ITU A|Z • Vol 17 No 2 • July 2020 • 159-170

Karşıyaka Coastal Renovation Project: A process-based approach to urban design

Ebru BİNGÖL
ebrubingol@mku.edu.tr • Department of Architecture, Faculty of Architecture, Hatay Mustafa Kemal University, Hatay, Turkey

Received: May 2018 • Final Acceptance: December 2019

Abstract

As the mobility and the fluidity in the society have increased and the economic activities have been globalized for the last few decades, the contemporary city has emerged as a rapidly changing dynamic phenomenon. Similar to the landscape, the city is an evolving, complex and layered system built as a result of natural and cultural processes. In this current conjuncture, a static image of the urban system like figure-ground maps sounds archaic. Therefore, imagining the city as a landscape not only helps to reformulate the conceptual relationships between landscape, architecture and the city but also provides new insights into how to organize the urban space. This paper invites Landscape Architecture Theory to introduce dynamic systems into urban practices that could contribute to the analysis and understanding of the contemporary city. Since the 1960s, landscape architecture theory investigates spatial organization of dynamic systems through the ecological models as a process-based design approach. Karşıyaka Urban Coastal Renovation Project (2012) in Izmir, discussed in this paper, is an urban design project produced for renovation of Karşıyaka coastal area. The project approached the city as a landscape where natural and social self-organizing processes are expected to transform the site. Therefore, the focus of the project was individuals' interaction with the environment at the social level and self-organizing nonhuman factors as a living system as the natural phenomena. Rather than searching a fixed and rigid spatial frame, the project investigated how self-organizing systems generate a process based design approach to urban planning.

Keywords
Change, Process, Urban design, Process-based design, City as landscape.

doi: 10.5505/itujfa.2020.03521

1. Introduction

Traditional descriptions of urban systems represent urban pattern as a static image displayed for a particular time. In the 1748 Nolli map of Rome, the urban context was implicitly conceived as a static and stable pattern as it becomes apparent through the emphasis on the distribution of buildings on a ground. In a relatively more recent and one of the most well-known formulations of the urban context, introduced as contextualism Colin Rowe's figure-ground maps analyzed urban space at a certain time. On the other hand, as the worldwide exchange networks have transformed over the past quarter century they caused a corresponding shift in the understanding of the city and articulation of territory (Lyster, 2006). The rapid flow of information, transportation, and communication at multiple scales have created layered, complex and dynamic urban systems. As an architect who pursued his recent architectural practice in global scale, Rem Koolhaas (1995: 29) has defined "born of new urbanism" as the "staging of uncertainty, accommodating processes, discovering unnameable hybrids, manipulation of infrastructure for endless intensifications and diversifications". In this context, recommending static figure-ground mappings for the city becomes archaic.

Karşıyaka Coastline, in metropolitan city İzmir, is a complex and dynamic urban space displaying a diverse set of characteristics along 8 km length.. The Coast hosts changing activities, emerging indeterminacies, ecological processes, and self-organizing processes on the coastline as well as ordinary daily activities taking place on site. As a response to dynamic social, territorial and ecological characteristics of the Karşıyaka Coastline, a dynamic understanding of urban space is essential.

For few decades, landscape architecture theory has formulated the landscape not merely as a natural "passive resource" or "a field of deployment of a predetermined project" (Picon, 2010: 98); rather, it refined the landscape as a dynamic, evolving and adaptive phenomenon that has a role in the urban formation. Recent landscape architecture theory provides new insights into understanding and designing dynamic urban space, by understanding *city as a landscape* that is changing and self-organizing . By conceiving the *city as a landscape,* this paper investigates how to employ change, process, indeterminacy and self-organization into the urban design of Karşıyaka Coastline in response to the dynamic and complex structure of the city.

Accordingly, this paper was conducted in two parts. The first part concentrates on contemporary landscape architecture theory that combines dynamic systems and processes with spatial patterns to identify strategies for urban design. The second part of the paper discusses the design methodology of Karşıyaka Urban Coastal Renovation Project (in which the author is a part of the design team) which transfers the city as a landscape approach into design of Karşıyaka Coastline.

1.1. Contemporary urban space is dynamic

David Harvey (1989) has defined postmodern urban condition as characterized by complex networks of relationships, rapid change and dynamism at the economic, physical and social level. As a multi-level structure, contemporary cities are examples of large complex systems (Heylighen, 1989; De Roo and Rauws, 2012).The dynamic character of contemporary city emerges from its complexity and interaction between its multiple parts in a dynamic web of relationships (Batty, 2005). The current urban condition is a by-product of interaction of structures i.e. urban planning or urban policy as well as dynamics (processes) i..e organization of people, events, spaces and ecologies over time. The dynamic web of interaction and relationship between structures and processes of the contemporary city produces emergent and indeterminate phenomena and allows the urban structure to organize itself which produce a characteristics in time (Boeing, 2018). As Portugali (2009) has identified, the contemporary city is a product of self-organization, which creates arising indeterminacies as a result of the interaction between its components. Even though, self-organization is a spontaneous pro-

[1] *McHarg's creative fitting model was a synthesis of Charles Darwin's theory of survival of the fittest, introduced in his book The Origin of Species (1859) and the lesser-known scientist Lawrence Henderson's (1878-1942). symbiotic model of adaptive environment for fittest possible life that he introduced in his book The Fitness of the Environment (1913).*

[2] *McHarg's creative fitting theory is based on a closed ecosystem approach that the ecosystem reaches to a balanced state when best fitting to the environment is achieved. Open ecosystem approach derives from C.S. Holling's theory of dynamic cycle of ecosystem development evaluating ecosystems as open. Since the past few decades, closed, hierarchical, and stable and fitting ecosystem approach was altered into open complex, self-organizing, cyclic and dynamic ecosystems approach that is in constant flux. See C. S. Holling, "Resilience of ecosystems; local surprise and global change", in Sustainable Development of the Biosphere, W. C. Clark and R. E. Munn, (eds) 292-317 (Cambridge University Press, Cambridge, 1986).*

[3] *See Anne Whiston Spirn, Granite Garden: Urban*

cess of organization, in the end, it develops towards an organized structure (Heylighen, 1989). Thus, recent urban system exhibits a non-linear system in which determinate structures and indeterminate processes operate simultaneously.

