*Research Article*

# The Progressive Trail of Environmental-Concerned Urban Planning from Growth to Resilience; an Analytical Overview

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## Abstract

The primary objective of this article is to review the evolutionary trajectory of urban planning theory, to deeper sense how it has dealt with unsustainable variations. This review reveals that there has been a significant decrease of interest and potential in further application of sustainable development approaches over the last 20 years. Furthermore, they have even been seriously accused of making indirect contribution to provoking detrimental alterations. In following, the article defines two being welcomed strategies of mitigation and adaptation planning in the face of wide-spreading variations. The article concludes that none of the above strategies would seem to be eventually efficient enough, unless being composed proficiently. Supplementary to this, there is an obvious weakness evident in existing urban planning knowledge with regard to the process of problem diagnosis, the Integrity of recommending solutions, and the accuracy of planning techniques application. This indeterminacy has had a strong negative impact on the potentialities of planning strategies in ceasing variations, and needs to be removed immediately.
**Keywords:** Sustainable development approaches, Unsustainable variations, Mitigation and adaptation strategies

## Introduction

Since the time of early settlements, man's concern has always been about gaining control over his surrounded environment. This control was attained through applying some kind of orders on the form and pattern configuration of his settlements. This order as a tool to sustain different segments of dwellings, was stemmed from the nature initially, and had been developed so as to protect him from more diversified sever situations gradually (Lynch & Hack, 2014). The general goal of giving order to chaos, was growing at the heart of man's desire to make more convenient, durable and safer habitats. This could be considered central to the very first imaginations on the nature of urban planning (Ackerman, 1983).

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From the establishment of Mesopotamia civilization on 5000 B.C. to the occurrence of the industrial revolution in 1840s, the activity of settlement planning has been fluctuated between generally unplanned arrangements, in accordance to natural context, and the purposeful methods of planning which were also reflecting an exhaustive obligation and respect to the surrounding environment (Morris, 2013). Soon after the industrial revolution emerged, town planning began to be considered as a growth facilitator mechanism. The mechanism included a series of certain orders, derived from the most recent needs and values of the human society (Schuyler, 1986). As a consequence of industrial growth, cities began to expand intensely in either dimension or complexity of their issues. Since the turn of the 20th century, it has always been the environmental, economic, and social concerns that motivated new planning movements to emerge (Morris, 2013). Variety of movements nurtured the knowledge-base of urban planning over the last two centuries. Nonetheless, despite some seemingly disparate orientations, shifting from one period to another was never from considering the aforesaid concerns to neglecting them. The concept of sustainable development emerged as a thoughtful compromise between social, economic, and environmental concerns on one hand, and the grand desire of progress on the other (Brown et al., 2009). Some fragmented experiences aside, the promise of sustainability has not seemed to gain adequate achievements to ensure the future, yet. That's while, the exacerbated trend of increasing unsustainable variations over the last 20 years, hints that there is still a long way left in front (Speth, 2008).

Since the mid-19th century, however, there were at least four drastic shifts imposed to human life and civilization (Hall, 2017). This research, as a part of a greater study on urban planning and environmental variations, is organized around those four time periods. In section 2, we have argued how the knowledge-base of urban planning expanded during each era, to cope with variations and to sustain more livable urban areas. The common promise of progress has evidently been central in rising every planning paradigm to prominence. How different perceptions of progress have altered from time to time is addressed in section 3. Finally, the trail of the planning theory is derived out, to show how it has evolved, and suggest what additional changes will be required to progress further toward a more resilient future.

**The trajectory of urban planning theory**

*First era: 1840- 1920*

At the beginning of the 19th century, the exploding prevalence of industrial revolution ended up in a social, technological transformation worldwide. The motion of the machine age which was aspired to enhance human prosperity, soon reversed harmfully on an unwittingly path to urban and habitat degradation. Social deterioration, growing population, disability of urban supportive potentials, the ever increasing pollution, and unsanitary conditions, were the most prominent features of urban life in the first age of machinery (1760 -1840). (Levy, 2013).

After the destructive impacts of industrialization revealed and variations began to accelerate, variety of pro-urban movements emerged over the 19th century. Each movement was based on its certain rules and principles the common purpose of which was to save the city and its qualities against the population growth and those harmful repercussions of industrial development (Hall, 2017). The unifying thread in many of the urban reforms during this period was the amelioration of public well-being through making improvements in the physical fabric of industrial cities (see table 1). The prominent theorists of this era, had limited access to a scattered narrative knowledge-base of planning, as the result of being pioneer in facing multifarious challenges. Despite some minor successes, therefore, their attempts merely provided a more reliable scientific basis for future urban and regional planning (Daniels, 2009).

**Table 1**. Most influential movements during the first era.

| First Era | Park Movement | Garden City |
|---|---|---|
| Main Concern(s): | Ecosystem Services / Human Well-being | Growth Regulation / Social Reformation |
| Main Principle(s): | Organizing a Coherent Green Infrastructure | Integrating Built and Natural Environments |
| Intervention Scope(s): | Urban Fabric | Suburban Green Fields |
| Intervention Scale(s): | Neighborhood, City, and Region | City and Region |
| Manifestation(s): | Series of Planning Orders | Garden City Utopia Model |

*Park Movement:*

One of the most prominent expressions of those optimistic approaches was the 19th century park movement. The park movement did not deny industrialism nor urbanization. Instead, it was a great proponent of the city, and defended the economic, educational, and social opportunities it could provide (Hall, 2017). By criticizing the industrial urbanization, however, the park movement claimed that cities need a green infrastructure, as an organizing spine, to equally provide dwellers with more healthful, sociable conditions (Eisenman, 2013).

