

## ANALYTICAL STUDY OF URBAN FORMALIST MODELS SHIFTING IN THE PERIOD 1830 - 2021

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### ABSTRACT

Urban design discipline synthesizes from evolutionary paradigms as a product of integrated thoughts of design models. Every urban design model consists of concerns and thoughts that are changing continuously. The formalist model is one of the urban design models that has its principles for shaping the built environment. However, the interrelationship and shifts issues among thoughts of all formalist models are not yet gathered and updated in a continuum manner. Therefore, this study aims to present the evolution of urban design concepts and models, with an emphasis on the formalist model. Furthermore, analyzing urban formalist models to discover relations among them through time. In order to do so, this paper is divided into two parts. The first part explains urban design models by applying historical and theoretical approaches, with a focus on the formalist model to provide an alternative framework for understanding the paper's goal. The other part follows an analytical approach for revealing links and relations between urban formalist models. The research results that some of the formalist models have a great influence on the other. For instance, the Beaux-Art movement, the parks movement, Camillo Sitte and Kevin Lynch's thoughts are prominent models that affected other formalist models and concepts. This gets a recommendation for building up more studies on the precedents urban formalist models, which have design principles that enrich contemporary urban designers' thoughts. An additional recommendation is the adoption of traditional urban design thoughts that support a quality of contemporary and public urban life requirements.

### KEYWORDS:

Urban design; chronological-analytical study; paradigms shift; urban formalist models.

## دراسة تحليلية للتغيرات في نماذج التشكيل العمراني بالفترة ١٨٣٠ - ٢٠٢١

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### ملخص البحث

يتكون علم التصميم العمراني من مجموعة من النماذج التصميمية المتطورة عبر الزمن. يتكون كل نموذج تصميم عمراني من مبادئ وأفكار تتغير باستمرار. ويعد نموذج التشكيل العمراني هو أحد النماذج التصميمية التي لها مبادئها في تشكيل البيئة المبنية. ومع ذلك، فإن قضايا الترابط والتحويلات بين أفكار جميع النماذج التشكيلية للعمران لم يتم تجميعها وتحديثها بعد بطريقة متصلة. بالإضافة إلى ذلك، فإن تحليل القضايا التي تسببت في التحول بين نماذج التشكيل العمراني المختلفة قد تم في سياق نماذجهم العمرانية وليس في سياق التصميم العمراني كعلم ومجال عملي. وبناء على ذلك، يهدف البحث إلى تقديم مراجعة نقدية لنماذج التصميم العمراني مع التأكيد على النموذج التشكيلي في الفترة من ١٨٤٠ إلى ٢٠٢١. أيضا، تحليل نماذج التشكيل العمراني لإثبات علاقتها ببعضها البعض وكذلك نوع العلاقة فيما بينها عبر مرور الزمن. لذلك، ينقسم البحث إلى قسمين. القسم الأول يوضح نماذج التصميم العمراني مع تسليط الضوء على نموذج التشكيل العمراني، وهذا من خلال اتباع المنهج النظري والتاريخي. بينما يوضح القسم الثاني تحليل النماذج التشكيلية للعمران لتوضيح العلاقات فيما بينها، وهذا يتأتى باتباع المنهج التحليلي. وتعد نتيجة البحث بمثابة توضيح للتحويلات بين النماذج التشكيلية للعمران وأنواعها والعلاقة بينها أيضا. وقد أظهرت النتائج أن بعض النماذج التشكيلية للعمران لها تأثير كبير على البعض الآخر مثل نماذج The Beaux-Art و The Parks وكذلك نماذج كاميلو سبيت وكيفين لينش. ويوصي البحث ببناء المزيد من الدراسات حول النماذج التشكيلية للعمران التاريخي لما لها من أهمية بالغة وتأثير على النماذج المعاصرة للتشكيل العمراني، بالإضافة إلى تركيز الضوء على الأفكار التاريخية للتصميم العمراني والتي بدورها تساعد في دعم جودة متطلبات الحياة الحضرية المعاصرة والعامة.

### الكلمات الدالة:

التصميم العمراني؛ دراسة تاريخية تحليلية؛ التحول في نماذج التصميم العمراني؛ النموذج التشكيلي للعمران.

## 1. INTRODUCTION

Urban design is a new term that has been coined in the 1950s [1]. It has been an integral part of the process of city planning and design since antiquity. This is evident from the different geometrical forms based on ideal town proposals throughout history in western civilization [2]; [3]. The urban design field has been emerging in the United States and other countries. However, academicians, theorists, and professionals have raised questions of inquiry of the field increasingly. The function of urban design is to give form and order to the present and then the future of the built environment. As with the master plan, urban design provides a master form for urban growth. It is primarily a collaborative effort involving other professionals [4].

