

**House, Street, City:
Le Corbusier's Research Towards a New Urban Interior**

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Abstract

*Le Corbusier's investigations, conducted between the 1910s and the 1930s, were focused on a new relationship between street and building. His research started from texts about the city, in particular, the writings of Eugène Hénard. These essays, dating back to 1903-1909, dealt with the necessity of a renewed strategy for the urban street, breaking down the monotony and the problems related to the sequence of buildings and creating a series of places as squares, gardens, and open courtyards: actual urban rooms between streets and buildings. Learning from those texts, Le Corbusier worked on a series of polemical writings about the rue corridor, collected in particular in *The City of Tomorrow*, *Precisions* and *The Radiant City*. A series of projects explored to the extreme consequences the topic: the Dom-ino building principle used for collective housing evolved to the redent, detached from the infrastructure, and the immeuble villa, with its inhabited façades. Finally, the curved redent for the Plan Obus in Algiers transformed the street itself into a "building as city" flowing in the landscape. The essay follows how Le Corbusier transforms the street and its traditional urban components in interior elements inside the buildings.*

Keywords: Le Corbusier, street, façade, urban interior, city

Introduction

“A town is a tool” (Le Corbusier, 1971, p. 1).

The essay focuses on Le Corbusier’s investigations, both theoretical and through design, on the topic of the street and its relationship with the building. His work moves from the critique of the street of the traditional city, considered as the cause of the decay of the urban environment, with the purpose of defining new models that revisit the relationship between architecture and city planning. Le Corbusier rethinks the traditional urban components of the street and re-invents and transforms them in interior elements of the building, in an overlapping and fertile cross-pollination between the different scales of urban and architectural design.

The outcome of my investigation is not the judgement of the value of Le Corbusier’s proposals, in particular if linked to the consequences of his projects in the contemporary city (Rice, 2016). I would rather point out how his critique, to solve the problem of the street and the city, gave a new interpretation of the interior spaces where we live, both urban and architectural. With an argument somehow related to the past (we can recall Alberti’s statement (1988): the city is a big house, the house is a small city), Le Corbusier, to save the city, “moved” some of its elements inside the building: the interior pedestrian street, the public spaces on the building’s roof, the façade with new urban semi-public roles. This radical renovated relationship between interiors, buildings, urban and natural landscapes, is nowadays still open to investigations and projects.

Architecture in Everything, City Planning in Everything

In the summer of 1934, scholars and experts in the art fields, coming from all over the world, gathered in Venice to participate in the symposium *Les Arts et la Réalité Contemporaine. L’Art et l’État* (*L’Art et la Réalité, L’Art et l’État*, 1935). Among them, Henri Focillon and Le Corbusier discussed the importance of a strong relationship between art, city and architecture. In his intervention, Focillon expressed the concept that the city, with its palaces and temples, would be an example and a model for a change to the world of art. In response to that, in his lecture entitled *The Gondola Lesson*, Le Corbusier pointed out that dwellings, not monuments, are the most important element to consider for this purpose. “For me – he declared – the city is made of dwellings, in the first place. Then we have temples and palaces” (Le Corbusier, 1935, p. 82). He argued that the purpose of architecture is to build interiors, that would give quiet and tranquillity, enriched by sunlight and well-lit thanks

to modern technologies. These, he explained, “have eliminated the stone façade pierced by holes and give us, with the glass façade of the homes, a view of the sky and the vegetation, made perfectly available thanks to the technical principles of modern city planning” (Le Corbusier, 1935, p. 84).

This new dwelling can offer shelter by constructing appropriate living spaces, well equipped and suitably economical, that can ensure the most urgent material needs of the inhabitant. It is also the place for meditation and satisfaction of psycho-physiological needs, for the collective participation and the freedom of the individual, thanks to a completely new form. These dwellings, grouped together, would build the new city, with “audacious visual spaces” but without streets. This is what happens in Venice, where the streets are the water routes for circulation on boats, completely separated by the pedestrian paths and the accesses to buildings (Figure 1). Venice is built in the harmonious proportions of the relations between houses, monuments and thoroughfares, between walkways and waterways. The city is made up of urban places in which one can walk in a human dimension of safety and calm, far from the risk caused by motor vehicles:

In this so perfectly organized Venice you can still see the street, the typically Venetian street, an extraordinary thing, as something specifically studied and calculated, where we feel masters of our feet, of the ground on which we walk; where we feel calm, where we can rest our ears; where we can direct our steps at whim, without danger: *the city without streets!* ... Streets, pedestrians and design of the waters make up a thrilling unity. (Le Corbusier, 1935, p. 79)

Venice is the expression of the perfect one-to-one relation that Le Corbusier sought between the disciplines, the same that is clearly expressed in the chapter “Architecture in Everything, City Planning in Everything” in *Precisions*. Here he states that architecture is “*to put functions and objects in order ... spaces, dimensions and forms, and exterior spaces – quantities, weights, distances, atmospheres.*” He ends saying that “from there on, I consider architecture and city planning together as a single concept. Architecture in everything, city planning in everything” (Le Corbusier, 1991, p. 70). The elements in play and the compositional methods are the same for architecture and city planning, in an inseparable and unitary whole in which, as the Italian architect and academic Alberto Samonà has clearly stated, is expressed the “need of a social, political and economic nature.” This unity has an architectural form in which “every human

activity takes its dimension of real, built, completed settlement in relation to its qualified characterization" (Samonà, 1985, p. 108).

Figure 1
Le Corbusier's
lecture "The
gondola lesson"
focuses on how
Venice could be
an example for
the city of the
future, where
the separation of
flows becomes
an opportunity
for new building,
urban models and
interiors
(Collage by author)



"The house, the street, the town, are points to which human energy is directed," Le Corbusier wrote in *The City of Tomorrow* (Le Corbusier, 1971, p. 21). Venice seems to ensure the role of a testimony built and carved in stone for the construction of the new city, which will replace the traditional one inherited from the nineteenth century: "I call up Venice as a witness" (*"Je prends Venise a témoin"*) was his motto for the urban renewal of Antwerp (Le Corbusier, 1964, p. 268) (Figure 1). In his research, this will happen primarily by dismantling the *rue corridor*, the corridor-street, and defining new building types that establish new relations between street and building, between city and architecture. The residential building, more than the monument, would be the architectural place where the renewed interior of the dwelling will be realised, but also the place that would include the public collective activities, in a reinvention of the relationship between urban and domestic interiors.

