

CONTRADICTIONS OF DESIGNING “GREEN” CITIES: INTEGRATION OF THE TERM “GREEN” TO UNLIMITED GROWTH IN ISTANBUL

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Abstract

It is essential to reinterpret the built environment in the context of environmental conscience to deal with global climate change and environmental destruction. However, in this sustainable environment design process, the attempt of different disciplines to apply the ideal and theoretical concept -social, economic and ecological sustainability- to practice leads to conflicts between these concepts under competitive market conditions. On the one hand, green cities seek to create more habitable environments with environmental concerns, on the other hand, as a result of methods to obtain this goal; it requires integration of innovative technologies directly related to capital investment. Unless governments fund these settlements with support policies and legislative regulations, these green settlements shall inevitably become sites with lack of social equity and therefore be areas of focus of capital projects using the term ‘green’ as a brand. The aim of this paper is to describe the contradictions of the concept of ‘green city’ within market relations, through the case of Istanbul and discuss the term green within its commodified meaning, which has more popular in the urban transformation of Istanbul. In this context, the contradictions of green settlements in terms of social, economic and environmental perspectives are defined primarily. Then these contradictions are exemplified by green cities (unlimited growth in a megacity) planned for construction in Istanbul and also through projects underway that pretend to be green, on the European side of Istanbul. Following a discussion on the way this term relates to the built environment and on its contradictions, suggestions are finally made to understand the city as an organism with the requirement of balance in every subsystem.

Keywords: sustainable urbanism, green city contradictions, green city.

INTRODUCTION

For nearly thirty years, sustainable development concept has been discussed in detail through its most frequently cited definition mentioned in the Brundtland Report (United Nations 1987). To comprehend the contradictions of sustainable development nowadays, the discourse of “the needs of the present without compromising the ability of future generations to meet their own needs” needs to be reconsidered. It is essential to be able to solve the gap of sustainability in real practice by drawing attention to the distribution of resources and by criticizing the percentage of today’s generation having access to the facilities that the economic, environmental and economic sustainability offer.

The primary task of architecture is to define and design using solutions stemming from site, utilizing passive design criteria for the environmentally sustainable built environment. However, especially in developing countries where neoliberal politics rule capital flow, occupant needs are not taken into consideration while standardized spaces are constructed as mass production in order to answer needs of the market as quickly as possible.

In particular, the terms green, ecological, sustainable, energy efficient have been promoted in the way that they all correspond to the same meaning in social perception and such terms have been turned into a marketing factor by green investors. Ecological factors have not been taken into account in settlements called green in the promotions using these terms and technological integrations that maintain continuity of capital flow have been prioritized. Problematic issues arise from lack of consideration of the ecological relations between local and regional issues in designing the built environment for sustainability.

This article seeks to put forth the contradictions of designing for sustainability by prioritizing neoliberal policy approaches under competitive market conditions in developing countries through the case of projects in Istanbul that use the terms green, energy efficient, sustainable and ecological for promotion. In this context, the study consists of three sections; first the paradigm shift of the term ecology within approaches for built environment are described and the contradictions of designing green are defined; in the second section, social, environmental and economic contradictions of design approaches called green are exemplified through projects in Istanbul and in the conclusion, inferences and suggestions are made for creating a balanced built environment from the ecological point of view.

PARADIGM SHIFT OF ECOLOGY IN ARCHITECTURE

Since German biologist Ernst Heinrich Haeckel introduced the term ecology in 1866, the meaning of “relationships and interactions between living organisms and their environments” has been forming relations in our built environment, thereby causing new paradigm shifts.

As of mid-20th century, environmental consciousness has been rising with a consideration for depletion of nonrenewable resources. Therefore, approaches to design our built environment in the context of its ecological system have been evolving. The term ecology in built environment context has broadened its meaning by reaching significance in different scales and receiving new paradigm shifts. The ecology paradigm could be analyzed with three shifts within the development process of our built environment. These shifts could be defined as follows, respectively;

- shift to the environmental movement,
- shift to the sustainability revolution,
- based on sustainability revolution, shift to commodity based sustainability in the context of the neoliberal city.

During the environmental movement of the late 1960s and 70s, the term ecological was accepted to refer to anything related to the environment. Also, in the 1970s, some studies examined sun, wind etc. as passive solar design principles that could be defined as ecological design today. This was the first substantial paradigm shift that has gained a new perspective for ecology in the built environment.

