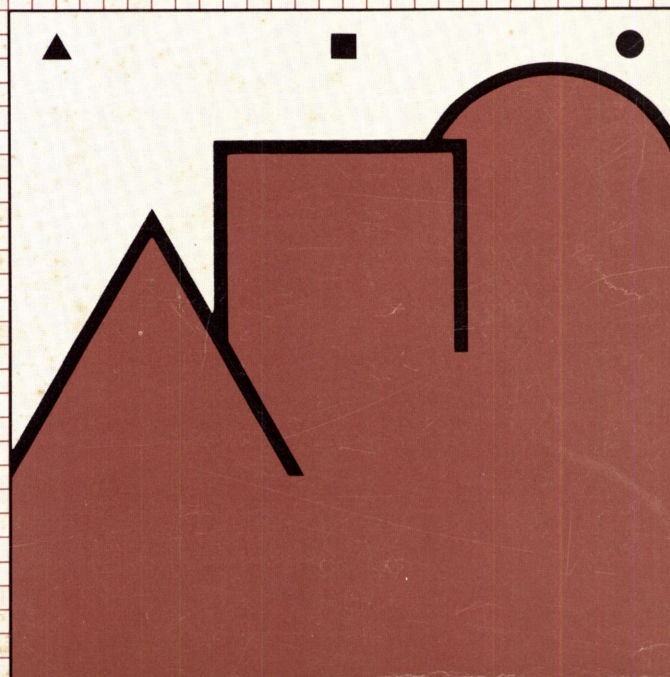


ANALYSIS OF PRECEDENT

V O L U M E 2 8

THE STUDENT PUBLICATION OF THE SCHOOL OF DESIGN





ANALYSIS OF PRECEDENT

An investigation
of elements, relationships, and ordering ideas
in the work of eight architects

Roger H. Clark
Michael Pause

and

Twenty Students of the School of Design

Kevin Utsey, Editor
Terry Barrett, Assistant Editor
Peter Hester, Business Manager

THE STUDENT PUBLICATION OF THE SCHOOL OF DESIGN
NORTH CAROLINA STATE UNIVERSITY AT RALEIGH 1979

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MICHAEL PAUSE	
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THE STUDENT PUBLICATION OF THE SCHOOL OF DESIGN was established in 1951 as a memorial to Matthew Nowicki, Head of the Department of Architecture from 1948 to 1950. The legacy of a yearly forum for ideas in design is continued by this, Volume 28.

The subject and format of each issue is determined by student editors who are encouraged to continue a tradition of relevance and quality but are otherwise unrestricted.

Circulation is worldwide and a list of back issues is available from the school.

ANALYSIS OF PRECEDENT

ANALYSIS OF PRECEDENT

This volume is a collection of diagrams which systematically analyze the works of eight architects. For each architect four representative buildings have been documented. The architects were purposefully selected from various periods of time to represent seemingly different approaches to architecture.

Diagrams have been utilized to capture the essence of particular issues for each building. The issues studied are divided into three categories: elements, relationships, and ordering ideas. Physical attributes which can be compared independent of building type or function have been addressed in the diagrams. The analysis is not all inclusive in that it is limited to characteristics which can be diagrammed; thus, material palette is one obvious omission. Our analysis and interpretation has been of built form and therefore may not necessarily coincide with the architects intentions or the interpretation of others. In order to make the diagrams memorable, they have been intentionally simplified. Likewise the accompanying text has been abbreviated to reinforce the information contained in the diagrams.

Presentation of the diagrams permits this document to be used for the understanding of one building, one architect, or an approach to an idea by several architects.

The intentions of the study are to assist the understanding of architectural history, to examine the basic similarities and differences of architects' designs over time, to identify generic solutions to design problems which transcend style, and to develop analysis as a tool for design. Of paramount importance is the development of a vehicle for the discussion of design ideas through the use of example.

The material in this volume began as a graduate architecture seminar presented by the authors. This seminar was generated by the observations that the concept of parti was unfamiliar to many students and that while history is discussed it is seldom useful or applicable.

In the course of the seminar the designs of the following architects have been analyzed and diagrammed by these students:

Alvar Aalto
Le Corbusier

Romaldo Guirgola
Hardy, Holzman &
Pfeiffer
Arata Isozaki
Thomas Jefferson
Louis Kahn

Sir Edwin Lutyens
Richard Meier
Charles Moore
Andrea Palladio
H. H. Richardson
Roche/Dinkeloo
James Stirling
Louis Sullivan
Kenzo Tange
Aldo Van Eyck
Robert Venturi
Frank Lloyd Wright

- Polly Hawkins
Scott Haywood &
Steve Varenhorst
- Donald Self

- Joseph Prefontaine
- William Moore
- Vickie Cable
- Jacqueline Blalock-James

- Grimsley Hobbs
- Stephen Hepler
- Paul Haynes
- Kevin Utsey
- Louise Oldenberg
- Molly Hester
- Michael McMurphy
- Betsy Pettit
- David Riddle
- Matthew Norman
- Roger Cannon
- Sathit Choosang

We are indebted to these students in helping us develop the technique for analysis, but for this publication we have totally re-analyzed the work of the architects, developed new diagrams, and generated the text. The diagrams were drawn by Roger Cannon and Don Self, with the exception of some of the diagrams of Charles Moore's work, which were drawn by Paul Haynes. The work of these graduate students was supported in part by university research assistantships.

To the best of our knowledge the information presented here has not been previously available. By making the information available through this publication, we hope to expand the understanding of precedents in architecture, and to illustrate an educational technique that is useful to students, educators and practitioners.

April 16, 1979 Roger H. Clark
Michael Pause

COMMENTARY

The fragmentation of architecture into the separate disciplines of design, criticism, history and education is a relatively recent phenomenon. The unfortunate result of this specialization has been the limitation of most architects' knowledge of history to little more than names and dates. Few architects have any real understanding of the evolution of architectural ideas or even what constitutes them, and thus are denied a vocabulary that has been developed and tested over time. This introduction into the study of architectural ideas is an important step in bridging these artificial distinctions between practice and theory. By making comparisons easier and clearer, it should also help to separate that which is being attempted from the memos by which it is being achieved.

The following diagrams of architectural concepts at once reduce buildings to their essentials, intricate use programs to a few lines, and hundreds of complex relationships to a few important ones. This elimination of all but the most important considerations makes those that remain both dominant and memorable.

I believe designers benefit from a comprehensive understanding of the widest possible range of architectural organizational concepts or *partis*. One of the best ways of becoming familiar with these ideas is to study those used by important architects throughout history. The basic *parti* and its variations can provide the first step in recalling a building, comparing several schemes, or beginning a design. In addition, familiarity with the major *partis* should encourage the selection of ideas from a greater range of possibilities on the basis of their appropriateness in a particular situation. It should also facilitate the comparison of contemporary designs with solutions to similar problems throughout the history of architecture. It is no accident that our most creative architects are also often those who have the best working knowledge of architectural history (Charles Moore, Robert Venturi, Louis Kahn, etc.) or those who are working within an established historical context (Alvar Aalto), or both (Andrea Palladio).

Obviously, a sound organizational diagram will not lead inevitably to a good design any more than a classic chess opening will lead to certain victory, but a sound beginning can forestall an early defeat while greatly increasing the chances of an ultimate success.

George E. Hartman, Jr.
Washington, D.C.
13 December 1979

George E. Hartman, Jr., FAIA, is a partner in Hartman-Cox Architects of Washington, D.C. and was elected to Fellowship by the American Academy in Rome in 1977.

BUILDING LIST

ALVAR AALTO

Cultural Center, Wolfsburg, Germany
Town Hall, Saynatsalo, Finland
Imatra Church, Vuoksenniska, Finland
Enso/Gutzeit Office Building, Helsinki, Finland

LOUIS KAHN

Kimball Art Museum, Ft. Worth, Texas
Salk Institute, La Jolla, California
Phillips Exeter Academy Library, Exeter, New Hampshire
Richards Medical Research Building, Philadelphia, Pennsylvania

CHARLES MOORE

Hines House, Sea Ranch, California
Sea Ranch Condominiums, Sea Ranch, California
Burns House, Los Angeles, California
Moore House, Orinda, California

JAMES STIRLING

Olivetti Training Center, Haslemere, England
Leicester Engineering Building, Leicester University, England
Cambridge History Faculty Building, Cambridge University, England
Queen's College Dormitory, Oxford University, England

MITCHELL/GIURGOLA

Tredyffrin Library, Stafford, Pennsylvania
MDRT Foundation Hall, Bryn Mawr, Pennsylvania
Lang Music Building, Swarthmore College, Pennsylvania
Student Union, State University College at Plattsburg, New York

LE CORBUSIER

Unite de Habitation, Marseilles, France
General Assembly Building, Chandigarh, India
Villa Savoye, Poissy-sur-seine, France
Church at Ronchamp, France

ANDREA PALLADIO

Chiesa del Redentore, Venice, Italy
Church of San Giorgio Maggiore, Venice, Italy
Villa Malcontenta, Italy
Villa Rotunda, Vicenza, Italy

VENTURI AND RAUCH

Venturi House, Chestnut Hill, Pennsylvania
Fire Station No. 4, Columbus, Indiana
Tucker House, Katonah, New York
Brant House, Greenwich, Connecticut

DIAGRAM NOTES

1. When two plan diagrams of the same building are shown adjacent to each other, the left refers to the lower and the right to the upper floors of the building
2. When differences of line weight occur in a diagram, the boldest lines refer to the most obvious example of the issue being discussed

ELEMENTS



ELEMENTS

ENTRANCE

CIRCULATION

MASSING

STRUCTURE

SERVICES

SPACE DEFINITION

NATURAL LIGHT

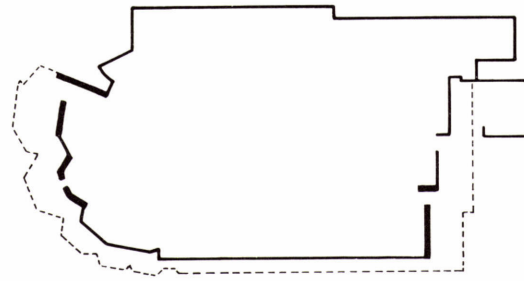


ALVAR AALTO

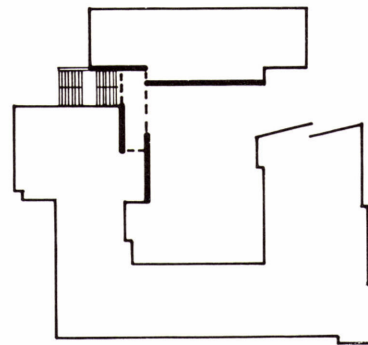
ENTRANCE

SUMMARY

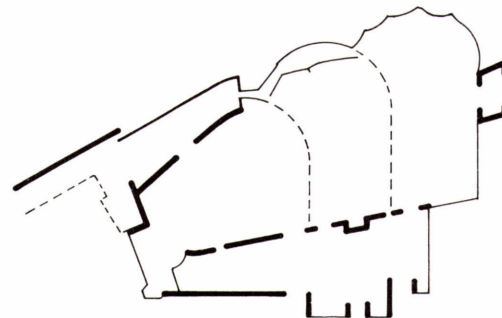
- Separated from dominant exterior form by indention into, or addition onto that form.
- Generally opaque.



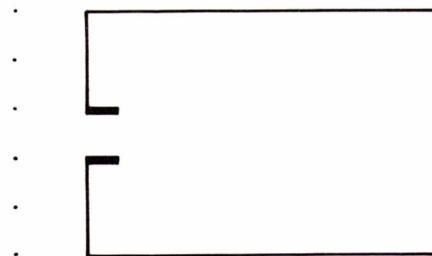
Cultural Center



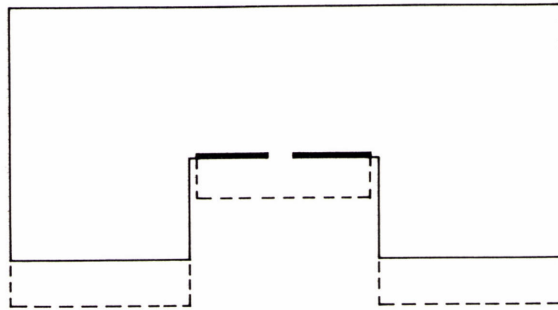
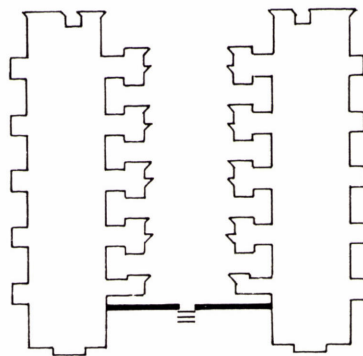
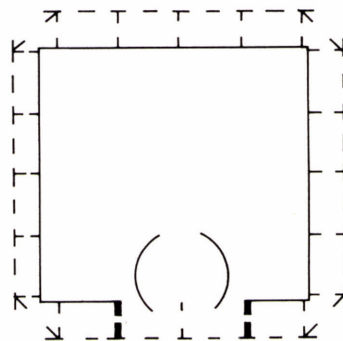
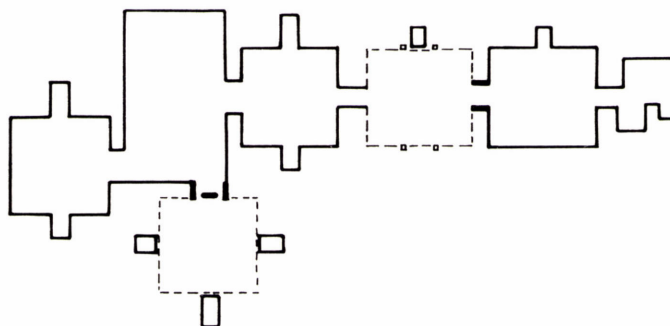
Town Hall



Imatra Church



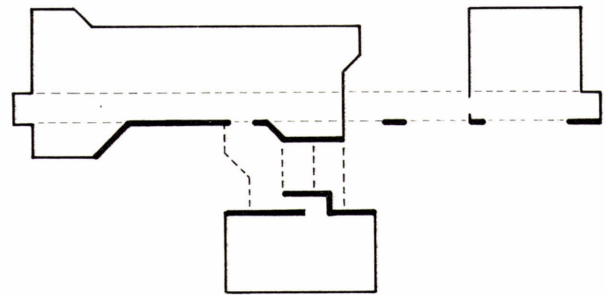
Enso/Gutzeit

*Kimball Art Center**Salk Institute**Exeter Library**Richards Medical Laboratory***SUMMARY**

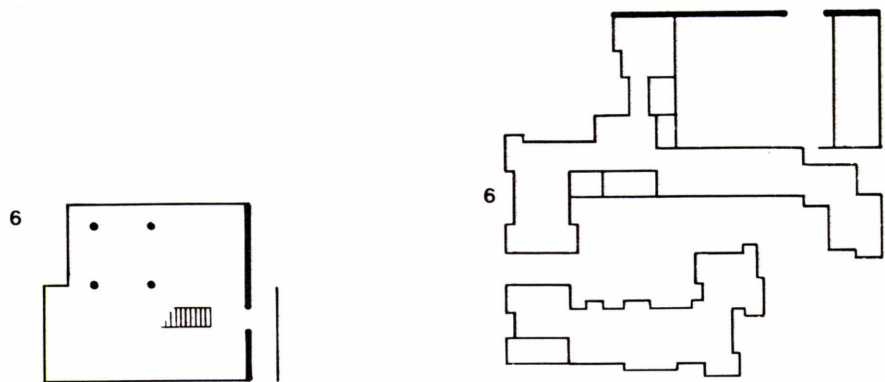
- Generally included in overall form that it is encountered after passing some part of building.
- Enter building prior to encountering doors which often do not enter directly into significant space.

SUMMARY

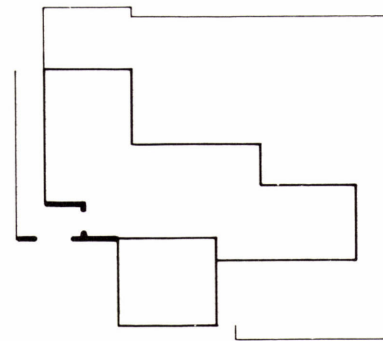
- Definition of entrance (starts) before actual penetration to interior.
- Actual entrance is aperture in wall.



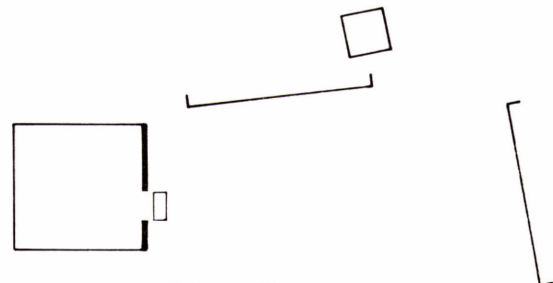
Hines House



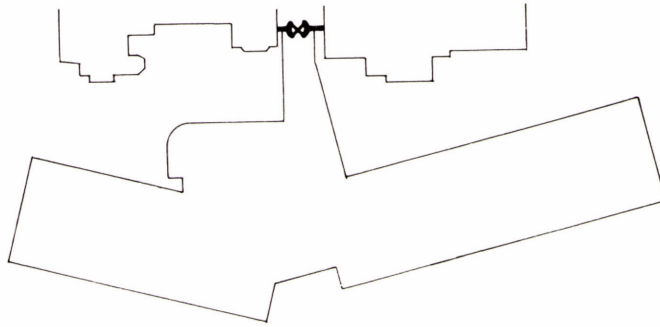
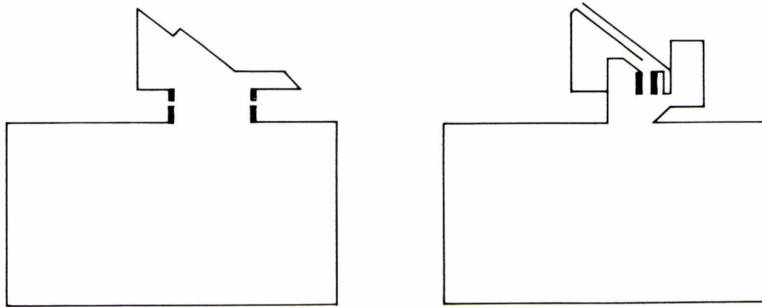
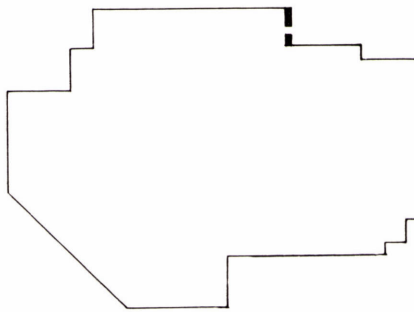
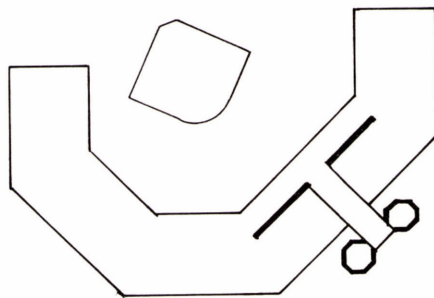
Sea Ranch



Burns House



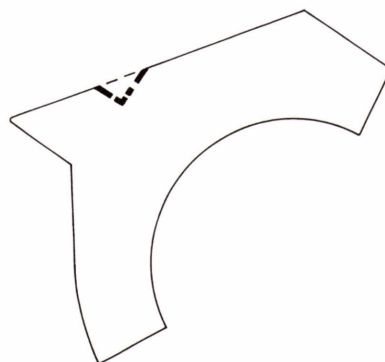
Moore House

*Olivetti**Leicester**Cambridge History**Oxford Dorm***SUMMARY**

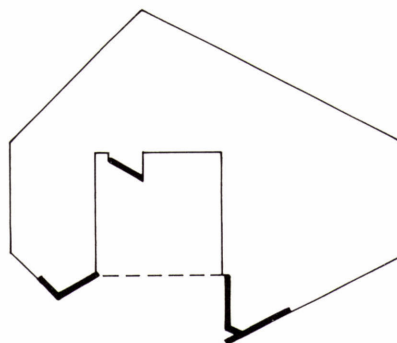
- Usually transparent.
- Often articulated as void between masses.

SUMMARY

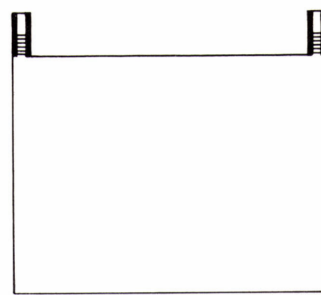
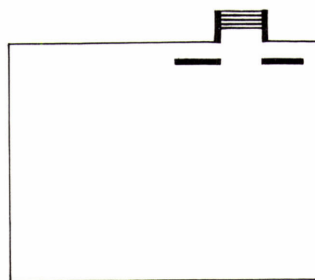
- Recessed into plane of wall or through entry court.



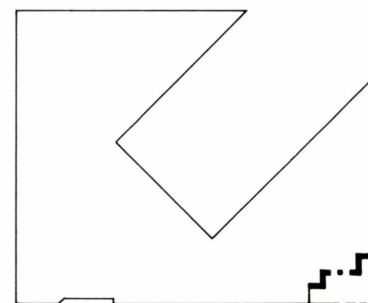
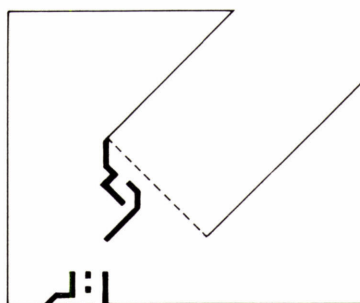
Library



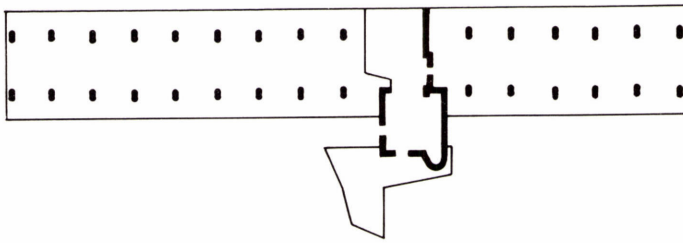
M.D.R.T.



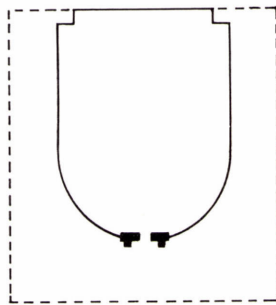
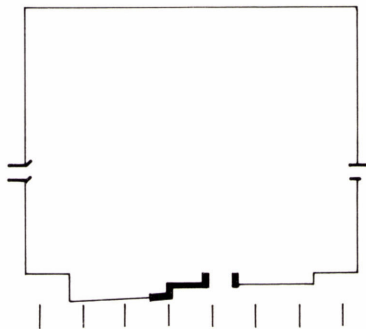
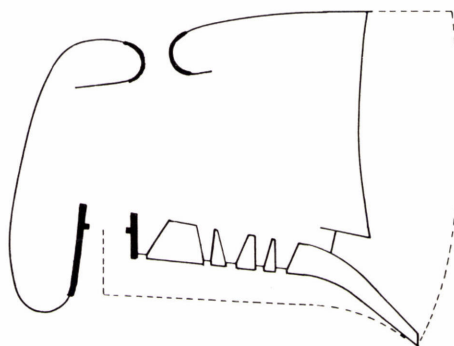
Music Building



Student Union

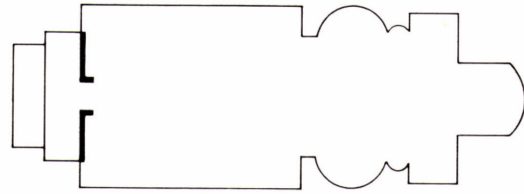
*Marseilles***SUMMARY**

- Generally located between or under dominant forms.
- Often articulated by indention.

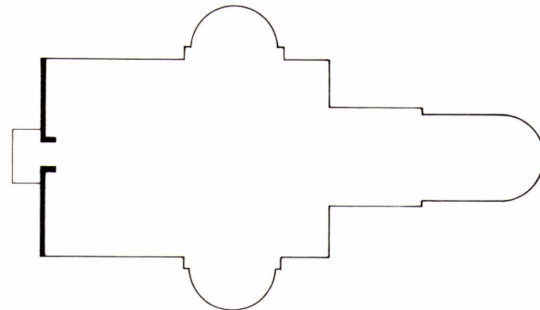
*Villa Savoye**Assembly at Chandigarh**Ronchamp*

SUMMARY

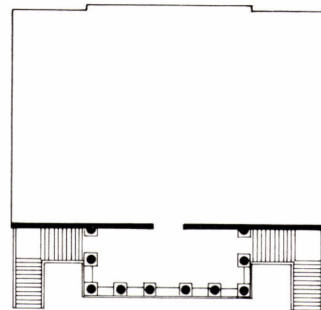
- Generally puncture in wall preceded by portico, stairs and pediments.



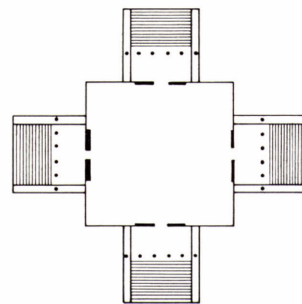
Redentore



San Giorgio

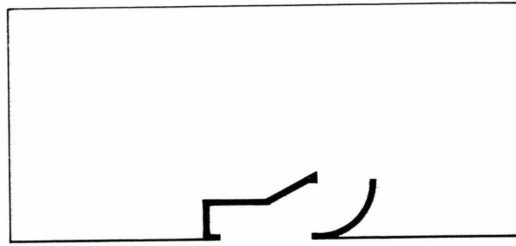


Malcontenta

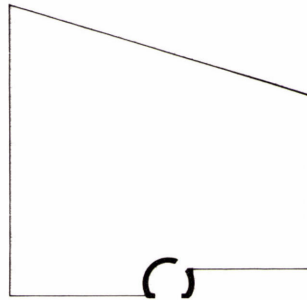


La Rotonda

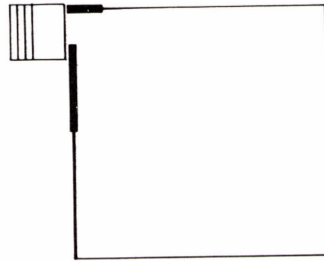
ENTRANCE



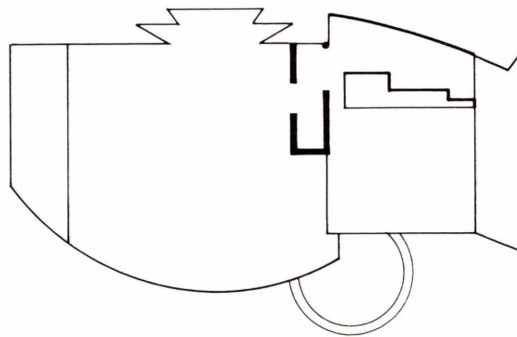
Venturi House



Fire Station



Tucker House



Brandt House

SUMMARY

- While consistent pattern is not evident, entrances are generally recessed and incorporate a change of direction.

ELEMENTS

ENTRANCE

CIRCULATION

MASSING

STRUCTURE

SERVICES

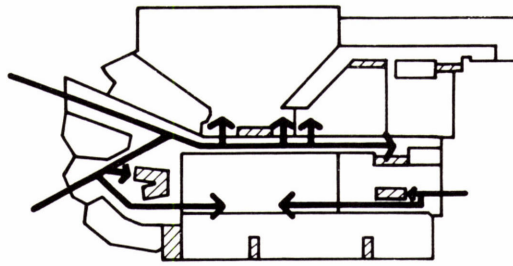
SPACE DEFINITION

NATURAL LIGHT

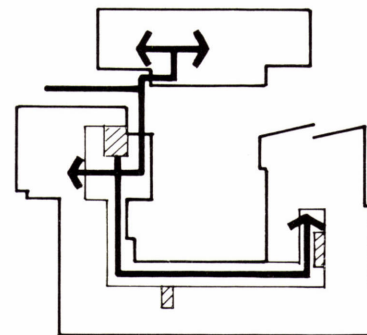
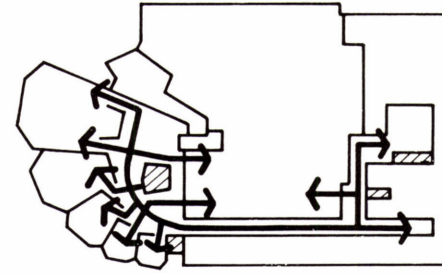


SUMMARY

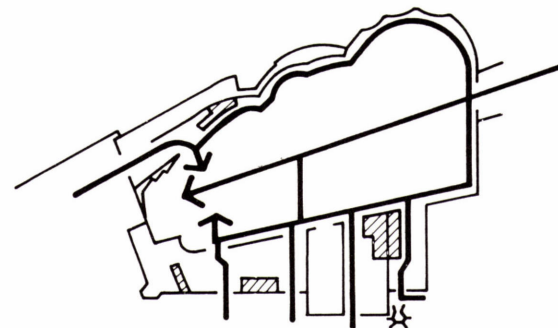
- Circulation routes clearly articulated and usually separated from use spaces.



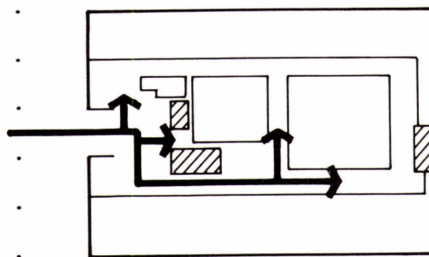
Cultural Center



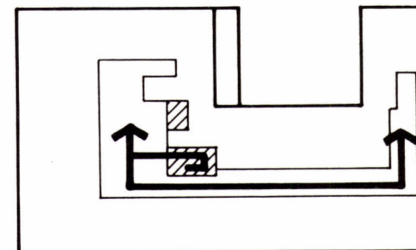
Town Hall

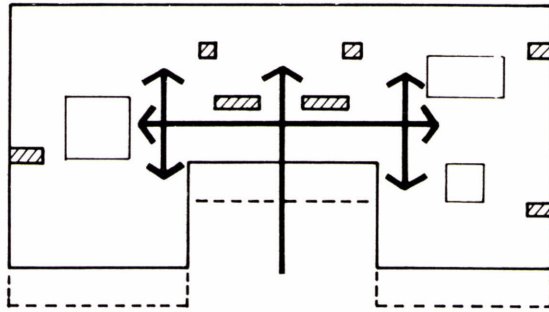
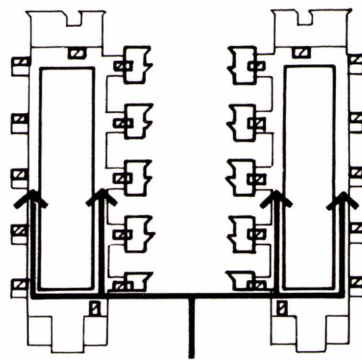
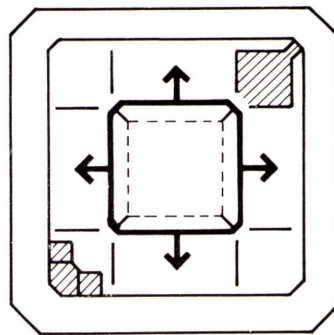
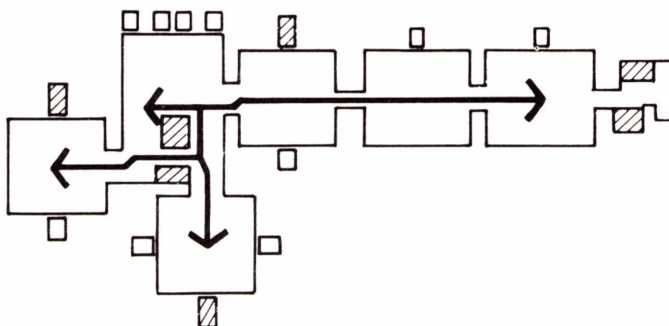


Imatra Church



Enso/Gutzeit

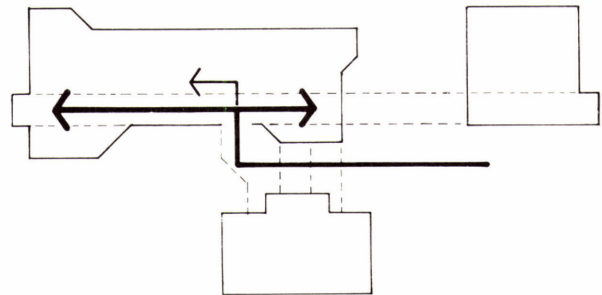


*Kimball Art Center**Salk Institute**Exeter Library**Richards Medical Laboratory***SUMMARY**

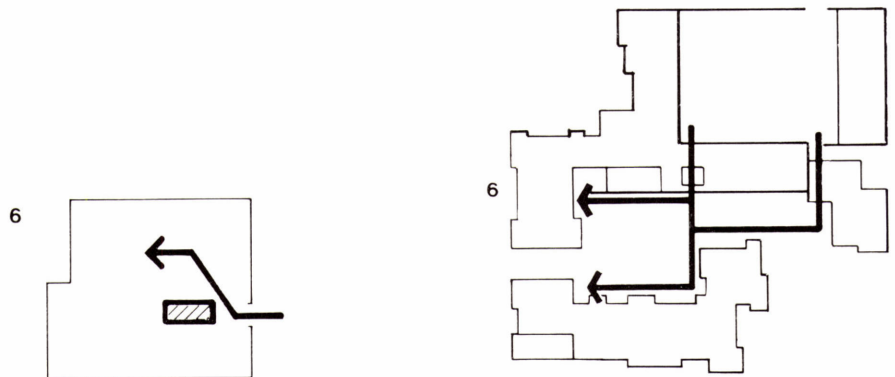
- Horizontal circulation coincident with geometric organization of built form.
- Vertical circulation is expressed by formal elements.

SUMMARY

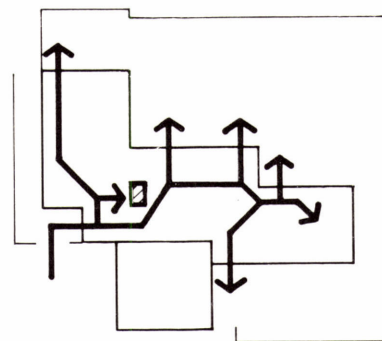
- No discernible pattern—at times direct and articulated; at other times indirect, through spaces and deflected by elements (stairs, columns, fireplaces).



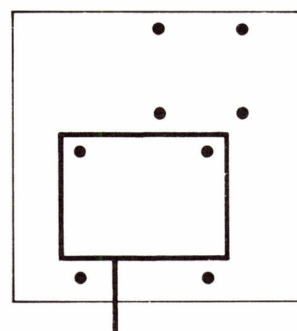
Hines House



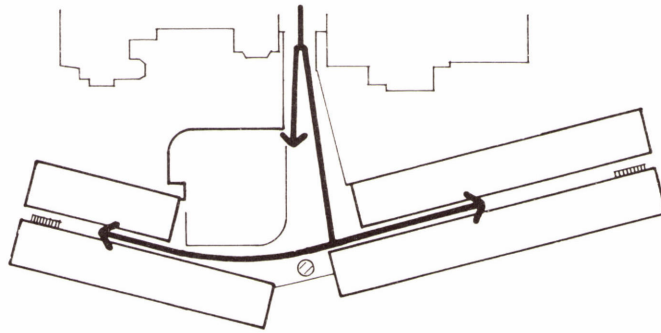
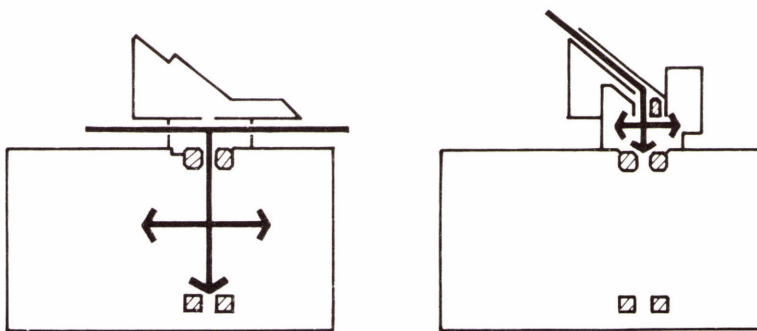
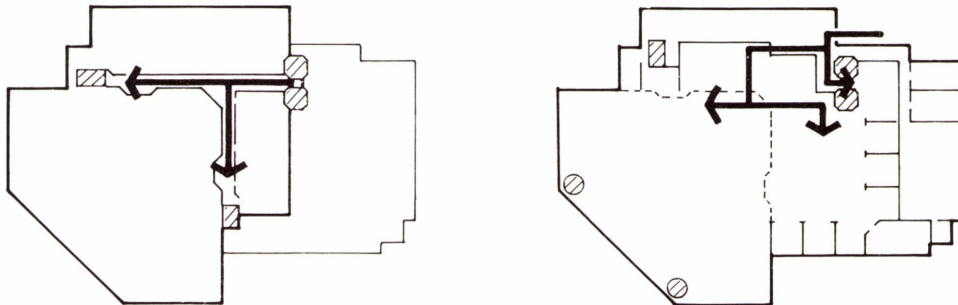
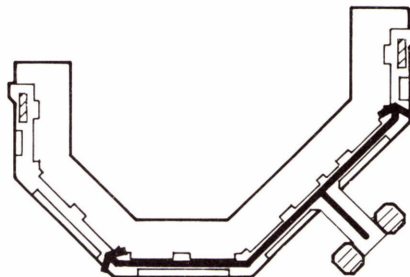
Sea Ranch



Burns House



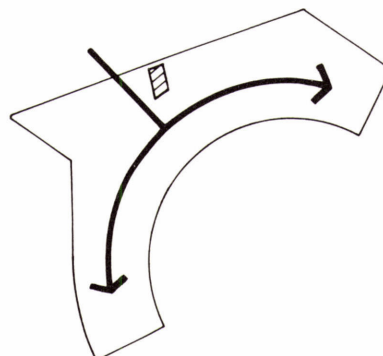
Moore House

*Olivetti**Leicester**Cambridge History**Oxford Dorm***SUMMARY**

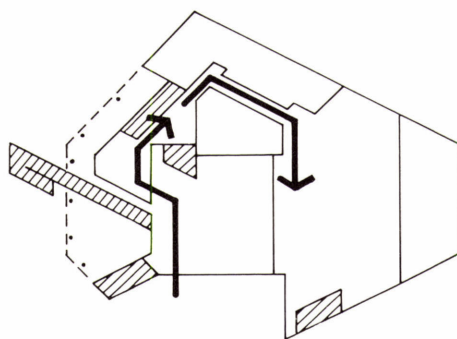
- Circulation routes usually transparent.
- Vertical circulation, where it occurs, is articulated by paired towers.
- Horizontal circulation articulated to separate from use spaces.

SUMMARY

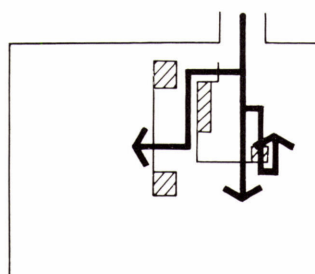
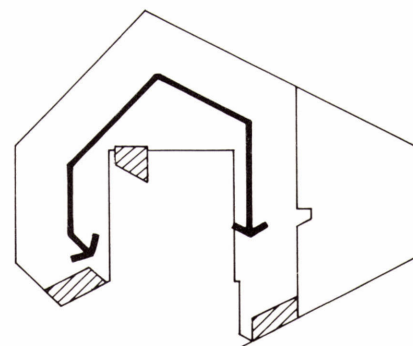
- Combination of through use spaces and in defined circulation space separate from use spaces.
- Vertical circulation usually clearly articulated, at times as an open main stair.



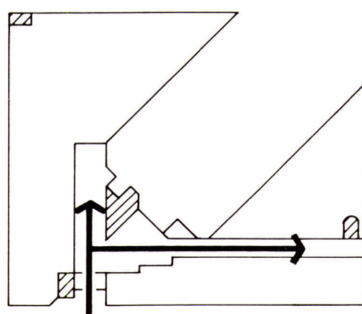
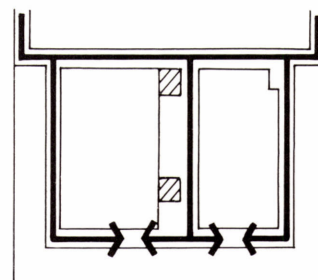
Library



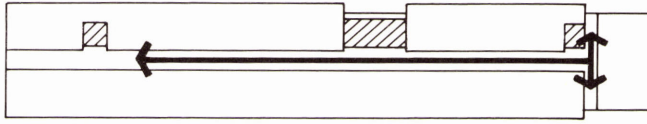
M.D.R.T.



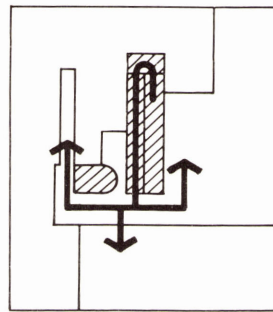
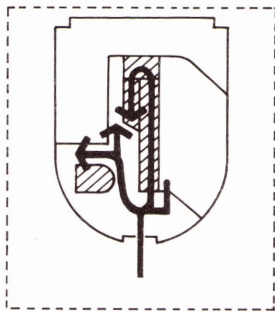
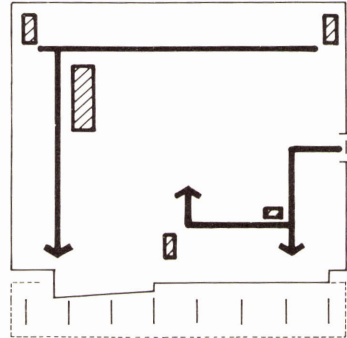
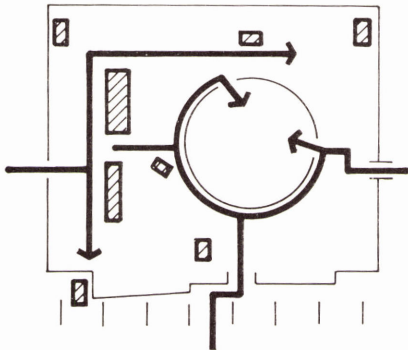
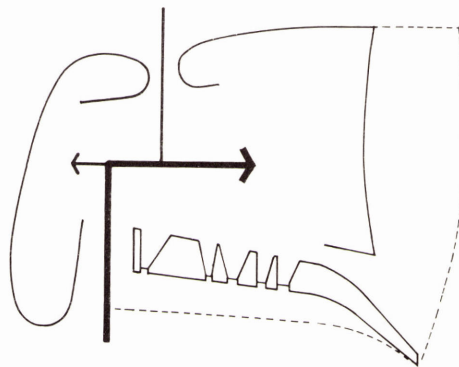
Music Building



Student Union

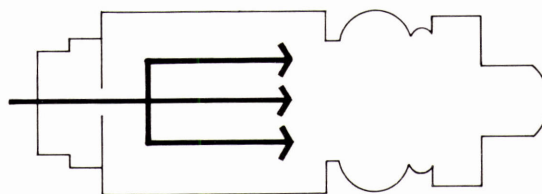
*Marseilles***SUMMARY**

- Circulation routes both clearly articulated and separated from use spaces
- non-directional through use spaces
- Generally this distinction coincides with private/public uses.

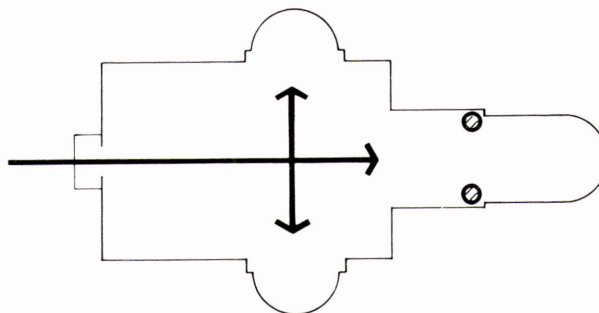
*Villa Savoye**Assembly at Chandigarh**Ronchamp*

SUMMARY

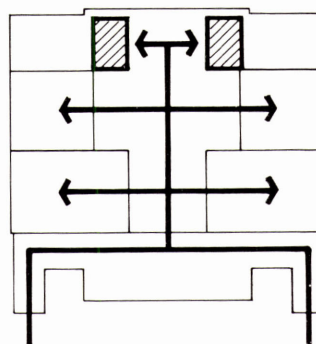
- Generally through use spaces. Vertical circulation located in thick wall configuration.



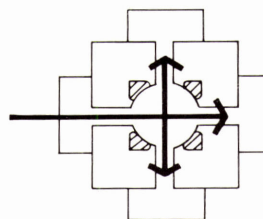
Redentore



San Giorgio

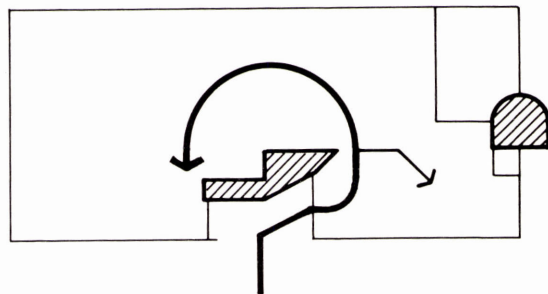


Malcontenta



La Rotonda

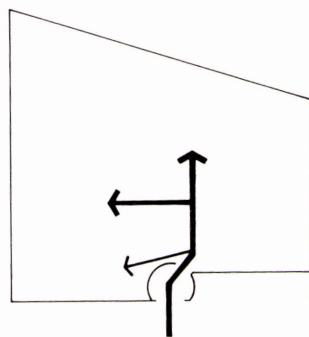
CIRCULATION



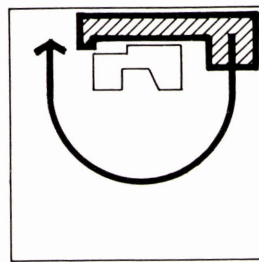
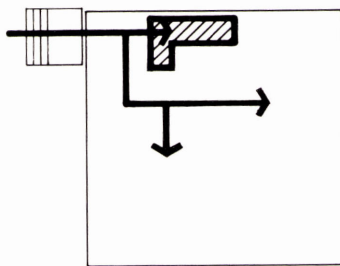
Venturi House

SUMMARY

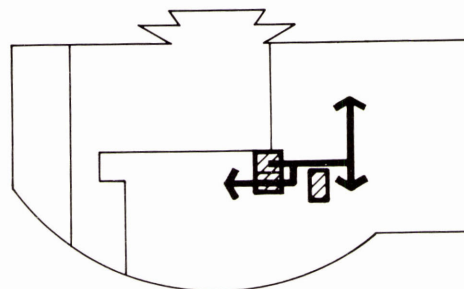
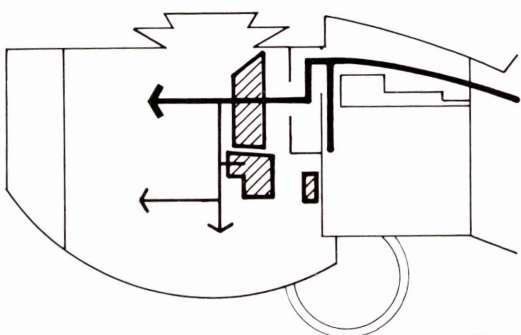
- Generally through use spaces. V
circulation at times linked to fire



Fire Station



Tucker House



Brandt House

ELEMENTS

ENTRANCE
CIRCULATION
MASSING
STRUCTURE
SERVICES
SPACE DEFINITION
NATURAL LIGHT

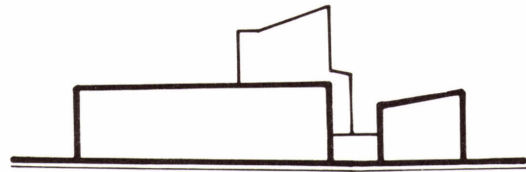


SUMMARY

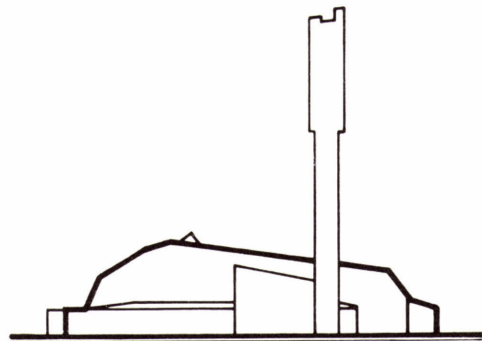
- Usually complex profiles that are softened by a transition that mediates between roof and wall surfaces.
- Major spaces are dominant.



