

THE LEAVES AND THE FLOWERS

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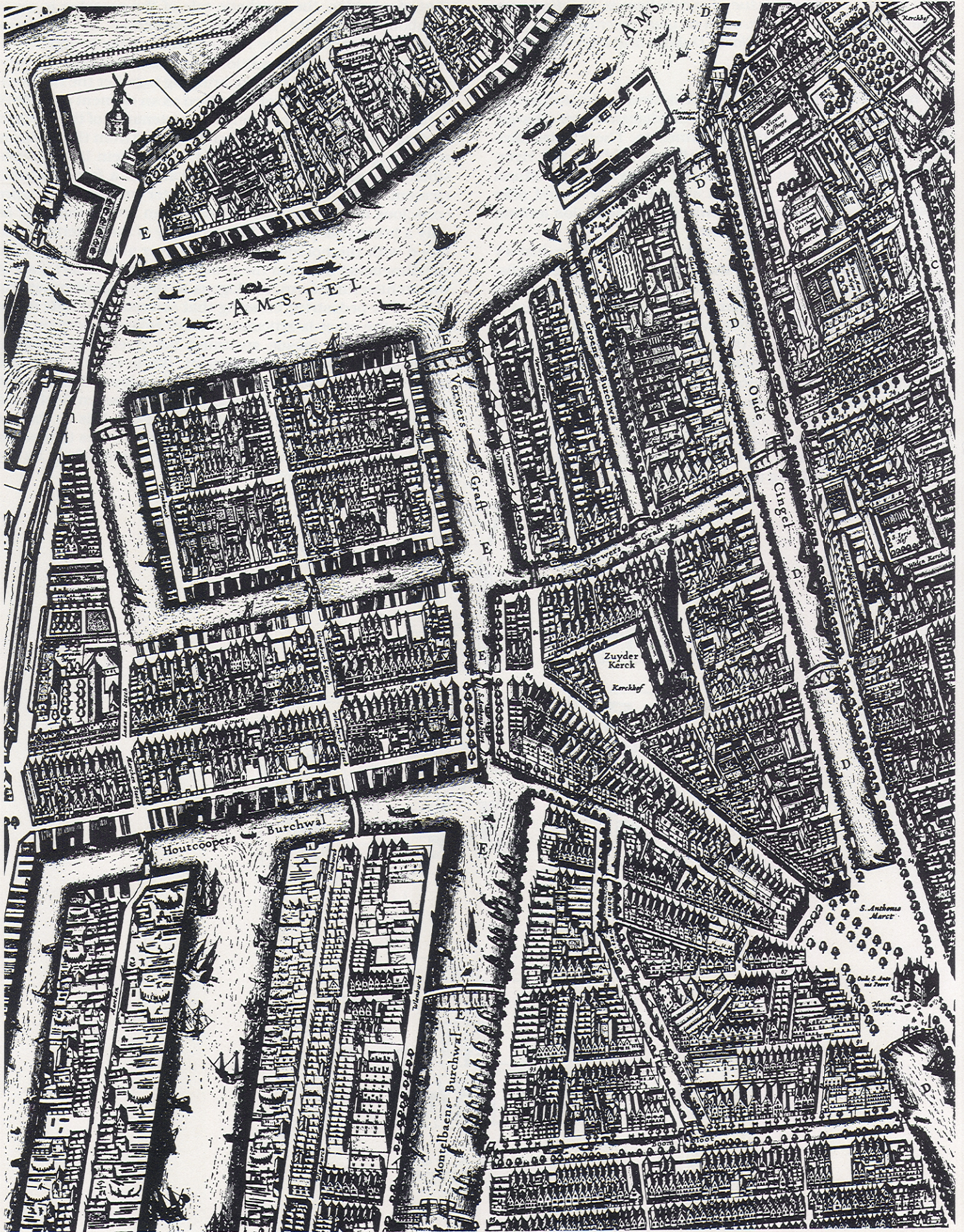


Fig. 1. The site on the Amstel River as it appeared on a map of 1625.

THE LEAVES AND THE FLOWERS

N. John Habraken

I TAKE this opportunity to write about a few things that are very dear to me: architecture, first of all; secondly, the beautiful city of Amsterdam that I love so much; and lastly, a design exercise I did, the drawings of which I have not seen myself for many years. They are for a project I did almost ten years ago, a competition to design the new Amsterdam Town Hall. I had just taken on the organization of a new Department of Architecture in Eindhoven and, although I had not time for this competition, for some reason or other I was so intrigued with the problems it posed that I spent several nights pondering them.

It has suddenly dawned on me now that the problem I saw in the competition was indeed representative of so much I have always been thinking and writing about that it was quite understandable why it had intrigued me at the time. And now, ten years later, I can perhaps explain what it was I tried to do then.

I also realize, looking at the drawings I made at the time, that the problem is still worth some attention. In fact, it is perhaps even more pertinent now than it was ten years ago, in the sense that perhaps there will be an opportunity now for dialogue.

What was the exercise about? A big building, mostly housing administrative offices, but accessible to the citizenry as well—a place where the community could feel at home, as well as conduct business. It had to be done on a site that was part of the fine-grained historical tissue of one of the most beautiful and characteristic cities of Western culture. It could not be a palace; it could not be an office building. It could not be a high-rise; it had to be accessible to everyone. It had to function for many, many years in an uncertain future. If it had to be a symbol, what powers should it represent? If it had to become a functioning place, what values would people attach to it? These were the obvious questions posed by the competition.

First there was the city of Amsterdam. The rich urban tissue, so distinct in scale, monumental in its tree-lined canals, ever human in its abundant variety of individual buildings, a generous organism full of vitality, capable of growth and self-renewal for many centuries. Would it be possible to cultivate the organism, to have it sprout yet another part? Could something grow there in an almost natural way, or did something have to be imposed, alien and artificial—a dead stone in living vegetation? Here you can see the themes that have fascinated me for so long: growth and change, the continuation of patterns as results of human action; the way living urban tissues are developed out of many small, individual entities; and, above all, the underlying structure, the relatively constant holding the relatively ephemeral; the unity and diversity; the beauty of the extraordinary that compliments the beauty of the ordinary—the leaves and the flowers that speak of the same tree.

Let me show you part of a seventeenth-century map of Amsterdam that gives you the site of the project (Fig. 1). It is the rectangular island neatly divided into four blocks by two streets. It faces the River Amstel at the point where it flows into the city. As it bends at that point, there is a beautiful view down the river from the site we are interested in. At the time that this map was made the city was engaged in its most ambitious extension plan ever. Three major new canals were to circle the existing town. When these were

completed the city had more than doubled its building area (Fig. 2). Ambitious and bold in scale as it was, the new extension was a continuation of the old. The elements were the same: a hierarchy of canals and streets laid out in an orderly pattern, along which buildings were built, following the same patterns as those that the citizens already knew. Certainly, there was development in style, in materials, in the treatment of façades and floor plans. But it was development, not innovation. No revolution. No alienation either, apparently. What is most remarkable is the consistency in the dimensions that are the most structural of all: the size of the lots, the width of buildings. Six meters is the dimension that perhaps denotes the scale best of all. It is the space you can span with a wooden beam from one brick wall to another.

Around 20 or 21 Amsterdam feet (28.3 cm) seems to be the dimension that was used from earlier times. On the new canals, where the rich merchants built when the city was at the peak of its prosperity, we find 30-foot lots, and sometimes a person bought two lots to build one monumental house in stone. The working class and lower middle class, the bulk of the population, built in brick on 20-foot lots, sometimes less, sometimes a bit more. Six to seven meters seems to be the dimension that most reveals the underlying system.

