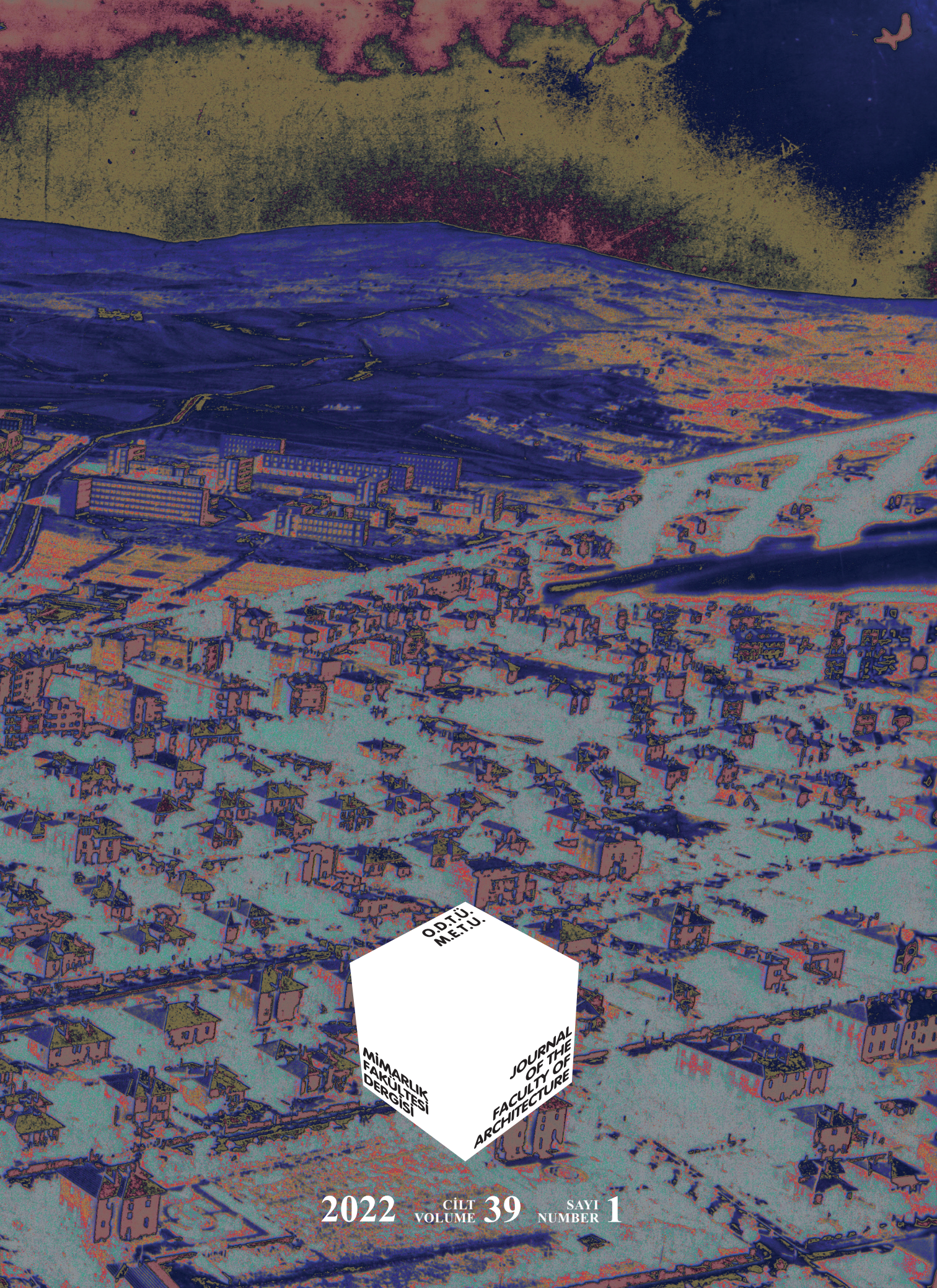

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JOURNAL OF THE FACULTY OF ARCHITECTURE

2022 CİLT VOLUME 39 SAYI NUMBER 1

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ODTÜ MİMARLIK FAKÜLTESİ DERGİSİ

METU JOURNAL OF THE FACULTY OF ARCHITECTURE
is a biannual refereed publication of the Middle East Technical University published every June and December. The Journal publishes articles contributing to the development of knowledge in man-environment relations, design and planning, which have theoretical or practical significance. Manuscripts, in English or Turkish, have to be approved by the Editorial Board, which are then forwarded to Referees before acceptance for publication. The Board claims no responsibility for the opinions expressed in the published manuscripts. It is assumed that the manuscripts received by the Journal are not sent to other journals for publication purposes and have not been previously published elsewhere. Translation of other authors' works is not accepted. Manuscripts sent for publication should conform to the format outlined in the Writing Manual that is published in the first (June) issue of each volume or that can be found on the Journal website. Starting from 2013 the 'online submission website' http://metujfa.arch.metu.edu.tr is available. Authors should submit manuscripts using the online submission system. Manuscripts that are not submitted through the online system, will not be considered for publication.

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Ankara, June 2022
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ODTÜ Mimarlık Fakültesi Dergisi, 2022, 39/1
Yayın Sahibi: (Fakülte adına Dekan) Neriman Şahin Güçhan;
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YAZI KURULU'NDAN

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Derginin bu sayısında; 27 yazar tarafından 10 yazı sunulmaktadır. Bu yazıların sekiz tanesi İngilizce, kalan iki tanesi ise Türkçe olarak hazırlanmıştır.

2022 yılında maalesef çok değerli emekli hocalarımızdan Enis Kortan'ı kaybettik. Kaybı nedeniyle derin üzüntü duyduğumuz, mimarlık alanına önemli katkıları olan hocamızı saygıyla anıyoruz.

Bütün yazarlara akademik üretime yapmış oldukları katkıları nedeniyle teşekkür ederiz. ODTÜ MFD'ni takip eden tüm dostlarımızla sağlıklı günlerde tekrar bir araya gelmeyi umuyoruz.

EDITORIAL

We are happy to present the first issue of METU JFA in 2022.

In the June 2022 39(1) Issue of the METU Journal of the Faculty of Architecture, there are 10 articles authored by 27 people. Eight of the articles are in English and the remaining 2 articles are in Turkish.

In 2022, Professor Enis Kortan, former faculty member of the Department of Architecture, passed away. We are deeply sorry for his loss and will always remember his great contributions to the field of architecture.

We are grateful to all the authors for their contributions to the body of academic knowledge and hope to see all our colleagues, who are following the METU JFA, in better days ahead.

ENİS KORTAN
1932, 21 Mart 2022, Ankara

ENİS KORTAN: ASALET VE TUTKU, BİR MİMARIN *"HAYAL DÜNYASINDAKİ SONSUZLUK İÇİNDE YOLCULUĞU"*

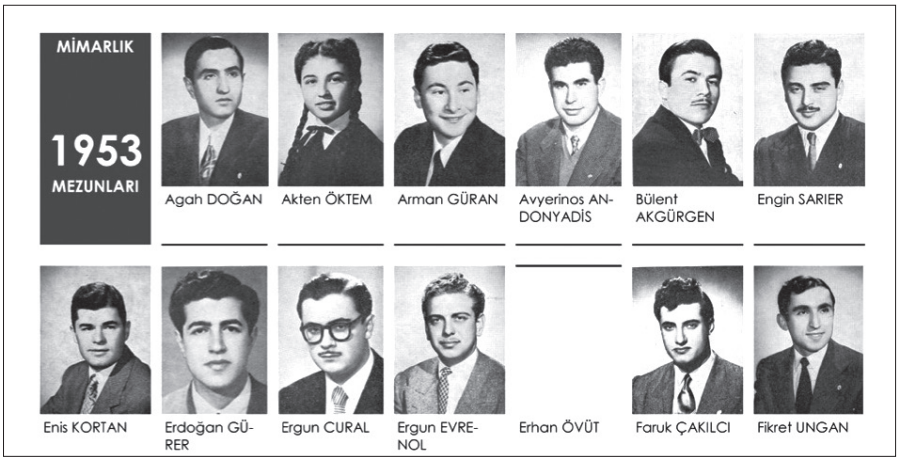
Lale Özgenel*

Prof. Dr. Enis Kortan'la 1980'li yıllarda Ankara Tenis Kulübü'nde tanıştım. O yıllarda kulübün takım oyuncusu olarak, diğer takım arkadaşlarım gibi haftanın yedi gününü kulüpte geçirir, sadece hafta sonları değil hafta içinde de her gün okul çıkışında antrenman yapmak için kulübe giderdim. Kulüp, adeta evimizden çok vakit geçirdiğimiz bir yerdi. Bu nedenle kulüp üyelerinin hemen hepsini iyi tanırdık. Kulüp bir anlamda bizim için büyük bir aileyi temsil ederdi. Üyeler arasında, sporcu geçmişleri, muhabbetleri ve/veya kişilikleri ile bizi etkileyen üyeler vardı. Enis Kortan benim için bu üyelerden biriydi.

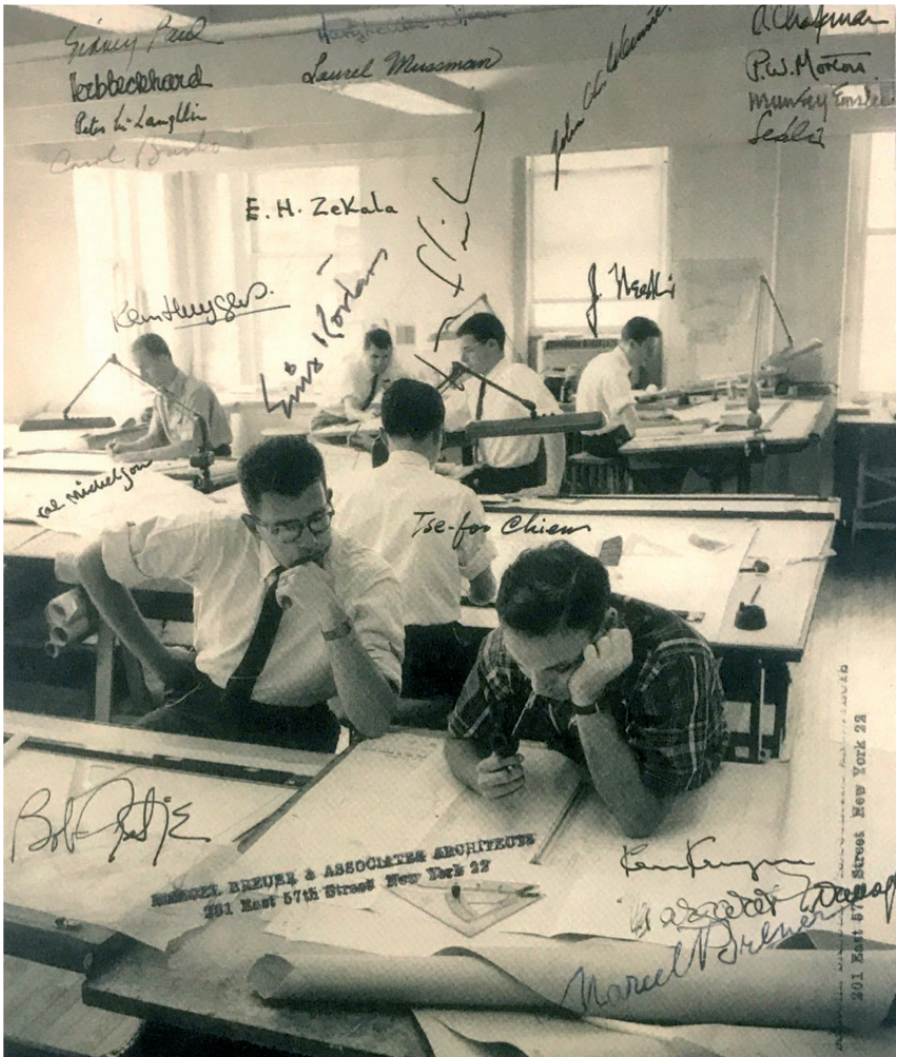
Özenli ve şık giyimi, konuşması ve davranışlarındaki zarafet dolu üslubu, karşısındakine değer verdiğini gösteren saygılı yaklaşımı ve nazik iletişimi ile özeldi; "asalet" adeta vücut bulmuştu. Sohbetlerinin tadı da bir başkaydı. Dili kullanma biçimine, duru ve berrak anlatımlarına, konular hakkındaki birikimine ve özellikle mimarlık hakkında heyecan dolu yorumlarına hayran olurdum. 1983 yılında ODTÜ Mimarlık Bölümünü kazandığımda, üniversitede hocam olacağı için çok sevinmiştim ama sadece kulüpten tanışık olduğum için değil. Üniversitedeki eğitim hayatım boyunca kapısını çalabileceğimi, her anlamda bana bilgisi ve deneyimleriyle yol gösterebileceğini, beni kültürel ve mesleki olarak zenginleştireceğini bildiğim için.

Mimarlık Yüksek Lisans programında, 1991 yılı sonbahar döneminde verdiği ARCH 515 "Origins of Attitudes in Modern Urban Design I" dersini almış, bu ders kapsamında çok keyifli bir öğrenme ve araştırma süreci geçirmiştim. Dersin final ürünü olarak antik Mısır, Mezopotamya ve Yunan kentlerinin planları ve kentsel tasarımları hakkında seçtiğim örnekler üzerinden bir araştırma ödevi hazırlamıştım. O dönem bilgisayar kullanımı yaygın olmadığı için metni elle yazmış, planları elle boyayarak renklendirmiştim. Enis Hocam, geçen yıllar içinde her karşılaşmamızda bu ödevi bana anımsatmış, tamamen el ürünü olan bu çalışmanın titizlikle, emek verilerek ve keyifle hazırlanmış bir araştırma olduğunun ne kadar belli olduğunu ve ödevimi sakladığını söylemişti. Otuz bir yıl sonra hazırladığım bu araştırma ödevi, Enis Hocamın kendine has zarafetiyle yaptığı bir jest ile hiçbir zaman unutamayacağım bir sürpriz olarak bana geri döndü. Mimarlar Derneği 1927'nin Enis Kortan'a onursal üyelik takdim ettiği, aynı zamanda kitap imza günü olarak düzenlenen 4 Aralık 2019 tarihli buluşmada, Dernek Yönetim Kurulu Başkanı olarak yaptığım konuşmanın ardından Enis Hocam bunca yıldır sakladığı bu ödevi bana izleyicilerin önünde iade etti. Zarfın içine koyduğu ödevin sayfaları ilk günkü gibi duruyordu. Kendisi için düzenlenen bir buluşmada, özenle sakladığı bir okul ödevini, eski öğrencisine böylesine onurlandırıcı bir biçimde iade edecek; 22 Aralık 2016 tarihinde ODTÜ Mimarlık Fakültesi'nde yapılan imza gününde, "Arayış, Genç Bir Mimarın Öyküsü" isimli kitabını; "Değerli Meslektaşım, Tenis Partnerim, Lale Özgenel'e Sevgilerimle" notuyla imzalayacak kadar mütevazi ve asil bir insandı.

* ODTÜ Mimarlık Bölümü Öğretim Üyesi, Prof. Dr.

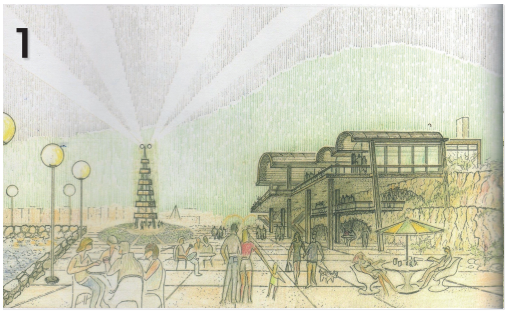


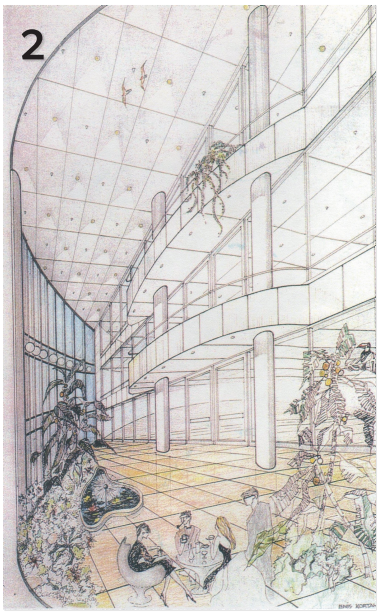
1953 İTÜ Mimarlık Bölümü Mezuniyet Yıllığında Enis Kortan. https://twitter.com/mimarliktarihi_/status/1062297890574528512

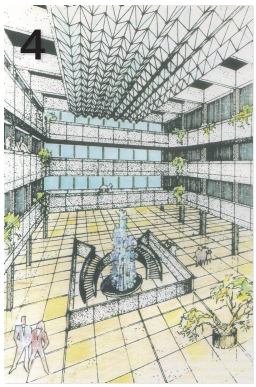


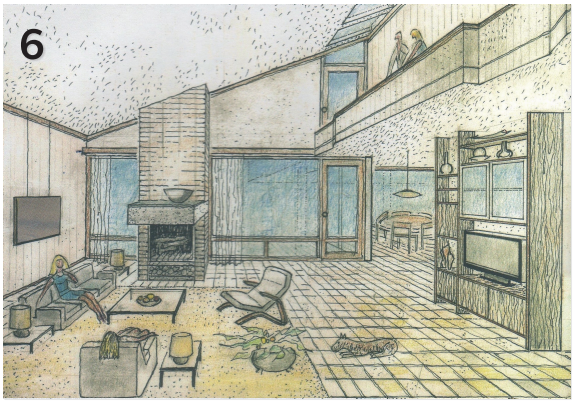
Marcel Breuer'in stüdyosunda, 1957. *Enis Kortan (2012) Hümanist Bir Mimarlığa Doğru, Projeler ve Uygulamalar 1952-2005, Boyut Yayınları.*

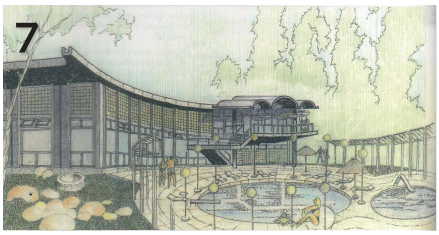
Düşünce ve yaratıcı fikrin gelişmesinde eskiz ve el çizimlerinin önemini vurgular, kendi çalışmalarında da el çizimlerini güçlü bir ifade ve sunum aracı olarak kullanırdı. Özellikle perspektif çalışmaları, salt yapı hakkında değil yapının kurgulayacağı gündelik hayat ve çevre nitelikleri ile olası kullanıcıları hakkında da detaylar içerirdi. Bu perspektifler, ayrıca, tasarımlarının özünü oluşturan, zamansız mimarlık ögelerinin nasıl ustaca kurgulandığını ve uyumlandığını de resmederdi. Bu yaklaşımını,

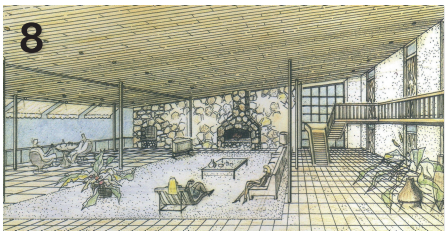












El çizimi proje perspektiflerinden örnekler. 1: Gazino-Restoran projesi, Ocaklar Belediyesi, Erdek (2005), 2: Megastrüktür, sera iç bahçeden görünüş, Düşeybahçeli Megastrüktür, Maslak-İstanbul (1994); 3: Ankara Karanfil Sokak'ta konut+dershane+büro+mağaza kullanım amaçlı apartman (2007); 4: Ankara Büyükşehir Belediye Binası, kent salonundan görünüm, Ankara Büyükşehir Belediye Binası proje önerisi (1985); 5: Makadam taşlı Abacı Latif Sokağı (1950), solda Enis Kortan'ın evi; 6: T. K. Villası, Atakum, Samsun, salondan görünüş (1985); 7: Sosyal ve sportif yapı, Ömerli Park Sitesi, İstanbul (2003); 8: S. A. Villası, Datça, salondan görünüş, (2002)

Enis Kortan (2012) Hümanist Bir Mimarlığa Doğru, Projeler ve Uygulamalar 1952-2005, Boyut Yayınları, görseller 1-4, 6-8; Enis Kortan (2006) Kaybolan İstanbul'um, Bir Mimarın Anıları, 1947-1957, Boyut Yayınları, görsel 5)

"Hümanist Bir Mimarlığa Doğru, Projeler ve Uygulamalar 1952-2005" isimli kitabının ön sözünde şöyle paylaşır: (**1**)

> "Kitaptaki bütün çizimler, perspektifler ve fotolar (müellifleri açıklananalar dışında) tarafımdan üretilmiştir. Bütün tasarımlarımda, belli bir zamana ait olan geçici moda akımlardan uzak alıp "kalıcı, zamansız ve hümanist" bir mimarlık yapmayı amaçladım."

Enis Kortan, düşünen, eleştiren ve sürekli sorgulayan, çok boyutlu üreten bir akademisyen ve tasarımcı hoca olarak onlarca kitap ve yazı yazdı. Gündemi takip etti, görüşlerini, eleştirilerini, önerilerini kitap, dergi, gazete gibi çeşitli mecralarda paylaştı. Öğrenmek, tıpkı mimarlık gibi, tutkusuydu. Bu anlamda, çalışma masasının üzeri her zaman araştırdığı ve üzerinde çalıştığı konulara ilişkin dokümanlarla, yayınlarla, çizimlerle dolu oldu. Aramızdan ayrıldığı güne

1. Enis Kortan (2012) *Hümanist Bir Mimarlığa Doğru, Projeler ve Uygulamalar 1952-2005,* Boyut Yayınları, s. 11

ODTÜ Mimarlık Fakültesi 1969 Yaz Stajı Futbol takımı; ODTÜ Öğrencileri-Ocaklar Köyü Gençleri maçı, Ocaklar Köyü, Erdek; Hakem: Prof. Dr. Enis Kortan.

kadar da düşünmeye, çalışmaya ve üretmeye devam etti. Sadece kitapları değil, Mimarlık ve YAPI Dergilerinde 1965-2020 yılları arasında paylaştığı yazıları (**2**), onun mimarlık gündemini yakından takip ettiğini gösteriyor:

Tasarımcı, yarışmacı, yönetici, akademisyen, eğitimci ve yazar olarak çok boyutlu bir mesleki kariyer inşa eden Enis Kortan'ın mimarlık ortamına yaptığı bu çok katmanlı ve zengin katkı Mimarlar Derneği 1927 tarafından kendisine takdim edilen onur üyeliği belgesinde şu şekilde özetlenir:

> "Modernist ve çağdaş bir mimarlık anlayışı ile özgün yapı ve mekân tasarımını ilke edinen meslek anlayışınız; form, malzeme, detay ve işlevin bütünleşik, yerine ait ve yaratıcı kurgusuna odaklanan mimarlık pratiğiniz; uluslararası ve ulusal mimarlık yarışmalarında kazanmış olduğunuz ödüller; yurtdışında geçirdiğiniz meslek hayatınız süresince dönemin uluslararası mimarlık ortamlarındaki temaslarınız ve proje çalışmalarınızla ülkemiz mimarları adına yapmış olduğunuz temsiliyet; akademi ve kültür kurumlarında yönetici olarak yaptığınız katkılar; engin mesleki ve düşünsel birikiminizle verdiğiniz dersler; Yirminci Yüzyıl Türk ve

2. 2020 "Mimaride Estetik Üzerine" (*YAPI*)
2019 "XXI. Yüzyılda nasıl Bir Mimarlık Eğitimi (*YAPI*)
2019 "Grotest Mimarlık" (*YAPI* 428)
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1992 "Mimarlıkta Dekonstrüktivizm" (*Mimarlık* 250)
1987 "Le Corbusier Yüz Yaşında" (*Mimarlık* 226)
1984 "Eleştiri Yanıt: Mimaride Türk Milli Üslubu Araştırması Üzerine" (*Mimarlık* 208)
1982 "Mimaride Zaman Faktörü" (*YAPI* 43)
1982 "Atatürk Kültür Merkezi Yer Seçimi ve Mimari Projeye İlişkin Bir Değerlendirme" (*Mimarlık* 181)
1977 "Ankara'da Son On Yılda Mimari Gelişmeler Üzerine" (*YAPI* 25)
1975 "Mimarlığımız Üzerine "(*Mimarlık* 140)
1970 "Günümüzdeki Mimarlık ve Mimar Kavramları Üzerine" (*Mimarlık* 86)
1970 "Biçimdeki Değişiklikler" (*Mimarlık* 81)
1969 "Mies van Der Rohe" (*Mimarlık* 72)
1969 "Mimarlık Eğitiminde Topluma Dönük Olma İlkeleri" (*Mimarlık* 71)
1969 "Son Olayların Getirdiği Sorunlar Üzerine" (*Mimarlık* 68)
1968 "Yarışmalar ve Jüriler Sorunları Üzerine" (*Mimarlık* 57)
1965 "Yaratıcı Ruh" (*Mimarlık* 22)

Ustalara Saygı: Enis Kortan, Mimarlar Derneği 1927 Onur Üyeliği Takdimi ve İmza Günü, 4 Aralık 2019. Mimarlar Derneği 1927 Arşivi.

Dünya Mimarlığı başta olmak üzere, tasarım ve mimarlık tarihini eleştirel, bütünleyici ve yorumlayıcı anlatılar üzerinde ele alan onlarca makale ve kitabınız; güncel mimarlık üretimini, disipliner bir yaklaşımla ve alternatif önerilerle eleştirel olarak değerlendiren çalışmalarınız ve paylaşımlarınız; büyük bir tevazu ve eksilmeyen bir tutku ile sürdürmekte olduğunuz örnek meslek hayatınız; yapıcı ve bilge kişiliğinizle ülkemizde mimarlık, yapı ve eleştiri kültürünün gelişmesine yapmış olduğunuz çok boyutlu, sürekli, üretken ve etkin katkılarınız için teşekkür ederiz." (4 Aralık 2019)

Bu kısa yazıyı değerli hocam, mimarlık sevdalısı, modern mimarlığın Türkiye'deki önemli temsilcilerinden Enis Kortan'ın öğrenmek ve mimarlık üzerine coşkulu anlatımlarıyla bitirmeyi anlamlı buldum:

"Benim üniversiteye gelişim gerçekten öğrenmek içindir, öğretmek için değil, hala da öğrenmeye devam ediyorum. 35 yılı geçmiş, hala her şeyi takip ediyorum, buranın kütüphanesi (ODTÜ) çok güzel, oradan öğreniyorum, arkadaşlarımdan öğreniyorum, jürideki tartışmalarımızdan, herkesten bir şeyler öğreniyorum ve böylece kendimi geliştiriyorum, öğrencilere de bir şeyler vermeye çalışıyorum" (**3**)

"Evet, mimarlıkta şiiri aramak: akıl-düşünce; kalp-duygu; sezgi, heyecan; bilgi, yetenek; hissediş, önsezi; iç güdü v.d.

İşte, bütün bu özellikleriyle hayal dünyasında sonsuzluk içinde yolculuk!

Mimarın bu yolculuğu her zaman da mutlu bir sona ulaşmayabilir; çöküş ve hayal kırıklığı da vardır senaryoda: ama asla yılgınlık yoktur.

Tekrar başa dönülür ve süreç, o özlenen buluş elde edilene kadar devam eder." (**4**)

3. Sevgi Aktüre, Sevin Osmay, Ayşen Savaş der. (2007) *Anılar, 1956'dan 2006'ya ODTÜ Mimarlık Fakültesi'nin 50 Yılı, Bir Sözlü Tarih Çalışması*, ODTÜ Mimarlık Fakültesi Yayınları, s. 31

4. Enis Kortan (2012) *Hümanist Bir Mimarlığa Doğru, Projeler ve Uygulamalar 1952-2005*, Boyut Yayınları, s. 292

ENİS KORTAN ÜZERİNE

Haluk Zelef*

Enis Hoca ile ilk karşılaşmam yüksek lisans yıllarıma dayanıyor. Yirminci yüzyılın ilk dönemlerindeki mimari akımlara odaklanan dersini bu yıllarda almıştım, 1950-60 ve 1960-70 arasındaki dönemi inceleyen "Türkiye'deki Mimarlık Hareketleri ve Eleştirisi" başlıklı kitaplarını ise henüz mezun olmadan okuduğumu hatırlıyorum. Bu kitapların içinde kendi projelerine de yer vermesi hem yazan, hem eğiten, hem de tasarlayan mimar fikrinin altını çizmekteydi.

Kendisini daha iyi tanıma fırsatı ise 1987 yılında Macaristan'daki bir uluslararası çalıştayda oldu. Henüz Sovyet bloğu dağılmamıştı ama politik ve kültürel değişim, "Re-vitalization of Islamic Heritage / Re-engineering the Conglomerate" başlıklı bu çalıştayın konusunda ve katılımcılarının çeşitililiğinde görülüyordu. Demirperde ülkeleri, Orta Asya, Orta Doğu, Kuzey Afrika, Avrupa, Amerika dahil olmak üzere her yerden akademisyenler ve genç mimar adayları gelmişti. Budapeşte'deki bu uluslararası organizasyonda ODTÜ'den düzenleyici olarak rol alan sevgili Selahattin Önür ve Enis Kortan yanında ben de öğrenci olarak yer almıştım. Alison ve Peter Smithson, Karoly Polonyi, Imre Makowecz gibi mimarlık dünyasının bilinen kişileri yanında kendi hocalarını görmek genç bir asistanın hem onlara, hem de eğitim sistemine olan güvenini arttırıyordu. Bu çalıştayda katılımcıların alt gruplara ayrılarak öneriler geliştirilmesi bekleniyordu. Yıllar ardından bakınca Enis Hoca'nın oradaki çalışma grubunda pek de rahat hissetmediğini düşünüyorum. Radikal bir modernistti hoca, hem estetik hem teknolojik hem de sosyal boyutlarıyla. O nedenle de tarihi formlara öykünen bir kültür merkezi tasarlamaktansa, Gül Baba Türbesinin merkezinde olduğu Türk-İslam geleneğindeki su, bahçe, gül gibi doğal elemanlarla sükunetin hakim olduğu bir bahçe yaratmayı hedeflemişti.

Hoca modernist benliğini çalıştay boyunca geceleri verilen konuşmalarda ortaya koymuştu. Onun konuşması "Le Corbusier ve Türk- Osmanlı Mimarisi" başlığını taşıyordu. 1987 yılı ünlü mimarın 100. doğum yılıydı ve onun doğuya yolculuğu ve bu yolculukta

* ODTÜ Mimarlık Bölümü Öğretim Üyesi, Doç. Dr.

Budapeşte, 1987. Fotoğraftakiler soldan sağa; ayaktakiler, Bayan Sesgör, Karoly Polonyi, Enis Kortan, Haluk Zelef, Turgut Sesgör, Selahattin Önür; oturanlar, solda Elizabeth Polonyi, sağda Gülsün Kortan.

karşılaştıklarının erken dönem üretimine olan düşünsel katkıları yeni yeni gündeme geliyordu. Kortan, bu konuda hazırladığı bir kitabını, 1990 yılında üç dilli olarak yayınlamıştı. "Değerli öğrencim ve meslektaşıma" diyerek imzaladığı kopyasını özenle kütüphanemde saklıyorum.

Fotoğrafta görüldüğü gibi Enis Hoca'nın bir yaz okulunda bile kravatlı şık kıyafeti, kendisinin 1950'lerdeki İTÜ eğitiminde karşılaştığı akademisyen neslinin çizdiği "ciddi" mimar profilini sürdürdüğünü gösteriyor. Ancak Budapeşte'deki çalıştay, akademik aktiviteler yanında daha az ciddi sosyal aktiviteler de içeriyordu, bunların biri de Macar öğrencilerle diğer ülkelerden katılanlar arasında düzenlenen bir futbol maçıydı. Sahadaki "dünya karması" içinde yer almak bugünden bakınca çok eğlenceli. Hoca o maçın hakemiydi. Sporsever birisi olduğuna ileriki yıllarda tenis kortlarında sıkça rastladığımda da tanık olmuştum.

2005 yılında ise bir retrospektif sergi dolayısıyla Enis Hoca ile yollarımız kesişti. O yıllarda Dekan olan Prof. Dr. Haluk Pamir, Mimarlık Fakültesi Binasının dekanlık girişindeki mekanın sergi salonu olarak düzenlenmesine karar vermişti. Bu mekansal dönüşümde ve sergilerin hazırlanmasında Nihal Bursa ve Alper Semih Alkan ile ben görevlendirilmiştim. Salonun açılışı Enis Kortan üzerine bir sergi ile olacaktı. O süreçte pek çok kez hoca ile evinde buluştuk; proje arşivlerini, kütüphanesini, fotoğraf albümlerini gözden geçirdik. Hocanın uygulamaya

Budapeşte / Margaret Adası, 1987. Siyah beyaz giysili hakem Enis Kortan, topu kontrol etmeye çalışan kırmızı formalı hücum oyuncusu Haluk Zelef.

Dekanlık Sergi Salonu Düzenleme / 2005
Enis Kortan: Mimarlıkta 35 Yıl: Eğitmen, Yazar, Mimar.
Düzenleyenler: A.S. Alkan, N. Bursa, H. Zelef

yönelik projeleri yanında radikal önerileriyle de tanıştık. Anıtkabir'i kristal bir kabuk içine almayı öneren, böylece onu örneklerine pek çok yerde rastlanan neo-klasik bir yapı niteliğinden uzaklaştırarak Atatürk'ün aydınlanmacı düşünce yapısına uyum sağlamasını hedefleyen proje bunların en dikkat çekicisiydi.

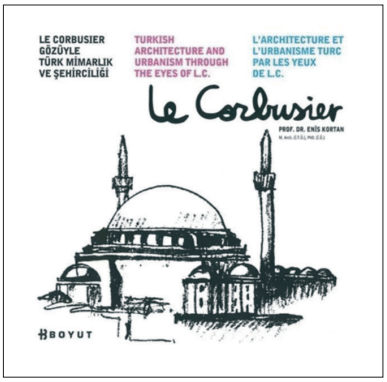
Kaybının ardından bu yazı vasıtasıyla Enis Hocayı güzel anılarda gülümseyerek anıyorum. Uzun mimarlık ve eğitmenlik yaşantısına saygı işareti olan bir sergiyi onun sağlığında hazırlamış olmak ise mutluluk verici. Hocanın zevkle ve beğeniyle sergiyi gezdiğini ve meslektaşlarıyla projeler üzerine sohbetlerini çok canlı olarak hatırlıyorum. Tek üzüntüm ise kendisi ile sergi esnasında bir fotoğraf çektirmemiş olmamız.

HÜMANİST MİMAR VE EĞİTİMCİ PROF. ENİS KORTAN'A SEVGİ VE SAYGIYLA

F. Cânâ Bilsel*

Sevgili Enis Kortan Hocamız ile 30 Ocak 2022 günü, 90. doğum gününün ertesinde telefon ile görüşmüştüm. Mimarlık Bölümü olarak gönderdiğimiz beyaz çiçekler onu çok duygulandırmış, büyük bir nezaket göstererek teşekkür etmek üzere beni aramış ve "tüm arkadaşlarına" teşekkürlerini iletmemi benden istemişti. Orta Doğu Teknik Üniversitesinin ve Mimarlık Fakültesinin kendisi için ne denli değerli olduğunu bu konuşmada özellikle ifade etti. Fakülteyi özlediğini, bir konuşma yapmak üzere gelmeyi arzu ettiğini söylediğinde, onu dinlemekten mutluluk duyacağımızı, öğrencilerimizin çok yararlanacağını belirterek bölümümüzde bir konferans vermek üzere kendisini davet ettim. Büyük bir tutkuyla, sevgiyle üzerine çok sayıda eser verdiği, "Yirminci Yüzyılda Modern Mimarlık" konusunda konuşmayı arzu ediyordu. Ne yazık ki, onu Fakültede ağırlamamız, Mimarlık Amfisinde dinlememiz mümkün olamadı. 21 Mart 2022 günü vefat ettiği haberini aldık. Enis Bey'in konferans metninin yazımını tamamladığı gün vefat ettiğini, kızı Emine Kortan'dan öğrendim. Modern Mimarlığı anlamaya ömrünü adamış

* ODTÜ Mimarlık Bölümü Başkanı, Prof. Dr.



mimar ve eğitimci Enis Kortan'ın, bu konuda hazırladığı konferansının son tümcelerini yazdıktan sonra, yaşamını adamış olduğu bir görevi tamamlamış olmanın gönül rahatlığıyla defterinin üzerine kalemini bıraktığı o an ne kadar anlamlı...

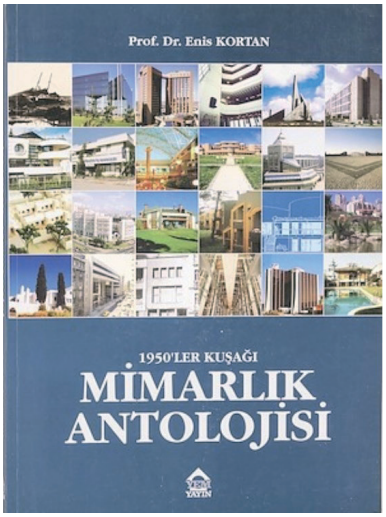
Mimarlık eğitimime başladığımda Fakültemizden aldığım ilk kitap Enis Kortan'ın "Le Corbusier Gözüyle Türk Mimarlık ve Şehirciliği" kitabıydı. Le Corbusier'nin "Voyage d'Orient" (Doğu'ya Seyahat) kitabından İstanbul eskizleri eşliğinde, duru bir dille yazılmış olan bu kitabı, büyüsüne kapılarak ilgiyle okuduğumu hatırlıyorum. Birinci sınıfta "Mimarlık Kavramlarına Giriş" dersini veren hocamız Prof. Dr. Feyyaz Erpi slaytlarla Le Corbusier'nin eserleriyle bizi tanıştırmış; "Grafik İletişim" dersinde ise Villa Savoye ve Ronchamp Şapeli'nin aksonometrik çizimleriyle mimari mekânı kavramamız istenmişti. Bu deneyim ile birlikte Enis Bey'in kitabını okumam modernizmin bu öncüsüne karşı bir duygu bağı kurmamı sağlamıştı.

Öğrenci olduğum dönemde Enis Bey'den ders alma olanağım ne yazık ki olmadı, fakat kendisinin ODTÜ Gaziantep Yerleşkesini tasarlama sürecinde derlemiş olduğu, üniversite yerleşkelerinin mimari tasarımlarını konu alan "Çağdaş Üniversite Kampüsleri Tasarımı" kitabından da öğrenciliğim sırasında yararlandığımı hatırlıyorum. Bundan yıllar sonra doktora çalışmalarım sırasında Paris'te Fondation Le Corbusier'de –mimarın yapıtı olan mekânda- Enis Bey'in kitabı ile karşılaştığımda ve onun benden önce burada çalıştığını öğrendiğimde ise çok heyecanlandığımı anımsıyorum. Le Corbusier'nin İzmir Nazım Planı ve "Yeşil Şehir" teması üzerine yaptığım araştırmada Enis Bey'in kitabında işaret ettiği bulguları, saptamaları ve özgün düşünceleri benim için aydınlatıcı ve yol gösterici oldu. Le Corbusier'nin geleceğin mimarlığı ve kenti üzerine düşüncelerinin gelişmesinde, tarihi İstanbul'un yirminci yüzyıl başında henüz yitirilmemiş olan yeşil kent peyzajından, bu peyzajın içerisinden yükselen anıt yapıların yalın geometrisinden etkilendiğine ilişkin bulgularının, uluslararası kaynaklarda hemen hiç değinilmeyen önemli saptamalar olduğunu düşünüyorum.

Enis Kortan, ülkemizde mimarlıkta modernizm hareketini keşfeden ve benimseyen ilk kuşağın önde gelen temsilcilerinden biriydi. İTÜ Mimarlık Fakültesi'nden mezun olmasından kısa bir süre sonra New York'a giderek bir dönem Marcel Breuer ile ardından Uluslararası Mimarlık uygulamalarının başat mimarlık ofisi Skidmore Owings Merrill'de çalışarak deneyim kazanmıştı. Enis Bey, Bauhaus'tan sonra, Harvard Graduate School of Design'da eğitimciliği sürdüren, modernist tasarımlarıyla tanınan Marcel Breuer'den özellikle etkilendiğini söyleşilerinde ifade eder, onun tasarımlarından örnekler verirdi.

Enis Bey'i bir mimarlık uygulaması sürecinde kişisel olarak tanıma ve birlikte çalışma fırsatı bulduğum için mutluyum. ODTÜ Yerleşkesinde Bilgisayar Mühendisliği Bölümünün ek binasının tasarımı sürecinde, Feyyaz Erpi hocamızın davetiyle, Sibel Sayek ile birlikte uygulama çizimlerini yapmak üzere ekibe dahil oldum. Enis Bey yeni mezun olmuş iki genç mimar olarak düşüncemize değer verdiğini zarafetle bize hissettirmişti. Kendisinin beyaz Schoeller resim kartonları üzerine olağanüstü bir ifade ve presizyon ile kurşun kalem olarak çizmiş olduğu avan projenin plan, kesit ve cephe çizimlerinden etkilenmiştim. Mühendislik Fakültesinin yapıları arasında, son derece sıkışık bir konumda yer alan bu yapı çevresinde bulunan yetişmiş ağaçlara zarar vermeden, bulunduğu yere çok ustaca yerleştirilmiştir. Behruz ve Altuğ Çinici'nin brüt beton mimari üslubuna duyarlı, ancak kendine özgü mimari diliyle çevresiyle diyalog kuran bir yapı olduğunu düşünüyorum. Köknar ağaçları arasına saklanmış, brüt betonun son derece incelikli biçimlendirildiği bu yapıyı, yapının girişini vurgulayan, pilotiler üzerinde yükseltilmiş zarif amfi kütlesini bugün de hayranlıkla izliyorum. Amfinin bir üst saçak oluşturduğu yapı girişinin, korunaklı bir buluşma ve dinlenme yeri olarak bugün de öğrenciler tarafından kullanılıyor olması, mimarın duyarlı tasarımının kullanıcılar tarafından takdir edildiğini kanımca ortaya koyuyor.

Prof. Dr. Enis Kortan, Modern Mimarlığı derinlemesine anlamış ve modernizmin temelinde var olan hümanizma düşüncesini özümsemiş olan bir mimar ve eğitimciydi. Mimari



proje ve uygulamalarını topladığı, "Hümanist Bir Mimarlığa Doğru, Enis Kortan: Proje ve Uygulamalar 1952-2005" başlıklı kitabında hümanist yaklaşımın mimarlığındaki yerini açıklamaktadır. Enis Kortan kitaplarıyla Modern Mimarlık kuramı ve estetiği konularında olduğu kadar, Türkiye'de mimarlık yazınına, mimarlık kültürüne ve eleştirisine değerli katkılar yapmıştır. Yapı Dergisinde düzenli olarak yayımladığı yazıları yanı sıra, "1950'ler Kuşağı Mimarlık Antolojisi (1947-1957)" başlıklı kitabı, Türkiye'de yirminci yüzyılın ikinci yarısında öne çıkan mimarlar ve yapıtları üzerine eşsiz bir kaynak oluşturmaktadır.

Prof. Dr. Enis Kortan, Orta Doğu Teknik Üniversitesinin eğitim kadrosuna katıldığı 1964 yılından başlayarak uzun yıllar Mimarlık Fakültesi Mimarlık Bölümünde öğretim üyesi olarak çok sayıda öğrenci yetiştirmiş, araştırma, tasarım ve uygulama çalışmalarıyla kurumun saygınlığına çok değerli katkılarda bulunmuştur. Emekliliği sonrasında mimarlık üzerine araştırma yapmaya, okumaya ve düşünmeye devam eden Prof. Dr. Enis Kortan, bu dönemde çok sayıda kitap yazmış, mimarlık kültürüne değerli katkılar yapmayı sürdürmüştür. Bu dönemde bölümümüzde lisans stüdyolarında jürilere katılmış, mimarlık makültesine ve bölüme olan ilgisini her zaman korumuştur.

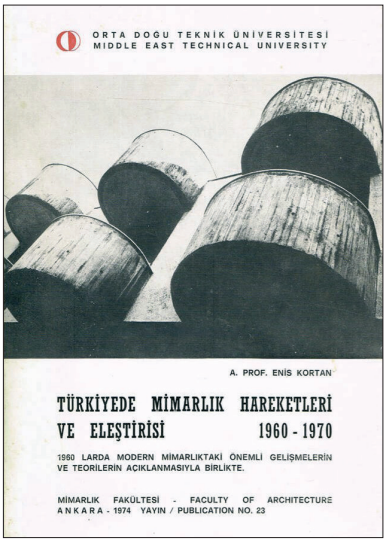
Çok değerli hocamız Prof. Enis Kortan'ın, ilkeli duruşu ve mimarlığa duyduğu heyecan ve adanmışlığı ile hümanist bir mimar, araştırmacı ve eğitimci olarak yapıtlarıyla genç mimarların ve mimarlık araştırmacılarının yolunu aydınlatmayı sürdüreceğine yürekten inanıyorum.

ÖNEMLİ BİR TASARIM STÜDYOSU HOCASI, İYİ BİR MİMAR VE ÜRETKEN BİR YAZAR OLARAK ENİS KORTAN

T. Elvan Altan*

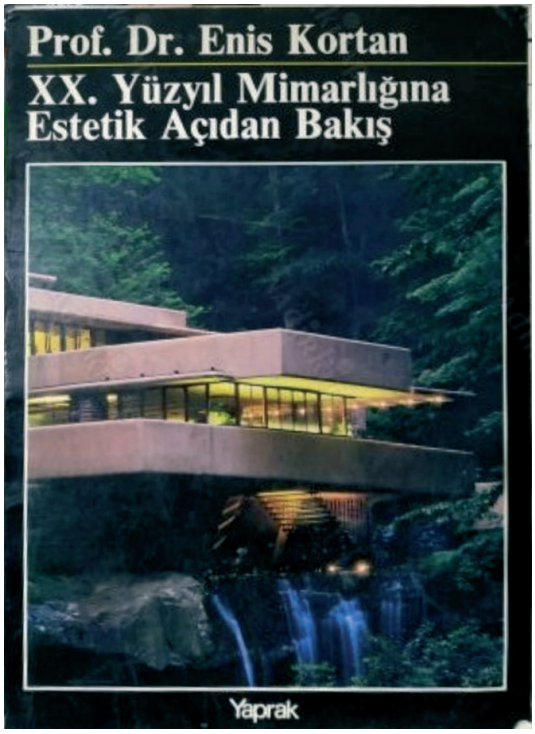
* ODTÜ Mimarlık Bölümü Öğretim Üyesi, Prof. Dr.

Enis Kortan Hocamla, geçtiğimiz birkaç yıl içinde Nişan Yaubyan ve Neriman Birce için düzenlenen paneller, 1950-1980 arası Ankara'da üretilen mimarlığa odaklandığımız seçmeli dersim ve yüksek lisans öğrencim Nilay Özkan'la Sakarya Hükümet Konağı üzerine tamamladığımız tez gibi Türkiye'de İkinci Dünya Savaşı sonrası dönemin mimarlık ortamı ile ilgili çalışmalar için görüştük. Enis Hoca kendisinin de bir temsilcisi olduğu bu dönemle ilgili deneyimlerini ve yorumlarını her zaman keyifle paylaşır, verdiği bilgilerle araştırmalara önemli katkı sağlardı. Bu yakın zaman sözlü paylaşımları aslında; yıllarca mimarlık pratiği ve eğitimi alanlarındaki çalışmalarının yanı sıra sürdürdüğü yayın üretiminin devamı olarak da görülebilir. Enis Hoca, dergilerde yazarak görüşlerini sıklıkla paylaşırdı; yayınladığı kitaplar ise Türkiye'de 1950'li yıllardan itibaren üretilen mimarlığı daha iyi anlamamızı sağlayan çok değerli kaynaklardır. Mimarlık eğitimi sürecinde ve genç bir mimar olarak yaşadığı deneyimleri paylaştığı "Kaybolan İstanbul'um - Bir Mimarın Anıları 1947-1957" başlıklı, 2006'da yayınlanan anı kitabı, 1950'ler ve 1960'lara odaklanan, iki cilt olarak yayınladığı 1971 ve 1974 tarihli "Türkiye'de Mimarlık Hareketleri ve Eleştirisi" başlıklı dönemin mimarlık üretimini eleştirel bir çerçevede inceleyen öncül değerlendirme çalışması ve dahil olduğu mimarlık neslinin üretimini sunduğu, 1997 tarihli "1950'ler Kuşağı Mimarlık Antolojisi" başlıklı öncül derleme çalışması, inceledikleri dönemin mimarlığına, o dönemi bizzat deneyimlemiş bir mimarın gözünden ışık tutmaktadır.



Antoloji çalışmasının Önsöz kısmında (s.7) yazdıkları Enis Hoca'nın bu yayınları gerçekleştirirken hedeflediklerini anlatmaktadır aslında:

> "Bugüne kadar ülkemizde bir 'Mimarlık Antolojisi' hazırlanmadı; böyle çalışmaların gereğine inanıyorum. Bu kitap ise, yaklaşık olarak, sadece 1950'lerde mimar olarak hayata atılmış bir kuşağın antolojisi olmak durumunda; o kuşak ki, II. Dünya Savaşı'nın zor koşullarında, her türlü olanaksızlıklar içinde yetişti, fakat bir bakıma da şanslıydı, çünkü büyük mimarların çoğu yaşamlarının en verimli çağındaydı, örnek alınacak 'Gerçek Usta'lar ve kuramları çoktu. Bu kitabın amacı, bir kuşağın deneyimlerini, duygu ve



düşüncelerini genç mimarlara ve diğer ilgilenenlere aktarabilmek ve Türkiye Mimarlık Literatürüne kalıcı bir eser sunabilmektir."

Enis Hoca, 1953-56 yılları arasında İstanbul Teknik Üniversitesi Mimarlık Bölümü'nde Paul Bonatz gibi mimarlardan klasik yaklaşım ağırlıklı bir mimarlık eğitimi almışsa da Türkiye'de modern mimarlığın oluşumunda belki de en önemli rolü oynamış olan "1950'ler kuşağı" mimarlarından biri olarak 1957 yılında Amerika Birleşik Devletleri'ne gittiğinde Marcel Breuer ve Skidmore, Owings and Merrill gibi savaş sonrası dönemin ünlü mimarlık bürolarında çağdaş mimarlığı yakalamayı hedeflemiştir. Örnek aldığı "ustası" diye tanımlayabileceğimiz Le Corbusier'nin mimarlık kuramı çerçevesinde Türkiye'deki mimarlık üretimini değerlendirdiği, 1983 tarihli "Le Corbusier Gözüyle Türk Mimarlık ve Şehirciliği" başlıklı çalışması, Enis Hoca'nın mimarlık üretim ve eğitiminde izlediğimiz radikal modernist yaklaşımını özetler niteliktedir.

ODTÜ Mimarlık Bölümünde lisans öğrencisi olduğum ve post-modern mimarlık uygulamalarının Türkiye'de de yaygınlaşmaya başladığı 1980'li yılların ikinci yarısında Enis Hoca'yı Le Corbusier'nin üretimine dikkat çekmesi ve dolayısıyla modern mimarlık vurgusuyla hatırlıyorum. Yine ODTÜ'de yüksek lisans eğitimim sırasında Enis Hoca'dan aldığım seçmeli derste de 1985 yılında tamamladığı doktora tez çalışmasının yayını olan, 1986 tarihli "XX. Yüzyıl Mimarlığına Estetik Açıdan Bakış" başlıklı kitabına odaklanarak modern mimarlık akımlarının ortaya koyduğu ilkeleri çalışmıştık.

Enis Kortan, ODTÜ Mimarlık Bölümünün en önemli tasarım stüdyosu hocalarından biridir; öte yandan, kendi tasarladığı yapılarla yer aldığı Türkiye'nin modern mimarlık üretimini değerlendirdiği yayın çalışmalarıyla literatüre yaptığı katkılar da hep hatırlanacak, çalışmaları savaş sonrası dönemi çalışan mimarlık tarihçilerine yol gösterecektir.

Enis Kortan ve Ali Osman Öztürk'ün birlikte çalışarak projelendirdikleri Ankara'daki ODC Ofis Binası.

HOCA VE MİMAR OLARAK BENİM İÇİN ÖRNEK BİR KİŞİ OLAN ENİS KORTAN (1)

Ali Osman Öztürk*

* Yüksek Mimar, A Tasarım Mimarlık

Enis Kortan Hocam ile ilk tanışmamız sanırım 1985 yılında olmuştu. ODTÜ Mimarlık Bölümünde, üçüncü sınıf stüdyo dersinde Almanya'da nehir kenarında Ziraat Bankası Bölge Binası projesi verilmişti. Projeler daha sonra Fakülte içinde sergilenmişti. Birisi, benim projem üzerine olumlu düşünceler yazmıştı; o yazının altındaki imza Enis Kortan Hocaya aitti.

Böylece Enis Hocam ile ilk diyaloğumuz başlamış oldu. Mezun olduğumda da Enis Hocam beni yanına asistan olarak aldı. Aslında ODTÜ'de böyle bir gelenek yoktu. Hocalar ve asistanlar zaman zaman değişen gruplar oluştururdu. Biz Enis Hoca'nın grubu olarak uzun süre üçüncü sınıf stüdyosunu beraber yürüttük. Bu grup, şu anda da çok başarılı mesleki faaliyetler yürüten mimarların yetişmesine katkı yaptı.

Asistanlık yıllarımdan sonra profesyonel hayatta da Enis Hoca ile birlikteliğimiz sürdü. A Tasarımın ilk yıllarında beraber bir proje gerçekleştirme imkânımız oldu. 1998 yılında Ankara'da ODC Ofis Binasının hem projesini hem de inşaatını Enis Hocam ile birlikte yürüttük.

Böylece hayatımın farklı evrelerinde bir hoca, bir mimar olarak Enis Kortan Bey benim için örnek bir kişi olarak yoluma ışık tuttu.

Değerli bir insan, tutkulu bir mimarı saygıyla selamlıyorum.

1. Bu yazının benzer bir versiyonu Serbest Mimarlar Dergisinin 43. Sayısında yer almaktadır.

METU JFA 2022/1
(39:1) *1-22*

DOI: 10.4305/METU.JFA.2022.1.1

HERITAGE BUILDING INFORMATION MODELLING FOR CONSERVATION OF 20TH CENTURY MODERNIST ARCHITECTURE

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Received: 02.04.2021; **Final Text:** 17.01.2022

Keywords: Conservation planning; modernist architecture; heritage building; heritage building information modelling; architectural visualization.

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INTRODUCTION: CONSERVING 20TH CENTURY BUILT HERITAGE

The need to conserve the Modernist heritage buildings has been one of the central concerns of the 21st-century architecture. Modern Architecture has been characterized by its innovative approach towards social, technical, and aesthetic intentions, as well as its experimental –and sometimes untested- use of materials, structural principles and infrastructure (Henket, 1998). Moreover, the original function and infrastructure of Modernist buildings have been subject to change, failing to meet the contemporary needs of its occupants. Today these buildings are under the risk of irreversible alteration, demolition, or destruction. As a result, there is an increased need for architectural conservation initiatives targeting Modernist heritage.

This paper focuses on the conservation management planning activities carried out for The Middle East Technical University's (METU) Faculty of Architecture Building with Getty Conservation Institute's support, and specifically, the Heritage Building Information Model (HBIM) developed during this process (Savaş, 2019a). The building was originally designed as a school of architecture and still accommodates the same function. Particularly for this reason, it has been well preserved over the last 60 years; yet there are challenges. Some of the problems this building face are very unique and some apply to almost all the early 20th century structures. The developed HBIM facilitated the systematic collection, structured representation, sharing and visualization of the vast amounts of building data gathered during the research activities, which are highly interdisciplinary, heterogeneous, and fragmented. The architectural and material qualities of the building, in a way, facilitated the construction of the HBIM, as standardization in architectural elements, the elimination of cladding and the rejection of all means of decorative elements, the known aphorisms of Modern Architecture, made it relatively easier for

the researchers to develop the said model. Moreover, HBIM acted as a core representational environment on which the other digital technologies and computational tools converge, such as LiDAR (Light Detection and Ranging) imagery, image-based 3D reconstruction, auxiliary analytical tools, and virtual reality visualizations.

This article intends to disseminate the tools and actions aimed at the use of HBIM for heritage buildings and the coordination of digital technologies supporting heritage building conservation planning into an integrated approach. Moreover, the HBIM and its development process presented in this article, aim to act as an exemplary model that can help facilitate the effective use of building information models for heritage buildings in the future.

The Significance of the Building

METU Faculty of Architecture Building is located in a university campus in Ankara, and functions as a school, housing three departments: Architecture, Industrial Design, and City and Regional Planning. The building was designed by the architect couple, Altuğ - Behruz Çinici between the years 1958-1961 as a competition entry, followed by its construction in the following two years (**Figure 1**).

This iconic building's spatial, aesthetic, and material qualities, as well as its stylistic maturity is considered as a genuine interpretation of Modern Architecture. Not only this building, but also the entire campus was an outcome of the creative intellect of post-war architectural engineering and became the laboratory of new materials, mechanical equipment, and construction techniques in Turkey. Its architectural qualities were motivated by the Bauhaus program reflected in the functional and volumetric layout of the building, including its material workshops, open-plan space distribution, transparent courtyards, exposed concrete curtain walls, large glazed surfaces, brise-soleil façades and the flat roof (**Figure 2**) (**Figure 3**).

Due to the high quality of materials used in the construction, meticulous detailing and application techniques, the building has been in good physical condition (**Figure 4**); yet it is still under the threat of various material, environmental and political pressures. The daily population of the building has reached 2000 people, tripling in quantity since its construction. The ideological shifts and the city's rapid growth with its new roads, underground transportation systems, and additional urban functions are threatening the integrity of both the campus and the building. Moreover, new building codes, comfort demands, and infrastructural requirements

Figure 1. The entrance arcade and interior view of the METU Architecture Faculty building (METU photography archives).

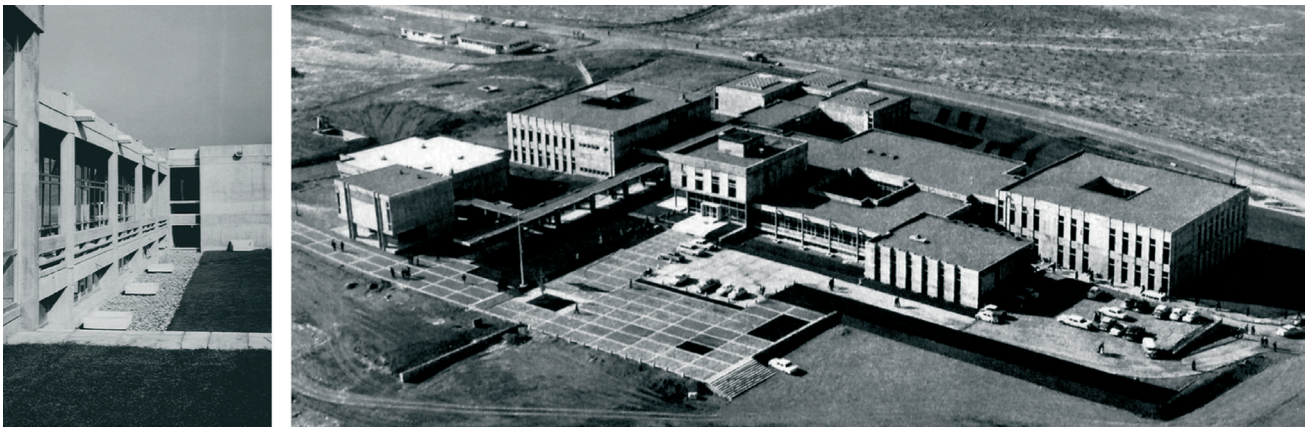


Figure 2. The façade detail and the aerial view of the METU Architecture Faculty building (METU photography archives).

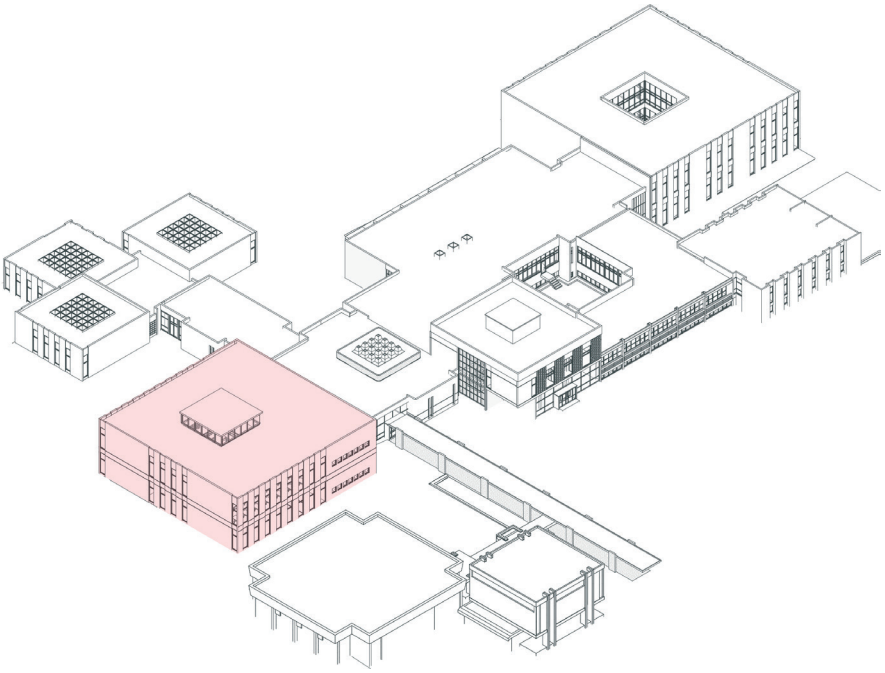


Figure 3. The METU Faculty of Architecture Building. The focused area is indicated in red (Model made by Şahin Akın).

of information/communication technologies introduce additional technical challenges to the building. As a result of a series of physical interventions that it has been subject to during the last three decades, the building's authentic architectural and material qualities are being threatened (Savaş and Dino, 2019).

The Planning Activities

The planning activities took place between June 2017- December 2018 with the valuable support of the Keeping It Modern Grant of the Getty Conservation Institute, USA. The grant helped the initiation of the conservation management plan to guide long-term maintenance and conservation policies developed for the building. That required the thorough investigation and documentation of the current performance of its physical building systems, as well as its social and cultural significance. Specifically, three assessment phases were simultaneously executed: (a) the elicitation of cultural and spatial values, (b) structural and material assessment, and (c) environmental performance assessment. These activities involved the collection, documentation and analysis of large

Figure 4. Meticulous detailing and application techniques (Photographs by Serra İnan).

amounts of interdisciplinary building information. Inaccessibility of such building information is an obstacle against the seamless communication between the team members, hindering effective decision-making. The introduction of Heritage Building Information Modelling (HBIM) as an effective and practical visualization medium helped the team to make the complex data more accessible, comprehensible and usable. All the related steps of the conservation management plan have been conducted in parallel to the ongoing daily maintenance activities. As such, building codes, users' demands, architect's dreams, personal histories, historical narrations, memoirs, legal documents, and many similar and seemingly unrelated data had been overlapped with more quantitative information. Moreover, HBIM helped the research team to overcome the specific aspects of Modern Architecture that were challenging the conventional heritage documentation techniques. The idea of open plan in architectural design, for instance, forced the photographic and textual documentation of each space as an autonomous entity in the building.

Photographic documentation, which is a widely applied, systematic visual data collection method, has been conducted with the assumption that each space is autonomous and defined by surfaces that can be identified as elevations/façades, floors and/or ceilings. However, in Modernist buildings, the definition of the physical borders of rooms, halls, and circulation areas are usually open to interpretation. The spaces flow into each other due to a desired volumetric fluidity and spatial flexibility. Various kinds of transparencies, mezzanine floors, bridging over passes, glazed surfaces and courtyards enhance this complexity (**Figure 5**). To address these and similar challenges, the HBIM was developed in parallel with the aforementioned three assessment activities. Throughout the project, HBIM acted as a comprehensive digital twin of the building, capturing vital information and continuously supporting various planning activities in the long term.

Figure 5. Open plan, volumetric continuities, courtyards and large glazed surfaces (Left photo by Duygu Tüntaş, right photo by Serra İnan).

HERITAGE BUILDING INFORMATION MODELLING: A GENERAL PERSPECTIVE

Heritage building conservation planning is an information-intense process that requires the management of vast amounts of data about the building. According to the RECORDIM guiding principles, the scope of heritage documentation includes metric, quantitative and qualitative information about the building assets, their values, significance, management, condition, maintenance and repairs, as well as the threats and risks to their safekeeping (Letellier et al., 2007). Digital technologies, especially computer-aided architectural design (CAAD) tools, are widely used for 3D modelling, but they cannot extensively support the information-rich workflows of heritage planning processes. Building Information Modelling (BIM) is a technology that can support Architecture, Engineering and Construction (AEC), building management, and maintenance activities. The main premise of BIM is one single model encoded in a standard, interoperable file format that maintains the entire building data. This data can be related to a wide range of sources, including 3D object geometry, building components, object properties, activities throughout the time dimension, or building actors.

In this research, following the need for information management for heritage buildings, the scope of BIM has been expanded to support heritage information, namely Heritage Building Information Modelling (HBIM). HBIM managed to leverage the existing capabilities of BIM and further harnessed it by the domain-specific heritage information gathered through a wide variety of sources. The object-oriented structure of BIM allows the modelling of heritage building objects with domain-specific properties associated with them. In contrast with BIM, HBIM additionally aims to capture the as-is condition of heritage buildings, while making room for imprecision and incompleteness due to missing information or degradation. The data types include but are not limited to geometry, data tables, audio, still or moving images, web pages, and other data types embedded in various software tools.

It is generally argued that to realize the value and significance of cultural heritage assets and to support long-term conservation activities, a wide range of technologies (including information capturing and structuring, performance analysis, visualization) need to converge on HBIM (Arayici et al., 2017). Central to such technologies is the capture of building geometry, which is currently handled with LiDAR, due to its increased accuracy,

dataset quality and data visualization capabilities. The resulting point cloud has great significance, especially for the documentation of buildings under the threat of being demolished, for the remote/virtual access of heritage buildings that are otherwise inaccessible, and for buildings that require the application of visual analytical methods on buildings in three dimensions (Counsell and Taylor, 2017). The conversion of 3D point clouds into BIM, known as Scan-to-BIM, is a labour-intensive workflow involving the "fitting" of parametric BIM objects (i.e., windows, columns) onto the point cloud, supported by information from design drawings and site surveys (Hajian and Becerik-Gerber, 2010).

Semantic data is also a critical complement to geometric data in BIM, which accounts for the non-geometric information about the building, its site, components and processes. In heritage buildings, semantic data includes not only technical performance data but also information regarding heritage values, including the architectural, cultural, social and historical significance.

Other advantages of BIM are the auxiliary functionalities such as energy performance analysis or environmental performance analysis. Tools that operationalize simulation-based analyses can be made accessible through semantics-based interoperability standards (i.e., the Industry Foundation Classes, gbXML) that allows access to a BIM model through (semi)automated methods and procedures (Pauwels et al., 2009). As such, concurrent performance evaluation in distributed environments can be facilitated through both synchronous and asynchronous communication modes (Lam et al., 2004). Other potential benefits of BIM for existing buildings include planned or ad-hoc maintenance information (Rodríguez-Moreno et al. 2018), assessment and monitoring (Gigliarelli et al., 2017), energy and space management (Bonduel 2021), emergency management (Feng et al., 2021), virtual/augmented reality (Akin et al., 2020), Web-based GIS applications (Brumana et al., 2019), life cycle assessment (Naneva et al., 2020), and retrofit planning (Volk et al., 2014).

HBIM In Heritage Building Planning And The Need For Customization

Currently, comprehensive, well-documented implementations of HBIM are still scarce. This is partly because reaching a consensus on a shared, standard schema for heritage buildings is difficult due to the fragmentation of the heritage-related information sources, the technical and cultural differences between stakeholders and difficulties in integrating interdisciplinary, heterogeneous information into one single BIM schema (Lam et al., 2004). Specifically for existing buildings, missing, outdated, or incorrect building information that results from the lack of continuous as-is building documentation is common (Volk et al., 2014). In new or unconventional application areas, there are other difficulties against a common- standard data schema. These include the volatility of the domain knowledge that continuously changes and expands and the unpredictability of transactions between process actors (Fischinger et al., 1998).

Heritage building conservation is such a new domain of expertise that has no a priori agreement of shared standards on the domain ontology. Therefore, there is a need to seamlessly manage the fluid conventions of different disciplines, cultures and periods in the development of building information models (Niemeijer et al., 2008). The a priori, top-down BIM

approaches, which "offer a complete and uniform description of the project data, mainly independent of any project specifics," (Stouffs and ter Haar, 2006) run the risk of failing to capture the specificity of heritage building information. In the top-down approaches, there are generally strict municipal/national/international standards or guidelines to be met, and there is no room for customization. On the other hand, the bottom-up approaches are suitable for capturing and representing individual building characteristics, which is crucial for the HBIM model development. The bottom-up approach does not confine itself based on prescribed standards from authorities. Instead, the approach allows a model to morph into a medium that could address some additional concerns in a more flexible, fluid, and customizable way. Both of the approaches are required for stakeholder communication, but their suitability depends based on the contextual framework.

This research supports that the diversity of heritage buildings needs to be maintained rather than absorbed in standard domain models. Therefore, it stresses the need to integrate bottom-up a posteriori approaches that allow evolving custom representations while adhering to universal, top-down representational standards. As such, standardized building representations can be augmented with a local, strategic, and pragmatist character (Lam et al., 2004).

HERITAGE BUILDING INFORMATION MODELLING FOR THE METU FACULTY OF ARCHITECTURE BUILDING

The systematic investigation of the physical condition and performance of the Faculty of Architecture building, as well as the documentation of its social and cultural significance, was carried out by an interdisciplinary team that included architects, engineers, social scientists, conservation specialists, IT experts, chemists and archivists. The team pursued three main pillars of research. The first, titled the elicitation of cultural and spatial values, aimed to present a comprehensive understanding of the building as a modern heritage, together with its history, development and present state. This phase was essential for achieving the appropriate assessments and, consequently relevant proposals for the principles, policies and related actions for its conservation. The second pillar, namely structural and material assessment, involved the visual assessment of the structural members, the evaluation of the structural damage and deteriorations, the identification of the material conditions and various visual decay forms through visual inspections. The third pillar, environmental performance assessment, carried out a quantitative methodology using energy simulations to understand and improve the energy performance, occupant comfort and environmental footprint of the building.

As a result of these research activities, archival information (such as photographs, drawings, models, and written documents) and technical information (related to the structure, mechanical system, electrical systems, materials, environmental performance and occupant comfort analyses) have been collected in different media. The nature of information gathered during the assessment activities was found to be rather heterogeneous and diverse, and many similar and unrelated data were in need to be overlapped and integrated.

As a digital environment for storing and retrieving the collected data, the HBIM was developed in parallel with the other planning activities. The purposes of the model are:

- The documentation of the building, including information on the geometry, architectural significance, and the results of the assessment activities,
- Data sharing between the team, and data interoperability with other digital tools (i.e., structural analysis or energy simulation),
- The visualization of the geometric and semantic data (**Figure 6**).

Modelling Building Geometry

The HBIM was developed using Autodesk Revit 2017 (Autodesk 2020a), a 3D building modelling software tool used for building information modelling in architectural design practices. Revit maintains 3D objects to define architectural elements and their parametric attributes, both geometrical and non-geometrical in the model. HBIM requires precise geometric information of a building. To this end, different data capturing methods were used, including LiDAR, surveying, image-based 3D reconstruction.

LiDAR

LiDAR technologies are widely used to support the high-accuracy surveying of the physical environment. In our research, the Faculty of Architecture building was laser-scanned twice using different levels of resolution. In the first step, the whole building was scanned in four

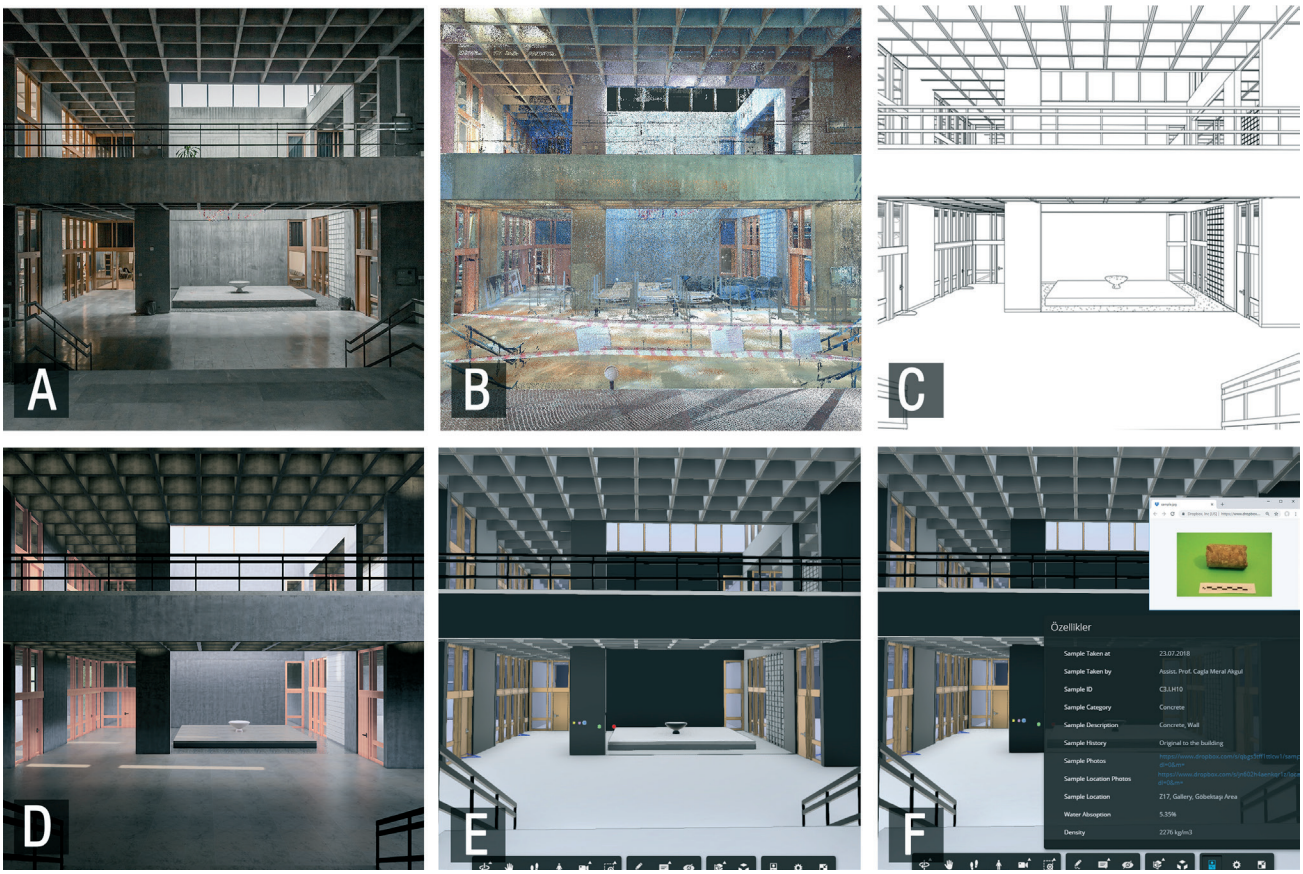


Figure 6. A) Photograph of the selected area, (B) Point cloud of the selected area, (C) BIM model of the selected area (D) Realistic rendering of the selected area (E) Interactive web-based visualization of the selected area with Autodesk A360 (F) HBIM data stored in model elements (Model made by Şahin Akın).

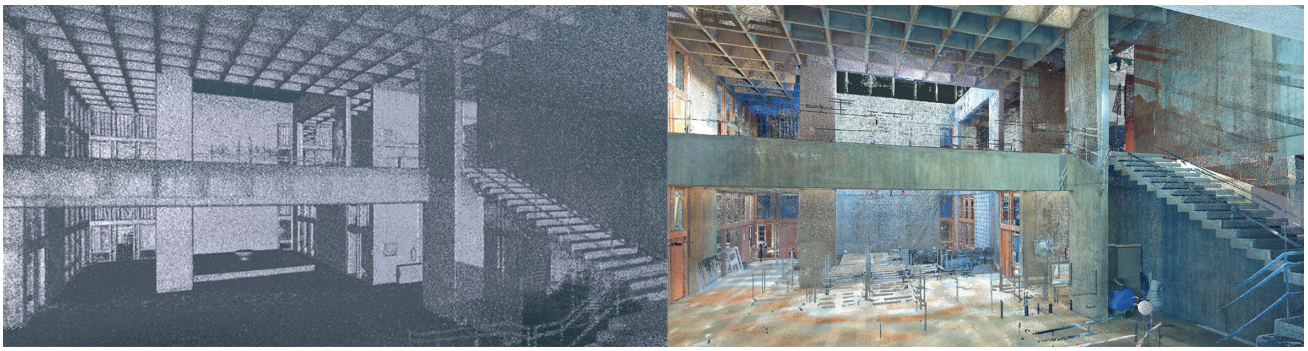


Figure 7. Point cloud model scanned with a low precision scanner (left), and with a high precision scanner (right) (Model made by Şahin Akın).

hours using a handheld, low-precision 3D laser scanner, called ZEB-REVO (GeoSlam, 2020). The scanner has -/+ 0.1% accuracy with an indoor range of 30m and it has a 43.200 points/sec data acquisition rate with 905 nanometres –nm laser wavelength. ZEB-REVO scanner is advantageous to steady cameras due to its ease of use, flexibility, and scan speed.
The second scanning process focused on a selected area of the building (indicated in red in **Figure 3**), in which detailed technical analyses were carried out. A stationary, high-precision laser scanning device, Faro Focus Laser Scanner 120 (Faro 2020), with a 905nm wavelength and a scan speed of 122 kpt/sec was used. The 3D point cloud models were generated as a result of a total number of 75 sessions and two days. **Figure 7** shows a comparison between the low- and high-resolution point cloud models of the building. While the initial low-precision scan allowed the definition of the building's overall geometry and main features, the high-resolution scan facilitated the detailed modelling of all architectural elements. As such, this latter point cloud also was used as the basis to define a library of parametric objects (in other words, families) for HBIM (see Section 3.2).

Surveying

The building features that were not captured by LiDAR were documented by on-site surveys such as physical details or building materials. This task was carried out in parallel with the data collection and condition assessment activities and registered the gathered information in the model as required. The information that was already contained in the BIM model was instantiated directly. However, as will be described in the following section, many new information types were identified and captured during the project, which were added to the HBIM by extending the schema with new families and/or family parameters.

Image-based 3D reconstruction

Image-based 3D reconstruction aims to deduce the 3D geometry of a scene captured by a set of images taken from different angles. The technique is applied with high-resolution photographs to model building elements with high significance value. For precision modelling, some key factors that affect the quality of the output geometry include:

- To reduce any possible distortion, every angle of the object must be captured and photographed accordingly.
- Evenly distributed light conditions are needed to be provided for the prevention of cavities on the model surface.
- A high number of images are needed for a high-precision model.

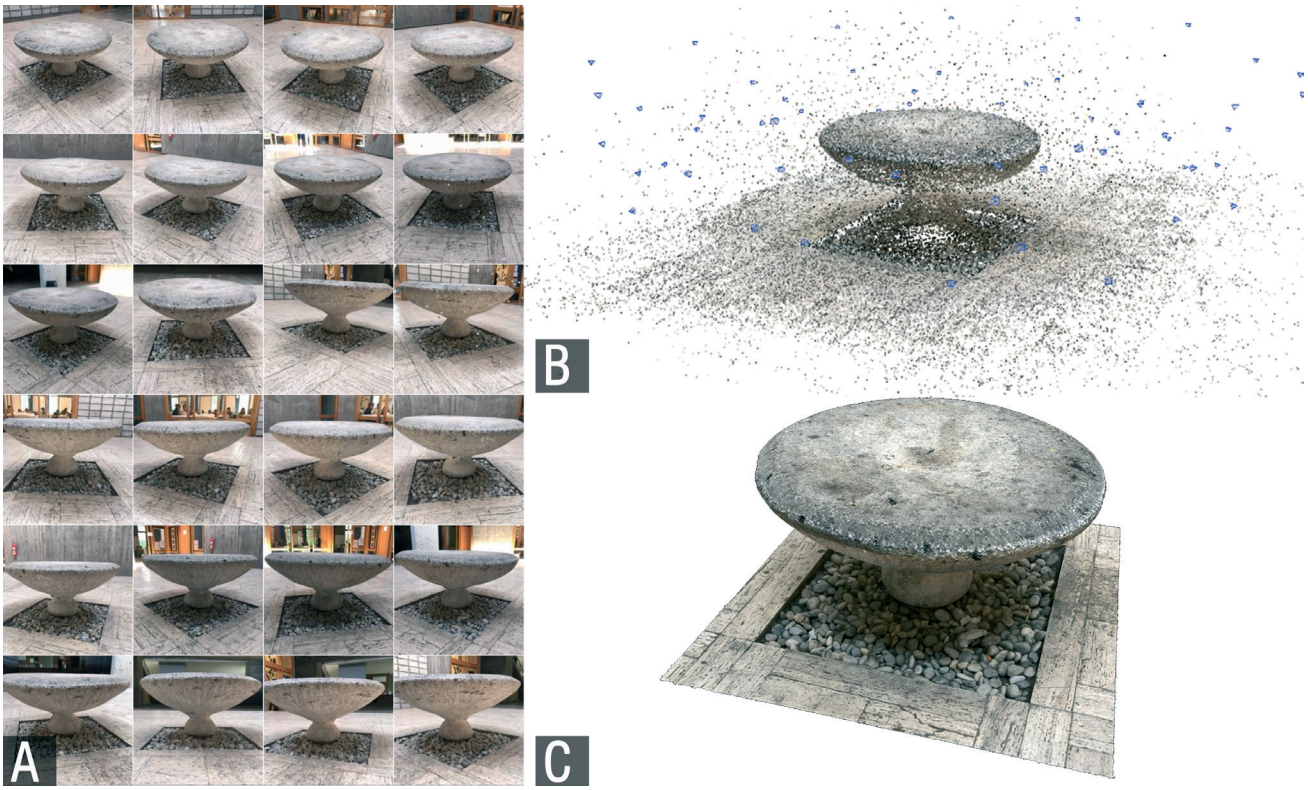


Figure 8. A) The photos of the selected geometry, B) Sparse point cloud model, C) Coloured mesh model of the Göbektasi (Model made by Şahin Akın).

An artwork in the building, *Gobektasi*, which has high historical significance for the building, is selected for 3D reconstruction (**Figure 8**). A commercial photogrammetry and 3D modelling software, 3DF ZEPHYR (3DFlow 2020), was used for the automated construction of the geometry. Using 95 photographs, a point cloud with 36.824.754 points and a mesh model were generated. Finally, the mesh model was introduced to HBIM according to its relevant building element category.

Modelling the Parametric Building Elements

A critical phase in HBIM development is the development of custom families. A family is defined as "a group of elements with a common set of properties, called parameters, and a related graphical representation"(Autodesk, 2020a). The main premise of a family is that its elements encapsulate a number of attributes that assume specific values, as they are instantiated in the model. An element of a family, therefore, is of the same type with other family elements, but can take different forms in the model. Therefore, the repetition of an element is key to the use of families. In the faculty building, the standardization in architectural elements and their repetition further justified using the custom-made standard families for the building.

Family creation is a manual process that requires translation of a point cloud into objects, such that an element is identified, isolated from its broader context, parameterized, and modelled. An example of a family in our research is the windows. During HBIM development, various window types are identified, parametrically modelled as families, and instantiated in the building model (**Figure 9**). All windows within each family share the same basic attributes such as level, sill height or opening aperture, while specific ones can be extended with additional attributes such as division

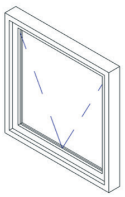
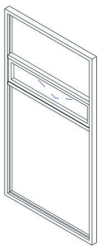
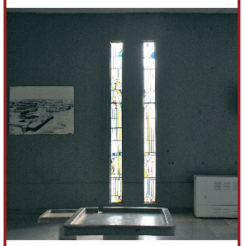
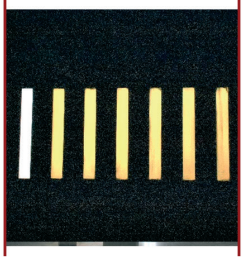
FAMILY	TYPE	DESCRIPTION	PROPERTIES	IMAGE	PHOTO
getty_studios_window	getty_gobektasi window	Vertical window with single opening, bottom-hung (design studios)	Level: -0.95 Sill Height: 0.00 Opening Aperture: Bottom Frame Material: getty_aluminum Glass Material: getty_glass Height: 390 cm Width: 112 cm Split Line Height: 270 cm Frame Thickness: 5 cm Glass thickness: 1.36 cm Function: Exterior Arch. Significance: Moderate		
getty_square window	getty_gobektasi office	Square shaped window, operable opening, bottom-hung (offices)	Level: -0.95 Sill Height: 80.00 Opening Aperture: Bottom Frame Material: getty_aluminum Glass Material: getty_glass Height: 95 cm Width: 95 cm Frame Thickness: 5 cm Glass thickness: 1.36 cm Function: Exterior Arch. Significance: Moderate		
getty_triple window	getty_dean	Triple window with single opening, bottom-hung (Dean's Office)	Level: +4.71 Sill Height: 0.00 Opening Aperture: Bottom Frame Material: getty_aluminum Glass Material: getty_glass Height: 350 cm Width: 190 cm 1st Split Line Height: 210 cm 2nd Split Line Height: 260 cm Frame Thickness: 8 cm Glass thickness: 1.36 cm Function: Exterior Arch. Significance: Moderate		
getty_sloped window with 4division	getty_4 division	Non-operable slim window, with stained glass , four black iron dividers and exterior angled opening cut	Level: +0.25 Sill Height: 10.00 Opening Aperture: None Frame Material: getty_iron Glass Material: getty_glassstained Height: 347 cm Width: 39 cm Division Line: 31.50 cm Frame Thickness: 4 cm Glass thickness: 1.36 cm Function: Exterior Arch. Significance: High		
getty_clerestory	getty_clerestory gobektasi	Non-operable slim clerestory window with colored glass, black iron frame and exterior angled opening cut	Level: +5.00 Sill Height: 68.40 Opening Aperture: None Frame Material: getty_iron Glass Material: getty_glassyellow Height: 200 cm Width: 40 cm Frame Thickness: 4 cm Glass thickness: 1.36 cm Function: Exterior Arch. Significance: High		

Figure 9. Parametrically modelled window family examples (Model made by Şahin Akın).

line or split line-height. While repetition is critical for family elements, there are several objects –either artwork or furniture- that are unique in the building (i.e., chandeliers, fountains). Although these elements were fully modelled as parametric families, they were used only once.

Customization of HBIM

The custom data collected during heritage building assessment processes was registered to the model elements in HBIM. As mentioned above, a bottom-up, a posteriori modelling approach that can result in custom, one-of-a-kind representations while adhering to universal, top-down representational standards is adopted in this research. The object-oriented structure of object-oriented models, or product families as parametric

building elements, can represent objects with properties that both exist as part of the model and that can be added as needed. The HBIM can be extended either by adding new attributes to the existing family elements or new families that encapsulate the data gathered during assessment. The data sources for new information types originate from the three research pillars, including documentary evidence of architectural and social values, structural and material assessment and environmental performance assessment.

Documentary Evidence of Architectural and Social Values

Architectural and Social Values of the building are extracted from the archival documents, which are composed of different groups of materials: Visual documents (photographs, blueprint drawings, moving images), written documents (construction diaries indicating the details of the application and implementation processes, institutional documents, correspondence and interviews) and physical objects (the building materials, finishing details and the furniture).

The building has been subject to a series of physical and functional changes over time. As there were no official records of these changes, the best medium to follow the traces of the major alterations in the architects' design ideas was the four sets of architectural drawings that were prepared for different purposes during the execution of the project. Subsequently, these drawings can be listed as the Competition Drawings (1961), Conceptual Drawings (1961-62), Application Drawings (1962), and the Publication Drawings (1964-69). In addition to these four sets, Survey Drawings (2018) are prepared during this project in order to be able to show the alterations after the construction until today. Motivated by the desire to uncover the initial design principles, material qualities and social/environmental integrity of the METU Faculty of Architecture, the research team brought together architectural drawings, photographs, publications, films, student projects, course syllabi, studio assignments, etc., the sources of original impetus behind design, construction and use. The diversity of the archival material required the development of a spatial archival method. Archival processes necessitate appropriate ontologies and applicable software tools.

Structural and Material Assessment

Structural assessment data collection for the faculty building was carried out during several different phases. Visual evaluation of the building involved expert inspection during building surveys. Different structural parts of the building are investigated by putting special emphasis on each element. To evaluate compressive strength of the concrete and its variations, non-destructive Schmidt hammer testing was carried out on the selected elements of the building. Moreover, the reinforcement layout of concrete columns and slabs was identified using a Ferro meter and was registered on 2D drawings. Finally, eight problematic areas with bending and shear cracks in the concrete waffle slabs were identified, and eight linear variable differential transformers (potentiometric LVDTs) and two temperature sensors were installed to monitor the crack width for a year. Moreover, laboratory studies on the concrete samples for characterization were carried out, including x-ray fluorescence (XRF), X-ray powder diffraction (XRD), and ultrasonic testing. The data obtained from these sources were integrated into the HBIM model in different data formats and data types.

The material assessment procedures started with the determination of material conditions through visual inspections. A framework to map the visual decay forms, such as material loss, detachment, discoloration, deposits, cracks and deformation, was developed and the assessed materials were classified under these categories. The location and distribution of these decay forms in the building are needed for diagnostics and the long-term monitoring of the decay form. Here, HBIM claims the responsibility of managing asset information for long-term condition assessment, planning, and maintenance scheduling. As the measurement data collected during the building lifecycle is also born-digital, it can precisely be associated with the corresponding model elements when required. The data collected on material condition and measurements can establish the basis of decision-making for preventative or corrective maintenance activities.

Environmental Performance Assessment

Environmental performance assessment procedures are motivated by reducing the environmental footprint and improving the occupant comfort of the building. The current building condition was assessed through visual inspections, where information regarding the building geometry, materials, set points and schedules (mainly of building use and internal loads) was gathered by observation or from other project sources. The HBIM model was also used for energy modelling and simulation to quantify the energy use (heating + electricity) and occupant comfort (air temperature + adaptive comfort + overheating) using EnergyPlus (US Department of Energy 2010). A number of performance-improvement scenarios that include various measures were developed, modelled, and simulated to assess the most effective measures. As such, the potential of BIM as a tool of interoperability that can support data integration between disparate tools was realized. Field measurements were also carried out to monitor the indoor dry bulb temperature and relative humidity of two critical rooms in the faculty building. Similar to the potentiometric LVDTs, these sensors continuously measured and registered data into time-stamped tables, which provides long-term insight into occupant comfort in building spaces.

Based on the relevant data types captured during the three research pillars, the HBIM is extended with the following custom families. The Architectural Documentation family addresses the need for archival documentation of the building collected since its construction, such as architectural drawings from different building phases (i.e., plan, section, or elevation drawings), technical drawings (i.e., mechanical, structural, or electrical drawings) or photographs. These documents are categorized to represent the significant phases in the building's life, such as Competition Drawings, Conceptual Drawings, Application Drawings, or Published Drawings.

The Material Assessment family represents the tests performed on the collected material samples. Therefore, the family includes information on the sample collection process, sample description and the test results. The Material Assessment family can be associated with all physical model elements but is most typically used for construction materials such as concrete and brick walls. The Structural Assessment family represents the procedures followed during the structural assessment and the data collected or generated during this process. This family can be associated with structural elements in the model. The Environmental Assessment family is associated with building spaces and contains simulation-based

information regarding the building energy use, occupant comfort, space daylight illuminance and room occupancies. Probe Measurements family represents data sets that are results of continuous on-site data collection through sensors. As described above, measurements that were considered in this research include but are not limited to indoor air temperature, air relative humidity, and crack width measurements. This family can be associated both with the physical elements and spaces.

It must be stressed that the research team followed a bottom-up approach during HBIM development. This means that the Revit model's proposed extension was carried out based on the collected and generated data types. While the new families proposed herein have the capacity to cover a wide range of heritage conservation planning activities, it still can be developed further to include information if and when required by other practices.

Visualization of HBIM

The HBIM environment acts as an interactive medium in which users can view, visualize, edit and share the model and its elements for various purposes. Several visualization modes are implemented for the HBIM (**Figure 10**).

Photo-realistic Renderings, Stereo Panoramic Renderings, Web-based Standalone and Executable Walkthrough Experience

The photo-realistic renderings were created at the designated viewpoints inside the HBIM model by using real-time rendering software programs named Lumion (Act-3D, 2020) and Enscape (Enscape, 2020). To achieve photorealism in still renders, material textures are critical. Textural pieces of information of selected building elements were captured by taking high-resolution photographs. These photographs were then accurately converted to seamless textures that can create homogeneously distributed surfaces that can reflect the real visual conditions.

Figure 10. Various visualization methods for the HBIM model A) Autodesk Revit Live, B-C) Autodesk A360, D) Photo-realistic still render, E) Web-based Walkthrough (Enscape), F) Standalone Walkthrough Experience, G) Stereo Panoramic Render (Model made by Şahin Akın).

360° view images, namely stereo panoramic renderings, allow the observers to experience HBIM models in an immersive way. A designated location can be defined in the HBIM model and the location can be reviewed in 360 degrees. The panorama views were generated in rendering software programs named Enscape and Autodesk Rendering (Autodesk, 2020b). These 360° images can be accessed via QR codes or URLs. The visual access can be provided on various platforms such as personal computers or mobile devices. Augmented immersive experience can be achieved with the head-mounted displays that adjust the orientation of the image and viewers' point of view simultaneously, thereby help to surround the user with the virtual environment.

Virtual walkthroughs increase the comprehension of the finer architectural details of the building (Yan et al., 2011). The users can navigate inside the models, similar to first-person shooter computer games. For the faculty building's game-like visualization, two types of walkthrough methods were adopted: Web-based Standalone (WBS) and Executable Walkthrough (EW). Even though the outputs of these two methods are similar, they serve different needs. WBS offers low rendering quality, access via a web browser from a tablet or PC, and requires no high-end graphic card. On the other hand, EW has more features such as time of the day adjustments, virtual reality support, various visualization filters; however, it requires powerful graphic cards and a PC. Both of the visualization methods were generated via Enscape for this project.