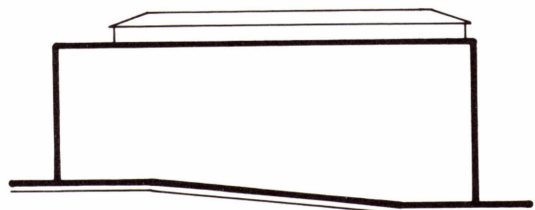
Cultural Center



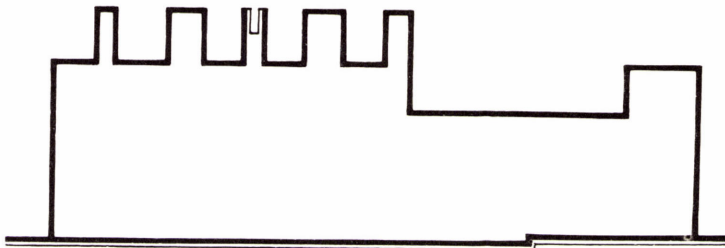
Town Hall



Imatra Church



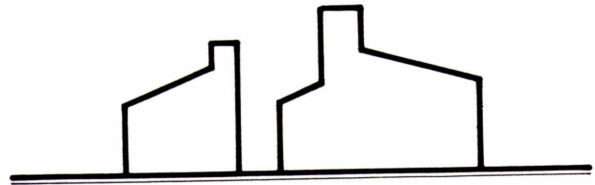
Enso/Gutzeit

*Kimball Art Center**Salk Institute**Exeter Library**Richards Medical Laboratory***SUMMARY**

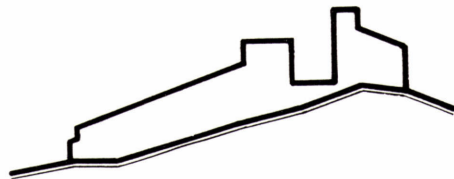
- Reinforces formal organization, Exeter Library is monolithic, Salk Institute is two built forms and courtyard, Richards Labs are a series of vaulted shafts, Kimball Museum is a collection of vaults.

SUMMARY

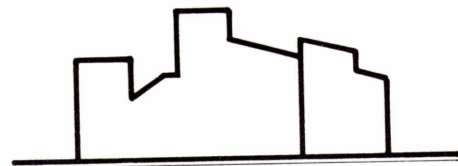
- Complex profiles that mediate between building and sky through multiple levels of sloping surfaces.



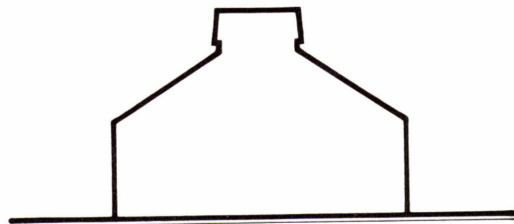
Hines House



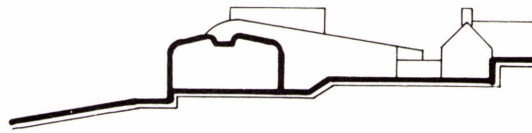
Sea Ranch



Burns House



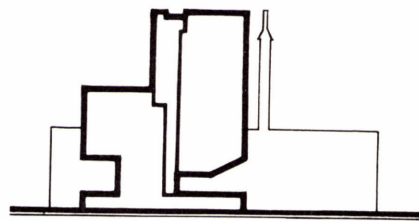
Moore House



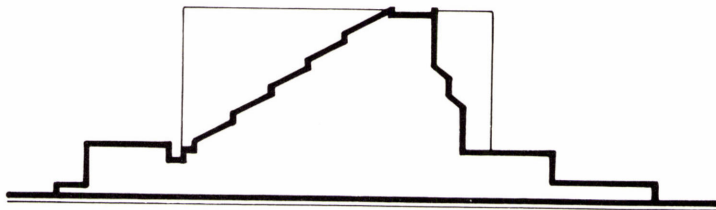
Olivetti

SUMMARY

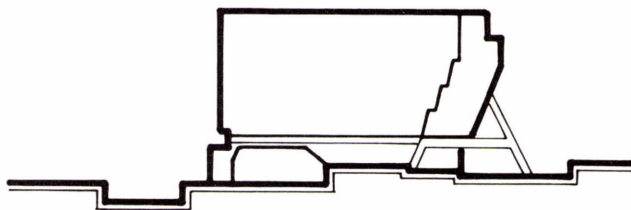
- Highly articulated and complex combinations of angles.



Leicester



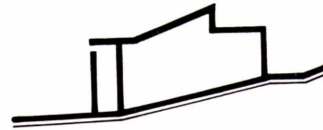
Cambridge History



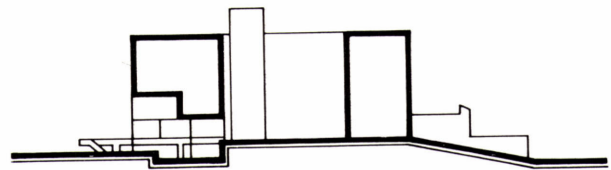
Oxford Dorm

SUMMARY

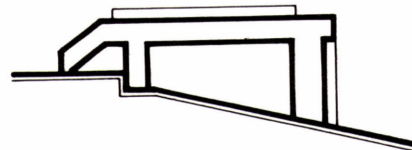
- Generally articulated profiles.



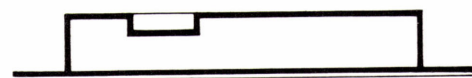
Library



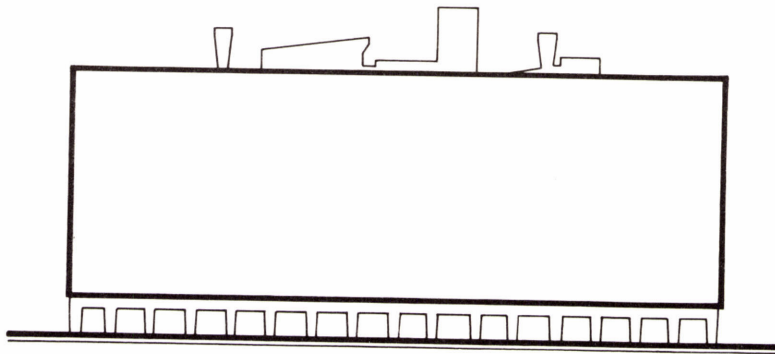
M.D.R.T.



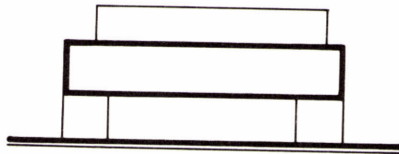
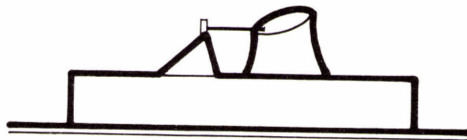
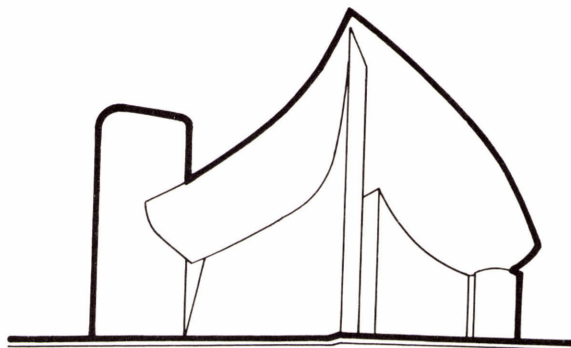
Music Building



Student Union

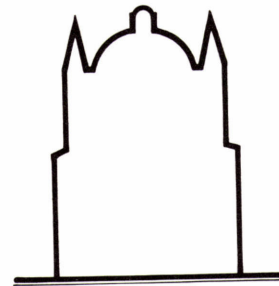
*Marseilles***SUMMARY**

- Dominant form usually a simple configuration with a more complex series of forms that mediate between building and sky.

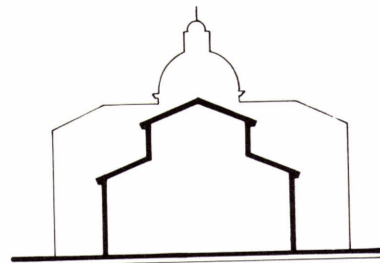
*Villa Savoye**Assembly at Chandigarh**Ronchamp*

SUMMARY

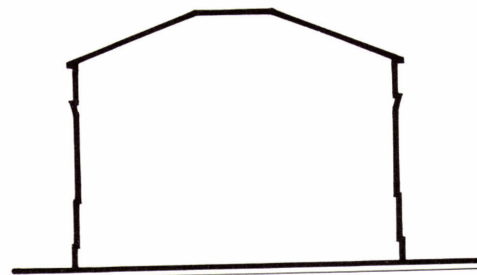
- Generally builds toward center.



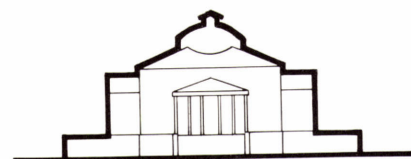
Redentore



San Giorgio



Malcontenta

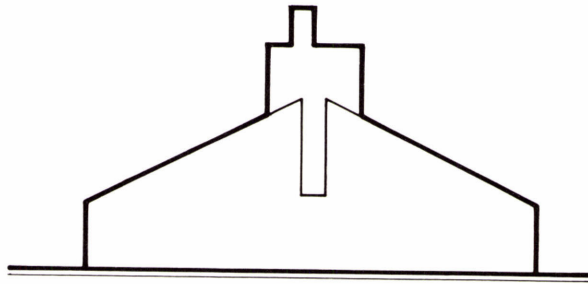


La Rotonda

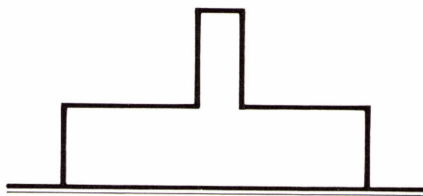
MASSING

SUMMARY

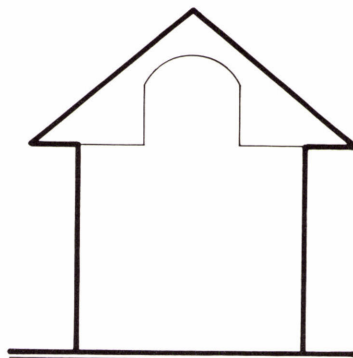
- Tallest portion of mass is at or near center.



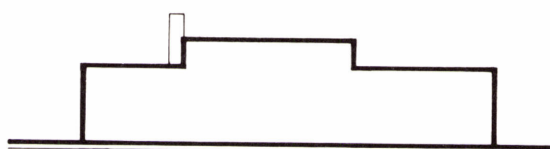
Venturi House



Fire Station



Tucker House



Brandt House

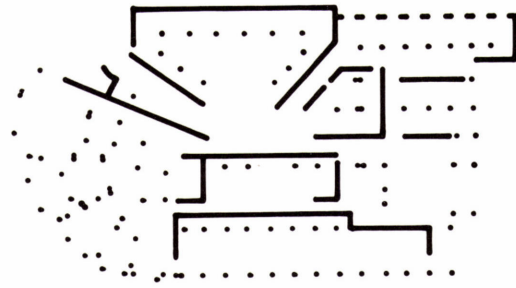
ELEMENTS

ENTRANCE
CIRCULATION
MASSING
STRUCTURE
SERVICES
SPACE DEFINITION
NATURAL LIGHT

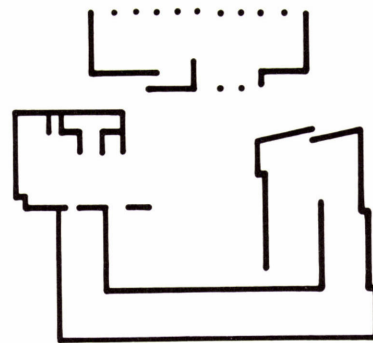


SUMMARY

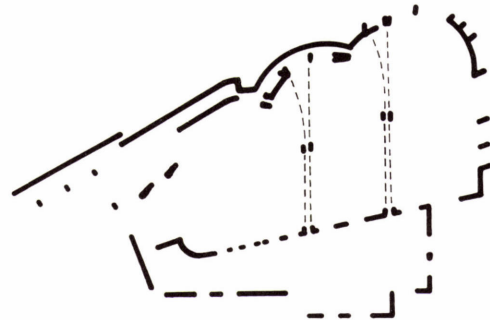
- Complex combinations of structural systems that are subordinate to formal considerations.



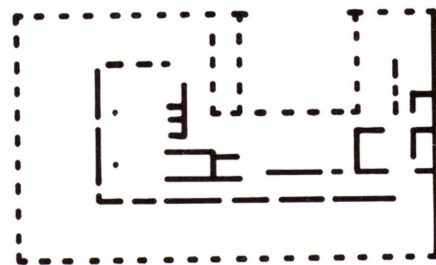
Cultural Center



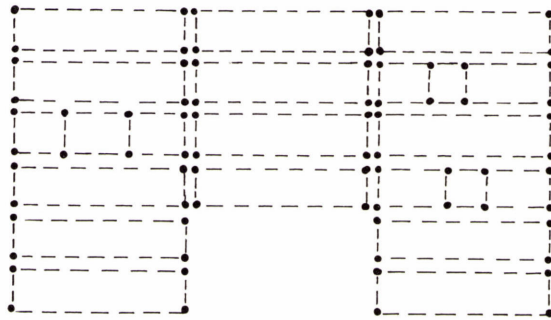
Town Hall



Imatra Church



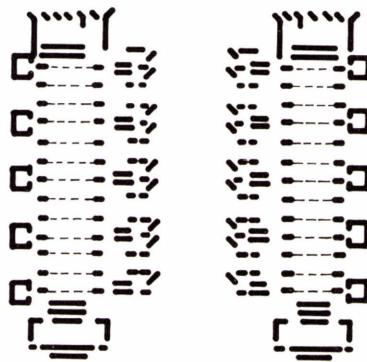
Enso/Gutzeit



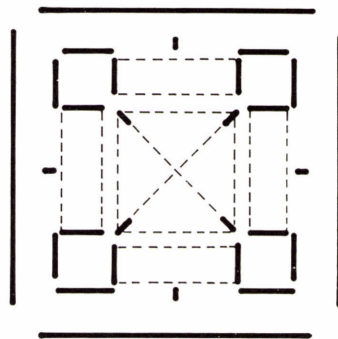
Kimball Art Center

SUMMARY

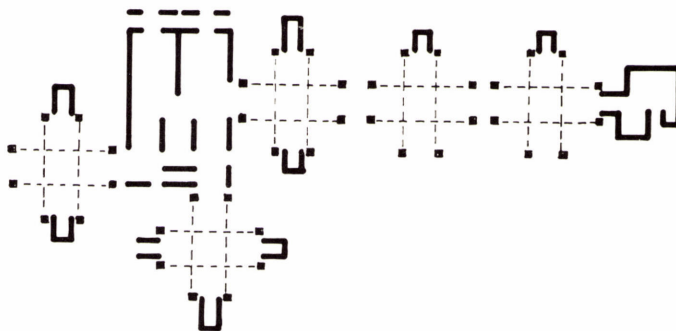
- Articulated and contributes to spatial organization.



Salk Institute



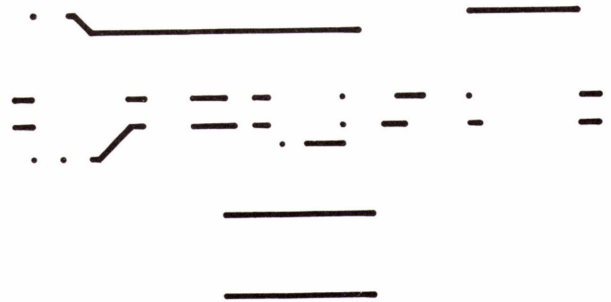
Exeter Library



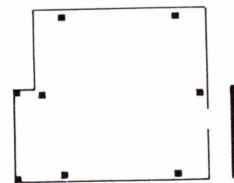
Richards Medical Laboratory

SUMMARY

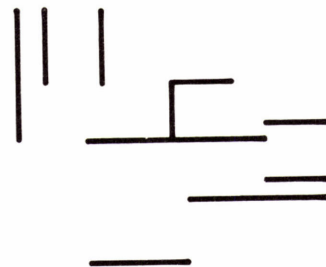
- Common for structural elements to be used as space modulators.



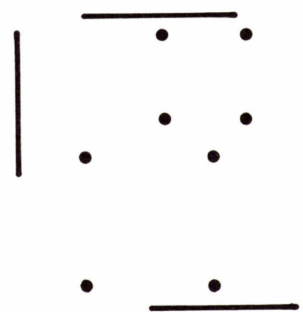
Hines House



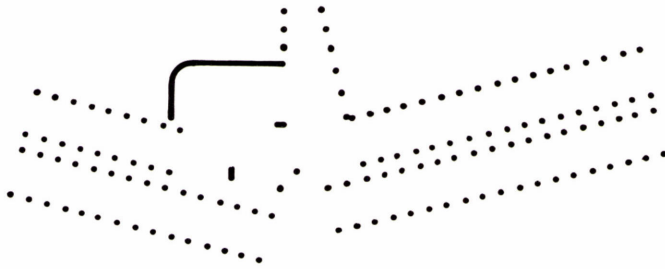
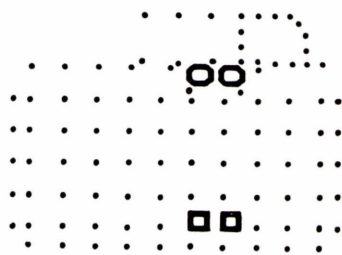
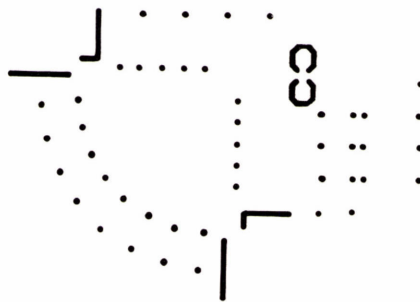
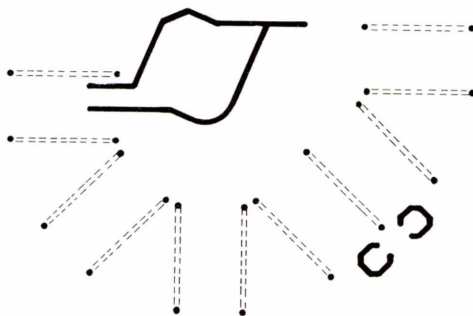
Sea Ranch



Burns House



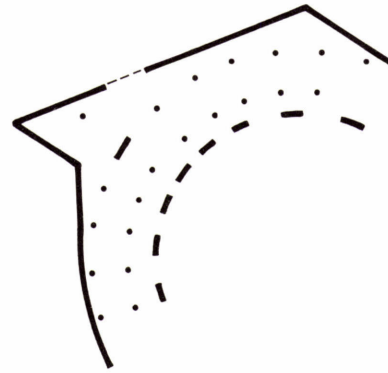
Moore House

*Olivetti**Leicester**Cambridge History**Oxford Dorm***SUMMARY**

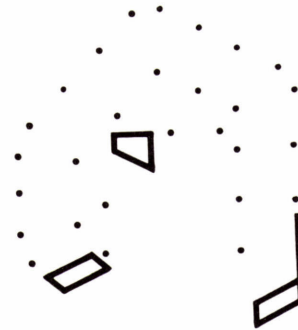
- Usually ordered, columnar, and consistent with formal organization; on occasion used as space defining element

SUMMARY

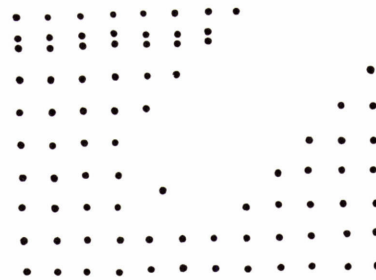
- Generally entails a combination of systems.
- Systems appear to reinforce plan form.



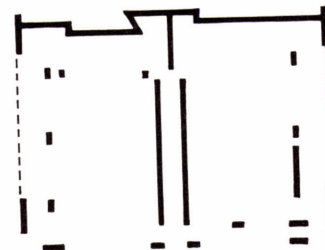
Library



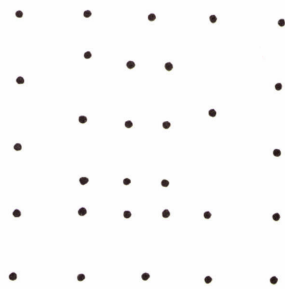
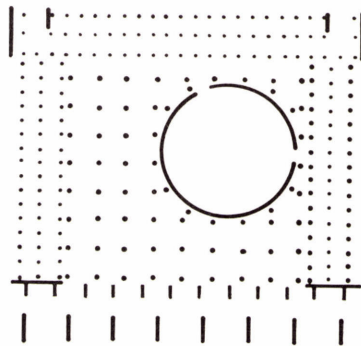
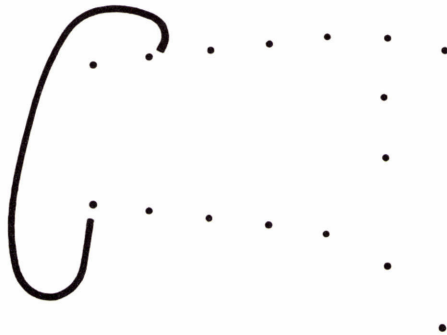
M.D.R.T.



Music Building



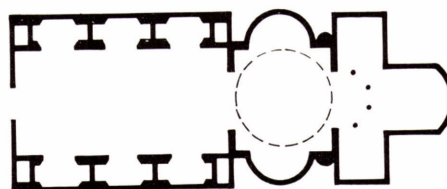
Student Union

*Marseilles**Villa Savoye**Assembly at Chandigarh**Ronchamp***SUMMARY**

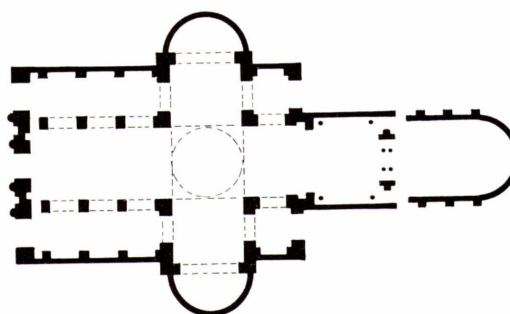
- Most often columnar structures.
- Generally on a grid and independent from walls.

SUMMARY

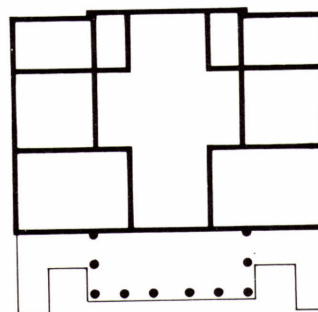
- Generally bearing walls used to define spaces.



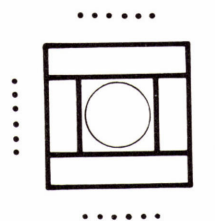
Redentore



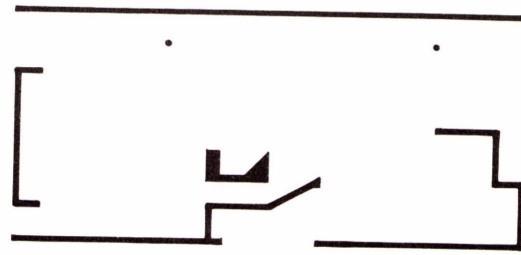
San Giorgio



Malcontenta



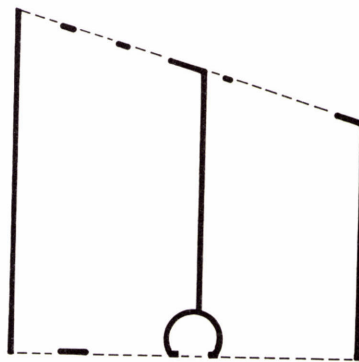
La Rotonda



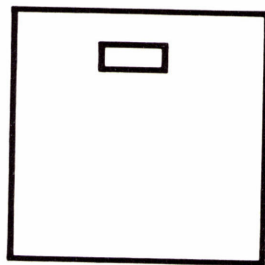
Venturi House

SUMMARY

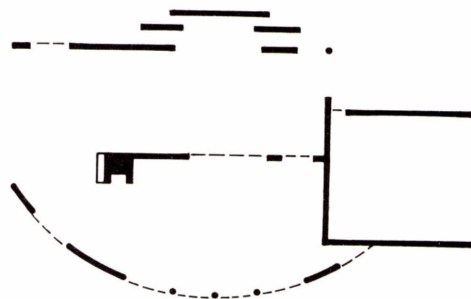
- Generally bearing walls at perimeter of building.



Fire Station



Tucker House



Brandt House

ELEMENTS

ENTRANCE
CIRCULATION
MASSING
STRUCTURE

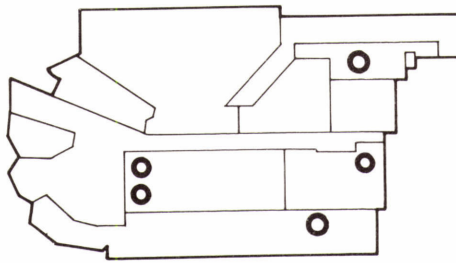
SERVICES

SPACE DEFINITION
NATURAL LIGHT

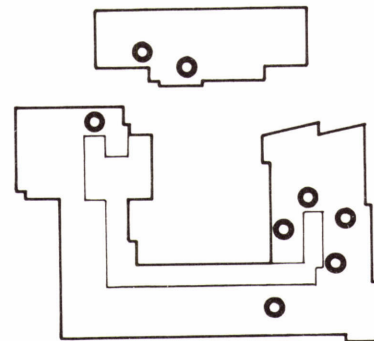
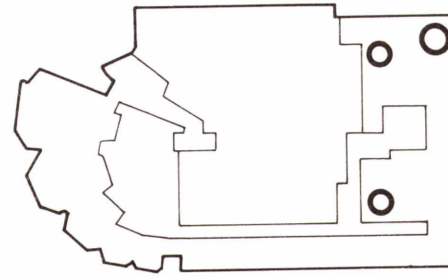


SUMMARY

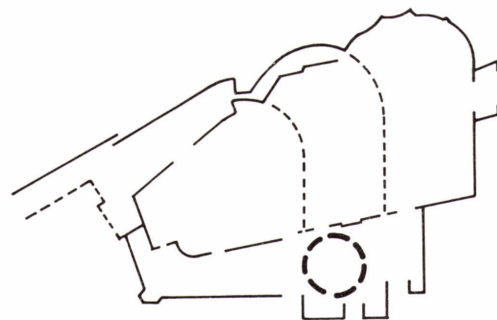
- Incidental.



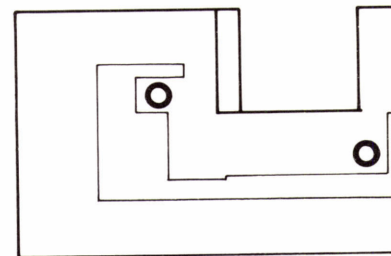
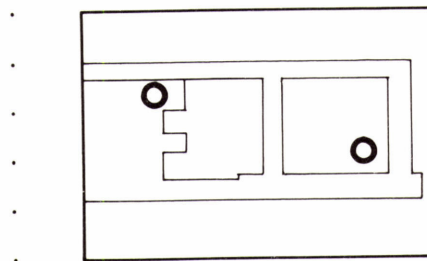
Cultural Center



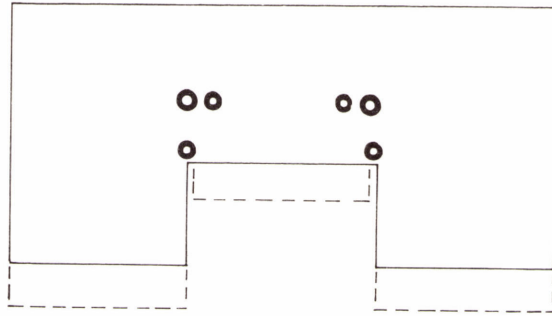
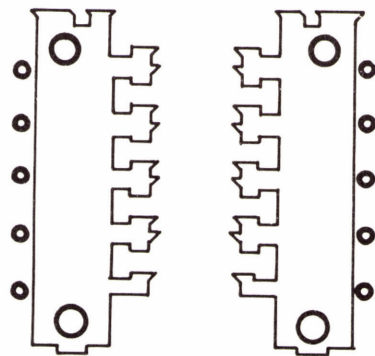
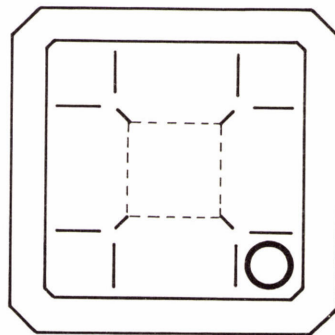
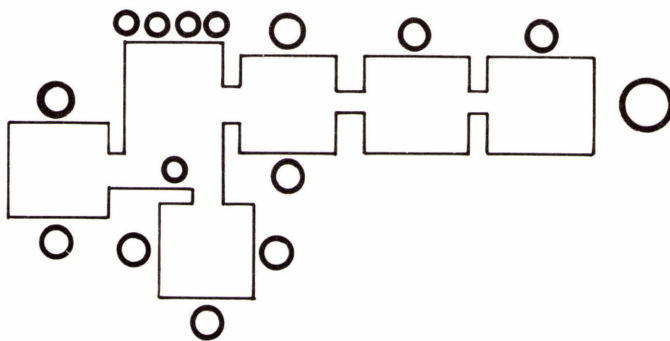
Town Hall



Imatra Church



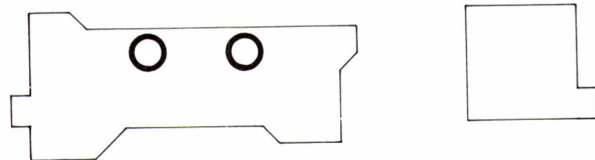
Enso/Gutzeit

*Kimball Art Center**Salk Institute**Exeter Library**Richards Medical Laboratory***SUMMARY**

- Often expressed as formal elements
- Often coincide with structural elements
- Often treated similarly to vertical circulation elements.

SUMMARY

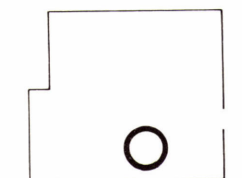
- Incidental



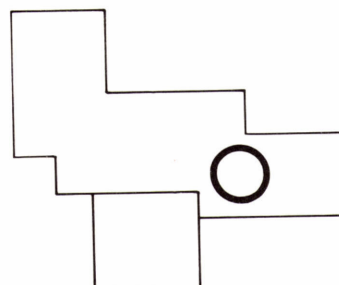
Hines House



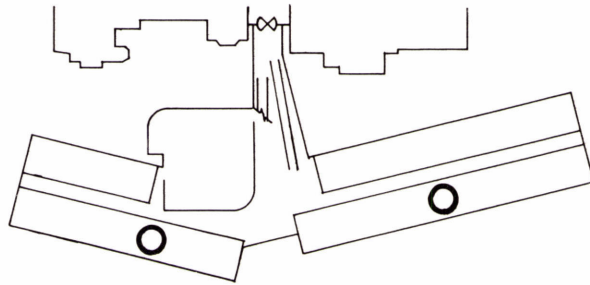
Sea Ranch



Burns House



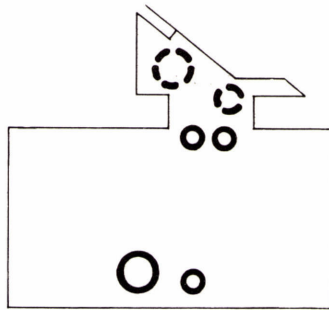
Moore House



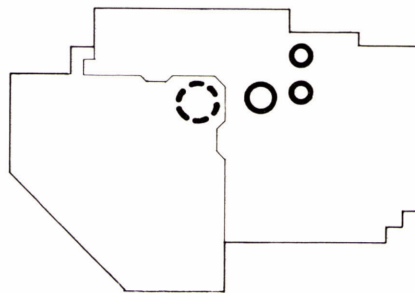
Olivetti

SUMMARY

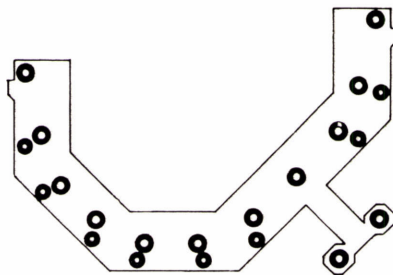
- Often linked in towers with vertical circulation. Otherwise incidental.



Leicester



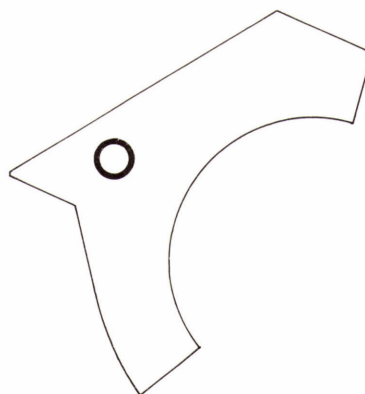
Cambridge History



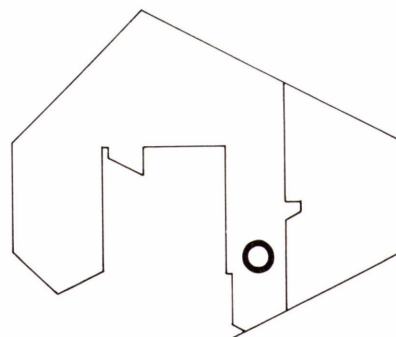
Oxford Dorm

SUMMARY

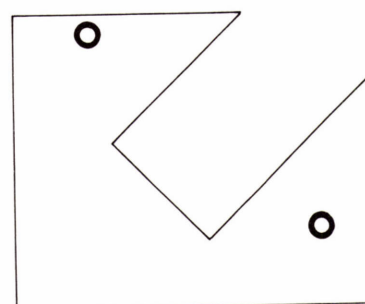
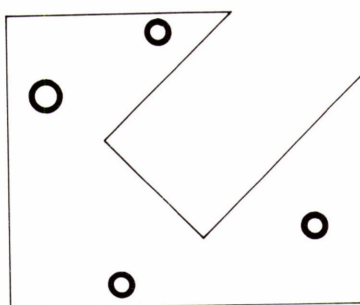
- Incidental.



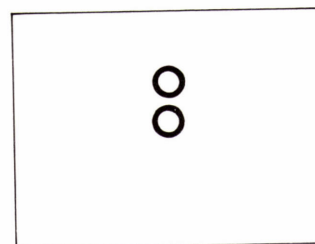
Library



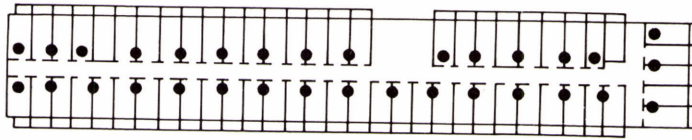
M.D.R.T.



Music Building



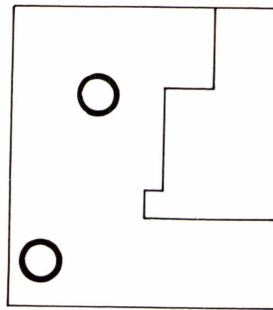
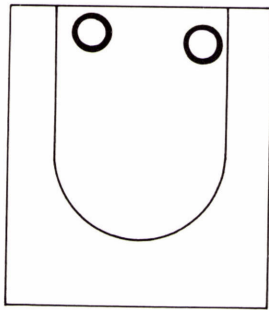
Student Union



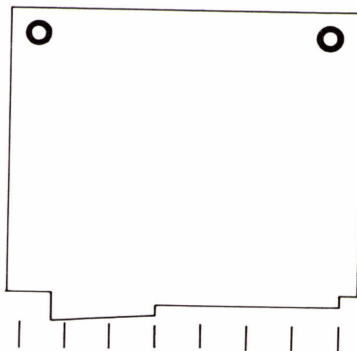
Marseilles

SUMMARY

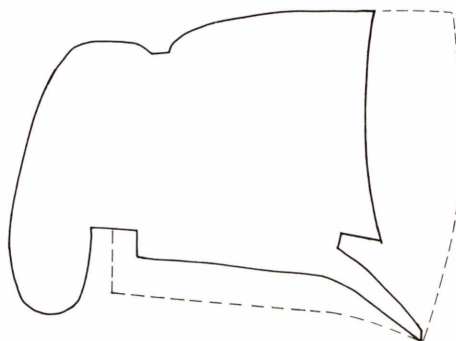
- Incidental.



Villa Savoye



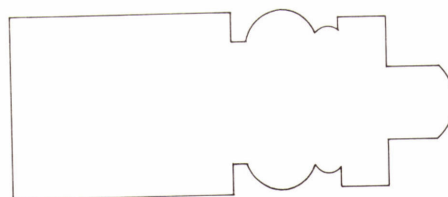
Assembly at Chandigarh



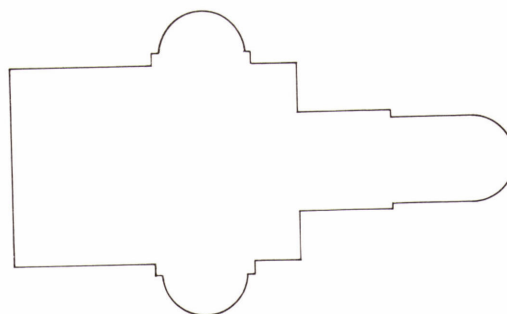
Ronchamp

SUMMARY

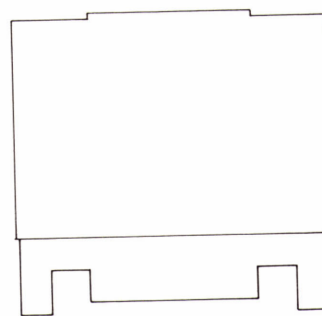
- Incidental or non-existent.



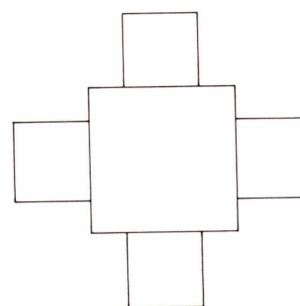
Redentore



San Giorgio



Malcontenta

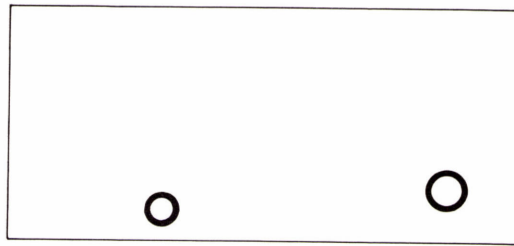


La Rotonda

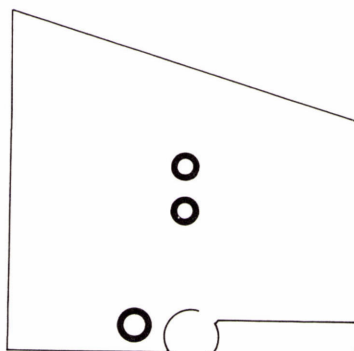
SERVICES

SUMMARY

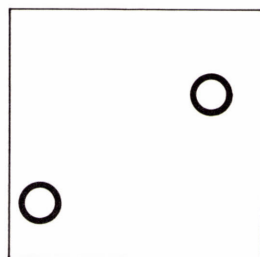
- Incidental.



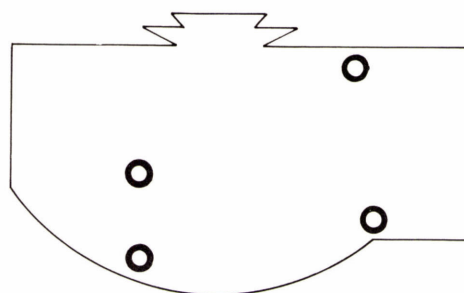
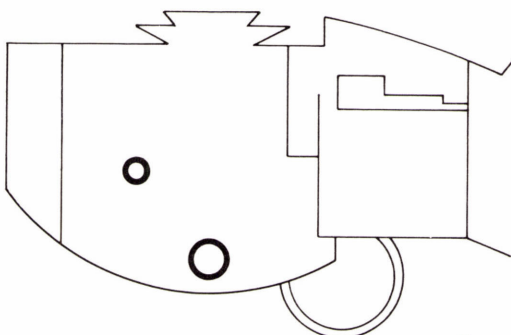
Venturi House



Fire Station



Tucker House



Brandt House

ELEMENTS

ENTRANCE
CIRCULATION
MASSING
STRUCTURE
SERVICES

SPACE DEFINITION
NATURAL LIGHT

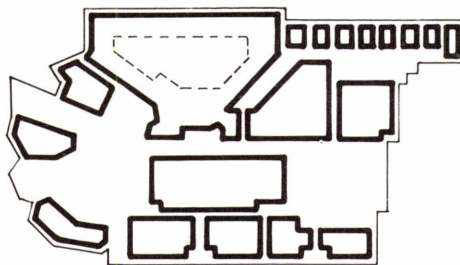


ALVAR AALTO

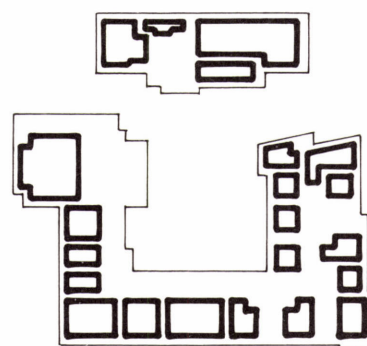
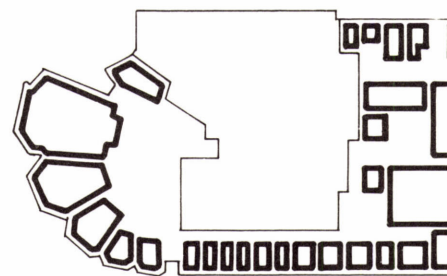
SPACE DEFINITION

SUMMARY

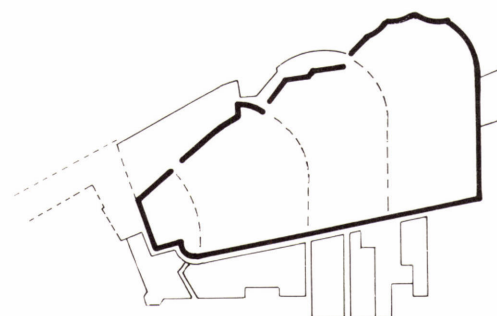
- Major spaces generally contain implied spaces.
- Space definition usually a collection of separate spaces linked to elements of circulation.



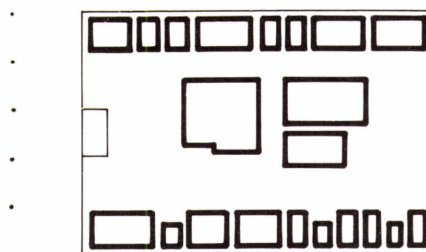
Cultural Center



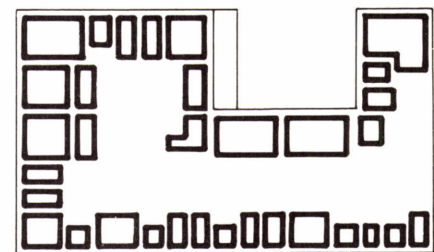
Town Hall

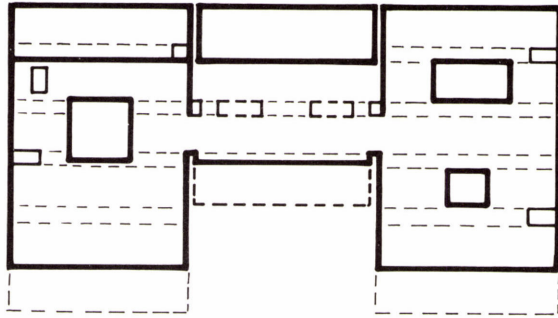
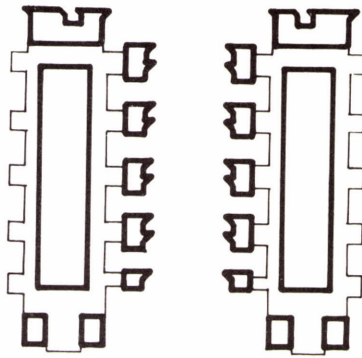
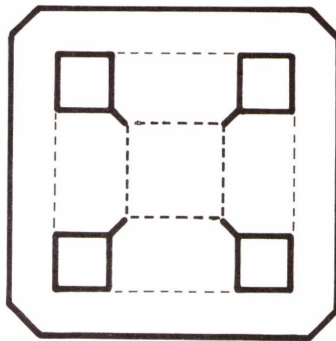
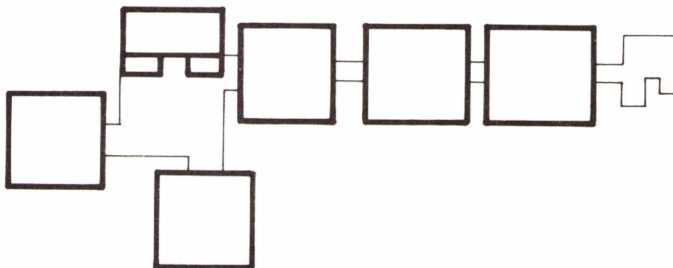


Imatra Church



Enso/Gutzeit

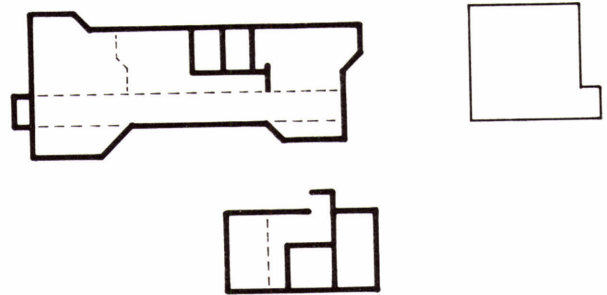


*Kimball Art Center**Salk Institute**Exeter Library**Richards Medical Laboratory***SUMMARY**

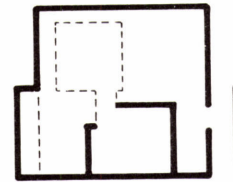
- Major spaces usually contain implied spaces.
- Implied spaces generally formed by structural articulation in roof or ceiling.
- Defined spaces limited by structural walls.

SUMMARY

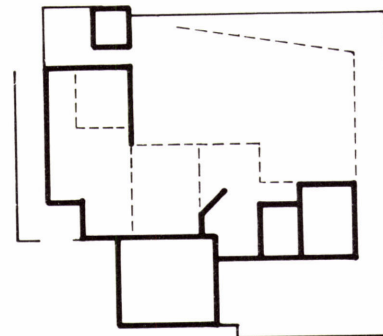
- Major spaces generally contain implied spaces.
- Implied spaces usually formed by screen walls, level changes, and aedicula and reinforced by natural light.