   Park movement prescribed stronger connection with nature as a viable solution to overcome concerning environmental variations. Park movement highlighted the importance of a more openly built environment and attempted to achieve the differentiation of space and land use within the city (Wilkinson, 1988). It regarded the park as an urban space where natural and the built environments met in harmony, all people could interact peacefully, and environmental services like air purification and surface water drainage occurred naturally (Daniels, 2009). The most fundamental principle of this movement was to establish a coherent green infrastructure with parks of varying scales citywide and connecting it to countryside fields in a regional perspective (Hall, 2017). The second important principle was an effort to connect city life with the healthfulness of nature (Eisenman, 2013). Creating organic forms and designs, rather than geometrical shapes, preserving natural green spaces and lakes were the dominant elements used under this movement (Schuyler, 1986).

*The Garden City:*

Another contribution to the planning discourses of the age of industrialization, was the movement referred as the garden city. Garden city criticized the disorders of large industrial cities and profoundly rejected the growing unplanned suburb developments (Buder, 1990). Central to the concept of the garden city, was the idea of drawing population out of huge, enabling the city as well as its surrounding environment to efficiently meet the needs of urban residents (Abercrombie, 1910). It outlined a higher stage of civilization through legislating a model of environmental oriented development, for creating its ideal superlative community (Clark, 2003). In 1890s, Ebenezer Howard envisioned a reforming development concept, manifested in a series of satellite cities connected to each other and to the central city by rail lines. Each core was a self-sufficient city, populated by at most thirty thousands of local workforce (Howard, 2003). Garden City was girdled by green belts of farmlands, designated to limit growth and to provide strong linkage to natural environment (Abercrombie, 1910). Howard's foremost concern in the garden city delineation was to embark on a social and urban reform. He regarded social transformation as a master key to urban progress and tried to facilitate it through reorganizing social production and reconnecting natural and man-made components (Parsons, 2002). Garden city is eminent, not for the minor success it enjoyed at the

time, but for the major contributions it made to theoretical development of its consequent planning movements (Register, 2006; Daniels, 2009).

*Second era: 1920- 1970*

This period is remarkable for its drastic ideological shift, which stemmed largely from the logic line of objective sciences and the belief in endless progress (Pisani, 2006). The desire for establishing a universal morality and order was central to emergence of the broad revolution, and consequently transformation in different aspects of human life (Irving, 1993). Modern man and his life then redefined and formulated in absolute terms, to create a platform for formalization. Soon after standardization emerged, the frenetic ambition for progress manifested profoundly in a broad desire for mechanization (Hall, 2017). Like every other aspect of modern life, it was the tendency towards mechanization that outlined the activity of architecture and planning in this era. Emphasizing a Utopian approach, like what Howard did, urban planning was broadly subjected to this era's evolutionary shift, both procedurally and substantively (Fitting, 2002). Procedurally speaking, it was conceived as a technocratic elite's activity not to be left to the inhabitants. The product was also expected to be an efficient, machine-like system to live, work and entertain in (Hall, 2017).

By the end of the Second World War the strong demand for reconstructing damages as well as the perennial desire for rehabilitating the existing industrialized city cores, led to the eminence of different modern planning movements (see table 2). The most common purpose characterized those movements was their strong obligation to surmount the annoying condition of former compact cities. They all emphasized circulation against congestion, function against artistic beauty, homogenization against fragmentation, engineering against art, and logic against emotions. Doing more with less was the motto that could describe planning movements of this era best (Gold, 1998; Levy, 2013).

**Table 2**. Most influential movements during the second era.

| Second Era | Modernism | Urban Metabolism |
|---|---|---|
| Main Concern(s): | Scientific Implementations, Social, Economic, and Environmental Advancement | Social, Economic, and Environmental Resilience |
| Main Principle(s): | Reconstructing the City / Building High on Small Parts of Total Ground Area | Collecting Interchangeable Modules of City in a Metabolic Mega-structure Form |
| Intervention Scope(s): | Urban Fabric | Urban Fabric |
| Intervention Scale(s): | City and Region | City and Region |
| Manifestation(s): | A Machine-Like Utopia | A Mega-structure Utopia |

*Modernism:*

The Second World War is central to understanding Modernism as the first movement of planning in the 20th century. The war opened up an unparalleled demand for experimentation and innovation (Shoshkes, 2017). Fueled by many reconstruction projects around the world, the internationalism of modern planning and design expanded even further when the new science and technology enabled exotic ideas to emerge (Greenhalgh, 1990). Those scientific implementations were represented in planning as a commitment to systems theory and a fundamental shift towards technical rationality (Beauregard, 1989). Modern philosophy was then translated into a remarkably standardized planning vocabulary, to draw its missionary agenda out, in social, economic, and environmental areas (Freestone, 1996). It was the paradoxical goal of "decongesting the inner city by increasing its density", which led to the lift

in the amount of open spaces and high-raised buildings on a small part of total ground area (Hall, 2017). To realize its utopian dream, then the movement drew up a powerful master planning system whereby, ignored and demolished the uptown and replaced it with a new city of high-raised towers, in a city-wide park (Fitting, 2002). It began to advance the public demands through tending towards rational gigantism rather than the romantic human scale, redevelopment rather than restoration, and spatial mono-functionality (zoning), rather than diversity and pluralism (Couch, 1990). The Modern movement in planning was based on providing a close connection with natural environment, improving the welfare in society, and advancing the application of modern technologies in both construction and operation phases of cities. It emphasized the importance of function and statistics (Per capita), and minimized the value of form and aesthetics (Gold, 1998).