Hybrid Visualizations: A Data-centric approach

During assessment processes, heritage professionals are in need of not only geometric but also semantic information related to buildings. In this study, an unprecedented strategy was adopted to incorporate the visualization of non-geometric information in the HBIM model. Distinctive visual markers (spherical shapes) that indicate the five custom families explained above are inserted into the HBIM by associating these family elements with the existing model objects (i.e., columns, walls, waffle slabs). Upon clicking, these markers in the HBIM display their stored data in a pop-up dialogue. For instance, during the structural assessment processes, the data on an existing crack was monitored, and various data, including the close-up images of the crack, crack depth information, hazard conditions, were collected and assigned to a particular visual marker that is placed in a wall element in the HBIM. These data on HBIM can be reviewed by selecting the visual marker interactively. Clicking on a staff office door helps the retrieval of historical data related to the previous users of that particular space, restorations that the door had been subject to, material properties, manufacturing techniques of that door and the industrial resources of its doorknobs, hinges, and locks. To achieve interactive and accessible HBIM data and HBIM geometry, A360 platform (Autodesk, 2020c) and Revit Live (Autodesk, 2020d) were utilized. Both platforms support combined visualization of semantic and geometrical data in an integrated way; while the A360 platform presents a web-based interactive visualization environment, Revit Live offers a standalone walkthrough experience. The interactive visualization capacity of the model, is also useful for the assessment activities and for sharing the architectural heritage values with a broader audience. All the details of the above-mentioned visualization methods are shared on the project website (Akın, 2022) and the published report (Savaş et al., 2018).

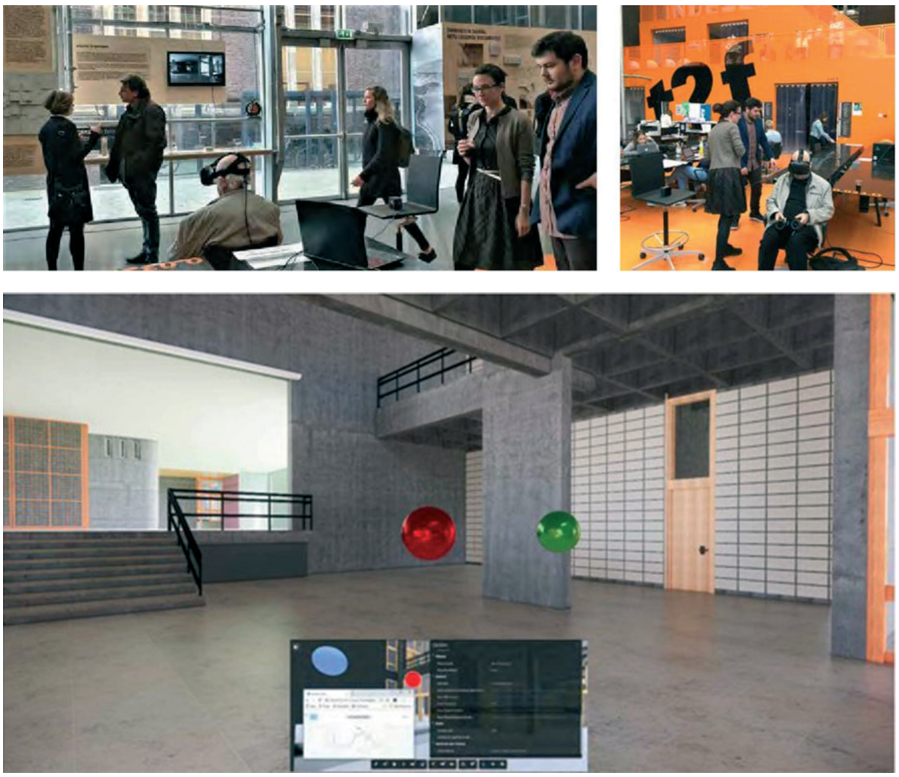


Figure 11. Getty Foundation Keeping It Modern METU Campus Exhibition TU Delft, 2019 (Photographs by Serra İnan).

In the final step, the HBIM was made available in the virtual reality (VR) environment. In this fully immersive VR environment, users can walk in the rendered HBIM model by means of a head-mounted display and interact with the building components (**Figure 11**). VR-based visualization was made available to a broader audience during public meetings with the building's faculty members and national/international exhibitions (Savaş, 2019b).

Integration With Energy Performance Analysis Tools

A conservation planning process that focuses on environmental performance mandates that conservation interventions take into account sustainability issues and meet environmental targets for the current and future climate. In this direction, building energy-efficiency, environmental impact and occupant comfort (especially for those buildings that are still being actively used) need to be considered through quantitative analysis. Building energy simulation is used in this study to quantify performance metrics, the development of alternative scenarios that can improve the current conditions, and the comparative analysis between the current state and these scenarios. Finally, a critical evaluation on the ways in which interventions can be realized while preserving the cultural and spatial qualities needs to be made.

To provide deeper insight into the thermal behaviour of the faculty building, simulation-based analyses were conducted. The first step in energy model development is to export the HBIM to DesignBuilder, a software tool used for energy modelling and hourly energy simulation using gbXML (Green Building Extended Mark-up Language) data exchange format. Although seamless data transfer between digital tools is not fully achieved yet, missing information required for simulations, such as internal loads (occupants, lighting, and equipment), heating setpoints,

or materials' thermal properties, are manually added in DesignBuilder. Simulation-based analyses are used to quantify performance metrics such as annual energy use, CO2 emissions, and occupant comfort. Other detailed results include heat loss through the building envelope, natural ventilation cooling capacity, solar gain from windows, or internal loads. The possibility of data integration between other tools and HBIM, as exemplified by the simulation-based environmental assessment activities, further justifies the development of a detailed HBIM. Similar data transfer processes can be realized using other tools in the future, such as building structural analysis.

Following, several scenarios that aim to improve building performance that consider different building interventions were developed, including improving window type and frames, roof insulation, window aperture angle, cross-ventilation possibilities, the application of components such as phase-change materials or infrared reflective coating. The existing energy model was edited for each scenario and simulations were run to be able to benchmark each scenario against the original building. The simulation results indicate that improving the airtightness of the building, improving the roof isolation by increasing the insulation thickness and using high-performance glazing have the maximum impact on energy efficiency. Combined scenarios that consider multiple interventions can reduce the energy use by 45% and indoor overheating hours from 21969 to 1724-degree hours.

Future Uses of The HBIM

The HBIM development constitutes an inseparable part of the conservation planning processes in this research. The model is considered not as a static end-product that is merely used within the limits of this project, but as a reliable medium that has the capacity to support a wide range of functionalities for data collection, classification, information modelling, representation and visualization. Potential benefits of HBIM for heritage buildings should be considered in the future as part of the long-term policy.

The conventional workflows in the heritage building conservation are based on paper-based activities focusing on many fragmented specialties, which transfer the design documentation from one to another in a sequential manner. The lack of a shared medium for communication between different disciplines, such as architects, heritage conservation specialists, engineers, policy-makers, results in ineffective collaboration, a lack of a shared understanding into the heritage building's architectural and heritage values. As a result, misunderstandings and mistakes can surface during conservation planning and implementation processes. HBIM can function as the common medium through interdisciplinary collaboration and coordination. The presented research initiated the use of the model as a digital environment for information sharing, communication, and decision-making across the project team members. In the future, it can maintain this function with the involvement of other stakeholders, disciplines, conservation activities, and contexts unforeseen at the moment.

Clash detection occurs when physical building elements are in spatial conflict. BIM allows the automated detection of physical clashes, especially for those elements that require the involvement of different disciplines such as structural engineers, mechanical and electrical engineers, or

environmental engineers. For heritage buildings, clashes also occur conceptually, when an intended intervention to a building element conflicts with the building's heritage values. As an instance, assume that an administrative stakeholder wants to replace the historical stained glazing without knowing its history with a better performing double-pane glazing on the grounds that they are causing air leakages. In this case, the HBIM model can warn and inform the stakeholder regarding the historical value of the building element in the case of an intervention. When heritage information is embedded into the HBIM model, both physical and conceptual clashes can be detected in the future.

Each discipline; MEP (mechanical, electrical, plumbing) engineering, structural engineering form a model independently from all others, based on the architectural model that sets up a layout for other professions. In the future, the structural and MEP models can be developed in detail to support conservation activities, such as clash detection and analytics.

A BIM model can quantify the modelled materials and provide cost information in an automated way. Therefore, work processes based on BIM can be performed more effectively and accurately. For heritage buildings, the generation of quantities can assist decision-making when building interventions are considered and inform the decision-makers in the exploration of different design alternatives and concepts. For the same feature of the BIM models, an existing building's life cycle assessment (LCA) can be conducted to identify its embodied and operational carbon emissions related to initial material consumption and operation throughout the lifecycle. Identification of the environmental impacts can help various stakeholders to detect the carbon footprint of existing buildings, which is crucial for understanding their environmental performance. HBIM models can be used to conduct LCA with various software tools (i.e., OneClick LCA (Bionova, 2020)) established on a seamless workflow between BIM environments. The planned retrofit actions for buildings can be assessed with these LCA tools by using the same information-rich HBIM models.

CONCLUSION

In this paper, the development of an HBIM model for a Modernist heritage building was presented. The physical and architectural qualities of the Faculty of Architecture building facilitated the generation of this unique environment. Consistency in the design principles of the existing building, standardization in detailing, the abstract formation of its masses and the elimination of all the cladding and ornamentation, helped the construction and development of the HBIM model.

The model is visualized in different platforms such as virtual reality and web-based applications using state-of-the-art software programs. The tested platforms revealed different visualization possibilities of HBIM, towards enabling the users' interacting with the model, including its elements and data in multiple scales. Thus, this new HBIM platform enables interoperability and communication between different professions and prevents conflicts and clashes that are very common in most modelling processes. The existing building data in the standard BIM schema, as well as the extended schema that contains the new data types, can provide critical support to the heritage professionals during assessment processes. Moreover, the users can instrumentalize the HBIM model as a guiding tool for managing and maintaining the faculty building throughout its lifecycle.

The created HBIM model is anticipated to be used actively in case of need and to be kept up-to-date according to emerging developments by the stakeholders.

The HBIM also has the potential to be used as a long-term digital medium that supports future activities regarding operations and maintenance, major renovation, or analysis. The project benefits from the potential of BIM to allow collaboration on a single object-based model that is shared across the whole team throughout the building lifecycle. The methodology developed for the Faculty of Architecture Building will form a sustainable model for similar undertakings in the other campus buildings or other campuses in the country.

ACKNOWLEDGEMENTS
This research is supported by the Getty Foundation's Keeping It Modern Grant [Grant number R-ORG-201735141]. We would like to extend our sincere thanks and gratitude to all members of the METU Faculty of Architecture. No potential competing interest was reported by the authors.

BIBLIOGRAPHY

3DFLOW (2020) 3DF Zephyr Photogrammetry Software. [https://www.3dflow.net/3df-zephyr-photogrammetry-software/] Access Date (19.12.2020).

ACT-3D (2020) Lumion 3D Rendering Architectural Visualization Software. [https://lumion.com/index.html] Access Date (19.12.2020).

AKIN, S. (2022) Interact Keeping It Modern METU Project. [http://kimproject.arch.metu.edu.tr/en/gallery/interact-0] Access Date (20.05.2022).

AKIN, S., ERGUN O., SURER, E. DINO, I., G. (2020) An Immersive Performative Architectural Design Tool with Daylighting Simulations: a Building Information Modeling-based Approach. *Engineering, Construction and Architectural Management* (28) 4 1319-44.

ARAYICI, Y., COUNSELL, J., MAHDJOUBI, L., NAGY, G., HAWAS, S. DEWIDAR. K. (2017). *Heritage Building Information Modelling*. Routledge, London.

AUTODESK (2020a) Revit BIM Software. [https://www.autodesk.com/products/revit/overview?plc=RVT&term=1-YEAR&support=ADVANCED&quantity=1] Access Date (19.12.2020).

AUTODESK (2020b) Autodesk Rendering. [https://gallery.autodesk.com/a360rendering] Access Date (19.12.2020).

AUTODESK (2020c) A360. [https://a360.autodesk.com/] Access Date (19.12.2020).

AUTODESK (2020d) Revit Live. [https://www.autodesk.com/products/revit-live/overview] Access Date (19.12.2020).

BIONOVA (2020) One Click LCA. [https://www.oneclicklca.com/] Access Date (20.12.2020).

BONDUEL, M. (2021) *A Framework for a Linked Data-Based Heritage BIM,* unpublished Ph.D. Dissertation, KU Leuven, Leuven.

BRUMANA, R., CONDOLEO, P., GRIMOLDI, A., PREVITALI, M. (2019) Towards a Semantic based Hub Platform of Vaulted Systems: HBIM

Meets a GeoDB, *International Archives of the Photogrammetry, Remote Sensing and Spatial Information Sciences - ISPRS Archives*, Vol. XLII-2/W11; 301–8.

COUNSELL, J., TAYLOR, T. (2017) What Are the Goals of HBIM?, *Heritage Building Information Modelling,* eds. Y. Arayici, J. Counsell, L. Mahdjoubi, G. Nagy, S. Hawas, K. Dewidar, Routledge, London.

ENSCAPE (2020) Enscape Real-Time Rendering and Virtual Reality. [https://enscape3d.com/] Access Date (20.12.2020).

FARO (2020) User Manual for the Focus3D 20/120 and S 20/120. [https://knowledge.faro.com/Hardware/3D_Scanners/Focus/User_Manual_for_the_Focus3D_20-120_and_S_20-120] Access Date (20.12.2020).

FENG, Y., WANG, J., FAN, H., HU, Y. (2021) A BIM-Based Coordination Support System for Emergency Response, *IEEE Access*, (9) 68814-25.

FISCHINGER, M., CEROVSEK, T., TURK, Z. (1998) EASY: A Hypermedia Learning Tool, *Journal of Information Technology in Construction* (3) 1–10.

GEOSLAM (2020) ZEB Revo RT. [https://geoslam.com/solutions/zeb-revo-rt/] Access Date (20.12.2020).

GIGLIARELLI, E., CALCERANO, F., CESSARI, L. (2021) Heritage BIM, Numerical Simulation and Decision Support Systems: An Integrated Approach for Historical Buildings Retrofit, *Energy Procedia* (133) 135-44.

HAJIAN, H., BECERIK-GERBER, B. (2010) Scan to BIM: Factors Affecting Operational and Computational Errors and Productivity Loss, *2010 - 27th International Symposium on Automation and Robotics in Construction, ISARC 2010*.

HENKET, H., J. (1998) The Icon and the Ordinary, *Modern Movement Heritage*, ed. A Cunningham, E & FN Spon; 13–7.

LAM, K.P., WONG, N. H., MAHDAVI, A., CHAN, K. K., KANG, Z., GUPTA, S. (2004) SEMPER-II: An Internet-Based Multi-Domain Building Performance Simulation Environment for Early Design Support, *Automation in Construction* 13 (5) 651-63.

LETELLIER, R., WERNER S., FRANÇOIS L. (2007) *Recording and Information Management for the Conservation of Heritage Places: Guiding Principles*, The Getty Conservation Institute, Los Angeles.

NANEVA A, BONANOMI M, HOLLBERG A, HABERT G, HALL D. (2020) Integrated BIM-Based LCA for the Entire Building Process Using an Existing Structure for Cost Estimation in the Swiss Context, *Sustainability* 12 (9) 3748.

NIEMEIJER, R. A., DE VRIES B., BEETZ, J. (2008) Identifying Technical Obstacles for a Constraint-Based Mass Customization System, *9th International Conference on Design & Decision Support Systems in Architecture and Urban Planning*, Eindhoven .

PAUWELS, P., VERSTRAETEN, R., DE MEYER, R., VAN CAMPENHOUT, J. (2009) Architectural Information Modelling in Construction History, *Proceedings of the Third International Congress on Construction History* 3 (May); 1139–46.

RODRÍGUEZ-MORENO, C., REINOSO-GORDO, J., F., RIVAS-LÓPEZ, E., GÓMEZ-BLANCO, A., ARIZA-LÓPEZ, F., J. ARIZA-LÓPEZ, I. (2018) From Point Cloud to BIM: an Integrated Workflow for Documentation, Research and Modelling of Architectural Heritage, *Survey Review* 50(360) 212–31.

SAVAŞ, A. (2019a) *Research and Conservation Planning for the Metu Faculty of Architecture Building By Altuğ-Behruz Çinici*, Ankara.

SAVAŞ, A. (2019b) The Metu Campus Documented V: Representing Itself May 2019, Tu Delft, *Metu Journal Of The Faculty Of Architecture* 36 (1) 285–95.

SAVAŞ, A., DINO, I.G. (2019) Constituting an Archive: Documentation as a Tool for the Preservation of the METU Faculty of Architecture, *100 Years Bauhaus, What Interest Do We Take In Modern Movement Today?*, eds. M. Melenhorst, U. Pottgiesser, T. Kellner, and F. Jaschke, Berlin: Lemgo; 319–31.

SAVAŞ, A., DEREBAŞI, B., DINO, I.G., SARICA, S., İNAN, S., AKIN, Ş. (2018) *Research and Conservation Planning for the METU Faculty of Architecture Building Complex by Altuğ-Behruz Çinici, Ankara, Turkey*, Keeping It Modern Project Report, Getty Foundation, Los Angeles.

STOUFFS, R., TER HAAR, A. (2006) Constructing Design Representations BT - Intelligent Computing in Engineering and Architecture, ed. Ian F C Smith, Berlin, Heidelberg, Springer; 653–62.

US DEPARTMENT OF ENERGY. (2010) *EnergyPlus Engineering Reference: The Reference to EnergyPlus Calculations*, US Department of Energy, Berkeley.

VOLK, R., STENGEL, J., SCHULTMANN, F. (2014) Building Information Modeling (BIM) for Existing Buildings - Literature Review and Future Needs, *Automation in Construction* (38) 109-27.

YAN, W., CULP, C., GRAF, R. (2011) Integrating BIM and Gaming for Real-Time Interactive Architectural Visualization, *Automation in Construction* 20(4) 446-58.

Alındı: 02.04.2021; **Son Metin:** 17.01.2022

Anahtar Sözcükler: koruma planlaması; modernist mimari; tarihi değeri olan binalar; tarihi bina bilgi modellemesi; mimari görselleştirme

20. YÜZYIL MODERNİST MİMARİSİNİN KORUNMASI İÇİN TARİHİ DEĞERİ OLAN YAPILARIN BİNA BİLGİ MODELLEMESİ

Tarihi yapıların koruma planlaması, ilgili bina bilgilerini yakalamak, temsil etmek ve görselleştirmek için etkili araçlar gerektiren, değere dayalı, disiplinler arası bir süreçtir. Bu sürecin bilgi yoğun doğası, oldukça heterojen, parçalanmış ve yapılandırılmamış tarihi bina bilgilerini sürdürebilen bir modelleme ortamı gerektirmektedir. Bu makale, 20. yüzyıl Modernist bir yapı olan Orta Doğu Teknik Üniversitesi Mimarlık Fakültesi binasının bir Tarihi Yapı Bina Bilgi Modelinin (HBIM) geliştirilme sürecini takdim etmektedir. Modelleme çabaları, bu eşsiz bina için bir koruma planı geliştirmeyi amaçlayan ve Getty Foundation, Keeping It Modern hibesi tarafından desteklenen bir araştırma projesinin parçasıdır. Modelleme sırasında veri toplama, temsil, görselleştirme ve entegrasyon ile ilgili çok çeşitli teknolojiler kullanılmıştır. Model oluşturma sürecinde, mevcut

model şeması, toplanan verilerin temsili için yukarıdan aşağıya (*top-down*) bir yaklaşım kullanılarak genişletilmiştir. İlgili teknolojilerin kullanımı, HBIM'in çeşitli değerlendirme sonuçlarını temsil etme kapasitesi, HBIM'in kolaylaştırdığı farklı görselleştirme modları ve HBIM ile bina performans değerlendirmesi için yardımcı araçlar arasındaki veri entegrasyonu olanakları tartışılmıştır. Sonuç olarak, HBIM'in tarihi binalar için mevcut bina bilgilerini güncellemek, görselleştirmek ve bu bilgilere erişmek için sürekli olarak kullanılma potansiyeli konusu değerlendirilmiştir.

HERITAGE BUILDING INFORMATION MODELLING FOR CONSERVATION OF 20TH CENTURY MODERNIST ARCHITECTURE

Heritage building conservation planning is values-based, interdisciplinary process that requires effective means to capture, represent, and visualize relevant building information. The information-intense nature of this process requires a modelling environment that can maintain heritage building information that is highly heterogeneous, fragmented and unstructured. This paper presents the development of a custom-made Heritage Building Information Model (HBIM) of the Middle East Technical University Faculty of Architecture building, a 20th-century Modernist structure. The modelling efforts were part of a research project supported by the Getty Foundation, Keeping It Modern Grant, which aimed at the development of a conservation plan for this unique building. A wide variety of technologies regarding data acquisition, representation, visualization and integration were used during modelling. In the process of model construction, the existing model schema is extended using a top-down approach for the representation of gathered data. We discuss the use of the relevant technologies, HBIM's capacity in representing assessment information, different modes of visualization that HBIM facilitates, and possibilities of data integration between HBIM and auxiliary tools for building performance evaluation. In the end what is assessed, is the HBIM's potential to be continuously used to update, access, and visualize as-is building information for heritage buildings.

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METU JFA 2022/1
(39:1) *23-56*

DOI: 10.4305/METU.JFA.2022.1.2

ANKARA YENİ ŞEHİR'İN KURULUŞU: ERKEN CUMHURİYET KONUTU'NU ANLAMAK

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Alındı: 10.09.2021; **Son Metin:** 22.02.2022

Anahtar Sözcükler: Ankara; erken dönem Cumhuriyet mimarlığı; Yeni Şehir; üsluplar; konut plan tipleri; inşaat ortamı.

YENİ ŞEHİR'İN KURULUŞU

Türkiye kentlerine Kurtuluş savaşı sonrasındaki imar ve mimarlık pratiğindeki gelişme açısından bakmak, çökmüş bir imparatorluktan bir ulus devlete doğru giden süreçte, kentlerin ve mimarlığın oluşumu için üretilen modellerin kaynağına bakmak anlamına da gelmektedir. Kurtuluş Savaşı öncesi ve sırasında, 27 Aralık 1919'dan başlayarak nüfusu hızla artan ve yine aynı hızla 30 bin nüfuslu kasabadan bir kent irisine büyüyerek 13 Ekim 1923 tarihinde başkent ilan edilen Ankara, 29 Ekim 1923'te yeni Türkiye Cumhuriyeti'nin tüm idari kurumlarını kendisinde toplamış durumdaydı. Başkentlik görevini üstlendiği andan itibaren, sessiz biçimde yeni işlevlerine uyarlanırken, merkezi yönetimin yıllar içindeki uygulamalarıyla, bir model kent de olmaya başladı: Ankara'da ne yapılırsa, Türkiye'nin öteki kentlerine örnek oluyordu. Yirminci yüzyılın ilk çeyreğinde, yeni başkentte, yeni bir şehir bölgesinin kurulmasını incelemek, bu modelin içsel maddi dinamiklerine olduğu kadar, düşünsel kaynaklarına bakmak adına da anlamlıdır. Şehrin yeni bölgeler açılarak gelişmesi, bir yandan onu yönetenlerin tarihsel, yönetsel ve ekonomik açıdan sınırlarına ve kültürel birikimleriyle entelektüel kapasitelerine ilişkin bilgi verirken, diğer yandan toplumun beklenti ve kültür gelenek açısından alışkanlıklarını anlamamıza yardımcı olan boyutlar ortaya çıkarır. Bu noktada öncelikle, Ankara'nın Cumhuriyet'le birlikte ilk on yılındaki yerleşim ve konut gelişimi konusunda şu ana kadar yapılmış araştırma ve tarih yazımı çalışmalarına bakmakta yarar vardır.

Öncü Çalışmalarda İzlekler ve Yönelişler

Erken Cumhuriyet mimarlığı ve özellikle Ankara'nın inşası konusunda öncü çalışmalar arasında, İnci Aslanoğlu'nun araştırması (1980) büyük önem taşır. 1980 yılında ilk baskısı yapılan çalışma, 1979 yılında tamamlanan mimarlık tarihi doktora çalışmasına dayanmaktadır; büyük ölçüde başkent Ankara'daki yapılaşma örneklerine bakarak erken Cumhuriyet dönemi için bir mimar-inşaat faaliyeti-ekonomi-sosyal

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gelişmeler zeminini ilk kez geliştirmekte ve ilk kez bu dönem mimarlığına "erken Cumhuriyet dönemi" adını koymaktadır. Bu açıdan, gerek yazımı ve gerekse içerdiği bilgilerin özgün ve ilksel oluşu açısından özellikle erken Cumhuriyet dönemi mimarlığı ve birinci ulusal mimarlık üslubu tanımı açısından kanonik değeri vardır. Bu alandaki Üstün Alsaç (1976) ve Metin Sözen (1984) çalışmalarından ilki daha genel bir biçimde mimarlık alanının Cumhuriyet dönemindeki gelişimini irdelerken; ikincisi, Aslanoğlu (1980) çalışmasını da kullanarak, Cumhuriyet'in 50. Yılı sonrası genel bir Türkiye Mimarlığı bakışı serimlemekte, Birinci Ulusal ve İkinci Ulusal Mimarlık dönem ayrımını araçsal kılmaktadır. Değinildiği gibi, "erken Cumhuriyet mimarlığı" kavramını ilk kez Aslanoğlu (2001) ortaya atmıştır (**1**). Ancak her üç çalışma da temelinde Wöllflinci (**2**) yaklaşıma dayanan, üslup/üsluplar üzerinden bir sınıflama yapan, dönem mimarlığının ve yapıların biçim ve biçem özellikleri üzerinden ortaklıklar ve benzerlikler kurarak çıkarsamalar oluşturan çalışmalardır. Bunlara Yıldırım Yavuz'un, dönem üzerine *Mimar Kemalettin ve Birinci Ulusal Mimarlık Dönemi* (Yavuz, 1981) adlı özverili monografi çalışmasını, Afife Batur, Attila Yücel, Suha Özkan, Yıldırım Yavuz, Sibel Bozdoğan'ın farklı mimarlara, oluşumlara ve olgulara bakışlarını, pek çok adlarını anmadığımız tekil çalışmanın yarattığı birikimi de ekleyebiliriz. (Holod et al., 1984; 2005) Bu çalışmaların neredeyse tümünde, üslupçu ayrımlar önem kazanmaktadır. Aslanoğlu (1980) çalışmasında, oldukça kapsamlı bir tasnif dışında, dönem inşaat sektörü ve konut yapım birikimini değerlendirme bölümü de bulunmaktadır.

1980'li ve 1990'lı yıllardaki yoğun inceleme ve araştırma çalışmaları gerek yukarıda adları verilen üç öncü araştırmacının, gerekse onların yetiştirdiği yeni ve genç araştırmacıların ve tarihçilerin önünü açar. Bozdoğan, Gülsüm Baydar Nalbantoğlu, Ali Cengizkan, Esra Akcan benzeri isimler ve onların da öğrencileri, gerek tarih araştırmaları, gerekse alan çalışmaları ile yeni bilgi, belge ve yaklaşımlar geliştirirler. Bozdoğan'ın 1999 yılında tamamladığı doktora çalışması 2002 yılında *Modernizm ve Ulusun İnşası: Erken Cumhuriyet Türkiye'sinde Mimari Kültür* başlığıyla yayınlandığında, büyük yankı uyandırır. Erken Cumhuriyet dönemi mimarlığı hem bu kitap içindeki bölümlerle, hem de Bozdoğan'ın bu süre içindeki diğer üretim ve katkılarıyla, farklı bir oylum kazanır; Döneme yapılan vurgu yalnızca mimarlık ve inşaat sektörüyle sınırlanmamakta, "devrim mimarlığı" arayışı, endüstrileşme isteği ve estetiği, mimarlık mesleğinin gelişimi ve yaşama kültürünün evrimine kaymaktadır. Nalbantoğlu, kitap katkısı yerine, farklı araştırma, bildiri ve makaleleri ile erken Cumhuriyet dönemi mimarlığına özellikle yurt dışı kültürlerin varlığıyla köken ve eleştirel açılım kazandırmaktadır. Bu sırada farklı mecralardaki araştırmalar yanı sıra, yüksek lisans ve doktora tezleri ile genişleyen alanda, söz konusu dönemi doğrudan hareketlendiren bir çalışma da Bernd Nicolai (1998) tarafından yapılmış; *Modern ve Sürgün: Almanca Konuşulan Ülkelerin Mimarları Türkiye'de 1925-1955* kitabı, 2011 yılında çevrilerek araştırmacılara, Ankara'nın kuruluşunda görev alan Almanca konuşan mimarların katkısını birinci elden verilerle sunmuştur. Gerek Bozdoğan'ın mimarlığı bir kültür olarak tanımlayıp kucaklayan ve bağlamlaştıran tavrı, gerekse Nicolai'nin mimar biyografileri ile dönemi aydınlatan yaklaşımı, Cengizkan (2002) çalışmaları ile başlayarak arşiv belgelerinden yola çıkan mimar monografileri, alt kavramlar ve kuramsal yerel tarih metinlerinin ortaya çıkmasını sağlamış, Akcan (2009) ise güçlü bir kuramsal yaklaşım çerçevesinde yerel-küresel bakışıyla, döneme kültürlerarası geçişkenlik ve kavramsal evrilme çerçevesinde katkılar sunmuştur. Kuşkusuz dönem araştırmaları bu kişilerle sınırlı değildir (**3**).

1. Üslup ya da biçemlere göre dönemleme yapmak konusundaki kararlılığa karşı, söylemsel oluşum yaklaşımını tartışmaya açmak bir başka yazıya bırakılsa daha yerinde olacaktır. Ancak burada söylemek isteriz ki, bu tartışma, büyük ölçüde okuduğunuz makale ve kaynaklık ettiği araştırmanın önünü açmıştır.

2. Heinrch Wöllflin (1864-1945) sanat tarihi yazımının formalist yaklaşımının kurucularındandır. Doğan Kuban ve öğrencileri, 1970'li yıllarla başlayarak sanat tarihi yazımındaki bu yaklaşımı Türkiye'de mimarlık tarihçiliği alanında kullanmaya başlamışlardır.

3. Yaptıkları çalışmalar dolaylı olarak 1923-33 Ankarası dönemini ilgilendiren Oya Atalay Franck, Uğur Tanyeli, Elvan Altan (Ergut), Leyla Alpagut, Ahmet Ersoy, burada anılabilir.

Başkent Ankara'nın, erken Cumhuriyet döneminde planlanmış bir kent olarak gelişimi ve tüm Türkiye kentlerine örnek oluşturmasını konu edinen makale ve araştırmalarla Gönül Tankut (1993), Raci Bademli ve İlhan Tekeli tarafından çalışılmış olması da yeni ve modern bir şehir kuruluşu sürecinin aydınlatılmasına ve araştırma sürekliliğine katkıda bulunmuştur (**4**). Sonuç olarak "erken dönem Cumhuriyet mimarlığı" araştırma alanı olarak (habitus) oluşmuştur ve yeni aktörlerini bulmaktadır. Mimarlık ve planlama alanındaki çalışmaların yanı sıra, toplumsal tarih, kent tarihi, kent planlama tarihi çalışmaları da buna eklenecek ve araştırma alanı genişleyecektir. Sarıoğlu'nun (2001) *"Ankara", Bir Modernleşme Öyküsü (1919-1945)* kent tarihi açısından ayrıntıları artırırken, arşiv belgelerine dayanan Cengizkan'ın (2004) *Ankara'nın İlk Planı: 1924-25 Lörcher Planı* kitabı ile bu kez, karanlıktaki plan uygulama ve süreçleri aydınlatılır. Dergilerde kalan dönem mimarlarından Koyunoğlu'nun mesleki pratiği ve gözlemleri, Hasan Kuruyazıcı (2008) tarafından *Osmanlı'dan Cumhuriyet'e Bir Mimar: Arif Hikmet Koyunoğlu* çalışmasıyla gün yüzüne çıkmıştır. Koşut biçimde, Balamir ve ekibi Holzmeister (2010), TMMOB Mimarlar Odası Anma Programı ise Kemalettin, Arkan, Sayar, Egli araştırmaları (2007-2012) yapar. Batur'un Tek (2003) monografisi; İTÜ, YTÜ ve Mimarlar Odası İstanbul Büyükkent Şubesi'nin (2010) Eldem-Onat monografileri; Eldem, Tanyeli ve Tanju'nun iki ciltlik Eldem çalışması (2008-2009), gerek müellifleri, gerekse mimarlık dünyası ve yapıları ile Ankara'nın erken dönem Cumhuriyet mimarlığını yeni kaynak ve bakış açılarıyla geliştiren çalışmalardır.

Yeni Şehir'in Ortaya Çıkışı: Bilgi Birikimi Eşliğinde Kırılma

Bütün bu çalışmalar içinde erken dönem Cumhuriyet mimarlığı kapsamında kullanılan kavramlar, 1923-1938 Ankara'sı mimari ürünlerinin inşası ve inşa teknikleri, zamanın teknolojisi konusundaki çoğu bilgi, Aslanoğlu (1980) çalışmasında ilk kez ortaya çıkmaktadır. Aslanoğlu, yaklaşık 1970-1980 aralığında Türkiye kentlerinin tümündeki erken Cumhuriyet yapılarını tasnif etmenin yanı sıra, hemen bütün Ankara'da ayakta olan yapıları incelemiş, İmar Müdürlüğü arşivlerinde ilgilendiği yapıların projelerine ulaşmış ve bulabildiklerini yeniden çizmiş gibidir. Döneme ilişkin en önemli kaynak olarak o yıllarda belki de hala yayınlandığı için değeri genelde bilinmeyen *Mimar / Arkitekt* dergisini çok iyi tarayan Aslanoğlu, önemli ölçüde konut ve kamu yapısını maliyet, yapım türü, planimetri açısından kayda geçirip değerlendirmeler yapmış ve bu birikimle kendi kataloğunu hazırlamıştır (**5**). Aslanoğlu'nun erken Cumhuriyet dönemi mimarlığı ve birinci ulusal mimarlık üslupları tarih yazıcılığındaki yaklaşımının kanonik katkısı, bu birikimden kaynaklanmaktadır.

Dönemin tarihsel kalıpları ve sınırlılıkları açısından düşünüldüğünde, yaklaşık 40 yıl sonra bugün, Aslanoğlu'nun yazdıklarına eleştirel bakmak olanaklıdır (Aslanoğlu, 2001, 13):

> "Eğitimlerini batı ülkelerinde tamamlayan bu mimarlar, dönüşlerinde, Osmanlı ülkesinin içinde bulunduğu kargaşa ortamının bir uzantısı olan mimarlık alanını yabancı etkilerden arındırmayı amaçlarken, Avrupa'da edindikleri seçmeci mimarlık doğrultusunda çalışmışlardır. Yalnız bu, yabancı kaynaklı değil, Türk tarihine dönük bir seçmeciliktir. Onların açtığı yolda yürüyen diğer önemli mimarlar Muzaffer, Arif Hikmet, Halim, Ahmet Kemal, Tahsin Sermet, Ali Tâl'at, Fatih Ülkü, Mehmet Nihat ve İtalyan Giulio Mongeri'dir."

4. Yine anılan isimler dışında, yaptıkları çalışmalarla dolaylı olarak 1923-33 Ankarası dönemi planlamasını aydınlatan Fehmi Yavuz, Cevat Geray, Tansı Şenyapılı, Ali Vardar, Ruşen Keleş, burada anılmalıdır.

5. Makalede bölgenin günümüzde kullanılan karşılığı olan Yenişehir yerine Yeni Şehir kullanımı tercih edilmiştir. 1920'lerde ilk uygulama döneminde dünyada bir "yeni şehir" (*new city*) planlama ve uygulama pratiği vardı ve Yenişehir de bunun parçası olarak gerçekleştirilmişti. Bilindiği gibi aynı sorunsal Yeni Mahalle / Yenimahalle (*new neighbourhood*) adlandırmasında da vardır ve evrenseldir. Dolayısıyla makalenin genelinde semtin bugün anıldığı sözcük Yenişehir yerine, kurulduğu andaki kullanım ve çağrışım yükünü taşıyan Yeni Şehir tercih edilmiştir. Makalede alıntıların yazım dili, özgün halindeki gibi bırakılmıştır.

Devlet arşivlerinin ve özel belgeliklerin görece az olduğu, çoğunun henüz açılmadığı 1970'li yılların sığ araştırma ortamlarında bu isimlerin bulunması ve yukarıdaki önermelerin ilkselliği bile çok değerlidir. Vallaury, Jachmund, Tek ve Kemalettin arkasında sayılan bu isimlerden Muzaffer, Tahsin (Sermet), Ali Tâlat, Halim ve Mehmet Nihat, Kemalettin'in kurduğu Evkaf İnşaat Şubesi'nde belli dönemlerde çalışıp o disiplini almışlardır. Koyunoğlu ve Mongeri ise bağımsız çalışmayı tercih etmektedirler.

Alıntının ilk bölümündeki saptama, mimarlık ve mimarlık tarihi alanlarının kavranmasındaki anlayışı ortaya koymak açısından ilginçtir. Mimar özneler adeta kültürel birikimi yapay olarak taşımaktalar, onunla ve mimarlığın bileşenleriyle, yalıtılmış laboratuvar koşullarında deyim yerindeyse forseps ve cımbız ile işlem yapmaktadırlar. Oysa mimarlık, 1990'larda Bozdoğan'ın da vurgulayacağı gibi, bir kültürdür. Aslanoğlu bir yapıyı ele alırken ve üslup açısından dönemlemeler önerirken, bir yandan ortamın sosyo-ekonomik bağlamını, mimarlık eğitimi dünyasını, günlük yaşantı beklentilerini anmakta, ancak mimarın, kendi aldığı eğitim ve formasyonun ürünü, bir sonuç çıktısı, bir sonuç aktörü olduğunu unutmaktadır. Oysa mimar her dönemde, içinde bulunduğu koşulların ürünüdür; her mimar, her dönemde, tasarımcı olarak yaptıklarının doğru olduğuna gönülden inanmaktadır. Formasyon, beceri ve donanımları ile özgüvenleri ve meslek etiği arasına sıkışmış olan mimar öznelerin, bu gerçeklere uygun olarak hareket ettiklerini ve bir mimar öznenin bir ötekinden çok farklı olduğunu hatırlatmak bile gerekmez. Öte yandan alıntıda ortaya çıkan bu yaklaşım, 1970'ler Türkiye'sinde mesleklerin algılanması, mesleki ideolojilerin kavranması ve zihniyet ortamının tartışılması açısından bilgilendirici de olabilir. Bu tutum belki de, yalnızca mimarlık alanıyla sınırlı değildir; dönemin bütün meslek ve disiplin alanlarının sürekliliği, eğitimi, pratiği, eleştirel dünyası içinde aynı formel ve kurgusal yaklaşımı görmek mümkündür (Aslanoğlu, 2001, 22-3):

> "Ankara'nın gelişmesi için ilk olarak istimlâk sorunu gerçekleşmiş, böylece Yeni Şehir'in biçimlenmesi başlamıştı. Kente yeni yerleşen üst bürokrat kesimle devletin ve bazı kuruluşlarının memurları için yaptırdıkları konutlar bu yeni bölgede yer almışlardır. Önce Sağlık Bakanlığı'nın arkasında yaptırılan 198 evlik tek katlı, üçer, dörder odalı memur evlerine iki milyonun üstünde harcama yapılmıştı. Dört-beş bin Türk lirasına mal olacak bu evler, ayda ellişer lira taksitle sekiz yılda ödemek isteyen memurlara satılacak, bunlara sonradan birer kat eklenebilecekti. Özel sektöre ait olmayan konutlara ilk örnekler, Vakıflar Başmüdürlüğü'nce İstanbul Caddesi üzerinde kiraya verilmek üzere farklı tiplerde yaptırılan bahçe içindeki memur evleridir. Bugün yıkılmış olan bu evleri dönemin önemli mimarlarından Kemalettin Bey ve Arif Hikmet Koyunoğlu, Vakıflar İnşaat Müdürlüğü mimarlariyle birlikte ulusal üslupta tasarlamışlardı. Planlamalarında batı biçimlenmesi gösteren bu yapıların cepheleri Osmanlı mimarlık ve sanat ögeleriyle cömertçe bezenmişlerdi."
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> "1926 yılında Yeni Şehir'de yüz yetmiş evin yapıldığı, bunlara 1927'de yüz kadar daha evin eklendiği anlaşılıyor. Konut sayısı her yıl artmış, bu arada Cebeci gibi plansız gelişen birçok yeni mahalle türemiştir. 1927 yılına gelindiğinde, Yeni Şehir'de Kazım Özalp Caddesi üzerinde bugün bir örneği kalmış olan tek tip ikişer katlı evler yapılmış, biribirlerini dik kesen Potsdam planındakini anımsatan Yeni Şehir yolları üzerine bahçe içinde, genellikle iki katlı konutlar dizilmiştir. Asimetrik kütlelerinde köşelere kule biçimi verilişi, farklı büyüklük ve biçimde pencereler, kıvrımlı profilli desteklerin tuttuğu delikli, ağır görünüşlü kargir balkonlar, pencerelerin içine alındığı girintiler ve bazı pencerelerde kemer kullanımı bu evlerde görülen özelliklerdendir."

Bu tanımlarda genel olarak Yeni Şehir bölgesine hakim olamama göze batar (**6**). Tümüyle bir boşlukta kurulmakta olan yeni Ankara'nın yerleşim arazisi eski bir bataklıktır. Adeta *tabula rasa* bir boşluk içinde gerçekleşmekte olan bu kuruluşun, söz konusu araştırma tarihinde ilk yerleşimcileri, ilk yatırımcıları hayattaydılar. Ayrıca TBMM kayıtlarında da bu gelişmeler izlenebilir durumdaydı; buna karşın çalışma bir betimleme ile yeterlik bulmuştur (**7**). Bugünkü Yeni Şehir'in kurulacağı alan, 24 Mart 1925 tarihinde 583 sayılı "Ankara'da inşası mukarrer Yeni Mahalle için muktezi yerler bataklık ve merzagî arazinin Şehremanetince istimlâki hakkında yasa"yla yapılan istimlâk ile imara açılıyordu (Baş, 2019, 70-124). Atay'ın bir yazısında "Yeni Şehir'in sınırları içindeki alanın dörtte birini eski sahiplerine bırakılmak suretiyle ucuza istimlâk edilerek metre karesi birer liradan ev yapacaklara satıldı" açıklaması yer almaktaydı (Atay, 1933). Büyük ölçüde gazete ve dergi haberlerine dayanan bu bilgilerde, Yeni Şehir'de yapımı bildirilen konut sayılarını topladığımızda (198+170+100) 468 konut ortaya çıkmaktadır ki, bu sayı hemen bütün Yeni Şehir'deki parsel sayısının üçte ikisine eşittir. Oysa 2019 çalışmasında ortaya çıktığı ve ayrıca dönemin fotoğraflarından da izlenebildiği gibi, Yeni Şehir'de o kadar sayıda konut inşa edilmediği, 1935'lerin ortalarına doğru dolu parsel sayısının 320 civarında olduğu anlaşılabilmektedir (Cengizkan ve Cengizkan, der., 2019, 143-71).

Aslanoğlu'nun vurguladığı gibi, zamanın yasa ve yönetmelikleri ile başkent Ankara'da kentliler, inşaat yapma konusunda teşvik edilmişti (Aslanoğlu, 2001, 190,):

> "1923 yılında 368 sayılı yasayla imarı özendirme yolunda şu önlemler getiriliyordu: "Vatandaşların imar faaliyetlerini teşvik için yeniden inşa edilmiş veya edilecek gayrimenkuller, bazı vergilerden (emlâk ve musakkafat [gelir getiren mal]) muaf tutulacaktır… İmar faaliyetini artırmak için Türkiye'de bina inşaasına taahhüt eden şirketlere ve müesseselere bazı kolaylıklar sağlanacaktır."

Aslında 1928 yılında Ankara Şehremaneti'nin en önemli müdürlüğü olarak kurulan İmar Müdüriyeti'nin de önceliği, başkentte inşaatı teşvik etmek için imar ve inşaat kurallarını olası katılımcı hemşehrilerle paylaşmak olmuştu (**8**). Savaş yorgunu başkentte, hem konut açığı hızla büyüyordu, hem de bu alana katkıda bulunabilecek küçüklü büyüklü sermayedar bulunamıyordu. Söz konusu teşvik yasalarının gerek küçük bütçesinden yatırım yapacak kentli için, gerekse Avusturya ve Alman inşaat firmaları için bir çekicilik yaratması beklenmekteydi.

Aslanoğlu çalışmasının hem erdemine, hem de eksikliğine yol açan durum, seçiciliğinden kaynaklanmaktadır. Döneminde sanat tarihinde ve mimarlık tarihinde böyle bakmak doğaldı kuşkusuz (**9**); yalnızca egemen üsluplar, genel siyasi yapının egemen unsurlarına bakmak, genelde en büyük yatırımcı olarak devletin üretimine bakmak, mimarlık alanındaki gelişmeleri tümüyle değerlendirebilmekten uzaklaşmayı getirirken, söz konusu dönemin kayıt altına alınmasından da uzaklaştırmıştır tarihçiyi. Bu seçicilik iki türdendir: Birincisi, yapılardaki Ankara vurgusudur.

Aslanoğlu çalışması, genelinde Türkiye'de erken Cumhuriyet dönemi mimarlığının kaydı sayılabilir; bugün artık kült olan kitaba baktığımızda, kurucu ve yeniden inşacı bir dönemin içinde anılan yapıların çoğunluğunun doğal olarak kurucu ve yeniden inşacı başkent Ankara'dan seçilmesi şaşırtıcı gelmeyecektir(**10**). Zamanına göre bir bütün Türkiye vurgusu ve arayışı vardır kuşkusuz, çünkü kuruluşun nitelik ve yenileşme yanı sıra derine işleyiş ve kalıcılık gibi ölçümlerine benzer başarı

6. Mimar yayıncı Zeki Sayar'ın katkılarıyla 50 yıl gibi çok uzun ömrü olan *Mimar / Arkitekt* dergisinin tüm sayıları, TMMOB Mimarlar odası tarafından 2010-2012 yılları arasında yürütülen program çerçevesinde sayısallaştırılarak 2015 yılında bir veri tabanı oluşturulmuştur.

7. 1998 yılında bile, özellikle Bayındırlık Bakanlığı, Basın ve Yayın Genel Müdürlüğü kapsamındaki kütüphane ve arşivler, oldukça nitelikli ve araştırmacısını bekler durumdaydı.

8. Bu amaçla Ankara Belediyesinin ilk yayını 1929 tarihli yarışma belgeleri idi; arkasından bir *İmar Talimatnamesi* de yayınlanmıştı.

9. Bu noktada sanat tarihçiliğinden el alıp gelişmeye başlayan mimarlık tarihçiliğini ve bu iki disiplin arasındaki gerilimi ele alıp konu etmeyi başka bir yazıya bırakmaktayız.

10. Bu yazıda kitabın ikinci baskısı kullanılmaktadır: Aslanoğlu (2001).

göstergelerinden diğer ikisi de kapsam ve yaygınlaşmadır. Bu nedenle dönemin yeni yapı türlerinden olan, hemen her kenti ilgilendiren hükûmet konağı, istasyon, postane, okul, fabrika, hastane benzeri yönetim-ulaşım ve haberleşme-eğitim-üretim-sağaltım ve sağlık yaşam alanlarına özgü yapı örnekleri, tam da bu kategorizasyon ile çalışma örnekleri arasına alınır. Ancak yine de Ankara'da olanlar, ilk bakışta bile, çoğunluktadır (**11**). Kurucu ve yeniden inşacı iradenin Ankara'da olması bir yana, yönetime yakın olmakla kalmayıp yönetimin bizatihi kendisi olan Ankara'nın üzerine titrenmesi doğaldır. Yine, diğer kentlere başkent olarak örnek olacağı düşünülerek Ankara'nın model şehir olarak kurgulanması, salt yapıları değil, yapılaşma süreçleri ve imar yönetiminin de model yönetim olarak kurgulanması, Aslanoğlu kitabında başkent olarak odakta bulunmasının gerekçeleridir.

Bilindiği gibi kent, bir yapılar toplamı değildir; yapıların hasbelkader bir araya gelmesinden de oluşmaz: Bütün, her zaman parçaların toplamından büyüktür. (**12**) Parçalar, bölümler ya da alt-bölgeler, gettolar illa birbirini tamamlayan, destekleyen, varlıklarıyla birbirlerinin eksikliklerini gideren, ya da tam tersine birbirini yok eden bileşenler değildir. Nitel yelpazenin bir yanı birbirini yap-boz gibi kusursuz tamamlayan nenler iken, yelpazenin öte yanı başka türlü olamayacağı için böyle olan, böyle eklemlenen, zorunsuzluk hali içinde böyle bir araya gelen, böyle birbirine tahammül eden ya da hoşgörü gösterir gözüken nenler olarak algılanmalıdır (**13**). Planlama ve mimarlık pratiği ile kente sürekli ya da dönemsel katkıda bulunmak amaçlanır. Kent yaşlanmıştır; yoğunluklu olarak ahşap inşaat tarzı nedeniyle yaşanan yangınlara karşı on dokuzuncu yüzyıl sonunda yapılmak zorunda kalınan geniş cadde açma etkinliği, bir yangın bölgesinin toptan yenilenmesini ve var olan yeni teknoloji ile tuğla yığma-volta döşeme-çelik kullanımı ve yangın sakınımlı ada-parsel tasarımını doğurabilir; doğurmuştur. Kent eskimiştir; yaşam tarzının gerektirdiği geniş mekânlar, yeni yapı tipolojilerinin gereksindiği arsa konum-boyut-biçimleri yeni bir planlama ve mimari tasarım tarzına gereksinim yaratır; yaratmıştır. Kent işlev değiştirmiştir; başkentlik ya da ticari pozisyonlardaki değişiklikler (liman kenti-ticaret odağı-bölge merkezi-hinterland çıkışı, olma gibi) hemen sonrasında da, belli birikim ya da eksilmeler ile yeni varlığı tartışmanın zamanını gelmiştir. Ankara'da olan da böyledir.

Ankara planlamasına bakılacak olursa, 20. yüzyılda Cumhuriyet döneminde birbirini izleyen Lörcher, Jansen ve Yücel-Uybadin planları, onları izleyen Metropoliten Nazım Plan Bürosu (AMNPB) plan yönetimi etkinlikleri ve planları, kentin o günleri ve geleceği için önermelerde bulundular: Yapıların bir araya gelişleri ve mahalleleşmenin sağlanması; kentin başkentlik işlevinden doğan yeni öğelerinin bir temsil anlatımı içinde eski şehri zedelemeyecek biçimde yeni bir şehir yaratabilmesi; kent-içi ulaşım sağlanırken kamusal alanlardan özel alanlara hiyerarşinin kurulması; kentin uzman alt-bölgelere ayrılarak akılcı biçimde kullanılması ve hatta genişlemesi; benzeri konular da dahil olmak üzere kentleşme konusunda ilke, kural, izlek ve işletim yöntemlerini kayıt altına aldılar. Bu dönemlerin her birinin zamanın Ankara'sının geleceği üzerine tahayyülleri vardı; birbiriyle çelişmeyen, birbiri ardına eklemlenen tahayyüllerdi bunlar…

Erken Cumhuriyet Dönemi Mimarlığı 1923-1938 kitabının oluşum yönteminde iki tür seçicilikten söz edilmişti. İkinci seçicilik, Ankara vurgulu bir çalışma olmasının daha da belirgin biçimde anlaşılmasını gündeme getiren,

11. Kitaptaki 85 yapı grubundan 55'i Ankara'da, , dokuzu İzmir'de, dördü İstanbul'da, dördü Afyon'da, üçü Bursa'da, üçü Konya'da, diğerleri birer adet olarak Antalya, Yalova (İstanbul), Tokat, Samsun, Adana, Kayseri ve Nazilli (Aydın) gibi Anadolu'nun farklı kent ve yerleşimlerinde bulunmaktadır.

12. Artık kanıksanmış, ama döneminde çok önemli bir tasarım-çözümleme aracı olan Gestalt ilkesi.

13. Son dönemlerdeki kıyı dolguları, Taksim Gezi Parkı operasyonu, Boğaziçi'ndeki sözüm ona "ihya"lar, İstanbul'daki ve Bursa'daki tarihi Osmanlı camilerindeki restorasyon ve restitüsyon kod adlı icraatlar, bu kapsama girer.

kamu yapıları dışında yalnızca modern mimarlık ürünlerinin seçilmiş/görülmüş olmasından kaynaklanmaktadır. Birinci Ulusal Mimarlık olarak adlandırılan üsluptaki yapılara da yer verilmektedir kuşkusuz; ancak Bavyera çatılı bir yapı, ya da daha anonim (mimarı belli olmayan) bir Yeni Şehir bölgesi konutu çalışmada yoktur. Bu önyargılı tutum ya da belirgin tercih çalışmanın başlığını rahatsız etmeye başlamaktadır. Erken Cumhuriyet mimarlığı dönemine 1923-1950 aralığından bakarken, üslup tercihi yapmak, o dönemin başka sonuçlarını, örneklerini, arayışlarını görmezden gelmek, pratiği yarım incelemek anlamına gelmektedir. Çalışmanın, eksik bırakmış olmasa bile, Vekaletler Mahallesi, Hastaneler Bölgesi, Fakülteler Bölgesi yörelerinde seçmelere odaklandığı, ana hatlarla yetindiği, birebir mimarlık tarihinin yapıya odaklı stilistik modern mimarlık anlatısı dışında, modern oluşun kentsel mekândaki cisimleşmesine de az dikkat gösterdiği söylenmelidir. Çalışma satır arasında kimi yapıları "soysuz" olarak nitelendiriyorsa, okurun gözünde de dışlayıcı, öğrenmek istemeyen bir refleks gelişmeye başlayacaktır (Aslanoğlu, 2001, 148). (**14**)

> "Bu yapıdan birkaç yıl önce inşa edilmiş olan Ankara'daki tek evlerin ne ulusal, ne modern olan soysuz mimarlığına karşın, bu yapı erken bir dönemde kübik kütlesi, düz çatısı ve yarım daire uzantısıyla modern mimarlığın o yıllara özgü çizgilerini ortaya koymaktadır."

Peşin yargıyla, bir dizi dönem yapısını kenara ayırıp onlara bakmadığınız zaman, bir dönemi anlamanın, bir dönemin mimarlık tarihini yazmanın bir anlamı kalmamaktadır. (Cengizkan ve Cengizkan, der., 2019, 18). Modern mimarlığın Ankara"daki seyahati yazılırken, kentin ve bağlamın bir bütün olarak kavranması, benimsenmesi, gelişme ve oluşumların anlaşılabilmesi ve gerekirse değerlendirilmesi için kent mekânı ve tarihinde olup bitenlerin bilinmesi, kentin mimarlık geçmişinin sahiplenilmesi gerekir. Ancak böyle bir donanımla döneme ilişkin tasarım kaygıları ve kent yönetiminin üretimi, değerleri ve kazanımları konusunda bilgi sahibi olunabilir. Elde edilmiş değer ve bütünlüklerin algılanması bir başka pratik alanı değildir, doğrudan mimarlık pratiğidir, mimarlık eğitimi, tasarım birikimi ve bina üretimi pratiği alanında da bulunur. Bu sürekliliğin mimarlık ve tasarım yazımında aranması gerekir. Aynı gerekliliğin, mimarlık tarih yazımı ve mimarlık eğitimi alanlarında da izlenmesinin önemli olduğunu söyleyelim. Bir dönemin ve yerin önemsenen mimarlığının önemli ve yarım kalmış noktalarının anlaşılması, ancak bu çabalarla kayda geçebilir (**15**).

KENTSEL MEKÂN VE YENİ KONUT BÖLGESİ OLARAK YENİ ŞEHİR

Yeni Şehir'in Elde Edilmesinde Örgütlenme

Bugünkü bilgilerimize göre, başkent Ankara'nın konut sorununa çözüm olarak bulduğu Belediye Başkanı Asaf Bey zamanında başlayıp Ali Haydar (Yuluğ) Bey zamanında cisimleşen ve sonuçları ortaya çıkmaya başlayan arayışlar, plan yapma düşüncesi ve yapı tasarımlarını mimarlarla birlikte çözmek kadar, bu yolda toplumsal örgütlenmeyi de içeren bir dizi modern yaklaşımla olanaklı olabilmişti. Carl Christoph Lörcher'e 1924 ve 1925'te iki kez yaptırılan başkentin eski Ankara ve Yeni Şehir bölgesi planları, 1925 yılındaki Büyük Kamulaştırma ile birlikte düşünülmüştür (Şenyapılı, 1985; Cengizkan, 2004; Baş, 2019).

Kurtuluş savaşı sonrası başkenti ve yönetim ile yaşama mekânlarını oluşturmak gerekliydi, fakat bu işe ayrılacak özel bütçe yoktu; ödenekler sıfır mertebesindeydi. Devlet yapıları tümüyle kamu bütçesinden

14. Doğrusu soysuzlaşma terimini, 1930 tarihli *Mimari Muhit* yazısında Egli de kullanmıştır. Ancak buradaki niteleme, Ankara'da Avrupadaki villaların soysuzlaşmış (tereddi etmiş) örneklerinin yeniden kullanıma sokulmamasına ilişkin uyarıdır. Egli burada, başka ülkedeki demode ilk örnekleri kopyalamak yerine niçin otantik, özcü arayışımızın sonuçlarını uygalamayalım, diyor (Egli, 1930, 35).

15. Yazar bu deneyim ve birikimini, bu çerçevede ele aldığı doktora tezinde (Cengizkan, 2000) geliştirme fırsatı bulmuştu.

oluşturuluyordu, fakat şehri yapmak zordu. Ankara'da perakende eksik ve yoksunluklarının üstesinden gelmek için Memurin Kooperatif Şirketi, Ankara Şehremaneti'nin katkıları ile kurulmuştu (**16**). Katkı yapabilir yurttaşlarla yapılacak konut arasında ilişki kurulmaya çalışılan bu dönemde Belediye, yol, su, elektrik, havagazı benzeri altyapı yapımı konusunu üstlenmiştir. Yeni Şehir Evleri için Belediye Başkanı Ali Haydar Bey şunları söylemektedir: "Yeni Şehir'de yapılacak evler birer, ikişer katlıdır. Bunların hepsinde dahilî taksimât itibarıyla Avrupa konforunu gözeteceğim. Yalnız cephelerinde millî bir üslup mevcut olacaktır" (Türkoğlu, 2019, 38). Buradan, yatırımcının küçük ölçekli, kendi konutunu yapmak isteyen kişi olarak görüldüğünü; konutun da artık içinde çeşme suyu-atık su çıkışı-elektrik-havagazı kullanımına erişimli birim gibi algılandığını, bu yönde beklenti yaratıldığını anlıyoruz. 1925 Lörcher Planı ve dönemin beklentilerinin yarattığı bir sınırlılık söz konusudur adeta.

Ankara'da her kurum ve kişi kendi çapında konut üretimine katkıda bulunurken, konut yapımını tek elde ve daha yetkin biçimde kullandırabilecek merkezi örgütlenmeyi bir kooperatif şirketi üzerinden düşünmek anlamlıdır. Yunanistan ile Türkiye arasındaki 2,5 milyonluk Zorunlu Nüfus Mübadelesini başarıyla iki yıl içinde yönetip sonuçlandıran Mübadele, İmar ve İskân Vekaleti ve Bakan Mustafa Necati (Uğural)'ın, Cumhuriyet yönetimince konut alanında da görevlendirilmemesi, öncelik ve aciliyetin eğitim alanında olduğu gerçeğine yorulmalıdır (**17**).

Yeni Şehir'in Kuruluş Aciliyeti ve Yabancılar Konusu

Burada, zamanında önemli tartışma konusu ve doğal olarak yeni bir şehirle barınmayı da çözmek isteyen Ankara"nın imarının yalnızca niteliğine değineceğiz. Barınma, acil kararlarla yeni bir şehir kurma ihtiyacını belirlemektedir: Aciliyetin boyutlarının anlaşılması için varolan yapı stokunun Cumhuriyet ilanından önceki dört yıl boyunca nasıl paylaşıldığına bakılabilir (**18**). Yeni bir şehrin ortaya çıkarılabilmesi için, Kemalettin'in erken zamanlardaki eleştirisinde haklı olarak belirttiği gibi (**19**),

> "…mimari ve bina inşasının yönetimi, bayındırlık bakanlığına verilmeli, illerdeki inşaatlar için her il merkezinde bir fen heyeti sorumlu tutulmalıdır. Bunların dışında her şehrin belediyesinde bir fen heyeti kurulmalı; bunlar şehrin mimarlığını ve inşasını yönetmeli; bu uzman kadroları karşılayabilmek için de vakit geçirmeksizin, Mühendislik Fakültelerinde Mimarlık bölümleri kurulmalıdır. Ulusal duygularımıza göre bir mimarlık elde etmek, ancak okullaşmayla mümkündür."

Ancak pek çok gelişme aynı anda yaşanmaktadır. Örneğin, Kemalettin'in kendisi, Şubat 1924'de Sağlık Bakanlığı tarafından inşası başlatılan otelin (Ankara Palas) bitirilmesi için yeni mal sahibi Evkaf yönetimine kapsamlı rapor sunmuş; 2 Ağustos 1925'ten 13 Temmuz 1927 tarihindeki ölümüne kadar, altı ay kadar Kudüs'te bulunmak dışında, sürekli Ankara'da çalışmış; projeler çizmiş, Vakıf mimarlarını yönetmiş, hükumete ve bakanlıklara danışmanlık yapmıştır. Yine de ömrünün son yıllarında Ankara'daki inşaat işlerinin temposuna yetişememiştir. Kemalettin'in vurgulamış olduğu "milli tarz" ve Türk mimarlığının üslup olarak araştırılması görevi, çoğunlukla yabancılara verilmekte olan mimarlık ve planlama işlerinin yerli/yerel mimarlarca yapılması düşüncesinden kaynaklanmamaktadır. Kemalettin, Türk mimarlarının kendi kültürlerine özgü inşaat ve kullanım değerlerini anlaması, öğrenmesi ve yaygınlaştırması gerektiğine inanıyordu. Bu dönemde konunun yatırım kuruluşları olarak bakanlık, vakıf yönetimi, belediye birimleri düzeyinde

16. Şirket odun ve kömür getirmekten, ecza malzemesi ve içki teminine kadar farklı görevleri gerçekleştirmekteydi.

17. Bu durum belki de, mübadelenin sonuçlandırılma sürecinin sürüyor olmasıyla ilgili olabilir; ya da Mustafa Necati'nin Eğitim Bakanlığındaki üstün performansı ve 1 Ocak 1929 tarihindeki ani ölümüyle.

18. Kurtuluş Savaşı yıllarında ayakta olan Vali Konağı, Tarım Okulu, Meteoroloji, Devlet Demiryolları binaları, Dar-ül Muallimin, Sanayi Mektebi, Taş Mektep benzeri kamu yapılarının tümü, üstelik de sürekli değişim içinde, bakanlıklar ve ordu tarafından kullanılmışlardır. Sözkonusu dönemde çoğu bağ evi, okul olarak işlev görmüştür.

19. Tekeli ve İlkin, 1997, 195-196. İlk yayımı: *Hakimiyet-i Milliye*, s: 1675, 4 Mart 1926. Tekeli ve İlkin, 1997, 199-200. İlk yayımı: *Hayat Dergisi*, c:1, s: 24, 1926; 14.

tartışılabilmesi mümkün değildi; ayrıca kimlik arayışının, yatırımcı paydaş ve yurttaş özneler düzeyinde alımlanması ortamı da hazır değildi.

Genç ve parlak mimarlık öğrencisi Sedad Hakkı'nın 1926 yılında kendisine tuttuğu şifreli notlarda kalan Ankara imarı eleştirisi değinilmeye değer (Eldem vd.,, 2008, 152-3):

> "Ankara'ya çekilmek, biz kendimizi kurtarırız demekdir. Neden inşaatda bu usul tatbik edilmedi? Neden yine ecnebilere? Ecnebileri kim intihab etdi [seçti]? Millet mi? Hayır. Kız Enstitüsü, Müdafaa-i Milliye binaları yapıldı. Gazi'nin sarayında tek bir eşya Türk eseri değildir. İşte biz sanatkârlara bu en büyük cezadır. Bu ceza nedendir? Ankara'ya gelen birinci Türk mimarlarının eseri mi? O zamanki hususi ve acul vaziyetde [aceleyle] bulunmuş birkaç mimarın yapdıkları kusurları, bütün millet sanatkârları mı çekecek ve ne zamana kadar? Şimdiki yapılan binalar hiçbir zaman Türk mimarisini ifade edemezler. Yapanları ecnebi, yapılan malzemeleri ecnebi. Öyle ise eskiden yine ecnebiler imar yapdıkları gibi, şimdi de öyle, yalnız İtalyan yerine Alman! Hem de neden?"

Burada, yeni mezun genç mimar adayının, gündem konusunda bir nebze fikir verdiği görülmektedir: Türk mimarlarının haklarını savunmak içgüdüsü yanı sıra, mimari kimlik, yeniyi üretme yolları, harap ülkede alçakgönüllü bütçeyle üretme, gibi düşünülmüş, duyarlı mimari yaklaşımlar önerilmektedir. Genelde yanlış biçimde, yerli-yabancı mimar tartışmasına bürünen bu gerilim ortamı, devasa değişim döneminde yeni kültürün taşınması için kuluçka döneminin varlığına işaret eder. *Mimar* dergisinin yayına başlama öncelikleri arasındaki "Türk mimarlarının haklarını savunmak ve mimarlık ortamını geliştirmek", gerçek bir zorunluluktu. Yeni mezun mimarlar bir yeni mimarlık yaratmak arzusundaydılar; ancak Ankara'da 1925 yılında başlayan inşa etkinliğinin bu gelişme ve yetişmeyi bekleme lüksü yoktu. Bu açıdan ecnebi mimar-Türk mimar tartışması, yapay biçimde gündemi işgal etti. 1931 yılında bir yandan mimarlığın toplumda kabul görmeyişi ve toplumda herkesin mimarlık yapma arzusu eleştirilerek yarışmayla proje elde etme yöntemi tavsiye ediliyor; öte yandan yerel mimari proje uygulaması ile inşaat teknikleri ve yapı bitiş kalitesinin gerilediği eklenerek, konutların mal sahibinin keyfince değiştirilmemesi savunuluyordu (Sami, 1931). Sonuç olarak "yabancı-ecnebi" olarak adlandırılanların bir kısmı, yıllarca Osmanlı coğrafyasında yapı üreten ve tasarımcı yetiştiren Balyanlar, d'Aronco, Vallaury, Mongeri gibi isimlerdi. Ancak Ankara'da onlar değil, yapımcı ve yatırımcı firmalar dolayımıyla kendilerini yeni başkentte pratik yapmak zorunda hisseden, bunu fırsat bilen mimarlardı yabancılar.

Ankara'da erken dönemde uygulanan projelerin hemen yarısına yakını Türk mimarların, diğer yarısı da Ankara'da iş kapmak için bulunan yabancı mimarların ya da onların bağlantılı olduğu müteahhitlik hizmeti veren yabancı şirketlerin idi. Bu şirketlerin başlıcaları Alman Philipp Holzmann Kumpanyası, Alman Redlich und Berger Brüder ve Avusturyalı Rellah und Neffe olarak sayılabilir (**20**). Kuşkusuz onların yanı sıra, 1931'e kadar Koyunoğlu'nun kurduğu "Türk İnşaat Yurdu" benzeri yerli firmalar ve Erzurumlu Nafiz, Aggiman ve Burhaneddin Co. gibi küçük müteahhit ve kalfalar da inşaat işinde görev aldılar. 1933 yılına doğru Holzmeister'le birlikte çalışan Otto Wöber de, bağımsız küçük müteahhit gibi davranmaya başlamıştı. Ankara'da A. Selim, Jacques Nessim Aggiman (1892-1942), Mithat Aydın (1884-1959), Ernst Arnold Egli (1893-1974), Arif Hikmet Holtay (1896-1968), Clemens Holzmeister (1886-1983), Nizamettin Hüsnü, Werner Issel (1884-1974), Hermann Jansen (1869-1945), Theodor Jost, Arif Hikmet Koyunoğlu (1893-1982), Erzurumlu Nafiz Kotan (1887-

20. Bu noktada mimar isimlerinden ön ismi/doğum-ölüm tarihleri bilinenler açık olarak listelenmektedir. Metinde mimarlar bu noktadan sonra yalnızca soy isimleriyle anılacaklardır.

1946), H. Lüderer, Mimar Alaattin, Mimar Ali Talat (1869-1922), Mimar Kemalettin (1870-1927), Mimar Sadi, Guilio Mongeri (1873-1953), Mehmet Nihad Nigisberk (1880-1945), Robert Oerley (1876-1945), Halit Orhan, M. Szerdahelyi, Mukbil Kemal Taş (1891-) ve Mimar Vedad Tek (1873-1942), tasarım yapan diğer mimarlardı.

Yeni Şehir'in Kentsel Tasarımı

Böylesi zorlu bir toplumsal ortamda ve erişilebilmesi zor mali ve teknolojik olanaklar yelpazesinde, ulaşılabilecek örgütlenme-bilgilendirme kapasitesindeki eksikliğin doğası anlaşılabilmektedir. Elde edilecek konutların çeşitlenme ve tipleşme mantığı, ya da bir araya geliş deseni, dokunun karakteri ve besleneceği sosyal donatı konularında bir temel ilkeler altlığı oluşmadığı gibi, kent mekânının örgütlenmesi konusunda da ilkeler dizini oluşturulmamış, Lörcher Planı'nın getirdiği parselasyon ile yetinilmiştir. Yapılan adeta şudur: İki boyutlu bir çizimle mülkiyet desenine indirgenen tasarımla yeni bir yaşam çevresi yaratılmaya, bu sınırlar içinde henüz belirmekte olan yeni insanın yaşayabileceği varsayılmaya çalışılmaktadır. Planın sunduğu olanaklarla bölünen ve metrekare değerine, şerefiyelere sığınan parseller, konumları ve ilk sahipleri itibariyle anlam ve prestij üretmektedirler. Bu değerlerin yönetilmesi söz konusu değil gibidir. 1924 ve 1925 yıllarında iki kez eldelenen Lörcher Planı'nın 30 Mayıs 1924 tarihli ilk plan açıklama raporu Şehremanetince Türkçeye çevirtilip yayınlanmış (**21**); ancak 1925 tarihli "Türklerin Başkenti Ankara'nın İmar ve Yapılaşma Planı / Eski Şehir ve Yönetim Şehri = Çankaya" (*Plan zum Aufbau der Türk. Hauptstadt-Angora /Altstadt u. Regierungstadt = Tschankaya*) Yeni Şehir'i oluşturan planın Açıklama Raporu yönetime verildiği halde, Osmanlıca yayınlanması gecikmiştir (**22**). Bu da 1925 Lörcher Planı yapı adalarının iki boyutlu değerlere indirgenmesine, önerilen üç katlı yapılaşma ve kentsel mekân kalitesinin unutulması anlamına gelmiş olabilir. Planın işlerlik kazandığı 1925 sonrasında ortaya çıkan çok düşük yoğunluklu çevre oluşma eleştirisi, planın İdarece reddedildiği ve yeni müellif arayışının başladığı 1927-28 yıllarına paraleldir. Planın özellikle günümüzdeki Kurtuluş Parkı ve Ön Cebeci bölgesinde çalışanlar için önerdiği "en fazla 150-200 metrekarelik bahçelerde tek katlı-iki katlı evler" yani Memur Mahallesi biçimlenişi sanki Yeni Şehir parsellerine taşınmıştır (**23**). Oysa 1925 Planı, reddedilmiş olsa bile, merkez Yeni Şehir bölgesinin biçemlenmesine damgasını vurur. Gerek 1932 tarihli Jansen, gerekse 1957 tarihli Yücel-Uybadin Planında altlıklarını belirler ve kalıcıdır. Özetle, Lörcher Planı'nın belirleyici olmadığı iddiası, boştur ve bir görmezden gelme cehaletine yol açmıştır.

1924-1927 arasında Ankara için önerilen Lörcher ve Jansen Planlarının her ikisi de, hatta Jaussely Planı da, planlama yoluyla yaşam alanı, topluluk bölgesi (komün; *community*), mahalle (*neighbourhood unit*), kent alt bölgesi ürettiklerinin bilincindeydiler. Bu bilinç Türk belediyeciliği ve yerel yönetim eğitimine Ernst Reuter tarafından daha sonra yerleştirilecektir; ancak Yeni Şehir için ise çok geçtir. 1927 yılında Almanya'nın Stuttgart kentinde açılan yapı sergisinde projelendirilen ve "Yeni Yapı" anlayışı çerçevesinde Avrupa merkezli arayışları toplu olarak serimleyen "Weissenhofsiedlung" yerleşimi, Ankara Yeni Şehir ile karşılaştırıldığında çarpıcı örnekler barındırır: Konut birimi çeşitliliği, kütle formu arayışları, yerel yönetimlerin ayırdığı zaman ve bütçeler ile kullanıcı halkın konu üzerine katılımcı tutumu, iki kültür arasındaki farklı yaklaşım sonuç ürünlerinden başlıcalarıdır.

21. Rapor 1924'te Şehremaneti tarafından yayımlanmıştır (Cengizkan, 2004, 145-57).

22. Yeni planlama amaçları ve kısmen raporlar, Berlin'de iki planlama dergisinde yayımlanmıştır (Cengizkan, 2004, 162-6).

23. Belediye 1929 yılında Ankara Plan Yarışması Raporlarını yayımlarken (TC Ankara Şehremaneti, 1929) Lörcher'in sözleşmesinin iptal edildiğine övünerek değinmekteydi; ancak anlaşılan sokaktaki uygulamayı anlayıp yönetmekten bile uzak kalmıştır.

Sonuçta Ankara Yeni Şehir için seçilen konut tipleri ve çeşitleri konusunda basına yansıyan haber dışında bir belgemiz yoktur (*Hâkimiyet-i Milliye*, 18 Aralık 1924, Türkoğlu (2019, 38):

> "Yapılacak evler için muhtelif grup ve mühendisler tarafından Şehremanetine 45 proje teslim edilmişti. Evlerin plan ve projesi konusunda şehremâneti iki farklı proje üzerinde duruyordu: Tek katlı ve iki katlı evler. Tek katlı evler 3-4 odalı ve 150 metrekare, iki katlı evler ise 6-7 odalı ve 200 metrekare olacaktı. Ayrıca evlerin birer de bahçeleri olması şarttı. Dış görünüşte aranan birinci özellik ise "Türk tarz-ı mimarisine" uygun olmasıydı."

Bu beklenti saptaması, kamuoyunda konunun nasıl algılandığına, konut çevresi ve konut kalitesinde çeşitlenmenin nasıl kısıtlandığına dikkat çeker: a. Hazır projeler içinden seçilen tek ya da iki katlı konut tipleri uygulanacaktır. b. Buna bağlı olarak seçilen arsa ve yine seçilen konut tipi, maliyeti belirleyecektir. c. Belediye, idare olarak, parsel bazlı hangi projenin nereye uygulanacağını önceden belirlediğinde, her iki maliyet birden seçilmiş olmaktadır. d. İsteyen konut sahibi, boş parsel satın alıp, projesini kendisi çizdirip (onaylatmak şartıyla) uygulayabilmektedir.

ARAŞTIRMA İLE ORTAYA ÇIKAN YENİ ŞEHİR KONUT TİPLERİ VE İNŞAAT

Yeni Şehir bölgesindeki konutların yapımı, sosyal örgütlenme ve finans yöntemi kooperatif modeline dayanmaktadır; Ankara Memurin Kooperatif Şirketi'nin kazandığı öz-yetkilendirme ile kendi üyelerine sağladığı kaynaklar, bireylerce konut yapımına aktarılır. (Cengizkan ve Cengizkan, der., 2019, 143-78). Bu örgütlenmeyi, doğrudan konut üretme amaçlı olmasa bile, bir pilot konut kooperatifi çalışması olarak kabul etmek gerekir. *Bir Şehir Kurmak: Ankara 1923-1933* (BSKA) Yeni Şehir fotoğrafik döküm ve modelleme-yorumlama alan çalışması, 1923-1933 arasında Yeni Şehir bölgesindeki 14 cadde ve 35 sokak üzerinde toplam 75 yapı adasında bulunan 320 parseldeki konut ve 30 kamu yapısının tümünü belgelemiştir (**24**). Bu belgeleme, elinizdeki makalenin de araştırma veri tabanını oluşturmaktadır; Yeni Şehir'in oluşumuna odaklanan araştırma, bölgedeki 700'e yakın parselin tümündeki gelişmeleri 1923-1933 aralığında inceler. Aynı adalar üzerinde 350'ye yakın boş parsel ise sahiplenmeyi ve yapılaşmayı beklemektedir. 1940'lardaki bir oblik uçuş fotoğrafı, yapılaşmanın aynı tipler üzerinden arttığını ve doygunluğa doğru gittiğini kanıtlar (**Resim 1**).

Dönemde yapılaşmanın ortaya çıkışını tasarım olarak belirleyecek olan, Şehremaneti'ne teslim edildiğinden söz edilen 45 konut tipi bu süreçte kullanılmıştır (Cengizkan ve Cengizkan, eds. (2019, 161-78). Şehremaneti Envanteri oluşturulmuş ve tipler numaralanmıştır: Araştırmada bu Envanter'e ait Tip 1, Tip 1 İkiz, Tip 2, Tip 3, tip 5, Tip 6, Tip 7 ve Tip 15, fotoğraf ya da çizimleriyle dönemin etkin milletvekillerinden Mithat Aydın'ın, yazarın dökümünü yaptığı arşivinde (MAA) bulunmuştur. Ankara Memurin Kooperatif Şirketi, konut edinebilecek olan "yapabilir" ortaklarına elindeki projeleri sunmuştur. Projelerin tümünün yarışmayla elde edilip edilmediğine dair bilgimiz yok; ancak TİP 3._Mebusan olarak kodlanan örnek projenin yarışma katılımı ile elde edildiği kesindir (**25**). Mithat Aydın arşivindeki (MAA) çizim destesi, 1924-1933 arasında Ankara'daki büyük inşaat pazarında, Evkaf mimarları ve yerli mimarların yanı sıra, yabancı mimarların ve yine ilginçtir, Katalog Mimarisi projelerin

24. Belgeleme çalışmasının araştırma kısmını Ali Cengizkan ve Müge Cengizkan, tasnif kısmını Müge Cengizkan, modelleme kısmını ise Büşra Öner ve Dersu Değer üstlenmişlerdi.

25. Yarışmanın Şehremaneti'nce mi, yoksa Şirket tarafından mı; yalnızca Mebusan konutları için mi, yoksa Memurin konutları eldelemek için mi düzenlendiğine ve diğer ayrıntılarına dair bilgimiz bulunmuyor.

Resim 1. Yeni Şehir'deki yaşam yatırımının algılanır ve tüm hizmet birimleriyle yaşanır kılınması, 1930'ların ilk yarısını buldu. Vekaletler Mahallesi'nin bir bölümü, Atatürk Bulvarı adını alan Lörcher'in Ulus Caddesinin (*Strasse der Nation*) 4 katlı yapılaşması ve hemen tüm tipleri barındıran bölgenin İsmet Paşa Caddesi, sağ altta Sağlık Bakanlığı, sağ üstte Polis Kolejini gösteren, yaklaşık 1940 civarına ait oblik uçuş fotoğrafı (AYA; 22.6cm X 16cm).

de dolaşımda ve etkin olduğunu göstermektedir. Batı dünyasında konut yapımı için üretilen standart tip projeler de, tıpkı Evkaf üzerinden gelen Kemalettin imzalı projeler gibi (Gökçe Günel Arşivi, GGA) yerli-yabancı mimarlar tarafından doğrudan ya da kopyalanarak kullanılmakta; bir görgü oluşturmak için yalnızca mimarın ve müteahhittin elinde değil, yeni "kullanıcı"nın elinde de gezmektedir (**26**). Mimarlık, belediyenin de teşvikiyle, herkesin katıldığı ve bilip bilmeden karıştığı bir tasarlama ve inşa pratiği olmaya başlamıştır. 1930'lu yılların *Yeni Gün* ve *Muhit* dergilerinde yer alacak "popüler mimarlık" ürünlerinin dönemi yaklaşmaktadır (Bozdoğan, 2002, 216-36; Tuncer, 2006).

TİP 1._MEMURİN

Şehremaneti Envanteri "Tip 1". Bu tek katlı yapı, Memur Evi olarak önerilmiştir. Vakıf Mimarı Taş (11 Ağustos 1926 tarihli, imzalı) tarafından tasarlanmış, Sıhhiye bölgesinde İsmet Paşa Caddesi ile Fidanlık arasındaki beş yapı adasında 21 adet inşa edilmiştir. Koyunoğlu'nun müteahhitliğini yaptığı 34 konut arasındadır. İki oda, oturma odası ve tuvalet+banyo+mutfaktan oluşmaktadır. 3.25mx5.00m'lik oturma salonu, cepheyi karakterize eden şahnişinle tamamlanmaktadır (**Resim 2**).

TİP 1. _İKİZLER

Memur Evi olarak "Tip 1"; kullanıldığı yapı adalarında gruplanarak, Sıhhiye bölgesinde İsmet Paşa Caddesi ile Fidanlık arasında kalan beş yapı adasında 20 adet inşa edilmiş; Koyunoğlu inşaat müteahhitliğini yapmıştır. Planimetri, Mübadele, İmar ve İskân Vekaleti tarafından yapılan

26. Mithat Aydın Arşivinde (MAA) bunun el kopyası, el çalışması farklı örnekleri görülmekte.

Resim 2. Memurlar için yapılan Tip_ Memurin ve Tip_İkizler'in bulunduğu Fidanlık Mahallesi. Sol üstte Evkaf Vakıf Oteli ve hemen sağında TC Ziraat Bankası Evli ve Bekâr Lojmanları. Yaklaşık 1927, (ATA 1897).

Resim 3. Bir başka açıdan Tip_Memurin ve Tip_İkizler'in bulunduğu Fidanlık Mahallesi. Ön solda Hıfzısıhha Enstitüsü Bakteriyoloji Binası temelleri atılıyor, yaklaşık 1927 (ATA 2336).

alçakgönüllü mübadele ikiz konutlarını düşündürmektedir. Büyük olasılıkla üç oda, oturma odası ile tuvalet+banyo+mutfak ve çatı arası odasından oluşmaktadır (**Resim 3**).

TİP 2._ MERKEZ

Şehremaneti Envanteri "Tip 2" olarak geçmektedir. İsmet Paşa Caddesinde iki adet yapıldığı saptanmıştır. Olasılıkla orta sofalı ve beş odalı bu plan tipi, Evkaf mimarları tasarımı karakteristik özelliklerini taşır (**Resim 4**).

Resim 4. Tip 2/ Merkez. (KÖA 27; ayrıca Cengizkan ve Cengizkan, der., 2019, 236)

27. Planlar üzerinde yer alan Osmanlıca açıklamalar ("Mebusan Evi: Ankara'da inşa olunacak mebus evleri müsabakasına ait. Renksiz teras hesaba dahil değildir") yanı sıra, MOTTO A kodu, bir yarışma katılımı olmasının yanı sıra, belki de yabancı bir mimar tarafından tasarlanmış olduğunu göstermektedir. Plan tipi ve çatı arası odasının kırılımı, bu fikri destekler.

TİP 3._MEBUSAN

Şehremaneti Envanteri "Tip 3" ; plan ve cephe çizimleri (MAA; Pafta 0235-0237/Pafta 394-395) elde bulunan iki katlı yapı, Milletvekili Evi olarak önerilmiştir (**27**). Beş oda, oturma odası ile tuvalet+banyo+mutfak ve çatı arası odasından oluşmaktadır. Yarım kat bodrumu vardır. İsmet Paşa Caddesi üst kısmında tek yapı inşa edilmiştir.

TİP 5._ŞAHNİŞİN

Şehremaneti Envanteri "Tip 5"in plan çizimleri yoktur. Evkaf mimarları tasarımına benzeyen proje, İsmet Paşa Caddesi başta olmak üzere dokuz adet uygulanmıştır (**Resim 5**). Osmanlıca kartpostal bilgisine göre solda oturma odası, ortada yatak odası ve sağ tarafta banyo ile diğer odalar vardır. Şahnişin ve tepe ışıklığı olan oda, yatak odası olarak tanımlanmıştır.

TİP 6_KANATLI

"Tip 6"; plan ve cephe çizimi elde olan yapı (MAA) Mebusan Evi olarak önerilmiş, 13 birim olarak çoğunlukla Sakarya Caddesi civarında inşa

Resim 5. Tip_5 / Şahnişin. (Cengizkan ve Cengizkan, der., 2019, 239)

edilmiştir. Ana girişte iki kanatlı dörder basamak merdivenle sahanlığa varılmaktadır. Konutun oda (3.00mx3.00m), yatak odası (3.50mx4.00m), yemek odası (3.75mx3.50m), dışarıdan girişli mutfak (3.50mx3.20m), banyo (1.50mx300m), kiler (2.50mx1.00m), balkon (3.20mx2.00m) mekân dizilimine, ana yaşam alanı yemek odası ve mutfaktır. Çatı arasındaki oda ve sofa, cihannüma niteliğinde 2.15m enindedir. Konutun genel tavan yüksekliği 3.50m'dir; bodrum 1.80m tavan yüksekliği ile kömürlük olarak tasarlanmıştır. (**Resim 6**)

TİP 7._KULELİ

"Tip 7"nin en ikonik yapılardan biri olduğu söylenebilir. Olasılıkla Evkaf mimarlarına ait olan proje, İsmet Paşa ve Tuna caddeleri başta olmak üzere dokuz adet uygulanmıştır. İnce uzun kütlenin tam ortasında yer alan kule, çatı yüksekliğini aşmasa da, perspektife giren görünüşleriyle konuta fark edilme şansı verir. Girişin ters yönünde yer alan hacim, büyük olasılıkla yatak odasıdır ve bir şahnişin yorumlu ahşap cumbasıyla dış cepheye karakter verir. Yapının kimi özellikleri ve kule, Mimar Kemalettin tasarımını andırır. Kimi parsellere köşegenel konumlandırılan "Tip 7"ye göre üretilen Tuna Caddesi No: 24, Mehmet Ali Bağana ailesine aittir ve bir süre de Ziya Kocainan tarafından kullanılır (**Resim 7**).

TİP 15._VERANDALI

"Tip 15" olarak geçen projeyi Koyunoğlu tasarlamış, Kazım Özalp-İsmet Paşa Caddeleri kesişiminde dört adet uygulanan yapının müteahhitliğini de kendisi üstlenmiştir (Birkan ve Pehlivanlı, 1977, 11) (**Resim 8**). İki tam katlı olan konutların planimetrisine ilişkin bilgi bulunmamaktadır; İsmet Paşa Caddesi üzerindeki ikisi, elçilik olarak uzun süre kullanılmışlardır.

TİP_ZAFER

Zafer Park civarı ve İsmet Paşa Caddesi üzerinde yedi adet uygulanmıştır. Ana yaşam alanı yükseklikleri 3.50m'den fazla olan ve bütün odalarda pencere tepe açıklıkları (eski deyimle "tepe camı") aydınlatma/havalandırması bulunan yapının ön cephesinde geriye çekilmiş balkonu ve giriş terası bulunmaktadır. Evkaf mimarları karakteristikleri taşıyan yapının, tek pafta üzerinde cephe çizimleri bulunmaktadır (**Resim 9**).

Resim 6. Tip_Kanatlı. (Cengizkan ve Cengizkan, eds, 2019, 238)

Resim 7. Tip_7 / Kuleli. (Cengizkan ve Cengizkan, der., 2019, 238)

Resim 8. Tip_15 / Verandalı. (Cengizkan ve Cengizkan, der., 2019, 240)

Basık kemerli ön cephe balkon ve arkasındaki iki dikmeyle üçe bölünmüş kemerli açıklık, mimarının Tek olabileceğini düşündürmektedir.

TİP_MAARİF

Necati Bey Caddesi üzerinde üç adet uygulanmıştır. İki bağımsız birimden oluşan iki katlı kütlenin, Evkaf mimarları elinde üretildiği düşünülmektedir. Hemen bütün yaşam hacimlerinde tepe camı kullanılmış; tam kavs kemer, basık kemer, nim kavs kemer, aynı cephede yan yana denenmiştir; cadde köşesine gelen noktalarda cephe pahlanarak cumbalarla köşe odanın niteliği değiştirilmiştir. Mimari dili ve yaşantıya değen ayrıntıları, Tek tasarımı olduğunu düşündürür. Necati Bey Caddesi No: 8'de yer alan birim, uzun süre Türk Maarif Cemiyeti (sonradan TED) Koleji olarak kullanılmış, bahçeye doğru genişletilmiştir. Necati Bey Caddesi No: 4'te uzun süre Tanpınar oturmuştur (**Resim 10**).

TİP_GÜVEN

Mustafa Necati, Milli Müdafaa ve İzmir Caddeleri üzerinde birer parsel atlanarak 11 adet uygulanan plan tipi, Tip_Maarif'e benzer. Zemin kat yaşam birimlerinde "tepe camı" kullanılmış; yeri geldiğince kemerli

Resim 9. Tip_Zafer. (Cengizkan ve Cengizkan, der., 2019, 236)

Resim 10. Tip_Maarif. (Cengizkan ve Cengizkan, der., 2019, 243)

açılımlar ile dikdörtgenel pencereler aynı cephede yan yana denenmiş; zemin katta üzerinde balkon kullanılan cumba, şahnişin biçiminde salonun niteliğini değiştirmiştir. Ana giriş kapısının basık kemerli açıklığının iki dikmeyle üçe bölünmüş oluşu, tıpkı Tip Zafer'deki gibi mimarının Tek olabileceğini düşündürmektedir. Milli Müdafaa Caddesi No:6 uzun süre Afet İnan ve ailesi tarafından kullanılmıştır (**Resim 11**).

TİP_VAKIF

Mustafa Necati ve İzmir caddeleri boyunca, birer parsel atlanarak yedi adet uygulanmıştır. İki katlı yapının köşe ve arka bahçe girişleri bulunmaktadır. Zemin katta köşe odalar, ön cephede üç bölüntülü basık kemerli pencereye sahiptir. Girişin üzerinde tek koloncukla taşınan küçük balkonu vardır. Tavan yükseklikleri giriş katında 3.50m'den fazla, üst katta 3.50m'dir. Yine basık ve bölünmüş kemer nedeniyle, mimarının Tek olabileceği düşünülmektedir. Mustafa Necati Caddesi No:3, uzun yıllar Ankara Vali

Resim 11. Tip_Güven. (Cengizkan ve Cengizkan, der., 2019, 392. A. Derin İnan Arşivi)

Konağı olarak kullanılmış, genişletilmiş ve Nevzat Tandoğan uzun yıllar burada oturmuştur.

TİP_ULUSAL

İsmet Paşa Caddesi üzerinde üç adet uygulanmıştır. Sivri kemerli ve söveli pencereleri olan tek katlı konut, küçük bağımsız bir giriş saçağına sahiptir; saçağın önünde beton döküm tırabzan vardır; guseli kolonlarıyla Koyunoğlu tarafından tasarlanmış olabileceğini düşündürür.

TİP_MENEKŞE

İzmir Caddesi üzerinde, birer parsel atlayarak dört adet, Gülistan Sokak'ta ise iki adet uygulanmıştır. Tek katlı yapı, giriş saçağının üzerini balkon olarak kullanan tek odalı bir ikinci kata sahiptir. Zemin ve birinci kat balkonunda beton döküm tırabzan kullanılmıştır. Guseli kolonlarıyla Koyunoğlu mimarisine benzerliği dikkat çeker (**Resim 12**).

TİP_MADO

Kazım Özalp Caddesi üzerinde, dört adet olarak uygulanmıştır; birisi 2021 yılında ayaktadır. Evkaf mimarlarınca tasarlanmış olabileceği düşünülen yapı, Mongeri ve Tek motiflerini de taşır (GGA). Ortak iç merdivenle ulaşılan iki bağımsız tip dairelere (h: 3.55m) dar merdiven sahanlığından (1.00m en), ulaşılır. Bodrum katta 4 metre eninde kömürlük (h: 2.50m) vardır. Her iki katta tekrar eden planimetri, oldukça moderndir: 2.50m kenarı olan üçgen hol, merdiven arkasındaki mutfağa (2.70mx3.50m), arka köşedeki girişi pahlı oturma odasına (4.20mx3.50m), banyoya (1.70mx3.00m), ön cephedeki yatak odasına (3.90mx4.30m) ve küçük yatak odasına (3.90mx2.30m) ulaşır. Oturma ve yatak odalarının küçük birer balkon çıkmaları bulunur. Cephesinde saçak altı frizleri, birinci kat döşeme hizasında seramik küçük panolar dikkat çeker (**Resim 13**).

Resim 12. Tip_Menekşe. (ACA 70)

TİP_UYBADİN

Mustafa Necati Caddesi üzerinde üç adet uygulanmış; Emek İşhanı'nın yerindeki dördüncüsü ise ilk İçişleri bakanlarından Cemil Uybadin tarafından kullanıldığı için Uybadin Köşkü olarak anılmıştır. (GGA) Köşklerden Mustafa Necati Caddesi üzerindeki ikisi, 2021'de ayaktadır (**Resim 14**). Planda üç katlı sekizgen kule, dikdörtgen planın giriş cephesine eklenmiştir ve iki katlı genel kütleye cihannüma sunacak biçimde yükselir.

Resim 13. Tip_Mado. (ATA 971)

Resim 14. Tip_Uybadin. (Cengizkan ve Cengizkan, der., 2019, 17, ACA)

Giriş cephesi abartılı bir alınlık ile Art-Deco havasındadır; farklı yazarlarca Tek, Mongeri ya da Koyunoğlu mimarlığına atfedilirler. Her katta oldukça büyük metrekare sunan (165m2) dikdörtgenel planlı köşkler, İran, İtalyan, Afganistan ve Macar elçilikleri olarak kullanılmışlardır.

TİP_YÖNETİCİ

Ziraat Bankası Genel Müdürü ve Yardımcısı için Banka Baş Mimarı Mongeri tarafından Ağustos 1925'te tasarlanmış olan villalar, yapı adası büyüklüğünde bahçe içinde, 1926'da iki adet inşa edilmiştir (**28**). İki katlı villaya doğrudan giriş saçağından, önce taşlığa sonra da hole girilerek, oldukça modern dağılımla, salon-yemek salonu-büro (çalışma) ve mutfak-tuvalet mekânlarına ulaşılmaktadır. (GGA) Holün ekseninden üst kata çıkılarak, üç yatak odası, bir banyo ve bir giyinme odasına varılmaktadır. Bodrum kattaki mutfak-ısıtma ve iki depo birimine, merdivenkovası sahanlığından ulaşılmaktadır (**Resim 15**).