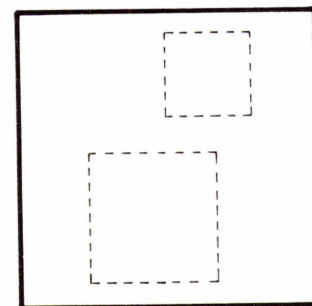
Hines House



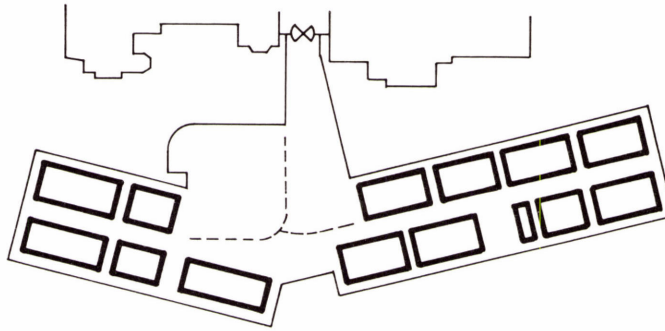
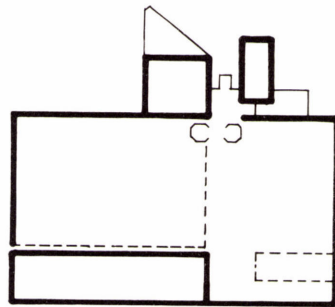
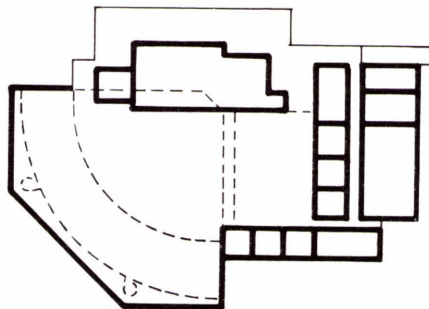
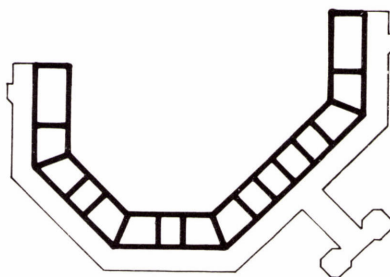
Sea Ranch



Burns House



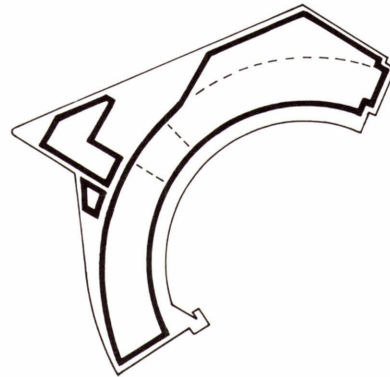
Moore House

*Olivetti**Leicester**Cambridge History**Oxford Dorm***SUMMARY**

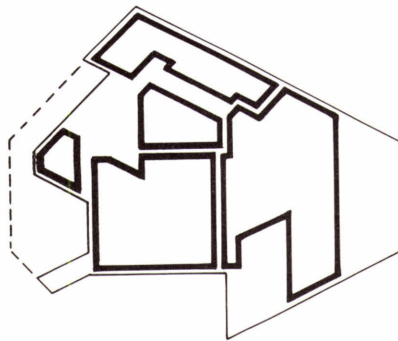
- Spaces generally of three kinds: m
unique spaces which tend to be
continuous, separate repetitive sp
which usually border unique spaces,
circulation routes which tend to
transparent.

SUMMARY

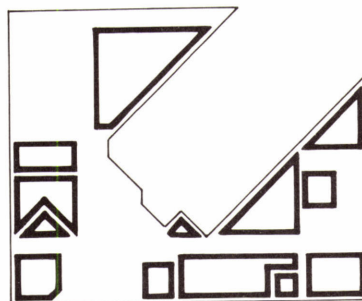
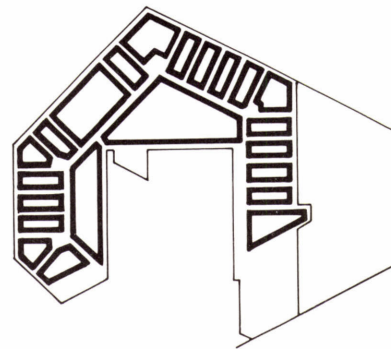
- Both a collection of separate spaces and major spaces which contain implied areas.
- Major spaces are at times continuous.



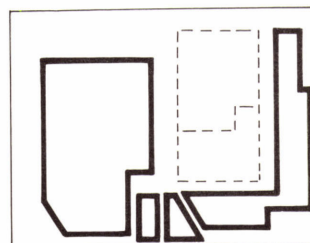
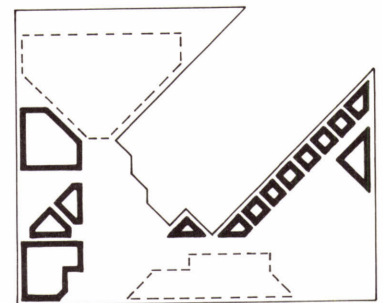
Library



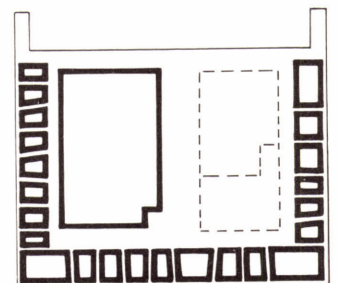
M.D.R.T.

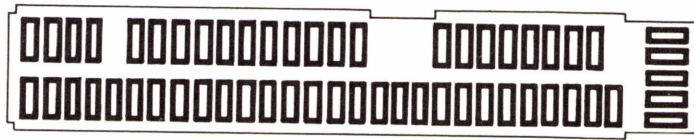


Music Building

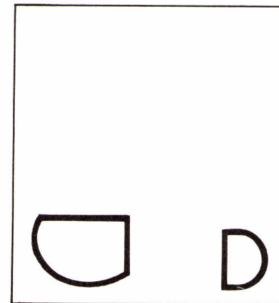
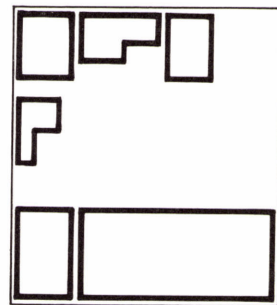
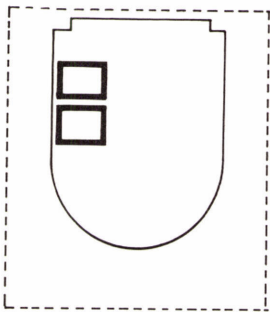
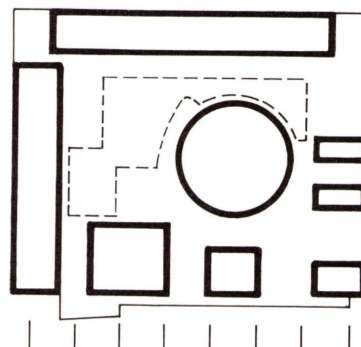
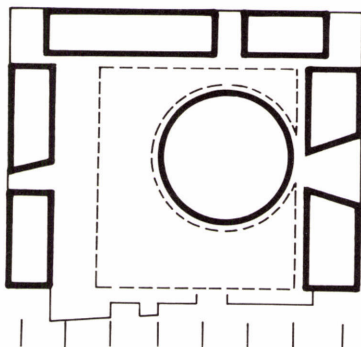
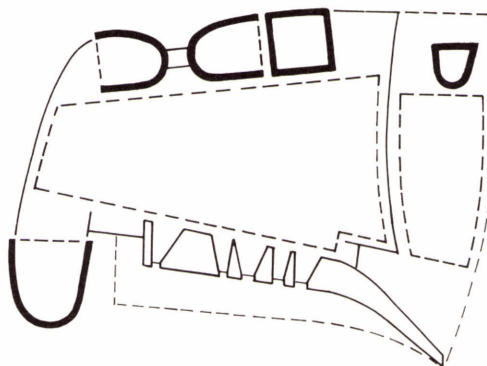


Student Union



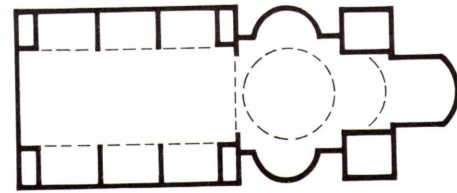
*Marseilles***SUMMARY**

- Both a collection of separate spaces linked by elements of circulation and spaces which contain implied spaces with non-directional circulation.

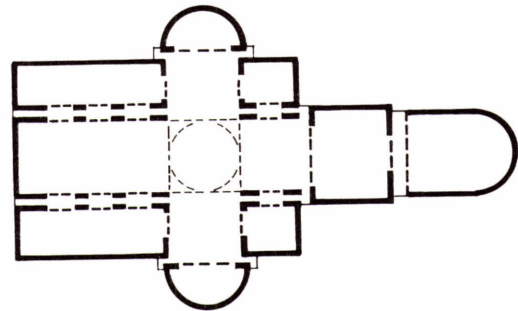
*Villa Savoye**Assembly at Chandigarh**Ronchamp*

SUMMARY

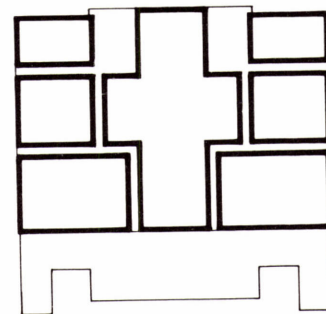
- Varies with building type. Churches are usually large continuous spaces with several implied spaces. Villas are usually a collection of separate spaces located around a major central space.



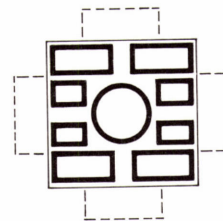
Redentore



San Giorgio

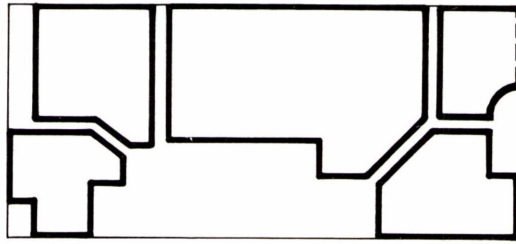


Malcontenta



La Rotonda

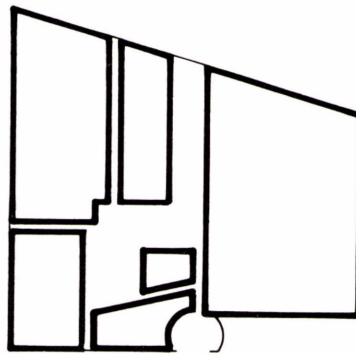
SPACE DEFINITION



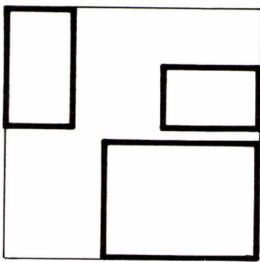
Venturi House

SUMMARY

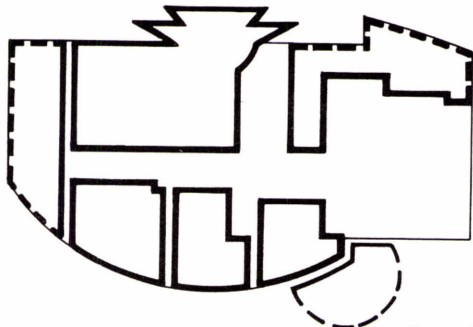
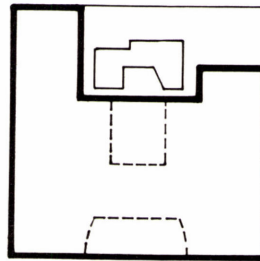
- Usually a collection of separate spaces with major spaces that contain important spaces.



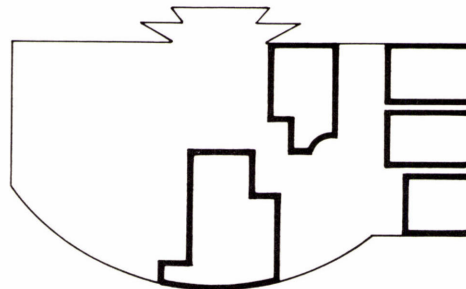
Fire Station



Tucker House



Brandt House



ELEMENTS

ENTRANCE
CIRCULATION
MASSING
STRUCTURE
SERVICES
SPACE DEFINITION
NATURAL LIGHT

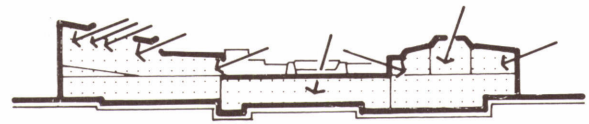


ALVAR AALTO

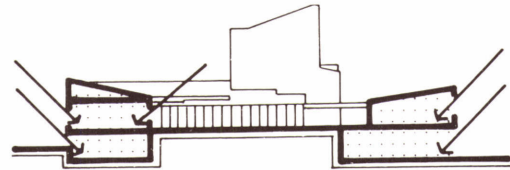
NATURAL LIGHT

SUMMARY

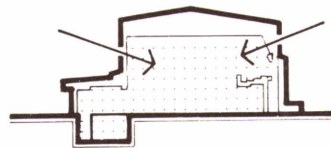
- Brought in from multiple directions, often in complex ways.
- Used to enhance space definition particularly in implied spaces.



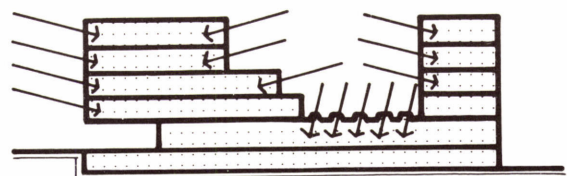
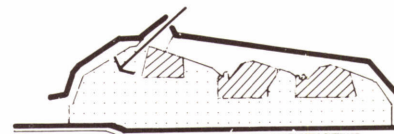
Cultural Center



Town Hall



Imatra Church



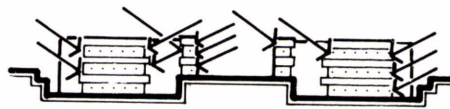
Enso/Gutzeit



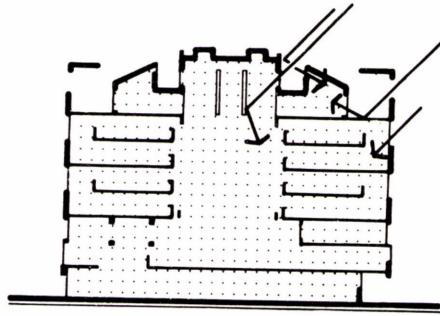
*Kimball Art Center
(skylight detail)*

SUMMARY

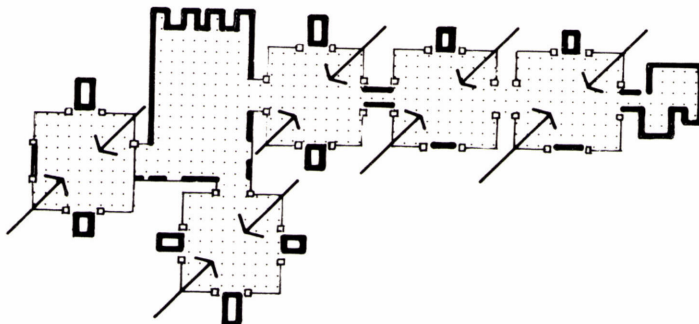
- Usually brought in through penetrations.
- When brought in overhead, source is indirect.



Salk Institute



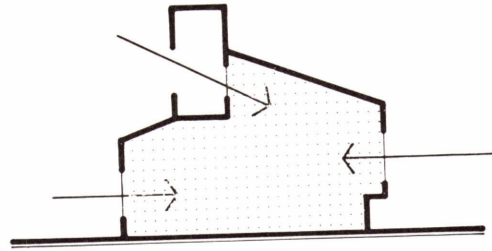
Exeter Library



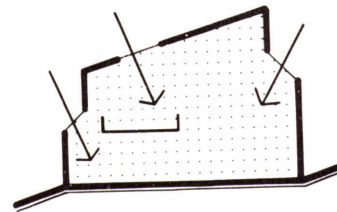
Richards Medical Laboratory

SUMMARY

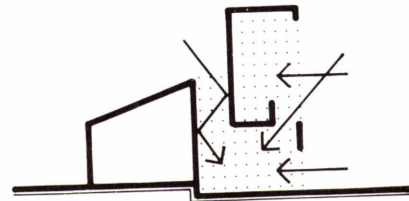
- Brought in from multiple directions: (Wall and ceiling penetrations, direct and indirect).
- Used to enhance space definition and layering of surfaces.



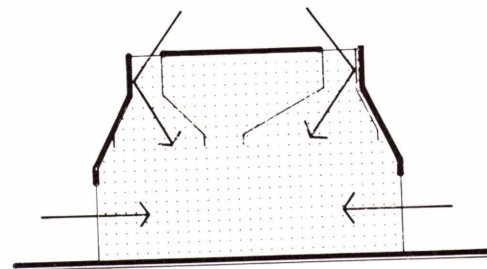
Hines House



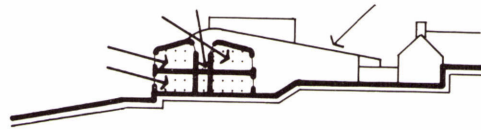
Sea Ranch



Burns House



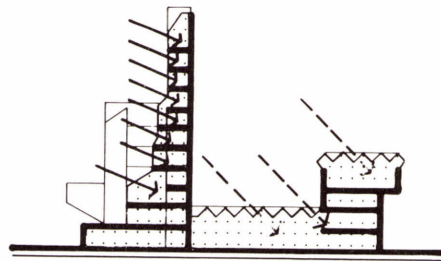
Moore House



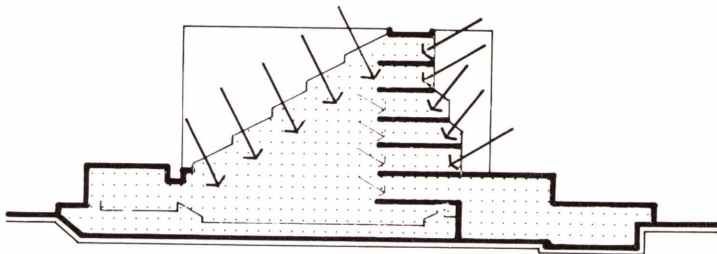
Olivetti

SUMMARY

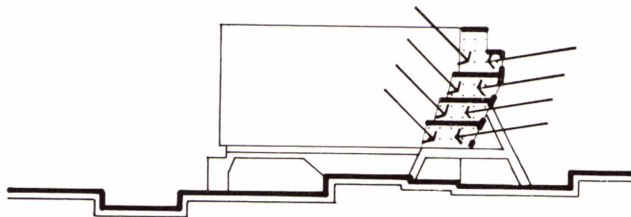
- Glazing treated as total surface through which light enters building from all directions.
- Integral part of circulation system.
- Light source usually apparent.



Leicester



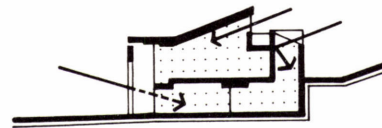
Cambridge History



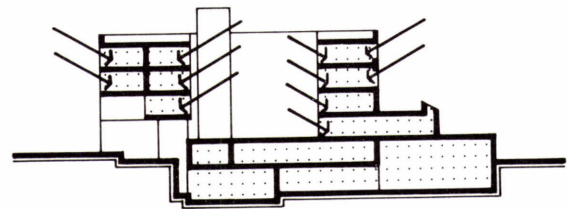
Oxford Dorm

SUMMARY

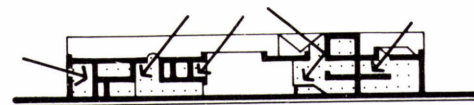
- Generally through wall penetrations, at times high in the space.
- Often filtered through sun shading devices.



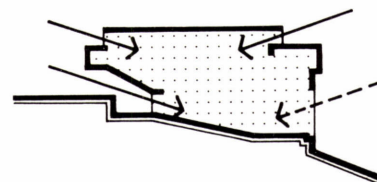
Library



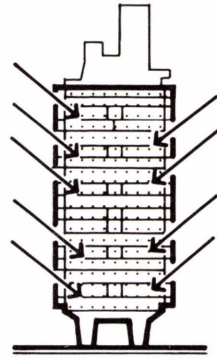
M.D.R.T.



Music Building

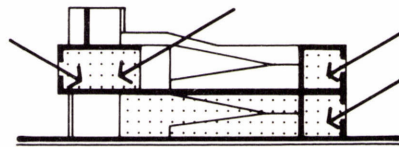


Student Union

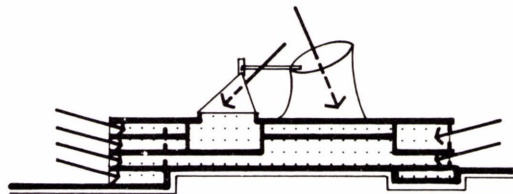


Marseilles

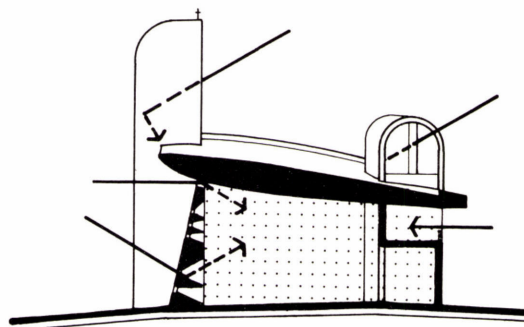
- Often indirect; through sun screens, thick walls, light monitors, etc.



Villa Savoye



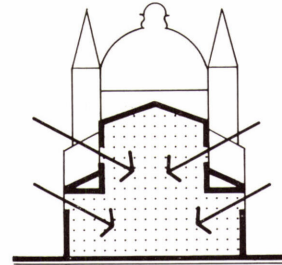
Assembly at Chandigarh



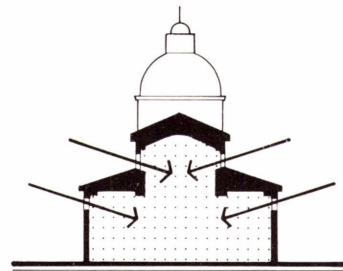
Ronchamp

SUMMARY

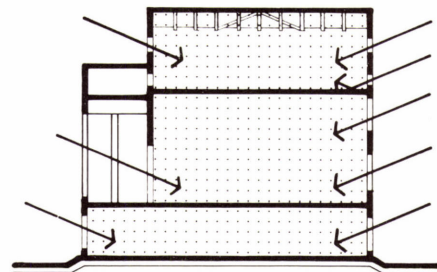
- Generally through wall penetrations.
Many times located in upper portions of space.



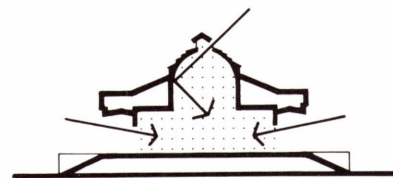
Redentore



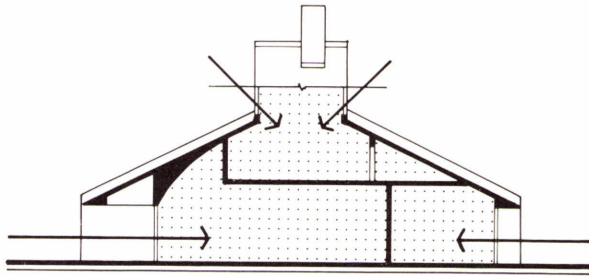
San Giorgio



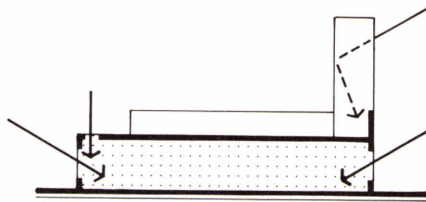
Malcontenta



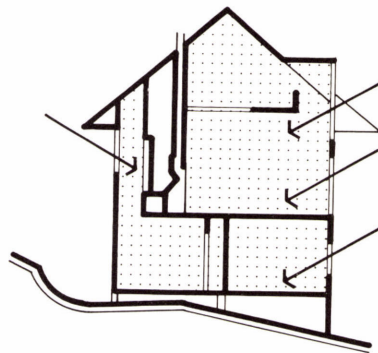
La Rotonda



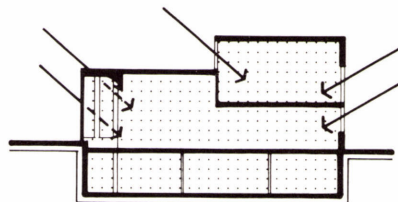
Venturi House



Fire Station



Tucker House



Brandt House

SUMMARY

- Usually brought in through wall penetrations, at times high in the space

RELATIONSHIPS



RELATIONSHIPS

In that buildings are composites of a multitude of elements (e.g. structure, fenestration, entrances, etc.) the relationships between the various elements are an area of concern to designers. Of particular interest are those relationships which embody opposing attributes that are resolved in a built form.

Specific relationships that have been studied are:

BUILDING TO CONTEXT
CIRCULATION TO USE
PLAN TO SECTION
UNIT TO WHOLE
INSIDE TO OUTSIDE
REPETITIVE TO UNIQUE



RELATIONSHIPS

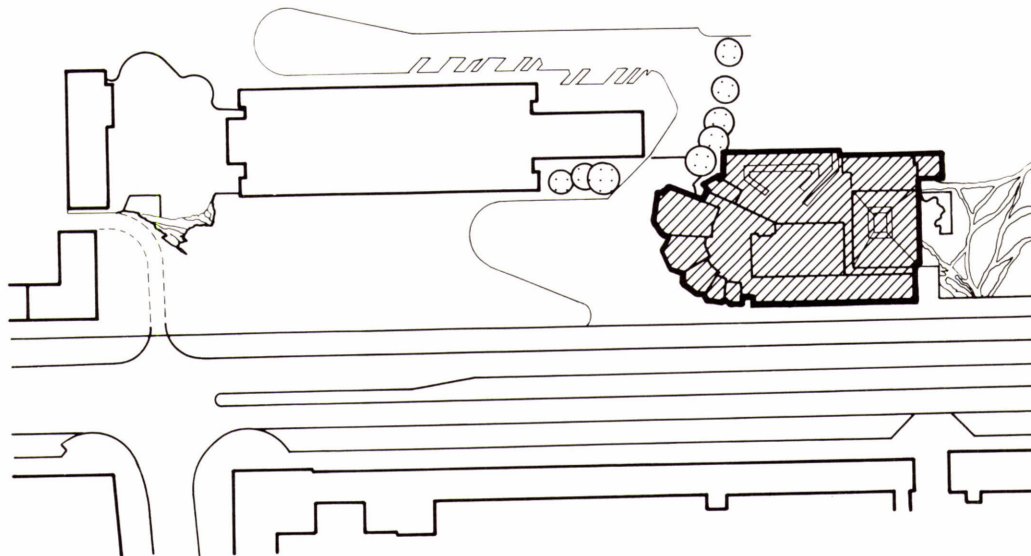
BUILDING TO CONTEXT

The examination of the primary relationships between a building and its immediate proximity; focusing on site specific information of access, boundary conditions, topography, views, and vegetation. Another focus is contextual issues which may have influenced the design; such as, adjacent activities patterns, form languages, and geometries.



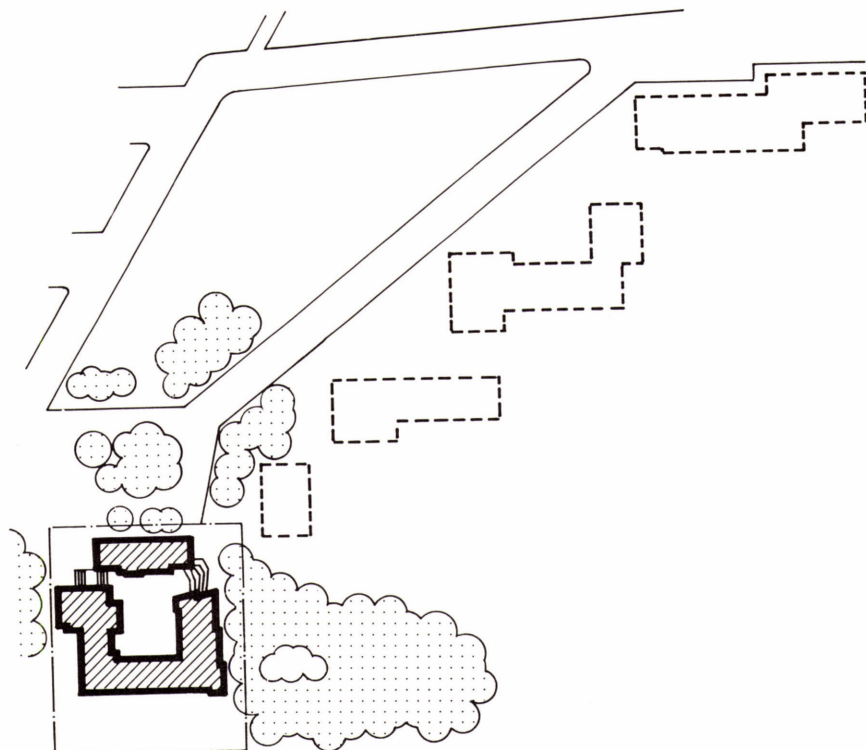
Cultural Center

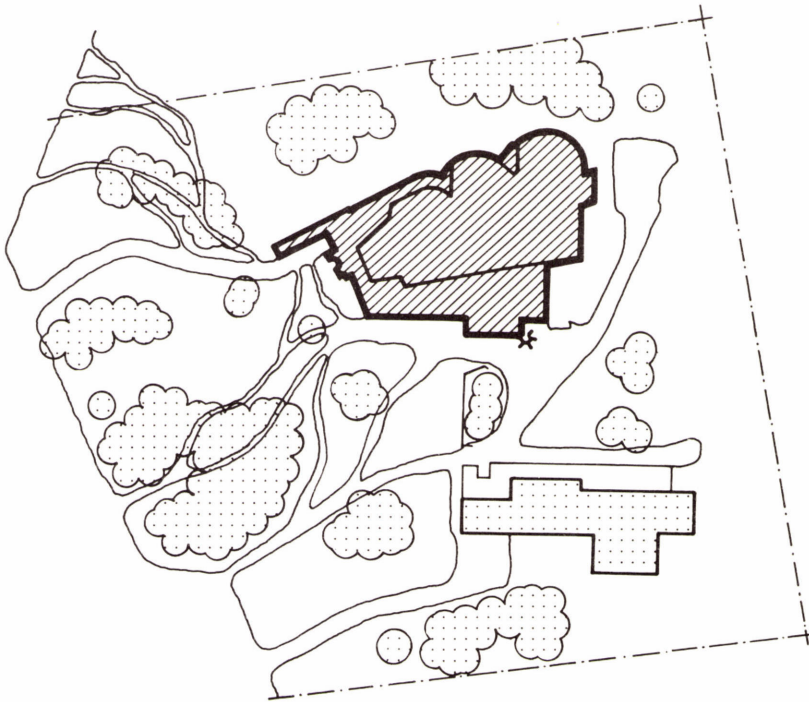
- Building located to side of town hall plaza.
- Building edge adjacent to plaza steps back from street toward town hall.
- Other edges of building orthogonal to street and surrounding building pattern.



Town Hall

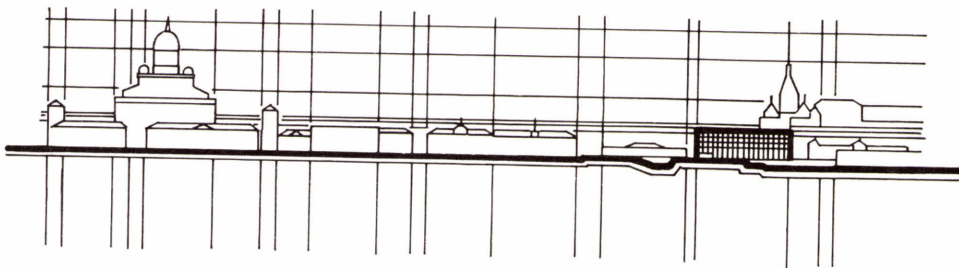
- Central courtyard raised on fill above surrounding landscape.
- Wooded site.
- Council chamber is dominant built form.





Imatra

- On wooded site in loosely scattered industrial area.
- Church dominates site and bell tower dominates surrounding landscape.
- Orthogonal side of church oriented toward other orthogonal buildings on site.
- Bell tower designed to be distinct from surrounding industry smoke stacks.

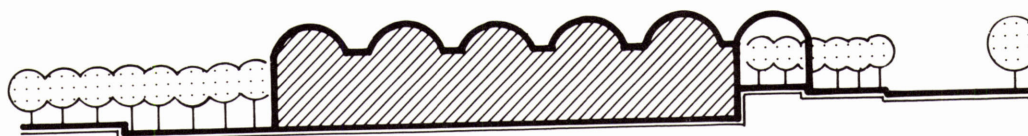


Enso/Gutzeit

- Orthogonal building configuration consistent with city grid.
- Building height sympathetic to surrounding buildings and subordinate to major buildings.
- Grid of building skin reflects grid of city.

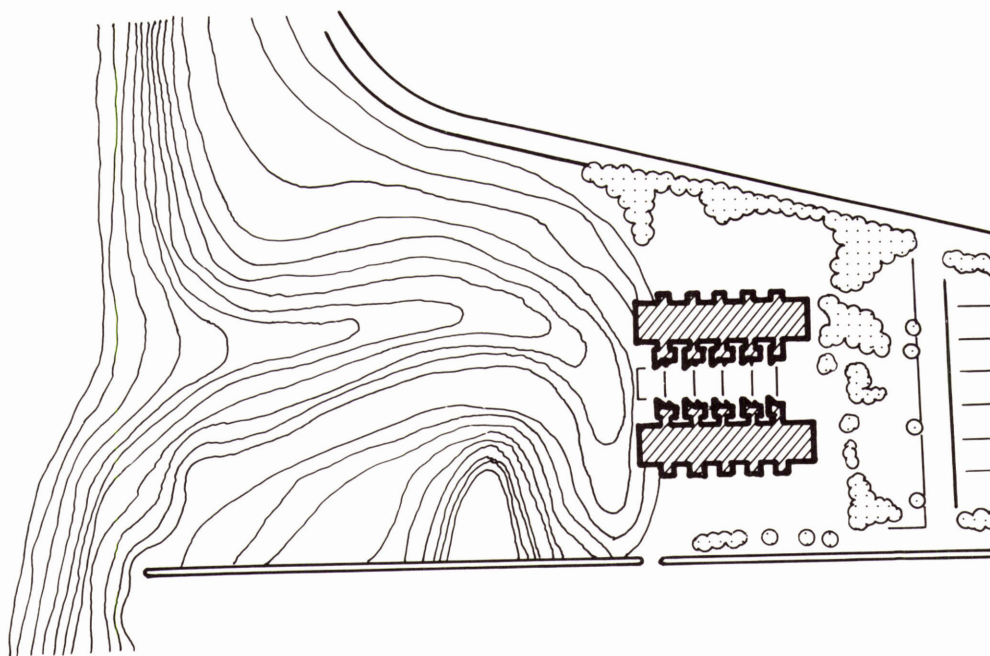
Kimball Art Center

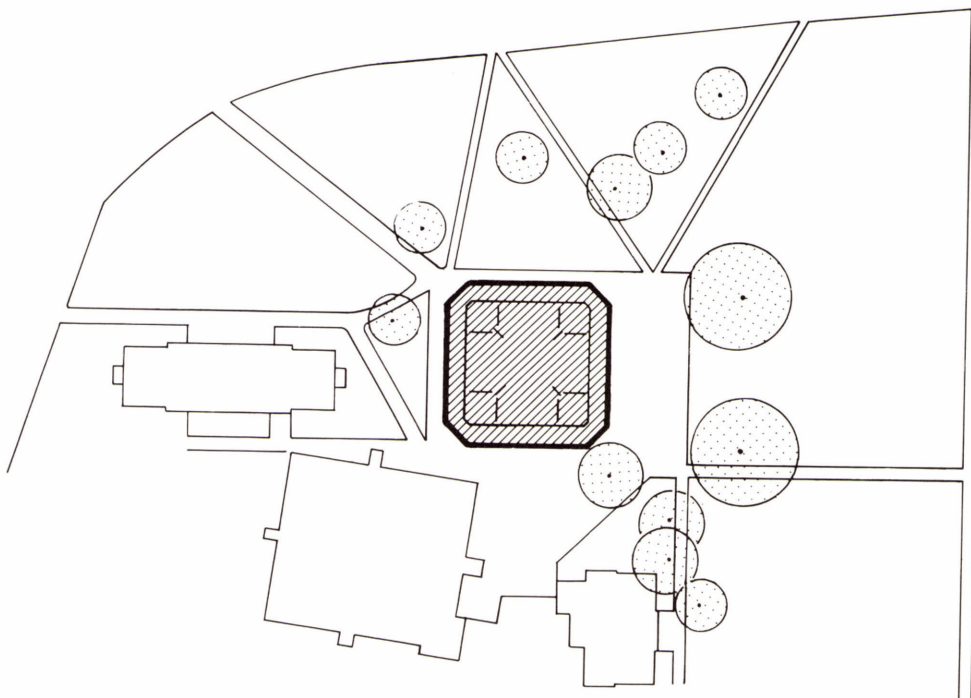
- Located in park.
- Silhouette of building derived from surrounding landscape.



Salk Institute

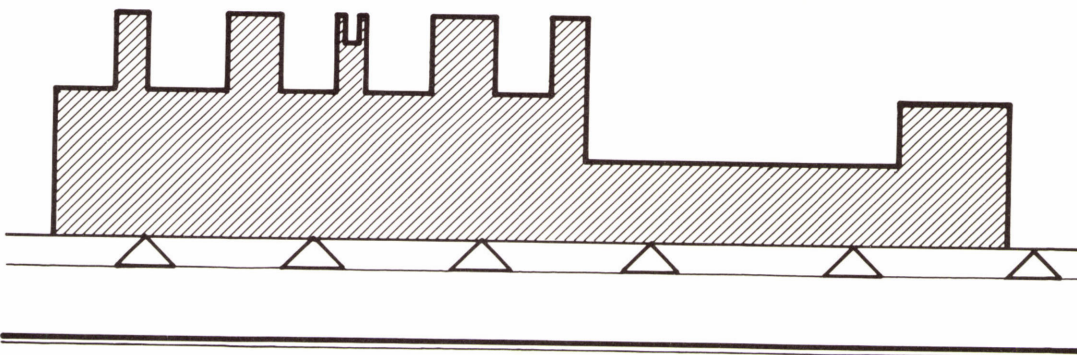
- On a generous site at cliff edge, overlooking ocean, as part of proposed larger complex.
- Entrance court between buildings opens to ocean.





Exeter Library

- On rural campus of predominant Georgian buildings.
- Fronts on major street with a gap between building and street.
- On axis with dominant campus building across the street.
- Building is orthogonal to existing Georgian buildings.



Richards Medical Laboratory

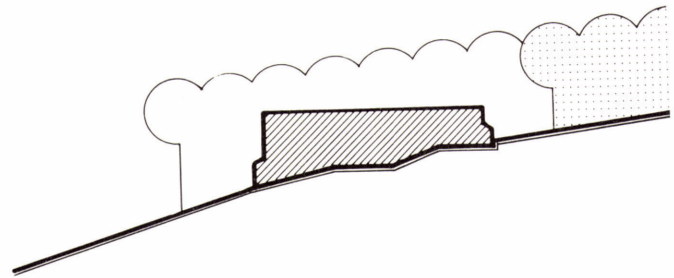
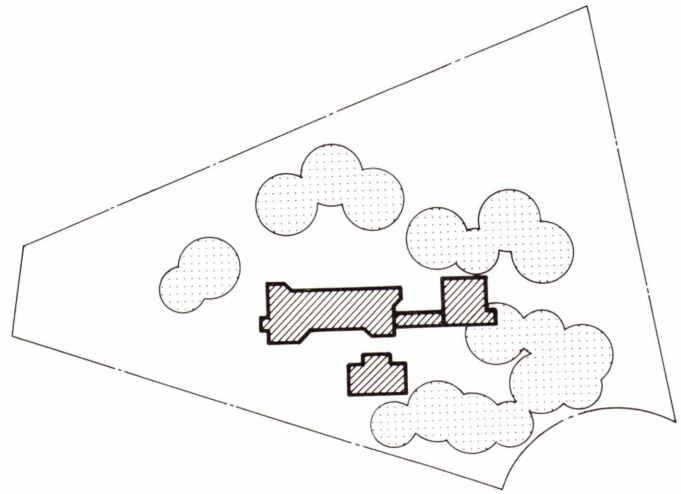
- On urban university campus.
- Variation in silhouette, though in different form language, is similar to silhouette of adjacent buildings.

CHARLES MOORE

BUILDING TO CONTEXT

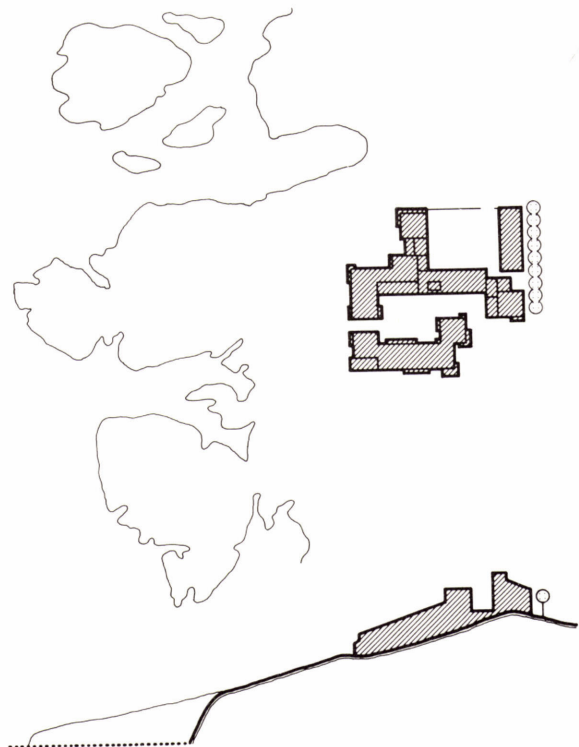
Hines House

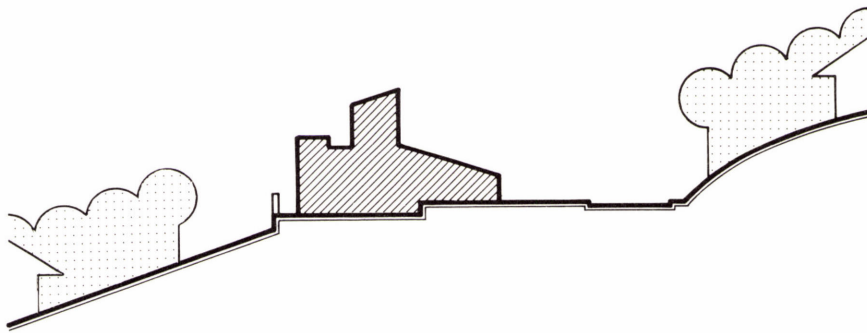
- On sloping site located at end of a cul-de-sac, toward ocean.
- Building profile is horizontal and as such does not conform to slope of site.
- Circulation spine located perpendicular to contours.



Sea Ranch

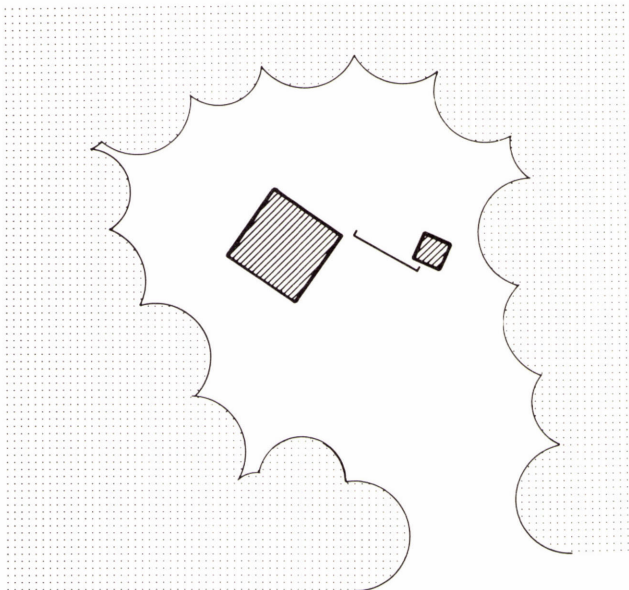
- Open site on bluff overlooking ocean.
- Highest point of building on high part of site.
- Roof slopes compliment slope of land.
- Interior court opens to ocean through separation between major building forms.





Burns House

- Located in residential area on side of hill.
- Site leveled to accommodate house.
- Building form projects above surrounding trees.



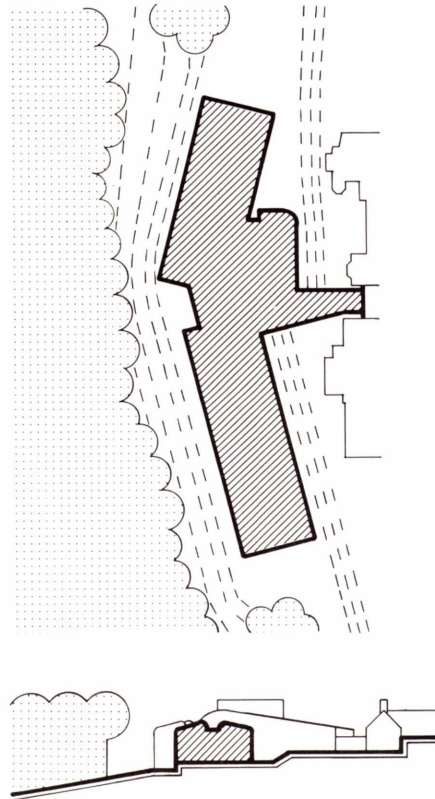
Moore House

- Located in clearing on top of flattened knoll.
- Clearing surrounded by trees except where access occurs.
- House profile appears to complete form of hill.



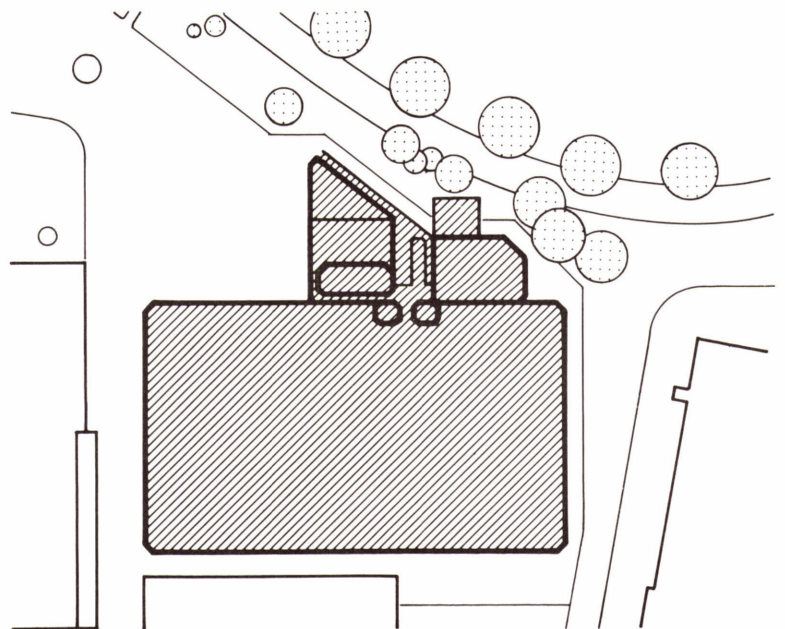
Olivetti

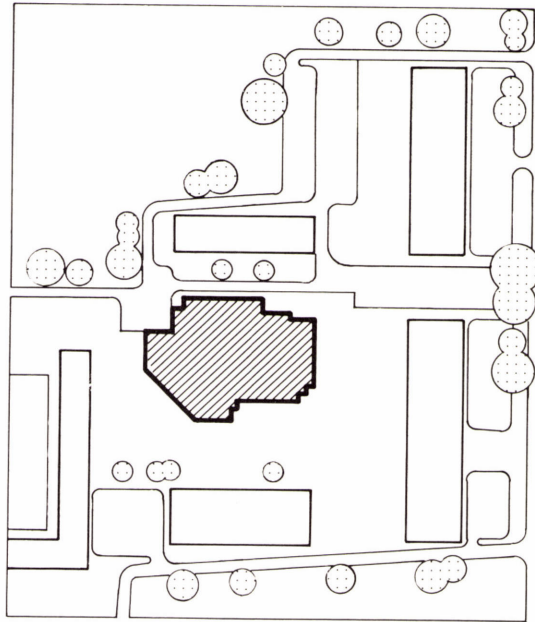
- An addition to an existing building.
- Sited in clearing between existing building and bank of trees.
- Axis of building parallel to site contours.