And the system of the town is really walls perpendicular to the streets—brick walls, one next to the other, each holding its own floors. Since the time of the early fires in the fifteenth century that devastated the city, partywalls have had to be brick. And they held the building together. The façades were really nonstructural “curtain-walls” that literally were hung

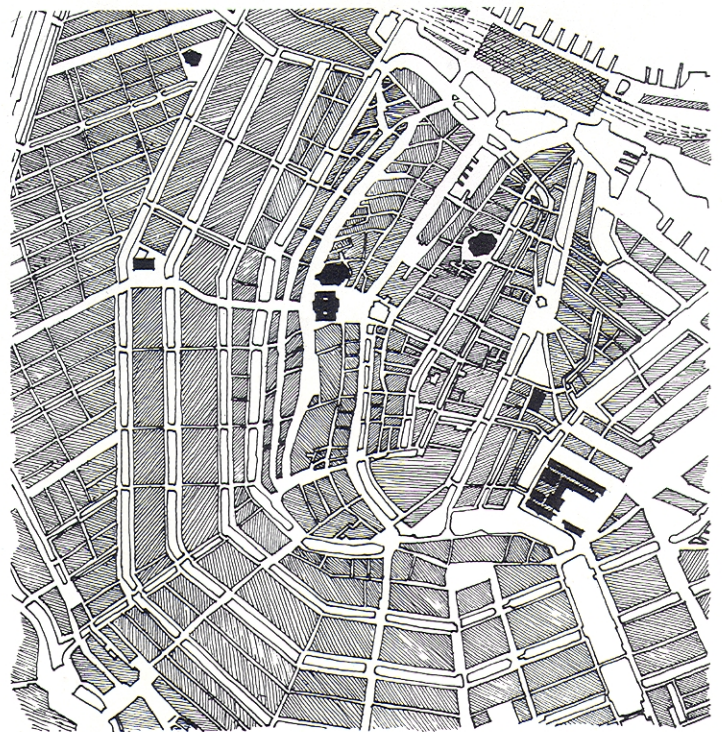


Fig. 2. Amsterdam center. Note the seventeenth-century extension by the three major canals around the medieval core.



Fig. 3. The facades of canal houses are curtain walls suspended on a structure of brick party walls and wood beam floors, lending themselves to change over a period of time.



Fig. 4. Aerial view of Amsterdam center. In circle: site of the new town hall.

on the structure behind. That is why they could be mostly glass in large wood frames with brick filling up the spaces in between (Fig. 3).

The site today is still surrounded by many of the same buildings that you can see on the map (Fig. 4). I felt that the new use of the site should have a structure akin to what the town was about: walls perpendicular to streets at distances around 20 feet, some less, some more. That structure had to be established first. It should be a continuous thing that could cover the entire site—a structure that had to be the essence of the urban tissue I had tried to understand. It is another characteristic of the Amsterdam tissue that building facades line the streets in straight lines. They press themselves forward, possessive of the public space they make together. Straight lines are consistent with the digging of canals in flat land. Curves are only found in the medieval part, where dikes and cow paths followed the flow of the Amstel River. The flat facades display color, texture, and sharp profiles against the sky, but no plasticity (Fig. 5). The skies are often gray and cloudy. Shadows do not work in that atmosphere. The facades are cut out against that sky and the steeples of the churches, whether they are medieval or renaissance, are open webs drawing their inky lines against gray clouds.

The tightly packed buildings that jealously hide the often generous gardens behind them suggest a dense tissue in which streets and squares are carved out. The new structure had to have that same quality. I tried to develop it in such a way that I had a choice of streets and alleys and squares to work with. The continuous structure had to represent a tissue in which public spaces could be carved out. The actual organizational decisions made in this exercise meant less to me than the general principle. Should the program change, should the dialogue develop through which the real thing had come into being, then there would be an overall structure that could easily be understood by everyone involved. Then we would see how to proceed in developing this neighborhood called a "town hall" (Fig. 6).

Because that is what it wanted to be: a piece of urban fabric. If you look at the site and see what was there, virtually until the bulldozers cleared it, you will understand why I felt we did not need a big building, but an urban tissue that would house the various activities anticipated in the elaborate and detailed program (Fig. 2). I have been told that Rietveld once said, when asked about the way he would go about designing a new extension of a town: "I think I first would fill the site with houses and then take some away where streets were needed." I cannot vouch for the veracity of this quote, but it is something I have remembered ever since I heard it. Its naive poetry gives the essence of what urban space is all about.

So I wanted to carve out streets and places. You will understand that this poses some problems in the design of a structure. Somehow its parts and dimensions must allow for such choice. Well, if you measure the dimensions used in this structural grid you will be surprised not to find any real 6-meter dimension. What you find is two dimensions that together are 2 times 6. One is 7.20 meters and the other 4.80 meters, or roughly 24 and 16 feet (Fig. 7). These two dimensions are repeated differently in the two horizontal directions. In one direction it repeats simply on a straight a, b, a, b rhythm. Material is 6 feet and space in between is 24 feet. In that direction, then, I can make "streets" 24 feet wide, and they can repeat on a 40-foot grid. In the other direction there is a more subtle rhythm. It basically runs a, a, b, a, a, b ; the a is 24 feet. But you will notice some 10-foot dimensions thrown in. They come in at places where I wanted to make "alleys" that run perpendicular to the rectangular 24-foot "streets." So it is not as neutral as it seems, and that is no.

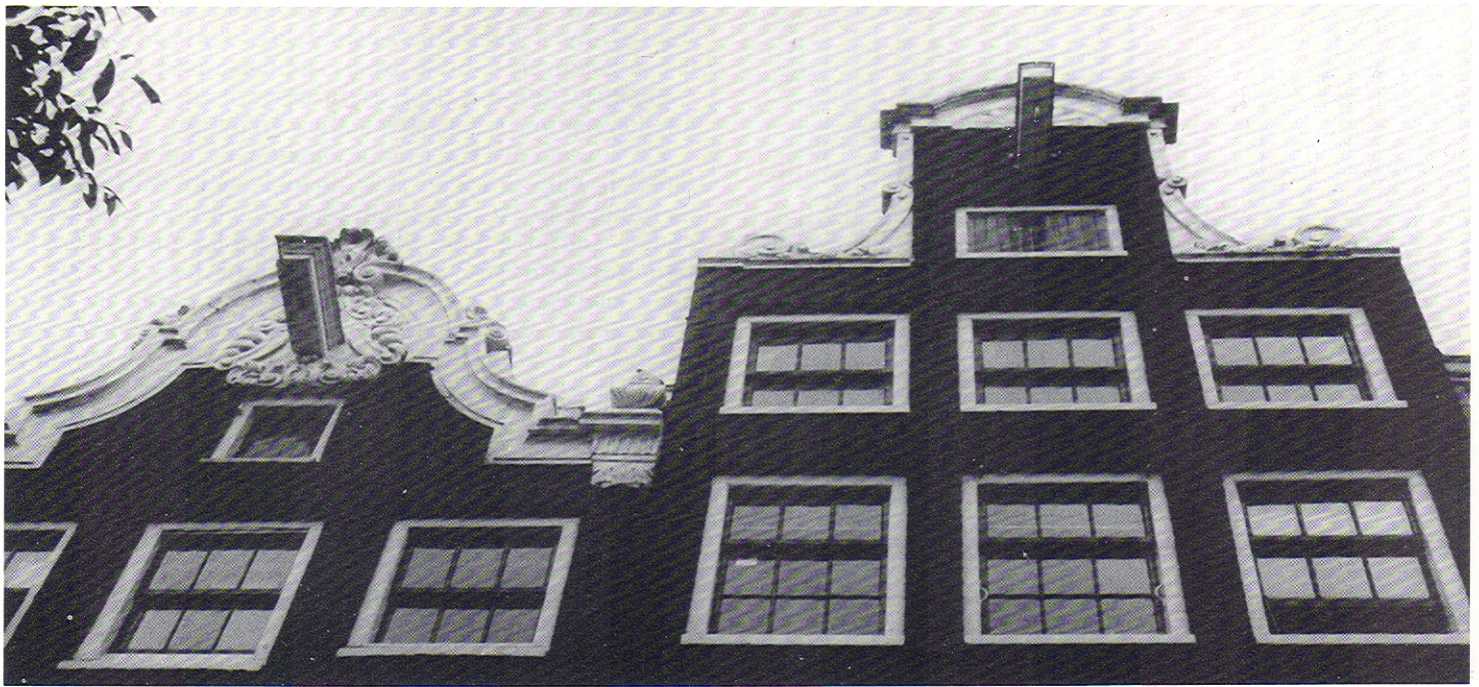


Fig. 5. The architecture is one of silhouettes cut out against the sky. Shadows don't play a role, but color and texture are important.