Criticism of the *Rue Corridor*

The harmonious unity between street and house that, as stated by many scholars of urban studies (Benevolo, 1963; Rossi, 1966; Aymonino, 1977), has its origins in the European medieval city, has been compromised with the advent of the "driver civilization," the demographic congestion caused by the industrial revolution

and the consequent structural changes in the urban fabric.¹ In the Greek-Roman urban model, the fabric of the city was defined by the juxtaposition of courtyard homes, whose space was characterised by an introverted, inward view and consequent closure towards the exterior. This was solved by way of masonry walls cut only by the entrance door. Conversely, the medieval city was built up with a direct relation between the architecture of the house, where residential, production and commercial functions coexisted, and the street. This was the place of traffic, but also a place of work, relations and view. The elementary building type of the Gothic house assumed the configuration of a workshop on the ground floor and a series of rooms on the upper floor, open towards the street. The Gothic city is built on this type, whose traces persists in the modern city, "where the construction of the residential fabric ... coincides with construction of the street" (Monestiroli, 1979, p. 77; Grassi, 1967).

The architectural contrivance of the portico, which often characterizes the street front, emphasises and corroborates this social vocation and mediation between house and street, in which the repeated and serial element fashions a simultaneously public and private space. In these in-between spaces, the life of the residence and that of work is projected and represented in the urban function. As Aldo Rossi reminds us,

The portico ran along the street front, serving to distinguish between traffic and the performance of certain tasks; the portico was often a projection of the workshop and the craftwork took place beneath it (in the same way that the commercial function of displaying goods in the portico has remained). (Rossi, 1975, p. 379)

Citing Goethe's memory of the porticoes in Verona, he points out that these are not considered part of the property, even if built by individuals, but places that belong to all, where the city population feels at home, using it for every kind of function, public or private (Rudofsky, 1969).

This primal harmony of relations has been lost in the nineteenth-century unhealthy, diseased, dangerous European city. Paris, in the description made by Victor Considerant (1834), "is an immense

¹ "The industrial revolution in England and the political revolution in France, each in different but ultimately interdependent ways, and in an incredibly short period of time, forced new form of life and understanding on the inhabitants of the rapidly expanding of the cities." This is how the in-depth essay by Anthony Vidler *The Scenes of the Street: Transformations in Ideal and Reality, 1750-1871* begins, in which the development of the city (and its street) is interpreted, analyzing its dramatic development and the consequent theoretical and practical hypotheses of solutions to the problem (Vidler, 1986, pp. 29-111).

workshop of putrefaction, where misery, plague and illness work in concert, where air and sun hardly penetrate" (p. 42). The streets of London, in the words of Engels (1969), "are generally unpaved, rough, dirty, filled with vegetable and animal refuse, without sewers or gutters, but supplied with foul, stagnant pools instead" (p. 57). A few decades later, Le Corbusier notes how the city has become a "congestion of buildings [that] grows greater, interlaced by narrow streets full of noise, petrol fumes and dust; and where on each storey the windows open wide on to this foul confusion" (Le Corbusier, 1986, p. 57). For him, this is a "picture of the seventh circle of Dante's inferno," in which the paralysed fabrics of the traditional city, though fascinating in their pictorial aspect, are places where "tuberculosis, demoralization, misery and shame are doing the devil's work among them" (Le Corbusier, 1971, p. 284). The street is no longer the harmonious construction on a human scale but has become a dangerous and unhealthy place, poorly lit, noisy, which builds the insalubrious closed courtyards of the traditional residential blocks. It is a "gut" where cars and public transport hurtle, putting the safety of the pedestrian at risk, as Le Corbusier eloquently shows in *The City of Tomorrow*, in a rich section of the book with newspaper cuttings on the subject. This is the "corridor-street," which makes up the "corridor-cities," the evil to be eradicated:

A roadway; most of the time, sidewalks narrow or wide. Above, a wall of houses; their outline against the sky is an absurd cut-out of gables, chimneypots, metal pipes. The street is the lower depth of this adventure; it is in permanent shade. The blue of the sky is a hope, very far, very high. The street is a drain, a deep slit, a narrow corridor. One touches its two sides with the two elbows of the heart; the heart is always oppressed... although this has existed for a thousand years. The street is full of people; one has to watch one's way. Recently, it has become full of fast cars; death menaces between the two edges of the sidewalks. But we are trained to face being crushed. (Le Corbusier, 1991, p. 197)

Problems of hygiene and safety are behind Le Corbusier's criticism of the corridor-street. But the houses that he describes, disfigured and blackened by the smoke of progress and their rigid alignment, also pose a problem of an aesthetic, formal and perceptive nature. From this point of view, the layout of the nineteenth-century city had lost the quality given by the spatial control of the elements typical of previous ages. The city had developed, as the architect and urban planner Giuseppe Samonà points out, "a geometrical sketchiness by grand parameters, which obeys the new positivist and generalizing trend, to which the liking for uncontrolled urban sprawl is owed." Here, he observes, "the large often replaces, in taste, the grandiose, just

as the richness of ornamentation takes the place of more profound celebratory architectural expressions" (Samonà, 1967, p. 28). This results in the *Potëmkin City* as described by Adolf Loos, referring to the Vienna Ring, whose urban façades become insincere masks that falsify the architectural and spatial narrative of the city (Loos, 1982). This is what Le Corbusier sees, during his South American trip in 1929, in La Plata and Buenos Aires, whose urban façades, made of simple walls marked by few incisions such as doors and windows (that he defines as the only real "architectural facts"), are decorated with the heavy and charged "make-up" of pilasters, pediments, cornices, stuccoes and balusters (Le Corbusier, 1991, pp. 215-231).

Le Corbusier Reads Eugène Hénard: The Scene of the Street as an Urban Interior

"I will devote myself mainly to seeking new forms that must have streets and houses, constituent and primordial elements of the city" (Hénard, 1972, p. 183).

In 1915 Le Corbusier, still known as Charles-Edouard Jeanneret, completed an important task of "long, patient, meticulous research" at the National Library in Paris (Duboy, 1987, pp. 94-103), looking mainly at a series of works concerning the city. The purpose was to gather ideas and images for drafting the book *La Construction des Villes*, on which he had been working since 1910, but which he never published (Brooks, 1985).