2. How to employ dynamic processes into design: A tune into landscape architecture theory

Given its living material, in landscape architecture, change does not come externally. According to landscape architecture theorist Anita Berrizbeitia, one of the oldest method in landscape architecture is to appreciate change as a technique for " articulating a project in terms of its material determinants" (Berrizbeitia, 2007: 178). Considering change through its materiality relies on temporalities on site and perception of temporality of landscape that has been sought by many landscape architects (Rose, 1938; Spirn, 1988; Relph, 2004, Andersson, 1997; John-Alder, 2014; Lassus, 1998; Raxworthy, 2004; Dee, 2012). While the term temporality is associated with change profoundly at a personal level, on the one hand process predominantly refers to rhythms and cycles at the urban scale. Since ecology is a science of process (Halprin, 1989), an ecological perspective brought debate on landscape processes into landscape archtecture. Ian McHarg is the preeminent figure who extended landscape architecture's relationship with time and change from materiality into broader perspective of process. McHarg has asserted that all living entities are in the "process of becoming" (McHarg, 1967: 107) and thus, landscape is. McHarg associated landscapes with ecosystems, which interact with and fit into their environment and to each other, in which some species succeed, fittest one invades, and all of which adapt to existing conditions. By applying the processes of ecosystems into landscape planning, McHarg believed that all organisms developed "a kind of creativity, a reciprocal fitting itself to the environment" (McHarg, 1992: 53), what he called as *creative fitting*[1]. According to McHarg's *creative fitting theory,* all systems consciously achieve the highest success through evolutionary progress to best fit to their environment. In such a system, when an organism or landscape best adapts to the environment, it reaches a stable position. Here, McHarg has suggested that ecological structures and survival processes in the landscape were the generators of change on landscape.

In his influential book, "Design with Nature" (1969), McHarg introduced his ecological planning method as an ecological inventory to identify suitability of land for specific uses where human development would be attuned to the land without interfering processes of the landscape. McHarg developed map overlay method to analyze landscape elements layer by layer in various maps and then superimposed them into a composite map to individually show the unique, specific data about a site. The composite map showed the suitability for a specific use valued by light to dark gradation of colors to show degrees of compability for use. Nevertheless, McHarg's map overlay method did not show change patterns and landscape processes on site. While McHarg's creative fitting theory introduced a dynamic understanding of landscape, it could not find its counterpart in his static mapping technique.

By revising McHarg's creative fitting theory and reappraising it as an open ecosystem[2], his student James Corner evaluated the landscape as an open, ever-evolving, self-organizing and dynamic system, marked by sudden and unpredictable change. For Corner, landscapes had the same processes of ecosystems such as adaptation, invasion and succession and these processes ever-evolve on site. Similar to McHarg's creative fitting, Corner appreciated ecological processes as organizing forces of change on site. Corner called these self-organizing strategies of landscape as "design intelligence" (Corner, 2004) that gave shape and form to the grounds by organizing itself. He pointed out ecosystems' processes that produce emerging ecologies on site as productive capacity of landscape Corner offered using these processes to generate the design, rather than using ecology as an instrument for ecological inventory. Corner

Nature and Human Design, (New York: Basic Books, 1984); John Brinckerhoff Jackson, "Concluding with Landscapes", in Discovering the Vernacular Landscape, ed. J.B. Jackson, (New Heaven: Yale University Press, 1984), 145-158; Elizabeth Meyer, "The Expanded Field of Landscape Architecture" in Ecological Design and Planning, ed. George Thompson and Frederick Steiner, (John Wiley Press, 1997); John Dixon Hunt, Gardens and the Picturesque: studies in the history of landscape architecture, (Massachusetts: MIT Press, 1992); James Corner, Recovering Landscape: Essays in Contemporary Landscape Architecture, (New York: Princeton Architectural Press, 1999); Charles Waldheim, "Landscape Urbanism: A Genealogy", in Praxis: Journal of writing+ building 4, (2002).

[4] Landscape theorists Elizabeth Meyer argued extension of the notion of landscape since the 1990s, in The Expanded Field of Landscape Architecture. See Elizabeth K. Meyer, "The Expanded Field of Landscape Architecture", in Ecological Design and Planning, ed. George Thompson and Frederick Steiner, (John Wiley Press, 1997).

favoured the term *landschaft*, which investigates "how landscape performs over time, how they work, how they interact, and what agency or effects they might exercise over time" (Corner, 1999: 4). As a response to organizing capacity of landscape,Corner transferred premises of *landschaft*, into one of his well-known project, Fresh Kills Park (2001) in partnership with Stan Allen.For Fresh Kills Park, Corner and Allen created a framework for the transformation of the landfill in Staten Island into a park, as an evolving landscape for the next thirty years (Fresh Kills Park Draft Master Plan, 2006). By transferring self organizing capacities of landscape as a model for actualization of the design, Corner and Allen used the self-organizing capacities of the landscape to strategically phase the design. They created a plan schema defined four phases for spatial development of Fresh Kills Park from 2001 to 2026, as sequential site plans: seeding, infrastructure, programming and adaptation. *Seeding* was the metaphor to initiate a process for design that triggered further change and the organization of infrastructure and program on the site. The seeding strategy was to set up the conditions for the ecological succession that establishes the conditions for the next stage which is not necessarily in foreseeable or prescribable ways" (Corner, 2004: 32). The plan schema of the Fresh Kills Park was displayed the growing Parkland in twentyfive years rather than a single one. Similarly, Derek Revington and Bernard Tschumi's proposal, *The Digital and the Coyote* for Downview Park (2000), was based on strategically phasing of succession planting and seeding of ambient urbanity in fifteen years.