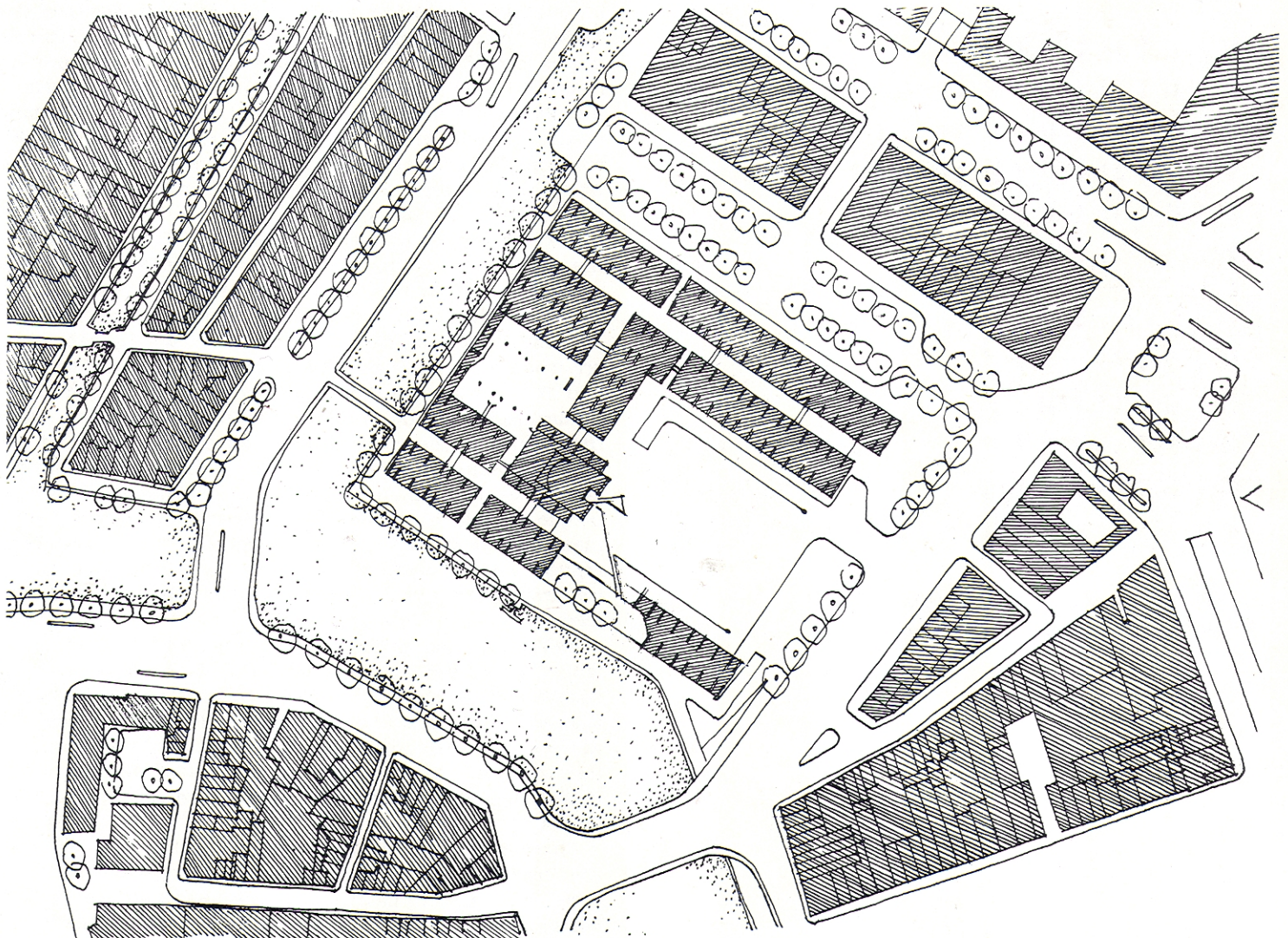


Fig. 6. The extension of a living urban tissue. New urban spaces carved out.

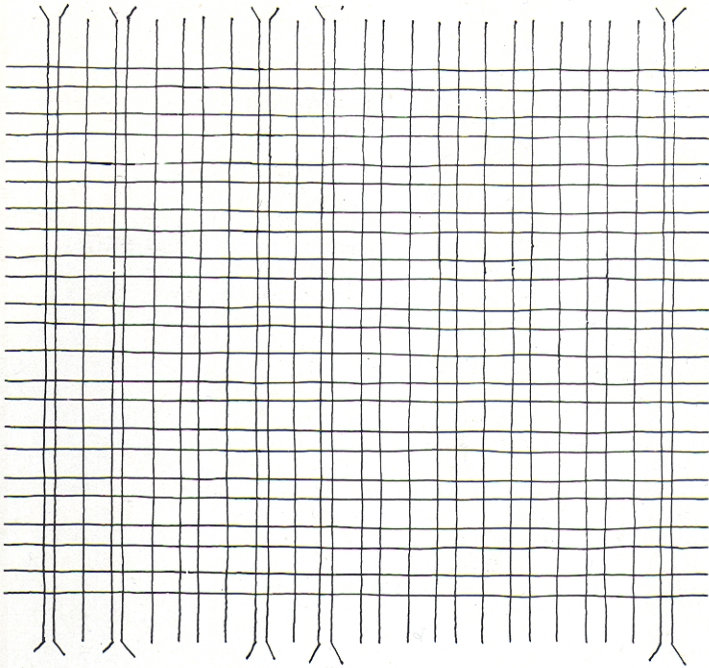


Fig. 7. The grid applied to the site.

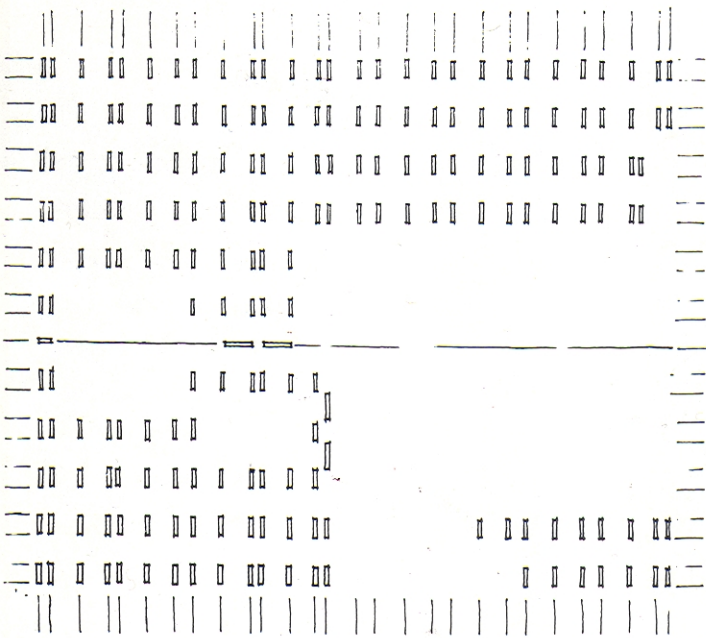


Fig. 8. The primary structural elements as distributed on the site after carving out the urban spaces.

coincidence. A good structure must be interrupted from time to time if you have reason to do it. And you can only do it convincingly, I think, when the basic principle is really well formulated and clear. In the other direction there is also an interruption: an a, a axis in the a, b rhythm.

There you have the first articulation of the new territory: lines crossing in space. Now imagine walls 16 feet deep, 2 feet thick and $4\frac{1}{2}$ floors high set on the distances described above, and you have the first spatial formulation of the structural principle. With these decisions the scale is set. We have established a material-space relationship in dimensional terms that from now on will govern all the decisions we make, whether they are about urban space or buildings, inside space or outside, communal or individual. There are two additional rules: first, larger spaces are made by taking away material; second, you can take away the upper part of a structure wall if you like, but not the lower part. In other words, in cross-section you may see less structural material as we build higher (Fig. 8).

As you can see, on the plan I took away most material at the southwest quarter of the site to get a large urban space—with the help of some of the old buildings—that relates to the river (Fig. 9). The bridges in Amsterdam have a strong pitch (you can even see that on an old map, where they are wooden constructions) to allow for ships to pass under them. This means that a bridge that connects two streets at the same time separates them because it is raised to eye level or higher. The new town hall square rises toward the northeast until it attains about the same height as the bridge over the Amstel River. At that point the river becomes visible. As one moves toward it, one can look down the river's axis into the distance, where a sequence of bridges links the two parts of the city that are separated by the water (Fig. 10a,b). The new square we will call Amstel Place (Amstelveld in Dutch), which is the name of the place that was there before the site was cleared. It was a place with a long tradition and it seems proper to keep the name.

