Start-Up Buildings: The built space as connector between public space and infrastructural axes.

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ABSTRACT: The urban mobility infrastructure axes have an important potential in the structuring and aggregation of the urban fabric. Throughout the last century this fact takes on special relevance due to the increasing fragmentation of the fabric and its processes of composition. It is through the main infrastructural axes that the relations of continuity, physical and spatial, are often preserved occurring in certain cases a distortion of the notions of space and time. Thus, the strategic (and spatial) value of these urban elements causes, in the contemporary city, the definition of new linear centralities that attract buildings and singular uses. Marginal occupation often occurs in a fragmented and individual way. Infrastructure and urban fabric are thought out, and constructed, separately, creating often weak morphological relationships or indirect systems. Despite this, it is evident the creation of symbiotic mechanisms of interrelation between the infrastructural axis and the surrounding built fabric. Its formal characteristics are influenciated by the visibility allowed by the infrastructural axis. A more or less constant continuum is built, but the vision as a whole appears relatively inconsistent, not stabilized and poorly articulated with the adjacent urban context.

The formal composition of the building itself has contradictory characteristics, on one hand it establishes strong visual and functional bonds with the infrastructural axis, but on other hand, its form as an architectural object, does not always contribute to a qualification of the space as a whole. The article seeks to look in a particular way for the case of the Start-Up Buildings, singular buildings that by their morphological and functional characteristics are promoters of particular dynamics capable of reinventing the urban space around them. There is particular interest in its ability to generate ambiguous urban spaces, developers of crossings and connections between distinct parts of the city, as well as links between the built fabric and the mobility infrastructure that supports it. In this way, through the study of these Start-Up Buildings is intended to collect contributions that can inform the exercise of the project, using them as didactic objects and not as models. It seeks to systematize principles of composition that allow a better articulation between certain infrastructural axes and the singular buildings that surround them, such as for example shopping centres or megastores. The qualification of the public space and the relation that it constructs with the collective space is seen as a factor that would potentiate the capacity to connect the two elements: infrastructure and building.

KEYWORDS: Start-Up Buildings, Mobility Infrastructures, In-Between, collective space.

INTRODUCTION

This article is based on a postdoc research recently initiated. The research seeks to understand certain relationships of interdependence that are created between the main axes of mobility and certain singular buildings. The street classic concept, mainly its type configuration, has undergone some important morphological changes over the last decades, so tries to understand new formal relations that are established between the singular building and the infrastructure that supports it. The reading of the formal composition of the architectural object and the links that it constructs with the axis of mobility becomes determinant to realize the dynamics that are established. The research therefore addresses the singular building through a morphological and functional study, identifying formal constitutive elements and which relation are made by them in the urban fabric.

In certain situations, the link between the building and the infrastructure is so intense that the architectural object itself generates new urban dynamics, ranging from the territorial scale to the architectural scale itself. This building typology, capable of creating new dynamics in the city, reconfiguring its urban space and its form of appropriation, is understood as Start-Up Buildings. This architectural typology redefines the contemporary urban space, breaking with classic processes of architectural, functional and urban composition. Its architecture acts as a connector between different parts of the urban space, creating ambiguous relations between the private and public space. Its formal composition contributes to the dissipation of boundaries, creating new forms of collective appropriation of the urban space. New urban
flows are generated by the architectural form of the building, making it a dynamic pole capable of aggregating and simultaneously articulating the surrounding space.

The research seeks to identify new tendencies of living, of urban appropriation and spatial design stimulated by the Start-up Buildings, understanding phenomena that contribute to the qualification of the urban space. The article seeks to systematize and consolidate a thought that will be used as the basis for the debate of this issue and thus make way for the development of broader research. It looks for indications that can support future decisions of urban and architectural interventions.

1.0 THE MOBILITY INFRASTRUCTURE AS STRUCTURAL ELEMENT IN THE CONTEMPORARY CITY.

1.1. The emergence of linear centralities

With the beginning of the twentieth century, the city based in the western cultural matrix stops to grow, following a logic of continuity of its fabric, starting to develop various processes that have potentiated the fragmentation of its urban fabric.