Arguably, as a result of post-structuralism, since the end of the 1980s, landscape architecture started to relate not only with natural sciences and ecology but also with social sciences. Anne Whiston Spirn, John B. Jackson, Elizabeth Meyer, John Dixon Hunt and James Corner theorized landscapes not antitheses to the human systems but as one system working together within urbanized environments[3]. Landscape was now understood not as a natural, but rather a culturally constructed phenomenon[4]. In his famous book *"Recovering Landscape: Essays in Contemporary Landscape Architecture" (1999)*, landscape architect James Corner emphasized the critical and cultural role of the landscape, not as antitheses to the human systems (as McHarg would have expressed it).but as parts of the same ecological system[5]. Thus, landscape embraced not only processes of ecology but also processes of human ecologies that drive the *terra fluxus*[6] of the contemporary city.

One of the groundbreaking milestones in cultural role of landscape was Park de La Villette Competition (1982) the winners of which evaluated the park as a cultural space and the processes on landscape as changing events and programs on site. Bernard Tschumi's winning entry offered regular distribution of Folies as arrangement of points of intensity on site to leave "opportunities for chance, formal invention, combinatory transformation, wandering" (Derrida, 1986). OMA's second winning entry, 'Limited Self-Organization', proposed a overlapping of different certain and uncertain activities by combining *programmatic indeterminacy* with architectural specificity (Koolhaas and Mau, 1995) and let the program to undergo constant change and adjustment. Here, landscape did not retain as a specific situation defined by the designer (Ruff, 1982: 10). Rather, it is understood as a process that should respond to changing and indeterminate needs of the user. More recently, in Downsview Park Competition 2000, James Corner and Stan Allen offered integration of *circuits* such as the activity programs, event spaces and circulation with *flows* such as the hydrological and ecological dynamics specific to the site into a complementary whole (Weller, 2001: 12). The emerging ecologies in the park were expected to impact not only the spatial organization of park over time, but also the emergence of events, programs and the culture on site. Thus, Corner and Allen's project foregrounded "program, event space, utility, economy, logistics, production constraints and desires" (Corner, 1999: 159) that were working in harmony with ecological processes

And Linda Pollak explained the hybridization of notion of landscape in her article "City, Architecture, Landscape" by writing "urban landscape is a hybrid undertaking, … that harbours ineluctable contradictions, refusing a singular classification". See Linda Pollak, "City, Architecture, Landscape: Strategies for Building City Landscape Petrosino Park, Manhattan", Daidalos, 73: Built Landscapes (Spring 2000): 48-59.

[5] Since the end of 1980s, landscape architecture theorists Ann Whiston Spirn, John B. Jackson, John Dixon Hunt, James Corner and Elizabeth Meyer, considered landscape, not as the antithesis to human intervention, but one system among many in urbanized environments. See John Brinckerhoff Jackson, "Concluding with Landscapes", in Discovering the Vernacular Landscape, ed. J.B. Jackson, (New Heaven: Yale University Press, 1984), 145-158; John Dixon Hunt, Gardens and the Picturesque: studies in the history of landscape architecture, (Massachusetts: MIT Press, 1992); Anne Whiston Spirn, Granite Garden: Urban Nature and Human Design, (New York:

on the Downsview Park. This is what Corner described as the cultural role of landscape. By conceiving landscape as a living, adaptive and connective surface, Alex Wall offers strategies of multi layering surface, folding with smooth geology, providing nonprogrammed use, impermanence for future demands and improving movement through a new and public type of urban corridor (Wall, 1999: 244) to leave room for social processes on site. Such a design perspective invokes strategically programming of landscapes to provide spaces open to change, rather than single design solutions.

Lifting Corner's *landschaft* into the theoretical position of the landscape urbanism[7], Charles Waldheim has proposed to take the landscape as a model for urbanism in a series of conferences[8]. Waldheim defined landscape, not a formal model for urbanism but rather as "a model for process" (Allen, 2001: 125) which can support adaptation to the ongoing processes in the city. Landscape urbanism projects mostly offer landscape that shapes the environment, and thus the city, with its own dynamics to index the future form of the urban development. This means that the landscape does not only adapt to the ecosystem of urban life, but it is the generator of the change in the city (Allen, 2011). In other words, as Koolhaas (1998) has asserted, "architecture is no longer a primary element of an urban order, increasingly landscape is the primary element of an urban order".

Landscape urbanism principally engages with processes that facilitate design especially in the post-industrial landscapes (Lister, 2010: 525) like mine sites, active rail corridors, marine ports, landfills, highways, riversides, and old factory sites etc to recover these places. These projects use adaptation, and change as the generator for transformation of a post industrial area into an urbanized landscape. Spontaneity and casualness of these sites, deriving from unplanned social and vegetal processes were potentials for urban life. (Rivlin, 2007: 52). Landscape urbanism projects are primarily focuses on natural and social processes that were expected to recover the site's problems and to transform the defunct area into an urban public space. West 8's design Schouwburgplein for a formerly dead urban space, Peter Latz' Landschaftspark Duisburg-Nord and Richard Haag's Gas Works Park design for a formerly industrial site, were all starting with a remediation processes ; ecological processes to recover the site and social processes working with ecological processes to evoke enable cultural activities and urban vitality on the site.

