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New Order to Design the Skin of Buildings

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Equipment and Pattern Language as Legacy to Design the Skin of the City: New Order to Design the Skin of Buildings

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Abstract: This text highlights the designer's ability to find satisfactory hypotheses as Nigel Cross' statement is applied to the skin of buildings in the city of the twenty-first century. The text supports the notion of 'équipement' as 'pattern language' in the Western context equipment scenarios and in the period immediately following the Second World War, based on Michel Foucault's archaeological reasoning method. The manuscript revisits René Descartes' reasoning to understand his influence on projectual method and is based on the interpretation of the concept of 'équipement' (Le Corbusier, 1923) as 'pattern language' (Christopher Alexander, 1963). To support this idea, we perform a comparative study on the use of methodology by Le Corbusier, Archigram and Archizoom. As a field, design proposed a staged implementation of the project on the city as a whole, taking into account change and the dynamics of time. This research also intends to demonstrate that when correlated to the factors characterizing the contemporary metropolis, the project hypotheses enhance the efficiency and sustainability of the interface with the user. We are, therefore, focused on studying the construction of scenarios as carriers of meaning that call upon users decoding skills.

Keywords: Reasoning, Design Methods, Design Cognition, Pattern, Scenarios Construction

Introduction

This text supports the notion of 'équipement' as 'pattern language' in the Western context equipment scenarios and in the period immediately following the Second World War, based on Michel Foucault's archaeological reasoning method (1998).

The first section revisits René Descartes' reasoning to understand his influence on projectual method, namely on Le Corbusier's methodological action, qualifying the need to rationalize Europe's design in 1925. Understanding the concept of 'équipement' applied to design involves revisiting 1925; therefore, grasping the concept of 'équipement' in its essence involves understanding the scientific process underlying Le Corbusier's reasoning at that time, which implies addressing Descartes' reasoning.

The second section of the text presents the arguments in favor of a phenomenological understanding of the 'équipement' concept hypothesis as an autonomous unit of thought and interpreted as 'pattern language' in the project, in particular the project of the city skin, due to its semantic value. Elements with strong symbolic value, evoking historical experiences, intertwine, determining the creation of systems of products referenced according to context needs, rather than adapted to reality. To support this view we aim to demonstrate that when relating to context, design provides project hypothesis as 'équipements'/patterns intersecting other different nature 'équipements'/patterns. This intersection of patterns assures the survival of each pattern identity and the meaning for man in his rapport with the world. An equipment scenario project conveying meaning, and therefore ready to be experienced by the user, is an efficient project to the extent that it is productive and sustainable, because it provides meaning for human life. One case study illustrates this notion: a project from Archigram.

The text ends with a reference to the Nature theme as a typological element, intersecting other elements with different existence, directing information towards reading nowadays context. Individual in his/her relationship with the world is the standard for the creation of project propositions that connote being-in-the-world today and in the undefined time to come.

Method

Material and Procedure

In Western Europe, the economic and social context immediately following the Second World War was characterized by the emerging consumption of industrialized products. On the one hand, technological advancements caused by the Cold War allowed the consolidation of a competitive industry in a historical context dominated by warfare production. On the other hand, the demographic boom gave way to younger population with low economic potential. Real estate activity focused on the development of private construction profiting from warfare industrial production features, which granted a pre-fabricated process of design and production. This proposition, combined with the International Style model, imported from the United States of America, was presented as a starting point for the development of new housing typologies. Through an almost serialized production plan, the proposition drew dwelling and youth nearer.

However, by the end of the fifties, the context had changed in the more industrialized European countries. Other factors emerged, such as environmental concerns, personalized consumption of products, the television phenomenon or technological advancements in the conquest of the outer space. In social and political terms these factors led to major changes, spreading through the Media from country to country and from the street to the domestic sphere. Regarding the project, the change factor motivated a re-evaluation of designers' methodological action, for the problem did not reside in method but rather in the method's interpretation. Everything would be subjected to reassessment: society, thought, and the design of consumer products that ultimately configured the new identity of 'the society of the spectacle' (Guy Debord, 1967).