28. Yapının özgün plan-kesit-cephe çizimleri ve rölöveleri vardır. 1990'lı yıllarda Ankara Büyükşehir Belediyesi'nin mülkiyetine geçen ve Başkanlık konutları olarak kullanılan yapılar küçük tadilatlar görmüştür. Bir onarım da 2020 yazında gerçekleşmiştir.

Resim 15. Tip_Yönetici. (Cengizkan ve Cengizkan, der., 2019, 241, KÖA)

Resim 16. Tip_Konak. (Cengizkan ve Cengizkan, der., 2019, 243)

TİP_KONAK

İzmir ve Mustafa Necati Caddeleri üzerinde, beş parselde uygulanmıştır; 2021'de ayakta kalan örneği yoktur. 1925'te İstanbul Şişli'de Mongeri'nin kendisi için tasarladığı konağa çok benzeyen iki katlı konuta, merdivenle çıkılan revak sahanlığıyla (revak kayd) ulaşılmaktadır. Hol öncesi *vestibül* kullanımı, revak kayd üzerinde açık balkon, üst katta çıkma olarak cepheye yansıtılmış şahnişin, gibi temel yapı özelliklerine sahiptir. Yapıda pencere açıklıkları zemin katta sivri kemerlerle ifade edilirken, birinci katta ortogonal kirişler vardır ki bu da tipik Mongeri tasarım özelliğidir (**Resim 16**).

TİP_KÖŞK

Tip proje, İzmir Caddesi ve Gülistan Sokak bölgesinde sekiz adet inşa edilmiştir; ayakta kalan örneği yoktur. Çatı arasındaki cihannüma odası

Resim 17. Tip Bektimur. (Cengizkan ve Cengizkan, der., 2019, 239)

29. Yapının farklı dönemlere ilişkin rölöveleri vardır. TBMM Başkanlığı tarafından milletvekili kulübü olarak kullanıldıktan sonra, 2018 yılı sonunda Kültür ve Turizm Bakanlığına devredildi ve Güzel Sanatlar Müdürlüğü tarafından Mustafa Necati Kültür Evi olarak işletildi.

ile daha geniş mekân elde edilmiştir. Plan tipi açısından Tip 6_ Kanatlı'nın ilerleyen yıllarda geliştirilen yarım bodrum katlı ön modeli sayılabilir.

TİP_BEKTİMUR

İsmet Paşa Caddesi'yle Sakarya Caddesinin kesiştiği noktada, Lozan Meydanının Lörcher Planıyla belirlenmiş arsasına köşegenel oturan yapı, 2021 yılında ayaktadır (**29**). Tip_Konak gibi Mongeri'nin plan ve yapı bileşeni tasarım özelliklerine sahiptir. Dışarıdan ulaşılan bodrum katıyla yapının konumu, köşegenel oturduğu Lozan Meydanı ile uyumludur (**Resim 17**).

TİP_İSMETPAŞA

Tek katlı alçakgönüllü konut tipi, İsmet Paşa Caddesi üzerinde dört adet uygulanmıştır. Tip_Merkez gibi kare planlı ve üç odalı gözüken kurgusu vardır. Bileşenleri ayrıntılı incelendiğinde Koyunoğlu tarafından tasarlanmış olabileceği söylenebilir (**Resim 18**).

İnşaat Malzemesi Temini ve İnşaat Süreçleri

1923-1933 yılları arasında inşaat malzemesinin her kaleminin, temininde güçlük nedeniyle çok pahalı olduğunu söylemek olanaklı. Ahşap, demir, çimento, kum, çakıl, kireç, taş, tuğla, kiremit, mermer; bitiş malzemeleri cam, boya, çivi, elektrik malzemesi, paratonerler, kapı kolları, pencere ispanyoletleri, fayans, lavabo ve mutfak-banyo-tuvalet taşı ve ilgili armatürleri, temiz ve pissu tesisat malzemesi, inşaat ve döşeme aletleri, hem temin, hem de yeni yerleşim alanına taşınma açısından zorlayıcı şeylerdi. Bunlar arasında en değerli inşaat malzemesi çimento idi. İlk çimento fabrikası 1912'de kurulmuştu (Aslan / Darıca); 1920'de ikinci fabrika ile birlikte (Eskihisar / Gebze) Türkiye'deki yerli üretim dengelenmeye çalışıldı. Anadolu'nun ortasında kurulmakta olan yeni başkentte tüm inşaatlarda kullanılan çimentonun trenle, ya da Kastamonu İnebolu Limanından motorlu araçlarla; tuğla ve kiremit Eskişehir'den; kireç Kütahya'dan, taş ise Bentderesi civarından temin ediliyordu. Koyunoğlu'nun 1924'te başlayan tasarım ve inşaat faaliyetinde kendisine

Resim 18. İsmet Paşa Caddesi ortaya çıkıyor: Sağ başta Tip_İsmetpaşa, hemen solunda Tip_Şahnişin, hemen alt parselde Tip_Ulusal. (Cengizkan ve Cengizkan, der., 2019, 208, ATA 111)

destek olması için pek çok tuğla, mozayik, fayans, karosiman, lavabo ve mutfak-banyo-tuvalet taşı imalat atölyesi kurduğunu biliyoruz. Şehir içi araçlar ise at, eşek, kağnı arabası ve kamyonet idi. (Kuruyazıcı, 2008, 236) Kartpostal fotoğraflardan okunduğu kadarıyla kamyonetlerin özellikle yabancı inşaat firmalarınca kullanılması dikkat çekicidir. Bu koşullarda, örneğin yol altyapı malzemesini sıkıştırmak için kullanılan silindir bile, öncü ve uygar bir inşaat aracıdır. (**Resim 19-20**)

Kaba ve İnce İnşaat ile Bitişler

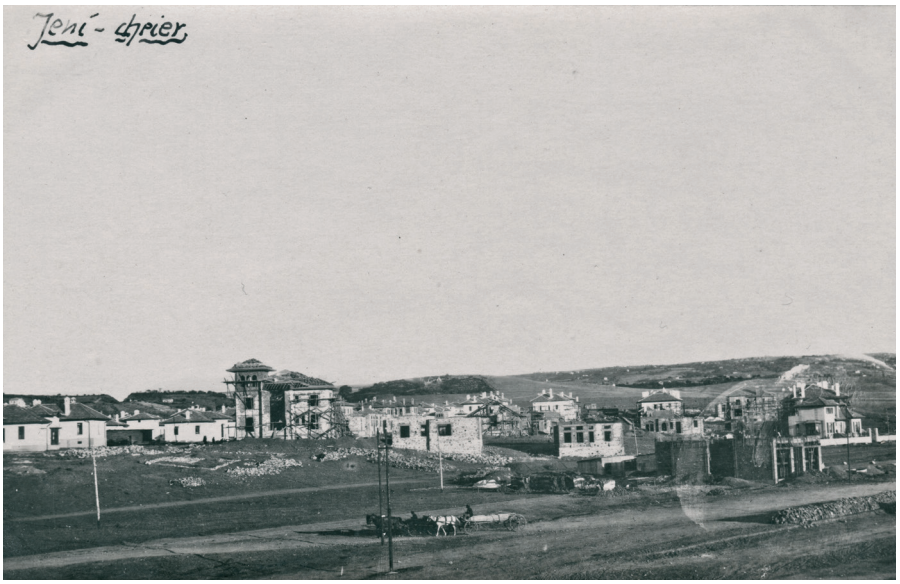
Yapıların inşa sistemi çoğunlukla taş ve tuğla kargir, yani melez kargir olarak adlandırılabilir. Temeller ve bodrum katlar taş duvar olarak örüldükten sonra, döşemeler betonarme ya da ahşap olarak atılmakta, birinci kat dış duvarlar taş, iç bölücü duvarlar ve biçimlendirici kapı-pencere bitişleri tuğla olarak örülmekteydi. İkinci katlar ise tümüyle tuğla (2, 1,5 ve 1 tuğla) örgüydü. Tek katlı yapıların büyük çoğunluğunda, oda döşemelerinin döküm masrafı ve zorluğundan kaçınmak amaçlı, oturtma çatı kullanılmıştı. Tavanlar bitiş yapılırken içeriden kaplanıyor ve yapı oturuma hazır hale geliyordu. Taş duvarların 60-70cm arasında değişen kalınlıkları, iklim açısından koruyucu iken, tavanın ısı yalıtımının bulunmaması, yapıyı yaz ve kışın sert koşullarına karşı etkisiz kılmaktaydı. Bodrum kat zeminlerinin toprak olarak bırakılması, oturtma çatının gerek böcek ve tozlanma, gerekse iklimsel yalıtım sağlamayacak biçimde yarım bırakılması, kullanım içinde her zaman bir sorun oluşturmaktaydı.

Evkaf İdaresi mimarları tarafından tasarlanan tümü Kemalettin onaylı yapıların, az katlı olduklarında bile betonarme karkas (iskelet) olarak tasarlandıkları ve inşa edildikleri görülmektedir. Buna karşılık 1923-1933 yılları arasındaki küçüklü-büyüklü bütün kamu yapıları betonarme inşaattır.

Tuğla işçiliği İstanbul kaynaklıdır, ama Koyunoğlu, Ankara'da Frenközü (Türközü) ve Akköprü'de tuğla imalat atölyesi kurdurmuş; İstanbul'dan tuğla örme ustası getirtmiştir. Eskişehir kiremitleri ise ünlüydü (**30**). Kemalettin'in İstanbul'da daha 1911'de kurduğu Evkaf İdaresi İnşaat Bürosunun şartname ve ilkeler düzeni belgeleriyle oluşan mevzuatın, yapma bilgisini ve kurallarını tanımlamış olduğu eklenmelidir. Eski

30. 2002 gözlemlerimize göre, 1928 yılında yapımına başlanan Etimesgut Numune Köyü Mektebi ve diğer sosyal merkez yapılarında Osmanlıca Eskişehir adresli tuğlalar ve Marsilya türü kiremitler kullanılmış; çatıda yer alan cam kiremitlerin ise, Marsilya kaynaklı olduğu saptanmıştır.

Resim 19. Yeni Şehir dokusu ortaya çıkıyor: Tuna ve Selanik Caddesi beliriyor; önden geçen paralel çizgi sonrasının Atatürk Bulvarı; yaklaşık 1925 sonları. (KÖA Yeni Şehir 30)



Resim 20. Yeni Şehir dokusu ortaya çıkıyor: Bir anda çoklu inşaatlar ve yapı tektoniği konusunda bilgi veren bir kartpostal; yaklaşık 1925 sonları. (ACA 40)

başkentte yapım ve işletim ayrıcalıkları (kapitülasyonlar; *concessions*) üzerinden yerleşik olan Fransız ve Alman firmaları, Ankara'da iş yapma kolaylığı elde etmişlerdir. Viyanalı Rella und Neffe hem Hariciye Vekaleti'ni, hem de Etnoğrafya Müzesini üstlenir; bu dönemde, Yeni Şehir'de de müteahhitlikleri vardır (**Resim 21**). Ancak Koyunoğlu firmanın üretimini beğenmez, hatta Hariciye Vekaleti bitişini kendisi üstlenir. Kapı ve pencere lentoları, hatıllar, söveler, dişler, saçak frizleri, kat silmeleri, pencere ve kapı, kepenkler, baca feneri, baca tepeliği, kemer üst başlığı, küpeşte, balkon korkuluğu gibi elemanlar standartlaşmış (seri üretim ürünü) hazır eleman olarak kullanılmışlardır. (**Resim 22-24**)

Gerek kum, kireç, tuğla, taş ve harç taşınması gibi süreçler, gerekse harç karma ve beton dökme gibi işler, emek-yoğun biçimde yapılır. Örneğin tuğlanın elden ele aktarılmasıyla gerçekleştirilen taşıma biçimi "ala-vire inşaat" adını alır. Şantiyede ya da inşaata yakın noktada kireç söndürme, harç karma, demir donatı hazırlama, ahşap planya ve işleme gibi ön hazırlıklar, tıpkı bugün tekil yapı imalatında olduğu gibi, emek-yoğun halledilir. Bu durum bitmiş yapıda standart dışı

Resim 21. Tam yeri bilinmemekle birlikte, büyük olasılıkla Hacettepe-Cebeci eteklerinde, Rella und Neffe Şantiye Yönetim Merkezi (Ortadaki yapının tabelasında, Osmanlıca "Revilla İnşaat Türk Anonim Şirketi" okunuyor. Yaklaşık 1926 yılı (KÖA 13).

Resim 22. En sol uzakta Tip_Zafer, ortada Tip_Ulusal, en sağda Tip_Merkez; tarih büyük olasılıkla 1925. Özellikle İsmet Paşa Caddesi üzerinde öbeklenen bu tek katlı dizinin, inşaat tektoniğinin verdiği standartlaşmayla, taş yığma - emek yoğun örgü olarak inşa edildiği görülmekte. Söveler, küpeşteler, pencere üstü hatıllar (lento) betonarme. (AYA 313)

Resim 23. Yeni Şehir dokusu ortaya çıkıyor; karşıda Tuna ve Selanik Caddeleri beliriyor; önde İzmir Caddesi üzerindeki inşaatlar; arada Atatürk Bulvarı; 1926 yılı. (Cengizkan ve Cengizkan, der., 2019, 196, KÖA Yeni Şehir 31)

Resim 24. Yeni Şehir dokusu ortaya çıkıyor; İsmet Paşa Caddesi olacak bölgede konutlar yükseliyor. Uzakta, Yeni Şehir'in "ilk konutu", tam merkezde bir "Tip 2. Merkez", tümüyle yapı tektoniğini yansıtarak tamamlanıyor. Erken 1926 yılı. (Cengizkan ve Cengizkan, der., 2019, 196, KÖA Yeni Şehir 16)

üretime, hatalara, düzensizliklere ve özensiz bitişlere yol açabilir. Ahşap iskelelerle betonarme dökümü, harçla taş ya da tuğla duvar örgüsüyle tamamlanmaktadır. Kentin yeni bölgesinin 2-3 katlı inşaatı, inşaat koşullarıyla sınırlanmış ve adeta onun sonucu gibidir.

Barınmada Yaşam Kalitesi

1923-1933 arasında başkent Ankara'daki inşaatın ne denli çağdaşlaştırılmış olduğu tartışılabilir. Bir defa evlerde konfor açısından soba, kuzine ya da ocak ile ısıtma egemendir; bu durum da bağımlı konforu işaret eder. Yer yer mangalın, yani bağımsız dolaşan ısıtıcının kullanıldığını söylemek yanlış olmaz. Evin tümünün değil, içinde bulunulan hacmin ısıtılmasıyla, ekonomik açıdan sakınım (tasarruf) sağlanmaktadır. Ancak bunun yaz-kış ve gece-gündüz arasında sıcaklık farklarının oldukça yüksek olduğu Ankara'da sağlık sorunlarına yol açtığı da bilinmektedir.

1928 yılında, kendi yaşadığı evin bitişlerine ilişkin bir gözlemi Egli'nin dilinden aktarmak da inşaat kalitesi ve yaşama yansıyan sorunları ortaya koyacaktır: (Egli, 2013, 26)

> "Başlangıçta Yeni Şehir'de, İsmet Paşa Caddesi'nde oturuyordum. Mutfağı da olan bir oda kiralamıştım.// O günlerde şehrin bu kısmında yaklaşık bir düzine kadar yeni yapılmış ev vardı. Bunların çoğunu da Viyanalı Rella ve Neffe firması inşa etmişti. Evlerin temelleri hatalı yapılmıştı, binalarda bodrum katı yoktu, sadece tabanın altında alçak bir boşluk bulunuyordu ve bunun üzerine de tahta bir yer kaplaması döşenmişti. Tavanda da, ek yerleri kapatılmamış, yine ahşap bir kaplama vardı. Kışın aşağıdan yukarıya doğru soğuk hava giriyor, güçlükle ısıtılmış sıcak hava da tavandan dışarıya çıkıyordu."

Evlere su tesisatı henüz girmektedir; evin mutfak, tuvalet ve banyo gibi birimlerindeki kullanımı da yeni olgudur. Yeni Şehir'de Mongeri tarafından tasarlanan Ziraat Bankasının Evli ve Bekar Çalışanlar için Lojmanları bodrum katında binanın parçası olan betonarme su depoları, bireysel çözüm için ilginç örnek oluşturur. Büyük olasılıkla Bent Deresi, Kazıkiçi Bostanları, Fidanlık civarından artezyen pompa ile sağlanan yer altı ve kuyu suyu, günün belli zamanlarında Yeni Şehir tesisatı ve depolara basılmaktadır. Deliler Tepesine (şimdiki Kocatepe) yerleştirilen büyük dağıtım deposu, zamanında coşkuyla karşılanır; çünkü tıpkı daha

sonraki yıllarda açılacak Kavaklıdere Su Deposu gibi, kendisinden alt kotlardaki parselleri besleyecek, oradaki yapılaşmayı olanaklı kılacak altyapı öncülüdür. Benzeri öncü "modern" ve "ilerici" eleman ise elektrik trafosudur. Yeni Şehir'in ana meydanlarında trafolar, birer "modernleşme anıtı" olarak algılanırlar (**31**). Yeni Şehir bölgesindeki evlerde, Ankara Elektrik ve Havagazı Fabrikası ürünü olarak elektrik ve havagazı, 1928 yılında başlayarak kullanılmaya başlanmıştır; ama kanalizasyon, genelde foseptik çukurlarıyla idare edilmektedir; büyüklüğü ne olursa olsun yapıların foseptiği, belli aralıklarla boşaltılmak zorundadır.

Yeni Konutun Temsiliyeti: Kültürel Farklılıklar

Görüldüğü gibi ortaya çıkan Yeni Konut'un batı dünyasındaki eşzamanlı benzerlerinden ayrılması, barınma kültürüne tasarlanmış olarak getirilen yeniliğinde değildi; her türlü yenilik, geçen zaman ve ufkun derinliğinde yakalanmaya çalışılan modernliğin gerçekleştirilme biçiminde bulunmaktaydı. Geç kalmış bir yenilik, modernleşmenin terkisinde zorla gelen bir yenilik söz konusuydu. Sorun, etkinliğin kendisinin yeni yani ilksel oluşundaydı. Bunu hissedenlerin başında, herhalde Taşmektep ve Gazi Terbiye'de ders veren, bu durumu eskinin ve yeninin ağırlıklarıyla derinlemesine hisseden Ahmet Hamdi geliyor (Tanpınar, 1960, 6):

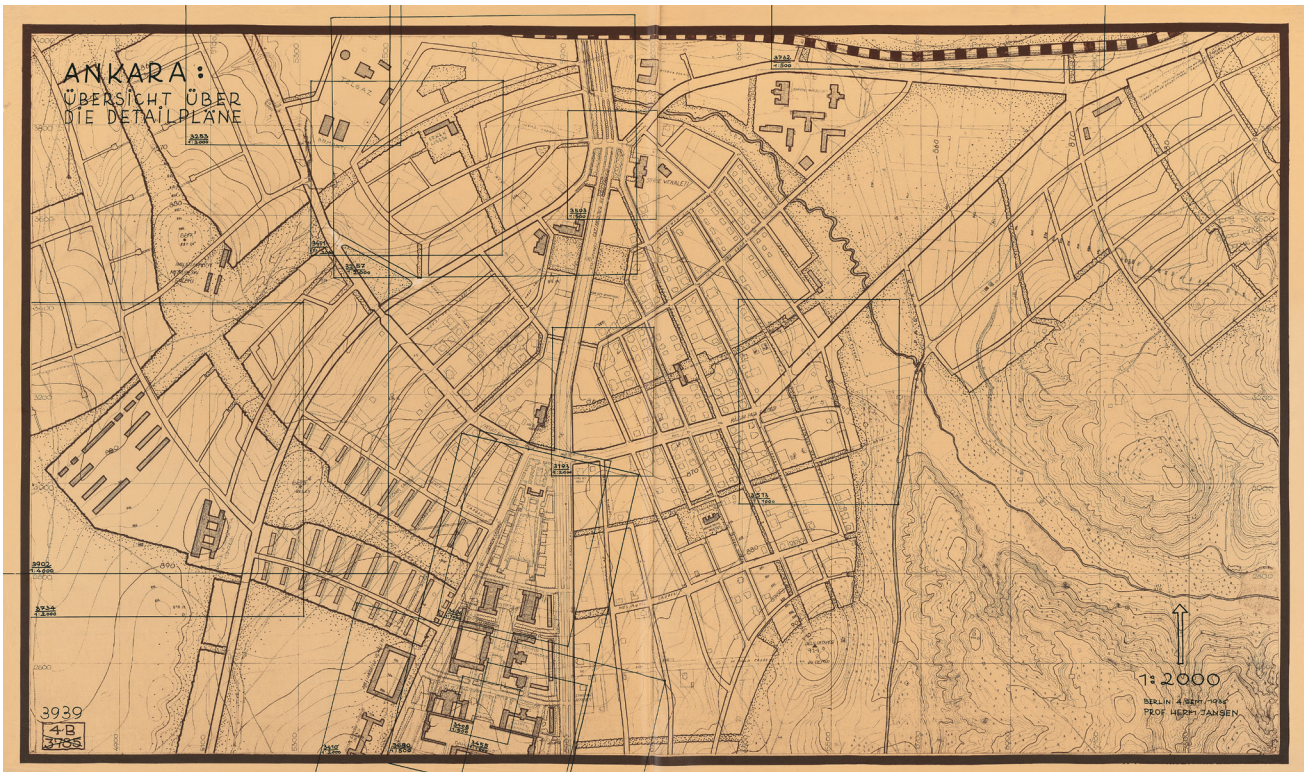
> "Zaten o seneler Ankara memurlarının çoğu Riviera, İsviçre, İsveç, Baviera ve Abdülhamid devri İstanbul'u ev ve köşklerini görmek mümkündü. Yeni yapılmış sefaret binaları da bu çeşidi artırıyordu.// Biz birkaç arkadaş Belçika Sefareti'nin sakin ve gösterişsiz, klasik yapısını seviyorduk. Bu tecrübeler arasında Türk mimarîsi de kendine bir üslûp yaratmaya çalışıyordu. Türk Ocağı binası, Etnografya Müzesi olan bina, Gazi Terbiye Enstitüsü, İstanbul'da Yeni Postahane ve Dördüncü Vakıf Hanı ile başlayan tecrübenin devamı idiler. Sonradan Güzel Sanatlar Akademisi'nde arkadaşlık ettiğimiz Prof. Egli, Cebeci'deki Musiki Muallim Mektebi ile çoğu dıştan taklit eden bu tecrübeleri ilk defa modern malzemenin imkânlarıyla birleştirmeye muvaffak olmuştu."

Tanpınar'ın sözünü ettiği "çoğu dıştan taklit eden bu tecrübeleri… modern malzemenin imkanlarıyla birleştirmek" konusu, daha da derin tartışmadır. Ankara'da Oerley, Holzmeister ve Egli'nin geliştirdiği konu, aslında "yerel malzeme ile modern planimetrinin birleştirilmesi" olgusu gibi görünmektedir. Mimar zanaatkâr Oerley'in başlattığı uygulama, yerel andezit olarak Ankara taşının, yığma olsun olmasın yeni yapıların temel ve subasman düzeyinde, taş işçiliği de gösterilerek kullanılmasıydı. Oerley'ın gerek Hıfzısıhha yerleşkesi yapılarında, gerekse Kızılay Genel Merkezinde kullandığı bu buluşçu yenilik, daha sonra Holzmeister tarafından da kullanılmış, ancak doğasını anlayıp geliştiren Egli olmuştur. Türk mimarlar düzeyinde ise bu duyarlık, Tanpınar kadar içselleştirilerek hissedilmemektedir. Taşmektepte hocalık yapan ve Ankara Kalesini karış karış gezen Tanpınar, "yerellik" ve "Ankara taşı" kavramlarını kullanmamış olsa bile, "taklit olmayan" ve "modern imkanı kullanan" durumları algılamıştır (**32**).

Yeni Şehir, "planlanmış bir kentin planlı bir mahallesi" olarak ortaya çıkmıştır (**Resim 25**). Plan uygulama sırasında iki boyutlu bir mülkiyet desenine indirgenmiş olsa bile, kentin bütüncül geleceği için ilk kez plan yoluyla tasavvurda bulunulduğu, plan yapmanın ve onu pratiğe dökmenin modernite arayışı ve somut ifadesi olduğu teslim edilmelidir. Yeni Şehir'de ortaya çıkan yeni konut birimleri de, tıpkı bölgenin planlanması gibi, mimar-mühendis benzeri modern uzmanların eliyle tasarlanmış, yüklenici-müteahhit firma ve kişilerle üretilmiştir. Mekânın üretilmesinin plana bağlı geliştirilmesini izleyerek sağlayan yerel yönetim birimleri ve

31. Bu dönemde kentsel altyapı çalışmalarının Avrupa kentleri örnek alınarak yapılması doğaldır. Kurtuluş Savaşı sonrasında şehrin kör topal yürütülmekte olan aydınlatması, 1928 yılı kadar geç bir tarihe kadar gazlı elektrik trafo ve santrallerinden yürütüldü. Bunların ilkinin Ak Kale dibinde Bent Deresinde konumlandığını biliyoruz. Ankara Elektrik ve Havagazı Fabrikasının Sıhhiye civarında demiryoluna yakın konumlandırılması, taş kömürünün demiryolu taşımacılığı ile ulaştırılması ve çevrede orta çapta bir basit sanayi bölgesinin oluşmasıyla ilgilidir. Ankara'nın ilk un fabrikaları (en az iki adetti), Ankara Silosu, Ankara İnhisarlar İdaresi (Tekel) Bürosu ve Depoları, demiryolu taşımacılığı antrepo ve depoları ile tamir atölyeleri, tümü de buradaydı. 1928 yılında Elektrik üretiminin başlaması, sokak aydınlatması ve evlere elektrik hatlarının döşenmesini olanaklı kıldığı gibi, yaygın dağıtım şebekesinin işletilmesini zorunlu kıldı. Eski ve yeni şehirde büro ve trafoların inşa edilmesi gerekli oldu. Kuşkusuz trafolar, şehrin birer artkitektonik ögesine dönüşürken, mahcup, utangaç ve saklanmak ister gibi ele alındılar. Ankara'da çağdaş yaşam kalitesini imleyen bir yeni isim de, elektrik-havagazı pazarlaması yapan firmaydı: Telgas.

32. *Beş Şehir*'de Ankara başlığı paragrafına şöyle başlar Tanpınar:"Belki milli mücadele yıllarının bıraktığı bir tesirdir, belki doğrudan doğruya çelik zırhlarını giymiş ortada dolaşan bir eski zaman silahşoruna benziyen kalesinin bir telkinidir; Ankara bana daima dâsitani ve muharip göründü." (Tanpınar, 1960, 1).



Resim 25. Yeni Şehir dokusunun 1925 Lörcher Planında beliren biçimi, 22 Eylül 1936 tarihinde Jansen tarafından revize edilen hali, 1/2000 plan. Lörcher Planı parselleri ve 1925-36 arasında gerçekleşen konut dokusu silik olarak altlıktır. Kamu yapıları koyu olarak benimsenmiştir. (TUB 22738)

onların izledikleri mevzuat çerçevesinde, yasal taraflarca tapuya bağlı olarak sahiplenilen, alenileşen ve yasallaşan, meşruiyetini bütün bu süreçlerin açık, herkesçe ulaşılabilir ve tekrarlanabilir olmasından alan bir çevre üretimi pratiği söz konusudur. Osmanlı başkentinde 19. Yüzyıl sonundan başlayarak denenen sıra evler benzeri konutların aksine, Yeni Şehir'in yeni konutları, bireysel küçük köşk, konak, villa benzeri bahçeli konutlardır. Yirminci yüzyıl başı Ankara'sındaki gelişme, Batıda endüstri kenti sorunlarını çözmek için gelişen bahçeşehir yaklaşımıyla da ilintilidir. Ancak burada, kentsel sorunlar için Batı merkezlerince çözüm olarak tasarlanan normların, hali hazır uzmanlarca anlaşılabildiği kadarının pratiğe döküldüğü yenilikçi durumlar söz konusudur.

Yeni Şehir'in Yeni Konut'u artık geniş aile değil, çekirdek aile konutudur; ev içinde tek bir ailenin yaşantısı hayallenmektedir. Paralel biçimde, arsa ve yapı üzerindeki mülkiyet de yine 4 Ekim 1926'da yasalaşan Medeni Kanun hükümlerine göre biçimlenmektedir (**33**). Yirminci yüzyıl başındaki mimarlık tartışmaları içinde ağırlık kazanan işlevselcilik yaklaşımı çerçevesinde, konutun alt bölüntülerinin ve konutun kendisinin, kullanıcısına, onun gereksinim ve kullanımına; dolayısıyla işlevlere özgülenme (tahsis) özelliği ortaya çıkarılır. Cinsiyetçi haremlik-selamlık ayrımı yerine, tıpkı kentin bölgelerinin eğitim-barınma-ticaret-üretim gibi farklı işlevlere özgülenmesi (*zoning*) gibi, konut içi alt birim ve mekânların farklı işlevlere ayrılması, uzmanlaşması geçerlik kazanır. Bu çerçevede, yine modernleşme bağlamında konut içine çekilen uzmanlaşmış banyo ve tuvalet odaları, tıpkı mutfak gibi su ve pissu giriş-çıkışlarını alır; konutun yararlanacağı elektrik, havagazı ve hatta telefon, altyapının parçası olur. Ama asıl, konut içi yaşama-yemek yeme-çalışma-uyuma hacimlerinin odalaşması, konut birimini hem konut içi ağlar açısından yeniden düzenleyecek, hem de bu mekân ya da odaların yeni kent çevresi (sokak-meydan-cadde) ile bağlantılarını yeniden ele alacaktır.

33. Osmanlı Devleti'nde özel mülkiyetin on dokuzuncu yüzyılın ilk yarısında ortaya çıktığı ve yaygın olmadığı, yalnızca bağışlar, tahsisler, zilyetlik/kullanım hakları yoluyla oluşturulan mülkiyetin işlerlikte olduğu bilinir. Bu konuda az sayıdaki çalışma için: Tekeli (1988); Tekeli (1992); Sönmez (1998); Günay (1999).

Yeni Şehir'de ortaya çıkan Yeni Konut, tuğla ya da taş yığma kargir olarak, betonarme inşaat tekniklerine de hakim ekipler tarafından inşa edilir. Yapı bedeni stereotomik (yığma taş ya da tuğla) olarak ele alınırken, iç bölüntüler ya da yan balkon tektonik (kolon kiriş) çözülebilir. Balkon/teras parapeti, merdiven basamağı ve korkuluğu, prefabrik bir tektonik öge olarak görülürken; çatı yapımı bir karma çatı malzemeleri bitişi şeklinde olabilir. Betonarmeye geçiş döneminde tüm Avrupa kentlerinde denenen bu acemi bileşimler, Ankara örneğinde iyice karma-melez yapılara yol açmıştır: Dışı tümüyle yığma taş (stereotomik) inşa edilmiş yapının, zemin ve tavan döşemesi ile çatısının ahşap yapılması, evi iklimsel ortama tümüyle sakınımsız kılar.

Ama tüm bu özellikleriyle ve farklılaşmalarıyla "Yeni Konut", modern örgütlenme ile ortaya çıkan, toplumsal örgütlenmesi ve ortakların seçimi planlı; ortak yatırım bütçesi ve ortaklık paylarının bir model içinde düşünüldüğü, modernleşmeden payını alan bir kent konutudur (**Resim 26-27**). Artık bu özellikleriyle de metalaşmaya açıktır; çünkü ilk tasarımı ve inşaatı öyle olmasa bile, tip kavramı içinden anonim kullanıcıya seslenen modern bir konut olduğunu kısa zamanda kanıtlayacaktır. Plan çeşitliliği,

Resim 26. Yeni Şehir dokusu yaşanır durumda; Sakarya Caddesi beliriyor; Atatürk Bulvarı ve Güvenpark; 1940'lı yıllara ait oblik uçuş fotoğrafı. (UKA)

Resim 27. Yeni Şehir Kocatepe (Deliler Tepesi) Su Deposu Parkından İsmet Paşa Caddesi kuzeye doğru uzanıyor. (UKA)

tasarım farkı, yeni insanı arama vurgusuyla bu konutların envanterinin bile önemli olduğunu ve buradan öğrenilecek derslerin fazla olduğunu vurgulamak gerekir (**Tablo 1**). Bütün bu özellikleriyle Yeni Şehir'in, "erken dönem Cumhuriyet mimarlığı"nın önemli bir uygulama ve örnek alanı olduğu, bugüne kadar bu bilincin yerleşmemesi nedeniyle yitirdiklerine karşın sokak dokusuyla başlayarak hala çok önemli nitelikleri barındırdığı açıktır.

SONUÇ YERİNE

Makalenin ortaya koyduğu en önemli sonuçlardan birisi, Cumhuriyetimizin ilk on yılında, onca yoksunluk ve bütçesizlik ortamında bile yeni ve çağdaş bir kent parçası oluşturmada kararlı bir arayışın var olduğudur. Bu konuda elden gelen yapılmıştır. Planlama, bütçe ve belediye yatırımları, kamu kurumlarının irade ve yönlendirmesi ile kooperatif örgütlenmesi ve sonuçta mekânın ortaya çıkışı, ancak bu şekilde gerçekleşebilmiştir.

Neredeyse bu on yıllık süre içinde, Türk mimar ve plancıları yanı sıra, küçük yatırımcıların da sayıca arttığı; konut kullanım kurallarının artık çekirdek aileye özgülendiği; dolayısıyla yeni tasarımın orta ve orta-üst sınıf aileler için hedeflenerek, bahçeli ev ve bahçe-ev dengesini daha iyi kuran örneklere yöneldiği anlaşılmaktadır. Bahçeşehir yaklaşımının içten örneklerini gerçekleştirmenin zamanı, 1940'a doğru ortaya çıkacaktır.

Görüldüğü üzere, on yıl sonra daha bilinçli ve iyi örgütlenmiş bir belediye ön hazırlığı yanı sıra devlet kurumlarınca daha iyi seçilmiş uzmanlar, plancılar ve kooperatifçiler ile gerçekleştirilen ilk konut kooperatifleri Bahçelievler ve Güvenevler yapılaşmaları, yapı tiplerinin çeşitliliği, kamusal ve kolektif kullanımların yatırım planı ve pratiğine dahil edilmeleri açısından dünyaca ünlü örnekler oluştururlar. 1923-1933 arası ile 1935 sonrasını karşılaştırdığımızda, kooparatifçiliğin geliştiği, Jansen gibi şehir plancı mimarların kamu isteklerine göre tasarım yapabildiği, ve nihayet, inşaat sektörünün gelişmiş ve yerelleşmiş, malzeme temini sorununun kurallara bağlanarak aşılmış olduğu görülebilir. Yeni bir şehir kurma iddiasına sahip olan Ankara Yeni Şehir mahallesinin ise kentin "yeni merkezi" olarak çok hızla rant baskısına yenik düştüğünü söylemek doğru olacaktır. Bunda, erken dönem Cumhuriyet mimarlığı tarih yazımının ancak 1960'lı yılların ortalarından başlayarak oldukça geç gerçekleşmesi ve gerçekleştiğinde de önyargılı seçimler yapması etken olmuştur.

TEŞEKKÜR
Çalışmanın araştırmasında, plan, proje, metin ve görsel belge için, şu arşivler kullanılmıştır: TC Cumhurbaşkanlığı Cumhuriyet Arşivi; TC Harita Genel Müdürlüğü Arşivi; VEKAM Kütüphane ve Arşivleri; Koray Özalp Arşivi (KÖA); Ali Cengizkan Arşivi (ACA); Yener Baş Arşivi (YBA); Atila Cangır Arşivi (ATA); Uğur Kavas Arşivi (UKA); Gökçe Günel Arşivi (GGA); Ankara Enstitüsü Vakfı Kitaplığı (AEV); Mithat Aydın Arşivi (MAA); Ahmet Yüksel Arşivi (AYA); TU Berlin Architekturmuseum (TUB). Çalışmanın sayısal çıktılarına dayandığı "Bir Şehir Kurmak: Ankara 1923-1933" Sergi ve Kitabı da (BSKA) ayrıca genel kaynaklar yanı sıra, yukarıdaki arşiv ve belgeliklerden yararlanmıştır.

BIBLIOGRAPHY

AKCAN, E. (2009) *Çeviride Modern olan / Şehir ve Konutta Türk-Alman İlişkileri*, Yapı Kredi Yayınları, İstanbul.

TİP 1. MEMURİN (21 ADET)

TİP 1. MEMURİN İKİZLER (20 ADET)

TİP 2. MERKEZ (4 ADET)

TİP 3. MEBUSAN (1 ADET)

TİP 5. ŞAHNİŞİN (17 ADET)

TİP 6. KANATLI (15 ADET)

TİP 7. KULELİ (12 ADET)

TİP 15. VERANDALI (4 ADET)

TİP ZAFER (12 ADET)

TİP MAARİF (3 ADET)

TİP GÜVEN (13 ADET)

TİP VAKIF (7 ADET)

TİP ULUSAL (6 ADET)

TİP MENEKŞE (4 ADET)

TİP MADO (4 ADET)

TİP UYBADİN (4 ADET)

TİP YÖNETİCİ (2 ADET)

TİP KONAK (5 ADET)

TİP KÖŞK (8 ADET)

TİP BEKTİMUR (1 ADET)

TİP İSMETPAŞA (4 ADET)

Tablo 1. *Bir Şehir Kurmak: Ankara 1923-1933* alan araştırması çalışmasında bulgulanan tiplerin bir bölümü.

AKIN, G. (2019) "Yeni-Osmanlı Mimarlığı", Başkent Ankara'nın Kuruluşundaki Kısa Deneyimi ve Romantizm Çağrışımları, *Bir Şehir Kurmak: Ankara 1923-1933*, der. A. Cengizkan ve N.M. Cengizkan, KÜ VEKAM Yayınları, Ankara; 51-78.

ALSAÇ, Ü. (1976) *Türkiye'deki Mimarlık Düşüncesinin Cumhuriyet Dönemindeki Evrimi*, KTÜ Basım İşliği, Trabzon.

ALSAÇ, Ü. (2003) *Bir Türk Mimarının Anıları, Yaşamı, Etkinlikleri / Orhan Alsaç*, Yapı Yayın, İstanbul.

ANON. (1983) *Sedad Hakkı Eldem: 50 Yıllık Meslek Jübilesi*. Mimar Sinan Üniversitesi, 100. Yıldönümü Armağanı. MSÜ Yayını, İstanbul.

ARSEVEN, C. E. (1906; 2017) *Istılâhât-ı Mi'mariyye (Osmanlı Dönemi Mimarlık Sözlüğü)*, çev. Ş. Alpay, Kaknüs Şehir ve Mimarlık Yayını, İstanbul.

ASLANOĞLU, İ. (1980; 2001) *Erken Cumhuriyet Dönemi Mimarlığı, 1923-1938*, ODTÜ Mimarlık Fakültesi Yayını, Ankara.

ATAY, F. R. (1933) "Ankara", *Hakimiyet-i Milliye*, 29 Birinci Teşrin 1933; 90.

BAŞ, Y. (2019) Yeni Şehir'in İlk Sahipleri ve İlk Sakinleri, *Bir Şehir Kurmak: Ankara 1923-1933*, der. A. Cengizkan ve N.M. Cengizkan, KÜ VEKAM Yayınları, Ankara; 79-124.

BATUR, A., haz. (2003) *M. Vedad Tek: Kimliğinin İzinde bir Mimar*, Yapı Kredi Yayınları, İstanbul.

BİRKAN, G., PEHLİVANLI, S. (1977) Mimar Arif Hikmet Koyunoğlu ile Bir Söyleşi, *Mimarlık*, s: 1977/1; 8-16.

BOZDOĞAN, S. (2002) *Modernizm ve Ulusun İnşası: Erken Cumhuriyet Türkiyesi'nde Mimari Kültür*, çev. T. Birkan, Metis Yayınları, İstanbul.

CENGİZKAN, A. (2000) *Discursive Formations in Turkish Residential Architecture: Ankara, 1948-1962*, Yayınlanmaımış Doktora Tezi, Mimarlık, ODTÜ Mimarlık Fakültesi, Ankara.

CENGİZKAN, A. (2002) *Modernin Saati: 20. Yüzyılda Modernleşme ve Demokratikleşme Pratiğinde Mimarlar, Kamusal Mekân ve Konut Mimarlığı*, Mimarlar Derneği 1927 ve Arkadaş Yayınları, Ankara.

CENGİZKAN, A. (2004) *Ankara'nın İlk Planı: 1924-25 Lörcher Planı / Kentsel Mekân Özellikleri, 1932 Jansen Planı'na ve Bugüne Katkıları, Etki ve Kalıntıları*, Ankara Enstitüsü Vakfı ve Arkadaş Yayıncılık, Ankara.

CENGİZKAN, A., der. (2009) *Mimar Kemalettin ve Çağı*, TMMOB Mimarlar Odası ve TC Vakıflar Genel Müdürlüğü, Ankara.

CENGİZKAN, A., İNAN, A.D. ve CENGİZKAN, N. M., der. (2012) *Modernist Açılımda Bir Öncü: Seyfi Arkan / Mimarlık-Değişim-Özerklik*, TMMOB Mimarlar Odası, Ankara

CENGİZKAN, A., İNAN, A.D. ve CENGİZKAN, N. M., der. (2012) Zeki Sayar Anma Programı Dizisi / *Zeki Sayar'a Armağan: Türkiye Mimarlığı ve Eleştiri*, TMMOB Mimarlar Odası, Ankara.

CENGİZKAN, A., İNAN, A.D. ve CENGİZKAN, N. M., der. (2015) Zeki Sayar Anma Programı Dizisi / *Zeki Sayar ve "Arkitekt" / Örgütlemek-Tasarlamak-Belgelemek Sempozyumu*, TMMOB Mimarlar Odası, Ankara.

CENGİZKAN, A., BANCI, S. ve CENGİZKAN, N.M., der. (2017) *Ernst A. Egli: Türkiye'ye Katkılar / Yerel Yorumlar, Eğitimde Program, Pratiğin Muhasebesi*, TMMOB Mimarlar Odası, Ankara.

CENGİZKAN, A. ve CENGİZKAN, N.M., der. (2019) *Bir Şehir Kurmak: Ankara 1923-1933*, KÜ VEKAM Yayınları, 3. Baskı, Ankara.

EGLI, E.A. (2013) *Atatürk'ün Mimarının Anıları: Genç Türkiye İnşa Edilirken /1927-1940/1953-1955*. çev. G. Gökta Uçer, Türkiye İş Bankası Kültür Yayınları, İstanbul.

ELDEM, E., TANJU, B., TANYELİ, U., der. (2008) *Sedad Hakkı Eldem I: Gençlik Yılları*, Osmanlı Bankası Arşiv ve Araştırma Merkezi, İstanbul.

(ELDEM), Sedad Hakkı. (1931) Küçük Ev Projeleri, *Mimar*. n: 1931-5; 156-159.

GÜNAY, B. (1999) *Property Relations and Urban Space*, METU Faculty of Architecture Press, Ankara.

HOLOD, R., EVİN, A., ÖZKAN, S., eds. (1984; 2005) *Modern Turkish Architecture*, University of Pennsylvania Press, Pennsylvania.

(HOLTAY), Mimar Muallim İlyaszade Arif Hikmet. (1932). Dr Celal Bey Evi. *Mimar*. n: 1932-10; 286-287.

(KOYUNOĞLU), Mimar Muallim Arif Hikmet. (1931). Mühendis Mustafa Fahri Bey Evi. *Mimar*. n: 1931-5; 154-155.

KURUYAZICI, H. haz. (2008) *Osmanlı'dan Cumhuriyet'e Bir Mimar: Arif Hikmet Koyunoğlu / Anılar, Yazılar, Mektuplar, Belgeler*, Yapı Kredi Yayınları, İstanbul.

MORTAŞ, A. (1931) Tek Katlı Evler. *Mimar*. n: 1931-9; 310-311.

NICOLAI, B. (1998) *Moderne und Exil: Deutschsprachige Architekten in der Türkei 1925-1955*, Verlag für Bauwesen, Berlin.

NICOLAI, B. (2011) *Modern ve Sürgün: Almanca Konuşulan Ülkelerin Mimarları Türkiye'de 1925-1955*, çev. Y. Pöğün Zander, TMMOB Mimarlar Odası Yayını, Ankara.

NİZAMETTİN HÜSNÜ (1933) Bir Ev Projesi. *Mimar*. n: 1933-06 (30); 176.

SADİ (1932) İsmail Hakkı Bey Evi, *Mimar*, 6-18, 171-173.

SAMİ, M. O. (1931) Proje ve Mimar, *Mimar*, 1, 21-22.

SARIOĞLU, M. (2001) *"Ankara", Bir Modernleşme Öyküsü (1919-1945)*, TC Kültür Bakanlığı Yayını, Ankara.

SÖNMEZ, M. T. (1998) *Osmanlı'dan Günümüze Toprak Mülkiyeti: Açıklamalı Sözlük,* Yayımevi, Ankara.

SÖZEN, M. (1984) *Cumhuriyet Dönemi Türk Mimarlığı, 1923-1983*, Türkiye İş Bankası Kültür Yayınları, Ankara.

ŞENYAPILI, T. (1985) *Ankara Kentinde Gecekondu Gelişimi*, kent-Koop Yayını, Ankara. İkinci baskı: ŞENYAPILI, T. (2004) *Barakadan Gecekonduya*, İletişim Yayınları, İstanbul.

TANJU, B. TANYELİ, U., der. (2009) *Sedad Hakkı Eldem II: Retrospektif*, Osmanlı Bankası Arşiv ve Araştırma Merkezi, İstanbul.

TANKUT, G. (1993) *Bir Başkentin İmarı, Ankara: (1929-1939)*, Anahtar Kitaplar, Ankara.

TANPINAR, A. H. (1960) *Beş Şehir*, İkinci Baskı, İş Bankası Yayınları, Ankara.

TC Ankara Şehremaneti (1929) *Ankara Şehrinin Profesör M. Jausseley, Jansen ve Brix taraflarından yapılan plan ve projelerine dair izahnameler*, Hakimiyet-i Milliye Matbaası, Ankara.

TEKELİ, İ. (1988) Mülkiyet Kurumu, Kamu Yararı Kavramı ve İmar Planları Üzerine. *Planlama*, Aralık 1988, s: 2; 6-13.

TEKELİ, İ. (1992) Kentsel Topraklarda Mülkiyet Kurumunun Varlığının Toplumsal Sonuçları ve Yeniden Düzenlenme Olanakları Üzerine. *Planlama*, Ocak-Aralık 1992, s: 1-4; 48-57.

TEKELİ, İ., İLKİN, S. (1997) *Mimar Kemalettin'in Yazdıkları*, Şevki Vanlı Vakfı Yayınları, Ankara.

TMMOB Mimarlar Odası İstanbul Büyükkent Şubesi (2010) *100. Yıl'da İki Mimar: Sedad Hakkı Eldem-Mehmet Emin Onat*, TMMOB İstanbul Büyükkent Şubesi Yayını, İstanbul.

TUNCER, M. (2006) Potential for Popular Dissemination: An Analysis of the 'Ideal Home' Images in the Weekly *Yedigün Magazine*., Yayımlanmamış Yüksek Lisans Tezi, ODTÜ Mimarlık Fakültesi.

TÜRKOĞLU, Ö. (2019) "Ankara'nın Yürüyüşü: Hakimiyet-i Milliye'de Yeni Şehrin İzini Sürmek", *Bir Şehir Kurmak: Ankara 1923-1933*, der. A. Cengizkan ve N.M. Cengizkan, KÜ VEKAM Yayınları, Ankara; 37-49.

ÜNSAL, B. İ. (1933) Küçük Ev Projeleri. *Mimar*. n: 1933-02 (26); 53-54.

YAVUZ, Y. (1981) *Mimar Kemalettin ve Birinci Ulusal Mimarlık Dönemi*, ODTÜ Mimarlık Fakültesi Basım işliği, Ankara.

YAVUZ, Y. (2009) *İmparatorluktan Cumhuriyet'e Mimar Kemalettin 1870-1927*, TMMOB Mimarlar Odası ve TC Başbakanlık Vakıflar Genel Müdürlüğü, Ankara.

Received: 10.09.2021; **Final Text:** 22.02.2022

Keywords: Ankara; early Republican Turkish architecture; Yeni Şehir; styles; house plan types; construction milieu.

THE CONSTRUCTION OF ANKARA NEW CITY: TO COMPREHEND THE EARLY REPUBLICAN HOUSE

The Construction of a New Capital: Ankara 1923-1933 research, which ended up in an exhibition and book in 2019, brought to the fore new horizons to comprehend early Republican Turkish architecture, especially in the context of Ankara and housing culture. The research focused on deciphering the housing architecture in the early capital, using scarce architectural documentation. Successful in modelling the Yeni Şehir / New City area of 350 buildings, the documentation of vast number of genuine photographs and postcards of the area reaching more than 1300 in number, along with aerial photographs dated 1936, supported the study. The outcome made it possible to reflect on the new city and neighbourhood formation in the early Republican Capital, with respect

to housing design, construction and taskforces in the practice of building construction. This article connects what was already known to what is recently revealed, acknowledging the designer architects, the construction constraints, the available technology with the prevailing construction materials and the capacities of manpower in the era. The zoning, planning and implementation of a new housing neighbourhood, inevitably reflects the historic, administrative and financial capacities and limitations of those who organize the development; along with demarking their intellectual capacities and revealing the expectations and cultural diversities of the future owners and tenants.

ANKARA YENİ ŞEHİR'İN KURULUŞU: ERKEN CUMHURİYET KONUTU'NU ANLAMAK

Bir Şehir Kurmak: Ankara 1923-1933 sergi ve kitap çalışması, erken Cumhuriyet mimarlığı üzerine, özellikle de Ankara ve dönemin mimarisi konusunda çok farklı yönlerden açılımlar getirdi. Dönemin yeni Ankara'sı olan Yeni Şehir'in fotoğraflarla temellendirilerek modellenmesi, bu sırada 1300'e yakın çok özgün sayıda fotoğraf, hava fotoğrafı ve sınırlı da olsa döneme ilişkin mimari proje çizimlerinden yararlanılması, özelde Ankara'daki 350 yapılık Yeni Şehir bölgesine, genelde bütün Türkiye'de söz konusu 1923-1933 on yılına bakışta yenilikler getirdi. Türkiye'de kent konutu, yeni kent bölgeleri ve mahallelerinin eklenmesi konusunda, mimari tasarım, yapı üretimi, bu üretimin bileşenleri üzerine yeniden düşünmek zorunluk oldu. Makale, söz konusu çalışmanın açtığı yeni yolda bilinenlerin yeni bilgilerle birleştirilmesini, dönemin özellikle konut sektörünü yönlendiren tasarımcı mimarların etkinlikleri yanı sıra, inşaat altyapısı, teknolojisi, inşaat malzemesi ve inşaat işgücü alanında bulgulanan verilerin gözden geçirilerek değerlendirilmesini amaçlıyor. Şehrin yeni bölgeler açılarak gelişmesi, bir yandan onu yönetenlerin tarihsel, yönetsel ve ekonomik açıdan sınırlarına ve kültürel birikimleriyle entelektüel kapasitelerine ilişkin bilgi verirken, diğer yandan toplumun beklenti ve kültür-gelenek alışkanlıklarını anlamamıza yardımcı oluyor.

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METU JFA 2022/1
(39:1) *57-76*

DOI: 10.4305/METU.JFA.2022.1.3

HUMAN-THING RELATIONS IN DESIGN: A FRAMEWORK BASED ON POSTPHENOMENOLOGY AND MATERIAL ENGAGEMENT THEORY (1)

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Received: 11.01.2021; **Final Text:** 11.03.2022

Keywords: Reciprocal mediation; situated practice; embodiment; making; design theory.

1. This publication has made use of fieldwork and insights from completed doctoral theses by Bilge Merve Aktaş and Özgün Dilek, from ongoing PhD studies by Betül Gürtekin, Fazıl Akın and Elif Büyükkeçeci, and completed Master's thesis by Ayşegül Özçelik.

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INTRODUCTION

A growing strand in design research has been interested in "new materialist" theoretical approaches (Coole and Frost, 2010) and relational ontologies to study design and use as situated, material interactions within a vitalistic world, borrowing from diverse theorists as Bruno Latour in science and technology studies, Jane Bennett in political theory, and Tim Ingold in anthropology (see recent work by Tönük, 2016; Taylor, 2017; Luscombe, 2018). Such projects correspond with accounts in design, crafts, and Human-Computer Interaction (HCI), where design scholars have utilized phenomenological concepts to deal with questions of perception, embodiment and cognition within research frameworks that prioritize situated, embodied meaning making in designers' and users' interactions with designed things (see for example Nimkulrat, 2009; Kozel, 2011; Dourish, 2001; Loke and Robertson, 2013). As such, we see two theoretical insights converge across design research: On one hand, the agential capacity of material things is widely acknowledged, as they are seen to "mediate" human relations with the world (Latour, 1999; Verbeek, 2005). On the other is an interest in the skilled and embodied character of our engagements with and amongst those things (Bennett, 2010; Ingold, 2011).

One lucid formulation of such a convergence was recently expressed by Don Ihde and Lambros Malafouris (2018) in a joint paper that brings the two scholars' work (postphenomenology and Material Engagement Theory, MET) into dialogue. The authors advocated a unique relational ontology that underlined the "technical mediation" of human experience and capabilities by things through "creative material engagements." We propose that Ihde and Malafouris' joint framework is a viable approach to design research that brings together the two theoretical tendencies we mention above. We particularly emphasize three key aspects: relationality, reciprocal mediation, and creativity in engagement. Drawing on the postphenomenological tradition of outlining specific forms of human-

technology relations (Ihde, 1990), we apply the framework to a series of design-related cases to investigate what the framework can indicate in these, regarding what we call human-thing relations in and around design. In this manner, we aim to assess and identify the specific ways in which it can contribute to design research.

In the following sections, we first present postphenomenology and MET and discuss these theories' relevance for design research; then summarize the main tenets of Ihde and Malafouris' framework. Afterwards we present and analyze three design research cases conducted by the authors of this paper. In the following discussion, we rethink the joint framework from the perspective of design research to specify the characteristics of human-thing relations that we encounter in design: relational, reciprocally mediated, creative and exploratory, situated, embodied, and skilled – with an emphasis on the former three as significant contributions from the joint framework. We finish with an assessment of the theoretical framework developed here for future research.

(POST)PHENOMENOLOGY, MATERIAL ENGAGEMENT, DESIGN RESEARCH

Phenomenology has been called upon across design research; however, its influence has been most evident in HCI as a key component of "third-wave HCI" (Bødker, 2015) with its interest in experience and understanding of interaction as meaningful, embodied and situated action (Harrison et al., 2007). Here, phenomenological arguments and concepts, especially Heideggerian "ready-to-hand" and Maurice Merleau-Ponty's "lived body," have been offered as counterpoints to information-based understandings of interaction. An example is Paul Dourish's (2001) pioneering work on the design of interactive technologies. Another is Dag Svanaes (2000; 2013), who developed an understanding of the body as the active site of experience in human-technology interactions, and later advocated that supporting embodied perception through design makes users able to interact with technology more directly. Such arguments were often presented with a nod to related concerns with embodiment and situated practice in Computer Supported Cooperative Work (CSCW) (Suchman, 1987; Robertson, 1997) and with references to theories of embodied and distributed cognition (Lakoff and Johnson, 1980; Hutchins, 1995). Others used these emergent HCI frameworks to design products and systems from the perspective of tangible and embodied user experience, as with "Moving and Making Strange" design methodology by Loke and Robertson (2013) and "Human Tail Project" by Svanaes and Solheim (2019).

Outside HCI, too, design researchers have adopted phenomenological perspectives to examine their participants' or their own experiences of the world. For studies that employ creative practice as a method of inquiry, as in research through design, phenomenological approaches have helped scholars consider body's involvement in knowledge making (Candy, 2006), and interweave theory with bodily, material practice (Kozel, 2011). Nithikul Nimkulrat (2012, 11), for instance, studied how materials, as experienced by makers, affect the process of making in textile design – considered as "thinking through the hand". Or, Julia Valle-Noronha (2019) adopted a phenomenological approach to investigate the interactions between individuals and their clothes, emphasizing bodily experience rather than visual and cultural dimensions of fashion design.

Postphenomenology builds upon the insights of phenomenology but abandons the latter's essentialist account of experience as well as its romantic stance against technology (Rosenberger and Verbeek, 2015). It is instead interested in accounting for how technologies "mediate" human experience of the world (Ihde, 1990), and how both subjects and objects emerge through that mediation (Verbeek, 2005). While a complete overview is beyond the scope of this paper, we can outline the key human-technology relations as described by postphenomenology: "Embodiment relations" arise when technologies become transparent in their use, as opposed to "hermeneutic relations," where use requires active reading and interpretation. The "transparency" of technology in use, and users' "field of awareness" also affect the relationship, as well as the "multistability" of technologies, i.e. their multiple meanings and uses. (Rosenberger and Verbeek, 2015)

Following Verbeek's early commentaries on design (Verbeek and Kockelkoren, 1998; Verbeek, 2005), postphenomenology has found relevance mainly in HCI. Here, some discussions closely resemble the uses of phenomenology in Third Wave HCI. These use postphenomenological concepts, typically Ihde's (1990) inventory of human-technology relations, to identify design considerations beyond utility (Ohlin and Olson, 2015; Fallman, 2011). Others have adopted research through design to employ and extend the postphenomenological approach. This included nonutilitarian or counter-intuitive objects that put things and their mediating role at the center of inquiry: a slowly rotating coffee table (Hauser et al., 2018), a shape-changing public bench, digital Post-Its (Jensen and Aagaard, 2018), and bowls that communicate with one another in morse code (Wakkary et al., 2017). In another example, Pierce and Paulos (2013) developed a postphenomenological terminology for the study of electric objects, then designed prototypes that propose novel, embodied interactions with electricity.

Overall, uses of postphenomenology in design literature have a typically experimental character and are often distanced from in-depth description. Nor have they been concerned with the creative and co-evolving character of the interactions they study – a dimension that, in Ihde and Malafouris' joint framework, is provided by MET. MET is outlined by archaeologist Malafouris as a theorization of the co-evolution of human minds, bodies, and material culture. Malafouris (2013) brings together theories of "extended cognition" (Clark and Chalmers, 1998; Hutchins, 1995) with those of "material agency" from material culture and actor-network theory (Latour, 1999) to argue that, across human history, human cognition and perception have been shaped through the creative material interactions of the human mind with the affordances of the environments into which it extends. Intention and agency emerge within these interactions, rather than precede action (Malafouris, 2008).

Although MET has only recently attracted design scholars' attention (Aktaş and Mäkelä, 2019), material engagements with the world have been a topic in design research. While references to Ingold (2000) and Bennett (2010) are widespread, both have also been cited by attempts to rethink what design practice consists of. Recent examples include Taylor's (2017) call for a more nuanced understanding of design as open-ended exploration, and Marina's (2020) argument that cooking is an everyday design activity. Similarly, Tönük and Fisher (2020) argued for a "processual" understanding of materials in design practice that goes beyond selecting correct materials

in accordance with user expectations, and instead acknowledges their ongoing engagement with human beings in design and use.

The source of inspiration for this paper, Ihde and Malafouris (2018) have recently proposed the complementarity of postphenomenology and MET. This is despite the former's interest in novel, predominantly digital technologies as opposed to the latter's focus on older technology across longer periods. The combined framework advocates a relational ontology that emphasizes the entanglement of human beings and things, and their reciprocal mediation across different scales of time, from contemporary technological developments to changes across archaeological eras. The postphenomenological concept of "technical mediation" is central to this specific take on relationality, for it helps conceptualize the way both human experience and capacities are shaped by things. The MET concept of "creative material engagement" is equally key, for it describes that this shaping takes place through active, dialogic bodily engagements with the world.

As we review above, design literature has worked with both postphenomenological concepts and issues of material engagement. In the former, phenomenology's focus on experience, combined with an interest in describing forms of technical mediation, has been helpful to design and HCI researchers for working with diverse interactions that are not necessarily immediately utilitarian. The latter's focus has been on entanglements of humans and things in practice. Though underutilized, we find MET's stress on creative character of engagement to be particularly salient. By proposing the joint framework for design research, we thus argue for the complementarity of these two strands of research. We find the framework is fit for the task for its following three aspects: relationality, reciprocal mediation, and creativity in engagement. In the rest of the paper, we demonstrate the significance of the framework and especially these three terms.

CASES

The empirical basis for this paper is constituted by three design research cases that investigate three diverse practices: felt making, make-up, and studio camera operation. These were selected out of seven projects that are by the authors of this paper, who were brought together in an open-call workshop at Middle East Technical University in Ankara to discuss postphenomenology and MET in relation to their own research projects (for an overview of the projects, see **Table 1**). The remaining four cases were concerned with amateur computer repair, maker practices, text production, and GPS navigation. While diverse in their questions and approaches, as well as levels of progress, all case studies shared a commitment to relationality and a general concern with issues of technical mediation, embodiment, and creative material engagement. The analysis of the cases involved the workshop, and a series of online meetings to identify common threads and highlight differences in light of the joint theoretical framework. Guiding questions included the types of human-thing relations that emerge in the practices; how creativity appears differently; the couplings of the body with materials, tools, other bodies, and the environment; and what the outcome of the practice comprises. The wide range of cases illustrated the extent to which experience and engagement can be studied with relevance to design research.

	Practice studied	Research focus	Research methods	Participants
Bilge Merve Aktaş	felt making	material's role in felt making process	practice-led, participant observation	expert craftspeople, novice makers, the researcher herself
Tuğba Tok	make-up	creative engagement and embodiment with make-up tools	non-participant observation, interview	professional make-up artists
Betül Gürtekin	studio camera operation	embodiment processes of camera operators	auto-ethnography, participant observation, interview	studio camera operators, including the researcher herself
Ayşegül Özçelik	amateur computer repair	interactions with the inside of computers	interview, think-aloud sessions	amateur computer repairers
Özgün Dilek	maker practices	agencies in maker practices	interview, observation	makers
Fazıl Akın	text production	text production technologies as mediators of perception	historical analysis	-
Elif Büyükkeçeci	GPS navigation	Drivers' experience of their immediate surroundings	participant observation	drivers

Table 1. Overview of the seven design research cases

To conduct an in-depth analysis and discussion, we sampled three cases. The sampling was selected to represent the variations in the seven projects. The selected cases correspond to three different levels in terms of both the technical complexity of the mediating technologies and the relevance of the immediate interpersonal context to the studied practices. The sampling was selected also to highlight the central tenets of the seven projects to the fullest extent: They reveal the complexity of the materiality that is involved in these practices, and value the role of the social and material relations as equally crucial for the emergence of these practices: Bilge Merve Aktaş studied felt making, and rather than examining how a maker comes up with an idea and produces an artefact, she examined how material transforms from being part of a sheep to becoming an entangled form. Similarly, Tuğba Tok examined make-up practice, not from the perspective of cultural representation but from the perspective of material engagement. And Betül Gürtekin examined the multi-layered and collective embodiment of a studio camera operator with a focus on the momentary coming-together of the operator, camera, other crew members, and other things in the studio environment.

The following section provides a detailed presentation and analysis of the cases by referring to data that each researcher collected through their field visits and autoethnographic accounts.

Felt Making

Aktaş has used interviews, participant observation, practice-led research and workshop design as methods to look into felt making, a small-scale studio practice that relies on entangling wool fibers to create a textile surface (Aktaş, 2020). Her examination of material's agency in the making

processes draws from MET to examine the coupling of the body and material through interactions.

While making felt, the body moves the fibers back and forth to create a unified surface (**Figure 1**). Several elements contribute to the process. The first of these is the material. Contemporary practitioners often work with processed wool as opposed to raw wool, whose manipulation requires more time. The entangling of the raw wool fibres is also not as uniform, since its fibers do not go through a disentangling process as with processed wool. Aktaş's fieldwork also revealed that the living environment and breed of sheep, as well as the body part from where the wool is collected, affect softness, stiffness, and thickness of fibers. Following the arguments that materials are not "givens" of processes, but active participants, which embed vitalities (Bennett, 2010), Aktaş's examinations of the human-material interaction indicates that the making process starts being shaped before any design decision of the maker, as an impact of the active life of the material.

Aktaş's research documented felting by hand and with tools by visiting felting studios and industrial producers. Tools range from simple needles that are recent innovations, to fully automated production. The processes and outcomes of these significantly differ from each other, and shape makers' relationship with and closeness to the material. Following postphenomenological accounts of human-technology-world relations (Ihde 1990), it can be argued that different technologies of felting bring different interaction models and diverse forms of mediation. With a felting needle, tool becomes an extension of the hand, and form is created through wool-needle-hand interactions (an "embodiment relation"), whereas in semi-industrial production, the interaction between the material and the body is limited to the phases before and after entangling fibres, as the machine, the tool, does a significant amount of entangling work through becoming an intermediatory between the body and the material. Finally, in fully automated production, makers interact mostly with intermediary tools such as computer software that translates ideas to machine language, and the material interaction happens only after the production where the material becomes an artefact. Here, a "hermeneutic relation" tends to override "embodiment relations" since the maker develops design decisions with the representations of their ideas through the software; but

Figure 1. Felting is a way of entangling wool fibres to create a nonwoven textile.

embodiment still takes place im-materially and shapes the intentions of the maker.

Building on the idea that any entity is active in their own situated way, the making environment also mediates the interaction between the maker and the material: For instance, felt makers that Aktaş interviewed preferred to work in warmer seasons when heat shortens the making process.

Reviewing different ways of felting indicates that making unfolds in various ways depending on how the maker relates to the material, tools, and making processes, and under which conditions. In various engagements with the material, it gains various roles and actively impacts the ideas that the maker develops. This can generate unexpected situations that guide the evolution of the interaction. In turn, knowing that working with the material can bring unexpected situations, makers gain a sense of openness for changing their initial plans while developing skills for quickly adapting to such changes. Even though all creative practice starts with intentions, both the process and the results are often different from the initial ideas. The material continuously and actively transforms itself, the process of making, and the maker who is simultaneously transforming the material. In this reciprocally transformative interaction, tools mediate the process, makers mediate the material, and material mediates the maker. Human and material entangle in an active and dynamic relationship – a dialogue – through which an artefact co-emerges (Aktaş, 2019; Malafouris, 2008).

This dialogue occurs in the "lifeworld" – hence the phenomenological idea that humans are inseparably connected to the environment they live and experience in (Husserl, 1936). Makers think in the extended space that they are part of. From the embodied cognition perspective, humans make sense of their decisions, plans, experiences, and material interactions not merely in their brains but through situated engagement (Johnson, 2007). This is how making allows for personal and practice-related growth (Ingold, 2013). For instance, Aktaş's findings indicate that experiencing the agency of the material and the environment can transform the maker. As she followed the material not only in studios but also in sheep farms, this led to changes in her perception of the practice and the material. This also includes how being with sheep affected her understanding of the lifecycle of the material and its ongoing transformation even without human presence. The material will continue making an impact on surrounding material engagements not only in making, but also in everyday situations – a continual flux that continually shapes humans and things. Following what Ihde and Malafouris suggest (2018), recognizing and discussing these mediated interactions as creative material engagements can reveal alternative ways of being and doing for humans at large.

Make-Up

Tok's study has explored make-up as continuous reflexive engagement with make-up products, equipment, and the practice environment, using MET and the works of Ingold as a theoretical framework, indicating the reciprocal transformations between maker, tools, and materials. The study is based on an interview with and observations on a professional make-up artist while he applied bridal make-up on a client (**Figure 2**).

Tok's study documented the diversity of make-up tools and materials, and the skill and know-how required to use them. There are various types of make-up products to apply at different parts of the face, which come in

Figure 2. Make-up tools used by the artist.

different formulas, chemical states, and pigmentation levels. Furthermore, the properties of a product such as color, texture, fluidity, and opaqueness may appear on the skin unlike how they seem on the pan. Make-up tools, such as brushes, sponges, even tweezers, also have specific uses in combination with specific materials, and diverse ways to apply them – e.g., angles, lines, pressure, or repetitions. An example is the fan brush, which is used to highlight higher points on the face such as cheekbones. However, the artist that Tok observed used it to contour the hollows of the cheeks, to darken the shadows. He pointed out that, when his fellow make-up artist had recommended this "make-up trick", he had not been convinced at all, but was surprised when he experienced it. Thus, the recognition of the purpose of a tool and its mode of operation can also be interpreted as an extended cognitive process.

Tools do create opportunities for active material engagement (Malafouris, 2013, 169). But sometimes the tool delivers quite differently from the maker's expectations, and sometimes the tool hides the material – for instance, when he could not see the make-up product's actual color on the tip of the brush. The practice here not only belongs to the artist or the product but equally to the enactment of the brush's blending movements (Ingold, 2011). Postphenomenologists call these situations "embodiment relations," where the tool retreats from consciousness and forms a unity in action (Ihde, 1990). Indeed, there were movements the artist executed out of habit, without even noticing. For instance, he often stopped to look at the mirror to make a quick check to compare the results from a different distance and light. In this manner, he also evaluated the outcome: The image in the mirror would better resemble how the make-up would look in wedding photos than what he sees in closer contact. During the interview, the artist stated that results usually differ from what he envisioned at the start, though not dramatically. He was aware that he was not the only contributor to the outcome. In the process of make-up application, this can be interpreted as the "reciprocal causation" (Malafouris, 2013): Each element of the practice transforms the sequence, and therefore the outcome.

Although visibly transformed by the practice, the client is hardly a blank canvas, since her skin conditions can alter the process as much as other external factors such as light or temperature. Beyond what Aktaş mentions above as the influence of environment, this further includes the influence

of the projected use context of make-up; in this case, a day-long bridal ceremony. The differences between indoor or outdoor events, editorial shootings, or private celebrations alter the creative execution of the make-up artist. Moreover, this change occurs due to not only contextual differences but also physical conditions and chemical properties of the selected make-up products. Rather like Aktaş's emphasis on the active participation and liveliness of the material, even after the application is finished, chemical reactions keep taking place. Consequently, how the final make-up looks is not solely determined by the client's request or the make-up artist's creative vision.

The make-up artist followed a plan; however, this plan was in constant change: Sometimes, he deliberately changed his mind; sometimes, his client interrupted him; sometimes, the product or the tool did not work as he expected. His course of action did not consist of a linear path, e.g. brush-pan-skin, but followed a more complex sequence. Starting from the delegation of his finger's skill to brushes to obtain precision, going through the diversity of make-up products, selecting a few, mixing the colors, adding more, removing, building up, quick check, looking at the mirror, going back again, talking to the quests, reassuring the bride, cleaning up the brushes – a "wayfaring" type of movement, where each "in-between" creates another interaction (Ingold, 2011, 163). In parallel with Aktaş's statement that making is a dialogue, through this navigation, the dialogue of the maker, material, and tools are in motion within the environment.

Studio Camera Operation

A camera operator herself, Gürtekin has used autoethnography, observations, and in-depth interviews to investigate camera operators in multicamera systems used in TV studios (Gürtekin and Kaygan, 2018) Using phenomenological theory, she analyzed the bodily techniques of camera operation as multi-layered embodiment processes in the interactions of a skilled user – operator – and a designed product – camera – within the multicamera system in broadcasting context, considered as a "lifeworld." As discussed here, MET offers a complementary perspective that addresses the togetherness and active involvement of participants, and their creative and explorative co-engagement.

The camera operator's performance indicates how product use can become operating, experiencing, making and mediating (**Figure 3**). The operator is in an embodied interaction, focused on the task instead of the product. The camera withdraws from experience and becomes transparent, while the operator's attention is on the visual image. As narrated in the researcher's interviews with camera operators, the focal point for a camera operator is to achieve a visual image that is "aesthetic" and conforms to broadcasting norms. For that, the operator puts into play her occupational experience, skill, creativity, reflexes, interest, knowledge, expertise, and situational awareness. This can be understood from the perspective of MET as actively engaging with the materials, tools, and the environment and expressing bodily responses to what the environment offers and how through engaging in such situations the practitioner become more experienced (Malafouris, 2014). As she gains experience and expertise, the operator becomes more reliant on her embodied knowledge, to the extent that she becomes one (Ingold, 2013) with the mediating technology and the context she experiences in: She feels the technology as a part of her body, and she feels as if she is a part of the technical environment.

Figure 3. Camera operation as skilled practice.

User and product are not only intertwined in the former's experience, but also co-shaped in practice. Following Aktaş's insights, they are in a constant "dialogue," which makes the process ever dynamic. Gürtekin's findings reveal that an experienced camera operator executes smoother camera movements than a novice, whereas a tripod limits the movements of the camera more than a pneumatic pedestal does. In that regard, the camera and other technical equipment are not mere objects manipulated by the operator for producing a desired image; they are the active participants of an embodiment process, as the result of which the visual image is co-created.

Apart from the materiality of a specific product or tool, as in felt making and make-up, camera operation engages with the whole context. The operator works as part of a camera crew and more broadly within a broadcasting crew in a specific program setting such as news or a concert. Her operation is structured by a mesh of interactions within these environments, while she is tasked with creating an image on her camera by utilizing its hardware, software, accessories, and supporting systems. For instance, her body and camera movements and framing intentions in a music program differ significantly from those in a football match, even if she operates the same camera system: In a music program she follows the music and synchronizes her movements along with it, as music shapes her embodiment process. However, in a football match, her priority is to keep the ball in the frame and her embodiment is entangled with players' movements. Besides, her intentions and performance differ according to her camera position and specific task in the team even in the same program context.

The environment also includes the sociality of the operator's lifeworld. Gürtekin's fieldwork shows that the camera operator's significant initiative and creativity with regard to composition and camera movement, are shaped by the orders from the director in a hierarchical relationship. The operator also takes part in collaborative engagements with other crew members: For example, if another cameraperson fails to capture a

particular image, she may need to reposition herself to catch that image (Gürtekin and Kaygan, 2018). Through collective decision making and action taking, the shared objective of the broadcasting crew to capture an intended image, shapes the embodiment process of a camera operator. Decision and action are in this sense distributed among the crew and the technologies.

As such, a studio camera operator stands in the middle of countless relations. She plans her action according to her own capacity, her interactions with the director and other broadcasting crew, and the requirements of the program context, as well as the shooting environment and the camera she operates. During the action, however, she will adapt in a skilled manner, as Gürtekin's fieldwork showed, e.g., according to an immediate order coming from the director, a spontaneous technical problem, or an unanticipated development in the program. Overall, the final image on the camera is not a product of intention, but co-shaped and constantly transformed.

DISCUSSION OF THE FINDINGS

All three cases identify embodied practices in creative engagement with materials and tools, which emerge in distributed ways and through mediations. With this discussion, not only are we questioning the transformation of phenomenological experiences in the mediation of technologies, but we are simultaneously interested in how human beings are shaped by their dialogic interactions with the world across diverse creative material engagements that take place in design, making and use. In this section, we first summarize and discuss our findings from our analysis above, then from the more general perspective, identify the six characteristics of emergent relations that are called for from the perspective of the joint framework.

These three cases show that although we describe our engagements as singular practices, such as felting, make-up, or using a camera, they involve complex, multilayered interactions, in that even simple practices that seem to be taking place between one maker and a single material are built on complex relations that are interdependent on several humans and nonhumans.

Out of the creative interrelationship between humans, materials, tools, and the environment, an outcome emerges: This can be a new felt product, a painted face, or a TV program, as well as new insights, experiences, or knowledge. The emergent relations shape new experiences, interactions, and practices. While making, the artefact emerges from the dialogue between maker and material (Mäkelä, 2016). Although the maker starts with intentions in every contact with the material, these intentions are transformed across the process. Therefore, making is simultaneously an active, creative engagement, since, in order to reach the desired outcome, the maker keeps in constant bodily dialogue with circumstances at the scene, reacting to spontaneous changes and requests from the active elements in the environment (Aktaş and Mäkelä, 2019). The outcome cannot be known entirely beforehand; however, skillful practice entails responsiveness and anticipation.

For instance, in felt making the most obvious dialogue is between the maker and the material, however, once the maker embodies the sense of building a dialogue with the material, they also realize that the making

environment and the tools directly shape how to engage with the material: Working with a felting needle requires no specific space, while semi-industrial machines require a studio, and the industrial machines require a factory. On the other hand, in camera operation, the engagement is more holistic in the sense that it requires situational awareness in the environment: The dialogue responds to the spontaneous combinations at the environment, and this requires making quick decisions and adapting to changing conditions promptly.

In any case, the outcome is never really a fixed and finalized entity. Rather it continues becoming its new versions with or without human presence, in relation to factors such as heat, friction or light, and within the novel situations it enters. As **Figure 4** illustrates, the elements that we examined, namely humans, materials, tools, and the making environment exist in relation to each other while carrying meaning and significance both spatially and temporally beyond that particular practice. This means that the dialogue also depends on how human beings, materials, tools, and the making environment emerge and engage with the external environment, or the world in general.

As such, our examination indicates the centrality of emergent relations and relationality in practice. Next, we list and unpack the characteristics of these relations.

SIX CHARACTERISTICS OF THE EMERGENT RELATIONS

The research cases that we studied revealed various types of relations that can be found in creative practices in and around design. These indicate that employing MET and postphenomenology as theoretical approaches provide an understanding of design that builds relations that are relational, reciprocally mediated, creative and exploratory, situated, embodied, and skilled. The latter three of these six characteristics are relatively ubiquitous across design research, as indicated by our literature review above. We have instead emphasized the first three in our discussion above, as they are more central as contributions of the joint framework to design research. Furthermore, in the following, we refer to all seven cases (see Table 1) as examples to provide a more evocative explication.

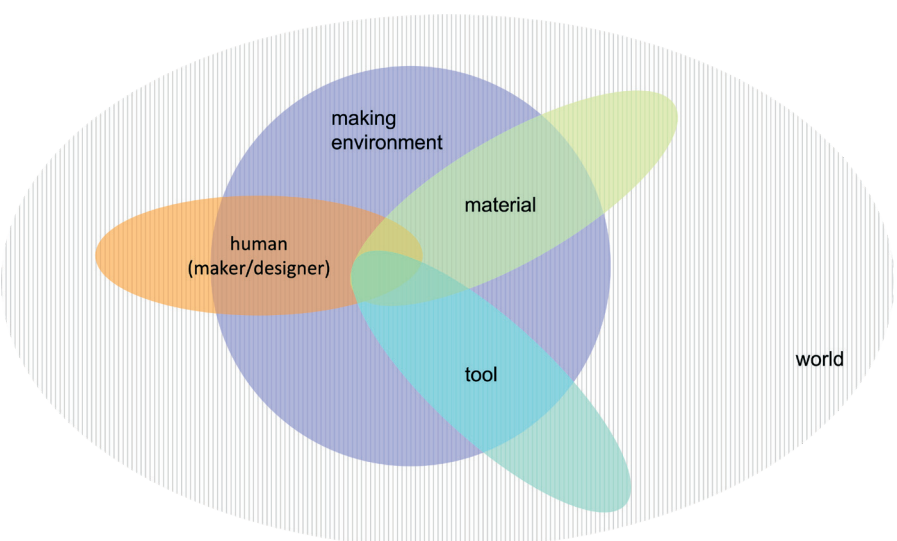

Figure 4. Human-thing relations.

The elements in the social and material situations in which design and use are practiced impact how our experiences emerge over time. Particularly in making processes, the material environment, which includes the materials, tools, and other artefacts, significantly impacts the emergence and development of the engagement processes as well as the outcome artefact. This impacts how we consider and reconsider our thoughts and intentions, how we articulate our bodily movements, how we execute our bodily techniques, and overall, how we perform an action. A further example can be found in maker communities, where maker spaces (viewed together with user guides, tutorial websites, online forums, as well as components such as breadboards, sensors, motors, cables) shape whole communities of users and their collective knowledge and shared practices (based on Dilek's fieldwork; see also Dilek, 2020). Different materialities enable different types of interactions and thus shape the ways in which we experience and think about, and act in the world. As such, our making and using experiences are relational**.** Moreover, not only the tools and materials but also other individuals, groups, and even nonhuman animals can be part of the relationality of the practice.

However, the materiality of our environment also continuously changes. These transformations can be led by human agency or nonhuman forces (see also Ingold, 2013). Our interactions are entangled with these changing material and social circumstances: They are, as such, situated (Suchman, 1987): Even repeated actions can be different each time in response to environmental conditions.

In these situated engagements, reciprocal mediations take place between humans and nonhumans: While humans alter nonhumans, such as through shaping materials into products, they are also reshaped as persons by gaining new experiences, skills, and embodied knowledge and capacities, and socially by forming interpersonal relationships and communities. Such changes occur because things around us have agency: Technologies afford certain interactions more than others and mediate our relationship to the world, to other humans and things (Verbeek, 2005). For example, whether we navigate a city with or without a GPS device changes how we experience and interact with its people and spaces (based on Büyükkeçeci's fieldwork).

As we make sense of the world through multi-sensorial experiences within our environments, our practices are embodied in the emerging situations. We embody materials, tools, products and the world to the extent that we are bodily connected to them. They become transparent, but not neutral, extensions of our body so that we can focus substantially on the process and think with these entities that we are placed in a relation with.

Through embodied engagements with affordances, human-technology relations also generate skilled practices. Although we gain our skills through imitation and repetition (Ingold, 2011), these skilled bodily movements are not merely mechanical and functional, but also emotional and expressional (Jensen, 2005). As with the camera operator, another example could be found in amateur repairers, who routinely use diverse tools: screwdrivers, prying tools, tweezers, soldering iron, as well as plastic cards to open cases, and toothbrushes to clean dusty fans. Using such tools – sometimes high-end, sometimes crude – on the sensitive hardware requires bodily skills, including a certain delicacy, patience, and precision, which indicate superior embodiment (based on Özçelik's fieldwork, see also Özçelik, 2020; Özçelik and Kaygan, 2021).

The relational experience thus reveals the skillful patterns of the human body as it gives instant responses to situations. Other things around us continually shape our interactions in a way that dynamically forces us to recalibrate our movements and re-evaluate our ideas and intentions. Therefore, skilled practice requires being attentive as well as responsive to the transformations happening in one's environment. Our experiences typically emerge spontaneously, and they are dynamic rather than static, and our engagements are creative and exploratory. An example similar to make-up is the GPS user, whose driving experience is guided by her following the live map view on the screen of her device, combined – or in contrast (Besmer, 2014) – with the extent of attention she pays to the view of the road through the windscreen (based on Büyükkeçeci's fieldwork). Every action creates and blends into another interaction in an explorative and improvisatory manner (Ingold, 2011). The body leads this creative and explorative process through perception and re-interpretation of sensorial information.

CONCLUSION

In this paper, inspired by Don Ihde and Lambros Malafouris's exposition on the possibility of a joint theoretical framework of postphenomenology and MET, we investigated how we might understand design through the complementary lens of the two theories. The joint framework brings together the idea of "technical mediation" in contemporary technologies and "creative material engagement" across archaeological eras, which we utilized and reinterpreted from the perspective of design research into instances of design, making, and use. For that, we presented and reanalyzed three cases in detail, out of an inventory of seven cases committed to the study of emergent relations in creative, embodied, and skilled practice with an interest in ethnographic detail. Our discussion demonstrated that diverse and complex relations make up such practices, where humans relate to the world in ways that are reciprocally mediated, creative and explorative.

Having described, interrelated and elaborated a diversity of human-thing relations in this manner, we contribute to the design literature a specific framework through which insights from postphenomenology and MET can be employed to examine our multi-dimensional relationship with the world in design, making, and use within diverse product milieu. As noted previously, this is in line with recent interests in relocating design and use in relational terms: Marenko (2014), for instance, indicated the animistic tendencies in Internet of Things. As another example, a recent paper by Taylor (2017) called for a rethinking of design as expanding our capacities within the world with reference to Ingold's work. Participatory Design scholars have been, for the last decade, interested in Latour's formulation of "thinging" to ground their practice (Björgvinsson et al., 2012; Latour, 2005). This paper does owe to these and other similar work cited in this paper for the ongoing interest in relational ontologies and situated, embodied practices. Yet we follow an alternative path, based on postphenomenology and MET, and therefore focused on questions of experience and engagement amongst material things.

From the broader perspective, the relational perspective proposed here can inform the field of design from two angles. Firstly, it can prioritize the experiential investigations during the design processes in which different technologies, materials, and tools affect the development of

design concepts. In this case, these theoretical approaches can enhance methodologies that significantly rely on practitioners' reflections and personal experiences as valid sources of information during the design processes. In these, the variety of relations we identified can work as a comprehensive yet flexible framework. Indeed, the rich empirical data that we show in this paper indicates that such theoretical frameworks can be applied to a wide range of cases and questions to tackle diverse design practices and use experiences.

Secondly, the joint framework can inform us about the relations between design outcomes and the use phase. A possible use could of course be better anticipation of use contexts for designers, through attention to the emergent relations amongst the various entities in material interaction. More importantly from the standpoint of these studies, the theoretical approach we advocate here can provide an understanding of both design and use phases as inseparable: as world-shaping experiences emerging through relations with materials, tools, technologies, and the world. Focusing on the co-development of humans, materials, and technologies can underline our existence, as both designers and human beings, in the world amongst the entanglement of diverse beings.

REFERENCES

AKTAŞ, B. M. (2019) Using Wool's Agency to Design and Make Artefacts, *RUUKKU: Studies in Artistic Research* 10.

AKTAŞ, B. M. (2020) Entangled Fibres: An Examination of Human-Material Interaction, Unpublished PhD thesis, Aalto University, Espoo, Finland.

AKTAŞ, B. M., MÄKELÄ M. (2019) Negotiation Between the Maker and Material: Observations on Material Interactions in Felting Studio, *International Journal of Design* 13(2) 55-67.

BENNETT, J. (2010) *Vibrant Matter: A Political Ecology of Things*, Duke University Press, London.

BESMER, K. (2014) Dis-placed Travel: On the Use of GPS in Automobiles, *Techné* 18(1/2) 133-46.

BJÖRGVINSSON, E., EHN, P., HILLGREN P.-A. (2012) Design Things and Design Thinking: Contemporary Participatory Design Challenges, *Design Issues* 28(3) 101–16.

BØDKER, S. (2015) Third-Wave HCI, 10 Years Later: Participation and Sharing, *Interactions* 22(5) 24-31.

CANDY, L. (2006*) Practice Based Research: A Guide*, Sydney University of Technology, Sydney.

CLARK, A., CHALMERS, D. (1998) The Extended Mind, *Analysis* 58(1) 7-19.

COOLE, D., FROST, S. (2010) *New Materialisms: Ontology, Agency, and Politics*, Duke University Press, Durham.

DİLEK, Ö. (2020) An Onto-Phenomenological Inquiry on The Post-Industrial Maker Experiences Through the Lens of Actor Network Theory, Unpublished Ph.D. thesis, Istanbul Technical University, Turkey.

DOURISH, P. (2001) *Where the Action Is: The Foundations of Embodied Interaction*, MIT Press, Cambridge.

FALLMAN, D. (2011) The New Good: Exploring the Potential of Philosophy of Technology to Contribute to Human-Computer Interaction, *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems*; 1051-60.

GÜRTEKİN, B., KAYGAN, H. (2018) Bir Otoetnoğrafik Anlatı: Stüdyo Ortamında Kamera Kullanımı ve Bedenleşme, *UTAK 2018 Bildiri Kitabı: Tasarım ve Umut* (12-14 September 2018, METU, Ankara), eds G. Töre Yargın, A. Karadoğaner, D. Oğur, Ankara, METU Faculty of Architecture, 359-74.

HARRISON, S., TATAR, D., SENGERS, P. (2007) The Three Paradigms of HCI, *Proceedings of the Conference on Human Factors in Computing Systems*, San Jose, 1-18.

HAUSER, S., WAKKARY, R., ODOM, W., VERBEEK, P., DESJARDINS, A., LIN, H., DALTON, M., SCHILLING, M., DE BOER, G. (2018) Deployments of The Table-Non-Table: A Reflection on the Relation between Theory and Things in the Practice of Design Research, *Proceedings of the ACM Conference on Human Factors in Computing Systems* (April 2018), ACM.

HUSSERL, E. (1936) Die Krisis der europäischen Wissenschaften und die transzendentale Phänomenologie: Eine Einleitung in die phänomenologische Philosophie, *The Crisis of European Sciences and Transcendental Phenomenology: An Introduction to Phenomenological Philosophy*, trans. D. Carr (1970), Northwestern University Press, Evanston.

HUTCHINS, E. (1995) *Cognition in The Wild*, MIT Press, Cambridge.

IHDE, D. (1990) *Technology and the Lifeworld*, Indiana University Press, Bloomington.

IHDE, D., MALAFOURIS, L. (2018) Homo Faber Revisited, *Philosophy and Technology* (32) 195-14.

INGOLD, T. (2000) *The Perception of the Environment: Essays on Livelihood, Dwelling and Skill*, Routledge, London.

INGOLD, T. (2011) *Being Alive: Essays on Movement, Knowledge and Description,* Routledge, Abingdon.

INGOLD, T. (2013) *Making: Anthropology, Archaeology, Art & Architecture*, Routledge, London.

JENSEN, M. V. (2005) An Anthropological Move Towards Tangible Interaction Design, *Proceedings of Nordic Design Research Conference* (29-31 May 2005), Royal Danish Academy of Fine Arts, Copenhagen.

JENSEN, M., AAGAARD, J. (2018) A Postphenomenological Method for HCI Research, *Proceedings of the 30th Australian Computer-Human Interaction Conference* (4-7 December 2018), Melbourne.

JOHNSON, M. (2007) *The Meaning of the Body*, Chicago University Press, Chicago.

KOZEL, S. (2011) The Virtual and the Physical: A Phenomenological Approach to Performance Research, *Routledge Companion to Research in the Arts*, eds. M. Bigg, H. Karlsson, Routledge, New York; 204-22.

LAKOFF, G., JOHNSON, M. (1980) *Metaphors We Live by*, Chicago Press, Chicago.

LATOUR, B. (1999) *Pandora's Hope: Essays on the Reality of Science Studies*, Harvard University Press.

LATOUR, B. (2005) From Realpolitik to Dingpolitik or How to Make Things Public, *Making Things Public: Atmospheres of Democracy*, eds. B. Latour, P. Weibel, The MIT Press, Cambridge; 4-31.

LOKE L., ROBERTSON T. (2013) Moving and Making Strange: An Embodied Approach to Movement-Based Interaction Design. *ACM Transactions on Computer-Human Interac*tion 20(1) 1-25.

LUSCOMBE, P. (2018) Rulers and Dividers: A Technology of Design, *Design Issues* 34(2) 5–19.

MALAFOURIS, L. (2008) At the Potter's Wheel: An Argument for Material Agency, *Material Agency: towards a non-anthropocentric approach*, eds. C. Knappett, L. Malafouris, Springer, New York; 19-36.

MALAFOURIS, L. (2013) *How Things Shape the Mind: A Theory of Material Engagement*, MIT Press, Cambridge.

MALAFOURIS, L. (2014) Creative Thinging: The Feeling of and for Clay. *Pragmatics & Cognition* 22(1) 140-58.

MÄKELÄ, M. (2016) Personal Exploration: Serendipity and Intentionality as Altering Positions in a Creative Practice, *FORMakademisk* 9(1) 1-12.

MARENKO, B. (2014) Neo-animism and Design: A New Paradigm in Object Theory, *Design and Culture* 6(2) 219-41.

MARINA, C. (2020) Making and Unmaking the Ephemeral Object: Design, Consumption, and the Importance of Everyday Life in Understanding Design beyond the Studio, *Design and Culture* 12(3) 243-63.

NIMKULRAT, N. (2009) *Paperness: Expressive Material in Textile Art from an Artist's Viewpoint*, Ph.D. Dissertation, University of Art and Design Helsinki, Helsinki.

NIMKULRAT, N. (2012) Hands-on Intellect: Integrating Craft Practice into Design Research, *International Journal of Design* 6(3) 1-14.

OHLIN, F., OLSSON, C. M. (2015) Beyond a Utility View of Personal Informatics: A Postphenomenological Framework, *Adjunct Proceedings of the 2015 ACM International Joint Conference on Pervasive and Ubiquitous Computing and Proceedings of the 2015 ACM International Symposium on Wearable Computers*; 1087-92.

ÖZÇELİK, A. (2020) Encountering the Inner Face of Products: Computer Repair Practice and Amateur Computer Repairers, unpublished Master's thesis, Middle East Technical University, Ankara.

ÖZÇELİK, A., KAYGAN, H. (2021) Encountering the Inner Face of Products: Computer Repair Practice and Amateur Computer Repairers, *Proceedings of the 4th PLATE (Product Lifetimes and the Environment) 2021 Virtual Conference*, Limerick, Ireland.

PIERCE, J., PAULOS, E. (2013) Electric Materialities and Interactive Technology, *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems*; 119-28.

REDSTRÖM, J. (2008) RE: Definitions of Use, *Design Studies* 29(4) 410-23.

ROBERTSON, T. (1997) Cooperative Work and Lived Cognition: A Taxonomy of Embodied Actions, *Proceedings of the Fifth European Conference on Computer-Supported Cooperative Work* (7-11 September 1997) Lancaster, UK, Kluwer Academic Publishers, Dordrecht; 205-20.

ROSENBERGER, R., VERBEEK, P. P. (2015) A Field Guide to Postphenomenology, *Postphenomenological Investigations: Essays on Human-Technology Relations,* eds. R. Rosenberger, P-P. Verbeek, Lexington Books; 9-41.

SUCHMAN, L. A. (1987) *Plans and Situated Actions: The Problem of Human-Machine Communication,* 2nd ed., Cambridge University Press, Cambridge.

SVANAES, D. (2000) *Understanding Interactivity: Steps to A Phenomenology of Human-Computer Interaction*, Ph.D. Dissertation, NTNU, Trondheim.

SVANAES, D. (2013) Interaction Design for and with the Lived Body: Some Implications of Merleau-Ponty's Phenomenology, *ACM Transactions on Computer-Human Interaction (TOCHI)* 20(1) 1-30.

SVANAES, D., SOLHEIM, M. (2016) Wag Your Tail and Flap Your Ears: The Kinesthetic User Experience of Extending Your Body, *Proceedings of the 2016 CHI Conference Extended Abstracts on Human Factors in Computing Systems*, ACM, 3778–9.

TAYLOR, A. S. (2017) What Lines, Rats and Sheep Can Tell Us, *Design Issues* 33(3) 25-36.

TONUK, D. (2016) Making Materials: The Case of Elaborating Qualities of Bioplastics, *Design Issues* 32(4) 64-75.

TONUK, D., FISHER, T. (2020) Material Processuality: Alternative Grounds for Design Research, *Design and Culture* 12(2) 119-39.

VALLE-NORONHA, J. (2019) *Becoming with Clothes: Activating Wearer-Worn Engagements Through Design*, Ph.D. Dissertation, Aalto University, Espoo.

VERBEEK, P. P., KOCKELKOREN, P. (1998) The Things That Matter, *Design Issues* 14(3) 28-42.