Since the theoretical position of landscape urbanism has gained importance in the last few decades, the landscape was started to be evaluated as a medium which can organize dynamic processes of the city (Gandelsonas, 1998). Recently, a variety of landscape architecture practices incorporate change, processes, indeterminacy and self organization into landscape design with an emphasis on "adapting to changing conditions rather than forms that conform an aesthetic whole" (Berritzbeita, 2007: 178). The emphasis on change and process highlights a process-based approach to design, entitled as evolutionary design (Prominski, 2005), adaptive design (Lister, 2010), ecological design (Lyster, 2006) or city as a landscape as in this article. In this sense, process-based design allows landscape processes to transform the land by leaving the space to open, spontaneous and unexpected conditions and supports a dynamic urban life.

2.1. Methodologies of process-based approach in landscape architecture as preclude to dynamic city

Process-based landscape architecture practices are diverse and multiform, in understanding and designing dynamic urban space, each of which have their own specific aspirations, origins and claims (Waldheim, 2006). While, there is no systematic method or technique for process-based design, it can be claimed that since the extension of notion of landscape into a cultural-natural synthesis after the 1990s. two lines of thought emerged in landscape architecture in terms of how they define change and process on site The First line of thought focuses on social

Basic Books, 1984); Elizabeth Meyer, "The Expanded Field of Landscape Architecture" in Ecological Design and Planning, ed. George Thompson and Frederick Steiner, (John Wiley Press, 1997); James Corner, Recovering Landscape: Essays in Contemporary Landscape Architecture, (New York: Princeton Architectural Press, 1999); Charles Waldheim, "Landscape Urbanism: A Genealogy", in Praxis: Journal of writing+ building 4, (2002).

[6] James Corner described 21st-century urbanism as organic and fluid urbanism characterized by networks of relationships, flows and rapid change, what he named as Terra Fluxus. See James Corner, "Terra Fluxus" in The Landscape Urbanism Reader, ed. Charles Waldheim, 21-33 (New York: Princeton Architectural Press, 2006).

[7] In the mid-1990s, Charles Waldheim and James Corner developed the phrase landscape as urbanism in a series of conferences and they popularize the term with the 'Exhibition of Landscape Urbanism' and Landscape Urbanism Conference held in Detroit in 1997. The speakers in the

processes such as temporary use and events, changing activities and unexpected events that pioneer the dynamic urban life in public spaces. Recently, in contemporary landscape architecture, the concept of designing with ecological processes expanded into designing for social processes (Berrizbeitia, 2007: 177). Designing for social processes, requires programming the urban surface by multi layering surface, providing nonprogrammed use, impermanence for future demands and improving flows of events through public movement (Wall, 1999: 244). Such kind of a design perspective invokes strategically programming of landscape to accommodate temporary use, unexpected events and open systems adapting to changing conditions rather than providing strict and closed design solutions.

Programming of social processes is not independent of existing urban life and its ecological, temporal and perceptional qualities on site. It requires analyzing the existing social processes in detail to enhance these dynamics also by allowing for programmatic freedom. The analysis is to reveal and develop unique character of the site by understanding of how cultural and natural processes were interrelated and how the site came into its present state and what is about to change due to periodic events, cycles and emergent events. After understanding how and why a site performs as it does, the design provides strategies to develop its performance by combining open and closed systems that operate simultaneously.

The second line of thought in process-based design considers non-human ecologies[9] and ecological processes of emergence and self organization as the main driving forces for change on site. In contemporary practice of landscape architecture, there is a tendency towards taking ecological models and natural metaphors as a model for urban processes and to transfer the characteristics of natural systems such as emergence, adaptation and self regulation into design (Waldheim, 2006: 83) . The survival strategies in the ecosystem such as succession, invasion and adaptation processes are seen as the "potent agents of change" (Lister, 2007: 51) which produce locally emergent ecologies. These emergent ecologies would self-organize growth, evolution and adaptation of new ecologies and programs on site and would generate ever-evolving and indeterminate processes in the urban landscape. Such kind of a model requires understanding specific processes of landscape such as rhythms periodic events, floods, saturation and periodic cycles, seasons, day-night cycles etc. to identify how the site came into its present state and to reveal native and unique ecosystem of the site that is more resilient and invasive for the particular area. Afterwards, the design would enforce native landscape to transform the environment with its own dynamics. Here, landscape becomes an active agent to create transformation of the site and the designer is the one who set up the conditions to trigger the transformation process.

Recently, contemporary landscape architecture theory and practices evaluate these two lines of thought, social and ecological processes, not two unrelated processes on site but rather processes enriching each other. Accordingly, they incorporate social and ecological processes into design as generative forces to design. The following part of this paper explains how Karşıyaka Urban Coastal Renovation Project transferred these methodologies into urban design of Karşıyaka Coastline.

3. İzmir- Karşıyaka Urban Coastal Renovation Project: City as a landscape

İzmir- Karşıyaka Urban Coastal Renovation Project is an urban design project produced for the renovation of the urban coast of İzmir, particularly for Karşıyaka Area under the auspices of Izmir Municipality. The project was developed by an interdisciplinary group of experts from landscape architecture, architecture, industrial design and lighting design disciplines[10].

Karşıyaka coastline is a *dynamic landscape* intertwined with ecological, social, physical, perceptional complexities. Karşıyaka's landscape is grounded on temporalities, emergent activities,

conference were Ian McHarg, James Corner, Mohsen Mostafavi, Linda Pollak, Brigitte Shim, Adrian Geuze, Alex Wall, Joan Roig, Grant Jones ve Kathy Poole.