Leicester

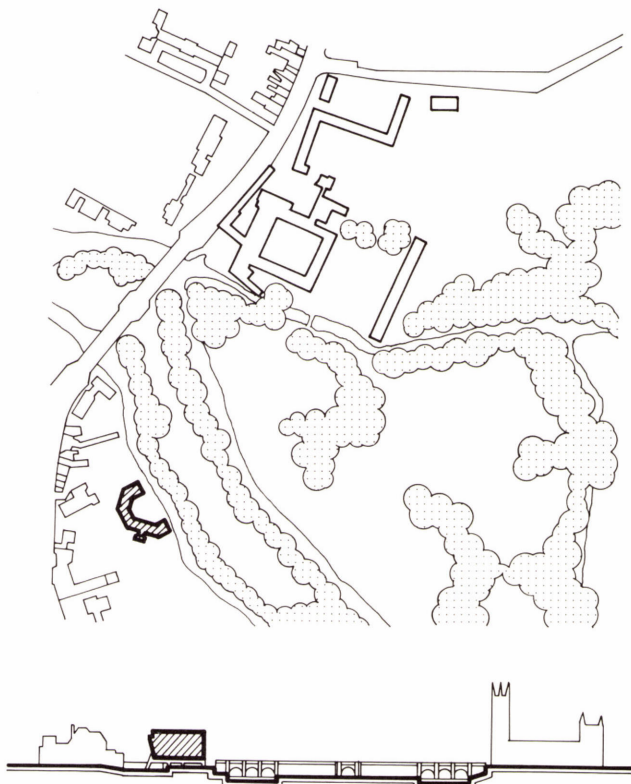
- On university campus in predominately industrial city.
- Site bounded on three sides by buildings.





Cambridge History

- On university campus.
- Building orthogonal to adjacent campus buildings which form a quadrangle.

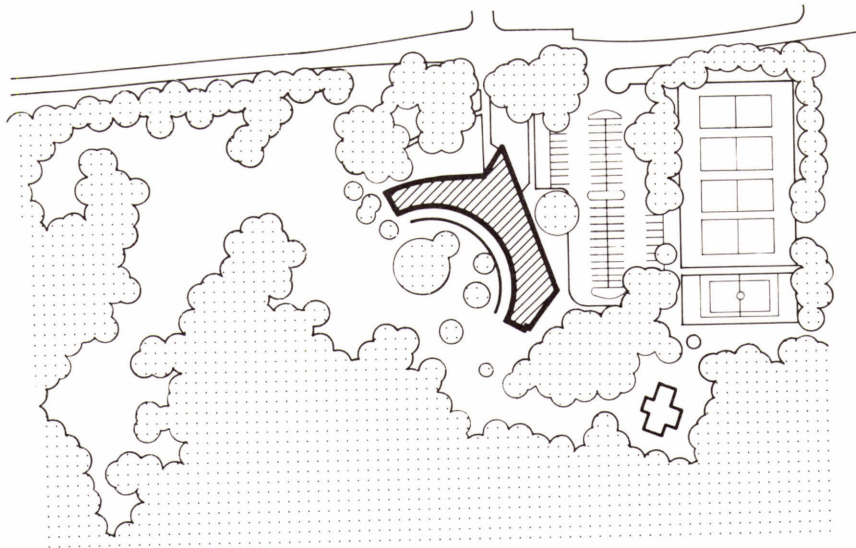


Oxford Dorm

- On university campus that is dominated by gothic buildings organized around courtyards.
- Open side of complex sited toward river and major quadrangle of university.
- Open side of complex completed with trees to form a courtyard.

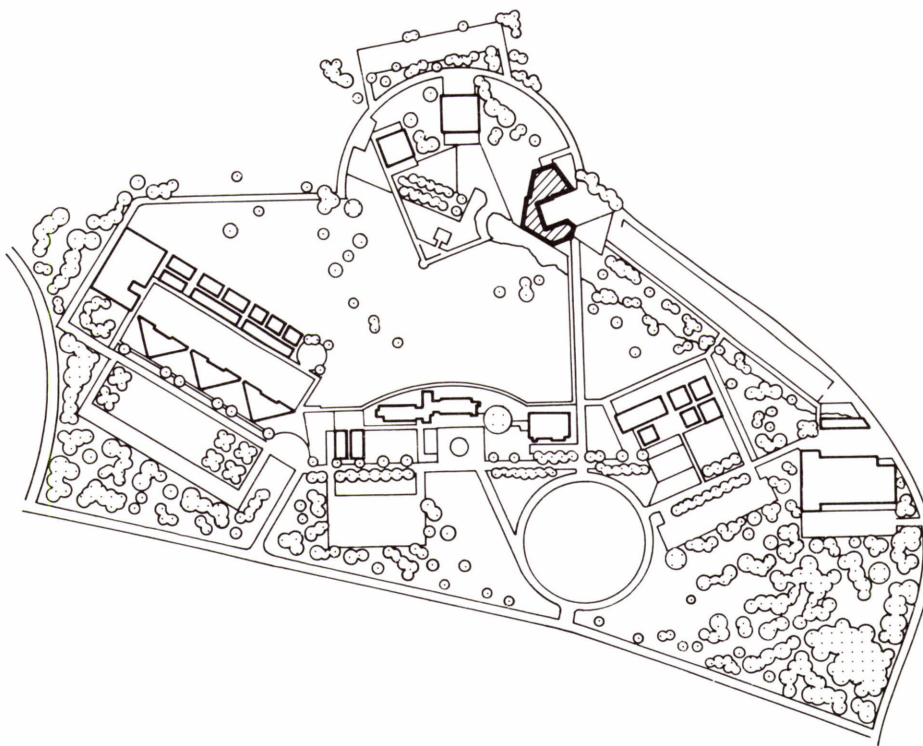
Library

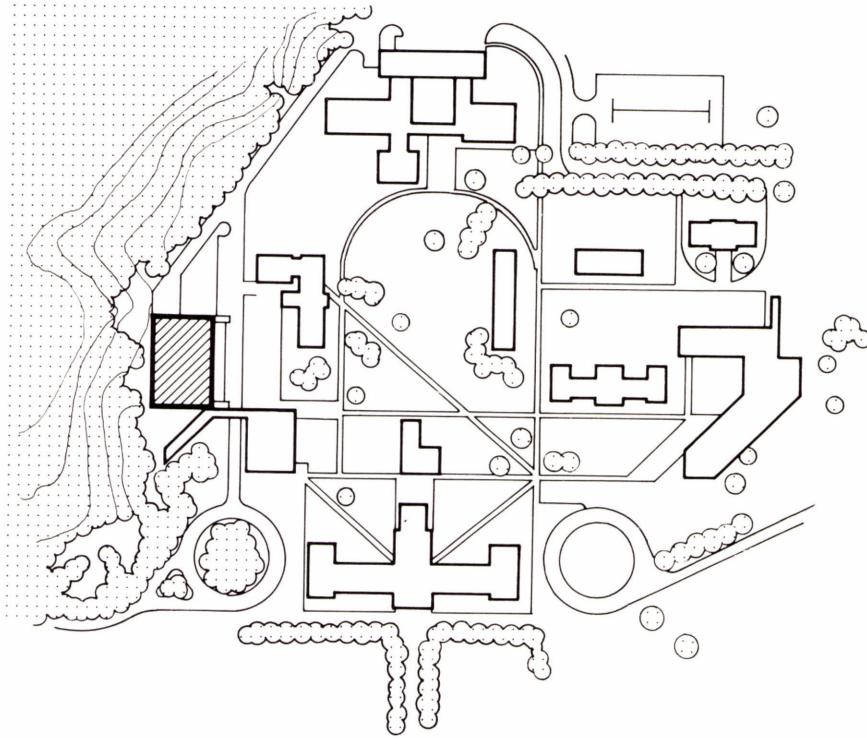
- On sloped site between park and residential area.
- Two-story high curved glass wall oriented toward park.
- Entry wall has low profile to reflect adjacent residential context.



M.D.R.T.

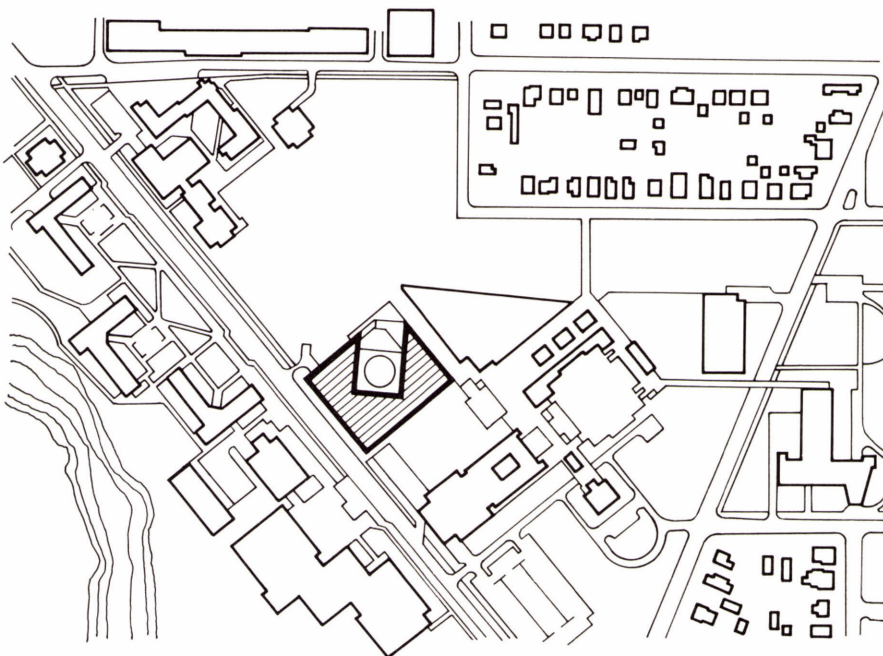
- On 32 acre hilly suburban site as part of larger complex of buildings.
- Sited on promontory with views of valley which divides the complex.
- Polygonal forms of exterior developed from topography of hill on which it is sited.





Music Building

- First unit of master plan that incorporates the arts into an existing college campus.
- Located at the end of an axis that crosses the existing main axis of the campus.
- On heavily wooded site that slopes away from the campus.

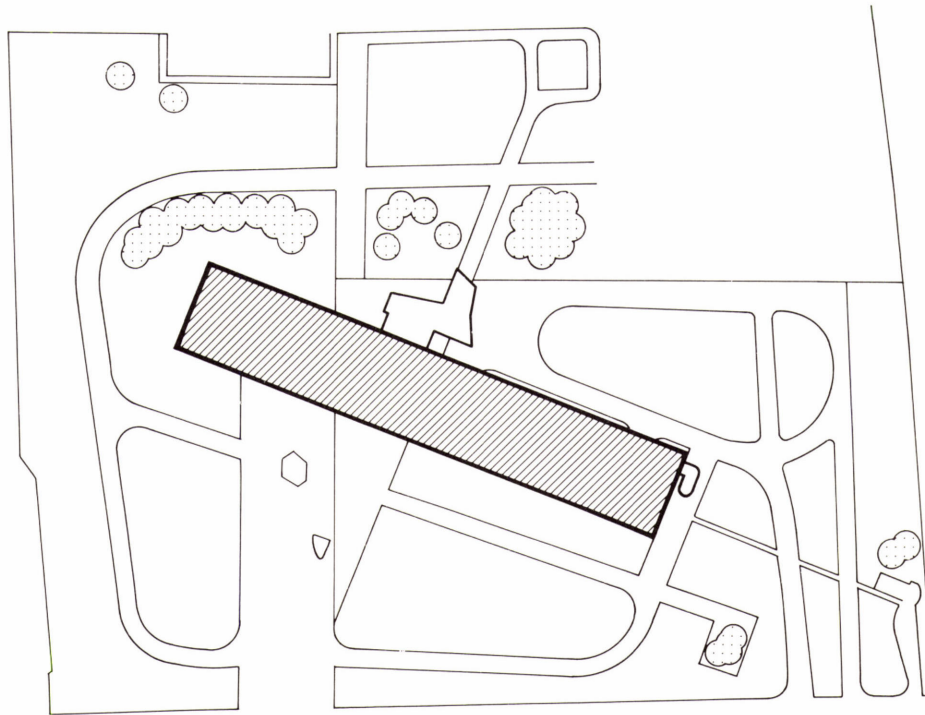


Student Union

- On a flat eight-acre site located at the intersection of two grid systems—one of the grid of the campus and the other that of the town.
- On an existing college campus next to a paved plaza that is the academic center of the campus.
- The diagonally cut courtyard is a reflection of a significant building in the town.

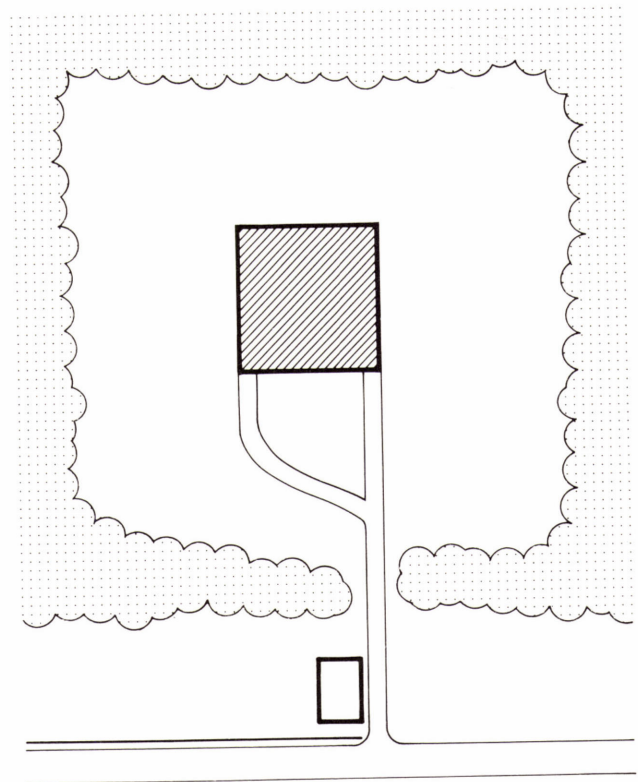
Marseilles

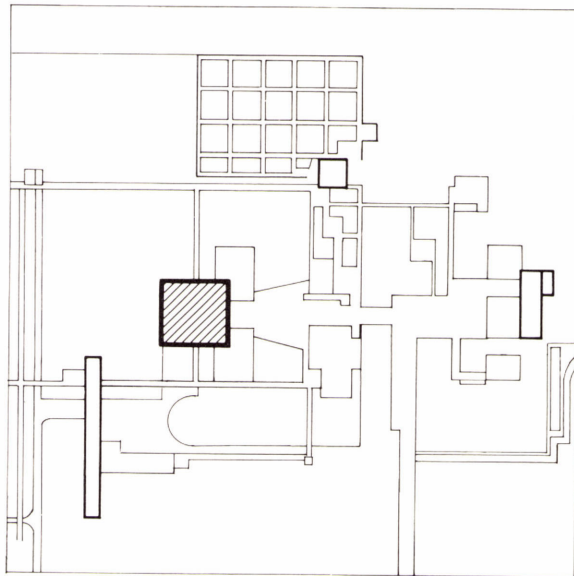
- Building located on open suburban site in a natural, meadow-like area.



Villa Savoye

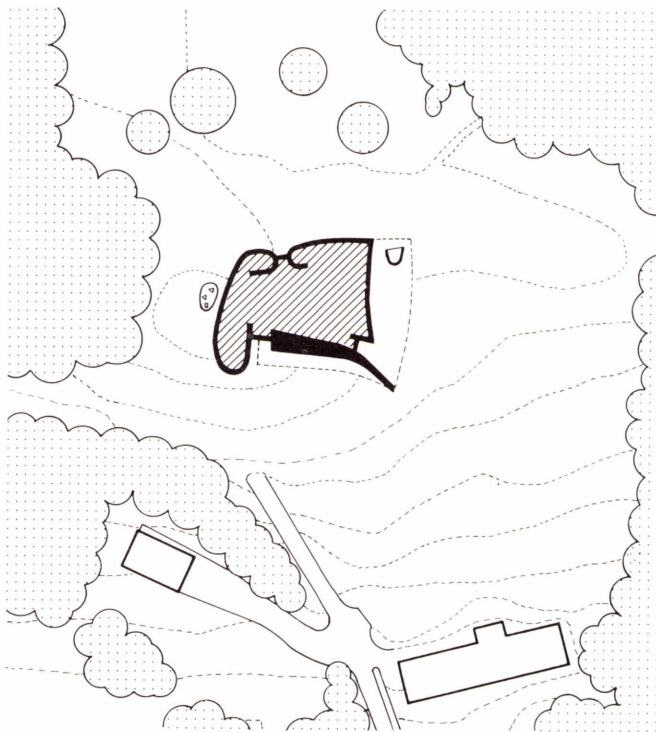
- Building located in open pasture encircled by trees with existing country road left intact to form part of entry drive which continues under house.





Assembly at Chandigarh

- Center of main capital complex located between secretariat and palace of justice.

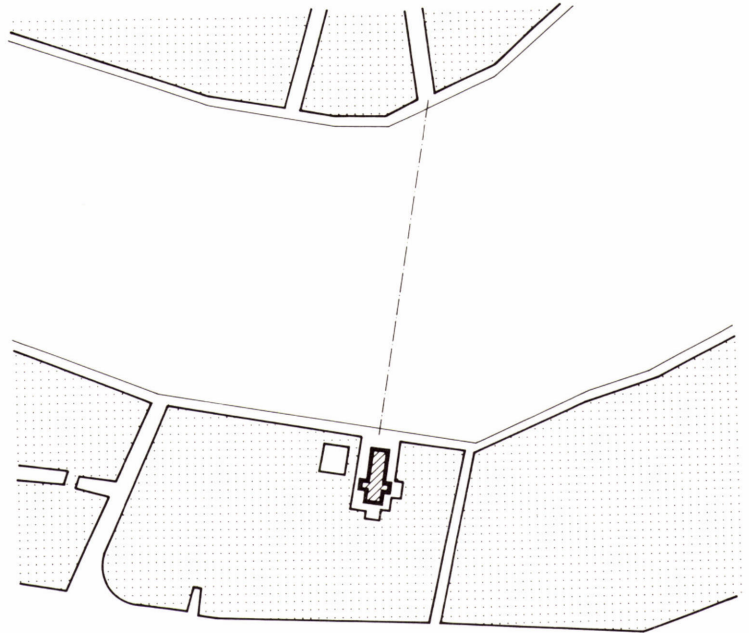


Ronchamp

- On crest of hill that dominates region.

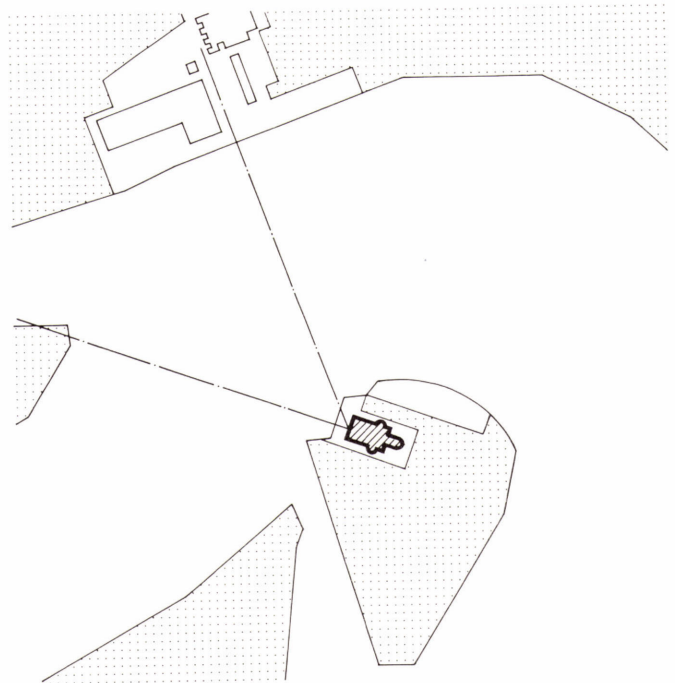
Redentore

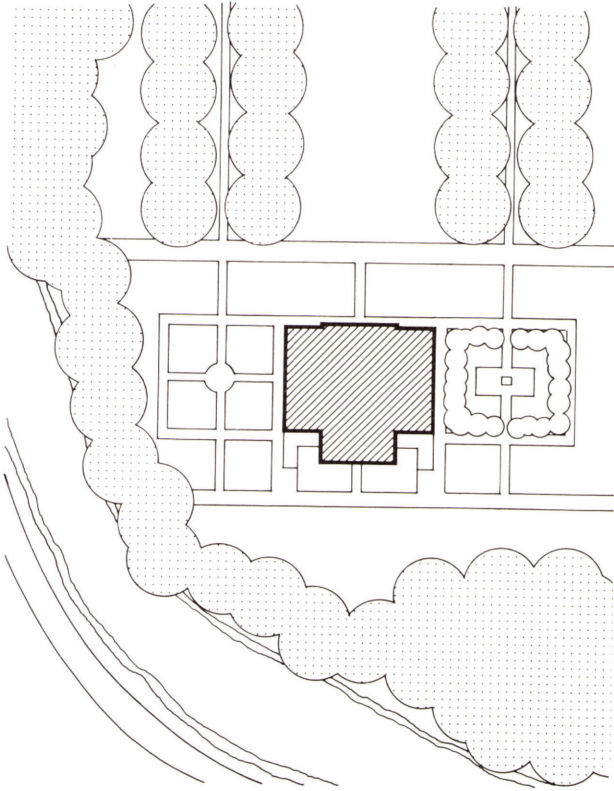
- In dense fabric oriented toward canal.
- Serves as terminus for religious procession that originates across canal.



San Giorgio

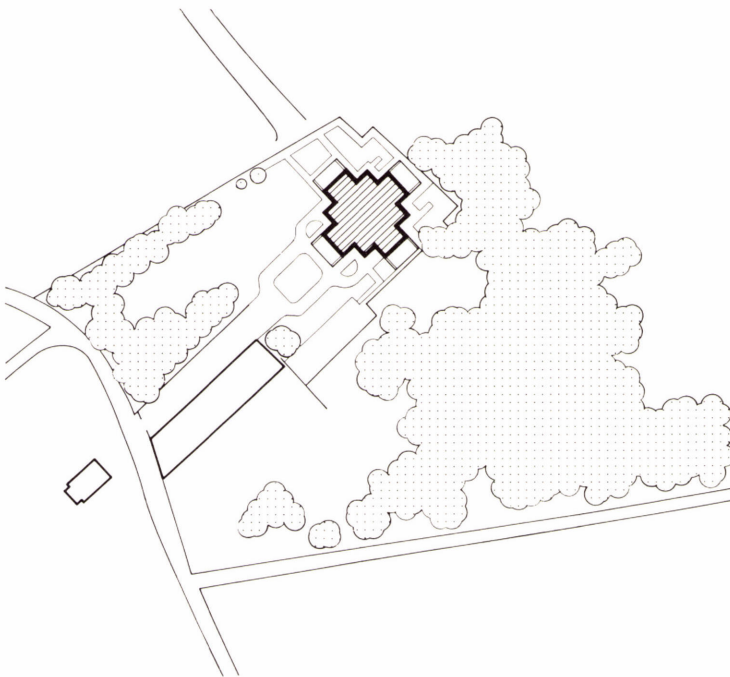
- Dominant form on island opposite major urban open space.





Malcontenta

- Located on canal in rural landscape



La Rotonda

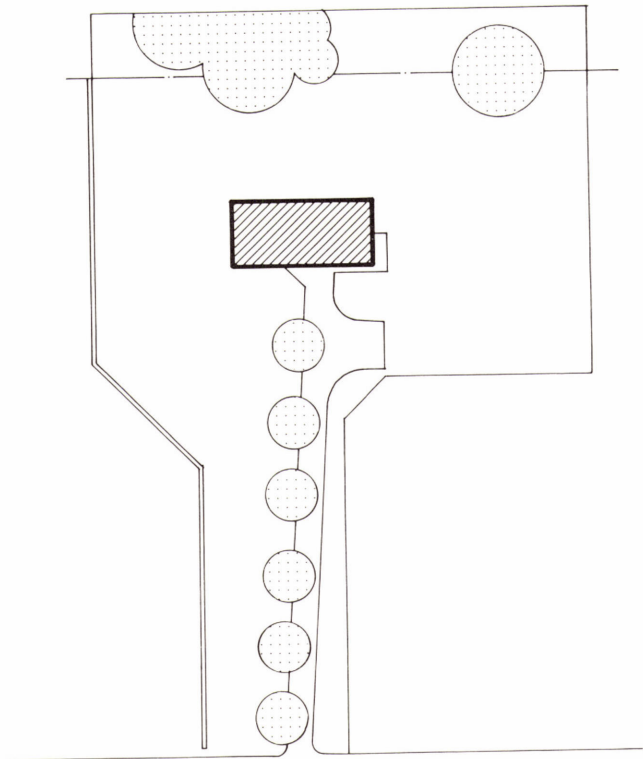
- Located on top of knoll above surrounding landscape.
- Built on one story platform.

VENTURI AND RAUCH

BUILDING TO CONTEXT

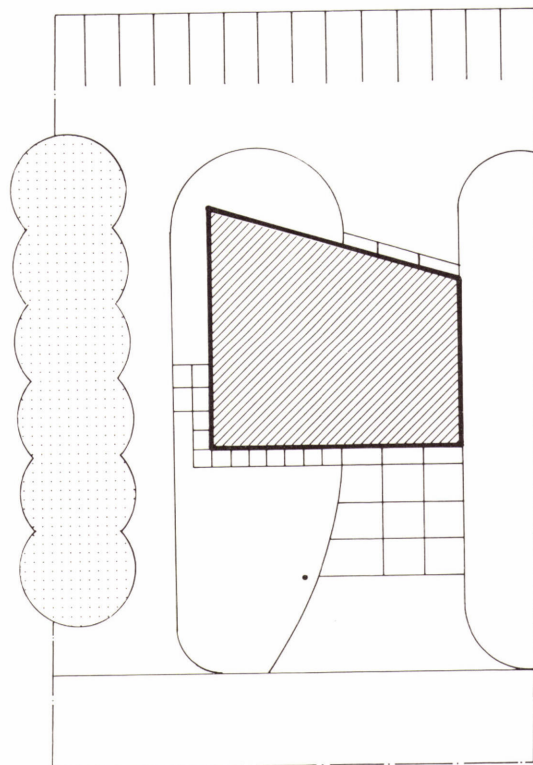
Venturi House

- On flat site, set back from suburban road, approached by long, straight driveway.



Fire House

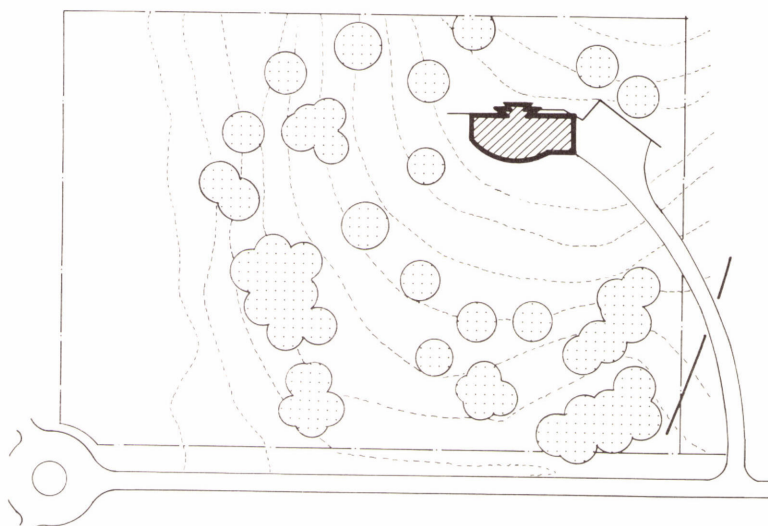
- On flat site next to two lane highway.





Tucker House

- On sloping, heavily wooded rural site with approach from downhill side of building.



Brandt House

- In flat natural clearing on 30 acre homestead farm in semi-rural area.

RELATIONSHIPS

CIRCULATION TO USE

The examination of the relationship between static and dynamic activities. As such, it is the combination of the circulation and space definition diagrams. The basic relationships are that circulation is separate from use space or through the use space. If circulation is separate from use space it either defines, serves, or links the use spaces. Circulation through a use space can be either defined or implied.

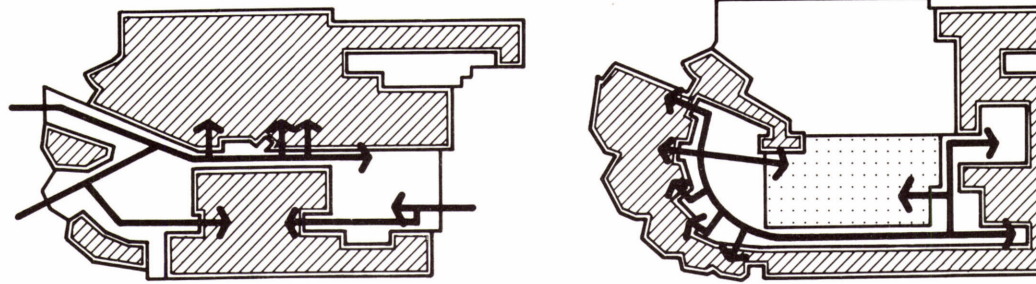


ALVAR AALTO

CIRCULATION TO USE

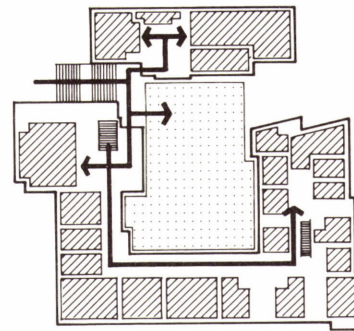
Cultural Center

- Circulation separate from use spaces.
- Use spaces around perimeter; circulation internal on first floor, adjacent to open court on second floor.
- Enter lobby space on each floor, then distribute.



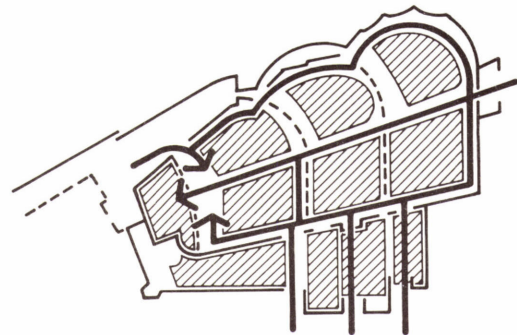
Town Hall

- Circulation separate from use spaces.
- Enter through central court into lobby spaces.
- Use spaces around perimeter, circulation adjacent to open court.



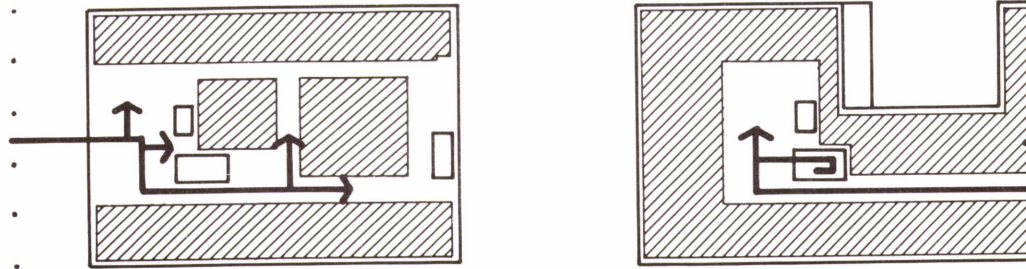
Imatra

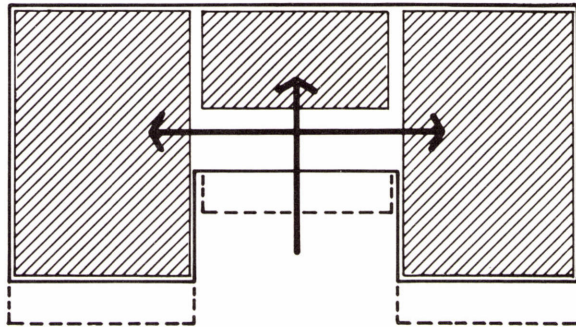
- Ceremonial circulation along central aisle through use space.
- General circulation filters through side into major space.



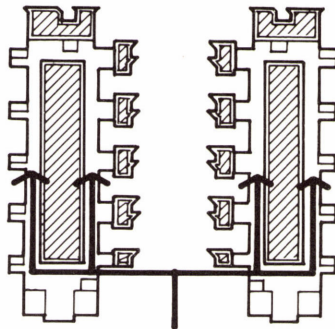
Enso/Gutzeit

- Circulation separate from use spaces.
- Use spaces around perimeter, circulation internal.
- Enter lobby space on each floor then distribute.

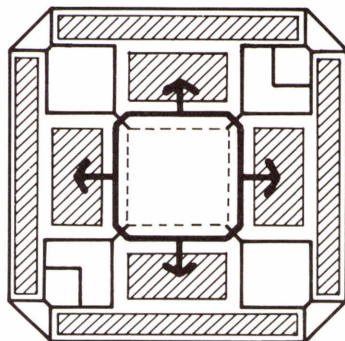


***Kimball Art Center***

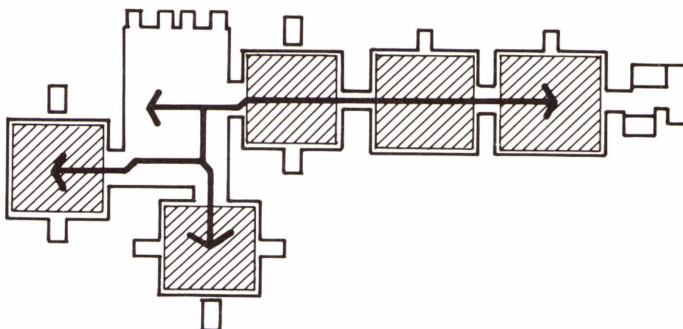
- Circulation through use major spaces.
- Vertical circulation incidental.

***Salk Institute***

- Circulation separate from and general outside of enclosed spaces.
- Vertical circulation generally in clearly articulated towers.

***Exeter Library***

- Circulation through major use spaces and around central well.
- Vertical and horizontal circulation patterns reinforce formal organization of building.

***Richards Medical Laboratory***

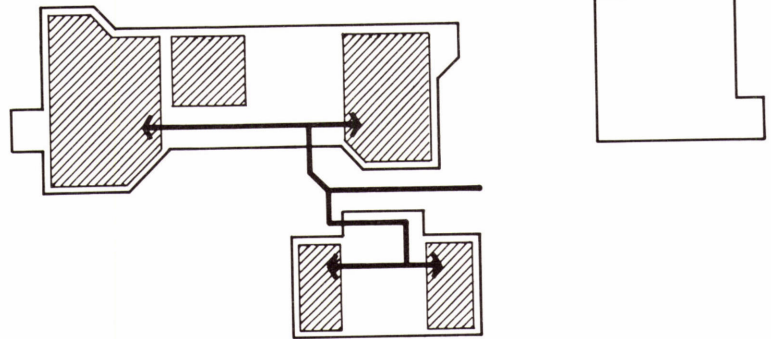
- Circulation through major use spaces that are separated by a series of circulation links.
- Vertical circulation generally located exterior of buildings in clearly articulated towers.

CHARLES MOORE

CIRCULATION TO USE

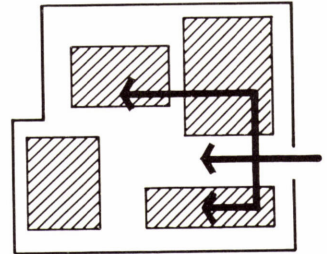
Hines House

- Exterior circulation, along spine, divides into house and guest house.
- Interior circulation along articulated spine, separated from and adjacent to use spaces.



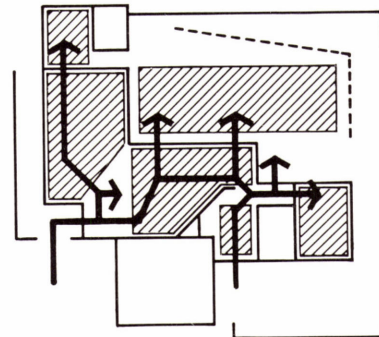
Sea Ranch

- At entrance to units, circulation is deflected around stair and through use spaces.



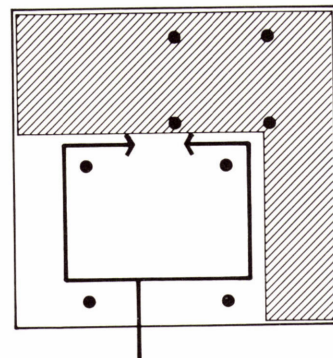
Burns House

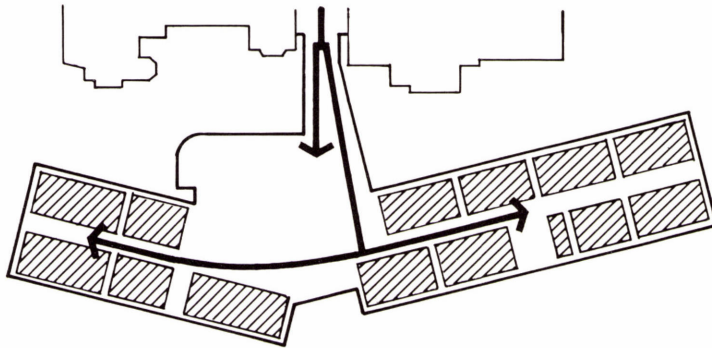
- Circulation generally through use spaces.



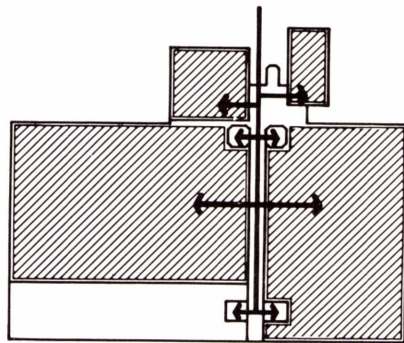
Moore House

- Circulation through use space defined by furniture and columns.

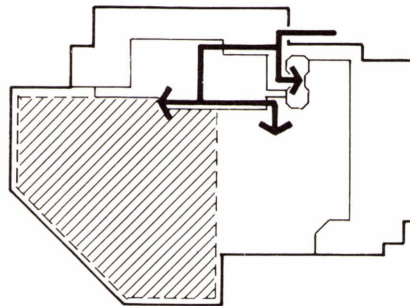
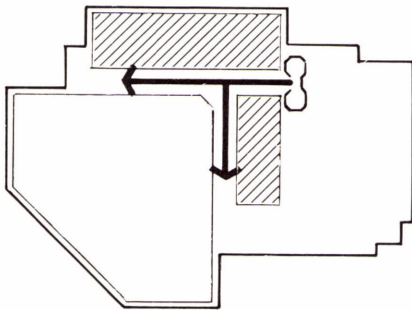


*Olivetti*

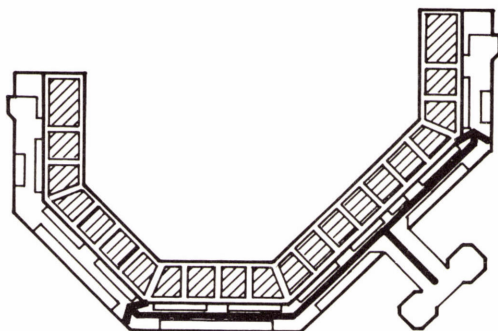
- Circulation separate from use spaces
- Circulation used as link to existing building and enclosed in glass.

*Leicester*

- Circulation separate from use spaces, generally glass enclosed.
- Vertical circulation located in clearly articulated towers.

*Cambridge History*

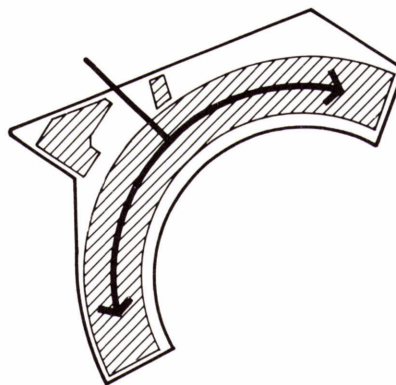
- Circulation generally separate from use spaces with the exception of the main use space.
- Defined circulation usually enclosed in glass.
- Vertical circulation located in clearly articulated towers.

*Oxford Dorm*

- Circulation separate from use spaces
- Vertical circulation located in clearly articulated towers.
- Circulation generally at perimeter, with use spaces adjacent to court.

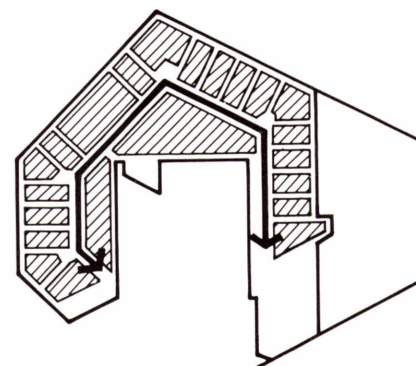
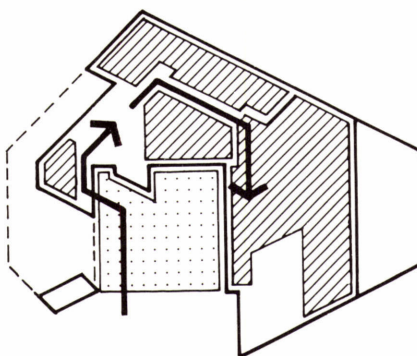
Library

- Circulation through major use space.



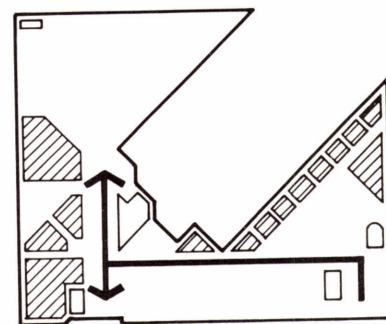
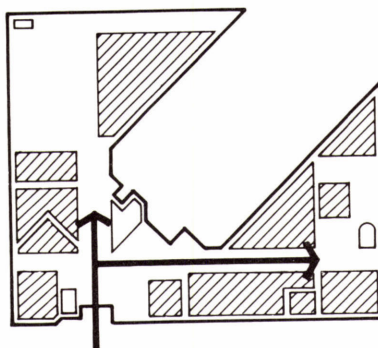
M.D.R.T.

- Circulation in clearly articulated areas within use spaces.
- Vertical circulation in clearly articulated towers.



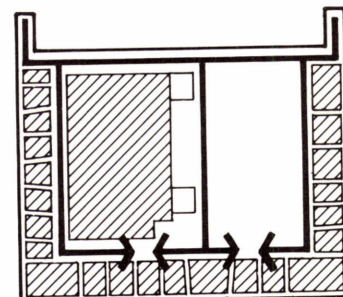
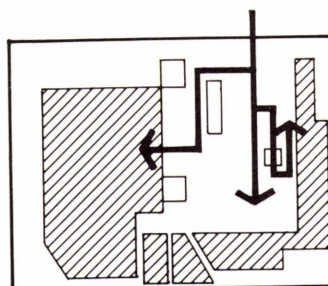
Music Building

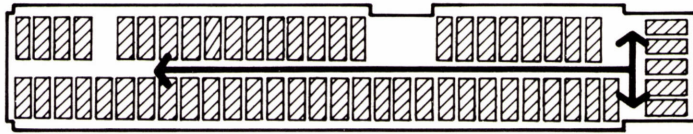
- Lower floor circulation through major use spaces.
- Upper floor circulation in defined spaces separate from use spaces.



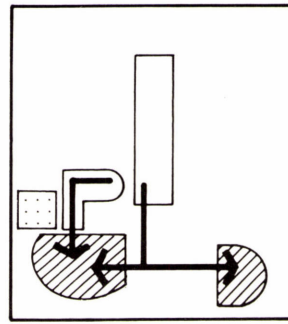
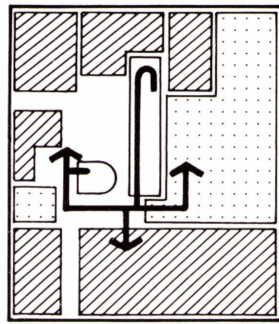
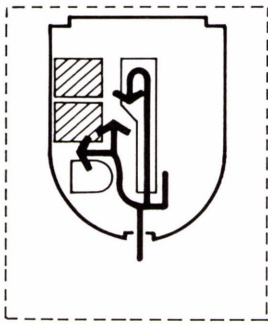
Student Union

- Circulation in defined spaces separate from use spaces.
- In major use spaces circulation is through the space.

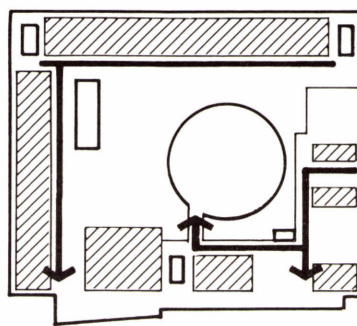
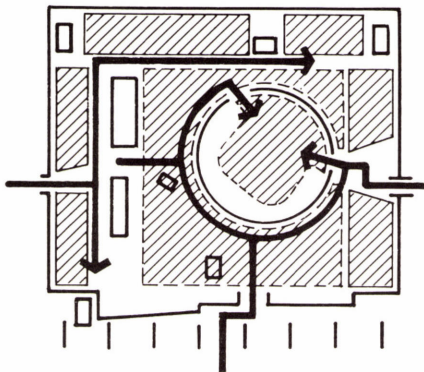


*Marseilles*

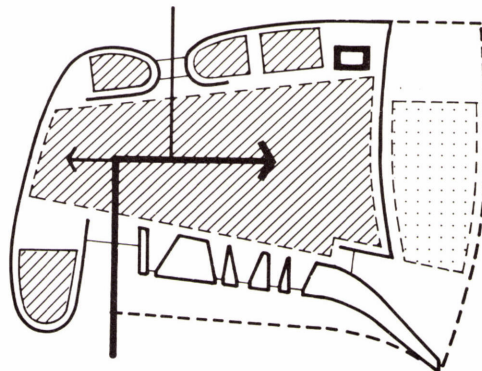
- Circulation located on every third floor is separate from and outside of enclosed spaces.

*Villa Savoye*

- Use spaces organized about central ramp which is dominant circulation element.

*Assembly at Chandigarh*

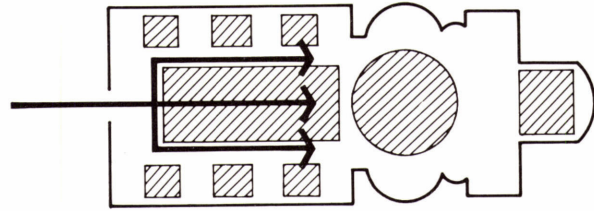
- Two general circulation patterns; one is separate from and outside of enclosed spaces, other is through major use spaces.

*Ronchamp*

- Circulation through major use spaces.