In the early 1960's, the urge for projectual change is reported in England as the need for an increasingly sophisticated scientific approach to design method, through authors as Jones & Thornley (1963), Alexander (1963) or Archer (1965). As an example, Bruce Archer proposed a process through critical analysis of design method applied to case studies able to support the experimental part of design research. However, more than new approaches to the method, these propositions marked a new era and the onset of history of design method as subject of study.

Regarding the project, some groups of young architects such as the Archigram or Archizoom responded to the exact model of Good Design from the Hochschule für Gestaltung in Ulm, with solutions that were not intended to educate the community, but rather to "bring their deconsecrated way of inhabiting into architecture" (Deganello 2009, 183)¹. Hence, was that an argument in favor of diverting from recent past architecture, or rather a proposition to redefine the issue of industrial society project, inherited from the Modern Movement? Was it a proposition for a society characterized by transience and new patterns of consumption, fitting a younger population? The Archigram presented projectual hypothesis through an architecture committed to 'expendability', term inherited from Cedric Price, English architect. Could then Le Corbusier's 'équipement' concept be regarded as the complex and autonomous part of the universal system of the city?

Nevertheless, before discussing the 'équipement' concept from Le Corbusier and considering an eventual construal as 'pattern language' (Alexander 1963), we must identify the

¹ Authors' translation from the Portuguese original: "trazer a sua maneira desconsagrada de habitar para dentro da arquitectura".

method underlying such concept. The phenomenological origin of the term ‘équipement’ dates from 1925, during the ‘Exposition Internationale des Arts Décoratifs et Industriels Modernes’ (International Exposition of Modern Industrial and Decorative Arts) in Paris, whereas the definition of Christopher Alexander’s ‘pattern language’ took place in 1963 as a contribution to the history of design method. In both cases, the core philosophy is Cartesian, therefore stemming from René Descartes’ influence and legacy.

The Cartesian Method to Define Methodological Action

In the end of the sixteenth century, the European context was under the influence of Galileo Galilei, Francis Bacon and René Descartes’ thinking, essential philosophical contributions to define the nature of design research; “The origins of modern design research may be traced to the early seventeenth century and the work of Galileo Galilei.” (Buchanan 2001, 3). From the seventeenth century on, for over two centuries and into the twentieth century, there is a period of Western tradition, in which the industry relates to art, and at the same time that period sets the key conditions to characterize the scientific method in design. As stated by Bruce Archer: “The traditional Western perception of a correct scientific approach, still held by many to the present day, is based on ground rules that were first systematically set out by Francis Bacon in 1620.” (Archer 1995, 7). The so-called Scientific Revolution proposed a change of thought and a path driven by reason, not by faith, through an experimental exercise able to unveil the laws governing natural phenomena. Proceeding from doubt to achieve certainty, René Descartes highlighted the importance of using the inductive method; yet, regarding the different stages, differing from Francis Bacon’s experimental inductive method. For Descartes, if the inductive method proposed an analysis, the deductive method presented a summary of the phenomenon, the manifestation of the essence. This process proposed an explanation consistent with the action but without adjustments. As stated by Walter Benjamin, “Among the great creative spirits, there have always been the inexorable ones who begin by clearing a tabula rasa. They need a drawing table; they were constructors. Such a constructor was Descartes, who required nothing to launch his entire philosophy than the single certitude, ‘I think, therefore, I am.’ And he went on from there.” (Benjamin 1999, 732). The positioning of the individual before an industrial context would certainly change from then on. The philosopher and historian Carolyn Merchant (1980) identifies the need of the Enlightenment age man to control and transform the world through science as ‘the death of nature’. Men taming the context as an identity, ignoring its organization and fostering a mechanistic view. In the project sphere, the subject relates to the object as a master towards a slave. “Correlating the subject with the mind, Descartes conceives the body as object, an instrument for the mind—a machine at his service—which would perform as standard for Le Corbusier’s ‘machine for living’.” (Puls 2006, 260).²

Accordingly, Cartesian thought leads the present research towards the understanding and definition of Le Corbusier’s methodological action in the 1920’s, when he defined the concept of ‘équipement’. Yet, is that thought also the cornerstone for the work of the radical movements from the early 1960s? And can it be found in Le Corbusier’s projects from the beginning of the 1960’s?