*Urban Metabolism:*

One of the significant movements that can be categorized under the so called modern planning currents, emerged in Japan, in the 1960s, and named urban metabolism. The movement's foremost concern was socio-economic progress, as a notion of national identity, in response to human and natural catastrophes (Tamari, 2014). The metabolism movement drew the attention of international planning community to the concept of `city as an organic process`, not a mechanical product. The term `Metabolism` used metaphorically to define the persistent demand of regeneration and replacement of the old with the new in cities, as living organisms (Koolhaas et al., 2011). Metabolism movement conceived the city as a mega-structure building encompassed numerous modular units. Collectability, interchangeability and the incorporation with transport arteries were the main principles devised the metabolic mega-structure. Such a structural framework empowered cities to extend, change, and upgrade their components gradually (Banham, 1976). When many cities in the world were undergoing drastic failures of urban sprawl and downtown dissolve, urban metabolism introduced a new order to accommodate and regulate the urban growth simultaneously (Lin, 2007). The proposed mega-structure was tended to be free from surroundings and planned in a way to function independently (Kennedy et al., 2011). Through the metabolism view point, the city is a mega-structure divided in to two essential and non-essential parts. The essential part implied to the main structure which was assumed fixed and stable in long term, while the rest would continuously undergo changes to enhance progress (Schalk, 2014).

*Third era: 1970- 2000*

The dynamism and expanse of the modern changes, eventually, generated their own stressors at the beginning of this era. It was in the 1970s, when the idea of endless progress, lost much of its fascination incredibly (Pisani, 2006). A series of social flips such as new evolution in communication technologies, and the demand for broader participation in public sphere, gradually altered the way people approached the notion of ethics and the concept of time and space during this era (Jencks, 2007; Smart, 1993; Harvey, 1991). The uncertainty towards future was the key to these cognitive alterations (Smart, 1993). Advocates of these amendments argued that the grand narrative of reason, progress and singular truth of modernism should be altered with a more fragmented reality of relative perspectives (Goodchild, 1990). The concept of Post-Modernism first raised to prominence by rebirth of interest in social science and then crossed into architecture and planning at the middle of 1970s (Harvey, 1992). The last three decades of the 20th century have witnessed a growing awareness and engagement by a number of planning and design theorists with what has been called the 'postmodern turn'.

Postmodernism was in fact a critique reacted to modernity's grand narrative of freedom and technical rationality (Smith, 2016). By getting influenced from phenomenological and hermeneutic schools of thought, the critical discourses provided firm theoretical basis for an interpretive current of planning to emerge (Whittemore, 2014). The arisen current was based on a series of self-conscious understanding of the experienced world, rather than pure commitment to scientific rationally (Dear, 1986). The new pragmatic approach, then led to the rise of several postmodern planning movements. They supported democratic forms, open and disjointed processes, traditional oriented innovations, and sustainable development approaches, on the basis of an ecological awareness environmentalism (Goodchild, 1990) (see table 3).

**Table 3**. Most influential movements during the third era.

| Third Era | New Urbanism | Urban Village | (TOD) | Smart Growth |
|---|---|---|---|---|
| Main Concern(s): | Improving the Quality of Urban Life / Retrieving Public Memories and Urban Organisms Advancement | Retrieving the Quality and Vitality of Traditional Urban Environments / Develop More Sustainably | Local Scale Development, Social Coherency, and the Threat of Urban Sprawl | Redirecting a Share of Regional Growth Within Cities in the Face of Urban Sprawl |
| Main Principle(s): | A Compact Pattern of Mixed Land Uses and Different Housing Types on the Basis of a Pedestrian Friendly Scale | High Dense, Mixed Land Uses, Self-sufficient Neighborhoods, Maximum Diversity, Minimum Separation | Limiting the Development Within Specific Geographical Areas (Around Rail Stations) | Revitalizing the Already Built Environments by Increasing Mixed Land Uses, Range of Housing Types in Compact and Pedestrian scale Neighborhoods |
| Intervention Scope(s): | Urban Fabric | Green Fields / Brown Fields | Rail Stations, Surroundings | Urban Areas |
| Intervention Scale(s): | Building, Neighborhood, City, and Region | Neighborhood, City, and Region | Neighborhood, City, and Region | Neighborhood, City, and Region |
| Manifestation(s): | A Three Level Categorized Series of Orders | Series of Planning Orders | Series of Planning Orders | Series of Planning Orders |

*New Urbanism:*

New urbanism movement found its roots in some intense personal and emotional responses to the rapidity of change in cities. *There Is No There, There,* remarked by Gertrude Stein, an influential American writer in the 20th century, implies the process of perpetual redevelopment that was destroying and replacing memories as well as places (Harvey, 1997). New urbanism based its canon on a return to the concepts of neighborhood and community in order to radically improve the quality of urban living. It launched one of the most dramatic reversals in planning theory from modern paradigm, and implied a neo-traditional model of development which began from neighborhood scale, while could be extended with a satellite pattern to regions (Calthorpe, 2014).

The new urbanism was the first clearly identifiable planning movement ever, which has well defined its aims, methods and principles altogether. The charter of the new urbanism comprised series of general principles which were organized in three categories, Encompassing: (the region: metropolis, city, and town), (the neighborhood, the district, and the corridor), and (the block, the street, and the building), in order to provide convenient means for a sustainable urban and regional evolution (The New Urbanism, 2000)The movement battled the environmental deterioration, dis-investment in inner cities in the shadow of sprawl, and the increasing human separation and society erosion (Duany et al. 2005). It promoted a development model, based on a compact pattern with a mix of different housing types, mixed land uses, variety of public spaces, alternative means of public transportation, pedestrian scale, more walk and less drive, and a physical, functional diversity (Duany et al. 1994).

*Urban Village:*

The UK's contribution to thinking about what had become known as new urbanism, was the concept of urban village in the late 1980s. Urban village formulated a form of development which aimed to result in more balanced communities, flourishing social interactions, bolstered local services and in overall, a pattern of development with a far greater concern for sustainability (Huxford & Urbuilfor, 1998).

