Densification Through A Revisited Urban Form Of The Modern:
Swiss Residential Complexes of Triangular Morphologies

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Abstract

In the urban environment of Zurich a series of urban transformation programs set in place during the last fifteen years illustrate an active political will operating in close collaboration with not-for-profit housing promoters. Among the State’s primary objectives has been controlling the phenomenon of urban sprawling, densifying and reviving certain urban districts. Residential architecture has been systematically promoted; new complexes serve as condensing nucleuses in the city’s urban life. New solutions, both in the urban scale as in that of the unit have been consistently sought through the organization of numerous housing competitions promoting the quality of architectural design.

In this background, a series of specific case studies issued from competitions in Zurich and in other urban complexes that follow the same interventional model, have been for several architectural teams the occasion to revisit design patterns of the modern. This article proposes to examine in detail a contemporary design approach to the cloverleaf (or star-shaped) plan and to triangular urban morphologies, associated in the after war period with large-scale residential projects mainly of elevated building height (Y-towers).

Keywords: residential blocks, triangular morphology, plastic geometry.

Introduction, contemporary changes in Switzerland’s urban agglomerations

Zurich, the largest Swiss agglomeration, is during the last decade, the most characteristic example of initiatives taken mostly in communal level, in various parts of Switzerland and in order to afront an important housing shortage (0.2% the lowest ratio in 2009 recorded in the canton of Geneva), control market prices and urban sprawling phenomena. Over 13’000 housing units were constructed in the city of Zurich between 1998 and 2008, thanks to two significant legislative frameworks, “10’000 apartments in 10 years” (1998-2008) and “Housing for all” (2002-2006); construction rhythms were increased by almost 30% in relation with the mid-nineties. The city’s administration aimed specifically to increasing the number of big apartments (large number of families with children were leaving the immediate city perimeter to move into the suburban periphery, where more spacious units on affordable prices could be found) and to constructing also smaller apartments for young or elderly people living alone, as well as for special groups of users lacking the means of paying for a larger unit.

To answer immediate and pressing needs in the housing sector it was decided to search for new solutions, in terms of urban forms and housing typologies, and in general promote the quality of housing conditions offered to the population. Zurich along with Basel and Bern has followed since the
end of the 19th century a policy of reserving lands for the future development of urbanized territories, with the hope of preserving a certain control onto the real estate market and to speculative tendencies. This measure has also been adopted as a reaction to the lack of coherent politics regarding the housing market, on federal level. Through Switzerland’s history, the housing sector has been almost entirely left to the private initiative. In 1998, the greater potential for construction of new units in Zurich (either by densifying the existing tissue, or by reconstructing existing ensembles – modifications of plans or extensions in height) remained with private developers, followed by cooperative construction societies. Land reserves, often in disused urban or suburban zones, became therefore an obvious means for pressure over housing investors, most of all for those with not-for-profit activity and with a strong link to State aids, as cooperative societies of construction. For to lease land to such kind of investors, the condition of organizing architectural competitions, considered as a guarantee to projects of better quality was imposed. A significant number of competitions have therefore seen the light, mainly in the German part of Switzerland, during the last fifteen years.

In Zurich, since 1996 the change of the political scenery gave way to a general change of policies regarding urban planning. Long years of unfruitful discussions and reluctant politicians have been succeeded by a clear and decisive will to change the way the built environment is produced. The dialogue between various interested parts – citizen associations, land owners, financial investors, politicians, and press was restored. For to achieve a wider consensus, decisions for concrete solutions should be taken on objective, to the best possible degree, grounds. Architectural competitions seemed an appropriate response to this demanding framework. It became standard procedure to organise idea competitions for to define the general design principles in large urban sectors that were followed up usually by project competitions aiming to the production of housing units in parts of this same area, setting and filling up concretely a new urban canvas receptive to further changes. Publicity around competitive procedures further allowed for generalised discussions to take place.

In the majority of competition briefs, produced in Zurich or in other parts of Switzerland following the same interventional model and sometimes directly influenced by the operational modes adopted by its state services, “optimal, innovative apartments” were usually one of the primary objectives; the term figured along with the mentioned need for “quality and up-to-date urban, architectural and exterior space solutions within new constructions’ that referred mostly to the urban scale of the planned interventions and the housing complexes as wholes. Innovation appeared associated also with the subject of densification, presented on the Swiss ground, of supposedly limited constructible surface, as a sustainable solution to long-term urban development. Experimentation and change have come to be implied by standard competition procedures and the publicity around them. The produced range of architectural solutions – admittedly mostly in relation with urban forms – remains impressive and propitious to various typo-morphological studies that reveal central investigation lines in contemporary Swiss architectural conception.

**Urban forms of triangular morphology, a new version of plastic geometry**

Here we will deal with urban forms of an unusual geometry: the triangular morphology, in plan and volumetric expression, to which the group of projects to be discussed answers, is not a very common one, although I will present a brief historical retrospective that reveals several examples of its use, at specific moments of collective housing’s evolution, in Switzerland and internationally. I will then analyse a group of six projects, produced in the framework of various, quite recent competitions, all dating from 2005. These belong generically to the category of point houses that include a grand number of contemporary residential proposals and feature well-known characteristics, a number of which I list here: reduced land print, compactness of the constructed mass that allows minimising vertical and horizontal common circulation surfaces and construction costs, differentiated views of the exterior spaces of the whole as well as of the separate housing units, multiple orientations and advantageous conditions of natural lighting and ventilation for the apartments. Nevertheless, the triangular form seems quite “unexpected” and presents certain particularities in comparison with the parallelepiped prisms or with articulated geometrical forms to which the majority
of blocks corresponds. The triangle is a form that we could easily picture as relatively rigid, at least with respect to the arrangement of the units’ interior spaces and the produced oblique angles. Its choice as generic form of these blocks’ plan reveals on the authors’ part a certain fascination for a geometry-oriented conceptual design process. What incites the architects to adopt this kind of morphology? Is it really as inflexible, concerning the sub-division of the typical floor and the internal distribution of the units, as one could easily imagine? Which are the “transformation” techniques and “mutation” logics to which the projects’ authors appeal, to soften the austerity of this particular geometry in plan and in its volumetric interpretation? Are there advantages gained by their choice regarding the assemblage and arrangement of point houses in complexes, and with respect to their three-dimensional expression? To what urban-morphological concerns do they respond?