Moreover, in recent years the idea of the synthesis of architecture, landscape architecture, and planning in the three-dimensional design of urban environments has returned as a key organizing concept for many designers in the field. A new interest has emerged in the theoretical basis of this synthesis [5]. Furthermore, the field's physical scope and content and the way it touches human experiences have expanded [6].

Accordingly, urban design has a knowledge base that has been sought about the goals and purposes of the field. This knowledge base has been historically established and is currently modified because of the contemporary needs and desires of society. Therefore, this knowledge

base consists of two distinctive and integrative areas: substantive and procedural areas. Substantive area consists of principles and rules to urban form and space, and urban activities. Whereas the procedural area consists of scientific methods and techniques. So, the proposed definition of urban design is the application of these integrative rules and principles to urban form and space elements to establish order in the physical environment [7]. This may be considered as a plausible approach to collect all formalist models of urban design and construct a link between them as well. In order to do so, this process will derive all segregated urban formalist models through various urban design paradigms.

However, the interrelationships and changes across all formalist models' ideas have not yet been documented and updated continually. Furthermore, issues associated with changes in urban formalist models have been examined within the framework of their paradigms rather than the context of urban design. Moreover, the big urban design gap between eastern and western cities is another issue while studying the evolution of urban design formalist models.

By addressing these fundamental issues, this research intends to identify the potentially unique interrelationship among various formalist models of urban design through comparing its paradigms and their models in order to establish the relationship between all formalist models through urban design paradigms. Providing a comparison of such formalist models to highlight the reasons and concerns that were generated and influenced the formalist models. Finally, the primary outcome of this research is to demonstrate the link between distinct formalist models of urban design in a way that represents and updates its knowledge base.

Hence, this research is qualitative-descriptive. Accordingly, this research divides into two sections. The first section uses chronological and theoretical approaches to outline formalist models of urban design paradigms by understanding the way that serves the purpose of the research. Additionally, the second section fulfills an analytic approach to formalist models' ideas in order to reveal the link between them. Accordingly, the shifts type and their influence on/by other urban formalist models will be created by merging the numerous and agglomerated urban formalist models of paradigms through the research period.

Each part of this research allows for more thinking about further applications of both body of knowledge and the formalist models typology for urban design. As Inam [8] mentioned, one of the reasons for mapping and representing the body of knowledge or even some of its parts is to enable the asking of critical questions. In the conclusion, further possibilities for such critical research are suggested.

## **2. MATERIALS AND METHODS**

This section consists of the available raw data that synthesize the urban formalist models by structure and analysis to them. The section divides into five integrated parts that are shown sequentially. Firstly, the historical background of urban design and the main dramatic changes in its thought of design as well. Secondly, the research scope and limitations and the critical questions that the research aims to answer. Thirdly, the purpose of the research and its rationale accordingly. Additionally, the methodology follows by the research and as a conclusion, the conceptual framework for the research. Fourthly, the presentation of urban design paradigms and the models that integrate to form every paradigm separately and evolutionary. Fifthly, exposure to the eclectic urban formalist models through time and the shifts that have taken place between by presenting their characteristics successively.

### **2.1. HISTORICAL BACKGROUND**

Man has attempted to achieve control over his constructed environment from the dawn of time. This control expressed itself in the form of configuration and pattern of towns. Order is a basic notion that governs and supports everything. For instance, it was used as the primary term in architectural planning throughout the Middle Ages and beyond. It was crucial to the Tuscan debate about the city's nature [9]. Therefore, city was thought to be dependent on order [10]. We all develop schemas that guide our conduct as humans. Scientists often attempt to put their observations into context by constructing ideas [11].

These broad ideas of control and order have always been with man throughout history. Nevertheless, their meanings and methods of understanding and accomplishing them have undergone significant evolutionary and revolutionary changes from one age to the next. Evolutionary changes are those that occurred prior to the early 19th century. The Industrial Revolution has brought about dramatic changes in man's perception of the urban environment. The nature of these aims, their numerous meanings and interpretations, and the various ways and means to attain them have gathered a repertory that can be referred to and depended on in urban design practice. Accordingly, settlement design as an art form or settlement alteration as a human act began with the creation of the first human settlements in Mesopotamia about 5000 B.C. by Summers. These types of communities tended to have unplanned layouts which are referred to as spontaneous development. The spontaneous evolution of settlements suggested that no deliberate and purposeful efforts were made to attain specific specified aims and ends, such as the methodical Hippodamian way of organizing Greek City State [12].

Furthermore, the Roman Empire's wholly unique and original creative qualities, a blend of planned and organic communities in the medieval period. Italy established a pattern in the Renaissance based on the return of interest in classical art styles from ancient Greece and Rome. The concepts of the Renaissance were subsequently disseminated to France and Britain and then to the rest of Europe. A composite of these civic design norms was introduced into the United States but was given less importance until the new movement of the Colombian Exhibition in 1893 [13].