Next I took away material in the middle of the structure on the northeast side. That is the square inside the structure. It must have a glass roof like the streets and alleys that connect through it. I will tell you more about these spaces later on, but let me first give you an overall view (Fig. 11). There are two major "streets" running southeast-northwest or, if you like, running parallel to the river side. They must have names. In the age-old tradition that names streets for what the people do there, we should call one the street of the weddings and the other the street of the bureaucrats, because the one closest to the river feeds into the houses where people get married, whereas the other brings you to all the places where you can get passports, pay your local taxes, register your newborn infant—in short, the places you go for the profusion of permits and forms that local administration feeds to those that it serves.

Again, more about that later. These two streets simply are where the structure permits them. There are secondary streets and alleys that connect them. The one between Bureaucrat Street and Citizen Square is the same width of 23 feet. Another continues in the same direction but is 15 feet wide, and then there are a number of alleys no more than 9 feet wide that you will have no problem finding (Fig. 11).

There is one more place where material was taken away: the "building" that is on your left when you enter the structure from Amstel Place. This is the town hall proper. It is where the city council meets. It is the real center of the government, the "special" building nested in the tissue of "ordinary" buildings and streets formed by the structure.

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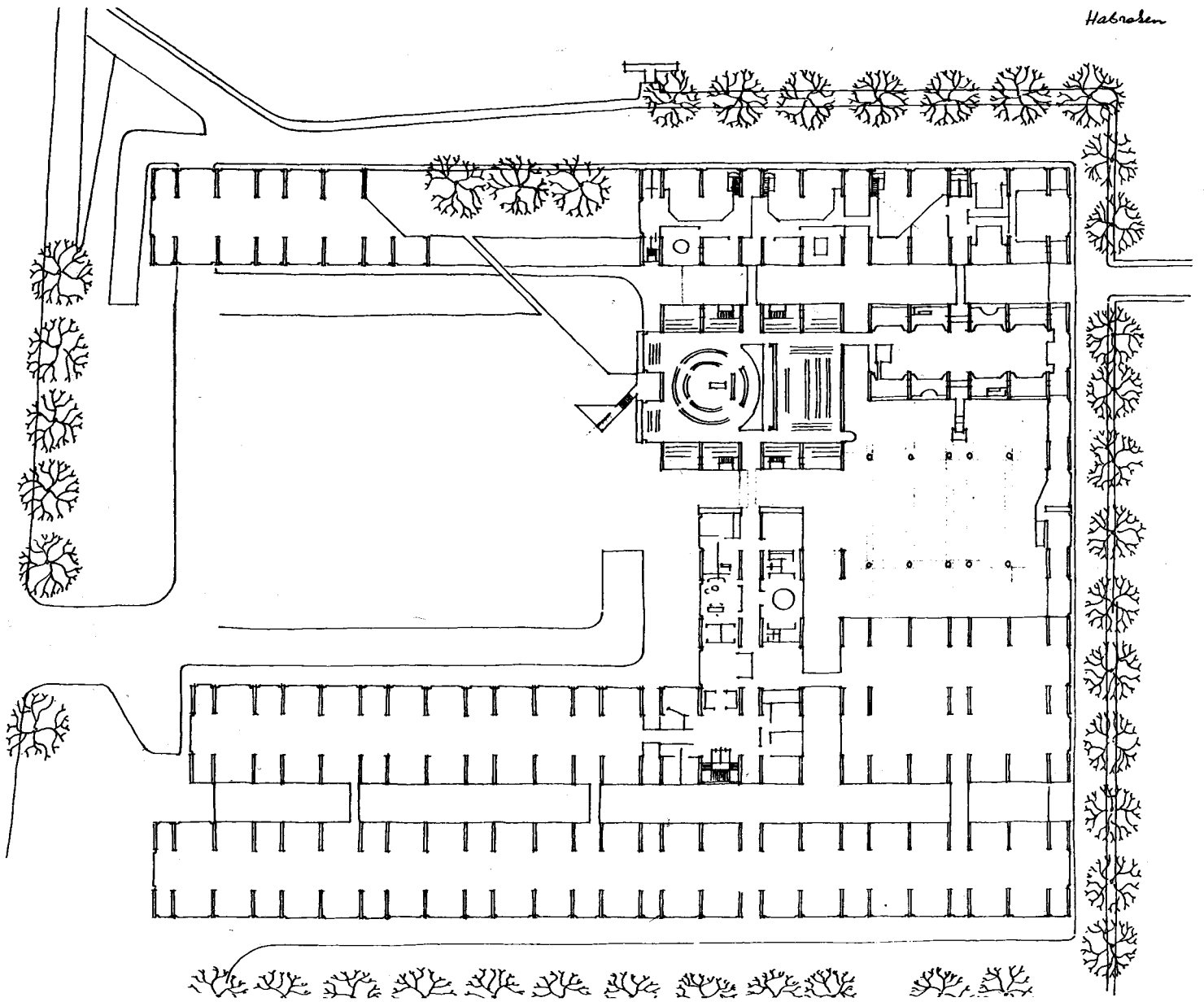


Fig. 9. Main floor plan.

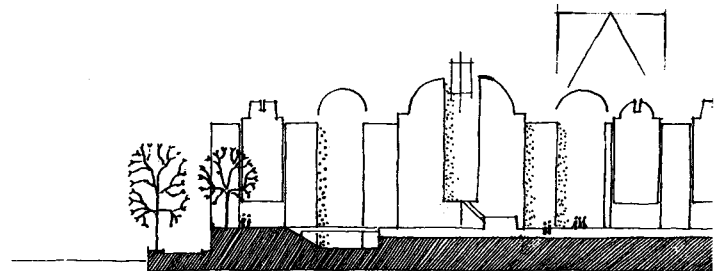
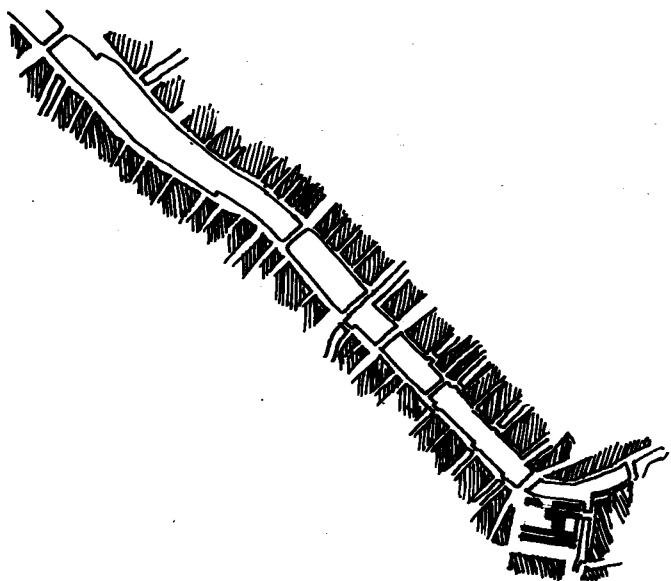


Fig. 10a, b. "Looking back up the river as it flows toward the city center."

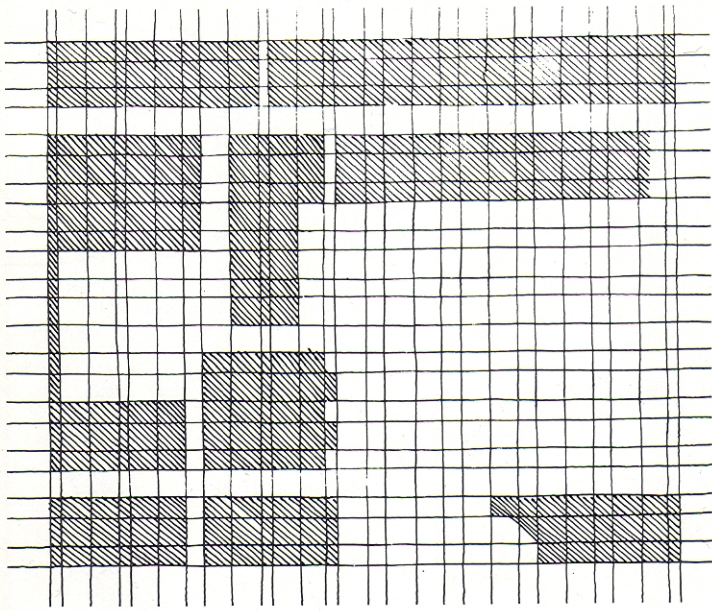


Fig. 11. The public spaces in relation to the grid.

