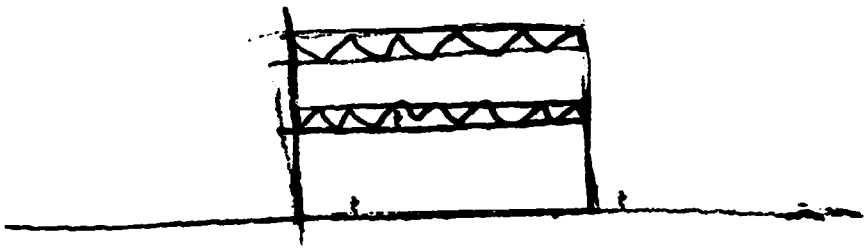
the negation of conventional architectural representation



troy james smith

prepared in partial fulfillment
for the requirements of the
degree of **master of architecture**

faculty of environmental design
the university of calgary
calgary, alberta, canada

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I would like to acknowledge the contributions of various people to this project and to my 4 long years of school here.

To Marc: thanks for the insight, the friendship and criticism, hopefully all of which will continue in the years to come.

To Geoffrey: thanks for the guidance on this project, you helped turn the document into something legible and readable that we both can be proud of.

To Lorraine: thank you for taking the time to be the Dean's examiner.

To Bob and John: thanks for all of the band-aids over the past four years.

To Bill: school and life here would not be the same without you.

To Marino: Now that I will be finishing school, I can start working on that cloning software we talked about.

To all of my classmates: you have made the four years here not only bearable but enjoyable.

To Will, Nicole, and Jocelyne: what can I say, my life would not be the same without you guys.

To my parents and Laura's parents: thanks for the love and support without you none of this would have been possible.

Last, but certainly not least, to Laura: I thank you for your love as well as the mostly constructive criticism and advice that has pervaded our relationship in the past and will continue in the future.

In the late twentieth century, mass media and information technology have infiltrated every facet of our society and shaped, along with migration and multiculturalism, a mass culture of globalization. These forms of information are overwhelmingly made up of signs, symbols and visual representations that seek to, consciously or unconsciously, communicate to each of us. But how does one communicate, using conventional representation, to such a heterogeneous population that is accustomed to different sign systems and cultural practices? This is where representation is put into question.

Architecture has also fallen into this trap of representation. Over its history architecture has become a medium which seeks to communicate through representation. But how can a building attempt to communicate using conventional representation with this society of mass culture? How do we as architects attempt to resolve these issues of representation? One solution is to abandon the notion of conventional architectural representation in favor of an architecture that interacts with the user through the direct experience of the whole: **a holistic architecture of direct experience**.

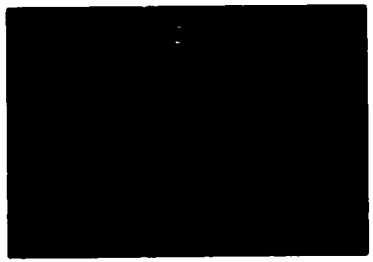
An architecture of direct experience seeks to influence through open-ended interpretations that shift depending upon the individual user and their individual interaction with the architecture. It is an architecture that **presents not re-presents**. The architecture influences through an abstraction and a clarity that can then be freely interpreted and imprinted by the user.

KEYWORDS
representation experience communication
holistic abstraction globalization language

This master's degree project is broken down into five sections: **Cultural Context, Precedents, Design Principles, Design Intervention** and lastly, the **Conclusion**. The first section, **Cultural Context**, seeks to introduce the issues and related problems with the use of conventional representation as an architectural design strategy in the early 21st Century. Conventional representation requires a common knowledge base to be understood and then deemed relevant by the user in today's society. But due to the fact that increased multiculturalism and migration are pervading our new global culture, a universal understanding of conventional representation has become impossible and thus meaningless to various peoples. This then begs the question, how do we as architects address the irrelevance of conventional representation and create architecture that has significance and meaning within a globalized contemporary culture?

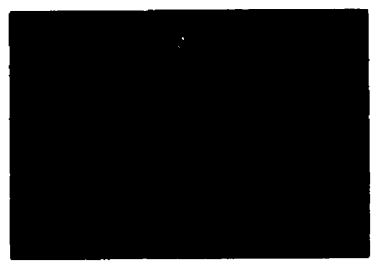
Section two of this master's degree project, **Precedents**, focuses on four different architectural firms that are addressing or have addressed the problems inherent to conventional representation. Two contemporary offices as well as two others from the early to mid 20th Century have been chosen as the firms to analyze. The contemporary firms are Foreign Office Architects of London and Architecturburo Riegler Riewe of Graz, Austria. The two offices from the early to mid 20th Century are Hannes Meyer, former director of the Bauhaus in the late 1920's and Candilis-Josic-Woods, who operated an architectural practice between 1956 and 1968. The work of these two firms provides a historical perspective into the theories of this project. All of these firms have advocated an architecture that does not use conventional representation as the design strategy. Instead, they are advocating the concepts of abstraction, simplicity and experience of the user over the more formal principles of conventional representation.

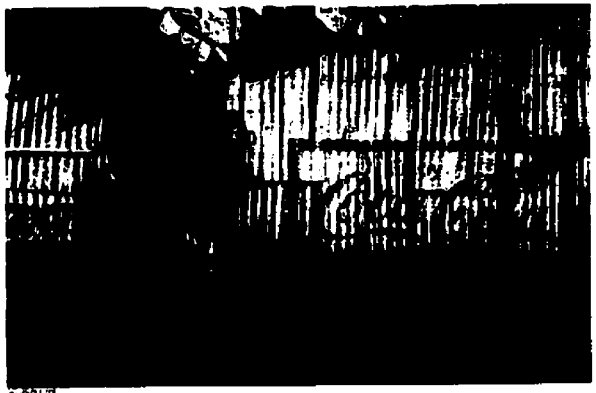
Section three, **Design Principles**, develops a set of principles out of an analysis, critique and interpretation of the theory of the precedents. The three principles are: *boundless containment, the abstract monolith,* and *the open-endedness of understanding*. Combining these three principles into a holistic design process will ideally produce an architecture where conventional representation is minimized and abstraction and experience become the means to facilitating understanding.



Section four, the **Design Intervention**, discusses the chosen site, programme and resulting architecture that act as vehicles for the testing of the design principles established in section three. Ideally, the design principles could influence any segment of the world population and be applied to any site and (or) programme. Thus, the chosen site and programme are independent of the design theory and exist only as a means for its examination. The selected programme is a new building for the Canadian Architectural Archives currently located on the University of Calgary campus. The building is to include the current program of the archives (storage, offices, reading room, etc.) and expand the program to house interior and exterior exhibition spaces as well as amenities such as a bookstore, café, and leasable retail units. Extending the programme to include these new elements plus the added storage space was derived from discussions with Linda Fraser, curator of the CAA. The chosen site is an existing surface parking lot located at the corner of 10th Ave. SW and 2nd St. SW. The site exists on the periphery of the downtown within walking distance of the Arts Centre, the Glenbow Museum, as well other small private art galleries such as New Zones Gallery or the Muttart Gallery.

The last section of this master's degree project is the **Conclusion**. This section reflects on the question posed in the opening section, Cultural Context, namely, What other types of design strategies within contemporary culture can be used to facilitate meaning in architecture that do not use conventional representation?



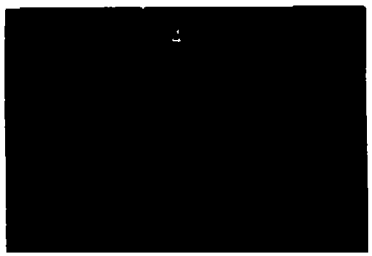


Representational imagery like the Coca-Cola logo appear all around the world contributing to globalization and the information overload that seems to be upon us.

"The production of vast amounts of information in the late-capitalist era has devalued representation as a vehicle of communication. Systems of signification, whether languages or value-systems, are increasingly being replaced by material and spatial organizations as the basis of communication, exchange and consensus."[1]

— foreign office architects

This master's degree project intends to look at the impact of conventional representation on meaning and relevance within contemporary architecture. Almost everything in our mass culture of globalization uses some form of representation to communicate. From architecture, to billboards, to the internet, representation is everywhere and is losing its power to influence. Representation is faltering due to two contemporary conditions: firstly, the increasingly multicultural and diverse nature of individual societies throughout the world; and second, the abundance of representation used today, we are experiencing a condition of information overload, where signs and symbols are no longer meaningful. There is a need to find new process of generating meaning within contemporary architecture (and society in general), that can exist as an alternative to conventional architectural representation. This is an architecture where conventional representation is minimized and an abstract artifact is produced. This artifactual architecture can then speak more effectively to contemporary society by means of an open-ended, holistic relationship with the user through abstraction and spatial complexity has resonance in today's globalized world.



The year 2000 celebration at Times Square in New York City showed the ethnic diversity that has come to symbolize many cities across North America.

globalization

"Human societies have always mixed and changed, but goods, people, and ideas move farther and faster today, spreading an urban-oriented, technology-based culture around the globe in just a few generations. Thanks to radio, television and videos this new world culture reaches virtually everyone, even the world's nearly one billion illiterate people."[2]

— joel swealow

From CNN's coverage of the Gulf War to Nike's world-wide domination of the athletics apparel industry, events that occur on a world scale are the cause and effect of increasing globalization. Globalization is such an abstract phenomenon that sociologists, anthropologists and other experts in the field struggle to give it a real, concrete definition. Its abstract quality and effect on a mass scale of events compounds the confusion in defining what globalization actually is. The common superficial understanding of globalization is that it results from the homogenization of world culture.

In actuality, globalization has multiple effects that include the homogenization of world culture but also other potentially more important phenomena. The two factors of globalization most influential to this project are the increased diversity throughout the world due to the rise in mobility, and a loss of meaning in the information distributed by technology and mass media. Technology and information move further and faster around the world creating a duality, one of simultaneous compression and expansion of time and space. One can travel around the world in a matter of hours or just connect to the Internet and leave your personal space in a matter of seconds. This increasing mobility facilitates a condition of expansion as well. The expansion of our time and space occurs as other parts of the world, previously unknown, become familiar and recognizable due to technology. Technology enables us to visit, via cyberspace, other places that until recently have been inaccessible. Thus movement across vast distances is no longer only possible it is also instantaneous and frequent. This contributes to a demystification of the world.

Demystification of other cultures and societies enables a return to an almost nomadic state of constant movement, increasing diversity and multiculturalism across the world. Addressing this condition in his book, *Cultural Complexity*, contemporary critic Ulf Hannerz states, "people can make quick forays from a home base to many other places- for a few hours or days in a week, for a few weeks here and there in a year- or they may shift their bases repeatedly for longer periods. Many of these footloose people are not much like the poor and the wretched whom Emma Lazarus welcomed to America, in those words inscribed on the statue of liberty."[3] This footlooseness of society increases the variety and number of different people that interact around the world. Technology creates ideal conditions for the temporary movement of people, with opportunities provided through travel associated with vacations, business or education. At the same time technology also facilitates increased permanent movement conditions like migration. Countries in which multiculturalism was never addressed before have had to adjust their policies on such issues. One such country is Germany. According to one recent publication, "Germany in the period from 1980 to 1989, brought in about 4,112,900 persons as permanent residents, i.e., 5.2% of the total German population in 1989."[4] This phenomenon has produced societies that are more diverse and heterogeneous than ever, due in large part to the mass culture of globalization.

The culture of globalization is increasingly facilitated by mass media and information technology. These phenomena have infiltrated every facet of our society. No one is immune to their influence. Forms of information are overwhelmingly made up of signs, symbols and visual representations that seek to, consciously or unconsciously, communicate to each of us. According to the notorious philosopher Jean Baudrillard, we live within the "culture of the copy, a society of saturation, the second flood. The world has become xeroxed to infinity."[5] Each day we are bombarded by the signs, symbols and visual representations that make up the information produced by contemporary technology. This constant interface with messages of representation has led to an indifference and meaninglessness directed towards these forms of communication. "If there is 'information overload' and 'information anxiety,' it is to a great extent because people cannot manage the relationship between the expanding cultural inventory and their reasonable personal share in it. When at times informa-

The Nike Air logo on this shoe exemplifies how signs and symbols which are connected to language and meaning can be misconstrued depending on the cultural context in which they are placed.

tion appears meaningless, it may again be that this information is somebody else's meaning."[6] In other words, the image fails to communicate because its translation is lost within different cultural customs and rituals. This cultural condition then begs the question: how does one communicate, using representation and imagery, to a heterogeneous and multicultural population accustomed to different sign systems and cultural practices?

representation and meaning

To start to address these issues of representation, a common understanding of the terms surrounding representation must be established. The concept of representation and its relationship with meaning and language, along with the notions of signs and codes must be addressed. According to Stuart Hall, representation connects meaning and language to culture.[7] For someone to communicate meaningfully they need to use language. Language becomes a way of communicating or representing an abstract notion like a thought or an idea. This provides a specific cultural framework, within which one can express him or herself and be understood by others sharing the same framework. Thus, according to Hall, "there is the system by which all sorts of objects, people and events are correlated with a set of concepts or *mental representations* we carry around in our heads. Without them, we could not interpret the world meaningfully at all. In the first place, then, meaning depends on the system of concepts and images formed in our thoughts which can stand for or 'represent' the world, enabling us to refer to things both inside and outside our heads."[8] Language, then, is the way in which we represent culturally understood but intangible notions in a meaningful way.

Language is made up of *signs* and *symbols*. To be a sign or a symbol a word, sound or image has to convey meaning.[9] For example, the word 'cat' only has meaning when referring to the small, furry animal that we know as a cat. It no longer exists as a sign when it used to describe the object we conventionally know as a tree. People belonging to the same culture must share a consistent way of interpreting the signs within language, for only in this way can meaning be effectively exchanged and understood. This consistency of interpretation is made possible by *codes*. Codes fix the relationship

The proliferation of signs and symbols on a billboard in Tokyo, Japan.

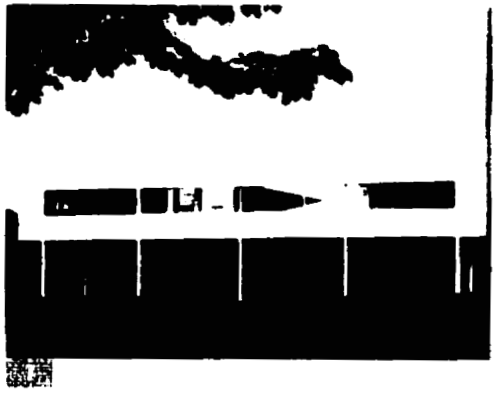
The Saskatchewan Provincial Legislature building is a good example of the use of conventional architectural representation.

between concepts and signs enabling a common understanding.[10] Codes tell us that within our culture the word 'tree' refers to a tree. Codes, and thus meaning, are constructed within the framework of culture. No object in this world has an inherent meaning; all things are a result of a signifying practice which produces meaning, that *makes things mean.*[11]

questioning representation

Meaning through conventional representation is questioned due to increased multiculturalism within society as well as the proliferation of signs and symbols within the mass media. With a common understanding of the concepts surrounding representation we can address the previously posed question: how does one communicate, using representation, to a heterogeneous population accustomed to different sign systems and cultural practices? If representation relies upon a shared cultural understanding to communicate meaning, within the context of cultural heterogeneity, representation becomes questioned. A universally shared understanding of any sign or symbol is virtually impossible. Thus we need to find another channel through which to discover meaning and preclude representation. This leads to an additional question: if it is true that "the infinite cloning of the image, the infinite proliferation of signs, that the sign itself has become invisible"[12] then it is also true that there needs to be another way of communicating meaning that does not use representation.

In a similar fashion, architects have also questioned representation. Historically, architecture has been built upon the relationship between representation and meaning within specific cultural contexts. Conventional architectural representation has traditionally imbued architecture with meaning. For example, the architects of the late nineteenth century that made up the various revivalist movements (i.e., Neo-Gothic and Neo-Classical) developed meaning in their architecture through the use of classically inspired elements such as symmetry, proportion and the appropriate use of iconography. This was also an attempt to represent an earlier age, which then evokes certain feelings of democracy and power. A good example of this phenomenon are the Canadian provincial legislative buildings. These buildings and many others around the world use conventional representation to create meaning and validation through the representation of history.



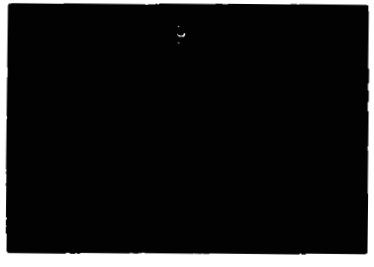
The Villa Savoye by Le Corbusier, 1928-31 exemplifies the stripped down classical forms of the modern movement.

modernism

In the early part of the twentieth century the modern movement began to question the relationship between conventional architectural representation and meaning. The architects of this period addressed the so-called *modern age* in two ways, both of which suggested avenues of meaning seperate from conventional representation. The concept of abstracting traditional forms to their essential and basic elements and the idea that form follows function enabled modern architecture to develop formal strategies that separated architectural meaning from conventional architectural representation.

The modernists advocated the notion that "forms should be purged of the paraphernalia of historical reminiscence."[13] Conventional architectural representations such as the classical column with its fluted shaft, and articulated base and capital were abstracted into simple, monolithic forms with no reference to the historical styles of the past. Le Corbusier's work may have been the best example of this. In his *five points towards a new architecture*, formulated in the 1920s, ideas such as proportion and symmetry along with formal elements like the *pilotis* were conceived based upon classical forms and principles of architecture. But the difference here is that formal representation is not employed. The abstraction of the architecture allows for its evaluation based purely on light, mass and space versus representational issues like message and symbol. Along with Le Corbusier other architects of this period advocated architectural elements including the wall, the opening, the column, the pier, the pilaster, and the entablature, which were redefined as stripped down, simplified forms that reflected a reductivist geometry.[14]

Given this reductivist geometry posed by modern architecture, the idea that architecture should "be based directly on the new means of construction and should be disciplined by the exigencies of function"[15] was facilitated. Function and its relationship to new construction technology provided a new basis for form. Extraneous elements serving no functional purpose were omitted. As well, the decoration layered on the existing elements was negated because it served no functional purpose. Function was served by displaying new construction technologies using elements free of needless decoration.



Walter Gropius and Adolph Meyer's Werkbund Pavilion, Cologne, 1914.

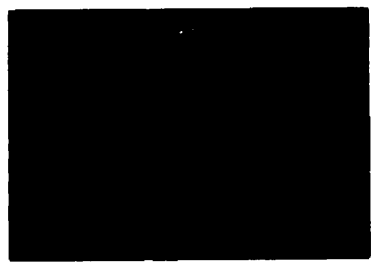
Specific built examples clarify this idea. Buildings such as Walter Gropius and Adolph Meyer's *Werkbund Pavilion*, Cologne, 1914, exemplifies the new construction techniques and the subsequent forms that followed. William Curtis has analyzed the building in the following way:

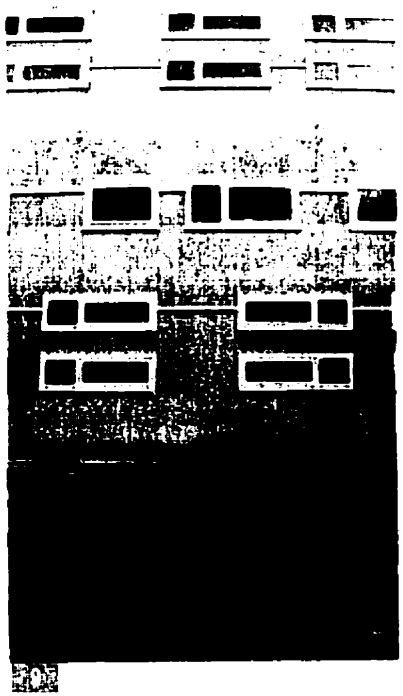
> The stripped brick volumes of the entrance block with overhanging roofs and sharp horizontal parapets were perhaps an echo of Wright in a formal mood. But the glazed wrapping to the rear and the transparent streamlined stair-towers (with the spiral stairs visible inside them) were stunning inventions which created not only a sense of weightlessness and space, but also an aura of crisp and disciplined machinery, of elegant and dignified industrial control.[16]

From a modernist perspective the aura of crisp and disciplined machinery, was the essence of the early twentieth century. It was an attempt to give meaning to the present condition, rather than simply referencing history to validate itself. In this architecture, the *Zeitgeist* was revealed and thus meaning was embodied within. Meaning emerged from new technologies and construction materials, which represented the time in which they were built. The unarticulated column, the strip window, and the curtain wall became the abstracted architectural signs and symbols of the modern world. These elements attempted to *represent* the times in which they were built thus negating conventional representation in favour of a new form of representation that tried to communicate the clarity of the modern world. Consequently, modernism exists as another form of representation, a new style, but conveys several important ideas, which influences contemporary architects and sponsor a re-questioning of conventional representation that will be discussed in the sections to follow.

the negation of conventional representation

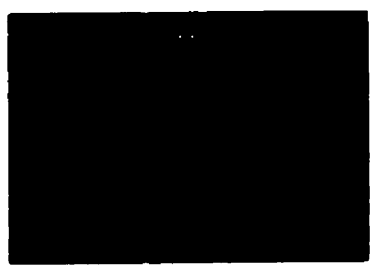
Contemporary architectural theorists continue to question conventional architectural representation and meaning. The protagonists of the modern movement attempted to create an architecture in which the significance was gained through a





The Institute for Social Pedogogues, Baden, Austria, 1998, by Architecturbüro Riegler Riewe. An example of the negation of conventional representation in contemporary architecture.

challenging of conventional representation through *abstraction* and *simplicity*. In reaction to the bombardment by representation within all forms of communication, a group of contemporary architects have attempted to generate meaning and significance in contemporary society and to negate conventional architectural representation. This architecture needs to address contemporary culture not through the use of historical symbols and images but rather through new avenues, which we all can perceive and understand. In addressing similar problems within contemporary art, author David Harvey writes, "It is hardly surprising that the artist's [in this case architect's] relation to history has shifted, that in the era of mass television there has emerged an attachment to surfaces rather than roots, to collage rather than in-depth work, to superimpose quoted images rather than worked surfaces, to collapse a sense of time and space rather than solidly achieved cultural artefact."[17] The four architects that will be discussed in the next section seemed to be addressing the issues that Harvey discusses. These architects focus on the issues behind globalization through the negation of conventional representation thus producing language that can communicate to all segments of the population. They advocate the universal notion of space. Space is universal due to the fact that everyone has some understanding of what it is, but that understanding shifts from culture to culture. Space is not understood to be the same everywhere, but it has influence and resonance in all of our lives just in different ways. Space and the abstraction of formal issues such as façade and structure, producing an open-ended architecture in which the user is free to react and interpret. All seem to be advocating an architecture of non-representation: an architecture, posing alternatives to previous forms of representation and addresses the meaninglessness of conventional representation through abstraction where the emphasis of the whole is elevated over the role of the part and experience is elevated over communication.



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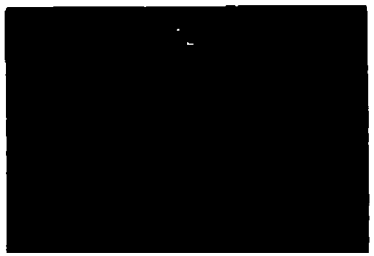


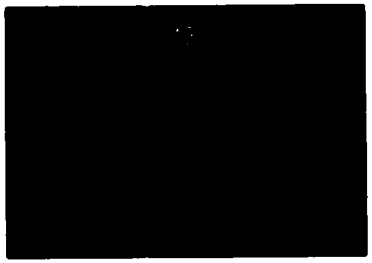
"By looking at techniques of material and spatial organization, we try to avoid typological, representational and signifying techniques that are only effective within well-constructed systems of values, signs, procedures.....A sign is a fixed relationship between a form and a meaning; a type is a fixed relationship between a form and a function. But, what happens to these constraints when a place is to be used by a multicultural population, with different rituals, customs, systems of value and signification, like a contemporary metropolis, an airport, a highway or an international port terminal?"[1]
- foreign office architects

The simple answer to the question of constraints is that we can no longer produce architecture based on conventional representation. Foreign Office Architects (FOA), London, UK, attempts to address this issue in their practice through the replacement of systems of signification with material and spatial organizations as the basis of exchange and consensus.[2] FOA investigates 'material and spatial organizations' through three formal strategies: systems analysis, material practices and manipulation of the ground, which in turn establishes their architecture of non-representation. Architecture, based on FOA's theories, is then defined as, "an artifact within a concrete assemblage rather than a device for interpreting or signifying material and spatial organizations."[3]

systems analysis

FOA produces spatial and material organizations through an approach of systems analysis. Systems analysis quantifies site conditions such as patterns, distributions, topologies, forms, and organizations at an abstract level.[4] Systems analysis breaks the chaotic and complex nature of the contemporary city down into individual elements that can then be analyzed and addressed.

FOA recognizes that analysis of this type leads to areas beyond the conventional realm of architecture. Through this analysis, systems such as infrastructure may be dissected but also more abstract notions such as socio-economic patterns



Population density mapping for Sommerville Design Charette led by Alejandro Zaera-Polo of Foreign Office Architects at the University of Calgary, 1998.

or population distributions may be discussed. For example, in the 1998 Sommervillle Design Charrette held at the University of Calgary, Alejandro Zaero-Polo of FOA asked the students to produce a series of abstract mappings that addressed the soci-economic processes within the downtown core. One study analyzed the population density of individual office towers by multiplying the floor areas by the number of stories turning a three-dimensional reality into a two dimensional map. This enabled an understanding of the daytime population densities at specific points within the downtown. Mappings such as this provided the students with a basis for suggesting alternative programmes and sites to aid in the redevelopment of the downtown plus-15 system.