If Descartes starts from doubt to justify being, Le Corbusier questions projectual action in an industrialized and productive context, and Archigram examines the role of communication flows in transforming the context. Descartes proposed a path that advocates that only what is rational exists, in the sense that it is made for and by the machine. Le Corbusier presents a ‘Machine à Habiter’ (machine to inhabit) that draws advantages from industrialized production. The Archigram proposes a disposable architecture correlated to mass products’ life cycle and to

² Authors’ translation from the Portuguese original: “Tendo identificado o sujeito com a mente, Descartes concebe o corpo como um objecto, como um instrumento da mente (uma máquina a seu serviço) que servirá de medida para a ‘máquina de morar’ de Le Corbusier.”

communication. Yet Descartes wrote “(...) there is seldom so much perfection in works composed of many separate parts, upon which different hands had been employed, as in those completed by a single master. Thus it is observable that the buildings which a single architect has planned and executed are generally more elegant and commodious than those which several have attempted to improve, by making old walls serve for purposes for which they were not originally built.” (Descartes cit in Puls 2006, 256).³ This statement, apparently applying only to Le Corbusier and not to Archigram or Archizoom, indicates another piece of information regarding the present research: the relation between equipment and pattern language (Alexander 1963). Initially, Descartes refers works composed of many complex parts, therefore referring to a process starting from parts, from patterns, to define the whole. Later, he notes the project should be restructured according to context demands and not suited to reality. Therefore, it may be argued that the method proposed by Descartes is the same applied by Le Corbusier, Archigram and Archizoom, for it begins with the singular, onto the general whose proof or deduction is to be found in the suitable interpretation of each specific time and context. The methodology is what differs. In the 1920’s, Le Corbusier presented a disrupting industrialized proposition. In the 1960’s, Alexander (1963) proposed a methodology directly intervening in the urban project using the concept of pattern language as subsystem of an entire and complex urban space. Therefore, Archigram perform differently from Le Corbusier and Christopher Alexander, yet starting from the same *tabula rasa* process.

At this point, and before examining the case study establishing how Archigram performed near the 1960’s, we will clarify the perception of ‘equipment’ as pattern. For such purpose, we will present the etymological meaning of both (‘equipment’ and ‘pattern’), seizing their construal, which results from man’s interaction within the context of reference.

Discussion

The Concepts of ‘Équipement’ and ‘Pattern Language’

Etymologically, the term ‘équipement’ derives from the French, “nom masculin, action d’équiper, de pourvoir quelqu’un de ce qui est nécessaire: Procéder à l’équipement d’une troupe.”⁴ This definition suggests the orientation of the present study towards the implication of the meaning with something indispensable that must exist or be provided. Transporting this definition onto the period following the First World War, the meaning of ‘équipement’ may have suffered some deviation from its etymological meaning, approaching Heidegger’s sense of phenomenon. In the context of the early years of the 1920’s, ‘équipement’ was revealed as something that would be manifest through the articulation between seeming to be and being: “When something no longer takes the form of just letting something be seen, but is always harking back to something else to which it points, so that it lets something be seen as something, it thus acquires a synthesis-structure, and with this it takes over the possibility of ‘covering up’.” (Heidegger 2005, 57).

Regarding design, the articulation between the concept of phenomenon and the concept of logos may be interpreted as a pathway along which the designer’s performance on a context transforms the context and the context transforms the designer. Designer and scenario are simultaneously transformed and perceived according to the interpretation of such transformation, for subsequent use.

³ Authors’ translation from the Portuguese original: “(...) não há tanta perfeição nas obras compostas de várias peças, e feitas pela mão de diversos mestres, como naquelas em que um só trabalhou. Assim, vê-se que os edifícios empreendidos e concluídos por um só arquitecto costumam ser mais belos e mais bem ordenados do que aqueles que muitos procuraram reformar, fazendo uso de velhas paredes construídas para outros fins.”

⁴ <http://www.larousse.fr/encyclopedie/nom-commun-nom/%C3%A9quipement/49038>, consulted in May 28, 2010. (Authors’ translation: noun, action to equip, to provide someone what is required: To provide troop equipment.)