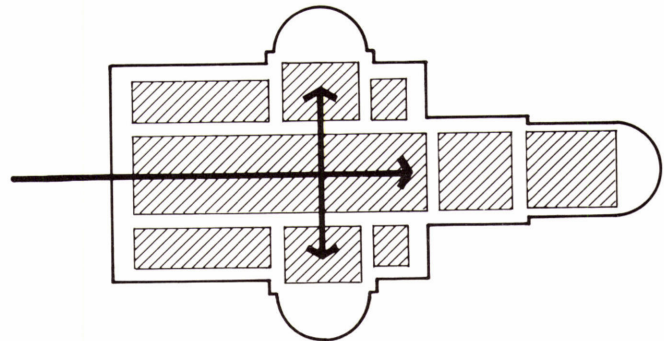
Redentore

- Circulation through major use spaces.



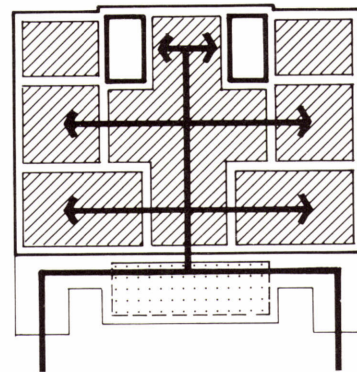
San Giorgio

- Circulation through major use spaces.



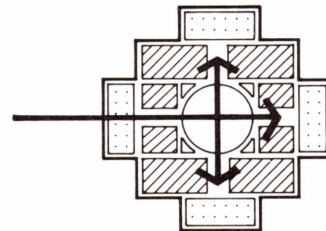
Malcontenta

- Circulation through major use spaces.

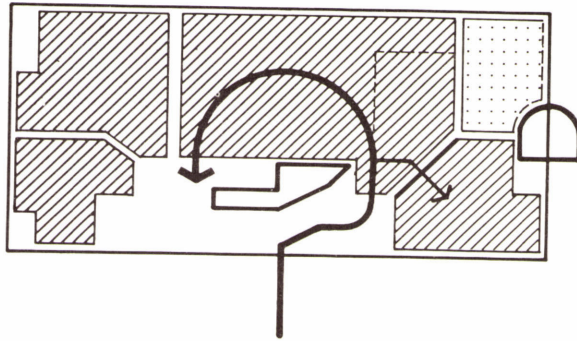


La Rotonda

- Circulation through major use spaces.
- Vertical circulation located off major central space.

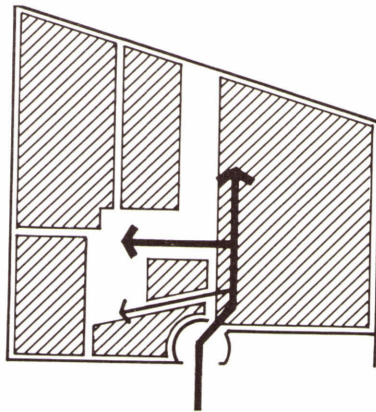


CIRCULATION TO USE



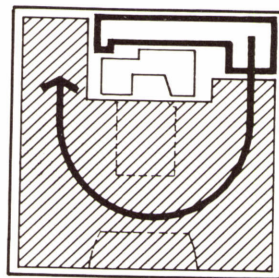
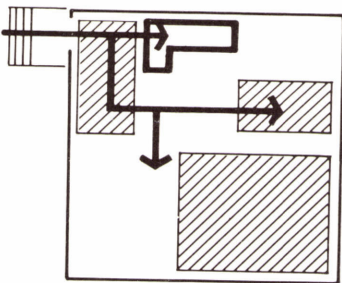
Venturi House

- Circulation through major use spaces.



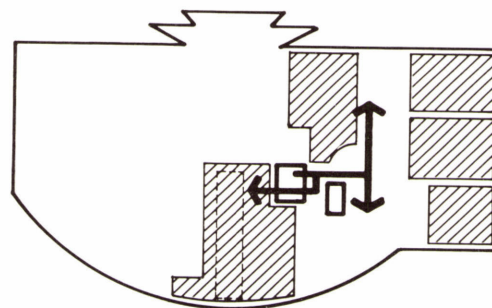
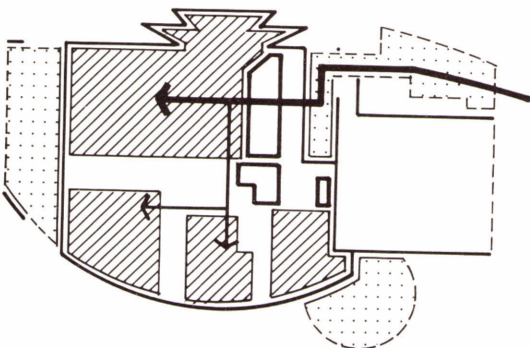
Fire Station

- Circulation through use spaces.



Tucker House

- Circulation through major use spaces.



Brandt House

- Circulation through major use spaces.

RELATIONSHIPS

PLAN TO SECTION

The examination of the relationship between two dimensional information as represented in a plan and the third dimension represented in section or elevation.

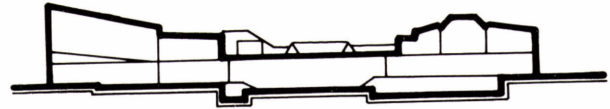
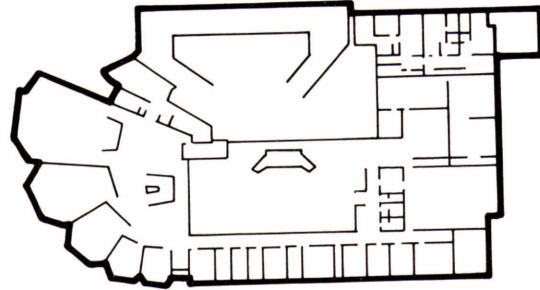
There is either a direct or indirect relationship between the plan and the section. Direct relationships exist when the section is the plan rotated 90° , similar articulations occur in plan and section, or the plan is the inverse of the section.

Indirect relationships exist when the plan and section are articulated independently; such that information from one does not suggest the configuration of the other.



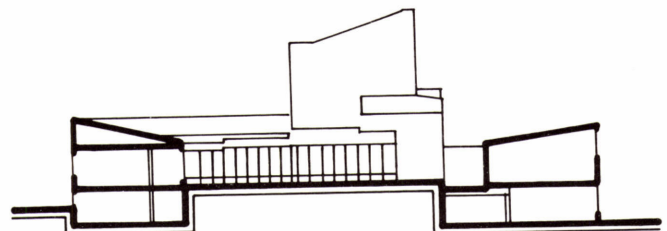
Cultural Center

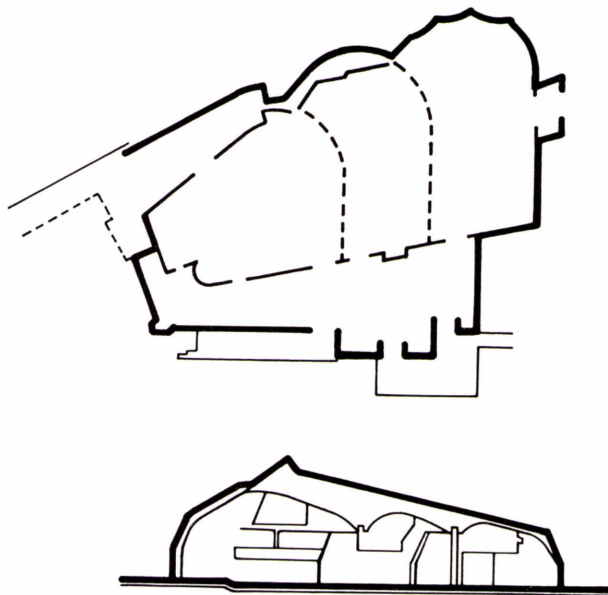
- Major use spaces articulated in section.
- Complex plan forms are expressed in section as simpler configurations, and conversely simple plan forms are expressed in section as more complex configurations.



Town Hall

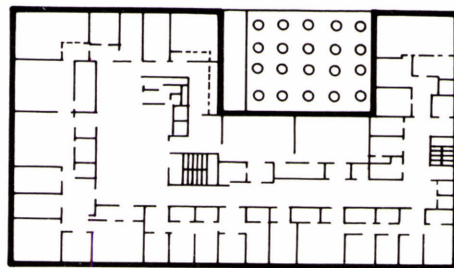
- Major space dominates section.
- Courtyard is negative form in section and plan; major space is positive form in section only.





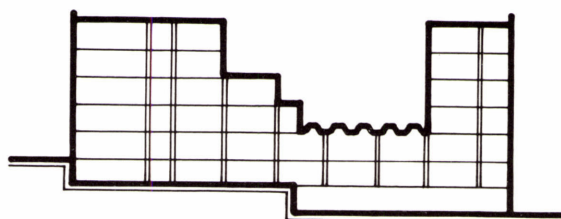
Imatra

- Strong formal similarity between exterior plan form and interior section form of major space.
- As plan form decreases, section increases.



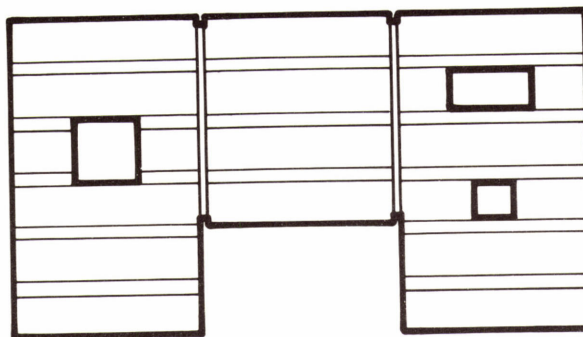
Enso/Gutzeit

- Strong formal similarity between plan and section.



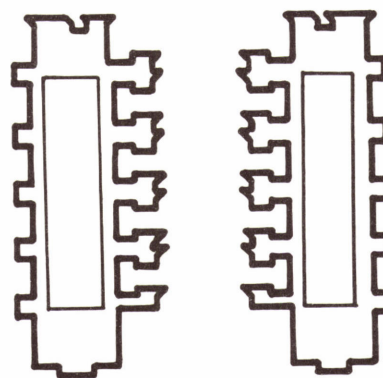
Kimball Art Center

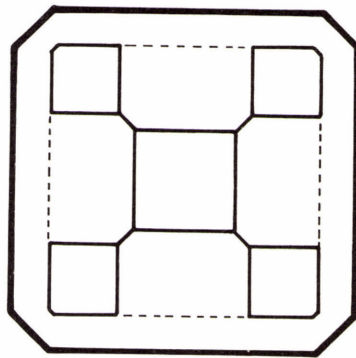
- Articulation of plan form independent of section articulation.
- Variation in use spaces not articulated in plan or section.



Salk Institute

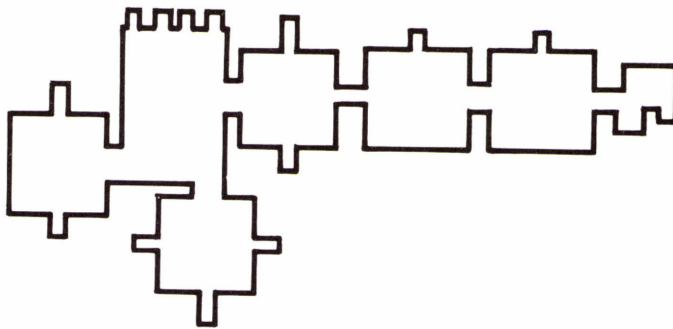
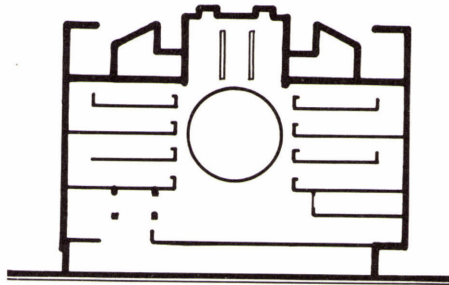
- A plan form more articulated than, and generally independent from, section articulation.





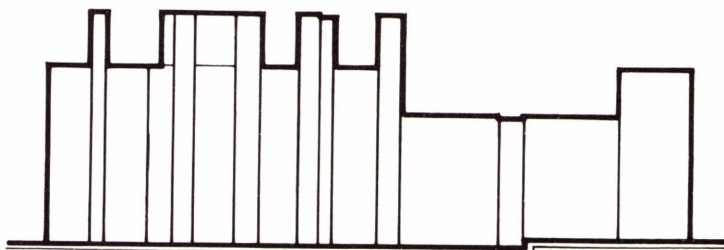
Exeter Library

- Strong formal similarity between plan and section. Both developed from square configurations where the central cell in both plan and section is void.



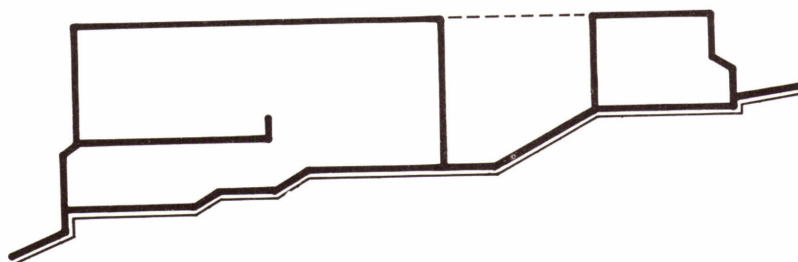
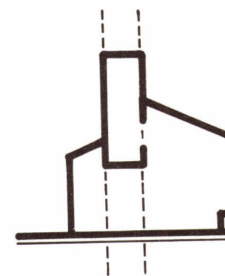
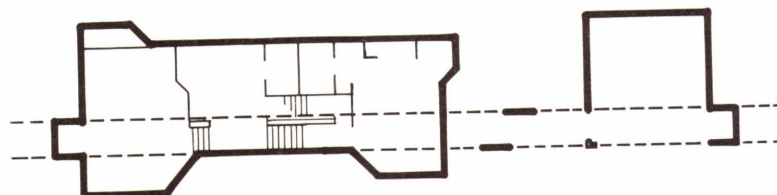
Richards Medical Laboratory

- Formal elements articulated in both plan and section.



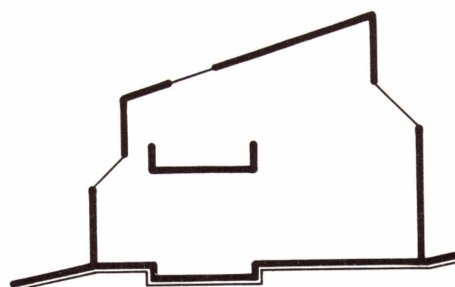
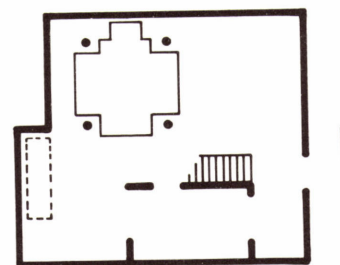
Hines House

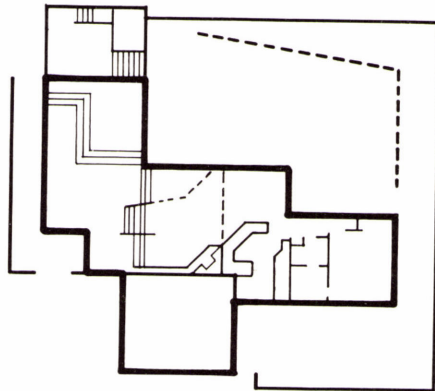
- Circulation spine dominant in plan, section, and elevation.
- Major form of building modified by series of appendages which are articulated in plan and section.



Sea Ranch

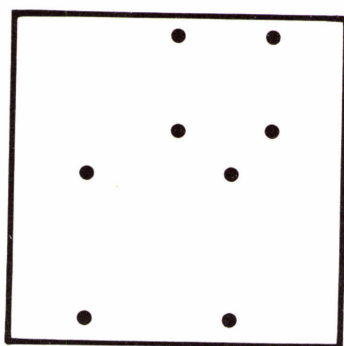
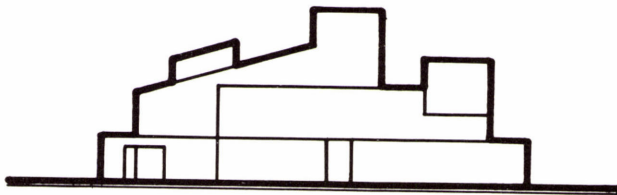
- Interiors are essentially large single spaces which are modulated by room sized units and related circulation elements floating within the volume.
- Interior volume further modulated by appendages which are articulated in plan and section.





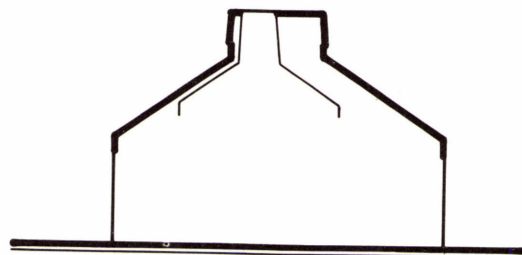
Burns House

- No apparent relationship between form and roof form.



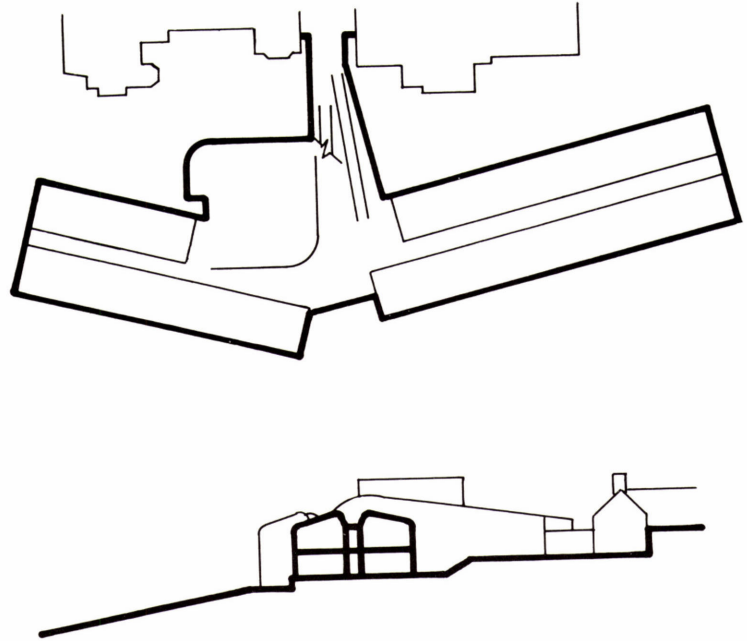
Moore House

- Interior is large open space in plan section modulated by aediculae.
- The aedicula roof in section is similar to building roof in section.



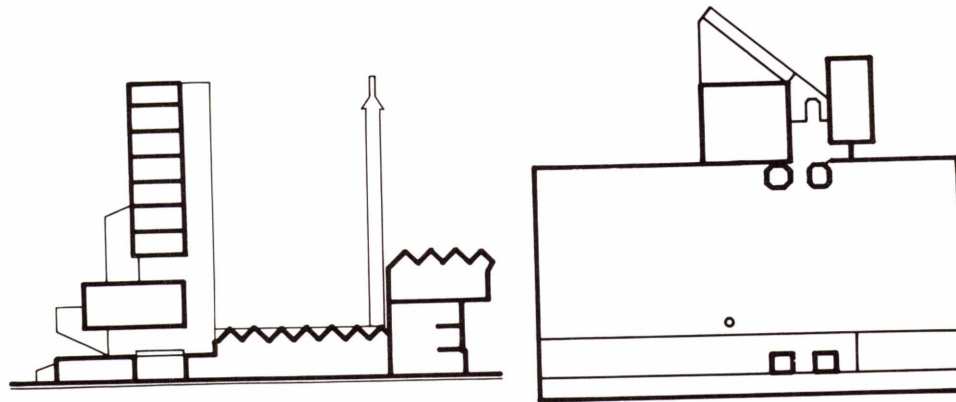
Olivetti

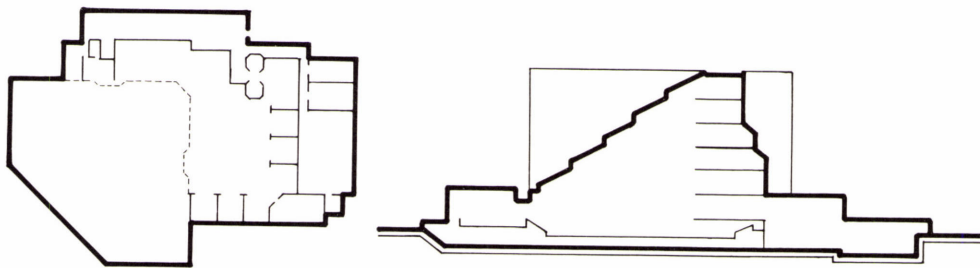
- Major building elements articulated as parts in plan and section.



Leicester

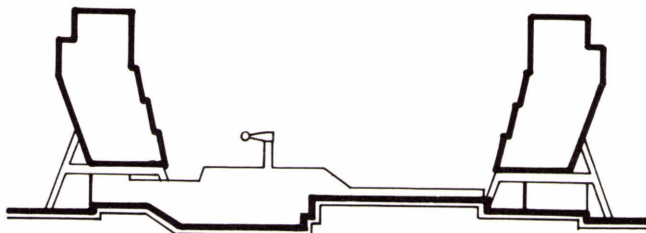
- Inverse relationship exists between plan and section. Large plan form is lowest form in section and smallest plan form is tallest form in section.
- Section is more complex than plan.





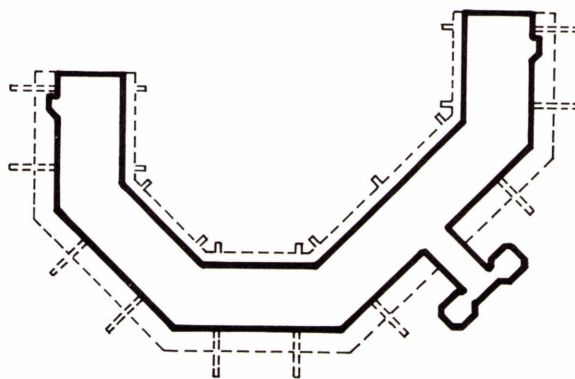
Cambridge History

- Strong formal similarity between plan and section at major use space, expressed as dominant angular form.



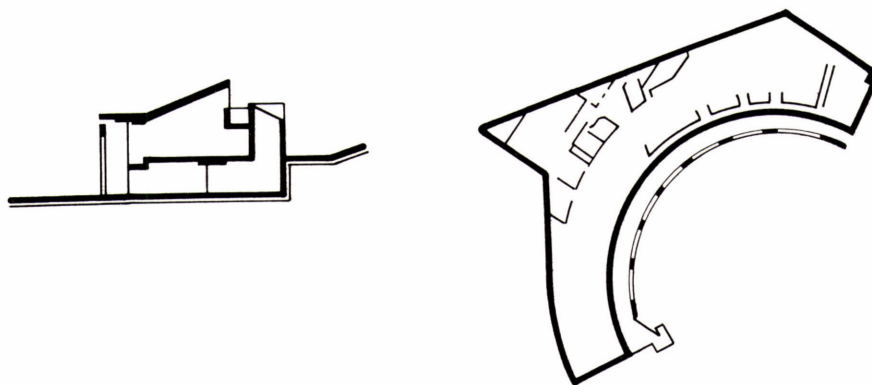
Oxford Dorm

- Strong formal similarity between plan and section; both are 'u' shaped configurations.
- Open side of complex completed by a wall to form a courtyard.



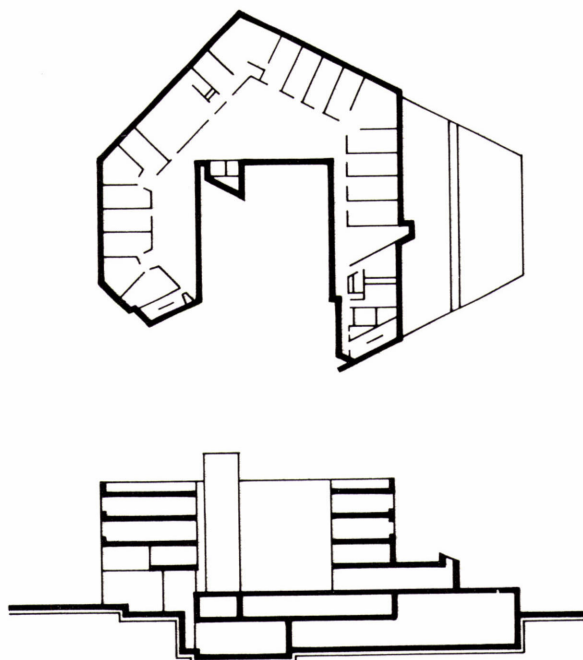
Library

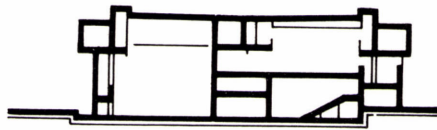
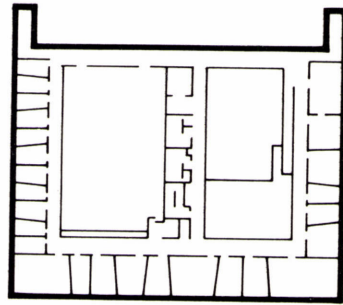
- Difference between the straight forms and the curved forms in plan are reinforced in section.



M.D.R.T.

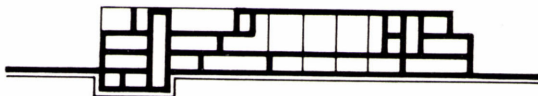
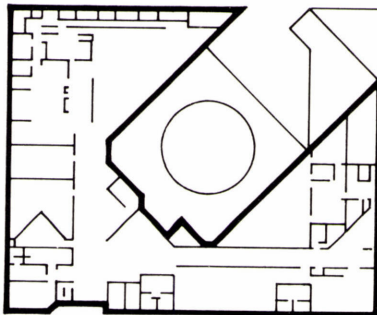
- Strong formal similarity between plan and section in that both embody a 'U' shaped form.





Music Building

- Strong formal similarity between plan and section in that both reflect a container for two larger forms.



Student Union

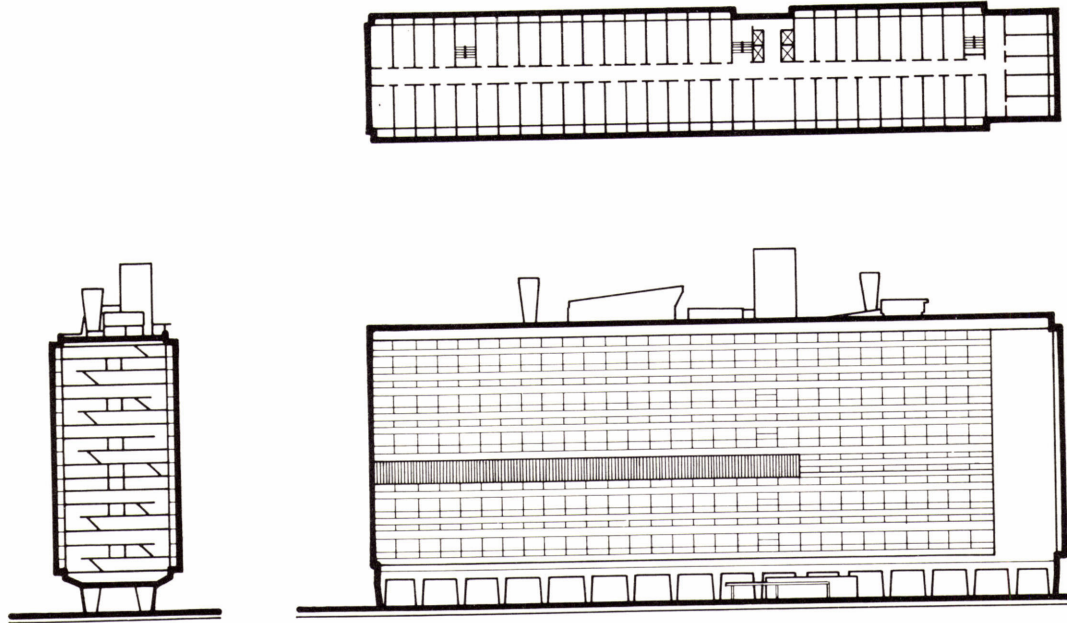
- Strong formal similarity between plan and section in that both are symmetrical rectilinear forms with 'U' shaped cutouts.

LE CORBUSIER

PLAN TO SECTION

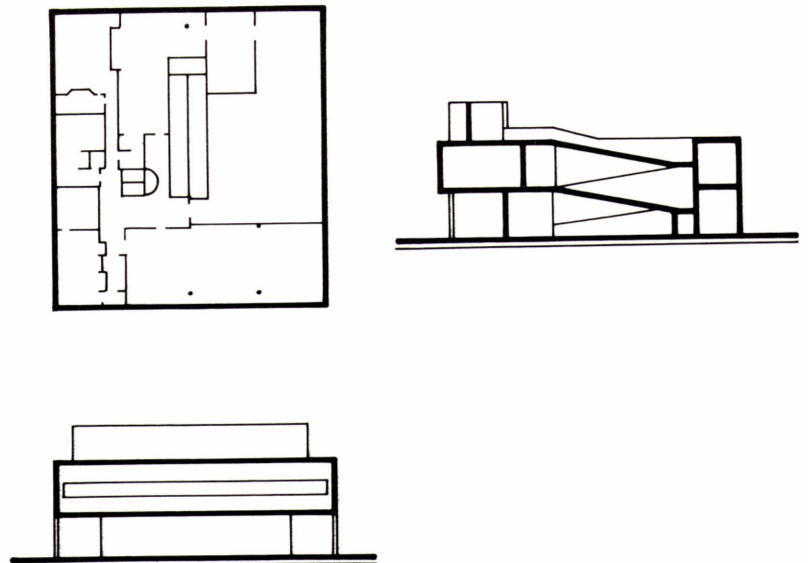
Marseilles

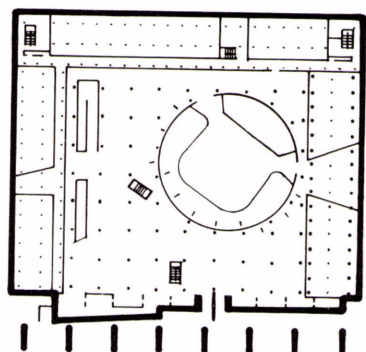
- Similar articulation in plan, section and elevation.



Villa Savoye

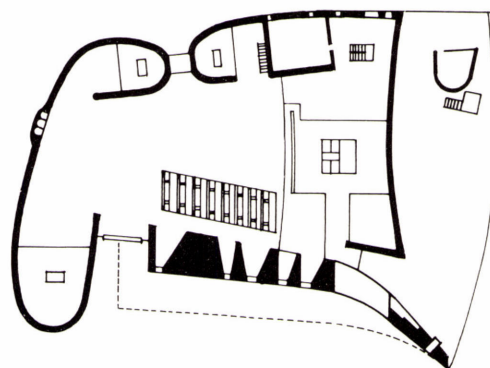
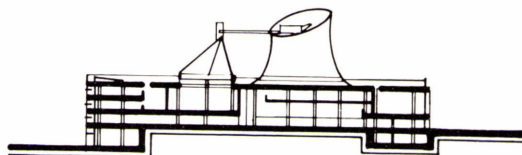
- Plan and section developed from similar simple geometric forms.





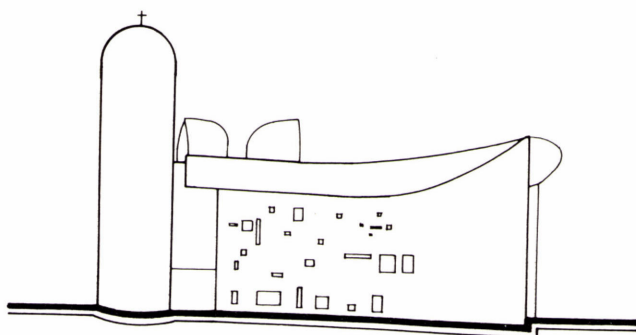
Assembly at Chandigarh

- Unique formal elements are articulated in plan and section.



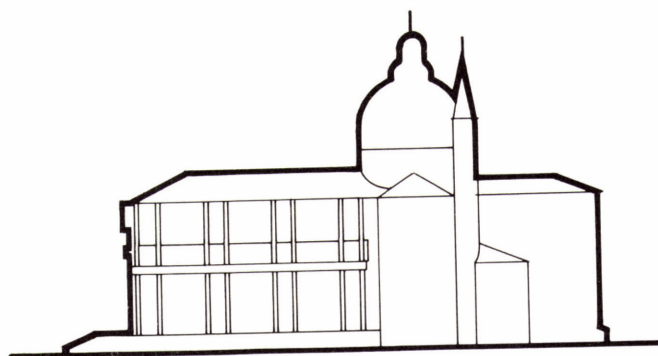
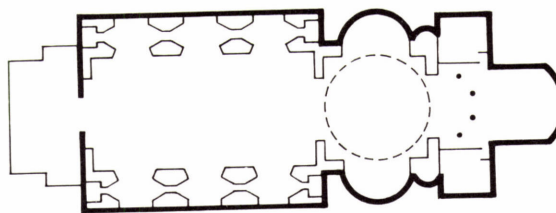
Ronchamp

- Strong formal similarity between form plus tower in elevation and wall plus chapel in plan.



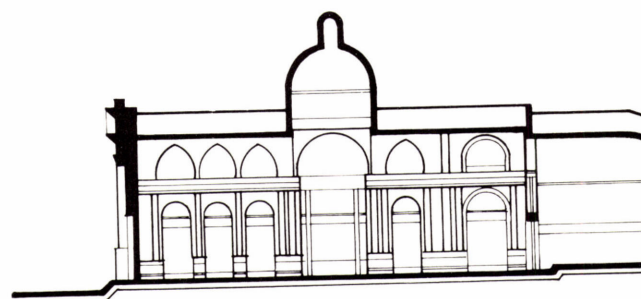
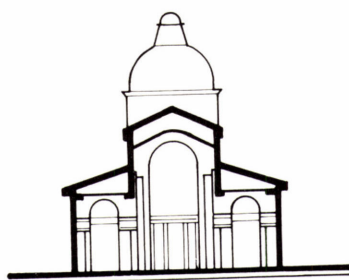
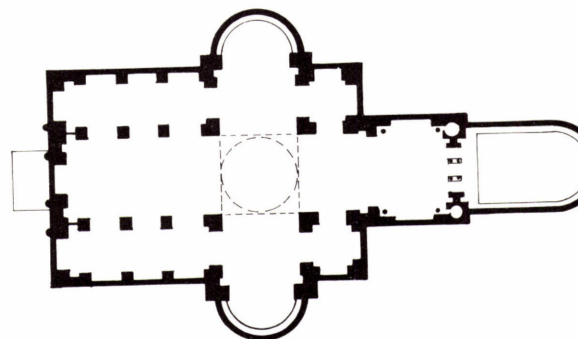
Redentore

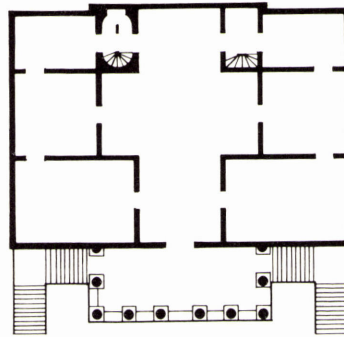
- Strong formal similarity between plan and section. Changes in plan form from orthogonal to circular coincide with similar changes in section and elevation.



San Giorgio

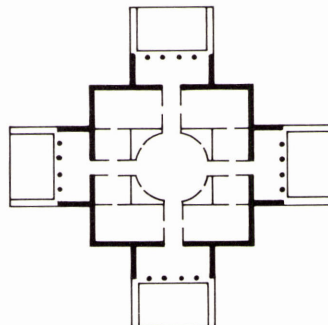
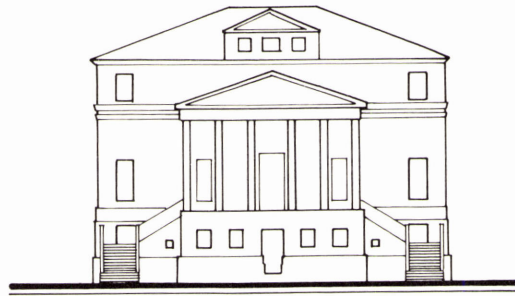
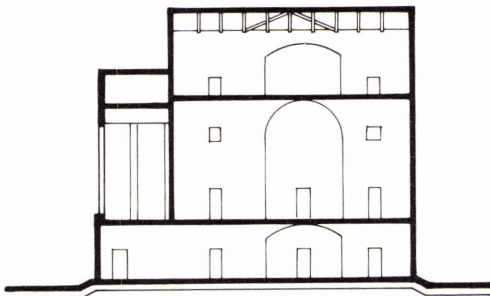
- Strong formal similarity between plan and section. Changes from orthogonal to circular forms are coincident in plan and section.





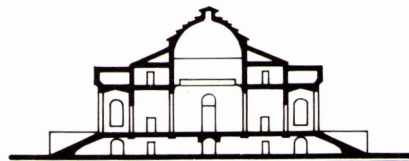
Malcontenta

- Dominant central plan form articulated on elevation.
- Three part division of plan is repeated in section and elevation.



La Rotonda

- Central plan form is dominant feature in section.

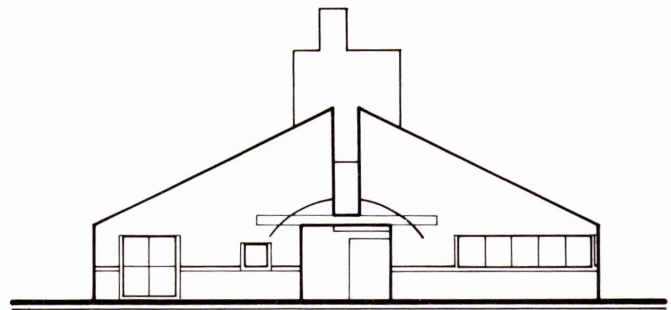
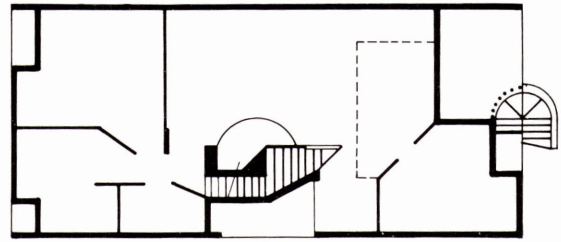


VENTURI AND RAUCH

PLAN TO SECTION

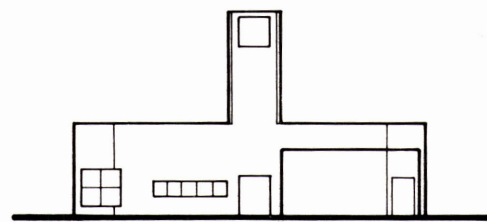
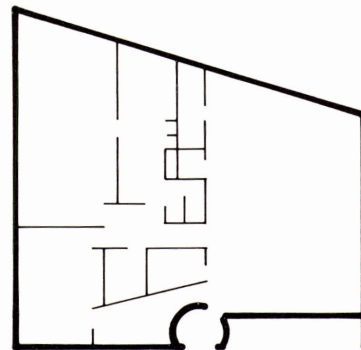
Venturi House

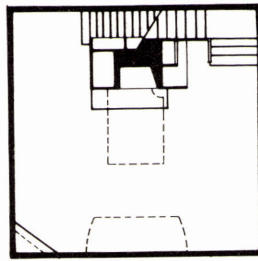
- Dominance of center emphasized in plan and elevation.
- Plan, section and elevation each contain a solitary curved form.
- Simple overall plan configuration inconsistent with more complex elevation configurations.



Fire Station

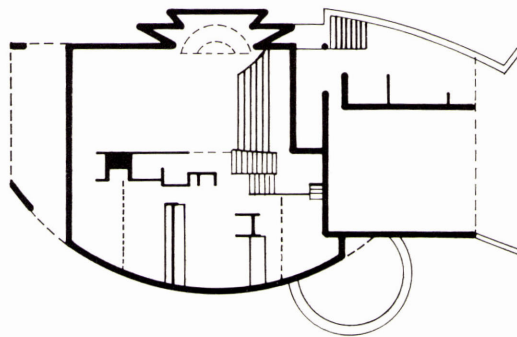
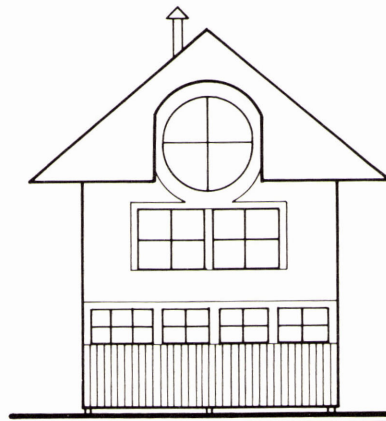
- Unique element in plan is dominant element in elevation.
- Elevation is inconsistent with section.





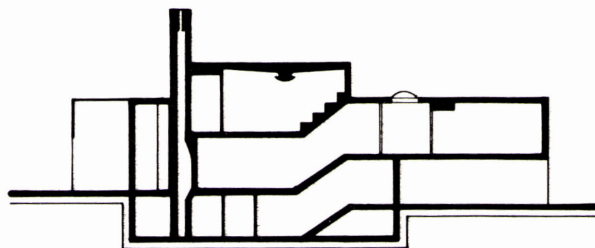
Tucker House

- Simple overall plan configuration inconsistent with more complex section.
- Square of plan reflected in square elevation.



Brandt House

- Dominance of center emphasized in plan and elevation.
- Split level nature of section not evident in elevation.
- Simple overall elevation configuration inconsistent with complex plan configuration.



RELATIONSHIPS

UNIT TO WHOLE

The examination of parts of a built form as units and the relationships of these parts to the total building. Alternative relationships are; that the unit is the whole, the units aggregate to form the whole, and the whole is more than the aggregation of the units.

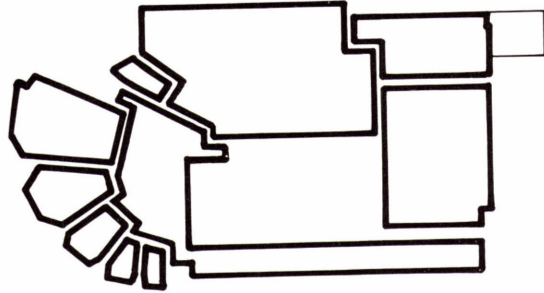


ALVAR AALTO

UNIT TO WHOLE

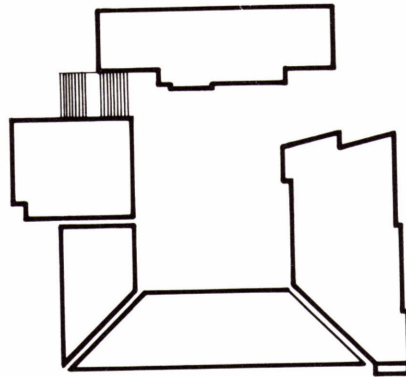
Cultural Center

- Units are various use spaces arranged to form open court.
- Whole is an aggregate of the units.



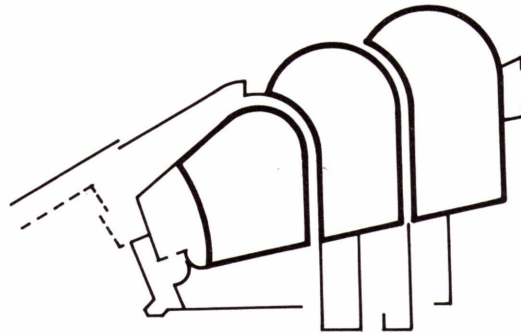
Town Hall

- Units expressed by changes in roof plane.
- Units arranged to form open courtyard.



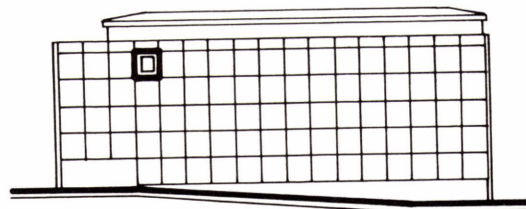
Imatra

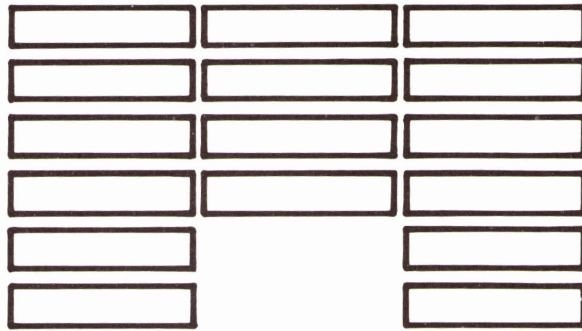
- Units are three subdivisions of major space that are similar in form and articulated internally.



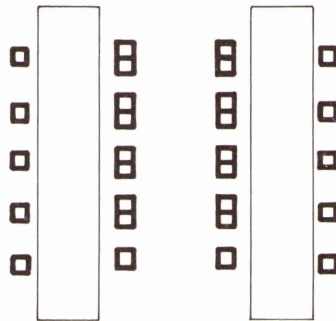
Enso/Gutzeit

- Units relate to whole on several levels, window to stone cell, cell to elevation, and elevation to context.
- All forms are rectilinear.

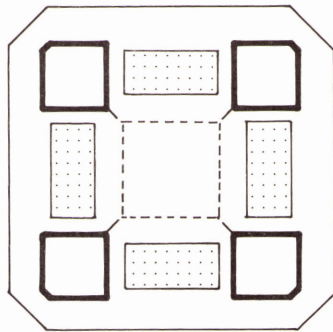


*Kimball Art Center*

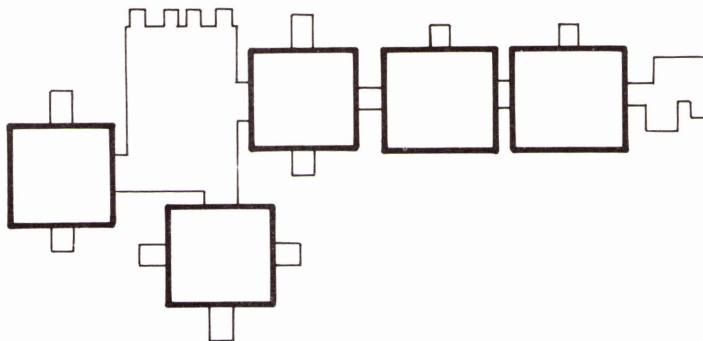
- Units are structural vaults.
- Whole is an aggregate of the units.

*Salk Institute*

- Units are service towers and small spaces, distributed around large spaces.

*Exeter Library*

- Units relate to whole, first as elements in corners to adjacent use spaces, second as use spaces to open well, then as open well to whole.

*Richards Medical Laboratory*

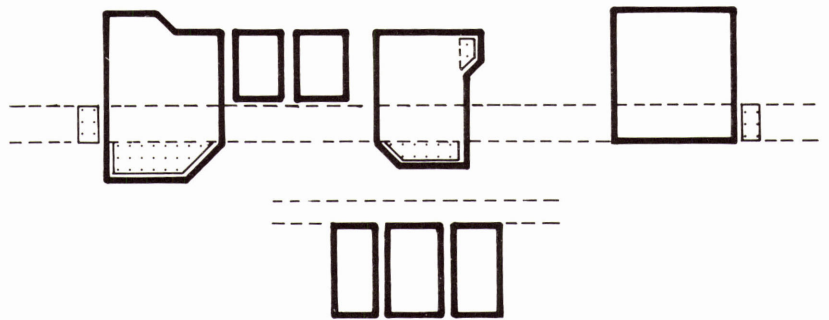
- Units relate to whole, first as articulated towers to use space and then as use spaces to whole.
- All units are rectilinear.