Figure 1. Sullivan, *A System of Architectural Ornament*, detail of plate n. 3

**Reperatory of forms and some theoretical thoughts on geometry in general and on triangular geometry in particular**

The plans of the projects analysed here are characterised by equilateral and, in one case, scalene triangular geometry. The typical floor plan however is not usually expressed as a pure geometrical form. Rather in most cases the floor plans take the form of modified versions of the triangle. This occurs because of “transformations” applied to its contour such as chamfered, rounded or accentuated angles, contortion of sides. The latter may dilate towards the external or shrink towards the internal area of the plan, or even be combined with amplified angles turning into separate building branches. They thus resemble the famous star or cloverleaf plan (in French *plan en étoile*, see Marchand 2000, in German *Sternhaus*, see Roth 1949) or may even engender, by means of their curved outlines, more organic volumetric expressions; judging from the range of the presented here architectural proposals, these mutations make evident the initial geometry’s unsuspected potential.

Several masters of the modern have pointed out particular morphological traits associated with the use of pure or “mutated” geometric forms. Frank Lloyd Wright refers to geometry in general, and to triangular geometry in particular, already in 1912 in a text entitled “The Japanese Print: An Interpretation”, where he underlines its symbolic value to human structures: “Geometry is the grammar, so to speak, of the form. It is its architectural principle. But there is a psychic correlation between the geometry of form and our associated ideas, which constitutes its symbolic value. There resides a certain “spell-power” in any geometric form which seems more or less a mystery, and is, as we say the soul of the thing. [...] certain geometric forms have come to symbolize for us and potently to suggest certain human ideas, moods, and sentiments - as for instance: the circle, infinity; the triangle, structural unity; the spire, aspiration; the spiral, organic progress; the square, integrity.” (Pfeiffer 2008). While Wright evokes the question of structural unity in relation with the triangle, Louis Sullivan, his liebemeister, insists on the dynamic character of the form.
In the beginning of the nineteen twenties and in his work *A System of Architectural Ornament, According with a Philosophy of Man’s Powers* (1922), Sullivan formulated his concept of plastic geometry. In a plate called “The Inorganic: Manipulation of forms in plane-geometry - Mobile geometry” (n. 3) he explained the potential transformations of “basic elemental” forms inscribed in the circle – “the circle is assumed to be the Primal Form”, such as the equilateral triangle, the square and regular polygons towards more “fluid” expressions: “Technically, as an item in the progress of our demonstration, the above forms, rigid in their quality, are to be considered, in our philosophy, as containers of radical energy: Extensive and Intensive. That is to say: Extension of form along lines or axes radiating from the center and (or) Intention of form along the same or other radials from the periphery toward the Center. Here then appears the will of man to cause the Inorganic and Rigid to become Fluent through his powers. Note also that we assume energy to be resident in the Periphery and that all lines are Energy-lines. This may be called Plastic Geometry”. I argue here that even if Sullivan’s principles refer mostly to compositions of two dimensions (see also plate n. 2 of the same work and his concept of Morphology, where he deals with forms of simple leaves and plants), they fit well also to the contemporary residential blocks constituting our case study: extension or intention, depending on the modifications applied in the triangle’s contour, leading to centripetal or centrifugal forms and to polygonal or star versions of the original geometry. A, to-the-letter interpretation of Sullivan’s drawings is not though our aim; we will offer later in this text a rough taxonomy of the projects according to his logic, with the intention to further support one of our basic arguments; this geometry’s potential as to producing even greater variety. Sullivan’s work is used as a reference on the basis of his transformative logic that allows rigid, austere geometrical forms to become organic paradigms.

**Triangular morphology: a retrospective**

The triangular morphology, while not so common in general, can be found in the history of twentieth century architecture, related to various uses. It is interesting to note that it is in some cases, dictated by the form of the construction plot, as in the example of the Flatiron building in New York, by Daniel Burnham & co. (1901-1903) or in the case of buildings known in Switzerland under the term of pointu. Several of Mies van der Rohe’s proposals for the Friedrichstrasse office building competition (1932) are also based on geometrical modifications of the triangle and feature a rigorous compositional logic, modelling the building’s main mass around a central spine / structural core. The organic expression of the cloverleaf plan that Mies proposes in one of these projects will not be incorporated in residential architecture till well after the World War II when Schipporeit & Heinrich, two of his students, use it for the construction of Lake Point Tower by the shore of the lake Michigan in Chicago (1965-1968). They used for the façade a curtain wall which followed a curved trail, creating a sort of envelope in motion for this sixty-five storey building. Most important, the cloverleaf plan excludes undesirable vis-à-vis between neighbours of adjacent units and guarantees lake views to the majority of the flats.

Figure 2. Lake Point Tower, typical floor plan and model photo of the architects’ original proposal
Wright associates the triangle with the idea of the skyscraper as a free-standing, architectural object. He writes in relation with St. Mark’s-in-the-Bouwerie, in downtown New York City: “This skyscraper planned to stand free in an urban park and thus fit for human occupancy, is as nearly organic as steel in tension and concrete in compression can make it… A one-two triangle is employed, because it allows flexibility of arrangement for human movement not afforded by the rectangle. The apparently irregular shapes of the rooms would not appear irregular in reality; all would have great repose because all are not only properly in proportion to the human figure but to the figure made by the whole building.” St. Mark’s unrealized project for an apartment complex of four cantilever towers, serves as reference for the nineteen story-high Price tower (1952-56), the only skyscraper completed by the architect and his famous “tree that escaped the crowded forest”. Bruno Zevi quotes Vincent Scully’s commentary in relation with St. Mark’s project: “La St. Mark’s Tower che emerge con lo splendore di un gioiello dal periodo più tormentato dell’attività creativa di Wright, comunica il modo con cui egli intendeva rievocare astrattamente le forme organiche della natura.”

(Zevi 1979)

In Switzerland, projects of residential buildings adopting the cloverleaf plan and featuring an elevated height were built mostly in the German-speaking region and date from the nineteen fifties. They were linked to the idea of the green city and were influenced by Scandinavian realisations of the immediate after-war period which aimed at a maximum use of land; as, for example, Sven Backström and Leif Reinius’s Akterspegel housing development (Stockholm, 1944-46). In this case the cloverleaf plan was adopted equally for isolated buildings and for larger cluster forms. Characteristic of this era’s mentality and this period’s research for an optimal use of land for residential constructions is the comparison that the authors establish with a “conventional” site plan of parallel slabs of an 8.50 m width and an interstitial distance of 20 m. The “star-house” plan represents 15% saving in terms of land use, while allowing for the houses’ entrances to be placed in shorter distances from the main street. Another advantage of the “star” plan in relation with the typical longitudinal floor plan of a slab building, is that in the first case, one staircase serves each time three apartments per floor – every apartment normally corresponding to one aisle of the star – whereas, only two double-aspect apartments are normally served by each staircase of the second case. In the Akterspegel development, the building height remains limited to three floors for the cluster continuums and to four floors for the detached houses; in the latter, two duplex units are accommodated in every star aisle, above the ground floor.