VERBEEK, P. P. (2005) *What Things Do: Philosophical Reflections on Technology, Agency, and Design,* Pennsylvania State Press, Pennsylvania.

WAKKARY, R., OOGJES, D., HAUSER, S., LIN, H. W., CAO, C., MA, L., DUEL, T. (2017) Morse Things: A Design Inquiry into the Gap Between Things and Us, *Proceedings of the 2017 Conference on Designing Interactive Systems*, ACM; 503–14.

Anahtar Sözcükler: Karşılıklı dolayım; yerleşik pratik; bedensellik; yapıp etme; tasarım teorisi

TASARIMDA İNSAN VE ŞEY İLİŞKİLERİ: POSTFENOMENOLOJİ VE MADDİ ETKİLEŞİM TEORİSİ ÜZERİNE KURULU BİR TEORİK ÇERÇEVE

Teknoloji felsefesi alanındaki postfenomenoloji çalışmaları, Don Ihde'nin erken dönemdeki araştırmalarından başlayarak teknolojilerin, insanların dünya ile ilişkilerine hangi yollarla şekil verdiğini tespit etmekle ilgilendi.

Daha yakın bir tarihte, bilişsel arkeoloji alanından Maddi Etkileşim Teorisi (*Material Engagement Theory*, MET) insanın dünya ile girdiği yaratıcı ve maddi etkileşimlerin, insani düşünceye ve diğer insan yetilerine nasıl şekil verdiğini tarif etmeyi amaçlıyor. Yakın zamanda Ihde ve Malafouris'in (2018) iki teoriyi iletişime geçirdi. İki yazarın ortak çalışmaları üzerine kurulan bu araştırma, bu ortak çerçeveyi, tasarım alan yazınında ilişkisel ontolojilere ve bedensel etkileşime yönelik yükselen ilgiyle bir araya getirmeyi hedefliyor. Araştırma, malzemelerle ve araçlarla yaratıcı etkileşimler içeren farklı pratikleri inceleyen yedi farklı vaka çalışmasından faydalanırken, bunlardan üç tanesine odaklanır: keçe yapımı, makyaj, stüdyo kamerası kullanımı. Araştırmada vakalar, tasarım alanında gözlemlenebilen insan ve şey ilişkilerinin farklı biçimlerini tespit etmek ve tartışmak amacıyla ortak teorik çerçeveden yeniden analiz edildi. Bulgularımıza göre, bu tür ilişkiler, yaratıcıdır ve keşif içerir; maddi ve sosyal olarak ilişkiseldir; çift taraflı olarak dönüştürücüdür; bir konuma hastır; bedenseldir; beceri içerir. Ortak çerçevenin, tasarım araştırmalarında tasarıma, yapıp etmeye ve kullanıma dair anlayışımıza katkısı açısından bu altı özellikten üçünü öne çıkarıyoruz: ilişkisellik, insan ve şey ilişkisinin çift taraflı olarak şekillendirici olması ve etkileşimlerin yaratıcı karakteri. Yazının sonuç kısmı bu bileşik teorik çerçevenin tasarım araştırmaları açısından sunduğu olasılıkları tartışıyor.

HUMAN-THING RELATIONS IN DESIGN: A FRAMEWORK BASED ON POSTPHENOMENOLOGY AND MATERIAL ENGAGEMENT THEORY

Starting with the earlier work of Don Ihde, postphenomenological studies in philosophy of technology have been documenting the many ways in which technologies shape human beings' relationship to the world. More recently, Material Engagement Theory (MET), originating from cognitive archaeology, offers descriptions of how human thinking and capacities have been shaped through creative material engagements with the world. Based on a recent collaboration by Ihde and Malafouris (2018), this study applies the joint framework of postphenomenology and MET to design research in light of the rising interest in design literature into relational ontologies and embodied practices. The study is built on data from seven case studies of practices in creative engagement with materials and tools, three out of which are reviewed in depth, namely: felt making, make-up, studio camera operation. The cases are analyzed through the joint theoretical lens to identify and describe the human-thing relations as observed in design. We describe such relations as creative and exploratory, materially and socially relational, reciprocally mediated, situated, embodied, and skilled. Our emphasis is on the first three of these six characteristics, emphasizing relationality, reciprocal mediation, and creativity in engagement, as significant contributions of the joint framework to understanding design, making and use in design research. Our conclusion includes a discussion of future research opportunities for studies based on the joint framework.

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METU JFA 2022/1
(39:1) *77-92*

DOI: 10.4305/METU.JFA.2022.1.4

OPTICAL TACTICS FOR SPATIAL JUSTICE IN THE WORKS OF FORENSIC ARCHITECTURE AND HITO STEYERL (1)

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Received: 12.07.2020; **Final Text:** 11.03.2022

Keywords: Visibility; documentary; spatial justice; power; politics of resolution.

1. An earlier version of this research was presented at the "3rd Turkish Congress of Aesthetics" in 2019, under the title "Materiality of the Image, Politics of Resolution and Invisibility as Power".

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INTRODUCTION

From cartographic mapping to the linear perspective, the technics of geometrical representation of our immediate surroundings, the technics of picturing the world are deeply connected with an urge to give an order to it. The ability to depict the world allows us to understand our agency in its forming and to make it the subject of our actions. While this spatial knowledge enables us to estimate and foresee our acts in a perspective, it also provides a crucial foundation for governing human lives. In this line, the current imaging technologies help us to pursue this deep-seated desire. As the world becomes an object of observation, surveillance, and control, the distinctions between the subject and object, the person at the center of the image, and the world outside wither.

Nonetheless, the technologies that allow us to picture the world is not unbounded. The limit of vision is regulated by a techno-judicial image regime, in which the capacities of the latest image production techniques, as well as the legal protocols (security laws, terror acts, and personal privacy concerns), are decisive. Thus, the images of the world are not only conditioned by the capacity of technology but also by the current order secured by law. Eyal Weizman (2017), the founder of FA, further elaborates how this image regime operates with the support of legal measures. For once, the satellite images that claim to give a complete picture of the world are restricted by personal privacy laws: "The reason for halting the process of improving the resolution of publicly available satellite images was that at 0.5 meters, the pixel resolution corresponds to the dimensions of the human body-an area 0.5 meters by 0.5 meters is roughly the size of the human body as seen from above" (Weizman, 2017, 28). Thus, Weizman remarks that, personal privacy laws determine the visibility threshold for the satellite images available for public use. Even so, the clarity of the image is not only bound to the human body in defense of the personal privacy laws. The images of the world for state use rely on

different regulations, protected by legal acts in support of national security measures, that vary across different national borders. Thus, the legal limits to the resolution of the images differ when personal and national concerns are at stake.

This asymmetry of visibility manifests an uneven image of the world with significant consequences on the ground reality. In this paper, I aim to reflect on this techno-judicial image regime, and to this end, firstly, I reflect on the firm belief in the truth claims of the technical images as transparent records of reality, based on the assumption that these images are produced without the mediacy of the human agency (Benjamin, 1936). This premise not only oversimplifies the process of mediation but also widely ignores the agency of images in the formation of the world we live in and the fact that the forming of a society is founded "in imagined surfaces, in surfaces that absorb geography and history" (Flusser, 1985, 4). As further discussions in the paper manifest, the images project a world limited by the technical capacities of the optical tools. Moreover the restrictions implemented by an asymmetrical threshold of visibility secured by judiciary acts order this world and its images. In the works of FA and Hito Steyerl, which critically engage with this asymmetrical image regime, I find a potential to reflect on the reciprocal relationship between images and the world that produce one another. Through these works, I explore the tactics operating to revoke the optical strategies that manipulate the spatial order with immediate effects on life on the ground.

THE HUMAN BODY AS THE REFERENCE POINT FOR THE OPTICAL TECHNOLOGIES

In one of the pictures capturing Auschwitz Crematorium 2, Eyal Weizman (2017) observes the coincidental entanglement of the visible silver crystals on the photograph and the dehumanized body of a prisoner. The grain on the photographic image collapses upon the image of a person seen from above, to such an extent that one struggles to separate the grain from the image of the body. By the same token, Weizman observes a correspondence between the image of the human body and the clarity of satellite images available for the public view today. In the former analogue image, the body of the prisoner is concealed in the grain of the silver particle, albeit coincidentally. The granular limits of the image hide the outlines of the human body. The satellite technologies, on the other hand, have a much better resolution quality, thus, in this instance, the visibility of the human body is not limited to the technical capacities of the optical tools (Weizman, 2017,13).

Until the end of the Cold War, the visualization of the world from above remained under state rule and thus, the threshold of visibility was strictly under military control. The commercialization of satellite images allowed the aerial views of the world to become ubiquitous and consequently our perception of the world has shifted (Cosgrove, 1994). From this perspective of the world, the human body is seen in its environmental surroundings, as an element within the spatial matrix. The distinctive features of the individual subjects become less relevant in this perspective. The emphasis is rather on the spatio-temporal being of the human body as an initiator of possible action. Thus, this perspective of the world also informs the way the human body is perceived.

The technical images, provide a particular perception of the body, in as much as they allow us to perceive the world at different registers. As early as 1936, Walter Benjamin gave credit to technical images - be it executed through the medium of photography or cinema- for expanding our knowledge about reality. Benjamin surmised that technical images allowed us to see things beyond our optical consciousness. Unlike the magical images of the painters, the camera worked like a surgeon piercing through the surface of the skin into the depths of the body, into the depths of the world (Benjamin, 1936). As a light-sensitive vestige of the object as well as a copy of its visual likeness, the mechanical image promised a "double-entry bookkeeping of the real" (Mitchell, 2015, 49), and as such, the photographic image was endorsed as a tool for "establishing evidence" (Benjamin, 1936, 27), as a foundation for a "legalistic truth" (Sekula, 1986). Since its inception, technical image production has been cherished for its capacity to provide a transparent and objective view of the world. Henry Fox Talbot, one of the early inventors of the photographic process, not only called the photographic medium the "pencil of nature," but strongly believed in the capacity of the photographs as a "mute testimony," an "evidence of a novel kind" in the service of law (in Sekula, 1986, 6).

Nonetheless, access to reality has never been simply through an indexical relationship or an iconographic likeness. The evidentiary value of this particular form of the image as an unmediated technical process, as well as its defining keywords, "truth, reality, objectivity" (Steyerl, 2009,1) remained under dispute. For once, the images operate within a visual regime, never independent of the socio-political reality they are embedded in (Mitchell, 2010). An image is a part of a "spatiotemporal system" (Ranciere, 2008) and it is a "symbolic form" (Panofsky, 1927), "technique of culture" (Belting, 2009) reflecting a certain perception of the world in a particular cultural perspective. As Hans Belting (2009, 21) succinctly observers, "What cultures do with pictures and how they reflect the world on pictures takes us to the center of their way of thinking". The particular perspective on the production of the images of the world creates a sense of reality, that affects the way we perceive the world, project meaning on, and in return, being affected by the operations of this economy of images (Ranciere, 2008, 102). Thus, the technical images that now grow at our fingertips do not simply operate as a window to the world, but rather these images produce a worldview affecting the world. On a more practical end, this view casts the world into the procedures of the prevailing image regime. The reciprocal relation between the world and its images is deeply entangled with the way we experience the world.

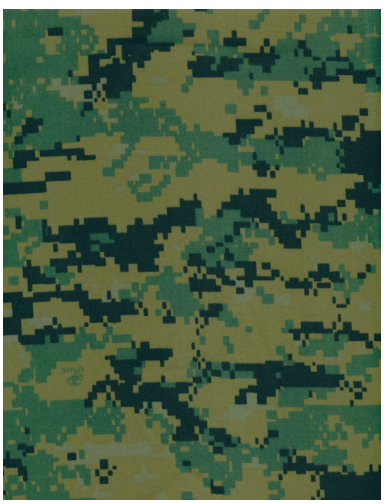

Figure 1. Marpat military camouflage pattern

When Hito Steyerl (2013) draws our attention to the Malpat military camouflage pattern, as an image of invisibility, we observe the shape of the world mediated by technical images; this time it's the world depicted by computer-generated digital images. The strategy of camouflage relies on one of the oldest principles of concealment: to be invisible, one should blend into space. The boundaries of the world mediated by the images repeat in the camouflage patterns. In this particular case of the pixelated camouflages, the reality one is embedded in, the world one leans one's body against is not that of vast lands shaped by the fluctuations of the seasons anymore but the dominant imaging technologies today, the reality experienced through screens (Mirzoeff, 2011, 16). Dressed in camouflage, the body becomes protected from the technological gaze cast on the world. Like the silver particle seamlessly collapsing on the body of the prisoner, the Marpat military camouflage pattern casts our bodies into its pixelated

texture. In this pattern, we see an image of the world built by the technical make of the digital image in its pixelated basis. The boundaries of every color field in this pattern follow the structure of the pixel, the smallest element of visibility in the computer-generated image. Thus, the visual perception of the space through screens is at stake. The body of the subject withers within a space mediated by current visualization technologies. The design of this camouflage explicitly manifests our shifting relationship with the world ruled by the new image economy, and the way we relate to the world with our pixelated vision, from a perspective that pictures the world from above. If objects and bodies undergo a sensory and sensible expansion in mimicry, the contours of the body respond to a pixelated space to blend into it. The subject expands toward the space enveloping the body in as much as this pixelated matrix consumes the body, hence, "the world we see has in turn been shaped and ordered by the way we see it" (Mirzoeff, 2016, 91).

Material Aesthetics and the Agency of the Objects of Evidence

Nonetheless, it is crucial to remember that this pixelated look does not simply manifest the technological limitations of the medium. Our vision is also marked by legal acts that limit the threshold of visibility. On this account, the debates over the resolution of aerial images picturing the Israeli-Palestinian region reveal how image resolution is a political issue with an impact on life on the ground. Eyal Weizman underlines that between the Israeli "architecture of occupation" and the Palestinian urban structure defined as "the jihad of building" by the Israeli military forces, the Palestinian/Israeli border is continuously redrawn on the ground (2014). In the region, aerial visualization technologies support the planning of the urban structure as a means to control the territory. The Israeli air forces ensure that its vertical presence surrenders the urban space and the inhabitants, which marks a shift of emphasis from operations on the land to the control from the air (Weizman, 2007, 238). The airborne optical tools play a significant role in drawing new geopolitical maps and with the support of judiciary measures that secure the hierarchy set in the vertical aerial domain, they become powerful tools to redesign life on the ground.

In the instance of the Israeli-Palestinian region, the Kyl-Bingaman Amendment (**2**) (KBA) is one such judiciary act that regulates the resolution of images for public use and ensures the authority of the Israeli state over the territory. In contrast to the strict limitations imposed on the publicly available images of the region due to the security concerns of the Israeli State, the military gaze is omniscient. Amnon Harari (in Williams, 2020), head of space programs at Israel's Defence Ministry openly remarks on the power of visibility, and the battle over the resolution of images: "It's always preferable to be seen blurred, rather than precisely."

FA addresses the injustices imposed upon individual lives through spatial strategies across the vertical and horizontal axis, through urban as well as optical means. Their work, *Bombing of Rafah* focuses particularly on the asymmetry of vision over the occupied territories, which has an immediate effect on individual lives. Rafah, as one of the most densely populated camps in Gaza (and also one of the most densely populated parts of the world), is redesigned by the Israeli forces through "spatial technologies," such as the destruction of houses by bulldozers, construction of Israeli settlements, bomb shellings as well as airborne imaging technologies (Weizman, 2007).

2. "Since 1997, the Kyl-Bingaman Amendment (KBA) to the 1997 U.S. National Defense Authorization Act has limited the availability of high-resolution satellite imagery over Israel and Palestine. Although this law only applies to the United States of America, as this country dominates the commercial market for satellite imagery, its impact is global" (Zerbini and Fradley, 2018).

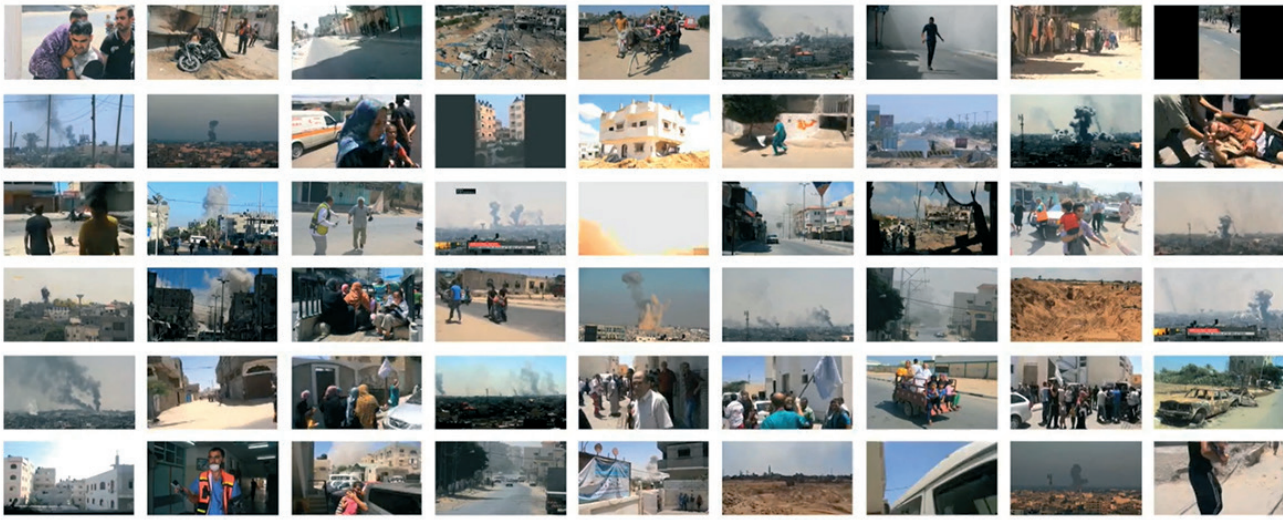

Figure 2. Forensic Architecture. Stills from *Bombing of Rafah*, 2014. Footages from the bombing, shot by different witnesses from the ground.

In the analysis of the Rafah bombings, the FA team works through the closely policed regime of visibility under the rule of the Israeli state. Since the asymmetry of vision also renders the atrocities against humanity invisible, the team strives to understand what happened during the bombings, with the help of the low-resolution videos and photographs recorded by people (**Figure 2 Figure 3**), witness testimonies, news, and media feeds from the ground, as well as material traces left on the urban structure. As such, their surveys combined images of the scene at different resolutions, but due to restrictions on publicly available satellite imagery, all their information was necessarily earthbound.

Tracing the smoke from burning buildings, the sound as it travels across the architectural layout, measuring the holes left by artillery attacks, the team reconstructed the course of events in the 3D modelling of the urban layout (**Figure 3**). Thus, the material traces left on the ground help to overcome the threshold of visibility under the control of the Israeli state. Once this information is registered on the 3D renderings of the built world,

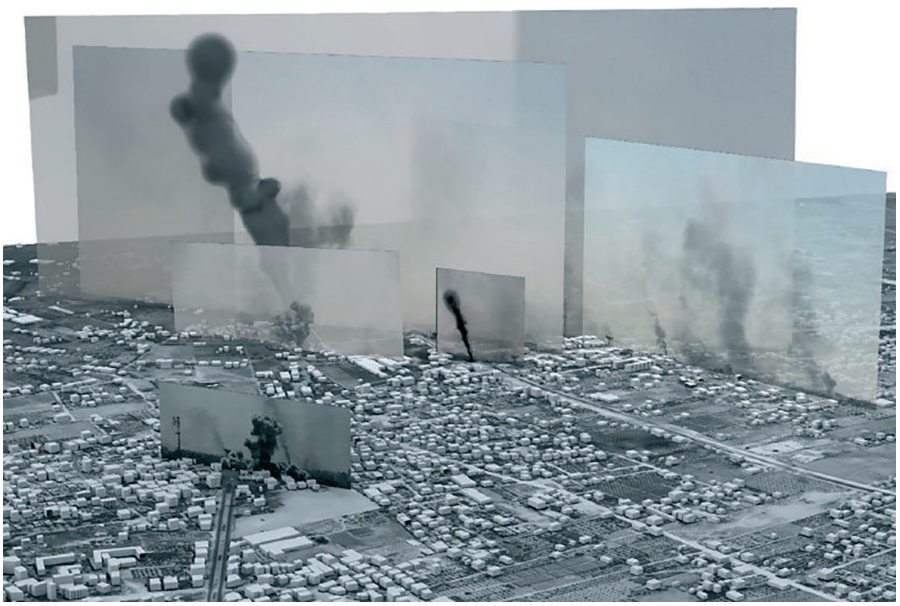

Figure 3. Forensic Architecture. *Stills from Bombing of Rafah*, 2014.

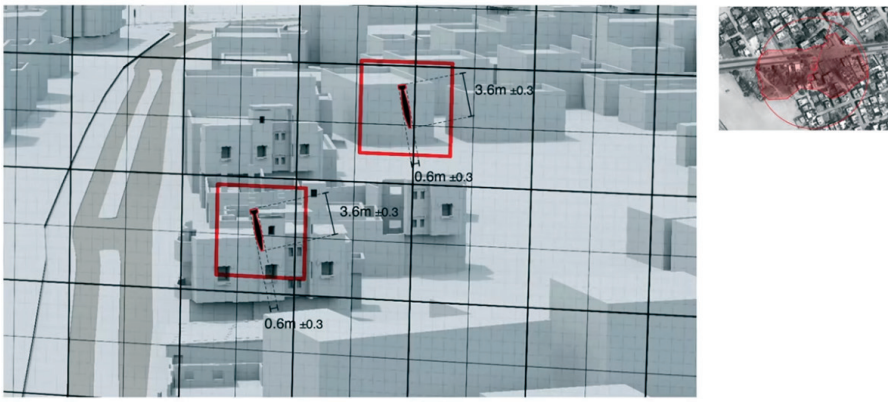

Figure 4. Forensic Architecture. Stills from *Bombing of Rafah*, 2014.

the architectural rendering becomes a tool to visualize the destruction of the built environment rather than a tool to help us to visualize an architectural plan to be constructed. The technology that serves to envision built environments for housing people is now being turned upside down, showing the destruction of the buildings that used to host human lives. The 3D renderings do not envision a residential area, but witnesses the destruction of it. FA reverses the architectural imagination, starts from the material data reminiscent of destruction, and builds the narrative of events with this data, to unravel what happened at a particular moment in a particular space.

THE AUTHORITY OF THE EXPERT KNOWLEDGE AND THE AGENCY OF THE PUBLIC

The restrictions over visibility also result in a privilege to be unaccountable for the atrocities committed against humanity. The practice of FA is centred on generating evidence to make the world visible and sensible and thus contribute to the formation of truth by using "all kinds of scientific, rhetorical, theatrical and visual mechanisms" (Keenan and Weizman, 2012). They fill the gap in our vision by tracing the indexical traces left on the urban structure, as well all following the witness accounts. These earthbound tactics rely on the increasing truth value bestowed upon "thing-based evidence" in forensics (Keenan and Weizman, 2012, 94). In the absence of the relevant evidentiary images due to the legal restrictions, the material traces of bomb shelling (smoke caused by fire, the holes left by artillery attacks on the buildings, the sound of the bombs, and its after-effects) replace the high-resolution images and trespass the threshold of visibility. Thus, a bone, as well as an image becomes an information reserve, an "object of evidence" (Steyerl, 2012) at different resolutions. Within this "material aesthetics" (Keenan and Weizman, 2012), things begin to talk in support of images of this material world.

If things gain agency in this new framework, their cryptic language needs an intermediary to clearly deliver its message. While the methods of FA seek to balance the moral overtones of the testimony with more object-oriented evidence, they might risk assuming an expert position that mediates this talk. Raw materials collected from the ground will only form another perspective on events through the expertise of the FA. Even the terminology in the process in which the raw data excavated from the ground turns into a piece of valuable and refined evidence evokes an

Figure 5. Forensic Architecture. Stills from *Bombing of Rafah*, 2014.

uneven relationship. In this regard, Hito Steyerl's (2009) remarks on the value of spatial and anthropological knowledge of distant geographies as a colonial strategy is worth noting: "reporting the so-called truth about remote people and locations has been closely linked to their domination". Within this perspective, the hierarchy of expert knowledge bestowed on FA risks building an asymmetrical relationship on another level.

In the context of "surveillant witnessing" in support of the human watch organizations' works, Andrew Herscher (2014) raises similar concerns. In the tactics of "surveillant witnessing", the public is called for monitoring the conflicted areas with the open-access satellite technology, to ward off any threats to human lives. Practically, people are invited to watch the designated area through the satellite images lest there would be any possible violations. Joshua Ewalt (2011) is cautious about the consequences of this tactic both for the participating public behind the screens and the local witnesses on the ground. The satellite witnessing through the secure distance of screens undermines the experience of the local, and at the same time deters the responsibility of "the citizens of the global world"(Ewalt, 2011, 346).

In the different forums FA presents its work, the question of the political agency of the subjects becomes a central topic as well. At the intersection of forensics and the forum, FA's investigations clearly emphasize forming of public forums for the discussion of truth. In the Latin roots of the word forensics, Eyal Weizman traces an intriguing kinship with the word "forum" as a "space of negotiation and truth-finding, in which humans and objects participated together in politics, law, and the economy" (2007, 63). Thus, within this material aesthetics, FA finds the possibility of establishing forums in which human and non-human actors are bestowed with an equal agency to establish the truth. Nevertheless, it is crucial to regard the distinctive subject positions across the various forums FA's work appears. At the diverse venues FA showcases their work, the agency of members establishing forums at each venue is dramatically different every time. In the judicial forums the FA presents its work - such as the International Court of Justice - assuming an unquestioned position of an expert is the standard procedure. In these forums, FA's work is to provide evidence for the judicial decision. On the other hand, for the lay audience, the illegibility of FA's methods as well as their all-knowing attitude risk implementing a domineering tone. In the venues of art or on the world wide web where they publish their work in detail, their sophisticated methods endanger imposing an asymmetry amongst the forum members.

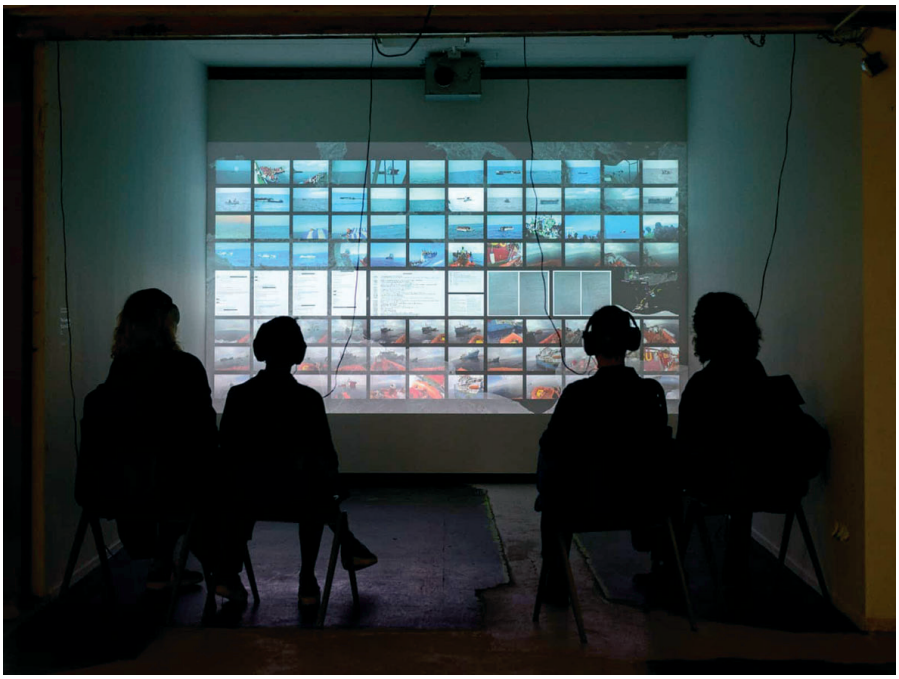

Figure 6. Installation view from Forensic Justice at BAK, Utrecht

In one of the installation settings of FA's work, we see the collapsing of the judicial rhetoric onto the language of art in more concrete terms. Facing the light emanating from the video work in the darkness of the exhibition space, the audience is positioned in the setting of a police line-up, where the suspects remain in the light to be identified by the witness (**Figure 6**). Hito Steyerl (2009) cautions about this "aura of the courtroom" in which technical images with their evidentiary quality are supposed to depict the world as it is. Although for FA, the use of such rhetoric is a deliberate decision, outside the judicial forums this manner of articulation brings asymmetry across the subjects involved, which bestows an assumptive position to the producer of images. In the art venues, their interlocutors do not have an agency of executing legal actions, so they become at best second-hand witnesses behind screens. Similar to the "surveillant witnesses," or curious spectators, they watch the FA solving the mystery of the events. In this manner, FA juxtaposes many subject positions; the victim, the witness, the spectator, the judge, the jury. Thus, not only the witnesses on the ground but also the other actors in the forum are displaced in this "aura of the courtroom" (Steyerl, 2007). Nonetheless, these positions cannot be leveled evenly.

In the context of the art venues, this knowledge hierarchy is more pronounced since the focus of the work shifts from what is depicted, towards who is depicting. Thus, the emphasis on the object of observation now yields towards the heroic attitude of the FA and their methods of establishing truth. When the objectivist claims collide with the subjective view related to art, the attention of the audience shifts from the work toward the author of it: "A cult of authorship, an auteurism, takes hold of the image, separating it from the social conditions of its making" (Sekula, 1978, 864). As the voice-over in FA's video explains the process of evidence mining and fact-finding, this rhetoric enacts an omniscient point of view. When the expertise of FA meets the collectively and painfully obtained information (the raw and poor images from the ground), only then, we have meaningful evidence and realistic renderings of the events. The

sophisticated technological evidence remains unreadable except for the experts, and hence this asymmetry of knowledge risks to reinforce the asymmetry of visibility.

The Disappearance of The Human Body and Shifting Axis of Visibility

On the other hand, Hito Steyerl destabilizes her position as a possible seat of authority through an insistent use of irony as well as her focus on the material structure of visualization technologies. The video work, *How Not to Be Seen: A Fucking Didactic Educational.Mov File*, dwells on the capacity of the optical tools to distinguish the law-abiding citizen from the possible threats to state security, thus, the privileged position of the subject from a body as an object of a target. Unlike FA's evident-based methods of visualization that aspires to capture what remains beyond the radar of the omniscient military vision, Steyerl distances herself from the idea of the image as impartial evidence. Rather, she ponders on the cyclical relationship between the physical reality reproduced in the image and the image that produces the world. In her work, Steyerl analyzes the technologies of image-making and lists tactics of survival in this visual regime.

Figure 7. Hito Steyerl. Film still from: *How Not to Be Seen: A Fucking Didactic Educational. Mov File*, 2013.

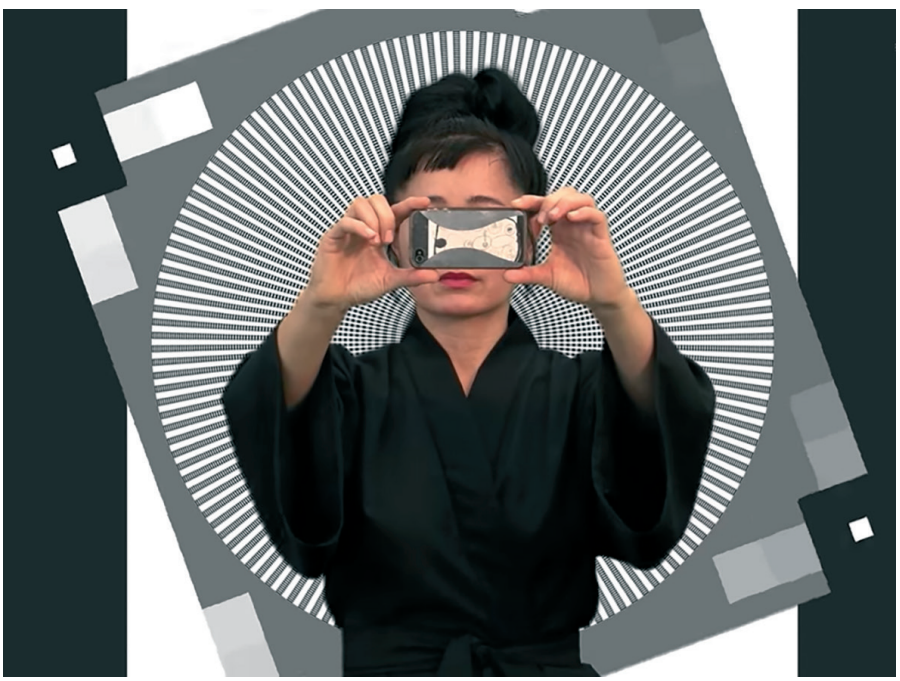

Figure 8. Hito Steyerl. Film still from: *How Not to Be Seen: A Fucking Didactic Educational. Mov File*, 2013.

As the video focuses on the technical infrastructures at use in the production of images of the world, Steyerl unveils another layer behind the scene of the crime and manifests the image not simply as evidence but rather as an accomplice to that very same crime. In response to the capacity of satellite technologies to displace ourselves globally, Steyerl employs a demilitarized version of this technology at the use of TV broadcasting. She annihilates the overbearing airborne images of the world with the low-key special effects of televisual image-making. The green screen of a television studio or a 3D rendering of an architectural project allows her to trespass the omniscient technological gaze and its complicit surveillance regime. In this world, becoming invisible is a matter of remaining unnoticed, of resisting the imaging technologies under the control of power.

From an auspicious perspective, the screen speed of information withers the distances and draws us closer. The demarcations across the far corners of the worlds fade and the nomadic subjects escape their confines grounded in territorial ideas. In Hito Steyerl's work, we see an alternative view to this rather rosy picture. The video shows figures in their burqas, in martial arts garments, with the garments marking their geographical location, assemble on the screen. The gathering of unlikely figures all at once in a TV studio, in a desert, or a 3D renderings of an architectural project manifests the collapsing of different spaces and time zones. This gathering, on the other hand, does not flatten the distinctive subject positions but rather highlights the invincible differences between them. As we see an affluent resident of a gated community in a 3D architectural rendering next to a figure in a burqa, we recognize once again that the world appears in different dimensions for each. For the former, the world is smaller in comparison to the underprivileged citizens of remote geographies. Outside the fortunate centers of the world, moving across the borders is rather an arduous endeavor.

The gathering on the resolution chart reminds us of the power to see in order to keep the possible threats at bay. Secure and safe life at home requires a vigilant and aggressive gaze at others. Depending on which side of this gaze you are at, the world is either bereft of concrete borders or every movement of your body slows down with the surveillant gaze. Until the reign of satellite technologies, these charts secured the clarity of the aerial images of the world. As the distant figures meet at the resolution targets built in the middle of a Californian desert, the kinship

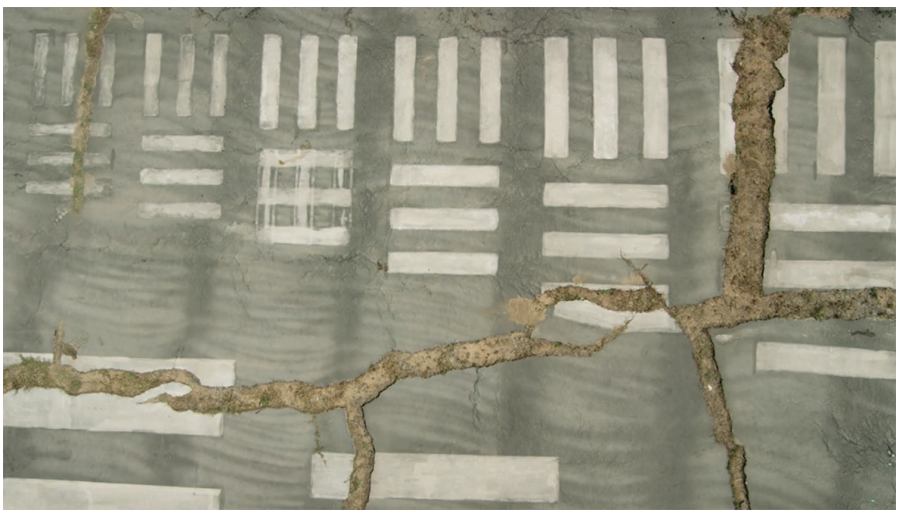

Figure 9. Hito Steyerl. Film still from: *How Not to Be Seen: A Fucking Didactic Educational. Mov File*, 2013. Cracked surface of the resolution chart.

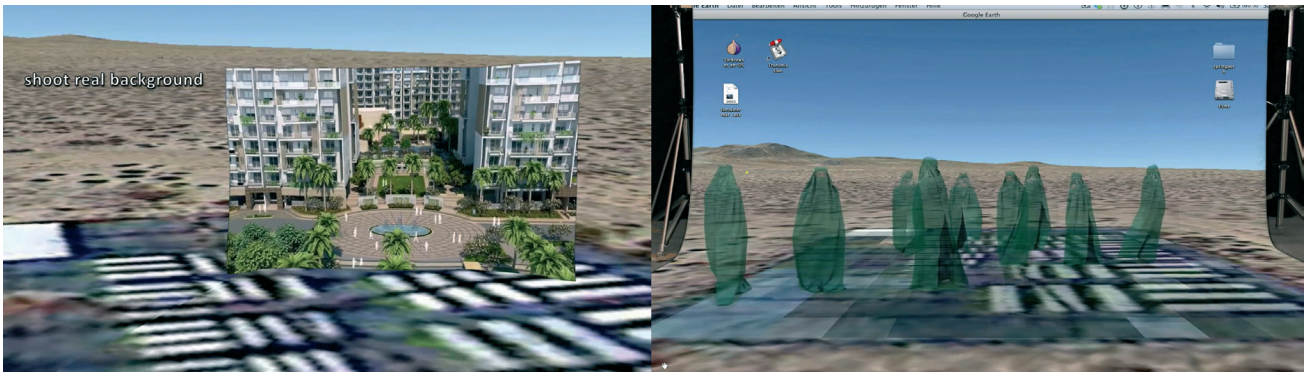

Figure 10. Hito Steyerl. Film still from: *How Not to Be Seen: A Fucking Didactic Educational. Mov File*, 2013. The 3D architectural renderings and the figures in the burqa appear on a Californian desert.

between the physical infrastructures behind the images of reality and the world here and now becomes more pronounced. Hito Steyerl's tactics of invisibility reflect on the power of the technical image to shape the life on the ground. An automated voice-over narrates the lessons in invisibility in five chapters: 1. Make something invisible for a camera, 2. Be invisible in plain sight, 3. Become invisible by becoming a picture, 4. Be invisible by disappearing, and 5. Become invisible by merging into a world made of pictures. Under five chapters, the video lists 54 methods of invisibility. All of these methods are founded on the fact that the world is mediated by a "technologized gaze" (Parks, 2005, 15), in which we are visible without being able to see back. In this regard, Steyerl remarks on the asymmetry of vision from the very beginning and aspires to speculate on how to use the power of images in reverse order. Pixel box heads, martial arts performers, and women wearing hijab ally at the blind spots of power (**Figures 6**) (**Figure 7**). When she transfers a 3D architectural rendering of an idyllic gated community to a resolution chart in a military zone, she looks back from the infrastructural origins of the technological gaze to its promises on another plane.

In another example, three individuals wear black and white boxes on their heads to mimic a pixel calibration target (**Figure 11**) and conceal themselves from the vertical view of power through their anti-technological camouflage. If Malpat pattern confirms the reality of a pixel-mediated world, a world immersed into the technological gaze, this pixel camouflage masks once again highlight the relationship between the world mediated by technical images and its inhabitants. As the figures imitate pixel calibration targets built on the ground, they unravel the visual infrastructures of the spatial images at the service of national security, which renders people not as individual subjects but rather as possible threats, figures of data, or a number of casualties.

As the figures in pixel camouflage masks overlap upon the pixel calibration point seen from above, the conventional view of the subject seen frontally on the horizontal axis becomes levelled with the vertical view of the world. For Steyerl (2011), the ubiquity of the aerial images of the world increasingly displaces our conventional image of the world as well as ourselves. While the view from above eliminates the distinction between objects and subjects, the subject deserts the privileged position as the center of vision. In the horizontal perspective, the threshold of visibility depends on the capacity of the human vision. The image appears at the cross-section between the observer and the vanishing point on the horizon, where the scope of the human eye ends. Hito Steyerl (2011) remarks on the loss of this grounded vision in the vertiginous perspective of the world, in which

Figure 11. Hito Steyerl. Film still from: *How Not to Be Seen: A Fucking Didactic Educational. Mov File.* 2013. Pixel heads against the pixel calibration charts inside restricted military areas.

the vanishing point shifts up to the vertical axis and objectifies life on the ground as a possible threat (Graham, 2016, 30; Vaalho, 2014, 101, Mirzoeff, 2016, 86).

CONCLUSION

In this paper, I aimed to analyze the technological and legal restrictions over the visual representations of the world and how this techno-judicial image regime informs the world we live in. While the current visualization techniques that picture the world provide spatial information, they become crucial means to envision the world, govern spatial relations, and determine our position. In this image regime, the threshold of visibility marks the human body as its resistance point. With regard to personal privacy laws, the body is the limit to visibility and when national security concerns are at stake, the law prioritizes the general safety of the public and regards the body as a possible threat and an object to be targeted. The distinction between subject and object, citizen and threat, and us from others is regulated by the visualization techniques that perceive individual bodies as spatial elements within strictly policed territories. In the view captured from above, the individual bodies are perceived in relation to the space, as moving elements, and as possible threats to rupture the order. What is on focus is the body in space, without a face and a name, a spot on the surface of the earth, hence, a human body dehumanized and dismembered into pixels.

Nonetheless, the images that allow us to picture our world are at the same time restricted by the asymmetry of vision at the service of political power. In this framework, I discussed the works of FA and Hito Steyerl, and the means they aspire to overturn the uneven character of this techno-judicial image regime. FA and Steyerl redress the hierarchy of visibility, its immediate impact on spatial order, and the position of individual subjects in this order. In this sense, FA's approach is to unveil atrocities against humanity implemented through spatial control, be it through aerial surveillance or urban design, and counteract against this spatial warfare with the earthbound tactics of alternative imaging. Hito Steyerl, on the other hand, is concerned with making visible things invisible, to escape the objectifying gaze of the power. To this end, she analyses the technological infrastructures of the images and takes the image as a world-forming process. Whereas FA exposes the overseen facts and renders them visible in search of justice, Hito Steyerl reflects on the power of images in mediating and shaping our reality in discrete manners. The tools of technical image production, which should remain off the frame and invisible become the

central concern of Steyerl's work. Thus, Steyerl mainly focuses on the apparatuses of the techno-judicial image, pushes the viewer's gaze back to the operations behind the images, and reflects on how our perception of the world is informed by them.

In both works, the optical tools of spatial control are employed to work against the asymmetry of vision in the service of uneven spatial order. Nonetheless, while the respective works strive to close the gap between the vertical vision of power and the reality on the ground by looking into the disregarded loopholes in the technological gaze, how these works meet us as spectators introduce another layer to the asymmetries of visibility. In Steyerl's ironic tone, we are instructed in how to fight against the regime of visibility by being invisible, while FA establishes forums that bring us to the same eye level as the local witnesses. As such, the various subject positions collapse upon one another in FA's work and eradicate the distinctive experiences within this regime of uneven visibility. Yet, as Steyerl's unlikely assembly manifests, while some lives are bestowed with a privileged position, many others are regarded as disposable, hence, an unquestioned unity across the uneven lines of this visibility regime is a susceptible proposition.

Nonetheless, in the techno-judicial regime, rendering the power visible is still a crucial critical work. Since the representations of space encompass our relation to the world, the overthrowing of the conventional images of the world has a potential to resettle our position. The gaze of power is epitomized in the vertical aerial view. In the practices of FA and Steyerl, this gaze meets earthbound tactics from the ground. Thus, the vertical vision falls onto the ground and meets its subject in person. As in the man's (sic) fall into the world from heaven in search of truth, in this fall the unfathomable authority is left behind in search of a true rendering of the world. In the free fall, the objects look as if they move apart from each other, "as though the ground was splitting open" (Virilio, 2008). Unlike the view from above, which sees the world as its own property (Virilio, 2008), this falling defeats the distinctions between subjects and objects. The fall is a moment of disorientation that obliterates the distinctions between subject and object, human and non-human with a promise of meeting on the same ground. If technological vision not only records but also shapes and produces the world, the works of Steyerl and FA seek a critical resolution for the redistribution of the world, in contrast to the clear-cut mechanisms of optical tools of power. The actual point of emphasis is to consider the act of looking like a political act (Herscher, 2014), and critically analyze the role of the image as a means to connect, capture, transport as well as govern and objectify the individual body.

ACKNOWLEDGEMENTS

I would like to thank the referees for their insightful suggestions, which helped me to further develop the early version of the manuscript. I am also grateful for the critical views offered by Szymon Malicki on the politics of vertical perspective. The writing of this paper was inspired by our in depth discussions on the subject.

BIBLIOGRAPHY

BENJAMIN, W. (1936) *The Work of Art in the Age of Mechanical Reproduction*. London: Penguin Books.

DORIAN, M. (2013) On Google Earth, *Seeing from Above: The Aerial View in Visual Culture*, eds. M., Dorrian, M., and F. Pousin, London, I.B. Tauris.

EWALT, J. P. (2011) Mapping Injustice: The World is Witness, Place-Framing, and the Politics of Viewing on Google Earth, *Communication, Culture & Critique,* 4(4) 333-54

FRADLEY, M, ZERBINI, A. (2018) Higher Resolution Satellite Imagery of Israel and Palestine, Reassessing the Kyl-Bingaman Amendment, *Space Policy*, Volume 44, 14-28.

FLUSSER, V. (1985) *Into the Universe of Technical Images*, University of Minnesota Press.

GRAHAM, S. (2016) *Vertical: The City from Satellites to Bunkers*, Verso Books.

GROYS, B. (2008) *Art Power*, MIT Press, Cambridge, Mass, London.

HARVEY, D. (2008) Globalization and the "Spatial Fix". *Geographische Revue - Zeitschrift für Literatur und Diskussion*. 3(2) 23-30.

HERSCHER, A. (2014) Surveillant Witnessing: Satellite Imagery and the Visual Politics of Human Rights, *Public Culture, 26*(3), 469-500.

HOUCK, M. (2007 *Forensic Science: Modern Methods of Solving Crime*, Westport, CT: Praeger.

KEENAN, T. (2014) Counterforensics and photography, *Grey Room* 55 (Spring) 58-77.

KEENAN, T, STEYERL, H. (2014) What Is a Document? An Exchange between Thomas Keenan and Hito Steyerl, *Aperture* No.214, Documentary, Expanded (Spring) 58-64.

KEENAN, T., WEIZMAN, E. (2011) *Mengele's Skull: The Advent of a Forensic Aesthetics*. Berlin: Sternberg Press.

MITCHELL, W. J. (2000) Holy Landscape: Israel, Palestine, and the American Wilderness, *Critical Inquiry, 26*(2), pp.193-223.

MIRZOEFF, N. (2006) Network Subjects: or, The Ghost is the Message, *New Media Old Media: A History and Theory Reader*. eds. W.H.K. Chun , T. Keenan, Routledge. New York.

MIRZOEFF, N. (2011) The Right to Look, Duke University Press.

MIRZOEFF, N. (2016) How to See the World: An Introduction to Images, from Self-Portraits to Selfies, Maps to Movies, and More, Basic Books.

PAGLEN,T. (2014) Operational Images. [https://www.e-flux.com/journal/59/61130/operational-images/] Access Date (11.06.2021).

PARKS, L. A. (2005) *Cultures in Orbit*: *Satellites and the Televisual.* Duke University Press. North Carolina.

RANCIÈRE, J. (2016) *The Edges of Fiction*, Medford, MA, Polity.

SEKULA, A. (1978) Dismantling Modernism, *The Massachusetts Review,* 19(4) Photography (Winter) 859-83.

SOJA, E. W. (2010) *Seeking Spatial Justice*, Minneapolis, Univ. of Minnesota Press.

STEYERL, H. (2003) Documentarism as Politics of Truth [http://eipcp.net/transversal/1003/steyerl2/en/] Access Date (11.03.2020).

STEYERL, H. (2009) In Defense of the Poor Image [https://www.e-flux.com/journal/10/61362/in-defense-of-the-poor-image/] Access Date (11.03.2020).

STEYERL, H. (2011) In Free Fall: A Thought Experiment on Vertical Perspective [https://www.e-flux.com/journal/24/67860/in-free-fall-a-thought-experiment-on-vertical-perspective/] Access Date (11.03.2020).

STEYERL, H. (2012) Missing People: Entanglement, Superposition, and Exhumation as Sites of Indeterminacy [https://www.e-flux.com/journal/38/61209/missing-people-entanglement-superposition-and-exhumation-as-sites-of-indeterminacy/] Access Date (18.04.2021).

STEYERL, H. (2013) The Photographic Universe: Photography and Political Agency? with Victoria Hattam and Hito Steyerl. [Video file] [https://www.youtube.com/watch?v=kqQ3UTWSmUc] Access Date (10.05.2020).

VIRILIO, P. (2008) *Open Sky*, London, Verso.

WEIZMAN, E. (2004). The Politics of Verticality: Architecture and Occupation in the West Bank [https://www.youtube.com/watch?v=UF83_tcuvms] Access Date (11.06.2020).

WEIZMAN, E. (2007) *Hollow Land: Israel's Architecture of Occupation,* Verso Books.

WEIZMAN, E. (2017) *Forensic Architecture: Violence at The Threshold of Detectability*, New York: Zone Books.

WEIZMAN, E. (2014) The architecture of Ariel Sharon [https://www.aljazeera.com/indepth/opinion/2014/01/architecture-ariel-sharon-201411114171030885 5.html] Access Date (11.03.2020).

WILLIAMS, D. (2020) Israel Feels Exposed as U.S. Drops Satellite-imaging Cap [https://www.reuters.com/article/us-israel-usa-satellites-idUSKBN2470WN.] Access Date (24.07.2021).

Alındı: 12.07.2020, **Son Metin:** 11.03.2022

Anahtar Sözcükler: Görünürlük; belgesel; mekânsal adalet; iktidar; çözünürlüğün politikası

FORENSIC MİMARLIK VE HİTO STEYERL'IN ÇALIŞMALARINDA MEKANSAL ADALET İÇİN OPTİK TAKTİKLERİN KULLANIMI

Görselleştirme teknolojilerinin tarihi, içinde yaşadığımız dünyayı anlamak ve düzene sokmak çabasında dünyayı resmetmek için gösterilen amansız çabaya işaret eder. Dünyayı görselleştirme becerisi, hayatta kalma ve kontrol için önemli bir stratejidir, bununla birlikte bize bu olanağı sağlayan teknolojiler bir görme asimetrisi içinde yönetilir. Zemin gerçekliği üzerinde doğrudan etkileri olan teknik görüntülerin erişilebilirliği yasal düzenlemeler tarafından desteklenen her şeyi gören gücün bakışı tarafından kontrol edilir. Bu anlamda, bir görüntünün sınırları sadece görselleştirme teknolojilerinin kapasitelerinin bir sonucu değildir. Güvenlik önlemlerini ve kişisel mahremiyet haklarını göz önünde bulunduran hukuki düzenlemeler de görünürlüğün sınırlarını belirler. Görülmeden

görme yeteneğinin nihai iktidar biçimi olduğu mevcut görünürlük rejimi altında, bu tekno-yargısal görüntü ekonomisi, özneler ve nesneler, yasalara saygılı vatandaşlar ve güvenlik tehditleri arasında sınırlar çizer. Bu makale, mevcut tekno-görüntü rejimi içinde sürdürülen güç ilişkilerini tartışmaya ve burada biçimlenen görünürlüğün asimetrik sınırlarını yeniden düzenlemeye çalışan Hito Steyerl ve Forensic Architecture (FA) ekibinin çalışmalarına odaklanmaktadır. FA, politik sınırların biçimlenmesinde şehir planlamasının yöntemlerini bir savaş aracına dönüştüren mekansal stratejilere ve dikey görüş teknolojilerinin sağladığı bakışa odaklanırken, Hito Steyerl teknolojik görüntünün materyal yapısını insan yaşamı üzerindeki etkilerini göz önünde bulundurarak araştırır. Bu çerçeve içerisinde bu makale, ilgili çalışmaların görünürlüğün asimetrisine karşı kullandıkları taktiklerin yakından bir okumasıyla, teknik görüntülerin içinde yaşadığımız dünyayı üretme kapasitesini ve görüntülerin failliğini inceler.

OPTICAL TACTICS FOR SPATIAL JUSTICE IN THE WORKS OF FORENSIC ARCHITECTURE AND HITO STEYERL

The history of visualization technologies remarks the relentless human endeavor to picture the world we inhabit, in order to understand our surrounding conditions and devise strategies of survival in its unforeseen vagaries. Nonetheless, the technologies that allow us to do so are ruled within an asymmetry of visibility. The accessibility of technical images is governed by the all-seeing gaze of power secured by legal acts with immediate effects on the ground reality. In this sense, the limits of an image are not simply an outcome of the capacities of visualization technologies but also judicial regulations circumscribing the threshold of visibility in regards to security concerns as well as personal privacy rights. Under the current regime of visibility, in which the ability to see without being seen is the ultimate form of power, this techno-judicial image economy establishes an uneven order across subjects and objects, law-abiding citizens, and security threats. This article focuses on the works of Hito Steyerl and the Forensic Architecture (FA) team, which strives to discuss power relations sustained within the current image regime and redress the limit of the visible under the techno-judicial image regime. While FA aims to unravel the spatial strategies of urban warfare and technologies of aerial vision at work in the forming of political borders, Hito Steyerl investigates the materiality of the technological image and its implications on human life. Through a close reading of respective works, in this paper, I analyze the agency of the images in their capacity to produce the world we live in and grounded strategies employed against the asymmetry of visibility.

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METU JFA 2022/1
(39:1) *93-114*

DOI: 10.4305/METU.JFA.2022.1.5

ADAPTATION OF RESIDENTIAL INTERIORS FOR LOW AND MIDDLE-INCOME SYRIANS LIVING IN SULTANBEYLI, TURKEY (1)

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Received: 08.05.2021; **Final Text:** 11.03.2022

Keywords: Adaptation; design principles; homemaking; residential interiors; Syrians.

1. This study is based on the research project titled "Determining Housing and Interior Design Principles and Developing Design Proposals Suitable for Modern Life and Cultural Conditions to Facilitate the Adaptation of Syrians Under Temporary Protection" run by Dr. Özge Cordan and approved by The Scientific and Technological Research Council of Turkey (TUBITAK) with grant number 118K441. As one of the output of the project, a thesis study with the same title as the project title was completed. Dr. Özge Cordan is the supervisor of the thesis study and, Talia Özcan Aktan is the writer of the thesis.

2. This human right is guaranteed by international conventions, such as Article 25 of the Universal Declaration of Human Rights (United Nations [UN], 1948) and Article 11/1 of the International Covenant on Economic, Social and Cultural Rights (United Nations Human Rights [UNHR], 1976).

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INTRODUCTION

One of the biggest forced mass migrations of the twenty-first century originated in the Syrian Arab Republic due to political conflict, which was turned into a civil war (Kavas et al., 2019). Syrian migrants are therefore considered refugees who were involuntarily displaced from their homelands. According to the United Nations High Commissioner for Refugees, "[o]ver 5.6 million people have fled Syria since 2011, seeking safety in Lebanon, Turkey, Jordan, and beyond". Turkey, which does not consider Syrians refugees, gave them temporary protection in 2014 (Directorate General of Migration Management [DGMM], 2022), and also hosts the largest number of Syrians—currently more than 3.6 million (UNHCR, 2022).

This mass displacement has affected countless people, eliciting studies on education, social services, health, legal processes, etc. by various institutions and NGOs that deal with Syrians. These studies reflect the perspectives of various disciplines, and some deal with Syrians' need for housing, which is one of the most basic human rights guaranteed by international conventions (**2**). It is imperative to solve this basic need in a more humane way that supports coexistence and strengthens interaction and cohesion. In other words, Syrians' housing issues have the potential to either unify or segregate people in terms of relocation. On the other hand, besides social and economic ones, cohesion policies cannot be achieved without considering spatial dimensions (Erdoğan, 2018).

The housing needs of Syrians who live in different parts of Turkey and whose numbers are greater than those living in refugee camps and reception centers have become increasingly significant in urban areas—more than 98,5% of Syrians have dispersed to different urban areas in Turkey (DGMM, 2022). The Syrian workforce constitutes the backbone of the Turkish economy in many locomotive sectors, such as construction (Cengiz and Tengüç, 2021) and textiles (Dursun and Nizamoğlu, 2021).

In this respect, it can be said that their settlements in urban areas were also supported by the authorities. Therefore, their housing needs must be solved in a long-term, on-site, and economical way to support coexistence and cohesion, instead of building new residences in areas isolated from the local community, specifically for urban areas. This can provide a sense of community between Syrians and local inhabitants and affect their sense of belonging, residential satisfaction, and well-being in relocation. In this sense, micro- and macro-scale studies and policies for solving Syrian's housing issues are needed. While finding solutions to Syrian's housing need on a macro-scale requires addressing the issue at political, urban, and architectural scales, it is also possible to seek a solution to this need on a micro-scale regarding homemaking in relocation. Additionally, there is not enough studies regarding Syrians' transcultural homemaking practices in Turkey.

Thus, the study focuses on finding a micro-scale solution to the housing issue of lower- and middle-income Syrians living in Turkey within the existing residential areas from the viewpoint of the interior design/architecture discipline. The research explores the housing needs of low- and middle-income Syrians, how they use and adapt their current residential interiors to their needs, and how existing interiors can be adapted to improve residential satisfaction. The Sultanbeyli district in Istanbul was chosen as the case for this study. The field study was conducted with the voluntary participation of Syrian families who live in apartment buildings within the borders of the Fatih neighborhood in Sultanbeyli. The data were collected and analyzed using multiple methods for acquiring holistic information about Syrians and their culture, housing needs, and homemaking practices, thus enhancing the creditability of the study. Accordingly, the purpose of the study is to develop a framework for designers and researchers to adapt existing residential interiors to meet the needs of low- and middle-income Syrians living in Turkey. This framework is based on determining housing and interior design principles and sub-principles and explaining them using a set of indicators. Besides developing a framework for adapting existing residential interiors, the study provides theoretical and practical contributions to the literature regarding the homemaking practices and housing needs of low- and middle-income Syrians living in Turkey and to stakeholders (e.g., designers, researchers, developers, politicians) to achieve economically, culturally, socially, and physically supportive habitats in the existing built environment.

To this end, the second part consists of a literature review and investigates the idea of home, homemaking, and housing adaptation appropriate to the user's needs, specifically focusing on refugee and migration studies. The third part comprises the method and details the case study settings, the study participants, data collection procedures, the materials and instruments, and the data analysis. The fourth part provides data analysis obtained through ethnographic and visual methods from Sultanbeyli. The fifth part discusses the study findings and details the proposed framework based on housing and interior design principles, sub-principles, and indicators. The conclusions provide limitations, implications, and suggestions for future research.

HOMEMAKING DURING (FORCED) MIGRATION

Migration, whether voluntary or forced (Tataru, 2020), and housing studies are interrelated due to the human factor. While homes for immigrants have become more common in the migration literature (Mazumdar, 2009), there is limited research related to Turkey. Housing studies for immigrants and refugees are often related to the meaning of home (Taylor, 2015), place attachment, belonging, residential satisfaction (Esentepe and Günçe, 2019), and homemaking practices (Boccagni and Brighenti, 2017; Bilecen, 2017) during relocation.

A house is a physical unit that defines and limits space for household members (Lawrence, 1987). Home refers to the interaction between people and place and has symbolic, intangible, and invisible aspects, according to scholars such as Dovey (1985), Lawrence (1987), and Mallet (2004). Home, as an idealized concept, provides territory, privacy, security, control, familiarity, and self-achievement to its residents to perform their social and daily life activities for private and public zones. Home plays an important role in identity formation, the socialization of the household, cultural norms and values, memories, and people's desires and hopes for the future (Kabachnik et al., 2010). Thus, home is a place of reproduction of culture, identities, and traditions (Al-Ali and Koser, 2002).

The meaning of home is redefined in the case of forced migration. Home can simultaneously be a "place of refuge and a safe haven" and "a place of alienation and discrimination" (Taylor 2015, 18). Solidarity networks, cultural affinities, kinship relationships, and religious and ethnic factors are determinants that push or pull people to a particular place in the migration process. The loss of home is traumatic for forced migrant populations and involves the loss of property, income, daily life activities, relationships, and self-identity. Because of these losses, most migrants attempt to remake home, which represents the home and homeland lost or left behind (Kissoon, 2015). There is a material link between past and present living environments (Levin and Fincher, 2010). Ralph and Staeheli (2011) explained this situation as simultaneously living here and there. In this sense, immigrants value both "heritage and receiving culture" (Titzman et al. 2015, 407). Thus, home becomes a blended place with new cultural interactions and acquisitions for its residents.

As a multi-layered and complex process, transcultural homemaking practices of immigrants in relocation are an ongoing attempt (Taylor, 2015) for symbolic reproduction of previous home (Boccagni and Brighenti, 2017; Fadlalla, 2011) and for ensuring social and daily life activities for users' needs. Home, in this regard, refers to a place where complex interactions between previous and present living environments and conditions occur (Liu, 2014). Living conditions during relocation are important for immigrants. While residential satisfaction and quality affect attachment bonds (Fornara et al., 2019), migrants who do not have residential attachments perceive their current residences negatively compared to their previous ones (Anton and Lawrence 2014). In this sense, residential satisfaction is associated with the relationships that household members have with their previous and present homes (Gronseth et al., 2016).

Besides symbolic and material processes, transcultural homemaking practices include alterations and adaptations (Bilecen, 2017). People arrange housing environments to satisfy their values, needs, and wishes over time (Altman and Gauvain, 1982) and make adaptations to settings (Zeisel,

2006) for turning their residences (house) into meaningful and familiar places (home). Adaptation, which is the alteration of an existing space for new uses (Brooker, 2016), depends on both situational (environment, architectural shell, space) and individual (culture, identity, etc.) variables (Kosic, 2002). Thus, the housing environment can be adapted through appropriation to make a place one's own (Graumann, 2002). Appropriation is essential for expressing culture, habits, preferences, tastes, and memories. Boccagni (2020) defines the multiple means of housing appropriation as "improving the space," "enabling the cultural reproduction," "privatizing the space," and "beautification" (Boccagni, 2020, 9).

Spatial adaptation requires flexible and adaptable loose ties in housing design (Rapoport, 2005). Flexibility maximizes space use and allows alterations according to users' changing needs (Till and Schneider, 2016; Moxon, 2011). Cultural adaptation requires cultural continuity (Gronseth et al., 2016). Lifestyle, which is the most concrete indicator of culture (Rapoport, 2005), maintains cultural continuity and gives crucial insight into people's kinship and social relations, activities and activity systems, family structure, roles, status, and identity (Rapoport, 2005). Furthermore, privacy, which allows the interaction between individuals and groups at different comfort levels (auditory, olfactory, visual, spatial, etc.), shapes both physical aspects and spatial elements as indicators of sociocultural adjustments (Ünlü, 1998) and ensures gender-segregated space use for Muslim societies in public and private zones (Zalloom, 2019). Religion is another important factor that plays an essential role in homemaking for providing continuity with migrants' previous lives (Fredericks and Nagy, 2016). Identity-based adaptation practices, such as beautification, are effective ways of personalization. To create a familiar home environment, objects such as furniture and decorations play an important role in the symbolic construction of homeland (Bilecen, 2017), carry special meanings (Ureta, 2007), and recall the previous experiences of feeling at home (Brun and Fabos, 2015). While furniture helps cultivate a sense of home for migrants (Rottmann, 2020), transitional objects such as decorative items, goods, and photographs brought from immigrants' homelands to new residences for personalization (Glusac, 2015) are other important indicators of an individual's home experience (Neumark, 2013).

Therefore, refugee/immigrant residences should ensure sociocultural and spatial adaptations to meet the residents' needs in the process of homemaking during relocation for feeling at home, sense of familiarity, belonging, and identity. The housing adjustment capacity and economic status of immigrants are also very decisive factors for homemaking in relocation, specifically for Syrians who work in the lowest levels of the economy in Turkey (Rottmann, 2020), belong to low- and middle-income classes (Kavas et al., 2019), and need low-cost housing (Ismail, 2015).

METHOD

Based on the literature review, this study aimed to acquire holistic information regarding low-and middle-income Syrians' homemaking practices and housing adaptation for residential interiors according to their culture, habits, and needs. Thus, the study intended to develop a framework for designers and researchers to adapt existing residential interiors appropriate to Syrians' housing needs. The field study was conducted in Sultanbeyli, Istanbul, and multiple research methods and techniques were used for data collection and analysis.

3. The Sultanbeyli Municipality developed the SUKOM database to facilitate social cohesion between Syrians and local inhabitants (Kavas et al., 2019).

4. Since the necessary permission for the technical measurements of the houses could not be obtained from the landlords in the first round, a second-round site visit was carried out. There were no inconsistencies or discrepancies affecting the study results between the two rounds of visits.

Case Study Setting

In Turkey, Syrians mainly settle in suburban areas of major cities, such as Istanbul (Kılıçaslan, 2016). Compared to other cities, Istanbul has the highest number of registered Syrians—approximately 540,000 (DGMM, 2022)—and the district of Sultanbeyli in the Asian region of Istanbul hosts the largest Syrian population—more than 20,000 (Syrian Coordination Center [SUKOM], 2022). Sultanbeyli was chosen as the case for this study because of the coexistence and cohesion between Syrians and the local inhabitants and the similarities between them in terms of religion, culture, and income. The services of the Sultanbeyli Municipality in terms of shelter, health, education, and employment and the use of the SUKOM database (**3**) are among other reasons for choosing Sultanbeyli. The field study was limited to the area between Seyhan and Şalgamlı Streets in the Fatih neighborhood (**Figure 1**). This is where the majority of Syrians settled, according to the 2017 SUKOM database. Sultanbeyli has a built environment consisting mostly of apartment buildings. This is because Syrian families live in apartments; the study was limited to three- to five-story apartment buildings in this neighborhood. The field study was also carried out in two rounds of visits (**4**): one in January/February 2019 and the other in June/July 2019.

Study Participants

Home is considered a sociocultural unit and is mainly associated with family life (Hayward, 1975). Therefore, the participant group was limited to Syrian low- and middle-income families living in the Fatih neighborhood in Sultanbeyli. The SUKOM database was used to screen the participants. During this process, all 63 Syrian families living in this neighborhood were contacted by a native translator and informed of the purpose of the study. The participant group consisted of 18 volunteer Syrian low- and middle-income families and 45 adults (i.e., two or three members over 18 years old from each family) who could understand and answer the questions.

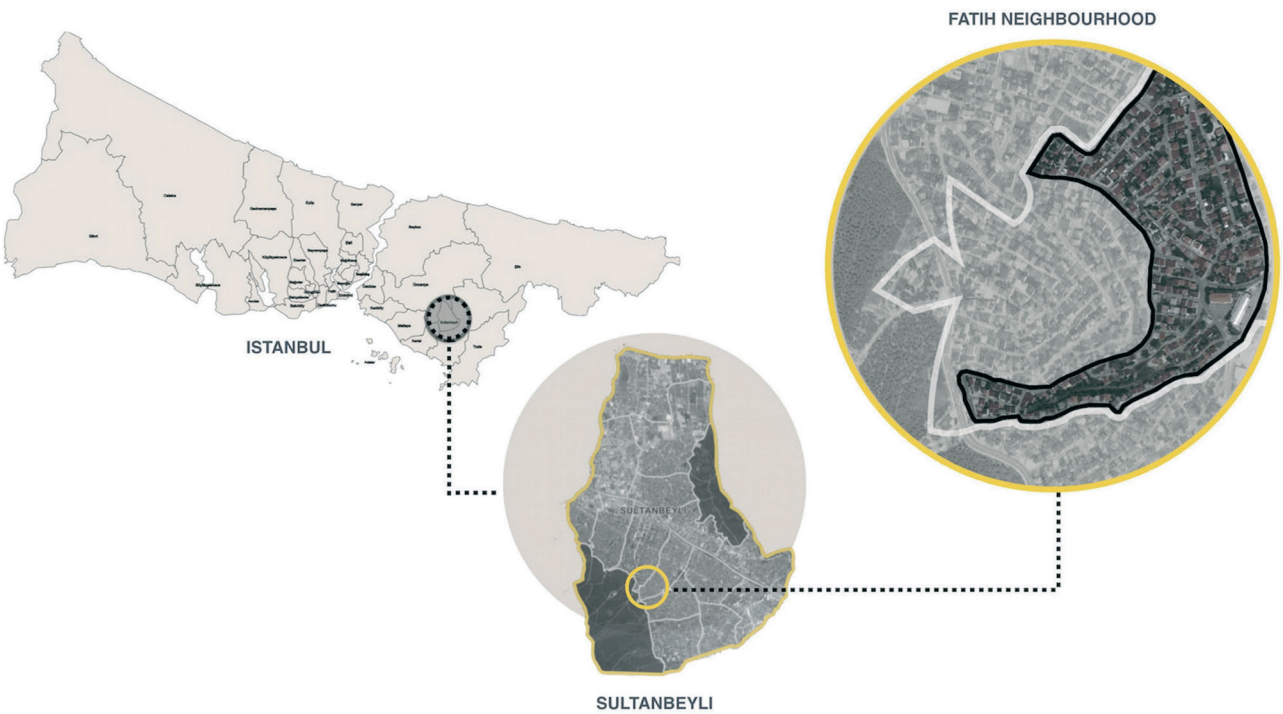

Figure 1. The field study area within the borders of the Fatih neighborhood in Sultanbeyli on the map of Istanbul

Data Collection Procedures

Before visiting the study area, permissions were acquired from the authorities, including ethical committee approval. The field study was carried out with the participation of a female Syrian translator for easy access to Syrians' residences and to overcome the language barrier with the participants. A clinical psychologist, an adviser on the research team, also contributed to the field study to communicate effectively with the participants. During the site visit, the participants signed a consent form prepared in Arabic and Turkish. The interview questions were asked by the translator via face-to-face communication in Arabic, and the participants' responses were taken in Arabic. The answers were then translated to Turkish by the translator. The photos were filtered, and audio and video recordings were not taken to ensure privacy. Each family was given a code to protect anonymity. After the first meeting and informal conversation to get to know each other, the data collection lasted at least three hours with each family, who were interviewed at their residences. When necessary, this period was extended to obtain sufficient information from the participants.

Materials and Instruments

Multiple methods were used to obtain sufficient data to obtain more objective results. All data were collected sequentially in two phases through visual and ethnographic methods. Sanoff (2016) and Zeisel (2006) referred to visual methods and Creswell (2006) to ethnographic methods. First, visual research methods were used to observe physical traces (Zeisel, 2006) and analyze the visual characteristics of the physical environment through many recording methods (Sanoff, 2016). All data were collected through photographs, schematic drawings and notes to observe and record the Syrians' residential interiors and to reveal their homemaking practices in current residences. Second, the data were collected in two steps through ethnographic methods, which involve direct interviews with people and wide-ranging participant observations (Creswell, 2006). In the first step, with the help of the participant observation technique, Syrians' living rooms were observed by researchers as participant observers to acquire information about their family structure, lifestyle, roles, relationships, activities, and behaviors. All data were collected through photographs, notes, schematic drawings, and mapping techniques. In the second step, the structured and semi-structured interview questions were asked to acquire substantial and holistic information about Syrians and their culture, living habits, and needs for domestic environments in both Syria and Turkey. Besides the structured questions regarding demographic characteristics such as sex, age, marital status, education, profession, and income, nine semi-structured questions were included (**Table 1**).

Data Analysis

The obtained data were analyzed in two phases. First, the visual data were analyzed to gather information regarding housing plan type, spatial use, activities, and furniture layout and to classify the physical traces as "adaptations for use," "by-products of use," "displays of self," and "public messages" (Zeisel, 2006, 160). With the help of an annotated diagram, all data were recorded on schematic drawings of the floor plan for each house using photographs, symbols, and written information by observing the surfaces (walls, ceilings, and floors) and then analyzed (**Figure 2**). Second, the ethnographic data obtained from the participant observations

Table 1. Semi-structured interview questions

Q number	Questions	Themes
Q1	Why did you prefer to relocate to Sutanbeyli?	Lifestyle Affinity Economy
Q2	What are the reasons for choosing this house?	Lifestyle Affinity Economy
Q3	Do you feel that you belong in your current home?	Culture Lifestyle Appropriaition Privacy
Q4	What are your needs for your current residence compared to Syria?	Culture Lifestyle Appropriation Adaptation
Q5	How does your lifestyle affect the indoor use of your current residence?	Culture Lifestyle Privacy Religion
Q6	How did you modify/adapt your residence according to your needs?	Adaptation Appropriation Economy
Q7	What are the mementos and objects that you brought from Syria? Please provide the reason(s).	Appropriation
Q8	If possible, which belongings would you have liked to take during your migration to Turkey?	Appropriation
Q9	How did you get the furniture and other goods in this house?	Economy Appropriation

and interviews were analyzed in two steps. The first step was based on an analysis of the observations of participants' living rooms. Again, with the help of an annotated diagram, data were recorded on schematic drawings of the living room for each house using diagrams, symbols, and written information **(Figure 3**). The positions of the family members and the researchers and the activities, behaviors, roles, and relationships were mapped on the annotated diagram and then analyzed. The second step involved analyzing the interviews. The content analysis technique was used for coding the answers according to the appropriate categories for the interview questions. The statistical analysis was used for obtaining the percentage of responses from the demographic characteristics.

RESULTS

The comprehensive data obtained through visual and ethnographic methods support each other and reveal crucial needs for Syrian families' indoor use and important parameters for their transcultural homemaking practices in Sultanbeyli.

Results of Visual Data Analysis

According to the visual data analysis, Syrians usually live on the ground floor of apartment buildings and have a housing plan with a hallway. The houses are approximately 80–110 m^2, with two or three bedrooms and a living room. Syrians make need-based adaptations to their housing environments (**Figure 4**).

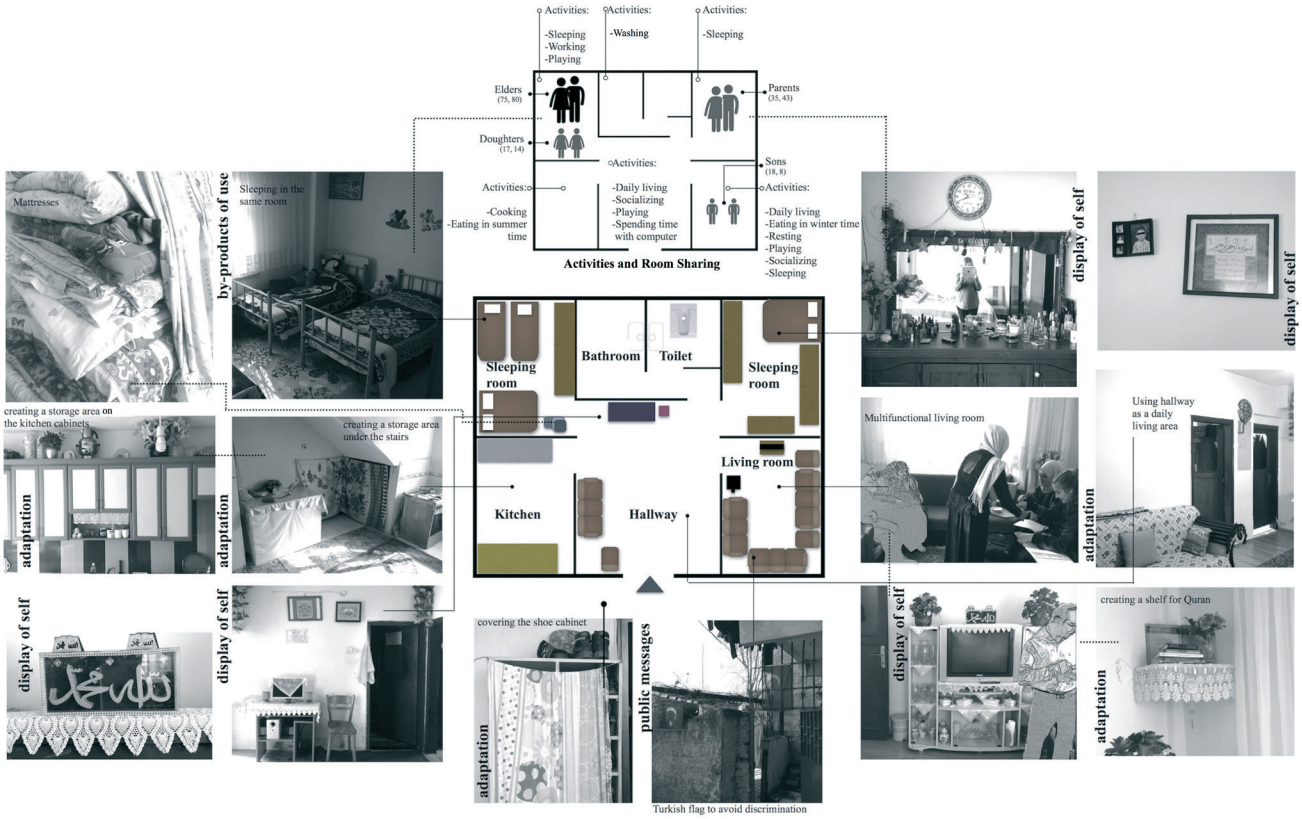

Figure 2. The annotated diagram used for analyzing the visual data

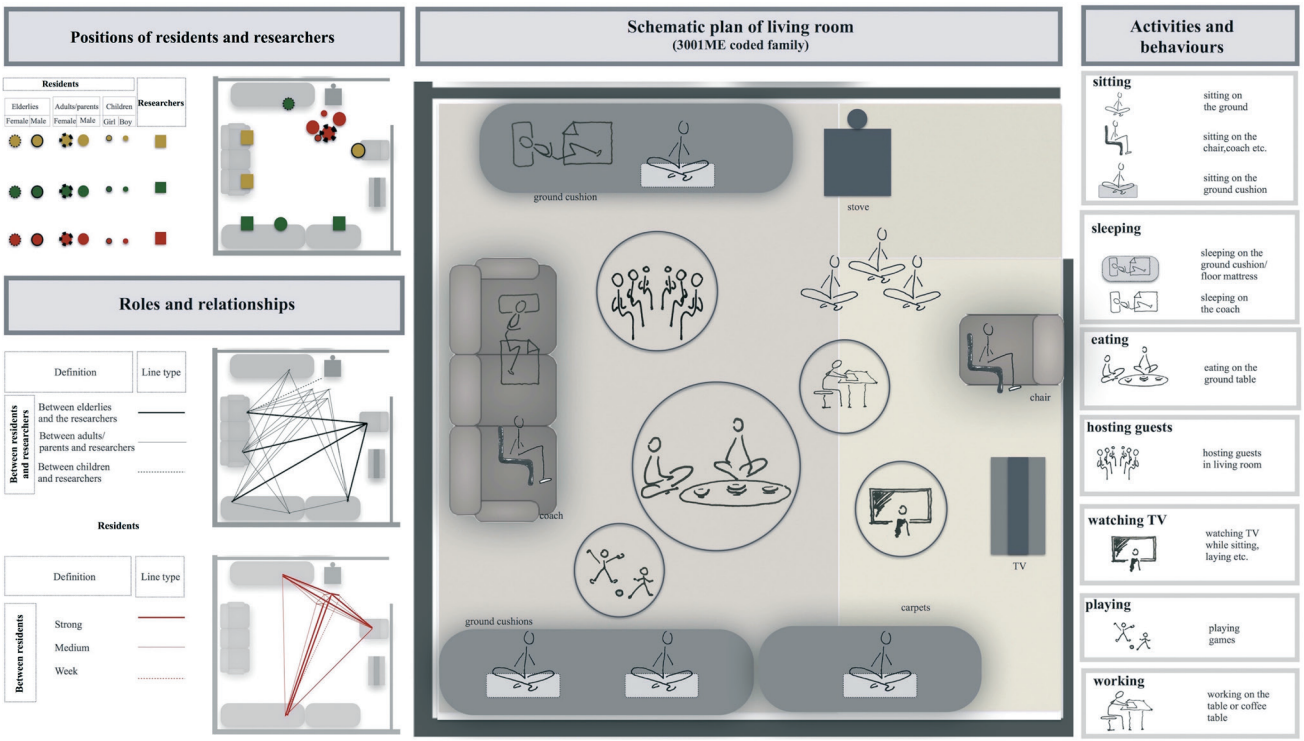

Figure 3. The annotated diagram used for analyzing the observation of living room

5. While homeownership provides real control and ensures people reflect their identities in the way they want, and transform a house into a home (Fox, 2002), being a tenant prevents a feeling of truly having a home and limits the way a rental unit's uses. The tenant, who is not free to shape his/her environment, to some extent, is deprived of the means of personalization to construct his/her identity and make a place his/her own (Stone, 1986).

The adaptations for use are mainly based on their sociocultural, temporal, and spatial needs. For example, if the entrance hall is large enough, the living room is located in the entrance hall, appropriate for Syrians' living habits. The living room is a place where many household activities take place, such as eating, working, resting, playing, socializing, and sleeping. While bedrooms are used for sleeping at night, they are used during the daytime for activities such as studying, playing, and hosting guests. Family members of different ages sleep in the same room according to the sexes and relations between them. If there is not enough room in the house, the elders can share the same bedroom with their grandchildren, and the parents have a bedroom. If a household needs more rooms, the room is divided by curtains, separators, or furniture. If there is no privacy threshold, the bathrooms, toilets, and bedrooms are separated from the public and common zones of the house by curtains. Bathrooms and toilets in the same space are divided by curtains or separators, depending on privacy and religious beliefs as well. In most cases, the kitchen is used for cooking and storing without a dining table, and balconies or terraces are used for storing, seating, etc.

The fact that Syrian families are tenants affects the space organization, which is mostly arranged by furniture. Furniture, such as cradles and showcases, is also used for storage outside of its function. The wall surfaces are also used to maintain extra storage areas. By-products of use can be monitored through material objects, such as furniture and accessories. The use of curtains or separators to provide privacy in appropriate areas, ground cushions and a low table are used in the living room, and stackable floor mattresses are used in bedrooms for sleeping at night to maintain the flexible and multifunctional use of spaces. The tenant status affects Syrian homemaking practices regarding identity construction, personalization, and both physical and psychological aspects (**5**) as well. According to the visual data results for physical aspects, the wall surfaces of the houses are the main elements that reflect the display of the self through various objects of decoration, mementos, religious objects, and verses from the Quran on the walls. Public messages can be seen through the use of Turkish

Figure 4. Syrian family's entrance hall: This space is mostly used as a living room depending on Syrians' living habits and decorated with small objects for expressing identity, beliefs, and attachment bonds

Figure 5. Living room of a Syrian family: The room has carpets and is furnished with ground cushions to meet cultural needs and secondhand furniture from neighbors or charities

politicians' photographs/posters, graffiti, and writings on the wall surfaces, and the use of Turkish flags on the doors and windows of the houses was also quite common.

Results of Etnographic Data Analysis

Ethnographic data analysis also presents valuable information for the study. The first step of the ethnographic data results regarding the observations of Syrians' living rooms reveals the sociocultural and sociospatial aspects of homemaking (**Figure 5**). Syrians have an extended or nuclear family structure and a crowded, hierarchical, and introverted lifestyle. They belong to a male-dominated society, and roles and relationships among family members are shaped by this hierarchical structure. While women are responsible for housework, men are responsible for the subsistence of the family. The oldest male member of the household is the head of the family. Additionally, elderly people are the most respected members of the family. The closest and strongest types of relationships are mother-child, husband-wife, elderly-child, and child-child. While there is a close relationship between children, there is distance, depending on their sexes. Because most families have large households (approximately 6–10 people in each family), family members gather and host guests in the living room, covering floor surfaces with carpets to support different activities. This type of use is one of the most important cultural indicators and is especially observed in this room. For example, meals are eaten at a low table. Sitting, resting, or sleeping activities are ensured through ground cushions. In this sense, this multifunctional room is the heart of the home and a public zone where social relationships and many activities take place.

The interview results, which is the second step of the ethnographic data, reveal the demographic characteristics of the participants obtained from the structured interview questions, as seen in **Table 2**. According to the answers, half of the Syrians are over 45, and the rest are between 18 and under 45. The participants, most of them married and from Aleppo, largely belong to the low- and middle-income classes. Women do not have professions, while men work mainly in the textile industry as a worker.

The semi-structured interview questions reveal that Sultanbeyli is a suitable and supportive environment regarding sociocultural, environmental,

Table 2. Characteristics of participants

Participants' Characteristics	Group	%
Sex	Male	37.8
	Female	62.2
Age	18-24	17.8
	25-34	17.8
	35-44	11.1
	45+	53.3
Place of birth	Damascus	13.3
	Aleppo	84.4
	Idlib	2.2
Marital status	Married (monogamy)	75.6
	Married (polygamy)	4.4
	Single	8.9
	Widow	11.1
Education	Illiterate	31.1
	Primary school	26.7
	Secondary school	31.1
	High school	6.7
	University	4.4
Profession (male)	Worker in textile industry	70.6
	Worker in iron industry	7.35
	Worker in ceramic industry	7.35
	Worker in construction	7.35
	Turner	7.35
Profession (female)	Housewife	100
Income	No income	46.7
	Less than 1000 TL	6.7
	1000-1500 TL	17.8
	1501-2000 TL	11.1
	More than 2000 TL	17.8

economic, and religious similarities between the locals and Syrians. While most Syrians have good relationships with locals in Sultanbeyli, they do not fully belong in their current residences. A participant explained: "In Syria, everything was ours... Here, we cannot establish a settled life; we constantly change houses, we do not feel we belong here" (Male, 32). Furthermore, they consider their home in Syria as a "real home" and defines their current house as a "shelter". In this sense, property ownership and the sense of belonging associated with social relationships, life habits, and memories are important for them to see a place as their own.

Comparing the current home with the home in Syria reveals the spatial (physical), cultural (privacy, religion, lifestyle), emotional (attachment, belonging, familiarity, identity), territorial (control, protection, security, and safety), material (furniture, goods, decorative items), and temporal (comfort) housing needs of the participants. The responses indicate that family structure, relationships, roles, habits, activities, behaviors, religion, and privacy are also important factors for space use. According to their religious beliefs, Syrians prefer the toilet and bathroom spaces separated, as one of the participants explained: "We perform ablutions many times in a day. Ablution cannot happen next to the toilet. Thank God! The bathroom and toilet are separated in our current house" (Female, 54). The Qibla direction is also important for placing fixtures in wet spaces. Because privacy was vital in space use, the segregation of spaces based on sex and relations was quite common. One of the participants explained the importance of this need: "When our relatives come, we sit in the same

room. But if a guest comes to our home, men and women sit separately… We do the same here…" (Female, 43). Another also explained: "We as parents sleep in a separate room, and the children sleep in another room because they are small children" (Female, 27). Frequent moving depends on high rents; relations with the landlord and neighbors; and the physical condition of living spaces, such as humidity and lack of ventilation, affect residential satisfaction and well-being. The interviews also showed the importance of habits and preferences in space use. One participant explained: "We use the kitchen only for cooking and storage. We do not eat there..." (Female, 38). Another participant shared: "…Our house had an inner courtyard…Daily life was spent in the courtyard in the summer and the rooms in the winter" (Female, 59).

Adaptations to current housing environments reveal that most families made modifications to interior spaces according to their needs, such as separating the bathroom and toilet spaces for religious beliefs and privacy; dividing rooms for privacy and personal space; using rooms multifunctionally (day and night) according to sexes; using suitable areas (niches or voids), surfaces, and some furniture for storage needs; and using open spaces, such as balconies and terraces, for living and storage. In this sense, culture and lifestyle needs stand out among these adaptations and appropriations. A participant mentioned, "We tidy up the rooms every morning and sleep on the floor mattresses at night" (Female, 25). They also modified the window and door surfaces for privacy, as indicated by one participant: "In Syria, there are usually no windows on the doors. We covered the master bedroom's door window with a piece of cloth here" (Female, 25). While the participants could not bring anything but a Qur'an and a few items of clothing and identity documents due to forced migration, they wanted to bring their photographs, personal items, and furniture and appliances during their migration to Turkey. A woman explained: "I wish it was possible to bring all my housing equipment and furniture" (Female, 43), which indicates the need for appropriation (i.e., familiarity, personalization, belonging, identity). Additionally, the answers reveal that they acquired their furniture and other goods secondhand or with help from neighbors, landlords, charities, or institutions without reference to their tastes, preferences, and wants relative to their income status.

DISCUSSION

Home protects people from the outside world and provides them with a familiar place that accommodates their needs. The study results showed that Syrians living in Sultanbeyli adapt their residential interiors through space organization, surface treatment, and furnishing without removing or adding walls or partitions, depending on their tenant and income status. In this sense, space is mostly defined by furnishing. Syrians make spatial- and object-based adaptations depending on their spatial, sociocultural, symbolic, emotional, territorial, and temporal needs and previous and present homemaking experiences, as indicated by many scholars (Bilecen, 2017; Boccagni and Brighenti, 2017; Taylor, 2015; Levin and Fincher, 2010). Adaptation of the domestic environment is also related to Syrians' economic status (Rottmann, 2020) and the physical/spatial conditions of the space (Rapoport, 2005).

Adaptations to residential interiors are mainly related to culture—[the] way of life (Oberg, 2006). In this sense, lifestyle, privacy, and appropriation

are distinguishing factors for cultural adaptations. Syrian families, whether extended or nuclear, consist mostly of large households and crowded, introverted living. While customs and rules are important aspects of lifestyle (Rapoport, 2005), the hierarchy of relations and roles between household members (elders, parents, and children) is also important for the homemaking practices of Syrians. Privacy is a crucial factor for maintaining religious, cultural, and personal domestic practices (William et al., 2020) for Syrians as well. It is common to separate and organize space according to religious beliefs, privacy thresholds, sex, and comfort needs. In this sense, privacy is revealed by spatial segregation according to religious beliefs, privacy thresholds, and sexes; spatial orientation according to religion and privacy; and spatial separation or connection for different levels of comfort needs. The use of furniture and accessories (separators, mirrors, etc.) to separate spaces according to the privacy needs of the household is also quite common. Appropriation is also essential for Syrians' homemaking practices according to their culture, lifestyle, education, income, sex, and age through spatial- and object-based adaptations. Appropriation of space is revealed by indoor/outdoor and day/night use for ensuring cultural habits, and multiuse of floor and wall surfaces for privatizing the space are quite common. The use of furniture, accessories, and decorative objects is essential for Syrians expressing preferences and conveying messages for creating a familiar and meaningful environment (Boccagni, 2020; Boccagni and Brighenti, 2017). Transitional decorative objects (Glusac, 2015) and commemorative items also help appropriation for carrying special meaning (Ureta, 2007) and for recalling the previous home and homeland (Brun and Fabos, 2015) in the homemaking practices of Syrians.

Syrians modify their home adjustment capacity of interior spaces depending on their needs. Apart from the size of housing, making alterations to residential interiors is quite critical in considering the culture, lifestyle, and daily life activities of Syrians. Therefore, flexibility, which allows multiple modes of use in the spatial organization (Conran, 2010), meets the Syrians' needs through multifunctional and adaptable use of spaces and effective use of surfaces and storage areas. The furniture and accessories also provide the flexible use of space through multifunctional, modular, adaptable, and lightweight items for Syrians.

Compared to their former economic status in Syria, the majority of Syrians live in more difficult economic conditions in Sultanbeyli and belong to the lower- and middle-income classes (Kavas et al., 2019). Considering the large household and income levels of Syrian families, they need affordable design solutions to meet their needs. Therefore, functional and adaptable use of space and effective use of surfaces are essential. Multifunctional, mass-produced, and affordable furniture and accessories also provide economic solutions for Syrians.

Accordingly, the proposed framework based on determining housing and interior design principles was developed for designers and researchers to adapt existing interior spaces appropriate to the needs of low- and middle-income Syrians living in Sultanbeyli, Turkey. The design principles associated with both the sociocultural and the physical components are explained with space, elements, and objects (**Table 3, 4, Table 5**). Space is defined by organization, elements are defined by surface, and objects are defined by furniture, accessories and decorative items. The design principles and subprinciples were ascertained through the literature review and the study results, while the indicators were revealed through the

Adaptation to culture Home adapts to residents' culture			
Indicators	Lifestyle Provide the needs and values of the household		
	Space	Introverted lifestyle Meet the requirements of introverted lifestyle both for household and outsiders	Organization
		Crowded lifestyle Meet needs and comfort conditions for a crowded lifestyle for extended or nuclear family structures	
		Hierarchical relations and roles depending on lifestyle Maintain roles and relationships between individual and family members based on sex and age	
	Privacy Ensure spatial and sociocultural needs and allow interaction at different levels for household		
	Space	Spatial segregation Define public and private areas in the use of space, separate toilet and bathroom spaces according to privacy and religious needs, and organize space to ensure the segregation of women's and men's spaces	Organization
		Spatial orientation Organize toilet and bathroom spaces and fixtures based on privacy and religious beliefs	
		Spatial separation or connection Ensure separation or connection of space in terms of household use, needs, and habits at different comfort levels	
	Element	Surface use Ensure privacy through the use of surfaces	Surface
	Object	Separation or connection Define space through furnishing and provide separation or connection of furniture and accessories for different uses.	Furniture & Accessories
	Appropriation Home reflects sociocultural identity and enables familiar interiors for personalization and beautification		
	Space	Indoor and outdoor use Provide indoor and outdoor use for household	Organization
		Day and night use Provide day and night use in space organization	
	Element	Multiuse surfaces Use wall surfaces to meet needs, preferences, and tastes of households and support multiuse of floor surface via placement of furniture and accessories	Surface
	Object	Reflection of preferences Ensure cultural needs and preferences of individuals and households through selection, and/or placement of furniture, accessories, and decorative objects	Furniture , Accessories & Decorative items
		Conveying messages Convey messages to provide identity, belonging, and familiarity needs of individuals and households through selection, and/or placement of furniture, accessories, and decorative objects	

Table 3. The principle of adaptation to culture

Flexibility Home adapts to different conditions for meeting the evolving needs of residents			
Indicators	Space	Multifunctional use Ensure multifunctional use of space appropriate to users' needs	Organization
		Adaptation to use Ensure separation or connection of spaces appropriate to users' needs	
	Element	Effective use of surfaces Ensure multiuse of surfaces appropriate to users' needs	Surface
		Increasing storage areas in use Increase storage by using surfaces and suitable areas appropriate to users' needs	
	Object	Multifunctional Design multifunctional furniture and accessories for meeting users' needs	Furniture & Accessories
		Modular Design modular furniture and accessories made of compatible elements	
		Adaptable Provide adaptable furniture and accessories through separation or connection	
		Lightweight Produce easily movable furniture and accessories made of light material for different uses	

Table 4. The principle of flexibility in use

Economy in design Home adapts to different conditions affordably			
Indicators	Space	Functional use Adapt space to support affordable, multifunctional use	Organization
		Adaptable use Adapt space appropriately and affordably for users' needs	
	Element	Effective use Ensure affordable and appropriate multi-use surfaces	Surface
	Object	Multifunctional Use furniture and accessories that are multifunctional for meeting users' needs affordably	Furniture & Accessories
		Mass-produced Design furniture and accessories made of affordable, repeatable, and easily mass-produced components	
		Affordable Use affordable furniture and accessories	

Table 5. The principle of economy in design

study results alone. Thus, three design principles are determined based on "adaptation to culture," "flexibility in use," and "economy in design." The three sub-principles of "lifestyle," "privacy," and "appropriation" are also determined under the principle of adaptation to culture. They are also explained using a set of indicators.