The urban village aspired to retrieve the appreciated qualities and vitality of traditional urban environments. The popular idea of sustainable development in the 1980s contributed to the formation of the urban village concept as a self-sufficient settlement, created on a green-field or brownfield site (Neal, 2003; Tait, 2003). What identified the urban village from its contemporaneous planning movements was its emphasize on neighborhood and local scale to begin with. Advocates of the movement stressed that the planning procedure was set to activate the development of self-sufficient neighborhoods (villages), at micro scale. They then claimed that such a polycentric grouping of villages would enable regions to grow more sustainably at macro scale (Biddulph M. , 2000). An urban village was in fact a utopia reflected characteristics of high density, mixed land uses, mix of housing tenures, different ages and social groups, high quality, and walkability (Biddulph et al., 2003). Its main principles were preserving natural environments, developing on an appropriate size and density, distributing housing and job opportunities on a 1:1 ratio, diversifying architectural and urban forms, facilitating public access to health and education, providing bases for relative self-sufficiency, decreasing car dependency, and increasing dwellers participation in decision-making processes (Franklin & Tait, 2002).

*Transit Oriented Development:*

Another significant neo-traditional effort to sustain urban planning and community design practices dates back to the emergence of Transit Oriented Development (TOD) movement. Beyond its definition of the built form, it was also a community design theory that asserted to address a more coherent society (Carlton, 2009). TOD generally referred to a development within a specified geographical area with variety of mixed land uses and a multiplicity of landowners. It regarded the train as most efficient mean of transportation and delineated a regional pattern of development by intensifying residential land uses around rail stations (Boarnet & Crane, 1998). TOD's basic development module defined as a village like, which was comprised of a dense mix of retails and office uses, with an intermingling of housing for different income groups.  It was the easy accessibility as well as the charm of physical and functional diversity that encouraged people to walk more and drive less (Cervero, et al., 2002). By putting emphasize on measures such as increasing centralization, ecological preservation,

brownfields reconstruction, and self-sufficient neighborhoods promotion, TOD addressed an easy comprehensible solution for regional growth which regarded neighborhood as the basic unit of planning (Calthorpe, 1993).

*Smart Growth:*

Smart Growth, as another optimistic movement in urban planning, created a supportive awareness for redirecting a share of regional growth within central cities and inner suburbs. It aimed to retain the rural and undeveloped portions of the metropolitan area away from un-projected growth (Burchell et al., 2000). As a pragmatic recoding of a new regionalism, smart growth sought to revitalize the already built environments, to foster more sustainable developments. Indeed, to protect urbanism, it tended to control sprawl and make an environmental stewardship a more overt part of urban development thinking (Scott, 2007). The smart growth emphasized on promoting mixed land uses, compact forms, wide range of housing types, pedestrian oriented neighborhoods and coherent communities, with a strong sense of place (Tregoning et al. 2002). Unlike other contemporary urban planning movements, the smart growth took components such as agricultural fields, water sources, air quality, natural assets and environmental vulnerabilities, in to planning considerations (Ye et al., 2005; Barbour & Deakin, 2012).

*Fourth era: 2000-Present*

At the turn of the third millennium, cities appeared to change to the arena of global economic competitions (Peck et al., 2013). That widely-held phenomenon, stemming from the predominance of Neo-liberal school of thinking, has been evidently altering urban settlements over the course of the last 20 years (Brenner & Theodore, 2005). The goal of absorbing the utmost amount of mobile-investment-capital led to state authorities aiming in facilitating the market-led development rather than sustaining the already existing cities or enhancing the citizens' well-being (Filion & Kramer, 2011). The idea of tradable urban planning, hence, emerged in order to address the demand of urban branding in this era. This new role of planning, encompassing a significant focus on globalization, competition, entrepreneurialism, flagship construction, and place making could be known as the last predominant shift in the contemporary planning movements (Sager, 2011; Robinson, 2011). Unlike the former movements the common goal of which was to develop social, environmental, and economic attributes of middle-class population's lives, Neo-Liberal movement drew a totally marketable image of the highly-valued notions of sustainability, culture, and smartness ((Rosol et al., 2017; Grossi & Pianezzi, 2017). In fact, it exploited such concepts to gravitate the elite-class citizens to invest more in city development markets. Such an exclusive approach, albeit being beneficial for urban administrative systems and the group of elites, they are mainly concerned about, has evidently resulted in deterioration of urban communal assets the very epitome of which is the natural environment (Sager, 2011) (see table 4).

**Table 4**. Most influential movements during the fourth era.

| Fourth Era | Neo-Liberalism |
| --- | --- |
| Main Concern(s): | Attaining More Mobile Capital in Competition With Other Cities |
| Main Principle(s): | Gentrification, Modernization, Entrepreneurialism, |
| Intervention Scope(s): | Urban Fabric, Urban Green, City Center |
| Intervention Scale(s): | City and Region |
| Manifestation(s): | Flagship projects, Hallmark Events, Place Making |

Neo-liberal city has been regarded as the most dramatic manifestation of human deteriorative impact on social, economic and environmental systems (Moglia, et al., 2018). Due to pressures that have been labeled as market demands and their consequences, cities had yet been under stress broadly (Ponzini, 2016). Despite the rhetoric of sustainable development over its past decades, urban development in 21st century, is accused of the natural habitats degradation and practical deficiency domination (Yigitcanlar & Teriman, 2014). The inappropriateness of divergent planning procedures deteriorated social and environmental systems and widened the gap between public declarations of principles and implementation of concrete measures over the years (Pacione, 2007). In spite of those former planning attempts, the threatening effects of the growing urbanization was rising on a steady trend. The trend led to some unprecedented phenomena initiation in terms of environmental variations and socio-economic vulnerability in urban areas (Benson & Clay, 2003). The concerning variations began to change to a major challenge for urban theorists as well as governors throughout the contemporary world (Bulkeley & Broto, 2012; Moglia, et al., 2018). The concept of sustainable development was reconsidered in terms of feasibility and efficacy, in order to restrain the disjuncture between the theories and practice ((Trudeau, 2018; Sneddon et al., 2006). By deciphering the crisis cities had faced at the beginning of the century, the environmental variations and their related socio-economic bottlenecks were recognized as the wickedest threats to urbanization and human well-being (Bulkeley & Broto, 2012). Yet, in spite of previous flawed practices, urban solution rose to prominence beyond developing technologies, alternative energy resources, and absolute conservation strategies, to overcome those variations (Calthorpe, 2013).

