Anton Zoetmulder

JEAN RENAUDIE

to give voice to that which was silent

Preface

This research on the French architect Jean Renaudie was written under supervision of Reinout Rutte for the History Thesis course of the Masters track of Architecture on the faculty of Architecture, Urbanism and Building Sciences at the TU Delft. It deals with the overall architectural achievements of Jean Renaudie, with a focus on his Jean-Baptiste Clément building in Ivry-sur-Seine, additionally there is an emphasize on the theoretical foundation that underlie his work. In writing this thesis I gained insight in the role of the French architect during the 60s and 70s. Additionally it gave me insight in what challenges a radical architect had to face when he was opposed to how the architectural practice was functioning. For me the most valuable information gained during the elaboration of this research was how Jean Renaudie was able to translate his strong, precise and ideological theoretical foundation into actual built architecture.

This research is organized around three chapters. I start off with the chapter *'Introducing Jean Renaudie'* in which I will chronologically introduce Jean Renaudie, during this we will see; the context in which he practiced, some projects he worked on and it will become clear what kind of challenges he faced. In the following chapter *'Analyzing Jean Renaudie'* I will do a brief analysis of the continuous line we can see in all the projects he designed, additionally I will do a more in depth analysis on one of his most precise buildings; the Jean-Baptiste Clément project in Ivry-sur-Seine. After this analysis I will raise several questions that I will try to answer in the final chapter; *'Understanding Jean Renaudie'*. I will answer these questions by different means ranging from theory to experience and inspiration to design process.

Anton Zoetmulder

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Prologue

Around the time I found out about Jean Renaudie I was especially interested in Dutch structuralism; mainly the intellectual legacy of Aldo van Eyck, Herman Hertzberger, Piet Blom, Herman Haan and Joop van Stigt and the reference they found in the Malinese Dogon villages appealed to me. I discovered Renaudie for the first time in a picture of the Voltaire square at Ivry-sur-Seine near Paris; what I saw here came closer to the Dogon villages than any of the Dutch structuralist had ever been (0.1). Further research on the architect made me even more enthusiastic; the seemingly incidental stacking of different unique housing units and the numerous overgrown terraces, in which the color of the vegetation and the grey of the concrete defined the representation, created an almost mayapiramide-like esthetic (0.2). These complex structures with their sharp angles could be almost completely penetrated, external stairs lead up to almost the highest floor, the buildings form bridges over crossing roads, pedestrian areas and shops are divided over several floors and go underneath or over the building. The profoundly modernist towers around which the Renaudie buildings wrap themselves in the Ivry-sur-Seine project indicate that this architect was truly unique for his time. This uniqueness gave him a lot of fame but this fame never reached out further than the borders of France. Even now the English Wikipedia page on Jean Renaudie only gives a marginal description on the architect: *''Jean Renaudie (1925–1981) was a French architect'' (Wikipedia, 2013).* With the growing interest in (Dutch) structuralism I think it is a good time to draw attention to the 3-dimensional structuralism of Jean Renaudie.

1.1 Mountains composed of stars and triangles; Town center of Givors, 1980

1.2 Mountains composed of stars and triangles; Jeanne Hachette in Ivry-sur-Seine, 1975

1 INTRODUCING JEAN RENAUDIE

Jean Renaudie (1925-1981) was a French architect who focused mainly on designing hybrid housing projects in complex urban locations. He became famous with his housing projects resembling concrete *'mountains'* composed out of *'stars'* or *'triangles'* in which every apartment is different and has its own terrace overflowing with greenery (1.1/1.2). These housing complexes embody a real urban density as they are inseparably mixed with other urban functions on a multitude of levels, blurring the limits between private and public space(Lambert, 2010; Lucarelli, 2012). Most of these projects were realized between 1968 and 1981 with his own office Agence Jean Renaudie. Before that time he was partner of l'Atelier de Montrouge which he founded together with three of his friends in 1958. In the time that Renaudie practiced the main architectural projects were the so-called *grands ensembles* that were steamrolled all over France. These monotonous suburban housing estates were mostly built in a simplistic functionalist style incorporating the zoning structures of the Athens Charter. Renaudie was opposed to the whole idea of zoning and in his work he was trying to find a more humane alternative to the *grands ensembles* where themes like human freedom, mixing of functions, movement and diversity stood central. Around the time that Renaudie split from l'Atelier de Montrouge to form his own studio, also France was ready for change. After the student revolts of May 1968 a fresh wind was blowing through France and new, progressive or experimental architectural ideas were seriously taking in consideration. This gave Renaudie the chance to finally propose a real alternative to the *grands ensembles*.

In introducing Jean Renaudie I will divide his architectural career in five different stages. Firstly his formation, mostly concerning his prior-education at the Beaux-Arts school in Paris. Secondly his time in l'Atelier de Montrouge; in which he was a partner for 10 years. Thirdly his revolution; concerning the split from l'Atelier de Montrouge. Fourthly his development, regarding the time in which his idea could fully come to fruition in his own architectural firm. Finally there will be a short part about the continuation of Jean Renaudies office and ideas after his decease.

Formation (1925-1958)

Jean Renaudie was born on the 8th of June 1925 in La Meize in the middle of France in the region of Limousin, being part of a modest peasant family he is raised with a straight forward hard working mentality. Just as many other teenagers from the rural parts of France Renaudie is deeply affected by the horrors of World War II, hungry for change and full of ideals they head towards Paris to study at the Universities. At the age of 18 in 1943 right after the liberation and full of post-war political and social ideology Renaudie arrives in Paris to study as a painter at the Beaux-Arts school (Chaljub, 2009). Besides his study Renaudie strengthens his political ideology by joining the Communist party of the University, in this small group of people (+/- 20) he finds like-minded among who Reneé Gailhoustet who will prove to be very important in the rest of his life(Gailhoustet, 16 February 2014). Renaudie will stay a member of the Communist party for the rest of his life.

After a year of studying painting his teachers recommend Renaudie to change his study and in 1945 he switches towards architecture and continues his study at the Beaux-arts school in a different direction. We can assume Renaudie was not very successful at painting, also his son Serge Renaudie remembers that his paintings were quite awful, however the joy Renaudie has in drawing and painting will stay with him and will be of great importance in his architectural design process throughout his architectural career(S. Renaudie, 2014).

In that time the Beaux-arts school of architecture is organized around a sort of master-apprentice system, you have to choose a studio of an architect to work for. Additionally most architectural education is deeply influenced by modernism and especially the books of Le Corbusier(Gailhoustet, 16 February 2014). Renaudie spends his time studying in the studio of among others August Perret, Marcel Lods and Michel Ecochard. In 1956, while working and studying for Michel Ecochard, he comes into contact with the trio; Pierre Riboulet, Gerard Thurnauer and Jean-Louis Véret, with whom he will latter form l'Atelier de Montrouge.

This trio had met each other before they came in contact with Renaudie at the Beaux-Arts school in Paris. They were especially formed by their collective trips to Morocco, to research the ground zero of architecture, and their participation in the CIAM congresses of 1952 and 1953. After graduation the trio starts working in different architectural studios, including the famous studios of Le Corbusier, August Perret and Michel Ecochard. In 1955 Thurnauer and Riboulet are working with the office of Michel Ecochard on a project for the University of Karachi in Pakistan, latter in 1956 they are joined by Jean Renaudie soon followed by Véret in 1957. In this collaboration they felt the urge to start their own studio, cumulating in the creation of l'Atelier de Montrouge in 1958. 1958 is also the year that Renaudie officially graduates from the Beaux-arts school and gets his architectural license(Blain, March 2008).

l'Atelier de Montrouge (1958-1968)

L'Atelier de Montrouge[1] was founded in November 1958 by Pierre Riboulet, Gerard Thurnauer, Jean-Louis Véret and Jean Renaudie (1.3). The atelier is erected in a small studio in the Parisian neighborhood Montrouge, from which it draws it name. The period that Jean Renaudie worked at the ATM, in close collaboration with Riboulet, Thurnauer and Véret, was of great influence in his intellectual, theoretical and architectural formation.

The quartet of ATM was against the whole idea of hierarchy and had the possibility to create an architecture studio based on egalitarian principles. The non-hierarchical collective structure of ATM was rare for the architectural landscape in France of the 1960's that was dominated by big offices attached to big names (Corbusier, Perret, etc.). Their choice to work together was born out of a desire to share ideas and reflect on issues collectively in order to avoid a too simplistic or systematic approach, which according to them was characteristic of the big offices. The ATM was not involved in the *grands ensembles* projects, the large social housing blocks, but instead focused on other ways of rethinking the problem of housing on different scales from private residences till urban plans. Their approach was characterized by a careful assessment of architectural as well as social

[1] From now on referred to as: ATM

1.3 The partners of l'Atelier de Montrouge (from left to right): Pierre Riboulet, Gérard Thurnauer, Jean Renaudie and Jean-Louis Véret.

1.4 An examplaric l´Atelier de Montrouge project: Housing block for EDF, 1967, Ivry-sur-Seine

realities of each context and the inspiration they drew from traditional housing. In this they combined the contemporary expression of the Modern Movement with a renewed reflection on program, construction and function. Part of this was also a re-evaluation of the according to them too simplistic percepts of the Athens Charter. The quartet was actively involved in the debate of their time, in which they discussed about architecture and the city but also about the political position of their profession(Blain, March 2008).

Although, all partners of the ATM discussed and reflected on all projects together, in reality each partner had their own dedicated projects and their own draftsmen (Gailhoustet, 16 February 2014). Still most of the realized projects have a clear ATM style, a style that combines the architectural expression of modernism with a way of thinking more reminiscent of regionalism, one that takes into account the social realities of the users and the built environment and drawing inspiration from vernacular or traditional architecture (1.4).

Some projects for which Jean Renaudie was responsible during his time at the ATM are the Montrouge kindergarten (1959-1964) (1.5), the Montrouge daycare center (1959-1964) (1.6) and the Montrouge fire station (1960-1968), additionally he was responsible for the study of among others an urban center and hotel complex in Tralicetto (1962), a stadium in Vincennes (1963), the Gigaro holiday village (1963-1964) and solution C for the new town of Le Vaudreuil (1967-1968). In some of these earlier projects there are already some rudiments of the direction Renaudie was going to turn to in the years to come. Especially Renaudies proposal for the new town of Le Vaudreuil showed a huge difference with the ideas and architectonic expression proposed by the other members of the ATM, these differences eventually led to the departure of Renaudie from the ATM.

Revolution (1968)

In 1968 by far the biggest commission in the ATM was the project of Le Vaudreuil. A study for a new town of approximately 150.000 inhabitants consisted of a large plateau crossed by a main road and a railway track and had to be designed on a site along the lower part of the river Seine. The site

1.5 Montrouge kindergarten, 1964, designed by Jean Renaudie during his time in l'Atelier de Montrouge

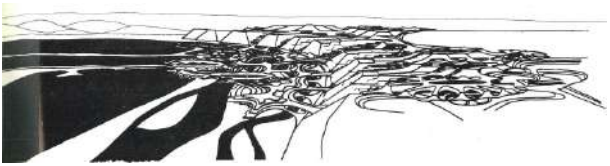
1.6 Montrouge daycare center, 1964, designed by Jean Renaudie during his time in l'Atelier de Montrouge

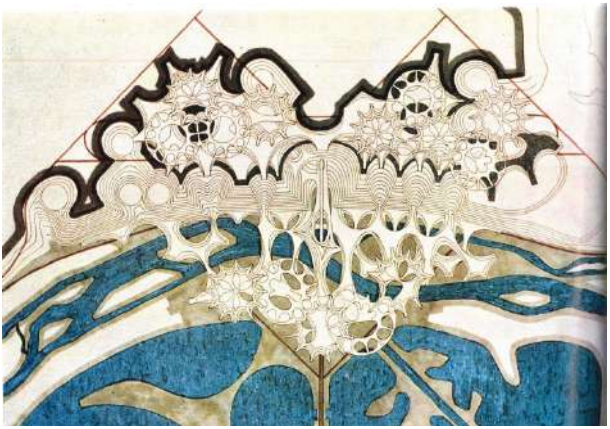
bordered on one side by the Seine. On the other side of the Seine several steep hills overlooked the plateau and descended into the river. For Renaudie these steep hills seemed almost architectural in themselves and demanded to be built upon. However, for the other members of the ATM it was self-evident that the new city had to be built on the plateau in close range of the main road and railway track.

In the presentation of April 1968 the ATM decided to present three different concepts for the new city of Le Vaudreuil, two of them on the plateau and one of them, solution C, on the steep hills along the river (9). Finally the judging commission deemed solution C, designed by Renaudie, unfeasible and in the end the city of Le Vaudreuil was never built. Still the unease among the partners of ATM about Renaudies decision to build on the cliffs and his way of elaborating the project led to tensions within the office. On the one hand the partners of ATM thought, not without reason, that the project was too utopian to be realized. They found that Renaudie had lost contact with reality and in doing so he put the most important commission in the office at risk(Scalbert, April 2004). On the other hand Renaudie was too convinced about his project to give up on it. Especially since he saw the intellectual foundation of his project confirmed in several newly published structuralist theories[2].

Most interesting about Renaudies design for Le Vaudreuil is that it already seems to contain some ingredients of the projects to come(Scalbert, April 2004). The originality of the proposal is that it is open to incorporating various contradicting features. On the one hand the project seems like one of the utopian projects of the 60s and it appears like an architecture-sculpture that asserts the right to form freedom. This is especially evident in the way of drawing and the elaboration of the project (1.7). On the other hand, however, Renaudie consistently searched for a scientific foundation for his proposal. This scientific foundation incorporated both, the formal aspects of the architecture as well as sociological aspects of the people that ought to be living there. The project reflected several ideas that were thoroughly discussed among the partners of the ATM, but the other

[2] More on this in chapter 3 Understanding Jean Renaudie





1.7 Drawings of solution C for Le Vaudreuil designed by Jean Renaudie

partners did not share the utopian nor the scientific emphasize of Renaudie.

This led to a sort of intellectual battle within the ATM, in which Renaudie was blamed to have ''lost his mind'' distracted by utopian ideas (Scalbert, April 2004, p. 14). These tensions were stressed when the unrest of *Les événements* arrived in May 1968[3]. During this period of civil unrest the political differences of the ATM partners came out into the open. Although they all inclined to the left, Renaudie, being a life-time communist, was the most extreme in his vocation. Renaudie felt little compassion for the revolts; the other member however, being more moderate, had a more open standpoint towards it. Other discords between the ATM partners were concerning the relevance of different intellectuals for architectural practice, for example Renaudie read a lot of Louis Althusser where the other members shared more common ground with the likes of Henri Lefebvre(Scalbert, April 2004, p. 20).

In the end the tensions between the quartet became too strong and Renaudie decided to leave the ATM in July 1968. During this same time he also split from his longtime partner, Renée Gailhoustet, to live with Nina Schuch; one of the drafts(wo)man with whom he worked. So within a month time, right after the unsuccessful presentation of Le Vaudreuil and the events of May 1968 he had left both his office and his home.

Development (1968-1981)

After leaving his home and his office it seemed like Renaudies entire life was in decline, however nothing could be further from the truth. Renaudie accepted this situation as a clean sheet and in the period to come he would be creating his most exemplaric works. Following the split with the ATM in July 1968 Renaudie started his own architectural practice; the Agence Jean Renaudie.

[3] The events of May 1968 in France were an unstable period of civil unrest characterized by demonstrations, strikes and the occupation of universities and factories across France. The unrest disappeared as fast as it came up, but the cultural, social and moral effects of it were felt in France for decades to come (Knabb, 1969). The events started with protests at the Sorbonne University in Paris, the place were all ATM members enjoyed their architectural education.

1.8 The Raspail towers by Renée Gailhoustet in Ivry-sur-Seine as seen from the Jeanne Hachette complex

1.9 Danielle-Casanova, Ivry-sur-Seine, 1972, as seen from the street side

Right after the student protests of May 1968 a fresh wind was blowing through France and finally new and daring ideas were taken in consideration. At the same time his former wife, co-communist and architect Renée Gailhoustet was struggling with a commission she got for the new city center of Ivry-sur-Seine. The municipality of Ivry-sur-Seine was a so-called banlieu rouge, or a profound communist municipality, that was badly in need of a renovation of their city center. The municipality wanted to replace the entire city center for a new plan. An urbanist, Dubrulle, had already made a preliminary masterplan for Ivry-sur-Seine, he however resigned his work because of a work overload and handed over the work to Renée Gailhoustet. For Gailhoustet it was difficult to establish a good relationship with the municipality of Ivry. To strengthen this relation she attracts the more experienced and the well-regarded Jean Renaudie for a co-operation.

Renaudie understood that the municipality, being communist and in that sense avant-garde, wanted an alternative for *les grands ensembles* after the hustles of May 1968. To persuade the municipality of his alternative for *les grands ensembles* Renaudie presented his plan of Le Vaudreuil to the municipality. This appealed to them, not because they could understand the highly theoretical drawings but because they understood it was something extremely different than the monotonous *grands ensembles*. Before Renaudie joined the Ivry-sur-Seine project Renée Gailhoustet already had designed several high rise towers inspired by the duplex-style of the Unité de Habitation (1.8). Around these towers Renaudie designed a new masterplan for the lower parts of the development. This masterplan was however not a masterplan in its classical sense, it was more a development scheme (like was Le Vaudreuil). It was to be developed in a longer period of time, so that every new building could optimally relate to the newly created context.

The first building within the Ivry-sur-Seine masterplan designed by Renaudie was the apartment block of Danielle-Casanova along the Avenue Danielle Casanova which was completed in 1972 and marked the beginning of the expressive visual language often described as ‘stars’ or ‘triangles’ (1.9).

1.10. Jeanne Hachette, Ivry-sur-Seine, 1975

1.11 Town center of Givors, 1980.

The Casanova project was, in relation to the projects to come, quite straightforward in the lay-out of the plans but more expressive in the composition of the facades. The second complex Renaudie designed within the Ivry-sur-Seine project was the Jean-Hachette complex; it was built in two stages, the first finished in 1973, the second finished in 1975. The complex includes a big commercial center, offices, a parking garage and several apartment, right next to it is the smaller Jean-Baptiste Clement apartment block. Concerning the lay-out of the plans these were the most complex and unrestricted projects Renaudie designed (1.10).

The last big project Renaudie finished by himself was the renovation of the town center of Givors completed in 1980 (1.11). In the Givors project Renaudie returns to a more simplified formal expression and a less complicated lay-out of the plans. The Givors complex is partly build onto the hills and it is generally seen as Renaudies best project or ''magnum opus'', mainly because it confirms the thoughts he had while working on Le Vaudreuil(Scalbert, 2013).

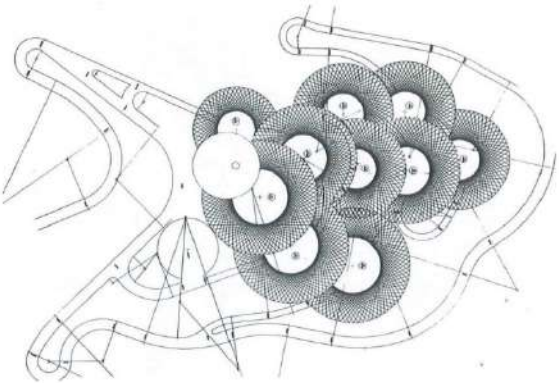
In 1978 Jean Renaudie received the Grand Prix Nationale d'Architecture for his entire build oeuvre. By then Renaudie had only finished the described projects in Ivry-sur-Seine and a small school in Cergy-Pontoise (1972). Besides his build projects Renaudie also made several studies and competitions that were never built. These include studies for a holiday village in Bastia (1969), ZAC[4] Vitrolles (1974), ZAC des Alpes (1976), ZAC Rateau (1980) and a train station in Poissy (1980) as well as competitions for a Work Exchange in Saint-Denis (1978), Parc de La Villette (1980) and a Law Court Complex in Lyon (1981). Several other projects he worked on during his last years he never saw finished because of his early and sudden death on 13 October 1981.

[4] ZAC (Zone d'Aménagement Concerté) is an Urban Development Zone appropriated by the French government in 1967 and is a replacement of the former ZUP (Zone à Urbaniser en Priorité) which facilitated the monotonous *grands ensembles.*

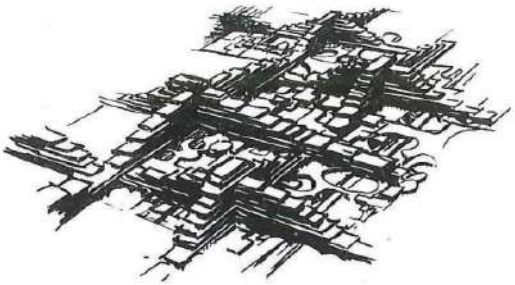
1.12/13 Typical more closed post-mortem Renaudie: Villetaneuse, 1985 and Ilôt Voltaire, Ivry-sur-Seine, 1985

Post-Mortem (1981-1985)

After Renaudies death in 1981 a group of former employees set up the Atelier Jean Renaudie to complete the projects initiated before his death, some on which Renaudie had worked on extensively. The projects finished after his death are: ZAC Courghain (1981), Einstein School, Ivry-sur-Seine (1982), Cité du Parc, Ivry-sur-Seine (1983), ZAC Saint-Martin-d'Heres (1985), ZAC Villetaneuse (1985), La Courneuve, Saint-Denis (1985) and Ilôt Voltaire, Ivry-sur-Seine (1985). Almost all of these projects wear Renaudies signature style of concrete mountain-like complexes with sharp angles and terraces. However, because of several post-oil-crisis energy saving regulations, they all have a severely smaller glazed surface, resulting in a complete change of appearance (1.11). The complexes look much more closed and the relation with the terraces doesn't seem so obvious anymore, also the additional concrete surfaces in the façade sit awkwardly in the normally so carefully designed facades (Gailhoustet, 16 February 2014).



2.1 The segmented discs of Gigaro (1964)



2.2 The terraces of Francs-Moisins (1966)

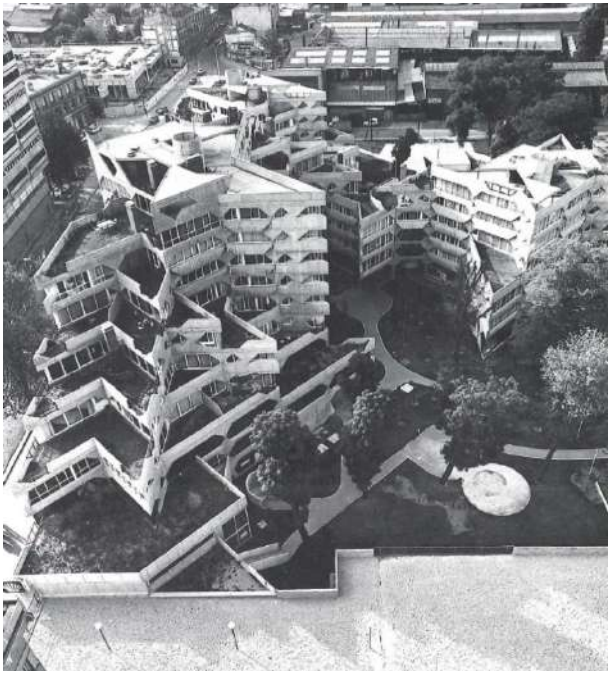
2 ANALYZING JEAN RENAUDIE

Jean Renaudie designed a lot of different *'mountain*' or *'star shaped'* projects between 1968 and 1981. All of these projects have similarities in appearance and form, but more interesting they all have differences ranging from different tectonic expression of the balustrades to the use of different gridlines. This indicates that Renaudies saw all of his projects as a single continuous process. This presumption is confirmed by Nina Schuch, a former design companion and third wife of Renaudie, stating that *''(the projects) were never the same: it was (about) the continuation''* (Scalbert, April 2004, p. 124). This continues process had already started as experimental designs in l'Atelier de Montrouge, most explicitly in the Le Vaudreuil project in 1968, which marked the split with the Atelier, but also in studies made for the neighborhood of Francs-Moisins (1966) and the Gigaro holiday village (1963-1964).

In this chapter I will first give a description of some of the unbuilt experimental designs Renaudie did during his ATM time. Secondly I will give a short summary of all the build projects that are important in his continuous process. Afterwards I will describe some of the unbuilt designs Renaudie prepared in his own office. Fourthly I will make a more thorough analysis of the Jean-Baptiste Clément project. This relatively small project is especially interesting for a more thorough analysis because it is a sort of intermediate stage in the continuous process in which Renaudie fully experiments with complexity. This complexity becomes more graspable because Jean-Baptiste Clément is one of the smaller *'mountains'* Renaudie designed. Still it has most of the same features his bigger projects have. The analysis is build up out of three parts, starting with the larger urban scale, through the configuration of the building, ending with the internal configuration of the single apartments.

The origination

In some of Renaudies earlier unbuilt designs we can already see some clues towards the direction he would be heading after 1968. This is most obvious in the design for the luxury holiday resort of Gigaro on which Renaudie worked between 1963 and 1964 (2.1). The project consists of several overlapping disc-shaped buildings that are stacked onto a hillside



2.3 T-Shaped urban placement and recessional build-up with terraces of Danielle Casanova, Ivry-sur-Seine (1972)

2.4 Fragmented façade, covered arcades and bridge of Danielle Casanova, Ivry-sur-Seine (1972)

overlooking the sea. The central part of each disc is opened up to create a central courtyard. What is particular about this project is that the geometry of the discs is separated through diagonal and tangential lines. These tangential lines, going from the outer border of the circle and touching the inner border of the courtyard, define the layout of the holiday apartments. For Gigaro Renaudie designed several types of apartments in which we can recognize the terraces and angles of his future apartments. Additionally this project shows a beginning of a method of segmenting a circular form by adding tangential and diagonal lines that Renaudie would use and improve extensively in the period to come.

The proposal Renaudie made for the neighborhood of Francs-Moisins near Saint-Denis in 1966 also incorporated several ideas that would be of a lasting influence in his work (2.2). The design consisted of some 5000 housing units that were merged into a single vast gridded building that was completely interconnected. On each crossing of the gridlines the building rose or lowered itself in steps, these steps ultimately formed the large terraces for which Renaudie later became famous.

In these two studies we can recognize some elements of Renaudies future architecture; the terraces, the mountain shapes, the diagonals and the angles. Some things are not so apparent yet; Renaudie still seems constrained by the strict geometry and there is no real diversity yet, just types.

The continuation

The first realized project that shows Renaudies latter signature approach is the Danielle Casanova project in Ivry-sur-Seine completed in 1972 (2.3/2.4). The Casanova project is not the start of the continuous process but can again be seen as a merging of schemes that Renaudie proposed earlier while working at l'Atelier de Montrouge on Gigaro and Francs-Moisins. The T-shaped urban placement and the recessional section of Casanova can be seen in the Franc-Moisins project in Saint-Denis and the twisted multi-angular plans can be found in earlier theoretical plans and more specifically in the project of Gigaro. The Casanova project consists of several shops adjacent to the Avenue Danielle Casanova and 82 apartments on the higher

2.5 Multidirectional angles of Jeanne Hachette, Ivry-sur-Seine (1975)

2.6 Covered arcade, the bridge, the terraces and the layers of shops, offices and apartments in Jeanne Hachette, Ivry-sur-Seine (1975)

floors. The Casanova project is, in comparison to latter projects, the most straightforward project regarding its main form. It is built on a 5 x 5 meter grid and almost all external and internal corners are restricted to 45 or 90 degree angles. From some side - the street side- it even looks relatively dull because the mountain shape visible in his latter projects is not yet present there. The most unusual aspect of the Casanova project is the treatment of the façade; this is the first and only project that has a fragmented pattern composed of triangular shapes in the facade. These expressive gestures create a fragmented facade with some interesting details like small children height windows and splayed columns on the ground floor. Some other aspects of the Casanova project will feature also in the coming projects, the placement along the street, the covered walkway, the shops on the ground floor, the recessional build up, the use of visible concrete and of course the terraces and sharp angles. Also the fact that the Casanova project forms a sort of bridge over a small perpendicular street is introduced in several other projects.