[8] In the late 1980s, James Corner and Charles Waldheim organized a symposium entitled "Constructing Landscape" at the University of Pennsylvania in 1993 and the following "The Recovery of Landscape" at the Architectural Association in 1994. These conferences focused on redefining what landscape was for 21st century and led to the development of the phrase "landscape as urbanism". The 'Exhibition of Landscape Urbanism' held in Detroit in 1997, helped further popularize the term. The speakers in the conference were Ian McHarg, James Corner, Mohsen Mostafavi, Linda Pollak, Brigitte Shim, Adrian Geuze, Alex Wall, Joan Roig, Grant Jones, and Kathy Poole who were the early theorists of landscape urbanism.

indeterminacies and self-organizing events. People's interaction with non-human factors and their ecosystems in the coast make Karşıyaka landscape a dynamic surface that is open to change. Karşıyaka Urban Coastal Renovation Project aimed to re-evaluate this dynamic, multi-layered complexity as self-organizing systems that will shape the site by itself. With this approach, the project began with understanding the self-organizing capacities of the landscape. As in the synthesis of natural and cultural systems by James Corner, the project team did not prefer to equate landscape merely with nature or environment but associated it with the processes of urban life carried out by the interplay of natural and cultural forces work on site. Accordingly, the project concentrated on two aspects of the planning of the urban site. The first one is the social aspect, which is formed by individuals' interaction with the environment that keeps the continuous restructuring of the landscape, as a formative pattern of space (Howett, 2002). Secondly, from an ecological perspective, the landscape is regarded as a living system, an evolving product of self-organizing natural processes. Through exploration and comprehension of these two-fold meanings of the concept, Karşıyaka Urban Coastal Renovation Project proposed an adaptive strategy for social and natural interventions in the coast by conceiving the *city as a landscape*.

3.1. Social dimension of change in Karşıyaka Landscape

Karşıyaka coastline is an 8 km long filled land, lying along the Aegean Sea, at a 10 to 20-meter wide green zone at the north part of the city. At first glance, the coast seems to be a continuous monolithic green strip lying parallel to the sea with spaces for particular activities such as large grassed areas, playgrounds, cafes, 2 ferry ports, tennis courts, a skateboarding sailor club, fishing port and car parking areas. Apart from the modernist design examples in Izmir such as Izmir Fair Area and modern coastline buildings that are spatial representations of the construction of the nation-state, urbanization and westernization in the 1930s (Gürel, 2011), Karşıyaka coastline is a flexible green zone responding the basic needs of the citizens (Akış, 2011: 65). There is no strict design plan for the entire Karşıyaka coast; rather, the flexible zone provides open space for emerging activities, indeterminate events and various possibilities. This flexible program enables ordinary daily activities to take place on the coastline throughout the day and night such as walking, running, cycling, sea watching, fishing, shopping, dining and so on. The characteristics of the monolithic green strip merely change according to its relationships to urban life. The coast displays a diverse set of characteristics all along 8 km from Alaybey to Mavişehir. At the east side of the coast, the green strip is interrupted by a closed military area in Alaybey, and as a result, it provides a still and silent atmosphere, which is preferred by couples or elderly people. Besides, the coast is linked to the dense city centre and transit transportation lines with crowd and traffic. The schools right behind the coast keep the coast lively with school children, their parents or grandparents. The west side of the strip intersects with the residential zone in Mavişehir neighbourhood, which is linked to a natural reserve area and to a rural character. From Alaybey to Mavişehir, the coastline is exposed to degradation and exhibits less density and urbanity. Lower income settlements are standing on the hills behind the coast (Yamanlar, Çiğli, Sancaklı, Ulucak, Kaklıç) who are also visitors of the coast at the weekends. So, Karşıyaka coastline provides a public space for the meeting of people from different social classes and ages. Visitors' activities include a wide variety most of which are unplanned, indeterminate, temporal and self-organized.

The design strategy of Karşıyaka Urban Coastal Renovation Project was not to repress, but to enrich the diversity of visitors of the site, and their activities, spatiotemporal experiences and varying sensations for an inclusive public space. Its objective was to improve the existing multifarious characteristics on the coast for broadening the range of possibilities of experiences on the site. To identify the multifarious

[9] *The phrase 'nonhuman features' was initially used by Anne Whiston Spirn to refer to ecologies related to vegetation and fauna in her article Anne Whiston Spirn, "The Authority of Nature: Conflict, Confusion, and Renewal in Design, Planning, and Ecology", in Ecology and design : frameworks for learning, eds. Bart R. Johnson and Kristina Hill (Island Press, 2002).*

[10] *Concept Development Group of Karşıyaka Coastal Renovation Project: Mehmet V. Kütükçüoğlu (Segment Coordinator , Lead Architect) Evren Başbuğ (Lead Architect) Umut Başbuğ (Architect) Hüseyin Komşuoğlu (Architect) Can Özcan (Architect) Oğuzhan Zeytinoğlu (Architect) Can Kaya (Architect) Tuba Çakıroğlu (Architect) Erdem Yıldırım (Architect) Meriç Kara (Designer) Ebru Bingöl (Landscape Architect, Urban Design Expert) Korhan Şişman (Interior Architect, Lighting Expert).*

characteristics emerging as an outcome of the interaction between visitors and the landscape, the project team collected data from the site varying from sensory analysis such as sounds of the sea, sound level in the urban space, stillness, smells, textures, views, wind level on land to the emergent temporal activities such as sitting, meeting, cycling, reading, watching, running, shooting etc. For drawing the social map of the landscape, all the data were spatially marked on an observation map (Figure 1). The observation map was designed according to five main senses: sound, taste, smell, texture, taste and then turned into a sense map (Figure 2).