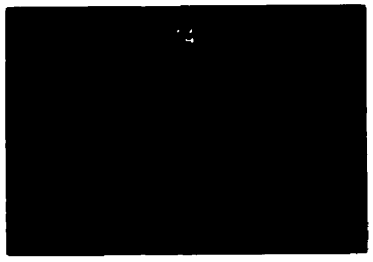
This type of analysis leads to a further separation of the completed work of FOA from conventional modes of architectural representation. This forms the basis for the design process and leads to a set of rules enabling FOA to fuse the disparate elements of the city with their architecture. Once this process is complete, figure and field, building and city merge, and the conventional formal separation between the building and the surrounding systems is lost. In the end, the architecture becomes an integral part of the initial systems from which it was born.

material practices

"Material practices are the collection of all the practices aimed at the modification of material or spatial structures, such as urbanism, civil engineering, architecture, crafts, fashion."[5]

-foreign office architects

Along with systems analysis, FOA is interested in the generative concept of material practices. Material practices are in direct opposition to the conventional concepts of signification and representation. As previously discussed, representation relies upon the fact that the meaning of a sign or symbol is universally understood and thus communicable to all. But as the sign attempts to address a heterogenous and multicultural population as exists in the contemporary city, the inherent



Wireframe model view of Foreign Office Architects' Yokohama International Port Terminal.

meaning of the sign is lost. As a result, material and spatial organizations are the only appropriate form of cross-cultural communication. According to FOA, "These organizations become the vehicle for the construction of ideas, rather than the embodiment of ideas generated on a textual support, through metaphors, through types and through meaning."[6]

The irradication of conventional representation is achieved through alienation, estrangement and de-territorialization. These concepts attempt to uncode conventional architectural signs and symbols and replace them with new forms that have no inherent or cumulative meaning. This allows the project to be freed of the conventional notions of architecture and the inaccessibility of conventional architectural associations like language and meaning. For example, in the *Yokohama International Port Terminal* the conventional separation between elements such as structure, envelope and ground plane is gone. All become integrated into one folded, undulating surface, which opens the building to new interpretations with limited preconception. The user is able to engage the building partially free of subconscious rules about architecture and its place within our culture. Material practices enable the building to become "decoded, unbounded *landscapes* rather than overcoded, delimited places."[7]

manipulation of the ground

Decoding of architecture extends to FOA's treatment of site and ground. Decoding refers to the process of opposing architectural signs and symbols that have inherent rules or ideas within them. In actuality FOA probably means uncoding versus decoding because decoding refers to finding a clarity of meaning whereas uncoding refers to the stripping away of meaning. Since FOA uses the term decoding I will use this term but understand that they seem to mean uncoding. The classical notion of building as figure located on a ground or on a site is negated by the theories of FOA. Here the ground is seen "as a kind of topographic operating system rather than as a category of the built environment- a 'platform' rather than a 'site'."[8] The platform is an operating system in the sense that it is part of a larger network, affecting both perception and usage. These systems affect the building as much as the building affects the systems. If one can redefine the ground,

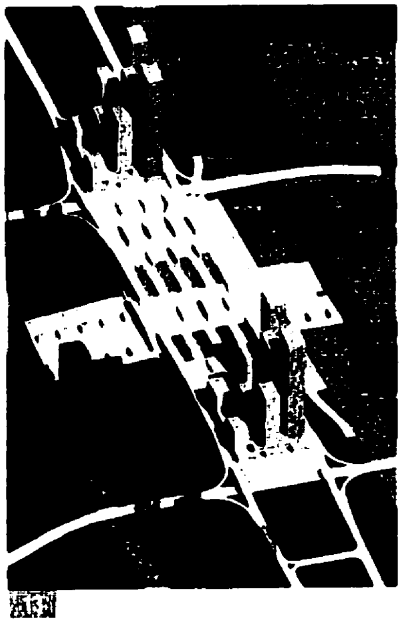
Photomontage of Myeong-Dong project, Seoul, Korea, 1995, showing the way the building can be perceived as a new ground plane where the city and the space are united.

perceptually and interactively, then the conventional understanding of the ground plane will be limited and a new understanding will develop.

This new understanding comes about with regard to the manipulation of the ground plane. Within the realm of conventional architecture, the conventional role of the ground is flattened and domesticated. Essentially it becomes a two dimensional surface that the building sits upon. To reverse this idealization of the ground, FOA explores the "ambiguity between the surface and the space."[9] Space and surface become one. The building becomes part of the ground and the ground becomes part of the building. Now the ambiguity between the ground and the envelope can be explored. This produces an architecture where the ground can wrap and fold to become the envelope of the building, constructing an uncertainty between beginning of structure and termination of ground. The indetermination between the two is when the relation of figure and ground is lost. Merging building and ground furthers the decodification of the architecture and thus negates the conventional representations of building and site, figure and ground.

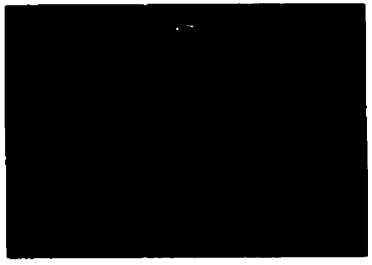
de-territorialization and re-territorialization

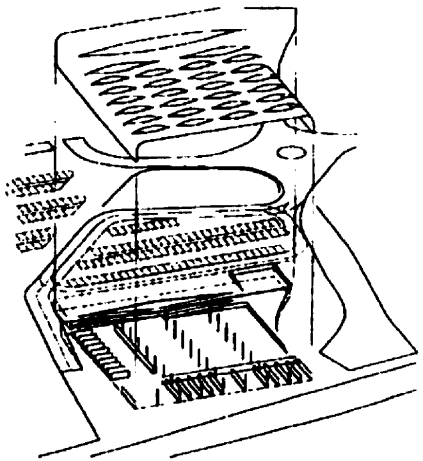
FOA's generative strategy initially de-territorializes but it also re-territorializes. De-territorialization is similar to decodification in the sense that it refers to an initial stage of consciously negating conventional architectural representation. Re-territorialization occurs after of the representational meaning of the architecture is de-territorialized using the devices noted above, whereby specific domains and organizations become devoid of limits, origins, destination or significance,[10] essentially non-representational. Like the modernists, FOA addresses conventional architectural representation but here the objective is to eradicate it instead of abstracting it. The forms produced by FOA are devoid of conventional representation but are not without meaning. The new forms attempt to instill meaning by first erasing conventional notions that are inherent within conventional architectural representation and then opening the resultant architecture to multiple, layered meanings. These new meanings address the diverse, heterogeneous population that interacts with the architecture since the building does



Multi-Modal Transport Interchange, Pusan, Korea, 1996. This project exemplifies the de-territorialization of the building into a integrated piece of the city: infrastructure versus traditional building.

not now use incomprehensible and outmoded conventional architectural representation to communicate. Thus the strategy of non-representational architecture effectively addresses contemporary culture through negation of sign, symbol and code and thereby integrating the building and its resulting multivalency into the overriding complexity of the city.





National Glass Centre, 1994, axonometric.

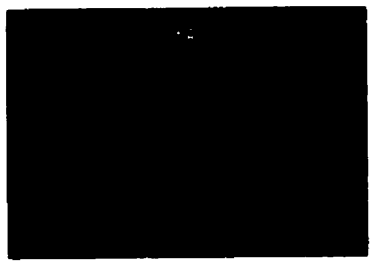
national glass centre
unbuilt, 1994

The *National Glass Centre* in Sunderland, UK was designed to unite two disparate programmatic conditions: an exhibition space (public) and a factory (private). The building needed to be integrated into university facilities adjacent to the site. According to FOA, "this suggested that it should not be functionally determined but would instead have to be conceived of as a differentiated topography where the forms of occupation are not prescribed and are able to be reconfigured."[11] The boundaries between the private and public functions would blur and overlap but would inhabit different domains of the building. Instead of separate black box elements (the exhibition gallery and the factory) FOA attempted to create a fluid spatial sequence where the disparate spaces are connected through circulation and views. The spaces would perceptually flow from one to another but the zones remain well defined.

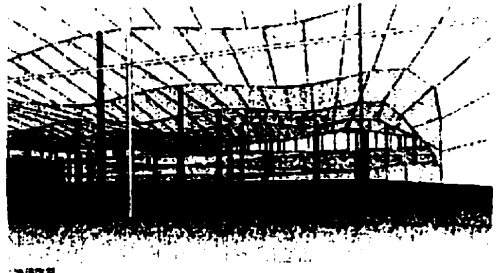
Existing site conditions enabled this fluidity of space and inspired the overall concept. The elevation change of the road access, through the university complex and the river walk is 10.5 metres. FOA designed a continuous surface that increased the connectivity between the different levels, thereby destratisfying the structure of the programme.[12] This continuity of surface was extended to the envelope of the building. The envelope appears almost a fluid globule of glass that flows off the hill to the east of the site. Thus this undulating plane is seen as wall, roof and floor all at the same time. It unites all of the programmatic elements within, under and around it. The singular nature of the roof/wall structure enables a reconfiguration of the enclosed space. A columnar grid supports the structure while enabling the spaces within to be partitioned or divided as dictated by the needs of the user.

national glass centre: analysis

The *National Glass Centre* was the first project during which FOA began to pursue the previously mentioned theoretical agenda. Consequently the project begins to address various components of this agenda but never completely realizes



View from parking lot into building.

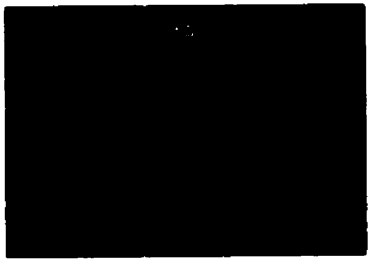


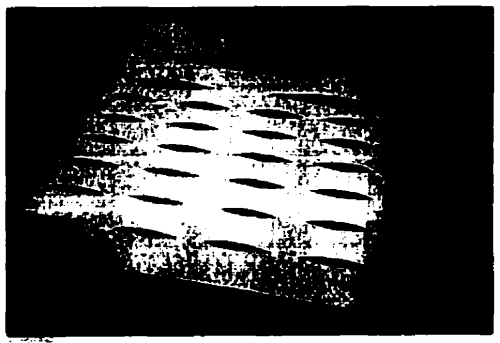
View through factory back to circulation ramp.

any single component. With regard to systems analysis, FOA pursues various systems oriented diagrams, which analyze circulation, flows of services, staff, and public within the building. However, this analysis never extends beyond the building itself to the surrounding built environment or circulation of the adjacent university. Consequently, due to the lack of a comprehensive systems analysis, the building as designed is disconnected from the existing systems and never becomes an integral part of the city.

In addressing material practices, FOA attempts to dissolve and thus de-territorialize, the separation between the conventionally private functions of the factory and the public functions of the galleries in an attempt to fuse them together. This is achieved by overlapping the programme by means of using fluid space and structure, thereby a re-territorializing of the programme occurs. In reality the space flows from the exhibition area to the more private functions of the factory, but the connection between them is only visual. A visitor cannot experience the factory because there is no true experiential overlap of this space with the public exhibition spaces and functions. The visitor is allowed to view the factory from the folded, continuous circulation ramp and alongside the factory itself, but is never allowed to physically connect with that space. Does FOA really de-territorailize the public and private conditions of this building? The answer is both, yes and no. The visual relation between the separated programme spaces as well the monolithic roof create a datum which allows a visual connection between the various spaces. But until one can physically experience both the public and private spaces, a conventional separation remains.

Like the de-territorialization of the programme, in this project FOA initiates the concept of manipulating the ground plane but does not take it to completion. The envelope, as a skin, eliminates the conventional architectural representation of wall, ceiling and floor, but it is still perceived as independent from the ground. The ground remains a plinth that the object sits upon. FOA attempts to address this issue by having the skin of the building seemingly flow off the hill to the east of the site; but in reality it appears as an independent object disconnected from the ground that it occupies.





View of the folded surface of the roof with the columnar grid below.

Yokohama International Port Terminal, 1998- , photomontage of model.

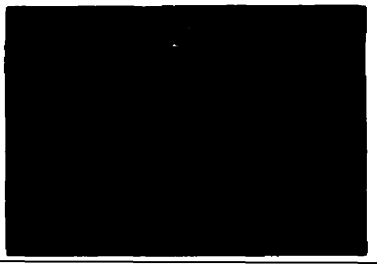
The idea of the skin eliminates many of the conventional notions of structure, envelope and enclosure. Here all exist as one united element and thus facilitate a new understanding of these architectural components. However, this new understanding is hindered because the construction of this envelope-as-skin uses a conventional, highly readable, method of interior structure: a columnar grid. The use of a conventional grid of columns negates the idea of de-territorialization. The grid is loaded with representational meaning, referring back to ancient Greek and Roman architecture. If FOA's intentions were to use a structural system without any applied meaning, then here this project fails.

As can be seen, many of the theoretical issues were never completely resolved within the *Glass Centre*, but, it became the stepping stone for the work to follow. It initiates a lineage that will culminate in the *Yokohama International Port Terminal* project.

yokohama international port terminal
competition entry 1995, first prize
construction 1998-

The *Yokohama International Port Terminal* (*YIPT*) was initially described in the competition project brief as embodying the Japanese concept of *ni-wa-minato*. This term suggests a mediation between garden and harbour, as well as between the citizens of Yokohama and those from other nations. FOA pursued this idea in an artefactual rather than representational manner.

The artefact attempts to operate as a mediating device between two diverse systems: the public space system of Yokohama and the flows of passenger cruise traffic. To achieve this, conventional notions of what constitutes a 'port' were examined and subsequently de-territorialized. According to FOA, the aim is for a "machine of integration that allows us to move



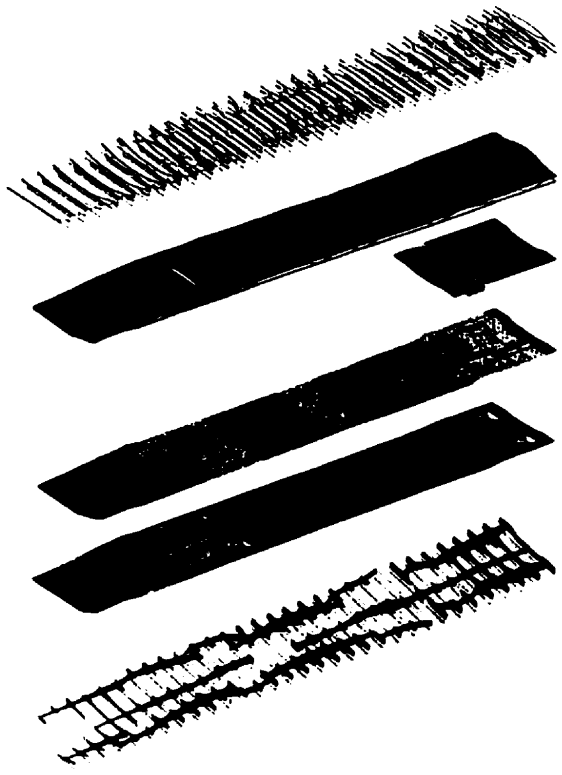
View of the public space on the roof of the terminal.

Interior view of the terminal showing the columnless, expnasive space.

imperceptibly through different states, turning states into degrees of intensity, countering the effects of the rigid segmentation usually produced by social mechanisms – especially those dedicated to maintaining borders."[13] This occurs as the public space wraps the terminal, negating the port as a symbolic representation of *gate* and thus decodifying the traditional rituals of travel.

The ground surface of the *YIPT* is a complementary public space adjacent to Yamashita Park. As the first perpendicular penetration of Yamashita Bay, it initiates an extension of the city out into the Bay. The ground plane of the city connects seamlessly to the boarding level and bifurcates it, to produce a series of flowing ramps leading to the lower levels.[14] The connection of the building to the ground extends the idea of circulation initiated in the *Glass Centre*, resulting in a continuous surface that shifts vertically and horizontally to create a fluid system of movement throughout the structure. The circulation system is organized as a series of loops in which there is no border between the static and the dynamic.[15] The circulation system allows an interweaving of all passengers using the *YIPT*, irrespective of whether they are domestic or international. This interweaving is reinforced by the ability to mix and reconfigure the domestic and international gates interchangeably depending on the requirements of each day's traffic flow.

The checkpoints for the different gates become moveable partitions rather than rigid load-bearing structure, permitting various configurations of the terminal (as necessary). This condition is facilitated by the fact that the folded, bifurcated ground of the terminal is load-bearing; thus eliminating the need for any intermediate structure. According to FOA, this flexibility does not lead to a neutral, homogenous building but to a "highly differentiated structure, a seamless milieu, which allows for the broadest variety of scenarios: an ideal battlefield where the strategic position of a small number of elements will affect the definition of the frontier."[16]



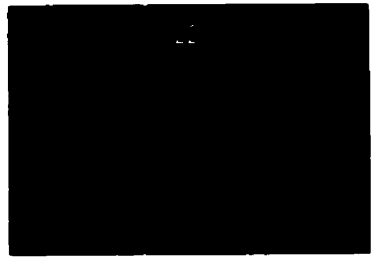
Exploded axonometric view showing the folded nature of the ground plane as well as the corrugated structure that is sandwiched between the folds.

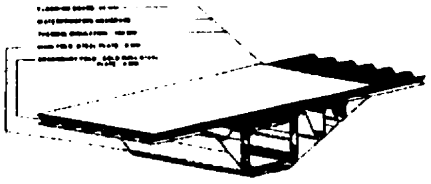
The folded nature of the ground is ideal in creating an environment of fluidity and openness. The ground solves many of the problems that were evident in the *Glass Centre*. There is little or no distinction between figure and field. The ground has morphed into the building enclosure as well as a functional roof top public space. Like the *Glass Centre*, the enclosure is wall, ceiling and floor all at once. But it is more successful here due to the lack of interior columns that provide structural support. The folds *are* the structural support creating the conditions of bifurcation for the circulation as well as the variety of permanent spaces required. The conventional separation of load-bearing structure and envelope has been decodified and a new artefactual, non-representational reading has evolved.

yokohama international port terminal: analysis

The *Yokohama International Port Terminal (YIPT)* is to date the most successful of Foreign Office Architects' projects with regard to fulfilling their theoretical agenda of *non-representational architecture*. With the *YIPT*, the complete integration of a systems approach is the key to success. The building would not be nearly as successful without the extensive diagrams calculating such criteria as ramp slope, circulation density, sectional analysis, flow and overflow of port traffic and overall use. These data were directly translated into the architecture, thus intertwining the architecture with the existing systems of the city.

This fusion of the project with existing urban systems enables a new understanding of the architecture. The project becomes an 'operative topography' as categorized by FOA because it extends the space of the city out into the bay. Spatially the ground, the city, and the architecture all become one. But the ground also folds to create the enclosure of the building and thus blurring the conventional distinction between figure and ground and decodifies the conventional notion of structure. The issues of figure and ground that exist in the *Glass Centre* have been eliminated. Here figure and field merge generating a new integrated urban extension.





Detail of the corrugated structural system of the terminal.

The merging of figure and ground due to the folded ground plane creating the building enclosure, enables a further decodification of the constructive system. The decodification of the constructive system, programmatically as well as structurally, allows new interpretations of what a port terminal can be. The project is de-territorialized with the negation of conventional structural systems, conventional notions of port as gate and the loss of the ground plane as an idealized two-dimensional surface. The *YIPT* is then re-territorialized with the creation of non-normative, non-representational structural and programmatic language, which enables the project to ideally be freed from all cultural biases. The corrugated steel, load- bearing structure of the building folds upon itself creating enclosure as well as structure. No interior columns are needed because the enclosure is the structure thus successfully addressing the weaknesses found in the design of the Glass Centre. The only issue that one can take with this type of structural language is that, in certain instances, it results in uninhabitable interstitial spaces. For example, in the *YIPT* there are a series of four-foot high residual spaces created at certain points where the folded structure intersects with itself. This space is not useful in its configuration even if FOA falsely rationalizes it by saying that they are "attempting to come up with new forms of inhabitation where people only lie down."[17] Even when one acknowledges this minor criticism, the building has become an integral piece of the city, which nullifies conventional representation and creates new meanings and interpretations of the built form.

Virtual House, 1997.

The *YIPT* fulfills FOA's theoretical agenda and is consequently non-representational, but I question the applicability of this theory to smaller-scale projects. The projects that have most successfully addressed FOA's theories are large, infrastructure-like commissions, which are inherently systems based. These include the *YIPT*, the *Pusan Multi-Modal Transport Interchange* and the *Myeong-Dong Episcopal Headquarters* (both in Korea). My major concern is that it seems more difficult to apply this non-normative decodified systems approach to smaller-scale projects. For example, how does one design a conventional single-family house using this theory of the folded structural skin? FOA has designed a virtual house using these theories but the project is for research and remains purely virtual. To accomplish such designs in reality, financially and otherwise, seems improbable even in the adventurous housing markets of Europe or Asia. In a large-scale

project such as the YIPT, the architects can afford to find new ways of generating structure because the scale of the project warrants the investment of time and research money to investigate these issues. In smaller scale projects, such as single family housing or even for smaller scale commercial or institutional buildings, budgets and time restraints make it very difficult to employ such tactics.

The next section deals with an overtly less non-representational architecture but one that seems applicable at all scales and, in the end, addresses many of the same issues and processes as FOA. The architecture of Architecturburo Riegler Riewe can also be interpreted as non-representational, but formally speaking, it exists at the opposite end of the architectural spectrum from FOA.

1. "Exploiting Foreignness: a conversation with Foreign Office Architects," *El Croquis*, no. 76 (1995): p. 22.
2. Foreign Office Architects, "Foreign Office Architects," *AA Files*, no. 26 (Summer 1995): p. 7.
3. Foreign Office Architects, *AA Files*, p. 7.
4. "Exploiting Foreignness: a conversation with Foreign Office Architects," *El Croquis*, no. 76 (1995): p. 21.
5. *El Croquis*, p. 21.
6. *El Croquis*, p. 20.
7. Foreign Office Architects, *AA Files*, p. 7.
8. Foreign Office Architects, "Operative Topographies," *Quaderns*, no. 220: p. 36.
9. Foreign Office Architects, *Quaderns*, p. 36.
10. Foreign Office Architects, *AA Files*, p. 7.
11. Foreign Office Architects, *AA Files*, p. 9.
12. Foreign Office Architects, *AA Files*, p. 9.
13. Foreign Office Architects, "Foreign Office Architects," *A.D.*, vol. 66 no. 7/8, (July/Aug. 1997): p. 71.
14. Foreign Office Architects, *A.D.*, p. 71.
15. Foreign Office Architects, *AA Files*, p. 20.
16. Foreign Office Architects, *AA Files*, p. 16.
17. Quote from Alejandro Zaera-Polo verbal lecture at the University of Calgary, William Lyon Sommerville Lecture, January 1998.

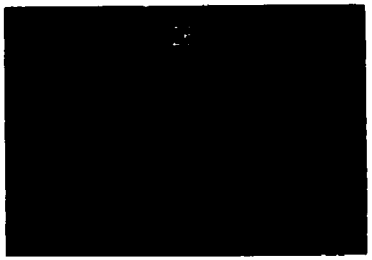
Concorde, by artist Bertrand Lavier.

"We don't design 'built images'. We arrange structures, open and yet, precise: frames for the complex flow for the images of use."[1]

-architekturbüro riegler riewe

Florian Riegler and Roger Riewe have established a practice (ARR) based in the Austrian city of Graz. Their work has developed the predominantly Swiss faction of the new minimalism into a significant movement on the contemporary Austrian architecture scene. In discussing their own work, ARR references an object made by artist Bertrand Lavier called concorde. Concorde is an installation of a square steel frame upon which a series of small lamps are mounted that then point into the frame. The light cast by the lamps illuminate the wall with differing intensities. The subject of the piece is not the depiction of light, but light itself. The frame and the wall play primary roles within the object, unlike traditional artworks, which are framed and then mounted upon a wall. The frame and the wall create the piece. Concorde is a frame, which locates a field of activity within, around, and beside it.[2] The work of ARR parallels this artistic construct. ARR constructs a field of use for the occupant that combines flexibility, abstraction and openness. The work of ARR can be superficially interpreted as a continuation of the modernist ideas of homogeneity, functionalism and abstraction, but more profoundly the work represents a middle ground between modernist ideals and post-modern thought.

Negotiating a middle ground between modernism and post-modernism can be understood in the following ways. ARR advocates the concept of non-prescriptive space over place. In this context space over place refers to a concept where the user takes hold of their surroundings and begins a process of continual evolution instead of constructing 'place' through the definition of particular relationships between site and artefact.[3] Space is malleable and layered; place is singular and rigid. ARR creates space from a direct analysis of use, site and changeability. ARR realizes that change and evolution are the only constants in our contemporary world thus space needs to be defined, yet open and able to adapt to these conditions of change. Space does not need to be homogenous; it needs to be capable of adjusting to shifting uses and



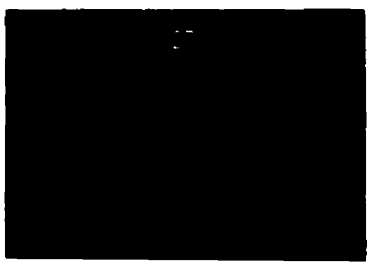
conditions but still demarcated. Within this concept of space, meaning is constructed by the user not by a supposed connection to a well-defined and ideal place. According to ARR, the only of type structure able to address the endless possibilities of utilization are abstract.[4] Abstraction allows a new interpretation between user, viewer and object. ARR states that "both the viewer and the user must study the building and must get used to it because it has only little to do with stored traditional images."[5] Conventional imagery and relationships are replaced by abstraction and this enables the building to open itself to new interpretations and uses that change over time.

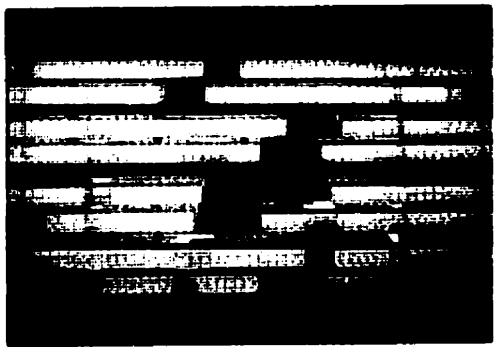
conditioned openness

space and use

Peter Allison describes conditioned openness as a delineated and defined concept that is flexible, and changeable.[6] It applies generally to the work of ARR but especially to their conception of space. Unlike Mies Van der Rohe, ARR has no desire for the loft, the isotropic space, which was predominant in early modernism.[7] For them "the quality of a building is largely measured firstly in the extent to which it '*determines' use* and secondly in the *potential for use* it allows, either implicitly or openly, in both cases over a longer period of time."[8] Conditioned openness gives the potential for multiple kinds of use that can change and shift as the user and the times change.

Conditioned openness is achieved through analyzing use. ARR does not start an architectural drawing until the office completes a thorough analysis of the programme, the site, and especially the utilization. ARR states, "utilization suggests a broader palette of occupation, an understanding that a building frames not only the performance of specific functions, but the manner in which the totality of human life unfolds in these endeavours."[9] Utilization is analyzed not prescribed. Utilization becomes revealed through building; everyday life is displayed and celebrated through the spatial and formal abstraction of ARR's architecture.