This reflection requests the interpretation and evaluation of the 1920's context. Should the war-ravaged Europe keep importing North American products or instead profit from the situation as an opportunity for change, becoming increasingly self-sustainable and eventually competitive? Factors such as the Bauhaus legacy, which sought to reconcile traditional craftsmanship with industrial technology, the De Stijl movement methodological action and the German effort to industrialize traditional craftsmanship that led to the 'Deutscher Werkbund' (German Work Federation), housing for factory workers built in Frankfurt and Stuttgart, projects by Mies van der Rohe, and also the visionary work of Le Corbusier enabled scenario analysis and evaluation and also project rethinking, regarding architecture and also regarding design. The focal point for this process dates from 1925, during the 'Exposition Internationale des Arts Décoratifs et Industriels Modernes' in Paris, housing the first exhibition of furniture designed by Le Corbusier at the 'Pavillon de L'Esprit Nouveau' (Pavilion of the New Spirit), also formerly designed by Le Corbusier. This particular date concerns the present research because Le Corbusier mentions the term 'équipement' for the first time, in this 'machine to inhabit', instead of nominating the furniture typology filling the domestic space. As forwarded by Nicoletta and Massimo Sala, "Le Corbusier spoke of 'équipement', meaning equipment. Equipment meant arrangement, according to domestic demands, of the various required elements, through a clear analysis of their task." (Sala, Sala 2005, 63).⁵ This definition emphasizes the notion of house organizing, reducing equipment's existence to the specificity and complexity of the elements to meet the new functions in the domestic environment. In a context of re-enactment, the essential was supposed to question every unnecessary appliance in the industrialized home, and therefore considered excessive. Le Corbusier appropriated the term 'équipement', related it to his context and to answer his own specific purpose of rationalization. As stated by Le Corbusier: "The use of the house consists of a regular sequence of definite functions. The regular sequence of these functions is a traffic phenomenon. To render that traffic exact, economical and rapid is the key effort of modern architectural science" (Le Corbusier cit in Cross 2006, 119). Le Corbusier anticipated an action demanding for a revolution of constructive dogmas and project maker's methodologies, taking in consideration his time. As sustained by Le Corbusier: "an era creates its own architecture, which is the clear image of a system of thought)." (Le Corbusier 2008, 147). Thus, when Le Corbusier proposed the pavilion for 'L'Esprit Nouveau' he refused the traditional methodology that considers architecture as model for thinking construction in favor of a system of equipments. "When you create an industry, you buy the equipment; when you set up house, at present you rent a stupid apartment." (Le Corbusier 2008, 266). Applied to the project of the buildings, the concept of equipment as element that creates the space assumes the connotation of a pattern of a system. It means, an equipment scenario project conveying meaning, and therefore ready to be experienced by the user. But, what is the origin of the concept of pattern?

⁵ Authors' translation from the Italian original: "Le Corbusier parlò di 'équipement', ossia di 'equipaggiamento'. Equipaggiamento significava sistemare, secondo le esigenze domestiche, i diversi elementi necessari, tramite una chiara analisi del loro compito."