So, before the beginning of the Industrial Revolution, town design or civic design was seen as an art based on specific guidelines and ideas drawn from societal demands and morals. The beauty of the surroundings was the most essential and distinguishing of these aspirations. Aside from aesthetics, the preservation of critical resources such as food, and magical and symbolic elements like religious and ceremonial beliefs [14]. Until the middle of the 19th century, municipal design was regarded as an art form. Sitte examined some of these creative principles of city construction and saw them as the laws that control the connection of buildings, monuments, public spaces, squares, open spaces, and so on. Civic design was not regarded as a distinct field of art [13].

As a dramatic change, cities expanded in size and complexity, as time went by. Civic design, likewise, began to enter a new era of identity. Abercrombie defined the new civic design activities as distinct from architectural design [15]. Due to socio-economic developments in the early 20th century and the resulting conditions, an aesthetic civic design lost pace and collapsed. Social, economic, and technical concerns took precedence over the older era's issues of form and three-dimensionality in municipal architecture. Moreover, during the second half of the 20th century, environmental, political, economic, and social challenges became the most prevalent issues in cities and therefore in urban planning and design [4]. Accordingly, it is notable that each era has its design style as a collection of rules and principles for practitioners to adopt in making decisions and influencing the built environment. Therefore, the overarching goal of urban design has always been to create order in the physical environment. On the other

hand, the modern concept of order has shifted dramatically due to the tremendous complexity of the urban environment. As a result, the product has been replaced with a process too. Public interest, values, citizen involvement, equity, and environmental sustainability have all emerged as key design themes and concerns [4].

## 2.2. RESEARCH AREA AND QUESTIONS

The research scope and limitation is the election of western urban formalist models through the time from the 1830s to the present of 2021s. In the USA and Europe as well. Accordingly, the research offers the following questions to answer: What are the urban formalist models?; What is the relationship between various urban formalist models through the research scope and limitations?

## 2.3. RESEARCH AIMS, METHODOLOGY, AND CONCEPTUAL FRAMEWORK

This section illustrates the research aims, a methodology that follows by the research and the conceptual framework for the research sequentially.

### 2.3.1 Research Aims and Objectives.

This research aims collectively to present all urban formalist models of urban design paradigms. Also, to find out a relationship and its type among thoughts of all urban formalist models through the time. Additionally, to expose the type of every formalist model if it an original or even derivative model. Furthermore, and as possible discover the influence of every urban formalist model on other models or even by them.

### 2.3.2 Research Methodology

The research in its nature is qualitative descriptive research. According to that, the research uses chronological, theoretical, and analytical approaches successively. A chronological approach to present urban design formalist models from 1830 to 2021 briefly. In addition to that, a theoretical approach to identify and demonstrate the main principles of every paradigm and its integrated models as well. Whereas, analytical approach to discover the link among all formalist models together and find out the nature of interrelationship among them.

### 2.3.3 Conceptual Framework for the Research

As (figure 1) shows, the conceptual framework for the research demonstrates how to tackle the election and analysis process of the urban formalist models through the research scope and limitation. By presenting urban design paradigms and their models then elect and gather all urban formalist models.

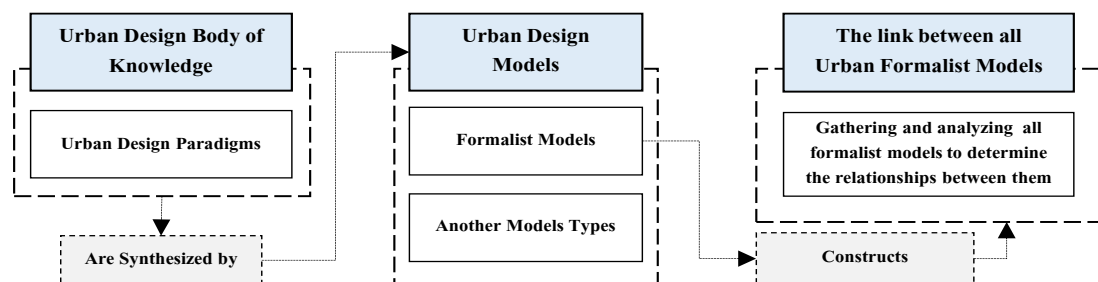


Figure 1. Conceptual Framework for the Research (By Researcher)

## 2.4. URBAN DESIGN PARADIGMS AND THEIR MODELS

Paradigms are models that are set up as examples of exemplary practice. Much of urban planning and urban design history is concerned with establishing the paradigms of key personal contributions and movements, and the patterns they pushed in response to what its proponents saw as contemporary difficulties. Therefore, the 20th century in urban planning and urban design began with the Beaux-Art, the Parks, and City Beautiful as the dominating paradigms. The contemporary movement's Empiricist and Rationalist branches evolved concurrently. The Garden City and the neighborhood unit are examples of the former. Tony Garnier's Industrial City, as well as Le Corbusier's and the Bauhaus' generic urban design concepts, are examples of the latter. Tensions between the two schools of thought persisted throughout the 20th century [16,17].