Among others, Jeanneret consulted the writings of Eugène Hénard (Hénard, 1982; Hénard, 1972; Wolf, 1968; Shane, 1983). These date from 1903 to 1911 and concern the "constituent and primordial elements" of the city (house, public spaces, streets, urban vegetation), for each one of which the scholar analyzes the problems and proposes planning solutions on an urban and architectural scale. These investigations fascinated Jeanneret, who wanted to draw knowledge of the history of the city as a means of understanding the present, but also to devise a series of models and solutions for the construction of the city of the future that keep the technical and the spatial-perceptive dimensions together, that keep together the urban scale and the architectural scale. The corridor-street of the nineteenth-century city was, in Hénard's reading, one of the evils to eradicate:

All these streets, without exception, have the common characteristic of the monotonous continuity of house façades or rows of trees, or both these elements simultaneously regulated by an absolute, forced, implacable alignment ... which has turned the streets into interminable and boring corridors. (Hénard, 1972, p. 61)

So Hénard focuses on an aesthetic and perceptual problem, but he also takes into account the “mechanics” of the street, on which the pedestrian paths and vehicle traffic (carriages, cars, public transport) and the technical and service channelings are directed. Therefore, it was imperative to draft “new types” in which technological innovation and a guaranteed “pleasure of the inhabitants and beauty have their place” (Hénard, 1972, p. 65). In an essay of 1903, eloquently entitled *Interrupted Alignments*, Hénard foresees the dismantling of the implacable continuity of urban façades and ends up defining the so-called *redan* building (the term *redan* refers to fortification works and corresponds to the English term “fortification”). This type proposes the setting back from the street of some portions of the building, with the creation of public spaces of mediation between the street and the façades. The front is always unitary, but every thirty-six meters there is a courtyard open to the street, twenty-eight meters wide and twenty deep: a genuine “urban room” that would break the monotonous path of the corridor street.

Hénard was actually upholding and taking to its extreme the new, recently approved (1902) building regulation in Paris, whose contents aimed at recovering the variety of the street fronts, through façade movements or the use of sculptural bow windows. In fact, the Paris building regulations of 1884 and 1893 moved towards breaking the uniformity of the nineteenth-century building curtains, with a review of the indications regarding the shapes of the roofs and with the introduction of bow windows, allowing, for example, the building of a design like that of Perret for rue Franklin; the 1902 regulations confirmed and reinforced this direction (Tamborrino, 2005; Tamborrino, 2003).

Hénard lists the advantages of such architectural formulation with precise calculations, cost estimates and comparisons between the current state and his hypotheses: a greater linear development of the fronts, with an increase in the prospects and the variety of vistas; an improvement in the quality of the air, no longer stagnant as in the closed courtyards; a new richness given by the space recovered on the ground floor, with the creation of resting places available for bars, restaurants, exhibitions, furnished gardens and appropriate entrances; and most of all a better spatial configuration of the city street-scape, enriched by the plastic alternation of solids volumes and voids, by the new rhythm given by the stone façades and the creation of “interiors” as open courtyards, garden, squares enriched by the presence of trees and natural elements.

Hénard likens this combining principle of elements to the way that the domino game pieces are placed, and that certainly inspired Le

Corbusier's idea of the *Dom-ino* system. With different compositions, for instance, placing the fronts at a slant from the street line, would create further variations on the urban façade and new spaces at the street level, that "instead of being flat and monotonous, will offer a succession of projecting angles, where effects of light and shade will clearly mark out all the reliefs" (Hénard, 1972, p. 70).²

In short, Jeanneret/Le Corbusier finds in the work of Hénard some ideas to solve the problem of the street. The most important is the compositional procedure of "separating" the architectural front from the street, and the transformation of the space that is created into an urban interior. This exacerbation of the distancing between infrastructure and architecture, and the multiplication of the routes, all related to a particular kind of traffic, would take, in his following research, to the definitive "elimination of the dichotomy: building-street" (Le Corbusier, 1964, p. 157) and the transformation of the concept of street as part of the building.

Le Corbusier and the Street, from the *Dom-ino* System to the *Redent* Building Type: Towards a New Urban Interior

In *Towards a New Architecture* Le Corbusier published the "group of houses in series on *Domino* frame" (Gregh, 1979), dating it to 1915, the year of his studies at the National Library of Paris. The word "frame" refers precisely to the construction principle that is behind the type proposed by Le Corbusier, and to the bare, much celebrated perspective depicting the six *pilotis* that support the slabs and the staircase uniting the various levels. As an ideal and abstract construction principle based on primal elements as the pure column and the pure horizontal slab (Turner, 1977), the *Dom-ino* system allows a free composition of the various construction cells of the residential complexes and of the "*pilotis-city*."³ Even in this early project, it is clear the overlapping of scales. As a sort of

² The concrete application of this new building type is proposed inside Paris, to transform the area of fortifications, with the plan for an eighteen meters wide ring road around the city, onto which the *redan* buildings face with their alternate solids and spaces, pauses of vegetation, urban interiors and continuous façades. Twelve city parks along the route punctuate the line of the ring boulevard, the largest of which, like heads respectively at east and west, are the Bois de Boulogne and the Bois de Vincennes: natural areas on a monumental scale but that in any case Hénard, as seen, also wanted present on the architectural scale of the building, inside the "inlets" of the *redan*.

³ "Towns built on piles. The ground level of the town is raised from 12 to 16 feet by means of concrete piles which serve as foundations for the houses. The actual 'ground' of the town is a sort of floor, the streets and pavements as it were bridges. Beneath this floor and directly accessible are placed all the main services, at present buried in the ground and inaccessible-water, gas, electricity, telephone wires, sewers, etc." (Le Corbusier, 1986, p. 59).

refoundation of architecture, the *Dom-ino* skeleton seems to be a modern version of the primitive hut described and represented by Laugier in his *Essay* in 1753, which is an interior space defined by the tectonic composition of elements (Laugier, 1977; Caan, 2011; Rykwert, 1972). But Le Corbusier, since its inception, thinks of the urban potential of this system, considering how its multiple aggregations could become a new idea for the city and its interiors. His notebooks document this (*Carnet A2-1915*, Le Corbusier, 1981), as do the urban proposals presented in *Towards a New Architecture*, in which he seems to recover Hénard's spatial configurations, and almost his very words:

Instead of our towns being laid out in massive quadrangles ... our new layout, employing the same area and housing the same number of people, would show great blocks of houses with successive set-backs, stretching along arterial avenues. No more courtyards, but flats opening on every side to air and light, and looking, not on the puny trees of our boulevards of to-day, but upon green sward, sports grounds and abundant plantations of trees. The jutting prows of these great blocks would break up the long avenues at regular intervals. The various set-backs would promote the play of light and shade, so necessary to architectural expression. (Le Corbusier, 1986, p. 47)

One of the residential types that Le Corbusier was to use and gradually perfect over the years for his city plans was an evolution of the *Dom-ino* principle: the *redent*, whose name has an obvious assonance with that used by Hénard, *redan* (Figure 2). This big linear building, whose façades retract and move toward the street, aimed at defining a new relation between this and the building by creating large, furnished areas of vegetation. A new figure thus took shape for the city, according to the same principle formulated years earlier by Hénard, but more articulate and on a monumental scale. The aim was the construction of that new "urban scene" about which Le Corbusier writes in *The City of Tomorrow*, in which the "depressing façades of the corridor have been replaced by geometrical shapes juxtaposed, or set apart, or brought together in a monumental and lively urban landscape", that represents an evolution towards "a noble architecture" (Le Corbusier, 1971, p. 76). And the design of the façade was to make up a kind of backdrop that extends for hundreds of meters, "a sort of grill or trellis against which the trees will display themselves to advantage, and this whether they are seen close at hand or from distance" (Le Corbusier, 1971, p. 236). In this relation between elements, the vegetation acts as a "proportional mean" between the scale of man and the new dimensions of the architecture, as well as ensuring physical and spiritual well-being.