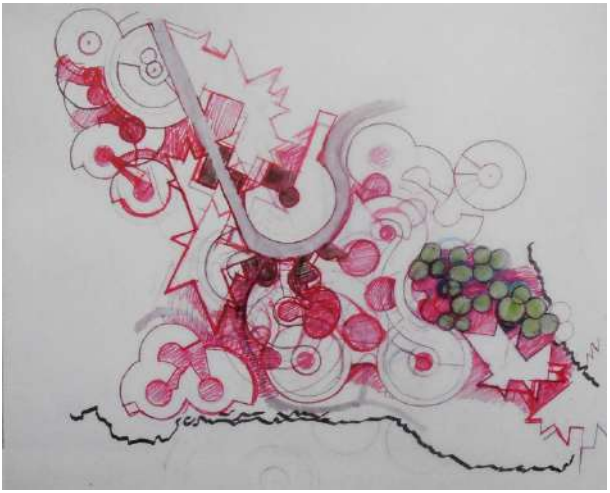
In 1975 Renaudie completes two more projects in Ivry-sur-Seine; the Jeanne Hachette complex (2.5/2.6) and the much smaller Jean-Baptiste Clément project adjacent to it. Both have great similarities in urban placement, external appearance and internal configuration of apartments. Jeanne Hachette is probably the most complex building Renaudie designed, it includes a large commercial center with shops, restaurants, cinemas, offices and a car park underneath, on top of this commercial plateau the 40 apartments are placed in mountain like crops. The construction grid used for Jeanne Hachette is defined by the grid used for parking of 7,5 x 4,5 meters. The angles of the building are no longer confined to 45 or 90 degree angles as in Casanova, resulting in much more complex proportioning of the apartments. Another innovation Renaudie applied was the introduction of the duplex (two story) apartment, in which he created voids over the living rooms and in which he could achieve an even more varied orientation of the apartments. The Jeanne Hachette complex is situated along the Avenue George Gosnat on which it also has the entrances to some shops along the covered walkway. The commercial center that is situated on the ground and first floor is accessible from a multitude of entrances on different floors. A part of the commercial center

2.7 Simplified horizontal bands, 45 degree angles and view from the castle, city center of Givors (1980)

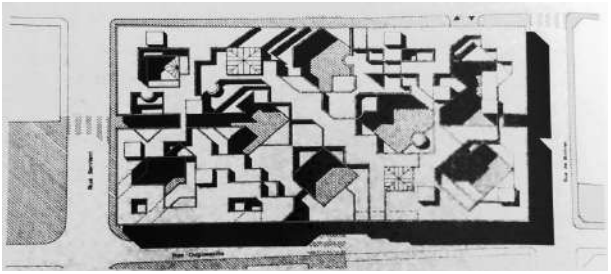
2.8 Spiral staircase, covered arcades and view from the market place towards the hills and the castle, city center of Givors (1980)

and the offices are situated in a two story part that forms a sort of bridge over the street and connects it to the buildings on the other side (which were only to be completed in 1985). Other aspects introduced in the Jeanne Hachette complex are the public stairs and routes that lead all the way up to the 5th floor, and the visible cylindrical forms of the large staircases leading to the apartments. The facades of the building are dominated by horizontal bands of concrete and glass; these bands are only interrupted when they meet a double height room. More expressive forms are found in the balustrade of the terraces where the triangular forms reappear.

The next big housing complex that Renaudie creates is the new center for Givors completed in 1980 (2.7/2.8). This is the biggest project he has realized and it fulfills his dream, present in Le Vaudreuil, to build upon the slopes of hills. Givors or *les etoiles* (the stars) is mostly seen as Renaudies Magnum Opus, because of its complex, though clear, forms and the simple facade that seems to strengthen the importance of the plans (Scalbert, 9 November 2013). The geometry of the plans is simplified in comparison to Jeanne Hachette and is again, like in Casanova, almost entirely confined to 45 or 90 degree angles. The nine blocks of Givors are build up like small mountains and seem to melt together to one continuous building. This building wraps itself around the hills, over streets and around squares. The ground floor adjacent to the market square is occupied by shops and along one of the internal streets a theatre is positioned, the rest of the lower floors and all upper floors are occupied by 270 apartments. Public stairs and routes through the entire complex lead up to the castle that is situated in the hills above. In this project Renaudie greatly simplifies the external appearance of the building, almost all expressive forms are removed. The only thing remaining is the horizontal concrete bands that wrap around the entire building, almost all space in between is glazed. The horizontality, and therefore the expression of the plans, is in Givors much more evident. Renaudie abandons the duplex-style apartment and he removes almost any other expressive forms (like the balustrade in Jeanne Hachette), therefore the horizontal band is never interrupted and becomes the main element of expression.



2.9 Design sketch for Vitrolles (1974) showing the discs of Gigaro and the stars of Casanova.



2.10 Law court complex of Lyon (1981) with terraces towards the inside

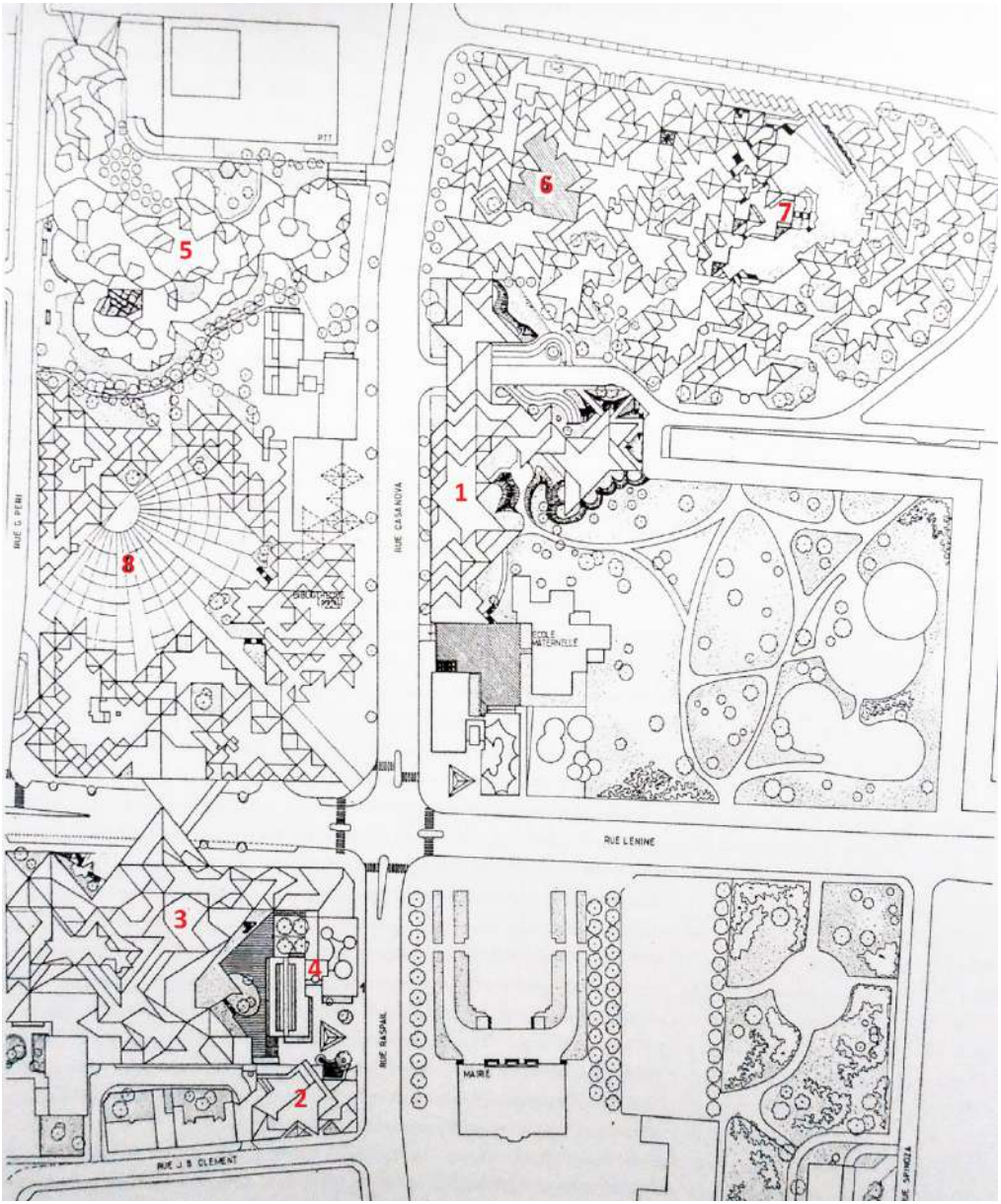
2.11 Villetaneuse (1985) less mixing of functions, lower density and more closed.

Besides all projects that were actually built Renaudie was also involved in several studies, competition and designs that never came into completion but that are still very much part of the here described continuous process. One of the most obvious is the study he made for the new town of Vitrolles in 1974. A new town of 600 dwellings had to be designed on a hilly site that was divided into two by a cliff. Unique about this design is that a lot of preliminary sketches have been preserved (Renaudie seldom kept his sketches) that show the developments in the design process[5]. During the design process Renaudie borrowed several ideas that he had already used and he tried new ideas which he would later use in his designs. In some of the sketches we can recognize the discs of Gigaro, the curving tissue of Le Vaudreuil, the star shaped blocks of Casanova and the latter section of Givors (2.9).

In the year before his death Renaudie entered two major competitions; one for Parc de la Villette in Paris (1980) and the other for a Law Court Complex in Lyon (1981), both which he did not win. Most interesting about these projects is that both show a continuation in his approach spreading towards non-residential building complexes. Renaudie conceived Parc de la Villette as a huge artificial hill which could be climbed terrace by terrace in order to reach the Museum of Science and Technology on top(S. Renaudie, 2011). The Law Court Complex of Lyon was a sort of inverse Renaudie block, from the outside it looked like a normal building block but on the inside a sort of small city unfolded with underpasses, patios and terraces overflowing with greenery all of which was totally and publicly penetrable (2.10).

Also the projects that were built after Renaudies death are a part of the continuous process. These projects, however, mostly show the practical struggles Renaudie had to deal with after Givors; they seem not as unrestricting as most of his earlier designs. None of them goes as high or is as complex as Jeanne Hachette or Givors, they have a lower density, less mixing of functions, fewer terraces and a less complex configuration; most corners are again restricted to 45 or 90 degrees. Additionally the latter projects have a more closed façade because of post-oil crisis regulations.

[5] More on the design process and Vitrolles in Chapter 3



2.12 Ivry-sur-Seine center; 1. Danielle Casanova 2. Jean-Baptiste Clément 3. Jeanne Hachette 4. Raspail Tower 5. Le Liégat 6. Cité du Parc 7. Einstein School 8.Ilôt Voltaire

Still they have a lot in common with the older projects; especially Givors. The newer projects have a detailing similar to Givors with simple horizontal concrete bands and mostly, like the older projects, they have shops or public functions on the ground floor, a covered arcade adjacent to the streets, the sharp angles and the pedestrian passages and shortcuts (2.11).

Jean-Baptiste Clément analyzed

In this chapter I will further analyze the Jean-Baptiste Clément[6] project; that is located in the north-east corner of the Ivry-sur-Seine center project. The J-BC project is one of the smaller ''mountains'' Jean Renaudie designed; it was designed simultaneously with the much larger Jeanne Hachette project adjacent to it. Both projects were completed in 1975 and have big similarities in external appearance, detailing and internal configuration of apartments. One big difference between Jean Hachette and J-BC that should be taken into account is that the apartments of the former are all intended for rental and all the apartments of the latter are intended for sale. This results mostly in the fact that the apartments of JB-C are overall slightly larger, the overall layout of the apartments is however quite similar. The J-BC complex is especially interesting for a further examination because it is, like Jeanne Hachette, a sort of intermediate stage in the development of Renaudies continues development between the first build project; Casanova, and his magnum opus; Givors. The scale of J-BC makes it more comprehendible for a thorough analysis and according to some it is *''perhaps the most finely chiseled project by Renaudie''.* (Scalbert, April 2004, p. 45)

Urban

The J-BC project is located in the north-east corner of the Ivry-sur-Seine center project (2.12). On the north-east side of the small complex lays the secondary street Rue Jean Baptiste Clement, two of the shops (at present a hairdresser and a pharmacy) have their main entrance along this street. On the north-west side along the Rue Jean-Baptiste Clément the complex stands side by side with an older housing project, at the point these two meet the Passage du Four, a small alley for loading and unloading goods,

[6] From now on referred to as J-BC

2.13 J-BC and the pedestrian area with the pavilion, the fountain and the (still small) pine tree as seen from on top of the Raspail tower.

goes underneath the building (2.14). On the south-east side lays the connecting road Rue Raspail, the largest shop (at present a bank) has its entrance on this street. On the other side of the street the town hall and the market square are situated. On the south-west side of the J-BC project there is a small pedestrian area leading to the Jean Hachette commercial center, this area consist of some benches, a small pavilion, a fountain/artwork and a big pine tree, and is bordered on the other side by the 15 story high Raspail tower. The entrance to the apartments of the J-BC project and the rear entrances of the shops are situated along this pedestrian area (2.15).The sides of the J-BC facing the pedestrian area and the Rue Raspail have a covered sidewalk that protects the pedestrian from the weather elements (2.16).

The J-BC complex stands on a visually quite prominent location (2.17), it is greatly visible from the market square and it finishes the 'wrap' that the Jean Hachette complex makes around the Raspail tower (2.18) while leaving some distance resulting in the pedestrian area and the entrance to the Jean Hachette commercial center. The external appearance of the project is dominated by the sharp forms of the raw concrete and the overgrowing greenery from the terraces. The concrete façade consists of horizontal bands, one for each floor, enfolding around the entire building. Almost the entire surface between these two horizontal bands is glazed. The only place where the horizontal bands are interrupted is when they are intersected by a double height room; here Renaudie placed a large full height but expressively fragmented window. The horizontal bands are also continued when they meet the terraces; here Renaudie placed a concrete balustrade on top of the horizontal bands. This balustrade consists of an additional horizontal upper band that is put in place by triangular shapes and is left open in between. This openness of the balustrade makes the greenery on the terraces more visible from the street and gives the plants the opportunity to grow outside their terrace. An additional element of the complex is the cylindrical main staircase facing the pedestrian area; it contrasts with the rest of the building by articulating its vertical direction (2.19).

2.14 The Passage du Four goes underneath the J-BC building, view from Rue Jean-Baptiste Clément

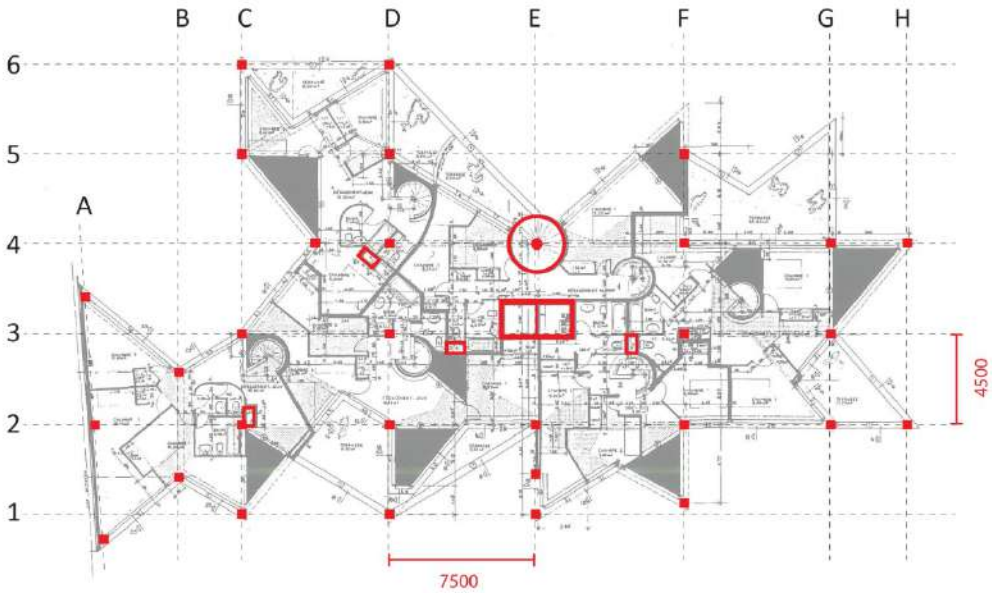
2.15 The pedestrian area; view towards Jeanne Hachette. To the left the J-BC building and fountain, to the right the pavilion

2.16 The covered sidewalk, as seen from the north corner of J-BC

2.17 The J-BC building as seen from the market place

2.18 The J-BC building finishes the 'wrap' around the Raspail tower

2.19 The entrance to the apartments and the cylindrical main staircase as seen from the pedestrian area



2.20 The construction system indicated in the second floor plan.

2.21 The corridor on the first floor (left) and the entrance on the ground floor (right)

Building

J-BC consists of shops on the ground floor and eleven apartments spread out over the five floors above, nine of the apartments are duplex-style and the other two are single floor apartments of which one occupies the entire top floor as a pent-house. The entire construction of the J-BC is made out of cast concrete. The building stands on a surprisingly rigid orthogonal grid of 7,5 x 4,5 meters (2.20), which is the same as the construction grid of Jeanne Hachette, which is in turn derived from the necessary construction grid for the parking below. When necessary, alteration to this grid are made, for example gridline A is slightly twisted to make it parallel to the adjacent existing building, gridline H is only half a distance away from gridline G to make room for the covered walkway, other smaller grid curiosities are found throughout the building for example the column at F1 is somewhat displaced. Each grid point has a concrete column with a square dimension of 300 x 300 mm. Other load bearing and stabilizing elements are the elevator shaft, the circular main stairway shaft and the four installation shafts. The floors are, where necessary for load bearing or stabilizing purposes, supported by additional concrete beams. These beams lead more often than not opposite to the grid in a diagonal direction from one column to the other.[7]

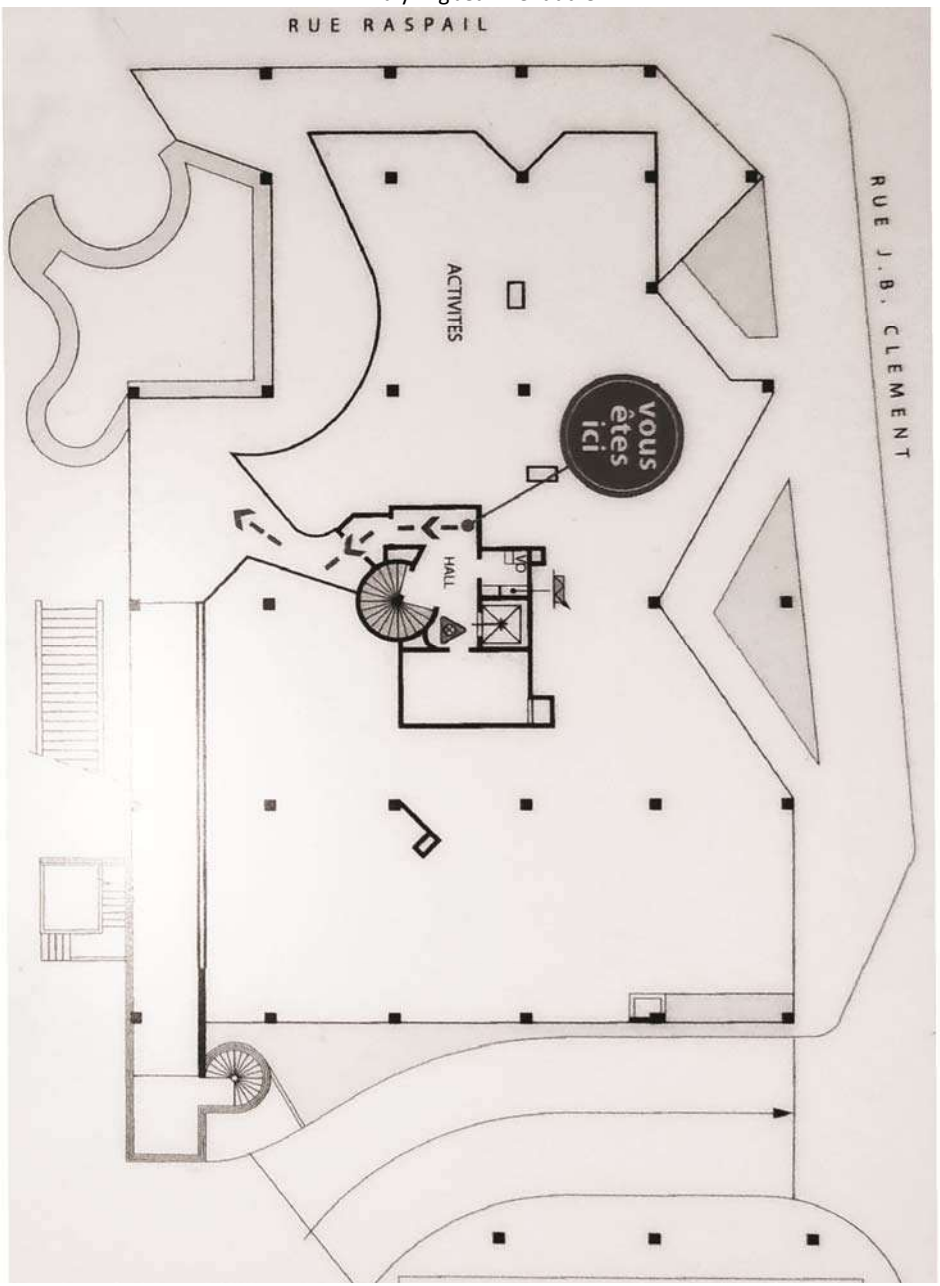
The internal circulation towards the apartments of the J-BC building consists of one main staircase and one elevator, making accessible the corridors that are situated on the first, the third and the fifth floor. The second and fourth floors have no need of an entrance because of the duplex style apartments. The ground floor entrance to the apartment part is at the south-west side of the J-BC project where there is the small pedestrian area (2.21). The apartments themselves are all entered from one of the corridors on the first, third and fifth floor. The corridors are painted in bright primary colors (yellow, red, blue) and are overall quite dark; only the main staircase has small and high placed windows (2.21).

[7] The exact placement and suggestion of these beams are only evident in plan drawings and can't be controlled in sectional drawing (because they do not exist). While visiting the apartments I have noticed that most of these beams are covered by a lowered ceiling (these lowered ceilings are the grey surfaces in the plans).

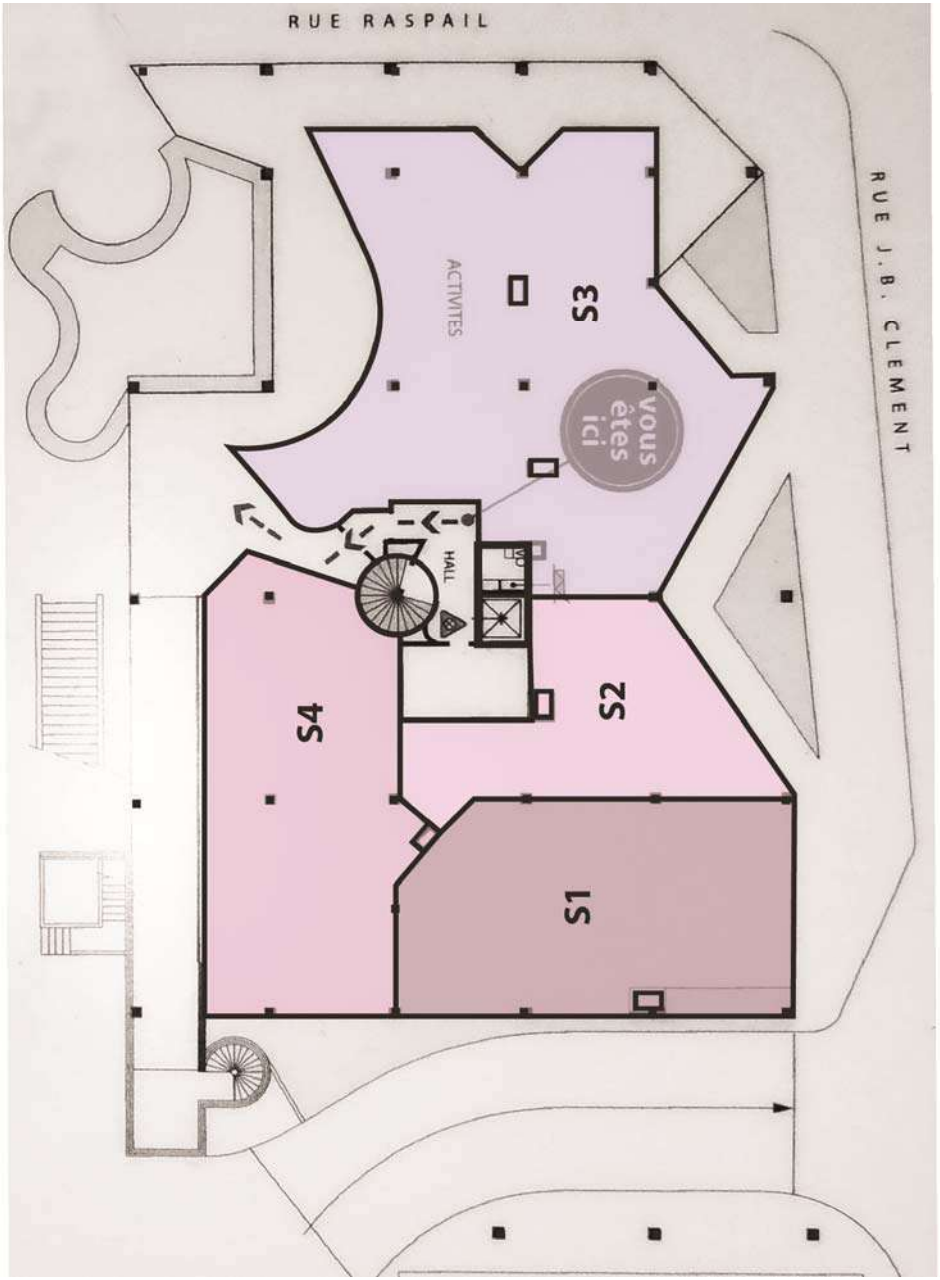
All of the apartments in J-BC are radically different and their unconventional shapes are tightly connected; they stick into, under and over each other (2.22). The apartments vary in scale from 143m2 to 77m2 with an average of 108m2 and all have access to multiple terraces varying in scale from a miniscule 2m2 to a park-like 30m2. On average 23 percent of the total floor space is occupied by the terrace, which is approximately 32m2 of terrace per apartment. The internal space versus the terrace space ratio of the apartments can roughly be divided into three categories; a group of five apartments have a relatively small terrace compared to their internal space with the terrace occupying 10 to 13 percent of the total floor space. A group of four apartments have an average terrace, which occupies between 19 and 29 percent of the total floor space. A group of three apartments have a relatively large terrace, which occupies between 34 and 36 percent of the total floor space.