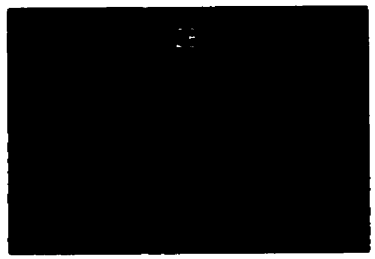
Information Technology and Electro-Technical Institute, Graz, Austria, 1997, model view.

The varying potential for use needed to achieve conditioned openness is pursued through the manipulation of rectilinear form and abstraction because of the inherent flexibility and openness within these concepts. According to ARR, "every geometry apart from the grid involves limitations. Orthogonality is the most open spatial concept – in the long term – which we know or which is known to history."[10] Orthogonality employs abstraction to create open spatial possibilities and formal solutions that enable multiple interpretations by the user. ARR achieves maximum freedom and use through minimal means by breaking the geometry in such a way that produces a very complex range of spatial possibilities – and ways of experiencing – a differentiated spectrum of interconnecting views and figures of movement, sideways, lengthways and diagonally.[11] Orthogonality enables a high degree of changeability as additions or subtractions are needed due to shifting uses that happen over time.

materials and light

Along with utilization, materiality and construction are considered at the beginning not the end of the design process. Cladding, structure and detail are not end results, but integral parts of the overall conception and design process. For example, during the initial design stages of the *Institute for Social Pedagogues* in Baden, 1994-98, ARR began to work on exterior envelope with the help of a contractor which had worked previously with them on various projects. This integration of an expert in construction at the earliest stage of design enabled them to create a kind of thermal skin. The thick, translucent and transparent glazed skin mediates the relationship of the interior to the exterior and produced spatial experiences that would have never been possible without the inclusion of these concepts early in the design process. The holistic nature of the design process seems to extend itself to the building where no specific part or detail becomes accentuated. Instead a united abstract whole is produced, which is then open to multiple interpretations by the user.

ARR believes that no material or detail should become a problem in the construction process; as they put it "construction – yes, constructivism – no."[12] The materials are simple and raw. According to ARR this is for two reasons: "Firstly, because



Institute for Social Pegogogues, Baden, Austria, 1998, showing translucent glazed skin.

they are cheaper, secondly because these materials are, in [their] opinion, are 'more open': formally and culturally they are less 'occupied'.[13] Materials and details do not exist individually but as part of a whole: they are integrated and subtle. Material and its affects are perceptual; to ARR "the important thing is not what you see but *how you see it* and the resultant response of the viewer while viewing something."[14] For example, the superficial interpretation of the *Institute for Social Pedagogues* is of a glass box with operable windows punched into the exterior. But in actuality it is a glass skin wrapped over a concrete box, which is then punctured, creating openings that are simultaneously translucent and transparent. A thermal separation between the exterior and the interior is facilitated by the skin which then produces a new relationship that would not been possible with just the simple Miesian glass box. The building vacillates back and forth from opaque to translucent to transparent due to the consideration of these effects at the beginning and throughout the design process.

Materiality and detail have a great impact upon illumination and light within and around the architecture of ARR. Lavier's concorde helps exemplify this fact. Gypsum Board and white latex paint enable the interpretation of the differing intensity and colours that the lamps produce. The materials that ARR use permit this as well. In differing light conditions materials such as concrete or translucent structural glazing will produce differing effects that then change the character of the architecture. Architecture is then read in relation to light and material not as an image of these qualities. Consequently the architecture is conditionally open because it creates a framework inside which there exists an opportunity for the user to manipulate, transform and interpret.

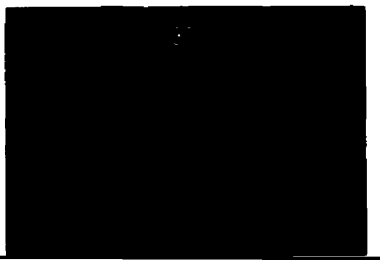
Studies Centre, 1991, elevation demonstrating the activation of the site through the building skin.

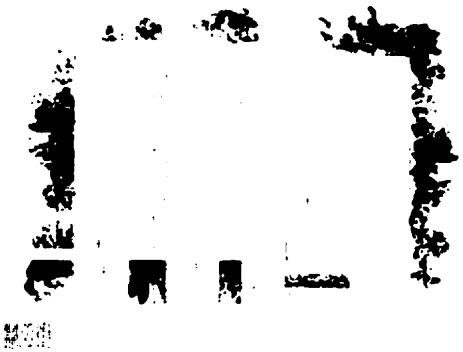
student studies centre,
graz technical university
competition project 1991, unbuilt

This project was initiated for a competition to design a new *studies centre* on the *Technical University* campus in Graz. The program called for a variety of spaces including a gymnasium, university restaurant and library: a place of communication and student activity. ARR refer to the site as a 'non-area',[15] due to its low density of activity and suburban location. These negative, non-urban conditions were the catalyst for the design strategy.

To counteract the lack of activities on the site, ARR decided to concentrate the movement systems of the building to the exterior next to the envelope. According to ARR this was achieved through "flow(s) of pedestrian movement, strolling around the building and the movement between levels would become the actual expression of the building envelope."[16] Using movement as the building expression is accentuated by the fact that the ground floor has large gateways that can be opened during warm weather permitting a blurring between inside and out. Along with these opening sections, the ground floor acts as a winter garden with large planted trees on the interior; the trees of the site appear to move in and out of the building further blurring the lines between interior and exterior.

The skin of the building was designed to be of rolled glass behind which the actual core areas – the individual rooms placed on each floor – are situated.[17] Carefully considered placement of these core areas accentuates the idea of conditioned openness. Spaces that need explicit definition and boundary are clearly delineated but the ones that can be more open are left neutral awaiting the interventions that the users will generate. According to ARR, "the precise determining of spaces is reduced to the necessary minimum. Free spaces occur which, without any conventional coding, refer merely to themselves and wait to be occupied."[18] This is what conditioned openness seeks.





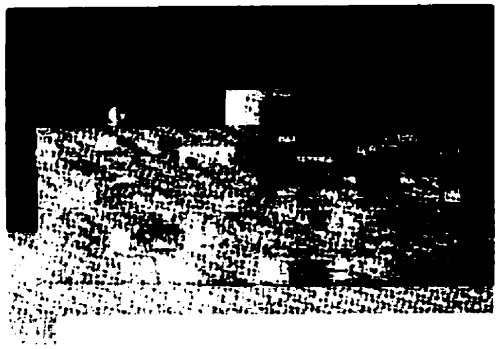
Ground floor plan.

Museum of Contemporary Art, Barcelona, Spain, 1995, by Richard Meier and partners.

According to ARR, "transparency and therefore openness are the 'leitmotifs' for this building."[19] Openness is achieved through the combination of specifically designated spaces like the gymnasium, changerooms and various bathrooms with 'open' spaces such as the winter garden, the large office areas and the restaurant. By integrating the specific and the open the duality of conditioned openness is created.

Conditioned openness is also facilitated through a dense integration between interior and exterior space. Devices such as the winter garden and operable gateways on the bottom floor enable the integration of the interior and the exterior. The winter garden inhabits the interstitial space between the glazed skin and the edges of the multiple floor plates. This intermediate space between the occupation of the interior spaces and the vastness of the exterior blur the line between where each condition starts and ends. It seems as if the surrounding landscape marches into the building. Operable gateways accomplish a distortion of exterior and interior as well. Because a large portion of the ground floor is open to the exterior elements, the line between where the building starts and the landscape ends is deliberately ambiguous.

Distorting these lines of the beginning and end of space is made possible by the glazed skin that wraps the exterior of the structure. The rolled glass skin can be perceived as a filter through which the various components of the building can be viewed. ARR describes the movement patterns along the façade as "depending on the lighting and whether the windows are open or not they shimmer through the façade producing a vibrant constantly changing image of the building."[20] Shifts in the movement seen through the facade is made possible by pushing the circulation to the exterior side of the structure and using rolled glass that through its texture and colour achieves a lens like quality. It achieves a similar condition to the circulation ramp in the *Museum of Contemporary Art in Barcelona (MACBA)* by Richard Meier. There the circulation ramp is a filter through which one participates with the exterior plaza and the interior gallery spaces. It bridges the gap between



Model view showing daytime elevation.

Information Technology and Electro-Technical Institute, Graz, Austria, 1997- .

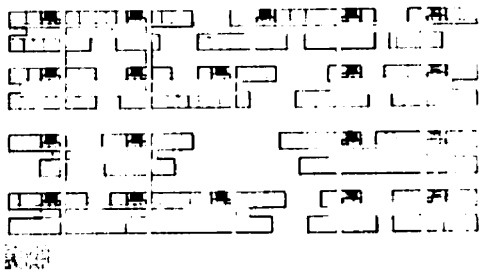
the exterior and interior of the building in a non-conventional but successful way. Like the *MACBA*, the circulation of the studies centre achieves this condition and helps realize the initial conceptual ideas of openness and transparency.

Openness is furthered through the simplicity of the monolithic glazed box. The enveloping glass skin, in combination with the orthogonal simplicity of the floor plan, enables a monolithic reading that then opens itself to the user for new and different interpretations. Further to this idea, the building is read as a united whole versus a series of disparate parts. Every element that is incorporated into the composition of the building is in service of the overall conceptual idea of openness. Consequently, no single part stands out from the rest. All parts are united and form an overall whole that enables an open-endedness to the building that could not be achieved without a design concept (and process) that seeks to achieve simplicity and clarity.

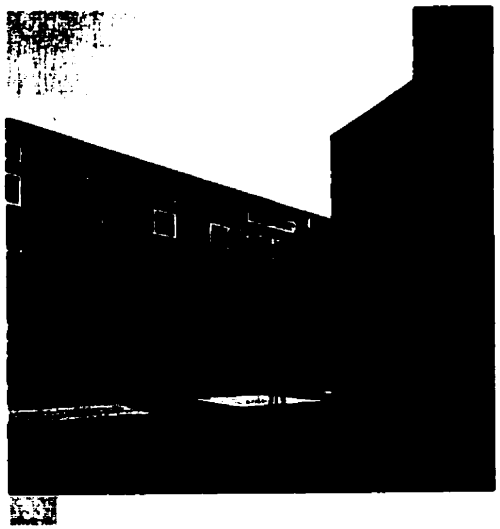
information technology and electro-technical institute,
graz technical university
competition project 1993, 1st prize
completion 1997-2000

"In contrast to most university institute buildings, in which the various institutions are separated within a building or placed without connection to each other, the basic urban idea here ensures that a campus develops which is tightly intermeshed on all levels and yet remains open and offers sufficient room for sensual experience and intellectual work."[21]
-architekturbüro riegler riewe

The new *Information Technology and Electro-Technical Institute* exemplifies the ways that ARR uses orthogonality and geometry to create conditioned openness. The building consists of a series of parallel lines that form the solid and void of the building. It may seem strange to refer to this structure as one entity but it exists as a series of bars, which in their



First floor plan.



Exterior space between the concrete bar buildings.

organization and use, form a coherent network that function as one. According to ARR, "these eight three-storey buildings form a small scale urban network with pathways, streets and individual squares which are each planted with different species of trees."[22] The north bar in each building unit houses the seminar rooms, libraries, etc., while the south side then incorporates all of the administrative functions. Each side is physically connected to the other by a sky-lit interior street while also being connected to the other bars via covered bridges. A visual connection also exists in that for each bar where program doesn't exit the bar is not built. Thus a series of voids located throughout the network provide visual connection through each bar on multiple levels. All of these conditions give the user a dynamic and rhythmic spatial pattern that connects multiple levels of exterior and interior space.

Each bar is made up of a six-by-six metre columnar grid with concrete slab floor construction, enabling each bar to be built with no load-bearing walls. This results in a highly flexible interior that can be customized to the user group of each department. Flexibility is then extended to the bottom floor of each bar as well. Like in the studies centre project, the ground floor is open and movement from the exterior and within the bar itself is unobstructed. According to ARR, "the entire structure does not merely permit a highly diverse interlinking of the various spatial layers but is also unproblematically open to changes in the programme and to variations in use."[23]

ARR's concept of materiality extends the abstract quality of the spatial structure in the *information technology and electro-technical institute*. The building is clad, inside and out, in non-structural concrete panels. These panels form an abstract surface that perceptually could be the actual structural system. This would seem to contradict ARR's ideas of materiality and artificiality, but on closer examination it furthers the idea of conditioned openness. The building cladding is simply a series of panels that give the impression that the bars are solid objects with carved out openings and spaces. Thus concrete is the only material of choice for this building. No other material would in this case achieve a truly monolithic reading: not steel, not wood, and not even glass because it would change the conception of the building. The building reads as if it is solid

Skylit volume connecting the concrete bars.

concrete and thus the envelope is structural. This is not architectural trickery; it is being true to concept from initial design right through to built form.

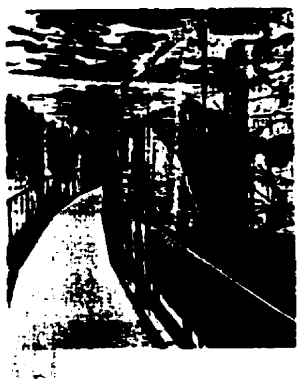
information technology and electro-technical institute: analysis

Otto Kapfinger describes the *Information Technology and Electro-Technical Institute* as the finest example of ARR's work. He describes it as being the epitome of the openness of orthogonality with its inherent possibility of addition and ordering through which drama and rhythm can be produced.[24] Through orthogonality ARR creates an open-endedness that only becomes possible through conditioned openness.

In the *information technology and electro-technical institute*, the simple plan configuration helps to achieve conditioned openness. Each block is broken down into two bars, which are then connected by a skylight. The programme within each of the bars is defined in the sense that one is for administrative functions while the other is classrooms but the inherent flexibility of the columnar grid structure allows for multiple configurations of these simple bar buildings. The skylit three-storey volume that connects each bar is the most open of all the spaces. This skylit space enables the spaces of the bars to be woven into each other through it creating a complex sectional spatial relationship. This enables the drama and rhythm that Kapfinger speaks of.

Drama and rhythm are also produced in the articulation of the concrete skin. The concrete skin exists along the exterior wall of each bar and also along the interior side which borders the skylit void. Thus the structure reads as a continuous concrete skin, which is fissured to produce openings for circulation, punched windows and large voids. The rhythm of the punched window openings along the exterior wall of the bar is complimented with large voids, which exist where no program is present on the interior. These voids facilitate a weaving of the view form bar to bar. Each void exists at different

The bridge connnectors between the bars.

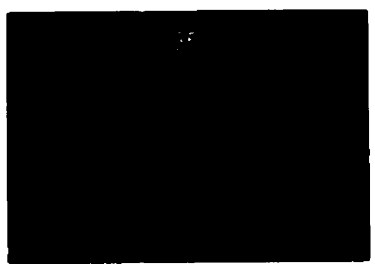


Institute for Plant Physiology, Graz, Austria by Klaus Kada.

points in the various bars thus ones receives a framed partial view through each void but has to move to the next to receive the full understanding of the spatial possibilities of the institute.

These connections are furthered by the physical bridges, which enable multi-storey movement from one bar to the next. The material palette of these connectors is sedate and blends into the concrete skin. ARR uses exclusively steel for the bridges such as metal handrails, and metal grate for the floor, ceiling and walls. A minimal material palette for all of the connectors between the bars achieves a visual reading where they blend in and are read as the bar is the major gesture. This design is direct opposition to other Graz architects like Klaus Kada. Klaus Kada designed a bridge connection between the two building of the *Graz University Institute for Plant Physiology* in high-tech genre. The connectors between the glass panels, the bridge deck and handrails are articulated tectonic steel bolt connections that take away from the power of the buildings directly beside it. I read the complex as series of almost independent parts not as a unified, designed whole. This condition is where the information technology and electro-technical institute of ARR is the most successful.

A unified whole is achieved through a number of gestures. The aforementioned concrete skin and minimal bridge connectors are two such ways but another is the steel structural frame of the building. The primary structural system being steel could be an element, which is over articulated and emphasized in detriment to the overall reading of the building. But here, ARR minimizes its impact by incorporating a single gesture of painting the exposed steel columns white. It virtually blends right into the building and is never really noticed. This small but significant gesture renders the structural system of the information technology and electro-technical institute silent. Because of the silence and the subordination of the various parts, the building achieves a simple, clear articulation where meaning is derived from an open, united whole versus a series of independent parts.

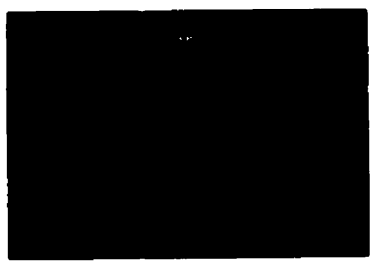


Exterior space between bars.

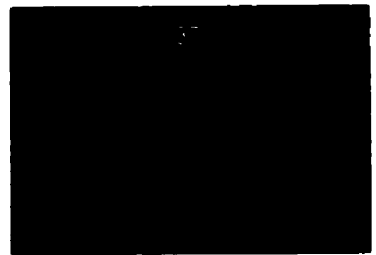
the negation of conventional representation

The concept of conventional architectural representation is not something that ARR ever discusses but it is inherent in their theoretical agenda. The concept of conditioned openness and the abstraction that is produced addresses contemporary society in a profound way. Contemporary society, which is made up of a multitude of different groups and cultures, is addressed using the only element, that we can all perceive= space. Everyone can perceive and understand space because we interact with it everyday. Along with advocating space ARR negates the use of conventional signs and symbols of architecture through abstraction and simplicity. ARR does not strive to reproduce or represent anything, but seeks to make utilization the content using minimum means for optimal spatial freedom.[25] Space and its endless possibilities attempt to speak to the whole. Ever person can find his or her own place or his or her own meaning within a building of ARR. Like the theory of FOA, I believe that ARR uses space to influence the individuals as well as the collective because it is the only legitimate universal understanding left.

Space is created and manipulated through processes of abstraction, which in turn generates form. I don't mean to suggest that form is automatically manifest from abstraction. Form is never generated automatically. There are always choices that the architect has to make where form is involved. However, to produce architecture where form is not simply aesthetics, but an integral part of a coherent whole, it must manifest directly from process. In the case of ARR, that process involves multiple levels of abstraction. Process dictates form. ARR produces abstract structures where the intent is to facilitate conditioned openness. Conditioned openness is the result of a process of abstraction where the use, material and detail are analyzed not dictated. This process produces an abstract volumetric architecture that intends to display use not represent it. Thus it is an advancement of the functionalist lineage but not a representation of function such as much of the early modernist work. It does not abide by the form follows function dictum, but seeks to display function and allow for changes within it. According to ARR, its "architecture is not an architecture of built images but creates structures, which are open and precise at the same time: frameworks for the complex flow of images of utilization."[26]

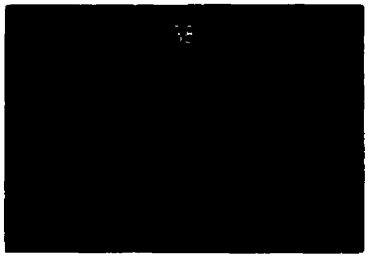


In both FOA's and ARR's work non-representational architecture is produced through processes of analysis and abstraction. These processes lead to very different forms but both address representation in similar ways. FOA explicitly attempts the eradication of conventional signs and symbols to begin the process of de- and re-territorialization. ARR lets the process of analyses take over: form is manifest directly from concept. Conditioned openness is only manifest through an abstract geometrical structure where flexibility, malleability, material and detail are all part of the overall concept. In the occupation by the user, this can lead to a phase of irritation caused by abstraction. But according to ARR, "Such an irritation also results in a heightened awareness. In the context of this abstraction, the user must define himself via himself, without the help from third persons."[27] Preconceived notions are thus minimized by the process of abstraction and the user is able to experience and view architecture in a new way. Consequently the only universally understood concept that remains is space. Space then can be clearly understood and perceived and influences the user in meaningful and powerful ways.

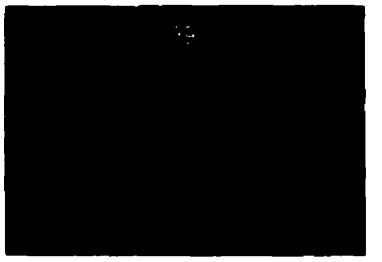


architekturbüro riegler riewe: footnotes

1. Architeturbüro Riegler Riewe, *Reigler Riewe*, (Graz, Austria: Drucklegung, 1994), p. 20.
2. Peter Allison, "Riegler Riewe: Conditioned Openness," *AA Files*, no. 31, (summer 1996): p. 86.
3. Marc Boutin, "Architekturbüro Reigler Riewe: a review," *Insitu: Critical Explorations in Architecture*, (Calgary: Triad Press, 1999), p. 20.
4. Nicole Howard, ed, "Interview: Nicole Howard with Roger Riewe," *Insitu: Critical Explorations in Architecture*, (Calgary: Triad Press, 1999), p. 15
5. Nicole Howard, ed, "The Search for Conditioned Openness," *Insitu: Critical Explorations in Architecture*, (Calgary: Triad Press, 1999), p. 14.
6. Allison, *AA Files*, p. 86.
7. Architeturbüro Riegler Riewe, *Reigler Riewe*, p. 8.
8. Architeturbüro Riegler Riewe, *Reigler Riewe*, p. 6.
9. Boutin, *Insitu: Critical Explorations in Architecture*, p. 19.
10. Architeturbüro Riegler Riewe, *Reigler Riewe*, p. 12.
11. Architeturbüro Riegler Riewe, *Reigler Riewe*, p. 8.
12. Architeturbüro Riegler Riewe, *Reigler Riewe*, p. 18.
13. Architeturbüro Riegler Riewe, *Reigler Riewe*, p. 10.
14. Howard, *Insitu: Critical Explorations in Architecture*. , p. 14.
15. Architeturbüro Riegler Riewe, *Reigler Riewe*, p. 16.
16. Architeturbüro Riegler Riewe, *Reigler Riewe*, p. 16.
17. Architeturbüro Riegler Riewe, *Reigler Riewe*, p. 42.

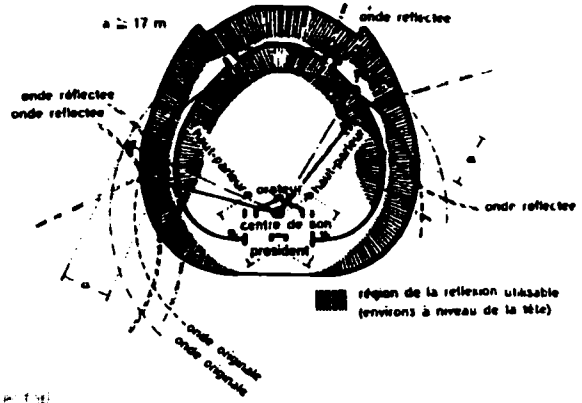


18. Architeturbüro Riegler Riewe, *Reigler Riewe*, p. 42.
19. Architeturbüro Riegler Riewe, *Reigler Riewe*, p. 42.
20. Architeturbüro Riegler Riewe, *Reigler Riewe*, p. 42.
21. Architeturbüro Riegler Riewe, *Reigler Riewe*, p. 32.
22. Architeturbüro Riegler Riewe, *Reigler Riewe*, p. 30.
23. Allison, *AA Files*, p. 86.
24. Howard, *Insitu: Critical Explorations in Architecture*, p. 11.
25. Architeturbüro Riegler Riewe, *Reigler Riewe*, p. 8.
26. Howard, *Insitu: Critical Explorations in Architecture*, p. 14.
27. Howard, *Insitu: Critical Explorations in Architecture*, p. 14.



building is the deliberate organization of the processes of life.
building as a technical process is therefore only one part of the whole process, the functional diagram and the economic programme are the determining principles of the building project.
building is no longer an individual task for the realization of architectural ambitions.
building is nothing but organization: social, technical, economic, psychological organization.
***-hannes meyer*[1]**

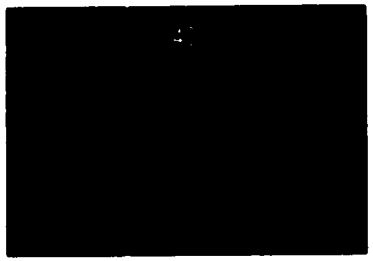
Hannes Meyer (1889-1954), director of the Bauhaus between 1928 and 1930, was one of the extreme functionalists of the modernist movement. He advocated two essential ideas that manifested in his own architecture and much of the architecture produced at the Bauhaus at this time. These are, firstly, the idea that function and economics govern building production and secondly, under this dictum, architecture is not art and must be representative of the times in which it is produced.