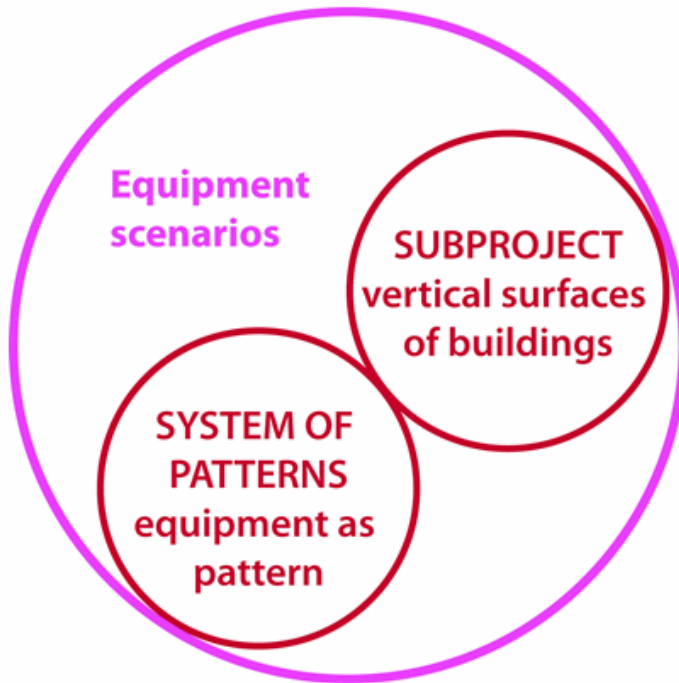


Figure 1: Diagram Explaining the Subproject of Vertical Surfaces of Buildings Defined as a System of Equipmenst/Patterns. Image from the Authors

The concept of pattern, “(...) from the French patron, is a type of theme of recurring events or objects, sometimes referred to as elements of a set.”⁶ As for the previous concept of ‘équipement’, this research aims to grasp the concept of pattern applied to design project in the beginning of the 1960’s.

The authors are particularly interested in the ‘pattern’ concept appropriation by Christopher Alexander due to the direct influence he has had upon counter-tendency project groups such as the Archigram. It was a proposal for a society characterized by transience and new patterns of consumption, fitting a younger population. For Christopher Alexander, ‘pattern language’ consisted in splitting projectual problems into patterns, enabling the solution of some of the project subsystems. Alexander’s proposition consisted in identifying and solving subsystems that constituted the project’s complexity and also in connecting every subsystem’s patterns among them and the user; “This means you must treat the pattern as an ‘entity’; and try to conceive of this entity, entire and whole, before you start creating any other patterns.” (Alexander 1977, 464). To design for social responsibility does not require intervention in the whole urban space; it is wondered to start with subsystems such as the sub-project of the vertical surface of the city. As Bürdek’s statement “the design method known as pattern language elucidates and reveals the social and functional issues of design discourse and how they can be implemented in the three-dimensional world. Its central section comprised a plan to provide the residents of cities and houses with the means necessary to shape their environment themselves. The core of this plan

⁶ <http://en.wikipedia.org/wiki/Pattern>, consulted in May 28, 2010.

was that the residents understand that everything surrounding them—structures, buildings, and objects—possesses its own language.” (Bürdek 2005, 257).

The authors are also concerned in the ‘pattern’ notion appropriation by Richard Buckminster Fuller as the architect and philosopher contributes with a meaningful view. Fuller departs from the notion of intuition to support the concept of pattern. Going back to the 1920’s and the ‘dirty world’ connotation the term ‘intuition’ had acquired at the time, Fuller stated his most powerful faculty as a thinker was intuition, the third of four levels of human experience and the common pattern among some men: “The difference between the Leonardo da Vincis, Albert Einsteins and other people is that the other people don’t pay attention to the third experience in the series of four system-defining events. The Leonardos and Einsteins pay powerful attention to the third event.” (Fuller 1983, 78).

In view of such statement, the present research is lead to the intuition to consider the concept of ‘équipement’ as ‘pattern’, as a sign providing an equivalent for something. In this case, the intuition of associating terms like the word ‘pattern’ to the word ‘équipement’ becomes a ‘productive reasoning’ (March 1976), comparing the exercise of design to an exercise departing from conjectures, through semantic association, to solve problems that may be concealed or poorly defined. Consequently, it is relevant an approach to a subproject (a pattern) of the city with a strong semantic connotation, as the project of vertical surfaces defined as a system of equipments/patterns. As well as the authors studied the concept of equipment of Le Corbusier (1922) as a pattern language (Alexander 1968) carrier of culture, they understand the concept of pattern (Alexander 1968) as a new order of the surface construction of buildings. The façade that sometimes had become a moment to narrate a setting, either by transforming the surface into a link of a function/activity unfolding in the space of reference (internal or external) or through the transformation of the surface into a *tabula rasa*, without references, therefore open to interpretation. A project using symbolic elements that evoke past historical experiences, which intersect new fragments of the city in order to create a fluid and dynamic product system. A project proposition where patterns cross different nature patterns, such as equipment, is an experiential hypothesis of context assuring the survival of each pattern’s identity and the hybridization that characterizes Western Europe’s current context. The designer becomes aware of the appropriation of work, creation and production concept, allowing him to reach a meaning for their determination and for the projectual response.