Apartment	Rooms	Internal (m2)	Terraces (m2)	Total (m2)
A	4	115	13 (10%)	128
B	3	114	16 (12%)	130
C	4	103	44 (29%)	147
D	4	77	26 (25%)	103
E	4	113	17 (13%)	130
F	4	111	60 (35%)	171
G	4	98	14 (12%)	112
H	5	114	60 (34%)	174
I	4	105	18 (13%)	133
J	4	97	53 (36%)	150
K	6	143	34 (19%)	177
Total		1190	354 (23%)	1544
Average		108	32 (23%)	140

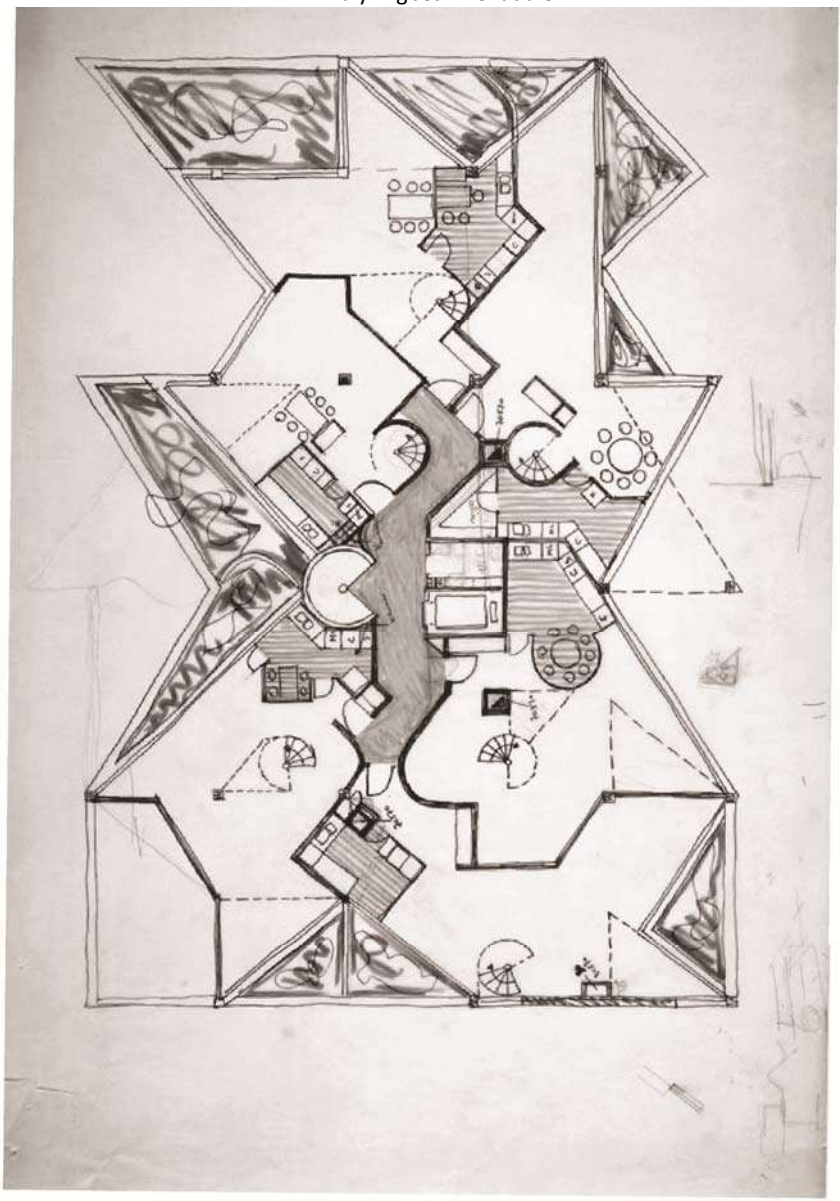
2.22 The apartments indicated in J-BC as seen from the junction of the Rue Jean Baptiste Clément and the Rue Raspail



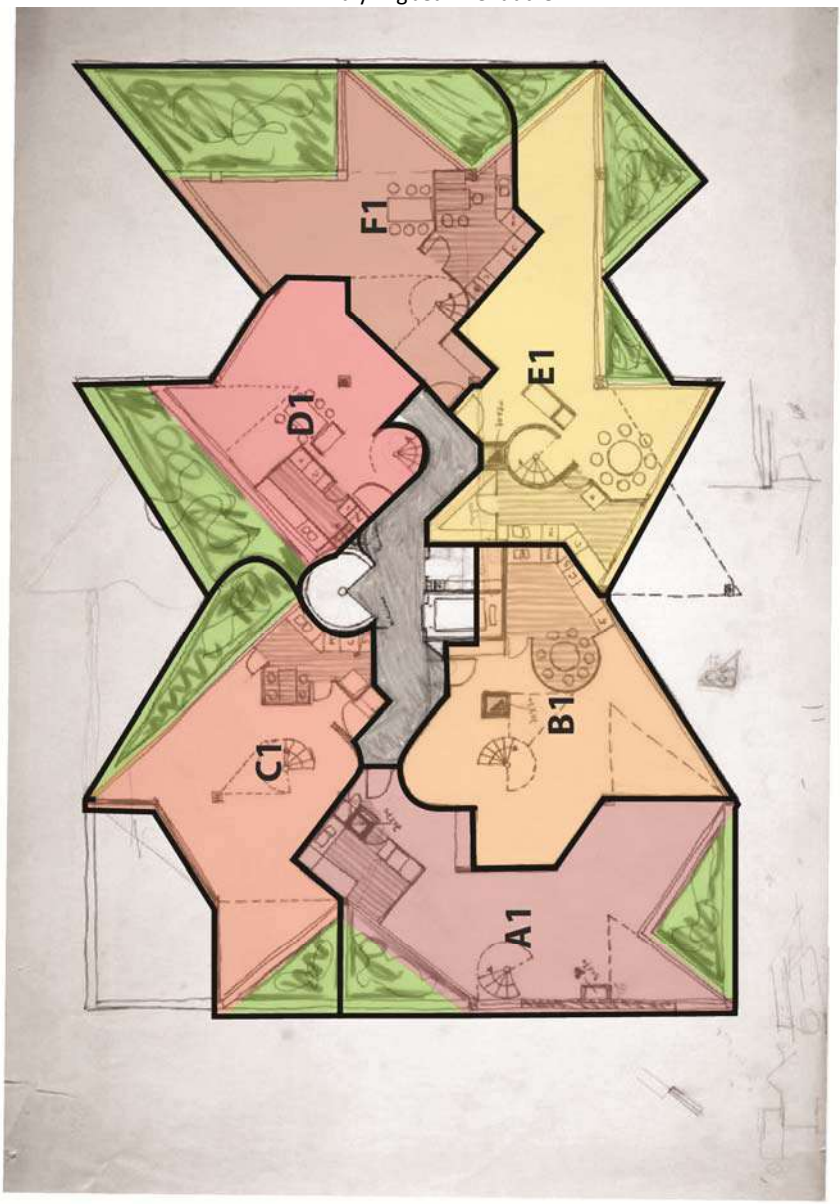
2.23.1 Ground floor plan



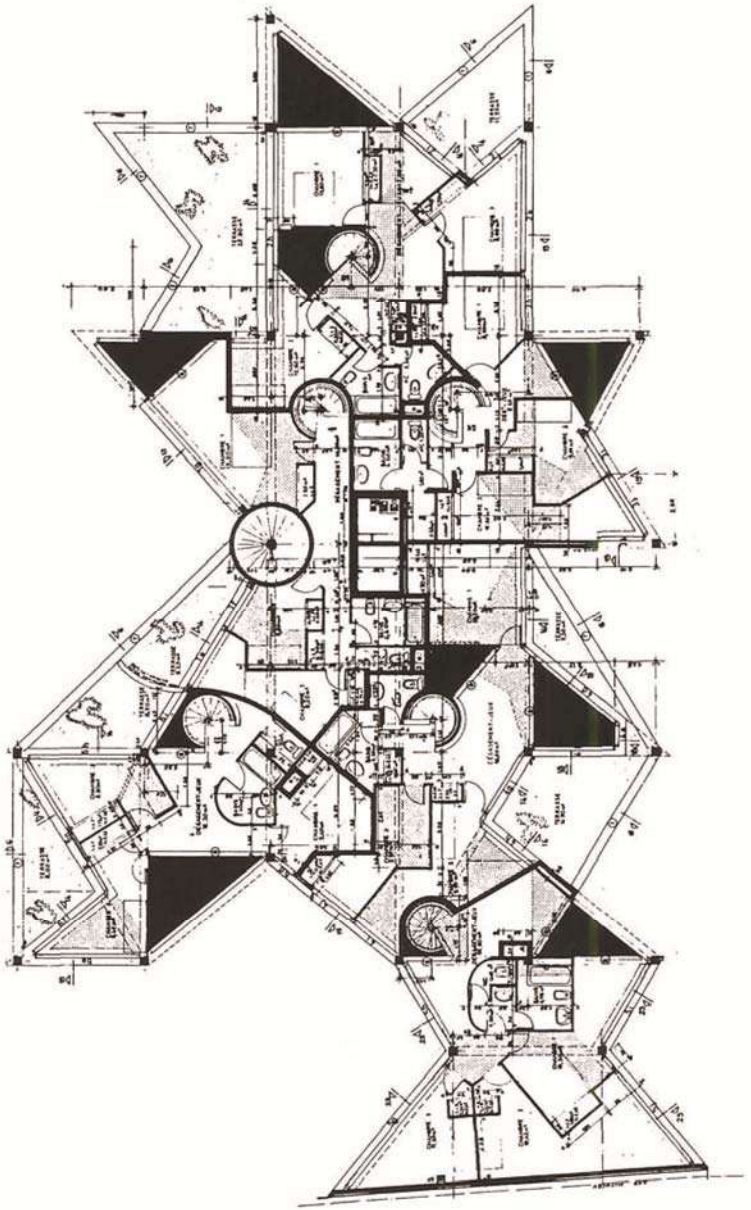
2.23.2 Indication of shops in ground floor plan



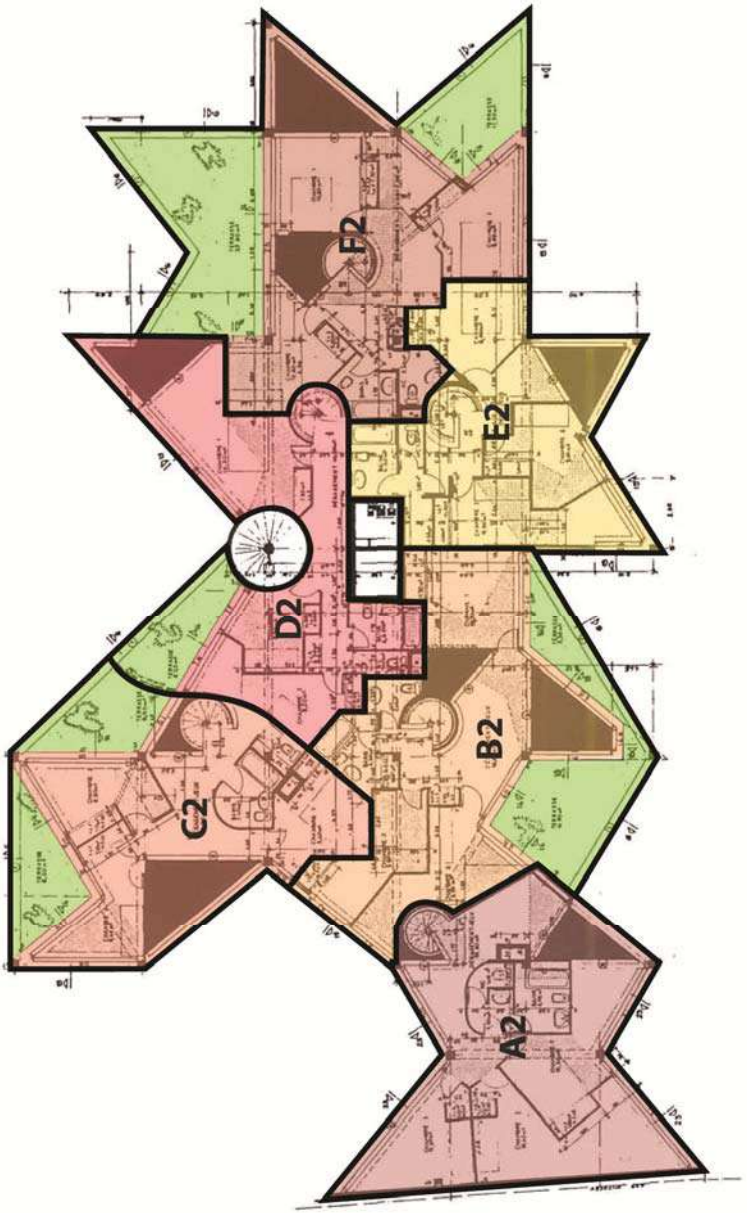
2.23.3 First floor plan



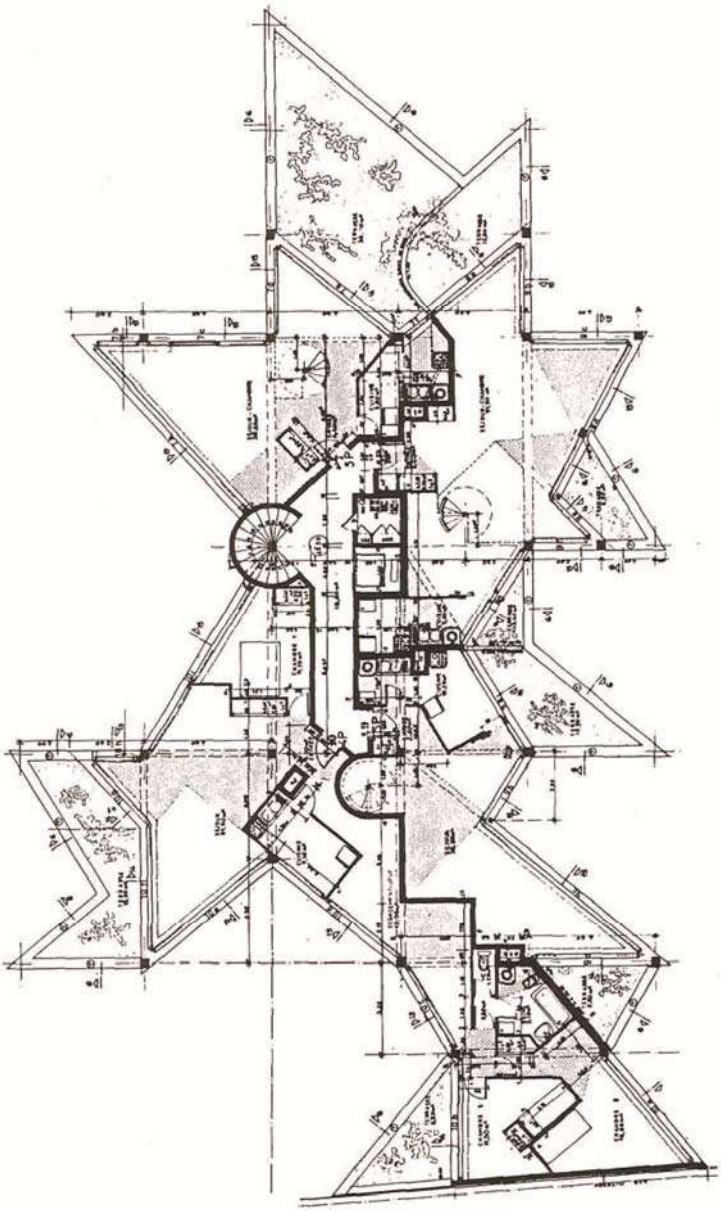
2.23.4 Indication of apartments in first floor plan



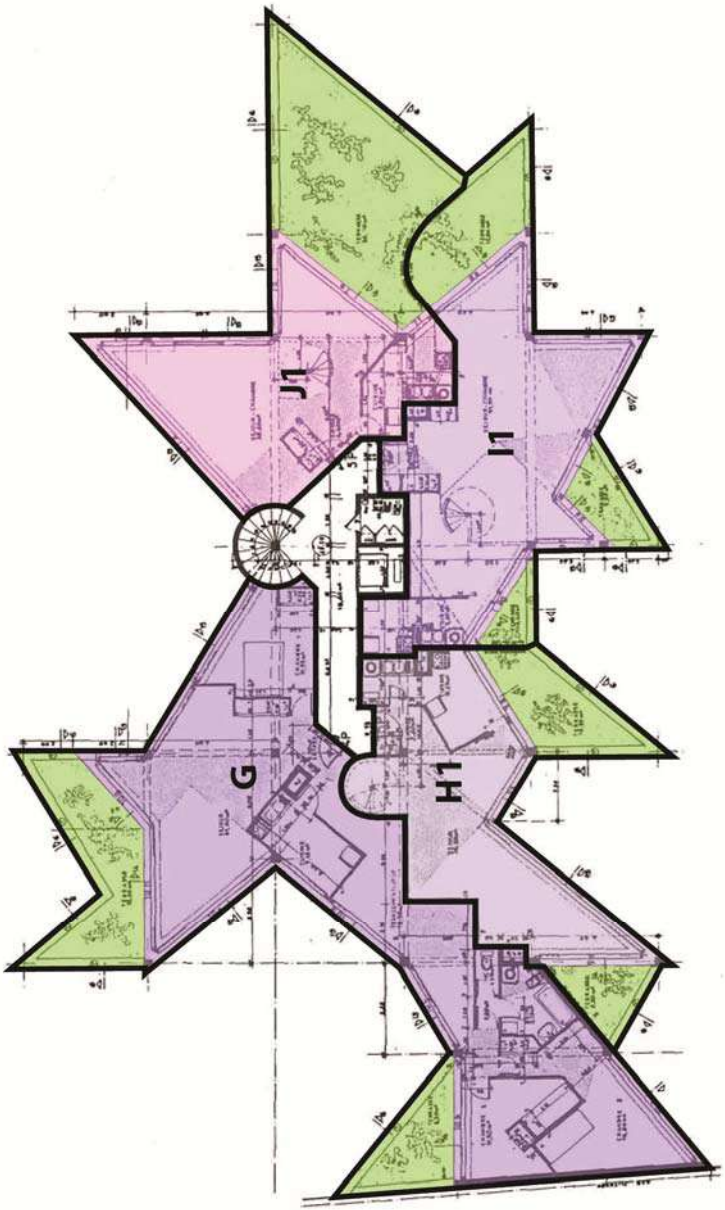
2.23.5 Second floor plan



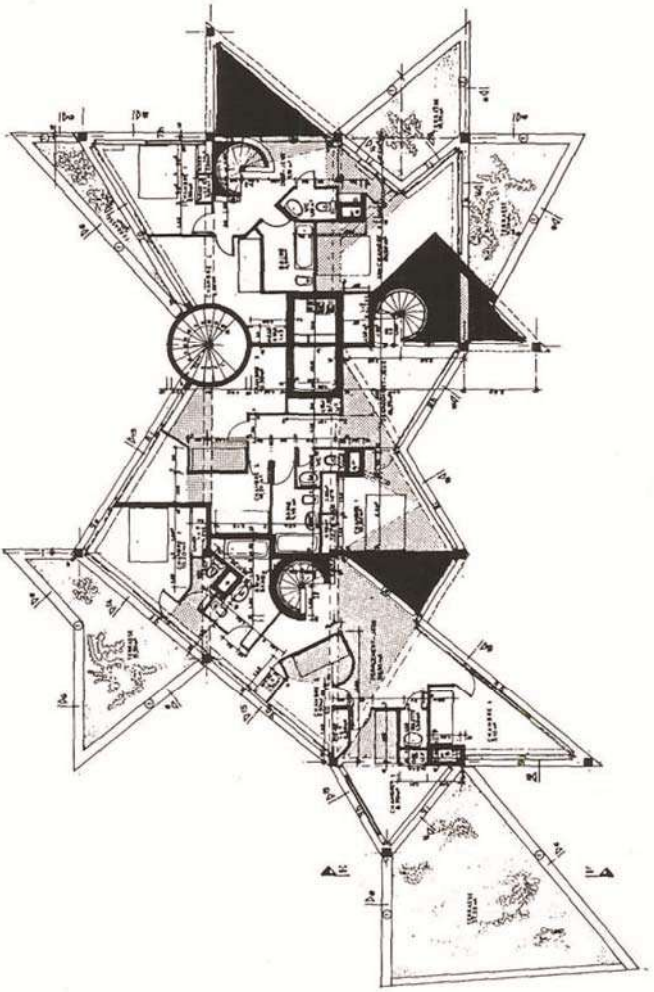
2.23.6 Indication of apartments in second floor plan



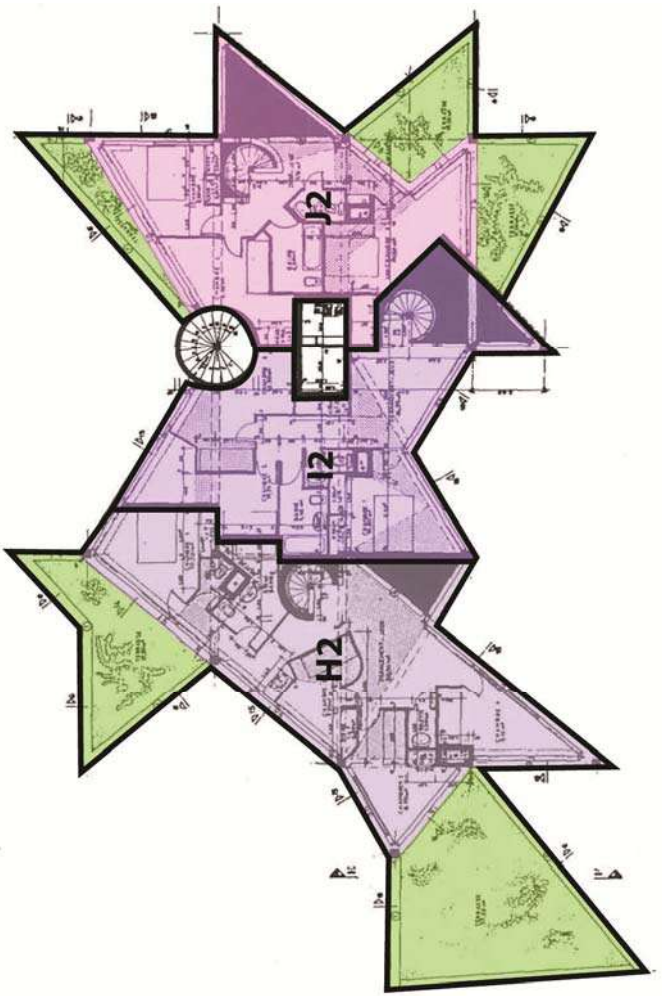
2.23.7 Third floor plan



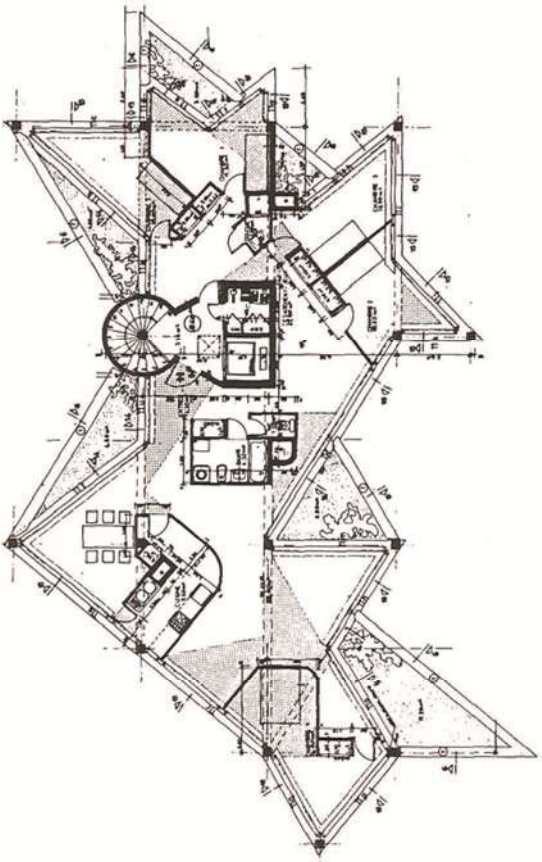
2.23.8 Indication of apartments in third floor plan



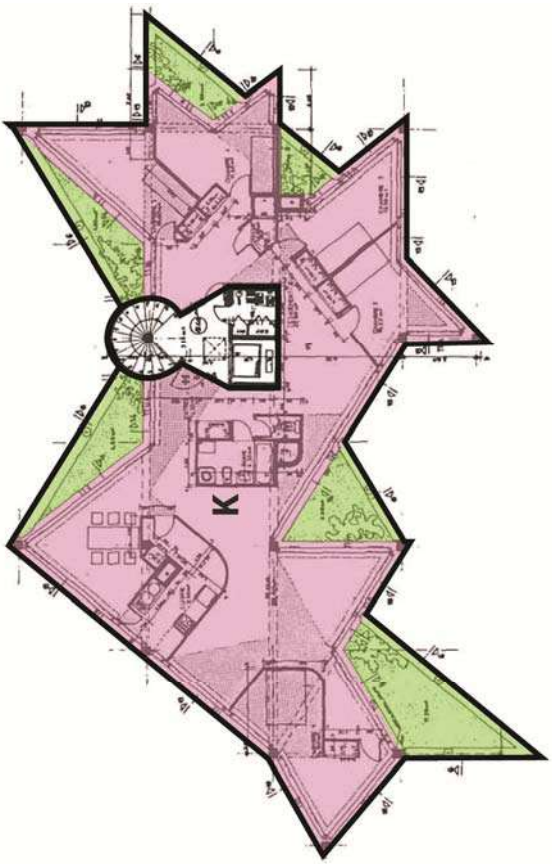
2.23.9 Fourth floor plan



2.23.10 Indication of apartments in fourth floor plan



2.23.11 Fifth floor plan



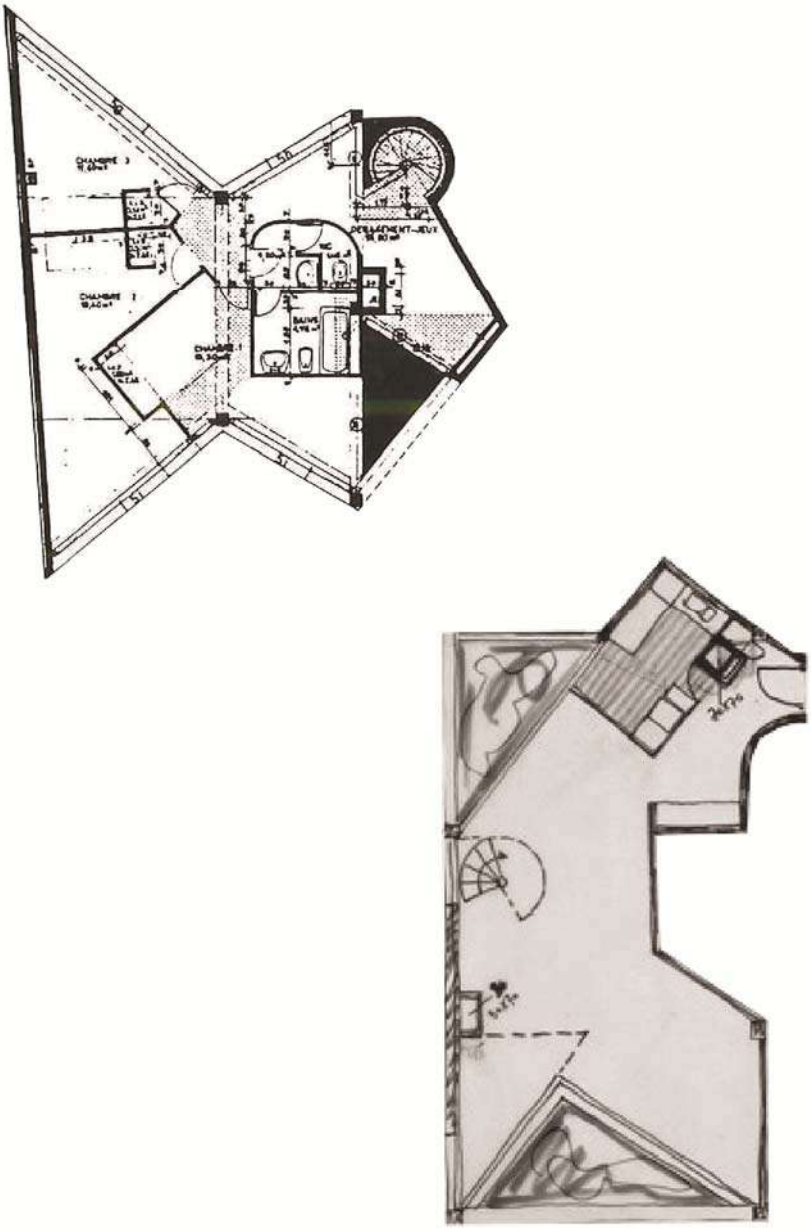
2.23.12 Indication of apartment in fifth floor plan

2.24 The apartments indicated in J-BC as seen from Rue Jean Baptiste Clément

Apartments

From all 11 apartments I analyzed five in a greater extend. First apartment A that could be interesting because it is located on the '*bridge*'. Secondly apartment C because it seems like a difficult apartment because of its north-west facing position and relatively small outside facing façade. Thirdly apartment I because it has a lot of different orientations. Finally apartment F and J because they have a relatively large terrace space.