I would like you to have a look at the way the "special buildings," the large churches in which the citizens of Amsterdam have congregated throughout history, are planted in the tissue of Amsterdam. There are two large medieval churches and at least three major ones that were built in the Renaissance. The church that you can see in Fig. 12 is the Zuiderkerk (South Church), built by Hendrik de Keyzer between 1603 and 1611. As I was writing this, I took out an old history book on the architecture of the Netherlands and found a plan of that church (Fig. 13). It is the first time I have really seen the plan, but I have been in the church itself several times. The structure of the building, both its spatial organization and dimensional structure, astonishes and delights me. I had always thought that the large interior system looked like a town square lined by houses, and the image is strengthened by the way the building is placed in the urban tissue. It is not a free-standing building in an open space. The church itself is as jealous of the public space as the houses. It lines up right at the street edges. There is no way in which you can perceive the whole building from any one vantage point. The view is always partly obstructed by houses (Fig. 14, Fig. 15a,b,c.). The building does not stand apart, but it is intimately integrated with the city fabric. The cemetery is walled off from the

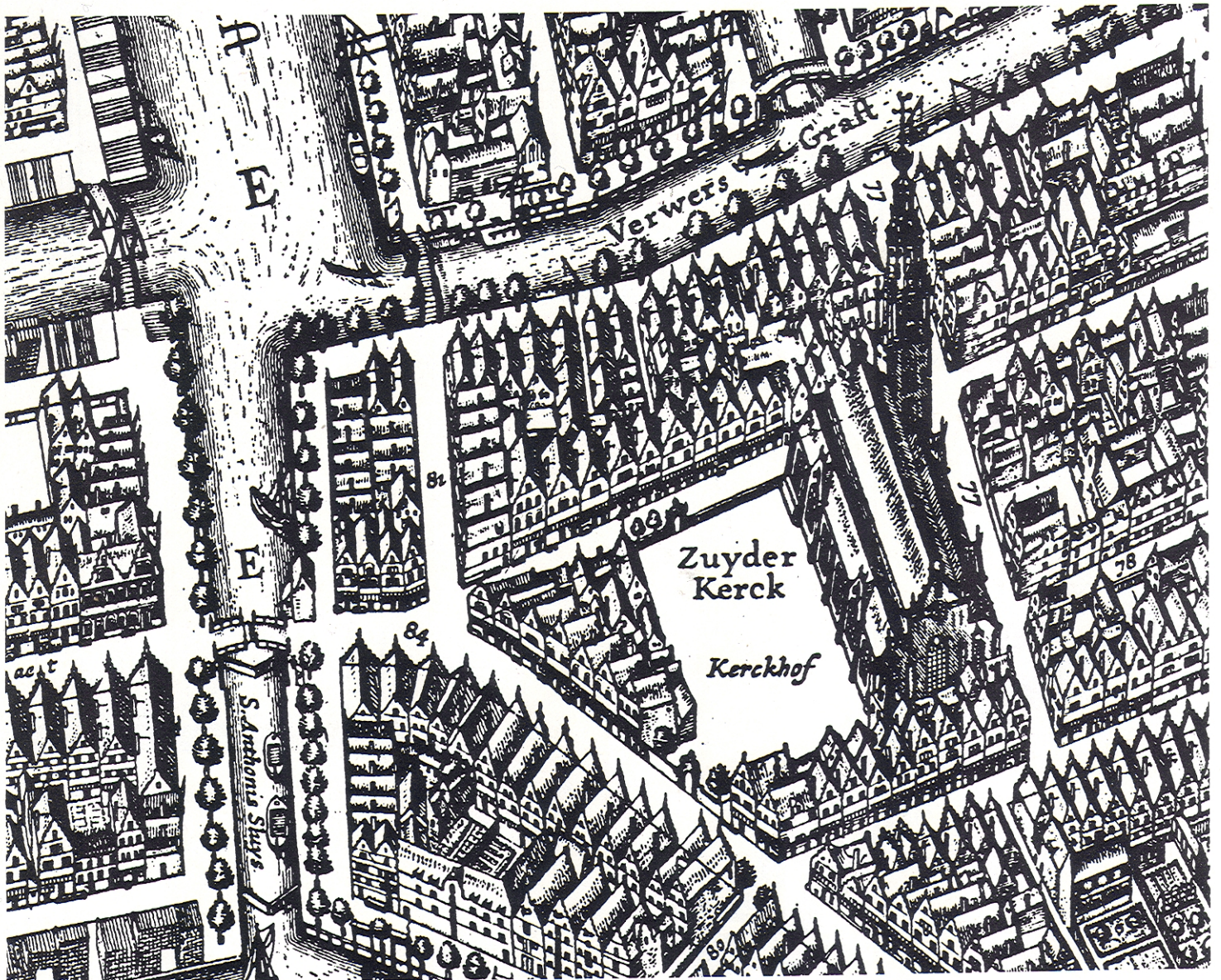


Fig. 12. The "South Church" (1616) as it appeared in the 1625 map.

streets. It is not the mass of the building that its builders were interested in; its interior space was what mattered most. That space is in fact a public space like any other town square. The only difference is that it has a roof.

The middle space in the Zuiderkerk is about 40 feet wide. Its bays are half of that: 20 feet, the width of the townhouses around it.

What more is there to say? The same pattern is revealed by the medieval churches. The Ouderkerk (the "Old Church"), although more complicated in its structure—the result of enlargements in history—is built on the same structural principle: a large public square covered by a roof and lined by secondary spaces, the dimensions of which, again, equal those of the houses and streets in the town. It is not the horizontal dimensions that make the structure different from the fabric of the town, but the vertical. As you walk through the maze of streets, canals, and alleys of the urban environment you see the high roof and the steeple from afar. As you come closer, the streets do not open up to make a place for a large building, but they lead you to the interior, where you find a large space. It is an architecture of space, first of all.

Now let me take you into that urban tissue that I hoped to be the result of my exercise in structure and dimension. Perhaps you are troubled by the long, narrow Bureaucrat Street. I think I already indicated that all the "streets" and "alleys" should be open spaces right from the ground floor to the glass roof. The length of this street does not bother me at all. To begin with, it is typical in its size and dimensions for the tissue around it. You will note that the street in the old town that you find perpendicular to it, to the northeast of the site, has the same width and is even longer. This will only work on one condition: that the facades that make the street have individuality and are not endless repetitions of the same design. As we are conditioned to think of massive repetition of uniform elements, we assume almost automatically that any long, straight facade must have such a uniform repetition. But what I would like it to be is a series of individual "houses." After all, the people who work there, and their activities, are different from each other. They surely arrange their furniture differently. Why should they work behind uniform facades?

But uniformity, as we all know, is the result of centralized decision making. It is *not* the result of industrialized building. On the contrary. We can produce systems of industrially made elements that allow themselves to be combined in endless variation. There is no reason why our streets should not have a variation similar to the older streets. This should not be an aesthetic exercise, however. When we want the result to be a living thing that in its long lifetime will reflect the changes and idiosyncrasies of its population, then we must conceive it as the result of that life within. Consequently, the issue is decentralization of decision making and recognition of the individuality of the smaller units in the organization of the inhabitants.