"We no longer understand urban agglomeration as a continuous structure with its own recognizable form and we see it as a system of relations between autonomous pieces, an individual city..." (Portas, 2011:167)

This phenomenon, especially accelerated after the second half of the century, is intrinsically linked to the consolidation of new ways of urban mobility, namely the rising of the automobile as the main transport vehicle. With this process of transformation of the cities, the metropolitan territory is confronted with the addition of new urban configurations and different processes of urban fabric constitution. This seeks to respond to the needs and impulses of society, even if this happens in a disjointed way from theoretical thinking or management tools. Within the diversity of phenomena that occur in urban space, it is important to highlight a set of systems with linear character, urban formations which having the mobility infrastructure as a referenciador axis assume a particular importance in the dynamisms and daily flows of this complex organism that is the contemporary city. These urban formations play a vital role in the articulation between urban fabrics, being used systematically as connecting elements, linking the various fragments dispersed throughout the territory.

Mobility of people and goods, gains a new dimension and territorial expression. The mobility infrastructure became a vital element in the urban paradigms of the present time. The speed of movement and the easy access to different points of the territory provides the raise through its channel space the appearing of new places of opportunities. Along its borders accumulate progressively buildings at a very constant rhythm and frequency, constituting linear sequences that built continuity (Boeri et al., 1993). The infrastructure axis (motorway, road or just a simple itinerary) is colonized by an urbanization that gives the element a new identity and innovative urban forms. Nevertheless, some of its formal and functional attributes end up referring to characteristics that we recognize as intrinsic to the urban element - Street.

One of these functions is undoubtedly the role that these elements play in the structuring and hierarchization of the territory. Its extension and scope allow connection to different points in the territory and when the urban compactness is consolidated around the axis gain the sense of a primordial structure of the city. These characteristics promote the creation of mental and sensorial mechanisms of reference among populations and allow these infrastructures to be able to establish a spatial hierarchy. In parallel, when stressing themselves as vertebral axes of the plot structure, which support the building, they allow the fixing of different fragments and also their aggregation around the same axis. This fact creates conditions for the urban fabric to disperse across the territory, prevailing its relations of continuity only through the road. These linear formations, when inserted in a specific urban context, with a specific territorial logic, starts to concentrate activities with singular uses, such as commercial spaces. Nevertheless, other uses and functions can be anchored to these elements, forming what Stefano Boeri (1993) refers to as places of flows, in a clear allusion to the intensity (traffic and operations) and dynamism that these elements incorporate. These various activities are strongly driven by the accessibility and affluence of users that the infrastructure potencies and, as such, establishes a relationship of interdependence that transforms these urban formations into what Lorena Vecsčil (2007) defined as "new spaces of centrality", placing new tensions in the stabilized concept of centrality.

Mobility infrastructures are today more than mere circulation elements; they are also living spaces, places and axial structures of mediation. They often call to themselves, without an awareness of government entities, the function of intermediating quite distinct formal and typological fragments and realities. The path,
the road, the expressway, the motorway, regardless of its capillary expression, affirm themselves as links between spaces, uses and forms. The metropolitan dynamisms, but not only, use these linear elements as tools in the construction of more continuous urban corridors, with greater spatial coherence.

In turn, these linear centralities also play a relevant scenographic role in the construction of a landscape (Lynch, 1964). Certain objects or architectural elements are distinguished as spatial references, interpreting equally situations observed in the consolidated city. The symbolic character assumes special power along these linear formations, being often saturated with stimuli that announce us, spaces, uses, functions, objects, etc. (Venturi et al., 1977). Mobility axes, of greater or lesser importance, and of a larger or smaller size, together with the whole urban system that surrounds them, brings together a set of characteristics that go well beyond the simple infrastructural function. The operated metamorphosis constructed a new reality on these mobility axes that endowed them with functions and an urban character. The morphological changes resulting shaped by this new character, and the progressive compactness increase in the territories around, gives the the infrastructure some elementary characteristics of the traditional street, leading us to question if we are not facing new formal trends of streets.