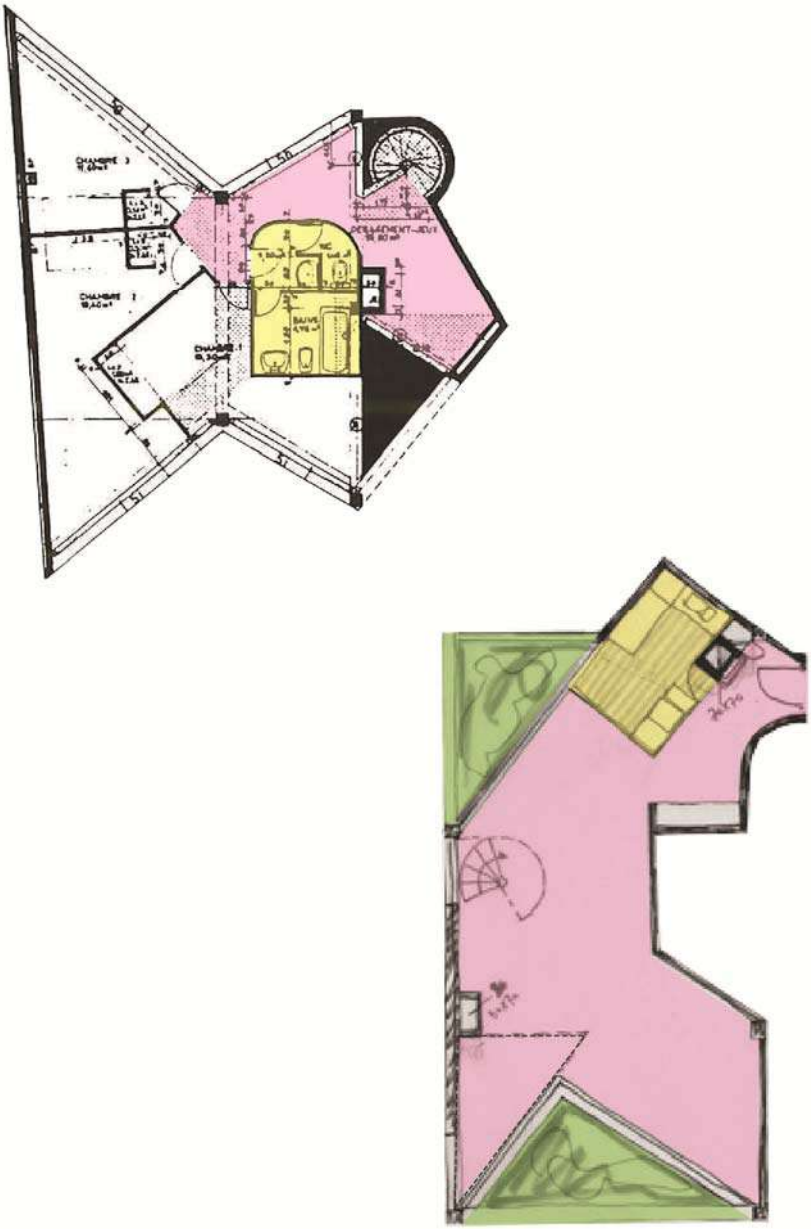
Apartment A is a duplex-style apartment located at the north-west side of the building on the first and second floor. The internal surface of the apartment is 115m2 and the terrace space is 13m2; which is approximately 10% of its total floor space and with which it has the lowest relative and quantitive terrace space of the entire J-BC complex. The most typical aspect of this apartment is that the higher floor is located on the 'bridge' structure that stretches out over the Passage du Four, while in the meantime the lower floor gives a view underneath this bridge structure. The lower floor of the apartment is occupied by the living room, the kitchen and two terraces. The higher floor consists of three bedrooms and the bathroom with a separate toilet and is lacking a terrace. The entrance to the apartment is positioned at the end of the first floor corridor. From here you enter into a small hallway that has an open connection to the living room. In this hallway you will find some build-in storage space and the entrance to the kitchen, which is in a separate room. The kitchen has a connection to a small 6m2 west facing terrace. This triangular shaped terrace is divided by a small wall from the neighboring terrace of apartment C. The living room also makes a connection with this terrace by a sliding door. The main feature of the living room is the centrally placed circular staircase which divides the room into a dinning and a living space. The living space is again divided in two wings by the insertion of a triangular south-west facing terrace. One of these wings consists of a double height space which makes a void in the higher floor. The part of this double height space facing the terrace is totally glazed. The 7m2 terrace is accessible from both wings by two sliding doors. The living room makes a visual connection with the underpass of Passage du Four at two points; one at the corner of the double height space and the other while ascending or descending the staircase. When you arrive at the higher floor you find yourself in the



2.25 Lower floor (below) and higher floor (above) of apartment A

middle of a relatively spacious L-shaped hallway which at one side leads to the entrances of the rooms and at the other side leads towards the void to the lower floor. This spacious hallway is in the plans by Renaudie indicated as a hallway for playing (*dégagement jeux*). When standing in front of the void you are able to see inside the living room, over your terrace into the city. When moving towards the rooms you find yourself inside the bridge structure that goes over the Passage du Four, from right to left you find the entrances to; a small triangular shaped children bedroom, a larger but awkwardly shaped children bedroom, the main bedroom and the bathroom. All bedrooms have built-in storage space and all of them have, because of their size or shape, an almost fixed place for the bed. The awkward shapes of the larger children bedroom and the main bedroom is created by introducing an extra orthogonal direction, is this way almost all corners are perpendicular except for the ones where the angle rotation is resolved. An extra feature of the main bedroom is that it also faces the void to the lower floor. The almost square formed bathroom has a separately accessible toilet and is placed in the middle of the plan and consequently has no windows to the outside. The two edges on the toilet-side of the square are rounded off, which make a relatively soft expression compared to the hard diagonal angles of the rest of the building. These round forms in walls are found in more places around the building; mostly as a contra mall of the round staircases, sometimes in the terrace division walls and sometimes in the kitchen or bathroom walls, rarely they are found somewhere else[8].

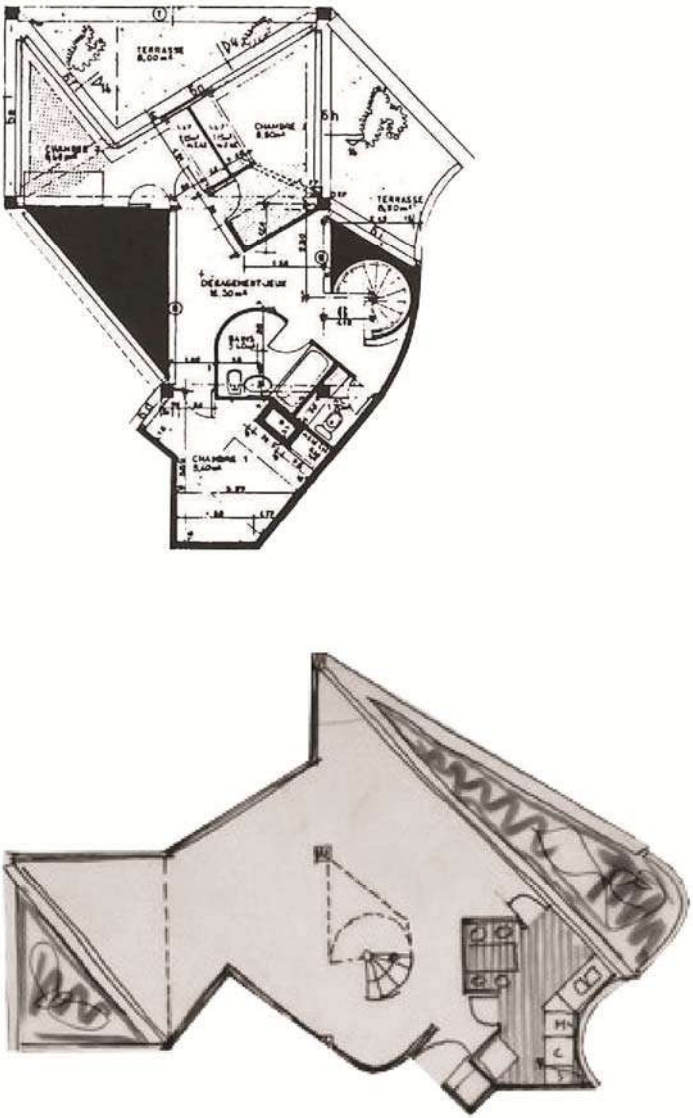
[8] For example: the division wall between apartment C and D on the second floor has a rounded form which is hardly related to the staircase.



2.26 Lower floor (below) and higher floor (above) of apartment A

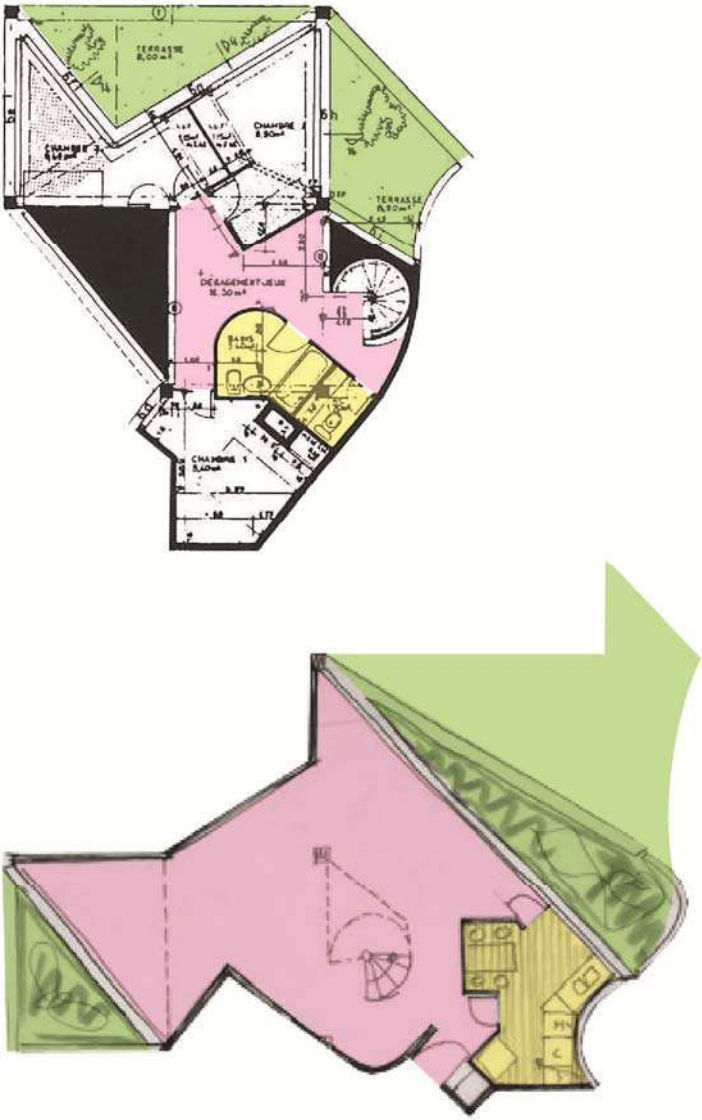
Apartment A	m2	%		m2	%
LOWER FLOOR	69	53	**HIGHER FLOOR**	59	47
Living room	49	38	**Bedrooms**	36	27
Living space	34	27	Bedroom 1	10	8
Dining space	8	6	Bedroom 2	14	10
Entrance hall	7	5	Main bedroom	12	9
Kitchen	7	5	**Bathroom**	6	5
Terraces	11	10	Toilet	1	1
Terrace 1	6	5	Bathroom	5	4
Terrace 2	7	5	**Hallway**	16	12
			Void	4	3
TOTAL				128	100

2.27 View from the dining space towards the living room



2.28 Lower floor (below) and higher floor (above) of apartment C

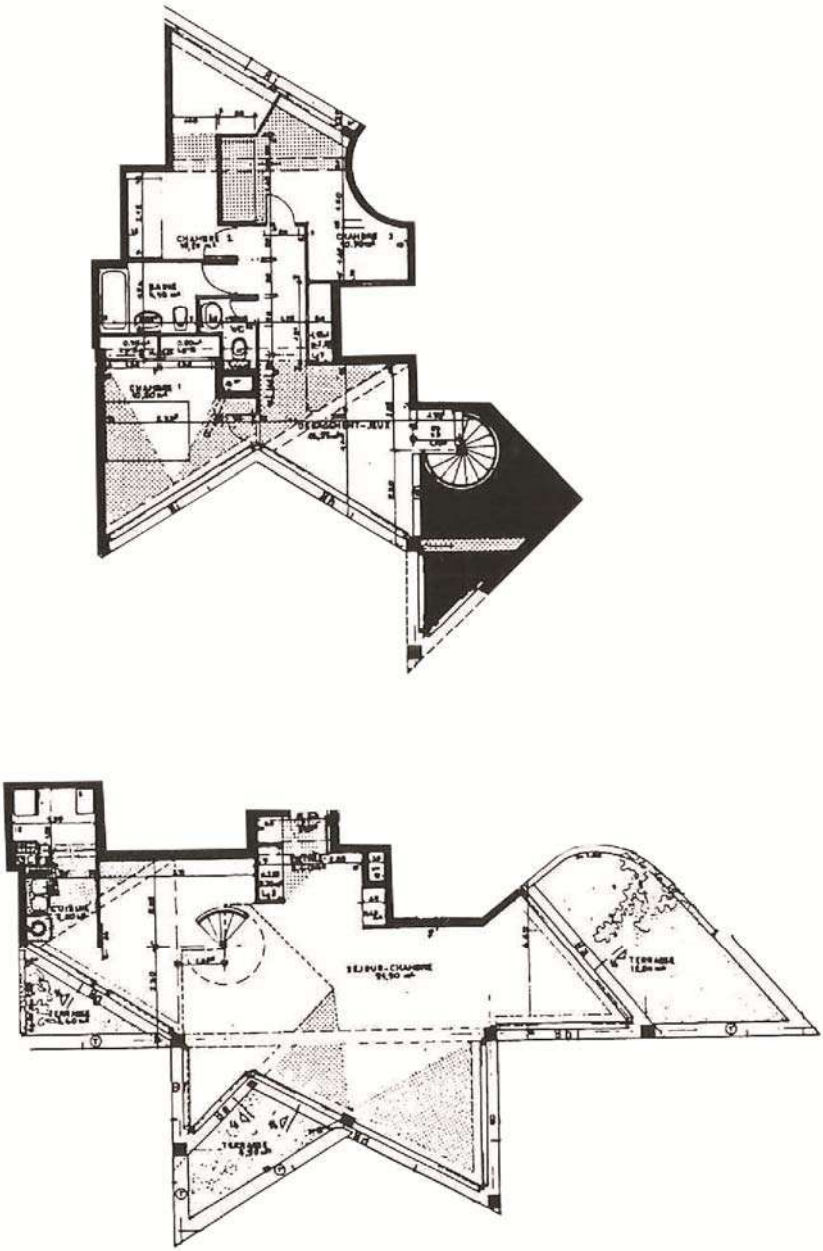
Apartment C is a duplex-style apartment located at the west side of the building on the first and second floor. The internal surface of the apartment is 147m2 and the terrace space is 44m2 divided over four terraces; which is approximately 29% of its total floor space. Most typical about this apartment is its living room, which is large but has a free standing column in the middle and which is deprived from natural daylight because of a closed-of service unit. The lower floor of the apartment is occupied by the living room, the kitchen and two terraces. The higher floor consists of three bedrooms, the bathroom with a separate toilet and two terraces. The entrance to the apartments lies at the end of the first floor corridor (right next to the entrance of apartment A). From here you enter into a small hallway with to the right some build-in storage and the entrance to the kitchen and to the left it has an open connection to the living room. The kitchen has two entrances, one towards the hallway and one directly into the living room, also it has a connection to a large north facing terrace. This terrace has a view towards the adjacent Raspail tower and the pedestrian area in the direction of Jeanne-Hachette. The living room stretches from this north facing terrace towards a west facing terrace at the other end, the part of the living room facing this terrace has a double height space with a large glazed surface. In the middle of the living room we find a free standing column and the spiral staircase leading towards the higher floor. This column and staircase visually divide the living room. When you arrive at the higher floor you find yourself in a spacious hallway (which is again indicated as a hallway for playing) leading from the stairway void towards the larger east facing void. When looking down into this east facing void you can see inside the living room, over your terrace into the city. At the beginning of the hallway you will find the entrance to the toilet and the bathroom, the wall of the bathroom facing the hallway is again (like in apartment A) curved. Standing in front of the big void you will find the main bedroom at the left side and the two children bedrooms at the right side. Each room has about the same floor space and their own build-in storage. The main bedroom however only has one single small window, while the two children bedrooms have a large glazed surface and are almost completely surrounded by terraces. They even have a shared terrace, so it becomes possible to go from one children room to the other while crossing the terrace.



2.29 Lower floor (below) and higher floor (above) of apartment C

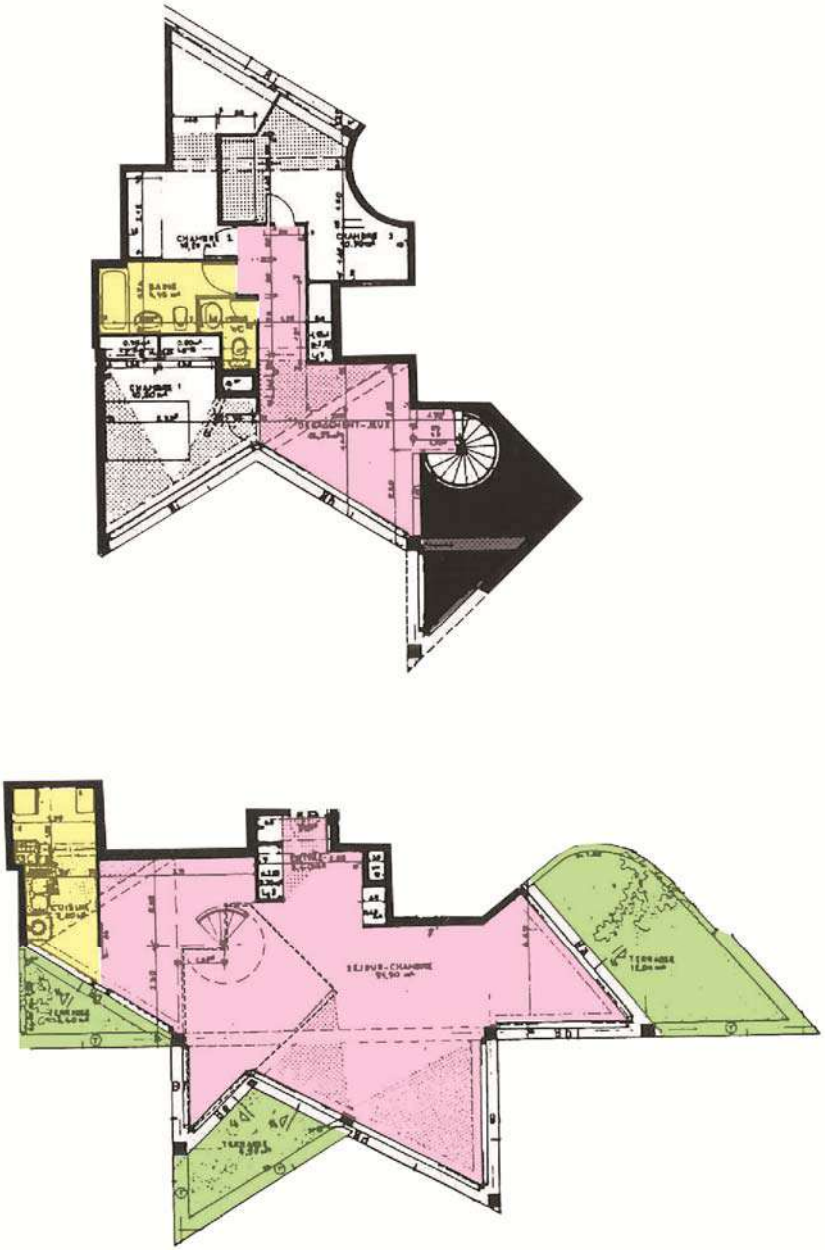
Apartment C	m2	%		m2	%
LOWER FLOOR	77	52	**HIGHER FLOOR**	70	48
Living room	45	30	**Bedrooms**	26	18
Living/dining space	42	28	Bedroom 1	9	6
Entrance hall	3	2	Bedroom 2	9	6
Kitchen	8	5	Main bedroom	8	6
Terraces	24	17	**Bathroom**	5	4
Terrace 1	17	13	Toilet	1	1
Terrace 2	7	4	Bathroom	4	3
			Hallway	11	7
			Terraces	20	14
			Terrace 1	10	7
			Terrace 2	10	7
			Void	8	5
			Void 1	6	4
			Void 2	2	1
TOTAL				147	100

2.30 View through the living room towards the smaller terrace



2.31 Lower floor (below) and higher floor (above) of apartment I

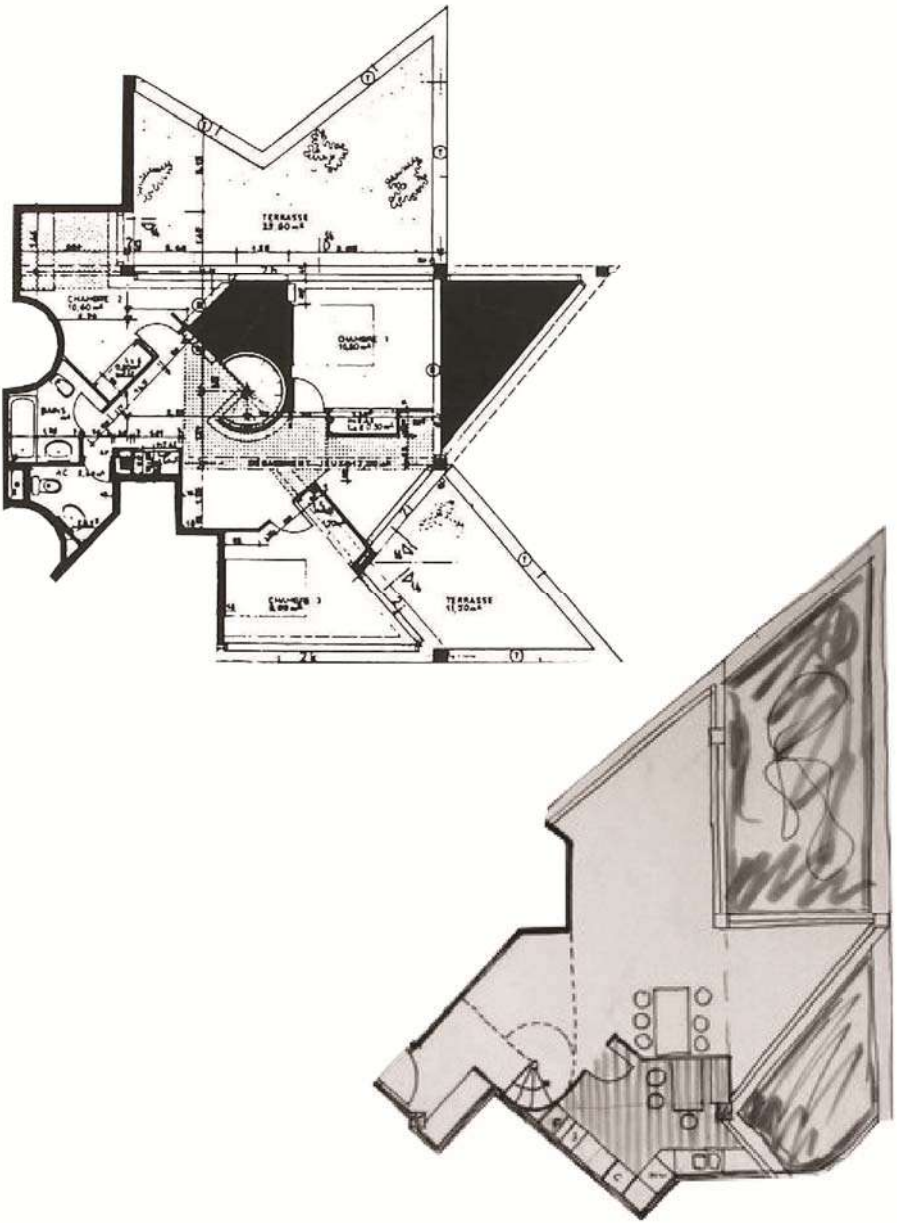
Apartment I is a duplex-style apartment located in the middle of the building on the third and fourth floor. The internal surface of the apartment is 105m2 and the terrace space is 18m2 divided over three terraces; which is approximately 13% of its total floor space and with which it is in the group of apartments with a relatively small terrace space. The most typical aspect of this apartment is that the lower floor is located at the south side of the building with terraces facing towards the Rue Jean Baptiste Clement and the Rue Raspail, while in the meantime the higher floor goes right through the middle of the building giving it an additional north-east orientation. The lower floor of the apartment is occupied by the living room, the kitchen and three terraces. The higher floor consists of three bedrooms and the bathroom with a separate toilet and is lacking a terrace. The entrance to the apartment lies at south-east side of the third floor corridor. From here you enter into a small entrance area with build-in storage on both sides. Immediately you enter in the large and light living room area which has access to three different terraces. The living room is again, like in apartment A, divided by a circular staircase in a dinning space and a living space. The living space has access to two terraces; the largest terrace lies at the south-east side facing the market square. The 10m2 terrace is divided from an adjacent terrace by a rounded of wall. Another 6m2 terrace is located south-west facing towards the Rue Jean Baptiste Clement . A third small 2m2 terrace is connected to the dining room and the kitchen. All terraces are accessible through sliding doors. The kitchen has an open (or sliding door) connection to the dining room. The circular staircase is placed within a double height space which sticks out into the second terrace. When going up the stairs you end up in a spacious hallway (which is again indicated as a hallway for playing) with, from left to right, the entrances to the main bedroom, the toilet, the bathroom and the two north-east facing children rooms. The corners in the rooms are almost all perpendicular to the construction grid, except for when they meet the facades which are in a diagonal angle to the grid. One of the children bedrooms is quite long and narrow while the other one has a large rounded-of surface (the contra mall of the main staircase). There are build-in storage spaces in the main bedroom and in the hallway, but not in the children bedrooms.