Some plates in the *Album La Roche*, dating from 1922, contain notes and sketches on this building. The distributional system has a central corridor, the same that was to be produced more than twenty years later in Marseilles, serving the complex L join of the apartments. In plan, these recall the Esprit Nouveau pavilion of 1925 and the aggregate cell in the *immeubles villas*, whose façade has the deep recesses of the loggias alternating with flat glazed walls.

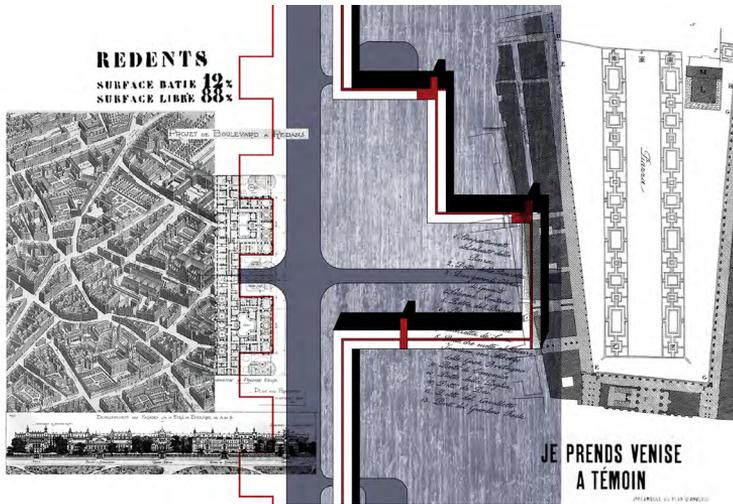


Figure 2
Paris, Eugène Hénard's redans, Le Corbusier's redents, the urban venetian interiors like St. Mark's square: Venice is a witness and an example that will save Paris and the traditional city. Le Corbusier's work is a tribute to Eugène Hénard and to the most modern European city (Collage by author)

The perfecting of the *redent*, plan after plan, led to a specification of such architectural aspects, such as happens with its constituent wings, which have a different thickness according to their orientation. Those oriented north-south are less thick (of *simple épaisseur*, simple depth), because the apartments are served by a corridor that takes up the less favourable side on the north; those oriented east-west (of *double épaisseur*, double depth) are designed rather with a central corridor and the L join of the apartments such as to ensure these open on both sides. The design of the façades reflected this arrangement, with opaque closed fronts punctuated by small square windows, where the distributional hallway was located, and total glass curtain walls (*pans de verre*) for the elevation of the dwellings. The same method is also put into practice in the Swiss Pavilion at the Paris City University, a genuine "fragmentary redent slab, drawn from the typology of La Ville Radieuse" (Frampton, 1987, p. 59), or for the wings with glazed double prospect in the Immeuble Clarté of Geneva.

The renovated relationship between street and building is well specified by Le Corbusier in the proposal for the *Ville Radieuse*, in the seventeen plates published in 1933 (Le Corbusier, 1964) (Figure

2). The corridor-street disappears and a figurative weave, a genuine “architectural symphony” is created between the new street and the “arabesque” of the *redent*. The “street-house pair” is definitively abandoned, and the metaphor of the fluvial system explains the city’s new circulation apparatus, for which the relation between the house (the *redent*) and the infrastructure is no longer direct, but through “carports” where vehicles are left and people can access the vertical distribution systems and pedestrian ways. The circulation is on separate levels, cars and pedestrians go through different places.

According to the “displacement of concepts” procedure (Colquhoun, 1972), the street and the public spaces of the traditional city reappear transformed as interior public spaces within the building (the *rues intérieurs superposés*), or on its roof. This was already anticipated in *Towards a New Architecture*, where he states: “Cafes and places for recreation would no longer be that fungus which eats up the pavement of Paris: they would be transferred to the flat roofs, as would be commerce of a luxury kind” (Le Corbusier, 1986, p. 60). A collective space in a collective building, the roof “becomes habitable, and more than that, becomes a sort of extra street, a place for strolling” (Le Corbusier, 1971, p. 76). Or it becomes a natural landscape, where the verdure partly demolished on the ground floor finds its place as part of the building (Benton, 2013, p. 202). The urban open spaces of the traditional city, such as the pedestrian street, the square, the public garden, become part of the architecture, transformed and transfigured in new interiors.

The monumental dimension of the *redent* building and the natural component can be seen in the design for the Ilot Insalubre n. 6 of 1937, for which Le Corbusier worked inside the diseased fabric of Paris made up of ramshackle seventeenth- and eighteenth-century houses (Figure 3). “Surfaces built too close; consequently, little light and air, few natural blocks, insufficient oxygenation, small yards without sun, damp, dirt, illness” we read in a handwritten note by Le Corbusier (Lucan, 1987, p. 293). This is Le Corbusier’s diagnosis for the site, positing the remedy of demolishing the “unhealthy blocks,” and retaining the main arterial routes, from which the *redents* are placed in absolute independence, respecting the most favourable orientation to the heliothermal axis. The plan is measured directly against the dimensions and figures Paris’s monuments: the same ones he selected in his sketches to describe the city, which he keeps inside the *tabula rasa* of the “Plan Voisin,” which emerge in a few selected views in the

Beistegui attic⁴ and which he uses in his writings for dimensional and figurative checks. The detachment from the street takes on monumental dimensions and creates vast areas for vegetation and services (Figure 3). The *redents*, suspended on *pilotis* to allow the presence of vegetation everywhere,⁵ are eighteen storey height peremptory blades. The apartments are devices for looking into the distance, an actual “mechanism for viewing” (Colomina, 1997, p. 158), which create through the glass façade that privileged relation with the elements of nature and the city, up above where the noise no longer arrives, and where the air is clean. Although far away in the distance, nature participates in creating the interior through its visual presence.