The environmental movement had shifted with solutions to the sustainability revolution in the 1980s. Thus, sustainable design was defined as a paradigm shift, where solutions were plugged into natural resources, renewable energies, and site-based knowledge (Williams 2007).

The last paradigm shift related to the sustainability revolution, which basically took its source from the term ecology, could be defined as commodity based, as sustainability rises from the urban environment from which the construction sector benefits, especially in developing countries. According to this paradigm shift, designing for the sustainable built environment in a neoliberal city involves several social, economic and environmental contradictions.

METHODOLOGY

The main aim in this study is to investigate the contradictions of designing cities called green, through projects that pretend to be green, sustainable, energy efficient or ecologic, by causing a terminological ambiguity in Istanbul. In this context several projects, some of which are in the process of construction and others are in the conceptualization phase, on the European side of Istanbul, have been chosen for the review. These projects are classified according to temporal, spatial, qualitative characteristics, besides the main stakeholders in the construction process, as indicated in the following table.

Project main stakeholder	The name of the Settlement	Functional Characteristics	Construction status
The Ministry of Environment and Urban Planning	Kayabaşı (Kayaşehir)	Residential	Bidding process
	Bio İstanbul	Health, Commerce, Innovation, Technology, Research Centers and Residential	Bidding process
	Sağlık City	Conference and Culture Center, Health Facilities Trade Units	Bidding process
	Magnet City	Residential, office, education	Bidding process
Investor Construction Firm	Maslak 1453	Mixed-use	In construction process since 2012
	42 Maslak Offices	Office	In construction process since 2010

Table 1: Criticized projects in terms of sustainability manipulation.

The criticized projects have been chosen from among those promoted with the terms green, energy efficient, sustainable or ecological as a manipulation. The criticisms are empirical, based on data about the projects and also social indicators. The study seeks to present the current situation of ecology and built environment relations in Istanbul by drawing attention to neoliberal policies in decision making mechanisms and to emphasize the influence of these mechanisms on the built environment.

Especially in Istanbul, real estate investments have dominated the flow of capital through neoliberal economic approaches in urban areas. According to the Emerging Trends in Real Estate Europe 2013 report, Istanbul is the fourth city that has become prominent with real estate investments in the market, among 27 European cities (ULI 2013). The growing construction market seeks new promotions, with huge projects comprising green innovative technologies that lack basic principles in designing for sustainability. The projects proposed by the Ministry of Environment and Urban Planning and by various investor construction firms have all remarkable social, environmental and economic contradictions in terms of ecology and built environment interactions.

CONTRADICTIONS OF DESIGNING “GREEN” CITIES: THE CASE OF ISTANBUL

There has been a radical shift in the governance of urban land and housing markets in Turkey, from a ‘populist’ to a ‘neo-liberal’ mode since 2001, through large urban transformation projects which are the main mechanisms through which a neo-liberal system has been instituted in incomplete commodified urban areas (Kuyucu & Ünsal 2010). Once again, on a larger scale, urban transformation had been launched in October 2012 in several cities of Turkey particularly in Istanbul. Parallel to this large scale urban transformation, in February 2012, The High Planning Council of Turkey intended to determine a roadmap for energy efficiency in Turkey with the Energy Efficiency Strategy Document for 2012-2023, prioritizing housing production thereby reducing CO2 emissions as well as integrating renewable energy technologies to buildings (The High Planning Council 2012). It is obvious that in this context, the enterprise for designing sustainable built environment is not well-intentioned.

As mentioned above, the commodity based sustainability paradigm shift has been leading capital flow in focus areas of the construction market in developing countries as it has in Istanbul. However, this paradigm shift causes urban conflicts to arise from social, environmental and economic contradictions of the term. A lack of perspective among numerous stakeholders for the integration of sustainability and community, prompted the struggle for city rights. For instance, the Gezi Park protests of June 2013 drew the attention of the world to a very urban conflict in Turkey's most populous city that arose from the government's commodity based decision mechanism for urban land.

Integration of sustainability and community encompasses ecology, economy and equity that require a long term systemic approach by addressing sustainability issues at all levels (Edwards 2010). If a well-designed project at a regional scale lacks planning decisions at an urban scale, then problems arise.