Along Bureaucrat Street the public will find all the offices that serve as the meeting places of the municipal administration and its citizens. These offices, where bureaucrats and public meet, should be on the ground floor. The activities that back them up should be above them. In other words, the smaller office units in the larger bureaucracy should be housed vertically. They should have their own stairs and elevators. The idea is not new. Again we can observe it in reality. Along the canals of Amsterdam many of the historic houses are now occupied by a variety of commercial enterprises. The public enters these from the street. Sometimes such organizations occupy several buildings connected by openings cut in the party walls. The

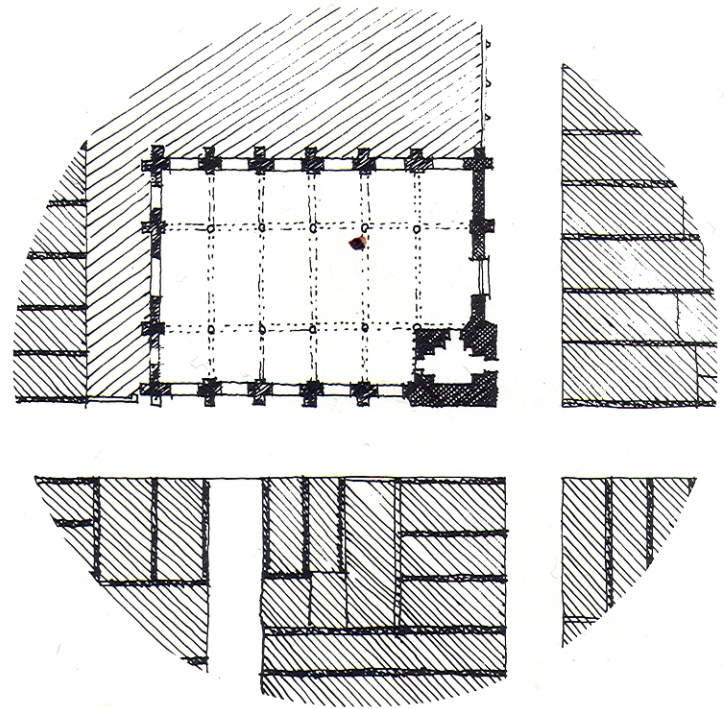


Fig. 13. The "South Church." Like the medieval churches embedded in the urban fabric, it creates a covered public space.



Fig. 14. The "South Church" steeple. The building never reveals itself as a whole except from the inside.

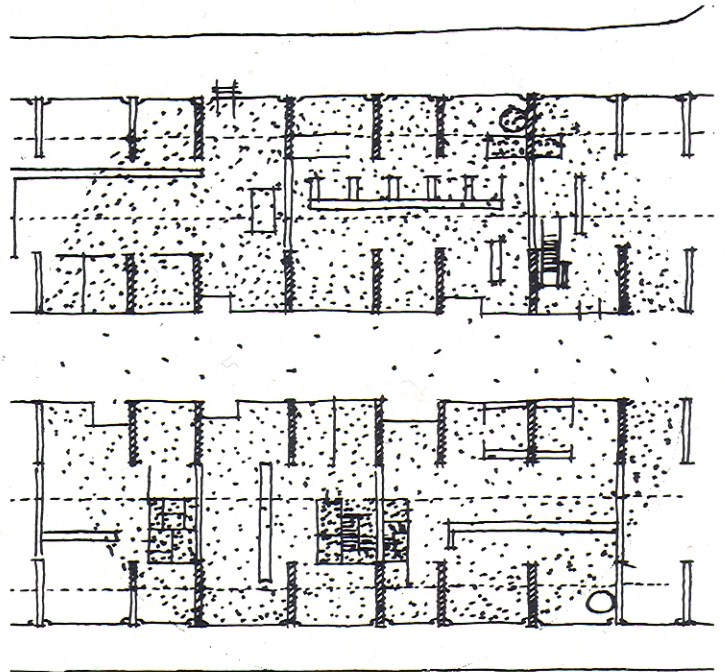
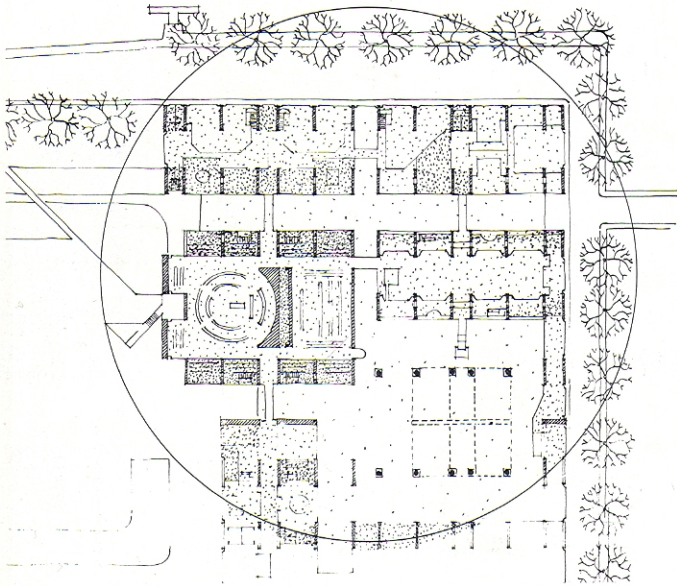


Fig. 16. Bureaucrat Street.

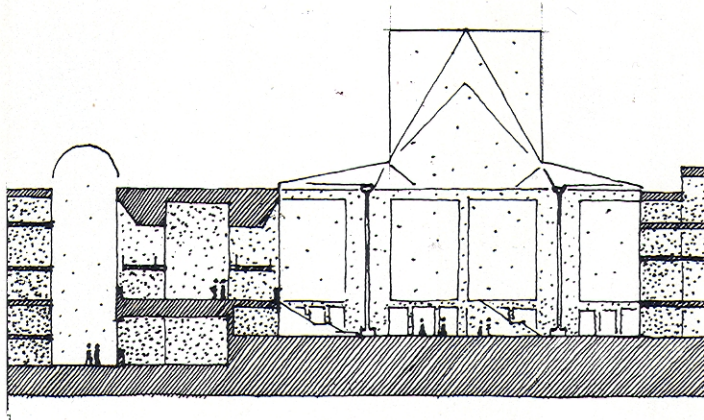
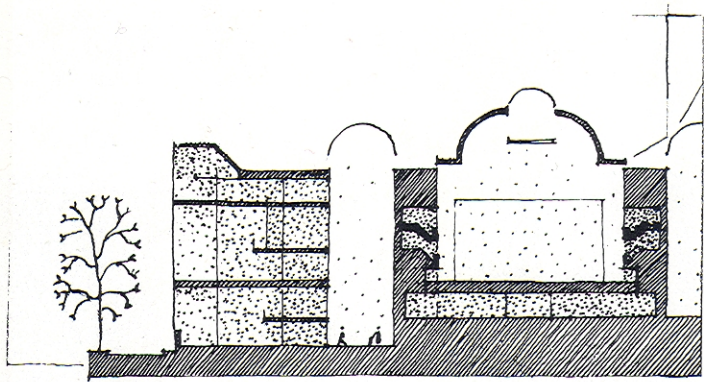


Fig. 15a, b, c. The "town hall in a town hall." The council chamber building surrounded by "Citizen Square," "Amstel Square," and "Wedding Street."



Fig. 17a. The entresol as it appears in the traditional Parisian vernacular.

result can be awkward where floors are not on the same level, but the principle is clear.

The administrative units that will occupy the houses in our new structure are the units that must serve as the clients to the architects who made the building (Fig. 16). Yes, indeed, I am talking about architects, not one architect. When we take decentralization of decision making seriously, we should start with ourselves. Who wants to make all the decisions in such a large enterprise as the one we are discussing now? The very concept of structure means delegation of decision making. Variety within a framework. What I would like to do is to work out a system of rules, regulating the choice of elements and their combination in space in such a way that many of us could work with the project and create parts within the larger framework. This is not new either. The American shopping mall is conceived on a similar principle. There the occupants deal with their own interior designers, building their shops in the larger framework. It would be worthwhile to develop this principle. I am convinced there is a younger generation of architects in the Netherlands who would be happy to play this game; the result could of course be much better than any precedents we can point to now. It certainly would be much more interesting than anything that even the most talented architect could design alone.