Figure 3. Akterspegel ensemble, Stockholm, floor plan and aerial view of the “clustered” star houses

Scandinavian projects of this period were published in Switzerland by Werk journal (for example, the Akterspegel Siedlung was published in 1949). In the Zurich area, there are two projects that resemble them worth mentioning: Karl Egender and Wilhelm Müller’s twelve-story building, part of a housing development constructed by the cooperative construction society Im Gut during the period 1949-55, and the City Architect Alfred Steiner’s eleven-story tower for the Heiligfeld housing development, in
the Letzigraben district (1954-55). Unlike the Akterspegel example, both Swiss projects display staircases attached to the building’s perimeter which let in laterally the natural daylight. In the Im Gut example the staircase is rectangular, fixed at the central articulation point, while Steiner arranges the staircase clearly in the part of the plan he considers as the least advantageous: the northern concave angle between the east and west wings.

Figure 4. Floor plan of the Heiligfeld ensemble

Every star aisle is normally attributed to one sole apartment, although this compartmentalization of the typical floor plan is questioned by the Swiss examples, probably with more success in Steiner’s towers. In this case, the star’s south wing, longer than the other two, is divided in two identical units, with their rooms arranged in linear sequences along the branch’s length. Two other significant differences with the Scandinavian model with regards to the organization of the typical floor, seem to confirm the rigorous modern principles and hygienic concerns of the Swiss architects. While Backström and Reinius arrange at every aisle’s symphysis and close to the central articulation triangle a zone of service modules (kitchen / bathroom / storage), in the Swiss examples, south exposure is not to be wasted to service areas; rooms of principal uses, in the south part of the eastern and western wing reach the articulation point, bathrooms and kitchens take up their place to the northern part of these branches. In the Swedish example, balconies follow the course of the sun and, in the detached houses the aisles’ longitudinal axes, subsequently oriented towards various points. In the Swiss cases, balconies and loggias take place exclusively facing south.

In France, the star plan is associated to the politics of the grands ensembles that flourished during the nineteen fifties and sixties, integrating construction techniques and experimentations already conducted during the forties. The star plan’s logic and its structural compactness suited prefabrication methods, intended to intensify housing construction in a period of serious shortage. Star-shaped – or else Y-formed – high-rise buildings are built, according more or less the same construction technique: in situ casting, in the first place, of the triangular core of vertical distribution allowing rapidly access to workers and materials for completing the aisles with prefabricated concrete modules, and in situ casting also of horizontal elements – the slabs. Representative examples can be found in the periphery of Paris, in the district of Bobigny (1955-1960) and in the Meaux-Beauval ZUP (Zones à Urbaniser en Priorité – first phase of construction in 1963, see Lucan and Seyler, 1985).
It is perhaps through France, and the opening that the Soviet leader Nikita Khruchtchev made towards USA and France in the end of the fifties for a typical home unit of the Soviet proletariat (Dumont 1996), that experimentations of this kind are to be found also in the Russian architecture of the sixties. The concrete prefabrication methods applied to large-scale projects of the French construction market found fertile grounds in the construction of millions of housing units in the Soviet Union, a country lacking at the time, skilled construction labour. I will comment two examples published in a special issue of *L'architecture d'aujourd'hui* n. 147 designed by the architect G. Gradov and corresponding to triangular or star towers. These two cases represent to the clearest way the construction logic reigning in the country during that period, related most of all with the abolishment of distinct boundaries (as traditionally perceived) between the city and the country, and the concentration of the construction activity to buildings of elevated height, minimising land footprints and mixing natural landscapes with urbanised areas.

The first example is a project of several housing towers destined to accommodate 10’000 inhabitants – expression of the modern idea of the skyscraper in the park – in the form of a star with three aisles that follow the direction of the central triangular nucleus’s sides. A central corridor in every wing extending to its entire length serves the apartments placed on either side in linear sequences. The second case is a “neighbourhood unit” (“Neighbourhood unit” is the English term (“unité de voisinage” in French, “mikrorayon” in Russian, “unidades vecinales” in Spanish – typical housing sectors that include a range of public uses and services, see also Moley 2006) for 6’000 inhabitants comprising two residential 90-story towers in the form of equilateral triangles facing symmetrically one-another. This example, including a smaller number of units per floor is more interesting in relation with the contemporary competition projects that we will study in this chapter. Each side of the triangle incorporates four or five apartments, whose entrances are located in a corridor surrounding the vertical access area. Apartments situated in the middle of each side’s sequence are unilaterally oriented. In the angles of the triangle, an important change occurs; it seems as the especially advantageous – as to views and the potential for multilateral orientation – position of the volume’s extremity, is taken seriously into consideration by granting this area to one sole unit. Apartments in the triangle’s extremities are therefore clearly distinguished from the others, and benefit from an exterior space located in the angle, a loggia that is ultimately dematerialising the edge of the tower in terms of its exterior aspect.

The examples presented so far, evoke two major characteristics concerning the triangular or star plan: it has often been related to constructions of elevated height favoured by the plan’s compactness. On the other hand, these forms have been associated to the “isolated” high-rise house and the question of constructions standing freely as sculptural objects in the natural landscape treated majorly by another master of the organic in the composition of two residential high-rise buildings, the only ones he ever designed (Wright and St. Mark’s project / Price Tower).
The examples that are going to be examined in the following, with the exception of the high-rise building by the architects Burkhalter and Sumi, answer to limited construction heights that do not normally exceed seven or eight floors. One point that clearly distinguishes them from their historical precedents is the organisation logic of the site plan, resulting from their relatively smaller scale; the same form is repeated in a number of buildings creating a complex; it is no more question of a unique architectural object. Triangles and stars are disposed in the plots much like other medium-sized blocks of flats in regular or less ordinary patterns; still, are there any particular characteristics concerning these site arrangements?

The Triangle and the Organic

We have previously talked of Sullivan’s and Wright’s work in relation with the subject of the generic geometry of the plan and its mutations, implying this issue’s connection to an organic plan. There is an interesting question regarding the link between geometry and organic architecture, and American architects have played an important role to the subject. John Sergeant points out that “American organic architecture has always made use of geometric planning grids” and evokes the theoretical background of Sullivan and Wright in the face of Herbert Spencer and his belief that “crystalline organisation underlay the structure of all matter.” (Sergeant 1978) He talks of “a process of accretion” that “implies geometric structure” and has been adopted by organic architecture that is based on growth and continuity. Sergeant analyses Bruce Goff’s case, one of Wright’s disciples and most fervent admirer. Despite the grotesque aspect of Goff’s work – Jencks refers to him as “The Michelangelo of Kitch”– there are some elements of his architectural language, characterised by his “obsession with geometric themes and ornamentalised geometry” (Jencks 1978), worth mentioning in our present analysis. Goff, a unique personage in the course of popular American architecture of the 20th century, collaborated with Wright to the realisation of his Price Tower and designed a studio for Joe Price, son of the homonymous Tower’s proprietor. He was the only person to use the duplex triangular unit of the Price Tower, as both office and apartment, as it was originally designed.