CHARLES MOORE

UNIT TO WHOLE

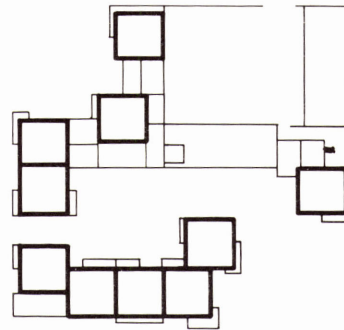
Hines House

- Units relate to whole first as appendages to major spaces then as a series of major use spaces linked by a spine to form the building.



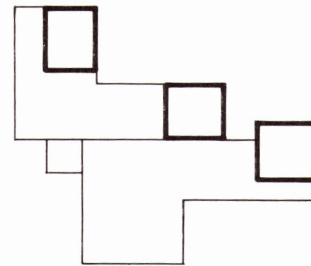
Sea Ranch

- Units are major spaces of individual dwellings aggregated to form complex with open court at center.



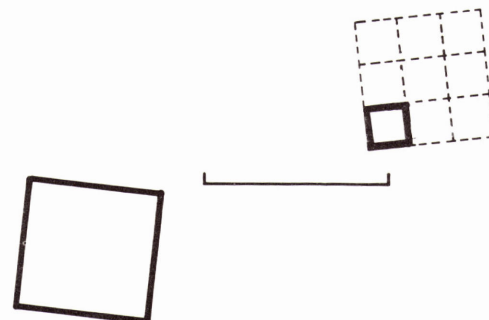
Burns House

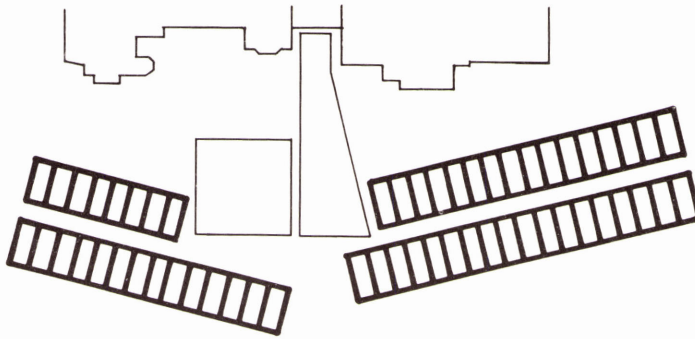
- Units are tower forms with shed roofs that project above the whole.



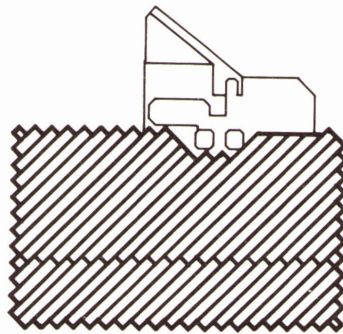
Moore House

- Unit is the whole.

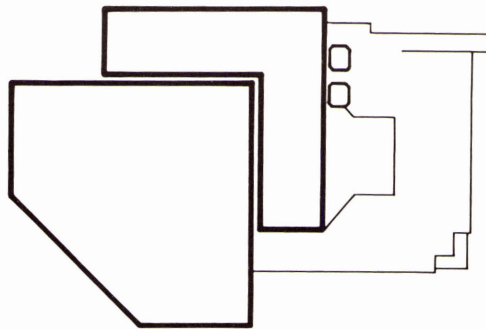


*Olivetti*

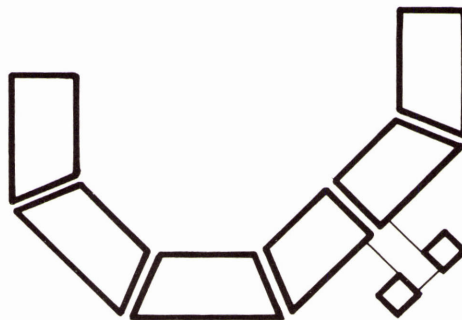
- Units are repetitive modular elements combined with special use spaces to form the whole.

*Leicester*

- Units are repetitive angular elements over low building forms.
- Low building form is an aggregate of units and is in contrast to the element.

*Cambridge History*

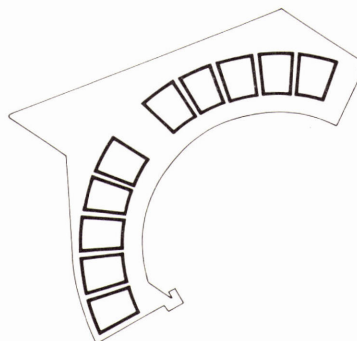
- Units are dominant building elements which include the major use spaces and adjacent smaller spaces.

*Oxford Dorm*

- Units are vertical circulation towers with trapezoidal plan forms which are aggregated to form court.

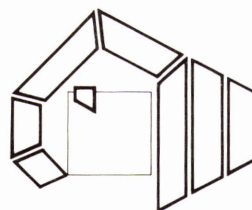
Library

- Units are wedge shaped structural bays which form major use space.



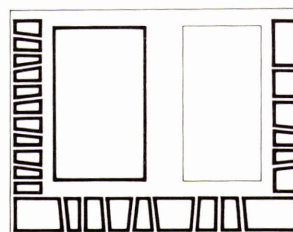
M.D.R.T.

- Units are trapezoidal plan forms; whole is an aggregate of units.



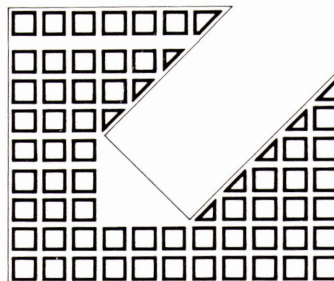
Music Building

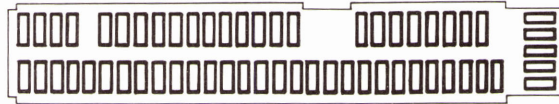
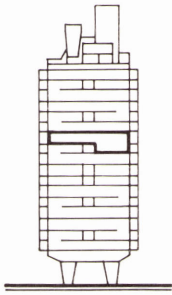
- Units are small, repetitive spaces which wrap two larger units to form whole.



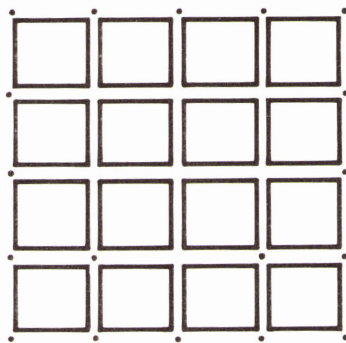
Student Union

- Units are structural modules which aggregate to form whole.

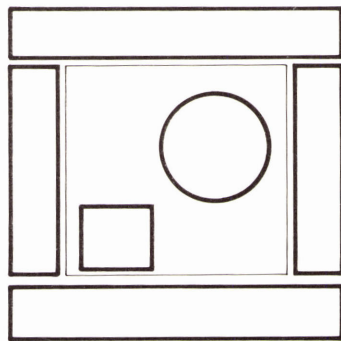


*Marseilles*

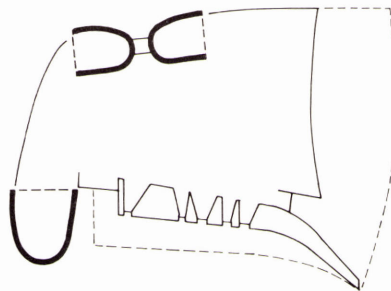
- Units are repetitive living cells which are aggregated to form whole.

*Villa Savoye*

- Units are structural grids.
- Whole is an aggregate of the units.

*Assembly at Chandigarh*

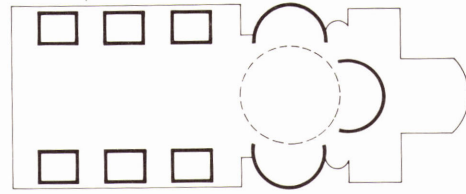
- Units are simple geometric forms which define the boundaries and unique character of the building.

*Ronchamp*

- Units are semi-circular towers which are incorporated into a whole.

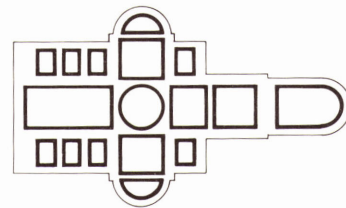
Redentore

- Units are grouped in threes as smaller chapels on sides of nave and semicircular forms around dome.



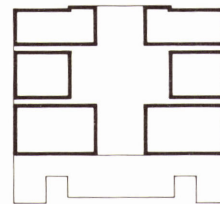
San Giorgio

- Units are implied spatial definitions comprising smaller chapels, nave, transepts, choir, and monk's chapel.
- Whole is an aggregate of spatial units.



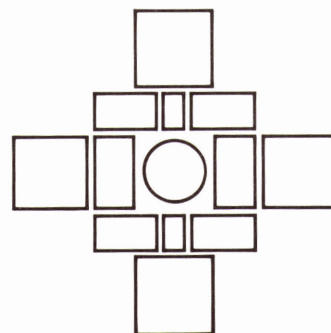
Malcontenta

- Units are rectilinear use spaces aggregated about major central space.

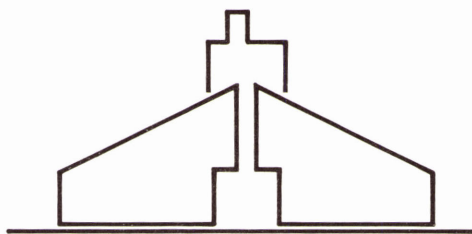


La Rotonda

- Units are major geometric plan forms, including stairs and portico, building mass and dome.
- Second level of units are rectilinear use spaces in building.
- Whole is an aggregate of units.

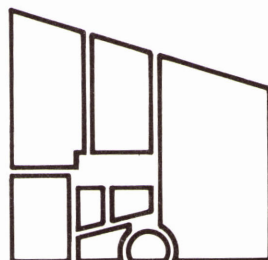


UNIT TO WHOLE



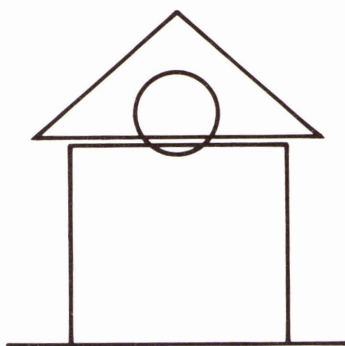
Venturi House

- Units are similar geometric forms that have been separated to create a whole.



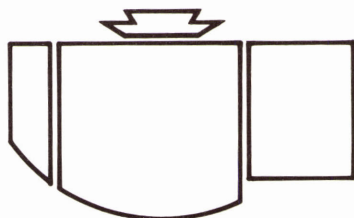
Fire Station

- Units are geometric forms that generally coincide with use spaces.
- Whole is the aggregate of units.



Tucker House

- Units are three simple geometric forms aggregated to form a whole.



Brandt House

- Units are four geometric forms aggregated to form a whole.

RELATIONSHIPS

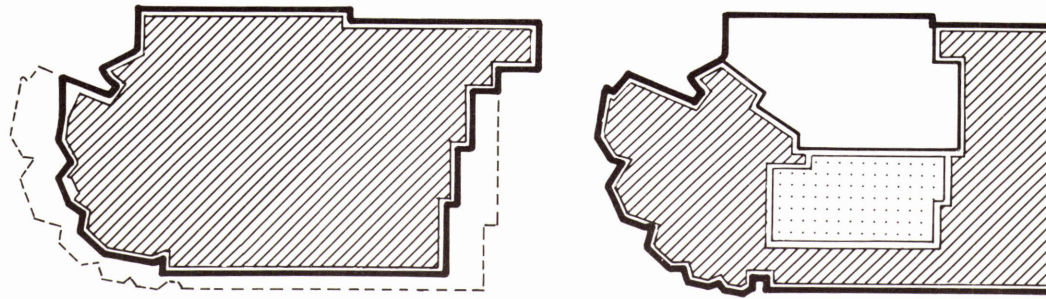
INSIDE TO OUTSIDE

The examination of the configuration of the membrane which separates the exterior from the interior. The configuration can be such that the outside and the inside are the same or different. Contrast between inside and outside can result from differences in geometry, alignment, articulation, or form language.



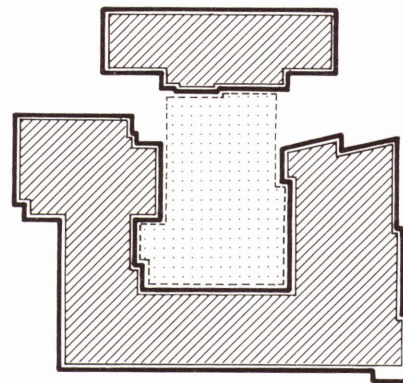
Cultural Center

- Interior form consistent with exterior form.
- Configuration of built form creates defined exterior space.



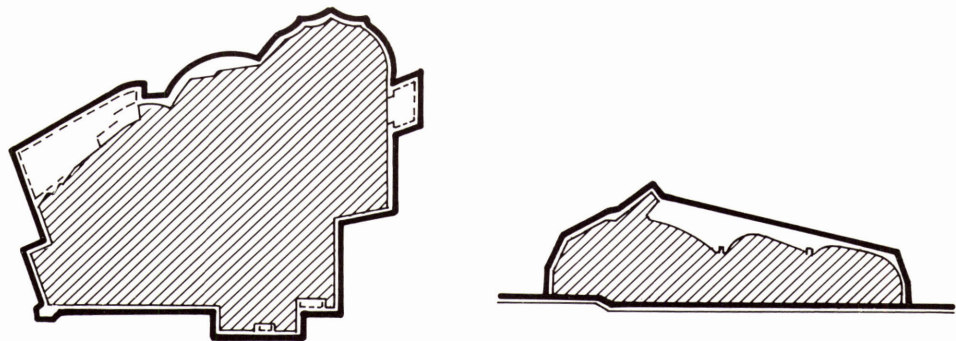
Town Hall

- Interior form consistent with exterior form.
- Configuration of built form creates defined exterior space.



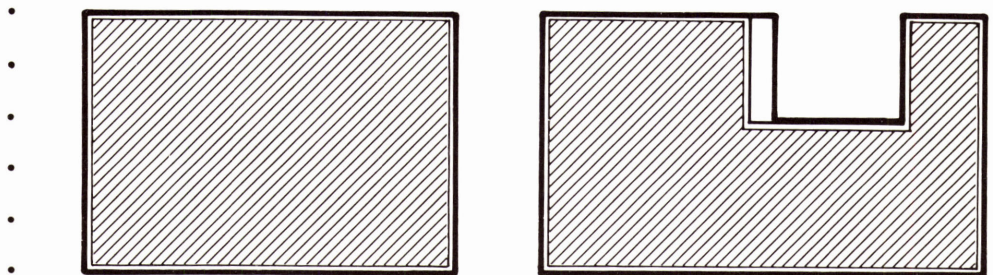
Imatra

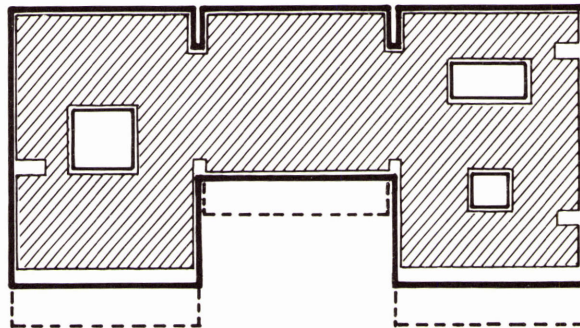
- Inconsistency between interior form and exterior form in both plan and section.
- Externally units are articulated on one side and combined into a single form on the other.



Enso/Gutzeit

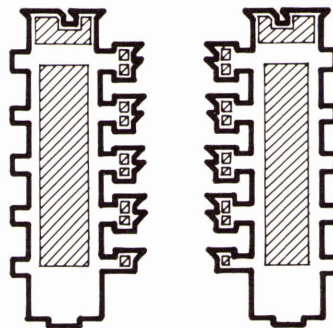
- Interior form consistent with exterior form.





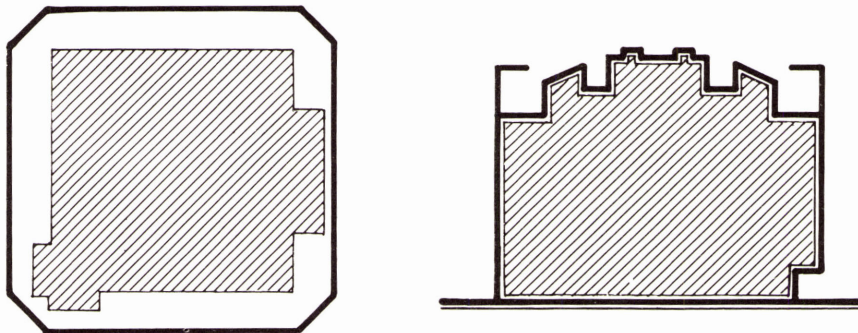
Kimball Art Center

- Inconsistencies between interior and exterior form appear at light and entrance canopies.



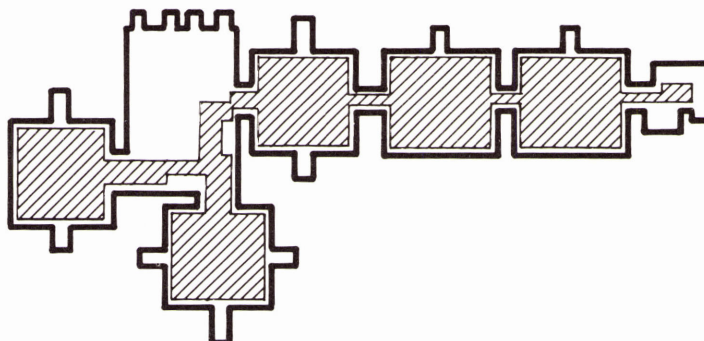
Salk Institute

- Inconsistency between interior form and exterior form caused by service areas and exterior circulation.



Exeter Library

- Interior form consistent with exterior form with exception of ground floor arcade.

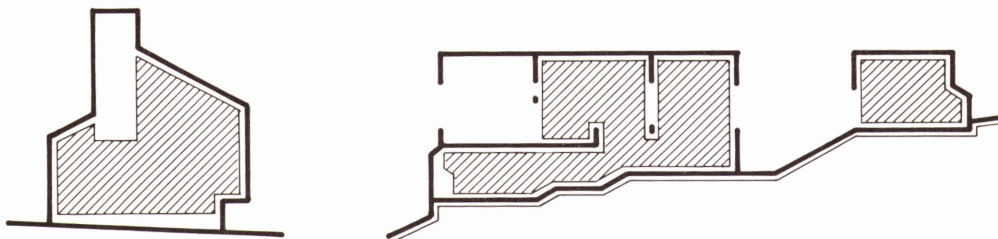


Richards Medical Laboratory

- Interior form consistent with exterior form with the exception of the towers.

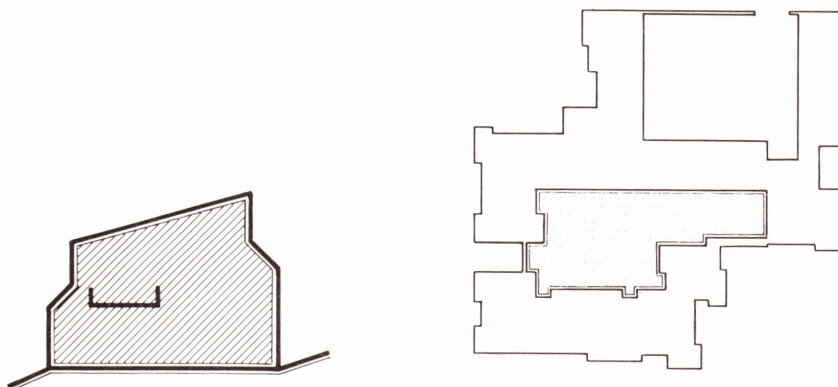
Hines House

- Inconsistency between interior form and exterior form in section at exterior deck which is expressed as part of circulation spine.



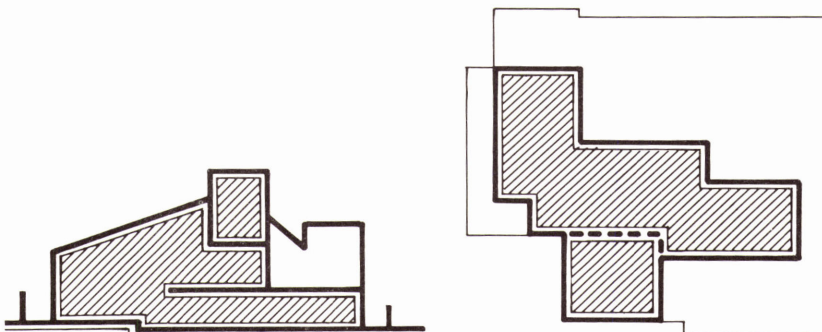
Sea Ranch

- Interior form consistent with exterior form.
- Configuration of built form creates defined exterior space.



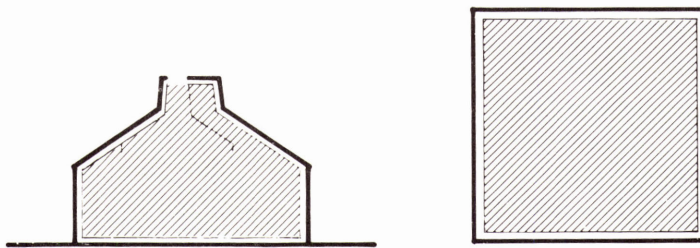
Burns House

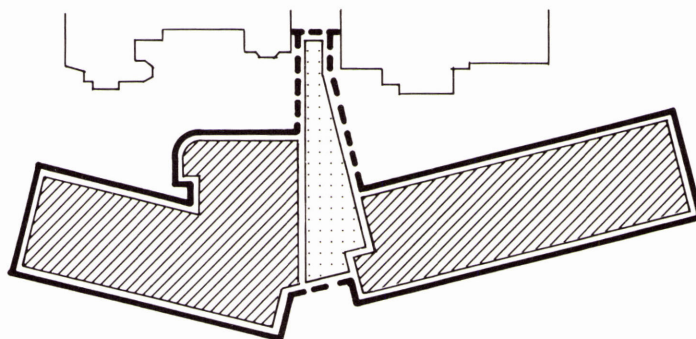
- Inconsistency between inside and outside in section at access stair to second floor.



Moore House

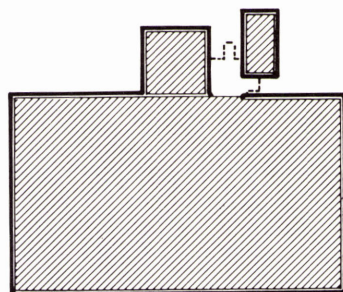
- Interior form consistent with exterior form.





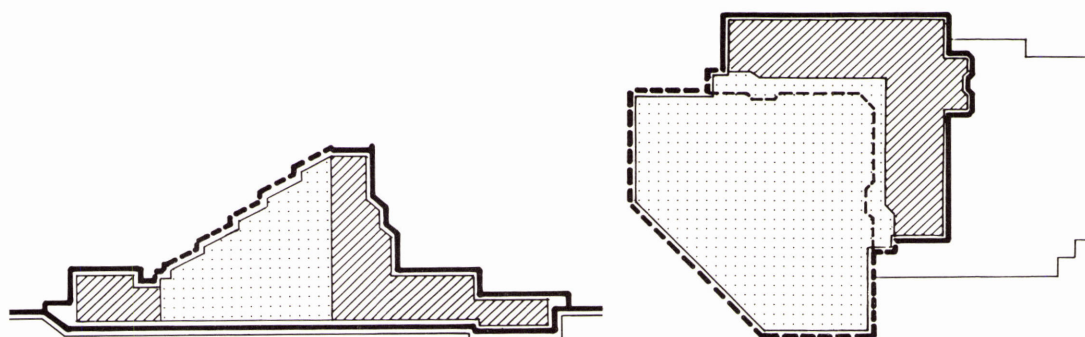
Olivetti

- Interior form consistent with exterior form.
- Glazed entry link generates indoor space that is visually open to exterior.



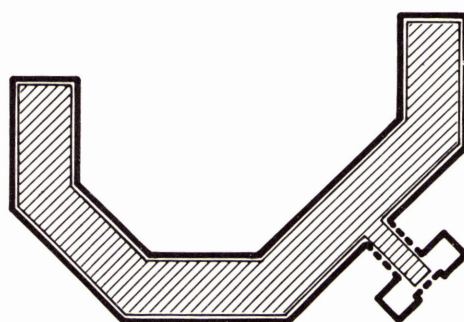
Leicester

- Interior form consistent with exterior form.



Cambridge History

- Interior form consistent with exterior form with exception of double skin over major use space.
- Total glazing over major use space generates an interior space that is visually open to exterior.

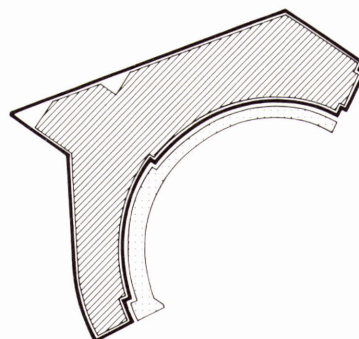


Oxford Dorm

- Interior form consistent with exterior form.

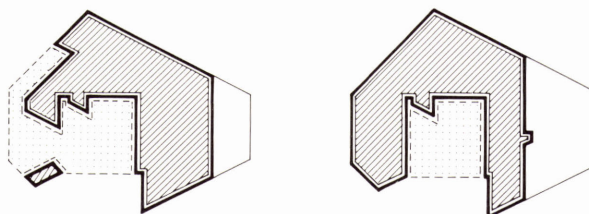
Library

- Interior form consistent with exterior form except at entrance, sun screen, and mechanical space.



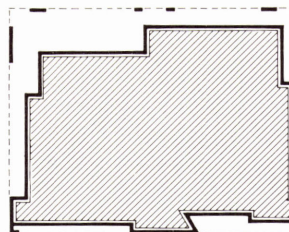
M.D.R.T.

- Interior form consistent with exterior form on upper levels.
- On ground floor, inconsistencies occur at defined outdoor space.



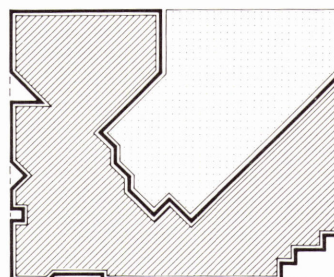
Music Building

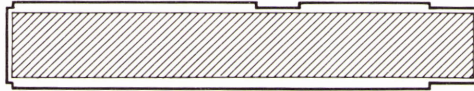
- Interior form consistent with exterior form.
- Inconsistencies occur at building overhangs.



Student Union

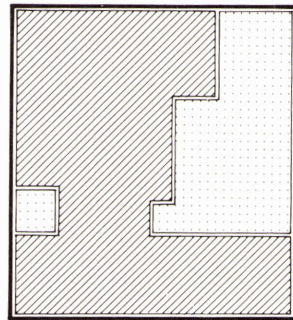
- Interior form consistent with exterior form.
- Inconsistencies occur at outdoor space, screen walls, and building overhangs.





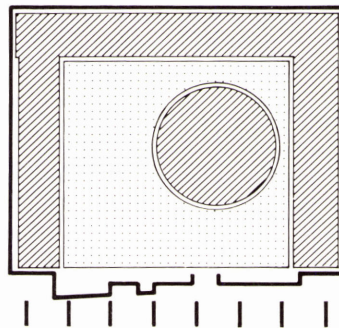
Marseilles

- Inconsistency between interior form and exterior form occurs at balcony units.



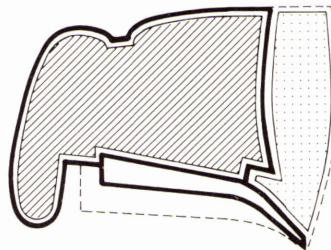
Villa Savoye

- Inconsistencies between interior and exterior form occur at exterior spaces.



Assembly at Chandigarh

- Inconsistencies between interior and exterior form occur at exterior court-yard.

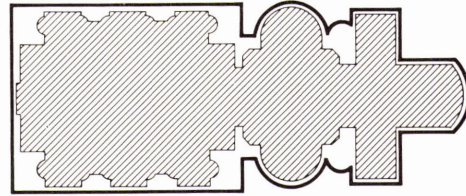


Ronchamp

- Inconsistencies between interior and exterior form occur at thick walls and defined exterior space.

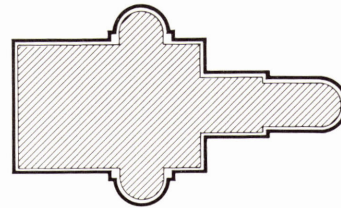
Redentore

- Inconsistencies between interior form and exterior form occur at structural elements in plan and between vaulted ceiling and pitched roof in section.



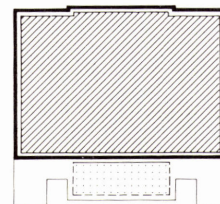
San Giorgio

- Inconsistencies between interior form and exterior form occur at structural elements in plan and between vaulted ceiling and pitched roof in section.



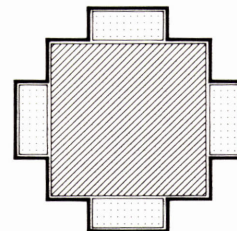
Malcontenta

- Interior form consistent with exterior form.

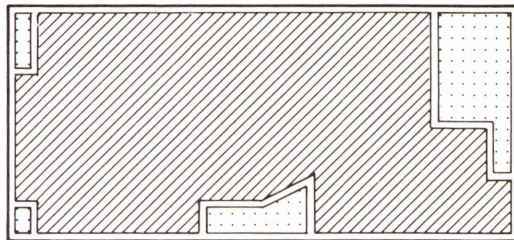


La Rotonda

- Interior form consistent with exterior form.

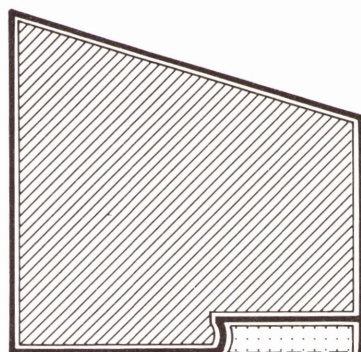


INSIDE TO OUTSIDE



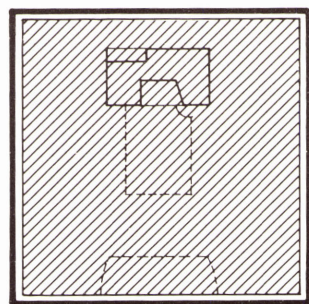
Venturi House

- Interior form inconsistent with exterior form at entrance and defined terraces.



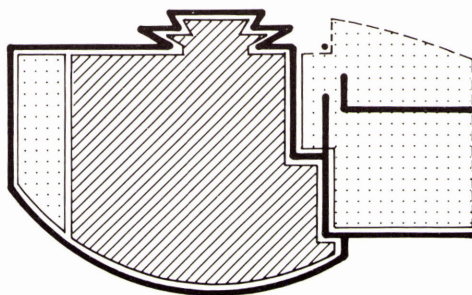
Fire Station

- Interior form consistent with exterior form except at the truck exit.



Tucker House

- Interior form consistent with exterior form.



Brandt House

- Interior form inconsistent with exterior form at outside terrace and garage.

RELATIONSHIPS

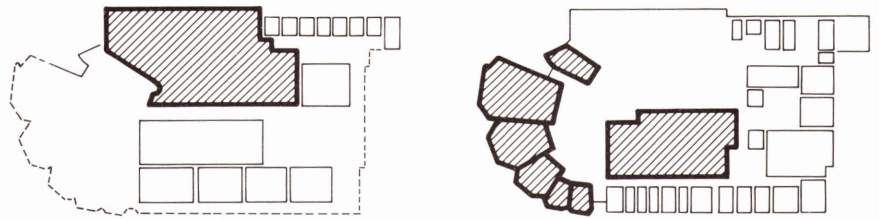
REPETITIVE TO UNIQUE

The examination of the relationships between multiple elements and singular elements. The repetitive elements can be aggregated to form the unique, interrupted by the unique, originate from the unique, or serve as a counterpoint for the unique.



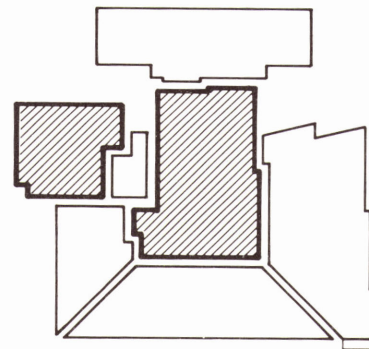
Cultural Center

- Repetitive elements are interior rectilinear spaces.
- Unique elements are major use spaces that are either interior and non-rectilinear or exterior and defined by built form.



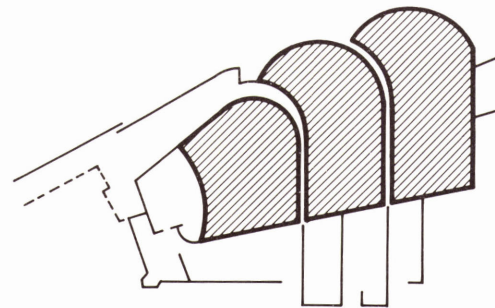
Town Hall

- Courtyard defined by configuration of repetitive elements.
- Unique elements are the two major public spaces, meeting room, and courtyard.



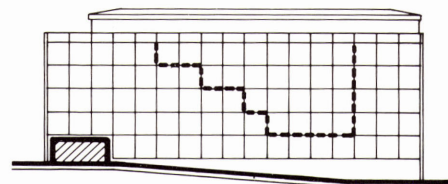
Imatra

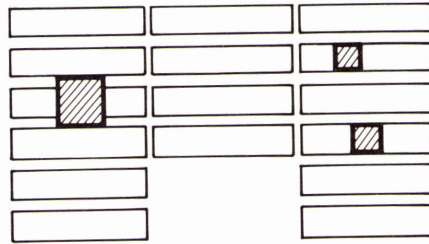
- Unique elements are three segments of major space.



Enso/Gutzeit

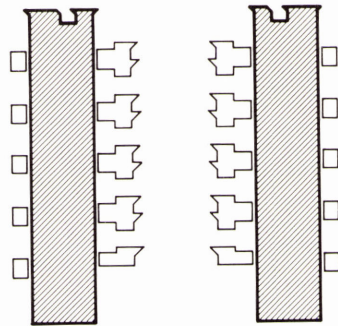
- Unique elements of entrance and lightwell interrupt repetitive grid.
- Entrance and lightwell are voids within rectilinear form of building.





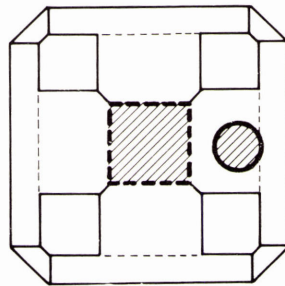
Kimball Art Center

- Repetitive elements are the structural vaults.
- Unique elements are three light wells which interrupt the repetitive unit.



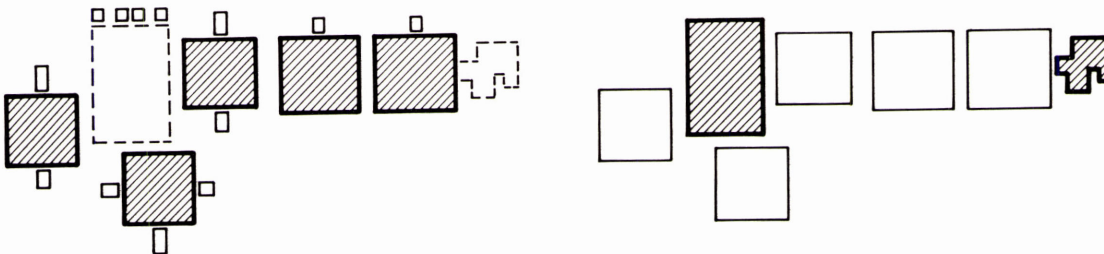
Salk Institute

- Repetitive elements are service units and small use spaces.
- Unique elements are laboratories located between repetitive elements.



Exeter Library

- Repetitive elements are enclosed spaces in corners and adjacent to use spaces.
- Unique elements are central light well and open stairway at entrance.

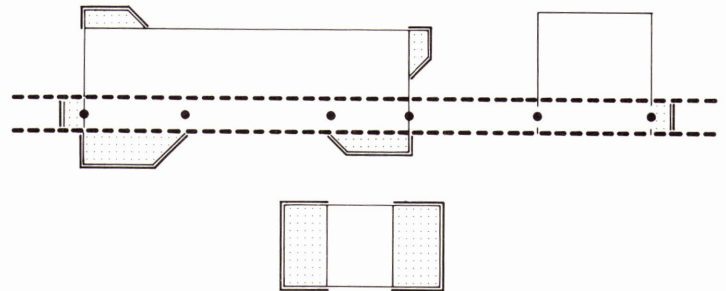


Richards Medical Laboratory

- Repetitive elements are service units adjacent to use spaces, and main service spaces.
- Unique elements are the two large service units.

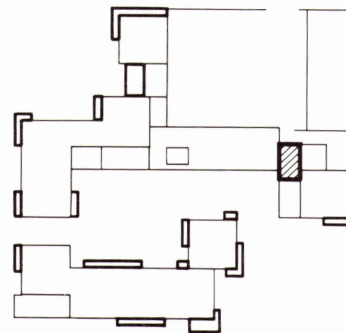
Hines House

- Repetitive elements are the frames, which are located within and perpendicular to axis of the spine, and the appendages to the major use spaces.
- Unique element is the spine.



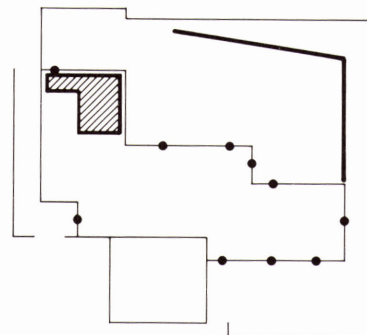
Sea Ranch

- Repetitive elements are appendages to major use spaces.
- Unique element is tower.
- Repetitive and unique elements are both expressed as additions to a whole.



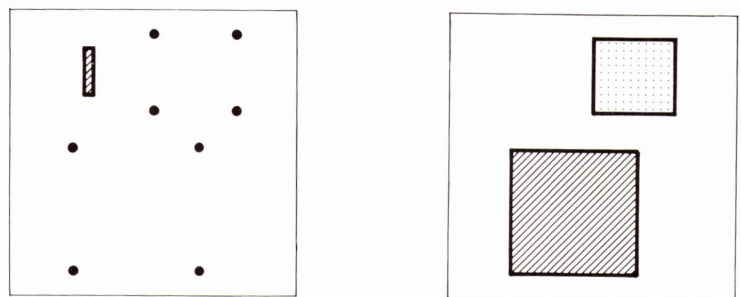
Burns House

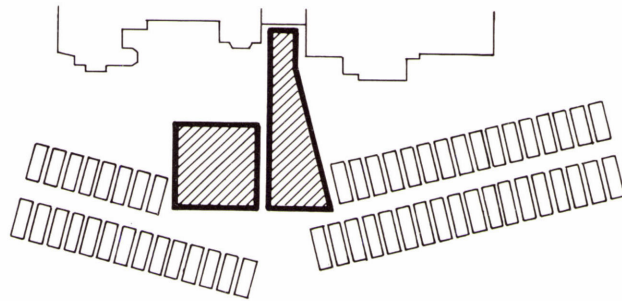
- Repetitive elements are the frames of exterior wall penetration.
- Unique elements are the two story interior space with related platform and the exterior bent.



Moore House

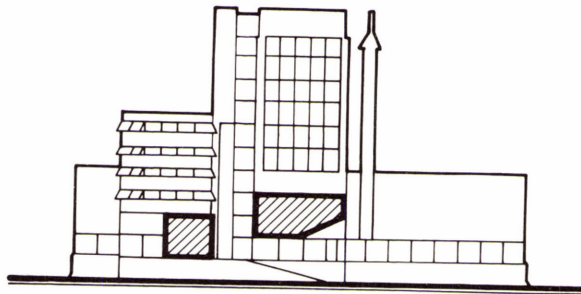
- Repetitive elements are the columns and roofs of the two aediculae.
- Unique element is the freestanding bookcase.
- Repetitive and unique elements are modulators of the major space.





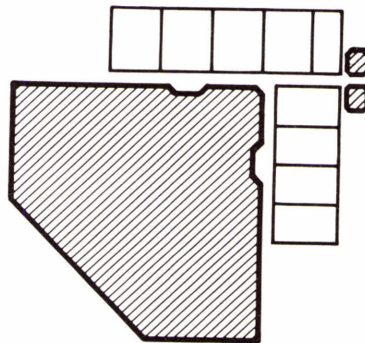
Olivetti

- Repetitive elements are modular units which are combined to form small spaces.
- Unique elements are entrance and exit spaces.



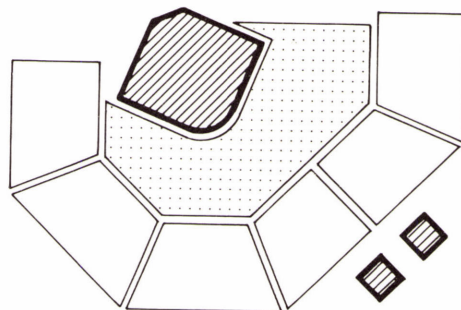
Leicester

- Repetitive elements are glazing units which are a major portion of the exterior.
- Unique elements are two auditoriums expressed as sculpted forms on the exterior.



Cambridge History

- Repetitive elements are the spaces adjacent to major use spaces.
- Unique elements are the major use spaces and the vertical circulation towers.

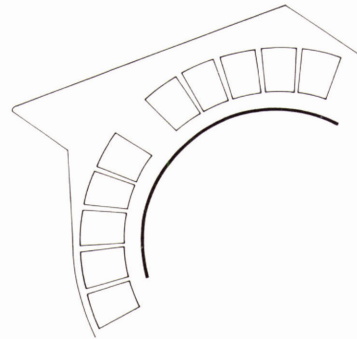


Oxford Dorm

- Repetitive elements are the trapezoidal forms of the living spaces which are adjacent to the courtyard.
- Unique elements are the major components, vertical circulation elements and the exterior court.

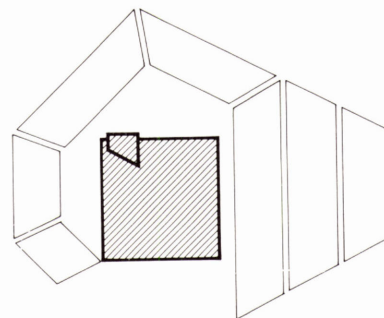
Library

- Repetitive elements are wedge shaped structural bays.
- Unique element is curved screen wall.



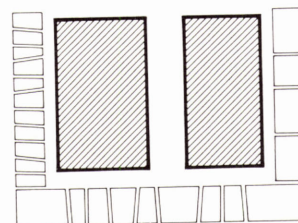
M.D.R.T.

- Repetitive elements are trapezoidal plan forms.
- Unique element is square entrance courtyard.



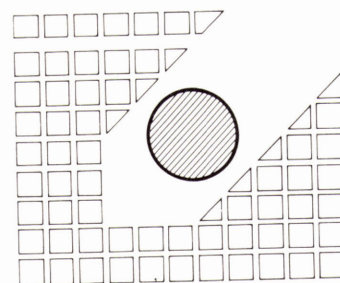
Music Building

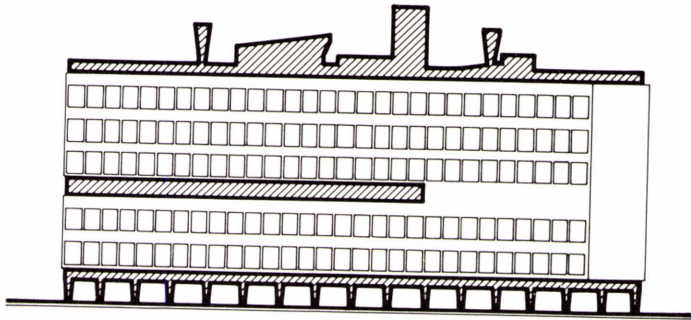
- Repetitive elements are small defined spaces.
- Unique elements are major use spaces.



Student Union

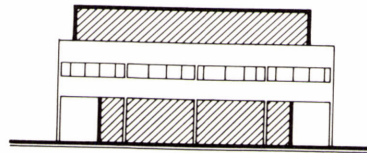
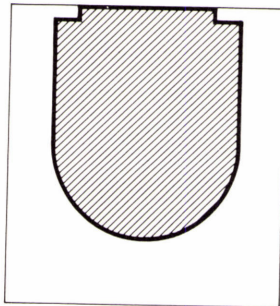
- Repetitive elements are structural modules.
- Unique element is circular area in exterior court.





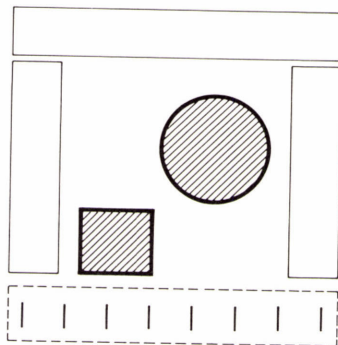
Marseilles

- Repetitive elements are the living
- Unique elements are special use that occur at ground floor, mid-p building, and roof.



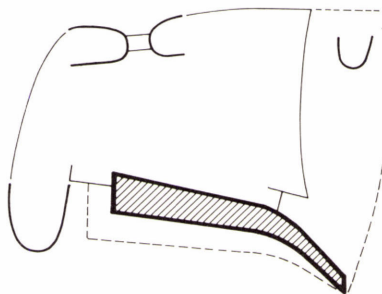
Villa Savoye

- Repetitive elements are rectilinear fo
- Unique elements are curvilinear f that occur on ground floor and ro



Assembly at Chandigarh

- Repetitive elements are four rectil blocks at perimeter of building.
- Unique elements are interior geom forms.



Ronchamp

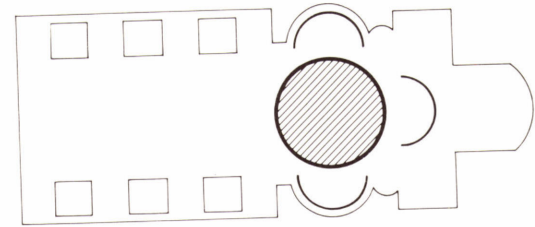
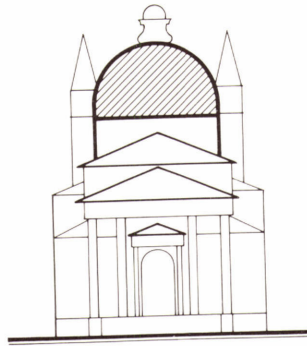
- Repetitive elements are semi-circ forms.
- Unique element is the thick wall.

ANDREA PALLADIO

REPETITIVE TO UNIQUE

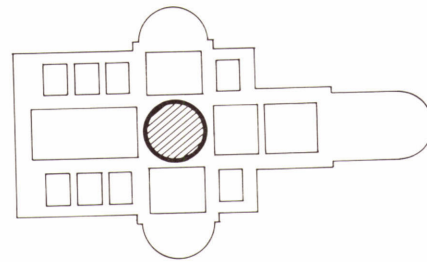
Redentore

- Repetitive elements in plan are side chapels and semi-circular forms around altar.
- Repetitive elements in elevation are triangular pediments.
- Unique element in plan and elevation is the dome.



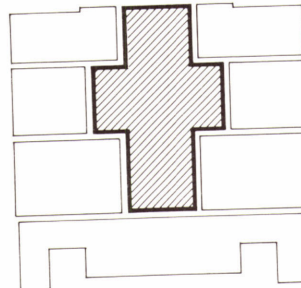
San Giorgio

- Repetitive elements are implied spatial definitions.
- Unique element is the dome.