To comprehend this reasoning we present a project from Archigram with reference to project scenarios for urban surface from the beginning of the 1960’s. This project was chosen for its mention to the use of equipment as pattern, once they regard the project of vertical surfaces and because the three projects date from the same age, reaching-through change-a new projectual cycle.

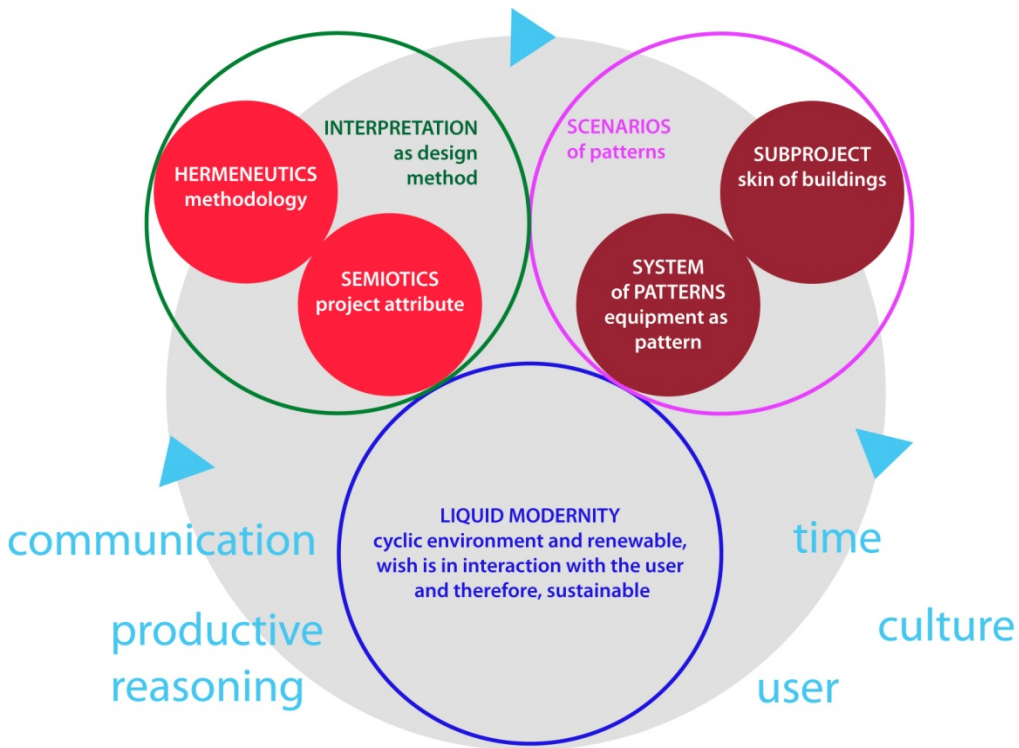


Figure 2: Diagram of Interpretation as a Method to Design the Skin of the City. Image from the Authors

The Archigram and the Project Plug-in City, 1964

The Archigram group incorporates context aspects excluded from architecture canons such as the ephemeral, the electronic, technological innovations, advertising, vehicles, clothes, cars, and lifestyle. The façade was a communication wall involving the user in a multisensory experience. Advertising was an interaction moment, which would no longer be absorbed in a merely passive manner. In the project, exactly in 1961, the first publication from Archigram appears in England as a manifesto supporting an architecture that should be consumed and depleted. The goal was rethinking the city issue, based on large multifunctional architectural structures that allowed for the articulation of dynamic processes such as population growth, mobility and flexibility.