Furthermore, Empiricists use precedents and observation of what works and do not work as the foundation for design thinking. Because there are several pasts to consider. Empiricists have differing perspectives on the future. The little country village represented one era, while the medieval metropolis represented another. Similarly, Rationalists have differing perspectives about the future. Rationalists reject previous concepts. Their models are based on a variety of assumptions regarding envisioned future lifestyles. Simply put, the former school of thought's urban design paradigms are typified by organic designs, whereas the latter is exemplified by rectilinear geometries. The former faces the street, while the latter turn their backs on it [17].

All of these paradigms maintained sway to varying degrees throughout the second half of the twentieth century, giving way to post-Modernist concepts as a result of the harsh criticism leveled against Modernist design ideology in the 1960s and 1970s. These principles may be found in the work of both Neo-Rationalists and Neo-Empiricists [17-19]. The Neo-Traditional approaches to urban planning and urban design that evolved into the New Urbanism and Smart Growth model best illustrate the latter [20].

Accordingly, understanding these paradigms is crucial because they reflect what many urban designers regarded and view to be their societies' current and then future concerns. Each paradigm reflects a point of view on the world. Each offers a viewpoint on the best method to handle the world's urban challenges in the public realm. As a conclusion, figure 3 demonstrates briefly, the main five paradigms of urban design and the various types of models that were integrated to synthesize every paradigm. Additionally, the selected urban formalist models are highlighted and presented in (Table 1) successively and evolutionary.

## 2.5. URBAN FORMALIST MODELS AND THEIR SHIFTS

The urban formalist model is the earliest urban design model that seeks to achieve aesthetics of order to the built environment. Therefore, this section attempts to demonstrate selected urban formalist models by presenting their main principles, shifts that occurred in between, and factors that influenced the shifts. In order to do so, the characteristics of selected urban formalist models are illustrated sequentially and successively.

### 2.5.1 The Beaux-Art

The Beaux-Art is a combination of the Neoclassical and Greek revival architectural styles. From 1885 until 1925, a dominating design movement in the United States. As (Figure 2) shows, it is distinguished by order, symmetry, formal design, grandeur, and artistic ornamentation. It made use of contemporary materials like iron and glass. It



Figure 2. Museum of Natural History, Paris, France.

(Source: Wikipedia, 2022.  
[https://en.wikipedia.org/wiki/Beaux-Arts\\_architecture](https://en.wikipedia.org/wiki/Beaux-Arts_architecture))

attempted to enhance society's moral structure via fundamental formal restructuring of spatial organization [4, 22].

### 2.5.2 The Park Movements

It was a landscape movement concerned with the integration between urban and rural areas. Central Park in New York represented the organic design while also connecting the park to the metropolis as (Figure 4) shows. The parks movements were formally incorporated into the city by four avenues that were built out with an extensive system of independent traffic lanes, bridges, and underpasses that were meant not to disrupt the landscape's continuity. It also attempted to enhance society's moral structure via fundamental formal restructuring of spatial organization [4, 22].



**Figure 3. Panoramic view of Central Park, New York, USA.**

(Source: Wikipedia, 2022.

[https://en.wikipedia.org/wiki/Central\\_Park](https://en.wikipedia.org/wiki/Central_Park))