Here we touch the heart of what I am used to calling the "support" concept. I use the term *support* because the framework in which the individual interpretations of different architects, who are serving different administrative units of the municipality, are developed should be much more than only a number of load-bearing walls or columns. It must—in itself—be a true piece of architecture, strong enough to hold the variety of forms that will be expressed within it, complete enough to be good art, satisfactory even when empty. If you want another example, take the Rue de Rivoli in Paris—a true support of a strong and dominating architecture. But within it you find a rich population of shops, restaurants, cafes, and even hotels. True, the Rue de Rivoli is perhaps an extreme case, in the sense that it does not allow any expression of its interior variety toward the street. From within its arcade, however, things are different. The late nineteenth-century shopping arcades in London (not to mention Milan) are another case in point. The Rue de Rivoli, by the way, is interesting because its structure is a faithful reflection of the Parisian urban fabric. Here too, its dimensions and spatial organization can be recognized in the ordinary streets of Paris, the dominating feature of which is the *entresol*, a low floor over the ground floor that sometimes falls back as a mezzanine, sometimes even disappears, to allow for a much higher space or a monumental entrance (Fig. 17 a, b). But that is another subject. Let's go back to the Amsterdam environment and the lessons it teaches us.

Although I have not mentioned it explicitly, you will have understood that, of course, the outside facades of our support should be governed by the same principle. Don't ask me to give you details of that aspect. I am not prepared to go that far. Something must be left for your imagination. I can, however, point out some aspects of the historic facades in Amsterdam that in my opinion could very well be incorporated in the rules of the game that we want to play here. I mentioned earlier the fact that these facades are true "curtain walls." The traditional Dutch townhouse has its own version of the *entresol*. The ground floor is usually very high. The tall windows let the light penetrate deep into the interior space. This height allows for a mezzanine that often can be reached by a separate stair. Figure 18 gives you a glimpse of that pattern. The interesting proportions that are



Fig. 17b. Rue de Rivoli. Note the *entresol* which continues inside the arcade—formal use of a vernacular element.

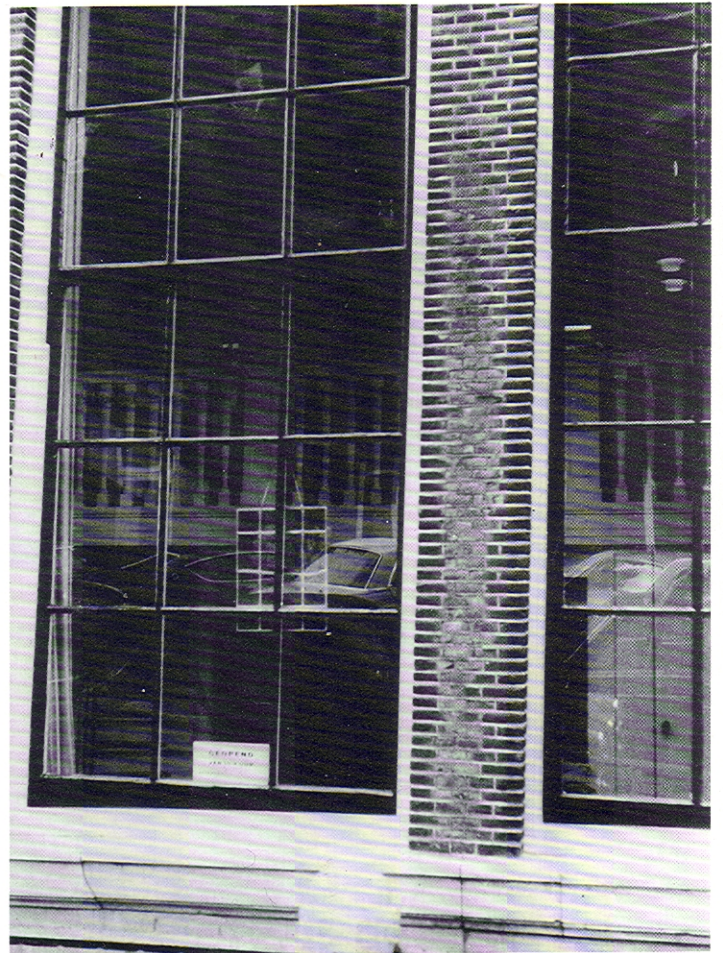


Fig. 18. The mezzanine floor as a traditional element in the canal house allowing for tall ground floor windows.

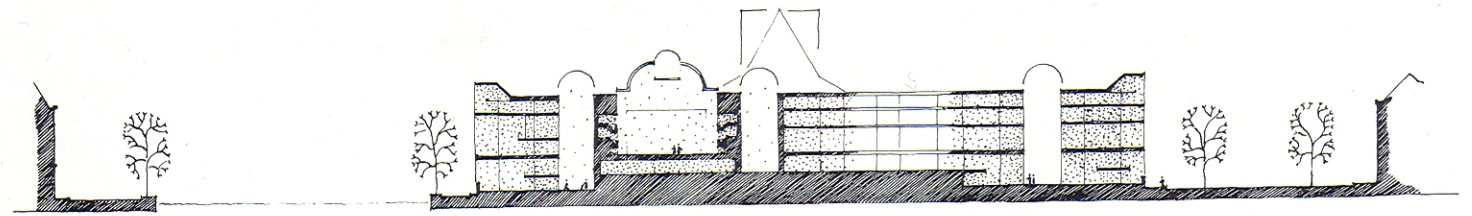
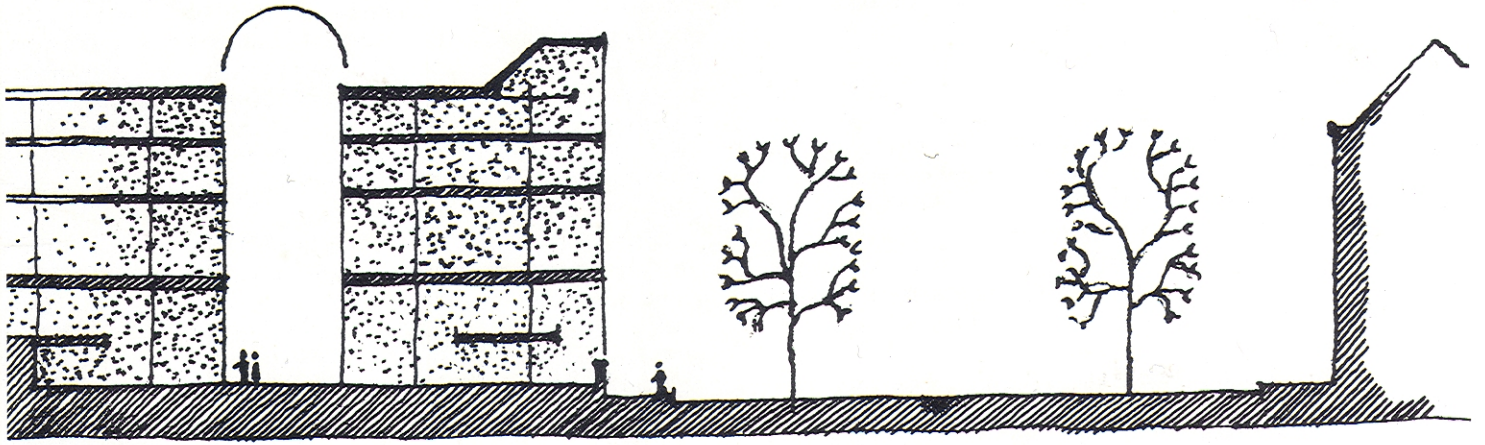


Fig. 19a, b. Cross-section perpendicular to the river across the council chamber.

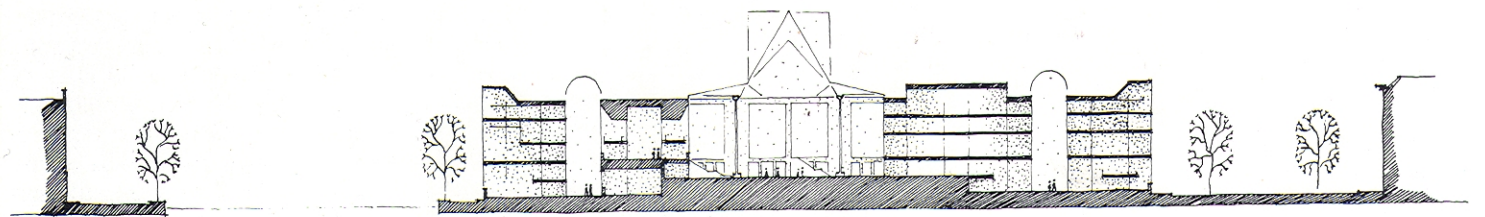


Fig. 19c. Cross-section perpendicular to river across "Citizen Square."