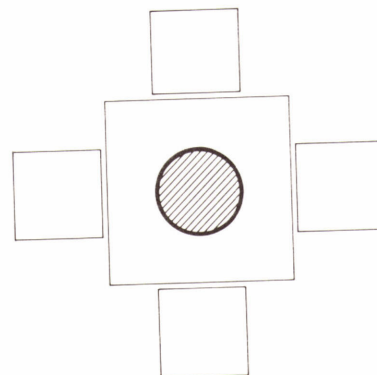
Malcontenta

- Repetitive elements in plan are rectilinear use spaces.
- Unique element is the central cruciform space.
- Repetitive elements in elevation are orthogonal windows.
- Unique element in elevation is the arched configuration of 6 windows.



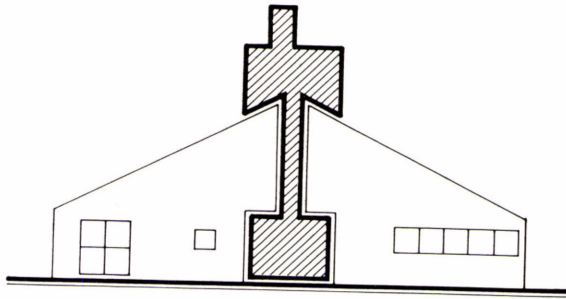
La Rotonda

- Repetitive elements are the square forms that include the stairs, porticos, and mass of building.
- Unique element is the dome.



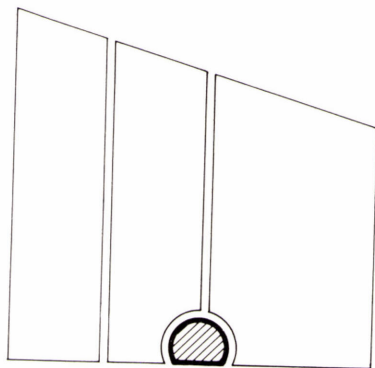
REPETITIVE TO UNIQUE

VENTURI A RAU



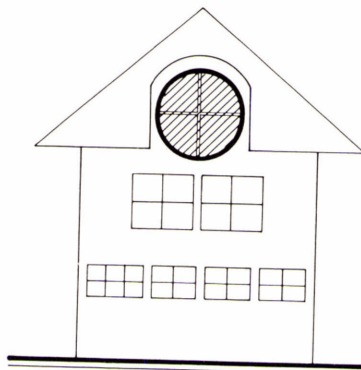
Venturi House

- Repetitive elements are the windows.
- Unique element is the entrance fireplace articulation.



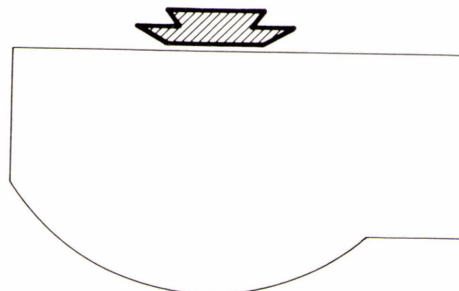
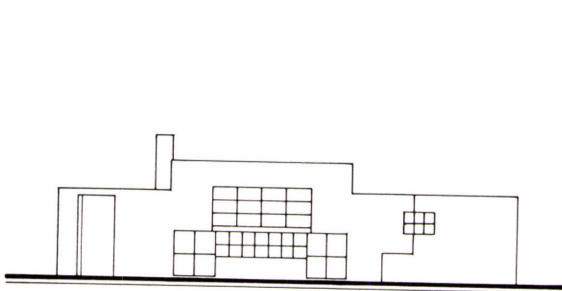
Fire Station

- Repetitive elements are the trapezoidal plan forms.
- Unique element is the circular plan form.



Tucker House

- Repetitive elements are the rectangular windows.
- Unique element is the circular window.



Brandt House

- Repetitive elements are the rectangular windows.
- Unique element is vertical strip window in angled plan form.

ORDERING IDEAS

ORDERING IDEAS

Ordering ideas create a conceptual framework for making decisions in the physical realm of design. While ordering ideas are not all inclusive to the generation of architecture, when they are central to the design process there is an observable impact on the physical solution. Thus the use of different ordering ideas can render diverse results. Similarly, one ordering idea engaged by different designers can contribute to generally diverse solutions.

Ordering ideas include:

SYMMETRY/BALANCE-POINT/COUNTERPOINT
GRID/GEOMETRY
HIERARCHY
LAYERING



ORDERING IDEAS

SYMMETRY/BALANCE-POINT/COUNTERPOINT

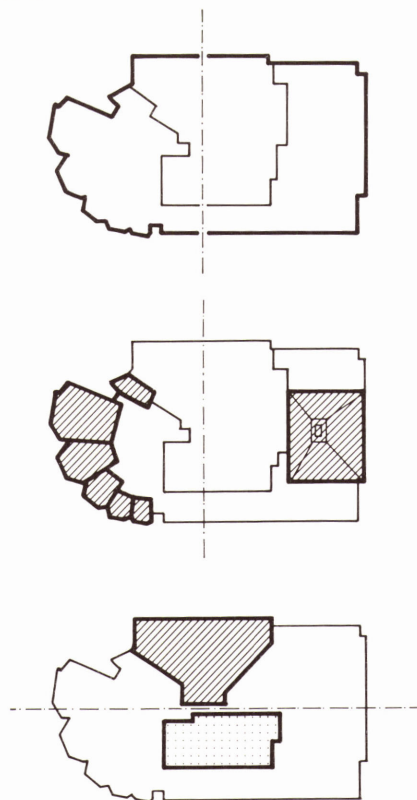
Generally symmetry and balance refer to the relationship of parts about a real or implied axis. Symmetrical order is achieved when equal elements have the same but opposing relationship to an axis. Symmetry embodies three basic manipulations: reflection, the mirror image of the element; rotation, the movement of the element about a center point; and translation, the movement of an element in a given direction while maintaining the same orientation.

Balanced order is achieved when different elements are compositionally arranged about an axis. A unique form of balance is point/counterpoint which is the juxtaposition of specific elements against other specific elements without necessary reference to an axis. Many times this condition appears as a positive to negative articulation.



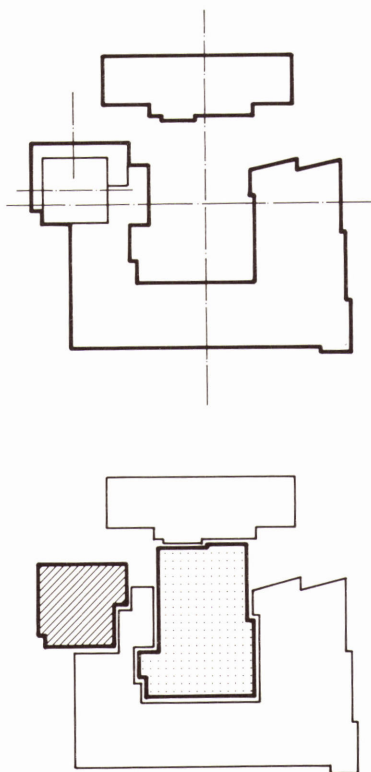
Cultural Center

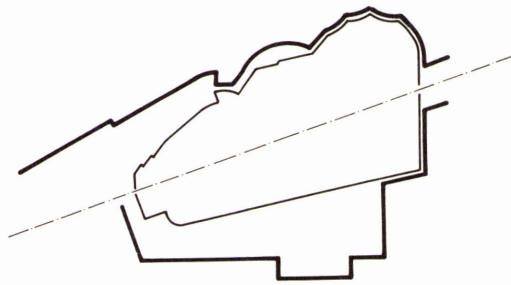
- Balance about 'y' axis created by uniquely shaped rooms on one side and unique roof form on other.
- Balance about 'x' axis by roof cover and library.



Town Hall

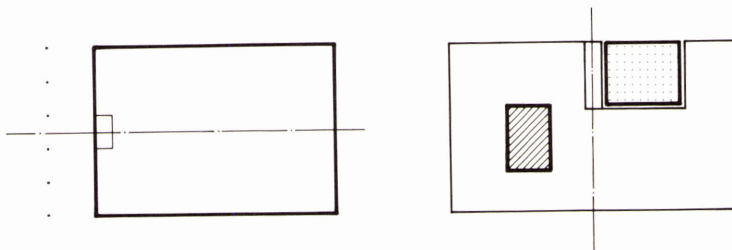
- Balanced about 'x' and 'y' axes.
- Meeting room symmetrical about 'x' axis.
- Courtyard is counterpoint to form of meeting room.





Imatra

- Tension about axis created by point/counterpoint of curvilinear and rectilinear exterior wall forms.

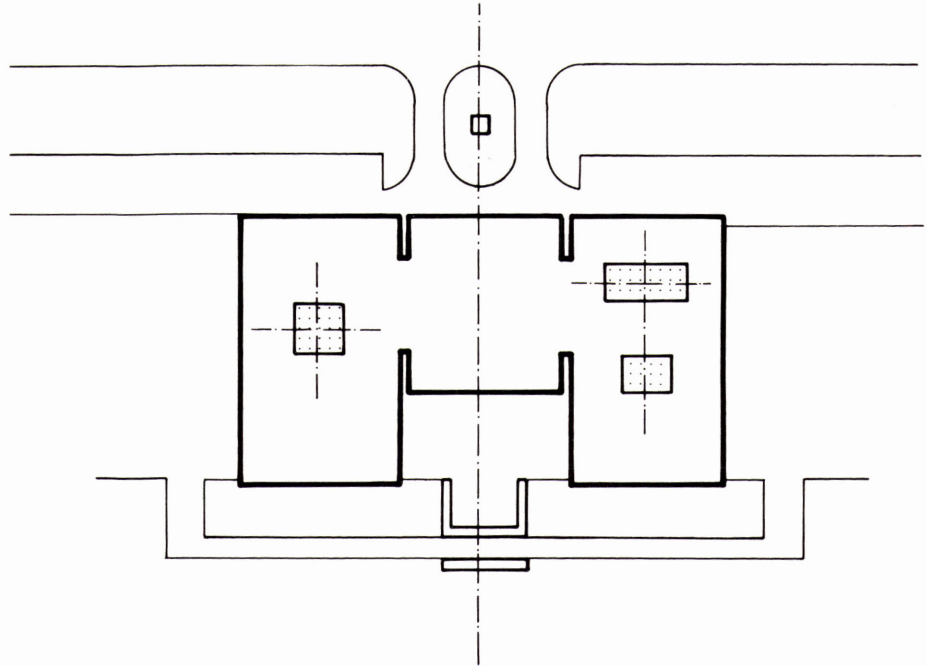


Enso/Gutzeit

- Entrance symmetrical about 'x' axis
- Balance about 'y' axis created by point/counterpoint of angular and rectilinear exterior wall forms.

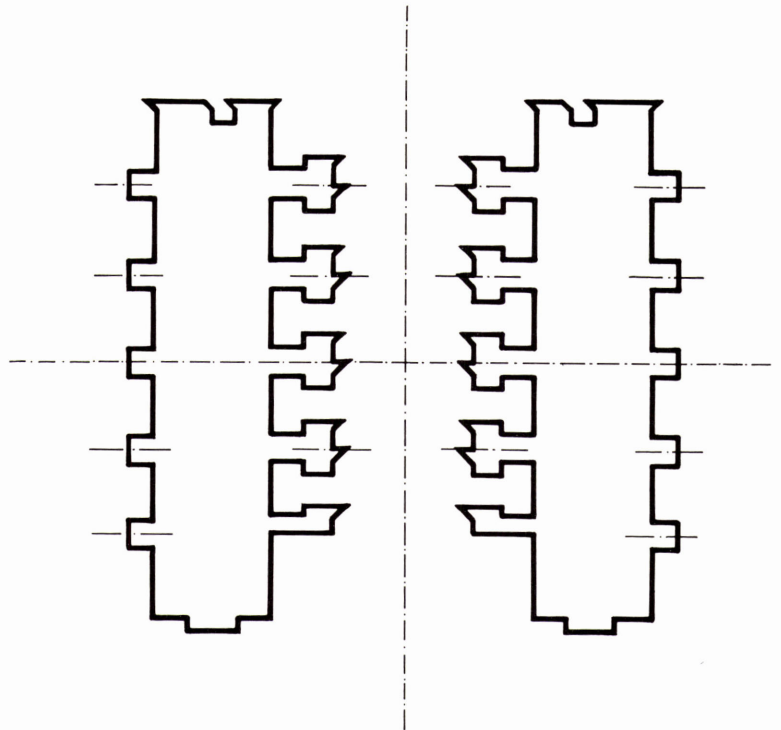
Kimball Art Center

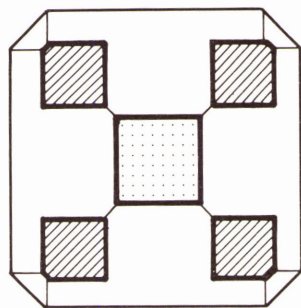
- Exterior is symmetrical about 'y' axis.
- Total form is balanced about 'y' axis.
- Internal courtyards are symmetrical to themselves about 'y' axis; two of the three are symmetrical about 'x' axis as well.



Salk Institute

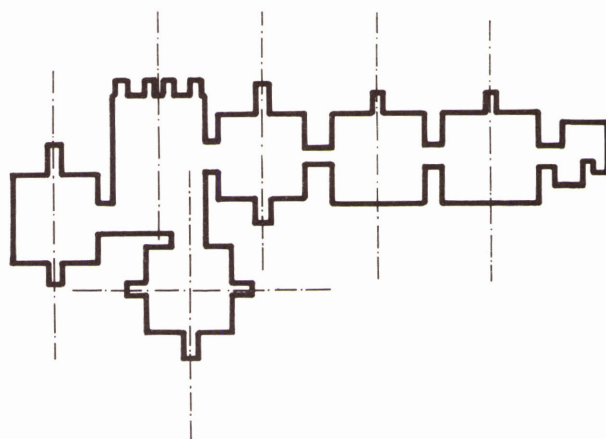
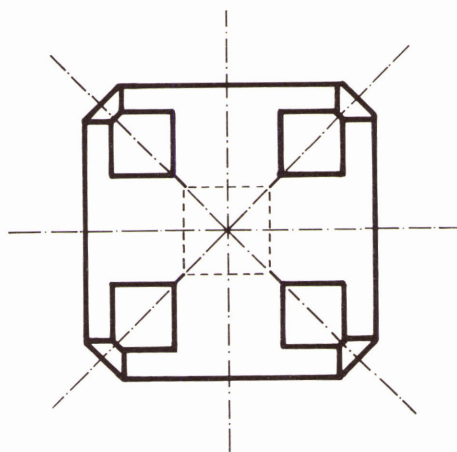
- Symmetrical by reflection about 'y' axis.
- Balanced about 'x' axis.
- Stair towers balanced about center lines.





Exeter Library

- Symmetrical about 'x' and 'y' axis.
- Symmetrical about both diagonals.
- Solid forms in corners are the counterpoint of the open central space.

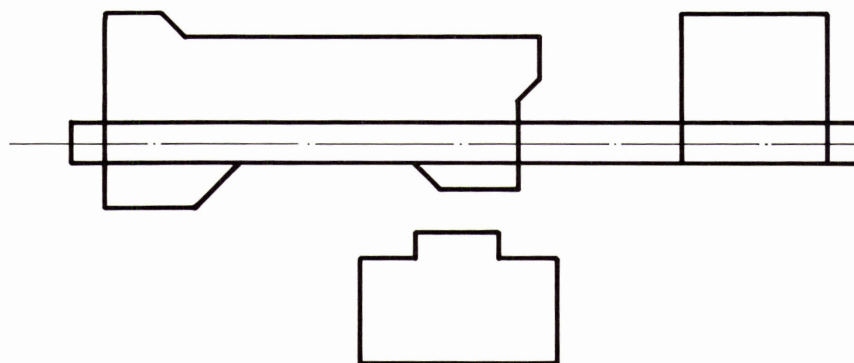


Richards Medical Laboratory

- Units are symmetrical about 'y' axis.
- Three original lab units are symmetrical about 'x' axis.

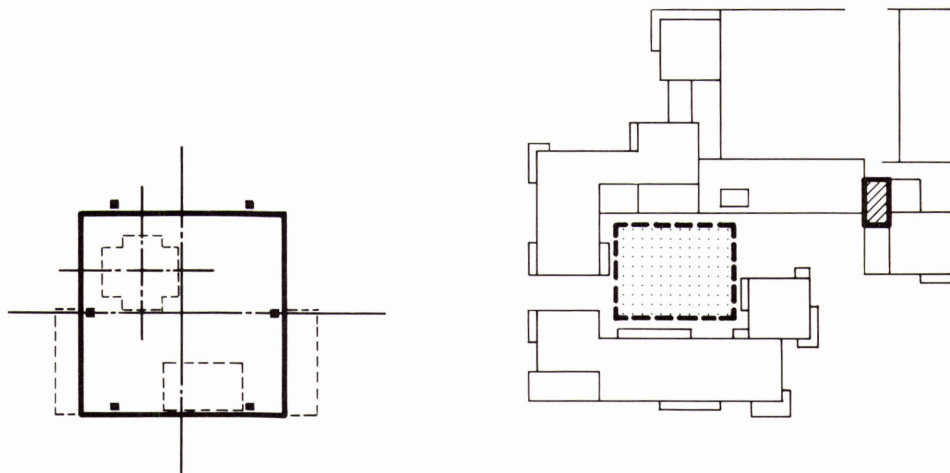
Hines House

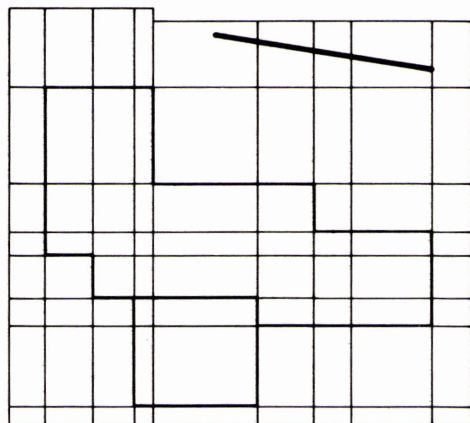
- Total complex balanced about the axis of the spine.



Sea Ranch

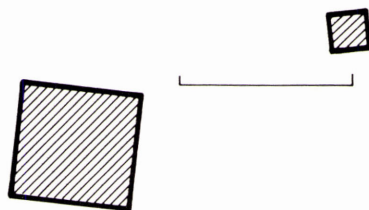
- Units balanced in plan about both axes.
- Aedicula that forms sleeping platform symmetrical about both axes.
- In total complex courtyard is the counterpoint to the tower.





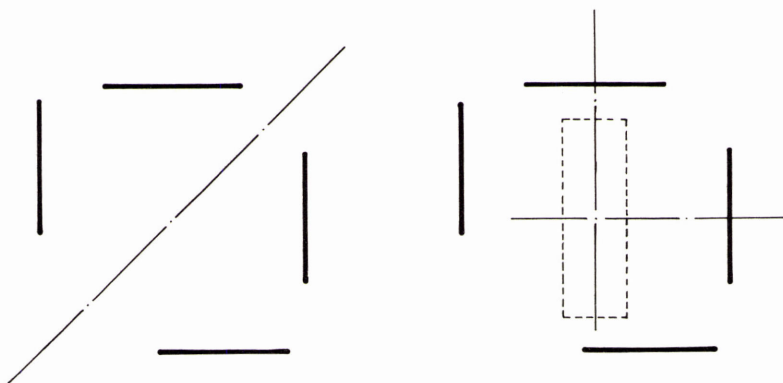
Burns House

- Angle of exterior bent is counterpoint to orthogonal geometry.



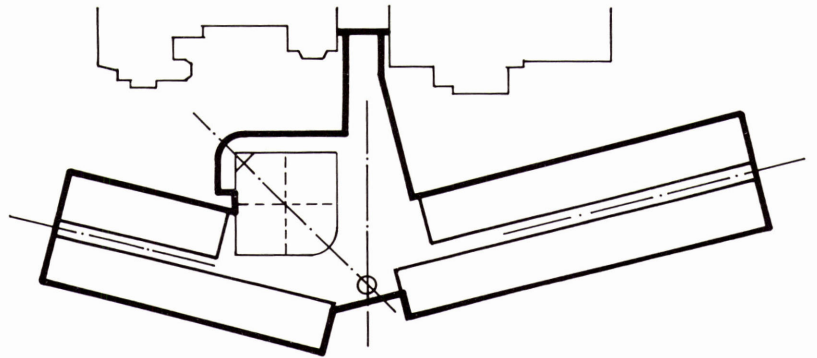
Moore House

- Total complex balanced about line of fence.
- Unit is symmetrical about the diagonal.
- Skylight form symmetrical about vertical axis and aligned with two adjacent exterior walls.



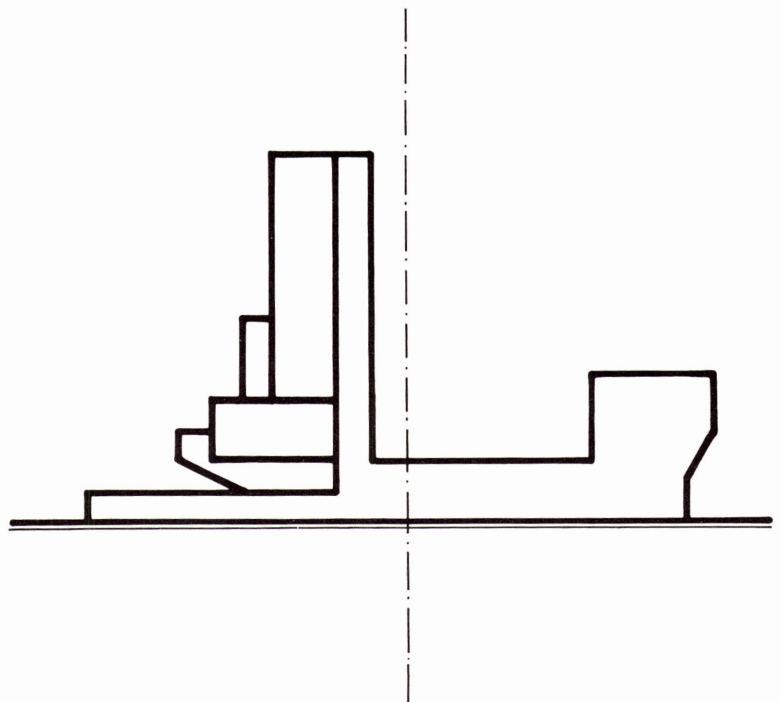
Olivetti

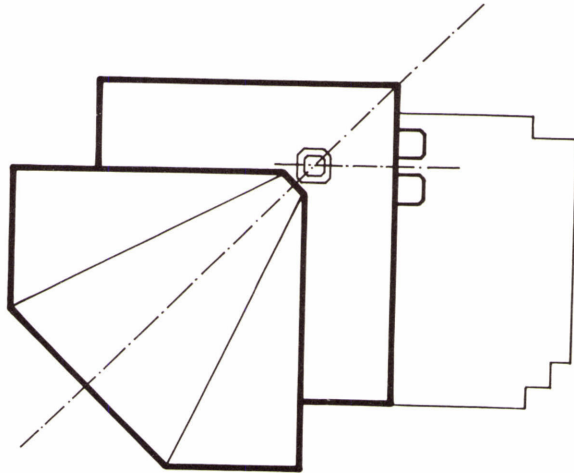
- Major common space is symmetrical about a diagonal axis which intersects a circular stair.
- Complex balanced about an axis which also coincides with the same circular stair.
- Small use spaces symmetrical about corridor axis.



Leicester

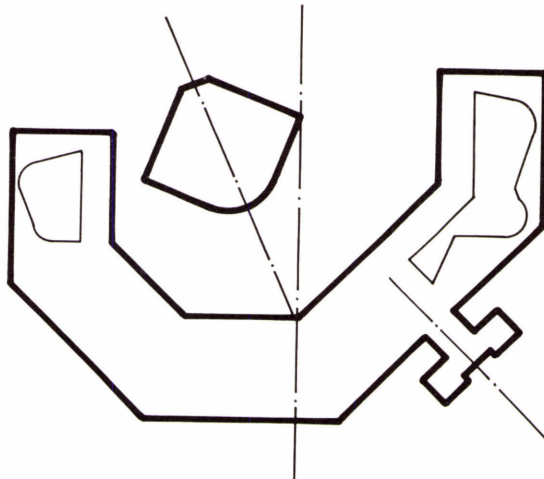
- Balance between the vertical elements on one side and horizontal form on the other.





Cambridge History

- Major use space symmetrical about a diagonal axis.
- Vertical circulation towers are symmetrical about an axis that intersects a diagonal axis at a unique condition.

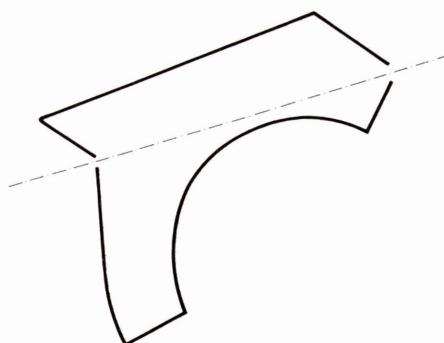
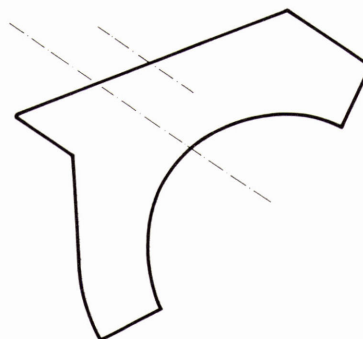


Oxford Dorm

- Vertical circulation towers are symmetrical about an axis that bisects the space between the two.
- Major common space is symmetrical about a diagonal axis which coincides with one of the unions of the trapezoidal forms.
- Whole complex is balanced about a vertical axis which coincides with the same union of trapezoidal forms.

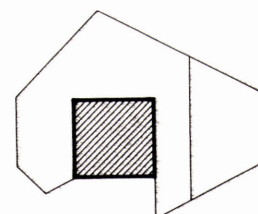
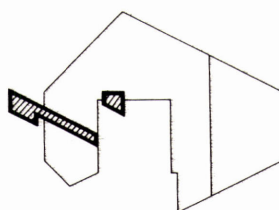
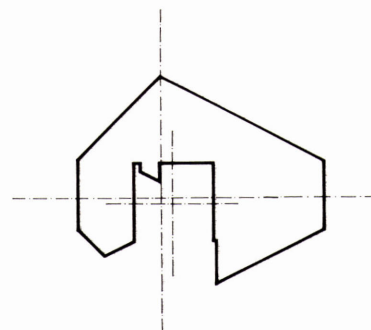
Library

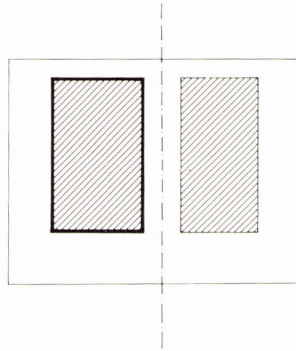
- Entire building balanced about center of curved form.
- Entry wall balanced about secondary center line.
- Curved form is counterpoint of angular form.



M.D.R.T.

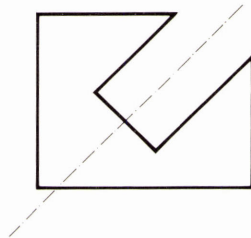
- Building balanced about 'x' and 'y' axes.
- Open stair is counterpoint of major enclosed stair.
- Open courtyard is the counterpoint of the built form.





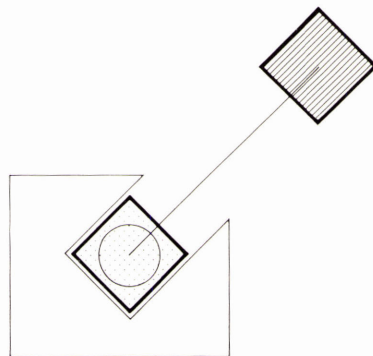
Music Building

- Building balanced about 'y' axis.
- Enclosed auditorium is counterpoint to open lobby.



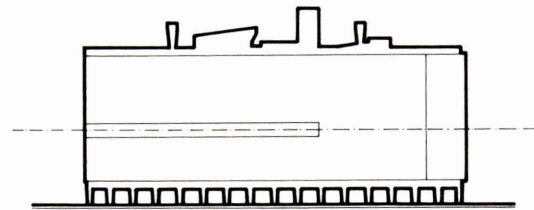
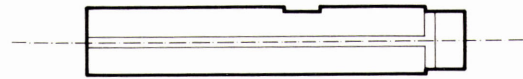
Student Union

- Balanced about the center line of courtyard.
- Courtyard is the counterpoint to significant building located on a diagonal.



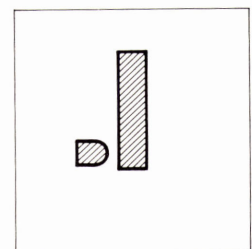
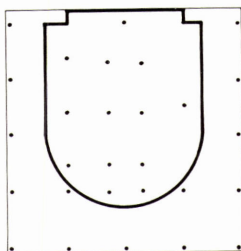
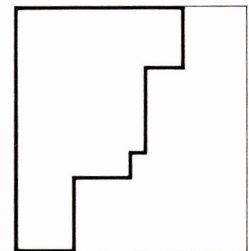
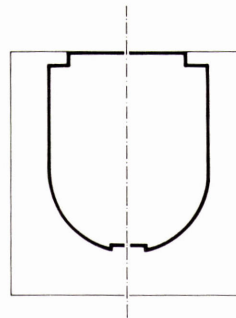
Marseilles

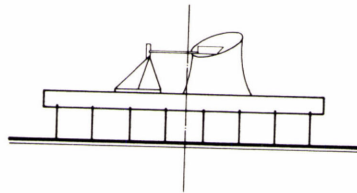
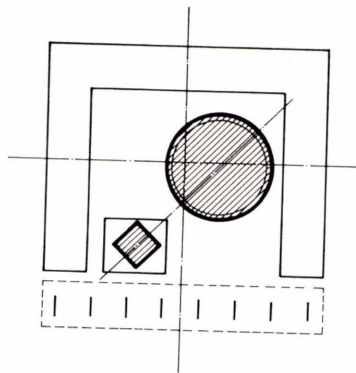
- Plan is balanced about centerline of corridor.
- Elevation is balanced about centerline of shopping street.



Villa Savoye

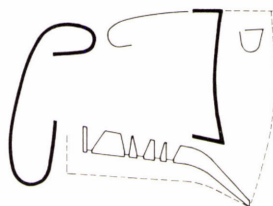
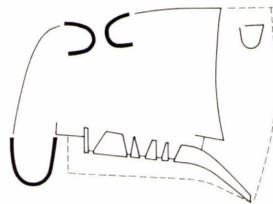
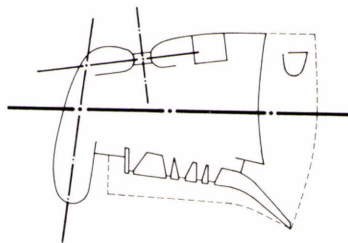
- Ground level plan generally symmetrical by reflection about 'y' axis.
- Middle level plan generally balanced about the diagonal.
- The orthogonal grid on the ground level plan is the counterpoint of the curved enclosed space.
- The stair with its curved form is the counterpoint of the ramp and perpendicular to the axis of the ramp.





Assembly at Chandigarh

- Balanced about the 'y' and 'x' axes.
- Two interior forms are symmetrical about the diagonal and are counterpoints of each other.

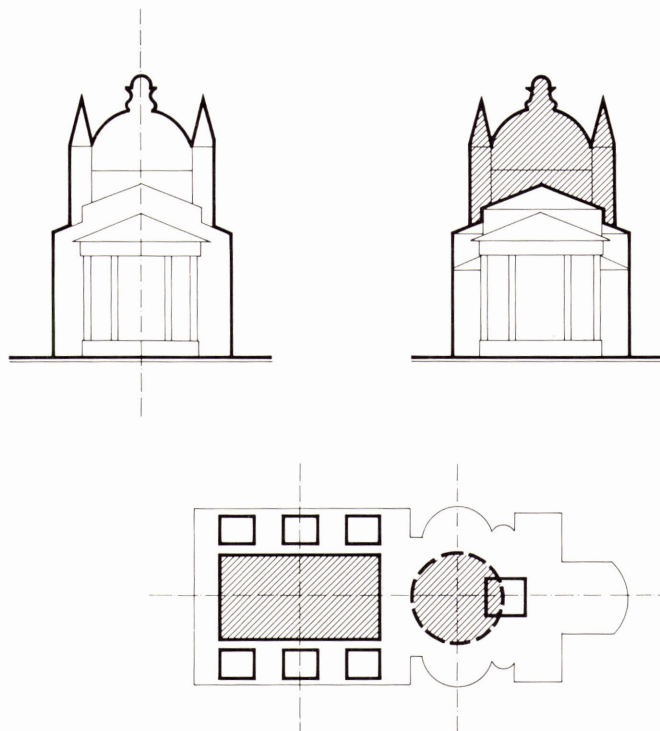


Ronchamp

- Plan is balanced about the 'x' axis; the side chapels are each balanced about the other.
- Two small side chapels are the counterpoint of the other side chapel.
- Curved wall is the counterpoint opposing angular wall.

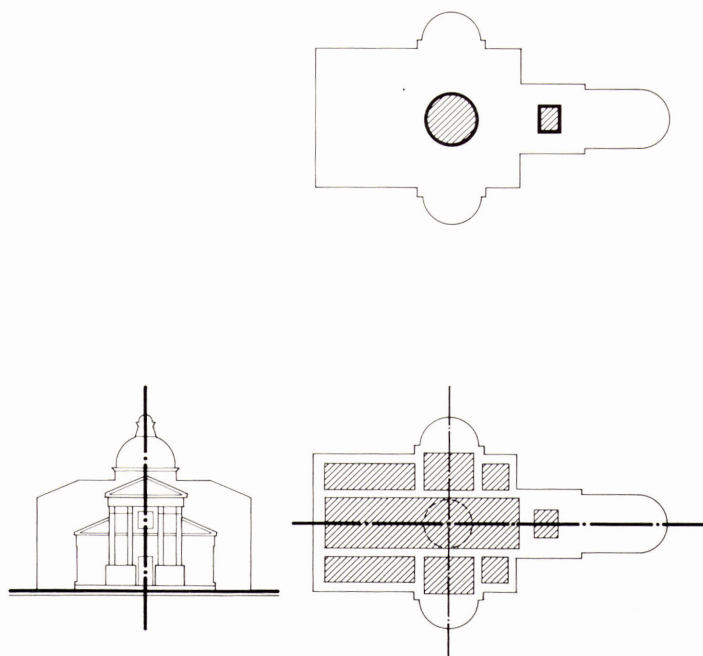
Redentore

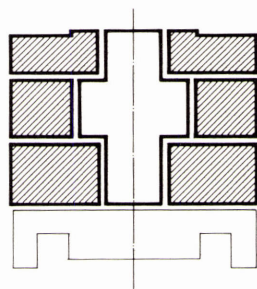
- Symmetrical by reflection about the 'y' axis.
- Dome form and drum is counterpoint of tri-angular roof form at nave and pediment.



San Giorgio

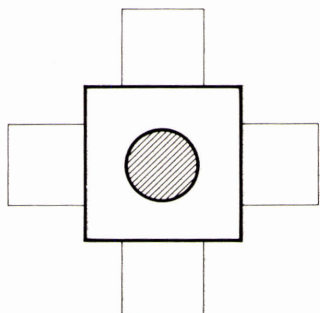
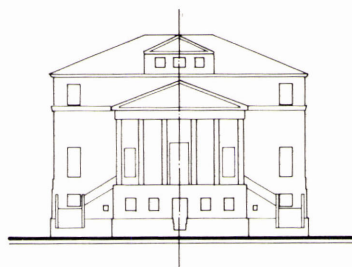
- Symmetrical by reflection about the 'y' axis.
- Dome is counterpoint of altar.





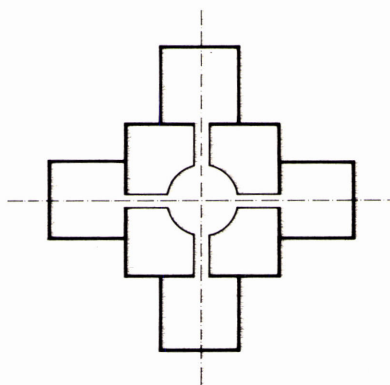
Malcontenta

- Symmetrical by reflection about 'y'



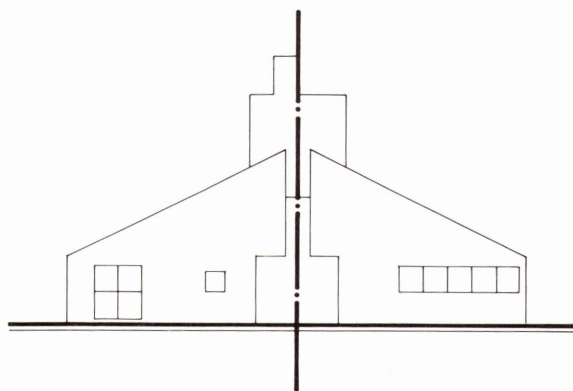
La Rotonda

- Symmetrical about 'x' and 'y' axes
- Dome is counterpoint of square building.



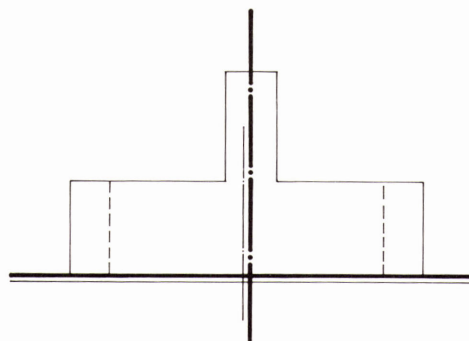
Venturi House

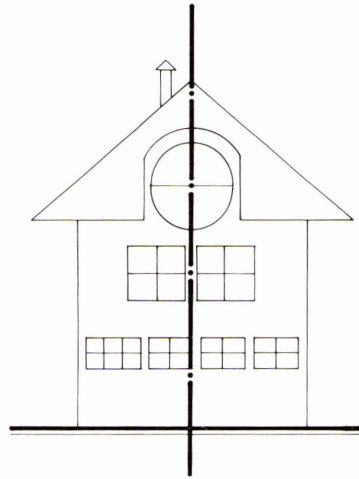
- Elevation is balanced about centerline of entry and fireplace.



Fire Station

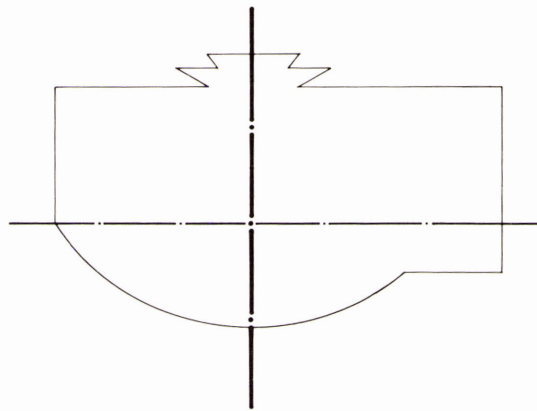
- Elevation is balanced about centerline of tower.





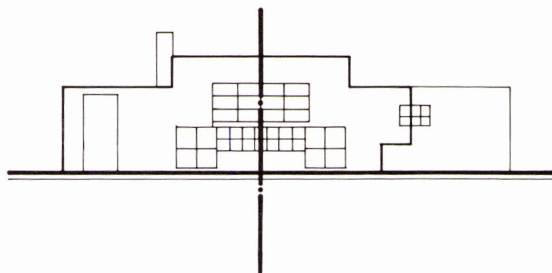
Tucker House

- Elevation is balanced about center of building mass.



Brandt House

- Plan is balanced about 'x' and 'y' axes.
- Elevation is balanced about 'y' axis.



ORDERING IDEAS

GRID/GEOMETRY

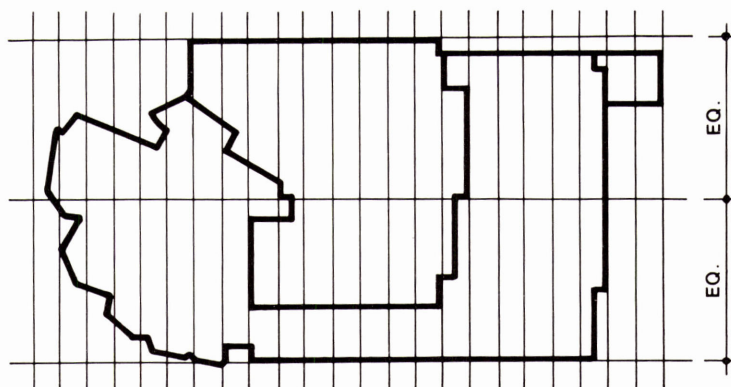
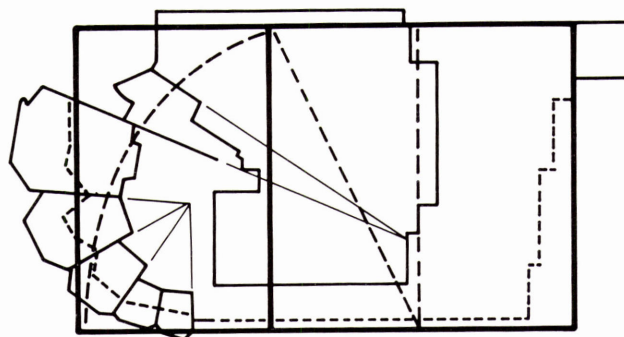
As an ordering idea grid/geometry embodies the use of geometric relationships to determine formal results. This includes the use of pure geometries; such as square, circle, triangle, and various manipulations of these geometries. Common manipulations are: proportional derivation, rotation, extension, overlapping, sub-division, and combination. Specific forms which develop from the proportional derivation of pure geometries are the golden section, and 1:1.4, 1:2, 1:3, etc. rectangles.

Grids can be developed from the repetition and sub-division of the pure geometries. Thus, the configuration and frequency of the grids can vary greatly.



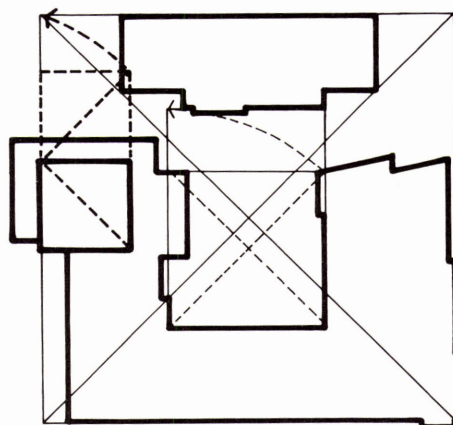
Cultural Center

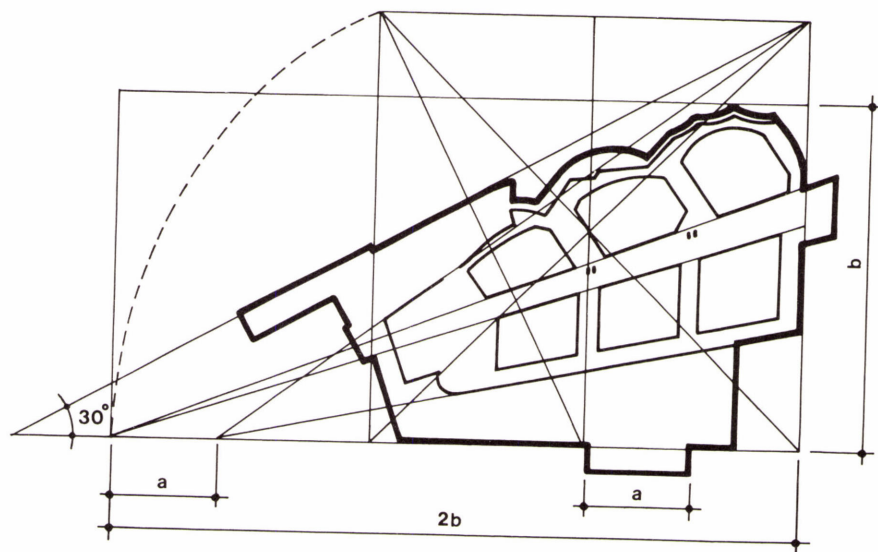
- Composite of rectilinear and angular geometries.
- Overall plan configuration developed from a 1.618 golden section rectangle.
- Subdivisions of golden mean rectangle relate generally to three major use areas: youth center, library/multi-purpose room, meeting rooms.
- Orthogonal grid, generally coincident with plan and structure, separates library and multi-use space.



Town Hall

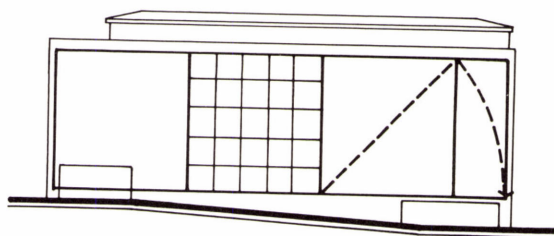
- Rectilinear geometry dominant.
- Overall plan configuration fits within a square.
- Courtyard is a 1.414 rectangle in plan.
- Meeting room is a square in plan.





Imatra

- Composite of rectilinear, angular and curvilinear geometries.
- Overall plan configuration derived from a 1:2 rectangle and a square, the golden section that is coincident with the long dimension of the rectangle.
- Angular plan forms radiate from the center along perimeter of the rectangle and square.

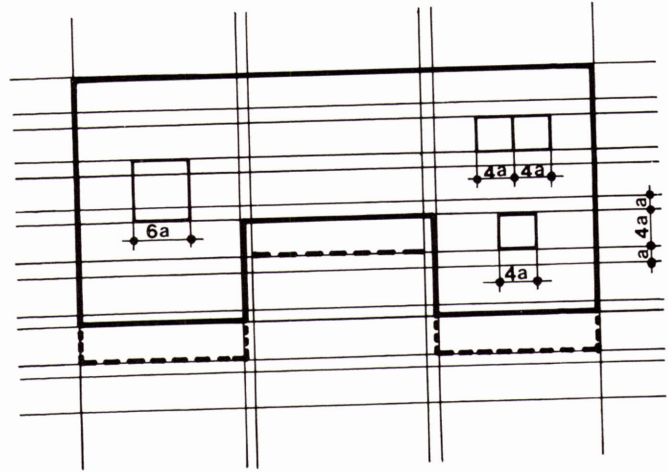


Enso/Gutzeit

- Rectilinear geometry dominant.
- Major elevation is a composite of one 5 x 5 unit squares and one 5 x 5 unit rectangle so that principle ratio of width to length is 1 : 3.414.

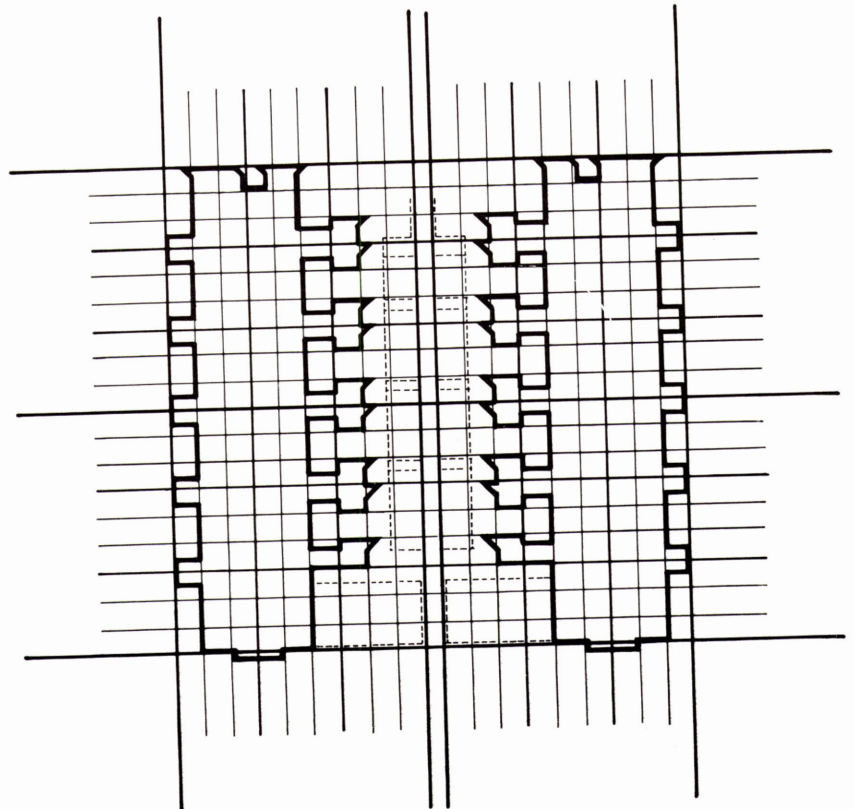
Kimball Art Center

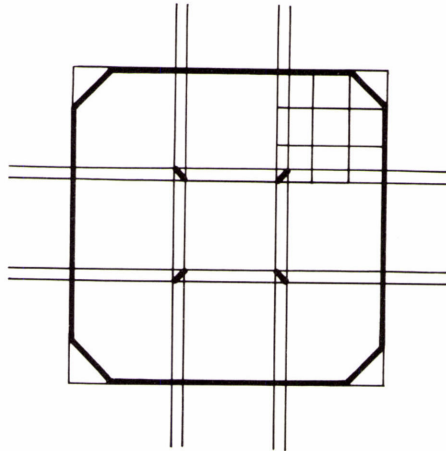
- Rectilinear geometry dominant.
- Orthogonal grid coincident with structural vault system.
- Vault width is 4 times the distance between the vaults.
- Light courts are squares or double squares and multiples of vault width.