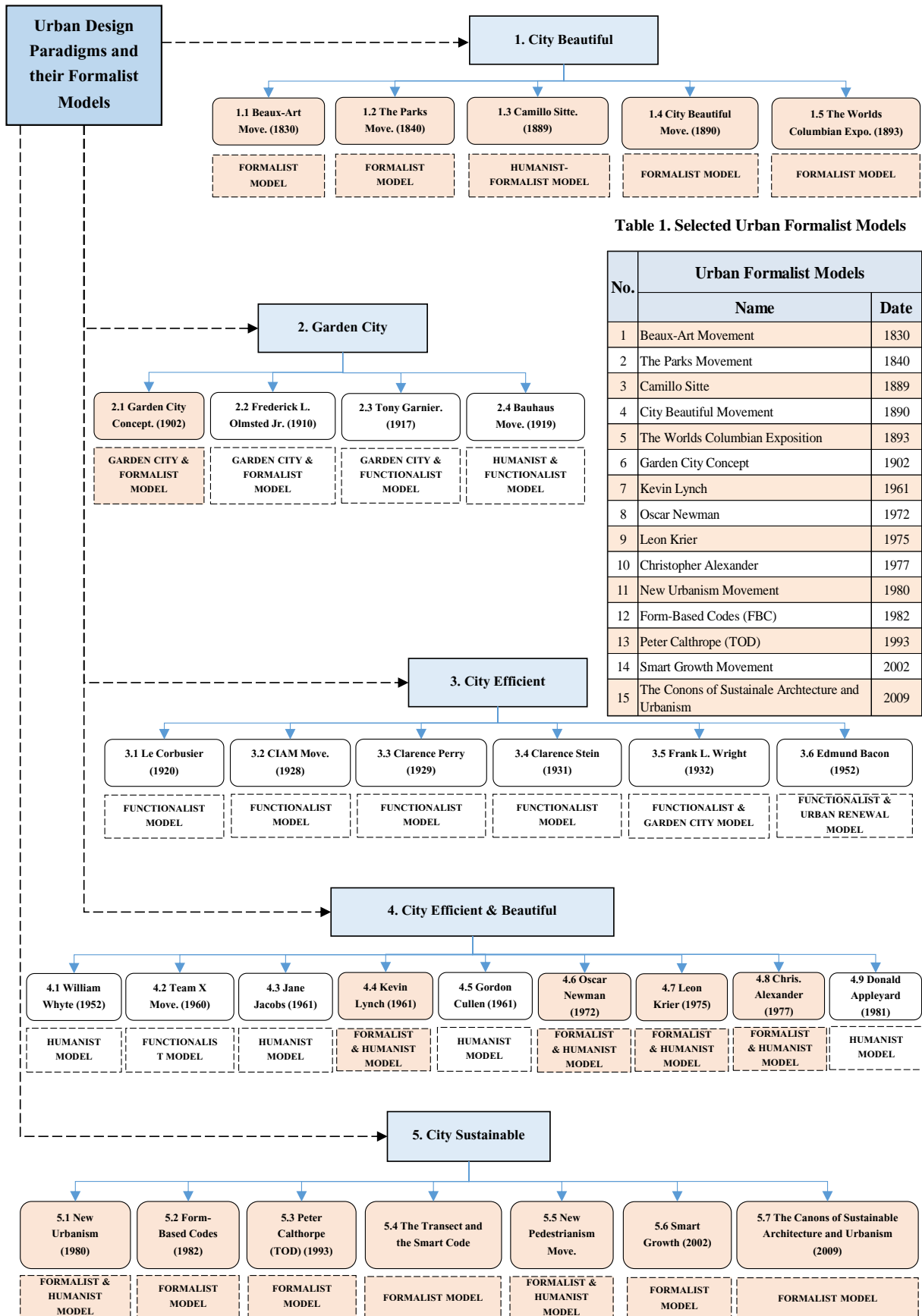


Figure 4. Urban design paradigms with their models, and the selected Formalist Models (By Researcher)



### 2.5.3 Camillo Sitte

Camillo Sitte discussed the treatment of urban spaces as aesthetically configurations of building masses, facades, and street spaces that embrace the human size, as (Figure 5) refers. He opposed the emphasis on broad, straight boulevards and monumental architecture, preferring to focus on small-scale features and an informal organizing scheme while eschewing large-scale geometry. Sitte brought a high emphasis on large, straight boulevards, public squares designed primarily for traffic convenience, and efforts to free important public or religious sites of nearby minor structures that were viewed as encumbering such historical relics [4, 22].

. In the 1960s and 1970s, many urban designers were influenced by Sitte and tackled urban design based on experience, perception, and particularity of unique locations, with an emphasis on the human scale. They were all opposed to the Functionalist Model's rationalism, which was perceived as abstract and detached in this century [22].



Figure 5. Sitte's sketch of Piazza Erbe, Verona, Italy. (Source: Pollack, 2018.

<https://www.theamericanconservative.com/urbs/meet-the-austrian-who-invented-placemaking/>)

### 2.5.4 The City Beautiful Movement

It was primarily concerned with the formal shapes of urban environments' physical features to beautify cities and achieve grand majesty. Architectural styles used in the design were greatly influenced by the medieval Beaux-Arts movement, which stressed the importance of order, dignity, and harmony. The significant use of design organizing components such as views, vistas, and axis. As (Figure 6) shows, it had its roots in Renaissance and Baroque urbanism included axial organization and static spaces based on basic geometrics. City Beautiful Movements attempted to enhance society's moral structure via fundamental formal restructuring of spatial organization [4, 22].



Figure 6. Axial plan of The Mall, Washington, USA. (Source: Wikipedia, 2021.

[https://en.wikipedia.org/wiki/City\\_Beautiful\\_movement](https://en.wikipedia.org/wiki/City_Beautiful_movement))

### 2.5.5 The Worlds Columbian Exposition

The significance of the exposition was the Chicago layout as (Figure 7) illustrates. It was created with Beaux-Arts architectural concepts in mind, as well as neoclassical architecture ideals focused on symmetry, balance, and beauty. The broad use of streetlights, which allowed boulevards and buildings to be used at night. Many of the buildings included sculptural features as well [4, 22].