In order to comprehend market-driven redevelopment of the construction sector, it is essential to criticize the chosen projects that have tendency to use innovative technologies and popular trends to boost the market, under three sustainability indicators such as social, economic and environmental, by comprising contradictions.

Definition of the sample projects

Before the launch of urban transformation in 2012, the flow of capital through urban land was processed through several projects in Istanbul. Mega projects such as Canal Istanbul, the 3rd Bridge, the 3rd Airport, the Northern City with a million population, have been proposed by the government one after the other, ignoring scientific studies and academic discourses.

One of the other mega-projects proposed by the Ministry of Environment and Urban Planning in 2011 has been two new cities on each side of Istanbul. One of these cities was named Kayabaşı (Kayaşehir), with the proposed center of the new city Basakşehir located on the European side of Istanbul. The aim of this project is to design a satellite town with over 1.5 million inhabitants. The first stage of settlements were completed

and offered for sale in 2008 by the Housing Development Administration of Turkey (TOKİ 2014). Since then, the number of housings has been 20,000 with approximately 60,000 inhabitants.

Bio Istanbul, Sağlık City, Magnet City projects have also been integrated into the new city called Kayaşehir, offering several facilities. Bio Istanbul project has been promoted as an 'intelligent city and center of ecological life' where a children's hospital, innovation campus, research foundation and residential zones are included. Sağlık City, meaning 'Health City' has an integrated health center, cancer research foundation, conference and culture centers and residential zones. Magnet City has been proposed for construction over a total area of one million square meters, with accommodation, education and working facilities. All these proposals pretend to be green and to have sustainable, energy efficient or ecological approaches.

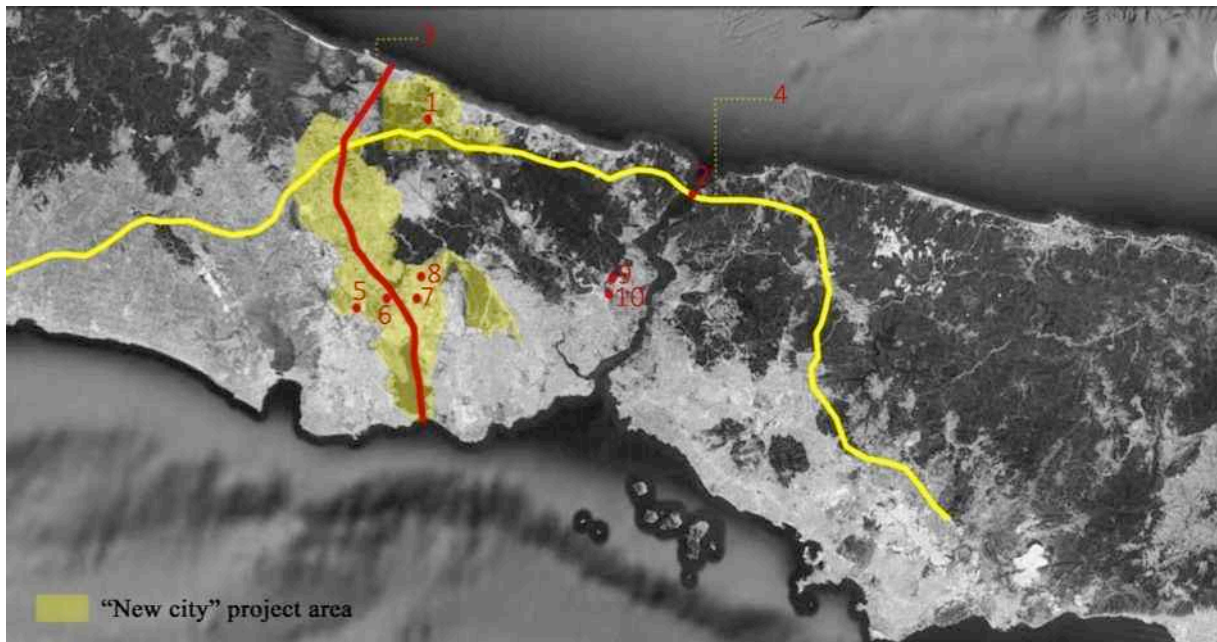


Figure 1: New city project area (Official Journal 2012), mega-projects and criticized sample projects, 1-3rd Airport, 2-3rd Bridge, 3-Canal Istanbul, 4-North highway route, 5-Magnet City, 6-Bio-Istanbul, 7-Sağlık City (Health City), 8-Kayabaşı (Kayaşehir), 9-Maslak1453, 10-42 Maslak.