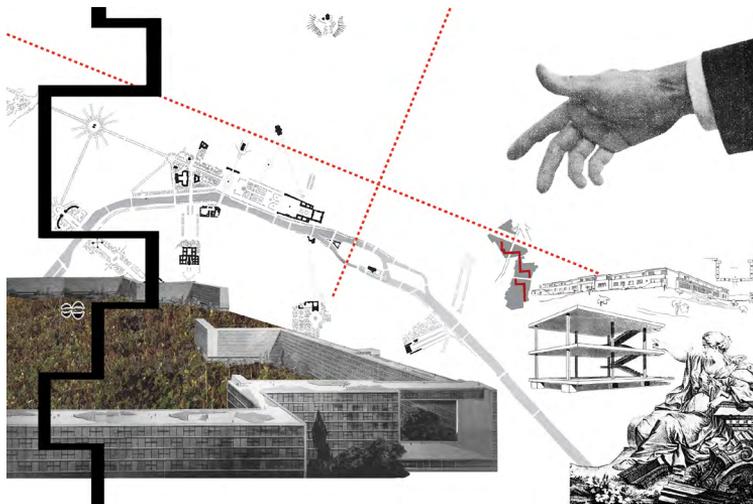


Figure 3
The *redents*
designed by Le
Corbusier for the
Ilot Insalubre
in Paris: a new
architectural type
and a new urban
landscape, in
relationship with
the monuments of
Paris (Collage by
author)

Compared to the total independence from the street and entirely glazed façade of the *redent*, another type allows further reflections: the *immeuble villa*, with its inhabited deep façades, and its placement in the urban fabric. The antecedent to this architectural type is the Certosa di Ema, near Florence, visited by Le Corbusier on two occasions, in 1907 and 1910 (Le Corbusier, 1991, p. 85-103). Inserted in the Tuscan countryside, on the top of a hill to overlook

⁴ “The city here, as it merged from the roof garden, appeared as a mere selection of isolated architectural ‘objects’. It was as if only after it had been decomposed into a catalog of ‘objets à réaction poétique’ that history could reenter the sphere of creation through the back door of irony. The monuments survived, but as mere quotations, selected and arranged with plastic wit rather than with historical consideration” (von Moos, 1982, pp. 305-306).

⁵ This design is analysed by Giedion in *Space, Time and Architecture* and related to the “unexecuted scheme of John Nash for the Regent’s Park housing development of 1812, with its advancing and receding building groups which cannot be embraced in a single glance” (Giedion, 1951, pp. 741-742).

the landscape, the architectural layout of the Certosa makes the collective dimension coexist with the independence of the individual life inside a cell. Each one of these is served by a small garden fenced by a “big wall” that “could hide the view of the road” (Petit, 1970, p. 43), where only one slit opens up selected views. In this building, “each cell opens by a door and a wicket on a circular street. This street is covered by an arcade: the cloister ... This ‘modern city’ dates from the fifteenth-century” (Le Corbusier, 1991, p. 98). The corridor, in Le Corbusier interpretation, is a street, the building is a city.

Starting from this precedent, the plans for the *immeubles villas* were drawn up between 1922 and 1925 and are part of that series of building types we find in the *Contemporary City for Three Million Inhabitants* (Croset, 1987, pp. 178-188), and in some proposals for Geneva. This type was then to be abandoned by Le Corbusier, such that in 1933 he defined it as “the worst invention” he had ever made.⁶

I think Le Corbusier’s self-criticism hinges precisely on the type of relation this type establishes with the street, given that the other questions it posed, like the distributional system, the joining of overlapping houses or the hanging garden, were subsequently tried out and eventually put into practice.

If compared to the desire to “break” the street front represented by the *redent*, the *immeuble villa* does not actually offer any innovative solutions to the traditional block. Although, as the Certosa di Ema, it recreates an urban microcosm in its interiors. The layout is configured as a big courtyard building, perfectly defined by the street grid, from which there is no separation and detachment. The dwellings, with double-height spaces and served by continuous hallways, are superimposed “villas” with an L shape plan that recalls the cells of the Certosa di Ema. The 1925 version of the building, formulated for the *Contemporary City for Three Million Inhabitants* occupies the plot of 400 x 200 meters, while the base grid of the city is 400 x 400 meters. The public hallway is turned towards the street, so that “the houses have their backs to the streets and look out on open spaces 300 x 120 meters (nearly ten acres)” (Le Corbusier, 1971, p. 215). So every apartment faces the green courtyard with a very deep loggia, a “hanging garden” that distinctly hollows out the façade, in a sculptural alternation between the double height

⁶ In a letter written for the Antwerp competition, cited in Gerosa (1978, p. 55). The *immeuble villa* was actually to be the object of his formulations until at least 1930: he explained its characteristics during the South American cycle of lectures in 1929, and proposed its application in a series of residential works in Geneva in the end of the 20’s (among them the Immeuble Clarté, built in 1930).

window that illuminates the living room and the space of the loggia. This elevation, not facing the street, suggests the idea of taking the vegetation of the central courtyard *inside* the home, and this is another strategy of Le Corbusier's poetic.

As Arthur Rüegg points out, "in his interiors of the 1930s Le Corbusier included any number of references to landscape" and in many of his larger structures "the interiors appear to have been conceived from the start as atmospheric fragments of landscape" (Rüegg, 2013, pp. 270-271). Here the façade is turned into an inhabited architectural depth in which to live and enjoy light, air, vegetation. The natural experience of nature becomes domestic in the interior, as the architect explains: "the hanging garden seems to me the modern formula for a practical intake of fresh air, close to the center of family life; one walks on it with dry feet, avoiding rheumatism, sheltered from the vertical sun and from rain" (Le Corbusier, 1991, p. 97). "The building," in the words of Le Corbusier himself "resembles an immense sponge for the absorption of air: the whole building breathes" (Le Corbusier, 1971, p. 182).

The strength of this residential model lies precisely in defining a new way for the house to face the city and its street and in defining the façade as an intermediate architectural place between interior and exterior. Made up of a highly flexible depth that allows opening and closing, the façade is where the life of the residence can be extended.

While in the traditional city the building's interiors were covered with a uniform façade, in Le Corbusier proposals the façade becomes a lively component of the interior, where the inhabitant's life finds new spaces and ways of expressions (Figure 4). In this sense the images that accompany the drawings of the *immeuble villa* in the *Œuvre complète* (Le Corbusier, 1999, p. 43, 98) are eloquent: the prospects, the collages, the photo-montages clearly describe this transformation of the street appearance, now defined by its deep architectural porosity, ready to receive vegetation, sun, air, and to express life.

Although abandoned, the *immeuble villa* remained a reference in the continuation of his studies on the construction of the city, for the composition of big residential buildings, in particular for the principle of superimposing large apartments enriched with double-heights, hanging gardens and loggias, or rather the construction of the inhabited depth of the façade.

In conclusion, Le Corbusier's research on typology developed a revision of the relationship between urban and domestic realms. The pedestrian street and the open green spaces of the traditional

city have been moved inside the building, in the apartments or on the roof. The façade is transformed in an inhabited semi-public space. The urban public life of the traditional city is now part of the building, part of its interior (Figure 4).