Goff, whose unique metaphoric language is also paralleled by Jencks with Gaudi’s architecture, built a number of private houses based on triangular plans – one of the most representatives the Gutman House (1958) that Sergeant compares to Wright’s Sundt project (1941) – or on other crystalline or curvilinear plan types, according to an elemental categorisation, established by the same scholar. But every time the final outcome is completely distinct: “From these generic plan types spring a whole family of building forms, all strictly geometrised” (Sergeant 1978). This is not only due on the use of different materials – Goff cedes during the war to the aesthetics of “as-found” materials – but mostly because of the three-dimensional expression of the triangle, its form in space: “The geometry of the same plan-type may be expressed in many different forms.” (Sergeant 1978) His geometry is described as “frozen”, “explicit” and “static”. But the fact remains that the final expression of the project is diversified through the process of accretion linking his work to an organic architectural perception. The centrality and inwardness stemming from his strict geometry, as well as the easily-readable hierarchy of the plan are characteristics worth investigating in relation with contemporary manipulations of the triangular or star geometry.

Goff adopts Wright’s triagrid or hex-triagrid in some of his plans and offers an extreme – as his architecture remains strictly personal – example of the link between geometrically based, organic conception. The same issue has been examined in relation with Swiss architecture and the question of Swiss architects’ influence by their American colleagues, in the case for example, of the hexagonal – although star-shaped if referring to the main floor mass and excepting the rhombus-shaped balconies – Fanghöfli tower, designed by the architect J. Gasser in Lucerne (1960-1961). Gasser’s tower presents significant differences with Wright’s Price tower (Marchand 2000), as to the materialisation of the tree’s organic metaphor, but handles essentially, the same question of a geometrically generated organic architectural expression, that Sergeant explains by “the concrete nature of building materials”. Are there implications of the same question in the contemporary Swiss examples grouped here? We will return to this question in the final discussion of this chapter. A detailed comparative analysis of these examples’ principal features is first due.
Morphological and spatial characteristics of the forms

A rough categorization according to Sullivan’s “plastic” logic can serve as initiation to the study of the primary aspects of the analysed here morphology. More specifically the logic in the project of the architects Frei & Gubler for the Rautistrasse competition in Zurich (2005), can be understood as an extension transformative process, applied onto the original equilateral triangle; the architects use the characteristic motto “EXPANDING” for their proposal. The geometric concept generating the project by Diener & Diener for the competition in Zurich-Schwamendingen (2007), and for a4D architects’ design for the competition in Johannes-Hirt-Strasse, Wädenswil (2008), can be seen as exemplifying the transforming process of intention. These two proposals can also be associated with the “manipulation of the organic” illustrated on Sullivan’s second plate as they both offer different versions of the cloverleaf plan. This subcategory incorporates some special characteristics, of which the most important one is a morphological fluidity inherent in organic expressions. The “freer treatment of the hexagon” found on the third plate of Sullivan’s study presents resemblances to the almost deconstructive logic illustrated by HHF architects’ proposition for the Laubiweg competition (Zurich, 2008), a project that distances itself from the rest of the group with a total deformation of the form’s perimeter and the addition of new parts to the extension of the form’s sub-axes.

The majority of the projects here presented refer to relatively moderate construction heights. The Laubiweg and Wipkingen projects illustrate seven or eight-storey high blocks as a result of the significant slope of their plots’ topographies. The Burkhalter & Sumi’s project for the competition at Pratteln, higher than the rest of the group’s blocks, constitutes a special case since it has a multi-functional character: twelve triangular residential stories are generated by the bisection of a rhombus-shaped, four-storey basis attributed to office uses. The height of the blocks in the Johannes-Hirt-Strasse project by a4D architects is reminiscent of the scale of multi-family houses: four cloverleaf-shaped levels of curved outline produce a similar spatial effect – a certain “blurring” of the blocks’ edges and a “softening” of the triangular geometrical archetype – as the rounded angles of Burkhalter & Sumi’s residential “tower”.

Figure 6. Perspectives of the Frei & Gubler and Burkhalter & Sumi projects

POOL architects adopt more or less the same solution for their own equilateral triangle’s edges, by emptying the building’s mass in the angles and placing loggias for the respective apartments there. Incidentally, their last floor’s plan is particularly evocative with regards to the concept of associating the star to the cloverleaf plan, on the basis of their generic geometry: it seems to have been created by the intersection of two triangles with chamfered edges: the one corresponding to the typical floor’s plan and its inverted copy. Regarding Frei & Gubler’s block, the generic form of the equilateral triangle is most clearly seen in the building’s central core, where the plastic transformation of the original geometry creates finally a non-equilateral, hexagonal plan. Buildings of this category propose attic floors of reduced surface attributed to one or two more spacious apartments taking full advantage of the best views; here they follow the example of many residential constructions classified under the type of the point house. Frei & Gubler propose a special treatment of the attic level: they reduce the
last floor to almost one third of a typical floor’s surface, in order to create a spacious terrace with panoramic views for collective use.

Figure 7. Apartment repartition in the typical and attic floors, a4D project

To what concerns the rest of the volumetric expression of this category’s buildings, particularly the ground floor apartments and the way the blocks are “posed” on the ground, in most cases the typical floors’ perimeter is identically repeated in the level of the main entrance. The Johannes-Hirt-Strasse housing development constitutes a case apart; the cloverleaf form corresponds in fact solely to the continuous balcony’s trail. The principal mass of the building is materialised on the basis of a “hybrid” plan, a synthesis of an equilateral triangle and a three-aisled star whose extreme points almost “touch” the curved perimeter of the balcony. Consequently, the ground level’s surface is reduced to the footprint of the “closed” volume, while the plan of the attic is unexpectedly transformed to a recessed version of the balcony’s outline, coupled by a slightly overhanging porch adopting the same form. Finally and as already pointed out, the Laubiweg project by HHF architects is a special case on its own; its particularity reposes also on the fact that different parts of each façade detach from the main volume’s outline, conferring thus a much less “disciplined” aspect to the whole.