Other sample projects still under construction have been projected by investor construction firms. The Maslak 1453 project is on the European side of Istanbul, in Maslak/Sarıyer. It has a total area of 320,000 square meters, with shopping centers, residential and office areas and pretends to inhabit sustainable resources and environment-friendly green building systems thereby being a LEED Gold certificate candidate. The 42 Maslak project with a total area of 220,000 square meters, is also located in Maslak/Sarıyer where high-rise office buildings with high investment values take place. This project has office areas which have LEED Platinum Certificate, residential towers, shopping areas, as well as a hotel.

Social contradictions

Three pillars of sustainability based on human needs are not only to provide an ecologically stable and healthy built environment, but the equally legitimate social and cultural needs also ought to be taken care of.

Based on sociological considerations, a set of three core indicators to assess the social dimensions of sustainability have been suggested as dealing with the fulfillment of basic needs and quality of life, which should relate to individual income, poverty, income distribution, unemployment, education and further training, housing conditions, health, security, as well as subjective satisfaction with work, health, housing, income and the environment; which are the claims of social justice within the sustainability discourse as well as social coherence (Littig & Grießler 2005).

Understanding social processes that dominate urban centers is a key factor and a prerequisite to guide urban development and sustain community dynamics. Therefore, politics and policy making mechanisms are directly related to provide social sustainability. Environmental sustainability superposes social sustainability, so it is not possible to rely on environmental sustainability without social concerns. The main question is also whether or not projects designed with consideration of environmental approaches deal with any social issues. Otherwise it is just a naive implementation that provides profits to green investors, as seen in the criticized projects in Istanbul.

The intention to provide green, energy efficient, sustainable and ecological settlements is questionable in such a populous city as Istanbul, due to the penetrating policy making mechanism on urban planning decisions. The contradictions of green enterprises in such projects could obviously be seen, if the interlinked relation between ecology and built environment is taken into consideration in a longer term or decision making is perceived as crucial by policy making. It is essential to analyze sociological considerations that the criticized projects involve in order to comprehend the social contradictions of these green, sustainable, ecologic promoted projects.

The name of the Settlement	Sociological issues						Social coherence outcomes
	The quality of life in terms of facility	Poverty	Income distribution equity	Unemployment	The claim of social justice	Satisfaction with work, health	
Kayabaşı	-	✓	-	✓	-	-	Urban disintegration, outer city replacement of low-income, satellite town
Bio İstanbul	✓	-	✓	-	✓	✓	Gated community of high income, Urban disintegration, satellite town
Sağlık City	✓	-	✓	-	✓	✓	Gated community of high income, Urban disintegration, satellite town
Magnet City	✓	-	✓	-	✓	✓	Gated community of high income, Urban disintegration, satellite town
Maslak 1453	✓	-	✓	-	✓	✓	Gated community of high income, Urban disintegration, satellite town
42 Maslak Offices	✓	-	✓	-	✓	✓	Gated community of high income, Urban disintegration, satellite town

Table 2: Social contradictions of ecologically-friendly manipulated projects.

As indicated in the Table 2, sociological issues integrate to settlements independently from the conditions of the society. This approach results in urban disintegration or it forms a gated community for high-income, starting from the very beginning of the design process.

After 2008, TOKİ and Middle East Technical University (ODTÜ) Built Environment and Design Implementation & Research Center (Matpum) collaborated to design energy efficient buildings by integrating renewable energy technologies for Kayabaşı (Kayaşehir) settlement. Accordingly, in October 2010, a study titled “An

evaluation for urban environmental standards in mass housing areas” was presented (Pamir & Pınarcıoğlu 2010). This study consists of nine sections that mention ecological settlements in natural environments, ecological settlements in terms of society, design principles for safe environments, accessible housing settlements, energy efficient housing, built environments with E-communication, economic and sustainable housing, planning mass housing settlements for ethical governance, mass housing as aesthetics living environments. The construction stage integrated with energy efficient technologies, such as water recycling systems and solar collectors, though it is obvious that implementations alone could not provide a sociologically sustainable environment in an urban disintegrated area.