"... when I speak of the street, I mean what the rationalists denominated in a derogatory way" rue-corridor ". that is, the urban itinerary delimited by the continuity of an architectural line or by the limits of another element that defines compactness. The street is, at the same time, a place, an itinerary, an unpredictable supply of events, that is, the backbone of the two essential functions of the city: information and accessibility; but it is also the recognizable image of the community and the passage of services remains." (Bohigas, 2004:128-129)

1.2. The emergence of new street types [in the contemporary city]
The contemporary urban fabric presents a set of elements that by their morphological, functional and social characteristics could be interpreted as new types of streets.

The street [of the contemporary city] is not restricted to the urban element that is constituted by a simple section and which connects different points in the city, always accompanied by a regular urbanization (Panerai, 1999). Its shape presents multiple configurations that result from dynamics and urban processes developed during the XX century, as already mentioned previously.

"The urban street had traditionally united three physical roles: that of circulation route, that of public space, and that of built frontage." (Marshall, 2005:6)

One of the most frequently observed situations in contemporaneity is the progressive transformation of the road, incorporating over time a regular and increasing density urbanization. Cases such as Strada Valassina, Milan, or the Strip of Las Vegas are paradigmatic examples of these situations, and remind us of historical transformation processes that have always accompanied the history of the city. However, the transformation process takes place at such a rapid rate of time and intensity that it generates urban forms quite distinct from those previously observed. Another phenomena regularly observed is the addition of new infrastructures and elements of circulation, overloading the channel space of the street. The transversal section is reconfigured, expressing innumerable formal and functional variations, of more or less complexity. The overlay of new platforms, levels and spaces of use and hybrid appropriation elevate this urban element to a new formal dimension. This multiplier of the levels of the street offers alternatives of movement, pedestrian, automobile, public transport, as it is observed in cities like Hong Kong, New York, Tokyo, São Paulo and among many others. To be noted also, the phenomenon of the underground pedestrian street. This constitutes a duplication of archetypal models of the traditional street, but at the underground level, used as a connector between different areas or conventional building fabric. The constant merging of atriums of buildings with access points to the network, and the vast system of corridors, arcades and blocks prove to be a collective space, which in itself can mean an innovation of the own perception by the user of public space.

1.3. The singular building as a preponderant element
The formal composition of the street is questioned normally when we are in presence of an axis that is presented as a centrality by itself. The pressure placed on this element causes it to react and to initiate a process of morphological and functional assessment. The street becomes a spatial reference, reinforcing its role as a structuring element of urban fabric.

Consequently it is natural to observe the concentration of a built fabric with specific characteristics that takes advantage of the greater exposure and centrality of the street, but also the emergence of some singular buildings (Dias Coelho, 2013) 

The singular building is distinguished in the urban landscape by its
exceptional function and often by its architecture of greater visual impact. In this way, the architectural object itself becomes an important piece in the construction of spatial reference maps (Lynch, 1960). They become landmarks in the city’s urban space, interacting with people (Cullen, 1961).

This fact alone does not represent an innovation in the formal and sensorial dialogue between the city and its community. Throughout the history of the city for several moments we can observe this logic, just remember plane of Sixtus V to Rome, among other examples. However, it is interesting to observe that in the present city, in urban fabrics still to be consolidated or in strong sedimentation processes, this phenomenon occurs. On the other hand, it often occurs disconnected from an academic and formal thought, as happened on the plane of Sixtus V. At present, when we observe a mobility infrastructure to be colonized by urbanization along its axis, we quickly see the emergence of some singularly designed architectural pieces with a very exuberant architecture (Venturi et al., 1977). The architecture is used as a way to build a symbol in the landscape. The symbolic character and its ability to stand out from others turns out to be decisive in the construction of the space of these urban elements. Often these facts are directly linked to a commercial activities or services that set their success in an intense publicity communication with the observer.