Figure 4
In Le Corbusier's proposals, the urban public spaces become architectural interior inside the building. The façade is an inhabited frame for the inhabitant's representation of self (Collage by author)



The Corbusian Urban Synecdoche: The Street as a Building, the Street as a City

The period between the end of the 1920s and the start of the 1930s was very challenging for Le Corbusier, during which important bases were set for new directions in his architectural research. He had the opportunity to travel: in Moscow, three times between 1928 and 1930, in South America, between October and December 1929, invited by a group of Argentine intellectuals, for a series of lectures to be given in Buenos Aires, Montevideo, Rio de Janeiro and San Paolo. Later he went in North Africa in 1931, and in the US in 1935.

The South American trip in particular proved extremely important because, on the basis of the lectures given in the cultural circles, it became for Le Corbusier an opportunity to reflect on his own work and his own poetics, which was to be translated into the book of *Precisions on the Present State of Architecture and City Planning* (1930). Besides the urban experience of the South American city, where he found the same problems of the European city, in ship, plane and walking around the streets of the cities, Le Corbusier was exposed to the magnificent nature, landscape, sea, rivers of South America. The result of this encounter, both in South America and in Africa, was the invention of the kilometres long curved *redent* that he applied in a series of projects such as the plan for Rio de Janeiro

and for Algiers. Following the characteristics of the topography of the coasts, this architectural type is an urban and landscape element, an infrastructure and a residential building. With the high-speed street running on its roof, it is at the same time the place of vehicular movement, pedestrian connections and for living and enjoying the landscape. The street itself becomes a building, and the building (that includes dwellings, pedestrian paths and public common spaces) becomes a city, *ergo* the street becomes a city: a genuine architectural and urban synecdoche, whose concrete implementation was never to take place, except than in fragments.

The Immeuble Clarté in Geneva and, as mentioned earlier, the Swiss Pavilion in Paris, may be interpreted in this sense. Similarly, the various Unités d'Habitation built in France and Germany refers on one hand to the metaphor of the big transatlantic steamer immersed in the vegetation. On the other, they actually are a "piece" of built *redent*, in which the residential cell may be inserted in a frame that can be repeated and multiplied, as in the perspective drawn for the Plan Obus in Algiers. The traditional street for people, in these projects, is definitively transformed into the pedestrian way inside the building. With the street for mechanical transport, now placed on the roof, Le Corbusier finally achieves the dichotomy between residence and infrastructure. "No pedestrian ever meets an automobile" (Le Corbusier, 1964, p. 113); in the South American and African designs, it becomes a part of the building itself.

In fact, fascinated by the Arcades des Anglais in Algiers (*Carnet C10* and *carnet C12* in Le Corbusier, 1981; Le Corbusier, 1964). Le Corbusier found tangible inspiration for this idea:

A precedent in Algiers: the Arcades des Anglais, which ever since their construction (about 1850) have sheltered a population of fisherman. Heavy traffic goes above their heads: the biggest boulevard in Algiers is above their heads ... a model of housing under optimum conditions. (Le Corbusier, 1964, p. 241)

Once again, history allowed Le Corbusier to invent an architectural and urban type, substantiating this rediscovery with the contemporary developments of technology. In fact, alongside the historic reference to Algiers, Le Corbusier considered the FIAT Lingotto building in Turin, where cars drive at high speed on the roof of the building: a historic precedent and thrust towards the future overlap, as often happens, in Le Corbusier's designs (Figure 5).

The curved *redents* in the landscape were thus Le Corbusier's definitive and most extreme proposal for the construction of the modern city street. While Haussmann created an *empty space* within

the compact fabric of the city, in order to save the city through the apparatus of the boulevard, Le Corbusier inverted its strategy, creating a *solid mass* that designs the landscape and the district, which is, in fact, the city-street. Between the ground, where the landscape flows under the *pilotis*, and the sky, which is “a model highway 24 meters wide,” the building is the overlapping of “layers of superimposed floors of vertical garden cities” and defines a new look at the urban and district landscape. And this prospect is highly influenced by the layout of the *immeuble villa* façades, as can be clearly seen in the drawing that represents the curved *redent* façades for plan A of the Plan Obus in Algiers of 1932. The famous perspective clearly shows the urban façade of the big building towards the sea. We can identify the structural principle of the *pilotis* that contrasts with the great freedom and plastic and even stylistic variety of the various cells. The façade is made up of recesses, solids, spaces and transparencies, genuine places populated by the residents, who can look onto the landscape views and represent themselves and their lives, as in a theatrical stage.

The façade as the *mask* of the nineteenth-century city, with its immobile and at times falsified *expression*, that hides the interiority of the inhabitants’ lives, is here surpassed: in the prospect of the curved *redent* in Algiers, life passes through the transparencies, the loggias, the hanging gardens, the places to rest. The façade, in its multiple typological variants and stylistic modulations, is a sincere representation of the faceting of human living and expression of the multiplicity of individuals with “freedom of speech” (Romano, 2008, p. 18), led in any case to unity by the serial frame that contains everything.

Figure 5
Urban interiors
and domestic
landscapes find
new expressions
inside the
“building-as-city”
designed by Le
Corbusier in the
landscape of
Algiers (Collage by
author)



Le Corbusier himself explains this kind of façade:

The living-room is open to the sun, the space, and the greenery by means of a loggia which is really a brise-soleil, a portico, such as Socrates advocates. ... This portico, this loggia, this brise-soleil links modern architecture with the most ancient traditions. (Le Corbusier, 1999b, p. 95)

The Corbusian façade is a loggia and a portico, both elements and terms traditionally related to the street and its life. The street as “public room par excellence” (Vidler, 1986, p. 42), where the lives of the citizens unfold and public activities take place, is now inside the building. In these projects, the street is now building and city at the same time and does have this variegated façade open towards the natural elements of the landscape. Infrastructure, city, residence and landscape are now contained in unitary design action. Urban interiors and domestic landscapes find new expressions inside the building and inside its inhabited façade.

Conclusion: Towards a New Urban Interior

The main purpose of my investigation is to demonstrate, in Le Corbusier’s work and theoretical research, the importance of considering strongly interwoven the two scales of the act of design of our domestic and urban environment. “Architecture in everything, city planning in everything” is the phrase that summarises his idea. The purpose of architecture, for Le Corbusier, is to design interiors that would create a new environment. After a strong critique of the condition of the traditional city, that he considered dangerous, unhealthy and ugly, his projects proposed radical architectural and urban models, where all the domestic and urban functions overlap in new residential types inserted in the landscape.