One of the projects profiting the most from the urban surface to communicate what pop culture stood for is the 1964 Plug-in City. The text for the exhibition ‘Living City’ in 1963, where the project was included, stated: “When it is raining in Oxford Street the architecture is no more important than the rain, in fact the weather has probably more to do with the pulsation of the Living City at that given moment.” (Cook 1999, 20). The Plug-in City is comprised of a set of patterns related to the logic of consumption and exchange, in a structure allowing oscillation and transformation of functions. “A semilattice could be seen in Plug-In City’s elevations and cross sections, conjoining criteria laterally as well as hierarchically, an idea that would receive a popular theoretical grounding in the 1965 essay by Christopher Alexander, ‘A city is not a

Tree’.” (Sadler 2005, 98). The Plug-In City was interpreted as something connecting all elements. More than a project, it was a strategy proposing a privileged sort of relationship between the parts and the whole: a pre-defined general structure and a strong variety of pre-established parts to suspend or connected to that structure, forming a whole system relatively open.

For this reason, it may be argued that the project not only starts with a tabula rasa and from parts relating to the whole, but also that it refers to Le Corbusier from ‘For an Architecture’, whose proof is in the Archigram’s interpretation of context. As Simon Sadler argues in Plug-in City, “the linear city concept—an invention of the late nineteenth century, revived in projects by Le Corbusier and the constructivists in the 1920s and 1930s—combined qualities of extension and communications simultaneously, stretching new cities along highways and railways.” (Sadler 2005, 96-98).

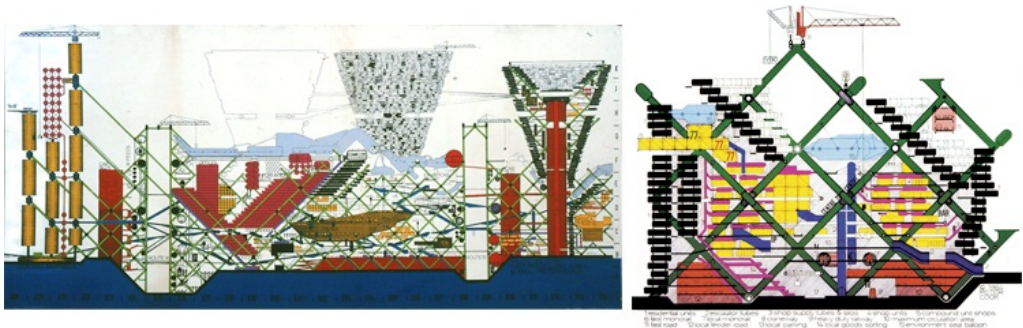


Figure 3: Peter Cook, Archigram, “Plug-in City (1964). Source: <http://archigram.westminster.ac.uk/>

Conclusion

Through time, the project of the city skin has been addressed by several authors and interpreted to context’s changeability. Beginning with the definition of Le Corbusier’s ‘équipement’, interpreted as ‘pattern language’, this text approaches the complexity that defines reality.

On the one hand, we confirm that equipment is a constructive order proposal from the 1920 and that pattern is the constructive order since the 1960 if connoted by a cultural pattern. The Plug-in City is a metaphor for Marshall McLuhan’s media society, reformulated through mass products consumption which qualifies the city, according to the new market forces and transforming the individual, from user to consumer. Underneath hide complex elements, with different nature, individuals (old and young), yearning to relate to context through experience.

Today, in a complex and contradictory reality, full of complex and contradictory individuals, designers may help the enigma of construction, having a strong pre-understanding about the discipline of architecture, and contributing on the judgment of projecting the surface with systems of equipments/patterns as layers, envisaging easily renewable constructions. The individual is (should be) the key to conceive design propositions that connote him to the world. For this to happen, it is necessary to analyze and assess the various typological elements (such as Le Corbusier’s equipment interpreted as Alexander’s pattern) defining the current cities and enhance their hybridization. Places that through project must assume a crossing of existing cultures and subcultures.

The designer cannot keep on overlooking new technological developments in the means of communication and the existence of the system of patterns as constructive order. The designer projecting the surface of built objects must find surface solutions that overlap, as layers, visualizing easily renewable creations. Therefore, equipment and pattern language as legacy to design the skin of the city is to propose a new order to design the skin of buildings. From this correlation among equipment and pattern rises a project that enhancing the subject's individual expression, is mediated by the language of encounter among people, old and young. In other words, it is an answer that denotes inclusion and sustainability, mirroring the nature of users in the world of the XXI century.

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