2.32 Lower floor (below) and higher floor (above) of apartment I

Apartment I		m2	%			m2	%
LOWER FLOOR		76	57	**HIGHER FLOOR**		52	43
Living room		51	38	**Bedrooms**		31	23
	Living space	38	29		Bedroom 1	10	7
	Dining space	7	5		Bedroom 2	11	8
	Entrance hall	6	4		Main bedroom	13	10
Kitchen		7	5	**Bathroom**		6	5
Terraces		18	13		Toilet	1	1
	Terrace 1	10	8		Bathroom	5	4
	Terrace 2	6	4	**Hallway**		17	13
	Terrace 3	2	1	**Void**		10	7
TOTAL						133	100

2.33 View from the entrance through the living room towards the large terrace



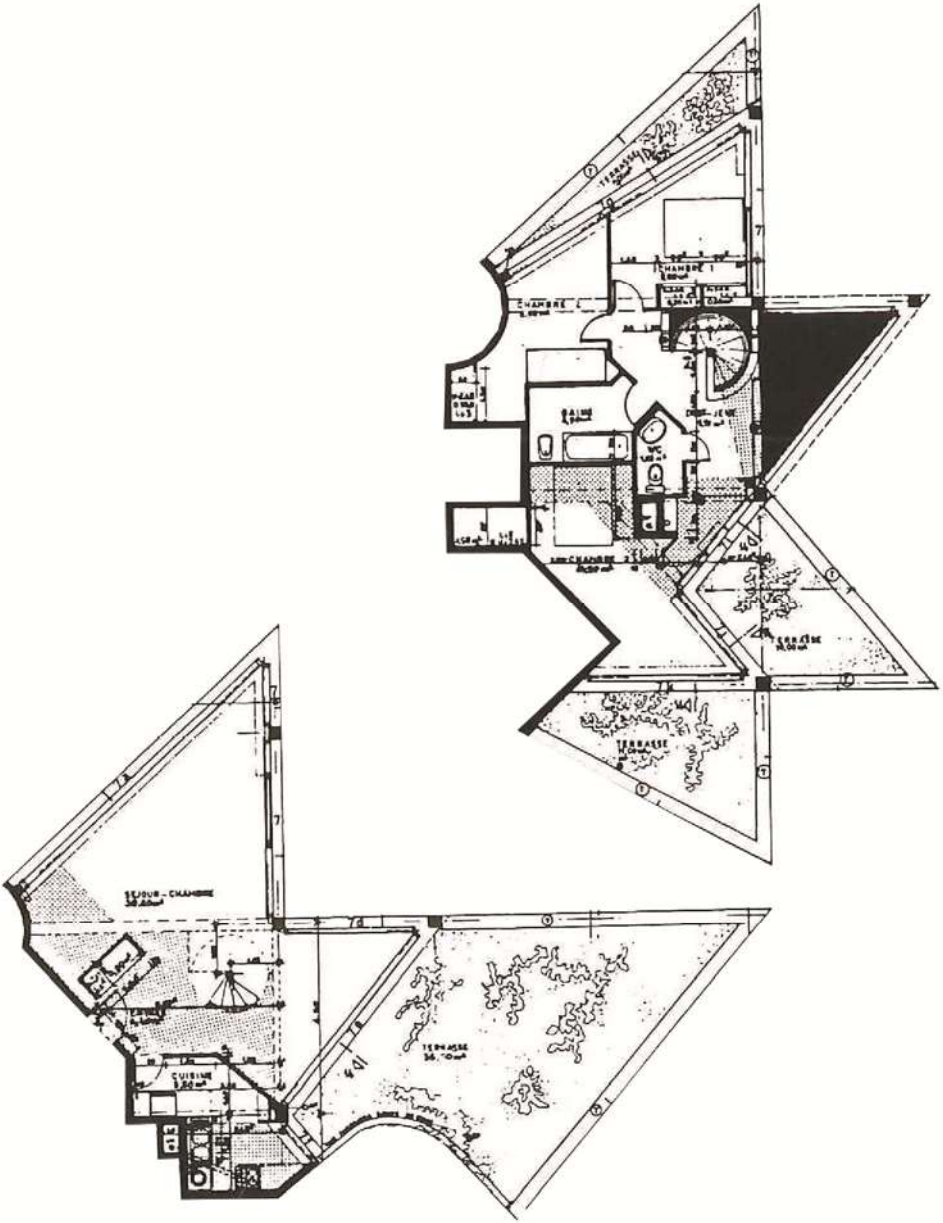
2.34 Lower floor (below) and higher floor (above) of apartment F

Apartment F is a duplex-style apartment located at the west side of the building on the first and second floor. The internal surface of the apartment is 111m2 and the terrace space is 60m2; which is approximately 35% of its total floor space and with which it is in the group of apartments with a relatively large terrace space. The most typical aspect of this apartment is that almost all outward facing facades of the apartment are occupied by a terrace. This means that every room has a direct connection with a terrace (and not directly with the city). The lower floor of the apartment is occupied by the living room, the kitchen and two terraces. The higher floor consists of three bedrooms, the bathroom with a separate toilet and two more terraces. The entrance to the apartment lies at the end of the first floor corridor. From here you enter into a small entrance hall with build-in storage and you immediately see the circular stairs leading upwards. If you go past the stairs you enter into the living room with on your right side the entrance to the kitchen. The living room gives entrance to two spacious terraces which are in total almost equally large as the living room itself. Two sliding doors give entrance to the east facing terraces. The living room has two double height spaces; one at the staircase and the other at the triangular space between the terraces. Also the kitchen has a connection with one of the terraces. When going up the stairs you end up in a hallway that has an open feel to it because of the two voids and the direct connection it makes to one of the terraces. All the rooms are arranged around the hallway and the central stairway void. The bathroom with separate toilet is placed in the windowless corner of the apartment. The first children bedroom has a visual connection with the stairway void and a direct connection with a large north-east facing terrace. The main bedroom (which is rectangular!) has a direct connection to the same terrace and it looks into the living room, over the below terraces and onto the market square. The second children room faces the Rue Jean Baptiste Clement and has access to a second terrace. The hallway and all bedrooms have their own build-in storage.

2.35 Lower floor (below) and higher floor (above) of apartment F

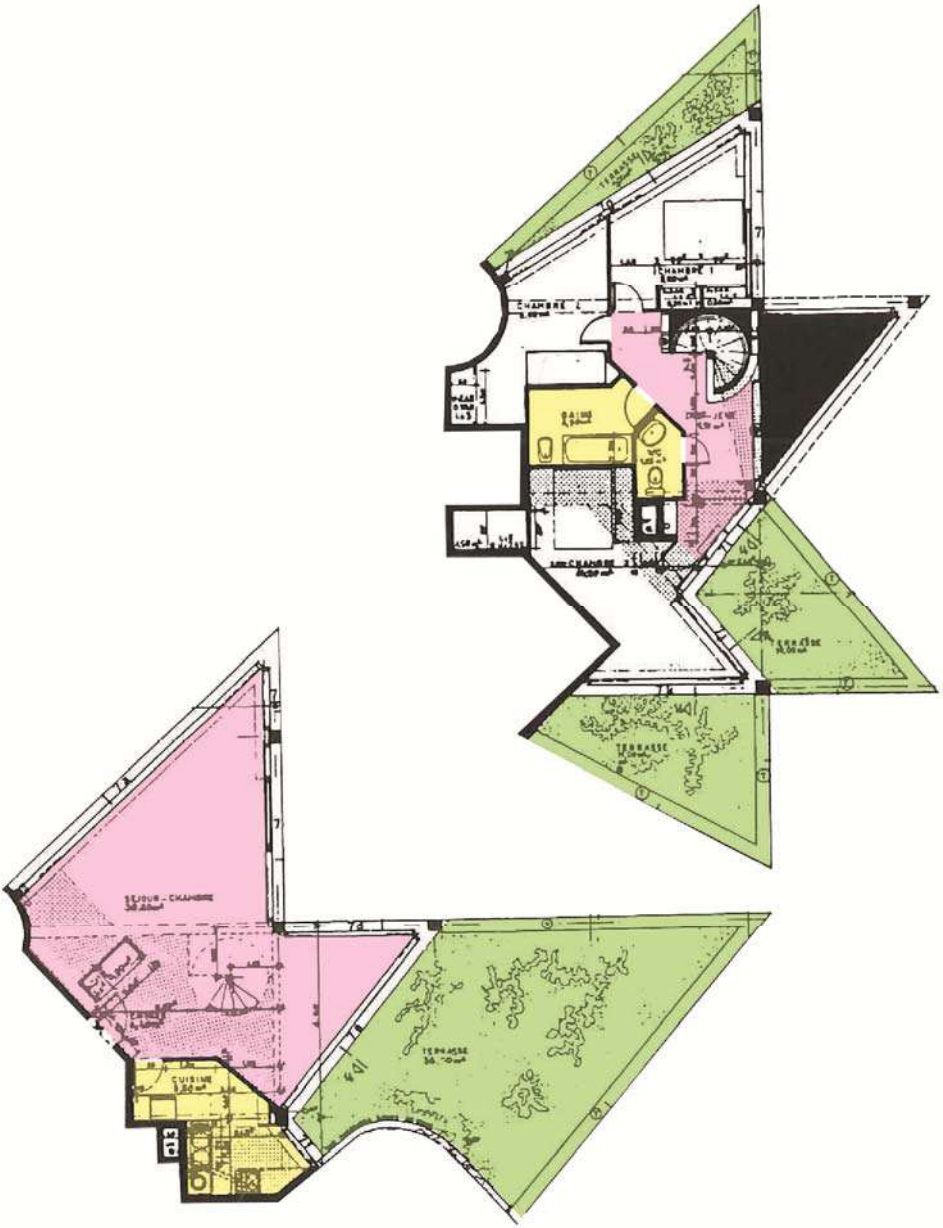
Apartment F	m2	%		m2	%
LOWER FLOOR	76	57	**HIGHER FLOOR**	52	43
Living room	32	38	**Bedrooms**	31	23
Living/dining space	24	29	Bedroom 1	8	7
Entrance hall	8	4	Bedroom 2	9	8
Kitchen	8	5	Main bedroom	8	10
Terraces	28	13	**Bathroom**	5	5
Terrace 1	20	8	Toilet	2	1
Terrace 2	8	4	Bathroom	3	4
			Hallway	14	13
			Terraces	29	13
			Terrace 1	20	8
			Terrace 2	9	4
			Void	10	7
			Void 1	3	2
			Void 2	7	5
TOTAL				133	100

2.36 View towards the void in the living room



2.37 Lower floor (below) and higher floor (above) of apartment J

Apartment J is a duplex-style apartment located at the west side of the building on the third and fourth floor. The internal surface of the apartment is 96m2 and the terrace space is 56m2; with which it is one of the smaller apartments regarding its internal surface but one of the biggest regarding its terrace space, which is approximately 37% of its total floor space. Typical about this apartment is that the terrace connected to the living room is bigger than the living room itself. The lower floor of the apartment is occupied by the living room, the kitchen and a big terrace. The higher floor consists of three bedrooms, the bathroom with a separate toilet and three more terraces. The entrance to the apartment lies at the end of the third floor corridor. From here you enter into a small entrance partition that is in direct connection with the living room, to the left is a freestanding build-in storage and to the right the entrance to the kitchen. The L-shaped living room has the central circular staircase in the middle dividing it into a living space and a dining space. The dining space is a double height room and is connected by a sliding door to the park-like terrace. The terrace has an angle pointing far into the city and giving a view towards the old municipality and the market square. The small kitchen is also accessible from the terrace. When going up the circular staircase you end up in a spacious and light hallway, again labeled as hallway for playing, from where you have a view onto the dining room, over the big terrace and into the city. The bathroom with separate toilet is accessible from the middle of the hallway, the main bedroom lies at one end of the hallway and the two children bedrooms at the other end. The main bedroom with build-in storage is connected to two terraces, of which one south-west facing and the other south-east facing. The latter gives a view towards the big terrace lying below and is also accessible from the hallway. The two children bedrooms at the other end of the hallway are both connected to the same long stretched north-east facing terrace and both have built-in storage.



2.38 Lower floor (below) and higher floor (above) of apartment J

Apartment J	m2	%		m2	%
LOWER FLOOR	73	49	**HIGHER FLOOR**	77	51
Living room	36	24	**Bedrooms**	30	20
Living space	19	13	Bedroom 1	8	5
Entrance hall	9	6	Bedroom 2	8	5
Dinning space	8	5	Main bedroom	14	10
Kitchen	7	5	**Hallway**	12	8
Terrace	30	20	**Bathroom**	6	4
			Toilet	2	1
			Bathroom	4	3
			Terraces	23	15
			Terrace 1	6	4
			Terrace 2	8	5
			Terrace 3	9	6
			Void	5	4
TOTAL				150	100

2.39 View from above through the void onto the terrace into the city

2.40 View from the large terrace towards J-BC

2.41 View from the angle of the large terrace towards the town hall.

The different apartments I analyzed have several things in common; they are all duplex-style, the lower floor always contains a kitchen, a living room and at least one terrace, they all have the same spiral staircase leading to a spacious hallway on the higher floor which gives access to the bathroom, the toilet and the bedrooms. The bedrooms almost all have a fixed place for the bed, indicated in the plans, and build-in storage somewhere in the vicinity. The square meters of the rooms on the higher floor are overall quite equal; the bathroom is always relatively orthogonal and quite small between 5-6m2, the bedrooms are also small for present-day standards; all between 8-14m2 and the hallway can almost double as an extra room measuring between 11-17m2. Also the size of the kitchen on the lower floor seems like a fixed entity, measuring between 7-8m2. Besides these few shared features the apartments mostly stand-out for being completely different on more than one place. These differences are mostly notable in the shape, size and orientation of the apartment and are usually manifested in the living room, the positioning of the terraces and the positioning of the void. These differences are so extensive that they should be able to change the entire atmosphere and character of the apartment; if and how this manifests itself will further be explored in the next chapter.

3 UNDERSTANDING JEAN RENAUDIE

After analyzing Renaudies work it is quite clear that his architecture differs tremendously from anything realized before or after him. Renaudie could be categorized under the denominator of structuralism but it is clear that he truly had a style of himself and that in fact he hardly belonged to any architectural category. This is also due to the fact that Renaudies theoretical foundation incorporated all kinds of seemingly contradicting elements or as his son Serge Renaudie describes: *''He had a great freedom of thinking, but (simultaneously) a chaos in his head''*(S. Renaudie, 16 February 2014). Still, in order to understand his motives and how he got to these designs, we have to turn to architectural theory. For Jean Renaudie theory and architectural practice formed an inseparable bond, according to Serge Renaudie, he ''*was in a constant movement between conceptual thinking and architectural and urban design''*(Schuch;, 2012, p. 8). The five main topics that Renaudie dealt with in his architecture are; access to freedom, flow of energy and movement, geometry and structure, the mixing of functions and diversity (S. Renaudie, 16 February 2014). These five topics will feature throughout this chapter in which I will dig into Renaudies intellectual legacy by raising questions that arose from the analysis of his projects. The questions will be derived from the actual architecture and answered by different means ranging from theory to experience and inspiration to design process. The answers will be discussed in five headings; firstly I will deal with the questions concerning complexity. I will answers questions regarding the reasons behind the complexity, the way this complexity could actually be built and how this complexity could be designed. In the next heading I will discuss the reasons behind the combination of complexity with diversity of the apartments. Thirdly I will answers questions regarding the reasons behind the extensive and consequent use of terraces. Afterwards the questions concerning the functionality of the architecture will be discussed. I will be working from the three scale levels I used in the analysis of Renaudies projects; so starting with the functioning of the urban fabric, continuing with the scale of the single building and ending with the single apartment. Finally I will devote a heading to questions relating to the architectural and ideological inspirations of Renaudie.

Complexity

One of the first things that will strike anyone when experiencing Renaudies work is the sheer complexity of the architecture. In analyzing Renaudies architecture it becomes clear that this complexity is not merely an external expression or form freedom, complexity is an integral feature of every layer of the architecture. From the mixing of functions to the uniqueness of each apartment, from the shapes of mountains to the star shaped plans, from the routing towards the apartments to the public routes through and onto the building, from the positioning of the terraces to the details of the balustrades, every element of the building has a certain complexity to it. In the following part I will try to find out why this complexity was so important to Renaudie and how he was able to design and build something with such a complexity.

Urbanism is architecture

So, why this complexity? To answer this question we have to begin with what most of us would call urbanism. For Renaudie urbanism and architecture were inseparably bonded; or to be more exact; *''(…) l'urbanisme doit être architecture*[9]*''*(J. Renaudie, 1968, pp. 32-33). In the few articles Jean Renaudie wrote about architecture he almost always talked about urbanism as being the real architecture. It is also in urbanism in which Renaudie found the value and necessity of complexity. In the article *'Urbanism is architecture*', which Renaudie wrote for *L'Architecture d'Aujourd'hui* in 1968, he describes why architecture is urbanism and why this should inevitably lead to complexity(J. Renaudie, 1968; Scalbert, April 2004, pp. 22-25). I will discuss this article in greater detail because I think it is key in understanding why complexity was so important to Renaudie, additionally it shows the critique he had against the free-market economy, capitalism, the Charter of Athens, modernism and CIAM which are all sort of anti-complex.

In the article Renaudie starts off with a fierce critique on the free-market economy and modern urbanism. According to him the free market economy destroyed the city because it saw the city as something purely

[9] *''(…) architecture and urbanism are one and the same thing''*

speculative in which man is merely tolerated; the *grands ensembles* developments are a manifestation of this phenomenon. The modern urbanism failed because with its simplistic segregation of functions, under influence of the Charter of Athens, it could never recreate the complex organism that is the city. He also acknowledges the resistance of the public towards modern urbanism and their longing towards the city shaped over time as a reason to start anew, he does however do this without being too sentimental about the times past[10]. After this introduction Renaudie starts a thorough description of what a city actually is, in which he puts emphasize on the fact that a city is a complex and living organism that inhibits an infinite amount of functions (more than the CIAM limit of four). He does this by relating the city to the structuralist understanding of the biological cell: *''(…) the city is composed of a number of simple elements which, in combination, create a complex whole whose signification outstrips that of the isolated functions.''*(Scalbert, April 2004, p. 23). The city evolves overtime, like the cell, resulting in the birth and disappearance of functions; this adaptability should be taken into account when designing the structure for a city (something impossible in the simplified zoning of the Charter of Athens). The study and understanding of the complexity of the city is something that should be worked on by different disciplines, however architecture should be the discipline that defines the form in which the complex structure can be organized. Renaudie then gives a definition of architecture that goes beyond the seductive purposes of Corbusiers definition and goes as follows: *''Architecture is the physical form which envelops people's lives in all the complexity of their relations with their environment''.* In this sense architecture should follow the form of the

[10] While describing this Renaudie seems to give a sneer towards the architectural movements that wanted to almost literally return to the ancient city (which was an up-and-coming movement in that time; 1966 was the year Aldo Rossi published *L'architettura della città*) by saying that: *''It would be dangerous to see nothing more in this resistance than a refusal to forget the past''* and: *'' (…) the public is only attached to the past when what is being proposed for the present is not satisfactory''.* According to Irenée Scalbert the post-modern movement of Aldo Rossi can almost be seen as an opposite camp; Renaudie liked the mingling of the old city but he had an aversion against the almost literal copying of it (Scalbert, 9 November 2013). Renaudie would say: *''You shouldn't repeat history, but you can take the energy from the past''* (S. Renaudie, 16 February 2014).

complex human behavior in space in order to construct the complex organism that is the city. And thus architecture must be urbanism, and if that is so architecture must be complexity.

This article describes a theory that gave Renaudie the belief that architecture should never be without urbanism and urbanism should never be without complexity. Complexity was an inseparable part of human life and thus of architecture. Around the time that Renaudie formed his ideas about the city, approximately between 1964 (Gigaro) and 1968 (Le Vaudreuil), the structuralist movement was gaining influence in the human sciences. Renaudies ideology was, sometimes quite literally, influenced by structuralism. Especially by the biologist François Jacob and the linguist Claude Lévi-Strauss. Compare for example these quotes by Jacob and Lévi-Strauss with Renaudies definition of architecture. Francois Jacob (about the biological cell): *''At every level of this organization, one encounters phenomena of communication operating in every direction''* (Scalbert, April 2004, p. 16)and Claude Lévi-Strauss (about language): *''To see in the ensemble, in the whole, an elucidating principle that a part of this whole could not provide on its own''(Scalbert, April 2004, p. 19)*. Both of these quotes show a theory based on a complexity created by connections between their parts. They were taken from a television broadcast of a discussion between, among others, François Jacob and Claude Lévi-Strauss that deeply influenced Renaudie and his partners at the ATM (François Jacob, 1968). The quotes are also present into the album Renaudie made for the presentation of Le Vaudreuil in 1968 to strengthen the validity of his proposal.

Communism

Although structuralist ideas were very influential in the human sciences they were more difficult (and slow) to realize in architecture, mainly because complexity was something directly opposed to the way the French free-market economy and building industry was functioning during the 70s. This explains why there are so few buildings like Renaudies; it was mostly hugely problematic to get them built. So, how was it possible that Renaudie could realize these buildings at all? One of the answers to this is communism. All of Renaudies housing complexes were built for

municipalities, and all of them were communist. This nepotism helped Renaudie to obtain commissions but it also gave him the opportunity to convince the like-minded municipalities, who were also critical towards capitalism and the free-market economy, of his architectural ideas. As mentioned before, the first commission that Renaudie ensured after his departure from ATM was made possible because of recommendations from Renée Gailhoustet, a co-communist. She introduced him to the municipality of Ivry-sur-Seine and Raymonde Laluque, the director of Ivry's public housing office. Laluque (and the municipality) felt, after the events of May 1968, that she as a communist belonged to the avant-garde and therefor she wanted something new and daring, something different than the *grands ensembles*. She found this in Renaudies presentation of Le Vaudreuil. What also helped tremendously in assuring this first commission was the fact that Renaudie was regarded as an important man because of the experience and reputation he had built up during his time at the ATM(Gailhoustet, 16 February 2014). Subsequent commissions were still quite difficult to obtain, especially since the first build projects, Casanova and Jeanne Hachette, were so unconventional. What didn't help either is that the tenders for later projects were systematically over budget; on average by 70 percent (Scalbert, April 2004, p. 117). Regardless of these difficulties the work was still attractive to municipalities that were in search for an alternative to the *grands ensembles*. Jean-Pierre Tohier, the economics and quantity surveyor of Renaudies office, played an important role here. He assured the prospective clients that although the buildings appeared complex the construction was not. His main argument was that the buildings were built upon simple orthogonal construction grids.

Design process

Here, in the rigid construction grid, lies another contradiction in Renaudies thinking. On the one hand Renaudie was restricted by the structural and economical possibilities of capitalism. On the other hand his dream was to recreate the forms of the earth and of nature because these were, according to Renaudie, the forms of human activity. Serge Renaudie recalls that his father would have wanted to copy the forms of nature if he had the economical and structural possibilities. However these forms had evolved in a very long time span and most of them were structurally and

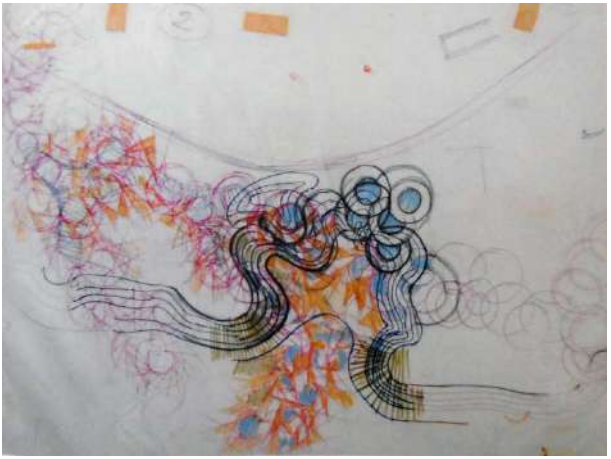
economically impossible. So Renaudie set himself the goal to recreate, or at least reproach, the complexity and diversity of nature in less time with all the structural and economic constraints he faced (S. Renaudie, 16 February 2014).

This leads us to another question: How was Renaudie able to design this complexity and diversity? The main answer to this is to be found in the design process. Because Renaudie realized he could not recreate the forms of nature, which according to him inhibited the complexity of human relations, he understood that he should find a process of designing that could mimic the slowness of evolution and at the mean time conforms to the restrictions presented to him by structure. The first traces of this design method are to be found in the unbuilt design for the holiday village Gigaro on which Renaudie worked between 1963 and 1964 while still at the ATM. Here he started with a circle out of which he created a certain diversity and complexity by introducing tangential and diagonal lines.

The circle, and even more the sphere, was an iconic form in the 1960's. In the book Order in Space, a book that Renaudie knew very well (S. Renaudie, 16 February 2014), Keith Critchlow observes that: *"(…) any form, however random, if completely rotated on its center of gravity, eventually describes a sphere at its extremities''* (Critchlow, 1969, p. 119; Scalbert, April 2004). This concept gave Renaudie a certain freedom to start with; if he commenced his design process with circles or, as he later did, circular tissues, these forms could inhibit an unimaginable amount of other forms[11]. While in Gigaro this method was still fairly restrictive because of the rigidness of the tangential and diagonal lines, a concern shared by his fellow partners at the ATM, later Renaudie became much freer in his use of circular geometries. Instead of starting with the strict boundaries and pure geometry of the circle he initiated the design process with quasi-formless circular tissues. An example of how this design process continued can be

[11] Renaudie would have wanted to start with spherical forms to develop from there a more 3D complexity; this, however, seemed unfeasible regarding the economical and structural constraints. He only succeeded in working with spheres once; his school for Cergy-Pontoise completed in 1972 initially consisted out of intersecting spheres. The model he made for this, Serge recalls, was made out of balloons.

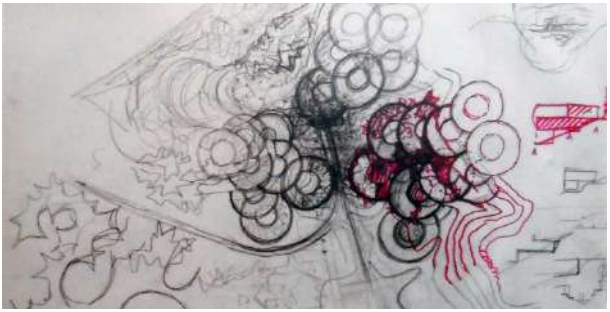
3.1 Curving tissue to get grip on the site (Vitrolles)



3.2 Defining the location and the geometrical guidelines (Vitrolles)

found in the sketches Renaudie made for Vitrolles in 1974; the project was never realized but it is unique since a great number of preliminary sketches have been preserved. Sketching is by far the main tool for Renaudie to understand the specifics of the assignment and to transform his theory into practice. He rarely used other means in his design process; physical models were mostly solely for presenting the work to clients.

The sketches of Vitrolles show that Renaudie starts with an almost random arrangement of curving tissue in order to get grip on the site and its geography (3.1). He sometimes combines this curving tissue with forms he applied in previous designs; we can for example recognize the discs of Gigaro, the stars of Casanova and the tissue of Le Vaudreuil. Once the location of the building(s) is determined (in Vitrolles in order to optimize the views from the cliff) he starts applying a more defined geometry (this time composed out of overlapping circles). This geometry is however never meant as an actual building form, it is merely a guideline for something to come; something that can take place inside or outside the circle. In this sense every step he took, every sketch he made, forced him to rethink what he had done before. He also took this freedom, nothing as such was defined. Every form he drew could be reinterpreted by going inside or outside that form(S. Renaudie, 16 February 2014). Once the location and basic geometry had been grasped, Renaudie researched how to further divide the geometries he made. He did this by creating straight lines, sometimes tangential, sometimes diagonal, sometimes totally random, within the vicinity of the geometry he had just defined. At times these lines already show forms resembling the star shaped plans of his build projects. Latter in the process he continues creating more concrete shapes in more detailed drawings that could be actual building plans. These drawings also give suggestions of driveways and parking for cars and circulation, courtyards and squares for pedestrians. They are all drawn with a sort of unrestricting freedom; still everything seems to be able to happen at all times, something that would have been impossible in the restrictions of the geometry for Gigaro. When Renaudie continues by drawing the preliminary shapes of the apartments and the access routes towards them, he is still very much using the circular geometry he envisaged at the beginning of the process. It is however apparent in the drawings for Vitrolles that these



3.3 Overlapping circles as guidelines (Vitrolles)

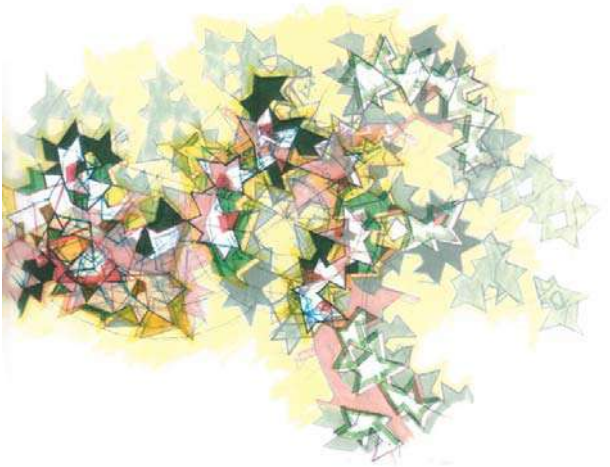
3.4 Fragmenting the geometry (Vitrolles)

3.5 Driveways, courtyards and squares (Vitrolles)

circles serve as mere guidelines, the star shaped plans are not afraid of growing to the inside or the outside of the circle. After these preliminary sketches for the apartment outlines Renaudie puts layers of tracing paper on top of each other; one for each floor. He then continues appropriating the outlines of the apartment plans. Around the time that Renaudie worked at Vitrolles he (and his team) could draw apartment outlines within 10 percent of the required floor area without additional calculations(Scalbert, April 2004, p. 123). What is unconventional about this method is that the outlines of the apartments were designed without taking their internal configuration into account.