His theory, as is well known, has been brought to critical consequences by Modernist urban planning (Jacobs, 1961; Gehl, 2010). This failure to address the domestic in relation to the urban is certainly related to the disciplinary and professional separation of urban and architectural design. Architects and theoretician tried to surpass this dichotomy, reconsidering to some extent the Corbusian reflections. For Aldo Van Eyck what the designer needs to achieve is “the dwelling and its extension into the exterior, the city and its extension into the interior” (Van Eyck, 1956, p. 133). Aldo Rossi, in all his works, showed the comparison between the form of the house and the form of the city, believing in the principle of the projection of the “urban universe” inside the building. Through an “analogy and a continuous transition and filter between life of men in the city and

life of men in the public or private dwelling" (Rossi, 1980, p. 158), the corridor becomes a street, the courtyard is like an urban square.

At the same time, Le Corbusier's heritage is without a doubt present in the research of architects and theoreticians as Rem Koolhaas. The Corbusian speculations resonate, to some extent, in his theory of Bigness: "Bigness no longer needs the city; it represents the city; it preempts the city; or better still, it is the city" (Koolhaas & Mau, 1995, p. 515). In his project for the Jussieu Library in Paris, Koolhaas, applying this theory, pays a tribute to Le Corbusier when he explains that inside the building "the effect of the inhabited planes becomes almost that of a street; this boulevard generates a system of supra-programmatic 'urban' elements of the interior: plazas, parks, monumental staircases, cafes, shops" (Koolhaas & Mau, 1995, p. 1326).

We can also recognize the idea of bringing the components of the city inside architecture in the contemporary self-contained urban interiors, which consist in safe, insular, and exclusive realms that, ultimately, defy urbanity. Just to name a few, the types of the mall (Piper and Khamsi, 2014), of John Portman's hotel lobby (Rice, 2016; Marinic, 2018), of the Hong Kong public space made of interior connections between buildings (Blaisse, 2014), represent some of these introverted spaces. The precedents of these places could be certainly found in the arcades, the glasshouses, the enclosed rooms of panoramas, museums and casinos, the halls of factories and railway stations of the nineteenth-century city that Walter Benjamin investigated. As Georges Teyssot recently wrote, these are "large spaces that create vast interiors for the collective, ... they are all interior, ... they are containers of the world: they enclose the collective dream" (Teyssot, 2000, p. 92). But these urban components represent a powerful interchange between architecture and city, emphasizing the character, the experience, the theatricality of urbanity, and not, as said before, defying it.

The aim of my investigation is also related to the contemporary international reflections and studies on "urban interior" or "interior urbanism", that consider the interior (and the discipline of interior design and interior architecture) not only related to the architectural private realm of the building, but to a wider scenario that involves the public scale of the city and its environment, with a fruitful intersection of disciplines, theories and practices (Attiwill, 2011; Attiwill et al., 2015).

This intersection considers the new needs and issues generated by the transformation of the traditional system of public spaces in the contemporary city. Design and theory need to consider, nowadays, issues as the evolution of the multifunctional containers,

the modification of the relations space-time due to the consistent connection to the internet, the new interpretation of the spaces of work and leisure, and the consequent modification of social engagement (Montanari, 2013). These recent studies develop in a broader range the opportunities of theoretical reflections and practical intervention. In particular, they add to the Corbusian strategy of bringing the city and its component inside the building,⁷ that could involve fragments of landscape (Snyder, 2018), its inversion: bringing the interior components of the building outside, in the city; the sensibilities, techniques, instruments of interior design to the urban environment (Merwood-Salisbury & Coxhead, 2018).

At the end, we can see a common thread that links these recent speculations to the aforementioned reflections about the "house as a city" by Aldo Van Eyck and Aldo Rossi. And far away in time, to Leon Battista Alberti: "If (as the philosophers maintain) the city is like some large house, and the house is in turn like some small city, cannot the various parts of the house - atria, *xysti*, dining rooms, porticos, and so on - be considered miniature buildings?" (Alberti, 1988, p. 23).

This is the path towards a new urban interior: as Le Corbusier said, architecture (and its interiors) is in everything, city (and its interiors) is in everything.

References

- Alberti, L. B. (1988). *On the art of building in ten books*. (J. Rykwert, N. Leach, R. Tavernor, Trans.). Cambridge, MA, London: The MIT Press. (Original work published 1485)
- Attiwill, S. (2011). Urban and Interior: Techniques for an urban interiorist. In R. U. Hinkel (Ed.), *Urban interior: Informal explorations, interventions and occupations* (pp. 11-24). Bamberg: Spurbuchverlag.
- Attiwill, S., Giunta E. E., Fassi, D., Crespi, L., & Hermida, B. (2015). Urban+Interior. *IDEA Journal*, 2015, 2-11.
- Aymonino, C. (1977). *Lo studio dei fenomeni urbani*. Roma: Officina.

⁷ From a didactical standpoint, this strategy is efficiently applied by Robert Rengel. In his book *Shaping Interior Space*, he proposes a framework of design strategies for the interior inspired by the combination of the elements of urban imageability defined by Kevin Lynch and Christian Norberg-Schulz's elements of existential space. See Rengel (2003).

- Benevolo, L. (1963). *Le origini dell'urbanistica moderna*. Roma, Bari: Laterza.
- Benton, T. (2013). Marseille: Unité d'Habitation, or the company of clouds, the sky, or the stars. In J. L. Cohen (Ed.), *Le Corbusier. An atlas of modern landscapes* (pp. 201-211). London: Thames & Hudson.
- Blaisse, P. (2014). Into the wild. *MONU, Interior Urbanism*, 21.
- Brooks, H. A. (1985). Jeanneret e sitte: Le prime idee di Le Corbusier sulla costruzione della città. *Casabella*, 514.
- Caan, S. (2011). *Rethinking design and interiors: Human beings in the built environment*. London: Laurence King Publishing.
- Colomina, B. (1997). Where are we? In E. Blau & N. J. Troy (Eds.), *Architecture and cubism*. Cambridge, MA: The MIT Press/ Montréal: Canadian Centre for Architecture.
- Colquhoun, A. (1972). Displacement of concepts in Le Corbusier. *Architectural Design*, 4.
- Considerant, V. (1834). *Considérations sociales sur l'architecture*. Paris.
- Croset, P. A. (1987). Immeuble-villas: Les origines d'un type. In Lucan, J. (Ed.), *Le Corbusier: Une encyclopedie*. Paris: Centre Georges Pompidou.
- Duboy, P. (1987). L.C.B.N. 1.9.1.5. *Casabella*, 531-532.
- Engels, F. (1969). *The condition of the working class in England*. London: Panther Books. (Original work published 1845)
- Frampton, K. (1987). Le Corbusier's designs for the League of Nations, the Centrosoyus and the Palace of the Soviets, 1926-1931. In H.A. Brooks (Ed.), *Le Corbusier*. Princeton, NJ: Princeton University Press.
- Gehl, J. (2010). *City for people*. Washington DC: Island Press.
- Gerosa, P. G. (1978). *Le Corbusier: urbanisme et mobilité*. Basel, Stuttgart: Birkhäuser.
- Giedion, S. (1951). *Space, time and architecture*. Cambridge, MA: Harvard University Press. (Original work published 1941)
- Grassi, G. (1967). *La costruzione logica dell'architettura*. Venezia: Marsilio.