CONCLUSION

This study focuses on finding a micro-scale solution for the housing needs of low- and middle-income Syrians living in Turkey within the existing

built environment from an interior design/architecture viewpoint. A framework has been developed to determine the housing and interior design principles—adaptation to culture, flexibility in use, and economy in design—and the sub-principles—lifestyle, privacy, and appropriation—under the principle of adaptation to culture, with indicators such as spatial segregation, multifunctional use, adaptability in use for designers and researchers for adapting existing residential interiors in compliance with Syrians' needs. Thus, it is aimed at increasing their residential satisfaction and facilitating sociospatial coexistence and cohesion between Syrians and local inhabitants.

The study results reveal that Syrians have modified their current residences to provide a symbolic, emotional, sociocultural, and territorialized place in a physical architectural shell. The spatial (i.e., space organization and surface treatment) and object-based (i.e., furniture, accessories, decorative items) cultural modifications are based on lifestyle (reflecting family structure and social interactions), privacy (allowing interaction and comfort at different levels and ensuring spatial and sociocultural needs), and appropriation (indicating daily routines and identifying personalization needs). In this sense, the study results affirm the literature on the housing and transcultural homemaking practices of refugees or immigrants (Boccagni, 2020; Bilecen, 2017; Boccagni and Brighenti, 2017; Taylor, 2015; Levin and Fincher, 2010; Rapoport, 2005). According to the results, Syrians' housing environments should also provide economical design solutions (Rottman, 2020) and flexible space use for making changes and adaptations appropriate to residents' needs (Dodsworth, 2009). Frequent moving of Syrians and their tenant and income status also reveal the importance of accessories and furniture—which can be affordable, modular, mass-produced, multifunctional, adaptable, lightweight, and commemorative—for designing the space through furnishing (Bilecen, 2017) and for providing a display of self (Zeisel, 2006), a sense of familiarity (Boccagni, 2020), and belonging (Esentepe and Günçe, 2019) to residents.

Thus, the proposed framework provides theoretical and practical contributions to the design field and guides designers (i.e., interior architects/designers, architects, and design students for educational purposes) in adapting existing residential stock—which is needed for social, cultural, physical, political, and economic aspects. The proposed framework can also be used by designers and developers to develop new housing environments for Syrians according to their needs. Besides developing a framework, this study contributes to research in relevant fields such as migration, refugee studies, housing, and homemaking and fills the gap in the literature providing on-site information, observation, and explorations regarding low- and middle-income Syrians' transcultural homemaking practices living in Turkey, and in-depth understanding and further analysis of Syrian's interior space preferences in relocation for researchers and designers. Furthermore, the study provides knowledge for developers and policymakers to develop economically, culturally, socially, and physically supportive housing environments and to lead sustainable policies for sociospatial coexistence and cohesion.

This study has limitations regarding the reservations of Syrian families to participate in the research and the language barrier between them and the researchers. The proposed framework can be revised according to the changing needs of Syrians and can be used to develop a framework for further studies. Additionally, the study will draw attention to the housing

needs of Syrians, both academically and in general, and will promote future research related to micro- and macro-scale housing studies and designs for refugees, immigrants, or low-income populations living in Turkey and abroad.

ACKNOWLEDGEMENTS
The authors gratefully acknowledge TUBITAK for funding the research project with grant number 118K441 approved in 2018. We would like to thank Dr. Şebnem Ertaş, Dr. Elif Sönmez, and Dr. Çiğdem Kudiaki for their collaboration on the project at TUBITAK, run by Dr. Özge Cordan. We would also like to thank the Syrian translators for ensuring good communication between the Syrian families and the researchers and the immigrant Syrian families for their participation in this research and anonymous referees for their valuable comments and suggestions.

BIBLIOGRAPHY

AL-ALİ, N., KOSER, K. (2002) *New Approaches to Migration? Transnational Communities and the Transformation of Home*, Routledge, New York.

ANTON, C. E., LAWRENCE, C. (2014) Home is Where the Heart is: The Effect of Place of Residence on Place Attachment and Community Participation, *Journal of Environmental Psychology* (40) 451–61.

ALTMAN, I., GAUVAIN, M. (1982) A Cross-cultural Analysis of Homes, *Architecture and Behaviour* (2) 27–46.

BİLECEN, B. (2017) Home-making Practices and Social Protection Across Borders: An Example of Turkish Migrants Living in Germany", *Journal of Housing and the Built Environment* 32(1) 77–90.

BOCCAGNI, P., BRIGHENTI, A.M. (2017) Immigrants and Home in the Making: Thresholds of Domesticity, Commonality and Publicness, *Journal of Housing and the Built Environment* 32(1) 1–11.

BOCCAGNI, P. (2020) *At Home in the Centre? Spatial Appropriation and Horizons of Home Making in Reception Facilities for Asylum Seekers*, Working Paper no:10_2020, *HOMInG, 3 September.*

BROOKER, G. (2016) *Adaptation Strategies for Interior Architecture and Design,* Bloomsbury Publishing, UK.

BRUN C., FABOS A. (2015) Making homes in limbo?, *Refuge* 31(1)15–7.

CENGİZ, D., TEKGÜÇ, H. (2021) *Is it Merely a Labor Supply Shock? Impacts of Syrian Migrants on Local Economies in Turkey*, SAGE, California.

CONRAN, T. (2010) *Essential Small Spaces: The Back to Basics Guide to Home Design, Decoration and Furnishing,* Octopus Book, UK.

CRESWELL, J. (2006) *Qualitative Inquiry and Research Design: Choosing Among Five Approaches*, SAGE, California.

DURSUN, G., NİZAMOĞLU, S. (2021) Türkiye'de İş Gücü Piyasalarında Suriyeli Kadın mMülteciler: Konfeksiyon Endüstrisi Örneği [Syrian women refugees in the Turkey labour market: The case of clothing industry], *DEU Journal of GSSS* 23, 109-32.

DGMM [Directorate General of Migration Management], (2022) *Temporary Protection.* [https://en.goc.gov.tr/temporary-protection27] Access Date (23.01.2022).

DODSWORTH, S.A. (2009). *The fundamentals of Interior Design. AVA Publishing.*

DOVEY, K. (1985) Home and Homelessness, *Human Behavior and Environment: Advances in Theory and Research*, *Home Environments,* eds. I. Altman and C. M. Werner, Springer: Science+Business Media, Berlin; 33–64.

ERDOĞAN, M.M. (2018) *Suriyeliler Barometresi: Suriyelilerle Uyum İçinde Yaşamın Çerçevesi* (SB-2017) [*Syrians Barometer: A Framework for Achieving Social Cohesion with Syrians in Turkey (SB-2017)*], Bilgi University Publications, Istanbul.

ESENTEPE, B., GÜNÇE, K. (2019) The Role of Memory as a Benefit of Place Attachment on Refugee's Attachment to Place: Case Study on Turkish Cypriot Refugees in Refugee Village, Nicosia, North Cyprus, in *LIVENARCH VI - 6th International Congress Livable Environments & Architecture - Replacing Architecture*, Karadeniz Technical University, (1) 274–90.

FADLALLA, N. (2011) Conceptualizing the Meaning of Home for Refugees, *International Journal of Urban & Extra Urban Studies* 1(3) 139–50.

FORNARA, F., LAI, A.M., BONAIUTO, M., PAZZAGLIA, F. (2019) Residential Place Attachment as an Adaptive Strategy for Coping with the Reduction of Spatial Abilities in Old Age, *Frontiers in Psychology* 10(856) 1-8.

FOX, L. (2002) The Meaning of Home: A Chimerical Concept or a Legal Challenge. *Journal of Law and Society* 29(4) 580-610.

FREDERICKS, M., NAGY, D. (2006) *Religion, Migration, And Identity: Methodological and Theological Explorations*, Brill, Leiden.

GLUSAC, T. (2015) *Architecture and Belonging: Migration, Re-territorialisation and Self-identity*, Ph.D. Dissertation, School of Built Environment, Curtin University, Bentley, Australia.

GRAUMANN, C.F. (2002) The Phenomenoligical Approach to People-Environment Studies, *Handbook of Environmental Psychology*, eds. R. B. Bechtel, A. Churchman, John Wiley & Sons, Inc; 95-113.

GRONSETH A., STOA E., THORSHAUG R., HAUGE A. (2016) *Housing Qualities and Effects on Identity and Wellbeing: Theoretical Perspective for Interdisciplinary Research on Asylum Seeker Reception Centres,* Research report no:169, Lillehammer University College.

HAYWARD, D.G. (1975) Home as an Environmental and Psychological Concept, *Landscape* (20)2–9.

ISMAIL, R.H. (2015) *Adaptation of Housing Design to Culture Change in Syria: Concepts and Practices in the City of Lattakia*, Ph.D. Dissertation, School of Energy, Geoscience, Infrastructure and Society, Heriot-Watt University, Edinburgh, UK.

KABACHNIK P., REGULSKA J., MITCHNECK B. (2010) When and Where is Home? The Double Displacement of Georgian IDPs from Abkhazia, *Journal of Refugee Studies* 23(3) 316–36.

KAVAS, A., KOYUNCU AVŞAR, İ., KADKOY, O., BİLGİÇ, E. (2019) *İstanbul'da Suriyeliler ve Savaş Sonrası Suriye Gettoları* [Syrians in Istanbul and Post-War Syrian Ghettos], TEPAV, Ankara.

KILIÇASLAN, G. (2016) Forced Migration, Citizenship, and Space: The Case of Syrian Kurdish Refugees in İstanbul, *New Perspectives on Turkey* (54) 77–95.

KISSOON, P. (2015) *Intersections of Displacement: Refugees' Experience of Home and Homelessness,* Cambridge Scholars, UK.

KOSIC, A. (2002) Acculturation Attitudes, Need for Cognitive Closure, and Adaptation of Migrants, *The Journal of Social Psychology* 142(2) 179–201.

KREUZER, M., MÜHLBACHER, H., WALLPACH, S. (2017) Home in the Re-making: Immigrants' Transcultural Experiencing of Home, *Journal of Business Research* (91) 334–41.

LAWRENCE, J.R. (1987) What Makes a House a Home, *Environment and Behavior* (19) 154–68.

LEVIN, I., FINCHER, R. (2010). Tangible Transnational Links in the Houses of Italian Immigrants in Melbourne, *Global Networks* (10) 401-23.

LIU, L.S. (2014) A Search for a Place to Call Home: Negotiation of Home, Identity and Sense of Belonging Among New Immigrants from the People's Republic of China (PRC) to New Zealand, *Emotion, Space and Society* (10) 18–26.

MALLET, S. (2004) Understanding Home: A Critical Review of the Literature, *SAGE Journals* 52(1) 62–89.

MAZUMDAR, S., MAZUMDAR, S. (2009) Religion, Migration, and Home making in Diaspora: Hindu Space in Southern California, *Journal of Environmental Psychology* 29(2) 256–66.

MOXON, S. (2011) *Sustainability in Interior Design*, Laurence King Publishing, UK.

NEUMARK, D. (2013) Drawn to Beauty: The Practice of House-Beautification as Homemaking Among the Forcibly Displaced, *Housing, Theory and Society* 30(3) 37–61.

OBERG, K. (2006) Cultural Shock: Adjustment to New Cultural Environments, *Verlag für Wissenschaft und Bildung* (29) 142–46.

RALPH, D., STAEHELI L.A. (2011) Home and Migration: Mobilities, Belongings and Identities, *Geography Compass,* 5(7) 517–30.

RAPOPORT, A. (2005) *Culture, Architecture and Design*, Locke Publishing, Chicago.

ROTTMANN, S.B. (2020) *RESPOND - Multilevel Governance of Mass Migration in Europe and Beyond*, EU Horizon 2020 Research Project, Report no:770564, European Union Funding for Research & Innovation.

SANOFF, H. (2016) *Visual Research Methods in Design*, Routledge, New York.

STONE, B. C. (1986) Community, Home and the Residential Tenant, *University of Pennsylvania Law Review*, 3(134) 627-56.

SUKOM (2022) *SUKOM İstatistikleri.* [https://multeciler.org.tr/sukom] Access Date (23.01.2022).

UN [United Nations] (1948) *Universal Declaration of Human Rights*. [https://www.un.org/en/universal-declaration-human-rights/] Access Date (23.01.2022).

UNHCR [United Nations Refugee Agency] (2022) *Syria Emergency*. [https://www.unhcr.org/syria-emergency.html] Access Date (23.01.2022).

UNHR [United Nations Human Rights] (1976) *International Covenant on Economic, Social and Cultural Rights.* [https://www.ohchr.org/EN/professionalinterest/pages/cescr.aspx] Access Date (23.01.2022).

URETA, S. (2007) Domesticating Homes: Material Transformation and Decoration among Low-income Families in Santiago, Chile, *Home Cultures* 4(3) 311–36.

ÜNLÜ, A. (1998) *Çevresel Tasarımda İlk Kavramlar* [*Primary Concepts in Environmental Design*], ITU Publishig, Istanbul.

TATARU, G. (2020) Migration: An Overview on Terminology, Causes and Effects, *Logos Universality Mentality Education Novelty: Law,* (7)10–29.

TAYLOR, H. (2015) *Refugees and the Meaning of Home*, Palgrave Macmillan, London.

TILL, J., SCHNEIDER, T. (2016) *Flexible Housing*, Routledge, New York.

TITZMAN, P., FULIGNI, A.J. (2015) Immigrants' Adaptation to different Cultural Settings: A Contextual Perspective on Acculturation, *Journal of Psychology* 50 (6) 407–12.

WILLIAM, S., DE SMET, H., HEYLIGHEN, A., (2020) Seeking a Balance Between Privacy abd Connectedness in Housing for Refugees, *Journal of Housing and Built Environment* 35 (1) 45-64.

ZALLOOM, B. (2019). Gendered Spaces: The Impact of the Cultural Aspects on The Spatial Organization of Spaces Inside the Houses of Amman During the Last Century, *METU JFA*, 31(1) 203-22.

ZEISEL, J. (2006) *Inquiry by Design: Environment/Behavior/Neuroscience in Architecture, Interiors, Landscape and Planning*, Norton Publishing, New York.

Alındı: 08.05.2021; **Son Metin:** 11.03.2022

Anahtar Sözcükler: Adaptasyon; tasarım prensipleri; evin yeniden inşası; konut iç mekanları; Suriyeliler

SULTANBEYLİ'DE YAŞAYAN ALT VE ORTA GELİR GRUBUNDAKİ SURİYELİLER İÇİN KONUT İÇ MEKANLARININ ADAPTASYONU

Mart 2011'den bu yana milyonlarca Suriyeli, Suriye'deki iç savaş sebebiyle Türkiye'ye sığınmıştır. Bu çalışma, mevcut yapısal çevre içinde, Türkiye'de yaşayan Suriyeliler ile yerel sakinler arasında bir arada yaşamayı ve uyumu kolaylaştırmak için iç mimarlık disiplininin bakış açısı ile Suriyelilerin barınma ihtiyacına mikro ölçekte odaklanmaktadır. Çalışmanın amacı, mevcut konut iç mekanlarının Türkiye'de yaşayan alt ve orta gelir grubuna mensup Suriyelilerin ihtiyaçlarına uygun olarak adapte edilmesi için tasarımcılar ve araştırmacılar için bir çerçeve geliştirmektir. Bu çalışma, ekonomik, kültürel, sosyal ve fiziksel olarak destekleyici yaşam alanlarının sağlanması için politika yapıcılara ve proje geliştiricilerine de bir çerçeve sunmaktadır. Bu çerçeve, konut iç mekanına yönelik

tasarım ilke ve alt ilkelerinin belirlenmesine ve bunların bir dizi gösterge kullanılarak açıklanmasına dayanmaktadır. Bir vaka çalışması olan bu çalışmanın saha çalışması, İstanbul'un Sultanbeyli ilçesine bağlı Fatih Mahallesi'ndeki konutlarda yaşayan Suriyeli ailelerin gönüllü katılımı ile gerçekleştirilmiştir. Çalışmada, literatür taramasının yanı sıra, görsel ve etnografik yöntemler ile veri toplanmıştır. Elde edilen veriler, görsel ve gözlem tabanlı veriler için açıklamalı diyagramlar ve görüşmeler için içerik analizi ile analiz edilmiştir. Böylece, Suriyelilerin kültürleri, yeniden ev kurma süreçleri ve konut ve kullanıma yönelik ihtiyaçları hakkında bütünsel bilgi elde edilmiştir. Çalışma sonuçlarına göre Suriyeliler, konut iç mekanlarında, yaşam tarzı, mahremiyet ve kendileme ihtiyaçlarını karşılamak için kültürlerine uygun, esnek ve ekonomik, mekansal ve nesne tabanlı uyarlamalara ihtiyaç duymaktadır. Çalışma, literatüre Türkiye'den bir örnek sunarak hem teorik hem de uygulamaya dönük bilgi/katkı sağlayacak ve gelecekteki araştırmalara ışık tutacaktır.

ADAPTATION OF RESIDENTIAL INTERIORS FOR LOW AND MIDDLE-INCOME SYRIANS LIVING IN SULTANBEYLI, TURKEY

Millions of Syrians have fled to Turkey since March 2011 due to the civil war in Syria. To facilitate coexistence and cohesion between Syrians living in Turkey and local inhabitants, this study focuses on Syrians' housing needs on a micro-scale from the viewpoint of interior design/architecture. The purpose of this study is to develop a framework for designers and researchers to adapt existing residential interiors appropriate to low- and middle-income Syrians' needs. This study also provides a framework for developers and policymakers to achieve economically, culturally, socially, and physically supportive housing environments for Syrians. The proposed framework is based on determining housing and interior design principles and sub-principles and explaining them using a set of indicators. The field study of the case study was conducted with the voluntary participation of Syrian families in their residences in the Fatih neighborhood in Sultanbeyli, Istanbul. The data were obtained through visual and ethnographic methods in addition to the literature review. The data were then analyzed using annotated diagrams for visual and observation-based data and content analysis for interview questions. Thus, holistic information on Syrians' culture, housing needs, and homemaking practices was acquired. According to the study results, Syrians need flexible and economic spatial- and object-based adaptations in their residential interiors appropriate to their culture to meet their lifestyle, privacy, and appropriation needs. The study will provide theoretical and practical contributions to the literature by presenting an example from Turkey and promoting future research studies.

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METU JFA 2022/1
(39:1) *115-136*

DOI: 10.4305/METU.JFA.2022.1.6

MAHALLE ÖLÇEĞİNDE MEKÂN ÜZERİNDEN İKTİDAR ÜRETİMİ: ÇUKUR DİZİSİNDEKİ İKTİDAR TEMSİLLERİNİN ÇÖZÜMLEMELERİ

Evren ÜLKERYILDIZ*, Gaye TOPA ÇİFTÇİ**

Alındı: 12.20.2020; **Son Metin:** 11.03.2022

Anahtar Sözcükler: : Mekânsal erk; sosyal kontrol; yer; kimlik; kültürel çalışmalar.

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GİRİŞ

Bursik ve Grasmick (1993) sosyal kontrole genellikle tahsis veya duyarlılığın, sosyal desteğin ve karşılıklı saygının geri çekilmesi tehdidiyle ulaşıldığı kanaatindedir. İkamet tabanlı kontrolün resmi olmayan sosyal kontrol yöntemlerinin bir türü olduğu görüşünü savunan Hunter (1985) üç düzeyde gayrı resmi sosyal kontrol seviyesini açıkça tanımlamaktadır. Bunlar; özel, mahalli (paroşiyal) ve kamu seviyeleridir. Bu yaklaşım farklı düzeylerde sosyal kontrol biçimlerinin karşılıklı bağımlılık ile karşılıklı sınırlamalar arasında şekillenmelerinin yanı sıra çevresel mekân ve yer (ikamet) olgusuyla yoğun bir ilişki içinde olduğunu vurgulamaktadır (Bursik ve Grasmick, 1993).

İktidarı oluşturan sosyal kontrol türlerinin mekândan ayrı düşünülemeyeceği ve bu durumun mekân üzerinden iktidar üretimiyle sonuçlanacağı gerçekliği mekân araştırmalarında oldukça tartışılan bir konudur. Çukur dizisinde kurgulanan kentsel mekânların; gerçekte var olan komşuluk ve yerleşim ilişkilerine dayalı sosyal kontrol mekanizmaları bağlamında benzeştiği varsayımından hareketle dizi bu çalışmanın örneklemi olarak seçilmiştir. Zira Çukur dizisinde simüle edilen kentsel mekân örüntülerinin gayri resmi sosyal kontrol normları yaratarak kendi içinde komşuluk tabanlı alternatif bir otorite temsili sunması, içerdiği mekân temsillerini dikkat çekici bir noktaya taşımaktadır. Elbette kentteki gündelik yaşam kültürünün sinema, televizyon ve medyadaki yansımaları popüler kültür ürünlerinin hegemonik veya özgürleştirici birçok örneğini barındırmaktadır. Bu noktada Çukur, Stuart Hall'ın (1989), savunduğu izleyiciye aktif bir iletişim rolünün verilmesi halinde söz konusu popüler kültür ürününe dair pasif izleyici konumundan sıyrılıp, kendine bir direniş ve anlam alanı yaratma (1980) potansiyeli ile örtüşmektedir. Böylece Çukur, yalnızca içinde yaşadığı var sayılan kurgusal bireylerin deneyimine, sosyal ilişkilerine dayalı değil; bir mahalle temsili olarak ekran karşısında diziyi izleyen kitlenin, o mekâna ilişkin geliştirdikleri

duygu ve düşüncelerine dayalı bir anlam alanı oluşturabilmektedir. Dizi, izleyicinin mekân üzerinden kurduğu bu alan ile birleştirici bir kültürel yönelimi tetiklerken diğer kitle kültürüne yakınsayan temsillerinden kendini mekân üzerinden iktidar üretimindeki çelişkileri aynalayarak ayrıştırmaktadır. Bu noktada medya çalışmalarında Çukur'un araladığı perspektif; çözümlemeye tabi tutulan öznenin mekânsal oluşu ve mekânın tahakküm sistemini sürdürmedeki rolünün halk tarafından gündelik yaşam pratiklerine mekânsal deneyim bağlamında bizatihi nasıl tatbik edilebildiğini sorgulamasıdır. Bu bakımdan Çukur dizisi gerçek hayatta tetiklediği mekânsal tezahürleri sebebiyle incelenmeye değer bir vaka niteliği taşımaktadır.

İnsan, gruplar halinde yaşayan ve sosyal dinamikler arasında var olma eğilimini sürdürebilen bir varlıktır. İnsan gruplarının sıklıkla ekolojik nişlere benzeyen doğal alanlara ve hakimiyet bölgelerine ayrıldıkları gözlenmekte ve bu durum "insan ekolojisinin kilit aksiyomu" olarak açıklanabilmektedir (Taylor, 1997, 133). Bu aksiyom perspektifinden bakıldığında sosyal kontrol mekanizmalarının odağındaki hâkimiyet alanı bilişini şekillendiren ana unsurun mekânsal olduğunu söylemek mümkündür. Bu noktada Bursik ve Grasmick (1993) tarafından sunulan komşuluk ve yerleşim ilişkilerine dayalı sosyal kontrol mekanizmaları; özel, mahalli (paroşiyal) ve kamu seviyelerinde tanımlanmakta ve Çukur'da temsil edilen mahalle kurgusundaki gayri resmi sosyal kontrolün mekân üzerinden nasıl üretildiğini betimlemeye yönelik anahtar bir yaklaşım sunmaktadır.

Bu araştırmadaki temel amaç; mekânsal nitelikler aracılığıyla şekillenen mahallelerdeki gayri resmi sosyal kontrolün nasıl sağlandığını, Çukur'da yaratılan mekân temsilleri üzerinden sorgulamaktır. Araştırma kapsamında; mekân tabanlı gayri resmi sosyal kontrol mekanizmalarının ürettiği güç temsilleri; mekânın anlamı, mekânın işgali ve mekânın mahremiyeti boyutlarıyla ele alınmaktadır. Araştırmanın temel sorusu; Çukur (2017-2021) dizisinde kurgulanan kentsel mekân tasarımları ile ikamet (mekân-yer) tabanlı sosyal kontrol üzerinden hâkimiyet alanı tanımlayan (bölgesel) bir bilişin nasıl oluştuğudur. Bu bağlamda bu araştırmada mekân üzerinden nasıl iktidar üretildiği tartışılmaktadır.

Yöntem

Bu araştırma yöntem olarak, Çukur dizisinde kurgulanan kentsel mekânların vaka analizi olarak değerlendirilmesine dayanmaktadır. Vaka analizi, 1. güncel bir olguyu kendi gerçek yaşam çerçevesi içinde ele alan, 2. olgu ve içinde bulunduğu içerik arasındaki sınırların kesin hatlarıyla belirgin olmadığı, 3. birden fazla kanıt ve veri kaynağının mevcut olduğu durumlarda tercih edilen, gözleme dayalı bir araştırma yöntemi olarak tanımlanmaktadır (Yin, 2003). Çalışma Çukur'da kurgulanan kentsel mekânların; komşuluk ve yerleşim ilişkilerine dayalı sosyal kontrol mekanizmaları bağlamında benzeştiği varsayımı üzerine kuruludur. Bu bağlamda bu araştırmada betimsel analiz yöntemiyle gayri resmi sosyal kontrol normlarının yer olgusu üzerinden, alternatif bir otorite temsilini nasıl oluşturulduğu incelenmektedir.

Çalışmanın amacına ulaşmak için mekânsal nitelikler aracılığıyla şekillenen mahallelerdeki gayri resmi sosyal kontrolün nasıl sağlandığı; birey-toplum, aidiyet-yer, mekân-iktidar ilişkileri bağlamlarında kuramsal olarak değerlendirilmektedir. Bu ilişkilerin kurgusal popüler kültür üretimlerindeki izleri örneklem olarak seçilen bir televizyon dizisi

üzerinden tartışılmaktadır. Simüle edilen kentsel mekân örüntülerinde İstanbul'un çeper mahallelerinden birini temsil eden Çukur'da, mekan olarak İstanbul'un Fatih ilçesinde Balat mahallesindeki gerçek mekanlar kullanılmış ve özel bir plato inşa edilmemiştir. Resmi internet sayfasında konusu: "İstanbul'un suçla özdeşleşmiş mahallesi Çukur'un kontrolü Koçovalı ailesinin elindedir. Suçla bu kadar içli dışlı olsa da ailenin kendine göre kuralları vardır. Bu kurallardan bir tanesi de uyuşturucu yasağıdır. Çukur'da uyuşturucu üretilmez, kullanılmaz, satılmaz. Fakat oyuna yeni dâhil olan gruplar yasağı delmeye çalışırlar" (Ayyapım, 2022) şeklinde özetlenmektedir. Genel bağlamda köyden kente göçün yarattığı yersizlik, yurtsuzluk ve yalnızlık kavramlarının vurgulandığı ve kent yaşamına adapte olamamış, kendilerini ekonomik ve sosyal açıdan konumlandıramamış bireyler etrafında şekillenen bir hikaye kurgusuna sahip olan dizi, zamanla mülksüzlüğün oluşturduğu yoksunluk kaynaklı koruyuculuğa ihtiyaç duyan kitlenin çoğalmasını hikayeleştirmekte ve bu kitlenin mülkiyet haklarının tümüne sahip olmaktan aldığı güçle kahramanlaşan bir ailenin çeşitli illegal işler yaparak ekonomik olarak güçlenmesi sonucu bir mahalle kurmasını konu edinmektedir. Mahallenin hakimiyeti, gerek ekonomik gerekse sosyolojik sebeplerle sürekli el değiştirmekte lakin bu hakimiyet kişilere (kahramanlara) duyulan sadakat yerine yer olgusu üzerinden şekillenmekte ve yer temsiline duyulan bağlılık üzerinden konumlanmaktadır. Böylece mekânsal bir otorite temsilini ele geçirmek isteyen, illegal işlerle uğraşan toplumsal sınıflar arasında yaşanan grup dinamiklerinin yere bağlılığı üzerinden yansıtılan çatışmaların "yer"i bir özne gibi kimlikleştirmesi, Çukur'un iktidar üretim pratiği simülasyonunu ekran dışında da tatbik etmesiyle sonuçlanmakta ve bu durum diziyi bir vaka olarak incelenebilir konuma taşımaktadır. Kurgulanan mekânlar bu bağlamda inceleme potansiyeli barındırmakta ve aşağıdaki şekliyle özetlenmektedir.

Kahvehane: "Dostlar Kahvehanesi" adıyla mahallenin merkezinde konumlandırılmış, tüm önemli kararların alındığı, mahalle içindeki adaletin sağlandığı, bir mahkeme özelliği taşıyan, mahalleye dışarıdan gelenlerin karşılandığı, misafir edildiği ve bir ölüm anında cenazenin önünden kaldırıldığı bir merkez konumundadır. Kamusal bir mekan olarak herkesin kullanımına açık olmasının yanında aile reisinin, gelecekteki veliahtları olan oğullarının ve kahramanın yoldaşlarının toplandığı bu mekanda eril temaların yoğunlaştırılan kullanımı özel olarak yansıtılmaktadır.

Çatılar: Tüm mahalleyi gözetlenebilir ve denetlenebilir bir enformasyon ağına dönüştüren, kamusal sokak örüntüsünü üst kotta paralel bir alternatif biçiminde tekrarlayan bir düzlem formudur. Tüm mahalleyi yukarıdan görebilen, mahallede yaşananların ve mahalleye giriş ve çıkışların gözlemlenebildiği ve üzerinde oluşturulan haberleşme ağı ile bilginin tüm mahalleye yayılabildiği mekânlardır.

Aşevi: Gücün toplandığı mekân olarak kurgulanan kahvehanenin yanında yer alan mülksüz ve ihtiyaç sahiplerinin erişimine her daim açık, yemek ve barınma gibi temel gereksinimlerin karşılanması amacıyla hizmet veren bir mekândır. Mahallenin hamisi konumundaki ailenin kadınları tarafından sorumluluğu ve hizmeti üstlenilen, bu sayede kadınların bilgi akışının içinde sürekli yer aldığı mekân, şefkat temalarıyla vurgulanmaktadır.

Berber/Dövmeci Dükkânı: Kahvehane ve aşevinin karşısında yer alan, mahallenin simgesi olan dövmeyi yaptırmak isteyenlerin geldiği, dövme yaptırmayanların da tıraş olmak için uğradıkları, mahalledeki

ortak değerlerin pekiştirilme noktası haline gelen ve işlevi gereği eril, mahallede ikamet eden erkeklerinin mutlak suretle ziyaret ettikleri bir mekândır. Mahalle genelinde yürütülen gayri resmi kayıt dışı ekonomi aygıtlarının kullanımında yer almamakta ve illegal işlerin dışında kendini konumlandırmaktadır. Mahallenin ve iktidarı temsil mekanlarının bu derece merkezine yakın bir noktada olmasına karşın hakim olan illegal tutumdan kendini soyutlayarak özerk bir duruş sergilemesini, bu mekana ilişkin mülkiyet hakkının mahallenin hamisi durumundaki aile reisinde değil işletme sahibinin kendisinde olmasına borçludur.

Balkon: Kahvehanenin karşısında, berber dükkanının üstünde yer alan loca mekânı kahvehane ve onun önündeki kamusal sokak mekânıyla bütünleşmektedir. Ortak normlar sonucu üretilen kültürel uygulamaları kapsayan tehdit ve ceza içerikli, ritüel ve törenlerin gerçekleştirildiği sokak mekanını hem bir sahneye dönüştürmekte hem de arkasındaki hakim duvarda devasa boyutlardaki mahalleye hakim gücün simgesel sunumu ile iktidarın kime ait olduğunu her daim vurgulayan bir loca mekanı niteliği taşımaktadır. Özellikle sokak kesitine nazaran yalın ve yüksek bir cephe vurgusuyla betimlenmiş olup genellikle alt açı çekim tekniği ile simgenin daha büyük ve baskın gösterildiği bir mekândır.

Ayrıca kamusal mekân kapsamında değerlendirilebilecek nitelikte, çoğunluğu mahallede mülkiyet hakkı bulunmayan konut sahibi esnaftan oluşan ve mahalle arasındaki sokaklarda kurulan bir pazar mekânı mevcuttur. Pazarda yer alan esnaf, mahallede sığınmacı konumda komşu oldukları mahalle reisinin pazarda yer alan tezgâhıyla da komşu durumdadır. Güç sahibinin sahip olunan yoksunluğu eşit şekilde kazanıyoruz ve paylaşıyoruz yaklaşımını bir mesken topluluğu bilincine dönüştürdüğü bu mekân; aynı zamanda mahallelinin ekonomik ve sosyal açıdan gözlemlenebildiği ve bu gözlemlere göre mahalle reisinin aksiyon alabildiği bir mekân niteliği taşımaktadır.

Bir çok bölümde çeşitli sahnelerin çekildiği kamusal mekân temsili olarak ailenin adıyla anılan "Koçova Halk Hastanesi" bulunmakta ve dizide yaşanan olay örüntüsü gereği destek, saygı, birlik ve eşitlik unsurlarına dair verdiği referanslarla dikkat çekmektedir. Mahallenin giriş ve çıkış noktası olarak gösterilen konumda bir de cami bulunmaktadır. Diğer mekânların aksine dinsel bir mekân olarak senaryoya çok az dâhil edilmekte ve varlığının gösterilmesine karşın mahalledeki hâkimiyet temsilinin tamamen dışında tutulmaktadır.

Mahalleyi yuva olarak gören ve bu sebeple aralarındaki ilişkiyi aile referansları üzerinden sürdüren mahalleli için mahalle reisinin yaşadığı ev kamusal bir mekân niteliğinde ve merkez olarak yansıtılmaktadır. Salonundan mutfağına, kilerinden yemek masasındaki oturma düzenine kadar her bir kullanım alanı ile aile üyelerinin de aynı mahalledeki gibi belirli hiyerarşik kurallar çerçevesinde yaşadıkları betimlenmektedir.

Dizi mizansen ve teknik (sinematografik) olarak incelendiğinde ise birkaç önemli unsurun öne çıktığı gözlemlenmektedir. Ana karakterlerin ve özellikle mekânların gücü temsil ettiği sahnelerde alt açı çekimleri gerçekleştirilerek güç ve iktidar olgusunun pekiştirilmesi söz konusudur. Öte yandan tahakküm altında kalan mahallelinin çekimlerinde genellikle çoğulcu bir kitle sunumu ve kalabalık bir temsil vurgusu havadan video çekimi olarak nitelendirilen drone çekimi aracılığıyla sağlanmakta ve mahallenin kamusal sokak örüntüsünü üst kotta paralel bir alternatif biçiminde tekrarlayan çatıların niteliğini daha ayrıntılı şekilde gözler

önüne sermektedir. Ayrıca erk savaşları esnasında kurgulanan çatışma sahnelerinde sıcak renklerin yoğunlaştığı filtreli çekimlerin tercih edildiği, dizinin genelindeki sahnelerde ise soğuk renklerin kullanımıyla oluşturulan filtreli çekimlerin ağırlık kazandığı gözlemlenmektedir.

Çukur dizisinin, ilk sezonun yayınlandığı 2017 tarihinden itibaren ana sorunsal veya örneklem olarak araştırıldığı akademik çalışmaların; adalet, karşılıklılık ilkesi, kentsel toplum, reklam, sosyal medya, dizinin gençlere etkisi, şiddet, kadın erkek eşitliği/eşitsizliği vb. konular bağlamında incelendiği gözlenmektedir. Ancak yapılan akademik çalışmaların hiçbirinde, dizinin, ana karakteri olan mekânın, iktidar bağlamında incelenmemiş olması da bu araştırmaya özgün bir değer kazandırmakta ve temsil ettiği mekânların – anlam, işgal ve mahremiyet ilişkilerini irdelemeyi gerekli kılmaktadır.

Nitekim, bu çalışma kapsamında Çukur dizisinin, ürettiği hakimiyet alanı tanımlayan (bölgesel) bilişin oluşturduğu mekân tabanlı iktidar simülasyonunun bileşenlerine dair bulgular, yukarıda bahsedilen mekanlar üzerinden 1. mekân – anlam ilişkisi (yer duyusu, yere duyulan aidiyet ve yer kimliği), 2. mekân – işgal (kendileme ve egemenlik) ilişkisi, 3. mekân – mahremiyet ilişkisi perspektiflerinden irdelenerek ortaya koyulmaktadır.

MEKÂN - ANLAM İLİŞKİSİ: ÇUKUR'UN YER ANLAMI ÜZERİNDEN TAHAKKÜM ÜRETİMİ

Yerin anlamı çalışmaları araştırıldığında bireylerin yere ilişkin gösterdiği bağlılığa göre şekillendiği kanaati ağırlık kazanmaktadır. Topluluk psikolojisi ile mekân ilişkisi irdelendiğinde sosyal ve mekânsal ölçekte küçük bir yapı birimi olan mahalle ile toplum duygusu arasında sıkı bir bağ olduğu vurgulanmaktadır (Long ve Perkins, 2007).

McMillan ve Chavis (1986) ise psikolojik anlamda topluluk duygusunun dört bileşenden oluştuğunu ileri sürmekte; bu bileşenleri; topluluğa üye olmak, toplulukla paylaşılan duygusal bağlantı, nüfuz ve taahhütlerin yerine getirilmesi olarak açıklamaktadırlar. Sonraki araştırmalar bu dinamiklere topluluk memnuniyeti, müşterek etkinlik, komşuluk, komünizm ve gayrı resmi sosyal kontrol, daha az suç korkusu, çöp ve grafiti kavramlarını ekleyerek (Perkins ve Long, 2002) topluluk açısından anlamlı bulunan ortak tarihin ve ortak sembollerin (Fisher vd., 2002) bu bileşenler altında değerlendirilmesini olanaklı kılmışlardır.

Dizi, kentsel yapı içerisindeki en etkin sosyal birimlerden mahalle temsilini oluşturan Çukur'un yer olarak anlamlı kılınmasını ve yuva saydığı mahallesine yüksek oranda bağlılık gösteren bireylerin temsili bir kurgusunun, toplumun geneline oranla daha güçlü bir toplumsal bütünleşmeye vakıf olmalarını gözler önüne sermektedir. Yaşadıkları mahalle olan yer ile anlamlı ve güçlü bağ ilişkileri geliştiren mahalle sakinlerinin komşuluk ilişkisi sayesinde aralarında kurdukları gayrı resmi karşılıklı yardımlaşma ve bilgi paylaşımı ağı neticesinde resmi olmayan sosyal kontrol düzeni oluşturmaları; mekân üzerinden yaratılan bir tahakküm üretimiyle sonuçlanmaktadır. Kökleşmiş bir mesken topluluğu bütünlüğüne mahalle sakini olarak katılım, sığınmacı konumundaki konut sahiplerinin birlikleri, oluşturulmuş güce ilişkin inanç tabanlı bir koalisyona dönüşmektedir. Bu tarz bir topluluk üyeliği prototipik bir sosyal sermaye davranışı olarak kabul edilen resmi bir sivil eylem teşkil etmektedir (Long ve Perkins, 2007). Mahalle olarak amaçlar birliği üzerinden yaratılan karşılıklı saygının müşterek etkinliğe dönüşmesi söz

konusudur. Mülkiyetin karşılığı olarak maddi bir beklenti talep edilmeyen Çukur'da birlik olarak gerçekleştirilen sivil eylemlerin etkinliğine güvenme, güç oluşumu ile sonuçlanmaktadır. Mülkiyete sahip olmayan ancak bunun karşılığı maddi bir ödemede bulunmayan mahalle sakinleri tarafından düzenlenen günlük davranış normları; gayri resmi sosyal kontrolü tesis etmektedir.

Yer ile anlamlı ve güçlü bağ ilişkilerine sahip mahalle sakinlerinin çoğunluğunda mülkiyet haklarının eşit şekilde yok oluşu komünizm fikrinde yer alan tüm mülkiyetin eşit paylaşımı yaklaşımı ile paralellik göstermektedir. Ancak kendi içinde alternatif bir otorite temsilinin ortak yoksunluk ve mülksüzlük üzerinden kurgulanması, Çukur'u, bu durumun neticesinde beklenen bir komün iklim yerine Perkins vd. (2002) tarafından tanımlanan topluluk psikolojisindeki birlik anlayışına; ait olunan topluluğa ve onu geliştirmek için toplu olarak çalışmaya verilen değere daha fazla yaklaştırmaktadır.

Güçlü topluluk bağları ve yer tutumu (yeri anlamlı kılma duyusu) bir toplumdaki alt sınıflar için özelleşmiş duygulardır (Bauman, 1998). Yüksek sınıf üyeleri, küreselleşme sürecindeki doğal hareketlilikten yararlanırken, yoksullaştırılmış ve marjinalleşmiş sosyal gruplar "yerelleştirilmiştir" (Bauman, 1998). Kaynakların kıtlığı ve artan güçsüzlükleri nedeniyle, kişilerin mevcut ikamet ettikleri yerleri değiştirme konusunda daha az yetenekli olabilmeleri gibi yer ile oluşturulan duygusal bağ da, yaşam alternatiflerinin bulunmamasının bir sonucu olma ihtimalini de barındırabilmektedir. Çukur temsilinde yaşayan bireylerin toplumsal anlamda yoksul ve marjinal zümrelerden oluşması bu bağlamda şaşırtıcı değildir. Çukur'daki bireylerin ikamet hareketliliklerini kendi aralarında sorgularken: "Çukur'un dışında bizim nefes bitiyor" metaforunu kullanmaları Bauman'ın değindiği yerelleştirilme etkisini gözler önüne sermektedir.

Çevresel psikoloji araştırmalarında kentsel mekânların toplum ilişkilerindeki yerini sorgulayan çalışmaların çoğu; yer duyusu (Hay, 1998; Jorgensen ve Stedman, 2001), yer bağlılığı (Altman ve Low, 1992; Brown, Perkins, ve Brown, 2004; Hidalgo ve Hernandez, 2001; Scannell ve Gifford, 2010) ve yer kimliği (Hernández vd., 2007; Korpela, 1989; Proshansky, vd., 1983; Twigger-Ross ve Uzzell, 1996) kavramlarını yerin anlamını irdelemek üzere tanımlamaktadır. Çoğu kez bu kavramların aralarında önemli derecede örtüşmelerin olduğu ve eş anlamlı olarak birbirleri yerine kullanıldıkları (Hernández vd., 2007), ancak aynı zamanda ayırt edici özelliklere sahip oldukları birçok araştırmacı tarafından vurgulanmaktadır (Jorgensen ve Stedman, 2001).

Bir mekâna ilişkin hissedilen yer duyusunu, mekâna kök salma derecesi ile ilişkilendiren Hay (1998), yer bağlılığını bu durumun neticesinde oluşan bir derecelenme olarak yorumlamaktadır. Shamai (1991) yer duyusunun; yere aidiyet, bağlanma, taahhüt gibi farklı bağlılık dereceleri barındırdığına dikkat çekerken; Stedman (2002) yer bağlılığını, kişinin sosyal yaşam içindeki kişisel konumu olan sosyo-psikolojik kimlik kavramına çok benzetmektedir. Yer kimliğini, mekânla etkileşim yoluyla, bireyin kendisini belirli bir yere ait hissetmesi anlamında tanımlanan bir süreç olarak nitelemek mümkündür. Başka bir deyişle, yer kimliği, belirli bir alanı belirleyen öğelere ve orada meydana gelen etkileşimlerin doğasına göre gelişen kişisel kimliğin bir bileşeni konumundadır (Hernández vd., 2007).

Çukur bir mahalle temsili olarak, sadece içinde yaşadığı var sayılan bireylerin deneyimine, sosyal ilişkilerine dayalı değil; ekran karşısında diziyi izleyen kitlenin, o mekâna ilişkin geliştirdikleri duygu ve düşüncelerine dayanan bir anlam alanı oluşturmaktadır. Bu alana üç bileşenli bir bakış açısı hâkimdir.

Yer Duyusu Bağlamında Çukur'un Mekân Temsili

Hummon (1992) yer ile duygusal bir ilişki kurulduğunu savunmakta, Low (1992) ise bunu, bireyin belirli bir ortama tanıdığı duygusal bir bağlantı şeklinde yorumlamaktadır. Yer ile kurulan duyusal bağın yere kök salma duygusuyla perçinlendiği (Hay, 1998) içinde bulunulmadığında yeri özlemek, yerle gurur duymak, yakın kişilerin hayatta kalmamasına rağmen yakın yerde yaşamaya devam etmek ve yere güven duymak (Lewicka, 2005) gibi eylemler barındırdığı kanaati ağırlık kazanmaktadır. Çukur temsilindeki mahalle sakinlerinin ikamet ettikleri yere ilişkin duydukları güven: "Çukur bizi korur; biz de Çukur'u koruruz" söylemi mekâna karşı oluşan duygusal bağı pekiştirmektedir. Yere duyulan itimat bağlamında Çukur, ortak değerlerin üretilme aracı olarak mekânın gayri resmi kayıt dışı ekonomi aygıtlarının kullanımında alt gelir gruplarınca baskın bir şekilde araçsallaştırılmasını aynalar niteliktedir.

Çukur temsili feodal bir sistem yansımasını andırmasına karşın oluşan otorite, değişip farklılaşan hakimiyet sınıfına değil mekânın kendisine biat etme ile sonuçlanmaktadır. Zira kayıt dışı ekonomiyi sürdürebilir kılmaya yönelik olarak paylaşılan; enformasyon, para ve silah gibi mübadele araçlarının etkin şekilde dağılımının sağlandığı ağ; mekânın yarattığı potansiyel üzerinden kurgulanabilmektedir. Aymaz'ın da nitelendirdiği üzere:

> "Hızlı ve güvenilir bir haberleşme için, mobil telefonların yaratacağı olası enformasyon kaçakları ve manipülasyonlara karşı, mahalle içerisinde işaret fişeklerinin ve en çok da hızlı koşan genç ulakların kullanıldığı özel bir network kurulmuştur. Sokakların olmadığı antik Çatalhöyük kentinin sakinleri gibi Çukur'un genç ve hızlı ulakları da, gizlilik esasıyla, mahalle içerisinde bir yerden bir yere gitmek için çatılardan atlar, merdivenlerden inip çıkar, küçük aralıklardan geçerler" (Aymaz, 2019, 1005).

Bu şekilde Çukur'u korumaya yönelik eylemlerin yarattığı başarı hissi yere duyulan aidiyeti güçlendirmektedir. Çukur'da yaşayan farklı sosyal grupları bir araya getiren bir diğer unsur Çukur'da sahip oldukları bu mekân temelli öznel ağa ilişkin duyulan aidiyet ve aidiyetin yarattığı gururdur.

Yere Bağlılık: Aidiyet Bağlamında Çukur'un Mekân Temsili

Bazıları tarafından tüm psikolojik ihtiyaçların en üst noktası olarak taçlandırılan aidiyet ihtiyacı (Baumeister ve Leary, 1995), karşılıklı olarak bir birey veya grupla (ebeveynler, eşler veya arkadaşlarla kurulan) güvenli işteş ve uyumlu ilişkiler kurmayı içermektedir. Nitekim bireylerin evrimsel geçmişlerinde sahip oldukları bu yetkinlik sayesinde sofistike sosyal sistemler geliştirebildiklerine, böylece grup koordinasyonu sağlayarak iş bölümü, güvenlik, çocuk yetiştirme görevlerinin bölünmesi ve sosyal sermaye gibi uyarlanabilir avantajlar sayesinde güncel toplumsal sistemlerin oluştuğuna inanılmaktadır (Neuberg vd., 2010).

Genel olarak, yer bağlılığı; insanlar ve belirli yerler arasında etkili bir bağ veya bağlantı olarak tanımlanır (Hidalgo ve Hernandez, 2001). Shumaker ve Taylor (1983) için yer bağlılığı bireyler ve onların bulunduğu ortamlar arasında pozitif bir bağ ya da birlikteliktir. Bu tür yere dayalı

duygusal bağlar, bireysel ve sosyal ölçekte topluluk için elzemdir ve hem bireyler hem de topluluklar için istikrarın yanı sıra değişimin de temelini oluşturmaktadır (Long ve Perkins, 2007). Çünkü yer tutkusu olarak ifade edilen kişinin fiziksel çevre ile kurduğu duygusal bağ; yere karşı düşkünlük, gurur duyma temeline dayanmaktadır (Tuan, 1990). Yer bağlılığını sağlamlaştıran diğer unsur yere olan itimat yani güven, bir diğeri ise yere karşı duyulan memnuniyettir (Ahlbrandt, 1984). Yere karşı duyulan bağlılık, memnuniyet kavramı üzerinden sorgulanırken (Scannell ve Gifford, 2017), genellikle sosyal dokudaki ekonomik farklılaşmanın memnuniyet kavramına etkileri üzerinde durulmaktadır.

Ekonomik anlamda yaratılan iş fırsatlarının toplu halde değerlendirildiği, olanakların korunup, geliştirildiği, sosyal sorunların yanı sıra çevresel tehditlerin ele alınmak için bir araya gelindiği bir düğüm işlevi gören kahvehane mekânı, Çukur'un mekânsal temsilinde otorite üretiminin merkezi noktasını betimler niteliktedir. Örneğin yönetim gücünü kendinde toplayan böylece altyapı sağlama ve planlama yetkisine sahip olan ayrıca kaynak yönetimini yönlendiren devlet; sorumlu olduğu toplumsal düzenin temellerini, mekân üretimini gerçekleştirerek sağlamaktadır (Ghulyan, 2017). Ancak Çukur bir gettodur ve mekânları devlet tarafından tasarlanmamıştır. Çünkü temsil edilen kurguda kapitalizm sonrası ekonomik sistemlerde ulus-devlet modelinden boşalan koltuğun yerini kapital ve onun sermayedeki dolaşımı ele geçirmiş durumdadır. Nitekim Foucault (1980) günümüz toplumlarında mekân üretiminin otorite yaratma gücünün, insanlardan bağımsız güç ilişkileri üzerinden sürme eğilimi gösterdiğini vurgulamaktadır. Mekânsal anlamda bir iktidar üretim simülasyonu olarak Çukur temsilini yaratan koşul, Lefebvre'nin bahsettiği üzere geç-kapitalizm döneminin yarattığı çelişkili mekânın oluşum süreciyle örtüşmektedir. Öyle ki,

> "Çok güçlü bir politik tahakkümden, üretici güçlerin atılımından ve pazarlara yetersiz hâkimiyetten, komşuluk adacıklardan bütün gezegene dek, her kademede mekânsal bir kaos doğar. Burjuvazi ve kapitalizm, kendi tahakküm ürün ve araçlarına -mekâna- hâkim olmakta bundan böyle güçlük çekmiştir. Pratiği (duyumsal pratik, beden ve toplumsal mekânsal pratik) kendi soyut mekânlarına indirgeyememişlerdir. Yeni çelişkiler, mekânın çelişkileri ortaya çıkmış ve tezahür etmiştir" (Lefebvre, 2014, 90).

Çelişkinin temelinde yatan etken mekânın sahiplenme ve mülk edinme değeri arasındaki gerilimin yanı sıra kullanım ve mübadele değeri arasındaki gerilimin artması böylelikle mekânın alınıp satılabilecek ve mübadele süreçlerinde kullanılabilecek bir metaya dönüşmüş olmasıdır (Lefebvre, 2014). Kurgusal anlamda Çukur'u ele geçirmeye çalışan güç odaklarının farklı sebepleri olsa bile ana hedeflerinin kentsel dönüşüm istenci olması bu noktada tesadüf değildir. Zira Lefebvre'e (2014) göre küresel çaptaki kentsel gelişim, mekânları sürekli olarak mübadele süreçlerine dâhil ederek niceliksel manipülasyona tabi tutma eğilimi göstermektedir. Lefebvre (2014) diğer bir çelişkiyi kapitalist soyut mekânın merkez ve çevresi (periferi) ikileminden beslendiği noktasında savunmaktadır. Çukur'un kendini merkez ve ayrıcalıklı bir yer olarak konumlandırarak dış dünyayı (İstanbul'u) periferine çevirmesi, yerelleşme eğilimini çelişkili olarak arttırmaktadır. Yerel ölçekteki meta mübadelesi pratiğinin merkez noktası kuşkusuz kahvehane mekânıdır. Çünkü Çukur'daki kahvehane mekânı; temsili kapsamı ve rolü gereği kurgusal düzenin, hâkim gücün ve hakim ekonomik düzenin mantığına göre düzenlenmiş örgütlenmiş ve üretilmiştir (**Resim 1**).

Resim 1. Mutlakiyetin mahalle içindeki en üst seviye temsili; kahvehane mekânı ve önündeki kamusal sokak (Çukur, 2017-2021)

Çukur'da temsil edilen kahvehane mekânı, mahalledeki kamuoyu nezdinde oluşan otoritenin tesisinin örgütlenebildiği bir yönetim alanı tanımlamaktadır. İktidarın mahallenin mülki sahibi olan Koçovalı ailesinin elinde toplanması ve aile reisinin mahallenin en söz sahibi ve yetkili otoriteyi temsil etmesi, aile içindeki ataerkil hegemonyanın tezahürünü mahalle ölçeğinde tahakküme dönüştürmektedir. Yansıtılan eril tutum, kahvehane mekânını mutlakiyetin mahalle içindeki en üst seviyesine taşımakta aynı zamanda kolektifleştirmektedir. Mahallenin sahibi konumundaki Koçovalı ailesi, kamusal otoriteyi temsil ederken kahvehane mekânını mahalle halkının müşterek sorunlar ve ortak yaşamla ilgili müzakerelerini gerçekleştirdikleri bir meclis gibi araçsallaştırmaktadır. Bu mekân, rolü gereği tüm karar verici yetkiyi kendisinde toplayan bir parlamento gibi hareket etmektedir ve Çukur'un dışında kalan erke karşı örgütlü bir siyasal direnç alanının merkezini oluşturmaktadır. Kahvehane mekânının sahip olduğu hiyerarşik güç aynı zamanda eril düzenin temsiline ilişkin güçlü referanslara sahiptir. Zira kahvehane mekânında gerçekleştirilen her eylem sadece sosyal hayatın deneyimlenmesini ve gündelik pratikleri içermemekte, erkin sürekli eril yollardan test edildiği, belirli ritüellerin gerçekleştirilerek mahalleye ait değer sistemlerinin pekiştirildiği dahası bunun kurumsallaştırıldığı ve kutsandığı bir mekân olarak kurgulanmaktadır.

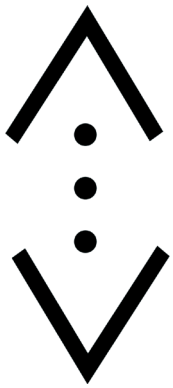
Yere karşı duyulan aidiyet çoğu zaman organizasyon duyarlılığı eğilimi üzerinden sorgulanmakta ve her iki durumun birbiriyle çok sıkı ilişkiler barındırdığı ancak farklı kavramlar olduğu gözlenmektedir (Long ve Perkins, 2007). Çünkü birincisi mekânsal yönelimli duygusal bir yapı ve ikincisi daha çok sosyal yönelimli bilişsel bir yapı barındırmaktadır (Long ve Perkins, 2007). Bir yere ait olma ve bağlılık, bireylerin (özellikle kadınlar, azınlıklar, düşük gelirli insanlar ve yaşlılar için) (Saegert, 1989) ve toplulukların ev ve mahalle ortamlarının tüm yönlerini canlandırmak için kullanabilecekleri bir kaynak oluşturmaktadır. Çukur'da temsil edilen aşevi de bu bağlamda mekânsal olarak bu işlevi fazlasıyla yerine getiren bir kaynak oluşturmakta ve ağırlıklı bir çekim alanı yaratmaktadır. Ataerkil geleneksel otorite ilişkilerinin temel odağındaki kahvehane mekânına komşu bir konum arz etmesi mahalle sakinlerini bu tür toplumsal örgütleme biçimine katılmaya motive etmektedir. İster bireysel ister topluluk düzeyinde olsun daha fazla topluluk bağlılığına katılım aidiyeti pekiştirmektedir (Zhao, 1996).

Yer Kimliği Bağlamında Çukur'un Mekân Temsili

Yer kimliği, etrafındaki fiziksel ortam algısına dayanarak bireyin kimliğini oluşturma sürecidir (Korpela, 1989). Dolayısıyla Çukur sadece inşa edilmiş bir mahalle temsili değil bir kimlik inşasıdır. Sembolik etkileşimciliğe bağlı olarak, kimlikler kendimize atfettiğimiz ve başkalarının sosyal kategori temelli davranışlarının nasıl gerçekleştirilmesi gerektiği konusundaki beklentilerinden öğrendiğimiz anlamlardır (Stedman, 2002). Yer kimliği; bireyin kişisel kimliğini fiziksel çevreye ilişkin olarak tanımlanan bilinçli ve bilinçsiz fikirleri, inançları, tercihleri, duyguları, değerleri, hedefler ve davranışsal eğilimleri ile bunları betimleyen kendiliğin boyutlarını barındırmaktadır (Proshansky vd.,1983).

Çukur dizisinde yere ilişkin üretilen anlamın, yere duyulan aidiyetin bir kimlik inşa etmesi ve bu kavramın mekânsal otorite üzerinden kurgulanması bir işaretleme ritüeli ile pekiştirilmektedir. Mahalle sakinlerinin kimlik şeklinde taşıdıkları dövme (**Resim 2**), sembolik anlam olarak; dışındaki imgeler mekânı, içindeki noktalar ise sırası ile üç düzeyde gayrı resmi sosyal kontrol seviyelerini açıkça tanımlamaktadır: Özel (bireyin kendisi ve ailesi), mahalli (paroşiyal) alan (yakın arkadaşlar ve tanıdıklar; mahalle sakinleri) ve kamu seviyesi (mahallenin sahibi Koçovalı ailesi).

İşaretleme geleneğinin tarihsel geçmişinde mahkûmların bedenlerine, hükümdarın damgasının basılarak iktidarın sonuçlarının dövme halinde işlenmesi, böylece yönetene ait bir nesneye dönüştürülme (Foucault, 1977) amacı taşıması yer almaktadır. Ancak Çukur temsilinde bireyin çukura ait bir nesneye dönüşmeyi kendi rızasıyla taahhüt etmesi söz konusudur. Nitekim bu durum bireylerin görünür kılınarak gözetim yoluyla denetlenebilirliklerini arttırmaktadır (Bauman, 1996). Çukur temsilinde ise dövme bir iç-denetim mekanizması olarak çalışmakta işareti taşıyan bireylerin birbirlerini tanımalarına ve bu sayede ortak hareket etmelerine olanak sağlamaktadır. Bu durum neticesinde: "Çukur'daki ortak çıkarlar da, mahallelinin öncelikli (etnik, cinsi, dini vs.) bütün kimliklerini aşan bir 'Çukurlu' kimliği yaratmıştır" (Aymaz, 2019, 1002) ve bu kimlik mekânsaldır. Bireyin hem mahalleye hem yakın çevresine hem de ailesine bu bağlamda duyduğu sorumluluk Çukur simülasyonunu mekânsal anlamda kutsallaştırmakta, sembolizm aracılığı ile politik bir iklime teslim etmektedir. Çukur'lu olmanın getirisi olarak temsil edilen ortak normların oluşturduğu kültürel uygulamaların çoğu, ritüel ve törenler aracılığıyla



Resim 2. Çukur'da yaşayan mahalle sakinlerinin aidiyetini simgeleyen dövme

Resim 3. Kahvehane mekânının tam karşısındaki kamusal alanın hâkim duvarındaki cephede insan ölçeğini aşan boyutlardaki *Çukur* simgesinin temsili (Çukur, 2017-2021)

tehdit ve cezalar içermekte bu pratikler kahvehane ve onun önündeki kamusal açık alan olan sokak mekânında gerçekleşmektedir. Lefebvre (2014) mutlak mekâna kazandırılan nitelikleri yorumlarken; zihne değil bedenlere hitap eden anlamlar yüklü olduğu sonucu üzerinde durmakta bu koşul Çukur'daki kahvehane mekânının aynı zamanda kutsal mekân simülasyonuna dönüştüğü gerçekliği ile paralellik göstermektedir. Zira kutsal mekân kendini merkez (kahvehane) ve ayrıcalıklı bir yer haline getirmekte etrafını da damgasını taşıyan periferiyle (Çukur) çevrelemektedir (Lefebvre, 2014) ve artık bu mekân inançsal bir düzene tabi ve bu düzen ise ayrıcalıklı bir statüye sahiptir.

Çukur sakinlerinin özgür öznelerden nesneleştirilerek Çukur'a tabi kılınabilen bireylere dönüşümü esnasında uygulanan dövme simgesinin, otorite üretiminin merkezi noktasını oluşturan kahvehane mekânının tam karşısındaki kamusal alanın hâkim duvarındaki cephede insan ölçeğini aşan boyutlardaki sunumu bir iktidar tekniği olarak mekânsal tarzda güç inşasını mümkün kılmaktadır (**Resim 3**). Öyle ki, mekânda yaratılan anlam hem Çukur sakinlerinin kolektif bilinçlerinde, hem de söz konusu kamusal alana hâkim kültürel iklimin içerisinde meydana gelmektedir. Çukur'daki kültürel iklim, doğal aidiyet olguları gibi görünen simgesel normların üretiliş biçimlerinin ideolojik anlamlar etrafında ve mekân üzerinden şekillenmesidir. Bu durum Barthes'ın (2003) sosyal grupların kendi üyelerine anlam sunan ayrımlar ve uzlaşımlar sistemi olarak yorumladığı kültürel kodun simge halindeki (mekânsal) temsilini oluşturmaktadır.

Mekâna yüklenen ilahi atıf, kökleri sembolik etkileşimci yaklaşıma dayanan ve toplumun sembollere yüklediği anlamlar (Burke, 1989) ve bu anlamlar üzerinden yaratılan davranış pratiklerinin (Blumer, 1986) sonuç ürünüdür. Mekânın anlamlandırılması ve davranış pratiğine geçirilmesi sürecinin merkezinde bireyin kendisi yer almaktadır. Çünkü

yere bağlılık kişinin benliğinin oluşması, bireysel ve toplumsal kimliğin tanımlanmasında başroldedir (Spencer, 2005) ve mekân kimliğinden ayrı düşünülemez bir konumdadır.

MEKÂN İŞGAL İLİŞKİSİ: ÇUKUR'UN MEKÂNSAL KENDİLEME VE EGEMENLİK ALANI ÜZERİNDEN TAHAKKÜM ÜRETİMİ

İlk olarak 1970'lerde psikologlar arasında tartışılmaya başlanan (Graumann, 1976) kendileme/sahiplenme kavramı felsefe ve sosyal bilimlerde uzun bir geçmişe sahiptir. Kendileme; "insanların fiziksel çevreye sahip olduklarını, aktif olarak kullandıklarını ve nihayetinde fiziksel çevrede anlam yarattıklarını ve fiziksel çevreye bağlı olduklarını iddia ettikleri süreçleri açıklamak için kullanılan karmaşık bir kavramdır" (Rioux vd., 2017, 61). İnsanların mekânı kendileştirerek yer haline getirdikleri mekanizmaları temsil etmektedir. Mekânlarda bireylerin kendilerine ait izlerin oluşturulması mekân üzerindeki denetim ve otoriteyi arttırdığı gibi bireyin veya topluluğun kendi kimliğinin yansımaları sembolik anlamlarda ve kentsel nezaketsizlik ve dokunulmazlıklar şeklinde tezahür etmektedir.

Brown vd. (2004) çöp veya duvar yazısı, kırık camlar ve bakımsız evler gibi kentsel "nezaketsizlikler"in, mekânları fiziksel bozulma ve düzensizliklerin ötesinde sonuçlara maruz bıraktığı görüşündedir. Etrafında bu ve buna ilişkin fiziksel nezaketsizlik/düzensizlik bulunan sakinlerin mahallelerini suç ve korkudan koruyamayacakları veya Çukur temsilinde olduğu gibi bilinçli olarak korudukları ve dokunulmazlık oluşturan önemli semboller olduğu varsayılmaktadır. Nitekim araştırmalar, orta gelirli bireylerin ikamet ettikleri mahallelerdeki bu tür dokunulmazlıkların, suçla ilgili sonuçlar için özellikle önemli bir ayraç olduğunu vurgulamaktadırlar (Brown vd., 2004). Varsayılanın aksine, Çukur sakinlerinin mahalledeki sosyal faaliyetlerden çekilmeyerek bu işsizlik sembolizmine tepki göstermek yerine bu durumu sahiplenmeleri söz konusudur. Suçlular ayrıca, bu fiziksel ipuçlarını, korku ya da ilgisizlikle yaşayanların mahalle üzerindeki kontrolünü kaybettiği için değil aksine bir parçası haline geldikleri için suç faaliyetine müdahale etmeyecekleri anlamında da yorumlamaktadırlar. Çukur temsilinde oluşturulan dokunulmazlıklar sayesinde mekân aracılığı ile karşılıklı taahütleşme sonucu hakimiyet ve sahiplenme bilinciyle bir alan tanımlanmakta ve sınırlandırılmaktadır. Çukur olarak nitelendirilen Koçovalı mahallesi resmi olmayan sosyal kontrol mekanizmalarıyla sadece sakinlerinin sahip olduğu bir egemenlik alanına dönüşmektedir.

Egemenlik alanı; insanların bölgesel kontrol uyguladığı (Davis ve Duren, 2011), sahiplenilmiş, savunulan, aynı zamanda başkalarının mekânsal kullanımı o bölge için sınırlandırılmış veya düzenlemeye tabi tutulan bir etkinlik alanını ifade etmektedir. Böylece egemenlik alanının yerleşik kimlik, komşuluk ve karşılıklı taahütleşmenin neticesinde dokunulmazlıkların oluşturduğu fiziksel çevreden beslendiği aşikâr durumdadır. İşaretleme ve kişiselleştirmelerle donatılmış olan Çukur belirli bir zümreye ait olduğunu ve bir organizasyon kültürü barındırdığını gerek duvar yazılarıyla gerekse çatıcı çocukların sınır bekçiliği tutumlarıyla her anlamda ilan etmektedir. Örgütlü olarak gerçekleştirilen mekânın hâkimiyete dayalı sahiplenme tutumuyla savunulması ortak bir değer niteliğindedir ve bu değer grubun ihtiyaçlarını ve imkanlarını karşılama noktasında mekânla kurulan ilişkiyi komüniteryenizm bağlamında sorgulanabilir kılmaktadır.

Perkins ve Long (2002) komüniteryenizmi, bir kişinin topluluğuna ve onu geliştirmek için kolektif olarak çalışmaya verdiği değer şeklinde yorumlamakta, diğer bir deyişle öznel uyaran değerler olarak nitelendirmektedirler (Perkins vd., 1990). Bu noktada araştırmacılar nitelendirilen komüniteryenizm terimini, Etzioni (1993) tarafından otonom bireyciliğe karşı komünal sosyalizm ile liberalizme karşı muhafazakârlık arasındaki ödünleşmedeki farklı ideolojileri uzlaştırma pozisyonu olarak konumlandırdığı anlamdan ziyade, politikleştirilmeden önceki anlamında irdelemeyi uygun bulmaktadırlar. Zira komüniteryenist bakış açısını çevre hareketinin doğa için yapmayı amaçladığı şeyleri toplum için yapmamızı sağlayacak değerler, alışkanlıklar ve kamu politikalarındaki değişiklikleri meydana getirmek üzere tasarlanmış bir hareket olarak yorumlamak tanımı daha anlaşılır kılmaktadır.

Ancak Çukur'daki toplum temsili sadece Koçovalı Mahallesinde yaşayanlar için özelleşmekte, bir grup zümreye odaklanmakta ve oldukça yerel bir anlam içermektedir. Öte yandan sahiplenilip kendileştirilen egemenlik kurulan alanın mülkiyetinin çoğunluğunun kullanıcılara ait olmaması otorite temsilinin mülksüzlük üzerinden kurgulanması; mekânın anlamı, aidiyeti, kimliği, sahipliği ve egemenliği üzerinden alternatif bir iktidar üretimine dönüşmektedir. Mülkiyet hakkının kullanıcılarda olmayışı veya neredeyse eşit şekilde yok oluşu otorite anlamında komün bir iklim algısı yaratmış olmasına rağmen Çukur, Perkins vd. (2002) tarafından tanımlanan topluluk psikolojisindeki birlik anlayışına; yani ait olunan topluluğa (Çukur'lu kimliğine) ve onu geliştirmek için kolektif olarak çalışmaya verilen değere (Çukur'un yer anlamına) çok daha yakındır. Söz konusu mekânsal dinamikler neticesinde ortaya çıkan otorite ve denetim, mahallelinin oluşturduğu mikro ekoloji, sürekli tekrarlanan maruz kalma, gündelik gözetim ve ortak normlar gibi sokak kültürü süreçleri, sakinlerin sosyal ve fiziksel bağlarında kenetlenmeyi ve akabinde gizliliği beraberinde getirmektedir.

MEKÂN MAHREMİYET İLİŞKİSİ: ÇUKUR'UN MEKÂNSAL MAHREMİYETİ ÜZERİNDEN TAHAKKÜM ÜRETİMİ

Rapoport (1994), uzamsal düzenlemelerde mahremiyeti istenen veya istenmeyen etkileşimi gerçekleştirme yetisi olarak tanımlamakta ve mekândaki etkileşimin kontrol mekanizmaları sonucu oluştuğunu belirtmektedir. Altman (1975) mahremiyetin birey ve diğerleri arasında yaratılan diyalektik bir ilişki olduğu üzerinde durmakta, etkileşimin kısıtlanması üzerinde bireyin veya grubun seçici bir kontrol deneyimi olarak tanımlamaktadır. Öyle ki mahremiyeti izin verme kabiliyeti olarak yorumlamak mümkündür.

Mahremiyet farklı seviyelerde vücut bulmakta (Madanipour, 2003) ve bireysel alan, sosyal alan ve kamusal alan gibi derecelerde kurulan sosyal etkileşimin nitelik ve yoğunluğuna göre katmanlaşmaktadır. Örneğin bireyin yaşam alanının merkezinde bulunan konut genellikle bir gurur kaynağı, kimlik gösterme aracı ve topluluk standartlarının ve bölgesel bağlılığın görünür bir sembolüdür (Altman ve Chemers, 1984). Öte yandan herkese açık olmayan, bireyin kendini güvende hissettiği ve sınırlandırılmış mekânların en özelleşmiş halini temsil etmektedir ve mahremiyet ihtiyacının karşılandığı en üst noktayı oluşturmaktadır. Çünkü konut mekânında; en yoğun etkileşim kurulan; kişiler arası mesafelerin en kısa olduğu; mekânda bulunma anlamının ve aidiyet duygusunun en yüksek zirvesini temsil eden ve kimliği oluşturan benliğin şekillendiği aile yer

almaktadır. Çukur temsilinin temel kurgusunda aile kavramını her şeyin üstünde bir değer olarak sunması; Çukur'un imgesel anlamını çoğu zaman eş anlamda aile kavramı yerine kullanmasının altında yatan temel neden olarak irdelenebilmektedir. Zira "Çukur evimiz ... babamız!" metaforunun altında yatan gerçeklik Çukur'un aileyi temsil etmesidir.

Bu noktada, Bursik ve Grasmick'in (1993) sosyolojik mantıksal ilkeler doğrultusunda temellendirdiği komşuluk ve yerleşim ilişkilerine dayalı sosyal kontrolün çok katmanlı etkilerini belirttiği sistemik kontrol yaklaşımı; mahallelerdeki gayri resmi sosyal kontrolün mekân üzerinden nasıl üretildiğinin anlaşılmasına yönelik anahtar bir hiyerarşik yapı sunmaktadır. Bursik ve Grasmick (1993) tarafından sunulan komşuluk tabanlı sosyal düzensizlik yaklaşımı, Çukur'da temsil edilen kimlik örüntüsü ile paralellik göstermekte ve yine **Resim 2**'de sunulan mahalle sakinlerinin aidiyetini simgeleyen dövmedeki mahremiyet seviyeleriyle bire bir örtüşmektedir.

Bursik ve Grasmick (1993) etkileşimin kontrol edilme seviyelerini kademelendirirken aile üyelerini ilk sıraya koymakta, ikinci sırayı mahalledeki yakın arkadaşlar ve tanıdıkların bulunduğu seviye olarak nitelendirmekte ve son olarak mahalleyi dış aktörlere bağlayan kamu seviyesini tanımlamakta böylece üç dereceye ayırmaktadırlar. Nitekim böylece Çukur temsilinde kurgulanan resmi olmayan sosyal kontrol yoğun şekilde mahremiyet olgusu içermekte ve mekândan bağımsız olarak düşünülememektedir. Her seviyede çalışan kontrol süreçleri niteliksel olarak farklıdır ve farklı mahremiyet derecelerini temsil etmektedir.

İlk seviyedeki sosyal kontrol genellikle duyguların paylaşımı, sosyal destek ve bu desteğin çekilme tehdidi, ayrıca karşılıklı saygı ile tesis edilmektedir (Bursik ve Grasmick, 1993). Bu seviyede etkili ve yaygın olarak kullanılan bir ihtiyaç-tehdit paradigması sosyal olarak katılımcıları dışlamaktır (Scannell ve Gifford, 2017). Çukur'un senaryosunda çok yaygın bir şekilde kullanılan etkin iletişim ağından uzaklaştırarak mahremiyet sınırlarının dışına çıkarma eylemi: Çukur'dan uzaklaştırma, mekân üzerinden üretilen iktidarın paylaşımını çıkarılan kişi özelinde kısıtlayacağından etkin bir cezalandırma yöntemi olarak temsil edilmektedir. Çukur temsil edilen benlik ve aile kavramlarını çakıştırarak sosyal destek ve karşılıklı saygı normlarını üst seviyeye çıkarmayı amaçlayan bir kurgu temelinde şekillenmektedir ve bu durum birinci seviyeyi oluşturmaktadır.

İkinci seviye sosyal kontrol daha geniş yerel kişiler arası ağların oluşması ve bu ağların birbirine kenetlenmesiyle sağlanmaktadır (Bursik ve Grasmick, 1993). Çukur'da temsil edilen bilgi akışı için oluşturulan ağ, mahremiyeti tetiklemekte ve kayıt dışı ekonomiyi sürdürebilir kılmaya yönelik olarak paylaşılan; enformasyon, para ve silah gibi mübadele araçlarının etkin şekilde dağılımını sağlayarak gayri resmi sosyal kontrolün ikinci seviyesini oluşturmaktadır.

Üçüncü seviye sosyal kontrol ise tahsis edilen ortak malların ve hizmetlerin güvence altına alınması suretiyle sağlanmaktadır (Bursik ve Grasmick, 1993). Üçüncü seviye dizide mahalle sakinleriyle Koçovalı ailesi arasındaki mahremiyeti temsil etmektedir. "Çukur Koçovalıları korur, Koçovalılar gerekirse Çukur'u...". Zira ortak malların ve hizmetlerin sadece Çukur için kamusal niteliğe bürünerek Çukur içinde (merkez) ve dışındaki (periferi) paylaşımı ve güvenliğinden Koçovalı ailesi sorumludur.

Bu durum Çukur'da yaratılan mekân temsillerinin komşuluk ilişkili sosyal düzensizlik yaklaşımı üzerine kurgulandığını göstermektedir. Çukur'da

yaratılan mahalle temsili ile mekânsal dinamikler arasındaki bağlantıları anlamak için önerilen perspektif; komşuluk tabanlı sosyal düzensizlik yaklaşımının gayri resmi sosyal kontrol süreçleriyle ilişkili olduğu ve bu durumunun mekân üzerinden iktidar üretimi ile sonuçlandığıdır.

SONUÇ

Bu çalışma kapsamında mekânsal nitelikler aracılığıyla şekillenen mahallelerdeki gayri resmi sosyal kontrolün nasıl sağlandığı Çukur'da yaratılan mekân temsilleri üzerinden sorgulanmaktır. Bu bağlamda iktidarı oluşturan sosyal kontrol mekanizmalarının mekândan ayrı düşünülemeyeceği ve bu durumun mekân üzerinden iktidar üretimiyle sonuçlandığı gerçekliği üzerinde durulmaktadır. Mekânsal tahakküm, mekânın yer anlamı üzerinden; yere ilişkin his, aidiyet ve kimlik bileşenleriyle şekillenmekte akabinde mekâna ilişkin sahiplenme ve mekânı egemenlik alanına dönüştürme gibi sonuçları beraberinde getirmekte, ayrıca mekânın mahremiyet niteliğinden ayrı düşünülemez bir boyut kazanmaktadır.

Nitekim, Henri Lefebvre mekânın sahip olduğu politik kimliği sorgularken, politika ve ideolojiden ayrıştırılamayacak kadar stratejik ve siyasi anlamlar taşıdığı, toplumsal bir ürün olarak üretildiği konusunda hem fikirdir (2014). Öte yandan Edward Soja'ın postmodern coğrafya söylemi; mekânın ideolojik bir yapılanmanın ürünü olduğu, toplumsal yaşamın sözde masum mekânsallığında iktidar ve disiplin ilişkileriyle işlendiği, çıkar politikaları ve ideoloji ile yoğurulduğu kanaatini taşımaktadır (Soja, 1989). Bu açıdan Çukur dizisinin, temsil ettiği mekân kurgusunun yüklendiği anlamlar bağlamında değerlendirildiğinde sosyal bir kimlik inşa süreci olduğunu ve yarattığı sosyal realitenin tesadüfi bir mekânsallık içermediğini söylemek mümkündür. Çukur'da temsil edilen kitlenin iktisadi örgütlenme tarzı mekânsal biçimler halinde tezahür etmekte, mahalle kurgusunun mekânsal biçiminin Harvey'in ön gördüğü üzere sermaye birikim süreçleri çerçevesinde kavramsallaştığı görüşü (Harvey, 2009) ağırlık kazanmaktadır. Çukur'un kurgusal mahalle tarihindeki mülkiyetin el değişim süreçleri ile sermaye birikim süreçleri arasındaki paralellik bunu kanıtlar niteliktedir.

Mekânsal anlamda bir iktidar üretim simülasyonu olarak Çukur temsilini yaratan koşul, Lefebvre'nin (2014) geç-kapitalizm döneminin iktisadi örgütlenme tarzının yarattığı çelişkili mekânın yansıması şeklinde; Çukur'un bir getto mekânı olarak bir direniş biçimi halinde kendini konumlandırmasıdır. Nitekim her ne kadar Çukur temsili, iktisadi örgütlenme bağlamında kaynakların kıtlığı ve artan güçsüzlükler nedeniyle kayıt dışı ekonomiyi sürdürebilir kılmaya yönelik suç niteliği taşıyan eylemlerle ekonomik anlamda periferine karşı bir direniş alanı olarak kendini konumlandırsa da örgütlü bir otoriteyi, mekân üzerinden kendisi tesis ederek karşı çıktığı düzeni kendisi yaratmaktadır.

Çukur kurgusal olarak, ikamet eden bireylerin deneyimine ve sosyal ilişkilerine dayalı olarak hem mekânın anlamı hem de mekânın işgal edilmesi ve mahremiyeti üzerinden iktidar üretimi pratiğini gerçekleştirmektedir. Bu durum; aynı zamanda ekran karşısındaki izleyici kitlesinin, Çukur'a ilişkin geliştirdikleri duygu ve düşüncelerine dayalı mekânsal bir anlam alanı oluşturmakta, Çukur'un iktidar üretim pratiği simülasyonunu ekran dışında da tatbik etmesiyle sonuçlanmaktadır.

Çukur'un iktidar üretim pratiği simülasyonunu ekran dışında da tatbik etmesi tam bu noktada mahalle kavramı temsili üzerine kurulu pek çok başka benzer yapıttan kendini ayrıştırmasıyla neticelenmektedir ve bu neticeyi dizinin mekân üzerinden kurguladığı iktidar pratiğini "yer"i bir özne gibi kimlikleştirmesine borçludur. Bu şekilde popüler kültür ürünü bir diziden beklenen, kahramanla özdeşleşmek yerine kişinin yaratılan bu kurgusal mekânı özdeşleştirmesi mümkün hale gelmektedir. Mekân ise bu karakterine sahip olduğu değil, temsil edilen anlamı, temsil edilen işgali ve temsil edilen mahremiyeti ölçüsünde ürettiği güç ile sahip olmaktadır. Bu noktada mekân üzerinden iktidar üretiminin temsil algısıyla farklılaştığını bu durumun ise Çukur dizisi örneğinde anlaşılabilir hale geldiğini vurgulamak mümkündür. Sonuç olarak mekân üzerinden iktidar üretiminin temsil algısıyla çok yakın ilişkide olduğu ve mekanın temsil niteliği ölçüsünde tahakküm üretim pratiğinin gerçekleşebildiği vurgulanmaktadır.

Özellikle kurgusal mahalledeki konutların duvarlarının: halkın matbaası, niteliğinde konumlandırılarak, temsil edilen mekanın, hem izleyiciye bölüm hakkında bilgi veren hem de mahallenin önemli haberleri aldığı bir iletişim unsuruna dönüştürülmesi söz konusudur. Bu şekilde modern medyanın kapitalizmle uyumlanmış bir endüstri ürünü olan kitle kültürü ürünü bir dizide, izleyicilerin ortak bir ideoloji etrafında şekillenen kurgusal bir popüler kültür ürünü içerisinde, gerçeklikten tamamen kopmasının sağlanması yerine; halkın gündelik yaşam deneyimlerinden ve kültürel yönelimlerinden beslenen gerçek hayatla bağ kurulmuş bir mahallede geçen bir yansıtma kurgulanmaktadır. Böylece kendi değerleriyle benzeş bir tahakküm üretimini ekran karşısında yakalayan kitlenin edilgen bir tavırla tükettiği bir popüler kültür ürünü, Fiske'in (2010) değindiği gibi bir mücadele alanına dönüşebilmektedir. Nitekim Çukur'un, popüler kültürü yanlış bilinç olarak yorumlayan öncül görüşlerin aksine, kültürel çalışmalarda tartışılan toplumsal özgürleştirme imkanına atıfta bulunabilecek benzerlikler taşıdığını öngörmek mümkündür. Zira, dizi kurgusunda mahalle içerisinde bir mekan temsili sunan duvar yazılarının gerek yapım şirketinin diğer yapımlarının reklamlarının yansıtıldığı bir temsil düzlemi ("İçerden çıktık, Çukura düştük", "Bold Pilot geliyor" vb.), gerekse gerçek yaşamdaki güncel olaylarla ilgili verilen mesajlar (örneğin terör saldırıları sonrası "vatan bir ailedir", covid-19 salgını sırasında "ellerini yıka", "çukur evde" vb.) bağlamında mekanın bir kitle iletişim aracı olarak kullanılmasına ilişkin örnekler barındırmaktadır. Böylelikle ekran karşısındaki izleyici kitlesinin, Çukur'a ilişkin geliştirdikleri duygu ve düşüncelerine dayalı anlam alanı, gündelik yaşamda işlerlik kazanarak Fiske'in (2010) belirttiği söz konusu popüler kültür ürününün kabulüne ve uyarlanmasına daha çok yaklaşmaktadır. Nitekim dizinin her sezonunda destek verdiği farklı sosyal sorumluluk projelerinin tanıtımı duvar yazılarıyla yapılan hatırlatmalar ile tetiklenirken ulusal çapta gerçekleştirilen ve kimi zaman dizi yapımcılarından bağımsız yürütülen sosyal sorumluluk hareketlerinin sadece sosyal medyadaki etki ve yansımaları dizinin gerçek hayatta bulduğu karşılığın göstergelerinden birini oluşturmaktadır.

Her ne kadar diziyi izleyen bireylerin, hiçbir zaman Çukur sakini olamayacaklarını bilmelerine karşın, yaşadıkları çevrelerdeki mekânsal kendileme ve egemenlik alanlarını Çukur'a dönüştürme eğilimi gösterdikleri birçok radikal örnek söz konusudur. Sosyal medyayı da domine ederek; Çukur, Dostlar Kahvehanesi, Yamaç'ın Yeri gibi birçok farklı gerçek mekânın Türkiye'nin çeşitli şehirlerinde açılması dahası bu

işletmelerin dizideki kurgusal unsurlara uyumlu bir ideoloji ile işletilmesi gibi bir çok radikal örnek, mekânsal bir kimlik ürünü olarak dizinin kurgusundaki mekanların halk tarafından içselleştirilerek oluşturulmaya çalışılan anlam alanının bizatihi tatbik edildiğinin bir kanıtı olarak sunulabilir. Nitekim bu durum gerçekte de benzer statüde yaşayan izleyici kitlesinin kendini temsili de olsa bir mekana ait saydığını göstererek etkileşimde bulunduğu popüler kültür ikliminde edilgen nesne, yani Hall'ın (1989) nitelediği "pasif izleyici" konumunda olmayı reddetmesiyle sonuçlanmaktadır. Böylece bireyler hem mekânsal kendileme ve egemenlik alanlarını Çukur'a dönüştürme eğilimleri ile hem de sosyal medya aracılığı ile kamusal mekânda iletişime geçen aktif öznelere dönüşebilmektedirler. Sonuç olarak; gerek izleyici kitlesinde yarattığı mekân duyusu, gerek Çukur'a duyulan aidiyet, gerekse Çukur kimliğinin farklı tezahürleri gerçek hayatın her alanına nüfuz ederek toplum üzerinde oluşturduğu tahakküm yetisinin sınırlarını gözler önüne sermektedir.

KAYNAKÇA

AHLBRANDT, R. (1984) *Neighborhoods, people, and community*, New York: Plenum..

ALTMAN, I. (1975) *The Environment and Social Behavior, Privacy, Personal Space, Territory, and Crowding*, Brooks/Cole, Monterey, CA.

ALTMAN, I., CHEMERS, M. M. (1984) *Culture and Environment*, Cambridge University Press.

ALTMAN, I., LOW, S. M. (1992). *Place Attachment* New York: Plenum.

AYMAZ, G. (2019) "Karşılıklılık İlkesi" ve "Kentsel Toplum" Kavramları Çerçevesinde Çukur Dizisi Üzerine Bir Analiz. *Erciyes İletişim Dergisi* 6(2) 995-1012.

AYYAPIM (2022) Çukur (Dizi) [https://www.ayyapim.com/cukur] Erişim Tarihi 21.6.2022.

BARTHES, R. (2003) *Çağdaş Söylenler*, Çev. Tahsin Yücel, İstanbul: Metis Yayınları.

BAUMAN, Z. (1996) *Yasa koyucular ile yorumcular*, İstanbul: Metis Yayınları.

BAUMAN, Z. (1998). On glocalization: Or globalization for some, localization for some others. *Thesis Eleven* 54(1) 37-49.

BAUMEISTER, R. F., LEARY, M. R. (1995). The Need to Belong: Desire for Interpersonal Attachments as a Fundamental Human Motivation, *Psychological Bulletin* 117(3) 497.

BLUMER, H. (1986) *Symbolic Interactionism: Perspective and Method*, Univ of California Press.

BROWN, B. B., PERKINS, D. D., BROWN, G. (2004) Incivilities, Place Attachment and crime: Block and Individual Effects, *Journal of Environmental Psychology* 24(3) 359-71.

BURKE, K. (1989). *On symbols and society*: University of Chicago Press.

BURSIK, R. J., GRASMICK, H. G. (1993) *Neighborhoods and crime: The dimensions of effective community control*. New York: Lexington Books..

ÇUKUR (2017-2021) Ekran görüntüleri, AyYapım.

DAVIS, D. E., DE DUREN, N. L. (2011) *Cities and Sovereignty: Identity Politics in Urban Spaces*, Indiana University Press.

ETZIONI, A. (1993) *The Spirit of Community, Rights, Responsibilities, and the Communitarian Agenda*, Crown.

FISHER, A. T., SONN, C. C., BISHOP, B. J. (2002) *Psychological Sense of Community, Research, Applications, and Implications*, New York: Kluwer.

FISKE, J. (2010) *Understanding Popular Culture*, Routledge.

FOUCAULT, M. (1980) *Power/Knowledge: Selected interviews and other writings, 1972-1977*, Eds. C. Gordon, L. Marshall, J. Meplam and K. Soper. Brighton: Harvester Press.

FOUCAULT, M. (1977) *Discipline and Punish, The Birth of the Prison*, New York:Pantheon.

GHULYAN, H. (2017) *Mekânın Üretimi Kuramı ve Türkiye'de Kentsel Mekânın Üretimi: Ankara Örneği, Yayınlanmamış* Doktora Tezi, Siyaset Bilimi ve Kamu Yönetimi Anabilim Dalı Ankara Üniversitesi, Ankara.

GRAUMANN, C. F. (1976) *The Concept of Appropriation (aneignung) and Modes of Appropriation of Space,* ed. P. Korosec-Serfaty, Proceedings of the 3rd international architectural psychology conference, Strasbourg, France.

HALL, S. (1989). Ideology and Communication Theory, *Rethinking Communication Theory* eds. L. G. Brenda Dervin, Barbara O'Keefe, Ellen Wartella, Newbury Park CA: Sage; 40-52.

HALL, S. (1980) *Encoding/Decoding*, Culture, Media, Language. London: Hutchinson.

HARVEY, D. (2009) *Social Justice and the City*, University of Georgia Press.

HAY, R. (1998) Sense of Place in Developmental Context, *Journal of Environmental Psychology 18*(1), 5-29.

HERNÁNDEZ, B., HIDALGO, M. C., SALAZAR-LAPLACE, M. E., HESS, S. (2007) Place Attachment and Place Identity in Natives and Non-natives, *Journal of Environmental psychology* 27(4) 310-19.

HIDALGO, M. C., HERNANDEZ, B. (2001) Place attachment: Conceptual and empirical questions. *Journal of environmental psychology* 21(3) 273-81.

HUMMON, D. M. (1992) Community attachment: Local sentiment and sense of place, *Place Attachment,* eds. Altman, I., Low, S.M. . Springer, Boston, MA; 253–278.

HUNTER, A. (1985) Private, Parochial and Public Social Orders: The Problem of Crime and Incivility, *The Challenge of Social Control: Institution Building and Systemic Constraint* eds. Gerald D. Suttles and Mayer N. Zald, Norwood, NJ: ABLEX; 230–242.

JORGENSEN, B. S., STEDMAN, R. C. (2001). Sense of Place as an Attitude: Lakeshore Owners Attitudes Toward their Properties, *Journal of Environmental Psychology* 21(3) 233-48.

KORPELA, K. M. (1989) Place-Identity as a Product of Environmental Self-regulation, *Journal of Environmental Psychology* 9(3) 241-56.

LEFEBVRE, H. (2014) *Mekânın Üretimi*, Sel Yayıncılık.

LEWICKA, M. (2005) Ways to make people active: The role of place attachment, cultural capital, and neighborhood ties, *Journal of environmental psychology* 25(4) 381-95.

LONG, D. A., PERKINS, D. D. (2007) Community social and place predictors of sense of community: A multilevel and longitudinal analysis, *Journal of Community Psychology* 35(5) 563-81.

LOW, S. M. (1992) Symbolic ties that bind: Place attachment in the plaza, *Place Attachment,* eds. Altman, I., Low, S.M., Springer, Boston, MA; 165-185.

MADANIPOUR, A. (2003) *Public and private spaces of the city*, Routledge.

MCMILLAN, D. W., CHAVIS, D. M. (1986) Sense of community: A definition and theory. *Journal of community psychology* 14(1) 6-23.

NEUBERG, S. L., KENRICK, D. T., SCHALLER, M. (2010) Evolutionary social psychology, *Handbook of social psychology* eds. S. T. Fiske, D. T. Gilbert, G. Lindzey, Hoboken, NJ: Wiley; 761–796.

PERKINS, D. D., FLORIN, P., RICH, R. C., WANDERSMAN, A., CHAVIS, D. M. (1990) Participation and the social and physical environment of residential blocks: Crime and community context, *American journal of community psychology* 18(1), 83-115.

PERKINS, D. D., HUGHEY, J., SPEER, P. W. (2002) Community psychology perspectives on social capital theory and community development practice, *Community Development,* 33(1), 33-52.

PERKINS, D. D., LONG, D. A. (2002) Neighborhood sense of community and social capital *Psychological sense of community*, eds. Fisher, A.T., Sonn, C.C., Bishop, B.J. ,Springer, Boston, MA; 291-318.

PROSHANSKY, H. M., FABIAN, A. K., KAMINOFF, R. (1983) Place-identity: Physical world socialization of the self, *Journal of environmental psychology*, 3(1), 57-83.

RAPOPORT, A. (1994). Spatial organization and the built environment, *Companion encyclopedia of anthropology,* ed. T. Ingold, London: Routledge; 460-502.

RIOUX, L., SCRIMA, F., WERNER, C. M. (2017) Space appropriation and place attachment: University students create places, *Journal of Environmental Psychology,* 50 60-8.

SAEGERT, S. (1989) Unlikely leaders, extreme circumstances: Older black women building community households. *American Journal of Community Psychology* 17(3) 295–316.

SCANNELL, L., GIFFORD, R. (2010) Defining place attachment: A tripartite organizing framework. *Journal of environmental psychology* 30(1) 1-10.

SCANNELL, L., GIFFORD, R. (2017) Place attachment enhances psychological need satisfaction. *Environment and Behavior* 49(4) 359-89.

SHAMAI, S. (1991) Sense of place: An empirical measurement, *Geoforum* 22(3) 347-58.

SHUMAKER, S., TAYLOR, R. (1983) Toward a Clarification of People-Place Relationships: A Model of Attachment to Place, *Environmental*

Psychology-Directions and Perspectives, eds. N.R. Feimer and E. S. Geller, New York: Praeger; 219–251.

SOJA, E. W. (1989) *Postmodern geographies: The reassertion of space in critical social theory*, Verso.

SPENCER, C. (2005) Place attachment, place identity and the development of the child's self-identity: Searching the literature to develop an hypothesis. *International Research in Geographical & Environmental Education* 14(4) 305-09.

STEDMAN, R. C. (2002) Toward a social psychology of place: Predicting behavior from place-based cognitions, attitude, and identity *Environment and behavior* 34(5) 561-81.

TAYLOR, R. B. (1997) Social order and disorder of street blocks and neighborhoods: Ecology, microecology, and the systemic model of social disorganization. *Journal of research in Crime and Delinquency* 34(1) 113-55.

TUAN, Y. F. (1990) *Topophilia: A study of environmental perceptions, attitudes, and values*, Columbia University Press.