Sense analysis was interpreted in relation to the changing character and experiences from Alaybey to Mavişehir and fourteen sub-character zones were

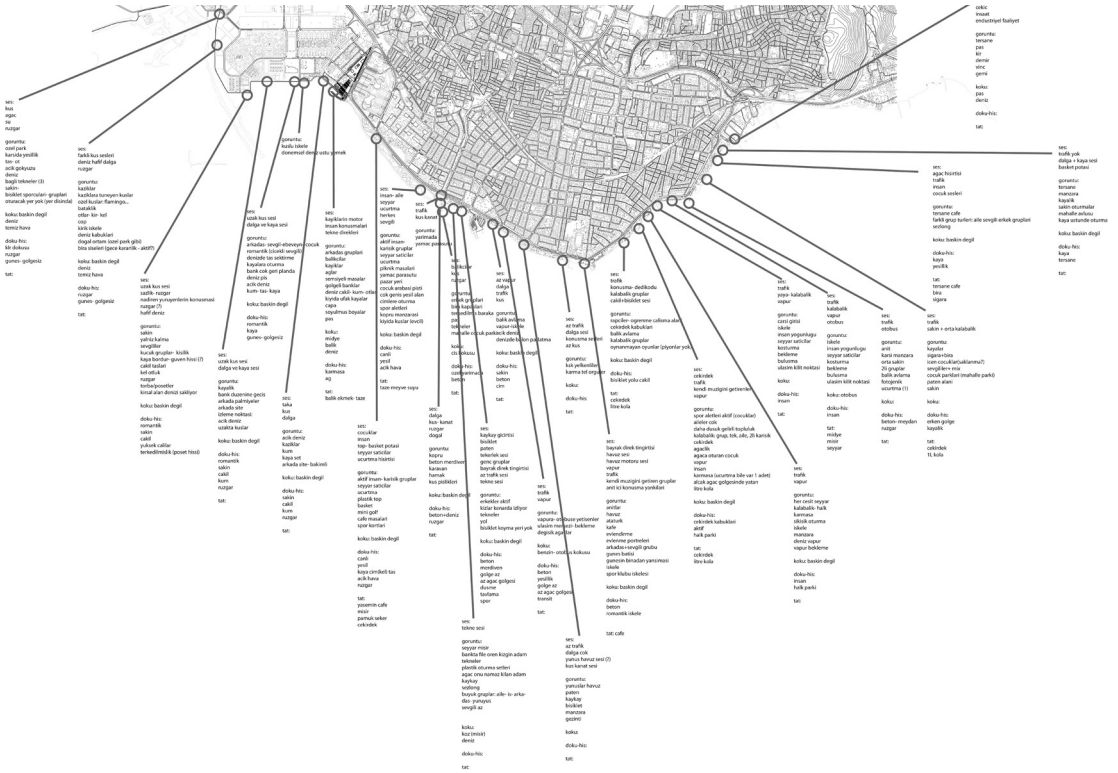

Figure 1. *Observation map demonstrates the activities, sounds, smells, colours, wind etc.that are spread along the Karşıyaka Coast (produced by the project team).*

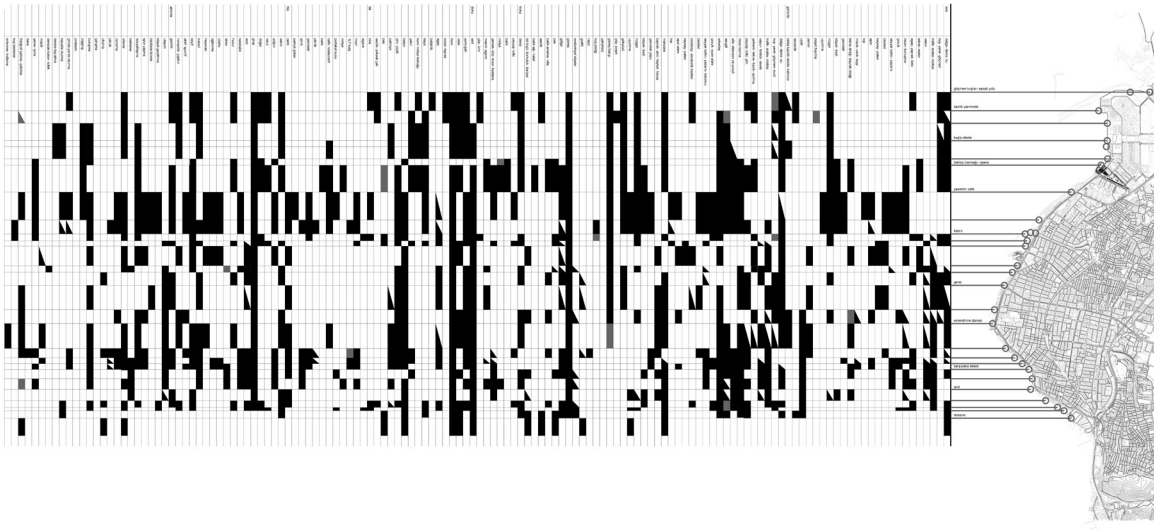

Figure 2. *Sense map demonstrating the changing senses and experiences from Alaybey to Mavişehir (produced by the project team).*

detected with regard to the varying activities, experiences, perceptions, sea & people relationships and spatial formations along the coast.

This classification facilitates the enrichment of existing characteristics of the site and improves the indeterminate and emergent capacities of the landscape. As in the Fresh Kills Park Project of James Corner, Karşıyaka project was "less about the construction of finished works or blueprint plans"; rather it was "about the designing the processes, strategies, agencies, and scaffoldings" (Corner, 1997: 102). Rather than suggesting a fixed and rigid spatial frame with specified functions, Karşıyaka Urban Coastal Renovation Project made strategic proposals and (a number of) small scale architectural interventions to establish the conditions for improving the existing diverse characteristics of the coast and to promote the self-organizing processes of natural and cultural ecosystems. The project offered a *continuous promenade* as an activity surface that could improve the specific characteristics of the fourteen character zones and respond to a wide range of possible events that might take place throughout the day and night, in summers and winters, on weekdays and weekends. Thus, the architectural design elements were expected to host variations of an interval between designed elements and unforeseen experiences that would come in the future. Some permanent infrastructure elements were designed to provide necessary services on the coast in addition to small-scale elements that would be adapted to specific facilities such as cafes, reading rooms, shops and toilets. The permanent design elements were used for the interaction with unpredictable social dynamics of the city to create indeterminate urban impact. The promenade allowed for a modular addition or subtraction as to comply with the responses of the users changing over time. Currently, the promenade functions as a flexible surface, which hosts an evolving and self-organizing social life.