Constitution of urban space, access and exterior spaces’ arrangement

The six projects examined here represent a wide range of possibilities as to urban spaces of different qualities, at the level of the entire city’s tissue, as well as for the collective spaces of each complex itself. The Pratteln project by Burkhalter & Sumi – parallel study commissions with seven invited architectural bureaus (2007) – is the only case where we deal with one single triangular house, making part of a multifunctional complex. It seems also to be the only example, where the form could be partially considered as generated by the plot’s contour. Pratteln is a small community near Basel. The parcel in question is located right next to the railway station plaza, to the south. The area has already been the object of several private and state intervention schemes, in order to be transformed from a mere circulation nexus, to a new urban centre between the industrial zone to the north of the rail track, and the main part of the community to the south. A competition for redesigning the square has been organised in 2005 and the plan of the district is going to be the object of revision, after the completion of this tender procedure. Along the south side of the railway track, the neighbourhood’s land-use plan proposes a three-storey high building of considerable length (125 m). The plot in question is part of an area containing already a parking lot. Half of its surface will be occupied by a new building complex composed by two complimentary parts: a five-storey building in the form of an inverse L, with mixed commercial (ground floor) and residential (upper levels) use, and a curved, three-storey apartment building boarding the street to the south of the plot. The parcel is of rectangular shape, opposite to a five-storey building, on the other (east) side of Bahnhofstrasse that connects the railway plaza with the heart of the agglomeration.
The authors of the project try to make maximum use of the grounds by planning a four-storey base of extended surface destined to host the offices included in the competition’s program. The regular rhombus of the building’s basis is slightly deformed to leave sufficient free space to the east and the west, for generous access openings towards Bahnhofstrasse and towards the large complex (to be constructed) to the west. At the same time, the importance of the plot’s southeast angle, at the intersection of boarding streets, is asserted by the rhombus’s angle, protruding to that spot. The choice of the basis’ form makes the triangular shape of the apartment floors seem natural and unforced. It also allows for an additional advantage regarding the disposition of the apartments in the interior of the plan. The triangle’s sides step back with regards to the plot’s limits and are thus partially isolated from car circulation noises. At the same time the disadvantageous north orientation of one of the triangle’s sides is attenuated by the interior organisational logic of the project and the typical floor’s division in apartments.

Figure 8. Site plan of the Burkhalter & Sumi project

To what concerns the rest of the projects and their site plans, two of them correspond to the rather common solution – in the category of point houses – of staggered rows. POOL architects’ proposal was submitted to a parallel study commissions’ procedure, conducted with the participation of ten invited architectural firms, for a residential colony at Breitenstein- / Hänggerstrasse / Im Sydefädeli in Zurich-Wipkingen (2006). It aimed to the reconstruction of three distinct plots in a relatively central district of Zurich, in a zone where the coefficient of utilization reaches the 90% as well as the imposed housing percentage. The already existing, 129 housing units, correspond to mostly to small (of 2 or 3-room) flats characterised by relatively small surfaces. The new buildings can be a lot denser; as a general rule three storeys with an attic and a basement are allowed, but for more complex developments – as the one concerned by this procedure – it is possible to attain a higher construction height, if maximum utilisation of the grounds is not applied.

POOL architects were recommended for a continuation of their study that featured six triangular blocks of seven floors each, in the larger plot of the group. Buildings are posed symmetrically on both sides of a central interior access level extending to the whole of the plot’s length and assuming the role of the complex’s main open space. We find there arranged all pedestrian entrances while most of the resting surfaces are planted. Open-air ramps and staircases take the users from the central space to lateral areas, left more or less to their natural state, an easy solution for the architects to deal with the plot’s slope. Most of pedestrian circulation is thus drained to a central intermediate level that further emphasizes on the strong identity of the complex in the neighbourhood’s tissue. Their intention to reinforce the image of the ensemble in this part of the competition’s perimeter, as well as the much smaller surface of the other parts, whose larger side is the one boarding the biased Hänggerstrasse and could not easily host triangular forms, are probably the reasons that the project’s authors decided not to adopt the same building type in all parts of the project. Instead, small longitudinal four-storey houses that can blend easily with the neighbourhood’s context are proposed for the other two plots.

At
the same time, with the underground garage’s entrance to the east and its organisation in a similar way – a central access route, on both sides of which are arranged the parking spaces – the concept reveals itself coherent on all levels, and allows for higher vegetation in the rest of the grounds.

Figure 9. Site plans of the POOL and the a4D projects

The second project featuring a staggered, although of completely different logic, disposition of the housing blocks, is the one designed by a4D architects for the parallel studies procedure – five participating bureaus in total – of the housing development “Johannes-Hirt-Strasse” in Wädenswil (2008), organized by Allreal Generalunternehmung. Wädenswil is a community of the Greater Zurich at the southern shore of Zurich’s lake. The plot in question is one of the larger land reserves of the community, with a view to the lake. The investor aimed to a maximum use of the grounds. a4D is a young architectural firm, whose structure has been enlarged in a short period of time by commissions of quite a few housing projects. In this case, house rows are in a way “camouflaged” by a mesh of pedestrian pathways applied on the trapezoidal grounds. To the northwest, a lane of the plot is left to two-storey, semi-detached maisonettes that benefit from a superb view to the lake. The pedestrian pathway’s mesh seems to be created on the main purpose of delimitating every building’s open space. That way the complex’s unity is confirmed by the repetition of the singular form but on the other hand every fragment’s autonomy is emphasized in the exterior spaces arrangement. The amoebaan-like, according to the jury’s description, apartment houses, seem to grow from the grounds as mushrooms scattered in the field, while the mesh’s nods are marked by trees, partly hiding the buildings’ entrances from the main street to the south. Perhaps for the same reason – to exclude direct views to the houses’ entrances – an alley is designed along the whole parcel’s length to that part of the perimeter. The underground parking organisation corresponds to three plateaus grouping each time the parking spaces corresponding to two separate building rows. It is accessible by an entrance to the south-eastern angle of the plot while a second ramp to the south-western corner, leads to a separate section corresponding to a cloverleaf house and a semi-detached one. Although the organic expression of the complex’s open spaces, emphasizing on the cloverleaf house’s form, is not really in accordance with the more rigid row of the smaller houses that completes the proposed types to the north, the reduced height of these last – their ground level is a level lower than the rest of the houses – guarantees unobstructed views for the whole complex.