For the proposed projects Bio-Istanbul, Magnet City, Sağlık City, as it is distinctly mentioned in the project presentations, these three projects in the new city are to be regional destinations for defined facilities. Therefore, the labor force is to travel through several places to this region every day. This traffic is to support the living environment and also highways, as there is no directly available public transportation axis to this region. The sustainable, ecologically friendly life, energy efficient buildings discourses are not eligible from the point of view of built environment and ecology relation/integration. Accordingly, these projects lack social sustainability issues.

The Maslak 1453 and the 42 Maslak projects offer facilities such as residential areas, working and living places and both projects also provide accommodation for high-income groups. Despite the fact that the 42 Maslak project’s office spaces have already acquired the LEED Platinum Certificate, a space with an identity in a plaza investment settlement area and intended only for working space requirements should be criticized in terms of quality of life of workers and the social justice they offer, compared to the people who are accommodated in the project area. It is obvious that LEED certificate does not change social injustice among building occupants. Besides, the promotion slogan of the Maslak 1453 is a ‘new age to happiness’, offering sustainable and green built environment for people.

All of these criticized projects are related as a part of the ongoing urban transformation in Istanbul. The perpetual need to find profitable fields for capital-surplus generation is the way of neoliberal politics, through urban transformation and this creative destruction process always has a dimension of class struggle (Harvey 2012). Thus, in a populous city such as Istanbul, designing green cities by integrating renewable technologies and using the referenced terms related to ecology and the built environment could only be a promotion or just a brand to market such buildings, unless the term sustainability is accepted in a holistic approach and supported by legislative regulations of the government.

Environmental contradictions

Environmental sustainability is a multidimensional phenomenon, the measurement of which is challenging and requires a comprehensive set of indicators that show developments in their various dimensions (Eurostat 2011). The term means maintaining and improving the quality of natural ecosystems so they can provide essential goods and services for human life, such as clean water and food, as well as conserving biodiversity and regulating the climate and it is an assessment that shows how far the built environment is pushing the biological and physical limits of the natural environment (Moldan, Janouskova & Hak 2012).

Green as the buzzword of the 1980s is nowadays the buzzword of the construction sector of developing countries. These projects show environmental concerns with an identified specific color but unfortunately not more than a ready-made symbolism and a showing-off of the construction sector, without genuine ecological concerns. The criticized projects are pushing the biological and physical limits of the ecosystem in Istanbul.

The name of the Settlement	Environmental/ecological considerations						Environmental Outcomes / predicted results
	improving the quality of natural ecosystems	clean water and food	conserving biodiversity	Regulating the climate	reducing deforestation	Integrated renewable technologies	
Kayabaşı	-	-	-	-	-	✓	High amount of soil excavation-caused stream bed flow
Bio İstanbul	-	-	-	-	-	✓	High amount of soil excavation
Sağlık City	-	-	-	-	-	✓	High amount of soil excavation
Magnet City	-	-	-	-	-	✓	High amount of soil excavation
Maslak 1453	-	-	-	-	-	✓	Extreme deforestation*
42 Maslak Offices	-	-	-	-	-	✓	High density settlement

Table 3: The contradictions of ecologically-friendly manipulated projects in terms of environmental sustainability.

Constructed settlements in Kayabaşı (Kayaşehir) are already a scientific disaster, with a lack of social and environmental concerns. In any case, integrating green technological systems in a new stage on a new site does not change the wrong planning decisions of the settlement that is not integrated with the whole urban system. The project stakeholder TOKİ pretended to design sustainable built environments in the other provinces in Turkey in many projects. As a result of the constructed projects, it was analyzed within the evaluation of physical environment that climatic factors, topographical issues, design solutions of the site and consideration of the urban context have not been taken into account as a basis of a sustainable and energy efficient built environment (Karaca & Varol 2012).



Figure 2: Kayabaşı (Kayaşehir) housing settlement (Source: Azem 2011).