The design process of Vitrolles stopped there; the project was never finished. However in other preserved drawings from other projects we can see how Renaudie appropriated the buildings for a structural system and how he further designed the internal configuration of the apartment. The structural system seemed more like a necessary evil to Renaudie, as mentioned before he would rather built the organic curving forms he started his design process with. Of course he couldn't escape it; Renaudie started drawing grids over his sketches in multiple orientations, the size of these grids were mostly, like in Ivry-sur-Seine, determined by the parking below the buildings. After the grids were determined Renaudie adjusted the outlines of the building plans and the apartment plans in order to make them congruent with the structural grid. This appropriating to structure is specified by the use of the diagonal. As is evident from the realized building plans; all the outlines of the building plans and the apartment plans are on a diagonal or straight line from one construction point to the other. Although the structural grid was very rigid the diagonal gave Renaudie the freedom to create the diversity and complexity he envisaged in his theory and his preceding design drawings. Once the outlines of the building and the apartments were finished, he continued by developing the plans of the separate apartments in more detail. As anyone can imagine; this was hugely time consuming because not only was every apartment different but also every alteration Renaudie made to the outlines of the apartments had effect on the adjacent apartments.

3.6 Outlines of the apartments are guided but not restricted by the circular geometry (Vitrolles)



3.7 Layers of tracing paper to appropriate the outlines of the apartments (Vitrolles)

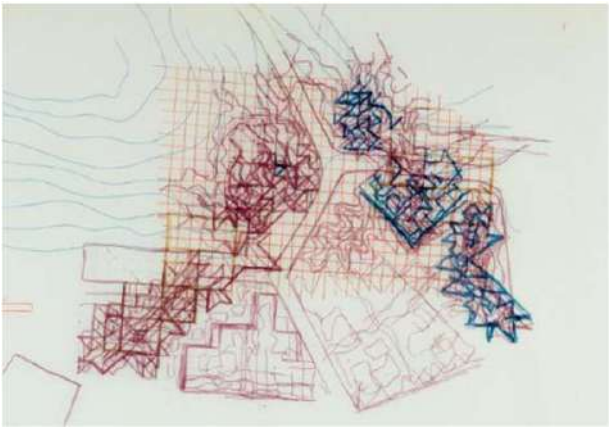
Luckily Renaudie found great pleasure in drawing and he used his multiple expressive techniques in the entire design process, from the first searching lines to the altering of the single apartments. Renée Gailhoustet remembered that Renaudie was fiercely independent; he didn't want to deal with people he didn't want to deal with and he was the happiest when he could work alone on his drawings all day. This featured also in the arrangement of his studio; it consisted of a large room in which all the draftsmen were working and a separate room in which Renaudie worked (Gailhoustet, 16 February 2014). When the design was finished the only thing that reminded of the previous circular geometry is the (mostly centrally placed) circular main staircase, it seems to stand as a reminder of the center of gravity around which the form, when rotated, will once again become a circle.

Complexity was, according to Renaudie, inherent to human life and thus to architecture and urbanism. He found a common ground in this belief with the, in his time up and coming, structuralist movement. The reasons that his theoretical ideas about complexity could become actual buildings are multiple; it helped a lot that he was working for communist municipalities, additionally they were open to new ideas because of the events of May 1968, furthermore Renaudie had a good reputation because he used to be partner in the ATM, and last but not least Renaudie was able to transform his highly theoretical ideas, and at first highly theoretical drawings, into something that could actually be built. Key to this was the design process in which the continuous drawing became the generator in which theory could become solidified. Significant in the design process was the fact that Renaudie could appropriate his free hand drawings to a structural grid by using the diagonal. He did this without losing complexity or diversity and simultaneously making his designs structurally feasible.

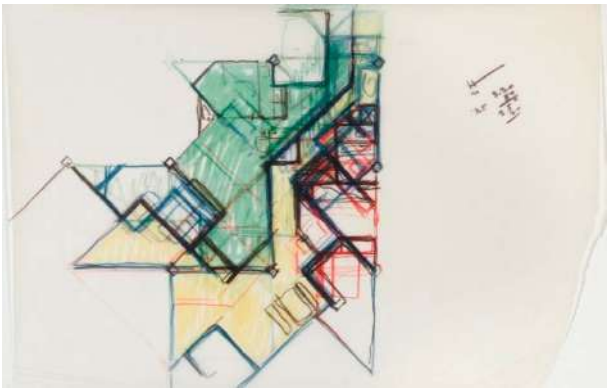
Diversity[12]

One issue not dealt with in the previous dissertation about complexity is Renaudies need for diversity. The differences between the apartments so

[12] As we know Renaudie wasn't afraid of contradictions; of course a communist proclaiming diversity is a contradiction in terminis.



3.8 Design sketch with construction grid (Givors)



3.9 Design sketch of the elaboration of a single apartment (Givors)

apparent in the analysis of J-BC are clearly not of a mere sales-promotional kind, on the contrary; these differences appear to be so random that they can hardly be justified by any means (Scalbert, April 2004, p. 50). The diversity of apartments (and offices and shops) in the architecture of Renaudie is especially interesting because it is something not so apparent in other structuralist architecture, while for Renaudie the two concepts, complexity and diversity, seemed inseparably bonded. So, why was diversity so important for Renaudie? To give answer to this I will refer to an article Renaudie published in *Technique et Architecture* in 1976 named: *Faire parler ce quie jusque-la s'est tu* (J. Renaudie, 1976, pp. 78-85). In this article Renaudie explains his motives behind his unusual apartment layouts.

Renaudie commences by quoting Karl Marx: *''What distinguishes from the outset the worst architect from the best bee is his ability to construct a cell in his mind before building it in wax''*(J. Renaudie, 1976; Scalbert, April 2004, p. 52). With this quote he accused architects who used the standardized apartment to create the *grands ensembles* of imitating the work of bees. Renaudie found it the task of the architect to first construct things mentally, in contrast to the bee and the standardized apartment. In order to let these visions, your imagination and your dreams flourish freely; there can be no restrictions; no established norms, no recipes and no standard criteria. We must question them with a clear conscious. At this point Renaudies recognizes that he finds himself in a sort of contradiction. Because, without established norms, he now still has to determine what is good and what is bad according to what the 'user' wants. In order to do this he must 'know' the actual user, which would be impossible, so he would have to return to the average user. And if he would know the average user he would be back at the standard criteria he was trying to get rid of. Still Renaudie is convinced that these standard criteria for the average user can never work; in the article he remarks sarcastically: *''If you make the typical flat, you are then obliged to invent the typical inhabitants''*(Scalbert, April 2004, p. 52). He was also famed for saying: *''les gens, je connais pas*[13]*''* (Gailhoustet, 16 February 2014). These remarks underline the fact the he didn't and couldn't know the actual inhabitant or the average inhabitant of

[13] *''people, I do not know who they are''*

his buildings. For Renaudie each and every person is a unique individual and he was fiercely opposed to any regulation that marginalized a person to an average. The way Renaudie treats the paradox of 'knowing' (not knowing the actual user versus not wanting to know the average user) is hugely important in understanding his theoretical foundation for diversity. His official answer goes as follow: *''Knowing, in architecture, does not mean passively conforming to and materializing the established criteria. It means giving voice to that which was silent, it is adding to that which you think you know''*(Scalbert, April 2004, p. 52). What he means by this is that you can never know anything regarding architecture for a fact, you are always obliged to reinterpret that what you think you know, again and again. This continuous reinterpreting is also something clearly present in Renaudies design process. Mostly the reinterpretations are not based on the purely functional or quantifiable aspects, instead they are influenced by something Renaudie calls the *'abstract content'* of architecture. Or in other words: *''(…) experiencing pleasure and being able to act freely in space''*(Scalbert, April 2004, p. 53). Renaudie wanted, by taking into account the abstract content, to provide favorable conditions to let the inhabitants become actors; people that were not mere inhabitants or passerbies, but real actors interacting with the architecture. Key to this was the unexpected; created through discovery, complexity and diversity. Renaudie designed the interiors of the apartments so that they consist of a seemingly definitive part and another part which is open to interpretation. When looking back at the analysis of the different apartments in J-BC we can now distill the, what Renaudie calls, definitive parts; for example the kitchen and bathroom are all well-defined, closed and small, additionally almost all the bedrooms have a fixed place for the bed. The open parts are virtually everything in-between the definitive parts; the open and large living rooms, the so-called hallway for playing and of course the terraces. And, indeed, precisely in these parts the differences between the apartments are most pertinent. According to Renaudie the diversity of the interior, created by the open parts, gives the inhabitants the freedom to respond and encourages them to appropriate the space in their own way. In dealing with the uniqueness of the apartments the inhabitants are able to emphasize their individuality. For Renaudie the appropriating of the apartment by the inhabitants is a continuation of a process initiated by the

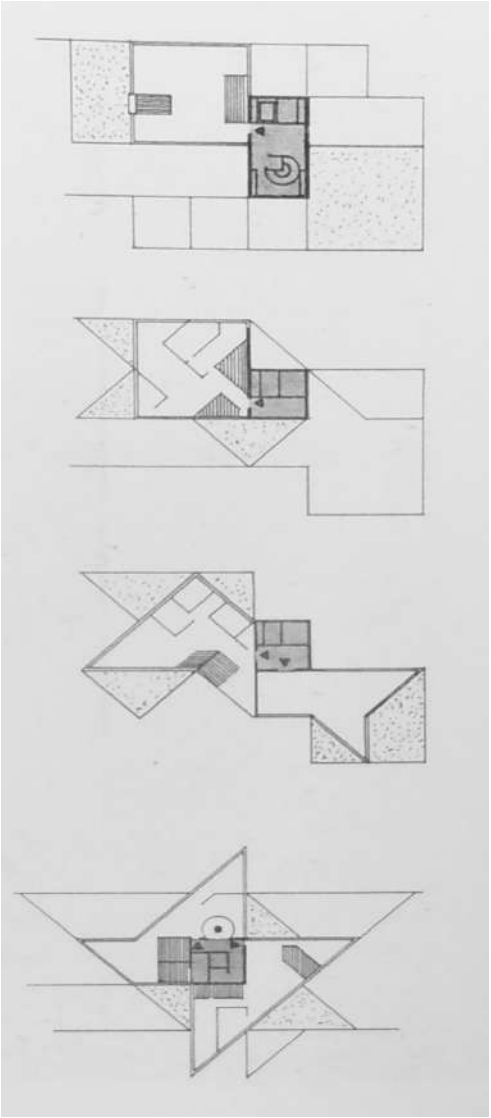
forms of the architecture. People are ought to use the formwork of the architecture to realize the complexity that is inherent to human life.

Paradoxically, in relation to the uniqueness he assigned to every human being, the only way Renaudie could design the apartments is if he designed them as if they were for himself. But because he didn't know people, he sought instead for qualitative criteria he could design with like; light, views, flexibility and spaciousness. Also here the diagonal was a faithful servant; through the diagonal the space seemed larger, more light could enter the room and multiple views and orientations became possible. Casanova was the first work in which the diagonal was put to practice; at first the design was orthogonal and had terraces; resembling Francs-Moisins. Then the diagonal was introduced; at first only within the orthogonal outlines of the apartments, but later also the perimeters of the apartments started to transform because of the diagonal. After this first successful meeting the diagonal was never to disappear from Renaudies architectural form language and it became the pre-eminent tool to create the diversity and complexity he envisaged in his theory and his drawings.

For Renaudie every individual human being was to be regarded as unique. And, according to him, the only way to let humans truly express their individuality is to make every apartment different. The diversity in apartments was guided by what Renaudie called the 'abstract content' and could be designed by applying the diagonal.

Terraces

A large part of the external expression of Renaudies architecture is depicted by the overflowing greenery of the terraces. As became evident in the analysis of the Jean-Baptiste Clément project these terraces are an extensive part of living in any of the apartments even though each and every terrace is completely different regarding their form, size, relation to other rooms and orientation towards the sun. In the following part I will try to find out why these terraces were of such a great importance to Renaudie that they returned in each and every project (after 1968) and in what sense these terraces are truly an addition to the architecture and the life inside it.



3.10 The transformation of the apartment through the diagonal; from Francs-Moisins towards Casanova

So, why the terraces? To answer this question I will refer to a short, but beautifully written, article that Renaudie wrote in 1980 and which was published in Irenée Scalberts book '*A right to difference*' (Scalbert, April 2004, p. 145). In the article Renaudie focusses solely on the importance of the terrace and he explains all his motives behind his extensive use of it. He starts of by stating that the garden is something anyone have wanted; it is in such a way connected with our being that the idea of the garden is present in our childhood dreams. Large part of the importance of the terrace lies in what Renaudie calls the 'abstract content' of architecture; by which he means that people should be able to act freely in their space in order to experience pleasure because of it (J. Renaudie, 1976). This abstract content are things like; the experience to see a plant grow, to be able to see it rain in your flat, to be able to stand in front of your apartment and to see the blackbirds arrive in the morning. These experiences aren't fundamental but they are the things that really matter in daily life and the terrace makes them possible or at least enhances them. Another reason for the terrace is a social motive; to be able to see the whole family participate in the creation of the garden and to be able to hold conversations with your neighbors from one terrace to the other. On the other hand the terrace can also create intimacy and be an extra room of your apartment. Other reasons have more to do with formal considerations about the architecture; the terraces connect the flats with each other, with the environment and with the city. He concludes by describing an additional ambition he has for the terraces: *''That the inhabitants can transform the building through the things they plant'' (Scalbert, April 2004, p. 145)*. An ambition, that seems to be turning out perfectly.

Most of the reasons given by Renaudie for the terrace are based on very subjectivist ideas; or like Renaudie calls them; they are the *'abstract content'* of the architecture. This makes it all the more interesting to see how these terraces are put to use in reality. I will find answers to the questions concerning their use in the next chapter; functionality.

Functionality

In the previous headings it became clear that Renaudie had a clear ideological thought behind his designs based on a strong theoretical

foundation, regarding concepts like human freedom, complexity, movement, diversity and geometry. Like is apparent from Renaudies definition of architecture, the goal of his buildings is to present a form that can inhibit the complexity of the relations between people and their environment. However, there is one thing which is not apparent from the analysis nor which we can find answers to through theory, it is the actual functioning of Renaudies buildings. Are Renaudies forms, indeed, able to inhibit the complexity of human life? How is it then to live in such an awkwardly shaped apartment? And how does the public space around, inside and on top of the building function? In order to find answers to these questions I have experienced several Renaudie complexes myself[14] and I visited several apartments in the Jean-Baptiste Clement project (but also in Casanova and Le Liégat[15]) additionally I took interviews with the inhabitants and with some passerbies. In order to know more about how the buildings were received in the time they were build I used several other media. Our most valuable source is a thorough research made by Francoise Lugassy about the reactions of the inhabitants of the Casanova project, were he interviews them in three phases: when they have just moved in, two months after and one year after(Françoise Lugassy, 1974). Part of this research was published in the magazine *Technique et Architecture* of December 1976 alongside an article by Renaudie called *'Faire parler ce qui jusque-là s'est tu'*(Francoise Lugassy, December 1976). Another valuable source is the 1979 movie *'les etoiles de Renaudie'* made by Hubert Knapp[16] in which we can see reactions of several inhabitants and passersbies of Givors and Ivry, as well as full walkthroughs in some of the apartments of Jeanne Hachette and J-BC (Knapp, 1979). I will treat the subject of functionality in three separate parts, the same as I used in the analysis;

[14] The ones in Ivry-sur-Seine and Givors.

[15] Le Liégat (1982) is part of the Ivry-sur-Seine center development and was designed by Renée Gailhoustet in a style reminiscent to Jean Renaudies. One interesting difference is that this building is not build on a traditional rectangular grid but instead on overlapping dodecahedrons.

[16] This film is certainly a must watch for anyone interested in Jean Renaudie and it is the only way of experiencing and understanding his architecture without actually visiting it. Additionally it shows footage of a French delegation visiting Delft(!) and project explanations of among others the Dutch structuralist masters; Aldo van Eyck and Piet Blom.

starting with the urban scale, through the building scale and ending with the scale of the separate apartments.

Urban

We start off with the larger scale; concerning the public space around, inside and on top of Renaudies buildings. I will describe this part starting from my personal experience with the public space of Ivry-sur-Seine and Givors. Because, as an outsider not living in or near the architecture of Renaudie, the only thing you will (normally) experience of Renaudies architecture is the urban space. The first time I visited Ivry-sur-Seine on a rainy day at the end of summer the whole complex felt sort of depressing. The only people that seemed to be there was a group of 'gang'-members that ordered me to stop taking pictures; everything felt a bit grim. Most of the vegetation of Jeanne Hachette was gone (because of a scheduled renovation) and most of the other leafs had fallen away; the grey of the concrete and the sky prevailed. I didn't really have time to see much more of it and it neither felt very inviting to do so.

The year after I visited Givors in the middle of the summer, now I had a much kinder impression; the sun was shining the sky was blue and the terraces were overflowing with greenery. I endlessly strolled through, over and underneath the entire complex, it was a real discovery; going all the way up to the castle, entering small alleyways (that felt really private) and discovering small public squares where children were playing[17]. Some of the terraces, the larger ones, were well used and appropriated by the inhabitants others were just downright neglected overflowing with random greenery. Almost all shops were occupied; although they were all closed because of the holidays.

The next time I visited Renaudies buildings was when I was doing research for this thesis; I had plenty of time to discover the whole of Ivry-sur-Seine and I had a chance to experience every nook and cranny of it. It was at the end of winter; no leafs on the trees but the weather was good, I walked around there for two full days; seeing the Casanova building, the Voltaire square, the Cité du Parc, the buildings by Renée Gailhoustet and of course I

[17] Imagine playing hide-and-seek here!

3.11 Stairs going up Jeanne Hachette; going to nowhere

3.12 Slope going to the first floor and towards the metro station in the passage of the Jeanne Hachette center. To the left and right passerbies have views into shops and from above the offices have views onto the passage.

went all the way up and through the Jeanne Hachette complex. The going up the building using the outside stairs is a real experience and the views are surely nice however these stairs seem to go to nowhere (3.11) (unlike at Givors, where they lead to the castle). The stairways are connected to the main circulation towards the apartments and offices but the doors towards them are (of course but not traditionally) locked and only sporadically used. The only people I encountered there are office people who use the public terraces as a smoking area; which they thought is a really comfortable addition to their office life. All the offices on the third and fourth floor of the complex seemed to be occupied. Inside Jeanne-Hachette I found a commercial center that was semi-thriving and semi-abandoned and overall looked a bit outdated and under maintained. On the first floor almost all shops were occupied mostly because they were positioned on the route leading from J-BC through the commercial center towards the Ivry-sur-Seine metro stop. This part felt a bit like a traditional passage but then with some unexpected corners, entrances and skylights; also the offices on the third floor sometimes had views inside the commercial center (3.12). A lot of people seemed to be using the commercial center as a shortcut towards the metro that protected them from the weather elements and in which they could simultaneously do their daily groceries. Most shops along the main route are for daily goods or quick snacks; a butcher, a supermarket, a greengrocery, a pharmacy, a barber, a clothes shops and several snack bars. The shops not positioned on this route, for example the ones in or near the 'bridge' part are larger restaurants or small offices; like travel agencies. Sort of surprisingly the entire ground floor inside the commercial center was abandoned and looked completely derelict (3.13); although it could easily be accessed from multiple sides. People still used them for shortcuts, from the bus stop towards J-BC, but there was absolutely nothing there; latter Serge Renaudie explained to me that the municipality is replacing all the shops there in order to re-appropriate the ground floor into a sort of cultural or neighborhood function (S. Renaudie, 16 February 2014, June 2013). On the other hand the shops positioned on the ground floor that have their entrance on the outside of Jeanne Hachette were almost all occupied (3.14); but then by larger functions; almost all of them banks or real-estate agents and one café-bar on the corner. Also the shops on the

3.13 The ground floor of the Jeanne Hachette complex is completely abandoned and waiting for a new purpose

3.14 Shops on the ground floor along the street

ground floor of Casanova are well used by small retailers and specialized food stores.

Very agreeable about walking around the entire Ivry-sur-Seine city center is that you are almost always covered by arcades and buildings; this immediately gives a sort of intimate atmosphere in which you are always in contact with the buildings surrounding you. This feel is indeed much more like an ancient city; where the buildings are within reach, than to a modernist city or one of the *grands ensembles*; where the buildings are to be observed from a distance. Additionally, because of the penetrability of all the blocks, you can each time choose how you want to walk this time; if it's raining you go through the commercial center, if you are in a hurry you follow the road and if the sun is shining you cross the square; you truly have a sort of freedom of choice. While walking around, I discovered countless unexpected places all with their own unique atmosphere; a large square, a flower garden, a park, a schoolyard[18], a jeu de boules track, some surrealistic stair arrangements, a fountain, small pavilions, but also less inviting places; like dark corners and passages without windows or social control (3.15). Most of the inhabitants however claim that they never have felt unsafe in their neighborhood; they have none of the problems some of the other banlieus surrounding Paris had to deal with[19]. They like the diversity the neighborhood has to offer; everything is in reach; food stores, clothing stores, the pharmacy, schools, library, greenery, it feels a bit like a village in a big town.

Building

When the buildings are observed on their own most of the passerbies dislike the expression of the architecture; mostly the raw concrete is to blame some others thought they look overall quite messy. More positive

[18] In the middle of Cité du Parc (1982), finished after Renaudies death, the truly innovative Einstein school is hidden in the middle of the neighborhood. The school has open classrooms, expressive skylights, a maze of terraces on top and a sunken schoolyard.

[19] Unlike Ivry-sur-Seine other neighborhoods Renaudie designed, like Givors, Saint-Martin d'Hères and Villetaneuse, have had their share of social and maintenance problems (Scalbert, April 2004, p. 125). Because of this a part of Villetaneuse has recently been demolished (Francis Chassel, April 2004).



3.15 Several unexpected places, passages and shortcuts

are they about the abundant greenery and the fact that this is something one-of-a-kind. The inhabitants themselves are overall more positive; they love their apartments and the atmosphere of the neighborhood and they 'got used to' the concrete. Another positive remark by the inhabitants goes out to the fact that the internal circulation towards the apartments is grouped per circa ten apartments; this means there is no anonymity when entering 'your' building (like there would be in the *grands ensembles* apartment towers). You know everybody and you greet everybody; some even depict is as *"a small community"*(Various, 15-16-17 February 2014). The inhabitants seem to know each other and they help each other out (for example taking care of the terrace plants during the holidays). The inhabitants are also positive about the functionality of the circulation, the underground storage boxes and the underground parking. They are more negative about the darkness of all the hallways; there is hardly any natural light shining in, and sometimes they are negative about the old-fashioned coloring of it (they are painted in bright primary colors in seemingly random arrangements). Also the inhabitants of JB-C complain that the inlet of their entrance portal is used as a urinal during market days.

Apartment

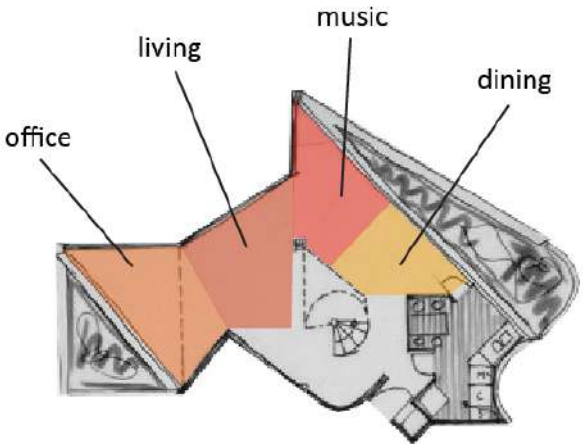
As we know now each and every apartment in Renaudies buildings is different, none is the same; still they have some shared characteristics as became noticeable in the analysis of J-BC. To get a good overall view of the different possibilities of these apartments I tried seeing as many as possible. During my research I visited four apartments in J-BC, all of them present in the analysis, namely; apartment A, apartment C, apartment I and apartment J. Besides these four I visited one apartment in Casanova and one apartment in Le Liégat, designed by Renée Gailhoustet. Additionally I have seen walkthroughs in three more apartments in the movie by Hubert Knapp; two of them in Jeanne Hachette and one of them apartment F of J-BC. I will mostly be discussing the five apartments in J-BC, since these are the apartments I thoroughly analyzed. In my discussion of the functioning of the apartments I will try to draw attention to what Renaudie calls the 'abstract content' of living and the 'open space' he designed which should be able facilitate these pleasures of life.

The first thing that should be said is that in real life the apartments don't feel as awkward or difficult as the plans might suggest. Overall most of the inhabitants loved their large and varied living spaces, their terraces and the uniqueness of their apartment. Making one inhabitant say: ''*Here I am at home, not in the same framework. Not every one of all is the same apartment. It is a pleasure to discover, and it is also a pleasure that we don't live in a uniformity, like architects from a certain time, were everyone lives like a number, no, we are not numbers here!''* (Knapp, 1979) and another: *''I immediately loved it here; more architects should build like this, its unique''*. They disliked the small size of the (children) bedrooms and some maintenance related issues; for example the impossibility to clean some of the outer windows. The sharp angles are mostly not seen as a functional limitation and the inhabitants seem to appropriate them each in their own way, mostly with plants, sculptures or small furniture's. In opposition, the research by Lugassy on the Casanova building shows that the inhabitants, when they had just moved into the building, found the angles very difficult to appropriate and saw them as wasted space. Still they seemed to acknowledge the value of it: ''*We can only place useless things there like plants (…) but it is still not lost, I tell you, it is not lost to the eye''* (Françoise Lugassy, 1974, p. 82) It is obvious that the angles bring light deep into the apartments. Because of the large glazed parts most of the apartments are flood with light and give generous views in multiple directions; for most inhabitants this was one of the main reasons to buy the apartment. A shortcoming of these windows is of course privacy; people living in the other apartments can easily look in. This is more problematic in winter, when the plants on the terraces have lost their leafs, than in summer, when the greenery distorts the views: *''In winter this openness gives views inside other apartments; I have to wear pajamas, but in summer you live in a green world and you are protected by the plants on the terraces''(Various, 15-16-17 February 2014).* Sometimes this shortcoming can also be an opportunity; the children of apartments I and apartment J are friends and can look and wave at each other when they are in their rooms. Another frequently mentioned shortcoming of the glazed façade is the thermal properties of it; inside the apartments it can get very hot in summers and very cold during winters.