Figure 7. The World's Columbian Exposition in Chicago, USA. (Source: Wikipedia, 2021.

[https://en.wikipedia.org/wiki/City\\_Beautiful\\_movement](https://en.wikipedia.org/wiki/City_Beautiful_movement))

### 2.5.6 Garden City Concept

It has been named the twentieth century's breakthrough theory. This concept proposes the development of small suburban settlements surrounded by permanent agricultural land, self-contained and economically administered by the residents [22]. As (Figure 8) shows, Garden city was a design idea that focused on the interconnected relationship between urban and rural vegetation. The concept served as the foundation for the development of new suburban

settlements of a restricted size that were planned and bordered by a permanent belt of agricultural land [4, 22].

**2.5.7 Kevin Lynch**

Lynch's contribution to urban design is an empirical study on how people use, perceive, and navigate the urban environment. According to Lynch, the city pictures' contents are divided into five categories: Paths, Edges, Districts, Nodes, and Landmarks. The components are essentially the basic materials for the city's appearance. To give a desirable shape, they must be patterned together as (Figure 9) shows [4, 22].

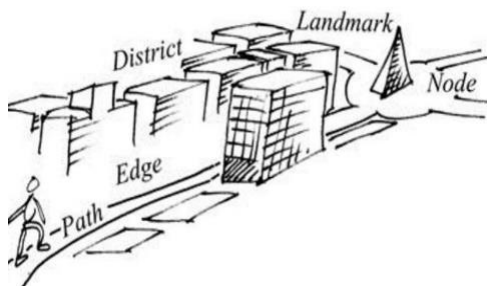


Figure 9. The Image of the city's contents as Kevin Lynch's illustration. (Source: Semanurcan, 2019. <https://semanurcan.wordpress.com/2019/10/27/the-city-image-and-its-elements-by-kevin-lynch/>)

**2.5.8 Oscar Newman (CPTED) Model**

Oscar Newman has adopted the ideas of Defensible Space as (Figure 10) illustrates his thought. His primary area of expertise was crime prevention through environmental design (CPTED). Natural access control, natural observation, and territorial reinforcement are examples of CPTED techniques. Newman called for the creation of boundaries and limitations to promote natural human dominance for citizens to act and prevent crime in their areas [4, 22].

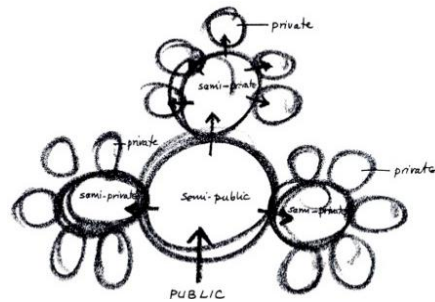


Figure 10. The Diagram of defensible spaces' concept by Newman. (Source: Knoblauch, 2015. <http://www.web-aggregate.org/piece/defensible-space-and-the-open-society/>)

**2.5.9 Leon Krier**

Krier contends that towns should be built on a human size and walkability, rather than zoning and transportation corridors. As (Figure 11), the picture also depicts public areas and buildings dispersing across the urban landscape rather than gathered in a single zone. This technique enables relevant public entities to provide personality to distinct regions of the town or metropolis. He had a significant impact on the New Urbanism movement. [4, 22].

**2.5.10 Christopher Alexander (Pattern Theory)**

Pattern theory is the concept of capturing architectural design as a pattern. A pattern is a record of the design decisions made by many builders in many places over many years to tackle a

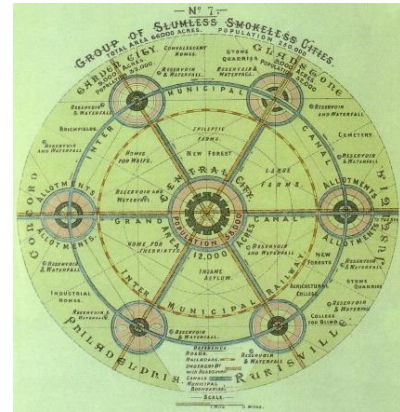


Figure 8. The Garden City Concept by Ebenezer Howard. (Source: Wikipedia, 2021. [https://en.wikipedia.org/wiki/Garden\\_city\\_movement](https://en.wikipedia.org/wiki/Garden_city_movement))

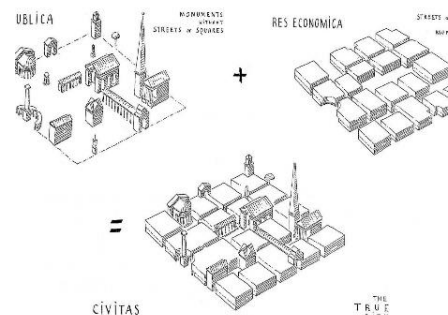


Figure 11. The Diagram of Actual City by Leon Krier. (Source: Thadani, 2016. <https://www.cnu.org/publicsquare/leon-kriers-foundational-diagram>)

certain problem. These formal patterns are used to help in the planning and design of towns and their structures. Pattern theory also had a significant impact on the New Urbanism Model and Form-Based regulations as an alternative to traditional zoning [21]. Furthermore, he helps in the design of towns and structures by applying the technique of tried-and-true ideas for people and communities to apply in the construction of their environment [22]; [4]; [21].