The pressing question, then, arose as: what type of planning could address the urban solution? Among those sobering considerations, there was a call for a more and better planning, suggested that the knowledge base of urban planning is broadly needed, not to develop new urban movements over again, but to avoid old mistakes happen, and harness the variations (Hall, 2014). Urban solution had an inherent optimistic attitude towards urbanization as the least-cost remedy for either the existing and upcoming uncertainties. It conceptualized a more resilient urban future by applying some mitigation and adaptation measures in the terms of infrastructural, physical, zoning, managerial, financial, and political reforms. Urban solution also emphasized that such a remedy when combined with simple conservation technologies, would broadly contributes to variations reduction (Ziegler, 2009; Calthorpe, 2013). The two fundamental strategies urban solution was consisted of, were `mitigation of` and `adaptation to` harmful variations. Mitigation strategies implied the procedure of thoughtful planning for limiting the threatening alterations, through removing and reducing their causes. Adaptation on the other hand, referred to a series of organized planning actions which empower the urban vulnerable systems to exploit opportunities for moderating harms (McCarthy, Canziani, Leary, Dokken, & White, 2001). Urban solution has obviously been swung somewhere between these two strategic approaches, over the last decades (Klein, et al., 2007). While it has defined no novel particular set of planning tools nor any new intervention method, urban solution delineated key dimensions of planning approaches in both climate sensitive disorders and non-climate constraints contexts (Ponzini, 2016).

The key challenge of current urban planning paradigm is to reform urban lifestyle in order to minimize unsustainable variations (Keivani, 2010). This challenge concerns how people live, work, and communicate in an urban area, the way they get around, the size and price of their homes, the food they eat, and the way they benefit from their surrounding natural and built environments (Corburn, 2004). The Current paradigm of urban planning has outlined its general goals for the 21st century and borrowed methods and principles of intervention from former planning movements. The goals are generally defined as advancing sustainability, respecting and engaging the nature, enhancing public health, expanding individual choices, and developing communities in different levels of planning (Brown, 2009).

## Conclusion, from progress to resilience

Progress is a purposeful, prospective desire of humankind, which has perpetually led his life toward improvement. Although thinking about progress was surfacing gradually from the earliest human settlements, it was at 1840s, when the industrial revolution started looming largely, that the idea of progress rose to prominence unprecedentedly. Henceforth, industrialization linked the idea to economic growth and material advancement. The first dramatic turn posed at this point to urbanization, where cities began to grow and dominate over the natural orders. Drastic growth in size and population debilitated cities in maintaining their healthful sanitary conditions. Consequently, the existed tiny knowledge of town planning advanced largely in response to either desire of growth and upcoming concerns of social and environmental issues, over this era. The idea that, we can by care lessen the evil effects of industrial growth, promoted urban planning from an absolute artistic activity to an anthropogenic, scientific practice. The second eminent fluctuation occurred by the birth of modernism in early 20th century. It was in fact referred more as a revolutionary paradigm rather than an evolutionary one, because of the many drastic shifts and the dramatic separation from the past, it provoked purposefully. Modernism was a school of thought which based it's canon on logical rationality, and empowered by the most advanced technologies of the time. Modern rationality and the belief in an endless progress were almost synonymous. Trusting new cumulative advancements, and believing in continuous development were two crucial strands in signifying the modern conception of progress. The radical goal of mass production, beside the desire for an even distribution of development, characterized the main threads of the modern urban planning paradigm. As a rejection to the great idea of everlasting growth, postmodernism pointed a new direction, that of sustainable development. It criticized the modern grand narrative of progress, socially, environmentally, and economically, and outlined the most dramatic theoretical reversal in decades following the Second World War. There was a call significant for balance, at the heart of postmodern philosophy of development. Accordingly, notions such as diversity, pluralism, differences, and heterogeneity retained their values, and empirical pragmatism returned into consideration. Postmodernism advanced a growing awareness of the limits to growth, and portrayed its planning agenda in seeking more sustainable developments. At the beginning of the 21st century, the rate of urbanization which was already on rise, grew dramatically, approached to 50%. That trend acknowledged the recognition that cities had turned to the engine of progress plainly, driving the economic development globally. Other surveillance simultaneously expressed alarms about the evil effects of that growing urbanization. It was revealed that cities were consuming about 67% of the global energy demand, emitting up to 70% of the total amount of greenhouse gas emissions (For more details see UNFPA (United Nations Population Fund) report: State of world population, published in 2007). Accordingly, cities were accused of representing key generators of environmental pollution, social inequity, economic vulnerability, and livelihood insecurity. Those insights seriously warned that cities were exceeding limits of exploitation, approaching to an imminent catastrophe. Taking as given that former notions of growth, and development had become un-feasible evidently, the fourth paradigm shift formulated under the title 'resilience'. One early response to the new direction provided by the advocates of technology. They did not deny the worriment of overpopulation, overconsumption of energy, social and environmental degradation. Nonetheless, they assured that scientific developments would open up more human possibilities to find or create new resources and to advance methods of effective pollution control. The application of artificial intelligence, information and communication technologies, along with advancements in renewable energy generation were being at the heart of those innovative approaches. There was, however a less optimistic side which believed that technology, on its own, have not proved to be the hoped-for solution to harness unsustainable

variations. Proponents of this view point revealed the need for a more proactive intervention. Therefore, they privileged the transformation planning beyond relying on technological conservation methods. They regarded city as a conceivably sustainable organization, and legislated moderate levels of adaptation and mitigation planning to wipe out threatening variations. The fourth paradigm shift in planning was actually a conceptual switchover from progress as sustainable development, to progress as planning for resilience.