- Gregh, E. (1979). The Dom-ino idea. *Oppositions*, 15-16.
- Hénard, E. (1972). *Alle origini dell'urbanistica: la costruzione della metropoli*. D. Calabi & M. Folini (Eds.). Padova: Marsilio Editori.
- Hénard, E. (1982). *Études sur les transformations de Paris et autres écrits sur l'urbanisme*. Paris: L'Équerre.
- Jacobs, J. (1961). *The death and life of great American cities*. New York: Vintage Books.
- Koolhaas, R., & Mau, B. (1995). *S, M, L, XL*. New York: Monacelli Press.
- L'Art et la Réalité. L'Art et l'État. (1935). Paris: Société des Nations, Institut International de Coopération Intellectuelle.
- Laugier, M.A. (1977). *An essay on architecture*. Los Angeles: Hennessey & Ingalls. (Original work published 1753)
- Le Corbusier (1935). Les arts et la réalité contemporaine. In L'Art et la Réalité. L'Art et l'État (pp. 72-86). Paris: Société des Nations, Institut International de Coopération Intellectuelle
- Le Corbusier (1964). *The Radiant City: Elements of a doctrine of urbanism to be used as the basis of our machine-age civilization*. New York: The Orion Press. (Original work published 1933)
- Le Corbusier (1971). *The city of tomorrow and its planning*. Cambridge, MA: The MIT Press. (Original work published 1924)
- Le Corbusier (1981). *Le Corbusier Carnets, Volume 1, 1914-1948*. Milan: Electa.
- Le Corbusier (1986). *Towards a new architecture*. New York: Dover Publications. (Original work published 1923)
- Le Corbusier (1991). *Precisions on the present state of architecture and city planning*. Cambridge, MA: The MIT Press. (Original work published 1930)
- Le Corbusier (1999a). *Œuvre complète, Volume 1, 1910-1929*. Basel, Boston, Berlin: Birkhäuser. (Original work published 1929)
- Le Corbusier (1999b). *Œuvre complète, Volume 5, 1946-1952*. Basel, Boston, Berlin: Birkhäuser. (Original work published 1953)

- Loos, A. (1982). Potëmkin City. In *Spoken into the void: Collected essays 1897-1900*. Cambridge, MA: The MIT Press. (Original work published 1921)
- Lucan, J. (Ed.). (1987). *Le Corbusier. Une encyclopedie*. Paris: Centre Georges Pompidou.
- Marinic, G. (2018). Internal disconnect. Material memory in the John Portman originals. In G. Marinic (Ed.), *The interior architecture theory reader*. New York: Routledge.
- Merwood-Salisbury, J., & Coxhead, V. (2018). Exterior interiors: The urban living room and beyond. In D. Schneidermann & A. Campos (Eds.), *Interiors beyond architecture*. London, New York: Routledge.
- Monestiroli, A. (1979). *L'architettura della realtà*. Milano: Clup.
- Montanari, E. (2013). Il progetto degli interni urbani nella città contemporanea: nuove scene, strategie e figure. In F. Lanz (Ed.), *Lecture di interni*. Milano: FrancoAngeli.
- Petit, J. (1970). *Le Corbusier: Lui même*. Geneva: Edition Rousseau.
- Piper, M., & Khamsi, J. (2014). Endless architecture: Accidental manifestos. *MONU, Interior Urbanism*, 21.
- Rengel, R. (2003). *Shaping interior space*. New York: Fairchild Books.
- Rice, C. (2016). *Interior urbanism: Architecture, John Portman and Downtown America*. London: Bloomsbury.
- Romano, M. (2008). *La città come opera d'arte*. Torino: Einaudi.
- Rossi, A. (1966). *L'architettura della città*. Venezia: Marsilio
- Rossi, A. (1975). I caratteri urbani delle città venete. *Scritti scelti sull'architettura e la città 1956-1972*. Milano: Clup 1975.
- Rossi, A. (1980). In C. Aymonino, V. Gregotti, V. Pastor, G. Polesello, A. Rossi, L. Semerani, G. Valle (Eds.), *Progetto realizzato. Venezia: Marsilio Editori*.
- Rudofsky, B. (1969). *Streets for people: A primer for Americans*. New York: Anchor Press/Doubleday.
- Rüegg, A. (2013). Paris and the suburbs: Interior and landscape, contrasts and analogies. In J. L. Cohen (Ed.), *Le Corbusier. An atlas of modern landscapes* (pp. 268-273). London: Thames & Hudson.

- Rykwert, J. (1972). *On Adam's house in paradise: The idea of the primitive hut in architectural history*. New York: Museum of Modern Art.
- Samonà, A. (1985). I problemi della progettazione per la città. Le scale di progettazione e la unità di metodo. In G. Samonà (Ed.), *Teorie della progettazione architettonica* (pp. 101-120). Bari: Dedalo. (Original work published 1968)
- Samonà, S. (1967). *L'urbanistica e l'avvenire della città*. Bari: Laterza. (Original work published 1959)
- Shane, G. (1983). The street in the twentieth century. Three conferences: London (1910), Athens (1933), Hoddesdon (1951). *The Cornell Journal of Architecture*, 2, 20-41.
- Snyder, B. (2018). Interior landscapes. In D. Schneidermann and A. Campos (Eds.), *Interiors beyond architecture*. London, New York: Routledge.
- Tamborrino, R. (2003). Le Corbusier e gli spazi del contemporaneo. In Le Corbusier (2003). *Scritti* (pp. VII-LXXIII). Tamborrino, S. (Ed.), Torino: Einaudi.
- Tamborrino, R. (2005). *Parigi nell'Ottocento. Cultura architettonica e città*. Venice: Marsilio.
- Teyssot, G. (2000). Thresholds and folds: Issues of interiority. *Casabella*, 681.
- Turner, P. V. (1977). *The education of Le Corbusier*. New York: Garland Publishing.
- van Eyck, A. (1956). Over binnen - en buitenruimte. *Forum*, 11(5).
- Vidler, A. (1986). The scenes of the street: Transformations in ideal and reality, 1750-1871. In S. Anderson (Ed.), *On streets*. Cambridge, MA: The MIT Press.
- von Moos, S. (1982). *Le Corbusier: Elements of a synthesis*. Cambridge, MA: The MIT Press. (Original work published 1968)
- Wolf, P. M. (1968). *Eugène Hénard and the beginning of urbanism in Paris, 1900-1914*. Paris: Centre de Recherche d'Urbanisme.