Most other complaints also have to do with the quality of the construction of the building. For example; the single glazed wooden frames of the windows started rotting and leaking; some replaced them with double glazing (in the same pattern), others repaired them. The concrete, of for example the balustrades, is of poor quality and is in need of renovation. Also there were numerous complaints about leaking; which were very consistent, hard to relocate and to access because of the complexity of the building. Most of the leaking had to do with the superjacent terraces and their rainwater drainage system. The drainage pipes are hidden above a lowered ceiling, which means that in the apartments below the lowered ceilings are shaped according to the superjacent terraces; resulting in a ceiling consisting of several extruded parts. Interesting about these seemingly random extrusions is that every family appropriates them in a different way. Some use the sides of these extrusions to hang decorations others adopted them for extra storage (3.16).

Interesting to note about the living rooms is that, because of their generous size and weird lay-out, all inhabitants seem to have divided their living room in separate parts. Most noteworthy the inhabitants of apartment C: *"the living room is divided in: the office, the living room, the music space, and the dining space"* (3.17). Mostly the architecture, like forms and angles, the centrally placed staircase, and the void, seem to help determine these places but without commending a determined function. Additionally some of the inhabitants have opened their, traditionally closed-off, kitchen up so that it now stands in open (and currently fashionable) connection to the living room. Others made even more exhaustive alterations; the inhabitants of apartment I enlarged their kitchen, added a toilet on the lower floor and they replaced the circular staircase for a straight one in order to fill up the void on the higher floor by an additional room. A commonly heard problem of the living room is that it provides too little wall and storage space, since most outside facing walls are glazed. This problem doesn't occur in apartment C since it has a significantly lower percentage of outside facing façade, making the inhabitants say: *''I like that I have enough place to keep my books and my memories''* but at the mean time: *''It's a dark apartment''.*

3.16 Ceiling extrusions are used for decoration in apartment I

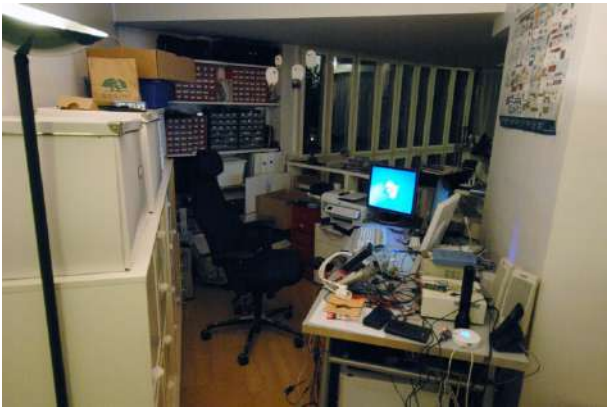


3.17 The division of the living room of apartment C

For most of the inhabitants the possibility of having a garden terrace in such an urbanized area near Paris was one of the main reasons to buy the apartment. For the inhabitants the terraces purpose is twofold; it obviously is an extra outside room but at the mean time it also changes the feeling inside the apartment, making one inhabitant say: *''It is a pleasure to be surrounded by greenery instead of by the city when you return home''* and another: *''at first I had to get used to all the birds singing around my apartment, it's unlike the normal sounds of the city''*. An extra advantage of the terrace is that it can provide social contact between the inhabitants; for example the inhabitants of apartment I and J have adjacent terraces from which they have met each other (3.18) (they are now close friends), others see this as a disadvantage; the lowest terraces are overseen by everybody and there is a lack of privacy. One slight flaw of the terraces is that the difference between the inside floor and the terrace floor is fairly large (+/- 40cm) additionally this results in a lower passage; so larger inhabitants and guests will bump their heads on the doorframe. Depending on the size, the location in the apartment and the orientation towards the sun the terraces were appropriated in fairly different manner; to identify these differences I will go through some of the apartments I analyzed in the previous chapter.

Apartments A has two relatively small terraces, both on the lower floor, the north-west facing terrace adjacent to the kitchen is used as a summer dining space with hardly any plants, the south facing terrace is a small garden used to grow small fruit plants that need a lot of sun and larger plants that can give shade in summer and views in winter. Apartment C has four terraces; two on the higher floor connected to the children rooms and two on the lower floor of which one very large one. All of the terraces are hardly used and overflowing with greenery; this is because all of the terraces are north-east or north-west facing; so they don't receive a lot of sun, additionally they belong to the lowest lying terraces of the building; so there is not a lot of privacy there. Still the inhabitants like the terraces because it makes them feel like they are in a forest. Also they remembered that when their children were still small they used to play a lot on the terraces between their rooms. Apartment I has three terraces, all of them on the lower floor, the largest one is used as an outside dining space, the south facing one is used to grow larger plants that provide shade and the

3.18 View from higher floor terrace of apartment J onto the terrace of apartment I



3.19 The hallway for playing is adapted as additional office space in apartment A

smallest terrace adjacent to the kitchen provides different kind of herbs to the kitchen. Apartment J has four terraces of which three on the higher floors connected to the bedrooms and one very large terrace, the largest in J-BC, on the lower floor. All of the terraces are very well maintained; the inhabitants indicate the three higher floor terraces as ''*terraces for viewing''* and the large lower floor terrace as ''*the garden''.* The large terrace is indeed a genuine garden; it has a veranda for dining, a lawn, on the sides various plants and an absolutely splendid view towards the old town hall. Two of the higher floor terraces are adjacent to the south facing main bedroom and consist of a lawn with some small fruit plants which can withstand the direct sun. The fourth terrace is long stretched, narrow and north-east facing, it connects the two children bedrooms, of which one functioning as a small office, and is completely planted with a single type of plant that doesn't need much sun.

When interviewing and reading reactions of the inhabitants concerning the terrace it seems that it is the eminent place in the apartment that is able to facilitate the 'abstract content' of living; it makes the inhabitants feel free, gives them the possibility to dream away and to feel pleasure in life: *''Life here, has a lot of silence, it is quiet. This great place (organized to have a maximum view from each corner towards the garden which is the part of the apartment that we love the most) is a place to relax, we're not oppressed by the wall; we get together, you can sit in a chair and stretch your legs as if you were at the top of the Eiffel Tower and you look over Paris''.* Another inhabitant speaks of feeling in tune, at night, *to be at the tip of the terrace: it is a bit like the guy who is on his boat. It's good, there is no one; it feels a bit like being on the countryside. It feels like a lodge. You are on the countryside and in the city.(Buffard, 1992, p. 59)*

Another space that gives reason for re-interpretation by the inhabitants is the hallway for playing; the oversized hallway mostly positioned on the higher floor of the apartment. The inhabitants of apartment A, having no children, appropriated it for an office space (3.19). He always worked on the higher floor and she worked on the lower floor, they liked being able to be separate but still together; they could hear and talk to each other through the void. The inhabitants of apartment C used the hallway for

additional storage and an additional so called '*retreat office'* where the man worked when he didn't want to deal with his wife. The inhabitants of apartment I used the hallway for hanging and ironing their laundry, their two children mostly played in their rooms or in the additional space the inhabitants created above the former void. The inhabitants of apartment J saw the hallway for playing as one of the best places in their apartment: *''the wasted space in the apartment is not wasted space at all''.* They used it for hanging and ironing their laundry but they mostly liked it because of the superb view, especially with the morning sun coming in, onto their living room over their garden towards the old town hall.

The bedrooms of the apartments are designed to be small; and this is also a relatively often heard complaint by the inhabitants. Especially the singular way of placing the bed in children bedrooms is sometimes problematic and not understood; for example the inhabitants of apartment J constructed a new build-in closet exactly in the place where the bed was supposed to be; this way the room became practically unusable as a bedroom. Other complaints are more varied; for example the main bedroom of apartment C has only one small window and the main bedroom of apartment A is in open connection with the dining room which is sometimes not so practical odor-wise. Generally the inhabitants are more pleased about the already provided closets. The small size of the bathroom and the fact that the toilet is on the higher floor are other reasons for slight complaints.

Overall, although every apartment is different, it seems like the inhabitants appreciate the same things about their apartment; particularly the large, open and light living room and the terraces. Incidentally these are also the parts of the apartment that Renaudie prioritized in his design, namely what he calls the 'open space'; the living room, the terraces and the hallway for playing. And it is especially in these spaces that the inhabitants seemed to be able to express and discover their own personality (an ambition of Renaudie). This conclusion resembles the one made by Lugassy in his report about Casanova; ''*This means, and this can be considered a fundamental conclusion of the study, (…) (that) the apartments of Danièle-Casanova are re-interpreted by each tenant according to their fundamental interests in life, of psychological and the social problems that they had and that they*

have had to face, and defense mechanisms that allow them to maintain a certain unity and continuity of their person'' (Françoise Lugassy, 1974, p. 79). One side note has to be placed by these observations; the apartments in Casanova and J-BC belong to the largest designed by Renaudie. The smaller the apartments get, the more problematic their appropriation becomes and the more obvious the limitations of the awkward forms. Still also these smaller apartments challenge the inhabitants to discover their own personality in their 'open space'.(Scalbert, 9 November 2013)

Inspiration

As we have seen in the previous headings Renaudie drew inspiration from numerous sources ranging from philosophy to biology and from mathematics to humanism. What seems to be lacking is a concrete inspiration coming from architecture. This is no wonder since Renaudie didn't like using strict historical or architectural references because, according to him, architecture was a personal matter and was not to be copied (Scalbert, April 2004, p. 46). Moreover his son, Serge Renaudie, described him as *''Libéré de toute tradition*[20]*''* (S. Renaudie, 2013, p. 15) and his wife and close collaborator, Renée Gailhoustet, remembered that she looked at him for inspiration but Renaudie: *''(…) he didn't want to get influenced''*(Gailhoustet, 16 February 2014). For Renaudie architecture is nothing (S. Renaudie, 16 February 2014). This might seem like a strange thing to say for an architect, but if we look at Renaudies definition of architecture: ''(…) *the physical form which envelops people's lives in all the complexity of their relations with their environment''* it is also an obvious thing to say. Architecture is a form derived from the complexity of human life; consequently the only inspiration needed is the human life itself.

Still Renaudie was very aware (and critical) of the architectural movements that were happening around him; for example he was well informed about the intellectual legacy of Team 10[21] and the structuralist movement and he

[20] *''Free from every tradition''*

[21] One should be able to find enough common ground between Jean Renaudie and some of the Team 10 members; they were also dealing with themes like complexity,

3.20 Historical references from the album for Tralicetto (1961)

3.21 Mont Saint-Michel; mixing of functions in a merged form

diversity and structure (Dirk van den Heuvel, 2005). Renaudies main opposition to Team 10 is that they claimed to know people(Scalbert, 9 November 2013).

stood almost opposite to the post-modern vision of Robert Venturi and Denise Scott Brown and the Tendenza movement of Aldo Rossi (Scalbert, 9 November 2013). Although Renaudie claimed he was free from historical and architectural inspiration he was in the habit of saying: ''*il n'y a pas d'architecture innocente*[22]''(Schuch;, 2012, p. 8). By which he meant that no architecture can be completely free from influence be it historic, artistic or esthetic. So, for us, now the goal is to find where Renaudie made himself *'guilty'*.

One thing that seems very apparent is Renaudies influence by pure corbusian modernism; he seems to be using all five points of modern architecture as described by Corbusier. The pilotis, the roof terrace, the plan libre, the horizontal windows and the free façade are all easily identifiable in his architecture. Also Renaudie sticks to the profoundly modernist material of beton brut. According to Renée Gailhoustet this influence was inevitable because of his Beaux-Arts education which was almost completely based around the books of Le Corbusier. Besides this Renée Gailhoustet remarks that Renaudie was almost superstitious of outside influences; during his professional career he never went on a study trip or holiday to gain inspiration. When they were married they only went on a vacation once; to Spain, but as soon as Renée, Serge and Jean arrived in a city, town or site, Renaudie sat down and waited for them to return from their visit. Also during his time in the ATM he didn't travel, they once got a commission in Mauritania and Renaudie was assigned for the job, but he said *''it's too far, I don't go''* and they lost the job. Only during his study time Renaudie made same trips, most notably to Italy (Gailhoustet, 16 February 2014).

Another thing Renaudie seems influenced by is the old city; he refers to the city grown over time in his theoretical writings and he compares his development in Givors to *''an arrangement which existed around the castle in an earlier age''*(Scalbert, April 2004, p. 146). Also some older projects he did during his ATM period contain direct references to old cities; we can see for example pictures of ancient sea villages in the album he made for

[22] *''there is no innocent architecture''*

3.22 Rue Mouffetard

3.23 Jean Renaudie, 3 March 1981, 20:30

Tralicetto in 1961 (3.20) (Blain, March 2008, p. 152). According to Irenée Scalbert Renaudie was interested in the merged forms and mingling of functions of the old city and more specifically of Mont Saint-Michel (3.21) (Scalbert, 9 November 2013). His son, Serge Renaudie, remembers that when he was young Jean Renaudie used to have custody over him on Sundays. And every Sunday they structurally (or obsessively) did the same thing; first they went to the Rue Mouffetard and afterwards to the Palais de Decouvert. The long Rue Mouffetard was lined with small shops and had parallel streets on both sides of it, between the streets there were small alleyways leading to several open spaces where the products of the shops were produced. Renaudie was fascinated by the Rue Mouffetard and its environment, the penetrability of the building blocks and the perfect mixing of functions (3.22). Afterwards they went to the Palais de Decouvert where they always went to the same two rooms; first one with crystals and afterwards to the room with graphs and models explaining chaos theory(S. Renaudie, 16 February 2014). The crystals seemed to inspire Renaudie because they were complex forms created by nature and the mathematical structures of chaos theory seemed to be the way to recreate them.

Renaudie is said to have likened the work of Frank Loyd Wright and Oscar Niemeyer, but this is not very apparent in his work (Scalbert, April 2004, p. 46). As noted before, Renaudie found more inspiration in science; he read a lot although he was a very slow reader. Renaudie was mostly influenced and inspired by communist and structuralist thinkers like; Karl Marx and especially Louis Althussers interpretation of Marxism, the anthropologist Claude Lévi-Strauss, the biologist François Jacob, the linguist Roland Barthes and the psychoanalyst Jacques Lacan (S. Renaudie, 16 February 2014). Other works he read are by the philosopher Gaston Bachelard, the sociologist Henri Lefebvre, the child psychologist Bruno Bettelheim and the physician Henri Laborit (Lefebvre, July 1992).

Some other clues on how Renaudie found his inspiration can be found in a picture made of him on the 3th of March 1981 still working at 20:30 (3.23). It shows him working on ZAC Villetaneuse in his office in Casanova. He is surrounded by plants; at a young age, growing up in rural France, he learned all about trees and plants and he took pleasure in planting and

growing them. His love for nature was so great that he envisaged his buildings to be overtaken by the growing of plants (Scalbert, April 2004, p. 144). On the left side of the picture we can see some pictures pinned on a window post; there is one drawing depicting a sort of Arabic geometry, there is a picture of a child (probably one of his own) and several pictures of Amsterdam-like canal houses! If I am free to interpret, these pictures seem like a historical reference with which he sought for a solution to a problem he faced around that time; namely how he had to deal with the more closed-off façade of the post-oil crisis regulations.

Renaudie didn't want to be influenced too much by direct architectural or historical references. Still he finds inspiration in them and applies them in a 'new' way. Mostly Renaudie was influenced by theory and science, but above all Renaudie was inspired by the complexity of human life that surrounded him, all he did was deliver a formwork for it.

Chronology

1925 Born on 25 June in La Meize, Limoges

1943 moves to Paris

1945-1958 Studies architecture at the Beaux-Arts school

1957 Bontemps house, Limoges

1960 Study for Lallet House, Chateau-Chervix

1960-1968 l'Atelier de Montrouge
with partners Pierre Riboulet, Gérard Thurnauer and Jean-Louis Véret. Jean Renaudie was in charge of the following projects:

1961 Competition for Housing in Thiais, study for Individual houses in Goussainville

1962 Study for urban center and hotel complex in Tralicetto, study for holiday resort in Ramatuelle

1963 Competition for a stadium in Vincennes

1964 Montrouge daycare center**,** Montrouge kindergarten, study for Holiday resort in Gigaro

1966 Study for 5.000 housing units, Francs-Moisins, Saint-Denis

1968 Fire station Montrouge, study for **s**olution C for the new town of Le Vaudreuil

1968-1981 Agence Jean Renaudie

1969 Exhibition stand in Vincennes, study for holiday village in Bastia

1972 Ecole des Plant in Cergy-Pontoise, Danielle Casanova in Ivry-sur-Seine

1973 First part of Jeanne Hachette in Ivry-sur-Seine

1974 Study for new town of Vitrolles

1975 Second part of Jeanne Hachette in Ivry-sur-Seine, Jean-Baptiste Clément in Ivry-sur-Seine

1978 Receives Grand Prix National d'architecture, competition for Work Exchange in Saint-Denis

1980 Renovation of city center of Givors, competition for Parc de la Villette, study for a train station with residential and commercial functions in Poissy

1981 Competition for Law Court complex in Lyon, dies on 13 October

1981-1985 The Atelier Jean Renaudie
founded to complete the projects initiated before Renaudies death.

1981 ZAC Courghain

1982 Einstein school in Ivry-sur-Seine

1983 Cité du Parc, Ivry-sur-Seine

1985 ZAC Saint-Martin-d'Heres, ZAC Villetaneuse, La Courneuve in Saint-Denis, Ilôt Voltaire in Ivry-sur-Seine

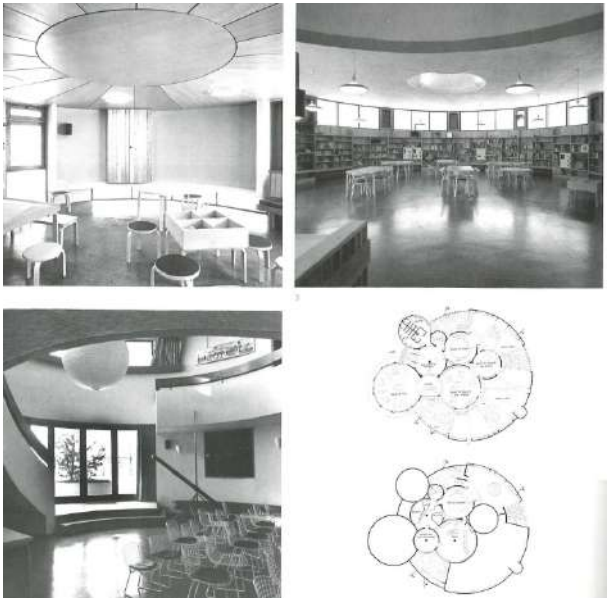
Additional images 1

1.14 University of Karachi, Michel Ecochard,, on which Renaudie, Thurnauer, Riboulet and Véret worked.

1.15 Opening of the ATM with in the middle Jean Renaudie

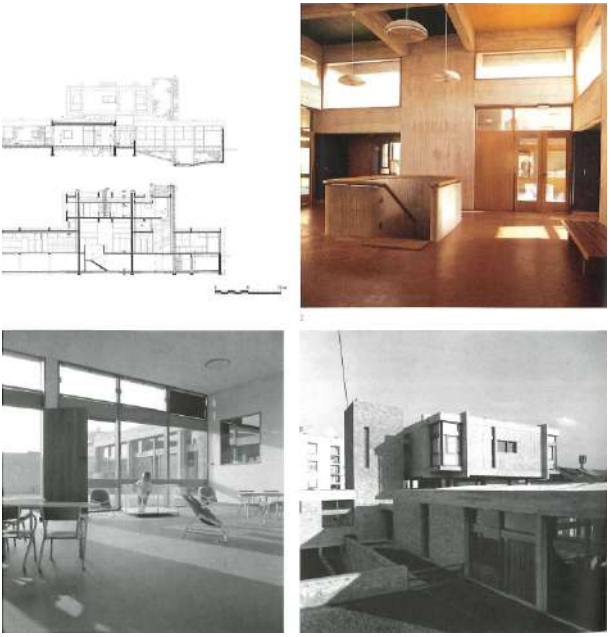
1.16 The atelier of ATM in Montrouge

Additional images

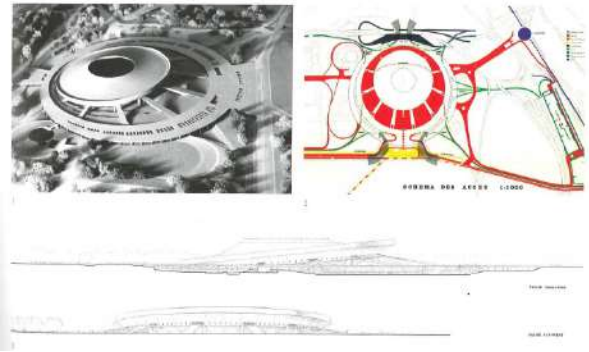


1.17 Interior of Montrouge kindergarten (1965)

1.18 Jean Renaudie working on Francs-Moisins during his time at the ATM

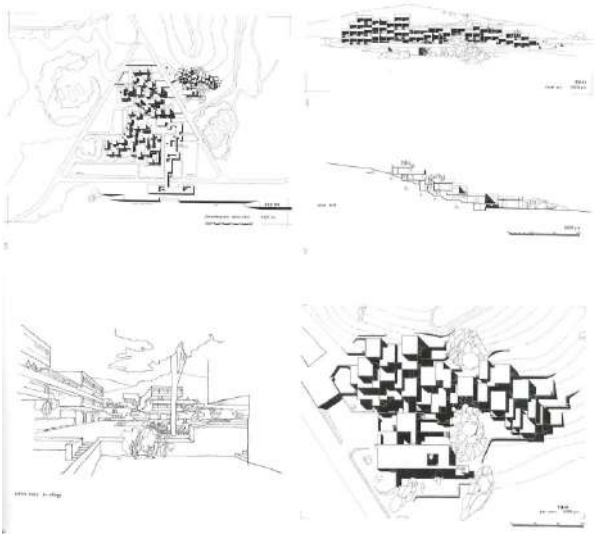


1.19 Interior of Montrouge daycare center (1964)

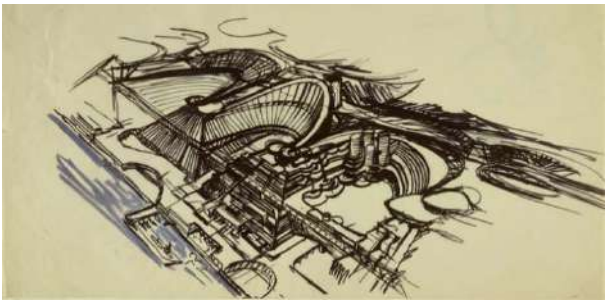


1.20 Study for a stadium Vincennes (1963)

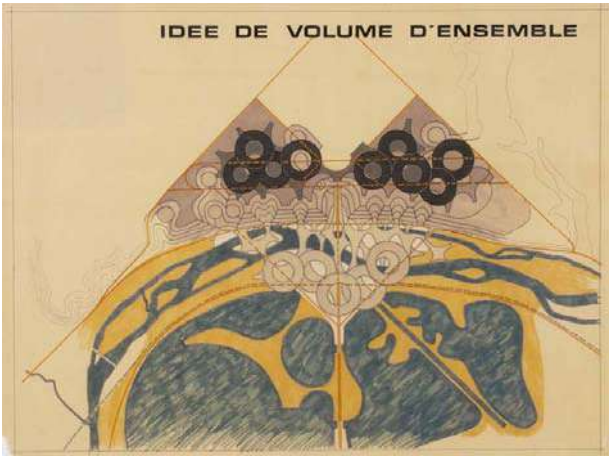
1.21 Montrouge fire station (1968)