### 2.5.11 New Urbanism

Public spaces should be diversified usage, and communities should be planned for pedestrians, transit, and cars. Cities and towns should be distinguished by physically defined and universally accessible public places. Architecture and landscape design that embraces local history, climate, ecology, and construction practice should be used to frame urban spaces as (Figure 12) shows [4, 22].



Figure 12. Public Places according New Urbanism principles.

(Source: Overstreet, 2021.

<https://www.archdaily.com/963314/exploring-new-urbanism-principles-in-the-21st-century>)

### 2.5.12 Form-Based Codes

Form-Based Codes are multidisciplinary codes that link the design of circulation and public space networks with the design of building form. This greater regulation includes encouraging the development of pedestrian-friendly mixed-use projects and a variety of housing types. Moreover, the core premise of Form-Based Code is that design is more important than use. FBC examines urban design at three different scales: region, neighborhood, and street [4, 22].

### 2.5.13 Transit-Oriented Development (TOD)

Peter Calthorpe defined Transit-Oriented Development as a mixed-use neighborhood within a half-mile pedestrian shed of a transit stop and main commercial center as (Figure 13) illustrates. The TOD combines residential, retail, office, and open space in a walkable setting, making it easy for residents and employers to move by public transportation, bicycle, foot, or automobile [22]; [4]. In addition to that, mixed-use buildings at important sites along the regional transit system concentrate moderate and high-density housing, as well as complementing public uses and services [22].

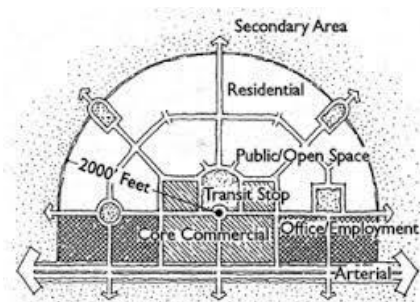


Figure 13. TOD Calthorpe's diagram. (Source: Bhadauria, 2021.

<https://www.99acres.com/articles/what-is-transit-oriented-development-tod.html>)

Furthermore, TOD's design ideas at the street and building scales attempt to construct spaces where continuity and public space are reinstated for pedestrians while taking full environmentally-friendly considerations [22].

### 2.5.14 Smart Growth

Smart growth is an American urban design and transportation idea that focuses on expansion in the city's core to avoid urban sprawl. It promotes compact, transit-oriented, walkable, and bicycle-friendly land use, as well as neighborhood schools, complete streets, and mixed-use development with a variety of housing options as well [4, 22].

### 2.5.15 The Canons of Sustainable Architecture and Urbanism

The Canons are a collection of human settlement operating principles that restore the connection between the art of construction, the formation of community, and the preservation

of our natural world. It provides a whole vision of sustainable urbanization, from the regional to the block and building levels [4, 22].

As a conclusion, (Table 2) shows the shifts between the selected urban formalist models, as well as, the shifts types additionally. It is notable that, there are two shift's types, original and derivative types. Original shift defines as new scientific ideas or concepts that synthesize a new urban formalist model. Whereas, derivative shift defines as a development for an existing model with some modification on the existing model to be compatible with new issues of the built environment. Therefore, only from Camillo Sitte to City Beautiful movement is a derivative shift. Likewise, from City Beautiful movement to The Worlds Columbian Exposition is a derivative shift as well.