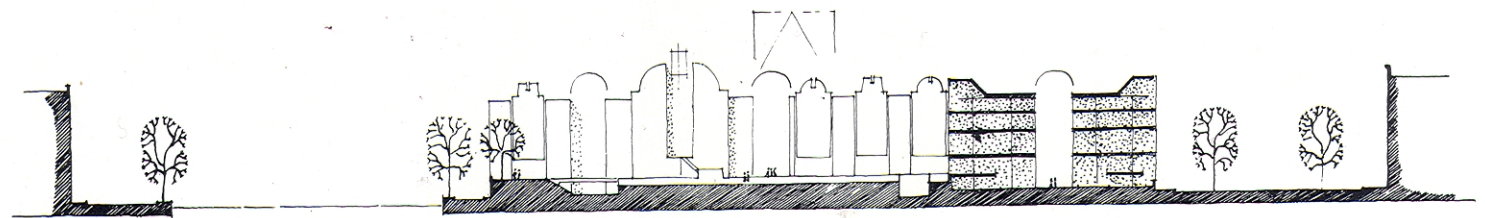


Fig. 19d. Cross-section perpendicular to river across "Amstel Square."

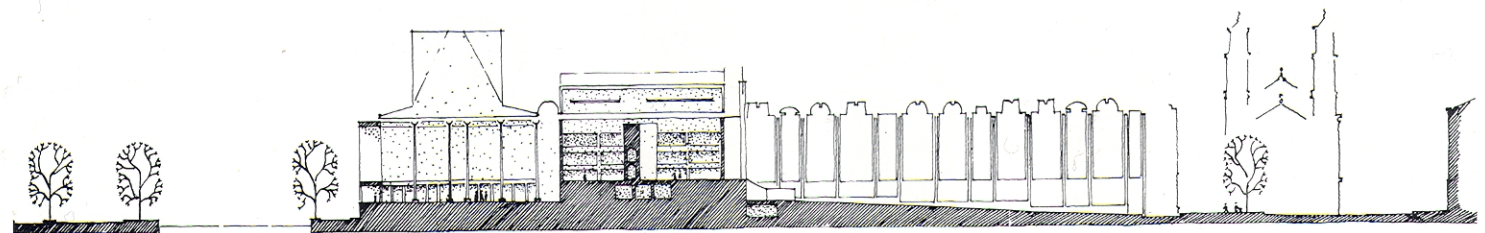


Fig. 19e. Cross-section parallel to river.

the result of that solution do not need to be stressed. Such a mezzanine, together with the high ground-floor windows, could serve very well in our administration building, it seems to me.

And then, of course, there is the top—the silhouette against the sky that marks the roof. The structure should have roofs; they make the top floor that much more interesting, or they can serve as lofts to house whatever additional functions may be needed by the clients—a storage space to put all the old files in, a place to relax and drink coffee. In our vertical organizational concept it is the bosses of the administrative units who, perhaps, want to be in the top spaces with their high-pitched ceilings.

To conceive of a physical system for the variety of facades would be an exciting design challenge. I must concede that I keep thinking of this in metal. They should not be all glass, although glass should be dominant. They certainly must be flat. Metal in a flat surface with glass in it, hovering over an almost total glass first floor, would be nice. It would lend itself to the kind of cut-out profile that the sky needs.

But let's go to Wedding Street, leading to the eight houses facing the Amstel in which weddings take place (Fig. 20). The cars come around the lower part of Amstel Place to unload the wedding party at the entrance of that street. They then disappear in the underground garage under the Amstelplace to wait. Finally, they pick up their party on the river side, where relatives can make pictures of the young couple as they descend the steps to the outside street, lined by trees.

The spaces in which the ceremony takes place are again those high spaces with tall windows looking out over the river and the houses on the other side. The water of the river sometimes reflects against the ceiling as the sun comes through. The mezzanine gives some of the guests the opportunity for a good view from above.

As even Dutch society has its class structure, some weddings are more important social affairs than others. A party can use the main entrance and proceed through the citizen square inside. This, of course, will also be the route taken by all those other groups to be received by municipal dignitaries—foreign visitors, local groups, demonstrators, petitioners, and the like. Citizen Square should have a light glass and metal roof. Its slender columns follow the rhythm of the structure. Have you ever seen those old Byzantine churches in which the builders used columns found in even more ancient Roman ruins? Some are better than others, some are fat, others are slender. What I would like to do is to invite some artist to make a few columns. Public buildings in Holland are allowed some 2 percent of building costs to spend on art objects. This would be one way to use that money. The structure that covers the roof on the citizen square should be light and transparent, weblike, the metal frames painted in bright colors.

A stair climbs from this square into the building on the river side. On its second floor we find the large, formal banquet and reception hall (Fig. 15a). This hall looks out onto Citizen Square. Its space extends horizontally across the wedding street into other reception rooms that look out over the river. A bridge spans the interior street.

The assembly hall is on this same level. It is connected by three bridges to the adjoining buildings. One comes from the banquet hall to make a more formal entrance. The other two bridges lead from the reading and committee rooms of the council members at the river side and from the building facing Amstel Place, where the mayor and the aldermen have their offices. There are internal stairs and entrances in each of these buildings. The assembly hall is, in fact, two spaces. One, facing Amstel Place, is the real city council

chamber; the other is for special committee meetings of a less formal nature. Both spaces will have balconies between the structural walls for public and press, accessible by stairs and elevators from the ground floor of this building.

Light for this space will penetrate from the top and reflect toward both sides of the structure above the balconies. On the Amstel Place side a wall stands apart as a facade, identifying this town hall within a town hall as a separate entity. A balcony protrudes into the public space outside, from which the Queen can wave at the crowds when she visits the city, and where the mayor can preside at other celebrations.

As we have taken our tour through this little town within a city, I have tried to explain the objective of this exercise: the design of a structural concept in which structure means much more than just physical elements that bear loads. It concerns the concept of support, in fact, this time not applied to residential use but to the operations of a municipal administration. It concerns the development of an architectural theme that in its spatial variations and dimensional rhythm picks up the themes that reverberate from a past that is still alive. The exercise illustrated the continuation of some values as they are expressed in the composition of physical elements in space.

At the same time, it is an exercise in the dispersion of decision making. There are no big buildings. There are only big organizations that want to centralize decisions, and the message that I would like to put across is that there should be a hierarchy of decision making in design, that one decision will give structure to those that follow. As I accept the structural concepts imbedded in the city of Amsterdam that tell me how to deal with this fascinating site at the Amstel River, I find myself in a situation in which decision making is delegated to me by that physical fabric that is already there, and I have to listen very carefully. But the corollary is that I should give structure so that there is a point where one must stop, to leave the process open to those who come next—the smaller groups of occupants and their consultants who will inhabit this new place. And to inhabit is to build. The process never ends.

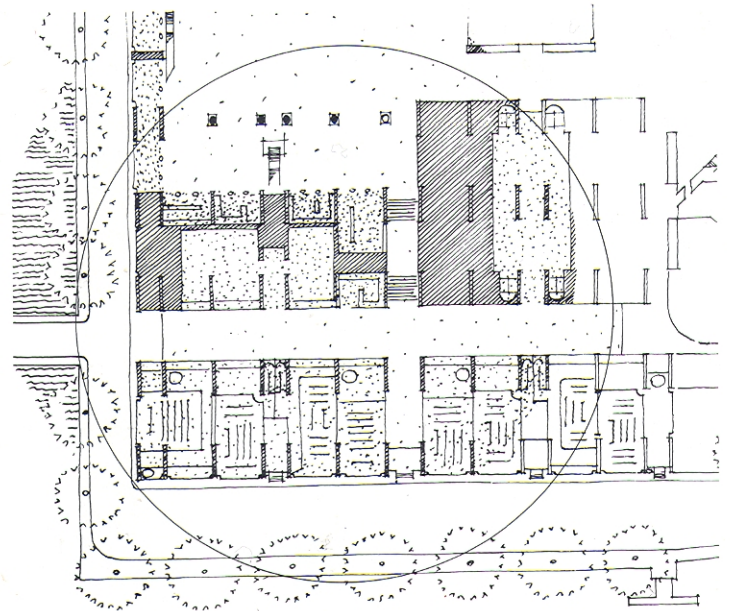


Fig. 20. "Wedding Street" and the spaces for the wedding ceremonies overlooking the Amstel River.