Analysis of the amount of useful sound reflected at the level of the acoustic centre, League of Nations proposal, 1926-27.

function

Meyer's radical manifesto *Bauen*, 1928, advocated the extreme notion that "all things in the world are a product of the formula: function times economy."[2] As precursor to both FOA and ARR, Meyer believed that architecture and architects produce architecture through analysis and organization.[3] But in Meyer's case, the analysis consisted of functional issues such as the annual fluctuations in the temperature of the ground to calculate heat loss through a floor slab and the angle of the sun's incidence throughout the year to give an accurate estimate of how much natural light will penetrate the building based upon specific window placement. According to Meyer, "the adaptation of form to function does indeed depend on the precise data supplied by the sciences and technology, but it also depends on how man conceives this function should be carried out."[4] For Meyer, the way this should be carried out was that architecture should embrace function and break with conventional building materials and technologies. This he believed would result in an architecture, which had meaning and relevance for the modern world. According to Meyer, architecture was then "made eloquent by its lack of



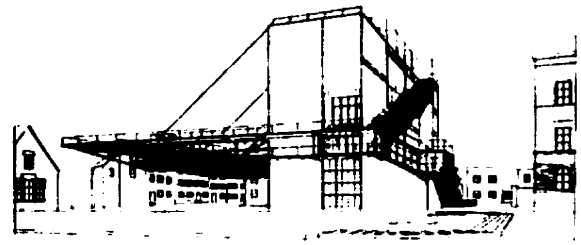
Federal School of the German Trade Unions Federation, Bernau, Germany, 1928-30 by Hannes Meyer.

pretensions and its direct expression of functional volumes and the supposed 'ordinariness' of machine-produced components."[5]

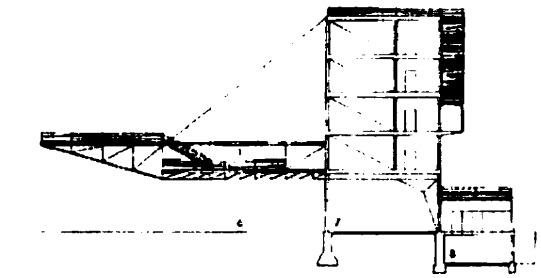
negation of history

According to Meyer the historical styles of the past represented the antithesis to functionalism. Meyer stated, "architecture as 'a continuation of the traditions of building' means being carried along by the history of architecture."[6] Historically based architecture advocated the conventional notions of hierarchy and rank. Meyer believed that conventional architectural signs and symbols "were borrowed from the architecture of the 'great' periods for the purpose of denoting a person's rank, of making a group stand out from the ruck, and of accentuating the hierarchy of society. This ideological power of architecture, which was potent enough to obstruct technical development and stultify the practical usefulness of a building, was the main obstacle to overcome."[7]

Seemingly unbeknownst to Meyer, the concept of no hierarchy was is in effect a hierarchy of its own and revealed the radical socialist tendencies that would ultimately impact all of Meyer's work. In Meyer's work these concepts evolved into a formalism of his own. His work shows a strategy that advocates equality not hierarchy between elements. Meyer advocated an architecture that expressed the clarity of the modern world through new construction techniques, materials and non-representational forms. New materials such as reinforced concrete, synthetic rubber, and aluminum "are organized into a constructive whole based on economic principles, thus the individual shape, the body of the structure, the colour of the material and the surface texture evolve by themselves and are determined by life."[8]



Petersschule, Basil, Switzerland, 1926. Perspective.



Cross section through platform, classrooms, gymnasium and kitchen.

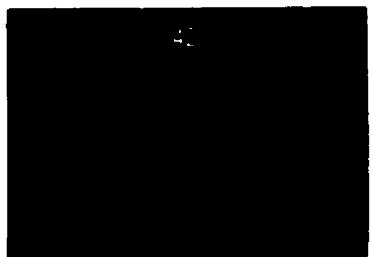
petersschule, basil, switzerland
unbuilt, 1926

The *Petersschule* project of 1926 testifies to Meyer's first attempt to implement his functionalist theories. The programme given to Meyer called for a new primary school for girls with eleven classrooms, a gymnasium, an art room, swimming pool, kitchen, etc. The chosen site seemed at first unsuitable for a school due to its poor environmental conditions and tall surrounding buildings. The total programme area of the site was to be 1240 sq. metres, leaving a miniscule 500 sq. metres of outdoor playing area for the students. These site conditions and its inherent problems formed the catalyst for the design strategy.

To address the insufficient site conditions Meyer proposed a solution where the "school itself is raised as far as possible above the ground to a level where there is sunlight and fresh air."[9] Meyer designed a frame structure containing the classrooms, art room and gymnasium. All the classrooms where placed on the upper floors where natural light and ventilation would be better. This was achieved by placing the gymnasium, swimming pool and traffic circulation on the ground floor. The proposed playing area would then be two large platforms hung above the ground by means of four cables that anchored back to the building. This platform would then be connected to the classrooms via a series of staircases and walkways. Natural lighting in all classrooms was achieved via generous window openings plus a series of angled skylights placed upon the flat roofs of the building. Along with the placement of the skylights, the flat roofs of the building were assigned to the students for exterior recreational space.

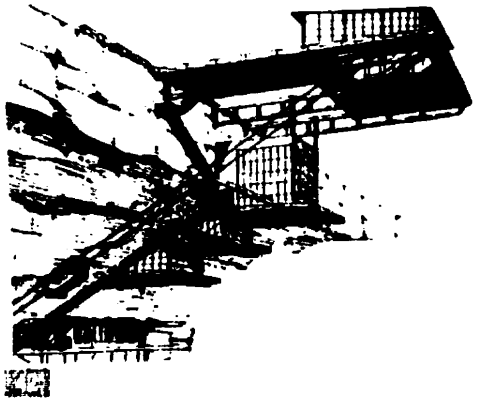
petersschule: analysis

We will never know if the *Petersschule* functioned well because it was never constructed. Given this, the design exemplifies the theories of Hannes Meyer but demonstrates many of his theoretical weaknesses as well. Meyer stated that the aim of architecture is to "set solid realities — functions of use — polemically against subjective speculations - functions

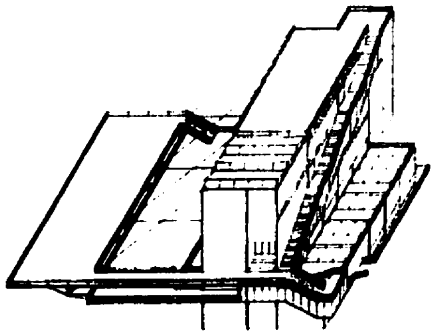


of representation, imperative to reaffirm a forgotten truth; a building is the object of material production."[10] The main programmatic volume of the building exemplifies these ideas of the functions of use. Meyer designed a frame structure within which all the classrooms are placed. The classrooms are all of equal size, configuration and materiality; essentially a standardized unit based upon the functions that the space has to perform. This fact was furthered through the implementation of equal lighting (through skylights and generous openings) in every room. Consequently the spatial experience between functionally similar rooms was also controlled in such a way to be virtually identical. A series of internal homogenous spaces with little diversity between them was produced. Standardization of space was something that Meyer wanted to achieve to create functional, but economical space.

The recreation platforms hung from the main programmatic volume representing the largest gesture towards function within the design. To Meyer, the hanging platforms were logical and functional. They use the existing dead weight of the main building mass to counteract the forces of gravity, thus fulfilling the requirements for a well-lit and well-ventilated recreation area. The ground below is free for circulation of people and automobile traffic. As well, the platforms counteract the initial programmatic estimates of only 500 sq. metres of recreation space by creating 1250 sq. metres of sunny, well-ventilated playing surfaces. The platforms are functional, economically designed spaces that address the intended use, but formally appear as a constructivst gesture of expressing the forces acting upon the large cantilever of the platforms. Why did the platforms have to be hung? Could they have been mounted on a grid of columns? A solution such as this would be a logical extension of the eight-column grid existing on the interior of the building. It appears to have been an architectural decision that had less to do with function than it had to do with Meyer's own personal style. In fact the *Petersschule* has a very similar formal aesthetic to a project for a suspended restaurant, 1922, by Simbirchev published in ABC magazine in 1924."[11] This project was published two years before the design for the *Petersschule* commenced and anticipates many of the same formal strategies used by Meyer. The suspended restaurant would have been in no way functional due to the fact that it was beyond the capacity of Soviet engineering at the time, while its numerous changes in



Project for a Suspended Restaraunt, 1922, by Simbirchev.

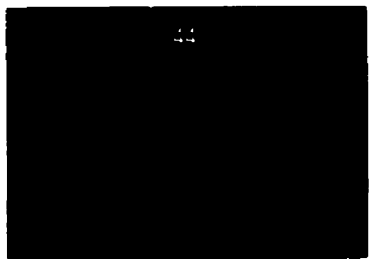


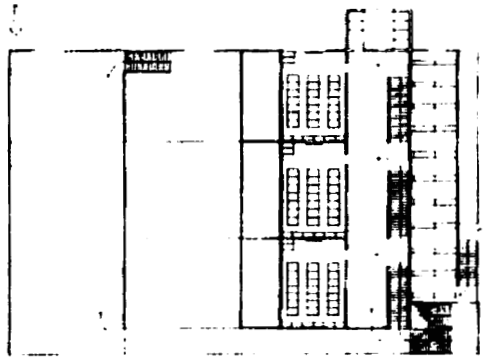
Axonometric of Petersschule

level would have limited its usefulness as a restaurant[12] Frampton uses adjectives such as extravagant and expressive utilitarianism to describe this project.[13] These words could be applied equally as well to the formal constructivst aesthetic produced by Meyer for the *Petersschule*.

The interpretation of constructivist notions within Meyer's design for the *Petersschule* can be extended to the series of exterior staircases and walkways that connect the recreation platforms to the main programmatic volume. These elements seem to be placed on the exterior of the building with no real hierarchical order or overall idea; a notion consistent with Meyer's theories. But the way in which all are cantilevered from and tied back into the main programmatic volume reinforces the interpretation of a constructivist aesthetic. Meyer states that "individual form, building mass, material colour and surface texture come about automatically,"[14] which is not necessarily the case. For example, the staircase elements of the *Petersschule* could have been interior staircases integrated into the main programmatic volume, thereby simplifying the exterior form of the building and facilitating a climate controlled vertical circulation system. I would suggest that they successfully display new construction technologies and materials but do not reflect the clarity that Meyer advocated at this time. This reading seems to be closer to a constructivst notion of expressing technology versus a functionalist approach of clarity and simplicity.

Meyer attempted to express the clarity and simplicity of the modern world in the programmatic relationships of the building as well as the materiality that facilitated these relationships. In the *Petersschule*, Meyer called for an exterior wall configuration of: aluminum sheet facing; pumice concrete slabs; air space; kieselguhr slabs [I was unable to find a definition for kieselguhr]; air space; polished Eternit sheets. For the most part these were new materials at the time, but how did Meyer decide which ones to use? Other materials available would have expressed his ideas and functioned just as well. How was the decision to use, for example, aluminum sheet facing made? I would suggest decisions like these are made by the architect, and *not* automatically by reference to function. This is one of the major weaknesses of Meyer's theory.



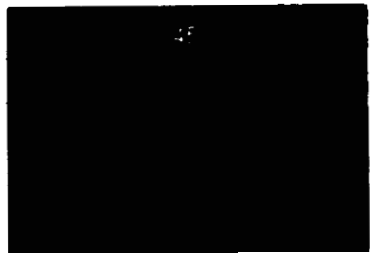


Plan of the Top Floor, Petersschule.

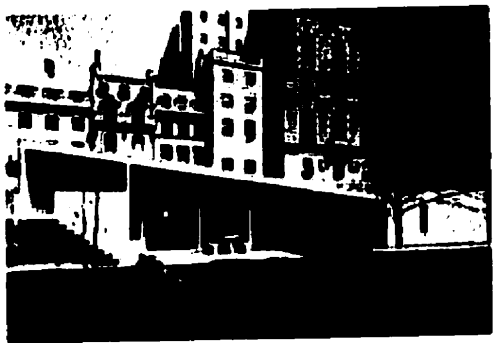
Arbitrary decisions like these are due in large part to Meyer's design process. He (like FOA and ARR) analyzes conditions such as "techno-economic, political-economic and psycho-economic elements,"[11] but these issues seem to directly impact only the implementation of a conceptual floor and site plan. As a result, the programmatic relationships of the building are designed according to function, but the materiality (walls, details, etc.) that create the physical manifestation of these spaces is disjointed from the function. Meyer states that the design process takes place in four stages:

Stage one: diagrammatic representation of the building, grouping similar spaces together.
Stage two: standardization of all spaces of virtually the same kind and laying down of standard types for all vitally important individual spaces.
Stage three: a diagrammatic plan of the entire building on a uniform scale (1:500) showing organization and the most appropriate grouping of spaces and the connections between them.
Stage four: working out of the draft of the building with all economic, technical and architectural factors.[15]

Consequently, architectural and technical factors are not addressed until stage four of Meyer's design process causing a disjunction between the functional analysis — completed before stage one — and the formal articulation of the building - stage four. A disjunction like this produces an architecture where function is considered and critical but the final form displays formalist tendencies that are disjointed from the initial functional analysis. A situation like this is contrary to an office like ARR where 'architectural and technical' factors are addressed in the earliest stage of design and thus impacts the interior composition of the building as much as the exterior articulation. The architecture of ARR fulfills their design theory whereas Hannes Meyer's fails to fulfill his. The disjunction between form and function is addressed by Klaus Herdeg in his 1983 book *The Decorated Diagram*. Herdeg focuses on these issues in regards to Walter Gropius and the architecture he produced along with students and other faculty that were associated with him while he was Dean of the Harvard Graduate School of design in 1942. Herdeg describes the architecture of this period:



Errazuris house, Chile, 1930, by Le Corbusier.

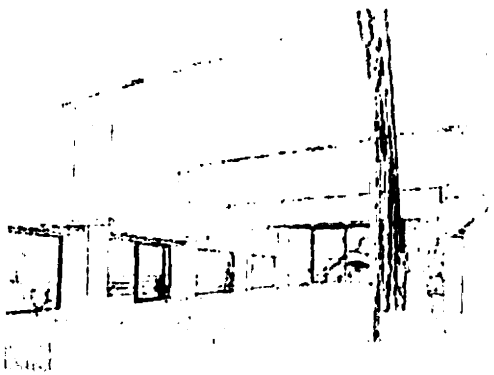


Exhibition house, MOMA garden, New York, 1949, by Marcel Breuer.

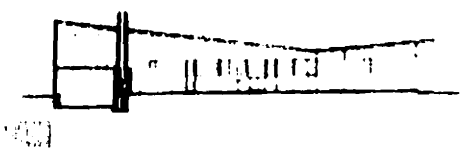
Today, more often than not, a building is an attention-seeking object that glorifies its owner and architect and is oblivious, if not outright injurious, to its physical, and often social, context. Its plan is diagrammatic- a literal expression of functional relationships- and the nonshelter aspects of the exterior of the building appear to be reduced to one purpose: to excite the eye (in a purely physiological sense) by clever pattern designs or by a total absence of pattern. Visual cues incorporated in the design of the building defy intellectual and often emotional resolution because they appear to have no meaning beyond their own existence; they are simply recorded by the retina.[16]

The architecture exists as *the decorated diagram*: A diagram of the functional relationships that exist between various elements of the programme, which is then decorated with modern garb that supposedly exemplifies the so-called modern world. As one can see from Herdeg's statement, often there is very little relationship between form and function. In his book, Herdeg makes an astute comparison between two formally similar houses: the *Errazuris house* by Le Corbusier, Chile, 1930 and the *Exhibition house* by Marcel Breuer, Museum of Modern Art garden, New York, 1949. The forms of the functionally similar houses are parallel in that they use butterfly style roof configurations, rustic materials such as field and flagstone and are similar in dimension and scale. Herdeg describes the two aesthetically similar houses in very different ways. He states:

While the first [MOMA house] strains to accommodate an American middle-income family with the most efficient 'zoning of functions' possible and then shower the resulting diagram with (by 1949) safely modern references, thus giving the occupants the feeling of living in harmony with the Zeitgeist, the second displays an intention not only of accommodating the occupants' immediate needs but of creating a basic confrontation between architecture as an abstract idea and architecture as craft and tradition.[17]



Interior rendering of Errazuris house showing the roof connection to the view and the circulation ramp.



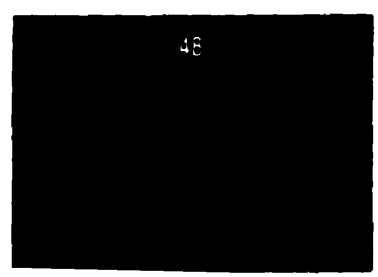
Longitudinal section of the MOMA house showing how groin of roof occurs over a wall between the bathroom and the utility room.

Differences in design intention and execution can be seen most obviously in the butterfly roof configuration of each house. In the *Errazuris house*, Le Corbusier designed the roof to accentuate the spatial and material notions of the house. The most interesting interior aspect of the butterfly roof is the junction where the two sloped planes meet. At this point in the *Errazuris house* is where Le Corbusier decided to place the landing of the ramps that lead up to the mezzanine level. Here one experiences the most compressed space in the house while also experiencing a figurative release as well. Whether ascending or descending the ramp the landing frames one's view out the north wall of the house. This wall is entirely glazed and directs the view to the spectacular mountain range beyond. This framing of the view is accentuated by the fact that the roof slope is the same angle as the ramp. When one ascends the ramp, its slope is carried through into the short arm of the roof further emphasizing the release to the view. In contrast to this, when descending the ramp the roof overhead is the same slope thus emphasizing one's movement down the ramp to the landing where the view is then revealed.

Connections of the roof configuration to an overall spatial and functional idea are not apparent in the *MOMA house* by Breuer. In this house, Breuer chose the junction of the two roof planes to exist over a wall where the bathroom and utility rooms meet. It seems ludicrous to place the most interesting element of this type of roof configuration in an area where it becomes almost impossible for the inhabitant to perceive. The larger roof plane slopes up to enclose a mezzanine level like in the *Errazuris house* but here it exists only for purely functional reasons. Roof slope has no spatial impact on the house and no effect on its connection to larger issues like site or climate. In fact, the mezzanine level, which was to exist over the garage, was intended to be a later addition as the family grew. If one added this piece on to the overall form of the house then it would have to line up with the existing slope of this half of the butterfly wing. It seems totally illogical for this type of roof. Why would one not place the addition at the joint between the two roof slopes? Then the house would begin as a mono-slope roof, which could then be made into a butterfly roof with the addition of this new wing. Given these conditions I would hypothesize that the final form of the *MOMA house* exists only as, in Gropius' terms, "visual interest."[18] The form has become totally disjointed from function and expresses a language of modernism that has more to do with the

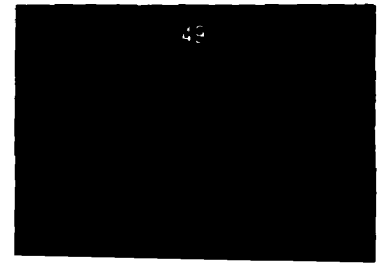
individual architect who compiled the forms than with displaying function and its connection the modern world. Formal incongruities such as this are where Meyer's architecture tends to become disjointed from his theories. Meyer's architecture can be seen as parallel to that of Breuer's. The final constructed building exists as the decorated diagram. The functional issues displayed efficiently in plan have very little if anything to do with the final form of the project.

Even with all of these inherent problems, Meyer's theories can be viewed as antithetical to conventional architectural representation. He does not attempt such representation to communicate to the user. Instead he attempts to break with historical traditions and utilize new construction methods and materials to facilitate an abstract architecture expressing the qualities of modern life. His theory of negating conventional historical style attempts to generate meaning and relevance through functionally driven, non-representational forms. The final forms thereby generated fail to live up to his own critical theory; however, they do begin to address the notion of the negation of conventional representation.



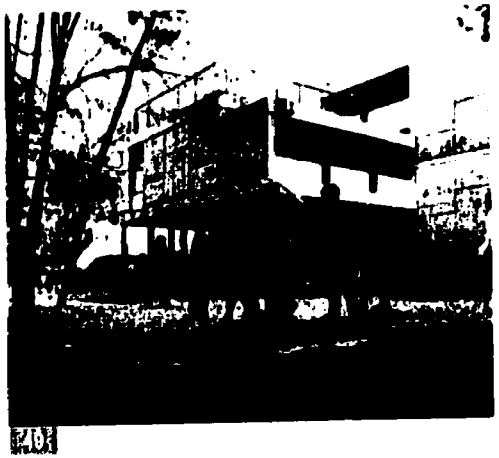
hannes meyer: footnotes

1. Ulrich Conrads, ed, *Programmes and Manifestoes on 20th Century Architecture* (London: Lund Humphries Ltd., 1970), p. 117.
2. Conrads, *Programmes and Manifestoes on 20th Century Architecture*, p. 117.
3. Conrads, *Programmes and Manifestces on 20th Century Architecture*, p. 118.
4. Claude Schnaidt, *Hannes Meyer* (London: Alec Tiranti Ltd., 1965), p. 23.
5. Schnaidt, *Hannes Meyer*, p. 23.
6. Conrads, *Programmes and Manifestoes on 20th Century Architecture*, p. 119.
7. Schnaidt, *Hannes Meyer*, p. 23.
8. Conrads, *Programmes and Manifestoes on 20th Century Architecture*, p. 117.
9. Schnaidt, *Hannes Meyer*, p. 17.
10. Schnaidt, *Hannes Meyer*, p. 23
11. Kenneth Frampton, *Modern Architecture: A Critical History* (London: Thames and Hudson, 1980), p. 171.
12. Frampton, *Modern Architecture: A Critical History*, p. 171.
13. Frampton, *Modern Architecture: A Critical History*, p. 171.
14. Schnaidt, *Hannes Meyer*, p. 23.
15. Schnaidt, *Hannes Meyer*, p. 27.
16. Klaus Herdeg, *The Decorated Diagram* (Cambridge, Mass.: The MIT Press, 1983), p. 2.
17. Herdeg, *The Decorated Diagram*, p. 5.
18. Herdeg, *The Decorated Diagram*, p. 11.



The 'man in the street' is the real town builder and the job of town planners is to interpret his ideas."[1]
-shadrach woods

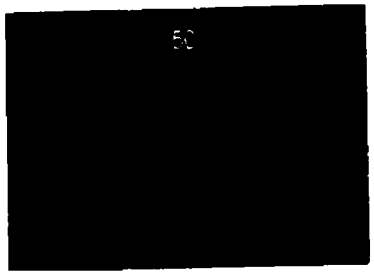
Candilis-Josic-Woods (CJW) won the first competition they entered in 1956 for a series of low-cost housing units in southern Paris. This project, as well as the series of housing projects that Candilis and Woods worked on in Le Corbusier's office, led to investigating low-cost housing as their primary means of research. Their interest expanded to town planning and construction methods, forming the focus of the practice in later years. Their last project, the Berlin Free University, will be the focus of this precedent study. CJW's theoretical agenda can be broken down into four sections, which influenced all of their projects but most specifically the Free University of Berlin. These sections are: the articulation of function, the articulation of the limits of space, the articulation of volumes and spaces, and the articulation of public and private domains.



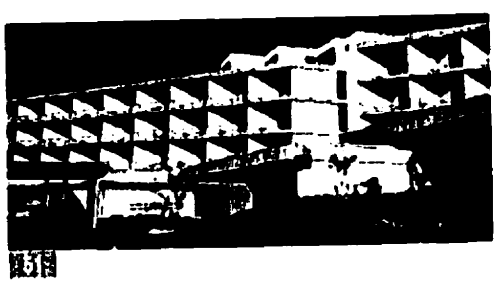
French primary school, Geneva, Switzerland, 1962 by Candilis-Josic-Woods

articulation of function

CJW's are concerned with function not from an aesthetic standpoint, in that the form somehow imbues the building as functional, but rather how the organization of the ground plan affects use In this regard, their theory is parallel to the same argument proposed by ARR for conditioned openness. CJW separates function into two categories: those requiring strict definition and those indeterminate and open to change. These two categories are then analyzed and designed to achieve maximum efficiency and flexibility. The plan is thus organized according to the interaction between defined functions and more open, flexible spaces. Organizing the plan in such a way creates a blurred condition of defined and open space where the two cannot be separated; the users have ultimate control over the interpretation of their own space.



Multi-family housing, Casablanca, Morrocco, 1951-52 by Candilis-Josic-Woods.



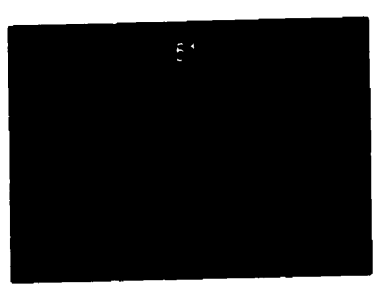
Hotel on the Mediterranean coast, 1960 by Candilis-Josic-Woods.

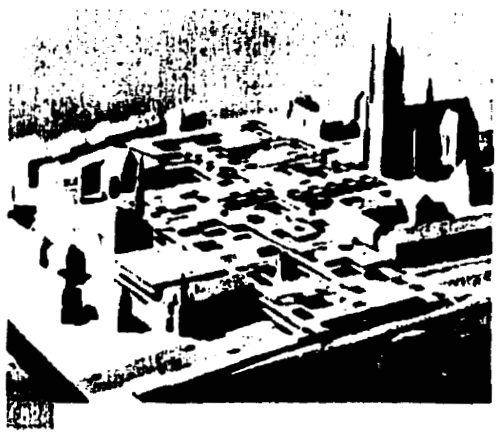
articulation of the limits of space

The articulation of the limits of space is concerned with form and how the architect chooses to enclose space. Woods states, "A plan, no matter how well it may be organized, remains merely a charter of good intentions until it is completed by the method of building which is appropriate to its intentions and its economic context."[2] Thus construction and the articulation of forms that delineate space is imperative to the theory of CJW. The articulations of these limits of space are as much concerned with economy as aesthetic or functional choices. These decisions relate directly to the existing climatic and technological conditions that the building addresses. In response, the built form will be located in close proximity to other buildings. Thus, according to CJW, "the size and the proximity to each other of most buildings today excludes the possibility of an expressionistic approach to the articulation of specific functions."[3] In other words, the architect need not formally express the various interior functions of an individual building on the exterior for the reason that it adds numerous figures to an already crowded urban field. The building also then attempts to signify functions through representation instead of just existing according to function and use. CJW state "is it not enough for a stair to fulfill its function correctly; it does not need to be representative."[4] Thus CJW advocates an architecture that could be deemed non-representational.

articulation of volumes and spaces

The articulation of volumes and spaces is like the articulation of the limits of space before it relates to the generation of form. CJW believes in the use of non-representational form but within this idea the building cannot become a mega-structure in which the individual has no relationship. Form and consequently space needs to be scaled to relate to the collective as well as the individual. In addressing large scale projects, in which a number of repetitive building volumes or spaces are required, CJW advocates using scale to break the large structure down to the human level. This can be achieved by defining an intermediate area between the individual cell and the always-abstract total number of large scale repetitive buildings.[5] An intermediate scale is then comprehensible to a person without overwhelming his or her individuality. CJW's efforts attempted to design urbanistically with the human as the dominant reference point; a hierarchy is then established



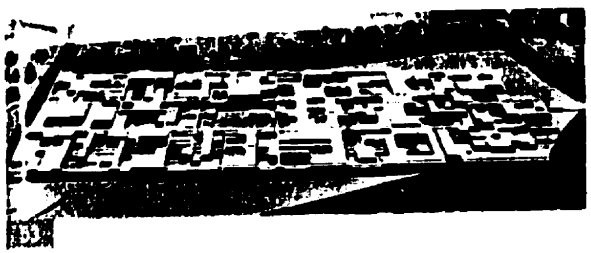


Model. Frankfurt main centre competition, 1963 by Candilis-Josic-Woods.

in an area where none previously existed. To be specific, the banal ubiquitousness of the large scale, repetitive unit, mega-structure is lessened and the individual can then relate to the building. The architects' attempt here is to create a continuity of the form where an overall understanding of the project can be recognized but because of the shifts in scale of the project the user's understanding of their role within, is left up to them

articulation of public and private domains

The articulation of public and private domains concentrates on the relationship between these two normally very separated conditions. Like the articulation of function this concept advocates an interweaving of two normally very separate conditions. As cities grow larger, the articulation of public and private domains becomes increasingly important. With the escalating complexity and density of urban areas, CJW believed the only way to address these issues was to penetrate built form with public space.[6] According to CJW, "as buildings become closer together and occupy more space, it is clear that they must englobe a greater part of the public activities, and that the period of the neatly-zoned, tidily-classified, specific building is passing. Buildings become more complex and their structure lies in the organization of activities, of public and private, within them."[7] The space within the building acting as part of the public realm is just as important as the urban spaces between and around it. Thus a symbiotic relationship between public and private exists and the lines between them become blurred and open to new interpretations and relationships.