The Bio Istanbul, Magnet City and Sağlık City projects intend to offer green, ecological and sustainable living environments with discourses of the center of life, perfect life, green life as subsidiary settlements of the new city, with Kayaşehir as the center of the city. However, using these terminological words requires consciousness, as putting ecology in the foreground of design is a critical condition. And the question would be whether or not Istanbul needs to have more construction sites and huge projects.

The biggest contradiction about the Maslak 1453 project is that a large amount of deforestation has already carried out, but this project pretends to be green and is promoted as ecologically friendly architecture. Besides, the 42 Maslak project, which holds LEED Platinum, also lacks environmental sustainability indicators.



Figure 3: Deforestation proof of “green” and “ecologically friendly” called Maslak 1453 project (Source: TMMM 2012).

Economic contradictions

In developing countries, Adam Smith’s invisible hand metaphor corresponds to the individuals’ hand making effort to sustain their income against governments’ economic policy implementations. Social considerations mentioned in Table 2 are also related to economic considerations, which should be taken into account in designing a sustainable built environment. Income distribution, unemployment rate and the claim of social justice are related to capital distribution in society.

The criticized projects are based on neoliberal economic investments and it is obvious that the new city and other huge investments are for redistribution of capital flow through the valuable land of Istanbul. Main aspects of accumulation through dispossession in the modern neoliberal economy are privatization, commodification, financialization, state redistributions through urban environment (Harvey 2005). As long as ecology and built environment relations are not based on a sustainable socio-economic system network, ecological enterprises are obliged to fail. In the neoliberal system, there is a sustainability gap due to contradictions of green investments. In order to solve the sustainability gap, it is suggested to combine market-rate and socially or environmentally responsible capital by replacing unsupportable levels of financial return with supportable blended financial, social, and environmental returns (Ryn & Cowan 2007, p. 29). As it is understood, integrating the phrase green to the built environment is a whole system which is not considered in the criticized projects.

CONCLUSIONS

Economic approaches based on neoliberal ideology that define the dynamic of daily life as well as the built environment, ensuring sustainability in all sub-systems -environmental, economic and social components- is too assertive to be implemented in real life practice. The buzzwords green, energy efficient, ecologic, sustainable are used to take advantage, as profit-oriented by the investors of the construction sector. Even if some of these investments pretend to offer better living environments in terms of lesser impacts on the natural environment in some ways, in comparison with investments that do not have ecological approaches; the contradictions of designing cities or settlements called green increase in developing countries.

As green, ecologically friendly or energy efficient pretended projects in Istanbul are overviewed from the point of social, environmental and economic concerns; it is obvious that these enterprises are to benefit

from urban land for surplus capital. These projects do not provide social equity under several subheadings of sustainability issues, they even do not improve the quality of natural ecosystems or conserve biodiversity. The most significant criticism about these green enterprises is that the architecture they offer is not for humans. On the one hand, projects invested by several construction firms, such as Maslak 1453 and 42 Maslak, propose privileged living environment for high-income groups, while on the other hand the proposed new city project on the European and also the Anatolian side of Istanbul accumulate population density as a result of urban transformation, thereby causing urban disintegration.

In social sciences, many academics do not have adequate scientific knowledge about the other fields of science and this lack of knowledge causes a gap in evaluating science as a whole (Wallerstein 2013). The criticized projects show that in the field of architecture, there is a gap in integrating social considerations into the built environment in different scales of planning in practice. In Istanbul, building green new cities ironically in a city with a population of approximately fourteen million, is just a manipulation based on urban transformation in central places of the city, where sites have high investment values. It is a result of seeking new spaces for the resettlement process of displaced occupants. It is observed that the broadened idea of sustainability that includes social wellbeing, resilience adapted to ecology, economics, politics and culture, does not reflect into the real practice of architecture.

The basic perspective of social ecology was defined nearly twenty years ago, but not yet taken into account by policy making in developing countries. According to this definition, political ecologists fail to recognize that the roots of the problems they care about are not overpopulation or pollution, but the unequal distribution of resources and privilege, so that the few may consume to excess while the many suffer, their basic needs never met in the first place (McDonough & Partners 1995, p. 48). In this case, in Istanbul, innovative renewable energy technology integration is not only to provide energy efficient or green environments, but also equal distribution of resources and social justice for accessibility to healthy environments should be guaranteed in order to be able to refer to a relationship between ecology and the built environment.

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