**Table 2. Selected urban formalist models' shifts illustration and its type (By Researcher)**

No.	Urban Formalist Models		Shifts among the Models	
	From	To	Shift's Illustration	Shift's Type
1	Beaux-Art Movement	The Parks Movement	From emphasizing urban architecture form to a combination between urban and rural forms, by applying organic design principles.	Original
2	The Parks Movement	Camillo Sitte	From the revival of traditional urban architecture properties to analysis and extraction of guidelines for artistic-based urban design	Original
3	Camillo Sitte	City Beautiful Movement	Reviving of Beaux Art and the Parks Movement principles.	Derivative
4	City Beautiful Movement	The Worlds Columbian Exposition	Reviving of Beaux Art and the Parks Movement principles.	Derivative
5	The Worlds Columbian Exposition	Garden City Concept	From emphasizing formal principles to urban architecture form to a combination between urban and rural forms by following formal urban design principles and geometric shapes.	Original
6	Garden City Concept	Kevin Lynch	From traditional non-classified elements of urban form to the integrated five elements as a contemporary urban form classification.	Original
7	Kevin Lynch	Oscar Newman	From the revival of traditional urban safety and its urban form characteristics to the integrated design approach based on prevention of crime	Original
8	Oscar Newman	Leon Krier	From segregated mega towers and lost urban space to urban design based on human needs and familiarity with pedestrians.	Original
9	Leon Krier	Christopher Alexander	From concentration on some aspects of traditional urban form separately to integrative and complete guidelines for all urban form scales and levels.	Original
10	Christopher Alexander	New Urbanism Movement	From concentrating on urban form issues only to considering ecological conditions and their impact on urban form and Vice-versa.	Original
11	New Urbanism Movement	Form-Based Codes (FBC)	From considering, land use as the main tool for the urban form to considering a coding system to synthesize urban form whatever its land-use type.	Original
12	Form-Based Codes (FBC)	Peter Calthrope (TOD)	From a concept of separation between car and pedestrian channels movements to consider the impact and role of public transportation on urban form.	Original
13	Peter Calthrope (TOD)	Smart Growth Movement	From decentralization and separated pattern of urban sprawls to emphasize centralization and the city center with its mixed-use and compacted pattern.	Original
14	Smart Growth Movement	The Canons of Sustainable Architecture and Urbanism	From thought and theories to urban form to create the manifestation that, support the practice for urban form development.	Original

### 3. RESULT AND DISCUSSION

After shift's analysis of the selected urban formalist models that match with the research scope and limitation, the result is illustrated and discussed in the following sequence as (Table 3) illustrates.

**Table 3. Selected urban formalist models' originality and influence's factors (By Researcher)**

No.	Urban Formalist Models	Model's Originality	Factors Influence on the Models
1	Beaux-Art Movement	Original Model	Progressive reform movement
2	The Parks Movement	Original Model	Progressive reform movement
3	Camillo Sitte	Original Model	Medieval Cities
4	City Beautiful Movement	Developed Model	Beaux-Art & the parks movements
5	The Worlds Columbian Exposition	Developed Model	City beautiful movement
6	Garden City Concept	Original Model	The parks movement and Formal principles of design
7	Kevin Lynch	Original Model	Empirical Theory and its applications
8	Oscar Newman	Original Model	Modern movement
9	Leon Krier	Original Model	Modern movement
10	Christopher Alexander	Original Model	Modern movement
11	New Urbanism Movement	Developed Model	Leon Krier and Christopher Alexander
12	Form-Based Codes (FBC)	Original Model	A pattern theory (Christopher Alexander)
13	Peter Calthrope (TOD)	Original Model	Modern movement
14	Smart Growth Movement	Original Model	New urbanism and environmental movements
15	The Canons of Sustainable Architecture and Urbanism	Original Model	Smart growth and various ecological considerations

Initially, most of the selected urban formalist models are original models that reflect personal's thoughts and his contributions, which result in a major change and completely model's shift for synthesizing a new urban formalist model. For instance, the Beaux-Art movement, the parks movement, Camillo sitte's contribution are examples of the original urban formalist models. Secondly, regarding the developed urban formalist models, they are updating other models with some kind of development to keep up with the new issues that result in an impact on urban form accordingly. City beautiful movement, the world Columbian exposition, and New urbanism movements are examples of developed urban formalist models, which contain some of precedent urbanism's characteristics as a type of repetition. Thirdly, as a crucial notice, the Beaux-Art movement has a major impact on the other urban formalist models from Europe to the USA. In addition, Camillo Sitte and Kevin Lynch's Contributions have a wide and critical impact on the successor generations of urbanists who are involved in urban form studies. This by its turns emphasizes the precedent urban formalist models due to the repetition of its principles, partially or completely, through time.

#### 4. CONCLUSION

This article tackles important principles concerning the role of the urban formalist models for understanding various principles within the literature. The article opens up two main areas for discussion. The first is about urban design paradigms and their integrated models. The second is about the election of urban formalist models and finding out the interrelationship in between. In order to enhance an understanding of the urban design body of knowledge, the suggested selection of urban formalist models is applied. A chronological analysis confirms that the traditional urban formalist has an important impact on both design thoughts and practice accordingly. Furthermore, the exposed link between the selected urban formalist models paves the way for more critical analysis. Moreover, this presentation of urban design collective domain of research and its formalist models offers a crucial design philosophy and practical concepts for effective communication between urban designers by exposing basic vocabularies of urban form. Those basic vocabularies of urban form are a starting point for future studies by demonstrating and identifying the characteristics of dominant urban formalist models that have a major effect on methods and techniques of urban fabric.

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