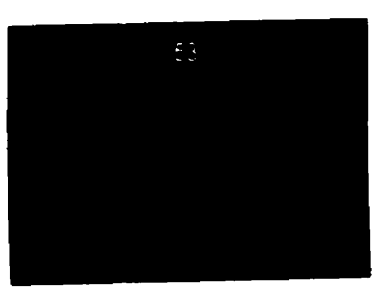


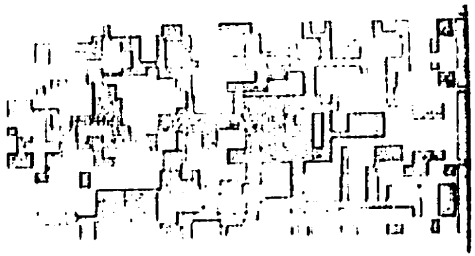
Berlin Free University competition model, 1963.

berlin free university
competition project 1963 – winning entry
completed 1963 – 1968

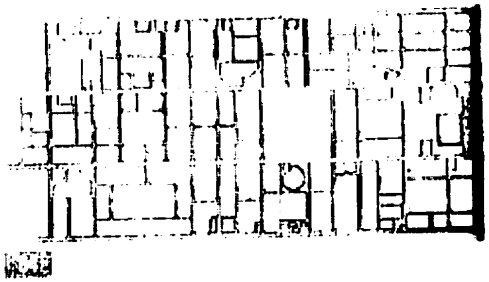
The *Berlin Free University* exemplifies CJW's theoretical agenda. A university is a place where individuals as well as groups can exchange of general and specific information. In a university individuals come together to learn and share. CJW understood the traditional university model of separating individual faculties and departments as creating an isolation of specific disciplines. To remedy this problem some would suggest removing the built barriers and mixing the disciplines. But according to CJW within this solution the group becomes meaningless due to the fact that there is no place left for the individual.[8] If there is no individual, then there can be no group, and vice versa. Here the building solution was to emphasize a collective or holistic understanding of the university institution, but also to develop tranquil, isolated spaces where the individual could exist and thrive.

According to CJW, the traditional university form exemplifies these problems. They stated in their competition entry, "the external expression of the differences in function and nostalgia for representational form also tend to segregate the university into specialized disciplines only."[9] CJW sought to achieve a "system giving the minimum organization necessary to an association of disciplines. The specific natures of the different functions are accommodated within a general framework which expresses university."[10] CJW advocated a groundscraper organization that would facilitate an interconnected network of buildings and appear as one entity. The groundscraper inverts the traditional segregation of the individual floor plates within the skyscraper.[11] In this context, individual floor plates were spread over the ground overlapping and interconnecting with one another creating "greater possibilities of community and exchange without necessarily sacrificing any tranquility."[12] A holistic interpretation then existed but not at the expense of the individual.





Plan of the open-space of the university.



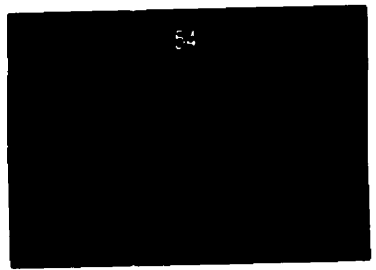
Plan of the circulation network of the university.

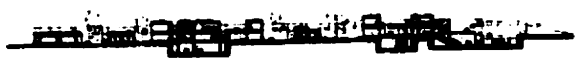
berlin free university: analysis

Through two very specific themes relating to the negation of conventional representation, the *Berlin Free University* fulfills all four CJW's theoretical ideas. These themes are: the use of non-representational form, and the creation of a united network of solid and void.. In the articulation of function and the articulation of the limits of space, CJW suggests that supposedly functional forms will not imbue the project as functional. As well, the project does not need to express the individuality of the different components within a building.[13] To exaggerate the specific qualities of the different functions within a building would exist only as a formal representation, not as an actual manifestation of use and function. In the design for the *Berlin Free University*, CJW chose not to exaggerate the differences between each individual faculty but instead to accentuate the similarities between them, creating a united network that facilitates a holistic understanding of the university. This notion was achieved through the use of a prefabricated modular panel wall system applied to each of the individual buildings within the university. The application of this system enables the complex of individual buildings to be perceived as a whole. Each building was then customized to the individual needs of the faculties based upon differing relationships to the exterior through the manipulation of openings within the modular panel system.

The articulation of the modular system also relates to another of CJW's theoretical ideas, namely the articulation of volumes and space. Within the legibility of the project as a whole, CJW made a conscious effort develop spaces that were related to the individual. CJW created a series of exterior voids that occurred on multiple levels within the structure. These voids are islands within the sea of the structure and are appropriate to the scale of the individual, not the collective.

The *BFU* can be seen as a precedent to the *Information Technology and Electro-Technical Institute* by ARR. Within this project, ARR conceived of the structure as a network of individual buildings woven together through the accentuation of the interstitial space between the bars. As well they developed voids punched through the individual bars, creating a united network of void and solid. A major difference between this project and the BFU is the articulation of the ground plane and





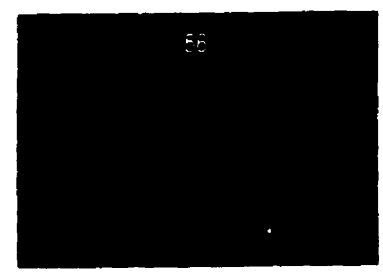
Longitudinal section.

the way it then relates to the solid and void of the project. ARR uses a series of bridges that exist on multiple levels to connect the individual bars. These bridges exist as connectors and but not as space. Whereas in the *Berlin Free University*, CJW conceived of an elevated network of plaza's and walkways that would be woven into the space of the individual faculties creating connections that overlap the space from inside to out and from building to building.

Weaving the interior and exterior as well as the formal articulation of the building as a whole enables CJW's last theoretical idea, the articulation of public private domains, to occur. In the *Berlin Free University*, the articulation of the private and the public as separate functions is nonexistent. The complex negotiates a middle ground between these two. This is due to the fact that each individual faculty, perceived as private space, relates directly to the articulated public space of the university campus around it. Articulating the public space, be it solid or void, impacts the design of the individual buildings as much as they impact the public space. A united network of landscape and built form, void and solid, public and private exists. It becomes impossible to differentiate between these opposing conditions due to the fact that they have blurred the line where one begins and the other ends. Blurring the individual components into a united whole enables the project to begin to fulfill the requirements of the negatioon of conventional architectural representation.

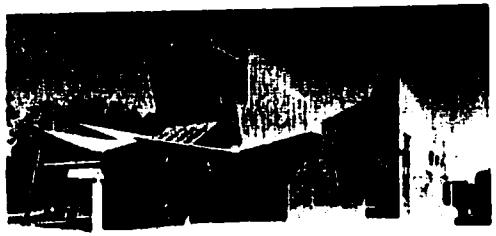
candilis-josic-woods: footnotes

1. Jurgen Joedicke, ed, *Candilis-Josic-Woods* (London: Alec Tiranti Ltd., 1968), p. 11.
2. Joedicke, *Candilis-Josic-Woods*, p. 71.
3. Joedicke, *Candilis-Josic-Woods*, p. 92.
4. Joedicke, *Candilis-Josic-Woods*, p. 92.
5. Joedicke, *Candilis-Josic-Woods*, p. 117.
6. Joedicke, *Candilis-Josic-Woods*, p. 159.
7. Joedicke, *Candilis-Josic-Woods*, p. 160.
8. Joedicke, *Candilis-Josic-Woods*, p. 208.
9. Joedicke, *Candilis-Josic-Woods*, p. 208.
10. Joedicke, *Candilis-Josic-Woods*, p. 208.
11. Joedicke, *Candilis-Josic-Woods*, p. 208.
12. Joedicke, *Candilis-Josic-Woods*, p. 208.
13. Paraphrase of footnotes 2 and 3.



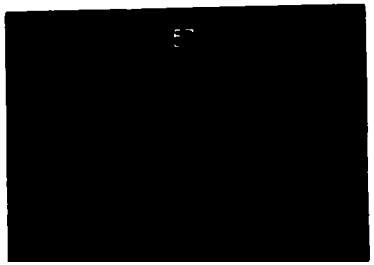
The initial problem posed at the beginning of this document was: how do we create meaningful architecture without relying upon conventional architectural representation? The precedents discussed earlier have all addressed this issue using a variety of methods and theories. But, the overriding design intent behind the cited projects was to emphasize the whole over the part. While emphasizing the whole, the notion of language and its individual parts is minimized in favour of **an architecture of direct experience**. An architecture of direct experience seeks to influence the user through open-ended interpretations that shift depending upon the individual user and their individual **interaction** with the architecture. It is an architecture that **presents not re-presents**. The architecture influences through an abstraction and clarity that can then be freely interpreted by the user.

Within a unified, abstract whole is the potential for multiple interpretations. Conventional architectural representation emphasizes the part; a singular understanding of an individual element. This creates an architecture in which the individual parts,—the signs and symbols of architecture— each attempt to communicate some type of meaning. But, because of the existence of multi-cultural users with diverse backgrounds, the assumption of a universal meaning for all is impossible to achieve. Further, the fact that each individual part in conventional architecture attempts to communicate a message creates an overload of information. Communication becomes lost in the use of signs and symbols and in the complicated combinations of these elements. An incomprehensible language results.



Newton Library, Surrey, BC, 1994 by Patkau Architects.

This statement is exemplified by the current movement in contemporary architecture that emphasizes the expression of the tectonic and the part rather than space or use. One could call this new movement decorative modernism due to its fascination with the tectonic.[1] This movement returns to the modernist ideal of abstraction but also advocates structure and construction. International firms such as Morphosis and Steven Holl along with Canadian offices such as Patkau Architects or The IKOY Partnership exemplify this philosophy through their work. The construction detail has become a fetishized and over-articulated object, intended to accentuate and reveal an abstraction of building construction. In the December



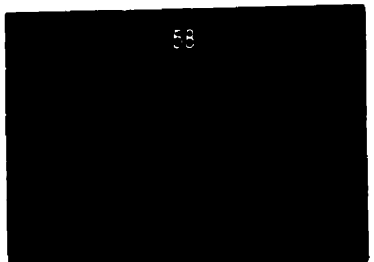
National Archives, Gatineau, PQ, 1998 by The Ikoy Partnership.

1998 issue of *Canadian Architect*, Montreal architect Howard Davies comments on the ways that contemporary architects have become fascinated with the construction detail and the tectonic:

> Regarding the issue of architectural expression, we seem to be firmly entrenched in an era where materials and the articulation of their assembly have become something of a national obsession. Facades are generally being worked in a manner of push-me-pull-me material tectonics or simply wrapped in neo-modern patterns....While undoubtedly there is a certain amount of salvation we might collectively derive from such strategies of architectural materiality, I can't help wondering if any sense of spatial dynamics (or indeed an interest in architectural space itself) is being lost in all the whittling. While I won't argue that some of the results undeniably produce moments of successful 'tectonicness,' *what seems to be slipping away in the process is an architecture equal to more than the sum of its parts.*[2]

The near-fetishization of the tectonic that abounds in many contemporary practices reduces the building to decorative assemblies accentuating the part over the whole. In the end, many of these buildings are reduced to isolated aesthetic elements with little indication of an overall conceptual idea. The tectonic simply advocates an aesthetisization of the part and therefore retreats from any potential that may be born out of construction and its relationship to new technologies and new forms. The building then exists as a conglomeration of independent pieces and not as a unified whole. Therefore, the tectonic modernism of the late twentieth century fails in its attempt to generate meaning due to the use of representational form and its negation of an architectural understanding that is more than just a series of parts.

The emphasis of the part over the whole facilitates a didactic attitude. It is didactic in the sense that conventional architectural representation attempts to communicate a predefined understanding through the use of language. The language is composed of a series of individual signs and symbols that when added together communicate this defined meaning. What



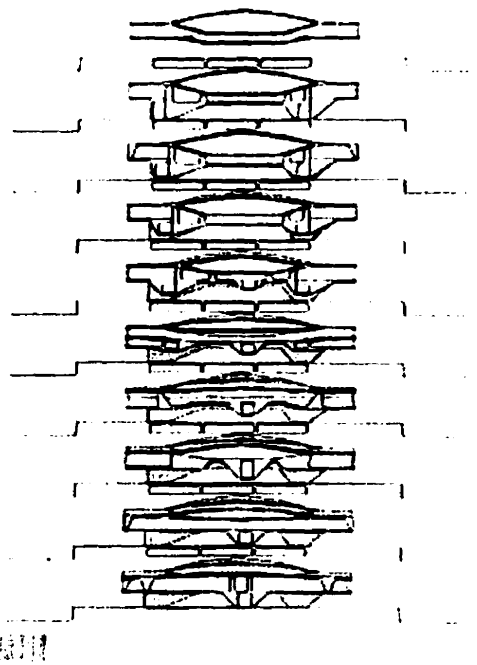
is operating here is an intellectual association that assumes a universal comprehension of set signs and symbols. Therefore if the language is incomprehensible due to the fact that the user has a limited to negligible understanding of the individual signs and symbols, then the meaning will never be discovered. The only solution is to abandon the notion of conventional architectural representation in favour of an architecture that interacts with the user through the direct experience of the whole. What results is **a holistic architecture of direct experience**.

After analyzing the various theories and strategies of the cited precedents, I have fashioned three design principles: *boundless containment, the abstract monolith and the open-endedness of understanding* that when considered concurrently within the design process, attempt to produce **a holistic architecture of direct experience**.

boundless containment

"After the explicitly defined spatiality of postmodernism and deconstructivism, it looks as if the –decades old- ideal of boundless and undefined space is set to become the main *Leitbold* for architects....The undefined space is not an emptiness but a safe container, a flexible shell."[3]
-hans ibelings

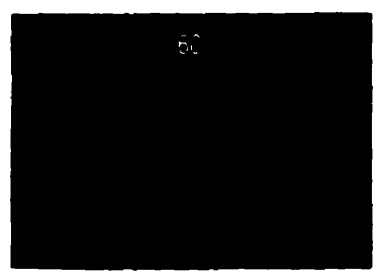
Architectural critic Hans Ibelings, within the cited quote, advocates the notion that in this new era of globalization architects will return to the modernist idea of flexible, boundless space. But this is not truly the case. Many architects negotiate a middle ground between an open condition and explicitly defined space, effectively a **boundless containment**. Boundless containment is symbiotic in nature; the condition of definedness cannot exist without openness and vice versa. Boundless containment is a condition that attempts to facilitate an understanding of architecture by directly experiencing fluctuations of defined and open space.

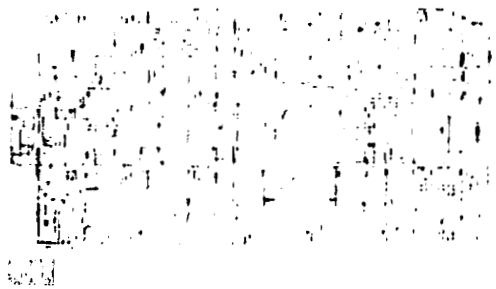


Sectional progression, Yokohama International Port Terminal, FOA.

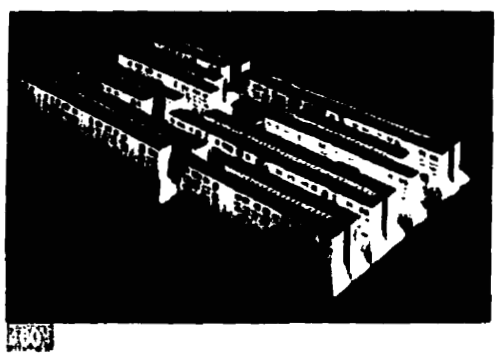
In his 1993 article, "Towards a New Architecture," architect and critic, Jeffrey Kipnis states that this condition "negotiates a middle ground between the homogeneity of infinite or universal space and the fixed hierarchies of closely articulated space."[4] ARR advocates the concept of 'conditioned openness,' the idea that space can at once be very defined and rigid but also flexible and malleable - essentially the same concept as boundless containment. But critical to the understanding of boundless containment, and never discussed by ARR, is the idea of the interstitial. The concept of the interstitial is critical to boundless containment. For example, the possible openness of interstitial space can be created by adjacent, defined conditions. Two buildings adjacent to one another create an interstitial zone. Space takes its definition from the walls, the defining elements of the two existing buildings. If these buildings do not exist then neither will the interstitial nor the potential for boundless containment. This concept relates directly to FOA's folded structural skin in that the continuos fold produces a structure where certain spaces are enclosed and defined while others flow from one to the next. The fold facilitates a series of interstitial spaces that exist between the separate sections of the fold. This condition then enables an overlap where the defined and the open can co-exist only as a result of each other. Activating interstitial space is critical to boundless containment.

The *Berlin Free University* (BFU) demonstrates another formal principle relating directly to the symbiotic relationship between the defined and the open. The BFU employed what the members of Team X (with which Candilis and Woods were affiliated) termed the mat plan. It is literally a simple geometric plan formation that resembles a mat. The mat is an architectural and urban scale strategy that elevates the whole over the part in order to further both flexibility and legibility. Objects, either solid or void, are added or subtracted from the mat in compliance with the complete orthogonal logic of the geometric mat. This conformation with the overall geometric logic of the plan enables a more holistic understanding of the architecture. No individual element is articulated to denote singular importance. Key to the interpretation is a holistic reading of the architecture as opposed to the individual elements placed within. The BFU exemplifies this concept. The rectilinear form of the project enables multiple additions and subtractions of building volumes as well as a series of voids





'Mat' floor plan, the Berlin Free University, CJW.



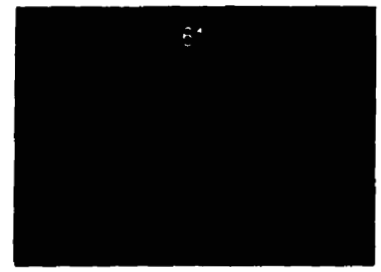
Model, Information Technology and Electro-Technical Institute, ARR.

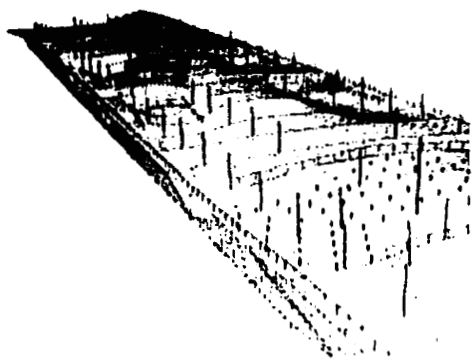
through multiple levels that permits exterior spaces on a variety of scales while relating to the overall form of the project. A united network of interior and exterior, built and landscape is the result. The mat furthers the concept of boundless containment because overlapping space results. The borders between exterior and interior are blurred since they are treated as equal conditions of an overall system containing both built and landscape. Neither gains dominance over the other; consequently, both exist to accentuate the overall form and concept of the project.

the abstract monolith

An understanding of boundless containment is furthered by the second concept: **the abstract monolith**. The abstract monolith refers to the formal characteristics of the building. The building is perceptually read as a monolithic whole suppressing conventional architectural representation with abstraction. Kipnis refers to the concept called Blankness, in "Towards a New Architecture." This concept advocates the "suppression of the quotation of reference through the erasure of decoration or ornament,"[5] relating directly to the abstract monolith. The erasure of ornament through abstraction is the only way in which the part can be negated and a holistic understanding can be achieved. Abstract, open structures are able to facilitate direct experience due to the fact that they do not attempt to communicate through signs and symbols. The architecture draws on the qualities of light, climate, movement, and the user causing an imprint on the building recording presence and use, not signs and symbols. Negating the conventional language of architecture elevates the open-ended direct experience over the defined, didactic meaning.

In all of the precedents considered in this project, abstraction appears in the form of simple, monolithic structures, intended to influence the user through clarity and simplicity. For example, the two projects cited as examples of ARR's work demonstrate an orthogonal simplicity, which imbues each project with a formal clarity and flexibility of utilization. This acts as a starting point from which the user can begin the process of inhabitation and interpretation. The best example of this concept is the *Information Technology and Electro-technical Institute* at the *Graz Technical University*. The buildings are





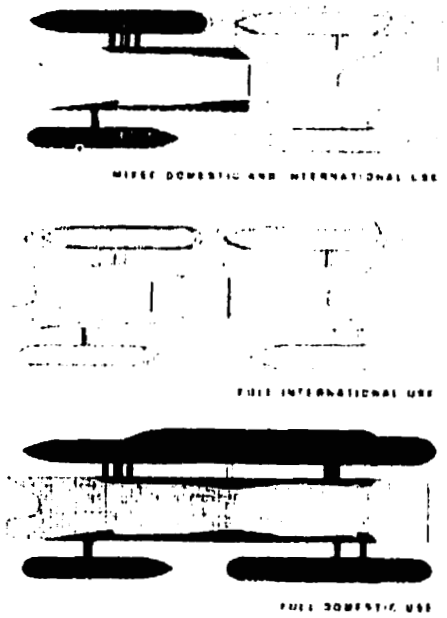
Wireframe view, Yokohama International Port Terminal, FOA.

Institute for Social Pedagogues, ARR.

a series of rectangular three-storey concrete bars. These abstract bars are then perceptually carved out, creating inter-connected spatial conditions that extend through large voids from one bar to the next. These bars do not speak a conventional language of architectural structure or form; instead they favour an open abstraction, allowing the user to inhabit the building and learn through discovery and direct experience rather than an intellectual reading of signs and symbols.

Abstraction also exists in the work of FOA, but produces different formal results. The monolithic forms produced by FOA and ARR marginalize conventional representation and attempt to find new meaning within the contemporary architectural context. Each differs slightly. The architecture of ARR seems monolithic while the landform folded architecture of FOA is literally monolithic. In the most successful projects of FOA, the skin of the building folds upon itself to become floor, wall, and ceiling concurrently. There is no distinction between structure and envelope, ground and building, floor and ramp. They all exist as one united skin. Here, the part is suppressed and a monolithic whole emerges. This heightens a direct experience over a conventional architectural reading. This is possibly due to the fact that the structure has been stripped of signs and symbols of architecture leaving an abstract building form.

This idea of the building skin furthers the monolithic understanding of the architecture. In the work of FOA the skin is a continuos surface, which forms enclosure, structure and circulation concurrently. Several examples are found in the architecture of ARR of the skin as a unifying element. The best example of this is the *Institute for Social Pedagogues*, in Baden. It illustrates the skin as an applied element over a structural system (in this case, a concrete box) which mediates the connection between the exterior environment and the interior spaces. The skin mediates through varying levels of opacity (wall), translucency (glazed skin) and transparency (void or punch). This is another trait of the abstract monolith; the smooth skin further abstracts the building envelope as a result of its fluctuation between transparent object, radiant glass box and mirror of the surrounding environment. These ever-shifting conditions can only be understood through direct experience.



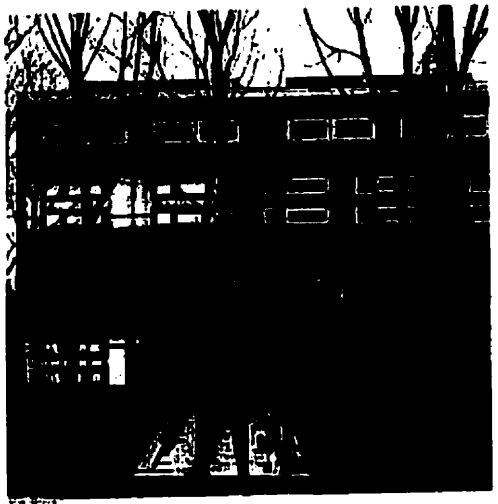
Configuration changes, Yokohama International Port Terminal, FOA.

the open-endedness of understanding

Combining the previous two concepts within the design process enables the creation of **the open-endedness of understanding**. The open-endedness of understanding facilitates the user's shifting interpretation over time. It exists as a reinterpretation of conditions such as materiality, flexibility and significance into something where their understanding continuously engages the user. It is not just the recombination of existing signifiers and elements to create new meaning, but the formation of open-ended meanings that change as the user changes. In "Towards a New Architecture," Kipnis, refers to the concept of Pointing, which has similar traits to the open-endedness of understanding. He describes the potential of Pointing as, "the indeterminacy of pointing shifts the emphasis from the formation of stable alignments and/or allegiances to the formation of provisional affiliations."[6] The key word, Indeterminacy, refers to an open-endedness, a non-fixed, perceptual understanding facilitated only through direct experience not the conventional meaning behind architectural language.

Examples of this can be seen in three of the precedents. For example, in FOA's *Yokohama International Port Terminal*, the negation of representational elements such as visible structure or the distinction between envelope and structure enables them to address the open-endedness of understanding. This type of structure allows them to create a reconfigurable building. The lines are blurred between local and international, building and ground, inside and out. Malleability leads to varying interpretations of what a port terminal can be and what is considered national or international territory. The outdated concept of the port terminal as gate is gone and a series of new meanings or understandings take its place. These concepts undermine the didactic and causal relationship of conventional architectural representation to meaning. What results is the open-endedness of understanding.

Within the work of ARR, the open-endedness of understanding is most visible in the reinterpretation of conventional building materials or systems. In the *Institute for Social Pedagogues*, the use of the glazed skin as a cladding within a layered



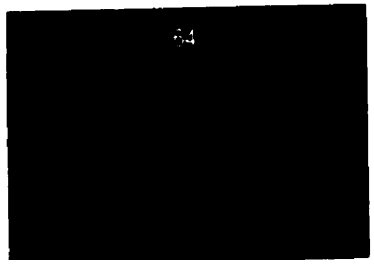
Skin under construction, Institute for Social Pedagoges, ARR.