Double-aspect, transversal exterior spaces, opening up the ensemble to its surroundings and allowing diagonal views from various spots, are equally the main idea of the Frei & Gubler proposal for the Rautistrasse competition. This was organised in the city of Zurich in 2005 for the densification of a plot in the Altstetten area, located near the Eichböhl cemetery and the Uetliberg woods. The existing 44 housing units, constructed in the immediate post-war years, were to be replaced by 80 to 100 flats destined to small households or families. The city’s administration is interested in producing housing for a variety of user groups, in the framework of the program 10’000 Apartments in 10 Years and Housing for All. The Altstetten district is characterised by a certain heterogeneity with small family houses and “denser” cooperative housing complexes in near vicinity. Frei & Gubler’s proposal is
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particular in relation with the already analysed examples. The positioning of the blocks seems in that case quite random, not only for the varying distances between the complex’s buildings but also because of their rotation in relation with one another, in a way that entrances give always onto the collective space in the middle, allowing for green areas around the rest of each building’s perimeter. Nevertheless, no two entrances are facing one another, which makes wonder as to the future collective life of the designed spaces. The underground parking is organised in the plot’s northern border being accessible by the less charged with traffic, street, to the west. Four separate pedestrian access points, are traced by the complex’s paved pathway grid, three towards the south and one more on the reduced length side, to the east of the trapezoidal plot. Despite their considerable volume, the houses’ somewhat fortuitous arrangement – as carelessly thrown pebbles scattered in the grounds – reinterprets the surrounding tissue’s heterogeneity and facilitates the complex’s implementation.

Figure 10. Site plans of the Frei & Gubler and Diener & Diener projects

This is almost the case also with Diener & Diener’s project. Nevertheless, their star houses are less voluminous in relation with the context and their disposition seems less random than that of the Frei & Gubler example. The garden city of Schwamendingen was designed in the fourties by Albert Steiner. It is a neighbourhood in the northern limits of the city, for which the state authorities have already established intervention principles, and the objective of densifying the tissue, while at the same time emphasizing to the creation of quality green spaces, as envisaged by Steiner’s original radial plan. Besides, Schwamendingen becomes progressively a centre for several other development areas, as Leutschenbach, Hochbord / Stettbach and Neu-Oerlikon. The plot in question is one of the larger in this residential area. In the competition program and as usual, there was not only a need for renovating the existing from the mid-fifties housing colony of 200 apartments, but also for building larger apartments. Diener & Diener aimed to a reinterpretation of the existing tissue’s design by creating somewhat “introverted” and yet porous, most of all “vaguely defined” open spaces for their complex. The three-aisled star houses gathered together in two major groups corresponding to the two distinct parts of the available grounds, organise “contained” parts of the available free space that are nevertheless, not confirmed by the design of the sitting areas, as these last are proposed mainly in the plot’s periphery and answer to free, oval forms. The ramps for the underground parking, coherent with the distinct block groups are placed to opposite edges of the ground: one to its south-east and the other to its north-eastern corner. Parking spaces for visitors are arranged to both sides of the street that divides the parcel in two.

Lastly, the HHF project is by far, the group’s less original example regarding the exterior spaces design. This was designed for a procedure of parallel study commissions organized by the cooperative Vrenelisgärtli – cooperative founded during the between-wars period and active in the quarter of Unterstrass – in 2008, for a total of three, available for future construction, plots. These are delimited by the network of parallel to the ground’s contours streets, characteristic of the district. A project competition was simultaneously organized for the zone that was to be constructed in the first place, a small trapezoidal, isolated lot, in the ground’s south-eastern edge. The Unterstrass district is mainly characterised by residential buildings, due to a construction boom that has begun already before the World War I and has continued till the nineteen sixties. The cooperative’s target group are middle-
class households. A clear distinction can be made between residential, more quite streets and those charged with car traffic, connecting Unterstrass with Oerlikon.

Figure 11. Site plan of the HHF project

The authors of the project arranged their blocks parallel to the contour lines in equal interstitial distances, in a quite monotonous way following the topography’s strong slope to the west. Limited seemed though the alternatives, since the triangular form’s proportions take up each time most of the plot’s width. The pedestrian entrances are normally placed almost on a higher than the car access, level, following a logic of clear separation between the two circulation networks of the complex. Due once more to the main form’s dimensions and to the fact that the surrounding tissue is characteristically shaped by continuous rows of detached and semi-detached single-family houses or by short-length slabs longitudinally placed with respect to contour lines, the chosen forms seem particularly out of scale in relation with their context. In addition, they seem as if they were completely denying the context’s character, tendency that appeared sometimes in a latent state as to the rest of the projects. The jury emphasized particularly this last point: “Diese eigenartige Gebäudeform findet absolut keine Anknüpfung an das restliche Quartier. Der Kontext sowie die baurechtlichen Grundlagen wurden negiert.” ii (Rodriguez et al. 2008)

Subdivision of the typical floor plan, access and apartment orientation

It seems that the rule regarding the subdivision of the typical floor plan is a type of radial tri-partition to medium or big size apartments (3.5 – 5.5 rooms), depending on the block’s dimensions, around a triangular shaped landing with the apartment accesses organized in its corners. Each apartment occupies an angle of the triangle taking thus advantage of multiple orientations and panoramic views. This seems to be the case for the triangular shaped buildings as well as the cloverleaf ones. An additional advantage is the exclusion of disagreeable vis-à-vis between the neighbours of the same block since the radial arrangement guarantees complete separation of the zones belonging to each unit. An exception is formed by the a4D plan and the balcony running along the whole perimeter of the floor, with its characteristic enlargements that provide two exterior spaces of considerable surface and totally different views to every apartment, but do not exclude indiscreet views between neighbours. Regarding the division of the second set of plans, the example by Diener & Diener constitutes a special case and a rather original solution. Every branch is divided in two – in a way that reminds Steiner’s plan and the solution he adopted for the southern branch of his star house – and the three
flats of the typical floor take up their surface on two different star branches at a time. Particular attention is paid to the space contained in the concave angles attributed each time to one sole apartment. In this way, every flat occupies one side of the “conceptual” triangle instead of an angle and benefits of even more diversified views. We should also note the subtlety of the architectural treatment allowing for a slightly larger apartment unit (though of the same typology) in one of the star’s aisles, elongated thanks to a slight shifting of the triangular circulation core’s position, away from the overall form’s gravity centre.

Allowing for a certain generalisation, we could say that the projects of this category cannot claim maximum flexibility with respect to the plan’s division. It seems that the triangular form offers limited possibilities as to generating varied apartment types. The additional unilaterally oriented small flat, engendered by the scalene form of the conceptual triangle in the case of the HHF project, could not really be considered as an exceptional alternative. As to the rest, POOL architects, Burkhalter & Sumi and A4D architects propose different floor arrangements, concerning exclusively the size of the flats and not their organisational principles. This is made possible by the rooms’ modularity and their positioning in rows that allow for certain spaces to be attributed either to one unit or to its adjoining one. The Frei & Gubler project responds also to this logic. Otherwise and in some proposals, the plan is divided in two with the respective sub-spaces of a dichotomised angle attributed to a pair of units. This solution, creating immediate vicinity between certain spaces of adjacent apartments, most of all with respect to exterior spaces – terraces or balconies – as in the POOL and a4D projects, could be considered problematic considering the plan’s main conceptual principle that seems to focus on the unit’s individualisation and autonomy. Finally and as common to point houses in general, the last floor, of a reduced surface, is divided between two larger flats or even entirely assigned to an even more privileged, larger flat.