The commercial or functional importance of some of these singular buildings located around these mobility infrastructures registers such preponderance that they potentiate in a decisive way the intensity of transformation that these elements begin to incorporate. They are creators of new urbanization, transformations of the section type of the infrastructure and often determine the degree of centrality of these elements within the wider system of the city. The singular building assumes itself as a pole of attractiveness, present in an axis that by itself is structuring of part of the urban fabric. It is affirmed in the territory by its functional singularity and in the own element by its architecture or formal/visual composition. It should also be mentioned that the singular building contributes to moments of greater consolidation of the urban fabric. It is on the space around it that more initiatives of consolidation and interconnection of the various urban fragments appear, helping to define a section type of the street. On the other hand, in realities more consolidated, where the section type is already more defined, these buildings stand out for their ability to connect different spaces, or levels, along the infrastructural channel.

1.4. The potential of the in-between space

The space where the influence of the singular building is most felt is the in-between. That is, in the intermediate space between the infrastructure and the constructed limit of the building itself. This space is often characterized by its ambiguity, corresponding to a place where it is not always clear whether it belongs to the private or public component of the city. Sometimes it corresponds to areas of the plot (of the singular building) that are given to public use by the private sector, in order to attract more users to their stores. But in other situations, these are empty, vacant spaces that result from the minimum distances that the mobility infrastructures require to be protected.

These spaces become areas with high potential and desirable for intervention. These spaces may prove decisive in the formal consolidation process of these emerging urban axis, but also in their spatial and functional qualification. To dwell this intermediate space allows to work in the moment of transition between the public and private component, dissipating limits. Knowing how to handle and work with this moment of transition allows us to operate on the ambiguity that some of these areas acquire, enhancing their ambivalence and developing social and collective activities and appropriations regardless of whether they take place in the public or private space of the city.

Given this, it is important to recover the thinking developed by Aldo Van Eyck and other members of the Team X group, such as Peter and Alison Smithson who starting from the reinterpretation of the concept of threshold understands it as a three-dimensional space as opposed to an approach which centers the idea of limit as surface. Aldo Van Eyck recognizes the importance of the existence of an intermediate space that articulates two distinct universes and that leads to the harmony of the characteristics of each one. In this way, one points to the need to know how to create a third universe, dependent on the two that supports it, connecting them but simultaneously capable to create an identity of its own. Limits should leave their natural and well-defined rigidity and incorporate smoother transitions that build relationships between people and the most pleasant and balanced spaces. The design of the building can incorporate spatial notions that formalize mutually contradictory concepts, such as: individual-collective, unity-diversity, interior-exterior.

The intervention in the intermediate space must facilitate manifestations that dissipate limits, composing spaces that develop morphological relationships and acts of socialization. The in-between space should contribute to the clarification of urban and architectural elements, for the explanation of hierarchies and
urban spaces. The constituted transition spaces can also act as permeability elements and interaction facilitators.

In this sense, it is important to reinforce the expansion of the ground floor space making it more permeable, continuous and open to the public space. The building connection to the ground level is vital to establishment it link with the street. The dissipation of the limit, physically or psychologically, allows the insertion of the street in the inner space and vice versa, which makes the relationship between the building and the public space more porous and capable of developing greater vitality.

The street acquires more activity, more personality, and the buildings become more dynamic and alive, according to their use, type of function and form of appropriation. The link between urban elements is stronger and interdependent. Xavier Monteys (2010), draws attention to this, stating that the ambiguity of the limits causes the living room to reappear on the street with its chairs, and that in turn the street noisily appears in the living room. This permeability between two inhabited sides creates an intermediate space that assumes a space of its own, managing to contaminate the adjacent spaces and requiring complementary spaces. The dialogue between the building and the street is favored at this more diffuse threshold, in its understanding as a limit but simultaneously clear in the identification of its identity.