Facade panel system, Berlin Free University, CJW.

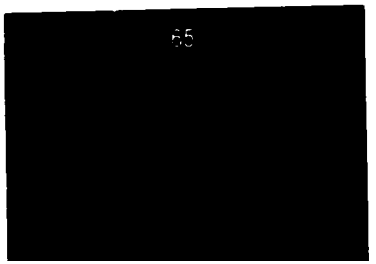
structural system inverts the conventional use of the curtain wall system. Due to this inversion, the relationship between the user and the mediating skin is very different than that of a standard curtain wall. In the *Institute for Social Pedagogues*, the glazed skin has simultaneous conditions of opacity, translucency and transparency. By contrast, standard curtain wall is in most cases only transparent. The skin is also used as a large solar collector, with a series of water pipes sandwiched between the skin and the concrete structure. Throughout the day the pipes increase in temperature; water is channeled through the structure heating the building while making minimal use of external sources such as electricity or natural gas. Thus, the conventional curtain wall is reinterpreted as a thermal skin, which mediates between the relationship between inside and out, the opaque and the transparent. This new interpretation of a conventional building system enables the open-endedness of understanding to occur.

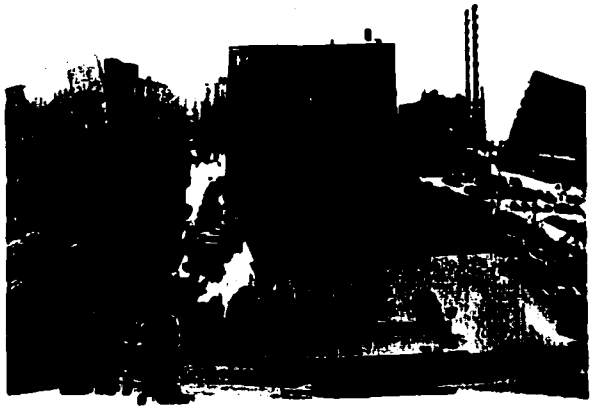
The reinterpretation of a constructive system also occurs in the *Berlin Free University*. The buildings of the campus were designed to be constructed of a steel frame with modular infill panels between the structural elements. Due to this infill system, windows could be placed anywhere in the façade. This construction also facilitated changing needs; panels could be changed from glazed to steel or vice versa. The architects foresaw the buildings not as static entities where change becomes a large undertaking, but as flexible from the largest scale planning gesture to the smallest building detail. This mutability facilitates a new understanding of the campus, which could have been invariable but is instead open-ended and is interpreted through direct experience not through conventional understandings and meanings.

The consideration of these three design principles throughout every stage of the design process will produce an architecture of multiple interpretations through its holistic nature and promotion of direct experience. Multiple interpretations lead to an open-endedness and create the condition for a wide range of users to experience the architecture over time. The three developed principles will be developed and tested in the next section of the project, the design investigation.

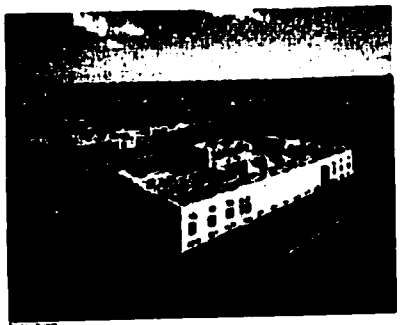


1. Hal Inberg, "Conceptual Alchemy," *Canadian Architect*, vol. 44, no. 7 (July 1999): p. 17.
2. Howard Davies, "The Usual Suspects," *Canadian Architect*, vol. 43, no. 12 (December 1998): p. 19.
3. Hans Ibelings, *Supermodernism: architecture in the age of globalization* (Rotterdam: NAI publishers, 1998), p. 62.
4. Jeffrey Kipnis, "Towards a New Architecture," *Architectural Design: Folding In Architecture*, no. 102 (1993): p. 43.
5. Kipnis, *Architectural Design: Folding In Architecture*, p. 43.
6. Kipnis, *Architectural Design: Folding In Architecture*, p. 43.





Looking south to site from parkade located on 10th Ave.

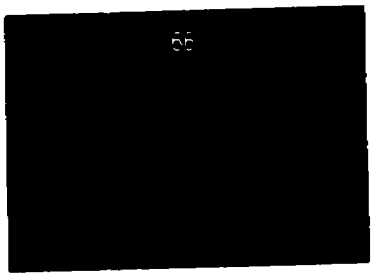


Canadian Centre for Architecture, Montreal.

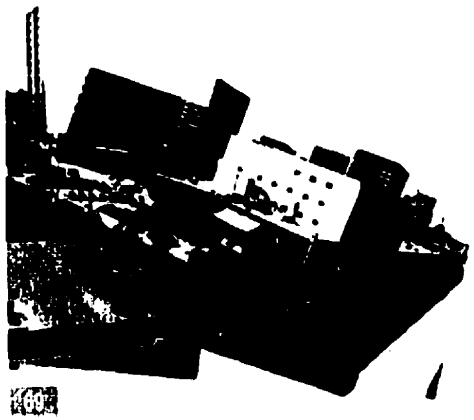
The selected programme is a new building for the Canadian Architectural Archives (CAA) currently located on the University of Calgary campus. The building would include the current programme of the archives (storage, offices, reading room, etc.) but would expand to house interior and exterior exhibition spaces as well as amenities such as a bookstore, café, and leasable retail units. The selected site is a corner lot located at the intersection of 10th Ave. SW and 2nd St. SW.

The site is currently a surface parking lot that services the surrounding office buildings for long-term daily parking. The site was chosen as the place for the new Canadian Architectural Archives for three reasons. These are: an urban downtown location, the proximity to existing arts-related facilities, and the population and built density to support a large-scale programme.

A downtown location is important to the conception of the new CAA. The reasons for this are twofold: first, if the building is to incorporate public functions such as extensive exhibition spaces, bookstore and a café then a location with a public nature is needed. Second, to facilitate increased outreach of an institution such as an architectural archive, a location where public accessibility is easy and available is important. The current location at the University of Calgary in the basement of the MacKimmie library tower does not facilitate either of these needs. The university is a public institution but its location on a suburban campus segregates a large portion of the public who rarely if ever use the university facilities. A precedent for this notion is the Canadian Centre for Architecture (CCA) in Montreal. While it is not located in the downtown, it operates in a dense urban area of Montreal with nearby medium density housing, retail and a metro stop. It presents public amenities such as lectures and research facilities that are focused at those interested in the culture of architecture. It does not require a surrounding institution, as is the case of the current placement of the CAA, to create the population base for its activation. The CCA in Montreal creates its own population base by participating in the context of the



Looking southeast from 10th Ave parkade to two-storey retail and parking.



Looking southwest from 10th Ave parkade to two-storey retail and six-storey commercial.

city as a whole. The chosen site for the new CAA would enable the institution to gain public exposure as well as the needed density for the new public programmes that I have added.

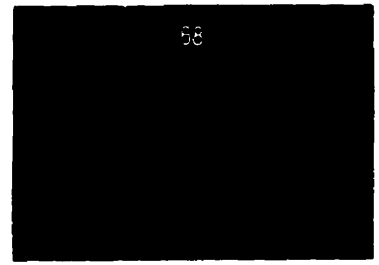
Choosing a site in close proximity to other arts-related facilities would also assist at increasing public exposure. The site on 10th Ave and 2nd St. SW is approximately five blocks south of the Centre for the Performing Arts, the Glenbow Museum, the Muttart Art Gallery on Stephen Ave as well as the Triangle Gallery located in City Hall. It is also within three blocks of private galleries such as New Zones and the Paul Kuhn gallery located to the south-west of the site. With the impetus by the City of Calgary as well as private institutions like the Centre for the Performing Arts to facilitate a coherent Arts District in this area, the location of the new CAA could become an catalyst in helping to bring this idea to fruition.

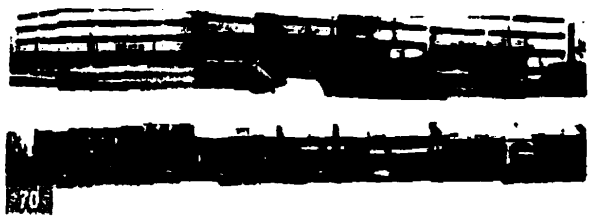
The chosen site offers the right amenities to an institution of this breadth and scale. To the north, across the street from the site stands a five-storey parking garage. To the east there is a surface parking lot providing long-term daily parking. There are also numerous metered parking stalls located along 10th and 11th Ave. as well as 2nd St. Directly south of the site, across the alley, exists an eight-storey commercial building that houses a restaurant on the ground floor and numerous office units above. To the west of the site along 10th Ave there is a series of two-storey retail shops and restaurants as well as a six-storey commercial building with retail located on the ground floor. The combination of the parking garage on the north side of 10th Ave. as well as the continuous commercial strip on the south makes it appropriate for a building of a significant scale to be placed at the corner of 10th Ave. and 2nd St.

The programme was developed to accommodate the scale needed for this type of site as well as accomplish the requirements for the expansion of the ever-growing collections of the CAA, developed in conjunction with curator Linda Fraser of the CAA and a visit to the CCA in Montreal. The programme is as follows:

new canadian architectural archives

exhibition:	gallery 1:	250 m2	
	gallery 2 and gallery 3:	350	
	exterior gallery (built installations):	270	**total**: 870 m2
exhibition handling:	ship/receiving:	68	
	temp. storage:	91	
	exh. preparation:	68	
	storage:	57	**total**: 284 m2
public space:	foyer:	64	
	reception:	14	
	coats:	9	
	bookstore:	60	
	lecture/multi-purpose:	150	**total**: 297 m2
	washrooms:	incl. in gross up	
general administration:	general office:	60	
	exhibition curator's office:	20	
	director's office:	20	
	storage:	9	**total**: 109m2
archives:	reading room:	50	
	workspace/ cataloging:	50	
	storage (black box):	2100	
	curator's office:	20	
	curator assistant office:	12	
	cataloging office:	12	
	collections office:	12	**total**: 2256 m2
commercial:	retail:	700	**total:** 700 m2
			grand total: 4516 m2
			total (30%): 5871 m2





Street wall on 10th Ave, parkade in top photograph and retail in bottom.

Change in scale, north of site in top photographs, south of site in bottom.

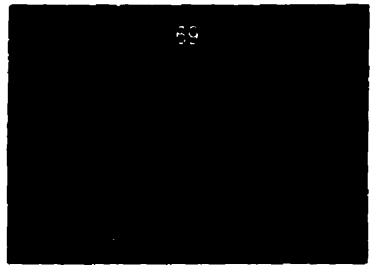
site analysis and design response

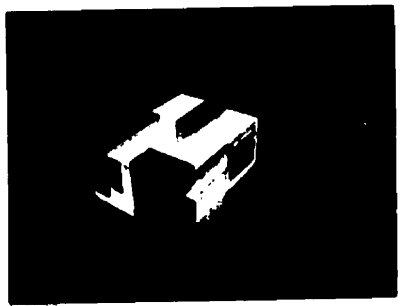
The design seeks to respond to four existing site conditions. These are: the emphasis of the existing street wall, the creation of a sectional transition between the large office towers to the north and the small commercial strips to the south, the accentuation of the urban grid and the activation of the street as a public place.

The most interesting condition of the surrounding area is the built-up street wall (continuous façade) that exists on 10th Ave. The parking garage on the north side and the commercial strip on the south form a condition that is broken only by the parking lot on the corner, my chosen site. Placement of the new CAA at the corner of 10th Ave and 2nd St continues the existing urban street wall on 10th Ave as well as providing a threshold between the increased density and size of the built form of the downtown and the smaller scale development that exists to the south of 10th Ave.

In this area, it is impossible not to notice the change in scale that occurs here. To the north one can see the Banker's Hall Towers as well as the Petro-Canada Tower and to the east the Calgary Tower. To the south the tallest building that can be seen from the site is an eight-storey commercial building directly south across the alley. The surrounding built form is between one and three storeys and offers a stark contrast to the multi-storey towers to the north. The zone where the site exists is in-between these two scales. The massing of the building reflects this fact. It is a five-floor building that has the massing of a seven storey structure. This sectional transition between the single-storey retail and the mutli-storey office tower enables the building to negotiate a middle ground between these two differing conditions.

Along with this sectional response the building also responds to urban form in plan. When looking at the plan of the downtown core there are very few blocks of the city grid that are formally complete. Most have large corners cut off or large voids functioning as surface parking lots. The architect developing this site with the appropriate intervention has an urban responsibility to complete the vacant corner of this section of the grid, especially at a rare intersection where the street is





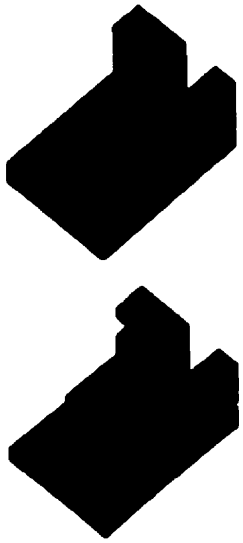
Model view: site and intervention.

Model view: down 10th Ave. showing the transparent corner at the ramp landings and the entry void.

broken by the rail lands. Along with the continuation of the street wall, the completing of this block creates the initial lines that have become the exterior edges of the building. This urban edge was maintained throughout the project to heighten the awareness of the corner site as well as the overall urban form of the downtown grid.

The prominence of the urban edge also allows the last design response- the activation of the street. Circulation within and through the building is the way in which the activation of the street is facilitated. The public nature of the foyer area is emphasized through the integration of public programmes such as the café and the bookstore. Accentuating the public scale of these spaces is the connection of these programmes to the courtyard, a major urban room. Along the perimeter of this urban room the leasable retail spaces are located which act as continuation of the public programme. From 10th Ave, the foyer exists as a void in the shimmering translucent skin of the building, enabling visual extension through the foyer into the courtyard behind. The public nature of the entry is furthered by the continuation of the concrete slab from the sidewalk into the foyer and directly into the courtyard. As well, the exterior translucent layer of the skin wraps into the foyer, creating a continuous exterior datum of translucent layer of glazing overhead The glazing then wraps out into the courtyard to become the exterior envelope on the south face of the courtyard.

Another urban strategy that suggests the public nature of the building is the ramp which functions as themain vertical circulation element on the 10th Ave façade. The ramp weaves between the layers of the skin enabling the user to obtain a shifting perception of the layers of the building. From the landing, the layers of the skin seem transparent, giving the user a framed view down 10th Ave. As one navigates the ramp, he/she is seen and then hidden to the passer by on the street due to the varying transparency of the glazed skin. This constantly changing façade enables the activation of the street that cannot be achieved through the tiny punched windows of the brick buildings that surround the site.



Erosion of the solid storage volumes.

Model view: the long span trusses.

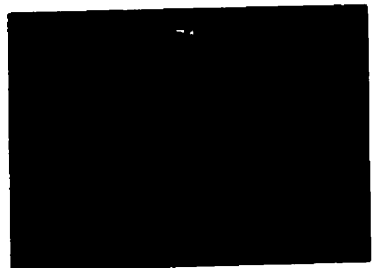
addressing the design principles

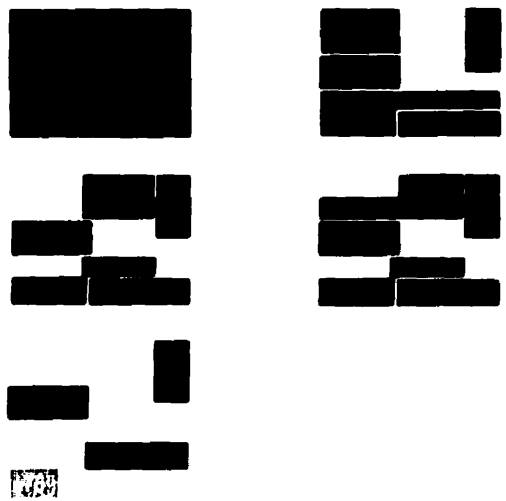
Using the response to the defined urban issues as a starting point, the design attempts to address the previously stated design principles that will enable the creation of a holistic architecture of direct experience.

boundless containment

Boundless containment is a simultaneous condition where the open and the defined co-exist. In the design intervention, the defined is composed of three solid concrete volumes, which contain primarily the black-box archive storage and other services such as washrooms, stairs, elevators, etc. At the beginning of the design process, these volumes were conceived of as solid forms that were then eroded based upon the spatial needs of the adjacent functions. The surrounding space is open, flexible interstitial space defined by the placement of the storage volumes. Thus a new relationship occurs because without the storage volumes an undefined standardized field would exist. But here the homogeneous is conditioned due to the specificity of each volume and the way the surrounding interstitial space relates to it. Some spaces move through the volumes, some move under, while others exist beside. But the volume is always a defined, legible object while the surrounding space is open and flexible. The main spaces that surround the volumes are the galleries, foyer, café, bookstore, multi-purpose/lecture space and courtyard.

The use of interstitial space is furthered by the structural concept of the building. By utilizing a series of long-span trusses, a columnless interior is possible that increases flexibility. The depth of the trusses is 3600mm from the underside of the bottom cord to the top of the top cord. The floor plates are hung from the cords, allowing the user to inhabit the interstitial space between and through the trusses. Space between the trusses accommodates functions that require a minimum floor to ceiling height but still need flexibility. These functions are the administrative offices, archive workspace, and the archive conservation area.





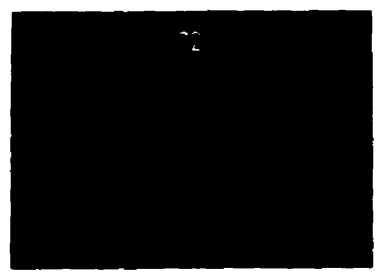
Plan views: the solid volumes versus the open voids.

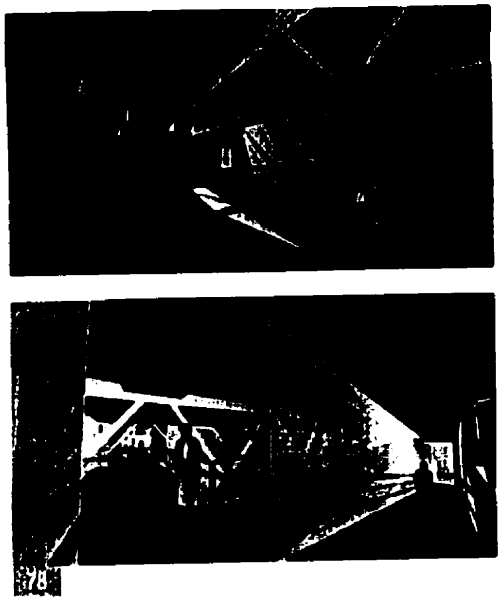
Model view: the abstract monolithic .

The overall form of the project in plan began as a simple, large rectangle with dimensions defined by the sidewalk edges as well as the alley to the rear of the site. This coherent rectangular was then subtracted-from or added to based upon the program needs of the defined storage volumes and the openness of the rest of the program. The integrity of the rectangle is always apparent. Formally, all of the spaces in the building relate to the overall form of the mat. Pieces of the mat were subtracted (i.e., bookstore and loading area) and others were added (i.e., the storage volumes) but all conform to the overall formal logic of the plan. No objects or spaces are skewed or curved to denote singular importance, everything is in servitude of the overall building form. The mat enables the conception of singular or specific pieces of the programme into a coherent whole where all elements work together as well as defining their own domain. Thus, the overall form of the project is emphasized and a holistic understanding is achieved.

the abstract monolith

Along with the formal articulation of the plan consisting of a highly legible simple geometry, its three-dimensional massing reinforces this reading. The building is organized as a monolithic box that attempts to erase the traditional emphasis of the part through the use of abstraction. Abstraction exists in the form of simple, monolithic massing as well as the fluctuating glazed skin. Conceptually, the building is perceived as a solid glazed box. The skin wraps the entire structure, uniting all of the spaces together and simultaneously creating different relationships with the street. Here difference is created through subtle transformations of the skin. The skin exits simultaneously as opaque, transparent, and translucent. The skin is composed of two layers of glazing with the structure sandwiched inbetween. The exterior layer of the skin is silk-screened with an abstract pattern that shifts in density based upon the requirements of programme behind. For example, when a gallery is located behind the skin, the skin becomes very dense, almost opaque, due to the fact that these spaces need lower levels of diffused natural light. In other spaces such as the offices, view becomes more important than direct light control, so the skin in this condition is transparent. The interior skin is almost always translucent except where direct





Interior views: on the ramp and between the layers of the skin.

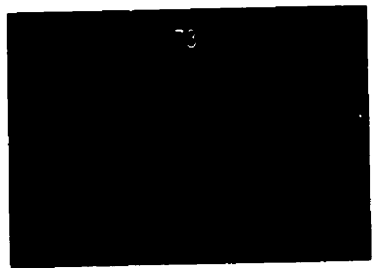
Model views: night elevations.

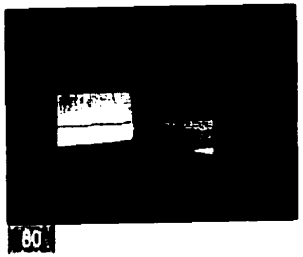
view is needed. This enables the structure to be perceived as an abstract shadow pattern located within the exterior wall. This reading furthers the negation of the part and the conventional signs and symbols of architecture.

Throughout the building, the layers of the skin shift and move, thus enabling a variable understanding of space and its definition, changing as the user moves through the building. For example, the skin separates at the ramp so that as users navigate the ramp, they move outside and then pass perpendicularly through the layers of the skin as they turn to double back. At this point they inhabit the space of the skin. This condition also occurs within the exterior exhibition space. Here the skin splits to form a threshold between interior and exterior. When the user is in the exterior exhibition space, they are essentially in an outdoor space between the layers of the skin. The exterior skin here is punctured to facilitate a direct view of the street from the exterior exhibition space as well as a view down to the terrace of the administration level. By creating differing levels of transparency and opacity, and changing the thickness of the skin as an experiential element, a new understanding of space and the project emerges. This new understanding is not based in conventional representation but through direct experience of the user.

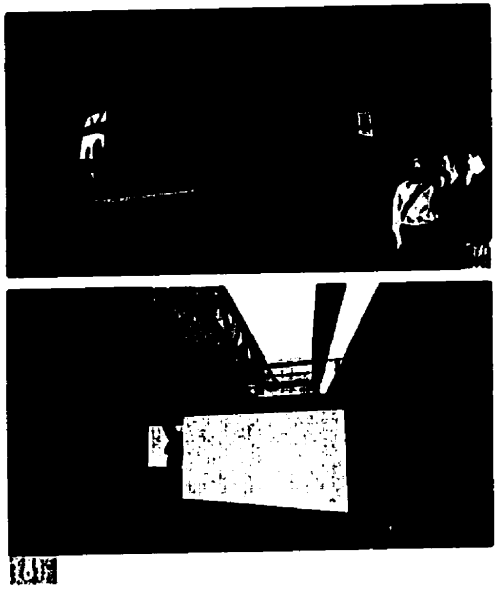
the open-endedness of understanding

Variations in the levels of transparency of the skin continuously engage the user and facilitate an understanding of the envelope of the building that is ever changing. This ever-changing understanding is accentuated by the shift from day to night. During the day, the skin appears as opaque, almost solid, with a shifting pattern on the glass. But as night falls and the interior is lit, one can see all of the layers of the building exposed behind the skin. Objects such as the trusses, the concrete storage volumes and the ramp become figures between or behind the layers of the glazed skin, as well as the animation provided by the user.





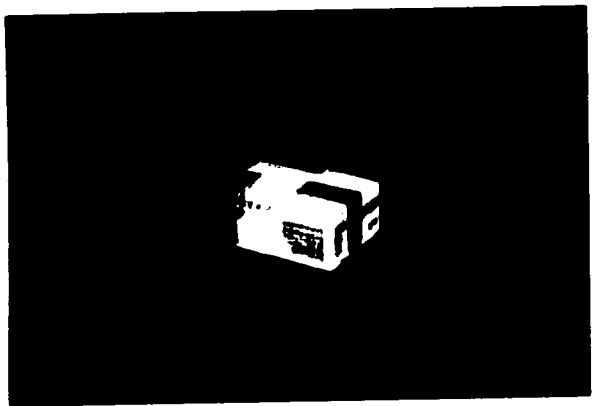
Model view: the entry void.



Interior views: in the courtyard and on the terrace.

New understandings of other conditions exist here as well. The most obvious is the blurring of public and private. When the user moves from the courtyard to the café or the bookstore and vice versa, the publicness of the street flows directly into the building. This is furthered by wrapping the exterior skin through this space out into courtyard, blurring the line between indoor and outdoor. The foyer exists as a part of the urban realm at this point, not just the entry to a private institution. The public nature of the project is emphasized by placing the exterior exhibition space and the administrative terrace on 10th Ave, enabling the people on the street to visually participate in these spaces. The person on the street also can catch glimpses through the building into the different spaces as well. For example, on the east façade of the building there is a large expanse of transparent glass facilitates views through one of the lower galleries, the upper galleries, and up into the archive workspace. Connecting a private institution directly to the public street furthers the open-endedness of understanding through the user's direct experience of the building.

The spatial configuration of the building can be ever-changing as well. Structural considerations such as the elimination of all interior structure except where necessary facilitates this condition. The galleries are large, multi-storey volumes that can be partitioned to enable multiple shows or left open to enable the placement of large travelling exhibitions. The multi-purpose/lecture space is conceived in this way as well. It is a large multi-storey volume that could be used for a variety of functions. For example, the interior layer of the skin in the space could be projected on and used as a projection screen. The constantly changing spatial possibilities offer open-ended interpretations that are only possible through the direct experience of the space by the user.



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Site model view: an example of a holistic architecture of direct experience.

At the beginning of this project, this question was posed: What other types of design strategies within contemporary culture can be used to facilitate meaning in architecture that do not use conventional representation? After examining several current and past precedents and designing a building based upon the principles obtained from these precedents, it seems clear that one compelling alternative to conventional representation is a **holistic architecture of direct experience.**

Conventional representation fails to influence the user because it is an essentially intellectual pursuit based upon a language of signs and symbols that are exclusive conventions within the traditions of western culture. These conventions are not universal thus, in today's multinational, multicultural society, their intended meaning is undermined. A **holistic architecture of direct experience** elevates direct experience of the fundamental elements of architecture as a substance: light, materiality, structure and atmosphere. These elements can be understood and appreciated by all. They are not intellectually *read*, but felt or sensed. Thus a **holistic architecture of direct experience** influences the user by leaving the interpretation of the architecture up to him/her. Meaning is not a static understanding of the architecture that is inherent within the formal language of the architecture. Meaning instead is something that will transform as the user's experience changes. Meaning is developed through an unmediated interaction with the user.