3.2. Changing ecology of Karşıyaka Landscape

Karşıyaka Coast is an evolving surface, not only as an outcome of the interaction between people and the coast but also as an arena for dynamic non-human processes on land. Karşıyaka coastline is an urbanized landscape. It has a unique ecosystem that is about to lose as an outcome of the rapid urbanization. Just 8 km away from Mavişehir Housing Area, a natural reserve area, the Gediz Delta, hosts İzmir Bird Paradise and Sasalı Natural Life Park that has a rich and diverse flora and fauna. The Gediz Delta has 40.000 ha area, made of alluvial land accumulated by the Gediz River flowing from Kütahya-Gediz to Uşak, Manisa, and İzmir provinces. Allocating salty and sweet water ecosystems simultaneously, the Gediz Delta involves different habitats of sand strips, salt meadows, morass, temporal wet meadows, Mediterranean inland salt steppes and Mediterranean maquis. It has a plant diversity of over 300 species, some of which are endemic (Ministry of Environment and Forestry, 2007). In addition, the Delta provides an environment for feeding, quartering and reproduction of various living species, especially 220 waterbirds regularly nestle (Ministry of Environment and Forestry, 2007). 289 different bird species have been detected; some of which (8 species of *Pelecanus Crispus, Branta ruficollis, Oxyura leucocephala*) are globally in danger of extinction (Ministry of Environment and Forestry, 2007). 20.400 ha of the Delta has been preserved by means of national protection laws since 1985 and declared as 'internationally significant wetland' in 1998 with Ramsar Agreement. On the other hand, since the 1970s ecological system of the Gediz Delta has been damaged by the rapid and uncontrolled urbanization process. As the urbanization levels increase, the native ecosystem of Karşıyaka gets nearly lost.

Izmir- Karşıyaka Urban Coastal Renovation Project proposed a remedy for the damaged native ecosystem of Karşıyaka by evaluating the rehabilitation process as a self-organizing system. The project made initial interventions of rehabilitation by setting seeding spots for the native species that are appropriate to the climate of the region. The ecosystem of the Gediz Delta

was supposed to be restored along the coastline through the penetration of the native ecosystem by means of a series of open spaces which will naturally evolve over time with locally emergent ecosystems. Native and resilient landscapes that are more akin to adapt to Karşıyaka's unique climate, geomorphology and rainfall, were expected to grow and spread along the coast. The project led the succession and invasion processes by allocating space for the species to grow and invade the adjacent open land. This transformation was expected to be supported by site-specific natural elements such as vegetation, hydrology and climate. Here, locally emergent ecologies would have a generative force for reshaping the spatial characteristics of the coast. This strategy of *leaving open space for invasion and succession processes* along the coastline is expected to trigger a larger scale renovation in time. Native plant communities would also provide habitat for wildlife, especially for bird species to find their natural environments. The seeding spots were altered with an urban character towards Alaybey, closer to the city. It is expected that the choreography of changing plant regimes would shift spatial characteristics in time. Instead of a fixed master plan, the project presented a phased plan, that would create emergent ecosystems for three to five years. Thereby, the phased plan resembled a growing organism rather than a program creating implementation zones dividing the coast.

4. Conclusion

With the increasing mobility and the fluidity for the last few decades, the contemporary city has emerged as a complex, multi-layered and rapidly changing dynamic system. The current urban condition is not only a by-product of urban planning or urban policy but is also generated by self-organizing urban dynamics and emerging nonhuman ecologies. Designing such a dynamic and indeterminate urban space requires dealing with complexity and uncertainty, determinacy versus indeterminacy, integration of time in design and providing systemic openness for changes in the design environment. By inserting strong conceptual framework of the contemporary landscape theory and praxis, integrating social and ecological processes with spatial interventions , İzmir- Karşıyaka Urban Coastal Renovation Project contributed to actualisation of the idea of understanding and organizing the *city as a landscape*. The Project conceived the Karşıyaka coastline as a dynamic landscape and proposed a process-based landscape strategy, allowing open-ended, self-regulated and adaptive natural-cultural processes to improve the existing diverse characteristics of the coast. The programmatic assumptions of the Project, is based on trusting self-organizing capacities of landscape. The twofold self-organizing strategy of the project was implemented at the social and natural level. The project was expected to interact with unpredictable social dynamics of the city and self-organizing non-human factors to create indeterminate, open and diverse urban effects. In a dynamic, complex and ever-evolving landscape of Karşıyaka, providing space for indeterminacies, temporalities and self-organizing systems rather than applying a predetermined design plan would enrich the diversities and enable possibilities of unexpected experiences in the contemporary urban life. Accordingly, it re-established the relationship between landscape, human and ecology not as opposite terms but as a synthesis. This approach analyses the organization of urban space with a transdisciplinary perspective. Imagining the city as a landscape does not only help to reformulate the conceptual relationships between landscape, architecture and the city, but also it provides new insights into how to organize dynamic urban space.

References

Akış, T., (2011). İzmir'de Yeşil Alan Kullanımı: Karşıyaka Sahilinde Gündelik Yaşam. *TMMOB Mimarlar Odası Ankara Şubesi Yayını, Dosya: Mimarlık ve Gündelik Hayat,* 27, 63-70.