1.22 Study for an urban center and hotel complex in Tralicetto (1962)

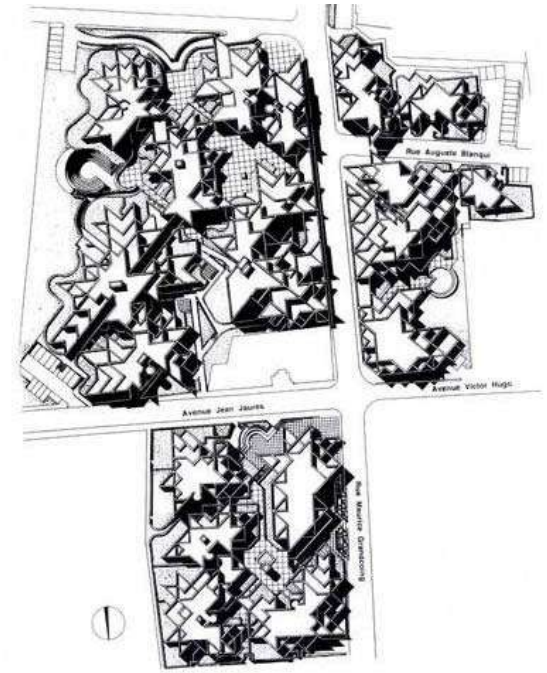


1.23 Le Vaudreuil, design sketches(1968)



1.24 Le Vaudreuil, presentation drawings (1968)

1.25 School des Plantes, Cergy-Pointose (1972)

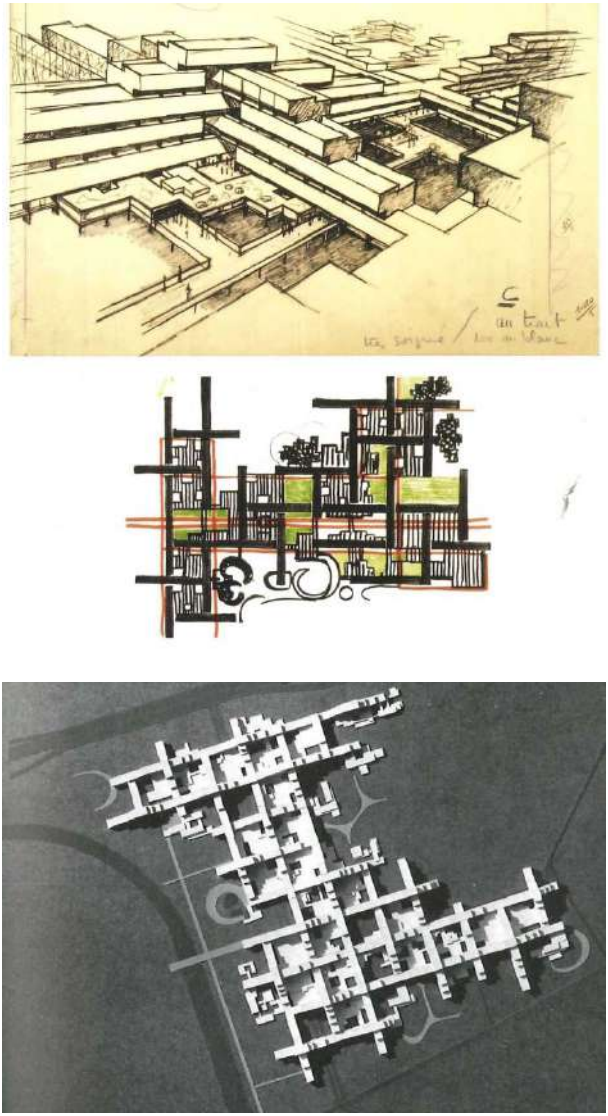


1.26 Villetaneuse (1985)

1.27 Roof of the Einstein school, Ivry-sur-Seine (1982)

1.28 ZAC Saint-Martin-d'Heres (1985)

Additional images 2

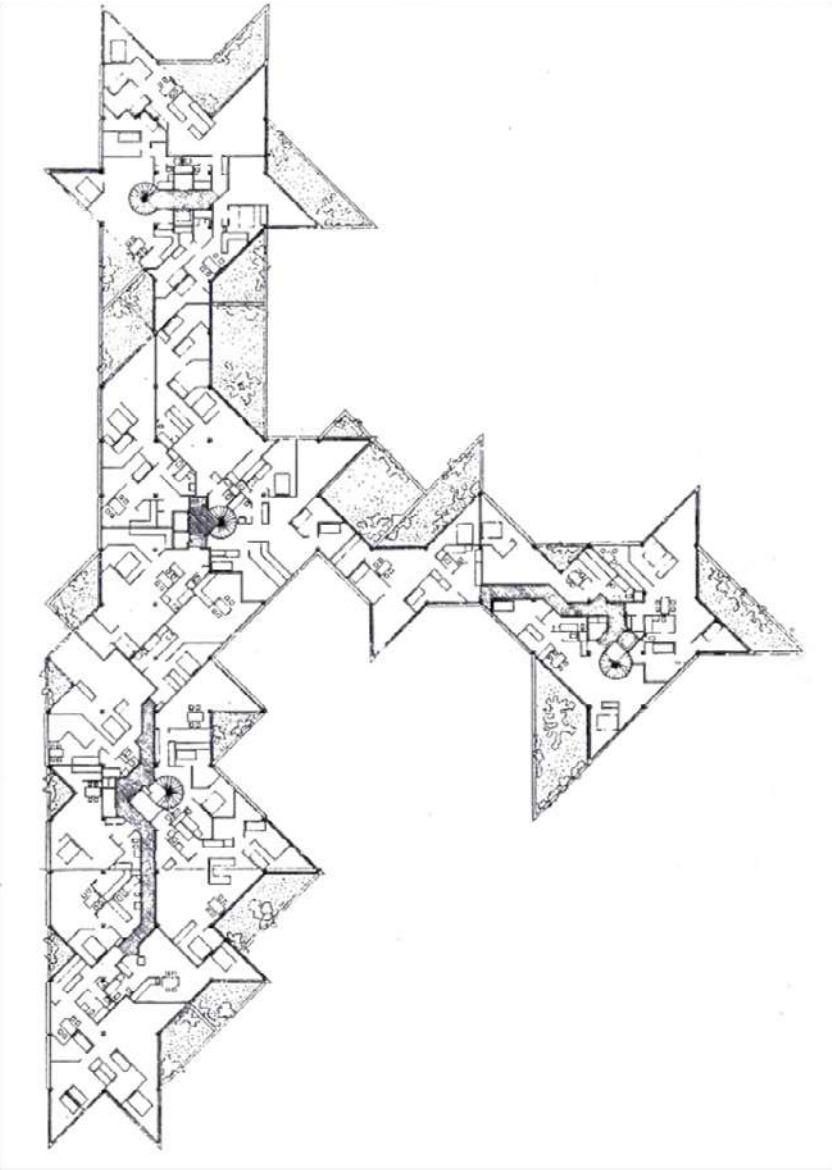


2.42 Design sketches and model for Francs-Moisins (1966)

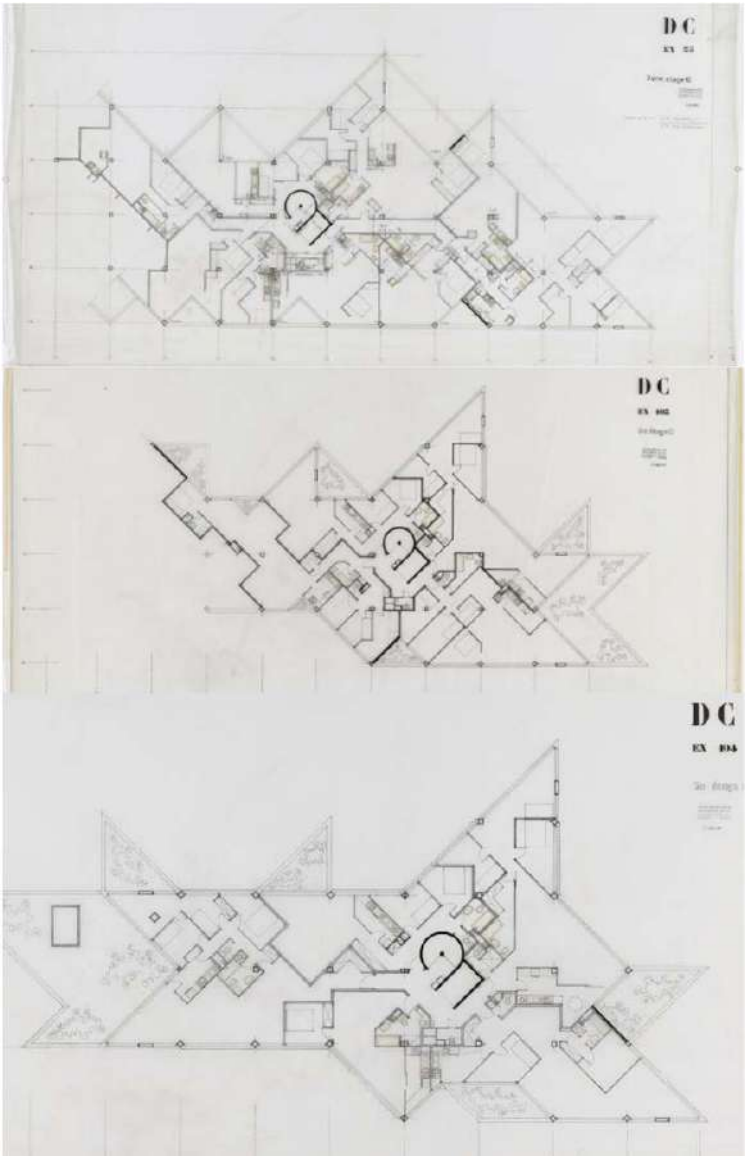
2.43 Design and models for Gigaro (1964)

2.44 Danielle Casanova during construction (1972)

2.45 Danielle Casanova (1972)



2.46 Third floor plan, Danielle Casanova (1972)

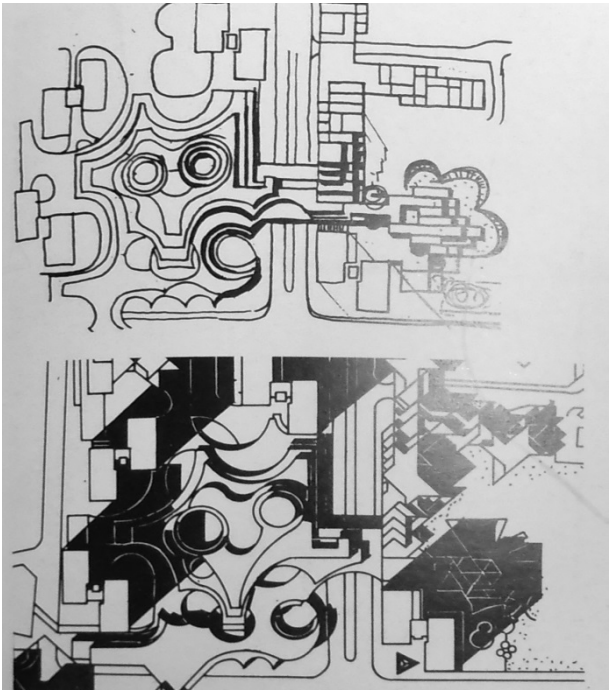


2.47 Third floor, sixth floor and seventh floor of Danielle Casanova (1972)

2.48 Façade details of Danielle Casanova (1972)

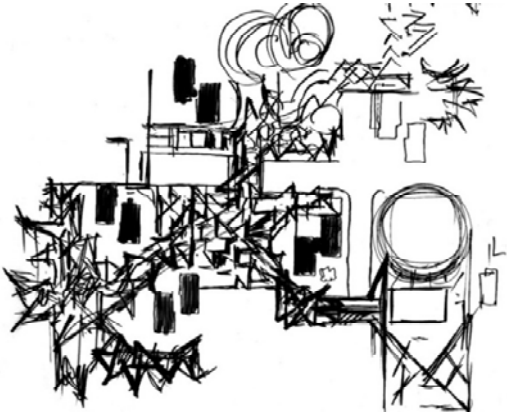
2.49 The bridge of Danielle Casanova (1972)

2.50 Interior of apartment in Danielle Casanova (1972)



2.51 Design sketches for Casanova and Ilôt Voltaire. Casanova used to be quite similar to Francs-Moisins before the diagonal came in.

2.52 Model of Ivry-sur-Seine center



2.53 Design sketch for Ivry-sur-Seine center

2.54 Model of Jeanne Hachette

2.55 Jeanne Hachette under construction (1973)

2.56 Arial view of Jeanne Hachette (right) and Ilôt Voltaire (left)

2.57 Jeanne Hachette (1975) overflowing with greenery

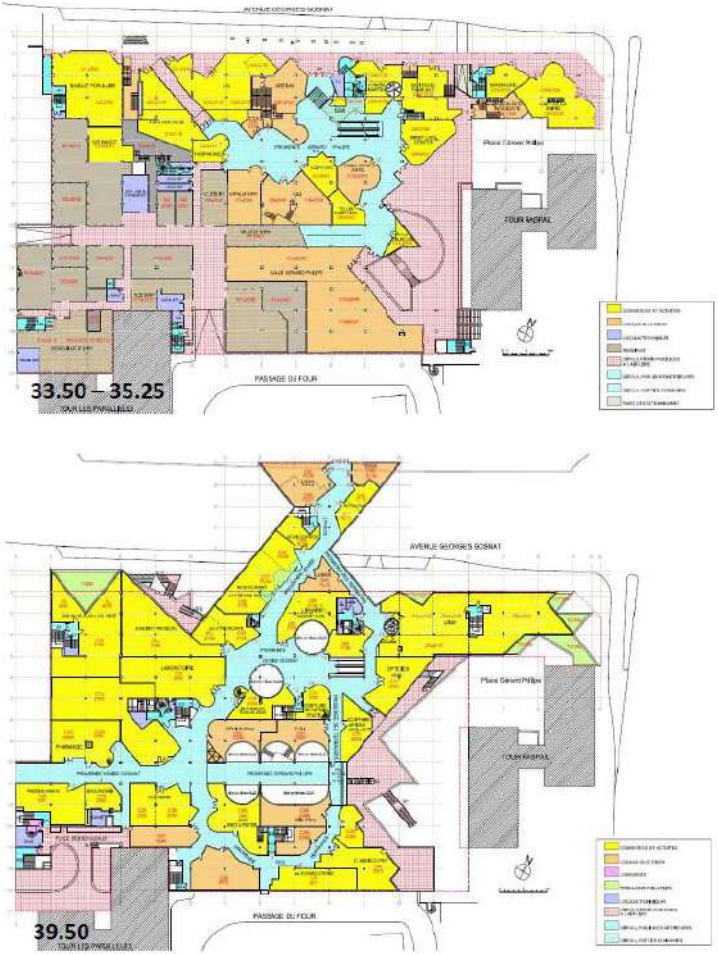
2.58 Arial view of Jeanne Hachette (left) and Ilôt Voltaire (right)

2.59 Jeanne Hachette (1975) overflowing with greenery

2.60 First part of Jeanne Hachette under construction (1973)

2.61 Jeanne Hachette (1975)

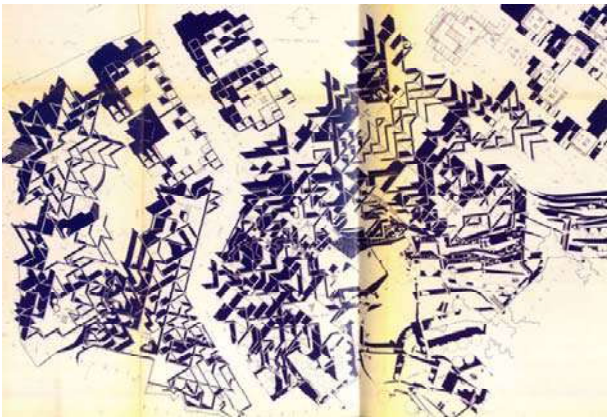
2.62 Interior of the Jeanne Hachette commercial complex (1975)



2.63 Plans of the Jeanne Hachette commercial complex (1975)

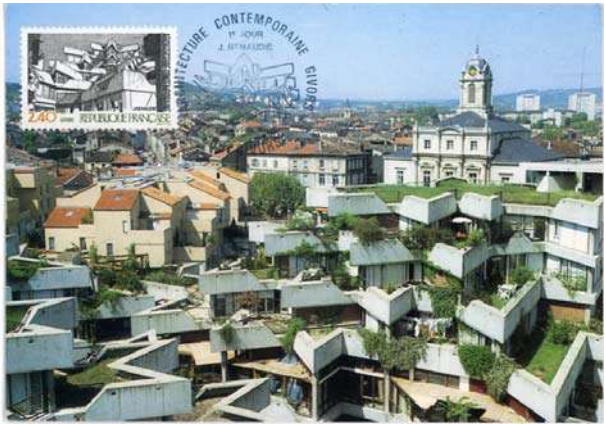
2.64 Raspail tower by Renée Gailhoustet; Ivry-sur-Seine

2.65 Pavilion by Renée Gailhoustet, Ivry-sur-Seine



2.66 Givors (1980) execution drawing

2.67 Givors (1980) satellite view



2.68 Givors (1980)

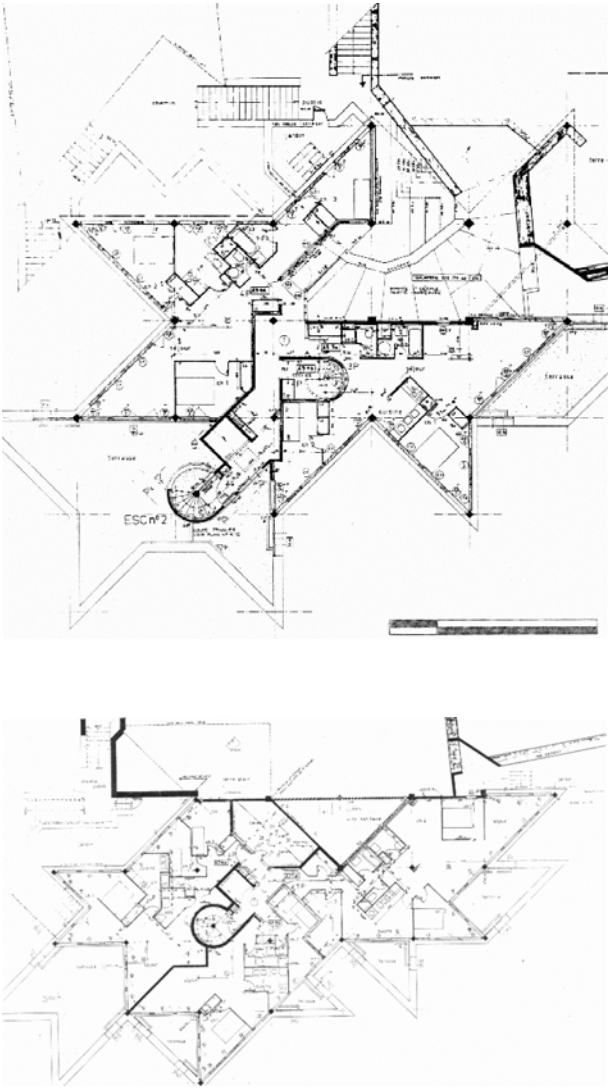
2.69 Givors (1980)

2.70 Givors (1980)

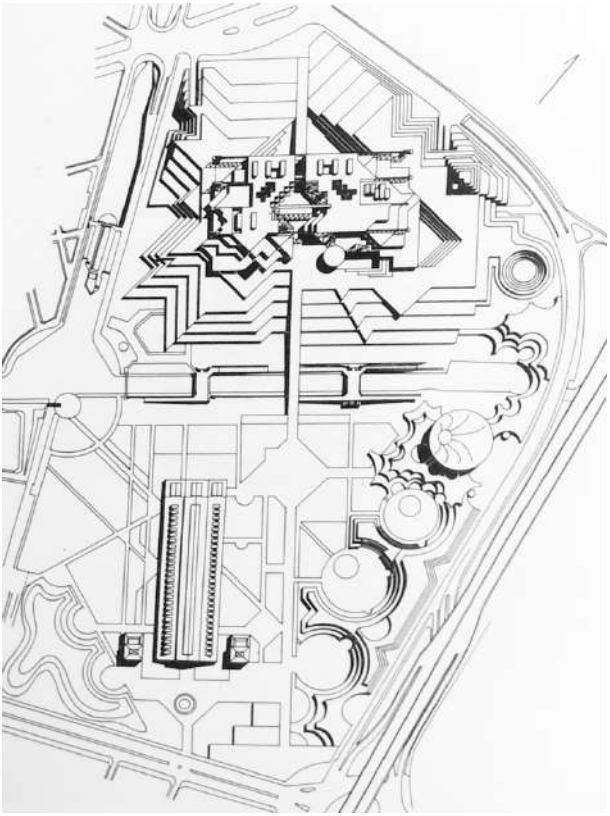
2.71/72 Givors (1980)

2.73 Givors (1980)

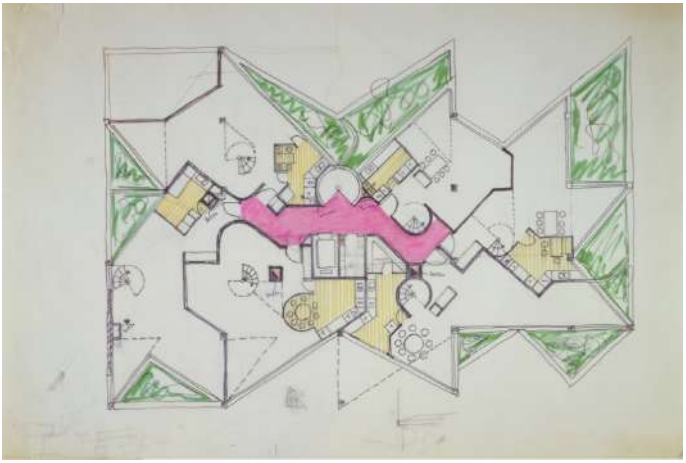
2.74 Givors (1980)



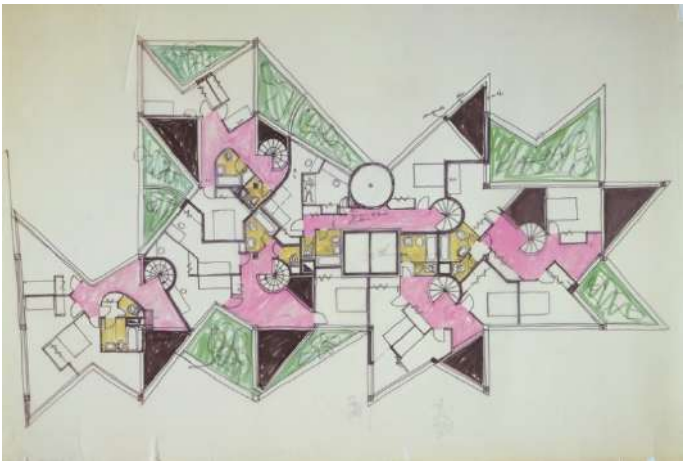
2.75 Plans of Givors (1980)



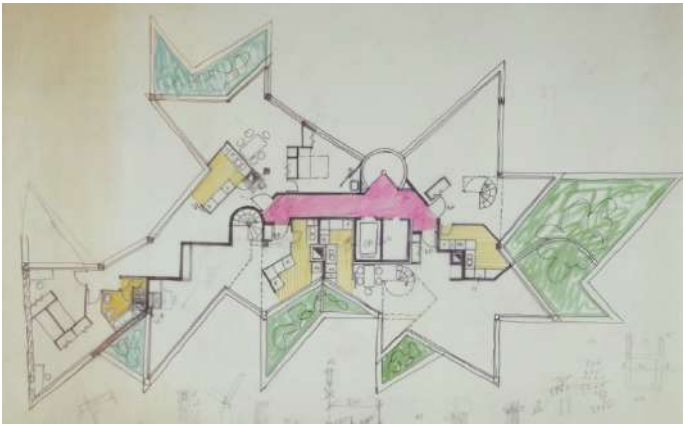
2.76 Competition entry for Parc de la Villette (1980)



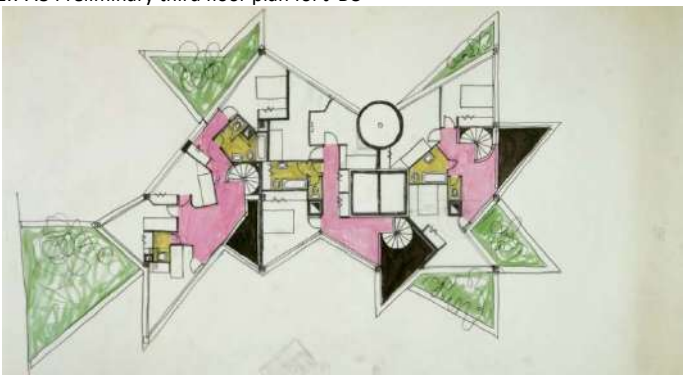
2.77.1 Preliminary first floor plan for J-BC



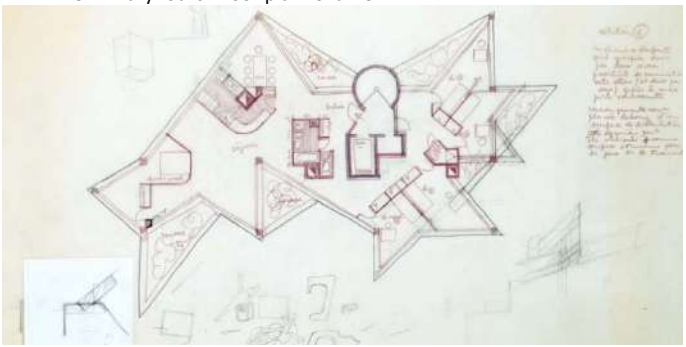
2.77.2 Preliminary second floor plan for J-BC



2.77.3 Preliminary third floor plan for J-BC



2.77.4 Preliminary fourth floor plan for J-BC



2.77.5 Preliminary fifth floor plan for J-BC

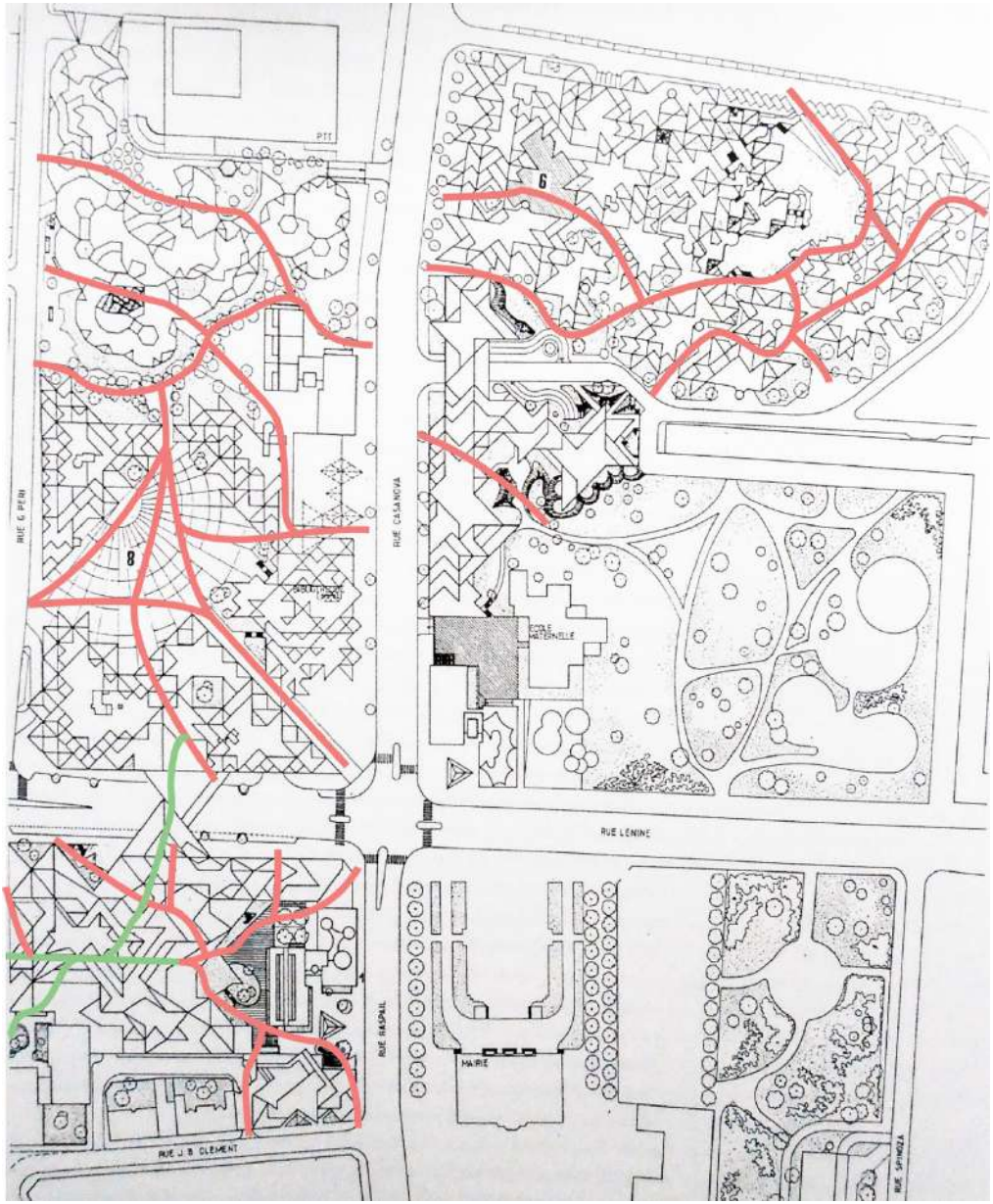
Additional images 3

3.24 Two photographs of Renaudie visiting a construction site with other interested parties. It's clearly visible that this is not his favorite passing of time; in the higher picture he stands apart from the group starring at something else (behind the ladder), in the lower picture he walks away from the group. As Renéé Gailhoustet recalls; he didn't want to deal with people he didn't want to deal with; he was the happiest when he could work alone on his drawings all day.

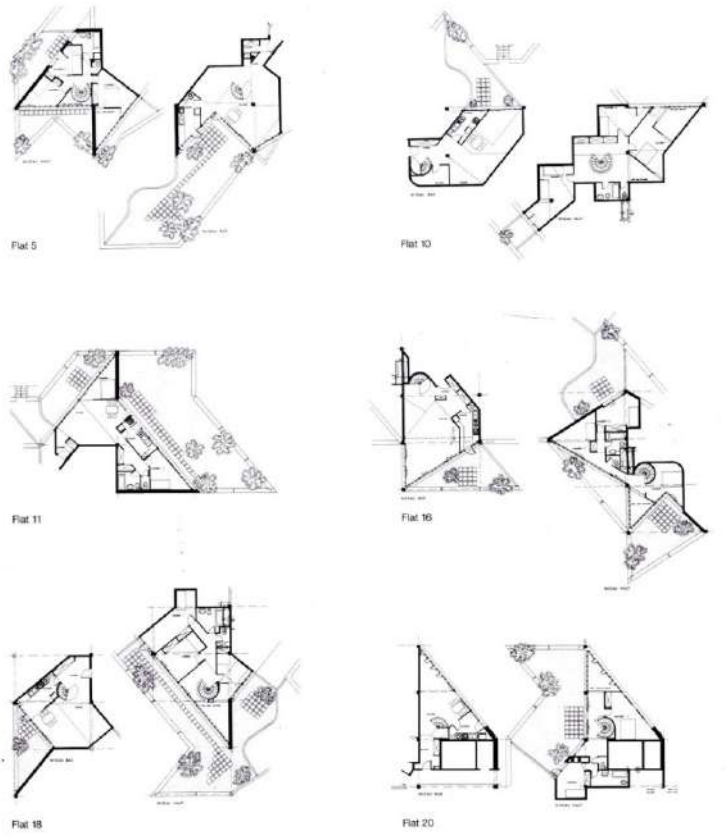
3.25 Jean Renaudie in front of the model for Villetaneuse

3.26 Jean Renaudie

3.27 Jean Renaudie



3.28 Pedestrian passages and shortcuts in Ivry-sur-Seine center



3.29 Different apartments in Jeanne Hachette (1975)

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Jean Renaudie: to give voice to that which was silent
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