TWIGGER-ROSS, C. L.,UZZELL, D. L. (1996) Place and identity processes, *Journal of environmental psychology*, 16(3) 205-20.

YIN, R. K. (2003) *Case study research: Design and methods* (3rd ed.), Thousand Oaks, CA, Sage.

ZHAO, L. J. (1996) *Community attachment in rural Iowa: Multilevel test of a theoretical model with intervening variables,* Unpublished Ph.D. Dissertation, Iowa State University, Ames, Iowa.

Received: 12.20.2020; **Final Text:** 11.03.2022

Keywords: Spatial power; social control; place; identity; cultural studies.

PRODUCTION OF POWER RELATIONS IN THE SCALE OF NEIGHBOURHOOD SPACES: AN ANALYSIS OF POWER REPRESENTATIONS IN THE TV SERIAL ÇUKUR

This research suggests that the urban space patterns simulated in the Çukur TV serial create informal social control norms and offers an alternative representation of authority and exercise power through space. In this context, the main purpose of the research is to examine how informal social control is achieved in the neighbourhoods and how social control is exercised through spatial qualities and representations in Çukur. The urban space patterns simulated in Çukur TV serial are analyzed as a sample, and how the informal social control norms transform into an alternative authority representation through the phenomenon of 'place' is investigated by using a descriptive analysis method. Within the scope of this study, the findings regarding the space-based power simulation dimensions of the TV series of Çukur produced by the territorial (regional) cognition are examined from three perspectives, these are; 1. space-meaning relationship (sense of place, place attachment and place identity), 2. space-occupation (appropriation of space and sovereignty) relationship, 3. space-privacy relationship. As a result of the research, it is emphasized that the social control that constitutes the power cannot be considered apart from the space and this situation results in the production of power through space.

Additionally, fictional space represented by the Çukur series is a process of constructing a social identity. On the other hand, the social reality it creates does not contain any random spatiality.

MAHALLE ÖLÇEĞİNDE MEKÂN ÜZERİNDEN İKTİDAR ÜRETİMİ: ÇUKUR DİZİSİNDEKİ İKTİDAR TEMSİLLERİNİN ÇÖZÜMLEMELERİ

Bu araştırmada Çukur dizisinde simüle edilen kentsel mekân örüntülerinin gayri resmi sosyal kontrol normları yaratarak kendi içinde alternatif bir otorite temsili sunduğu, bu durumun mekân üzerinden iktidar üretimiyle sonuçlandığı tartışılmaktadır. Bu bağlamda araştırmadaki temel amaç; mekânsal nitelikler üzerinden şekillenen mahallelerdeki gayri resmi sosyal kontrolün nasıl sağlandığını, Çukur'da yaratılan mekân temsilleri üzerinden sorgulamaktır. Çukur dizisinde simüle edilen kentsel mekân örüntüleri örneklem olarak ele alınmakta ve gayri resmi sosyal kontrol normlarının yer olgusu üzerinden, alternatif bir otorite temsiline nasıl dönüştüğü betimsel analiz yöntemiyle incelenmektedir. Bu çalışma kapsamında Çukur dizisinin, ürettiği yer (bölgesel) bilişinin oluşturduğu mekân tabanlı iktidar simülasyonunun bileşenlerine dair bulgular 1. mekân – anlam ilişkisi (yer duyusu, yere duyulan aidiyet ve yer kimliği), 2. mekân – işgal (kendileme ve egemenlik) ilişkisi, 3. mekân – mahremiyet ilişkisi perspektiflerinden irdelenerek ortaya koyulmaktadır. Araştırmanın sonucunda iktidarı oluşturan sosyal kontrolün mekândan ayrı düşünülemeyeceği ve bu durumun mekân üzerinden iktidar üretimiyle sonuçlandığı gerçekliği üzerinde durulmaktadır. Ayrıca araştırma neticesinde Çukur dizisinin temsil ettiği mekân kurgusunun, yüklendiği anlamlar bağlamında değerlendirildiğinde sosyal bir kimlik inşa süreci olduğunu ve yarattığı sosyal gerçekliğin tesadüfi bir mekânsallık içermediğini söylemek mümkündür.

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METU JFA 2022/1
(39:1) *137-164*

DOI: 10.4305/METU.JFA.2022.1.7

URBANIZATION PROCESSES OF NORTHERN ISTANBUL IN THE 2000'S: YAVUZ SULTAN SELIM BRIDGE AND THE NORTHERN MARMARA HIGHWAY (1)

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Received: 28.02.2021; **Final Text:** 05.04.2022

Keywords: Urban space production; Neoliberal urban policies; global city; northern Istanbul; mega projects

1. The first oral presentation of this research was made in the International Conference of "Architecture and Urbanism in The Age of Planetary Crisis", Ecodemia, London, October 2020. The research was then developed further under the light of the comments and discussions, evolving into this paper.

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INTRODUCTION

August 26, 2016 was a critical day for Istanbul, as well as the greater Marmara Region and Eastern Europe. This was the inauguration day of the Yavuz Sultan Selim Bridge and the Northern Marmara Highway (YSSB-NMH) (AA, 2016). YSSB-NMH was the first of the Northern Istanbul mega projects aiming to move the transportation infrastructure and the center of gravity of the city towards North, at the expense of tearing up the Northern forests of Istanbul. This project, followed by the opening of Istanbul Airport in October 2018 and the bidding of Kanal Istanbul in March 2020 could be seen as a part of the urban expansion strategy of Istanbul towards North; as well as establishing the city as a global transit transportation hub (ICA, 2018; World Profile Group, 2013).

Despite the opposition of various civil groups such as professional chambers and environmental NGO's, the projects mentioned above are carried out with top-down initiative, supported with neoliberal discourses of progress and grandiose, economic growth, political consolidation, technological and aesthetic superiority. In the case of the 21st century metropolises of developing countries such as Istanbul, this narrative is backed up with a commodified informality, where boundaries of the lack of regulation, illegality and gentrification are defined by the state (Roy 2009, 819-30).

Yet, 21st century is marked by a massive crisis of global warming, due to extensive exploitation of natural resources through human activities. As the global environmental crisis is forcing humanity's hand to challenge the so-called unshakeable narratives of neoliberal capitalism, it is crucial to question their validity. With this agenda in mind, the aim of this paper is to take YSSB-NMH as a case to investigate the realization process, affirmative discourse and estimated impacts of the project through a discursive analysis; revealing the extralegal mechanisms and neoliberal rhetoric that enable its execution. This project is taken as a case because of its initiating

Figure 1. Mega transportation projects of northern Istanbul (İSMD, n.d.).

role in the urbanization of Northern Istanbul, a booming metropolis of a developing country. The project, disrupting the Northern ecosystems and inducing urban growth towards North produces a valid example of the subversive effects of mega projects of developing countries. Moreover, top-down initiation, exclusive decision-making and state induced informality of the project provides a relevant discussion for the international literature. What are the legislative tactics and discursive tools that blur the public opposition and make possible the implementation of such a controversial project as YSSB-NMH? Are there any common patterns of neoliberal urban space production through mega projects around the globe, and if so, what are they? Could there be alternative strategies for the 21st century urban space production and if there are, what are their defining attributes? These are some of the research questions that inform the study.

In the course of the paper, firstly the theoretical framework is laid out with the discussion of neoliberal urban space production and transformation mechanisms in the 2000's through mega projects. Secondly, the geographical setting, being the Northern Istanbul area is discussed and the urban growth patterns of Istanbul starting from the second half of the 20th century with regards to the Bosporus bridges and automobilization infrastructure is reviewed. Thirdly, the YSSB-NMH project is delved into through a discursive analysis of the project. In this section, face to face interviews with the top executive officers of ICA consortium are used as well as published material related to the project such as newspaper articles and ICA promotion booklets. Lastly, conclusive remarks are given.

THEORETICAL SETTING: MEGA PROJECTS AS URBAN TRANSFORMATION STRATEGIES

In the 21st century, urban mega projects (UMP) have become a de facto, global strategy for urban transformation as a means for commodification

of urban land. Mega projects are associated with extremely large project scale, high cost and budget (usually over a billion dollar), singularity and complexity of design and execution, technologically and logistically demanding project scope, involvement of multi organizational enterprises, multidisciplinary input requirements and colossal social, economic and environmental impacts (Miller and Lessard, 2000; Capka, 2004; Grün, 2004; Brockmann, 2009; Zidane et al., 2013). As defined by Flyvbjerg, a mega project is "an extremely large-scale investment project, attracting excessive public attention due to major impacts on communities, environment and budgets" (2012, 95-6). A megaproject creates a nonlinear, non-proportional disturbance to a system where existing structures or rules are often uncapable of absorbing (Prosperi and Öner, 2015). Urban projects of this magnitude can be transformational on such a large scale that could alter the spatial structure of the whole metropolitan form.

Realization of UMPs require the association of large-scale investors and central and / or local governments. They are mostly imposed, top-down initiations with little, if any concern with regards to public opposition. In that sense, mega projects are spatial manifestations of the alliance of global capital and political power, teaming up for getting ahead in the race of "global city", reminding Molotch's (1976) "urban growth machine" theory of coalitions of actors and organizations that share an interest in urban growth and its effects on land values. The result is the commodification of space - urban or wilderness – through a construction boom, under the pressure of global financial capital, boosted up by political ambition and executed by private sector. As pointed out by Harvey (1989), UMPs are vessels for entrepreneurial urban policy making, enabling the exchange value of land to exceed use value, therefore creating an induced business and real estate environment.

In the last decades, UMP's have been frequently implemented all over the world as territorial restructuring strategies for the new and extravagant scales and forms of globalization. From Far Eastern cities such as Kuala Lumpur, Beijing and Shanghai to Middle Eastern cities such as Dubai and Abu Dhabi, from European cities such as Bilbao, Budapest, Milan, Hamburg, Vienna, Stuttgart and Paris to cross Atlantic cities such as New York, Sao Paulo, Detroit, Philadelphia and Mexico City; UMP's have become the golden standard for capitalist urbanization (Santamaria, 2013). UMP's operating with similar mechanisms of top-down initiation, controversial legal and planning approaches, fast track and closed decision-making cycles and public alienation are prone to conflicts, opposition and failure, as reported in cases all over the globe from infrastructural UMPs of Mexico City, Stuttgart and Belgrade to prestige UMPs of Valencia (Dewey and Davis, 2013; Novy and Peters, 2013; Tarazona, 2017; Grubbauer and Camprag, 2019; Zekovic and Maricic, 2020). On the far Eastern part of the world, UMP's have become a widely utilized tool subserving the frantic enthusiasm of city building, often giving way to social and environmental problems, as seen in numerous cities of China, India and Pacific Asia (Shatkin, 2008; Douglas, 2010; Ren and Weinstein, 2012; Shen and Kee, 2017). On some other cases such as Riyadh and Morocco, UMPs are discussed to have devastating social implications such as poverty, population loss, social inequality, urban deprivation and decay (Ledraa and Abu-Anzeh, 2008; Bogaert, 2018).

In the 21st century, urban space production mechanisms are associated with unprecedented speed and scale, blurring the boundary between

urban and non-urban, shifting the core of urbanization from Euro-America to peripheral geographies. These geographies set the scene for new mechanisms of urbanization, transforming from modernist and state driven policies to entrepreneurial urbanism with privatization and commodification of urban fabric. The shift in the urban governance from managerialism to entrepreneurialism is closely related to the conceptualization of cities as competing nodes in a global network (Harvey, 1989). The rapid urban growth occurring especially in the developing countries of the Global South, from Middle East to Africa and Latin America is accompanied by a number of conflicts and challenges in terms of social justice, inequality and environmental mishaps; requiring a deeper understanding of these cities in their own, unique terms and conditions (Samara et al., 2013).

The unprecedented speed and scale of urban transformation via UMPs is setting the need for alternative theories for the 21st century urbanization. In the methodology section of this paper, two concepts, Roy's informality (2009) and Flyvbjerg's sublime (2014), will be discussed as enabling mechanisms for the 21st century urban space production.

This study aims to investigate the execution process and estimated impacts of YSSB-NMH through adapting discursive analysis as the methodology in order to unfold the neoliberal rhetoric behind the project. Discursive analysis is a qualitative research method that is used as a phenomenological and critical approach in design research (Kümbetoğlu, 2008; Groat and Wang, 2002). YSSB-NMH is taken as a case study because of its paramount, precursor and facilitating role as an infrastructural mega project in the urbanization of the Northern Istanbul. Also, the project provides a consistent example to the fierce neoliberal urbanization of land via mega projects in the developing countries around the globe; providing similar accounts of lack of transparency, legal ambiguity, top-down initiation and environmental devastation.

In every society, production of discourse is controlled, selected, organized and redistributed by a number of procedures of exclusion in order to defuse its powers and dangers (Foucault, 1981). The execution of YSSB - NMH provides an example of this, as 94.5 percent of the inhabitants of the project area stated that they were not provided with any information related to the project and their information sources about the project were very limited and irregular (AECOM, 2013, 12-40). In neoliberal societies, discourse producing machines such as mass media, advertisement and political propaganda tools almost always favor economic growth and consumerism. Discourse analysis is a method to understand how different stakeholders use language to promote their agenda, deciphering hidden meanings and power relations beneath their statements (Kolat, 2014). Through discourse analysis, the actors, power relations, historical and cultural context underlying the production of meaning could be revealed and conflicting interests between different actors such as decision makers, politicians, investors, environmentalists, NGO's and citizens could be brought to light. Through discursive analysis, this study expects to reveal the neoliberal agenda and the rhetorical tools enabling the execution of YSSB - NMH.

In this paper, discourse analysis of the case study will be made through the concepts of informality (Roy, 2009) and sublime (Flyvbjerg, 2014) as they are quite relevant in terms of explaining the dynamics of space production through mega projects in the developing countries as well

as Northern Istanbul. Roy lays out a refreshing perspective to articulate new geographies of urban theory; displacing the Euro-American center of theoretical production and drawing attention to the 3rd world cities or the "global south" (Roy, 2009). In her article *The 21st-Century Metropolis: New Geographies of Theory*, she highlights a key concept with regards to the production of space in the emerging urban areas of the 3rd world, being "informality". Roy underlines that First World urban and metropolitan theory is "silent on informality", tending to imagine the informal as a sphere of unregulated, marginalized, illegal activity outside the scope of the state, often wiped out by gentrification and redevelopment.

Quite the contrary, 3rd world urbanization embodies a rather different understanding of informality. First of all, informality is incorporated within the state apparatus, not outside of it. It is often the state authority that determines the limits of informality (Portes et al., 1989). Moreover, informality is an adopted state strategy to gain flexibility, otherwise unavailable in formal mechanisms of accumulation and legitimation. As seen in many examples of the 3rd world UMP implementations stated above, informalized urbanization often goes hand in hand with state induced violation of master plans and legal norms. This does not imply that informality is not an unregulated domain; quite the contrary it is "structured through various forms of extra-legal, social, and discursive regulation" as pointed out by Roy (2009).

As a mode of production of space, informality generates an uneven geography of spatial value by enabling creative destruction as a strategy (Alsayyad, 2003, 7-33). Thus, the key features of the 21st century, 3rd world urbanism become the extralegal territoriality and flexibility of the state; producing spatial value through social and discursive regulation, bringing informality at the core of the capitalist urban space production.

The second key concept in terms of understanding the execution and legitimization of the 21st century, 3rd world urbanism through UMPs is "sublime", as discussed by Flyvbjerg (2014). Sublime, with its transcending quality, overrides all other topics of discussion such as environmental and social concerns, providing justification of a mega project in its own right. Flyvbjerg defines four categories of sublime with regards to mega project management being; technological sublime, political sublime, economic sublime and aesthetic sublime. Technological sublime is the exuberance with regards to the technological, engineering and innovative advancements of a mega project; often promoted with adjectives such as "the tallest, the longest, the fastest, the first" (Frick, 2008, 245-8). Aesthetic sublime is the gratification of an iconic object in XL scale, categorizing it as aesthetically beautiful. Political sublime is the exuberance of politicians while erecting a monument in their names or for their cause; not only manifesting their political power and grandeur but also gaining public attention and visibility. Lastly, economic sublime is the rapture of investors and business people with enormous profit margins and creation of jobs in all sorts of sectors such as architects, engineers, consultants, contractors, construction workers, bankers, investors, developers and speculators (Flyvbjerg, 2014, 6-8). It is safe to say that UMPs create a massive economy, becoming a motor function of many developing countries.

All of these categories are discursively used to market and legitimize UMPs all over the world. Moreover, they provide the mortar between the neoliberal coalitions of global finance and political power that promote UMPs. They bring forth such loud arguments that any counter position

becomes virtually invisible. As a result, the rhetoric of sublime, together with the state machine of informality become an invincible mechanism of advocating and executing UMPs, regardless of their irreversible affects to the social, urban and natural systems.

METHODOLOGY

The YSSB-NMH project provides an apparent example of this situation. First of all, the execution mechanisms of the project involve a great deal of state induced informality, as discussed in depth in the fifth chapter. A number of rules and regulations, including 1/100.000 scale planning decisions of Istanbul metropolitan area were disregarded during the decision making and execution of the projects. In doing so, the four categories of sublime were highly instrumental rhetorical tools, utilized by both the central government and the contractors. The aim of the discursive analysis adopted in this paper is to uncover this legitimizing rhetoric through in depth interviews with high rank project officials and analysis of the published promotion material.

On 19 June, 2019, a structured, open-ended, in-depth interview was conducted by the author with Serhat Soğukpınar, the General Director of ICA; Gülçin Kozan, the Traffic and Maintenance Director of ICA and Burak Akdemir, the Finance officer of ICA. In course of the paper, interviewees are referred as interviewee 1, interviewee 2 and interviewee 3 respectively. Interviewees, being high rank officials of the contractor firm were selected with regards to their close affiliation and liability to the YSSB - NMH project in various stages from bidding, design, execution and management.

Interview questions are structured to a certain extend; leading to an open-ended conversation; giving space for the interviewee to express his/her genuine opinions as well as the official discourse. Data gathered in the interview is processed and used in the study and presented as appendix. Promotion documents such as pamphlets, booklets and the web site prepared by the contractor firm are also used, in order to decipher the rhetorical tools used in the public presentation of the project.

Before delving into the discursive analysis of YSSB - NMH, it is crucial to discuss the geographical significance of the project site. In the following chapter, first the geographical setting of the NİMP will be discussed, then an account on the urban growth patterns of the city with regards to large scale motorways will be given, in order to reveal the impacts of YSSB - NMH.

	Name	Position	Experience
Interviewee 1	Serhat Soğukpınar	General Director of ICA	16 years in ICA as chairman of the board and director in bridge and highway construction and management projects.
Interviewee 2	Gülçin Kozan	Traffic and Maintenance Director of ICA	9 years in ICA is director in bridge and highway construction and management projects.
Interviewee 3	Burak Akdemir	Finance officer of ICA	4 years in ICA as finance executive and assistant of chairman

Table 1. Interviewees

GEOGRAPHICAL SETTING: NORTHERN ISTANBUL FORESTS

In order to comprehend the impacts of the Northern Istanbul Mega Projects (NIMP), ecological significance of the Northern Istanbul forests should be discussed. Northern Istanbul ecosystem is an integrated ecological corridor of major importance between Black Sea and the urbanized areas of Istanbul. As a transitory threshold between East Europe and Asia Minor, Northern Istanbul provides a unique ecosystem that connects European and Anatolian flora and fauna as well as Mediterranean and Black Sea regimes. This climatic and geographic clash result in an extraordinary diversity of natural habitats, consisting of forests, longos forests, sand dunes, wetlands, heathlands, meadows as well as natural parks and protection sites (Çalışkan, 2010, 23-30). Northern Istanbul ecosystem is claimed to be one of the 200 important ecological regions in the world and one of the 100 forests to be urgently protected in Europe (KOS, 2015, 23-42). Before being ruptured by NIMP, this region embodied a relatively unfragmented ecosystem inhabiting a significant amount of wildlife with;

- forests of mainly broadleaved trees such as oak, beech, hornbeam, chestnut, linden, willow, redwood, maple;
- floral diversity with around 2000 strains of flowery plants, 270 of them endemic;
- a globally significant flyway of migratory birds, inhabiting hundreds of thousands of aquatic, raptor and song birds in time of migration (Çalışkan, 2010, 23-30).

Northern Istanbul ecosystem is also of vital importance when the city scale is considered, being a crucial source of clean air, fresh water and climatic balance for Istanbul. Northern winds bring clean and cool forest air upon the city while northern wetlands and water basins such as Istranca Terkos, Ömerli, Büyükçekmece, Alibeyköy, Sazlıdere, (on the European side) Ömerli, Elmalı and Darlık (on the Anatolian side) and their habitats provide clean water for the city. In short, Northern ecological corridor with its vast biodiversity is imperative for reducing the effects of global warming.

As the natural reserves of the city, Northern Istanbul have never been densely populated in the history of the city. The urban development axis has always been towards East – West direction while growth towards North was avoided. The 1:100.000 scale Istanbul Upper Level Land Use Plan (IULLUP) approved in 2009, regarded as the constitution of the urban development of Istanbul, suggests similar urban growth principles. In that plan, it is clearly stated that;

- Most of the natural resources of the city such as forests, water basins, agricultural lands are located at the Northern ecological corridor, therefore the city should not grow towards North. The city should grow along the east-west axis.
- A land use – transportation relation that minimizes the Bosporus crossings should be established. This indicates a multicentered urban structure that reduces the interdependence of Anatolian – European peninsulas (IBB, 2009).

Northern Istanbul mega projects did not exist in the 2009 IULLUP. Yet, despite the necessity of protecting the area from the pressure of urbanization and against the rulings of the 1/100.000 IULLUP, the projects

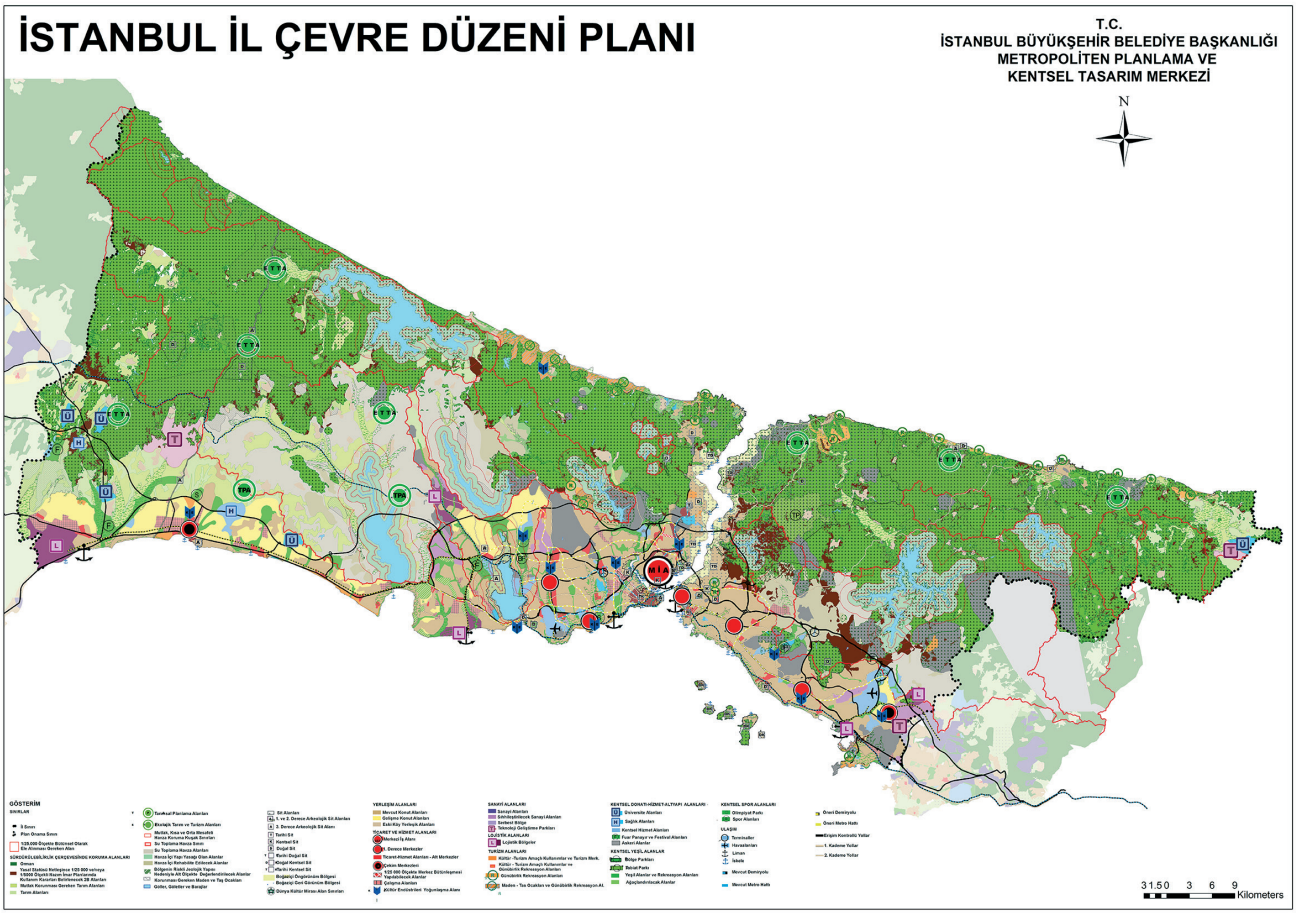

Figure 2. The 1:100.000 scale Istanbul Upper Level Land Use Plan (Istanbul Greater Municipality, 2009).

were initiated and executed subsequently in the last decade, starting with the YSSB – NMH, with top down and non-transparent decision-making processes.

As the initiatory mega project constituting the main transportation infrastructure triggering the urbanization of Northern Istanbul, YSSB – NMH had a major impact on the ecosystem of the area. As underlined in the Environmental and Social Impact Assessment (ESIA) of the Third Bosporus Bridge and the Connection Roads Final Report, the majority of the NMH route - nearly 35 km - passes through the Bosporus Key Biodiversity Area (KBA) with several vulnerable habitats supporting rare plant species; lying along the length of the Bosporus strait from European side to Asian side (AECOM, 2013, 2-5). In the ESIA report, it is stated that construction and operation of the project could result in loss of habitats of significant ecological value. Important plant areas such as Ağaçlı Dunes, Upper Bosporus, Kilyos Dunes and Ömerli Basin, together with the trees, vegetation, endemic species, animals and the habitats upon which they depend are compromised.

Yet, the urbanization pressure the project brings to the area exceeds its immediate destructive impact. As underlined in the ESIA report, the main threat to the KBA is the rapid expansion of Istanbul towards North and the YSSB - NMH is the first mega project to trigger an irrecoverable spread in terms of uncontrolled in-migration movement to the region. As stated in the report, “the impact of any unplanned settlement will be permanent. The 1:100.000 master plan has stated not to let the city grow into the northern

areas. However, it may be impossible to apply the master plan following the construction of the Project" (AECOM, 2013, 5-12).

In order to understand the threat of uncontrolled urban spread towards North, triggered by YSSB - NMH, it is imperative to take a look at the urban growth patterns of Istanbul in relation to the development of transportation infrastructure, especially the Bosporus bridges and their connection highways. Three motorway bridges in fifty years demonstrate the dominant urban transportation policy of the city, focusing on highways and motorways instead of sea and rail transportation systems, promoting private vehicle ownership against public transportation, depending on fossil fuels instead of alternative energies. These choices had significant consequences with regards to urban sprawl and land use patterns. Looking at the effects of the first two Bosporus bridges and their highway systems on the macroform of Istanbul, it is possible to comment on the possible impacts of the third bridge in terms of urban sprawl.

The Urban Growth of Istanbul Through Bosporus Bridges

The two Bosporus bridges, 15 Temmuz (Boğaziçi) Bridge inaugurated in 1973 and Fatih Sultan Mehmet (FSM) Bridge in 1988, had major and irreversible impacts on the land use, urban development and transportation patterns of Istanbul. Each bridge carried the city further towards North, triggering urban density with regards to population and land use. The bridges, built with the purpose of transit transportation became the primary spine of the inner-city transportation network in a very short period of time, altering the population and employment balance of the Anatolian and European sides of the city.

The major function of the Bosporus bridges became the transportation of vehicles, more than passengers. The second bridge (FSM) and its connection road network (TEM) further induced the pressure of urbanization towards North. Within a decade, entire neighborhoods such as Gaziosmanpaşa (population increase: 360.000), Ümraniye (population increase: 305.000), Sultanbeyli (population increase 93.000) emerged from scratch, sweeping the unurbanized land that was now accessible via TEM (Çalışkan, 2010, 14-20). it could be claimed that the basic impacts of the Bosporus bridges to the inner-city traffic were the increase in private car ownership and the degrading of public transportation in commuting between the two sides of the city as the bridges create their own traffic in a vicious cycle.

Transit traffic, which is used as a justification to build the third bridge is only two-three percent of the cross Bosporus traffic, which is a rather questionable percentage for such a costly investment. Moreover, FSM bridge, built with the same justification of handling transit traffic became a major trigger of the urban sprawl towards North; providing a clear example of the impacts of Bosporus bridges on the urbanization patterns of Istanbul. It is certain that the third bridge will trigger the population increase and unplanned urbanization towards the Northern ecological corridor, up to the shores of the Black Sea, against the basic planning principles of the initial 1:100.000 IULLUP plan.

Numerous environmental organizations, urban planners and Istanbulites have raised serious concerns about the YSSB - NMH, claiming that the project will damage the city's remaining green areas, make traffic even worse and lead to a boom in the already dense population. Many NGO's, such as the Chamber of Architects, Chamber of City Planners, Nature

Association (Doğa Derneği), The Turkish Foundation for Reforestation, Protection of Natural Habitats and Combating Soil Erosion (TEMA), Northern Forests Defense (KOS) voiced criticisms that the third bridge will not solve the problems of Istanbul but add new, unsolvable problems in terms of traffic congestion, contamination of water resources, environmental collapse and urban density (Guardian, 2012; KOS, 2019).

The question then becomes why and how such a controversial project, opposing the basic planning principles of the city could be issued and through which mechanisms could it be promoted and legitimized? In the next chapter, answers to these questions will be investigated through a discursive analysis of the project.

PROJECT: YAVUZ SULTAN SELIM BRIDGE AND THE NORTHERN MARMARA HIGHWAY

YSSB is posited at the Black Sea edge of Bosporus, crossing between Garipçe village on the European side and Poyraz village on the Asian side. The bridge is designed to carry a 2 x 4 lane motorway and two high speed railway tracks, although the railway system is not established as of today. The contract to build the Odayeri-Paşaköy section of Northern Marmara Motorway, including 1,3 km long bridge construction was assigned to ICA (Ibrahim Çeçen – Astaldi Consortium), a Turkish-Italian joint venture as the leading contractor firm of the project.

Project Name	Yavuz Sultan Selim Bridge and Northern Marmara Highway
Project Site	At the Black Sea end of the Bosphorus, Northern Istanbul YSM Bridge: between Garipçe (Sarıyer) and Poyrazköy (Beykoz) villages. NMH: Between Kurtköy & Paşaköy (Asian side) and Odayeri (European side) + junctions and connection roads at Ümraniye, Çamlık and Mahmutbey.
Project scope	95 km long main high way and following connection roads (250 km in total), 39 viaducts, highway bridges, 4 tunnels and 3rd Bosphorus Bridge
Ground breaking date	29 May 2013
Completion date	26 August 2016
Project cost	3.25 Billion USD
Project Dimensions	Bridge span: 1408 Meters, Bridge Length: 2164 meters, Tower height: 330 meters, Bridge Width: 59 meters, Lanes: 2X4 highway lanes, 2X1 railroad lanes
Project Material	Steel and concrete
Project model	Build-Operate-Transfer model - investment + operation period of 10 years 2 months 20 days
İnterview	Serhat Soğukpınar (General Director, ICA), Gülçin Kozan (Traffic and Maintenance Director, ICA) Burak Akdemir (Corporate Finance, ICA)
Actors	
Employer	General Directorate of Highways / Ministry of Transport and Infrastructure
Contractor	IC İçtaş Construction Industry & Trading INC. and Astaldi S.P.A Partnership
Project Designer	Michel Virlogeux
Project Engineer	T-Engineering, Jean Francois Klein, Greisch, Temelsu
Sub Contractors	HDSK Consortium (Hyundai, SK E&C)
Opposing civil actors	KOS – Northern Istanbul Defense, TMMOB

Table 2. Project Details: Bidding, Execution, Actors

Figure 3. Istanbul highway map (KGM, n.d.)

In the ESIA report, it was anticipated that 135,000 vehicles will use the bridge in each direction per day. It is stated by interviewee 3 that 480,000 vehicles are currently using the NMH route, mainly the link roads, on a daily basis. The aim of the project is stated as to "provide a new crossing of the Bosporus well away from the main conurbation of Istanbul", with the justification that the two existing bridges across the Bosporus are located within the city and are often heavily congested (AECOM, 2013; ICA, 2018). This new crossing is meant to take the transit traffic weight off the FSM bridge, therefore decrease the inner-city traffic. Yet, as discussed in the previous section, it is expected that the project will add up to the traffic of the city, triggering uncontrolled urban growth towards north.

At this point, it is important to take a closer look at the mechanisms that produce the affirmative discourse around the project; as it is not the actual vitality of the mega projects but the careful advocacy around them that manipulates their public perception towards helpless acceptance, dismissing opposing voices. Through deciphering the affirmative discourse around the project, it can be possible to deliver a viable critique of the developmentalist agenda behind it.

Informality

When looked from the legal perspective, construction of the third Bosporus bridge and Northern Marmara Highway is against a number of national and international laws and treaties such as;

- **The 1:100.000 scale IULLUP:** as discussed in detail in section 4.
- **9th National Development Plan Dwelling and Urbanization Criteria:** The 9th National Development Plan is based on reducing developmental differences between regions by transference of resources, investment and population movement towards mid-size cities (Resmi Gazete, 2006). Yet, vast resources and investment devoted to YSSB – NMH as well as the population growth and new settlement areas triggered by the project will ramp up the socio-economical imbalance between Istanbul and the rest of the country; producing a conflict between the criteria stated above.
- **Istanbul and Bosporus Zoning Laws and Codes**: In Reconstruction Law no: 3194, it is stated that "every plan has to conform to the principals and decisions of the upper scale plans". Yet YSSB – NMH was implemented in lower scale (1/25.000 and 1/5000) plans before its implementation on 1/100.000 plan, despite its clear contradictions

towards major decisions of the 1/100.000 plan. The way YSSB – NMH is forged on lower scale plans before the 1/100.000 plan creates a contradiction to the Zoning Law. The project, bringing immense destruction towards the area is also contradicting with the Bosporus Law no:2960, stating very clear boundaries regarding the protection of cultural and natural values of the Bosporus area.

- **Environmental Impact Assessment (EIA) Regulations:** The purpose of EIA is to protect environmental values by assessing probable negative environmental impacts of a given project and taking necessary measures accordingly. In the EIA Regulations, it is clearly stated that grand infrastructural projects such as highways and motorways are subjected to EIA. Moreover, forest areas, natural and wildlife protection reserves are classified as "Sensitive Zones", requiring protection according to the legislation (Resmi Gazete, 2014). Yet, YSSB – NMH was deliberately excluded from EIA through a consensus between Ministry of Transportation and Ministry of Environment and Forestry, regardless of many oppositions from NGO's and scientific circles. The legal pretense underneath the exclusion was stated as the decision of building a 3rd Bosporus bridge has been taken before 1993. This provides a questionable legal basis as neither the location nor the route of the project was determined at the time. In fact, the initial 3rd bridge discussions were focused on Arnavutköy neighborhood, but then left unexecuted due to intense public opposition. Therefore, the project's exclusion from EIA has ambiguous legal foundations and produces a clear violation of EIA regulations.
- **Istanbul Water and Sewerage Administration (İSKİ) Regulations:** Istanbul Water and Sewerage Administration Regulations state that "no construction under any circumstances can be built within the absolute protection areas of watercourses and water basins", constituting a 0-300 meters periphery along the water courses (İSKİ, 2011). On the contrary, NMH trespasses the Northern part of the absolute protection area of Büyükçekmece water basin, creating an explicit contradiction to the regulations.
- **Law on the Protection of Cultural and Natural Heritage No. 2863:** This law states that no construction or physical interference is allowed within cultural and natural heritage / protection sites (Resmi Gazete, 1983). YSSB – NMH route effects natural protection sites, natural parks and forest areas as discussed above; producing a conflict with the law.
- **Bern Convention**: Bern Convention, opened for signature on 1979 is a treaty on the conservation of European wildlife and natural habitats which Turkey is a committed party (COE, n.d). The YSSB – NMH route passes through the habitat of seventy-three bird species that are under protection due to the Bern Convention, producing a violation to the conditions of the Convention.
- **International Union for Conservation of Nature (IUCN) Criteria:** There are fourteen wildlife species under global extinction threat and thirty wildlife species under national extinction threat within the boundaries of Bosporus natural reserve area (IUCN, 2012), (Çalışkan, 2010, 33). The construction and utilization of the 3rd bridge and the connection roads of YSSB – NMH will inevitably have a ravaging

effect on the natural habitat of these species, contradicting with the IUCN criteria.

- **European Urban Charter Criteria:** European Urban Charter Criteria, established in 1992, states that the balance between cities and automobiles should be reshaped in favor of the cities, meaning urban development should not be based on encouraging private car ownership (EUC, 2009). Building a mega highway infrastructure project is a clear discrepancy with charter's principles.

As indicated above, the project route exhibits a major problem as it is not compatible with greater city urban plans and environmental regulations. Still, the execution of the project is somehow legitimized through regulatory revisions of planning documents (Doğan and Stupar, 2017, 281–8). It is stated by interviewee 2 that the reason beneath the route choice of the project was to "decrease the confiscation amount of private land and increase the incorporation of publicly owned forest area", in order to reduce the expropriation costs and potential law suits from land owners. It could be argued that cost reduction was prioritized over protection of natural reserves of the city.

Moreover, despite the fact that Environmental Impact Assessment (EIA) approval is a legal obligation in Turkey; especially for mega projects that could induce massive adverse effects on vulnerable natural and social fabric; YSSB - NMH project was excluded from EIA procedure for implicit reasons. Later an American company employed by ICA namely AECOM (Architecture, Engineering, Consulting, Operations and Maintenance) conducted ESIA for the construction of YSSB - NMH, on "volunteering" principles, as stated by interviewee 2. In conclusion ICA, the main contractor of the project, became the client of the ESIA report that is supposed to state the final assessment with regards to the environmental and social impacts of the project. The fact that the ESIA report that is supposed to determine whether or not the project should be built is financed by the main contractor, after the initiation of the construction process, is another indicator of the informality mechanisms and legitimization tactics.

As discussed above, the project has been legally problematic from the beginning. During the execution process of the project, a number of law suits addressing these legal discrepancies were filed by a number of NGOs such as professional chambers affiliated with the Union of Turkish Chamber of Engineers and Architects; TEMA Foundation and political parties, demanding the termination of the project (CNNTURK, 2015), (Mimarist, 2011), (Cumhuriyet, 2010), (T24, 2015). Yet the execution of the project continued, despite opposing statements of legal expert reports and court orders (Arkitera, 2016; Diken, 2014; İSMD n.d.). It is safe to claim that laws, regulations and court orders have been repeatedly bypassed by the government throughout the execution of the project, indicating a state induced mechanism of commodified informality, as stated by Roy (2009). Here, informality is no longer associated with the unregulated real estate market of squatter settlements and shanty towns but the hyper-flexible state machine that legitimizes its actions via political and capital power.

Istanbul is a global city under construction. To induce this transformation and stimulate economic growth, central government promotes mega projects as key interventions at any cost. Therefore, urban space production mechanisms in Istanbul are shifting away from integrative urban plans to

the execution of individual mega projects that define the spatial structure of the city. In this fragmented planning structure, legality becomes a mere formality to be wangled through mechanisms of state instigated informality.

Four categories of sublime: Technological, aesthetic, political and economic sublime

The primary aim of mega projects is to capture global capital and the quantitative attributes of a project are frequently underlined for promotion. The scale of a project therefore becomes an indicative feature with regards to attaining global attention, status and distinction (Doğan and Stupar, 2017, 281-8). Mega projects are often promoted through their sheer size, scale or volume, referred and publicized as being the "tallest, biggest, longest or fastest", as if the size or amount is a valid indicator of quality (Flyvbjerg, 2014, 6-8). This emphasis on bigness surpasses all other issues and arguments such as ecological or social concerns, repressing essential conversations.

YSSB - NMH project follows the same logic. The quantitative features are a huge part of the affirmative discourse built around the project as highlighted in the promotional books and brochures, inauguration speeches as well as stated in the interviews. In the official web site of ICA, the project is presented as the "largest suspension bridge of the world with fifty-nine meters width, having the longest railway suspension bridge of the world with 1408 meters length and the highest towered suspension bridge of the world with 322 meters height" (ICA 2020). This is a typical example of the technological sublime as discussed by Flyvbjerg with its recurrent emphasis on scale and use of adjectives such as "the biggest, highest, largest, first, a unique example of engineering, a monumental project, the project of firsts and mosts" as commented by interviewee 1 and pointed out in the promotion materials (ICA 2018, ICA 2019). In the promotion materials, YSSB - NMH is frequently depicted with terms of bravura and grandeur as well as irrelevant quantitative comparisons to soccer fields or airplanes.

Technological sublime goes hand in hand with another category, being the aesthetic sublime, in terms of establishing symbolic value and

Figure 4. Records set by Yavuz Sultan Selim Bridge: A bridge of firsts (ICA, 2018; ICA, UDH, KGM n.d).

global prestige of a mega project. "Beauty" in its relativity becomes an incontestable argument frequently utilized as an affirmative attribute. The aesthetic experience of YSSB is often underlined by the contractors and government officials. YSS bridge is frequently referred as the "third pearl / necklace of the Bosporus, a beautiful artefact, a new symbol for Istanbul, an opportunity to discover the hidden beauties of the city" (ICA, 2019). To underline the symbolic value imputed to the YSS bridge, it is compared by interviewee 1 to the Golden Gate Bridge of San Francisco or the Eiffel Tower of Paris; as a landmark and a touristic attraction that brings prestige and visibility to Istanbul.

Mega projects are also tools for political propaganda, as manifestations of power and grandeur and vessels for public attention and visibility, addressing to the political sublime (Flyvbjerg 2014). For right wing neoliberal politicians of Turkey, it has almost been a trade mark to erect a Bosporus bridge at Istanbul; the historical imperial capital and current economical capital; as a sign of their administrative performance. Süleyman Demirel inaugurated the First Bridge (Boğaziçi – 15 Temmuz) in 1973, Turgut Özal inaugurated the second Bridge (FSM) in 1989 and Tayyip Erdoğan inaugurated the third Bridge (Yavuz Sultan Selim) in 2019. All of these bridges were utilized as signs of administrative effectivity and political leverage as grand gestures of prestige. The speeches given by Erdoğan during the groundbreaking and inauguration ceremonies are examples of how YSSB - NMH is instrumentalized as a statement of political rhetoric (ICA, 2018, 47). The groundbreaking ceremony took place on May 29, 2013, marking the anniversary of Istanbul's conquest by the Ottomans. Erdoğan used the phrase "we continue to write history", drawing a parallel between the performance of his administration and the glorified Empyreal past of the Ottomans (ICA, 2018, 47). Similarly, the inauguration ceremony took place on August 26, marking two significant dates in the glorified historical narrative of the Turkish nation, one being the Malazgirt battle that opened up the doors of Anatolia to Turks (26 August 1071), and the Great Offensive (Büyük Taarruz) of Turkish War of

Figure 5. Everything about the New Pearl of Bosporus: A Landmark of Modern Turkey (ICA, n.d.).

Figure 6. The 3rd bridge press coverage (ICA, 2018).

Independence (26 August 1922). Erdoğan deliberately mentioned these two dates, again drawing a parallel with the past glories of the nation to his government.

More than any other category, economic sublime is instrumentalized for the justification of mega projects with promises of profitability, capital flow and economic rejuvenation. Mega projects trigger economic activity, create new jobs in every scale from contractors to designers, from investors to construction workers; feeding the construction sector which is the leading economic sector of Turkey. Turkey's Vision 2023 consists of a set of goals to be reached by the centennial of the Republic of Turkey. There, the importance of urban infrastructure investments is highlighted for further economic growth, urban and global development (World Profile Group, 2013, 3). Istanbul gets the lion's share of the global investments for UMP's and the North Istanbul mega projects, YSSB - NMH, 3rd Airport and Kanal Istanbul are specifically associated with the 2023 objectives. The global city discourse is evident in the promotion of these projects with a new international transportation network reinforced with touristic, recreational, cultural and commercial facilities. The aim of setting Istanbul as a junction point of transit transport and a center for global trade by establishing transit connection of Europe and Asia is stated by Binali Yıldırım, the former Minister of Transport and Communication and Prime Minister (ICA 2018, 48).

As the initiating project of the Northern Istanbul mega projects, YSSB - NMH carries the flag of setting Istanbul as a global finance center and a hub of connectivity. It is stated by interviewee 1 that the project aims to re-establish Istanbul as an important transition point with regards to local and global transportation of goods and passengers with no limitations on freight vehicles and lower import – export costs, enlivening the economy of the whole region (ICA, 2018; ICA, UDH, KGM 2019). Interviewee 1 claims that YSSB - NMH intends to set a local junction point of land, rail and air transportation by connecting three airports of Istanbul and Kanal Istanbul to the city center, also becoming a regional hub by connecting a number of national highway ring roads such as Gebze – İzmir Highway and Çanakkale Highway (to be built in the future), connecting Istanbul and Marmara region to Aegean and Mediterranean territories, easing the flow of goods and services (ICA 2018). In the larger picture, YSSB - NMH route is meant to connect Europe to Caucasus and the Caspian Sea on the Northern part and Middle and far East, all the way to China on the southern part.

Interviewee 1underlines the economic contribution and efficiency of this regional and international transit route; stating that "the goods and passengers, inner city or transit, are given a faster alternative to commute". Yet, the understated truth is that the cost of this faster and efficient alternative is the devastation of Northern Istanbul forests.

As pointed out by interviewee 1, master plan decisions to move the logistic hubs such as customs (Erenköy and Halkalı), bus terminals (Esenler) and market places (Hal) towards North are also parts of the expansion strategy of Istanbul. All these moves, together with the infrastructural mega projects will inevitably affect the real estate market, raising demand and creating centers of attraction at the small Northern Istanbul settlements such as Kilyos, Uskumruköy, Poyrazköy; bringing constant population increase to the area. This expansion strategy is defined by interviewee 1 as "necessary and inevitable" as Istanbul; the giant metropolis holding forty percent of the country's economy is claimed to be congested and needs to grow; and the only place left to grow is towards the Northern forests. In fact, the actual problem is this logic of centralization and continuous growth of one pioneer city, Istanbul. This policy of over accumulation is bound to create governmental and ecological problems. Even interviewee 1 queries this policy, stating that;

> "Unfortunately, all the eggs are placed in the same basket. As long as we put everything here (Istanbul), this place is going to grow. We need to change this strategy… We have created a center of attraction (via mega projects). If we could create this attraction elsewhere, maybe this population would go there, (Çorlu, Edirne…) and that area will develop. We need to make sure people earning their livelihood here (in Istanbul) could continue to earn their lives in another location. Otherwise, we do not have a chance to grow and develop by cutting trees and building roads. "

Economic rejuvenation and rise in employment rates are assertions frequently used to promote the project. The major economic impact of the project is without doubt the rent value of the land that will be zoned for construction, following the execution of the mega projects, as discussed above. It is estimated that around 500,000 decares of land, formerly forest areas or natural protection zones will be opened for development, having a land value of around thirty-five billion USD. With the construction of infrastructural facilities and real estate investments, the estimated value of the emerging real estate market is ten times the size of the sheer land value, around 350 billion USD, being almost double the size of Turkey's annual budget of 200 Billion USD (Çalışkan, 2010, 37-41). In short, through these mega projects, a 350 billion USD worth of real estate market is created from scratch, at a part of the city where urban development is mostly prohibited. This calculation clearly displays the indispensability of these projects for the government in power for overcoming the deepening financial crisis and maintaining its continuation. It is evident that the issue is far more than improving the transportation network; it is to create artificial needs to attract global capital investment by opening up the Northern ecological corridor to urbanization, therefore sacrificing natural resources of Istanbul.

Turkey, similar to many developing countries, rely too much on construction with regards to economic growth. The economical triggering effect of construction has become so dominant that all other means of production have been repressed. Yet, a growth model relying on land speculation is neither economically, nor ecologically sustainable. This fact is admitted by interviewee 1 with the words below:

> "There are no other groups in the world that are building mega projects of this scale in such a short period of time. We have achieved so much. From now on we need production, to produce goods that will be transported through these roads. We need to do different things. Construction sector could only do so much".

As a mega infrastructure project of a metropolis in a developing country, mechanisms of informality are vastly operated to realize YSSB – NMH, while categories of sublime are frequently utilized to legitimize the scale and scope of the project. Table 3 summarizes the discussion above; demonstrating how the mechanisms of informality were put into action and how they are supported by repetitive claims of technological, aesthetic, political and economic sublime.

Informality	• against a number of national and international laws and treaties • against the 1:100.000 scale Istanbul EMP (IBB, 2006), • project was excluded from EIA procedure – EIA conducted after the initiation of the project, financed by the contractor
Technological Sublime	Project largely promoted with quantitative aspects: • "largest suspension bridge of the world with fifty-nine meters width" • "longest railway suspension bridge of the world with 1408 meters length" • "highest towered suspension bridge of the world with 322 meters height" • "the biggest, highest, largest, first, a unique example of engineering, a monumental project the project of firsts and mosts"
Aesthetic Sublime	Project largely promoted with aesthetic aspects: • "third pearl / necklace of the Bosporus" • "a beautiful artefact" • "a new symbol for Istanbul" • "an opportunity to discover the hidden beauties of the city" • "a landmark and a touristic attraction that brings prestige and visibility to Istanbul"
Political Sublime	Project used as a political propaganda tool: • "we continue to write history" • project compared to Istanbul's conquest by the Ottomans, Malazgirt battle and the Great Offensive (Büyük Taarruz) of Turkish War of Independence
Economic Sublime	Economic rejuvenation and rise in employment rates are used to promote the project: • setting Istanbul as a junction point of transit transport and a center for global trade by establishing transit connection of Europe and Asia • enlivening the economy of the region • easing the flow of goods and services • a faster alternative to commute - efficiency • expansion strategy of the city towards North

Table 3. Discourse Analysis: Informality and the Four Categories of Sublime

CONCLUSION: MEGA PROJECTS IN THE AGE OF ENVIRONMENTAL CRISIS

In his book *Three Ecologies*, Guattari states that in the era of machines of image and artificial intelligence, we need to rethink and relink our social and individual practices under the umbrella of social, mental and environmental ecology. This reassessment is crucial as the collapse of these three realms could result in "ignorance and fatalistic passivity", with devastating outcomes such as "destruction and neutralization of democracy" (Guattari, 2000, 23-70). Looking from the 21st century, this prediction seems to be alarmingly accurate as in the past two decades, we are globally facing the consequences of the rupture of the three ecologies in terms of authoritarianism, deterioration of political institutions and environmental collapse. At this point, it is important to understand that this "fatalistic passivity" towards the systemic decline of our planet is neither due to blind-sidedness nor ignorance, but a result of careful and repetitive discursive propaganda of neoliberal capitalism, devouring any viable opposition. As human communities, we are neither impotent subjects nor innocent bystanders; we are merely pacified by neoliberal narrations of false prioritization, necessity and inevitability.

In this paper, the legitimization and persuasion mechanisms of Northern Istanbul mega projects are revealed through the discursive analysis of YSSB-NMH project. The answer of interviewee 1 to the question about the downfalls of the YSSB-NMH project provides a striking example of the false narration stated above: "What did it (YSS-NMH) take away? Trees were cut down. Instead, more trees were planted. Unfortunately, this happens where technology, civilization arrives. It makes you sad. But it happens".

These words represent the dilemma of our century; being the creation of endless demands that are impossible to be met by limited resources and prioritization of the demands of capitalist economy over everything else, including our environmental resources. In the case above, "technology and civilization" is used as synonym to construction, real estate market and creative destruction with their superiority and indispensability accepted without questioning. The unchallenged belief behind the phrase "it happens" is the main problem. The fact is, cut down trees of the Northern Istanbul Forest cannot be compensated with planting more trees, as it is an entire ecosystem with multiple layers of living and co-depending organisms that is devastated, which cannot be replaced by monocultural plantation. The fact is, Istanbul did not need a third Bosporus bridge and a highway right through its ecological corridor, compromising its clean air, water and natural habitats. Instead, it needed a human oriented transportation system that;

- did not endanger the ecologic integrity of the Northern forests,
- would support the linear urban development strategy of the IULLUP, along east – west axis, keeping the employment and residential functions of Anatolian and European sides in balance and discouraging unnecessary Bosporus crossings,
- created an integrated public transport network with railway systems as the main spine, with enhanced sea transportation and improved motorways,

- would not radically shift the population density to ecologically vulnerable areas of the city by creating artificial centers of attraction.

Yet, despite the obvious facts and oppositions from various NGO's, the execution of YSS-NMH was completed in three and a half years, a record completion time for a mega project of this scale. This was done through the utilization of the concepts of informality, as discussed by Roy (2009) and four categories of sublime, as discussed by Flyvbjerg (2014).

Informality, being the state driven manipulation and violation of laws and regulations, has been a very instrumental mechanism in terms of the realization of YSS-NMH. From the route selection to the execution of the project, numerous laws and regulations were deliberately trespassed, as explained in the previous chapter. Most importantly, the 1/100.000 IULLUP and the EIA Regulations were officially disregarded. In the face of the extra legality of the process, a number of law suits were issued by civil initiatives such as professional chambers, yet the juridical procedures were bypassed and the civil opposition was ignored. Moreover, four categories of sublime have been a widely adapted strategy for the promotion, justification and discursive imposition of YSS-NMH, blurring opposing discussions of legitimacy. From the discourses of high rank officials to public speeches of politicians, newspaper articles and promotion booklets, the rhetoric of technological, aesthetic, political and economic sublime have been the primary means of official communication of the project.

Far from being a unique case, similar mechanisms of informality and discourse of sublime; operational in the YSS-NMH have been widely used in the implementation of mega projects of many developing countries, creating similar outcomes. Mega projects are special kinds of beasts, generating disruptive and contentious results with their sheer and suppressive scale all over the world, especially from the rapidly urbanizing global south. From New Mexico to Shanghai, from Sao-Paolo to Delhi, many booming metropolises are facing similar problems of rapid urbanization, top-down initiation, non-transparent decision-making processes, legal obscurity, gentrification, social inequity and environmental devastation, blurred by neoliberal discourses of political grandeur, economic development, aesthetic and technological superiority.

Today, we are facing a discrepancy between the capitalist demands of neoliberal urbanism and the needs of cities with ever growing population, inequality and pressing environmental concerns. Cities can no longer be conceptualized as cultural commodities for capital accumulation and growth. Much more than that, cities are the foreground of the most urgent problems of the 21st century such as the environmental crisis and social injustice; currently generating the problem yet potentially bearing the solution within. Hence, there is an urgent call for alternative approaches to urbanism that recognizes the complexity and transdisciplinarity of cities. Santamaria, advocating a transdisciplinary paradigm in urbanization, suggests the reconciliation of theory and practice, social and exact sciences, governing structures and civil initiatives, arts, design and communities to transparently renegotiate power structures in order to create open ended, non-compartmentalized knowledge production translating into just, ecologic, efficient outcomes in urban space production (2020). More than the scale of the project, it is the agenda of the initiating actors that sets the success criteria of an urban mega project. Hence it is crucial that the agenda of the citizens, communities and the ecological imperative find voice and

agency within and beyond the hyper capitalist mechanisms of urban space production.

As the physical limits of Istanbul continue to expand through piecemeal interventions where mega projects constitute the primary tool for urban space production, tolerance limits of the city in terms of natural resources, land supply and livability are dramatically strained. This model of unconstrained growth through mega projects, executed by many urban administrations of developing economies as well as the economic giants of the non-western world is socially, ecologically and economically unsustainable. At this point, it becomes crucial to decipher and challenge the pacifying neoliberal discourse that preaches infinite economic growth at all costs, transforming our developmentalist, anthropocentric existential perspective in order to shift to a less detrimental, nourishing human existence on earth.

BIBLIOGRAPHY

AA (2016) *Yavuz Sultan Selim Köprüsü Açıldı*. [https://www.aa.com.tr/tr/gunun-basliklari/yavuz-sultan-selim-koprusu-acildi/636062/] Access Date (27.11.2021).

AECOM (2013) *Environmental and Social Impact Assessment (ESIA) of the Third Bosporus Bridge and Connected Motorways: Final Report*, Ankara.

ALSAYYAD, N. (2003) Urban Informality as a New Way of Life, *Urban Informality: Transnational Perspectives from the Middle East, Latin America, and South Asia*, eds. R. Ananya, N. Alsayyad, MD: Lexington Books, Lanham; 7-33.

ARKITERA (2016) *3'üncü Köprü Bağlantı Yolunda Ranta Kapı Aralandı.* [https://www.arkitera.com/haber/3uncu-kopru-baglanti-yolunda-ranta-kapi-aralandi/] Access Date (27.11.2021).

BOGAERT, K. (2018) *Globalized Authoritarianism: Megaprojects, Slums and Class Relations in Urban Morocco,* University of Minnesota Press, Minneapolis.

BROCKMANN, C. (2009) Mega-Projects: Getting the Job Done. *Proceedings - LEAD 2009 Conference*.

CAPKA, J. R. (2004) Megaprojects: Managing a Public Journey, *Public Roads* 68(1) 1-9.

CNNTURK (2015) *İptal Kararı 3. Köprü Inşaatını Da Kapsıyor.* [https://www.cnnturk.com/turkiye/iptal-karari-3-kopru-insaatini-da-kapsiyor] Access Date (27.11.2021).

COE (n.d*) Bern Convention, Convention on the Conservation of European Wildlife and Natural Habitats, Council of Europe*. [https://www.coe.int/en/web/bern-convention/home] Access Date (22.11.2021).

CUMHURIYET (2010) *CHP, 3. Köprü Için Dava Açacak.* [https://www.cumhuriyet.com.tr/haber/chp-3-kopru-icin-dava-acacak-141020] Access Date (27.11.2021).

ÇALIŞKAN, O. Ç. ed. (2010) *3. Köprü Projesi Değerlendirme Raporu,* TMMOB Şehir Plancıları Odası İstanbul Şubesi, İstanbul. [http://www.mimdap.org/images/dosya/spoist_3.koprurapor.pdf] Access Date (19.06.20).

DEWEY, F.O. DAVIS, D.E. (2013) Planning, Politics, and Urban Mega-Projects in Developmental Context: Lessons from Mexico City's Airport Controversy, *Journal of Urban Affairs* 35(5) 531-51.

DİKEN (2014) *30 Davaya Rağmen 3'üncü Köprü TEM Yolunda.* [https://www.diken.com.tr/30-davanin-durduramadigi-3-kopru-tem-yolunda/] Access Date (27.11.2021).

DOĞAN, E., STUPAR, A. (2017) The limits of Growth: A Case Study of Three Mega-Projects in Istanbul, *Cities* (60 February) 281–8.

DOUGLASS, M. (2010) Globalization, Mega-projects and the Environment: Urban Form and Water in Jakarta, *Environment and Urbanization ASIA* 1(1) 45-65.

EUC (2009) *Manifesto for a New Urbanity: European Charter II*, Council of Europe Publishing.

FLYVBJERG, B. (2014) What You Should Know about Megaprojects and Why: An Overview, *Project Management Journal* 45(2) 6-19.

FLYVBJERG, B. (2012) Why Mass Media Matter, and How to Work with Them: Phronesis and Megaprojects, *Real Social Science: Applied Phronesis* eds. B. Flyvbjerg, T. Landman, S. Schram, Cambridge University Press, Cambridge; 95-121.

FRICK, K. T. (2008) The Cost of the Technological Sublime: Daring Ingenuity and the New San Francisco-Oakland Bay Bridge, *Decision-Making On Mega-Projects: Cost–benefit Analysis, Planning, and Innovation,* eds. H. Priemus, B. Flyvbjerg, B. V. Wee, Edward Elgar Publishing, MA; 239-62.

FOUCAULT, M. (1981) The Order of Discourse, *Untying the Text: A Post-Structuralist Reader,* ed. R. Young, Routledge, Boston; 48-78.

GROAT, L.; WANG, D. (2002) *Architectural Research Methods,* David Wiley and Sons, N.Y.

GRUBBAUER M, ČAMPRAG N. (2019) Urban Megaprojects, Nation-State Politics and Regulatory Capitalism in Central and Eastern Europe: The Belgrade Waterfront Project. *Urban Studies* 56(4) 649-71.

GRÜN, O. (2004) *Taming Giant Projects: Management of Multi-Organization Enterprises*, Springer, Berlin.

GUATTARI, F. (2000) *The Three Ecologies*, The Athlone Press, London.

HARVEY, D. (1989) *From Managerialism to Entrepreneurialism: The Transformation in Urban Governance in Late Capitalism*, *Geografiska Annaler Series B: Human Geography* 71(1) 3–17.

ICA (2018) *Bir Başyapıtın Yükseliş Hikayesi: Yavuz Sultan Selim Köprüsü ve Kuzey Çevre Otoyolu*, İbrahim Çeçen Vakfı Yayınları, İstanbul.

ICA (n.d.) *Boğazın Yeni İncisi Hakkında Her Şey: Yavuz Sultan Selim Köprüsü,* Presentation Booklet.

ICA, UDH, KGM (n.d) *Yavuz Sultan Selim Bridge and Northern Ring Motorway,* Presentation Booklet.

ICA, UDH, KGM (n.d.) *Kuzey Marmara Otoyolu, İstanbul Kuzey Çevreyolu, Yavuz Sultan Selim Köprüsü,* Presentation Booklet.

ICA (n.d.) *İstanbul Yavuz Sultan Selim Bridge and Northern Ring Motorway Project*, Içtaş – *Astaldi Consortium official web site*. [http://www.icholding.com.tr/EN/Insaat/ProjeDetay/27] Access Date (15.12.20).

IBB (2009) *1/100.000 Ölçekli İstanbul Çevre Düzeni Planı*, [https://sehirplanlama.ibb.istanbul/arsiv/] Access Date (10.07.2020).

İSKİ (2011) İSKİ *İçme suyu Havzaları Yönetmeliği.* [https://www.iski.gov.tr/web/assets/SayfalarDocs/Mevzuat%20ve%20Y%C3%B6netmelikler/ISKI-ICMESUYU-HAVZALARI-YONETMELIGI-29092017.pdf] Access Date (22.11.2022).

İSMD (n.d.) *Mega Projeler İstanbul.* [https://megaprojeleristanbul.com/] Access Date (01.04.2021).

İSTANBUL URBAN DATABASE PLATFORM (n.d.) [http://www.istanbulurbandatabase.com/] Access Date (11.07.2020).

IUCN (2012) *International Union for Conservation of Nature Red List Categories and Criteria: Version 3.1*, Second edition. Gland, Switzerland and Cambridge, UK: IUCN.

IUCN. (2012). *IUCN Red List Categories and Criteria.*

KGM (n.d.)Karayolları Genel Müdürlüğü [https://www.kgm.gov.tr/] Acces date (11.26.2020).

KOLAT, T. (2014) *Urban Integrated Mega Projects in the Northern Istanbul Metropoliten Region: Echoes of Global Urbanisation on Istanbul,* Unpublished MSc Thesis, KTH, Stockholm.

KOS **(**2015) *Yaşam, Doğa, Çevre, İnsan ve Hukuk Karşısında 3. Havalimanı Projesi Raporu*. [https://kuzeyormanlari.org/Docs/Yasam_Doga_Cevre_Insan_ve_Hukuk_Karsisinda_3_Havalimani_Projesi.pdf] Access Date (06.30.20).

KÜMBETOĞLU, B. (2008). *Sosyolojide ve Antropolojide Niteliksel Yöntem ve Araştırma*, Bağlam Yayınları, İstanbul.

LEDRAA, T., ABU-ANZEH, N. (2008) Regeneration Through Urban Mega-Projects In Riyadh, *Whose Urban Renaissance?* eds. L. Porter and K. Shaw, Routledge.

LEFEBVRE, H. (2007) *Production of Space*. Blackwell, Oxford.

LETCH, C. (2012) Plan for New Bosporus Bridge Sparks Row Over Future of İstanbul, *The Guardian,* [http://www.guardian.co.uk/world/2012/jun/08/bosphorus-bridge-row-istanbul-turkey] Access Date (08.12.2020).

MILLER, R., LESSARD, D. R. (2000) *The Strategic Management of Large Engineering Projects*, Research Group, MIT Press, Cambridge, Mass.

MIMARIST (2011) *3. Köprü Yürütmeyi Durdurma İstemli Dilekçeler..* [http://www.mimarist.org/include/uploads/2015/11/3koprudilekceleri01.pdf] Access Date (27.11.21).

MOLOTCH, H. (1976) The City as a Growth Machine: Toward a Political Economy of Place, *American Journal of Sociology* 82(2) 309-32.

NOVY, J., PETERS, D. (2013), Railway Megaprojects as Catalysts for the Re-Making of Post-Industrial Cities? The Case of Stuttgart 21 in Germany, *Urban Megaprojects: A Worldwide View (Research in Urban*

Sociology, Vol. 13, Ed. Del Cerro Santamaría, G., Emerald Group Publishing Limited, Bingley, 237-62.

PORTES, A., CASTELLS M., BENTON, L. (1989) *The Informal Economy: Studies in Advanced and Less Developed Countries.* Johns Hopkins University Press, Baltimore.

PROSPERI, D., ONER, A.C. (2015) Spatial Impacts of Megaprojects on The Form of Metropolitan Regions: A Theoretical Inquiry, *International Journal Society Systems Science* 7(1) 23-46.

REN, X., WEINSTEIN, L. (2012) Urban Governance, Mega- Projects and Scalar Transformations In China And India, Locating Right to the City in the Global South, eds. T. Samara, S. He, G. Chen, Routledge.

RESMİ GAZETE (1983) *Kültür ve Tabiat Varlıklarını Koruma Kanunu,* Kanun No: 2863, Vol: 18113, 21 July 1983.

RESMİ GAZETE (2014) *Çevresel Etki Değerlendirmesi Yönetmeliği,* Vol: 29186, 25 November 2014.

RESMİ GAZETE (2016) *Dokuzuncu Kalkınma Planı,* 2007-2013. Vol: 26215, 1 July 2016.

ROY, A. (2009) The 21st-Century Metropolis: New Geographies of Theory, *Regional Studies* 43(6) 819-30.

SAMARA, T. R., HE, S., CHEN, G. (2013) *Locating Right to the City in the Global South,* Routledge, NY.

SHATKIN, g. (2008) The City And The Bottom Line: Urban Megaprojects And The Privatization Of Planning In Southeast Asia, *Environment and Planning* 40 383-401.

SHEN J., KEE G. (2017) Shanghai: Urban Development and Regional Integration Through Mega Projects; *Development and Planning in Seven Major Coastal Cities in Southern and Eastern China*, *GeoJournal Library*, vol 120. Springer.

SANTAMARIA, G.D.C. (2013) Urban Megaprojects: A Worldwide View, *Research in Urban Sociology*, Volume 13, Emerald Group Publishing, Bingley, UK.

SANTAMARIA, G.D.C. (2020) Complexity and Transdisciplinarity: The Case of Iconic Urban Megaprojects, *Transdisciplinary Journal of Engineering & Science* 11 17-31.

T24 (2015) *Mahkemenin Iptal Kararına Rağmen 3. Köprü Yolları Inşası Devam Ediyor.* [https://t24.com.tr/haber/mahkemenin-iptal-kararina-ragmen-3-kopru-yollari-ibsasi-devam-ediyor,304428] Access Date (27.11.2021).

TARAZONA VENTO A. (2017) Mega-Project Meltdown: Post-Politics, Neoliberal Urban Regeneration and Valencia's Fiscal Crisis, *Urban Studies* 54(1) 68-84.

WORLD PROFILE GROUP (2013) Turkey: A Landmark Decade Vision 2023, *Foreign Affairs.* [https://www.foreignaffairs.com/ country-focus/ turkey-landmark-decade] Access Date (08.12.2019).

ZEKOVIĆ, S., MARIČIĆ, T. (2020) Contemporary Governance of Urban Mega-Projects: A Case Study of The Belgrade Waterfront, *Territory, Politics, Governance* July 2020.

ZIDANE, Y.J.T, JOHANSEN, A., EKAMBARAM, A. (2013) Megaprojects - Challenges and Lessons Learned, Procedia - Social and Behavioral Sciences 74 349–57.

SYMBOLS AND ABBREVIATIONS:

YSSB-NMH: Yavuz Sultan Selim Bridge and Northern Marmara Highway

ICA: Ibrahim Çeçen – İçtaş - Astaldi Consortium

UMP: Urban Mega Projects

NIMP: Northern Istanbul Mega Projects

IULLUP: Istanbul Upper Level Land Use Plan

TMMOB: Türkiye Mimarlar ve Mühendisler Odası Birliği (Turkish Chamber of Architects and Engineers)

KOS: Kuzey Ormanları Savunması

ESIA: Environmental and Social Impact Assessment Report

KBA: Bosporus Key Biodiversity Area

FSM: Fatih Sultan Mehmet Bridge

TEM: Trans European Motorway

KGM: Karayolları Genel Müdürlüğü (General Directorate of Highways)

EIA: Environmental Impact Assessment Regulations

AECOM: Architecture, Engineering, Consulting, Operations and Maintenance

Alındı: 28.02.2021; **Son Metin:** 05.04.2022

Anahtar Sözcükler: Kentsel mekan üretimi; neoliberal kentleşme politikaları; küresel kent; kuzey İstanbul; mega projeler

2000'LERDE KUZEY İSTANBUL'UN KENTLEŞME SÜREÇLERİ: YAVUZ SULTAN SELİM KÖPRÜSÜ VE KUZEY MARMARA OTOYOLU

2000'lerin İstanbul'u mega projeler yoluyla kentleşmenin çarpıcı bir örneğini oluşturmaktadır. Özellikle geçtiğimiz on yılda İstanbul'un Kuzey'inde gündeme gelen mega altyapı projelerinin, kentin ekolojik sistemlerine ve büyüme dinamiklerine büyük çaplı ve geri dönüşsüz etkileri olacağı açıktır. Bu çalışma, Kuzey ormanlarının içinden geçerek İstanbul'un ulaşım altyapısını ve ağırlık merkezini Kuzey'e taşımayı hedefleyen mega projelerin ilki olan Yavuz Sultan Selim Köprüsü ve Kuzey Marmara Otoyolu'na (YSS-KMO) odaklanmaktadır. YSS-KMO ve ardından gelen İstanbul Havaalanı ile Kanal İstanbul projeleri, kenti Kuzey'e doğru genişleterek küresel bir ulaşım merkezi haline getirme stratejisinin parçaları olarak görülebilir. Bu makalede, 2000'lerin neoliberal kentsel mekân üretim mekanizmalarının sorunsallaştırılması üzerinden projenin eleştirel bir okuması yapılmıştır. Bu okuma yapılırken Ananya Roy'un (2009, 819-30) "kayıtdışılık" (informality) ve Bent Flyvbjerg'in (2014, 6-19) "süblimin dört kategorisi" (four categories of sublime) kavramları, kuramsal çerçeveyi oluşturan anahtar kavramlar olarak ele alınmıştır.

Çalışma, niteliksel bir araştırma yöntemi olan söylem analizini benimser. Öncelikle projenin ortaya çıkış ve uygulama süreçlerindeki yasal

tutarsızlıklar Roy'un "kayıt dışılık" kavramı üzerinden tartışılmıştır. Ardından projenin üst düzey yürütücüleriyle yapılan yapılandırılmış açık uçlu görüşmeler, projenin tanıtım materyalleri ve gazete haberleri üzerinden toplanan veri incelenerek projenin kamuya sunumundaki neoliberal söylem, Flyvbjerg'in "süblimin dört kategorisi" üzerinden okunmuştur. Kanun ve yönetmeliklerin yönetsel otorite tarafından manipule ve ihlal edilmesi anlamına gelen "kayıt dışılık", YSS-KMO projesinin gerçekleşme sürecinde araçsal bir mekanizma olmuştur. Proje güzergahının seçiminden projenin inşasına kadar geçen süreçte, başta 1/100.000 İstanbul Çevre Düzeni Planı ve Çevre Etki Değerlendirme Yönetmeliği olmak üzere bir dizi kanun ve yönetmelik devre dışı kalmıştır. Ayrıca, "süblimin dört kategorisi" olan teknolojik, estetik, politik ve ekonomik yüceltme söylemleri de projenin tanıtım, meşrulaştırma ve uygulama süreçlerinde sıklıkla başvurulan bir söylemsel strateji olmuştur.

Bu ikili analiz sonucunda, YSS-KMO projesinin ortaya çıkış, uygulama ve kamuya sunuluş aşamalarındaki neoliberal icra ve olumlama mekanizmalarının açığa çıkarılması hedeflenmiştir. Çalışma, YSS-KMO üzerinden gelişmekte olan ülkelerin metropol şehirlerinde benzerleri yaşanmakta olan, mega projeler üzerinden neoliberal kentleşme dinamiklerine eleştirel bir bakış getirmeyi amaçlar.

URBANIZATION PROCESSES OF NORTHERN ISTANBUL IN THE 2000'S: YAVUZ SULTAN SELIM BRIDGE AND THE NORTHERN MARMARA HIGHWAY

Istanbul of the 2000's is a striking example of urbanization through mega projects. It is clear that the mega infrastructure projects that have come to the fore in the North of Istanbul, especially in the last decade, will have large-scale and irreversible effects on the ecological systems and growth dynamics of the city. This study focuses on Yavuz Sultan Selim Bridge and Northern Marmara Highway (YSS-NMH), being the first of the mega projects aiming to move the transportation infrastructure and center of gravity of Istanbul towards North, passing through the Northern forests. YSS-NMH and the subsequent mega projects, being the Istanbul Airport and Kanal Istanbul can be seen as parts of a strategy to expand the city towards North and transform it into a global transportation hub. In this article, a critical reading of the project is provided through the problematization of neoliberal urban space production mechanisms of the 2000's. While doing this reading, Ananya Roy's (2009, 819-30) "informality" and Bent Flyvbjerg's (2014, 6-19) "four categories of sublime" are taken as key concepts forming the theoretical framework.

The study adopts discoursive analysis as a qualitative research method. First of all, the legal inconsistencies in the emergence and implementation processes of the project are discussed through Roy's concept of "informality". Then, through the processing of structured open-ended interviews with the senior executives of the project and the examination of promotional project materials and related newspaper articles; the neoliberal discourse in the public presentation of the project is analyzed through Flyvbjerg's "four categories of sublime". "Informality", meaning the manipulation and violation of laws and regulations by the administrative authority, has been an instrumental mechanism in the realization process of the YSS-NMH project. During the execution process, starting from the selection of the project route to the construction stages, a number of laws and regulations, especially the 1/100,000 Istanbul Upper Level Land

Use Plan and the Environmental Impact Assessment Regulations, were inactivated. Moreover, the technological, aesthetic, political and economic sublimation discourses, which are the "four categories of sublime", have been a discursive strategy frequently used in the promotion, legitimation and implementation processes of the project.

The aim of this dual analysis is to reveal the neoliberal execution and affirmation mechanisms of the YSS-NMH project during the emergence, implementation and public presentation stages. Through the dual analysis of YSS-NMH, this study intends to bring a critical account to the dynamics of neoliberal urbanization through mega projects in general, drawing parallels between similar processes that are experienced in many of the metropolitan cities of developing countries in the 21st century.

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METU JFA 2022/1
(39:1) *165-192*

DOI: 10.4305/METU.JFA.2022.1.8

URBANITY IN THE OPEN SPACES IN DEVELOPING NODES ALONG MAIN ARTERIES: SÖĞÜTÖZÜ NODE ON DUMLUPINAR ROAD IN ANKARA

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Received: 25.06.2021; **Final Text:** 05.04.2022

Keywords: Urbanity; activity; public space; pedestrian perception; Ankara

1. Jacobs et.al (2002) define the boulevard as wide paved streets made up of wide, rowed trees with walkways, seating areas, and cycle paths that serve various types of vehicles and pedestrians. Eskişehir and Konya Roads, which are not designed as boulevards in the physical manner, are named Dumlupınar Boulevard / İnönü Boulevard and Mevlâna Boulevard. These intercity roads transform their surroundings into urban spaces with rapid development, yet exceed the requirements of the definition of boulevard.

2. To ensure the continuity of the city's urbanity and urban life, public spaces for pedestrians should be provided. Boulevards are urban backbones that facilitate face-to-face communication and interaction among citizens, as well as the vehicle traffic they host. Boulevards, incorporating liveability, mobility, safety, public transport, open space needs and activities, are also defined as public spaces (Hayden, 1997) where urban experiences of the urbanite occur.

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INTRODUCTION

The effects of main urban transportation arteries on the urban sprawl and the formation of new public spaces comprise a significant issue of discussion. In the case of urban roads, major arteries instigate fast development processes and bring a considerable amount of open spaces in various sizes and characters along with them. The inherent characteristics of roads yielding to urbanity and centrality, thus publicness, were defined in an earlier study regarding the provision of circulation of people and goods at different speeds (Jacobs, 1969; Nijenhuis, 1994 and Read, 2006), rendering possible the interaction of users from local and remote areas (Alanyalı Aral and Demirbaş, 2015). This earlier study elaborated the sub-spaces; spaces which are leftover beside/ under/ between/ within the circulation arteries as public spaces (Alanyalı Aral, 2008; Alanyalı Aral, 2007) and discussed pedestrians' perception of sub-spaces along urban roads in the case of Eskişehir Road in Ankara, particularly in its closest part to Konya Road which has been its most visible section with high-rise blocks since the 2000s (**Figure 1**).

Eskişehir Road, which is one of the two main intercity transportation axes connecting Ankara towards its west, has been named as Dumlupınar Boulevard (**1**) after 2000s. However, within the context of the current study this axis is referred to as Dumlupınar Road since it is a fast vehicular traffic road that divides the city into parts, presents a hardship for pedestrian movement, and thus does not allow a boulevard experience (**2**) As the backbone of the main urban transportation network, this axis is a strong vehicular bind that connects the city center with the university campuses, public buildings and settlements on the periphery of the city. The building density in this area has significantly increased since 2015 (**Figure 2**). The continuous development of the area has been bringing in more users, even though the YDA Center -the biggest building complex in the area- has not yet been activated. The current study has been realized between June 2020 -

Figure 1. The high-rise blocks concentrated along Dumlupınar and Mevlâna Roads in Söğütözü node (photograph taken in March 2021 from south-east).

May 2021. Despite the fact that most visitors to shopping malls and eateries were absent due to pandemic restrictions (Covid-19) in that period, the area still portrayed a well-used pedestrian zone based on users from office buildings, public institutions, and service areas such as hospitals, as well as many transit passengers.

Regarding the dual character of urban roads as both generators of urbanity and origins of many major problems, the earlier study (Alanyalı Aral and Demirbaş, 2015) focused on the street scale highlighting pedestrians' perceptions of sub-spaces along urban roads as public spaces. Questionnaires were held in sub-spaces along Dumlupınar Road in Söğütözü and the results demonstrated the priority of the perception of the negative factors such as noise, pollution, and safety issues related to

Figure 2. The recent development zones with extensive change since 2015 and the study area.

the vehicular traffic experienced, yet also demonstrated the high public character of the area with the rise of perception of publicness following a major road expansion which increased the traffic volume and speed.

This area has also recently been studied in terms of its public space qualities in a broader context as one of the three main regional areas along Dumlupınar Road (Uysal Bilge, 2020a); as the most urbane one closest to the city center in its east. Barbaros (2005) defined this area as a 'commercial node' for the developing urban sector due to its attractive unique location in the urban macro-form and its central role in the urban transportation network. The current study defines the area as a developing node (**3**) with regards to its ongoing urban intensification as a strategic spot on the axis; as a core with its use and physical character; and re-elaborates the open spaces which are mostly observed to display a dynamic quality. Open spaces in developing nodes along urban roads include both sub-spaces by the road and spaces mostly left-over between the buildings. Söğütözü node demonstrating considerable urbanity within its variety of public and semi-public spaces, highlights Montgomery's (1998, 100) theorization of activity as a prioritized definer of urban character. The study discusses the urbanity and public space characteristics while evaluating the problems concerning urban open spaces in the node and explores the relevant conditions in order to demonstrate the qualifications and potentials via the analysis of their definers, field observations and questionnaires conducted by pedestrians as the primary yet disregarded users.

3. Lynch (1960) defines nodes as the strategic spots in a city into which an observer can enter, and as the intensive foci -or concentrations, which gain their importance from being the condensation of some use or physical character: "Many nodes, partake of the nature of both junctions and concentrations. The concept of node is related to the concept of path, since junctions are typically the convergence of paths, events on the journey. It is similarly related to the concept of district, since cores are typically the intensive foci of districts, their polarizing center" (Lynch, 1960, 41).

LITERATURE REVIEW

Urbanity, Activity, and Public Space

As was introduced by Montgomery (1998, 98), urbanity is formed by the co-existence and interrelationships of three groups of attributes that produce good urban places: activity, form, and image. Montgomery (1998, 97) defines activity as the product of vitality and diversity, where vitality refers "generally to the extent to which a place feels alive or lively" and can be measured through pedestrian flows and movements. Vitality and diversity are promoted mainly by high vehicular and pedestrian accessibility, which bring together a variety of users. At least a proportion of activity should occur in public and associated semi-public spaces as terrain for social interaction (Bianchini, 1990).

Jacobs (1961, 161) defines diversity as a mixture of commercial, residential, and civic uses in close proximity to each other, creating pedestrian traffic throughout day and night, thus consequently adding to the safety, economic functioning, and appeal of a place. Based on this, Montgomery (1998) adds the indices like the proportion of shops, patterns of day and night-time activities, the existence of street vending, variability of cultural and meeting places besides open spaces enabling promenading, people-watching and other activities, all of which are possible within a growing fine-grained economy defined by mixed land ownership with different unit sizes.

Bertolini and Salet (2003, 134) maintain that urbanity is associated chiefly with diversity presupposing two general conditions: 1. vitality and learning potential, and 2. physical and institutional access to relevant urban qualities. In accordance with these two conditions, four essential dimensions appear in addition to the emphasis on proximity and territorial continuity: specialization and interchange, diversity and freedom of

choice, urbanity as civic exhibition, and the principle of connectivity and accessibility. While specialization and interchange are threatened by the dominance of consumption in the use of urban space and the gradual disappearance of experimental zones, diversity and freedom of choice are fostered by the "confluences of traffic flows, stations and other transport interchange points" (Bertolini and Salet, 2003, 139), and urbanity as civic exhibition relies on conditions for non-coercion of behavior; spontaneity and an informal sphere.

Specifically urban transit exchange areas display high urbanity: Bertolini (2006) defines multimodal passenger interchanges as new centers of urban activity; spaces signified not only by the multiplicity of links and mobility flows between them, but also by diverse activities -yet with the question of how to develop their potential public realm. Banerjee (2001) emphasizes the significance of transit systems including transit stations for the public realm and claims that today, it is the appropriate mix of flânerie and third places that dictates the script for successful public life. Multimodal passenger interchanges frequently include third places (Oldenburg, 1989) and third spaces (Soja, 1996) with various forms of socializing that are not expected.

Based on the model developed in relation to Arendt's (1958) definition, the public realm implies an individual or a group that presents his/her/its specific qualities with the public observing them from diverse perspectives and aspects; the realization of public spaces is dependent on encounter and self-expression of many and diverse users in spaces (Alanyalı Aral, 2009). Diverse land-uses and programs instigating intense and continuous use in time, and connectivity with the city and the surroundings foster a variety and multitude of users. On the other hand, self-expression is possible through the appropriation of space, and spaces that make appropriation possible are defined by their inner physical properties like being expressive of and inviting appropriation via their repeated and intense use, besides processes of production and use (**Table 1**).

The Open Space Stock in Developing Nodes Along Urban Roads

A review of the relevant theorizations of roads as generators of urbanity demonstrates the significance of their implications in various scopes including the entire city, the neighborhood, and the street. Defining the urban landscape as a constellation of networks and locations within the frame of the space of places and the space of flows introduced by Castells (2000), Nijhuis and Jauslin (2015) assert that the space of flows is becoming more dominant in the contemporary city as a spatial manifestation. The flowscapes of transport, green and water landscapes define an interwoven trilogy in the macro scale, whereas transport landscape infrastructures, specifically "multi-modal transportation systems" shape conditions for urban development and offer opportunities for new types of public space (Nijhuis and Jauslin, 2015, 26).

Spaces of Places: Public Spaces in Private Property, In-betweenness and Fourth Places

The decentralization of the city centers, the vehicular density, the change in social and economic relations, thus in public investments and lifestyles, have led to changes in today's public spaces. Commercial spaces shaped by private ownership have enabled public spaces to assume an economic role leading to the transformation in their use and character (Uysal Bilge, 2021). In most cases, new settlements and commercial areas formed on the outskirts of cities cause social segregation and spatial fragmentation

CONCEPTS & DIMENSIONS	CONDITIONS & CRITERIA
URBANITY (Montgomery, 1998)	co-existence and interrelation of **activity**, form, and image
ACTIVITY (Montgomery, 1998)	**Vitality and Diversity** (Montgomery, 1998)
	high vehicular and pedestrian accessibility
Vitality (Montgomery, 1998)	*pedestrian flows and movements* :
	the numbers of people in and around the street across different times of the day and night
	facilities, the number of cultural events and celebrations over the year, active street life
Diversity (Jacobs, 1961)	mixture of commercial, residential, and civic uses in close proximity to each other, creating *pedestrian traffic throughout day and night*
Diversity (Montgomery, 1998)	variety in use, the proportion of shops, patterns of day and night-time activities, street vending, variability of cultural and meeting places, open spaces enabling promenading, people-watching and other activities, mixed land ownership with different unit sizes,... active street life and street frontages
URBANITY (Bertolini and Salet, 2003)	*proximity and territorial continuity* (Primary condition)
URBANITY -associated with high **diversity** (Bertolini and Salet, 2003)	1. **vitality** and learning potential, 2. *physical and institutional access* to relevant urban qualities
1. specialization and interchange	less consumption in the use of urban space and no gradual disappearance of experimental zones
2. diversity and freedom of choice	the confluences of *traffic flows* , *stations* and other *transport interchange points*
3. urbanity as civic exhibition	non-coercion of behavior; spontaneity and an informal sphere
4. connectivity and accessibility	ease with which destinations may be reached
URBANITY (hubs with high **diversity** and accessibility) (Bertolini and Salet, 2003)	*optimum linkage* to the surrounding urban tissue and optimum *pedestrian accessibility* within the area
	a minimum of *'other' functions* in addition to the dominant function at district and block level
	permitting and facilitating *temporary uses* with primarily unprofitable but lively cultural activities
PUBLIC REALM (Arendt, 1957)	Variety and multiplicity of users
	Self-expression
PUBLIC SPACE (reference removed)	*Encounter* & self-expression in urban space
1. Encounter in Urban Space	Diverse functions and Programs instigating intense and continuous use in time
	Overall physical properties supporting intense relationships with the surrounding and the city (access, location in the city)
2. Self-expression in Urban Space (through appropriation)	Inner physical properties expressive of and inviting appropriation
	Processes of production and use of spaces promoting appropriation

Table 1. Concepts and dimensions of urbanity and public realm, and their conditions and criteria.

(Carr et al., 1992). Many problems arise regarding the use of these areas by pedestrians: Handy (1996, 193) differentiates between pedestrian-oriented and automobile-oriented commercial areas and asserts that having commercial activity within walking distance encourages walking. Yet there are critical attributes like the relationship between residential and commercial areas, distances, barriers such as major arterials and existence of certain types of establishments, such as restaurants that define pedestrian use (Handy, 1996, 196).

Rather than creating an urban texture, the areas on the periphery that assume a central function contain introverted settlements connected to vehicle transportation, surrounded by parking lots, and lacking green areas. With this new settlement model, spaces with diverse commercial activities are formed within single buildings that depict urban environments with no integration with their surroundings. Privatization of public spaces has transformed them into artificial environments with security measures (Punter, 1990), and most mixed-

use complexes and shopping malls in the semi-public space category are owned by private investors and depict areas with rules and limited use durations (Kwiatkowski, 2010). Their location at the city's outskirts causes uncontrolled urban sprawl, which in turn becomes major determinant of the functional-spatial structure of the city. Mierzejewska (2011) claims that private spaces open to the public differ from the public space, especially in terms of ownership, access control, governance, function, and user. However, Trancik (1986), elucidating that semi-public / semi-private spaces soften the boundary between the living public and private spaces, argues that these areas increase the diversity of urban space activities. Parallel to Trancik's opinion, Newman (1973) affirms that semi-private / semi-public spaces provide the transition between private and public spaces and that these spaces are more flexible, more transitional and harmonious. Reflecting on the concept of 'in-between', Hertzberger (1991) asserts that the intertwining of indoor and outdoor spaces, and providing maximum accessibility softens the boundaries between public and private with variances in space sizes and forms.

Banerjee (2001, 12) criticizes the privately owned and managed spaces as not being truly public for "the owner has all the legal prerogatives to exclude someone from the space circumscribed by sometimes subtle and often invisible property boundaries". In the context of newly-designed public and semi-public spaces, Aelbrecht (2016) emphasizes the significance of the informal public social interaction, introducing 'fourth places' as spaces characterized by spatial, temporal and managerial in-betweenness, and a great sense of publicness. Aelbrecht (2016, 134) defines "fourth places" as mostly "publicly accessible privately owned and managed spaces" with specific types such as thresholds, edge spaces, paths, nodes and props that frequently exist in transit hubs, shopping centers, and circulation areas with truly public and anonymous character. An awareness of the public character of such spaces is informative for planning, via principles like mediating between the public, private and nonprofit sectors, supporting small businesses of the third place variety, and including conviviality and public life as objectives of street design (Banerjee, 2001).

Spaces of Flows: Pedestrian Environment to Foster Urbanity

In the scope of open spaces in developing nodes along urban roads, particularly in transit hubs, a comprehensive discussion on the pedestrian environment shaped and dominated primarily by vehicles is necessary. When not designed with a comprehensive attitude, roads – especially that serve high-speed traffic- threaten urbanity by breaking up the continuity and integrity of neighborhoods and public spaces, cause loss of human scale, dominate the urban space with noise, dirt, visual pollution, and safety issues, resulting in invaded urban open spaces and marginalized pedestrians (Read, 2006; Robertson, 2007; Gehl and Gemzøe, 2001; Carmona, 2010; Lefebvre, 1991; Forsyth and Southworth, 2008). Urbanity and public space characteristics are defined via pedestrians' encounters and self-expression, and this prioritizes the pedestrian environment, particularly in dense transit areas where walking may not be the preferred but necessary action. Such areas illustrate high urbanity and public space characteristics due to increased land-uses fostered by the high accessibility served by the multiplicity of transport modes like metro, bus, and minibus, walking, cycling besides private cars. Yet, the problematic confrontation of pedestrians with vehicles in both circulation spaces and residual open

spaces among the built stock necessitates a search on enhancing walkability in such areas to upgrade the urbanity and publicness.

Walkability is defined as the measure of how walking-friendly an environment is (Speck, 2012); the extent to which the built environment supports and encourages walking by providing pedestrian comfort and safety, connecting people with varied destinations within a reasonable amount of time and effort, and offering visual interest in journeys throughout the network**.** Walking has been discussed as a positive transport mode in many scopes, including health, economy, social equity, and sustainability (Seles and Afacan, 2019; Giles-Corti et al., 2016). In the urban studies literature, walking is discussed as a multidimensional construct with parameters including the physical environment attributes like city block size, topographic slope, distance to destinations and street connectivity (**4**) (for example; the directness of links and the density of connections), building density, urban block-street ratios and dimensions, sidewalk width and continuity, aesthetics, land use mixing, traffic volume, the number of people which inform perceived safety and liveliness (Pivo and Fisher, 2011; Ewing and Handy, 2009; Özer and Kubat, 2014). Ewing and Handy (2009) posit that physical features influence the quality of the walking environment both directly and indirectly through individuals' sensibilities and define the perceptual qualities like sense of comfort, sense of safety and level of interest which consequently shape individual reactions. Physical features inform visual qualities like imageability, sense of enclosure, human scale, transparency, and complexity at the street level (Lynch, 1960; Jacobs, 1961; Appleyard et al., 1964; Appleyard 1981; Rapoport, 1990; Ewing and Handy, 2009). However, these are insufficient to define the perception and individual reaction, which is also specified in collaboration with additional auditory, olfactory, tactile perceptions; walking speed and mnemonic meanings -if there are- attributed to the setting.

Among the models developed for a comprehensive understanding of walking in the urban scope, walking needs (Alfonzo, 2005) or pedestrian's needs (Mateo -Babiano, 2016) collect multiple dimensions of walking within a hierarchy of necessary conditions. Alfonzo (2005) defines five levels of walking needs, four of which are activity-related needs (accessibility, safety, comfort, and pleasurability) in urban spaces whereas feasibility is not a variable of physical space as being dependent on the individuals' conditions. With a discussion on relevant precedent studies (Handy, 1996; Black et.al., 2001; Southworth,1997), Alfonzo (2005, 825-6) defines the attributes of the second basic pedestrian need that is accessibility as related to measures like activities (pattern, quantity, quality, variety and proximity), connectivity between uses -as provided by the transportation system, and walking-related infrastructure involving the existence of walkable areas (paths, trails, sidewalks) and actual or perceived barriers to walking such as physical barriers (impenetrable land uses or natural features) and psychological barriers (like a wide road). Safety -as defined via parameters related to crime- is the third level of walking needs, and is followed by comfort needs which are defined via parameters derived from earlier studies (Frank et al., n.d.; Booth et al., 2000) that refer to a person's level of ease, convenience and contentment while walking in an area. The topmost walking need; pleasurability is defined regarding both physical features and experiential attributes depicting behavior patterns like use, appropriation, socialization patterns such as people-watching, triangulation (**5**), and involves factors of diversity and complexity,

4. The connectivity between uses / activities refers to "the ease with which those destinations may be reached" (Handy, 1996, 184), and may be provided both via transportation system and physical layout -for pedestrians. Street connectivity is defined as the number of streets directly linked by a node (Jiang et al., 2000).