Allen, S. (2011). From the Biological to the Geological. In S. Allen and M. McQuade (Eds.), *Landform Building: Architecture's New Terrain* (pp.20-41). Baden: Lars Müller Publishers.

Batty, M. (2005). *Cities and Complexity.* Cambridge, MA: MIT Press

Berrizbeitia, A. (2007). Re-placing Process. In J. Czerniak and G. Hargreaves (Eds.), *Large Parks* (pp 175-197). New York: Princeton Architectural Press.

Boeing, G. (2018). Measuring the Complexity of Urban Form and Design. *Urban Design International,* 23 (4), 281-292.

Corner, J. (1997). Ecology and landscape as agents of creativity. In G. F. Thompson and F. R. Steiner (Eds.), *Ecological design and planning* (pp 80-108). New Jersey: John Wiley & Sons Inc.

Corner, J. (1999). Recovering Landscape as a Critical Cultural Practice. In J. Corner (Ed.), *Recovering Landscape: Essays in Contemporary Landscape Architecture.* New York: Princeton Architectural Press

Corner, J. (2004). Not Unlike Life Itself: Landscape Strategy Now. *Harvard Design Magazine* 21, (Fall-Winter), 32-34.

Corner, J. (2006). Terra Fluxus. In C. Waldheim (Ed.), *Landscape Urbanism Reader* (pp 21-34). New York: Princeton Architectural Press.

De Roo, G., & Rauws, W. S. (2012). Positioning Planning in the World of Order, Chaos and Complexity. In J. Portugali, H. Meyer, E. Stolk, & E. Tan (Eds.), *Complexity Theories of Cities Have Come of Age* (pp 207–220). Berlin: Springer.

Derrida, J. (1986). Point de Folie. In K. Hays (Ed.), *Architecture Theory since 1968* (1998). London: MIT Press.

Field Operations and New York City Department of City Planning. (2006). Fresh Kills Park: Lifescape Draft Master Plan, New York.

Gandelsonas, M. (1998). The City as the Object of Architecture. *Assemblage,* Issue 37, 144-128.

Gürel, M. Ö. (2011). Architectural Mimicry, Spaces of Modernity: The Island Casino, İzmir, Turkey. *The Journal of Architecture*, vol. 16 (2), 165-190.

Harvey, D. (1989). *The Condition of Postmodernity.* Cambridge, Massachusets: Blackwell.

Heylighen, F. (1989). *Self-Organization, Emergence and the Architecture of Complexity.* Proceedings of the 1st European Conference on System Science (pp. 23-32), AFCET, Paris.

Howett, C., (2002). Systems, Signals and Sensibilities. In S. Swaffield (Ed.), *Theory in Landscape Architecture: a Reader.* Philadelphia: University of Pennsylvania Press.

Koolhaas, R. (1995). Whatever Happened to Urbanism?. *Design Quarterly,* 164 (Spring), 28-31.

Koolhaas, R and Mau, B. (1995). *S, M, L, XL.* New York: Monacelli Press.

Koolhaas, R. (1998). IIT Student Center Competition Adress. Illinois Institute of Technology, College of Architecture Chicago, 5 March 1986. Quoted in Shane, G. (2006). Emergence of Landscape Urbanism. In C. Waldheim (Ed.), *Landscape Urbanism Reader.* New York: Princeton Architectural Press.

Lister, N. (2007). Sustainable Large Parks: Ecological Design or Designer Ecology?. In J.Czerniak and G. Hargreaves (Eds.), *Large Parks* (pp 35-57). New York: Princeton Architectural Press.

Lister, N. (2010). Insurgent Ecologies: (Re)Claiming Ground in Landscape Urbanism. In M. Mostafavi and G. Doherty (Eds.), *Ecological Urbanism* (pp 525-526). Baden: Lars Müller Publishers.

Lyster, C. (2006). Landscapes of Exchange: Re-articulating Site. In C. Waldheim (Ed.), *Landscape Urbanism Reader* (pp 219-238). NewYork: Princeton Architectural Press.

McHarg, I. (1967). An Ecological Method For Landscape Architecture. *Landscape Architecture*, 57 (2), 105-107.

McHarg, I. (1969). *Design with Nature*. New York: Natural History Press.

McHarg, I. (1992). *Design with Nature,* 25th Anniversary ed. New York: John Wiley and Sons

Picon, A. (2010). What Has Happened to Territory?. *AD Journal,* 80(3), 94-99.

Portugali, J. (2009). Self-Organization and the City. In R. A. Meyers (Ed.), *Encyclopedia of Complexity and Systems Science* (pp. 7953–7991). New York: Springer.

Prominski, M. (2005). Designing Landscapes as Evolutionary Systems. *The Design Journal* 8, (3), 25-34.

Ruff, A. R. (1982). *An Ecological Approach to Urban Landscape Design*. Manchester : Department of Town and Country Planning, University of Manchester.

Waldheim, C. (2006). Strategies of Indeterminacy in Recent Landscape Practice, *Public 33*: Errata, 80-86.

Wall, A. (1999). Programming the Urban Surface. In J. Corner (Ed.), *Recovering Landscape: Essays in Contemporary Landscape Architecture* (pp 233-249). New York: Princeton Architectural Press.

Weller, R. (2001). Between hermeneutics and datascapes: a critical appreciation of emergent landscape design theory and praxis through the writings of James Corner 1990-2000 (Part One), *Landscape Review 7*, no.1

[Ministry of Environment and Forestry, Directory of Natural Protection and National Parks. (2007). *Wetland Management of Gediz Delta*]. Çevre ve Orman Bakanlığı. (2007). *Gediz Deltası Sulak Alan Yönetim Planı*. Doğa Koruma ve Milli Parklar Genel Müdürlüğü. Ankara: Sulak Alanlar Şubesi Müdürlüğü.