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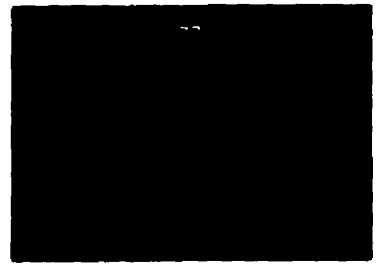

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71. Photograph, Troy Smith, November 1999.
72. Photograph, Troy Smith, April 2000.
73. Photograph, Troy Smith, April 2000.
74. Computer Rendering, Troy Smith, April 2000.
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76. Computer Renderings, Troy Smith, April 2000.
77. Photograph, Troy Smith, April 2000.
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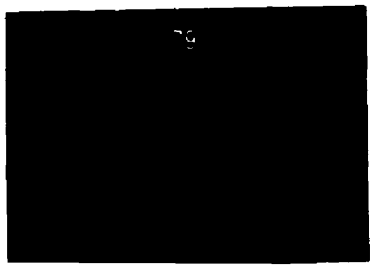

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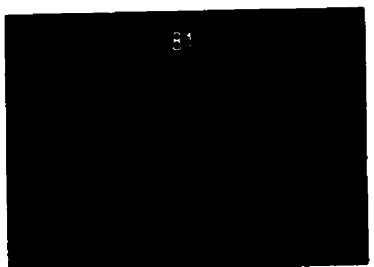
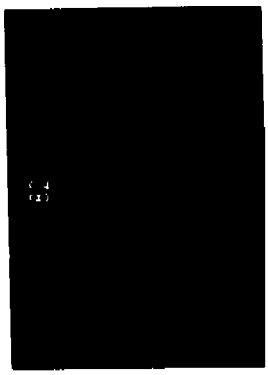
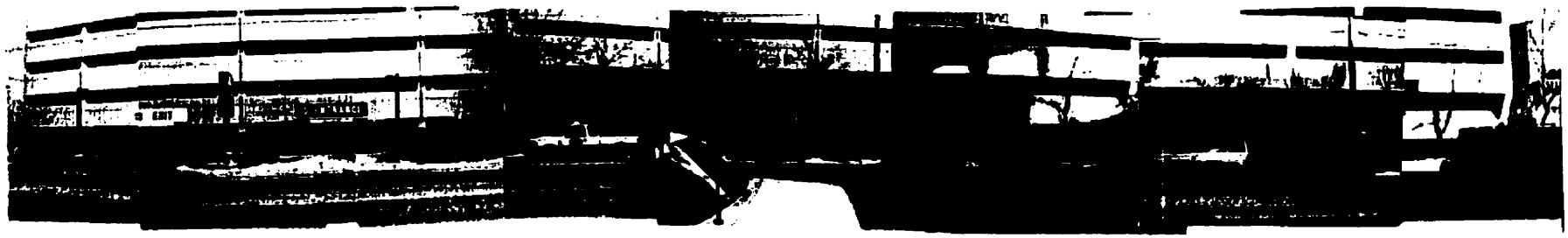


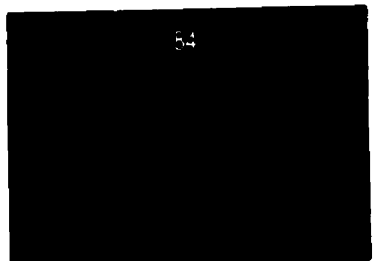


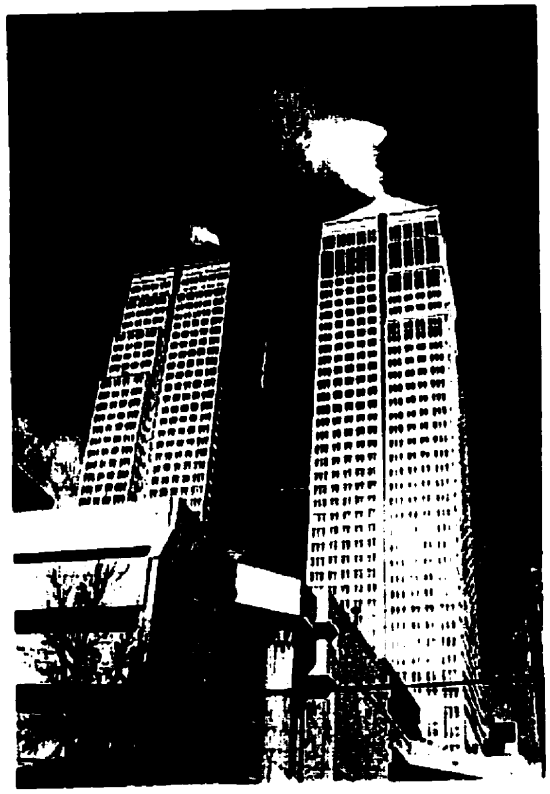
Aerial view of site.



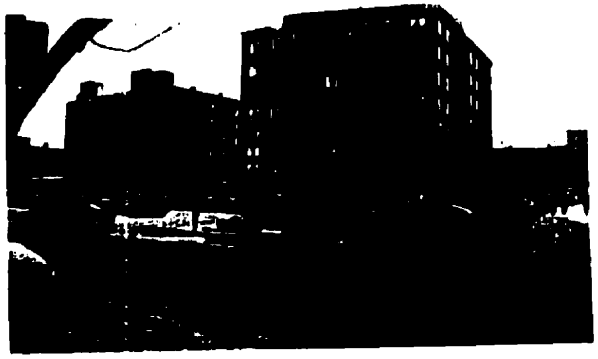
10th Ave street wall: north side.

10th Ave street wall: south side.

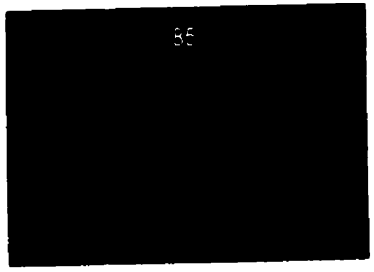


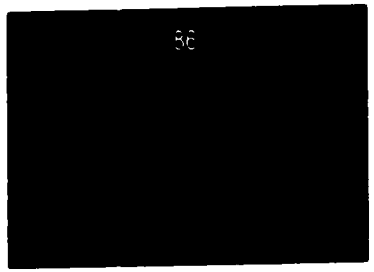


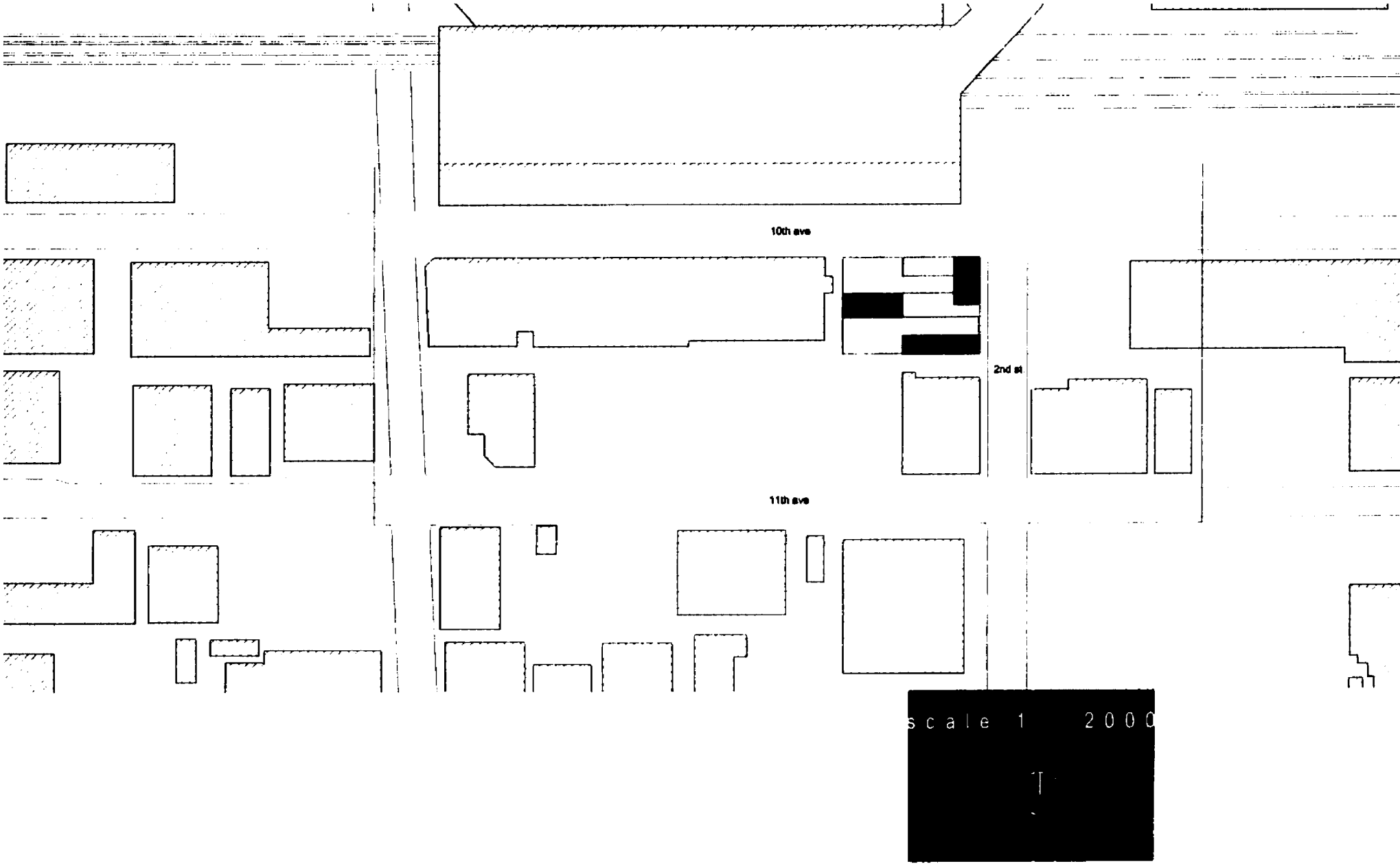
Looking north from site.

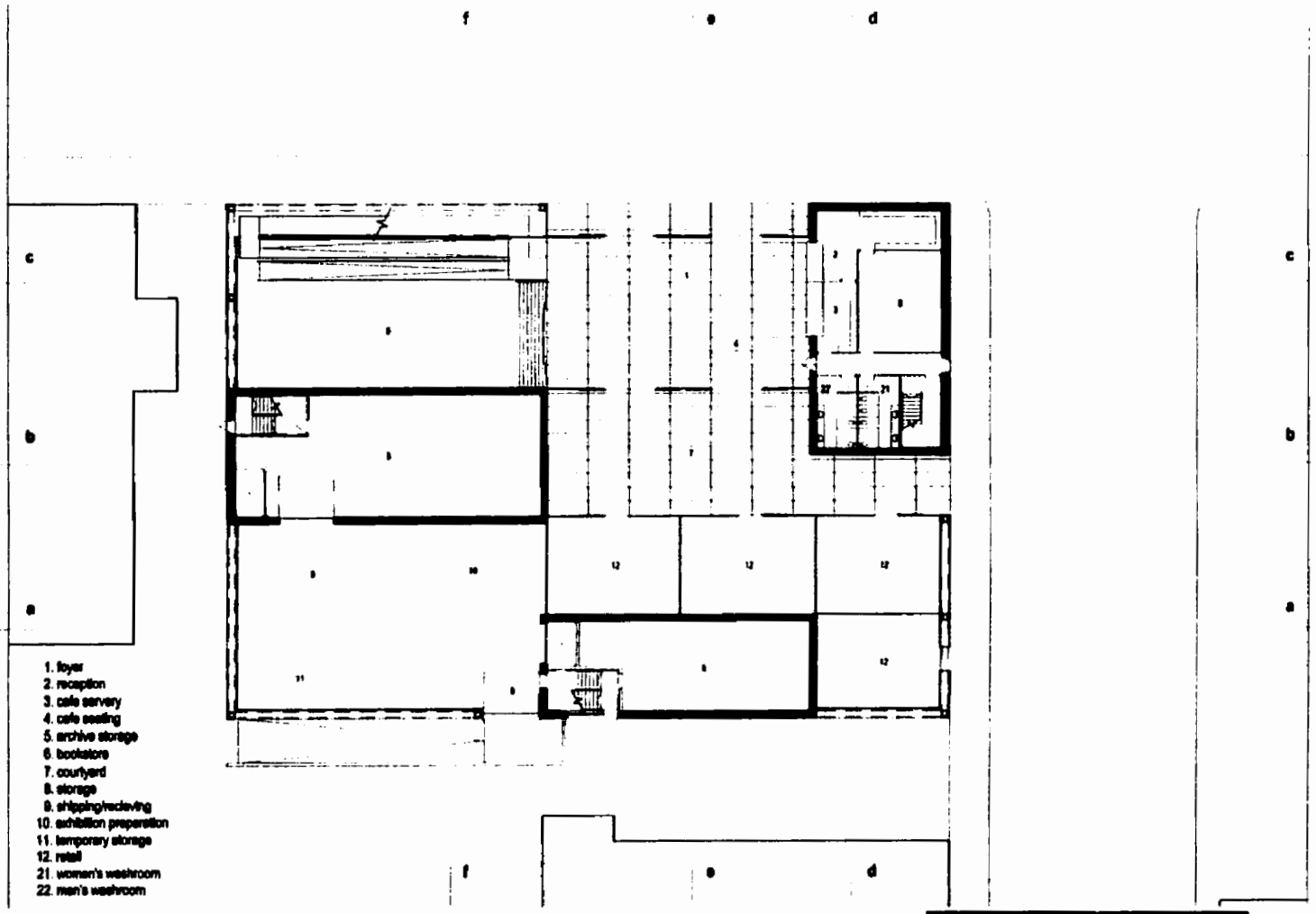


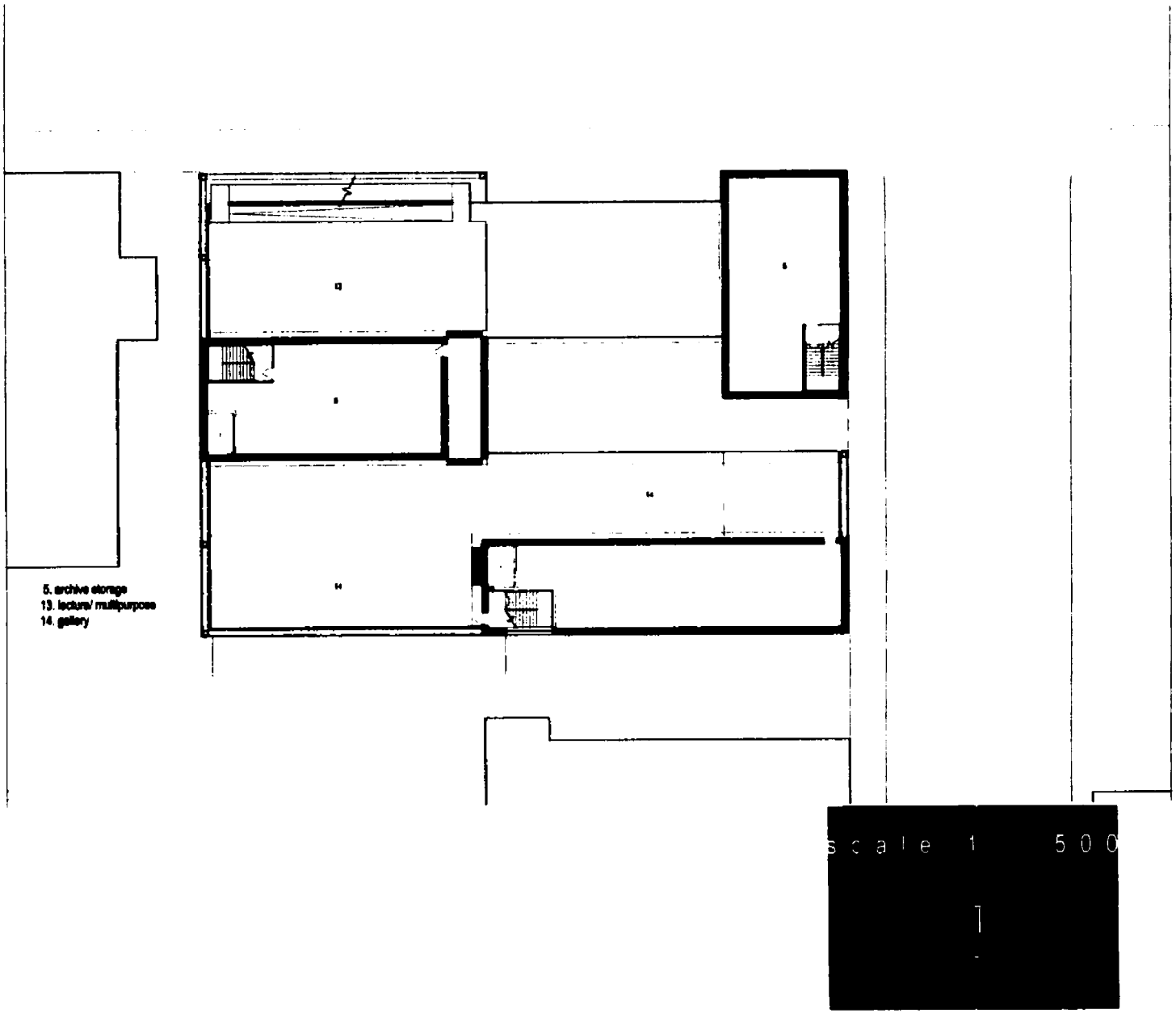
Looking south from site.

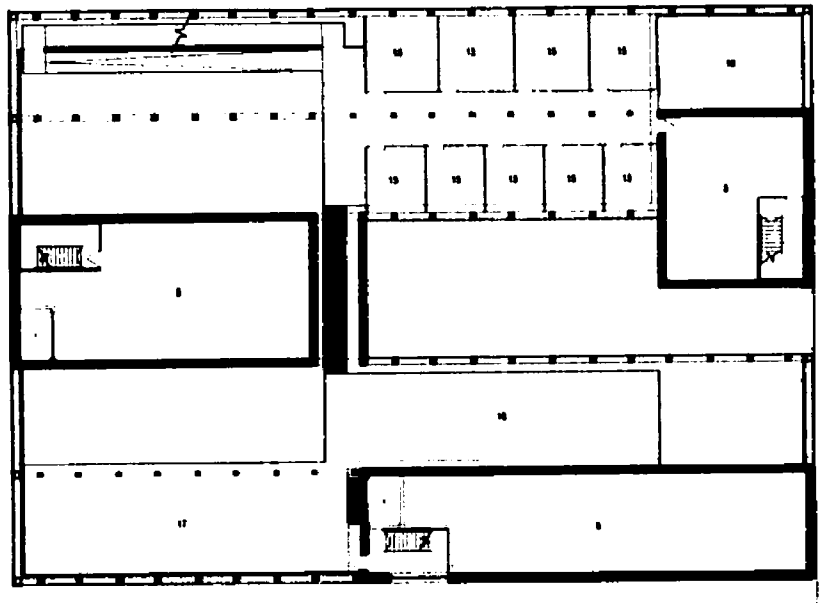



36


10th ave
2nd st
11th ave
scale 1 2000

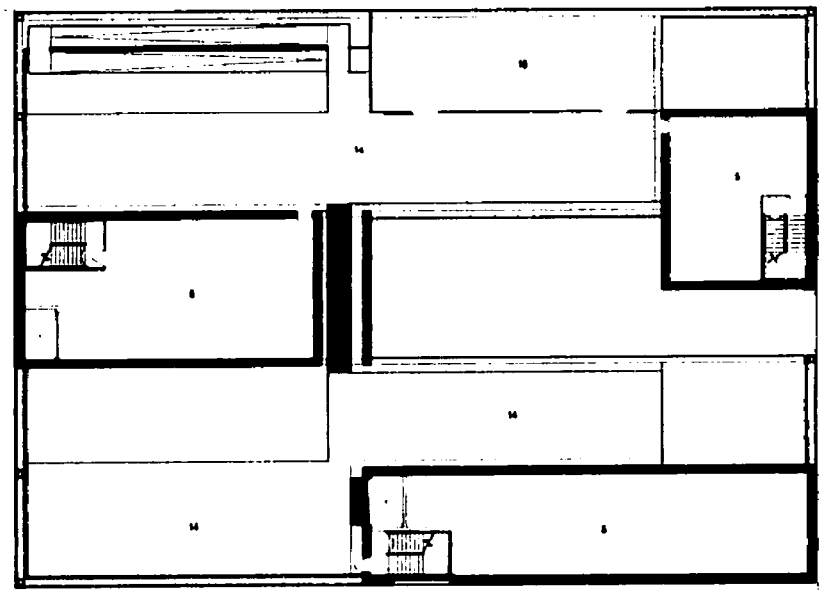

f
e
d
c
b
a
1. foyer
2. reception
3. cafe servery
4. cafe seating
5. archive storage
6. bookstore
7. courtyard
8. storage
9. shipping/recieving
10. exhibition preperation
11. temporary storage
12. retail
21. women's washroom
22. men's washroom
scale 1 500


5. archive storage
13. lecture/ multipurpose
14. gallery
scale 1 500



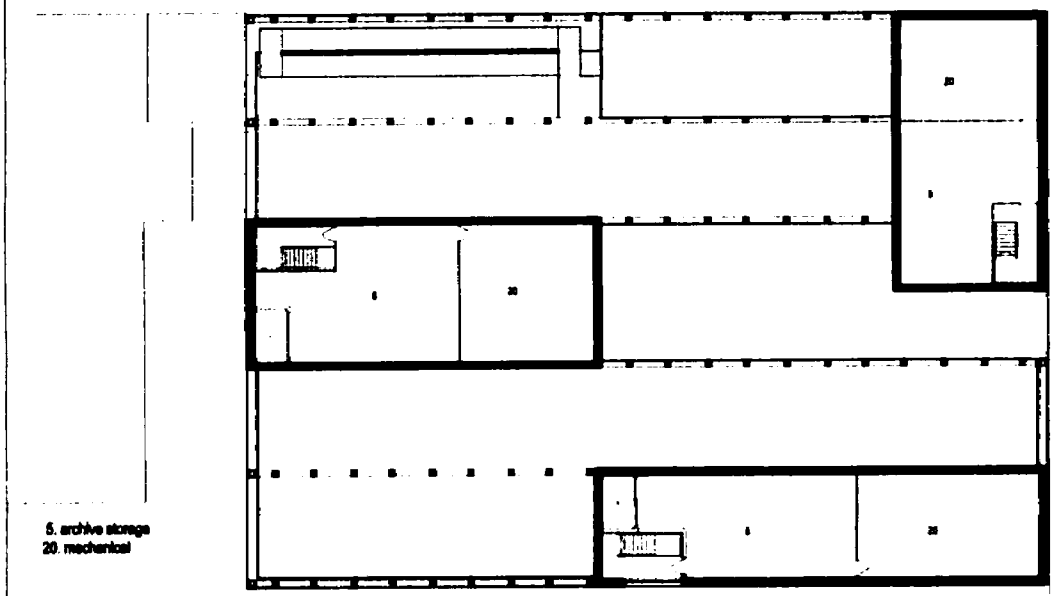
5. archive storage
15. office
16. conservation
17. workspace
18. terrace