Over the past couple of decades, the knowledge base of urban planning was evolving substantially in response to social, economic, and environmental circumstances. Tracking that evolutionary trail reveals that it was the perpetual desire for progress which has fueled it to pass forward. This review demonstrates that despite some piecemeal sparsely defined approaches, no genuine framework has been emerged to comprehensively evoke urban planning capacities in domesticating and restraining variations. This is the point to consider, in order to understand why upheavals has always grown faster than planning remedies revived. Not surprisingly, most of the existing urban planning literature has been devoted to urban development and it's attributes. Expansive technological breakthroughs, ever increasing rate of population and multiplied economic advancements, along with the growing threatening variations have ever had the greatest role in promoting the growth-oriented strategies. However, whether the theory and practice of urban planning have effectively responded to challenges in due courses, remains to be a consideration. Although sustainable planning movements have proved to have fairly impressive achievements, their success was chiefly limited to distinguished local areas, focusing solely on some aspects of the subject matter of urban planning. Hence, none of those movements might not have equipped us adequately for dealing with the host of serious challenges our metropolitan regions are now exposing to. A greater awareness even took place when the cumulative side-effects of those divergent planning practices climaxed in the form of increasing environmental variations, social decline, and economic downturns, at larger scales. Causality and vulnerability of urban areas to those aggravated variations were clearly linked to the very nature of the former sustainable development practices. Accordingly, the contemporary theory of urban planning became inclined to the concept of resilience considerably, and began to explore potential venues for integrating the adaptation and mitigation blueprints within already existing development contexts.

Reviewing the urban planning trajectory ascertains that it is operating now smarter than ever before, by narrowing down and shattering the complexity of exposed issues into their fragments. Yet the pressing question is that whether the current paradigm enjoys all planning capacities efficiently? The global still-increasing variations reply `NO`, while indexing a probable procedural leak. The leak possibly pertains to the very divergent nature of the knowledge-base of urban planning. Indeed, the existing knowledge has followed a step-by-step completion. In terms of integration however, there is no significant synergistic linkage evident between consecutive movements. Each step has revealed its distinctive planning tools and objectives, which have replaced actually by the next one's blooming. Unlike urban planning, unsustainable variations have chased an ever growing collaborative trend, not discarded any single factor. Consequently, the cumulative effects have always been terribly stronger and smarter in their perpetual returns. In order to overtake those wicked variations, we need to empower our mitigation and adaptation strategies profoundly. First, we require to delineate a more realistic, precise analytical method to recognize the fountainhead of problems as well as their subsequences. Since, we are frequently misdirected with a kind of complexity in the face of variations, it is substantial to differentiate causes from effects initially. Second, we should minimize conflicts of taste. One can possibly find as many instructions for mitigation and adaptation planning, as the number of conducted researches and practices. These varieties of approaches, aside from some commonalities, reveal the much diverged attitudes towards subject, which could avoid the synergistic effect of planning to evoke. We require to establish

an all-inclusive agenda for mitigation and adaptation urban planning, encompassing different subsets and categories of legitimized regional, urban, local, and block prescriptions. Such an agenda should be considered utterly and could not be referenced in levels merely. Third, Urban planners should have more reliable and scrutinized planning tools at hand to promote mitigation and adaptation strategies beyond the ambitions. There is an inherent undeniable multiplicity at the heart of the existing knowledge base of urban planning, which degrade the certainty in planning-tools application. This multiplicity, along with the lack of a consensus on the most efficient planning principles, have caused a plurality of votes and delegated the decision to individual planners in actuality. Yet, it is of a great importance to use identical planning measures to converge procedures and to stop divergence at its source. Hence, we are now required, more than ever before, to draw out a unified series of planning objectives and nominate principles of the most efficiency, for pursuing the goal of resilience. Fourth, we should consciously leave a room for innovative conservation technologies. Although, absolute reliance on such advancements would be extremely pricey, inefficient, and somehow unsustainable in long terms, they have largely experienced successful efforts. Urban planning is by nature a prolonged mechanism which we apply to sustain profound mutations gradually. That is while, the blending of planning measures with an appropriate portion of technological advancements would not only accelerate achievements, but facilitate the whole planning procedure beneficially.

Finally, let us keep in mind that, resilience, as the evolutionary destination of the goal of progress, is not a mere aspiration or advertising motto at all. Henceforth, this deal is more like our guarantee of survival. At this stage, unlike our former efforts, any failure could lead our thousands of years of civilization to the irreversible rout of descent. The worse news is that, we are all in danger equally, regardless of where we live, and to which level our country home is developed. Disastrous variations, such as climate change are now subject to a global widespread and both decision makers and citizens have to embrace mitigation and adaptation strategies to stop the expansion. The pandemic of the COVID-19 in 2020 was an informative alarm for all of us. We needed to understand that how vulnerable we would be, how useless our fragmented knowledge could be, and how conscious, we should be, in the face of threatening prevalent phenomena.

## References

Abercrombie, P. (1910). Modern Town Planning in England: A Comparative Review of" Garden City" Schemes in England. The Town Planning Review, 1.

Ackerman, J. S. (1983). The Tuscan/Rustic Order: A Study in the Metaphorical Language of Architecture. Journal of the Society of Architectural Historians, 42, 15-34.

Banham, R. (1976). Megastructure : urban futures of the recent past. Thames and Hudson.

Barbour, E., & Deakin, E. A. (2012). Smart Growth Planning for Climate Protection. Journal of the American Planning Association, Informa UK Limited,78, 70-86.

Beauregard, R. A. (1989). Between Modernity and Postmodernity: The Ambiguous Position of {US} Planning. Environment and Planning D: Society and Space, 7, 381-395.