2.0. START-UP BUILDINGS

2.1. An essay of a concept

As mentioned previously, the centrality offered by some of these emergent linear elements, understood as new street types, allows the appearance of singular buildings, transforming them into small poles that dynamize the territory. Its development as an architectonic object of exceptional character promotes the growth of new forms of occupation and appropriation of the territory. When this happens, we could say that the building resembles a start-up, an element that creates a new paradigm of urban appropriation or interrelationship [between elements, spaces, forms, uses or persons]. Thus, the idea of Start-Up Building seeks to classify a set of architectural objects that by their functional and morphological characteristics are capable of emerging new concepts of living in the urban space, developing new forms of social and urban interaction, questioning classic relationship processes of people with their own public or private space. This typology is not intended to be a reinterpretation of the Hybrid Building concept. This is fundamentally based on the capacity of a building to incorporate different types of uses, articulating different internal environments and building a specific dialectic with the urban space around (Fernandez Per, 2014). The Start-Up Building concept focuses more on the identification of unique buildings that are capable of reconfiguring the urban space around them, in an innovative way, becoming a dynamic center and giving rise to new processes of urban living. The urban transformation generated by a Start-Up Building should occur relatively quickly and in parallel configure a new spatial or functional model in the city. The architectural form, its articulation with the use(s) and the dialogue that establishes with the public space play an important role in the way that the Start-Up Buildings transform the surrounding territory.

2.2. A building type generator of transition spaces between built space and public space

One of the situations, in preliminary analysis, that the Start-Up Buildings generates is the construction of spaces of ambiguous character, where it is not clear to which universe belong, public or private. This ambiguity is revealed, for example, through two types of space: living spaces and circulation spaces.

The first situation refers to the existence of staying areas, with a collective character, in the interior space of the building. This fact brings back to the interior of the architectural space of this typology, areas that in the classical city normally are located in the public space. This phenomenon is not unconnected with the fact that, in several situations, there is a certain disqualification of the surrounding public space. Thus the building taking advantage of this handicap to creates a space of collective use that promotes actions of socialization. They mix activities usually associated to the public universe of the city with activities and behaviors proper to the private space. The common areas of certain buildings become "public spaces" (even though maintaining their own control of the private universe) by extending their area into the architectural object. A paradigmatic example of this phenomenon is the living and eating spaces that exist in certain commercial megastores. These spaces are thoughtfully designed to be very attractive to users and whenever possible seek to establish visual contacts with the outside. Another example is the architectural composition itself that promotes this dissipation of the limit and builds a strong interaction between the interior space of the building and outside space. The idea of a clear and well-defined limit is diluted with the aim of extending the public space. Crossing spaces are generated, but there are also living spaces where various activities, such as fairs, exhibitions, concerts, among others, take place inside the architectural
object, although suggesting that it is an activity that takes place in the public space. This idea of extension of the public space into the interior of the buildings, of singular use, was also present in the century XVIII in the map of Rome of Giambattista Nolli. The representation of this map in the 1748 of the interior space of the churches, patios and atriums of palaces can be understood as a metaphor that expresses the idea that the interior of these spaces belong to the public universe of the city. The limit between the building and the square or street that supports it is eliminated and the pavement of the city penetrates the space, inviting to enter. The building and the collective activities that take place in it open to the city.