5. The concept of "triangulation", as introduced by Whyte (1980, 94) refers to presence of some external stimulus which "provides a social bond between people and prompts strangers to talk to each other as though they were not".

liveliness, architectural coherence and scale, and aesthetic appeal (Alfonzo, 2005: 830). Diversity and complexity, and liveliness portray activity-based indicators like public space; other people, street vendors, outdoor dining areas, presence of mixed uses and a higher percentage of ground floor space devoted to retail (Appleyard, 1981; Cervero, 1988; Frank et al., n.d.). Activity-based variables of complexity include number of people and presence of outdoor eateries fostered by diversity: Integrating land uses, activities, transportation modes, and people creates diversity instigating complexity (Gehl, 1987) whereas the increase in controlled and predictable areas -as in development projects under unified ownership- is related to its loss (Ewing and Handy, 2009: 81). In this context, informal public spaces which add to complexity in an urban setting become visible via presence of 'fourth places' which has already been discussed._

Activity-based urbanity is further enhanced with increased pedestrian comfort levels. In that regard, Sarkar's (2003) theorization includes three comfort types for pedestrian circulation in urban networks: physical comfort in relevance to the effort to conduct pedestrian activities with attributes defining positive physical conditions for walking (adequate walkways in width, walkways free of impediments, comfortable walking surfaces, continuous sidewalks, walkways comfortable for vulnerable users, seating areas, protection from extreme weather conditions), psychological comfort connoting to pedestrians' mental satisfaction maintaining their walking speed and possibly participating pedestrian activities; and lastly physiological comfort defined by absence of noise and pollution which cause pedestrians stress.

RESEARCH: TESTING ACTIVITY-BASED URBANITY IN THE OPEN SPACES IN SÖĞÜTÖZÜ NODE

The Site - History and Recent Development

Ankara - Eskişehir State Road was first defined as a major alternative to the İstanbul Road in Yücel - Uybadin Plan in 1957, and has since made a significant change in the urban transportation network. Yücel - Uybadin Plan which offered industrial opportunities to Söğütözü and Çukurambar Regions rendered them more attractive to private capital in the industrial and commercial sectors. METU Campus and other government institutions built in the 1960s altered motor transportation along the Eskişehir Road instigating the city's expansion towards the west. The road has been a significant trigger of rapid urban development since the 1990 Master Development Plan, which was prepared in 1970 and assigned the surrounding areas along this axis to many more public institutions and university campuses. In the scope of the 2015 Ankara plan prepared in 1986, the land choice of public institutions on large plots along this road, the tendency of large and small scale industry to move away from the city center, and increase in the use of private automobiles led to many public and private sectors locating on this axis. The 1990 Master Plan Partial Revision in 1992 envisaged to develop on this main artery also housing and living spaces for upper-middle-income groups (Uysal Bilge, 2020a) in parallel with the further rise of private vehicle ownership and population growth.

The history of Söğütözü displays a significant example of rapid critical changes with piecemeal plan decisions, which has been a prevalent issue in many cities in Turkey since the 1980s: With the Zoning Law No. 3194,

Figure 3. Söğütözü node from the Dumlupınar Road -approaching from the west. YDA Center on the right (photograph taken in May 2021).

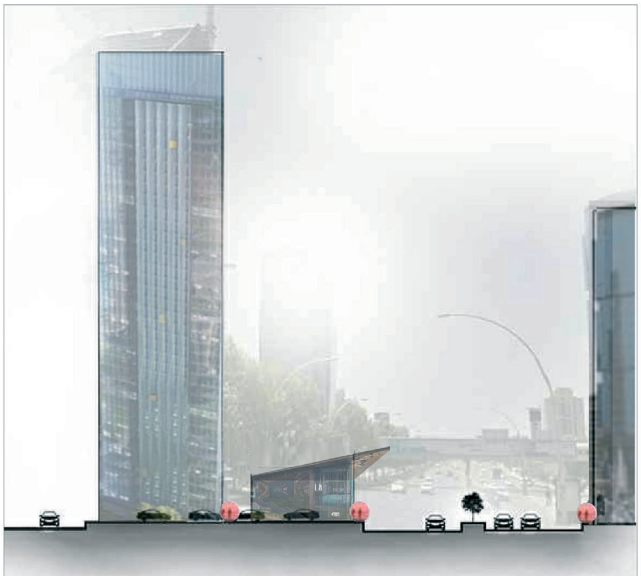
which entered into force in 1985, the authority to plan, build, approve, implement, and alter the plan, was given to the municipal council (Resmi Gazete, 1985). The law and relevant legal regulations resulted in the loss of a holistic framework in plan production and implementation processes which was displayed as urban spatial fragmentation (Uysal Bilge, 2020a).

Until 1990, most of the lands in Söğütözü were agricultural lands owned by Atatürk's Forest Farm (**6**). With the plan approved in 1992, envisaged maximum height in the Urban Service Areas increased resulting in the disappearance of the human scale (Uysal Bilge, 2020a) (**Figure 1, Figure 5)** (**7**). Authorized in 1995, the Ankara 2025 Plan envisaged the dispersion of congested functions in the current urban fabric to newly developed

6. Atatürk Orman Çiftliği, founded in 1925 as an urban agricultural practice model, was a modernization project that aimed to produce agricultural and animal products under modern conditions by reforming the swamps and cultivating the steppe of the Republic Ankara, and the education of the people, the youth and the raising of healthy generations (Akçay, 2019). AOÇ lands which were donated by Atatürk in 1937 for public use, suffered certain land losses at different times, especially since 2010 with newly opened boulevards, roads and intersections.

7. The parcel formation on the northern side of the Dumlupınar Road in Söğütözü was planned in 1992 with General Directorate of Forestry Söğütözü Facilities, AŞOT Connection Roads and Urban Service Area Site Zoning Plan prepared by Raci Bademli, who later in 1998 prepared an alternative plan for accessibility (approved in 1999), proposing to link Dumlupınar Road and public recreation area at the far end, offering this historical green area to common share. This plan ensured accessibility and pedestrian circulation continuity towards public recreation areas. However, the approach of private capital has stopped and altered the implementation of the project towards the use of planned area for parking demands of Armada, and redirected the pedestrian route into the entrance plaza of Armada (Uysal Bilge, 2020a). This route later informed Armada Street line, yet with only controlled access with a decreased publicness.

Figure 4. The northern side of the Dumlupınar Road from YDA Center: Mövempick Hotel and Armada Shopping and Business Center by the road, the dominance of vehicular use areas (photograph taken in February 2022).



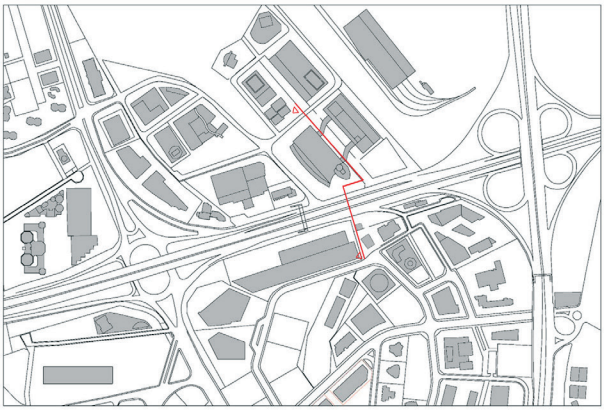


Figure 5. Section through YDA Business and Living Center and Armada 1 Business Center on Dumlupınar Road.

corridors, nodes and attraction centers, and promoted the construction of growth corridor sub-centers. Söğütözü became the hotspot for private capital with land use transformed from production-based facilities to financial services (Uysal Bilge, 2020b). The proximity of the area to the city center and the settlements of high and middle-income groups, the connection of major arteries in this area, and the presence of subway, minibus and bus stops in addition to the intercity bus terminal, caused changes in the value of the lands. The existence of Ostim, Teknokent, Cyberpark, four university campuses (METU, Çankaya, Bilkent, Hacettepe) and many public and military areas served by the Dumlupınar Road still increase the pressure and density with continuing construction sites of high buildings in private property.

In 2002, Armada Shopping and Business Center as the first high-rise and the most visible element was built **(Figure 4**) while the area became a focus development area for the city such as the localization of many other attractors such as built shopping centers, residences, public buildings on the further sites along the Dumlupınar Road. With many blocks built later, the area portrays building types today including institutional buildings, hospitals, housing estates, a huge convention and exhibition center, a political party center, a mosque, single commercial buildings, business centers besides a specific building type with combinations of housing blocks, shopping malls and offices shaped by consumption (**Figure 6, Figure 7**).

The intersection of the road with Konya (Mevlâna) Road in the east of Söğütözü physically divides this area into four unconnected sections, separating Emek and Balgat neighborhoods in the east, and Çukurambar in the south (**Figure 2**) consequently altering the development model of each region in specific ways (Günay, 2006). This node is a dense transit hub which connects various passengers of both the inner-city urban transport (subway stations, bus or minibus stops in many directions) and the Ankara

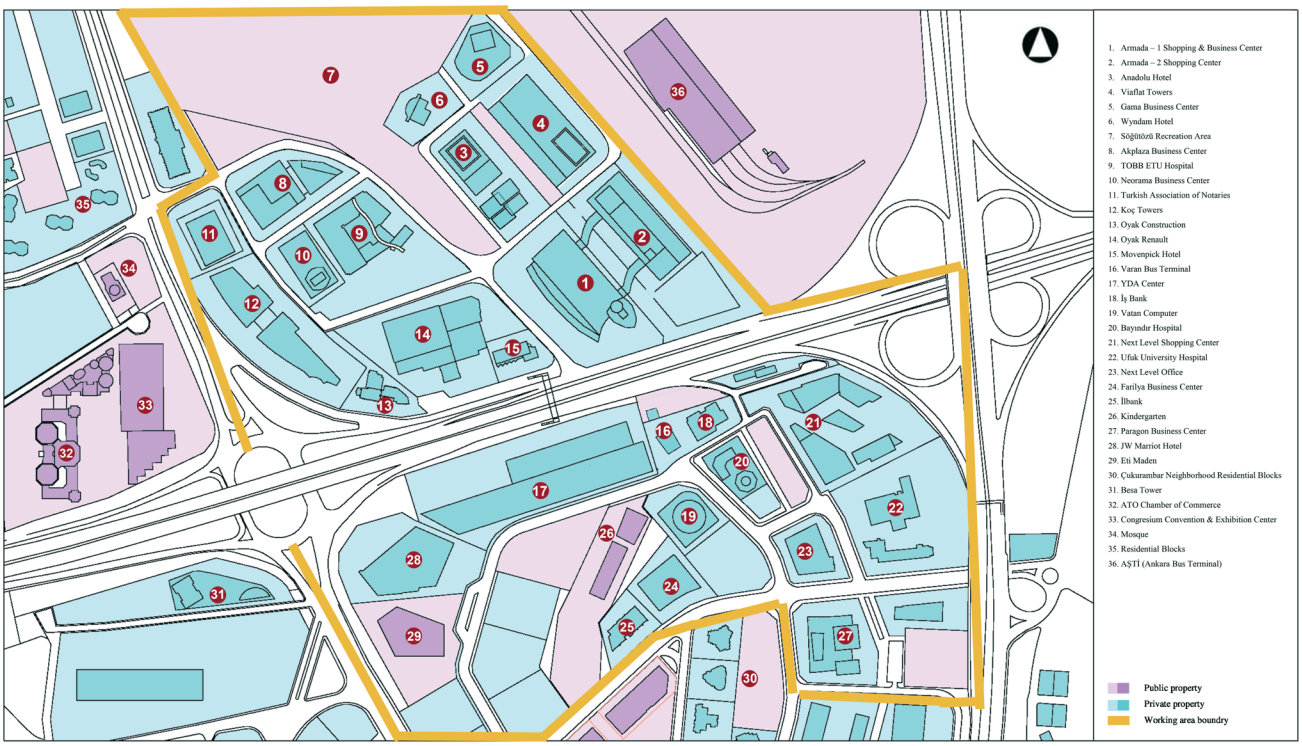


Figure 6. Properties of plots and buildings, and the boundaries of the study area.

inter-city bus terminal (AŞTİ) which is located on the north-west side of Dumlupınar Road - Mevlânâ Road junction (**Figure 6**).

The node portrays a use pattern more or less public on private property (**Figure 6**) and is highly accessible in various modes of transportation due to its location as a transit hub on a major transportation artery. This high accessibility, alongside factors such as proximity to the center and the presence of accommodation areas on both sides of Dumlupınar Road, particularly in the Çukurambar neighborhood in its south, accounts for the observed dense pedestrian use. The high-speed dense Dumlupınar Road and secondary vehicular roads with extensive car parking areas define the character of the open space stock.

Though functioning in a wider area, the node has been tested within the limits which more definitely affect its activity-based urbanity: the dense Mevlâna Road in its east and Muhsin Yazıcıoğlu and Söğütözü Streets in its west, the public green area (Söğütözü Piknik Alanı) in its north and Çukurambar neighborhood residential blocks in its south (**Figure 6**), which defines a walkable distance (about 800 meters) in east-west and south-north directions.

Methodology

As pedestrian-vehicle confrontation was identified to be the most commonly encountered problem in Söğütözü node, the research evaluated the variables of activity-based urbanity in a proposed model **(Table 2)** as derived from the literature on pedestrian needs in urban spaces. This model is based on relevant the definers of relevant walking needs which are mainly pedestrian accessibility, comfort and some parameters of pleasurability (**8**). In this model, fourth places (Aelbrecht, 2016) are considered as examples of informal public spaces, and comfort conditions for pedestrians, which are believed to constitute the primary conditions of

8. As defined by Alfonzo (2005, 827), crime safety, referring to "whether a person feels safe from the threat of crime" as affected by "urban design characteristics related to physical incivilities and fear of crime, types of land uses and people present' was not an observed problem in the field study, therefore it is not evaluated within the scope of the present research. Traffic safety, on the other hand, a much-experienced problem in the node, was evaluated via both observations and map analysis, and questionnaires (with the semantic adjective set fast" / unsafe) in the scope of pedestrian comfort and accessibility -as it also defines psychological barriers to access and maintain desired walking speed. Pleasurability, on the other hand, is partly included in the evaluation model with the variables of the activity-based factors such as diversity and complexity, and liveliness excluding the physical features defining factors of architectural coherence and scale, and aesthetic appeal.

MODEL FOR EVALUATION OF ACTIVITY BASED URBANITY IN THE NODE											
RELEVANT WALKING NEEDS	DEFINERS OF ACTIVITY-BASED URBANITY	VARIABLES	PERCEPTIONS						APPLIED METHODS		
			Noisy / Tiresome	Fast / Unsafe	Polluted / Unhealthy	Dynamic / Lively	Well-known	Enjoyable	Map Analysis	Observation	Questionnaire
Accessibility	*The pattern, quantity, quality, variety and proximity of activities *Connectivity between uses *Walking-related infrastructure	Activities							■		
		Connectivity between uses *(pedestrian connectivity)*							■		
		Existence of walkable areas *(paths, trails, sidewalks)*								■	
		Physical barriers *(presence and number of barriers)*								■	
		Psychological barriers *(inpenetrable / controlled landuse areas, natural features and wide roads)*							■		■
		Destinations within a walking distance							■		
Comfort	*The relationship between pedestrians and motorized traffic *Pedestrian walkway system and street network *Urban design amenities	Adequate walkway (*width for diverse usage*)								■	
		Continous sidewalk								■	
		Comfortable for vulnerable users								■	
		Continous sidewalk								■	
		Walkway free of impediments								■	
		Comfortable walking surface								■	
		Amenities throughout a setting (*Seating*)								■	
		Protection from extreme weather conditions								■	
		Ability to maintain desired walking speed		■						■	■
		Ability to participate in various pedestrian activities				■		■	■	■	■
		Traffic volume	■	■	■					■	■
		Features that buffer pedestrians from motor vehicle traffic	■	■	■					■	■
		Traffic calming elements, speed limits	■	■	■					■	■
Pleasurability	*Diversity and complexity *(Activity-based)* *Liveliness *(Activity level)*	Presence of mixed uses				■		■	■	■	■
		Presence of public spaces					■		■	■	■
		Presence of informal public spaces *(Fourth Places)*					■		■	■	■
		High numbers of people and activities					■	■	■	■	■
		Ground floor space devoted to retail & outdoor eateries				■		■	■	■	■

Table 2. Model for evaluation of activity-based urbanity in the node.

concern for the node, are further detailed via variables added from Sarkar's (2003) model for urban walkways in major activity centers. Many variables of comfort and pleasurability were found to match with the semantic adjective sets (**9**) sorted earlier in the 2005-2007 study (Alanyalı Aral and Demirbaş, 2015) which evaluated the pedestrian perceptions in this location; concomitantly these perceptions were integrated to the proposed model to be tested again after a considerable time span.

The evaluation necessitated a combination of qualitative and quantitative methods which would make clear both present physical conditions and activities in the node, and the perceptions of pedestrians. Many variables of accessibility (activities, destinations within a walking distance, connectivity between uses and the existence of physical and psychological barriers) were evaluated via map analysis, whereas most variables of comfort were assessed via on-site observations. On the other hand, pedestrians' perceptions were tested in a quantitative research via questionnaires defining semantic adjectives which also highlight the contradictory condition of the node in terms of its increasing urbanity and problems rooted from dense vehicle-pedestrian encounters. A comparison between the present pedestrian perceptions with the previous ones in such a rapidly growing node was aimed by means of testing the same parameters with those tested in 2005-2007 questionnaires (Alanyalı Aral and Demirbaş, 2015). In this earlier study, the set of semantic adjectives defining pedestrians' perceptions were extracted from a comprehensive literature research on spaces along motorways: noisy / tiresome, fast / unsafe, and polluted / unhealthy to describe the main problems found to be noise, pollution and traffic safety with their effects on pedestrians; well-known, dynamic / lively and enjoyable to test the perceived public character and urbanity.

9. Among the tested variables of activity-based urbanity in the node, those relevant to the effects of wide roads and dense vehicular traffic were seen in: Traffic volume, Features that buffer pedestrians from motor vehicle traffic and Traffic calming elements, speed limits which imply notions of noise, pollution, and traffic safety to be reflected in pedestrians' perceptions as noisy / tiresome, fast / unsafe and polluted / unhealthy. Additionally, Ability to maintain desired walking speed relates to fast / unsafe perception -for the dominance of vehicular traffic results in interruptions in walking. Variables relating to the public character of the node were: Presence of public spaces and Presence of informal public spaces (Fourth places) relating to well-known, and High numbers of people and activities relating to well-known and enjoyable perceptions; Ability to participate in various pedestrian activities and Presence of mixed uses both of which relate to dynamic / lively and enjoyable perceptions.

The field study was conducted between June 2020 and May 2021 in the open spaces of Söğütözü node. Even though the number of users was much decreased during the pandemic period (which started in March 2020), the area was still active with users of shops, eatery and offices and transit passengers on the days there were no lockdowns. The interviews were held in June -September 2020 (34 interviews) and February-March 2021 (59 interviews) at noon between 11:30 to 13:00 when user numbers were comparably high, yet not as high as it would typically be expected. The questionnaires were held almost at the same locations with the previous study -including not only the bus / minibus stops and sub-spaces by the Dumlupınar Road, but also Armada plaza, pedestrian overpass and some inner streets and car parking areas on both sides of the road. Holding face-to-face interviews during the pandemic period -which still continues today- portrayed difficulties due to the threat of infection and inevitably resulted in the reduced number of participants, yet it was still possible to complete 93 questionnaires with similar numbers of male and female pedestrians of 20-50 years age.

RESULTS

Definers of Activity-Based Urbanity

Map analyses and observations verify that Söğütözü node portrays high vitality and diversity which accounts for its urbanity (**Table 3**). **Figure 6** shows that the node displays a diversity of uses (commercial /mixed uses in addition to civic uses like public institutions and residential areas in close proximity - Çukurambar and gated residential areas in a walkable distance). Existence of many complexes including mixed land uses and the outdoor eatery and retail dispersed within the research area (**Figure 7**) in addition to the observed presence of many people in various time intervals (despite the lessening effects of the pandemic period) verify the activity-based complexity and liveliness in open spaces. Besides streets, public spaces with physical and institutional accessibility include only the Armada plaza and the street park in front of Next Level Shopping Center's main entrance whereas others (the Armada Street, Söğütözü Recreation Center, Next Level Courtyard and YDA Plaza) portray limited and controlled access (**Figure 7**). Informal public use, as observed via the presence of many fourth places (**Figure 7, Figure 8, Figure 9**), on the other hand, reveal the high public character, giving clues about the perception of the node -which was researched in questionnaires: As the area displays many spaces in private property used publicly or semi-publicly by pedestrians, it is possible to observe many types of fourth places defined by spatial, temporal and managerial in-betweenness where users socialize informally. These include seats within the plazas (Armada entrance plaza), walking-level retail areas, subway entrances and bus stops, active areas occupied by kiosks and street vendors (**Figure 7, Figure 8, Figure 9**).

Considering accessibility, even though the destinations, the variety of land uses and activities concentrated within a walkable distance are positive, there are many physical boundaries and controlled entrances caused by the existence of high-speed roads and privately owned lands (**Figure 7**), defining the node's connectivity negatively. The dense Dumlupınar and Mevlâna Roads disrupt the connectivity with the surrounding for pedestrians, in addition to the dominance of pedestrian-vehicle confrontation areas -both for crossing the roads and in extensive open-air car parking areas- which emerge as physical and psychological barriers.

Walking Needs	Attributes
Pleasurability	• **Diversity.** Existence of various -commercial, residential and civic- uses and mixed land uses (Figure 7) and variant user profile in the area verify diversity. • **Complexity (activity-based).** Existence of many people, street vendors and outdoor eatery / retail areas (Figure 7) verifies activity-based complexity. • **Liveliness.** High numbers of people and activities are observed at various time intervals. • **Public spaces**. Existence of plazas, parks and 'fourth place's (Figures 7, 8 and 9) signify the public space characteristics in the area.
Accessibility	• **Activities.** There are many activities portraying variety and proximity, with many ground-floor outdoor use areas (Figure 7). • **Connectivity.** Connectivity of the node towards the center and the neighborhoods in its east (Emek, Balgat) is disrupted by high-speed roads. Connectivity between public use areas in the node is loose and halted by dominance of roads and parking areas (Figure 2). • **Existence of walkable areas.** Sidewalks, paths, trails are not present continuously (Figures 8 and 9). • **Physical barriers.** Dumlupınar Road bisects the node into two. Additionally, some private areas and institutional areas are not accessible. (Figure 7). • **Psychological barriers.** The fast road, the overpass and the absence of sidewalks in some areas (Figures 7 and 8). • **Destinations within a walking distance.** The number of destinations in walking distance in the node is high (Figure 6).

Table 3. The evaluation of the activity-based walking needs in Söğütözü node in accordance with relevant attributes of pleasurability and accessibility.

The lack and discontinuity of sidewalks along the roads further add to the problems which are mainly rooted in the pedestrian-vehicle confrontation (**Figure 7**).

An evaluation of the node with regards to the attributes of comfort needs reveals that almost no measure of physical, psychological and physiological pedestrian comfort is met (**Table 4**). Attributes of pedestrian comfort in Sarkar's model, like the adequacy and continuity of walkways with comfortable and impediment-free walking surfaces are lacking, besides the fact that there are limited amenities like seating and no protection from weather conditions. These conditions result in inability to maintain desired walking speed and participate pedestrian activities causing psychological discomfort in addition to physiological discomfort resulting from motorized vehicles causing noise and pollution.

Pedestrian Perceptions

The previous study held on the perception of sub-spaces along urban roads –in the case of Eskişehir Road in Ankara- (Alanyalı Aral and Demirbaş, 2015) showed that they were perceived primarily with their problematic

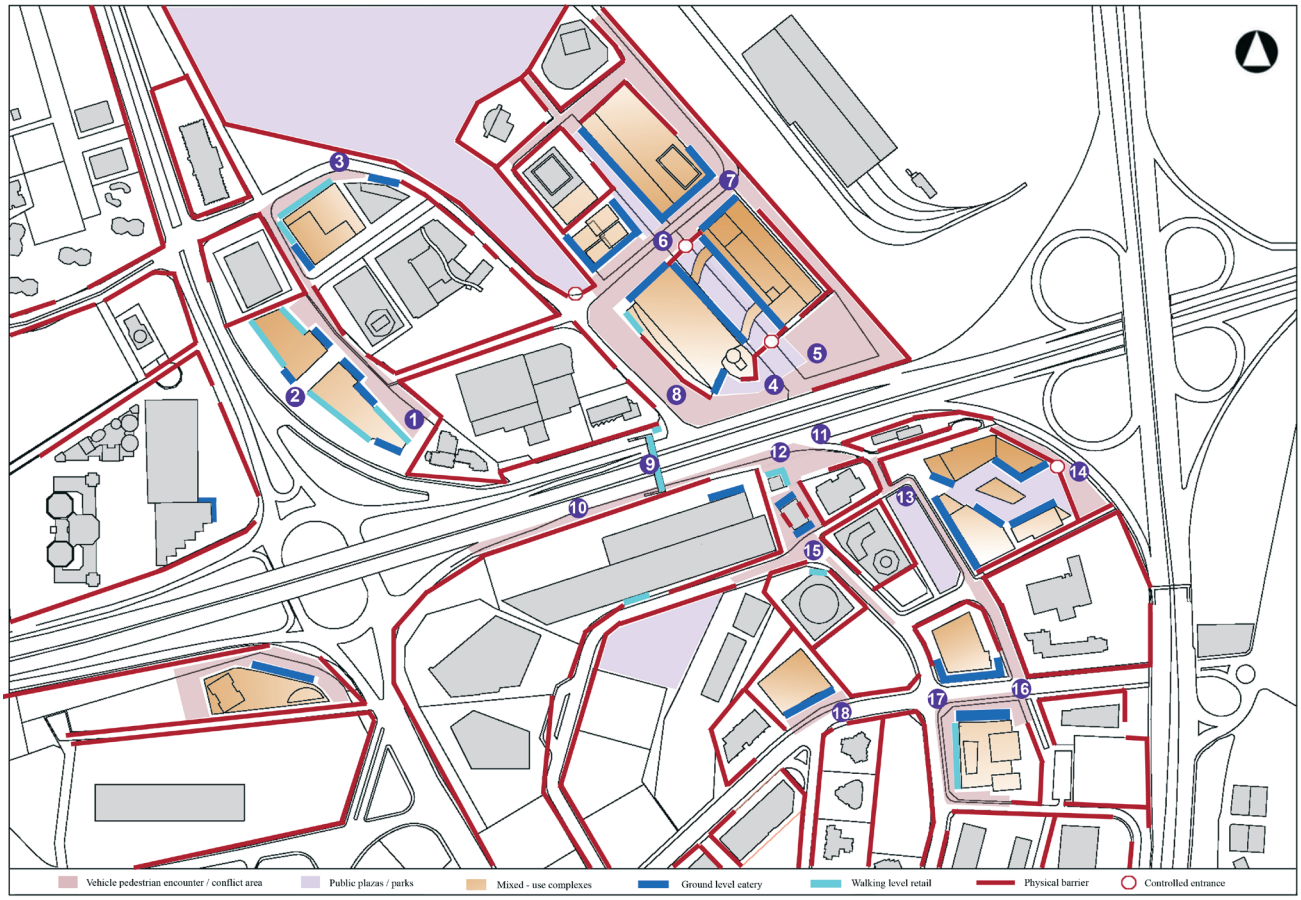


Figure 7. Ground floor conditions (ground floor eateries, walking-level retail, pedestrian-vehicle confrontation/conflict areas, plazas and parks, and physical barriers and controlled entrances for pedestrians), mixed use complexes and fourth places.

attributes –as noisy / tiresome, fast / unsafe and polluted / unhealthy - spaces, and then as public spaces –being defined as well-known, dynamic / lively and in a much smaller percentage enjoyable (**Table 5**). Since 2007 the node has developed even more rapidly, and the dominance and effects of vehicles have been enhanced.

In the current study, the same adjective sets that included those denoting traffic-related problems; noisy / tiresome, fast / unsafe, polluted / unhealthy, and those denoting public space attributes; well-known, dynamic / lively, enjoyable were questioned. As was mentioned before, the number of participants (93) remained less than half of the previous set (214), yet was still a considerable number for such a quantitative study. A comparison of the results of the questionnaires administered in 2005-2007 and 2020-2021 reveals that the overall perception of traffic-related attributes decreased with only a slight increase in perception of noisy / tiresome environment. On the other hand, perception of public space, expressed by adjectives well-known and dynamic / lively increased very significantly (well-known from 32.7 to 50.8 and dynamic / lively from 26.2 to 49.4) whereas enjoyable increased only very slightly.

The results show that the node is still primarily perceived with adjectives denoting traffic-based problems (the sum of adjectives noisy / tiresome, fast / unsafe and polluted / unhealthy is 136.5), yet slightly less when compared to the earlier set (which was 141.3), while the perception of public space attributes (the sum of adjectives well-known, dynamic / lively and enjoyable) increased significantly from 68.7 to 110.9. The most

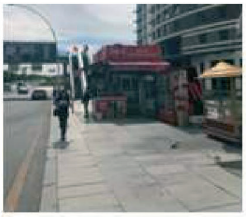
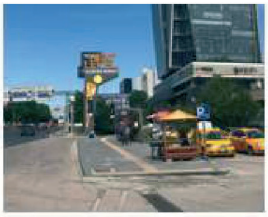
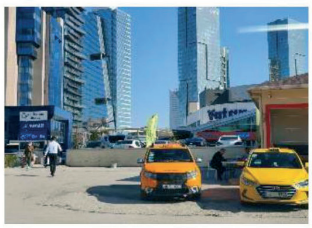
Comfort Types	Attributes
Physical   	• **adequate walkway** There are no standard widths in the site. Urban equipments and street furniture block walkway. • **continuous sidewalk** Walkways are cut by vehicles. • **comfortable for vulnerable** users (physically challenged, elderly). In the site there is no ramp or the other equipments for vulnerable users. Vulnerable users can not negotiate neglected sidewalk surfaces. • **walkway free of impediments** Walkways cluttered with signs and street furniture in the site. • **comfortable walking surface** In the site there are potholes, cracks and caved on surfaces. • **seating** There are seating areas only in private spaces. • **protection from extreme weather conditions** There are no conditions that encourage walking and protect against climatic conditions (extreme wind, sun, rain) in the pedestrian circulation network in the study area.
Psychological 	• **ability to maintain desired walking speed** The width of pavements, the adverse conditions of the pavement surface, the vehicles and the urban equipment covering the pavement decrease the walking speed of the pedestrians in the walking path in the area. • **ability to participate in various pedestrian activities** The inclusion of activities in the walking path is very limited in the urban walking paths in the area. The seating areas located only in the private property areas can be included in the walking activity and there is no continuity of walking and activity.
Physiological 	• **noise** The survey study and observations in the pedestrian environment reveal the discontent of pedestrians against noise. Pedestrian circulation areas next to vehicle traffic are adversely affected by noise. • **pollution** Vehicle density in the area adversely affects the air quality, reducing the comfort level on pedestrian walkways.

Table 4. Comfort conditions for pedestrians in Söğütözü node (photographs taken in July 2020).

Table 5. Comparison of pedestrians' perceptions in 2005-2007 and 2020-2021 study periods.

		Armada Shopping Mall and Business Center - Close Periphery Survey Results for 2005-2007 (Reference removed) (214 Participants)	Armada Shopping Mall and Business Center - Close Periphery Survey Results for 2020-2021 (93 Participants)
Pedestrian Perceptions	Noisy / Tiresome	60.7 %	64.5 %
	Fast / Unsafe	41.6 %	37.6 %
	Polluted/ Unhealthy	39%	34.4 %
	Dynamic / Lively	26.2 %	49.4 %
	Well-known	32.7 %	50.8 %
	Enjoyable	9.8 %	10.7 %

Figure 8. Fourth places on the northern side of Dumlupınar Road in Söğütözü node (Photographs taken in July 2020-March 2021).

Figure 9. Activity in the area and fourth places on the southern side of the Dumlupınar Road in Söğütözü node (Photographs taken in July 2020-March 2021).

significant increases are in perceptions as well- known (from 32.7 to 50.8%) and dynamic / lively (from 26.2 to 49.4%) space which render them as the main definers of pedestrians' perceptions today after the adjective noisy / tiresome (64.5%).

DISCUSSION AND CONCLUSION

The current study evaluated activity-based urbanity of open spaces in developing nodes along major arteries in the case of Söğütözü node, focusing on the conditions for pedestrians as the target group. After a discussion on the definers of activity-based urbanity, a novel model that included the relevant definers of walking needs was developed for testing the node. This model included accessibility, comfort and pleasurability measures which explicated the virtues and problems regarding activity-based urbanity in Söğütözü node. Results of the map analysis, observations and questionnaires with pedestrians show that the node demonstrates many problems in means of pedestrian accessibility and comfort even though it portrays high pleasurability with regards to its diversity, activity-based complexity, liveliness and public spaces. The pandemic period in which the study was conducted was a limitation resulting in decreased yet evidently continuous pedestrian use through time. The number of questionnaires were considerably reduced, still the *fait accompli* urbanity of the node was observable in many spots where socialization was possible (fourth places), alongside the perceived public character which was evident in the significant increase of the perceptions as a well-known and dynamic / lively space compared to 2005-2007 period perceptions.

The study shows that problems regarding pedestrian accessibility are mostly based on impediments introduced by high-speed and dense roads, extensive areas reserved for car parking, and many privately-owned spaces with limited and controlled access considered for public use; whereas problems about pedestrian comfort stem mainly from the insufficient urban design attitude towards such a fast-developing node: High numbers of pedestrian users are confronted with unpleasant experiences such as encountering vehicular flow and its consequences, in addition to being forced to use overpasses.

As an overall outcome, poor comfort conditions accompanying physical and psychological limitations for pedestrian accessibility ensue as the main problems regarding the flourishing urbanity. Reassessment of this result with a framework derived from the discussions on the conditions of the activity-based urbanity highlights more problems including the lack of cultural events and celebrations, the variability of cultural and meeting places ensuring open spaces enabling promenading, people-watching and other activities, and mixed land ownership with different unit sizes, enhancement of which could add further to its vitality and diversity. The territorial continuity, indicated as a primary condition of urbanity by Bertolini and Salet (2003), emerges as a main problem -portrayed via lack of physical and institutional access to urban qualities; along with the dominance of consumption in the use of urban space that leads to gradual disappearance of experimental zones. For busiest hubs which already exhibit high diversity and accessibility Bertolini and Salet (2003) affirm that urbanity may even further be fostered via optimum linkage to the surrounding urban tissue and optimum pedestrian accessibility within the area, the introduction of a minimum of 'other' functions in addition to the dominant function at district and block level, and thirdly by deliberately permitting and facilitating temporary uses with primarily unprofitable but lively cultural activities. In this context providing continuity and ease in pedestrian circulation both within the node and with the surrounding neighborhoods, providing unlimited access, and adding spaces for cultural activities in addition to smaller-scale activity hubs -which may be

temporary like the street vendors and kiosks currently instigating fourth places- would add more to the node's urbanity. As in many other parts of the city, means of circulation other than vehicular traffic are largely ignored in the node, so it is necessary to increase walkability both on Dumlupınar and Mevlâna Roads and in inner open spaces via decreasing open car parking areas and upgrading sidewalk continuity and comfort. In addition to the street-scale betterments, new pedestrian routes can also be offered -like the pedestrian axis proposed in 1990s to link the north and south of Dumlupınar Road.

For upgrading the spatial qualities and reducing the problems arising from the togetherness of dense vehicular and pedestrian circulation in multimodal passenger interchanges, Bertolini (2006) suggests that the role of in-between spaces may be prioritized by increasing the level of the interaction of interiors with good-quality outer spaces. In Söğütözü node there are many fourth places portraying informal socialization as spaces with an in-between character, yet the dominance of privately owned and managed public spaces introduces control and limitations for users and use. Such spaces raise some concerns in issues like rights of free action and assembly (Nemeth, 2009 in Nemeth and Schmidt, 2011), mostly fail to serve as welcoming, inclusive retreats as public spaces and often serve as the extensions of sponsors' (owners') public image (Nemeth and Schmidt, 2011) while aiming to attract only desirable users (Whyte, 1988). Following Nemeth and Schmidt's (2011) model of publicness based on three core components; ownership, management and uses / users, the possibilities for more inclusive privately owned public spaces include dimensions like specific management regimes and techniques with a focus on the owners of spaces / legal stakeholders, managers / managements in addition to users.

In Söğütözü node, the lack of a comprehensive urban design attitude towards the node seems to be an overarching cause of many problems: Bilsel (2009, 40) asserts that the absence of any positive interrelationship in Söğütözü causes a problematic coexistence of irrelevant use types; individual building blocks and shopping centers of various sizes and heights, built regardless of urban design considerations resulting in only car parking areas which suggest no public open space pattern. Tatom (2006, 184) exemplifies how comprehensive design of urban roads - when conceived on a metropolitan scale - constitutes 'programmatically and morphologically a complete urbanism' including the creation of public spaces. Nijhuis and Jauslin (2015) assert that evaluating the effects of roads on urban open public spaces in the scope of nodes along urban arteries necessitates consideration of their spatial (formal characteristics, spatio-visual experience), ecological (green corridors, sustainability), technical (civil route design) and social (participatory and anthropometric) dimensions. Considering these dimensions, possibilities for improving Söğütözü node involve providing the continuity of green network integrating the surrounding parks like Söğütözü Recreation and AOÇ areas for the public; reducing traffic density by use of traffic planning, increasing public transport and other modes like cycling (**10**) rather than private-car dependence, besides some technical precautions like control of vehicular exhaust emissions. Ensuring a coherent and continuous layout of privately and publicly owned open spaces and urban green would contribute to the public life and create habitable spaces.

With the global epidemic experienced worldwide, it is clear that the need for public open spaces will increase day by day, which renders the

10. There is an ongoing bicycle route project developed by Ankara Municipality, planned to connect university campuses along Dumlupınar Road (Uysal Bilge, 2020a).

findings of the current study critical to generate design and planning goals in similar urban nodes. Söğütözü node displays its image as Ankara's topmost high-rise focus and is further anticipated to continue its development due to its location with regards to continuing urban sprawl. As an example of developing nodes along main urban arteries, the open spaces in the node need to be carefully designed for achieving their potential contribution to the city. In that regard, the outcomes of the current study are aimed to positively lay the groundwork for future betterment of the node, with positive implications for planning and design. Upgrading the urbanity in this developing node necessitates continuous observations and further questionnaires in the future, including not only users but also owners and managers of spaces for more accessible and inclusive privately owned public space management models. For further research the study also suggests considering both the attributes defining activity-based urbanity, and other variables including the appeal of the physical environment which would further affect the perception and use of urban open spaces.

BIBLIOGRAPHY

AELBRECHT, P. S. (2016) Fourth places: the Contemporary Public Settings For Informal Social Interaction Among Strangers, *Journal of Urban Design* 21(1) 124-52.

AKÇAY, S. K. (2019) *Ankara Kentini 21. Yüzyıl Başında Kent Hakkı Mücadeleleri Üzerinden Okumak*, Unpublished PhD. Thesis. Gazi Üniversitesi. Ankara.

ALANYALI ARAL, E. (2009) *Redefining Leftover Space –Value and Potentiality for the City*, VDM Publishing House Ltd., Mauritus, UK.

ALANYALI ARAL, E. (2008) Peripheral Public Space - Type in Progress, *Public İstanbul: Spaces and Spheres of the Urban,* eds. F. Eckhardt, K. Transcript Verlag, Wildner, Bielefeld, Germany; 113-40.

ALANYALI ARAL, E. (2007) Kent İçi Otoyollarda Yol Boyu Yan-Mekânlar, *Arredamento Mimarlık* (204) 82-4.

ALANYALI ARAL, E., DEMİRBAŞ, Ö.O. (2015) Pedestrians' Perception of Sub-spaces Along Urban Roads -Case of Eskişehir Road in Ankara, *METU Journal of Faculty of Architecture* 32 (1) 45-64.

ALFONZO, M.A. (2005) To Walk or Not to Walk? The Hierarchy of Walking Needs, *Environment and Behavior* 37(6) 808-36.

APPLEYARD, D. (1981) *Liveable Streets*, University of California Press, London.

APPLEYARD, D., LYNCH, K., MYER, J. R., (1964) *The View from the Road*, The MIT Press, Massachusetts.

ARENDT, H. (1958) *The Human Condition*, The University of Chicago Press, Chicago.

BANERJEE, T. (2001) The Future of Public Space -Beyond Invented Streets and Reinvented Places, *APA Journal* 67(1) 9-21.

BARBAROS, S. (2005) *Creation of the Commercial Node: Söğütözü, Ankara / Merkezi İş Alanı Odağı Yaratımı: Söğütözü*, Master Thesis, Orta Doğu Teknik Üniversitesi, Ankara.

BERTOLINI, L. (2006) Fostering Urbanity in a Mobile Society: Linking Concepts and Practices, *Journal of Urban Design* 11(3) 319–34.

BERTOLINI, L., SALET W. (2003) Planning Concepts for Cities in Transition: Regionalization of Urbanity in the Amsterdam Structure Plan, *Planning Theory & Practice* (4)2 131-46.

BIANCHINI, F. (1990) The crisis of urban public life in Britain, *Planning Practice and Research* 5(3) 4-8.

BİLSEL, C. (2009) Ankara'da Kentsel Başkalaşım Karşısında Kentsel Kimlik Sorunu: Kent Merkezleri ve Kamusal Mekânlar, *Mimarlar Odası Ankara Şubesi Bülten*. Dosya 10(2) 33-46.

BLACK, B., COLLINS, A., SNELL, M. (2001). Encouraging Walking: The Case of Journey-to-School Trips in Compact Urban Areas, *Urban Studies* 38, 1121-41.

BOOTH, M., OWEN, N., BAUMAN, A., CLAVISI O., LESLIE, E. (2000) Social-cognitive and Perceived Environment Influences Associated with Physical Activity in Older Australians, *Preventive Medicine*, 31, 15-22.

CARMONA, M. (2010) Contemporary Public Space: Critique and Classification, Part One, *Journal of Urban Design* 15(1) 123-48.

CARR, S., FRANCIS, M., RIVLIN, L. G., STONE, A. M. (1992) *Public Space*, Cambridge University Press, Cambridge.

CASTELLS, M. (2000) *The Rise of the Network Society, The Information Age: Economy, Society and Culture* (volume 1), Blackwell publishing, London.

CERVERO, R. (1988) Land-Use Mixing and Suburban Mobility. *Transportation Quarterly* 42 429-446.

EWING, R., HANDY, S. (2009) Measuring the Unmeasurable: Urban Design Qualities Related to Walkability, *Journal of Urban Design* 14(1) 65–84.

FORSYTH, A., SOUTHWORTH, M. (2008) Cities Afoot—Pedestrians, Walkability and Urban Design, *Journal of Urban Design* 13(1) 1-3.

FRANK, L., ENGELKE, P., SCHIMID, T., KILLINGSWORTH, R. (n.d.) *How Land Use and Transportation Systems Impact Public Health: A Literature Review of the Relationship between Physical Activity and Built Form (Working paper #1).* [Access Date (01.03.2021).

GEHL, J. (1987) *Life Between Buildings –Using Public Space,* Van Nostrand Reinhold, New York.

GEHL, J., GEMZØE, L. (2001) *New City Spaces* (2. rev. ed.), The Danish Architectural Press, Copenhagen.

GILES-CORTI, B., VERNEZ-MOUDON, A., REIS R., TURRELL D., DANNENBERG, A.L., BADLAND H., FOSTER S., LOWE, M., SALLIS J.F., STEVENSON M., OWEN N. (2016) City Planning and Population Health: a Global Challenge, *The Lancet* 388 (December 10) 1-13.

GÜNAY, B. (2006) Ankara Çekirdek Alanının Oluşumu ve 1990 Nazım Planı Hakkında Bir Değerlendirme, *Cumhuriyet'in Ankara'sı* ed T Şenyapılı, ODTÜ Yayıncılık, Ankara; 61-118.

HALL, E.T. (1966) *Hidden Dimension*. Garden City, New York: Doubleday & Co. Inc.

HANDY, S.L. (1996) Understanding the Link Between Urban Form and Nonwork Travel Behavior, *Journal of Planning Education and Research* 15, 183-98.

HAYDEN, D. (1997) *The Power of Place: Urban Landscapes as Public History*, MIT Press, Cambridge, Massachusetts.

HERTZBERGER, H. (1991) *Lessons for Students in Architecture*, 010 Publishers, Mitgevenj, Rotterdam.

JACOBS, J, (1961) *The Death and Life of Great American Cities,* Random House, New York.

JACOBS, J. (1969) *The Economy of Cities*, Random House, New York.

JACOBS, A.B., MACDONALD, E., ROFE, Y. (2002) *The Boulevard Book: History, Evolution, Design of Multiway Boulevards,* The MIT Press, Massachusetts.

JIANG, B., CLARAMUNT, C. KLARQVIST, B. (2000) Integration of Space Syntax into GIS for Modelling Urban Spaces, *International Journal of Applied Earth Observation and Geoinformation* 2 161-71.

KWIATKOWSKI, K. (2010) Public space and its usurping appropriation, *Architektura,* Czasopismo Techniczne, 6 (2-A), Wydawnictwo Politechniki Krakowskiej.

LEFEBVRE, H., SMITH, D. N. (1991) *The Production of Space*, Blackwell, Malden.

LYNCH, K. (1960) *The Image of the City,* MIT Press, Cambridge, MA.

MATEO-BABIANO, I. (2016) Pedestrian's needs matter: Examining Manila's walking environment. *Transport Policy* 45 107-15.

MIERZEJEWSKA, L. (2011) Appropriation of Public Urban Space as an Effect of Privatisation and Globalisation, *Quaestiones Geographicae* 4(30) 39-46.

MONTGOMERY, J. (1998) Making a City: Urbanity, Vitality and Urban Design, *Journal of Urban Design* 1(3) 93-116.

NEMETH, J., SCHMIDT, S. (2011) The privatization of public space: modeling and measuring publicness, *Environment and Planning B: Planning and Design* 38 5-21.

NEWMAN, O. (1973) *Defensible Place*, Mac Millan, New York.

NIJENHUIS, W. (1994) City Frontiers and Their Disappearance, *AD Profile* 108 14-17.

NIJHUIS S., JAUSLIN D. (2015) Urban Landscape Infrastructures -Designing Operative Landscape Structures for the Built Environment, *Research in Urbanism Series* 3(1) 13-34.

OLDENBURG, R. (1989) *The great good place: Cafés, coffee shops, community centers, beauty parlors, general stores, bars, hangouts, and how they get you through the day*, Paragon House, New York.

ÖZER Ö., KUBAT A.S. (2014) Walkability Perceived and Measured Qualities in Action, *İTU|A-Z* 11 (2) 101-17.

PIVO, G., FISHER, J.D. (2011) The Walkability Premium in Commercial Real Estate Investments, *Real Estate Economics* 39 185-219.

PUNTER, J.V. (1990) The Privatisation of Public Realm, *Planning, Practice and Research* 5(3) 9–16.

RAPOPORT, A. (1990) *The Meaning of the Built Environment*, University of Arizona Press, Tucson, Arizona.

READ, S. (2006) *A Brief History of Flights to the Periphery and Other Movement Matters, Visualizing the Invisible: Towards an Urban Space*, Techne Press, Amsterdam.

RESMİ GAZETE (1985) Imar Kanunu [https://www.resmigazete.gov.tr/arsiv/18749.pdf] Access Date (22.06.2021).

ROBERTSON, S. (2007) Visions of urban mobility: the Westway, London, England, *Cultural Geographies* 14(1) 74-91.

SARKAR, S. (2003) Qualitative Evaluation of Comfort Needs in Urban Walkways in Major Activity Centers, *Transportation Quarterly* 4(57) 39-59.

SELES, E., AFACAN, Y. (2019) Exploring the Relationship Between Health and Walkability, *Open House International* 44(1) 44-52.

SOJA, E. W. (1996) *Thirdspace: Journeys to Los Angeles and Other Real - and - Imagined Places*, Blackwell, Malden, MA.

SOUTHWORTH, M. (1997) Walkable suburbs? An evaluation of neotraditional communities at the urban edge. *Journal of the American Planning Association* 63 28-45.

SPECK, J. (2012) *Walkable City: How Downtown Can Save America, One Step at a Time*, North Point Press, New York.

TATOM, J. (2006) Urban Highways and the Reluctant Public Realm, *The Landscape Urbanism Reader,* ed C Waldheim, Princeton Architectural Press, New York; 180-95.

TRANCIK, R. (1986) *Finding Lost Space*, Van Nostrand Reinhold, New York.

UYSAL BİLGE, F. (2021) Evolution of Public Space, *Journal of Architecture and Life* 6 (1) 141-56.

UYSAL BİLGE, F. (2020a) *An Exemplar Analysis and Method Proposal Intended for Development of Open Spaces Along Auto-Transport Corridors in Expanding Cities as Urban Public Space*, Unpublished PhD Thesis, Atılım University, Ankara.

UYSAL BİLGE, F. (2020b) A Comparative Study on The Evaluation of Urban Space Qualities and Urban Activities in The Relationship Between Public Realm And Private Space. *Gazi University Journal of Science Part B: Art, Humanities, Design and Planning* 8 (2) 565-75.

WHYTE, W. (1988) *City: Rediscovering the Center,* Doubleday, New York.

WHYTE, W. (1980) *The Social Life of Small Urban Spaces,* Conservation Foundation, Washington, D.C.

Alındı: 25.06.2021; **Son Metin:** 05.04.2022

Anahtar Sözcükler: Kentsellik; aktivite; kamusal mekân; yaya algısı; Ankara

ANA ARTERLER ÜZERİNDE GELİŞEN ODAKLARIN AÇIK MEKÂNLARINDA KENTSELLİK: DUMLUPINAR YOLU ÜZERİNDE SÖĞÜTÖZÜ ODAĞI

Kentlerde ana ulaşım arterlerinin kentsel saçaklanmaya ve yeni kamusal mekânların oluşumuna etkileri günümüzde önemli bir tartışma konusudur. Kentsel yollar düşünüldüğünde ana arterler hızlı yapılaşma ile birlikte önemli miktarda kentsel açık mekânın da oluşumunu tetiklemektedir. Araç yolları, yakın çevre ile uzak alanlardan farklı hızlarda dolaşımın biraradalığını sağlayarak kentsellik ve merkez özelliklerini ortaya çıkaran ana unsurlardır (Jacobs, 1969; Nijenhuis, 1994 ve Read, 2006). Bu bağlamda kent içi otoyollarda yol boyu yan-mekânlar, otoyolların yanında / altında / üstünde / arasında kalan ve kamusallık özelliklerine sahip mekânlar olarak tanımlanmış ve Ankara Eskişehir Yolu örneğinde yolun kent merkezine en yakın kısmı olarak Dumlupınar Yolu'nun Mevlâna Bulvarı'na yakın kısmında yayaların yan-mekân algıları daha önce araştırılmıştır (Alanyalı Aral ve Demirbaş, 2015). Bu çalışmada ise Söğütözü, kentin en önemli ulaşım arterlerinden biri üzerinde hızla artmakta olan yapı ve işlev yoğunluğuyla gelişmekte olan bir odak olarak tanımlanmakta ve ortaya çıkan açık alanlar bütünü kapsamında sergilediği kentsellik özellikleri tartışılmaktadır.

Söğütözü odağı uygun olmayan koşullara rağmen sürekli yaya yoğunluğu sergilemekte, bu özelliği ile Montgomery'nin (1998) 'kentsellik' kavramının üç bileşeninden biri olarak tanımladığı 'aktivite'yi önemli bir gösterge olarak örneklemektedir. Bu çerçevede yazın taramasında öncelikle kentsellik, aktivite ve kamusal mekân özellikleri üzerinden kavramsal bir çerçeve oluşturulmuş, daha sonra gelişmekte olan odaklar özelinde açık mekân stokunun bileşenleri 'yerlerin' mekânları ve 'akışların' mekânları (Nijhuis ve Jauslin, 2015) başlıkları altında incelenmiştir. Gelişmekte olan odaklarda 'yerlerin' mekânları, özel mülkiyetteki kamusal kullanım mekânları, ara-mekânlar ve enformel kamusal mekânlar -Dördüncü Yer (Aelbrecht, 2016); 'akışların' mekânları ise kentselliği destekleyen yaya mekânları olarak ele alınarak tartışılmıştır.

Alan çalışmasında Söğütözü odağının tarihi ve güncel gelişimi incelenmiş, odaktaki açık mekânların aktivite bazlı kentsellik özelliklerini değerlendirmek için konuyla ilişkili yaya gereksinimlerini temel alan kapsamlı bir model oluşturulmuştur. Odaktaki aktivite bazlı kentselliğin tanımlayıcı unsurları harita analizleri ve yerinde gözlemlerle, odaktaki yaya algıları ise uygulanan anketlerle araştırılmıştır. Sonuçlar, yaya erişiminin koşullu ve kesintili olması yanında fiziksel, psikolojik ve fizyolojik konforun sağlanamaması nedeniyle yaya deneyimini olumsuz etkilenmekte olduğunu; bununla birlikte çok ve çeşitli aktivitelerin alana canlılık kattığını ve yapıların kamusal / yarı-kamusal kullanım alanlarına giriş ve geçişlerde pek çok sosyalleşme mekânı oluştuğunu göstermektedir. Pandemi koşulları nedeniyle daha az ancak yine de karşılaştırılabilir sayıda kullanıcıyla yapılan anket çalışması, 2005-2007 yıllarında yapılan anket çalışmasındaki yaya algısı sorularıyla oluşturulmuş; gürültü gibi trafikle ilgili algılarının biraz artmasına karşın hava kirliliği ve trafik güvenliği sorunları algısının azaldığı, buna karşılık kamusal ve dinamik / canlı mekân algılarının belirgin bir şekilde arttığı ve gürültülü / yorucu mekân algısından sonra en yaygın algıyı oluşturduğu görülmüştür.

Sonuçlar, çok kullanımlı, büyük ölçekli ve parçacıl yapılaşmaların baskın olduğu Söğütözü odağında açık alanların aktivite temelli kentsellik çerçevesinde çevresel ve iç süreklilik yanında uygun yürüme ortamını da

sağlayamadığını, bu kapsamda bütüncül bir kentsel tasarım yaklaşımıyla ele alınmasının gereğini ortaya koymaktadır. Hızla gelişmeye devam eden bu odakta oluşan kentselliğin zamansal ve mekânsal sürekliliklerle desteklenebileceği; açık mekânlardaki motorlu araç baskınlığının olumsuz etkilerinin azaltılmasına yönelik düzenlemelerle yaya konforunun sağlandığı rotalar yanında tüm kullanıcılar için erişilebilir mekânlar, özenle tasarlanmış iç-dış mekân ilişkileri, kültürel kullanımlar, küçük ölçekteki işletmeler ve zamana yayılan aktivitelerle zenginleştirilmesi gerektiği görülmektedir.

URBANITY IN THE OPEN SPACES IN DEVELOPING NODES ALONG MAIN ARTERIES: SÖĞÜTÖZÜ NODE ON DUMLUPINAR ROAD IN ANKARA

The effects of the main transportation arteries on the urban sprawl and the formation of new public spaces is an important topic of discussion today. Considering the urban roads, major arteries trigger fast development and the formation of a significant amount of urban open space together with buildings. Vehicular roads are the main elements that bring out urbanity and centrality by providing a combination of circulation at different speeds and making possible the interaction of users from local and remote areas (Jacobs, 1969; Nijenhuis, 1994 and Read, 2006). In this context, sub-spaces were defined as public spaces that are beside / under / above / between / within vehicular roads and the sub-space perceptions of pedestrians in the case of the closest part of Ankara Eskişehir Road to the city center, were investigated in an earlier study (Alanyalı Aral and Demirbaş, 2015).

In the current study, Söğütözü is defined as a developing node with its rapidly increasing built stock and function density on one of the most important transportation arteries of the city, and its urban features are discussed within the scope of the emerging open spaces. Despite the unsuitable conditions, Söğütözü node displays a constant pedestrian density, and with this feature, it exemplifies 'activity' as an important indicator, which Montgomery (1998) defines as one of the three components of the concept of 'urbanity'. Accordingly, a conceptual framework is developed on the characteristics of urbanity, activity and public space, and then the components of the open space stock are discussed within the scope of spaces of 'places' and 'flows' (Nijhuis and Jauslin, 2015) specific to developing nodes. Spaces of 'places' in developing nodes include privately owned public use spaces, in-between spaces and informal public spaces -'fourth place's (Aelbrecht, 2016). The spaces of the 'flows', on the other hand, are discussed as pedestrian spaces that enhance urbanity.

In the case study, firstly the historical and current development of Söğütözü node is examined, and then a comprehensive model based on the relevant pedestrian needs is suggested to evaluate the activity-based urbanity in the node. The defining elements of the activity-based urbanity are explored via map analysis and on-site observations, whereas the pedestrian perceptions in the node are investigated with the applied questionnaires. The results show that the pedestrian experience is negatively affected due to the conditional and intermittent pedestrian access, as well as the inability to provide physical, psychological and physiological comfort; nevertheless, many and various activities add vitality to the area which result in many informal public spaces (fourth places) formed at the entrances and transitions to the public and semi-

public spaces. The questionnaire survey, which was conducted with fewer but still comparable numbers of users due to the pandemic conditions, included the pedestrian perception questions in the survey conducted in 2005-2007. It is seen that although today the perception of traffic such as noise increased slightly, the perception of air pollution and traffic safety problems decreased. Additionally, the perception of public space qualities like well-known and dynamic / lively spaces increased significantly and constituted the most common perception after the perception of noisy / tiresome space.

The results reveal that open spaces in the node of Söğütözü, where mixed use, large-scale and fragmented complexes are dominant, cannot provide environmental and internal continuity as well as appropriate walking environment within the framework of activity-based urbanization, and thus necessitate a holistic urban design approach. The urbanism formed in this rapidly developing node can be enhanced by temporal and spatial continuities; in addition to provision of pedestrian comfort with the arrangements to reduce the negative effects of motor vehicle dominance. The overall evaluation validates that the open spaces in the node should be enriched with accessible spaces for all users, carefully designed indoor-outdoor relations, cultural uses, small-scale businesses and activities spanning time.

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METU JFA 2022/1
(39:1) *193-214*

DOI: 10.4305/METU.JFA.2022.1.9

EVALUATION OF THE INTEGRATION OF BIKE ROUTES TO THE RAIL TRANSPORT SYSTEM IN ZEYTİNBURNU DISTRICT

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Received: 17.01.2021; **Final Text:** 20.04.2022

Keywords: Space syntax; bikeability; İsbike; bicycle routes; Zeytinburnu

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INTRODUCTION

The rapid transformation of socioeconomic mobility in urban areas, population growth, and the growing physical environment poses many problems for citizens. The main problem is related to traffic; therefore, public transportation is the key issue in highly populated urban areas. Increasing individual use of automobiles leads to environmental issues in urban areas, such as traffic congestion, noise pollution, and air pollution, thus affecting urban accessibility negatively.

The harmony and integration of all transportation modes, such as pedestrian, bicycle, motor vehicle, bus, and rail systems, are important for healthy and safe mobility (Yıldırım et al., 2021). In addition, integrated bicycle and public transportation reveal energy-efficient, environmentally friendly cities, promoting alternative transportation (Saplıoğlu and Aydın, 2018). Strategic sustainable urban transport planning is one of the main goals to improve cycling and reduce automobile use in developing and developed countries (Iacono et al., 2010; Litman et al., 2000). In this regard, bicycles can replace individual vehicles for short and middle-distance journeys when used as a part of the integrated transfer along with public transportation. Moreover, the bicycle stations and bike rental services are offered by municipalities worldwide, which support bicycles as a sustainable alternative in relation to public transportation and promote their integration (Frumkin et al., 2004).

The use of bicycles is the basis of the concept of bikeability, which can be defined as an individual's desire to use a bicycle as a means of transport or physical activity (Neilsen and Skov-Petersen, 2018). Bikeability is measured based on the suitability of infrastructure elements for the use of bicycles, such as the effectiveness of bicycle routes (bikeways, shared roads, road lines, signs and markers, and lighting), parking lots, interaction with motor vehicle traffic, topography, relationship with green areas, and an individual's capacity and aim to ride a bicycle (Lowry et al., 2012).

The present study aims to analyze the relational structure of the city to integrate bicycle roads into rail transport systems and envisage solutions for bikeability (**Figure 1**). Zeytinburnu, which one the largest districts in İstanbul, was selected as pilot study area to increase the use of bicycles as a means of physical activity and recreation and as an integrated part of rail transportation back in 2002. Two projects were launched in Zeytinburnu; the first was in 2002, namely Istanbul Bicycle-Route Planning by IBB. The second was in 2009 (BAKSI, 2021), namely Integrated Smart bicycle-sharing System (İsbike). İsbike stations and bicycle routes (shared and segregated bicycle routes) are not only located in the coastal line and green areas now in 2022; in fact, the Zeytinburnu district has bicycle routes of 44 km. and 37 bicycle stations, which are closely related to the public transportation networks in the district. Therefore, the Zeytinburnu district in Istanbul was selected as a case study area in this research. The present study method consists of three phases, (P1) The physical structure of the distirict is analyzed with space syntax methods, (P2) New bicycle routes are generated depending on the bicycle and rail transport data, and (P3) Bicyclists experienced these routes and evaluated the routes related to physical, environmental and visual factors with a survey.

LITERATURE REVIEW ON BIKEABILITY AND ITS INTEGRATION INTO THE CITY

Bikeability

Cycling is a green and active form of travel that assists physical activities, consumes minimal energy, and produces pollution (Lin and Wei, 2018). For this reason, local and national governments increase their efforts to design bicycle-friendly cities to promote bicycle use in integration with public transport stations in short and medium distances for mobility planning (Vietinghoff, 2021; Yang et al., 2019). A comprehensive strategy needs to be developed, infrastructure planning, design criteria, and integration with other modes of transport to support cycling in cities and ensure the bikeability of urban space (Meireles and Ribeiro, 2020). In the current literature, it becomes interesting first to review the built environment attributes to establish the nature of cycling. The built environment includes the physical elements of the urban space, its spatial configuration, public transportation systems, and the environmental psychology of the people living in the city (Handy et al., 2002). Studies examine the relationship between bicycle use and the built environment through criteria such as bicycle infrastructure and services, traffic safety, land use mix, integration with the public transport system, comfort, and attractiveness (Piatkowski and Marshall, 2015; Osama et al., 2017). Thus, the design of urban spaces that are suitable for bicycle use is essential for the sustainable development

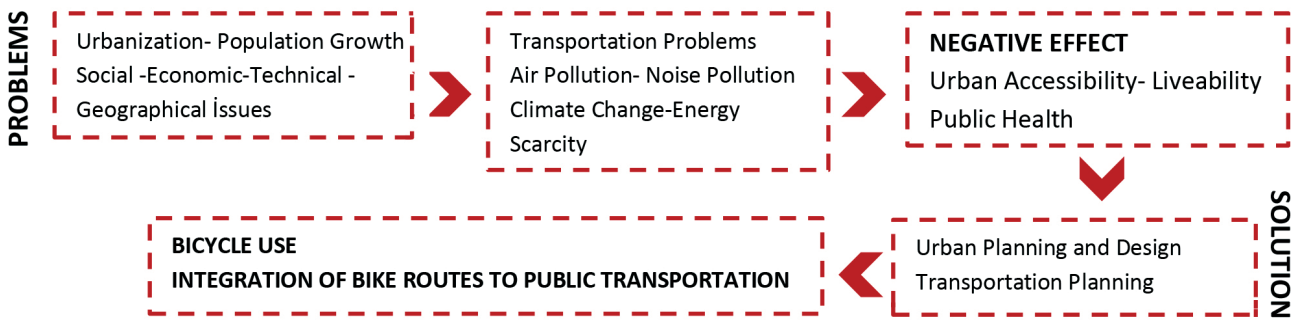


Figure 1. Problem and suggested solution of the study

of cities. Regarding this, the concept of bikeability and its evaluation criteria include variables related to urban form.

Bikeability is the desire and ability of a person to ride a bicycle and the suitability to the urban space. It is used as a basic concept of the possibility of the citizen choosing the bicycle as a mode of transportation or entertainment. There are a lot of important research on bikeability, some of which are bicycle route conditions and levels of service (Lowry et al., 2012), bicycle friendliness (Krenn et al., 2015), bicycle accessibility (Saghapour et al., 2017), and the concepts of cycling quality (Grigore et al., 2019), which provides a clear definition of bikeability in the context of urban mobility.

For the concept of bikeability, which is a combination of objective and subjective factors, the factors affecting cycling have been investigated (Dill and Voros, 2007; Fraser and Lock, 2011). Moreover, street networks, including streets, roads, bridges, and bikeways, are researched for their role in shaping the travel behavior of travel modes (Boeing, 2019; Emmanouilidis, 2013). The spatial configuration of the city is one of the most critical factors affecting bikeability (Alattar et al.,2021). The theory of natural movement, which Hillier et al. (1993) put forward, indicates that the urban space configuration and street layout are formatted for the individual, and many studies support this (Hillier et al., 1993; Hillier and Iida, 2005; Manum and Nordstrom, 2013; Alattar et al., 2021). For this reason, cyclist behavior and urban space order are closely related. Efforts are being carried out to promote sustainable urban transportation planning, evaluating and integrating bicycle infrastructure with the sustainability of individual prosperity and urban environments for regular use of bicycles in urban areas (Castañon and Ribeiro, 2021). Despite these studies, there is a lack of research into bicyclists' route selection and the role of the spatial configuration on cycling activity (Law et al., 2014, Manum et al.,2017). Therefore, in this study, the Space Syntax method is used to evaluate bikeability and the relationship of the spatial configuration of the urban built environment.

Moreover, bicyclists' route selection behaviors and preferences are multidimensional and complex. Empirical studies on the use of bicycles and route selection have demonstrated that bicycle users took several criteria, such as distance, the number of crossroads, bicycle stations, and safety, into account (Broach et al., 2011; Dill and Carr, 2008; Winters et al., 2011). It is of utmost importance to analyze physical and behavioral factors which influence route selection in detailed transportation models and create new approaches to reshape new routes in light of these factors.

Studies on modeling the route selections of bicyclists have various limitations, including lack of detailed biking data, quantification of spatial analysis, and use of non-spatial models (Liu et al., 2016; McCahill and Garrick, 2008; Orellana and Guerrero, 2019; Raford et al., 2007). Studies with traditional data sources argue that spatial details are insufficient in route planning. New emerging technologies and data sources are used to collect remote detection images, mass resource utilization, and GPS data from mobile devices (Winters et al., 2016; Alattar et al., 2021). These data collecting methods are useful to evaluate bikeability in large-scale comparisons. However, they evaluate very limited aspects of cycling, keeping subjective indicators out of evaluation. In this study, the bikeability concept is evaluated in a comprehensive manner using subjective and objective methods to fill this gap, and numerical findings on the performance of these routes are obtained.

Bikeability in Turkey

The use of bicycles in Turkey is relatively low due to the various infrastructure problems, insufficient bicycle roads and parking lots, and social unawareness. Nevertheless, in recent years, interest in bicycles has increased in some cities of Turkey, paving the way for new projects related to the improvement of biking infrastructure and focusing on more transportation projects (IBB, 2020). Bikeways have been constructed in some major cities such as Bursa , Ankara , Konya, Samsun, Denizli, Eskişehir , Antalya, Sakarya, Kayseri, İzmir, and İstanbul. However, since these roads are not yet integrated into the existing public transportation systems and there are insufficient bicycle routes in these cities, bicycles have still not been as widespread as they should be. Therefore, it is always necessary to plan bikeways and routes within the scope of transportation networks, determine design criteria, analyze the physical and social conditions of the urban space, and understand bicyclists' specific needs.

When legal and administrative initiatives are analyzed, it can be observed that *Bisiklet Yolları Yönetmeliği* (Regulation on Bicycle Roads) was published by the Ministry of Environment and Urbanization in 2019, underlines the importance of planning bikeways as an integrated part of public transportation networks and other vehicles. This guide aimed to pioneer various implementations that would increase the economic, environmental, and social benefits of the bicycle as a means of transport and offer various social, technical, and economic information about the pre-and post-construction period of bicycle roads through examples from major projects (Ministry of Environment and Urbanization, 2019). The guide also emphasizes that bicycle roads should not only be planned for physical and recreational activities but also as integrated systems to rail transport. In this respect, it envisaged a detailed route-planning process and model to offer solutions to different transportation goals. The factors that need to be analyzed in the route-planning model were divided into three main topics as physical, environmental, and visual factors.

This study focuses on Istanbul, as the largest city of the country with a population of over 15 million people with a population of over 15 million people, in the framework of various urban planning projects. For this purpose, firstly, the regulation prepared by the Directorate of Transportation and Coordination of IBB has been reviewed. The publication of *Istanbul Bike Route Planning*, launched in 2002, was followed by the IBB Transportation Planning Directorate in 2006 by the publication *Analysis, Planning Istanbul Bike and Pedestrian roads*. Finally, the IBB Transportation and Coordination Directorate prepared the Istanbul Bicycle Master Plan in 2019. Introduced as the first bicycle road planning project, it envisages and proposes a total bicycle road of 630 kilometers for the whole city. The project specified specific objectives and main strategies by considering social, spatial, environmental, and economic benefits. In this paper, current conditions, legislation, and standards were analyzed, and the existing bicycle transportation infrastructure was evaluated based on the physical environment data of the city. İsbike's bicycle stations are also analyzed, which are used as means of transport and recreation, helping to increase the popularity of bicycles. In addition, these data offer valuable information regarding the diversity of bicyclist profiles in Zeytinburnu. Finally, new bicycle routes were planned in the existing Istanbul rail transportation network (**Figure 2**) and recreational purposes of providing

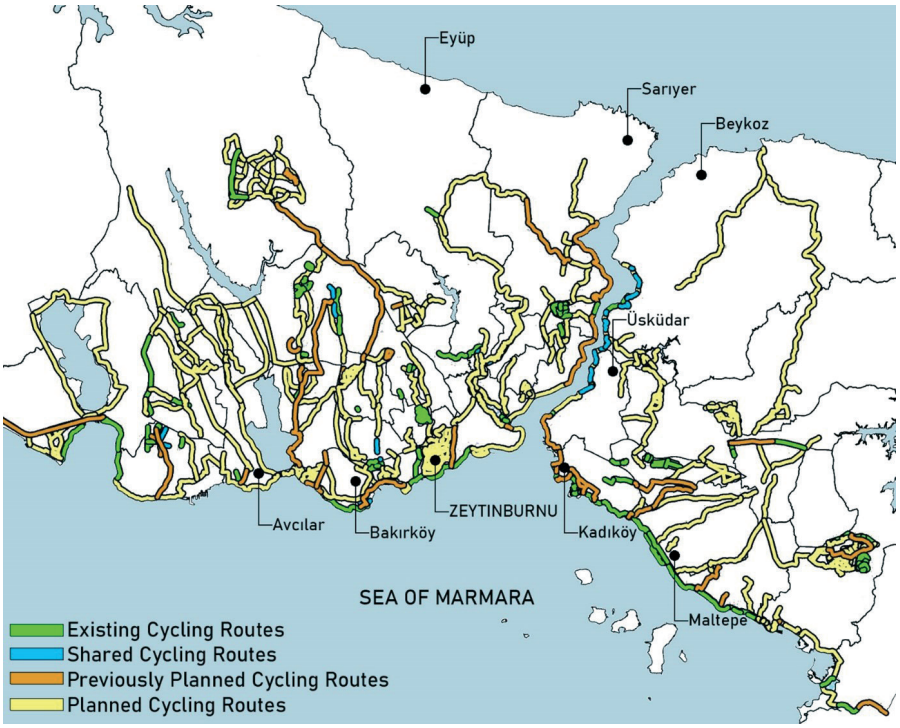


Figure 2. Suggested bicycle routes for Istanbul Metropolitan Area (IBB Directorate of Transportation and Coordination, 2020).

insight into Istanbul's potential bicycle road construction projects (IBB, 2020).

Bicycle and Rail Transport Integration and Bike-Sharing Systems

The bicycle is a healthy, reliable, economical, and sustainable alternative to mobility for integration into the public transport system over short and medium distances (Pucher and Buehler, 2008). The integration of the bike roads with public transport systems has been planned in many ways in history. The process started in 1940 with bicycle use in ferries, buses (1970), and railways in 1980 (Schneider, 2005). These studies aim to increase the use of public transportation and cycling to improve sustainable urban mobility. However, there is still not enough research on the spatial configuration analysis of the city in terms of bikeability (Saplıoğlu and Aydın,2018).

Station-based bike-sharing systems are being developed to improve sustainable urban mobility and increase physical activity (Zhang and Mi, 2018; Mrkajić and Anguelovski, 2016). These systems are being enhanced in cities to expand sustainable urban mobility and physical activity. They are implemented to complete the scope of public transportation networks easy to reach in urban areas (Shaheen et al., 2013). Bicyclists can rent, ride and return to stations at any time. Many services, such as station security, availability ratio, and the intensity of use, need to be provided and managed (Shui and Szeto, 2020). In means of coordinated use of cycling and public transport, there are several studies in the literature to measure the performance of integration between bike-sharing and public transport systems (Shaheen et al., 2013). In addition, the relationship between the behavior of bicyclists, route preferences, and their determinants is of great importance (Saplıoğlu and Aydın, 2018). These studies highlight the importance of user preferences for cycling and public transport integration. However, there is not enough research on public transportation and

bike-sharing system integration and evaluation as holistic and qualitative research. This study will be a novel one to examine bike and rail transport integration, bike-sharing systems, urban space interaction, and user experiences.

Space Syntax Based Research on Bikeability

Space syntax methodology was introduced in the 1970s to analyze a living space in terms of its architecture, urban planning, and user interactions from a social perspective. Focusing on *probabilities* and *realities,* the space syntax method aims to conclude the factual data obtained from functional, spatial, and formal interactions between a city and its citizens (Hiller and Hanson, 1984; Raford et al., 2007). Space syntax adopts a multidisciplinary approach; it can be used to evaluate the sociophysical development of a city and adopt relevant strategies to offer solutions to urban problems (Özbek and Özer, 2014).

Many studies dealing with space syntax to model bicycle users' route-selection behaviors can be found in the existing literature. Paul (2011) demonstrated that origin-destination data could be used for a detailed analysis and the improvement of transportation problems, such as traffic congestion, safety, and infrastructure, and the development of strategies for these problems. Raford et al. (2007) employed space syntax in a study to predict bicycle users' route selection behaviors in central London through an analysis of urban transportation networks. They concluded that bicyclists usually benefited from routes with less angular changes, revealing a strong correlation between them. McCahill and Garrick (2008) evaluated and tested various space syntax values through data obtained from Cambridge, MA, to model the distribution of bicycle volume in the urban transportation network and created a linear regression model including population density and distribution of workers as well as a space syntax measurement that estimates the number of total bicyclists accurately. Manum and Nordstrom (2013) surveyed to map bicyclists' route selections and compared them with the results of space syntax analysis.

It can be observed in these studies that space syntax analysis is a popular method of modeling bicycle users' route-selection behaviors. However, it must be noted that several factors limit space syntax analysis. Thus these studies were strengthened by other research methods, such as surveys, observation, and bicyclists' experiences of route selection.

MATERIAL AND METHOD

The method used in this study consists of three phases: In Phase 1, a space syntax analysis has been done to conduct depth and integrity measures of Zeytinburnu district. The road data is obtained from the OpenStreetMap web application, roads that are not suitable for bicycles are detected (Data Set 1). The aim was to analyze physical patterns, the network of topological relationships, and mobility potentials in Zeytinburnu. To this aim, DepthMapX software is used for connectivity, integration, and metric choice analysis (**Figure 4**).

In Phase 2, this data is used to generate suitable bicycle routes to detect the start and end İsbike stations. Related public transportation data were obtained from IBB Transportation/ Coordination Department, the 2019 user number data (yearly) of Zeytinburnu Metro Station, Topkapı Tramway Station, Zeytinburnu Marmaray Station, and Kazlıçeşme

Marmaray Stations are obtained (Data Set 2). Also, İsbike's 2019 year-round bicycle rent count is obtained depending on each station. With the use of these data, among 35 İsbike stations in Zeytinburnu, it is aimed to generate four different routes between each start and end station pair. Each route is decided to have four İsbike stations on it (starting station, first station, second station, end station). Finally, 24 possible bicycle routes are generated with DepthMapX software.

Finally, in phase 3, these 24 routes were experienced by independent bicyclists. Their experiences were recorded. This data was used to understand the users' views on and perceptions of the bicycle routes in the district. Eight bicyclists volunteered from a local bicycling club, and their experiences were recorded through the Strava application (Data set 3) (**Table 1**). After the rides, the bicyclists are asked to answer a survey. The survey asked them to answer the questions and rate the criteria related to physical, environmental, and visual factors. The integration scores are calculated depending on the bicyclists' answers and ratings. The formula of the integration value is generated by the authors, focusing on the importance of each criterion. Finally, the integration score of each bicycle route was calculated and evaluated and shown in **Table 3**. These three stages were analyzed together to reveal the potential of each bicycle route.

CASE STUDY

Zeytinburnu is one of the major problem areas in Istanbul in terms of traffic congestion and transportation problems due to its central position in the city. It has a flat topographic structure and an active intersection of transportation systems with Marmaray and M1-A metro lines, T1-T4 tram lines, and Metrobus stations. To overcome these traffic problems, Zeytinburnu Municipality launched a bicycle mobility project, "ZEYBİS", to offer transportation solutions and raise public awareness on environmental and health issues. A similar project organized by EMBARQ (2014), states that when the safety level of the bicycle pathways within the district become acceptable, cyclists, including cyclist communities and independent women, men, and children, use bicycle for transportation. The same situation happened in Zeytinburnu; at the same time, various activities and contests have been organized to increase the use of bicycles and raise awareness about this issue, and İsbike data shows that the bicycle rent count is gradually increasing (IBB, 2020).

Phase1- Space Syntax Analysis	
Data Set 1	**Analysis Method**
• District maps are derived from Open Street Map web application, • The roads which are not suitable for bicycle are detected,	• Space Syntax analysis (depth and integrity) is done with DepthMapX software
Phase2- Route Generation with the data from IBB Transportation/ Coordination Department and Isbike	
Data Set 2	**Analysis Method**
• Density of users for 2019 year round: Zeytinburnu Metro, Topkapı Tramvay, Zeytinburnu Marmaray and Kazlıçeşme Marmaray Stations. • Density of usage for 2019 year round: İsbike Stations. • Route 141-143 bicycle route data from "İstanbul Bicycle Main Plan" of IBB Transportation/Coordination Department	• Route Generation for bicycles,
Phase3- Bicyclists experience through the routes	
Data Set 3	**Analysis Method**
• Bicyclists rode 24 Routes, and the data is collected through the Strava application, • A survey is replied by bicyclists.	• Survey analysis, determining integration and correlation values on physical, visual and environmental factors.

Table 1. Material and method of the study

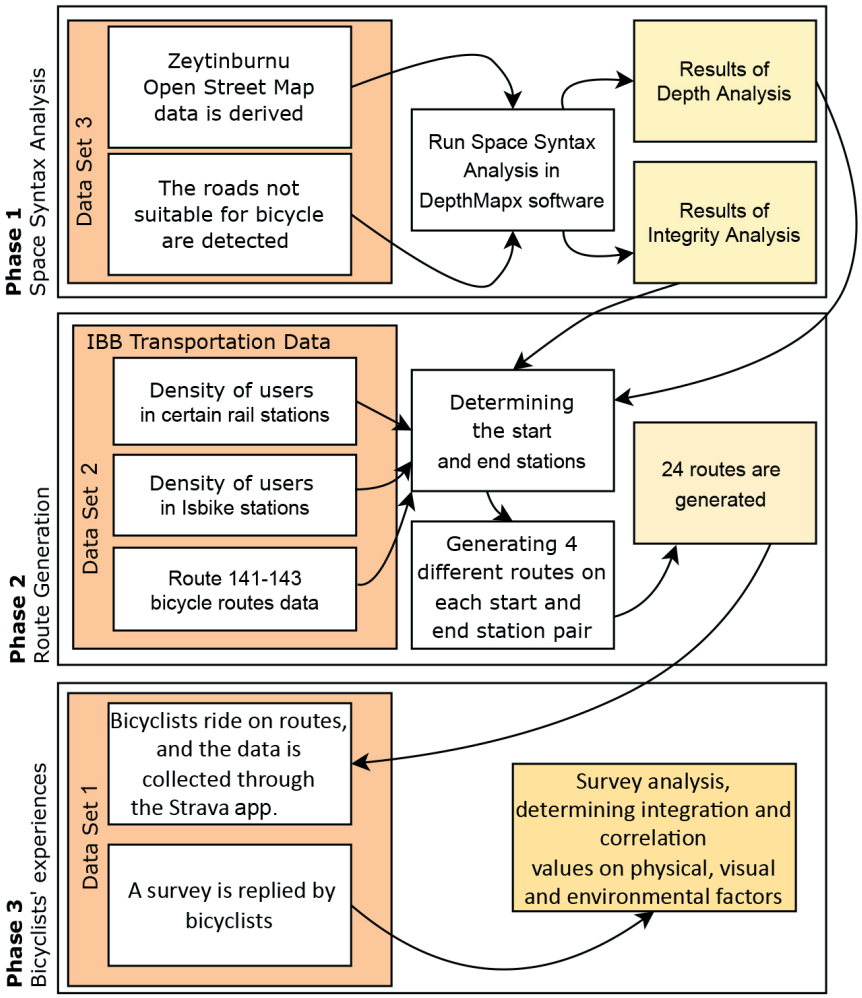


Figure 3. Flow chart of the method

Out of 102 İsbike stations in the European side of Istanbul, 37 active İsbike stations are currently located in Zeytinburnu, which aim to popularize bicycles and encourage citizens to use rental bicycles as a means of public transport transportation. Beyond functioning as a recreational activity for bicycle users, these stations are located in different parts of the district to better integrate into the existing public transportation systems and thus allow citizens to travel easily. This site was also selected as a pilot area by İsbike back in 2009, and the use of bicycles was supported by both IBB and Zeytinburnu Municipality through various slogans drawing attention to a healthy life and an environmentally friendly transportation system.

A study by IBB in 2020 demonstrated that Zeytinburnu has a characterized historical urban structure but developed without a proper urban planning project, making it unsuitable to support bicycle roads. In addition, since the physical conditions of the road networks were not feasible for a separate bicycle road, a shared bicycle road that would contribute to the bicycle transportation network was proposed and constructed in Zeytinburnu (**Figure 3**).

Phase 1: Zeytinburnu Space Syntax Analysis

The Space Syntax method is a model where spatial configurations are graphically analyzed based on dynamic and static measurements (Hillier et

al., 1993). Space Syntax Analysis is also done in the Zeytinburnu district to analyze the connectivity, integration, and choice parameters. Connectivity value is the number of neighbors directly connected to any place. The integration value is the normalized value of the distance of any field from all other fields. The metric selection is calculated by calculating the number of times each segment falls on the shortest path between all pairs of segments within a selected distance measured in metrics (Hillier et al., 1993).

In **Figure 4**, the graphic represents the shortest and longest lines describing all urban space gaps. The axial map is created with these lines. Each axis line at the intersection points is divided by other lines, producing a segment map based on the axial map. A segment map calculates integration and selection measurements of a specific urban street network, and connectivity is measured (**Figure 4a**). After the axial and segment maps are converted into graphs and topological (metric choice) analytics (Figure 4-c), a linear link-based integration analysis is presented (**Figure 4b**), and accessibility is expressed spatially, not in metric terms. Integration among various syntax measures is the most important criterion when applied to the segment and axial maps of the space syntax. The value of an integration line in a segment or axial map is defined for the shortest paths between the line and all other lines on the network. It also analyzes how each axis is associated with others in terms of integration analysis and routing. In space syntax analysis, geographical information and urban data for the study area were obtained from the OpenStreetMap database (Minghini and Frassinelli, 2019), a free, online geographic information service and database of street-level features. This study considered only bicycle-friendly roads' data for spatial analysis due to the Bicycle Roads Regulation (IBB, 2020).

This space syntax analysis is based on the interpretation of connectivity, integration, and metric choice parameters to analyze the movement potential of the cyclists in the field. First, the axial map of the district is created. Then angular integration and selection values were calculated on the axis map created using the DepthmapX software to represent the potential for movement. The analysis is limited to 1000 m. radius to determine bike motion. These analyses are also used for generating routes (**Figure 4d**) in Section 4.2.

Figure 4. Space Syntax analysis of Zeytinburnu District from DepthMapX (a) Connectivity, (b) Integration, (c) Metric Choice Analysis and (d) Generated routes

Figure 4 shows the segment angular integration of Zeytinburnu, highlighting the axes with high integration. Unexpectedly on this map, 10. Yıl Caddesi is not the city's most integrated road, probably because its connections between these streets and other streets aren't enough. However, the start and end of this street are the stops and İsbike stations of the public transportation system. In addition, Zübeyde Hanım Caddesi has the highest level of integration, Prof. Turan Güneş Caddesi and İnönü Bulvarı have also a high integration value. Integrated streets are the regions in the district with commercial and cultural centers and university campuses.

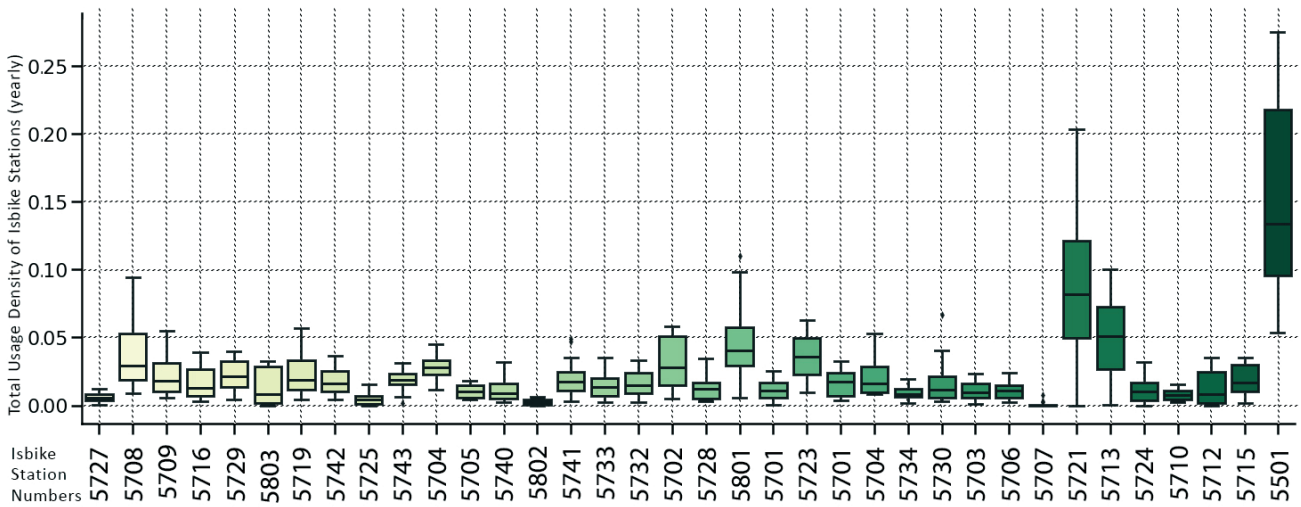
Phase2: Route Generation with transportation data

The Zeytinburnu have different types of bicycle lanes, only one of them is segregated (Route 3), but most of them are shared roads. Zeytinburnu Municipality built the bicycle roads. Whereas, İsbike stations are built in certain locations, can be seen in **Figure 6**. The main problem is, it has never been evaluated as if the İsbike stations are built in the proper spots to integrate the rail transport system with the bicycle roads. Within this perspective, possible bicycle routes are defined by authors between the main rail transport stations and İsbike stations.

Based on the number of times a bicycle is rented or left at that station, the rental rate of each bicycle station was calculated using İsbike data released by the IBB Directorate of Transportation and Coordination in 2020. Yearly usage data of İsbike stations are evaluated in the box diagram shown in **Figure 5**; total usage density shows the renting performance of that station. For instance, İsbike station 5702 was used at a similar rate in all quarters throughout the year. However, despite a higher usage rate than the station mentioned earlier, 5501 5721 displayed significant variations depending on the season. When spatial data of İsbike stations are visually represented on the map based on their usage rates, it can be observed that bicycle user density is higher in different zones, such as residential areas, major public institution buildings, university campuses, and centers of attraction, such as shopping malls. Therefore, it can be concluded that the densest İsbike stations are 5501 and 5721 (**Figure 5**).

The spatial and statistical data obtained from the different modes of rail transportation, such as Metro, Marmaray, Tramway, and İsbike bicycle

Figure 5. User density of İsbike stations (green bars show the change in the number of rentals in a year, while the black error bars show the standart deviation of a station)



stations, reveal that the region has gained more urban accessibility in recent years. In this phase of the method, bicycle routes were generated between the rail transport stations to evaluate the bikeability and reveal the integration of bicycle travel with other rail transport modes. In **Figure 6** (left image), the main rail transport stations are determined, and four different bicycle routes between each pair. **Figure 6** (right image) shows the exact path of each route, also pointing out the İsbike stations. Starting and ending points of these routes are Zeytinburnu Metro Station, Topkapı Tram Line, Zeytinburnu Marmaray Line, and Kazlıçeşme Marmaray Stations (**Figure 7**). During the route-generation phase, in line with space syntax analysis taken into consideration, 24 different bicycle routes were created that will intersect with two İsbike stations on the route. These routes have been designed as round trips, considering the use of the road and existing shared bicycle roads.

Phase 3: Experience and Evaluation of the Routes

After routes were generated in section 4.2, it is decided to get the ideas of the bicyclists on the bikeability of these routes. Therefore, eight bicyclists from a local bicycling club familiar with the area participated in the study. Three independent bicyclists tested these 24 routes (Table 2), and their experiences, speed and stop points were recorded via Strava application (mobile app). The bicyclists are coded as BR1, BR2, … BR 8, and each

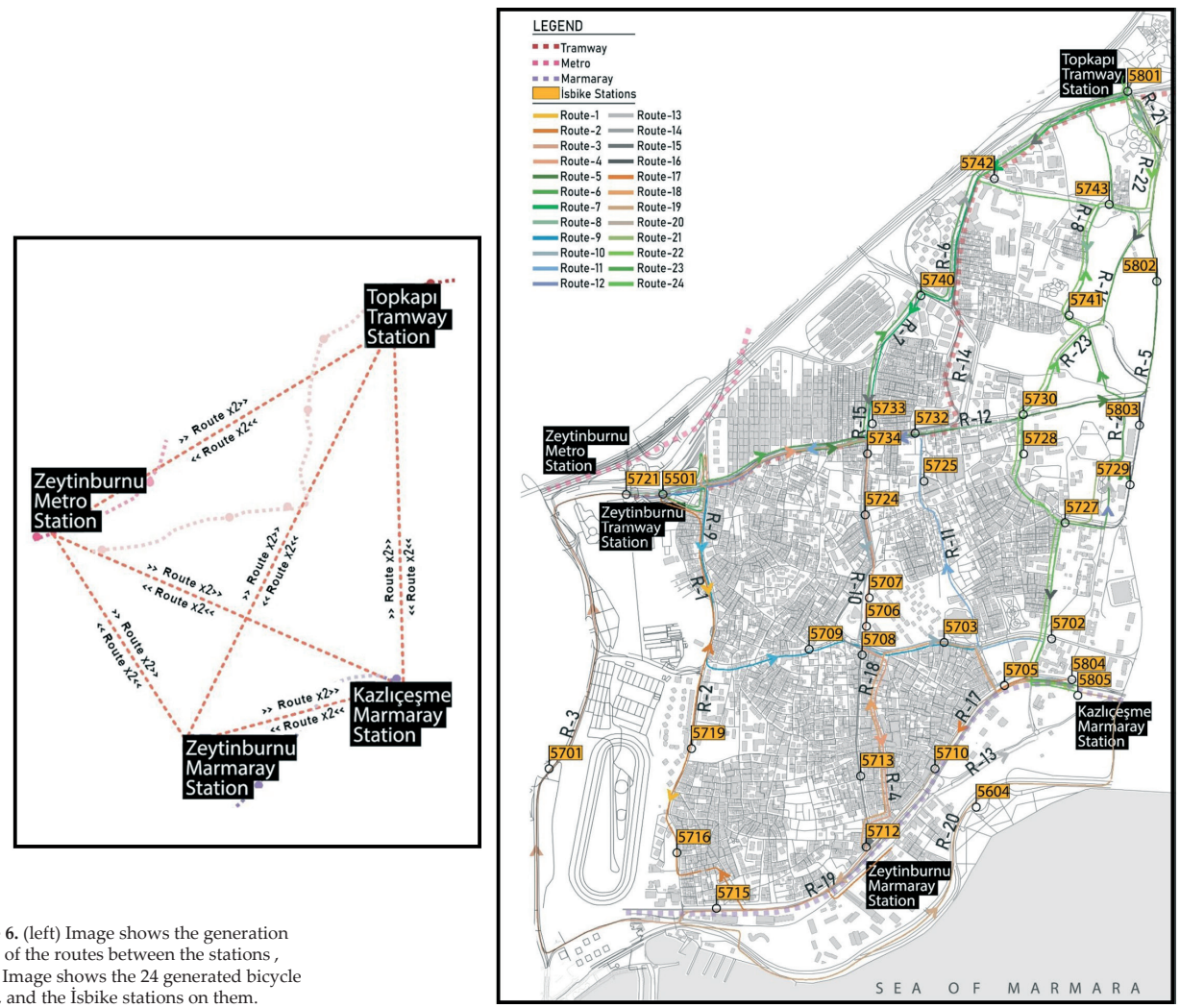


Figure 6. (left) Image shows the generation matrix of the routes between the stations , (right) Image shows the 24 generated bicycle routes, and the İsbike stations on them.

	public transport start point (also an İsbike station)	first stop (FS1)	second stop (SS1)	third stop (TS1)	final stop (FS2)	total distance (km)	
Route 1	Metro (Zeytinburnu)	5501 Zeytinburnu Metro 1	5719 Bozkurt Camii	5716 80. Yıl Cumhuriyet Parkı	5712 Zübeyde Hanım Cad. (Marmaray Zeytinburnu)	3,73	Between Zeytinburnu Metro - Zeytinburnu Marmaray
Route 2	Metro (Zeytinburnu)	5721 Zeytinburnu Metro 2	5719 Bozkurt Camii	5715 Zübeyde Hanım Caddesi 3	5712 Zübeyde Hanım Cad. (Marmaray Zeytinburnu)	3,68	
Route 3	Marmaray Zeytinburnu	5712 Zübeyde Hanım Cad. (Marmaray Zeytinburnu)	5715 Zübeyde Hanım Caddesi 3	5701 Veliefendi Hipodrom	5721 Zeytinburnu Metro 2	5,60	
Route 4	Marmaray Zeytinburnu	5712 Zübeyde Hanım Cad. (Marmaray Zeytinburnu)	5713- Zeytinburnu Noterliği	5706- Zeytinburnu Kaymakamlık	5501 Zeytinburnu Metro 1	3,35	
Route 5	Metro (Zeytinburnu)	5501 Zeytinburnu Metro 1	5730- Zeytinburnu İmam Hatip Lisesi	5802 Kozlu Otobüs Durağı	5801 Topkapı Tramway Durağı	4,32	Between Zeytinburnu Metro- Topkapı Tramline
Route 6	Metro (Zeytinburnu)	5721 Zeytinburnu Metro 2	5734 Zeytinburnu Belediyesi Aşevi	5740 Kiptaş Merkezefendi Meydanı	5801 Topkapı Tramway Durağı	4,97	
Route 7	Topkapı Tramline T1	5801 Topkapı Tramway Durağı	5740 Kiptaş Merkezefendi Meydanı	5733 Mevlana Caddesi	5501 Zeytinburnu Metro 1	4,84	
Route 8	Topkapı Tramline T1	5801 Topkapı Tramway Durağı	5743 FSM Üniversitesi	5732 Öğretmenler Parkı	5721 Zeytinburnu Metro 2	4,89	
Route 9	Metro (Zeytinburnu)	5501 Zeytinburnu Metro 1	5709 74. Sokak	5703 Zeytinbunu Akdem	5804 Kazlıçeşme Marmaray 1	3,39	Between Zeytinburnu Metro- Kazlıçeşme Marmaray
Route 10	Metro (Zeytinburnu)	5721 Zeytinburnu Metro 2	5733 Mevlana Caddesi	5707 Zeytinburnu Kültür Merkezi	5805 Kazlıçeşme Marmaray 2	3,54	
Route 11	Marmaray Kazlıçeşme	5804 Kazlıçeşme Marmaray 1	5725 Dr. Sadık Ahmet Sokak	5732 Öğretmenler Parkı	5501 Zeytinburnu Metro 1	3,69	
Route 12	Marmaray Kazlıçeşme	5805 Kazlıçeşme Marmaray 2	5727 100. yıl Meslek Lisesi	5803 Biruni Üniversitesi	5721 Zeytinburnu Metro 2	3,57	
Route 13	Zeytinburnu Marmaray	5712 Zübeyde Hanım Cad. (Marmaray Zeytinburnu)	5729 Belgradkapı Sosyal Tesisleri	5802 Kozlu Otobüs Durağı	5801 Topkapı Tramway Durağı	5,27	Between Zeytinburnu Marmaray- Topkapı Tramline
Route 14	Zeytinburnu Marmaray	5712 Zübeyde Hanım Cad. (Marmaray Zeytinburnu)	5724 Zeytinpark	5742 Cevizlibağ Atatürk Öğrenci Yurdu	5801 Topkapı Tramway Durağı	5,60	
Route 15	Topkapı Tramline T1	5801 Topkapı Tramway Durağı	5740 Kiptaş Merkezefendi Meydanı	5708 58. Bulvar	5712 Zübeyde Hanım Cad. (Marmaray Zeytinburnu)	3,38	
Route 16	Topkapı Tramline T1	5801 Topkapı Tramway Durağı	5803 Biruni Üniversitesi	5710 Zübeyde Hanım Cad. 1	5712 Zübeyde Hanım Cad. (Marmaray Zeytinburnu)	5,69	
Route 17	Marmaray Kazlıçeşme	5804 Kazlıçeşme Marmaray 1	5705 Zeytinbunu İtfaiye	5710 Zübeyde Hanım Cad. 1	5712 Zübeyde Hanım Cad. (Marmaray Zeytinburnu)	1,37	Between Zeytinburnu Marmaray- Kazlıçeşme Marmaray
Route 18	Zeytinburnu Marmaray	5712 Zübeyde Hanım Cad. (Marmaray Zeytinburnu)	5713 Zeytinburnu Noterliği	5703 Zeytinbunu Akdem	5805 Kazlıçeşme Marmaray 2	2,09	
Route 19	Zeytinburnu Marmaray	5712 Zübeyde Hanım Cad. (Marmaray Zeytinburnu)	5715 Zübeyde Hanım Cad. 3	5604 Kazlıçeşme Sahil park	5804 Kazlıçeşme Marmaray 1	2,67	
Route 20	Marmaray Kazlıçeşme	5805 Kazlıçeşme Marmaray 2	5702 Süleymaniye Kadın Doğum Hast.	5705 Zeytinbunu İtfaiye	5712 Zübeyde Hanım Cad. (Marmaray Zeytinburnu)	1,81	
Route 21	Topkapı Tramline T1	5801 Topkapı Tramway Durağı	5802 Kozlu Otobüs Durağı	5729 Belgradkapı Sosyal Tesisleri	5804 Kazlıçeşme Marmaray 1	3,66	Between Topkapı Tramline- Kazlıçeşme Marmaray
Route 22	Topkapı Tramline T1	5801 Topkapı Tramway Durağı	5741 Merkez efendi Parkı	5728 Textil Port	5805 Kazlıçeşme Marmaray 2	4,03	
Route 23	Marmaray Kazlıçeşme	5804 Kazlıçeşme Marmaray 1	5727 100. yıl Meslek Lisesi	5803 Biruni Üniversitesi	5801 Topkapı Tramway Durağı	3,87	
Route 24	Marmaray Kazlıçeşme	5805 Kazlıçeşme Marmaray 2	5730 Zeytinburnu İmam Hatip Lisesi	5743 FSM Üniversitesi	5801 Topkapı Tramway Durağı	3,87	

Figure 7. Generated routes and the İsbike stations on them

bicyclist rode 10 routes. The routes are given to bicyclists in a random order. They experience these routes in mid-November 2019, during weekend morning hours. In the table, the start and stop İsbike stations are also noted with their number codes.