Benson, C., & Clay, E. J. (2003). Disasters, vulnerability and the global economy. In Building safer cities: The future of disaster risk,3 (pp. 3-32). Disaster Risk Management Series.

Biddulph, M. (2000). Villages Don't Make a City. Journal of Urban Design, Informa UK Limited, 5, 65-82.

Biddulph, M., Franklin, B., & Tait, M. (2003). From concept to completion: A critical analysis of the urban village. Town Planning Review, Liverpool University Press, 74, 165-193.

Boarnet, M. G., & Crane, R. (1998). Public Finance and Transit-Oriented Planning: New Evidence from Southern California. Journal of Planning Education and Research, SAGE Publications, 17, 206-219.

Brenner, N., & Theodore, N. (2005). Neoliberalism and the urban condition. City, Analysis of Urban Change, Theory, Action, 101--107.

Brown, L. J., Dixon, D., & Gillham, O. (2009). Urban design for an urban century : placemaking for people. Wiley.

Buder, S. (1990). Visionaries and planners : the garden city movement and the modern community. Oxford University Press.

Bulkeley, H., & Broto, V. C. (2012). Government by experiment? Global cities and the governing of climate change. Transactions of the Institute of British Geographers, 38, 361-375.

Burchell, R. W., Listokin, D., & Galley, C. C. (2000). Smart growth: More than a ghost of urban policy past, less than a bold new horizon. Housing Policy Debate, Informa UK Limited,11, 821-879.

Calthorpe, P. (1993). The next American metropolis : ecology, community, and the American dream. Princeton Architectural Press.

Calthorpe, P. (2013). Urbanism in the Age of Climate Change. Island Press.

Calthorpe, P. (2014). The Region. In The Ecological Design and Planning Reader (pp. 506-514). Island Press/Center for Resource Economics.

Carlton, I. (2009). Histories of Transit-Oriented Development: Perspectives on the Development of the TOD Concept. University of California, Institute of Urban and Regional Development (IURD).

Cervero, R., Ferrell, C., & Murphy, S. (2002). Transit-oriented development and joint development in the United States: A literature review. TCRP research results digest.

Clark, B. (2003). Ebenezer Howard And The Marriage Of Town And Country. Organization {\&} Environment, 16, 87-97.

Corburn, J. (2004). Confronting the Challenges in Reconnecting Urban Planning and Public Health. American Journal of Public Health, American Public Health Association, 94, 541-546.

Couch, C. (1990). Urban renewal: theory and practice. Macmillan Education.

Daniels, T. L. (2009). A Trail Across Time: American Environmental Planning From City Beautiful to Sustainability. Journal of the American Planning Association, 75, 178-192.

Dear, M. J. (1986). Postmodernism and planning. Environment and Planning D: Society and Space, 4, 367-384.

Duany, A., & Brain, D. (2005). Regulating as if humans matter (chapter 14). In Regulating Place: Standards and the Shaping of Urban America (293-332). Taylor & Francis.

Duany, A., & Plater-Zyberk, E. (1994). The neighborhood, the district and the corridor. The new urbanism: Toward an architecture of community, 17-20.

Eisenman, T. S. (2013). Frederick Law Olmsted, Green Infrastructure, and the Evolving City. Journal of Planning History, 12, 287-311.

Filion, P., & Kramer, A. (2011). Metropolitan-scale Planning in Neo-liberal Times: Financial and Political Obstacles to Urban Form Transition. Space and Polity, 3, 15, 197-212.

Fitting, P. (2002). Urban planning/utopian dreaming: Le Corbusier's Chandigarh today. Utopian Studies, 13, 69-93.

Franklin, B., & Tait, M. (2002). Constructing an Image: The Urban Village Concept in the {UK}. Planning Theory, 1, 250-272.

Freestone, R. (1996). The Shattered Dream: Postwar Modernism, Urban Planning, and the Career of Walter Bunning. Environment and Planning A: Economy and Space, 28, 731-752.

Gold, J. R. (1998). Creating the Charter of Athens: {CIAM} and the functional city, 1933-43. Town Planning Review, 69, 225-243.

Goodchild, B. (1990). Planning and the modern/postmodern debate. Town Planning Review, 61, 119-123.

Greenhalgh, P. (1990). Modernism in design. Reaktion Books.

Grossi, G., & Pianezzi, D. (2017). Smart cities: Utopia or neoliberal ideology? Cities, Sep., 69, 79--85. doi:https://doi.org/10.1016/j.cities.2017.07.012

Hall, P. (2014). And one fine morning: reflections on a double centenary. Town Planning Review, 85, 557-562.

Hall, P. (2017). Cities of Tomorrow - An Intellectual History of Urban Planning and Design Since 1880 4e. Wiley-Blackwell.

Harvey, D. (1991). The Condition of Postmodernity. John Wiley and Sons Ltd.

Harvey, D. (1992). Social Justice, Postmodernism and the City. International Journal of Urban and Regional Research, Wiley, 16, 588-601.

Harvey, D. (1997). The new urbanism and the communitarian trap. Harvard Design Magazine, 1.

Howard, E. (2003). Garden Cities Of To-Morrow. Organization {\&} Environment,16, 98-107.

Huxford, R., & Urbuilfor. (1998). Urban Villages: An introduction. Ice briefing sheets. (Summary of "Urban Villages- a concept for creating mixed-use urban developments on sustainable scale", published by the urban villages forum) Urban Villages: An introduction. Ice briefing sheets. (Summ. Proceedings of the Institution of Civil Engineers - Municipal Engineer, 127, 204-206.

Irving, A. (1993). The Modern/Postmodern Divide and Urban Planning. University of Toronto Quarterly, 62, 474-487.

Jencks, C. (2007). Why Critical Modernism? Architectural Design, 77, 140-145.

Keivani, R. (2010). A review of the main challenges to urban sustainability. International Journal of Urban Sustainable Development, Informa UK Limited, 1, 5-16.