The second situation refers to the construction of spaces of passage, of connection. In these cases the building itself, or part of it, becomes a passage, joining different parts of the urban fabric and solving some urban conflicts. This capacity that the building assumes of connector allows to make the urban space more effective, but adapted to the needs of the people and of the city. The spaces of passage extend to the user the perception of the public universe, built in a new layout of the city. The idea of limit disappears and the city uses these passages as public space if it were. The building itself gains a greater prominence. It becomes reference in the mental maps of the population like a pole that allows acceeding to certain space or areas of the city of a faster and intuitive way. Its architecture seeks to respond to this function, while at the same time molding and transforming itself for greater efficiency. The channels spaces are formally qualified; being verified the implementation of various commercial activities or small services, such as living spaces, small gardens and/or cafes. The building assumes itself as a center and redefines logics of circulation and experience of the city. Some of the most emblematic examples of this situation are the train station in Tokyo. The station beyond its base function accumulates a set of valencies that elevates it to a new dimension. Its common areas are frequently transformed into passages between distinct points of the city of Tokyo. This connection does not only serve distances in extension. They are also used to join different levels, different buildings or infrastructures. The station is an authentic connector, which unites and merges everything into one system. Its interior spaces, turn into streets and squares. Stores or access to different lobbies of nearby buildings colonizes the corridors. The ambiguity of these zones is great, but they are also spaces of great ambivalence and interesting in urban terms. Some dialogues are constructed between the inner and outer space; some extend to the other and vice versa.
For the city, it does not matter who owns the property. Relevant is rather the efficiency and service that the space of this architectural typology offers. The idea of the in-between is somehow present. The physical and built limits between the building and the traditional street are present; however, the limit becomes porous there is a spatial and functional appropriation that goes beyond this boundary. Space becomes rich, diverse, multi-use and functional.

Figure 2: 1. Passages System through buildings in Shinjuku Station Area, Tokyo. Source: (base drawing: Tomoyuki Tanaka, 2016; overlap scheme: Author 2018); 2. Photographs of Shinjuku passages network, Tokyo. Sourse: (Author 2015); 3. Sections type. Source: (Author 2018).

FINAL REMARKS
The city as an organic system lives in a constant mutation and evolution. Its fabric grows, shrinks, sediments and transforms. Faced with the challenges of contemporary times, the city tends to adapt and reinvent development processes and forms of space appropriation. The phenomenon of the Start-Up Buildings, and fundamentally their influence in the redefinition of the intermediate space between them and the street or infrastructure that supports it, is one of the themes of greater opportunity at the present time. It is important to understand how the architecture of a building, together with its exceptional use, can redefine the nearest urban space or even a wider territory. The architectural conception of these objects cannot ignore the role and the added value that this can represent for the city.

In this sense, the investigation, now initiated, intends to decode, decompose and systematize its aggregation processes (between singular building and street/infrastructure); compositional and spatial logics; interactions and generated urban tensions and processes of spatial and functional reconfiguration.
Through a morphological study, formal and typological characteristics are systematized, which contribute to the simplification of the object, but also a better perception of the urban relations that it establishes and provides. In this way, it becomes possible to construct a referential framework that can be interpreted as a didactic instrument in support of the academic essays, but also in support of new creative, innovative processes of contemporary urban and architectural intervention. So the morphological readings developed by the research do not pretend to have an anachronistic meaning but to contribute to urban and architectural production more conscious and appropriate to the urban context where it is inserted.

The research is based on the need to deepen the study of new types of buildings that are emerging in the city and what dynamics they offer, stabilizing concepts and allowing a better decoding of certain urban phenomena unchained. It is sought to place the focus of attention on intervention processes and urban management that explore the architectural potential evidenced by the Start-Up Buildings but also by the adjacent urban spaces. In this way, the aim is to take full advantage of the urban dynamics generated, enhancing the polarizing capacity and contributing to the structuring and qualification of a wider territory.

REFERENCES


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2 Through an elementary decomposition we could say that the urban fabric contains common buildings and singular buildings. These are characterized by their exceptional function and their singular typological role, contrasting with the residential use that constitutes the most common and predominant building of the city.

3 What is a door? A flat surface with hinges and a lock, constituting a hard terrifying borderline? When you pass through a door like that are you not divided? Split into two - perhaps you no longer notice! Just think of it: a rectangle two inches thick and six feet high! What hair-raising poverty - a guillotine is kinder! Is that the reality of a door? - Well, perhaps the greater reality of a door is the localized setting for a wonderful human gesture: conscious entry and departure. That’s what a door is, something that frames your coming and going, for it’s a vital experience not only for those that do so, but also for those encountered or left behind. A door is a place made for an occasion that is repeated millions of times in a lifetime between the first entrance and the last exit, I think that’s very symbolical. And what is the grater reality of a window? I leave that to you! in Van Eyck, A. 2008:62