Figure 12. Subdivision of the typical floor plan in the POOL project

The organisation of every floor’s horizontal circulation seems to materialise the compactness of the form, as in every case the landing presents rather restricted dimensions. In the HHF project and the Burkhalter & Sumi proposition for Pratteln, due possibly to the elevated construction height and to fire regulations, the staircase is attached to the block’s periphery being naturally lit from the side, as is the case in the historical examples analysed. In the first project, the authors also make an attempt of creating a more lively space for socializing between neighbours, assuring a comparatively generous space to the floor’s common circulation and voiding the centre of the block in a kind of interior patio with daylight arriving from above. This is also the case with the a4D and the POOL project that take up one side of the triangular central space with a single-flight staircase dramatising the access to the flats. The Diener & Diener example presents the most reduced circulation surface on the typical floor with a “cramped” effect right next to the elevator door, where two directly facing one another, entrances are placed.

Apartment typology

The typical apartment in the a4D project is the most characteristic one as to assuming the radial distribution of the units in the floor, to the compactness of the block’s form. Wet and service spaces
are organised concentrically around the triangular circulation core in the middle while the next layer is attributed to spaces of principal uses; the living / dining / kitchen suite occupies the privileged spot of the angle with two exterior extensions provided by the enlargements of the continuous balcony’s form, while separate rooms are organised to both sides of the enlarged hall / anteroom of the partitioned entrance. We are far from the typology of the nineteen fifties where the sitting room extends timidly to one side of the aisle. The living space now takes up the most advantageous position in the unit’s plan and becomes, either as a continuous entity or as articulated suite, the most important place in the apartment. This organisational logic creates also a kind of clearly legible hierarchy while the subdivision of the rest of the apartment accentuates the uniformity of the living space, by a strong contrast effect.

The same concentric setting up of the plan, typical of block houses in general, is found in the cases of Burkhalter & Sumi and POOL projects, except for the fact that these plans manifest also a clearer separation of private and common zones: private rooms are mostly organised to a single side of the flat instead of articulated around the living space, evidently in an effort to draw advantage of the best orientation either for a big living suite in the south, or for the equal treatment of private rooms aligned towards the east or west. This device also leads sometimes to a different treatment of the entrance space in distinct housing units. In both examples, the triangle’s angles are voided, to provide exterior spaces with the best possible views. It should be said though, that at least for POOL’s project, despite the multiple orientations of the living space, a large part of it turns to the north, which is also due to the rigid arrangement of the blocks in the plot. The Frei & Gubler example follows the concentric pattern, but with an interesting articulation between the kitchen alcove, and the slightly rotated living room, both taking up their surface on different sides of the polygonal form, and thus succeeding in establishing a clear direction for the suite of the living space which leads to a spacious loggia of the same width.

A limpid organisational principle is legible also in the apartment typology proposed by the architects Diener & Diener, but this time in a much more organically unravelled plan. From the triangular circulation space in the middle, three branches accommodating secondary functions, grow in the middle of the star plan’s different aisles. This sequence is each time attributed to one sole apartment in a way that the service strip corresponds to the more private zone of the unit. The two parts of the plan, of which we have earlier spoken, “enclose” the apartment’s exterior space with an increased width in the angle’s cavity. The second part, containing the living suite of the unit is organised as a free space without partitions or fixed pieces of furniture but in an order of clear succession, starting from the entrance hall to the kitchen laboratory, the dining room and finally the sitting space completely open laterally. The sub-regions of this sequence are defined by differentiations in the façade’s openings: a small window is placed right opposite the entrance door, another window after a small solid interstice marks the table’s position. On the whole, an artful solution that aims also to the reinterpretation of the

form’s structural logic – with relation to the historical prefabrication references of the star plan, based to the solid structural centre and a lighter construction of the aisles – by creating a kind of core, also for each branch, and a peripheral load-bearing system at the façades thus enabling the creation of a completely uniform living suite in the interior.

Finally, and concerning the type of apartments proposed by the Laubiweg project, we seem to deal with a plan structured by an additional logic of sub-grouped spaces in a somewhat random order. The triangle’s angle is there assigned to a group of two rooms while the living room, bilaterally oriented resembles to a kind of residual space after another two-room module and a service core – consisting by the kitchen’s equipment, a bathroom and some storage space – have been posed into the apartment’s available surface. This impression is accentuated by the fact that the rooms protrude from the contour, while the living-dining sequence is in retreat as to the building’s perimeter. Balconies are delimited by these projections and it seems difficult, because of this choice, for the living room or for the eating corner to be sufficiently exposed to natural daylight.

**Organization of the façades**

As mentioned before, the compactness of the building’s central core can allow for less load-bearing structural elements in its volume’s periphery – according more or less to Mies van der Rohe’s logic in his Friedrichstrasse project. But the fact that in our series of case studies, the choice of the triangular geometry is not associated to clear structural logics constitutes one more significant difference in relation with historical precedents of the form. The Diener & Diener project as well as the a4D proposal, are exceptions to this rule, with the almost entirely transparent extremities of the star branches in the first case and the equally open, but mostly this time laterally, polygonal edges of the form in the second case.

Besides, Diener & Diener are the only bureau in this group of projects, proposing a rather sophisticated structural system with direct references. The strip of secondary spaces in the middle of every branch, built-up by a series of parallel, although slim, partitions and featured as a part of the building’s vertebral column corresponding to each aisle, could be supposed to represent the main structural element of the block, almost reminiscing prefabrication techniques commented on the subject of Y-formed buildings of the sixties and seventies. But the authors of the project make explicit reference, regarding their blocks’ exterior aspect, to the students’ residence of St. Hilda’s College, designed by Alison and Peter Smithson between 1967 and 1970, and its façade frame, made up from characteristic diagonal elements operating “as a kind of visual filter between inside and outside.” (Van den Heuvel 2004) In Smithsons’ work, this particular device of the façade represents a shift to their architectural language, a softening of their accent, which has to do with layer overlaying and using the lattice system as a sort of “decoration”. This solution has later been adopted also in Lucas Headquarters (1973-1974) and in the Yellow House (1976) and does have a principal structural role. Besides, the chamfered angles of St. Hilda’s Garden Building, characteristic of their era’s aesthetics, seem to find a direct relation to the treatment today of the triangular form. Chamfered or rounded angles are used to dissolve the form’s acmes and soften its contour; “blurring” the triangle’s edges seems a standard technique for the treatment of the volume.