Kennedy, C., Pincetl, S., & Bunje, P. (2011). The study of urban metabolism and its applications to urban planning and design. Environmental Pollution, 159, 1965-1973.

Klein, R. J., Huq, S., Denton, F., Downing, T. E., Richels, R. G., Robinson, J. B., & Toth, F. L. (2007). Inter-relationships between adaptation and mitigation. In Climate change 2007 : impacts, adaptation and vulnerability : contribution of Working Group II to the fourth assessment report of the Intergovernmental Panel on Climate Change (pp. 745-777). Cambridge University Press.

Koolhaas, R., Obrist, H.-U., Ota, K., Westcott, J., & Daniell, T. (2011). Project Japan : metabolism talks. TASCHEN GmbH.

Levy, J. (2013). Contemporary urban planning. Pearson Education.

Lin, Z. (2007). Urban structure for the expanding metropolis: Kenzo Tange's 1960 plan for Tokyo. Journal of Architectural and Planning Research, 24, 109-124.

Lynch, K., & Hack, G. (2014). The Art of site Planning. In C. f. Economics, The Ecological Design and Planning Reader (pp. 368-378). Island Press/Center for Resource Economics.

McCarthy, J. J., Canziani, O. F., Leary, N. A., Dokken, D. J., & White, K. S. (2001). Climate change 2001 : impacts, adaptation, and vulnerability : contribution of Working Group II to the third assessment report of the Intergovernmental Panel on Climate Change. Cambridge University Press.

Moglia, M., Cork, S. J., Boschetti, F., Cook, S., Bohensky, E., Muster, T., & Page, D. (2018). Urban transformation stories for the 21st century: Insights from strategic conversations. Global Environmental Change, 50, 222-237.

Morris, A. E. (2013). History of urban form before the industrial revolution. Routledge.

Neal, P. (2003). Urban villages and the making of communities. Spon Press.

Pacione, M. (2007). Sustainable Urban Development in the UK: Rhetoric or reality? Geography, 248-265.

Parsons, K. (2002). From garden city to green city : the legacy of Ebenezer Howard. Johns Hopkins University Press.

Peck, J., Theodore, N., & Brenner, N. (2013). Neoliberal Urbanism Redux? International Journal of Urban and Regional Research, 3, 37, 1091-1099.

Pisani, J. A. (2006). Sustainable development – historical roots of the concept . Environmental Sciences, 3, 83-96.

Ponzini, D. (2016). Introduction: crisis and renewal of contemporary urban planning. European Planning Studies, Informa UK Limited, 24, 1237-1245.

Register, R. (2006). EcoCities. New Society Publishers.

Robinson, J. (2011). 2010 Urban Geography Plenary Lecture—The Travels of Urban Neoliberalism: Taking Stock of the Internationalization of Urban Theory. Urban Geography, 8, 32, 1087-1109.

Rosol, M., Béal, V., & Mössner, S. (2017). Greenest cities? The (post-)politics of new urban environmental regimes. Environmental and Planning A, 8, 49, 1710--1718.

Sager, T. (2011). Neo-liberal urban planning policies: A literature survey (1990-2010). Progress in Planning, 4, 76, 147-199.

Schalk, M. (2014). The Architecture of Metabolism. Inventing a Culture of Resilience. Arts, MDPI AG, 3, 279-297.

Schuyler, D. (1986). The new urban landscape. The redefinition of City Form in Nineteenth Century America.

Scott, J. W. (2007). Smart Growth as Urban Reform: A Pragmatic Recording of the New Regionalism. Urban Studies, 44, 15-35.

Shoshkes, E. (2017). Jaqueline Tyrwhitt translates Patrick Geddes for post world war two planning. Landscape and Urban Planning, 166, 15-24.

Smart, B. (1993). Post-Modernism and the Social Sciences: Insights, Inroads, and Intrusions. The Journal of Higher Education, Informa UK Limited, 64, 494-495.

Smith, O. S. (2016). The Inner City Crisis and the End of Urban Modernism in 1970s Britain. Twentieth Century British History, Oxford University Press (OUP), hww032.

Sneddon, C., Howarth, R. B., & Norgaard, R. B. (2006). Sustainable development in a post-Brundtland world. Ecological Economics, 57, 253-268.

Speth, J. G. (2008). The Bridge at the Edge of the World. Yale University Press.

Tait, M. (2003). Urban villages as self-sufficient, integrated communities: a case study in London's Docklands. URBAN DESIGN International, Springer Science and Business Media LLC, 8, 37-52.

Tamari, T. (2014). Metabolism: Utopian Urbanism and the Japanese Modern Architecture Movement. Theory, Culture & Society, 31, 201-225.

The New Urbanism, C. (2000). Charter of the New Urbanism. Bulletin of Science, Technology & Society, 20, 339-341.

Tregoning, H., Agyeman, J., & Shenot, C. (2002). Sprawl, Smart Growth and Sustainability. Local Environment, Informa UK Limited, 7, 341-347.

Trudeau, D. (2018). Integrating social equity in sustainable development practice: Institutional commitments and patient capital. Sustainable Cities and Society, 41, 601-610.

Whittemore, A. H. (2014). Phenomenology and City Planning. Journal of Planning Education and Research, 34, 301-308.

Wilkinson, P. F. (1988). The historical roots of urban open space planning. Leisure Studies, 7, 125-143.

Ye, L., Mandpe, S., & Meyer, P. B. (2005). What Is "Smart Growth?"—Really?. Journal of Planning Literature, 19, 301-315.

Yigitcanlar, T., & Teriman, S. (2014). Rethinking sustainable urban development: towards an integrated planning and development process. International Journal of Environmental Science and Technology, Springer Science and Business Media LLC, 12, 341-352.

Ziegler, E. H. (2009). The case for megapolitan growth management in the 21st century: Regional urban planning and sustainable development in the United States. The Urban Lawyer, 41, 147-182.