scale 1 500

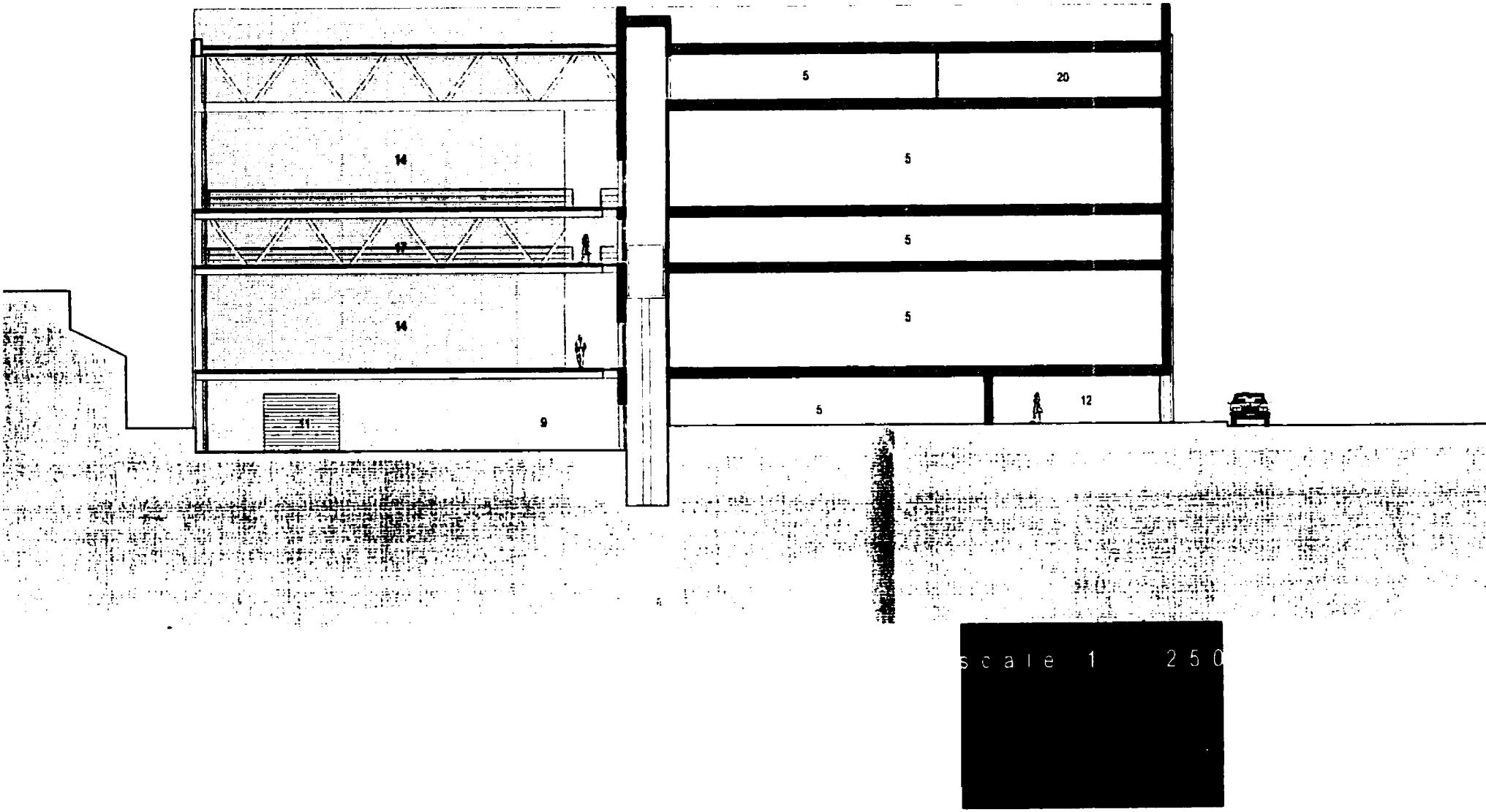


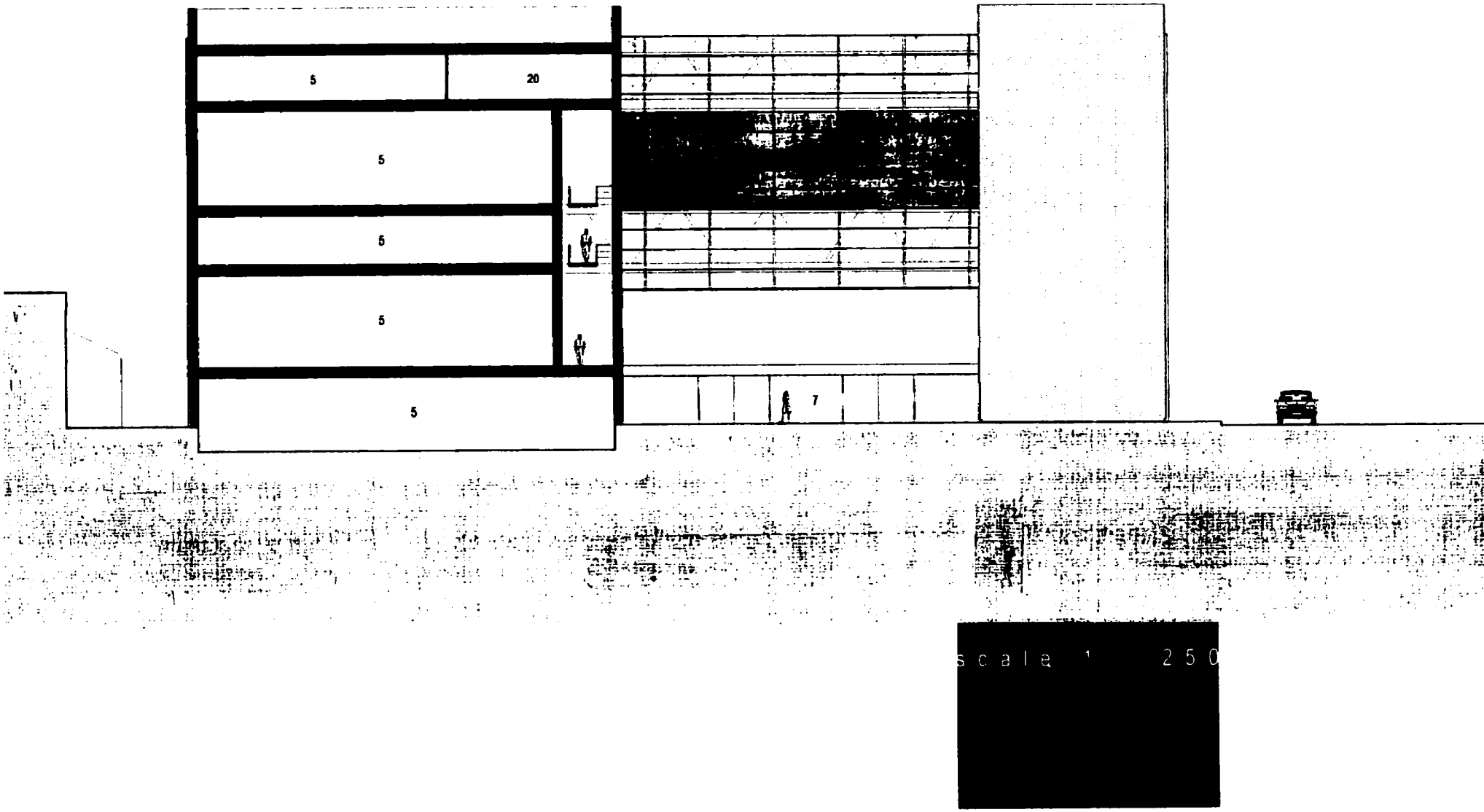
5. archive storage
14. gallery
19. exterior exhibition

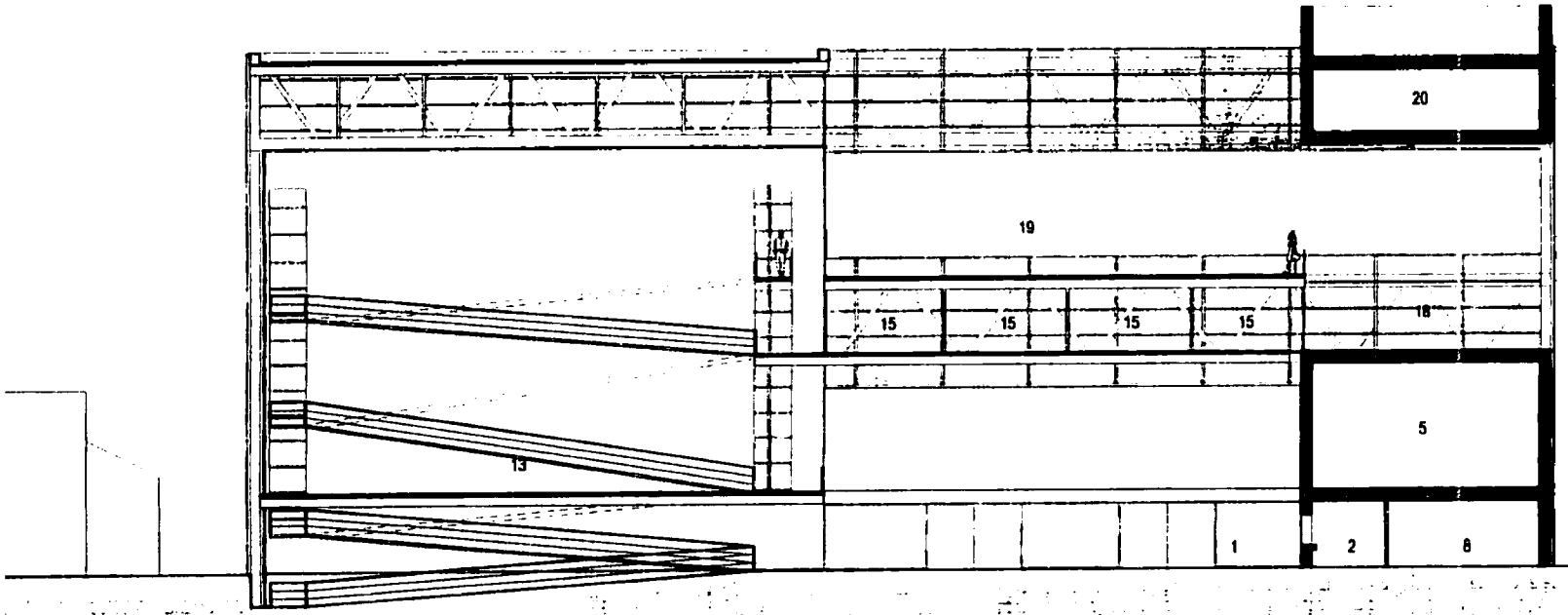
scale 1 500



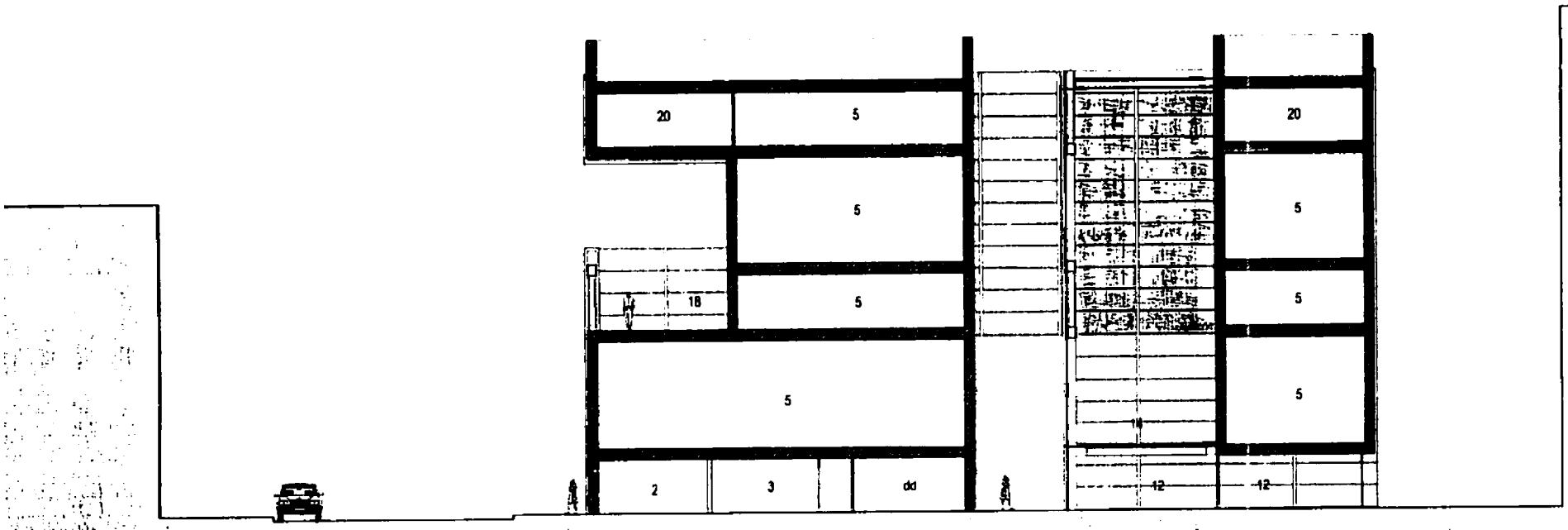
scale 1 500


5
20
14
5
17
5
14
5
11
9
5
12
scale 1 250


5
20
5
5
5
5
7
scale 1 250



scale 1 250



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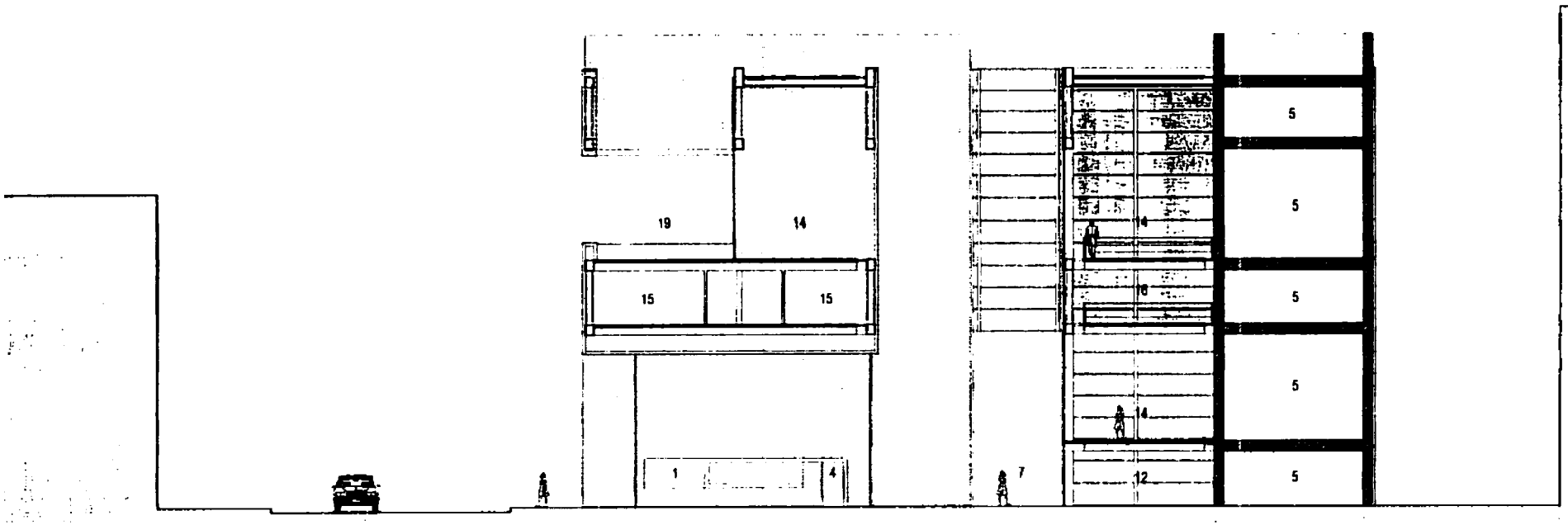

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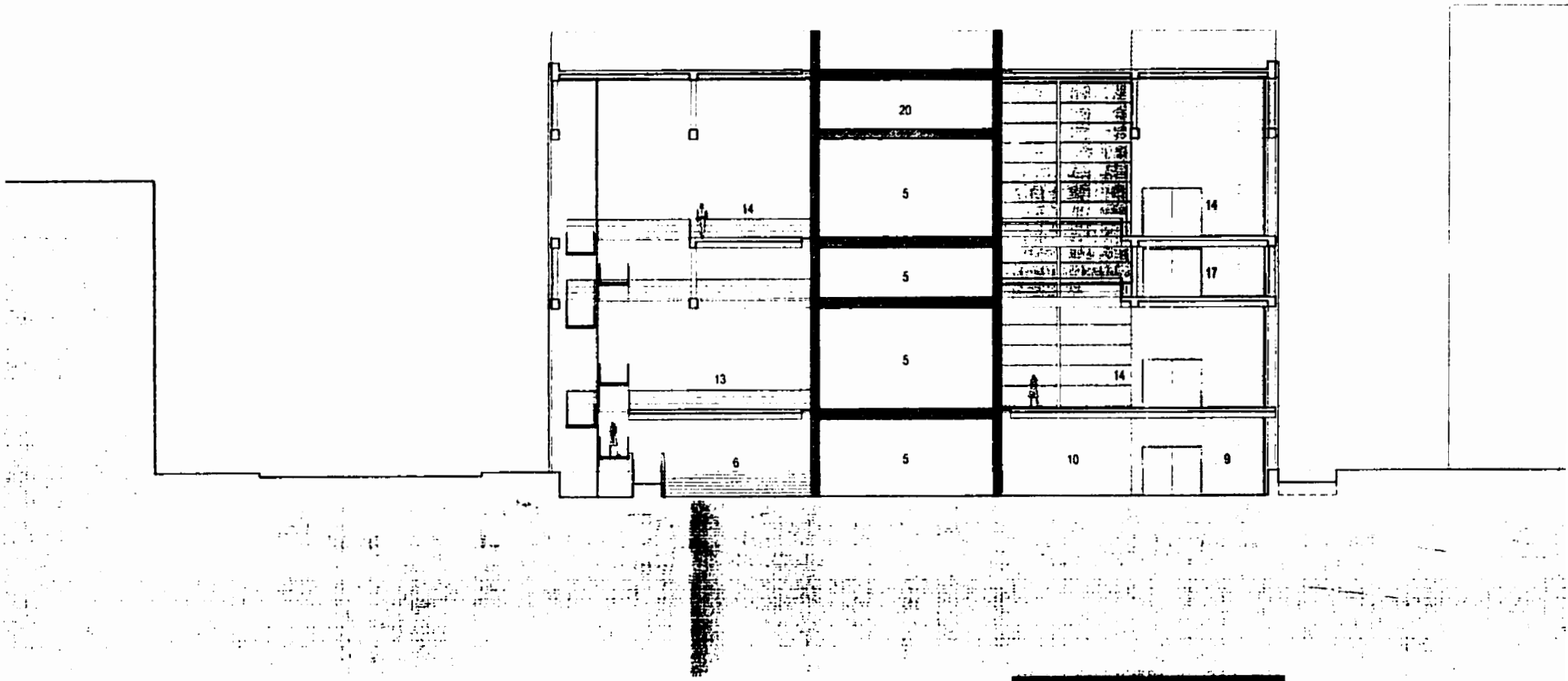
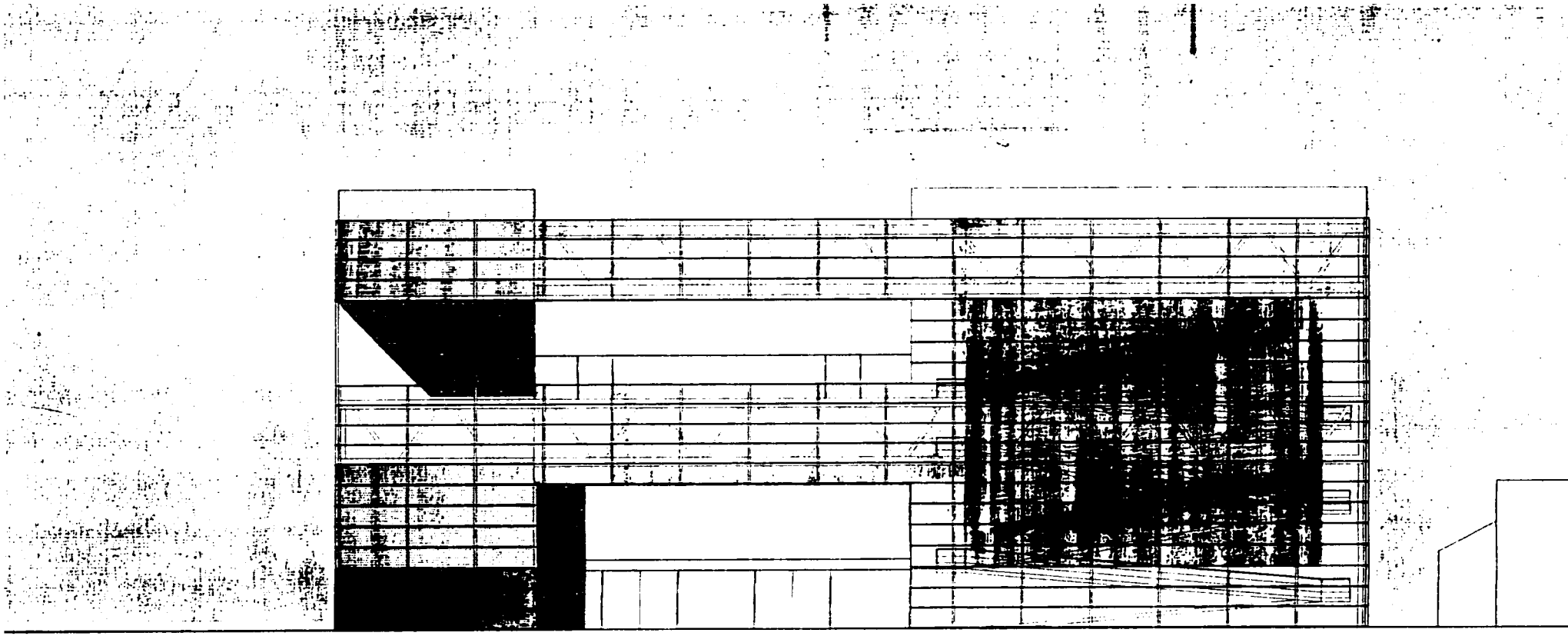


scale 1 250



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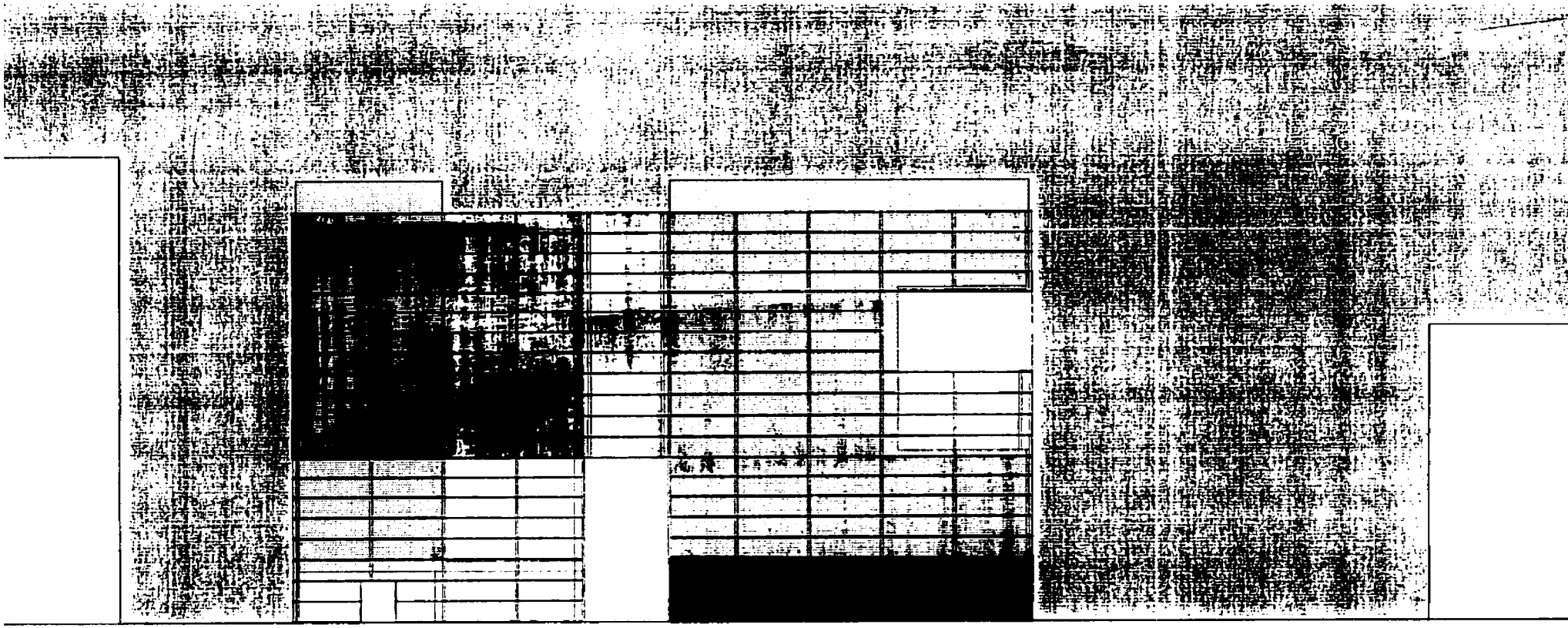
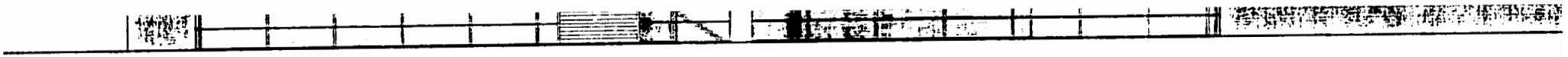
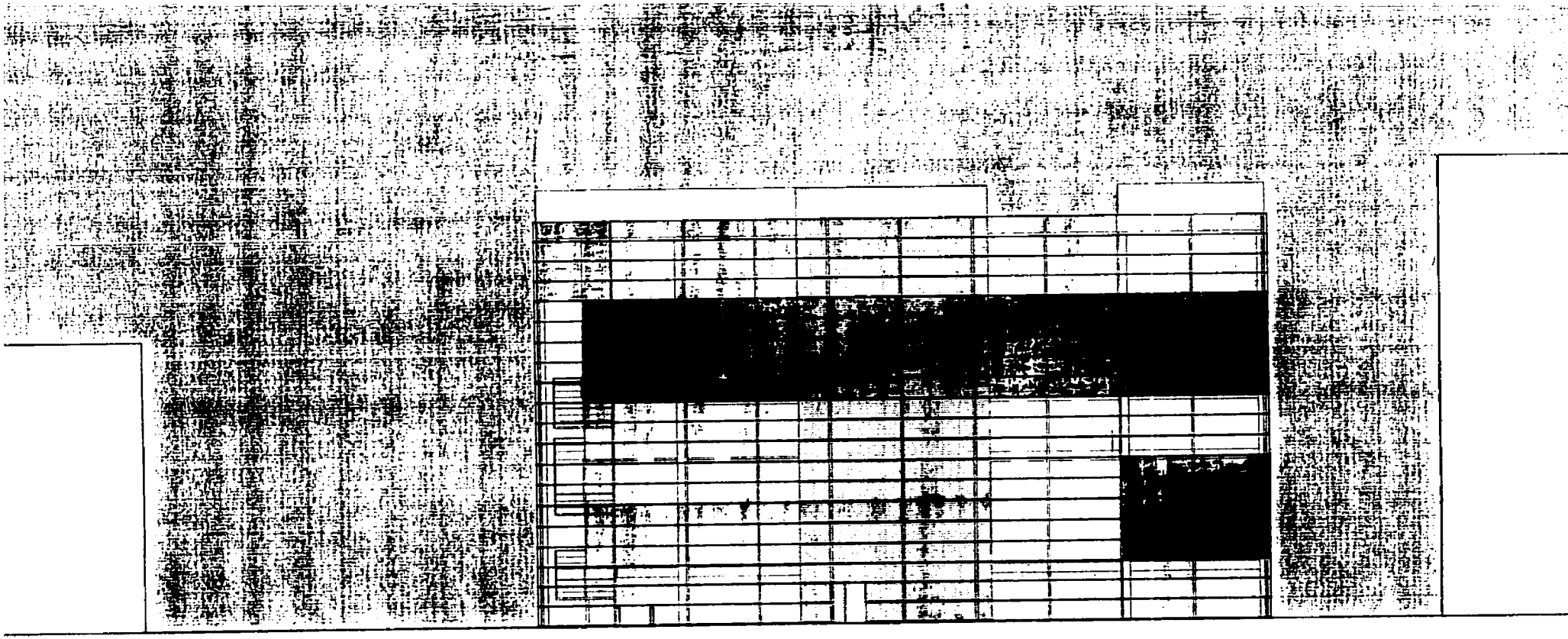


scale 1 : 250



Scale 1 250



Scale 1 : 250