After the bicycle riding experience, a survey is given to bicyclists to evaluate the routes they drove. In the survey, the evaluation criteria are; (i) The physical factors; route ergonomy, wayfinding, start-end stations, and stops in route; (ii) the environmental factors; vehicle and human traffic, desired speed, and integration to the rail transport system; and (iii) visual factors; landmarks in the route and greenery (**Table 3**). In order to evaluate these criteria, a survey is given to bicyclists and asked them to evaluate each route on a Likert scale (1-not relevant, 5-highly relevant). After all replies are taken on an online survey platform (Survey Monkey), the authors generate a formula with these criteria to find an overall integration value. However the weights of the criteria depends on the past experiences and observations during site trip. Since this work has been developed through a graduate course in YTU, the discussions are made through graduate students (architects), and come up with a consensus on which criteria affect the other in a positive or negative way. We have proposed that criteria A (Route Ergonomy), B (Wayfinding), E (desired speed), F (integration to railway), G (landmarks in the route) and H (greenery) affect the integration positively, whereas D1 (vehicle traffic), D2(human traffic), C1 (stops in route) and C2 (start and end stops in the route) affect negatively. The formula is:

$$[(AxBxExFxGxH)/(((D1+D2)/2)x2/((1/C1)+(1/C2)))]^{1/4}$$

Table 2. Route Experience Matrix by Bicyclists

	(start) İsbike station code	(end) İsbike station code	1st Tour	2nd Tour	3rd Tour	4th Tour	5th Tour
Route 03	5712	5721	BR1	BR3		BR5	
Route 01	5501	5712	BR1	BR3		BR5	
Route 04	5712	5501	BR2	BR4		BR6	
Route 02	5721	5712	BR2	BR4		BR6	
Route 13	5712	5801	BR3	BR1		BR7	
Route 15	5801	5712	BR3	BR1		BR7	
Route 14	5712	5801	BR4	BR2		BR8	
Route 16	5801	5712	BR4	BR2		BR8	
Route 19	5712	5804			BR3	BR4	BR1
Route 20	5805	5712			BR5	BR6	BR2
Route 11	5804	5501	BR5	BR7		BR1	
Route 09	5501	5804	BR5	BR7		BR1	
Route 12	5805	5721	BR6	BR8		BR2	
Route 10	5721	5805	BR6	BR8		BR2	
Route 23	5804	5801	BR7	BR5		BR3	
Route 21	5801	5804	BR7	BR5		BR3	
Route 24	5805	5801	BR8	BR6		BR4	
Route 22	5801	5805	BR8	BR6		BR4	
Route 17	5804	5712			BR7	BR8	BR3
Route 18	5712	5805			BR1	BR2	BR4
Route 05	5501	5801		BR3	BR2		BR1
Route 07	5801	5501		BR3	BR2		BR1
Route 06	5721	5801		BR8	BR4		BR5
Route 08	5801	5721		BR8	BR4		BR5

* BR1, BR2, BR3, BR4, BR5, BR6, BR7, BR8 are independent bicyclists who voluntered to be part of this study. The scheme shows which cyclist ride which route.

RESULTS

The results show that Routes 2, 19, 21, and 22 have high integration within physical, environmental, and visual factors. It has been revealed that cyclists have a better driving experience on these routes, the integration with rail transport stations is high, and the rate of preferring these routes is also high. Although Routes 5, 6, 7, 11, and 12 are located on the route where İsbike stations have high usage rates, as seen in Table 3, the integration values are very low (**Table 3**).

When the statistical data collected by İsbike are analyzed, it can be observed that the usage rates of stations 5501 and 5721 located near "Zeytinburnu Metro Station" were significantly higher compared to other stations (**Figure 5**). In this respect, it can be stated since the density of bicycle rent is high, the integration values are also high in Routes 1, 2, 9 and 10.

It can be derived from Table 3 that bicycle routes passing through 10. Yıl Caddesi (Route 5, 21, 22) are preferred by bicyclists over other routes. It must also be noted that these routes house some of the highly populated centers of attraction, such as the İsbike stations 5803 and 5729. However, it is found that they cannot achieve their potential because of the dense traffic flow and roads occupied by other vehicles, therefore do not offer a comfortable bicycle ride. No significant differences were observed between Routes 10 and 15 and Routes 11 and 14, downslope bicycle routes, although the former had a higher integration score than the latter. Route 19, designed for recreational purposes, had an integration score of 4.96/5, thus being the route with the highest integration score and fulfilling its recreational functions successfully. Station 5740, a part of Routes 6 and 7, is useful

	PHYSICAL FACTORS				ENVIRONMENTAL FACTORS				VISUAL FACTORS		
	Physical Condition	Cycling Route Type	Distance		Density of Traffic		Cycling Speed	Integration to railway	Building Pattern	Relationship with the greenery	
	A	B	C1	C2	D1	D2	E	F	G	H	
	Route Ergonomy	Wayfinding	Stops in route	Start and end stops in the route	Vehicle Traffic	Human Traffic	Desired Speed	Integration to railway system	Landmarks in the route	Greenery	INTEGRATION VALUE
Route 1	3,67	3,83	4,50	5,00	3,33	2,33	3,50	4,50	3,17	2,83	**3,49**
Route 2	5,00	4,00	5,00	5,00	3,00	3,00	4,00	5,00	5,00	3,00	**4,47**
Route 3	3,33	3,50	3,00	3,00	3,67	2,00	3,50	4,00	3,17	3,00	**3,68**
Route 4	3,00	3,50	3,50	2,50	2,50	2,00	3,00	4,00	3,50	3,00	**3,77**
Route 5	3,50	2,75	4,50	3,50	5,00	3,75	1,75	1,50	4,00	4,00	**2,20**
Route 6	1,50	3,00	4,00	3,25	4,50	2,75	1,75	4,00	2,25	2,00	**1,82**
Route 7	1,00	1,50	3,25	1,25	5,00	3,25	1,25	1,00	3,50	1,75	**1,11**
Route 8	1,75	2,75	3,75	2,00	4,75	2,50	2,25	3,25	2,75	3,25	**2,40**
Route 9	3,00	3,20	4,40	4,00	2,60	3,00	3,40	5,00	4,00	2,40	**3,40**
Route 10	5,00	5,00	5,00	4,00	5,00	2,00	4,00	5,00	5,00	1,00	**3,56**
Route 11	1,80	3,00	4,00	3,00	2,40	3,60	2,60	4,20	2,60	2,40	**2,45**
Route 12	3,00	1,00	1,00	1,00	5,00	2,00	3,00	1,00	1,00	2,00	**1,51**
Route 13	3,25	2,75	2,75	3,50	3,75	2,50	2,50	3,75	3,00	3,00	**2,98**
Route 14	3,00	2,50	3,00	3,00	4,25	1,75	2,50	3,00	3,50	3,00	**2,85**
Route 15	2,75	3,00	3,50	4,00	4,00	3,00	3,25	4,25	4,00	3,75	**3,38**
Route 16	3,50	3,50	3,75	3,25	4,25	3,00	3,75	4,25	3,75	3,50	**3,77**
Route 17	3,33	3,67	4,00	2,33	3,00	2,33	3,67	4,67	3,33	2,67	**3,92**
Route 18	3,00	4,50	2,00	4,00	4,50	3,50	2,50	2,00	3,50	2,00	**2,58**
Route 19	4,00	4,33	4,67	2,33	3,00	2,00	5,00	2,33	4,67	5,00	**4,96**
Route 20	4,00	3,00	5,00	5,00	3,00	2,00	4,00	4,00	4,00	3,00	**3,68**
Route 21	3,40	3,60	4,40	4,00	2,20	1,80	4,20	4,40	3,60	3,40	**4,26**
Route 22	4,00	3,00	3,00	1,00	2,00	1,00	4,00	1,00	4,00	5,00	**4,54**
Route 23	2,80	2,60	4,60	3,40	2,60	2,60	3,60	4,60	3,20	3,20	**3,32**
Route 24	1,00	1,00	4,00	2,00	3,00	3,00	2,00	1,00	1,00	5,00	**1,06**

Table 3. Route experience survey results evaluating physical, environmental, visual aspects and their final integration values

for bicycle users who work here since industrial areas and cargo centers surround the region. However, it was found that this station had one of the lowest integration scores in the analysis, the reason is dense traffic and lack of greenery again. On the other hand, Route 8, which does not fully overlap the industrial area and intersect the station 5740, had a higher integration score despite its lower usage rate. Therefore, some improvements in the industrial area are quite likely to increase these bicycle users' comforts and usage rates.

Table 3 describes the integration values of the routes in several aspects. Firstly, as in physical factors, one of the most important aspects is Route Ergonomy (A). Unfortunately, the physical form of roads are bad, there are a lot of bumps and holes on the road. The bicyclists also underline that a steep slope negatively affects bikeability. Also, since there are cars parked on the side of the streets, bicyclists are interrupted by their parking. Wayfinding (B) is another physical aspect that positively affects integration value. When landmarks are on the road, it is easier to direct your route and find your way to your destination. A final physical factor is Distance, Number of stops (C1) and Start/End stops (C2) in the route. Depending on the daily routine of the bicyclist, the in-between İsbike stations will help to stop, do your business, and rent another bike along the route, which will affect bikeability as well.

Secondly, focusing on the environmental *factors*, the most crucial issue that decreases a route's integration value is Vehicle (D1) and Human traffic (D2). Bicyclists complain about the dense vehicle traffic in most routes, even on weekends. When there is traffic, Desired Speed (E) is also low, so riding a bicycle is ineffective and safe. There should be segregated bike lanes to develop a better integration to prevent this issue. A final aspect on environmental matters is Integration to Railways (F) which directly affects bikeability. Due to the densest public transport stations, it seems to be relatively high in Routes 2, 19, 21 and 22.

Finally, focusing on visual factors, Landmarks in the route (G) and Greenery (H) are two criteria that positively affect bikeability. Bicyclists underline that greenery on the sides of the bicycle roads is very convenient during long drive hours.

CONCLUSION

The importance of the concept of bikeability, reflected in a significant number of studies in various research areas, especially mobility and transportation, has increased in recent years. Safety, comfort, and efficiency of bike infrastructures, and accessibility to destinations, environmental and visual factors are the most common characteristics associated with bikeability. The fact that there is an important agenda concerning the social distance with the Covid-19 pandemic which affects the whole world, along with environmental negativity such as the increase in individual vehicle use, traffic problems, air, and noise pollution, has made the use of bicycles even more critical. In many countries, electric scooters, vehicles, or shared mobility services are on the agenda in reducing environmental pollution and using bicycles for sustainable transportation. Turkey is also concentrating on this issue, building more bike roads day by day, and smart bike-sharing systems are also increasing rapidly.

As stated before, two critical projects on bike systems were first launched back in 2002 and 2009. The first one, namely Istanbul Bicycle-Route Planning by IBB, and the second (BAKSI, 2021), is the Integrated Smart Bicycle-Sharing System (İsbike). These are the relevant policies considered to guide this research. As in the Istanbul Bicycle-Route Planning guide, it is clearly stated that bicycle roads should be integrated with rail transport. Therefore, this research is important to show the integration degree of bicycle routes in terms of physical, environmental, and visual aspects.

The scope of this research is the evaluation of bikeability in the Zeytinburnu district with the help of space syntax analysis. Along with the integration analysis using space syntax, the district is analyzed to capture bikeability accurately. Besides, using this method, the integration values of routes are derived. As a result, the routes that start and end in main rail transport stations receive higher integration values, showing more suitable routes for cycling.

As stated before in the literature section, studies modeling the route selections of cyclists have various limitations, including lack of detailed biking data (Liu et al., 2016, McCahill and Garrick, 2008). Within this paper, it is shown that working with the local authorities for gathering data is important. Also various bicycling applications on mobile phones (like Strava), help the researchers gather more data about the experiences.

Empirical studies on the use of bicycles and route selection have demonstrated that bicycle users took several criteria, such as distance, the number of crossroads, bicycle stations, and safety, into account (Broach et al., 2011, Dill and Carr, 2008, Winters et al., 2011). Within this research, it is concluded that distance between the attraction points and bicycle stations are also major issues for the bikeability. Moreover, slope is also another issue which effects a good and convenient drive.

Promoting sustainable urban transportation planning, Castañon and Ribeiro (2021) evaluated the integration of bicycle infrastructure in urban environments. Additional to that, this research has shown that, for a

sustainable city; bike routes, shared-bicycle systems and rail transport stations should be integrated in terms of physical, environmental and visual factors. One of the most important one is dense traffic and separate bicycle roads. It is observed that, in the most bicycle friendly cities such as Copenhagen, Amstermdan etc., there are separate bicycle roads alternative to vehicle roads. Cities such as Istanbul, should adopt a similar attitude constructing bicycle roads for a more sustainable future.

Finally, bikeability analysis indicates an essential tool in the bicycle network planning process and in defining strategies to encourage bicycle use, especially in urban areas. Space syntax analysis and user experiences must be integrated and evaluated to integrate bike networks into public transport. This allows the definition of a strategy for improving bike infrastructure and promoting more sustainable mobility models.

ACKNOWLEDGEMENT
We would like to thank Faruk Meto, members of Turkuaz Bicycle Club and Hasan Taştan for taking part in our survey and sharing valuable information, also IBB Directorate of Transportation for sharing the relevant city data. This paper is an outcome of the study conducted in MIM6108 Computational Space Analysis course at Yıldız Technical University, 2019-2020 Fall Semester.

BIBLIOGRAPHY

ALATTAR, M. A., COTTRILL, C., BEECROFT, M. (2021). Modelling cyclists' route choice using Strava and OSMnx: A case study of the City of Glasgow. *Transportation research interdisciplinary perspectives* (9), 1-18.

BAKSI (2021) BAKSI AKILLI BISIKLET KIRALAMA SISTEMLERI [https://www.isbike.istanbul/] Access Date (24.08.2021).

BOEING, G. (2019) Urban Spatial Order: Street Network Orientation, Configuration, and Entropy, *Applied Network Science* 4(1) 1-19.

BROACH, J., GLIEBE, J., DILL, J. (2011) Bicycle Route Choice Model Developed Using Revealed Preference GPS Data, Presented at the 90th Annual Meeting of the Transportation Research Board.

CASTAÑON, U. N., RIBEIRO, P. J. (2021). Bikeability and Emerging Phenomena in Cycling: Exploratory Analysis and Review, *Sustainability 13*(4) 2394.

DILL, J., CARR, T. (2003) Bicycle Commuting and Facilities in Major US Cities: If You Build Them, Commuters Will Use Them, *Transportation Research Record 1828*(1) 116-123.

DILL, J., VOROS, K.(2007) Factors Affecting Bicycling Demand: Initial Survey Findings From The Portland, Oregon Region. *Transportation Research Record* 2031(1) 9-17.

EMBARQ (2014). İstanbul'da Güvenli Bisiklet Yolları Uygulama Kılavuzu. [https://www.istka.org.tr/media/20860/%C4%B0stanbul-da-g%C3%BCvenli-bisiklet-yollar%C4%B1-uygulama-k%C4%B1lavuzu.pdf] Access Date (20.08.2020).

EMMANOUILIDIS, T. (2013) Urban Network Analysis. Centrality, Sinuosity and Shortcut Detection *Revue Internationale de Géomatique 23*(4) 431-43.

FRASER, S.D., LOCK, K. (2011) Cycling for Transport and Public Health: A Systematic Review of The Effect of the Environment on Cycling, *European Journal of Public Health* 21(6) 738-43.

FRUMKIN, H., FRANK, L. D., JACKSON, R. (2004) *Urban Sprawl and Public Health: Designing Planning and Building for Health Communities*, Island Press, Washington.

GRIGORE, E. GARRICK, N. FUHRER, R. AXHAUSEN, I.K.W. (2019) Bikeability in Basel. T*ransportation research record* 2673(6) 607-17.

HANDY, S. L., BOARNET, M. G., EWING, R., KILLINGSWORTH, R. E. (2002) How The Built Environment Affects Physical Activity: Views From Urban Planning, *American Journal of Preventive Medicine* 23(2) 64-73.

HEESCH, K. C., LANGDON, M. (2016) The Usefulness of Gps Bicycle Tracking Data for Evaluating the Impact of Infrastructure Change on Cycling Behaviour. *Health Promotion Journal of Australia 27*(3) 222-9.

HILLIER, B., HANSON, J. (1984) *The Social Logic of Space*, Cambridge University Press.

HILLIER, B., IIDA, S. (2005) Network Effects and Psychological Effects: A Theory of Urban Movement. In *Proceedings of the 5th International Symposium on Space Syntax* , 553-64.

HILLIER, B., PENN, A., HANSON, J., GRAJEWSKI, T., XU, J. (1993) Natural Movement: or, Configuration and Attraction in Urban Pedestrian Movement,*Environment and Planning B: Planning and Design 20*(1) 29-66.

IACONO, M., KRIZEK, K. J., EL-GENEIDY, A. (2010) Measuring Non-Motorized Accessibility: Issues, Alternatives, and Execution. *Journal of Transport Geography* 18(1) 133-140.

IBB Directorate of Transportation and Coordination (2020) Bisiklet Ana Planı. [https://bisiklet.ibb.istanbul/wp-content/uploads/2021/01/ISTANBUL_BISIKLET_ANA_PLANI_2020_04_03.pdf] Access Date (20.08.2020).

LAW, S., SAKR, F. L., MARTINEZ, M. (2014) Measuring the Changes in Aggregate Cycling Patterns Between 2003 and 2012 from a Space Syntax Perspective, *Behavioral Sciences* 4(3) 278-300.

LEE, K., SENER, I. N. (2021) Strava Metro Data for Bicycle Monitoring: A Literature Review, Transport Reviews 41(1) 27-47.

Lİ, Y., XİAO, L., YE, Y., XU, W., LAW, A. (2016) Understanding Tourist Space at a Historic Site Through Space Syntax Analysis:The Case of Gulangyu, China, *Tourism Management* (52) 30–43.

LITMAN, T., BLAIR, R., DEMOPOULOS, W., EDDY, N., FRITZEL, A., LAIDLAW, D., MADDOX, H., FORSTER, K. (2000) Pedestrian and Bicycle Planning: A Guide to Best Practices, Victoria Transport Policy Institute.

LIU, J., SUN, L., CHEN, W., XIONG, H. (2016). Rebalancing Bike Sharing Systems: A Multi-Source Data Smart Optimization, In *Proceedings of the 22nd ACM SIGKDD International Conference on Knowledge Discovery and Data Mining*, 1005-14.

LOWRY, M. CALLISTER, D. GRESHAM, M. MOORE, B. (2012) Assessment of Communitywide Bikeability with Bicycle Level of Service, *Transportation research record* 2314(1) 41-8.

MANUM, B., NORDSTROM, T. (2013) *Integrating Bicycle Network Analysis in Urban Design: Improving Bikeability in Trondheim by Combining Space Syntax and GIS-methods Using the Place Syntax Tool*, In Proceedings of the 9th International Space Syntax Symposium, Seoul, Korea.

MANUM, B., NORDSTRÖM, T., GIL, J., NILSSON, L., MARCUS, L. (2017) Modelling Bikeability. In *Proceedings of the 11th International Space Syntax Symposium, Lisbon, Portugal*, 3-7.

MEIRELES, M. RIBEIRO, P.J.G. (2020) Digital Platform/Mobile App to Boost Cycling for the Promotion of Sustainable Mobility in Mid-sized Starter Cycling Cities, *Sustainability* (12) 5.

MCCAHIL, C., GARRICK, N. (2008) The Applicability of Space Syntax to Bicycle Facility Planning, *Transportation Research Record* 2074(1) 46-51.

MINGHINI, M., FRASSINELLI, F. (2019) OpenStreetMap History for Intrinsic Quality Assessment: Is OSM Up-to-date?, Open Geospatial Data, Software and Standards 4(1) 1-17.

MINISTRY OF ENVIRONMENT AND URBANIZATION (2017) Kentsel Bisiklet Yolları Rehberi. [https://webdosya.csb.gov.tr/db/meslekihizmetler/haberler/b-s-klet-yollari-kilavu zu-23.12.2017-20191223102511.pdf] Access Date (20.08.2020).

MINISTRY OF ENVIRONMENT AND URBANIZATION (2019) Bisiklet Yolları Yönetmeliği. [https://www.resmigazete.gov.tr/eskiler/2019/12/20191212-1.htm] Access Date (20.08.2020).

MRKAJIĆ, V., ANGUELOVSKI, I. (2016) Planning for Sustainable Mobility in Transition Cities: Cycling Losses and Hopes of Revival in Novi Sad, Serbia, *Cities* (52) 66-78.

NIELSEN, T. A. S., SKOV-PETERSEN, H. (2018) Bikeability–Urban Structures Supporting Cycling: Effects of Local, Urban and Regional Scale Urban Form Factors on Cycling from Home and Workplace Locations in Denmark, *Journal of Transport Geography* (69) 36-44.

ORELLANA, D., GUERRERO, M. L. (2019) Exploring the Influence of Road Network Structure on the Spatial Behaviour of Cyclists Using Crowdsourced Data. *Environment and Planning B: Urban Analytics and City Science 46*(7) 1314-30.

OSAMA, A., SAYED, T., BIGAZZI, A. Y. (2017) Models for Estimating Zone-Level Bike Kilometers Traveled Using Bike Network, Land Use, and Road Facility Variables, *Transportation Research Part A: Policy and Practice* (96) 14-28.

ÖZBEK, M.O., ÖZER, D.G. (2014) Spatial Integration and Accessibility Considering Urban Sustainability Patterns: Historical Islands of Istanbul, *WIT Transactions on Ecology and the Environment* 191 (1649 – 1660).

PAUL, A. (2011) Axial Analysis: A Syntactic Approach to Movement Network Modeling, Institute of Town Planners, *India Journal* 8(1) 29-40.

PIATKOWSKI, D. P., MARSHALL, W. E. (2015) Not All Prospective Bicyclists Are Created Equal: The Role of Attitudes, Socio-Demographics, and the Built Environment in Bicycle Commuting, *Travel Behavior And Society* 2(3) 166-173.

PUCHER, J., BUEHLER, R. (2009) Integrating Bicycling and Public Transport in North America. *Journal of Public Transportation* 12(3) 5.

RAFORD, N., CHIARADIA, A. , GIL, J. (2007) *Space Syntax: The Role of Urban Form in Cyclist Route Choice in Central London,* Transportation Research Board 86th Annual Meeting.

SAGHAPOUR, T.MORIDPOUR, S.THOMPSON, R.G. (2017) Measuring Cycling Accessibility in Metropolitan Areas. *International Journal of Sustainable Transportation* 11(5) 381-94.

SAPLIOĞLU, M., AYDIN, M. M. (2018) Choosing Safe and Suitable Bicycle Routes to Integrate Cycling and Public Transport Systems, *Journal of Transport & Health* (10) 236-52.

SCHNEIDER, R., (2005) Integration of Bicycles and Transit, Washington, D.C.: Transportation Research Board of the National Academies, Published by Transit Cooperative Research Program, Washington, D.C., United States.

SHAHEEN, S., COHEN, A., E. MARTIN, (2013) Public Bike Sharing in North America: Early Operator Understanding and Emerging Trends. *Transportation Research Record* 2387(1) 83-92.

SHUI, C. S., SZETO, W. Y. (2020) A Review of Bicycle-Sharing Service Planning Problems, *Transportation Research Part C: Emerging Technologies* (117) 1-28

SUN, Y., MOBASHERI, A. (2017) Utilizing Crowdsourced Data for Studies of Cycling and Air Pollution Exposure: A case Study Using Strava Data, International Journal of Environmental Research and Public Health 14(3) 274.

WINTERS, M., DAVIDSON, G., KAO, D., TESCHKE, K. (2011) Motivators and Deterrents of Bicycling: Comparing Influences on Decisions to Ride, *Transportation* 38(1) 153-68.

WINTERS, M., TESCHKE, K., BRAUER, M., & FULLER, D. (2016) Bike Score®: Associations between urban bikeability and cycling behavior in 24 cities. *International Journal of Behavioral Nutrition and Physical Activity* 13(1) 1-10.

VIETINGHOFF, C. (2021) An Intersectional Analysis of Barriers to Cycling for Marginalized Communities in a Cycling-friendly French City, *Journal of Transport Geography* (*91)* 1-10.

YANG, Y., WU, X., ZHOU, P., GOU, Z., LU, Y. (2019) Towards a Cycling-Friendly City: An Updated Review of the Associations Between Built Environment and Cycling Behaviors (2007–2017) *Journal of Transport & Health* (14) 1-42.

YILDIRIM, O.C., ÖZER, D.G., SUNGUR, A. (2021) Route Generator for Integrating Cultural Heritage to Smart City: Ontheroute, 8th European-Mediterranean Conference, EuroMed 2020, 12642 LNCS, 165–77.

ZHANG, Y., MI, Z. (2018) Environmental Benefits of Bike Sharing: A Big Data-based Analysis, *Applied Energy* (220) 296-301.

Alındı: 17.01.2021; **Son Metin:** 20.04.2022

Anahtar Sözcükler: mekan dizimi, bisiklete uygunluk, İsbike, bisiklet rotaları, Zeytinburnu

BİSİKLET ROTALARININ RAYLI ULAŞIM SİSTEMİNE ENTEGRASYONUN ZEYTİNBURNU İLÇESİ ÖZELİNDE DEĞERLENDİRİLMESİ

Kentlerde sosyo-ekonomik hareketliliğin hızla değişip dönüşmesi, nüfusun hızla artması ve fiziksel çevrenin büyümesi birçok sorunu beraberinde getirmektedir. Bu sorunların başında, yüksek popülasyonun kent içi ulaşım talebinin artışı ile ortaya çıkan ulaşım problemleri gelmektedir. Bireysel taşıt kullanımının artışı, trafik sıkışıklığı, gürültü ve hava kirliliği gibi çevresel sorunlar beraberinde kentsel erişilebilirlik sorunlarını ortaya çıkarmaktadır. Bu nedenle, kent içerisinde erişilebilirliği arttırmak için toplu taşıma ağına, diğer temiz ulaşım araçlarının da entegre edilmesi önem taşımaktadır. Bu entegrasyonunun sağlanabilmesi için, bisikletin kısa ve orta mesafeli yolculuklarda bireysel araçlara alternatif olarak kullanılabilme potansiyeli yüksektir. Sürdürülebilir bir ulaşım aracı olarak bisiklet kullanımının teşvik edilmesi ve raylı ulaşım sistemine entegre olması için bisiklet kiralama sistemleri, bisiklet yolları ve istasyonları gibi çözümler üretilmektedir. Burada önemli olan, bisiklet rotaları ve istasyonlarının doğru planlanması ve raylı ulaşım ile optimum düzeyde entegre olmasıdır.

Bu problem alanından hareketle, İstanbul kenti Zeytinburnu ilçesi özelinde bir alan çalışması yapılmıştır. İBB (İstanbul Büyükşehir Belediyesi) bisiklet kiralama sistemi (İsbike) istasyonlarının; Marmaray, Metro ve Tramvay istasyonları ile entegrasyonu incelenmiş, uygun bisiklet rotaların belirlenebilmesi için mekânsal dizilime dayalı analizler yapılmıştır. Çalışma üç aşamadan oluşturulmuş, (P1) Open Street Map verileri ile DepthMap X yazılımında mekan dizimi analizi yapılmış, (P2) IBB'den alınan toplu ulaşım verileri ile İsbike'dan alınan verilerle uygun bisiklet rotaları oluşturulmuş, (P3) bu rotaların bisiklet sürücüleri ile deneyimlenmesi ve sonrasında fiziksel, çevresel ve görsel kriterlere göre bir anket ile değerlendirilmesi sağlanmıştır. Çalışmada, kentin fiziksel yapısını çözümleyen mekan dizimi analizleri ile kent parçası ölçeğinde bisiklet yollarının raylı ulaşım sistemine entegrasyonu değerlendirilmiş; bisiklet kullanım uygunluğuna yönelik kentsel planlama için öneriler ortaya konulmuştur.

EVALUATION OF THE INTEGRATION OF BIKE ROUTES TO THE RAIL TRANSPORT SYSTEM IN ZEYTINBURNU DISTRICT

The rapid change and transformation of socioeconomic activities in cities, the increase in the population, and the growth of the physical environment bring many problems. One of these problems is the increasing demand for transportation by the increased population. High demand for individual vehicles, traffic congestion, noise, air pollution, and environmental problems adversely affect urban accessibility, quality of life, and social health. Public transport has gained importance to provide access within the city, and other means of clean transportation should be integrated into this system. Bicycles have a high potential to be used as an alternative to individual vehicles on short and medium-distance journeys to ensure this integration into the transportation system. As a sustainable means of transportation, solutions such as bicycle rental systems, bicycle routes, and stations are planned to promote bicycle use and integrate into the rail transportation systems. The most crucial point is to plan bike routes and stations at the right spots and integrate them into the optimum level with the rail transport system.

In the scope of this paper, a field study was carried out in the district of Zeytinburnu, Istanbul. IBB (Istanbul Metropolitan Municipality) bicycle rental system (İsbike) stations have been examined for integration with Marmaray, Metro, and Tramway stations. Therefore, Space Syntax analysis has been performed to determine the relevant bicycle routes. The study was created in three stages, (P1) the Space Syntax analysis is done with Open Street Map data on DepthMapX software, (P2) Bicycle routes are generated with the IBB railway transportation and İsbike station data, and (P3) Bicyclists experienced and evaluated these routes depending on physical, environmental and visual criteria via a survey. Finally, space syntax methods are used to analyze the physical structure of the city, and the integration of bicycle paths into the rail transportation system was evaluated; suggestions for urban planning for bikeability have been put forward.

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METU JFA 2022/1
(39:1) *215-236*

DOI: 10.4305/METU.JFA.2022.1.10

REVITALIZATION OF CULTURAL VALUES IN URBAN LANDSCAPE THROUGH STREET TREES DESIGN

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Received: 25.04.2021; **Final Text:** 09.05.2022

Keywords: Landscape design; deciduous fruit trees; revitalization; cultural values; sustainability.

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INTRODUCTION

Trees are one of the significant elements in urban areas that engage different professions in the planning, planting, and maintenance processes (Nadel et al., 1977). Despite a range of benefits of street trees (Cihanger, 2013), they could be anchored with two important aspects of value in urban areas; firstly, the urban ecological system such as atmosphere, temperature, and humidity (Horte and Eisenman, 2020), and secondly, the users' perception of meanings of the place based on lived experience such as beauty, shading, and sense of place (Moughtin and Shirley, 2006; Evans, 2007). However, it is a common observation that municipalities prefer to select wood trees because of low-cost maintenance such as the cost of the cleaning, pruning, and decorating of plants in urban areas (GreenBlue, 2020) grounded on some general guidelines of arboriculture (Nadel et al., 1977). This process is resulted in replacing old trees with a set of woods sapling to adapt the green spaces to be fit for the size of the streets and the height of buildings and electricity power lines (Harris and Dines, 1998; Chatzidimitriou and Yannas, 2017).

Relph (1976) argued that a few number of urban planning documents encompassed effective techniques to represent the quality of the place on the maps by reason of the 2D presentation style. Perhaps, for this reason, while a major part of urban design and landscape plans has emphasized planting and green spaces (Llewelyn-Davies, 2000; Evans, 2007), the absence of such approach and guidelines are still seen in a considerable proportion of urban development and master plan documents (Baker, et al., 2002; Miller R. W., 2007). The lack of essential requirements and guidance might make municipalities apply the recommendations of experts, advisors, or contactors to plant trees and manage the green spaces (McPherson et al., 2016). Specifically, the area of study lacked a master plan for green spaces, seemingly, the budget and affordability of the planting structure had been so important for the decision making through ad hoc

activities. For this reason, Castello (2010) criticized that the gap between the inhabitants' points of view and municipality activity could result in the creation of unauthentic and artificial places in the urban areas.

It is a common observation that the green spaces in cities are managed, changed, and developed by the municipality although this process does not include consistency (Sjöman et al., 2012). In other words, despite the responsibility of municipalities for public roads, historically, the inhabitants managed the planting, maintenance, and ownership of trees in adjacent paths and areas of houses in the Iranian heritage cities (Tafahomi, 2010; Tafahomi and Nadi, 2020; Tafahomi and Nadi, 2016). However, this process of intervention of the municipality has led to changing the position of the inhabitants from active participants to passive observers. Madanipour (1996) advocated that space comes into reality through a long relationship between events and people over time and location. Nonetheless, one of the common problems of cities in developing countries seems to be the instability of the streetscape, especially the green landscape (Tafahomi and Nadi, 2020) based on the uncertain policies, the contradictive effects on the built environment (Llewelyn-Davies, 2000; Moughtin and Shirley, 2006) and few relationships between socio-cultural aspects and built environment (Gustafson, 2001).

Gonabad city as the context of the study includes historic and architectural elements with a rich background in horticultural activities in the northeast part of Iran (Tafahomi and Nadi, 2020). The city has been developed with rich gardens, more importantly, fruit trees such as Mulberry, Pomegranate, Jujube, Almond, Walnut, Plums as the most common species in the region. There are some wood trees seen as part of the region such as Cypress and Platanus, and some Populus in the alleys although fruit trees have been widely used to apply in the industry based on availability. Nonetheless, the municipality started to plant some wood trees alongside the streets with less maintenance and a high level of adaptation to the region such as the Pine, Robina, and Melia azedarach (Tafahomi and Nadi, 2016). This tendency to apply just one species in the street planting is called monoculture by Alvey (2006) and Frank et al (2006), particularly with exotic trees (Hough, 2004; Moore, 2003). The study revealed that gentrification and influences of unwise decisions during a period of time would result in swift actions on street planting (Donovan et al., 2021).

The Daloeei area as a stellate of Gonabad city is located in the context filled with gardens whereas the current process of redevelopment has changed the structure of the green spaces (Tafahomi and Nadi, 2020). The area has paths passing through gardens with both physical and functional specifications such as integration of the walls and branches of trees as shelters on the alley, especially trees with round crown forms such as Berry, Walnut, Pomegranate, and Jujube. According to the last development plan, the main street in the site was detrimental to old trees. Therefore, the original form of the alley and the street no longer appears in the visual sense of the users. Consequently, the MCTH (Ministry of Culture, Tourism, and Handicraft) asked to provide urban design and landscape guidelines to redefine public green spaces in the area. In fact, it was a conservation plan for Daloeei (MCTH, 2016) with respect to the historic background and vitalization of the context for the lifestyle of inhabitants and touristic activities. It was a great opportunity to bring some cultural concepts to design the project (Tafahomi and Nadi, 2020).

The key question of the research is how to revitalize the streets of the site study through the consolidation of green spaces in favor of the cultural background (Velarde and Tveit, 2007) while considering environmental and sustainability criteria? To discover the solution, it was important to know the lifestyle of the inhabitants through knowing the characteristics of places in the areas (Relph, 1976; Gustafson, 2001) the cultural beliefs and reason for planting trees, and the specification of the trees to adapt to the arid climate. To answer the research questions, the objective of the research is to find out the cultural values through behavioral patterns of inhabitants in the planting of trees in the green spaces particularly public spaces and streets.

THE ROLE OF STREETS TREES IN PUBLIC SPACE AS CULTURAL ELEMENTS

Barker (Barker, 2005, 87) claimed that "definitions of the culture are all contestable", but the general argument pointed to the meaning of culture in terms of "mapping of meanings". However, the nature-culture relationship is contradictory due to the interrelation of definitions (Jin, 2021). The study highlighted culture in terms of the "values, beliefs, perceptions" of people that are represented in the patterns of behavior and analyzed through interpretation (Haviland, 1997, 35). Perhaps, for this reason, Back et al (2012) proposed a new definition of culture more than classical art, literature, and music. In fact, it is connected with inhabitants' everyday lives based on a dynamic process of creation. Oswell revealed that there is reciprocal interactions between culture, power, and ideology (Oswell, 2006) leading people to either select or present certain aspects of culture. Therefore, cultural knowledge interacts with contextual issues, including but not limited to social, political, and economic aspects (Cetina, 2005).

The values of the trees are so important in different locations and cultures. Some studies highlighted that the symbolic and meaningful aspect of trees in many societies is rooted in their inhabitants' lived experience that appears in the mythology, beliefs, and customs (Alexander, 1977; Spirn, 1998; Tafahomi and Lamit, 2011; Cihanger, 2013). Spirn (1998) advocated that the landscape is connected to the contextual and cultural aspects of location through manmade activities because of the pattern of life and the environmental conditions. An example is olive trees seen as one of the symbols in Greece (Kabassi et al., 2021). A number of studies showed that trees could play a significant role in the durability and life expectancy to give meaning to the place through planting, gardening, and maintenance (Alexander, 1977; Tafahomi, 2021). Blicharska and Mikusinski (2014, 2) classified the benefit of trees into "tangible and intangible" aspects. While tangible features focus on "goods", the intangible aspects reflect "aesthetic, symbol, religion", and belief in terms of cultural values. The cultural expression of trees in urban streets tends to be connected with legacy, symbolism, or tradition in the studies (Roman, et al., 2018; Smart et al., 2020; Tafahomi and Nadi, 2020). The meaningfulness of green elements in the whole history of human landscape design has created ethnobotany courses in landscape programs to interpret the relationship between culture and the landscape.

The cultural values and meanings of trees are related to the cultural background of inhabitants in a specific location to build landscape forms, functions and meanings to represent the cultural attributes (Jones and Cloke, 2002). In fact, the adaptation of dwellers to the arid environment

has constructed economic systems, social relationships, and behavioral patterns to form cultural values such as habits and beliefs (Butzer, 1994). For instance, a study highlighted that trees portray a location and context, as well as a celebrated person as a symbol or remembrance (Dwyer et al., 1991). In addition, an arid climate drives the residents to apply a wide range of adaptation, water harvesting, irrigation, and logical selection of species for planting (Wescoat, 1996). It is argued that a close relationship between socio-cultural and contextual aspects has formed a system of economic maintenance for green spaces in the arid area based on a shortage of water recourses (Diba, 1996). Consequently, most species were well adapted to arid climates such as low levels of water consumption, water harvesting, and Qanat technology to bring the water from mountain hills through underground channels into the flat areas for the horticulture gardening activities (Tafahomi and Nadi, 2020). This co-existing between the inhabitants and the environment for a long time formed the cultural beliefs and values, myth and legend, symbols, and motifs in the location based on life experiences (Spirn, 1998; Tafahomi and Lamit, 2011; Tafahomi and Nadi, 2021). It might be the reason behind planting specific trees in water channels, paths, and courtyards of mosques based on spiritual beliefs and ritual habits (Tafahomi, 2010; Tafahomi, 2021).

The importance of trees is not confined to gardens, courtyards, and public roads in terms of the urban green structure, but they are also regarded as a decorative and artistic expression in palaces, mosques, and temples, particularly in historical cities (Ettinghausen et al., 2001; McPherson et al., 2016). The history of landscape design has demonstrated a variety of the application of trees, gardens, and green spaces to represent either specific meanings or beliefs, such as healing gardens, therapeutic landscapes, thematic gardens, agroforestry (Boults and Sullivan, 2010; Tafahomi and Nadi, 2020; Smart et al.,2020), spiritual, and ritual value (Tafahomi, 2021) that may mean to inhabitants differently in different locations (Munyaneza et al., 2009). Although there are documents highlighted the human culture in the modification of trees in terms of "CMT (culturally modified trees)" (Resources Inventory Committee, 2001) meaning replacements and modification of aboriginal species, many of which have been reflected in painting, poetry, architecture, sculpture, and literature with a strong symbolic meaning (Hillenbrand, 1999). This could be the reason why some research recommended the incorporation of people's preferences and values in the planting of trees in streets to meet successful criteria in urban planning (Barron, et al., 2021).

From another perspective, the trees in streets are a vital part of urban green infrastructure to create the microclimate and the view of green in relation to well-being (King and Davis, 2007). The remarkable advantages of street trees, the namely mitigating temperature in terms of the passive cooling system via controlling the evaporation and transpiration (Kundu et al., 2017), stabilizing humidity and breezing through urban corridors and absorbing the sunlight, and controlling albedo in urban areas (Bajsanski et al., 2016). Trees are effective elements to absorb the sunlight and create a comfort zone for human life (Li et al., 2017). Importantly, both cluster and linear trees have a positive impact on the reduction of the sun heat in a specific area in comparison with isolated trees (Coutts et al., 2013). Particularly, the orientation and position of trees influence the insolation of buildings and the reflection of light on the street (Chatzidimitriou and Yannas, 2017) and the users in the public spaces (Andreou and Axarli, 2012). Moreover, Massengale and Dover (2014) stated that trees have a

significant role in the public realm to positively influence traffic, sunlight, visual appropriateness, and streetscape through green spaces.

A study (Sjöman et al., 2012) highlighted the benefits of trees in streets to create a green network with positive effects on transport policies, street network, and movement patterns (Horte and Eisenman, 2020). The quality of the green network enhances the inhabitants' perception of the urban environment and the visual quality of the living areas (Harris and Dines, 1998). The urban design and landscape documents placed an emphasis on the important function of trees to shape public spaces for users through typology, microclimate, urban forestry (Llewelyn-Davies, 2000; Evans, 2007) and environmental patterns such as morphology, landscape, and visual patterns (Tafahomi and Lamit, 2011).

The structure of trees is dependent on the climate, environment, and cultural background (LaGro Jr, 2008). The trees are likely to be planted because of arboriculture backgrounds and values based on the long socio-ecological interaction (Goffman, 2014). Despite various arrangements of trees, three types could be frequently observed in urban areas, namely a single tree with a monumental expression, linear trees for both connection and separation of the different parts, and a cluster of trees such as small forests and gardens (Tafahomi and Nadi, 2021; Tafahomi, 2021; Cihanger, 2013). The linear structure is viewed as a common pattern and encompasses a wide range of forms based on size, type, and distance. Such diversity creates certain compositions, patterns, and rhythms in the streets (Evans, 2007; Gehl and Rogers, 2013). However, some researchers revealed that narrow streets could support the life expectancy of trees with more difficulty than wider ones (Nagendra and Gopal, 2010; Shams et al., 2020).

Environmental specifications such as climate and water resources should be taken into consideration when choosing street trees (Horte and Eisenman, 2020). In many cities, for example, fruit trees are an essential element of green spaces owing to their compatibility with the context although they have a lower ULE (Useful Life Expectancy) ratio than wood trees (McBride and Douhovnikoff, 2012; Sjöman et al., 2012). Furthermore, the crown form of some fruit trees supports the urban public sidewalks and visual quality. The round, spreading, and vase trees help to protect the users from the direct sunlight radiation by shading (Massengale and Dover, 2014). The deciduous trees not only do provide shade for users in the summertime but they also create opportunities in wintertime for the penetration of the light into the sidewalk to heat the surface of the pedestrians.

Moreover, well-shaded trees in the urban green canopy were mentioned in terms of an ecological achievement in urban public space that controls the urban heat and ecosystem (King and Davis, 2007; McPherson et al., 2016). The green canopy is formed by the arrangement of linear trees on the sides of streets to provide shade, enclosure, and privacy. The overshadowing of the trees encompasses the open spaces, particularly on the walkways to provide a comfort zone for the pedestrians. For example, the study emphasized that the comfortability of users in public spaces influences urban livability (Llewelyn-Davies, 2000; Evans, 2007). The value of trees constantly increases as they grow older. The report of GreenBlue (2020) underlined that the benefit of trees would be increasing by the age of 200 reaching the ultimate level. The benefits are not limited to climate and temperature but include positive effects on the legibility of the area (Ward Thompson et al., 2008) and alleviating stress (Ward Thompson et al.,, 2016).

Nonetheless, the study criticized that urban planners have paid less attention to street trees' specifications in urban development plans (Baker, et al., 2002). For example, the study highlighted that urban planning, urban design, and landscape design have not taken arboriculture into account adequately (Bradley, 1995) although streets have great potential to transform into an effective green boulevard (Jacobs, 1993; Jacobs et al., 2002). Miller (2007) mentioned that this gap has been rooted in the late evolvement of arboriculture science as a profession in urban forestry. However, the municipality has been engaged in designing, planting, and maintaining trees based on the law and authority (Hauer and Petersen, 2016).

In summary, the evidence demonstrated that the forms and structure of planting trees could significantly affect the urban climate, temperature, and scenery such as a sense of place and belonging. The specification of trees influences life expectancy, maintenance, and fauna. The sustainability of trees depends on soil, land, and water source, the interaction between trees and the context, and the cultural reflection of the community in the area. The composition of trees can be related to the organization and arrangement having an influence on the character of an area. **Table 1** represents the important aspects of the application of trees in urban streets according to the form, function, and meaning.

METHODS AND MATERIALS

The methods and materials are comprised of the research methodology, the research process, data specification, time and location, and the context of the study.

Research methodology: The qualitative methods (Groat and Wang, 2002; Miller et al., 2004; Neuman, 2006) were applied as a valid tool to analyze the urban areas (Moughtin, et al.,1999; Niezabitowska, 2018), and an appropriate approach to studying the issues the context (Neuman, 2006; Silverman, 2010). The studies underlined some qualitative techniques to apply to landscape studies such as structured observation (Bonnes and Bonaiuto, 2002; Tafahomi and Nadi, 2016; Tafahomi and Nadi, 2020), photography (Georgoula, et al., 2013; Tafahomi and Nadi, 2016; Tafahomi

Table 1. Important criteria of the urban street trees

No	Components	Subcomponents	Specification	Application
1	Form	Structure	Round, vase, spreading, columnar, visual appropriateness	Iconic form, character, Shading, sheltering, territory
		Configuration	single, linear, grouped	Direction, attention, openness, enclosure
		Composition	Integration, rhythm, size	Beautification, decoration, meaning
2	Function	Arboriculture and specification of trees	Fruit, wood, deciduous, evergreen, overshadowing	Community, fauna, public spaces
		Climate and Sustainability	Microclimate, Locality, adaptability, durability	Ecosystem, Comfortability, Blended in the nature,
		Income and Benefits	Fruitfulness, harvesting, incomes	Fauna and community
3	Meaning	Cultural and Contextual Values	Ethno-botany, habituation, cultural values	Vitalization and reconstruction of the heritage aspects of the context
		Perception	Cognition, landmarks, relation to the site, relation to the context	Aesthetic, Sense of place, Sense of belonging,

and Nadi, 2020), sketching (Laseau, 2000; Regis, 2003; Tafahomi, 2009; White, 1975; Tafahomi, 2021), site analysis (White, 1983; Tafahomi and Nadi, 2020) and graphical techniques (Tafahomi, 2021). The structured observation was used in terms of visual tree assessment (VTA) (Mattheck and Breloer, 2005; Schägnera et al., 2016) to detect and estimate the health quality of the trees. Photography has been widely applied for documentation of the urban fabric, landscape, and behavioral pattern of users in urban areas. This research used photography to document the specification of green spaces in both public and private areas (Tafahomi and Nadi, 2016; Tafahomi and Nadi, 2020; Tafahomi, 2021). Sketching was another technique to redraw the urban qualities through graphical features and analysis (Regis, 2003; Sperlregen, 2003; Tafahomi and Nadi, 2021). Therefore, the selected methods applied to this research consist of photography, sketching, survey and site analysis through structured observation, and graphical analysis. The applied method was consolidated from three main techniques. In the first place, the photographs were used to demonstrate the typology, location, and application of trees in the area. Secondly, sketches showed the structure and arrangement of trees in the area. Thirdly, the specific elements in the site survey such as the relationship between buildings and green spaces in the public spaces were identified by notetaking. Finally, graphical techniques were employed to illustrate the current conditions of the area and proposed design solutions.

Research process: the research began with several site visits to find out the process of implementation of the new development plan and the reaction of the client, contractor, and inhabitants to the construction process. The green-alleys, the linear trees, and the monumental trees were taken into consideration to discover the specific relationship between the typology of trees in the site and surrounding areas. The site visit involved the participation of the research team, client, stakeholders, and the inhabitants to highlight the critical issues with the green spaces in the area.

Data specification: the data on green spaces in the urban area were combined from garden-alleys composition, linear trees structure, and the monumental trees as the reference point in the public spaces and outside of private areas such as gardens, courtyards, or houses. These three clusters of the data were located in public spaces in the inner part of the area although farms and gardens were arranged by the inhabitants in the surrounding areas.

The time and location: the research took around one year. The data were collected in both winter and spring to observe the trees with and without the crown. The area was located in the northeast of Iran having a dry climate that made the condition so close to the arid landscape. The area has been developed on underground water channels with the compact urban fabric. The predominant spatial pattern is semi -geometric with short roads to connect different areas across the city. The central part of the area is occupied by residential buildings while the surrounding areas are allocated to the gardens and farms.

The context of the study: Daloeei is a suburb part of Gonabad city in northeast Iran. Gonabad is geographically located at 58°, 4l′01′E longitude and 34°, 21′10′N latitude with a total area of close to 105800 square kilometers, and roughly 1105 meters above sea level. It has an arid climate and a number of mountains and hills in the surrounding areas. The total population of the city is almost 40,000 according to the official census in 2016. The historical background of the city refers to the Parthian and

Sassanid Kingdoms (248 B.C to 650 A.D) according to the mythology and historic books (Tabandeh, 1969; Tafahomi, 2010). However, the historic part of the city was destroyed three times by severe earthquakes, and the old Qanat in the area is seen as a distinctive characteristic of the city. The backbone of the city is comprised of main elements that refer to after 1100AD, such as mosques, schools, and water storage (Tafahomi, 2010; Tafahomi and Nadi, 2020). All mentioned elements are located in the historic core of the city (Tafahomi, 2021).

Daloeei is located in the north part of Gonabad with a population of approximately 1800 and with agricultural activities in the suburban areas. Although the area was attracting new dwellers by 1995, it experienced a noticeable decline in population as young adults migrated to bigger cities in search of work and better quality of life. The area is affected by the central desert climate, having an average temperature of 22 °C. In fact, the area is situated in a dry climate with a low level of rain between 75-100 mm per year without any permanent river, but it has underground water channels irrigating the green spaces. The majority of inhabitants have been involved in agriculture, horticulture, and livestock. Currently, the cultivation of saffron has increased owing to a long period of dry seasons, a shortage of rain, and water sources, and more importantly the high level of resistance of saffron flowers to the dry climate.

Public activities, especially religious rituals and ceremonies are organized along the main street. These occur between the main mosque (which is called "Jami Masjid") and the shrine as two reference points for residents and even visitors (**Table 2**). Despite the high level of privacy and indoor activities in the area, some of the inhabitants benefited from trees and shelter at the frontage of houses to rest or socialize.

The main street as the backbone of the city provides intra-connections and access to essential public facilities and services. So, it is quite crowded with different groups such as students, workers, and farmers on during the weekdays and weekends (**Table 2**). Some old-growth trees have been cut down to extend roads, whereas most paths enjoyed trees on both sides before redevelopment. In the following measures, it was the private green spaces and courtyards that were sacrificed for new development in some cases.

RESULTS

The well-adapted species to the arid climate were a major part of green spaces and trees at the site of study. The type of trees in the gardens, paths, and public areas was selected by the inhabitants based on long-lived experiences and cultural knowledge passed on to generations. In fact, the effects of hot summer and cold winter resulted in applying deciduous trees for sunlight protection in summer and penetration in winter. The typology of the applied trees in the area revealed that residents preferred the use of round and vase-shaped trees, providing shade in the summertime, and penetration of light in winter, rather than wood trees introduced to the area such as Pines with evergreen and pyramid shapes.

The green spaces in the areas included three forms of landscape, namely the private gardens, overshadows, and linear trees planted on the public roads and spaces. The private gardens spread over the areas, particularly in the surrounding part of houses to encompass the living areas in a green buffer. Although the private gardens were not accessible by the general

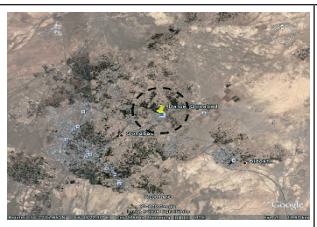
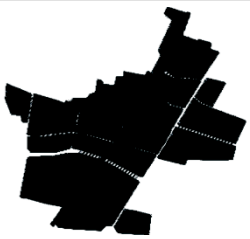
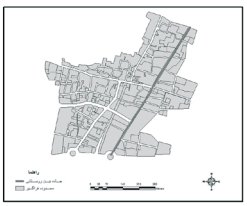
No	Name	Map	Critical Aspect	Explanation
1	The location			Dalooei is located in the periphery area of Gonabad city in northeast Iran.
2	Location of the area			The area is so congested to protect the buildings from the hot sunlight radiation in the summertime in a desert climate with dry summer and cold winter.
4	The area of the study			Dalooei was constructed in a semi and non-geometric form based on the specific style of construction in the area with the support of the underground water supply system.
5	The public spaces in the area for design solution			The main road of the area is adapted to the mainstream of underground water that the linear trees were enjoyed the channel.

Table 2. The location details

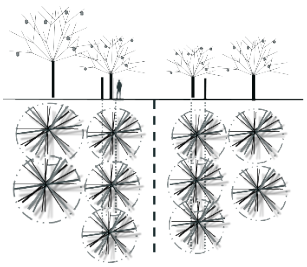
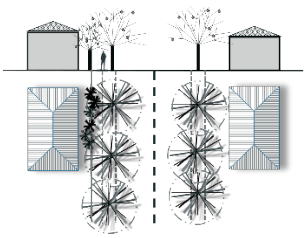
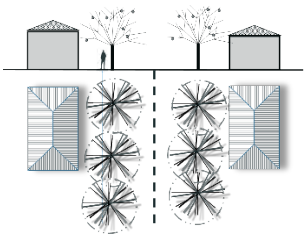
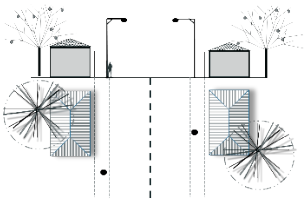
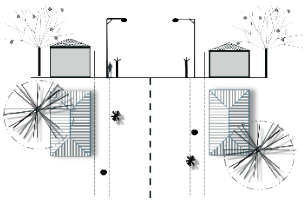
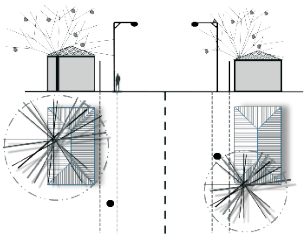
public, they were rather conspicuous from public roads due to the short walls of the gardens and the height of trees (**Row 1 and 2 Table 3**). This means the gardens were in a prominent position in the spatial structure of the area although they were physically separated from the users in public spaces. Moreover, these gardens helped to balance the temperature, humidity, and soil stability. Nonetheless, the redevelopment of the main road had negative effects on walls, and some of the old-growth trees, in particular the linear forms of trees.

While the area was primarily covered with linear trees in the streets and alleys (**Row 3 Table 3**), the extension of the main road resulted in cutting most of the old trees located along the new road (**Row 4 Table 3**). The linear trees were a combination of Mulberry (Morus Alba) with a round shape, Pomegranate, Walnut, and Jujube planted by the inhabitants, farmers, and gardeners. This structure presented the area with a variety of views and landscapes. Additionally, some wood trees such as Pine, Robinia, Ailanthus, Ulmus, and Platanus, Albizia were planted by the residents, and municipality due to being low-maintenance, durable and profitable.

The monumental trees were mainly situated in the central road, courtyards, and gardens. The collected data through photography, structured observation, and survey demonstrated that the size of the trunk of trees was between 1 and 1.5 meters radials based on the DBH (Diameter of

Breast Height). They are estimated to be aged between 157 and 235 according to the circumference of trees and growth factor average (**Row 5 Table 3**). Despite the great shape of the trees, their functional aspects of them led the inhabitants to plant fruitful trees and deciduous species such as Mulberry, Almond, Walnut, and Jujube.

Table 3. Green spaces specification

No	Name	Exemplify	Landscape Structure	Explanation
1	Green Alley in the gardens of the area			The area was integrated with both private and public green spaces that present a unique landscape with a human scale in the area with fruitful deciduous trees.
2	Green Shelter			The private green spaces were integrated with the public spaces to control the sunlight and temperature in the area with both visual and perceptual senses.
3	Linear Structure of Fruit Trees			The linear structure of the old trees created a functional landscape with fruitful trees in adaptation to the climate and sustainable environment.
4	Pruning and cutting the old and monumental trees			Pruning the trees made the areas so vulnerable in all seasons with less sustainability of the environment.
5	An old tree with pruning grown in the area			Both pruning of the crown and cutting of the trees were resulted in removing the last memory of the old trees in the area.
6	Monumental and Ornamental trees in the area			Some ornamental trees are located in the private part of the gardens and courtyards protected by owners as a pattern for planting.

THE RESEARCH FINDINGS AND DESIGN SOLUTIONS

The key findings of the analysis reveal that the trees have been integrated with the life experiences of the inhabitants in terms of source of income, social knowledge, and cultural values based on the behavioral patterns of the activities. Some of the gardens and trees were inherited from generations with the same species and arrangement. Apparently, trees are a part of the traditional way of life based on the collective knowledge of the inhabitants and practical applications in food, construction, furniture, and fuel in daily life in the area.

The results identify that there are three specifications in the trees that could be classified in terms of typology, built environment, and cultural aspects (**Table 4**). First, the inhabitants plant the adapted trees to an arid environment, dry climate, and shortage of water. The area enjoys the linear structure of the trees to highlight paths, boundaries of lands, territories of roads, and water channels. Second, the deciduous trees decrease the temperature in the roads, courtyards, and adjacent buildings in the area with round, vases, and spreading crown shapes. The deciduous trees work as a natural curtain to control the sunlight radiation in the summertime and to penetrate the light into paths in wintertime, buildings and courtyards. This specification supports the sustainability in the area through natural sunlight energy and the shadow of the trees also encourages people to rest and socialize. Third, some of the deciduous trees are a part of the cultural values based on fruitfulness, functionality, and application for a long time to represent generosity by sharing free fruit with the public, be it locals or visitors. Many fruit trees are also useful for certain functions in the area. For example, trunks of Mulberry, Jujube, and Walnut are used to build masques doors, ornaments, and furniture respectively. This specification of trees encourages the inhabitants to apply more fruit trees in the area than simply wood trees. Apparently, the cultural style of the application of the trees in the area is intertwined with the sustainability concept in terms of arid conditions.

To apply the findings to the design project, some local trees were selected to be essential elements of the landscape design of the public spaces. Arranging the trees in a canopy form creates a promenade for public activities and social interaction, but more importantly provides opportunities for the inhabitants of the area. Among the long list of fruit trees in the area, two of them, namely Mulberry and Jujube were well-adapted to the climate with less maintenance (**Table 4**).

DISCUSSION

The cultural values of the inhabitants are rooted in their long lived experiences in an arid environment (Spirn, 1998; Tafahomi, 2021; Tafahomi and Nadi, 2020). The interaction between the lifestyles and the geographical specifications has shaped forms, functions, and meanings for inhabitants in relation to the location and elements in the environment (Roman, et al., 2018; Smart et al.,, 2020). The arid circumstances have influenced economic structure, social interaction, and cultural values (Butzer, 1994), and trees have been one of the vital elements in the context for the production of wealth and value (Wescoat, 1996). The dwellers' dependency on specific types of fruit trees that were adapted to the arid climate led to some cultural values and beliefs (Cetina, 2005; Schägnera et al., 2016). For this reason, they planted trees along the path, allays, and underground

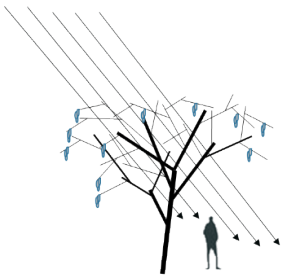
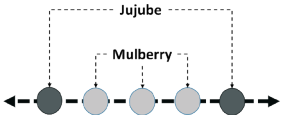
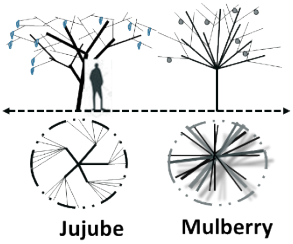
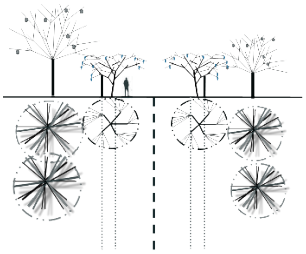
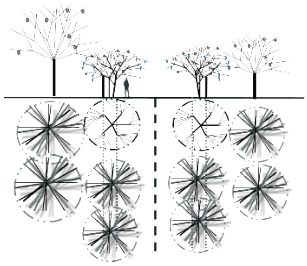
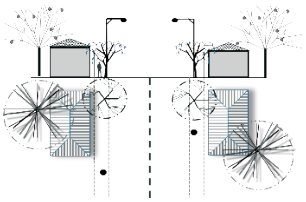
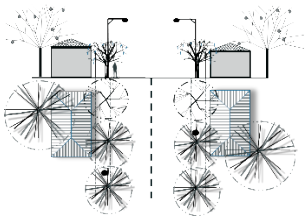
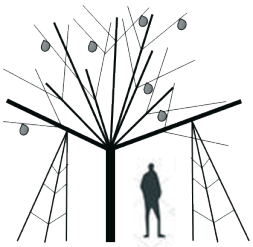
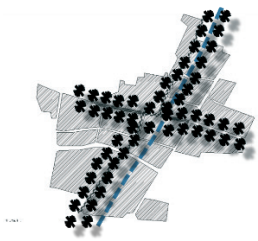
No	Topic	Design Strategy	Design Tactic	Landscape Structure Illustrations	
1	Typology	Application of Round and Deciduous Trees	The linear structure of deciduous trees in the paths for the shadow in summer and light in winter times		
		Structure of Trees arrangement	Integration of the fruit trees in the public spaces specifically Mulberry and Jujube to create rhythms		
2	Built Environment	Vitalization original garden-alleys	Integration of the new fruit trees with the original structure of the gardens and the alleys		
		Vitalization the public spaces with linear structure	Integration of the new fruit trees with the original structure of the buildings in the area to increase comfortability for the inhabitants in the area.		
3	Cultural values in Public Spaces	Maintenance the fruit landmark trees as part of inhabitants memories and free fruit sharing	To fix the problem of the stability of the branches through stands and trusses To control the form through graduate pruning		
		Free shadowing and gathering areas for community as a public promenade	Shading of the main social and cultural path in the area with the adaptive, deciduous, and fruit trees		

Table 4. Design solutions for the area

channels to help the climate comfort, as well as share fruits with the whole community. The fruit trees, therefore, have supported the food chain in the community (Chatzidimitriou and Yannas, 2017; Tafahomi, 2021).

The proposed plan reflected the cultural values of the inhabitants through the application of both visual and perceptual images of the area in the concept of design aligned with studies such (Alexander, 1977; Spirn, 1998; Tafahomi and Lamit, 2011). The trees' specification, structure, and compassion inspired the design team to apply traditional values in the design process (Smart et al., 2020). The design solutions were focused on sustaining the cultural values of the inhabitants in the area (Spirn, 1998; McPherson et al., 2016; Tafahomi and Nadi, 2020). The integration of Mulberry and Jujube supported the suitability and the cultural values in the area as earlier mentioned in the literature (Alexander, 1977; Spirn, 1998; Llewelyn-Davies, 2000; Cihanger, 2013). The proposed plan incorporated cultural values into the design structure based on the contextual evidence (Hauer and Petersen, 2016) and geographical specifications (Miller R. W., 2007; Plant and Kendal, 2019), which were adapted to the arid environment, soil quality, desert condition, and raining scarcity (Harris and Dines, 1998; Kundu et al., 2017).

The application of the round and speared trees increased the protected surface from the direct sunlight radiation in hot summer times in the area. This specification reduced the level of heating on the sidewalks and water consumption for the irrigation, which created a microclimate as some studies suggested such as (King and Davis, 2007; Kundu et al., 2017). This pattern of planting was adapted to absorb more sunlight (Bajsanski et al., 2016) and penetration the sunlight on the ground and buildings in the winter times based on the deciduous trees. This adaptation to the climate and human lifestyle was discussed widely by the studies (Tafahomi and Lamit, 2011; Tafahomi and Nadi, 2020). Although such specifications of trees were known in the area for a long time, revitalization of the concept in the public spaces through selected trees enhanced the integration of hardscape with softscape in the area (Moughtin and Shirley, 2006; Evans, 2007; Tafahomi and Nadi, 2021).

The linear structure of trees provided a promenade for social interaction in public spaces. This arrangement created strong scenery for the users in public spaces to enhance the visual appropriateness, and quality of the landscape in the area discussed by (Harris & Dines, 1998; Moughtin and Shirley, 2006; Tafahomi and Lamit, 2011; Smart et al., 2020). The linear structure of the trees also connected different parts of the area through a green network that approved the theory of the environmental pattern for design introduced by Tafahomi and Lamit (2011). The forms of both Mulberry and Jujube were adapted to the built environment to establish a green network in the hardscape part using the composition of trees, which was recommended by (Evans, 2007; Gehl and Rogers, 2013) as the key factor in street green spaces design.

CONCLUSION

The fruit trees, specifically Mulberry and Jujube have a strong connection to the horticultural and arboricultural background of the inhabitants in the site study. Although the process of industrialization and modernization has resulted in the loss of cultural values and character in many areas, there is an opportunity to revitalize useful cultural ways of life respectfully through landscape design projects. The fruit trees can be regarded as a part of the cultural values and symbolic elements to share free fruit in public spaces like paths for the consumption of the passers-by, visitors, and inhabitants. Finding out the cultural values to incorporate into the

landscape design process would support the integration of the design project with the beliefs of the residents.

The fruit trees not only do bring economic benefits but also reflect symbolic meanings to connect the dwellers with the past. In fact, planting fruit trees on public paths has been one of the great traditional values to share the public benefits through common assets. The existence of trees in public spaces could sustain the momentum of symbolic meanings, in the areas as part of cultural values. The urban green landscape would play a significant role in the creation of a unique character, such as a corridor canopy, social interaction, and a promenade to walk for pleasure. The linear structure of street trees can also support the adjacent built environment and protect users against hot summer and cold winter days. For instance, the green canopy with deciduous trees would contribute to providing comfortable and flexible public spaces.

The climate specification, geographical context, and cultural values are the key factor to select, recommend, and implement specific fruit trees in public places. Although the current condition of the world faces uncertainty in many aspects, paying attention to the environmental factors could be a crucial factor to mitigate the risk of manmade intervention in the urban environment. The form, function, and meaning of trees are unique factors to characterize and create a sense of place for users. The application of trees using locals' ideas and contextual knowledge could support the sustainability of implementation, utilization, and maintenance in the arid environment and dry climate. More exactly, the use of trees that are well-adapted to their environment would bring much more benefits and have a positive impact on the feasibility of landscape design projects. In fact, planting or removing specific trees affects the urban microclimate, lifestyle of users due to the visual and perceptional issues, and suitability of the city in future.

Achieving sustainable design solutions require an integrated approach to link the landscape design with the inhabitants' lifestyle. Importantly, the level of awareness of the inhabitants and users could support the successfulness of the landscape plans. For this reason, the participation of users and inhabitants in the landscape plans insists on more sufficient processes. Apparently, selecting trees for the urban environment requires scientific methods and data that are collected through studies, interviews, questionnaires and participatory design to increase the possibilities of attaining the outputs of landscape plans in public spaces.

ACKNOWLEDGMENT
This project was given financial support by ICHHTO (Iran Cultural Heritage, Handicrafts and Tourism Organization), Khorasan Razavi province, under the supervision of Arch. Marjan Akbari Sarshori, the Directorate of Cultural Heritage Department of ICHHTO, in Khorasan Razavi province.

REFERENCES

ALEXANDER, C. (1977) *A Pattern Language.* New York: Oxford University Press.

ALVEY, A. A. (2006) Promoting and Preserving Biodiversity in the Urban Forest, *Urban Forestology and Urban Greening 5*(4) 195-201.

ANDREOU, E., AXARLI, K. (2012) Investigation of Urban Canyon Microclimate in Traditional and on Temporary Environment,

Renewable Energy, Experimental Investigation and Parametric Analysis, 43, 354-63.

BACK, L., BENNETT, A., EDLES, L. D., GIBSON, M., INGLIS, D., JACOBS, R., WOODWARD, I. (2012) *Cultural Sociology: An introduction,* Oxford: Wiley-Blackwell.

BAJSANSKI, I., STOJAKOVIC, V., JOVANOVIC, M. (2016) Effect of Tree Location on Mitigating Parking Lot Insolation, *Computers, Environment and Urban Systems, 56* 59-67.

BAKER, L. A., BRAZEL, A. J., SELOVER, N., MARTIN, C., MCINTYRE, N., STEINER, F. R., MUSACCHIO, L. (2002) Urbanization and Warming of Phoenix (Arizona, USA): Impacts, Feedbacks and Mitigation, *Urban Ecosystems 6*(3) 183-203.

BARKER, C. (2005) *Cultural tudies: Theory and practice,* New Dehli: Sage.

BARRON, S., SHEPPARD, S., KOZAK, R., DUNSTER, K., DAVE, K., SUN, D., & RAYNER, J. (2021) What do They Like About Trees? Adding Local Voices to Urban Forest Design and Planning, *Trees, Forests and People 5*.

BLICHARSKA, M., MIKUSINSKI G. (2014) Incorporating Social and Cultural Significance of Large Old Trees in Conservation Policy, *Society for Conservation Biology 28*(6) 1558–67.

BONNES, M., BONAIUTO, M. (2002) Environmental Psychology: From Spatial-physical Environment to Sustainable Development, *Handbook of Environmental Psychology*, eds. R. B. Bechtel, A. Churchman, New York: John Wiley & Sons, Inc; 28-54

BOULTS, E., SULLIVAN, C. (2010) *Illustrated History of Landscape Design,* New Jersey: John Wiley & Sons, Inc.

BRADLEY, G. A. (1995) *Urban Forest Landscapes: Integrating Multidisciplinary Perspectives.* Seattle: University of Washington Press.

BUTZER, K. (1994) The Islamic Traditions of Agroecology: Cross Cultural Experience, Ideas, and Innovations. *ECUMENE: Journal of Environment, Culture Meaning,* 1, 1-50.

CASTELLO, L. (2010) *Rethinking the Meaning of Place: Conceiving Place in Architecture and Urbanism.* London: Ashgate Publishing Limited.

CETINA, K. K. (2005) Culture in Global Knowledge Societies: Knowledge Cultures and Epistemic Cultures, *The Blackwell Companion to the Sociology of Culture,* eds. M. D. Jacobs, N. W. Hanrahan, Malden, MA: Blackwell Publishing Ltd; 65-80

CHATZIDIMITRIOU, A., YANNAS, S. (2017) Street Canyon Design and Improvement Potential for Urban Open Spaces; the Influence of Canyon Aspect Ratio and Orientation on Microclimate and Outdoor Comfort, *Sustainable Cities and Society*, 33, 85-101.

CIHANGER, D. (2013). Trees in the Urban Context: A Study on the Relationship between Meaning and Design, Unpublished Master Thesis in Urban Design. [http://etd.lib.metu.edu.tr/upload/12615467/index.pdf]

COUTTS, A. M., DALY, E., BERINGER, J., TAPPER, N. J. (2013) Assessing Practical Measures to Reduce Urban Heat: Green and Cool Roofs. *Building and Environment*, 70, 266-76.

DIBA, K. (1996). Aspects of a University Project and a New Town., *Sustainable landscape design in an arid climate*, ed. W. O'REILLY, LAUSANNE, Switzerland: The Aga Khan Trust for Culture; 35-7

DONOVAN, G. H., PRESTEMON, J. P., BUTRY, D. T., KAMINSKI, A. R., MONLEON, V. J. (2021) The Politics of Urban Trees: Tree Planting is Associated with Gentrification in Portland, Oregon, *Forest Policy and Economics*, 124.

DWYER, J. F., SCHROEDER, H. W., GOBSTER, P. H. (1991) The Significance of Urban Trees and Forests: Toward a Deeper Understanding of Values. *Journal of Arboriculture* 17(10) 276-85.

ETTINGHAUSEN, R., GRABAR, O., & JENKINS-MADINA, M. (2001) *Islamic Art and Architecture 650-1250.* Hong Kong: Yale University Press.

EVANS, R. (2007) *Urban Design Compendium II.* London: English Partnerships.

FRANK, S., WATERS, G., BEER, R., MAY, P. (2006) An Analysis of the Street Tree Population of Greater Melbourne at the Beginning of the 21st Century. *Arboriculture & Urban Forestry* 32(4) 155-163.

GEHL, J., & ROGERS, L. R. (2013) *Cities for People*, Island Press.

GEORGOULA, O., STAMNAS, A., PATIAS, P., GEORGIADIS, C., FRAGKOULIDOU, V. (2013) Historical Coastal Urban Landscapes Digital Documentation and Temporal Study with 2D/3D Modeling Functionality: The Case of Thessaloniki, Greece. *Journal of Cultural Heritage* 14(5) 396-402.

GREENBLUE, U. (2020) *Street Tree Cost Benefits Analysis.* East Sussex: GreenBlue Urban Ltd.

GROAT, L., WANG, D. (2002) *Architectural Research Methods,* New York: John Wiley & Sons INC.

GUSTAFSON, P. (2001) Meanings Of Place: Everyday Experience and Theoretical Explanations,. *Journal of Environmental Psychology, 21,* 5-16.

HARRIS, C. W., DINES, N. T. (1998) *Time-Saver Standards for Landscape Architecture: Design and Construction Data* (2 ed.) New York: McGraw-Hill Publishing Company.

HAUER, R., PETERSEN, W. (2016) *Municipal Tee Care and Management in the United States: A 2014 urban & community forestry census of tree activities,* University of Wisconsin – Stevens Point. Stevens Point: Municipal of Stevens Point, WI.

HAVILAND, W. A. (1997) *Cultural Anthropology* (9 ed.). New York: Harcourt Brace College Publishers.

HILLENBRAND, R. (1999) *Islamic Art and Architecture,* London: Thames and Hudson .

HORTE, O. S., EISENMAN, T. S. (2020) Urban Greenways: A Systematic Review and Typology. *LAND, 9*.

HOUGH, M. (2004) *Cities and Natural Process: A Basis for Sustainability.* New York: Routledge.

JACOBS, A. B. (1993) *Great Streets.* New York: MIT.

JACOBS, A. B., MACDONELD, E., ROFE, Y. (2002) *The Boulevard Book: History, Evolution, Design of Multiway Boulevards.* Cambridge: MIT.

JIN, H. (2021) Deconstructive Hermeneutics of Nature and Culture: Thinking After Derrida. *Space and Culture* 24(4) 679-96.

JONES , O., CLOKE, P. (2002) *The Place of Trees and Trees in Their Place,* Oxford, UK: Berg.

KABASSI, K., MARTINIS, A., MINOTOU, C. (2021) Estimating the Value of Monumental Olive Trees: Designing a Tool Using Multi-Criteria Decision Making, *Trees, Forests and People* 6.

KING, V. J., DAVIS, C. (2007) A Case Study of Urban Heat Islands in the Carolinas. *Environmental Hazards, 7*(4) 353-9.

KUNDU, S., KHARE, D., MONDAL, A. (2017) Individual and Combined Impacts of Future Climate and Land Use Changes on the Water Balance. *Ecological Engineering, 105*, 42–57.

LAGRO JR, J. A. (2008) *Site Analysis: A Contextual Approach to Sustainable Land Planning and Site Design,* New Jersey: John Wiley & Sons, Inc.

LASEAU, P. (2000) *Graphic Thinking for Architects and Designers* (3 ed.). New York: Wiley.

LI, W., CAO, Q., LANG, K., WU, J. (2017) Linking Potential Heat Source and sink to urban heat island: Heterogeneous effects of landscape pattern on land surface temperature. *Science of the Total Environment 586* 457-65.

LLEWELYN-DAVIES. (2000) *Urban Design Compendium.* London: English Partnerships.

MADANIPOUR, A. (1996) *Design of Urban Space: An Inquiry into a Socio-Spatial Processes.* London: Willy.

MASSENGALE, J., DOVER, V. (2014) *Street Design: The Secret to Great Cities and Towns.* Hoboken, NJ: John Wiley & Sons.

MATTHECK, C., BRELOER, H. (2005) *The Body Language of Trees: A Handbook for Failure Analysis,* Norwick, GN: TSO.

MCBRIDE, J. R., DOUHOVNIKOFF, V. (2012) Characteristics of the Urban Forests in Arctic and Near-Arctic Cities. *Urban Forestry & Urban Greening*, 11(2) 113-9.

MCPHERSON, G. E., DOORN, N., GOEDE, J. (2016) Structure, Function and Value of Street Trees in California, USA. *Urban Forestry & Urban Greening* 17(1) 104-15.

MCTH. (2016) *Annual Report of Conservation.* Tehran: Ministry of Cultural Heritage, Tourism and Handicraft.

MILLER, G., DINGWALL, R., MORPHY, E. (2004) Using Qualitative Data and Analysis, *Qualitative Research: Theory, Method, and Practice*, ed. . In D. SILVERMAN, London: Sage Publications; 325-41.

MILLER, R. W. (2007) *Urban Forestry: Planning and Managing Urban Green Spaces,* Long Grove, ILL: Waveland Press.

MOORE, G. M. (2003) Native Trees: The Value of Selection, *Treenet Proceedings of the 4th National Street Tree Symposium: 4th and 5th September 2003*, Melbourne: University of Melbourne; 1-9

MOUGHTIN, C., SHIRLEY, P. (2006) *Urban Design: Green Dimensions* (2 edition-Kindle Edition ed.) Oxford: Architectural Press.

MOUGHTIN, C., CUESTA, R., SARRIS, C., SIGNORETTA, P. (1999) *Urban Design: Methods and Techniques*, Oxford: Architectural Press.

MUNYANEZA, E., BIZURO, E., NSHUTIYAYESU, S., BIGENDAKO, M. J., MINANI, V. (2009) The Role of Cultural Practices in the Conservation of Biodiversity in Rwanda. In E. Kalipeni, I. Kakoma, Y. Sanogo, K. Fawcett, & R. Warner (Eds.), *Turning Science into Action: Biodiversity Conservation and Natural Resources Management In Africa* (pp. 417-430). Kigali, Rwanda: Africa World Press Inc.

NADEL, I. B., OBERLANDER, C. H., BOHM, L. R. (1977). *Trees in the City* . New York: Pergamon Press Inc.

NAGENDRA, H., GOPAL, D. (2010). Street Trees in Bangalore: Density, Diversity, Composition and Distribution. *Urban For. Urban Green, 9*, 129–137. doi:10.1016/j.ufug.2009.12.005

NEUMAN, L. W. (2006). *Social Research Methods: Qualitative and Quantitative Approaches.* New York: Pearson Education.

NIEZABITOWSKA, E. D. (2018). *Research Methods and Techniques in Architecture.* New York: Routledge.

OSWELL, D. (2006). *Culture and Society: An Introduction to Cultural Studies.* London: SAGE Publications Ltd.

PLANT, L., KENDAL, D. (2019). Toward Urban Forest Diversity: Resident Tolerance for Mixture of Tree Species in Streets. *Arboriculture and Urban Forestry, 45*(2), 41-53.

REGIS, R. (2003) Sketchbook: Piazza di Spagna, Rome. In D. WATSON, A. PLATTUS, & R. SHIBLEY, *Time Saver Standards for Urban Design* (441-448). New York: Mc Grow Hill.

RELPH, E. (1976). *Place and Placelessness.* London: Pion Ink.

RESOURCES INVENTORY COMMITTEE (2001) *Culturally Modified Trees of British Columbia.* British Columbia: Resources Inventory Committee.

ROMAN, L. A., PEARSALL, H., EISENMAN, T. S., CONWAY, T. M., FAHEY, R. T., LANDRY, S. (2018) Human and Biophysical Legacies Shape Contemporary Urban Forests: A Literature Synthesis. *Urban For. Urban Green, 31*, 157–168.

SCHÄGNERA, J. P., BRANDER, L., MAES, J., PARACCHINI, M. L. (2016). Mapping Recreational Visits and Values of European National Parks by Combining Statistical Modelling and Unit Value Transfer. *Journal for Nature Conservation, 31*, 71–84.

SHAMS, Z. I., SHAHID, M., NADEEM, Z., NAZ, S., RAHEEL, D., AFTAB, D. (2020). Town Socio-Economic Status and Road Width Determine Street Tree Density and Diversity in Karachi, Pakistan. *Urban Forestry & Urban Greening, 47*, 126473.

SILVERMAN, D. (2010). *Doing Qualitative Research.* New York: SAGE Publisher.

SJÖMAN, H., OSTBERG, J., BÜHLER, O. (2012). Diversity and Distribution of the Urban Tree Population in Ten Major Nordic Cities. *Urban Forestry & Urban Greening, 11*(1), 31-39.

SMART, N., EISENMAN, T. S., KARVONEN, A. (2020). Street Tree Density and Distribution: An International Analysis of Five Capital. *Frontiers in Ecology and Evolution*, 8:562646.

SPERLREGEN, P. D. (2003). Making a Visual Survey. In D. WATSON, A. PLATTUS, & R. SHIBLEY, *Time Saver Standards for Urban Design* (pp. 431-440). New York: Mc Grow Hill.

SPIRN, A. W. (1998). *The Language of Landscape.* New Haven: Yale University Press.

TABANDEH, H. (1969). *History of Gonabad.* Gonabad: Sepehr .

TAFAHOMI, R. (2009). Application the Visual and Graphical Techniques of Urban Design in Urban Vision Document. *Journal of Shar Negar (City Writer), 52*, 36-42.

TAFAHOMI, R. (2010). *Documentary of Historical Parts of Gonabad City.* Mashhad: Cultural Heritage Organization, Mashhad, Iran.

TAFAHOMI, R. (2021). Application of Physical and Nonphysical Elements in the Conservation of Historic Core of City. *South African Journal of Geomatics, 10*(1), 75-86.

Tafahomi, R. (2021). Transition Process of Landscape through Changing Tropical Gardens from Productive Function into Recreational Purposes. *Turkish Journal of Landscape Research, 4*(1), 45-63.

TAFAHOMI, R., LAMIT, H. B. (2011). Environment as a Pattern for Design: Case of tudy Shandize Valley in Mashhad, Iran. *International Journal of Architecture and Urban Development, 1*(1), 11-16.

TAFAHOMI, R., NADI, R. (2016) Dehistoricisation the Urban Landscape through Transition of the Enclosure Ratio in Urban Fabric of Gonabad City in Iran. *Journal of Architecture Engineering Technology,* 5(2).

TAFAHOMI, R., NADI, R. (2020) Derivation of a Design Solution for the Conservation of a Historical Payab in the Redevelopment of Doloeei, Gonabad, *International Journal of Built Environment and Sustainability 7*(1) 1-9.

TAFAHOMI, R., NADI, R. (2020) Insight into the Missing Aspects of Therapeutic Landscape in Psychological Centers in Kigali, Rwanda, *Cities & Health*.

TAFAHOMI, R., NADI, R. (2021) Protection of Natural Wetlands through Landscape Design in Kigali city. *Rwanda Journal of Engineering, Science, Technology and Environment 4*(1) 1-16.

TAFAHOMI, R., NADI, R. (2021) The Transformative Characteristics of Public Spaces in Unplanned Settlements. *A|Z ITU Journal of the Faculty of Architecture 18*(2) 285-300.

VELARDE, M. D., TVEIT, M. (2007) Health Effects of Viewing Landscape-Landscape Types in Environmental Psychology. *Urban Forestry and Urban Greening 6*(4) 199-212.

WARD THOMPSON, ASPINALL, P., ROE, J., ROBERTSON, L., MILLER, D. (2016) Mitigating Stress and Supporting Health in Deprived Urban Communities: The Importance of Green Space and the Social Environment, *International journal of Environmental Research and Public Health 13*(440) 1-24.

WARD THOMPSON, C., ASPINALL, P., MONTARZINO, A. (2008) The Childhood Factor Adult Visits to Green Places and the Significance of Childhood Experience. *Environment and Behavior, 40*(1) 111–143.

WESCOAT, J. L. (1996) A Geographical Perspective on Landscape Design in Arid Environments. In W. O'Reilly, *Sustainable Landscape Design in Arid Climate* , Lausanne, Switzerland: the Aga Khan Trust for Culture; 11-23

WHITE, E. T. (1975) *Concept Sourcebook: A Vocabulary Architectural Forms,* Tucson: Architectural Media Ltd.

WHITE, E. T. (1983) *Site analysis: Diagramming Information for Architectural Design,* Tallahassee, Florida: Architectural Media Ltd.

Alındı: 25.04.2021; **Son Metin:** 09.05.2022

Anahtar Sözcükler: Peyzaj tasarımı; yaprak döken meyve ağaçları; yeniden canlandırma; kültürel değerler; sürdürülebilirlik.

SOKAK AĞAÇLARI TASARIMI İLE KENTSEL PEYZAJDA KÜLTÜREL DEĞERLERİN YENİDEN CANLANDIRILMASI

Bu araştırma, kuzeydoğu İran'da kurak bir iklime sahip tarihi bir mekanın peyzaj tasarımıyla kültürel değerlerini canlandırmayı amaçlamaktadır. Çalışma alanı fiziksel bir dönüşüme uğramıştır, özellikle ana caddenin yeniden inşası, orta yol boyunca yaşlı ağaçlara zarar vermiş, bu da alanın peyzaj ve karakterinin değişmesine neden olmuştur. Araştırma metodolojisi yapılandırılmış gözlem, fotoğraf, eskiz ve grafik analizden oluşan nitel tekniklere dayanmaktadır. Bulgular, yerel meyve ağaçlarının bazılarının bölge sakinleri için daha önemli değere sahip olduğunu ve geleneksel olarak bahçecilik değerlerinden yararlandıklarını ortaya koymaktadır. Daha da önemlisi, dut ve hünnap ağaçları, yürüyüş ve buluşma mekanı gibi sosyal ve ritüel aktiviteleri temsil eden kamusal alanlar için bir tasarım önerisi olarak uygulanmıştır Yaprak döken türde ve yuvarlak şekilde olan her iki ağaç da, yazın kaldırımlarda yapraklarıyla gölge oluşturmakta ve kışın güneş ışığının nüfuz etmesini sağlamaktadır. Sonuç olarak, yaprak döken ağaçların yeşil bir gölgelik gibi doğrusal bir yapıda uygulanması, kamusal alanlarda kültürel değerlerin yeniden canlandırılması yoluyla sadece mekanın karakterini canlandırmaya değil, tasarım sürecinde sürdürülebilirlik ilkelerine de katkıda bulunmaktadır.

REVITALIZATION OF CULTURAL VALUES IN URBAN LANDSCAPE THROUGH STREET TREES DESIGN

This research aims to revive the cultural values through the landscape design in a historic site located in northeast Iran with an arid climate. The area of study has undergone a physical transformation, in particular, the reconstruction of the main street has been detrimental to old trees along the central path, which has resulted in changing landscape and character of the area. The research methodology was based on qualitative techniques consisting of structured observation, photography, sketching, and graphical analysis. The findings revealed that some of the local fruit trees were of significant value to the inhabitants and that they have traditionally benefited from gardening values. Importantly, Mulberry and Jujube trees were applied as a design proposal for the public spaces to represent social and ritual activities such as a place for hangouts, walking, and talking.

Both trees having round shapes with deciduous specifications provide leafy shade for the sidewalks in summers and penetration of sunlight in wintertime. In conclusion, the application of deciduous trees in a linear structure with a green canopy could contribute to not only reviving the character of the site but principles of sustainability in the design process through the revitalization of the cultural values in the public spaces.

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F. Cânâ Bilsel, Olgu Çalışkan (eds.)
TÜRKİYE KENTSEL MORFOLOJİ ARAŞTIRMA AĞI: III. KENTSEL MORFOLOJİ SEMPOZYUMU
(ODTÜ Mimarlık Fakültesi, 1288 p.)

ISBN: 978-975-429-411-8

TÜRKİYE KENTSEL MORFOLOJİ ARAŞTIRMA AĞI: III. KENTSEL MORFOLOJİ SEMPOZYUMU

Uluslararası yazında kentsel coğrafya ve mimarlık, morfoloji araştırmalarının iki temel disipliner aktörü olarak ön plana çıkarken; ülkemizde kentsel morfoloji alanında öncülük rolü üstlenen disiplinlerin mimarlık ve planlama olduğunu görmekteyiz. 3-5 Mayıs 2021 tarihinde ODTÜ Mimarlık Fakültesi'nin çevrimiçi olarak ev sahipliği yapmış olduğu III. Kentsel Morfoloji Sempozyumu'nun örgütlenme biçimi, bu gerçeğin bir yansımasıdır. Bu bağlamda daha fazla coğrafya, tarih ve arkeoloji gibi kent ve yerleşim morfolojisine doğrudan ilgi duyan alanlarla güçlendirilmiş ilişkilerin yakın gelecekte alan içi araştırma çeşitliliğini artıracağını savlamak olanaklıdır.

III. Kentsel Morfoloji Sempozyumu'na katılmış olan araştırmacı ekiplerin profili, çok disiplinli bir alan olan kentsel morfolojinin ülkemizde çok daha güçlü çok-disiplinli ortaklıklar temelinde geliştirilmesine gereksinim duyduğu gerçeğini açığa çıkarmaktadır. Bu bağlamda, önceki iki sempozyumda olduğu gibi III. Kentsel Morfoloji Sempozyumu'nun Türkiye Kentsel Morfoloji Ağı bünyesinde morfolojik araştırmada disiplinlerarası sinerjiyi ortaya çıkartarak güçlendireceğine inanıyoruz. Bu anlamda ODTÜ Mimarlık Fakültesi çatısı altındaki iki disiplinin ortak çabası ile örgütlenmiş olan sempozyumun ve ortaya konan olumlu deneyimin önümüzdeki yıllarda yeni disipliner açılımların da önünü açacağını umuyoruz.

ISSN 0258531-6