Although the form’s compactness is not reflected to excessive transparency of the façades, continuous openings to the volume’s entire periphery, make allusion to a reduced number of structural elements in the building’s periphery, exactly as the “voided” angles. This is the case for the Frei & Gubler proposal as well as for the one by POOL architects, where the author’s additional intention to emphasize on horizontality, may be read in parallel with the a4D example and the protruding slabs of differently shaped balconies. This is done probably in order to put an accent on the regularity of the volume and the lack of hierarchy because of the equal treatment of every side, that correspond to the regularity of the typical floor’s interior organization. In the Frei & Gubler project a continuous – but of changing position in relation to the floor’s height – frieze is deployed all around the building’s
perimeter. In POOL’s project this zone of openings is occasionally interrupted by short, solid wall intervals rendering the horizontal “engraving” of the façade more interesting. The Frei & Gubler project offers an interesting space interpretation device by proposing a chromatic difference between every building’s spaces of collective use and the ones attributed to private apartments. The block’s main entrance as well as the floor landings and the stairway surfaces are marked by a live red, while the building’s vertical circulation core unfolds till the last floor and the equally soaked in red, terrace, attributed to common use. The concept is successfully represented in a section of the block, featured in one of the competition boards.

In the case of the Burkhalter & Sumi project – the tallest building of the group – vertical elements posed in regular intervals, search a sense of balance in the façades with horizontal window friezes. Finally in the HHF scheme, deconstruction principles that confer to the plan its particular aspect, seem to take over also with respect to the façades expression: solid and transparent parts emphasizing either on the horizontal or the vertical direction create confusing complexity.

Summing up…

Let us recall on that point the questions posed at the beginning of this chapter, in relation with the rigidness of the plan as to the apartment typology and the subdivision of the typical floor, in relation with the volumetric expression of the single building and with the organizational logic of its different assemblages in housing complexes, and examine them, this time in reverse order. Proposed apartment typology in our series of examples, seems in fact, offering a limited range of options. The same goes for the subdivision of typical floor plans, since a more or less standard logic of three units assembled around a central triangular circulation core, can be traced in all case studies. Equally standardised, maybe to the exception of zones requiring more privacy, seems the internal organization of everyday uses, according to a concentrically structured model of zones attributed to principal or secondary uses. But there is something ravishingly clear in the almost perfectly organized hierarchy that is installed between the receiving space of the entrance hall, providing – due to its central position – access to the rest of the rooms, and the “largeness” of the living suite dilating the housing unit towards exterior collective spaces and the complex’s immediate surroundings. This sense of expansion is each time emphasized by the exterior aspect of the building and the fact that the “voiding” of oblique in this case angles – as opposed to rectangular ones of parallelepiped prisms employed for the majority of point houses, allows for the volume’s “dissolving” and the visitor’s seeing through this fading outline. The loggias in the angles take up an almost symbolic meaning – both with respect to the unit’s individualisation and in general with respect to the offered quality of life – as each foyer’s unique mirador. The mirador metaphor is in this case more consistent since it refers to a liberated 120° angle instead of a 90° one, as is the case also for the majority of pinwheel – in French moulin-à-vent – apartment typologies, disposing equally voided by loggias, angles.

In the triangle, more than in other frequently adopted – parallelepiped or cubic – morphology, this symbolisation is rendered more explicit, as every side of the unit is aligned to a unique direction and as the whole “merges” towards the centre either of the unit – the appartement’s entrance and the living suite, or of the block – the circulation core; somewhat as Goff’s houses are turned to their central nucleus, the symbolic hearth, and seem stemming from it. In the analysed examples, the blocks’ centre of gravity is formed by the staircase, accompanied sometimes by an interior court and lit from above. The a4D example is the most representative of this solution, as sufficient surface seems attributed to this common patio. In Frei & Gubler’s blocks the centrality of the form is materialised by the red-coloured circulation sequence, reminiscent of organic metaphors.

Our last comment will refer to the scale of the complex: the effect of triangular morphology to the arrangement and design of exterior spaces. Oblique building sides have a direct influence to created views, to almost “channelled” perspectives that are engendered by the employed geometry, open-up selectively to the surroundings and establish a certain degree of porosity in the design of collective
exterior spaces. The buildings’ form seems to contribute to spatial organisations promoting a kind of serial vision of the immediate and macro-scaled context, allowing for a certain visual depth in its various points but at the same time revealing only a part of these spaces’ content, thus establishing “perceptual pathways” for its complete discovery. Motivation for studying this particular set of projects was provided by an urge to investigate the real potential of a geometry-oriented conceptual procedure, based on a primary geometrical form, at first sight, difficulty transformable. Can conceptual principles of austere two-dimensional geometry lead to plastic expressions of a three-dimensional “reality”, in the contemporary architectural frame? The plurality of proposals point to this direction as well as to a certain link of these expressions with an “organic” order – the Diener & Diener block being one representative example. Frei & Gubler’s project speaks of a certain mouldable quality of the triangular geometry, proved in the architects’ skilful orthogonal treatment of the oblique pattern corresponding to the overall form, in the apartments’ interiors. Finally, triangular or star blocks – in a background where buildings of reduced land footprint featuring qualities of the single-family house seem to be preferred by architects and investors – could be perceived as an effort for variety within the hegemonic regime of more common prismaticmorphologies; the particularity of the form confers in that case the unique character of the complex.

i “St.Mark ’s Tower that emerges with the splendor of a jewel from the most troubled period of Wright’s creative activity, communicates the way in which he intended to recall abstractly nature’s organic forms.” (author’s translation)

ii “This strange building form founds no link with the rest of the neighbourhood. The context and the principles of the building regulation are denied.” (author’s translation)

References


Eisinger A. et al. (2007) Zürich baut / Building Zurich Basel: Birkhäuser


‘Mixité’: an urban and housing issue?


Hochbaudepartement der Stadt Zürich, Amt für Städtebau (1999) Legislatschwerpunkt “10’000 Wohnungen in 10 Jahren”. Konzept – Zusammenfassung Stadt Zürich, Zurich

Dumont M.-J. et al. (1996) “Le logement : Une histoire française”, L’architecture d’aujourd’hui, 303, pp: 75-


“Architecture Soviétique” (1970), L’architecture d’aujourd’hui, 147 (whole issue)


Wright F. L. (1956) The story of the tower : the tree that escaped the crowded forest New York: Horizon Press