Salk Institute

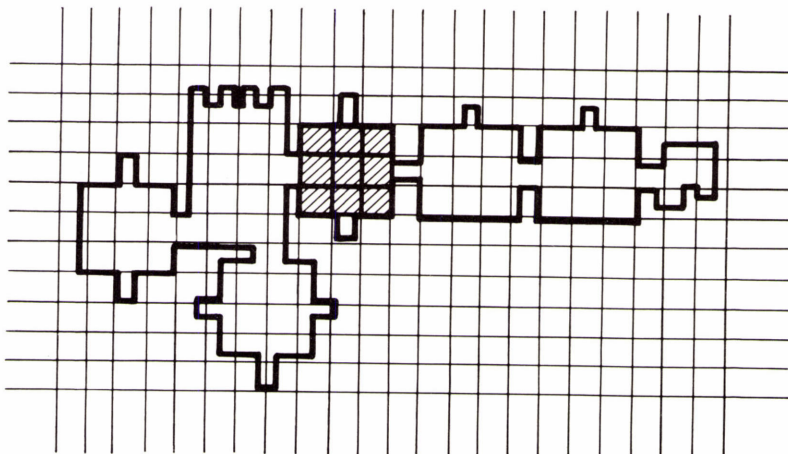
- Overall plan configuration based on a combination of 9 square relationships, each cell of which is further divided into smaller 9 squares.
- Each wing of the complex is based on the combination of two 9 square units.
- Ceremonial entrance to complex created by separation of 9 square units.





Exeter Library

- Rectilinear geometry dominant.
- Overall plan configuration based on square relationship—each cell in the plan is comprised of smaller 9 squares which overlap each other at the grid lines.
- The corners of the building are formed by the diagonal of a square of the same 9 square.

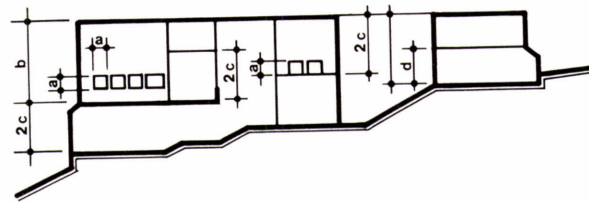
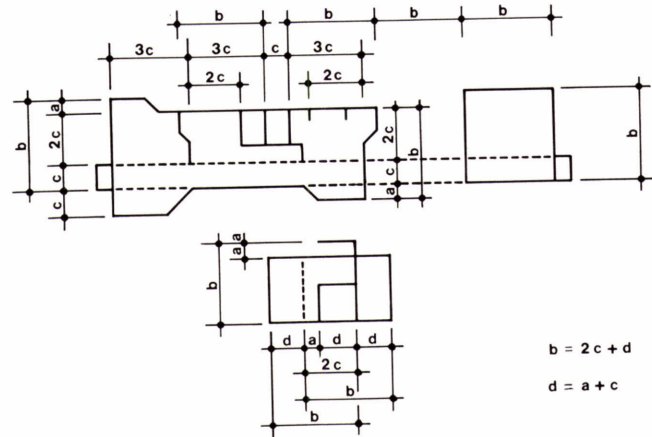


Richards Medical Laboratory

- Rectilinear geometry dominant.
- Major use space unit based upon square relationship.
- Nine square is the basis for overall planning grid.

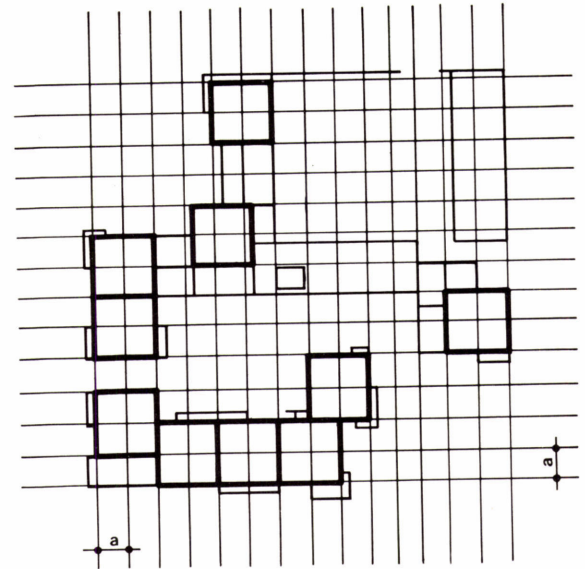
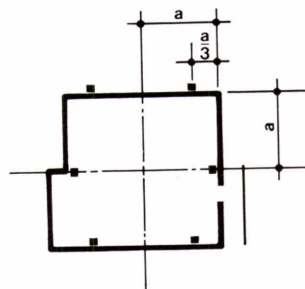
Hines House

- Dimensions of major plan and section forms are based on the proportional relationship of $b=2c+d$ and $d=a+c$.



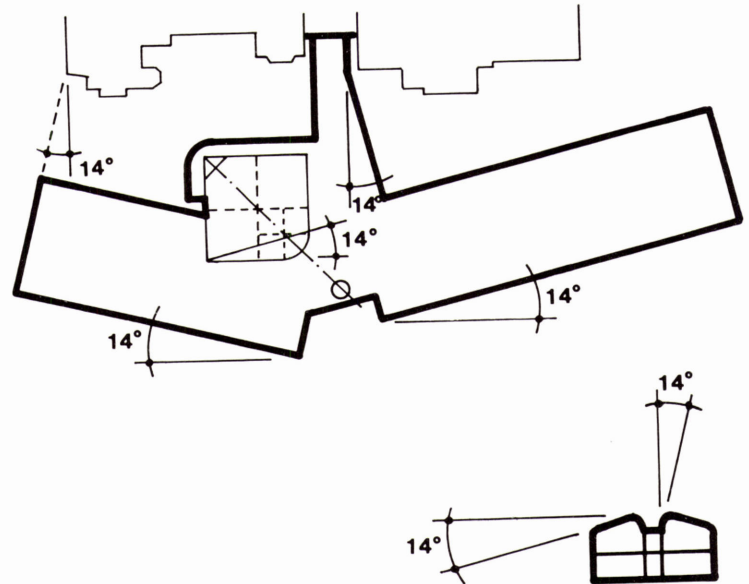
Sea Ranch

- Rectilinear geometry dominant.
- Entire complex laid out on square grid.
- Configuration of major use space in each dwelling is a 2×2 grid.



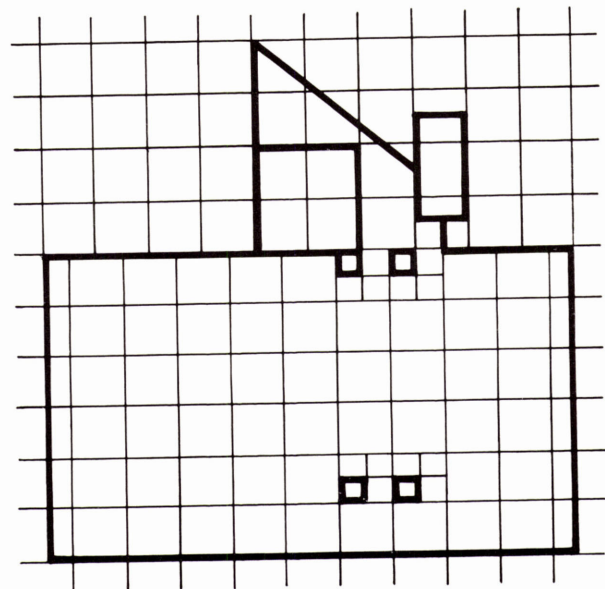
Olivetti

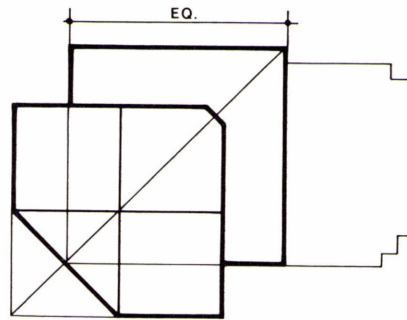
- Major common space based on 2 x 2 square grid, diagonal of which locates circular stair.
- One cell of 2 x 2 square grid further subdivided into a lesser 2 x 2 square which determines curve of major common space.
- Major plan and section forms developed from geometries related to golden section rectangle.



Leicester

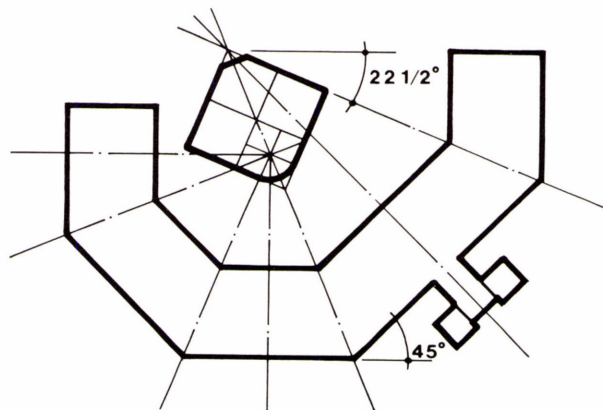
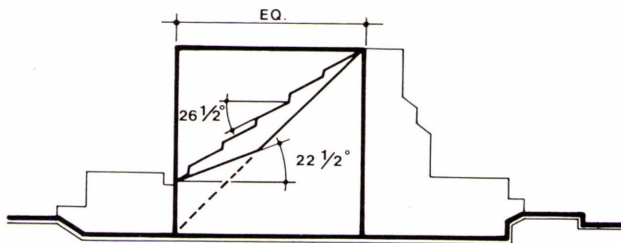
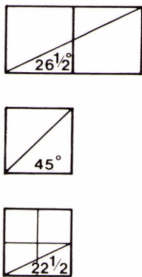
- Complex based upon a 10 x 10 square grid that is shifted 1/2 module at the juncture of the vertical elements and the horizontal form.
- Each vertical circulation element occupies 1/4 of a grid cell.
- Major auditorium is comprised of a 2 x 2 grid.





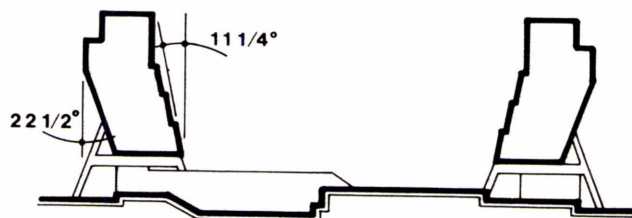
Cambridge History

- Major plan configuration comprising a 2 x 2 square grid truncated at a 45° angle and a form resulting from a 1/2 unit diagonal shift of the 2 x 2 square.
- Major use space, in section, is generated from a square.
- Glazed roof form of major use space developed from geometries related to squares.



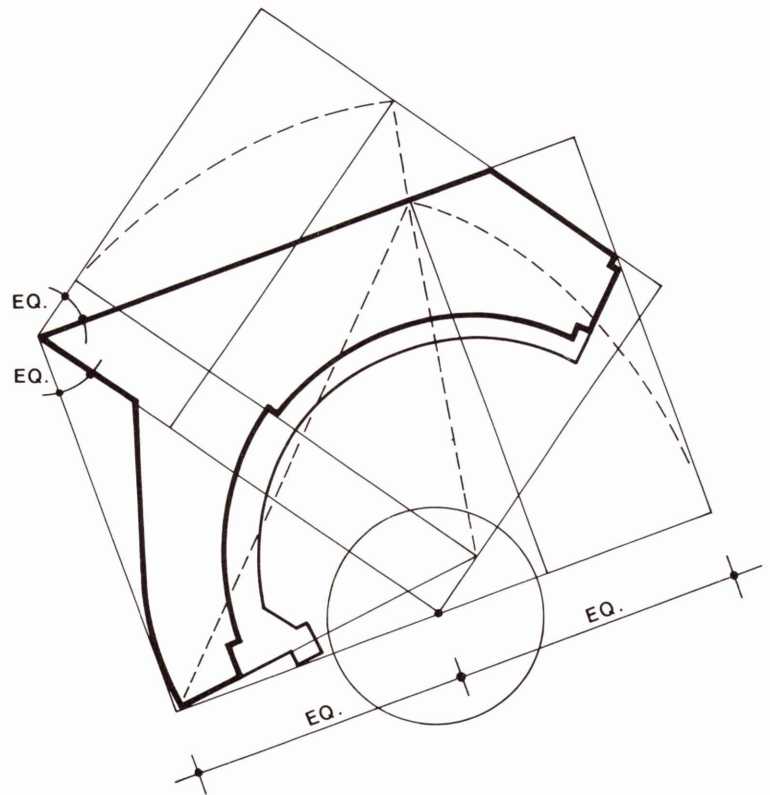
Oxford Dorm

- Major common space generated from a 2 square grid, one cell of which is further subdivided into another 2 x 2 square grid. The intersection of the lesser grid lines is the point from which a series of radial axes originate.
- A second series of radials originates from a corner of the larger 2 x 2 square grid.



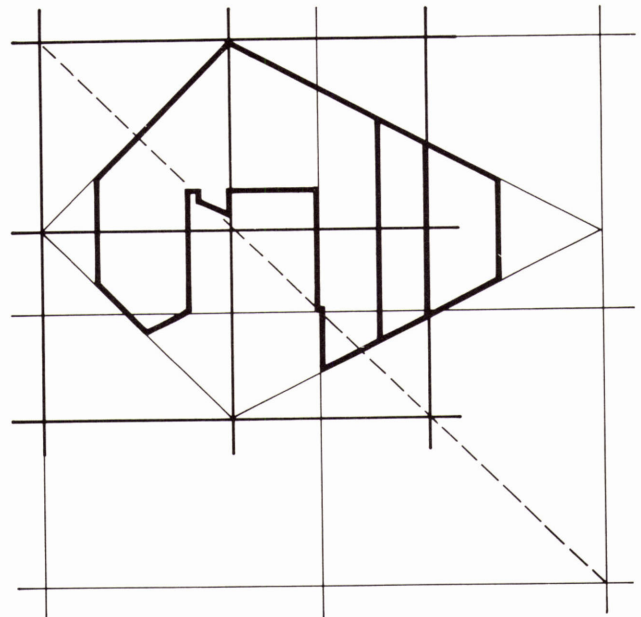
Library

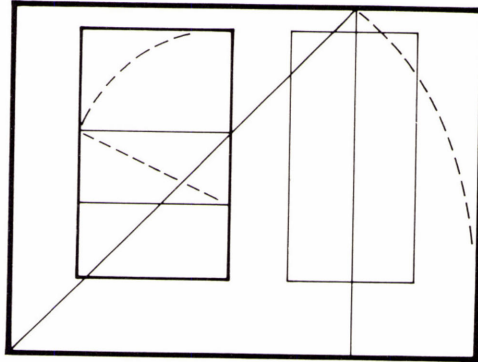
- Overall plan configuration fits within a 1 : 1.4 rectangle.
- Major plan forms developed from a combination of circle and 1 : 1.4 rectangles that are rotated.



M.D.R.T.

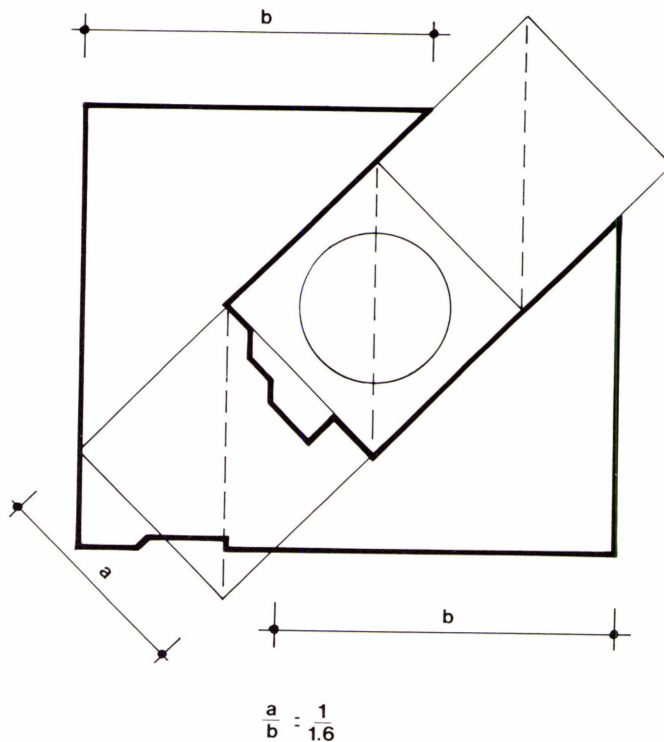
- Overall plan configuration is generated from a 2 x 2 square grid.
- Plan further developed within a larger 2 x 2 square grid.
- Extensions of angular walls intersect in diamond form.





Music Building

- Overall plan configuration is generated within a 1 : 1.4 rectangle.
- Major interior spaces are golden (1 : 1.6) rectangles.

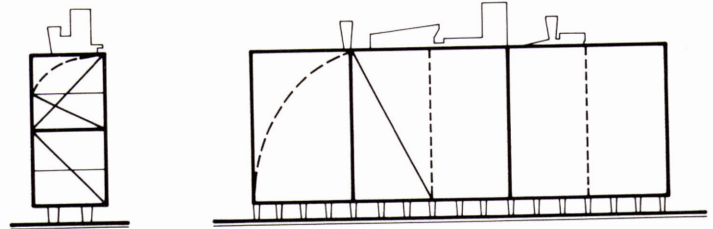
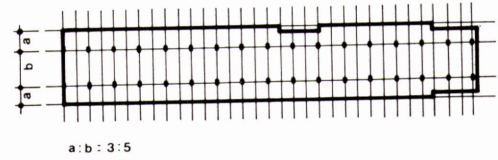


Student Union

- Overall plan configuration generated from a square that is bisected into four right triangles by three smaller squares.
- Ratio of smaller square to larger square is 1 : 1.6.

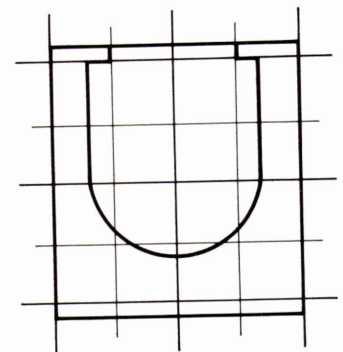
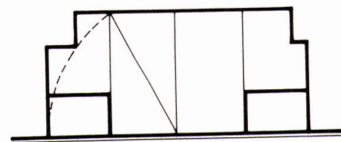
Marseilles

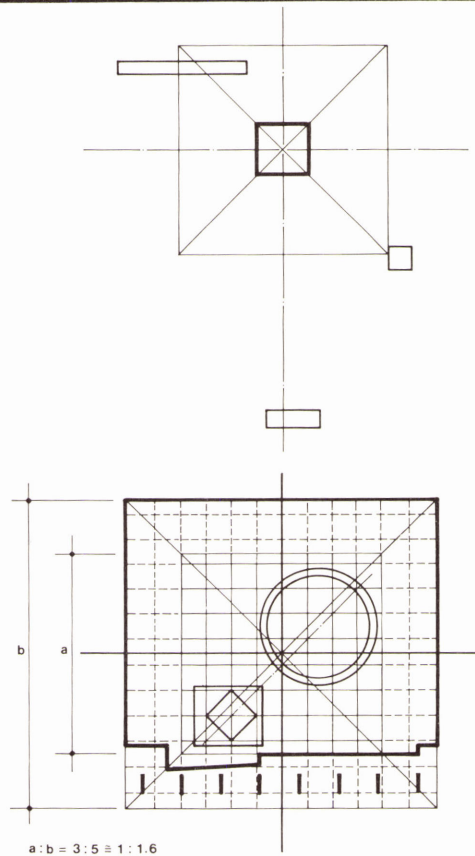
- Plan based on an orthogonal grid with a 3:5 ratio.
- End and side elevations developed from square and golden section geometrics.



Villa Savoye

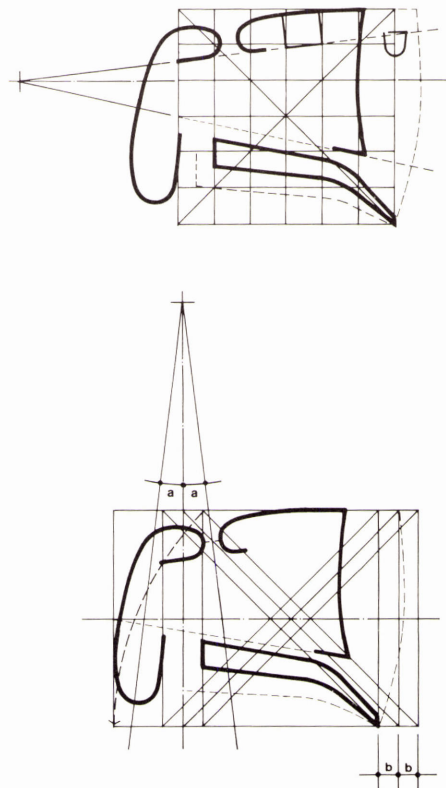
- Basic elevation developed from golden section geometry.
- Overall plan configuration based on a 2 x 2 grid with each cell subdivided into another 2 x 2 grid.





Assembly at Chandigarh

- Site plan developed from a geometry with the Assembly Building at the center of the square.
- Overall plan of building is a square which is first subdivided into a 2 x 2 grid, each cell of which is further divided into a finer grid.
- Interior court is a square with a specific geometrical relationship to the building, the whole of 3:5 (1:1.6).

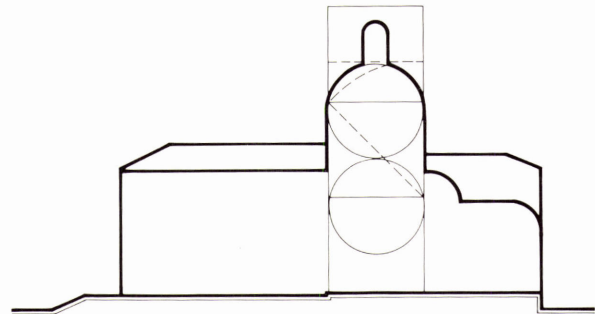
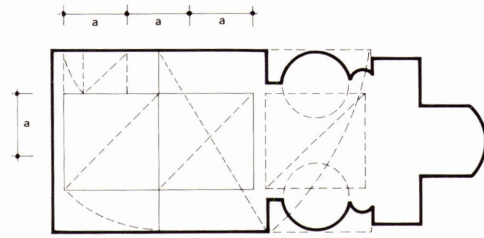


Ronchamp

- Plan geometries coincident with significant points on a 6 x 6 square grid.
- Overall plan configuration based on a 1:1.4 rectangle with shifted sections within.
- Angle formed by cross on floor area through center of main entrance is the same angle formed by line through center of main entrance and line through center of entrance between chapels.

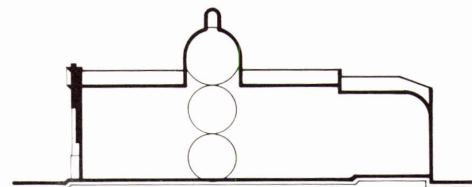
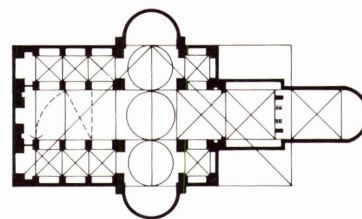
Redentore

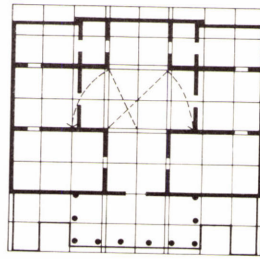
- Interior height of dome is $2\frac{1}{2}$ times its diameter.
- Height to tallest point is 3 times the diameter of the dome.
- Major component of nave is comprised of two squares which are the same dimensions as the dome.
- Width of side aisles is determined by manipulation of the geometry of the square.



San Giorgio

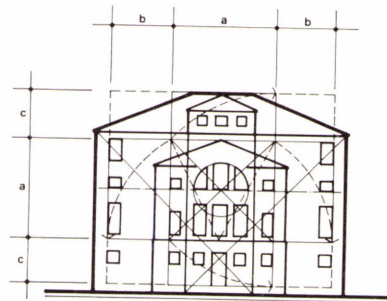
- Interior height of dome is 3 times its diameter.
- Basic plan form is comprised of two squares joined at center line of dome with diameter of dome that is $\frac{1}{3}$ the size of a side of the squares.
- Two major squares in plan are subdivided into 9 squares each.
- Side chapels are squares in plan.





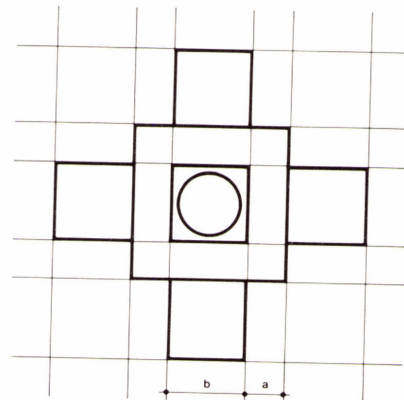
Malcontenta

- Plan configuration derived from grid.
- Center of cruciform configuration is square, the shorter legs are derived from the golden section.



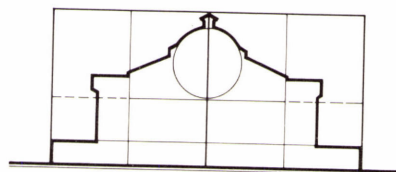
$$a : b = 1 : 1.6$$

$$a : c = 1 : 1.4$$



La Rotonda

- Basic plan form is a square subdivided into an 'a', '2a' grid.
- Elevation is contained within squares joined at center line of squares. Larger squares are subdivided into grid.

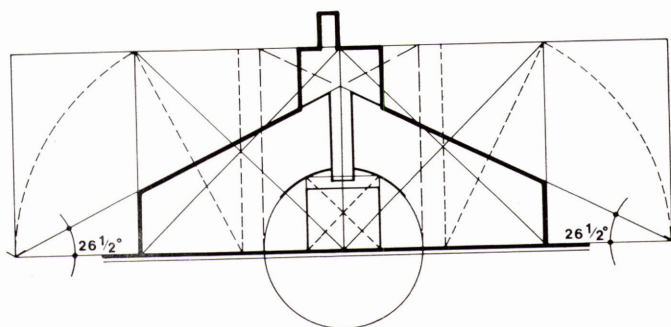
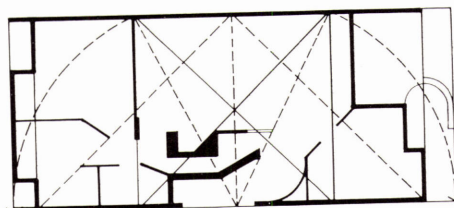


VENTURI AND RAUCH

GRID/GEOMETRY

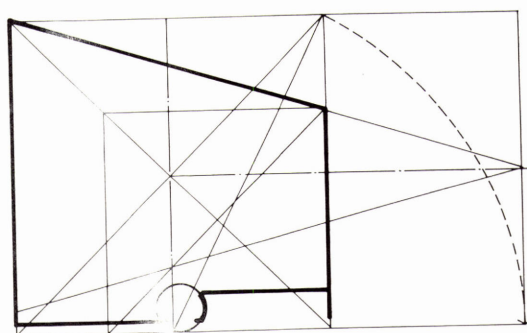
Venturi House

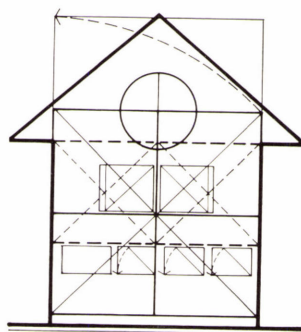
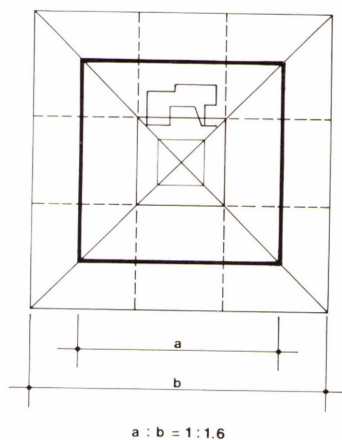
- Overall plan configuration developed from a square and its golden sections.
- Plan further developed by three overlapping squares to determine major divisions.
- Elevation developed from two adjoining squares.
- Major wall penetrations are squares.



Fire Station

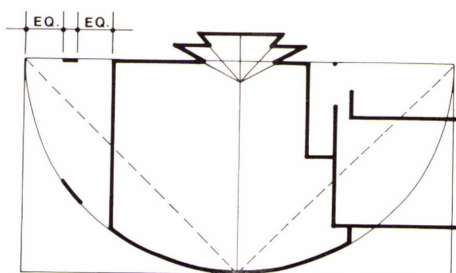
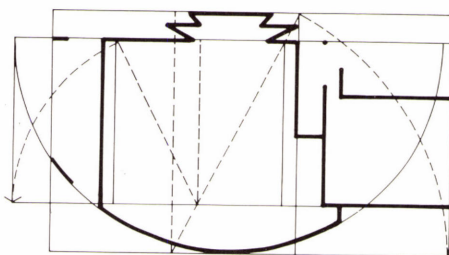
- Plan configuration developed from two squares that have two common sides.
- Rear angled wall is determined by connecting corners of the two squares.
- Extension of rear angled wall and the interior angled wall forms an isosceles triangle.





Tucker House

- Plan of building is a square related to the plan of the roof by a ratio of 1:1.6.
- Square of roof plan is divided into a square configuration which determines the location of major plan elements.
- Elevation generated from three metric forms with overall configuration contained within a golden mean rectangle.



Brandt House

- Overall plan configuration contained within a golden mean rectangle. The major living space defined by a square.
- Plan further developed from adjoining squares with the common side forming the radius of the major semi-circular wall.
- Three smaller overlapping squares superimposed over other geometric forms.

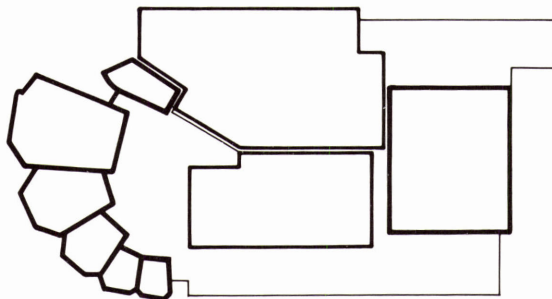
ORDERING IDEAS

HIERARCHY

Hierarchy is the rank ordering of parts relative to a common physical attribute.

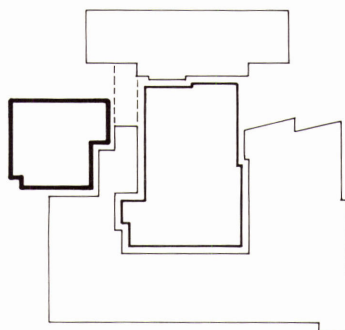
Cultural Center

- From most important to least
 1. Meeting rooms and youth center
 2. Library and exterior court
 3. Remainder of building



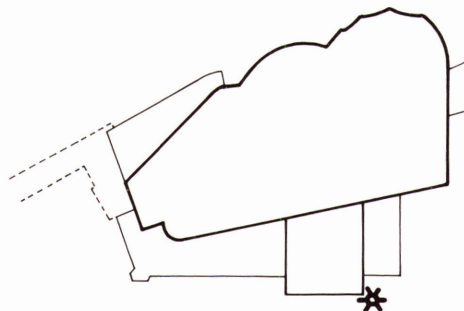
Town Hall

- From most important to least
 1. Meeting room
 2. Courtyard
 3. Remainder of building
 4. Lattice at entrance



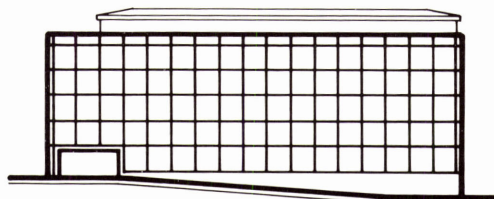
Imatra

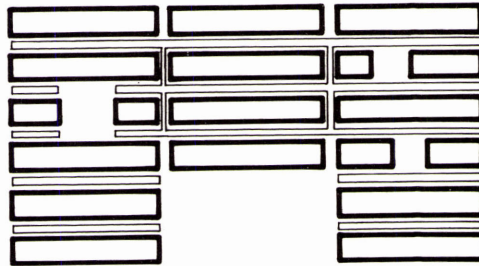
- From most important to least
 1. Bell tower
 2. Major space
 3. Entrance
 4. Remainder of building
 5. Canopy at secondary entrance



Enso/Gutzeit

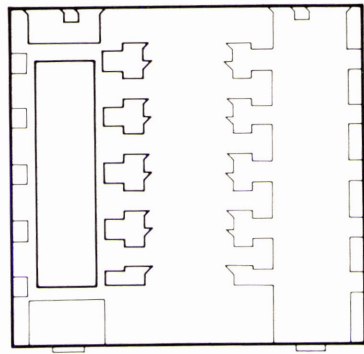
- From most important to least
 1. Overall rectangle of building form
 2. Entrance cavity
 3. Elevation grid
 4. Penthouse





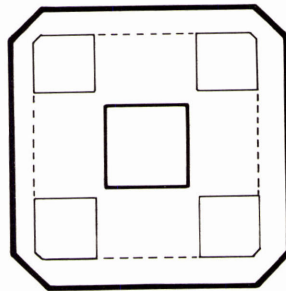
Kimball Art Center

- From most important to least
 1. Structural vaults
 2. Spaces between vaults
 3. Court spaces



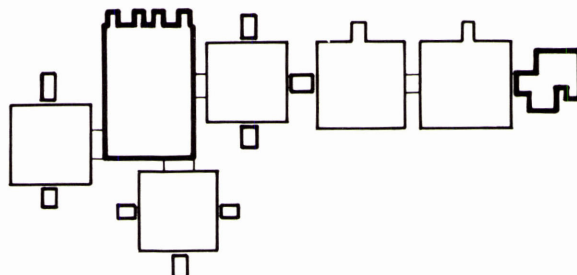
Salk Institute

- From most important to least
 1. Overall building configuration
 2. Laboratories
 3. Small use spaces
 4. Service spaces



Exeter Library

- From most important to least
 1. Overall building form
 2. Central lightwell
 3. Enclosed forms in corners
 4. Spaces adjacent to closed form

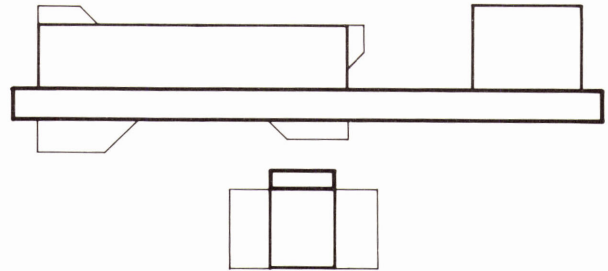


Richards Medical Laboratory

- From most important to least
 1. Major service units
 2. Service towers adjacent to major spaces
 3. Major use spaces
 4. Circulation links

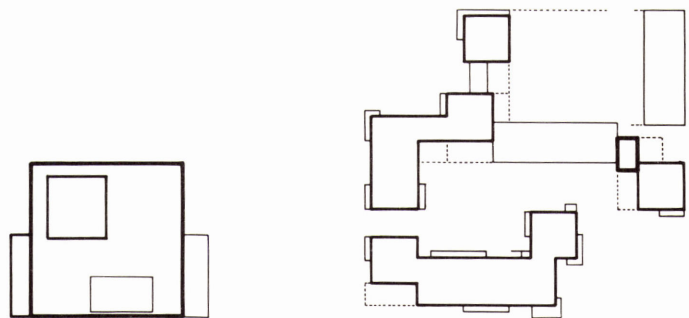
Hines House

- From most important to least
 1. Spine
 2. Walls which define major use spaces
 3. Appendages



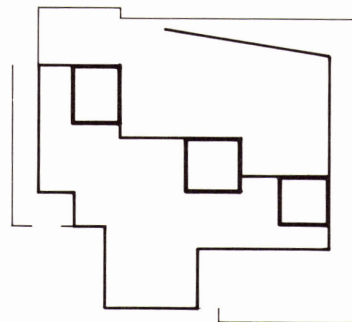
Sea Ranch

- From most important to least important for the complex
 1. Tower
 2. Aggregation of units
 3. Appendages to units and carport units
 4. Fences
- From most important to least for units
 1. Walls which define major space
 2. Aedicula and appendage to living space
 3. Kitchen unit and entry



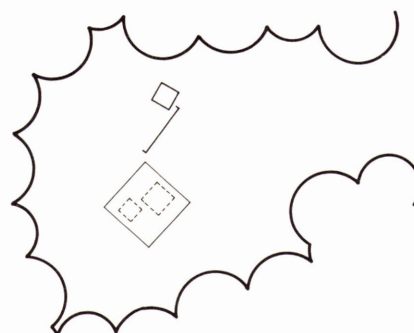
Burns House

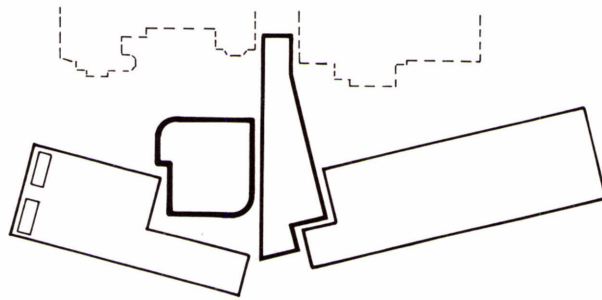
- From most important to least
 1. Three tower forms
 2. Remainder of building and exterior bent
 3. Walls which define outdoor spaces



Moore House

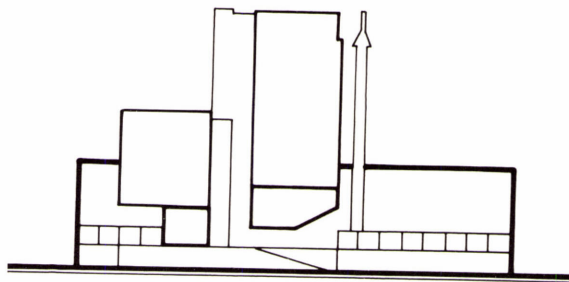
- From most important to least
 1. Clearing defined by trees
 2. Complex of buildings and fence
 3. Aediculae in living unit





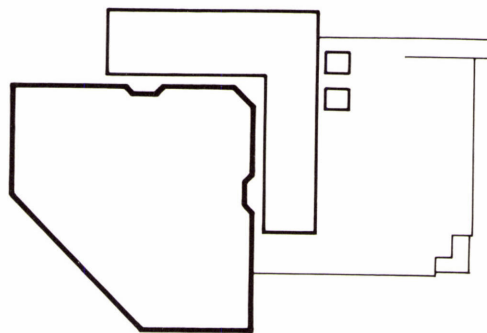
Olivetti

- From most important to least
 1. Major common space
 2. Circulation link
 3. Smaller use spaces
 4. Modular elements
 5. Existing building



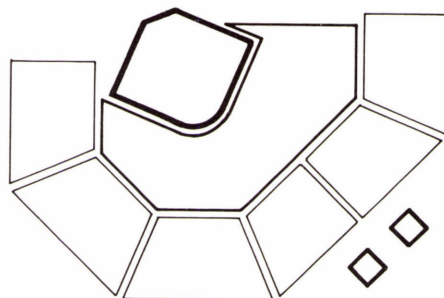
Leicester

- From most important to least
 1. Horizontal building form
 2. Two auditoria
 3. Use spaces in towers
 4. Remainder of building



Cambridge

- From most important to least
 1. Major use space
 2. Adjacent smaller spaces and circulation towers
 3. Remainder of building

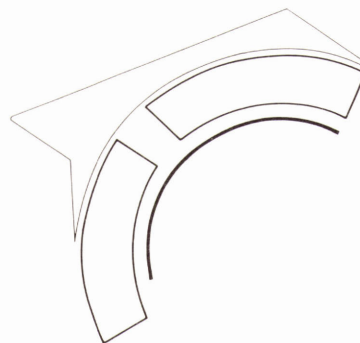


Oxford

- From most important to least
 1. Major common space
 2. Circulation towers
 3. Open court
 4. Trapezoidal forms of living units

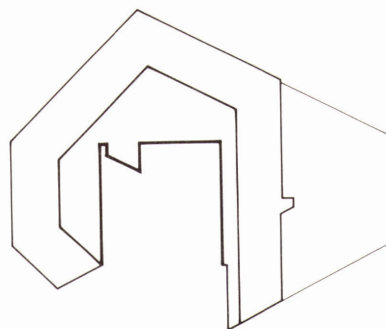
Library

- From most important to least
 1. Curved screen wall
 2. Curved major use space
 3. Remainder of building



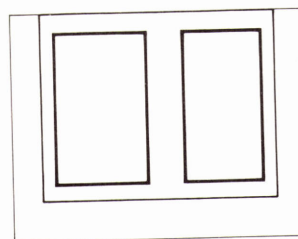
M.D.R.T.

- From most important to least
 1. Orthogonal walls that form entry court
 2. Angled interior subdivision
 3. Angled exterior wall



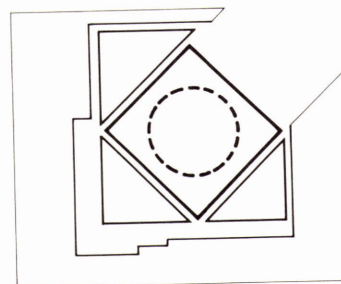
Music Building

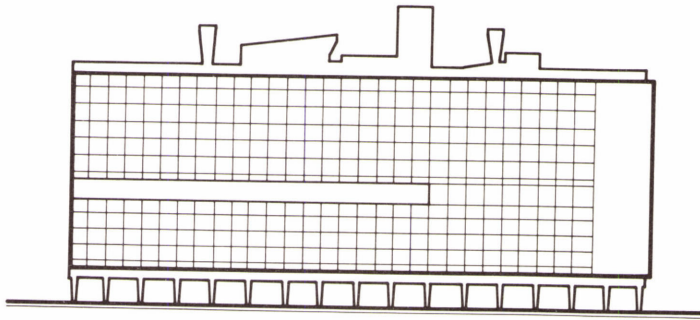
- From most important to least
 1. Major use spaces
 2. Interior edge of support spaces
 3. Building enclosure



Student Union

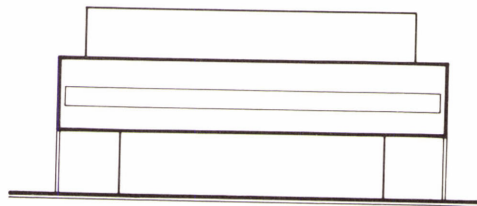
- From most important to least
 1. Exterior court
 2. Enclosure of triangular spaces surrounding court
 3. Interior edge of support spaces
 4. Remainder of building





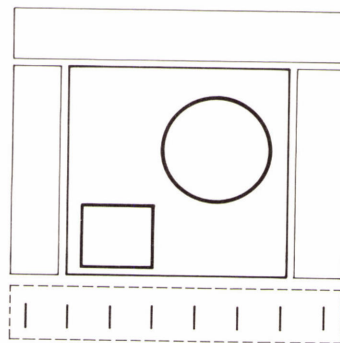
Marseilles

- From most important to least
 1. Main block of building
 2. Pilotis and roof forms
 3. Shopping street at mid-buildings
 4. Grid of living units



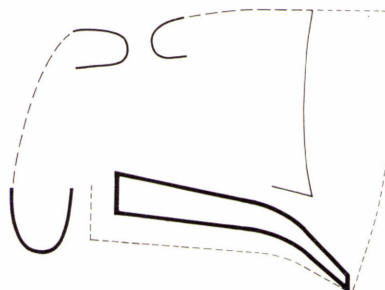
Villa Savoye

- From most important to least
 1. Block of main floor of building
 2. Block of ground floor and roof
 3. Strip windows in main block



Assembly at Chandigarh

- From most important to least
 1. Two unique interior forms
 2. Internal court and sun screen supports
 3. Rectangular buildings blocks enclose internal court
 4. Canopy of sun screen

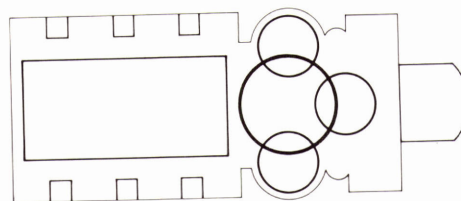


Ronchamp

- From most important to least
 1. Thick wall
 2. Main side chapel
 3. Two small side chapels
 4. Front wall
 5. Remainder of building

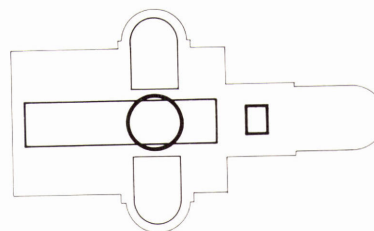
Redentore

- From most important to least
 1. Dome
 2. Three interior half-domes surrounding central dome
 3. Main seating area
 4. Side and rear chapels
 5. Remainder of building



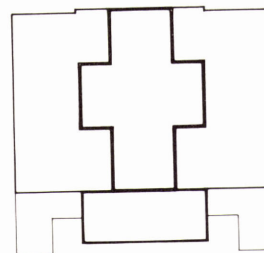
San Giorgio

- From most important to least
 1. Dome
 2. Altar
 3. Main seating area
 4. Transepts
 5. Remainder of Building



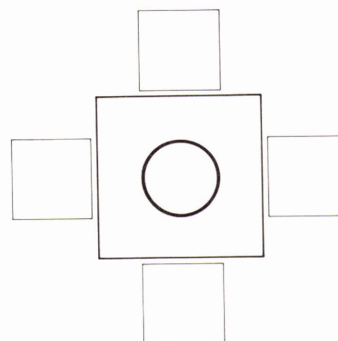
Malcontenta

- From most important to least
 1. Central cruciform space
 2. Portico
 3. Remainder of building
 4. Entrance stairs



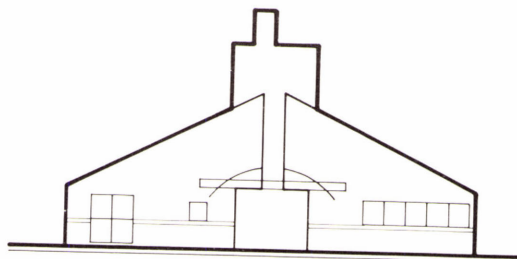
La Rotonda

- From most important to least
 1. Dome
 2. Square comprising mass of building
 3. Porticos and stairs



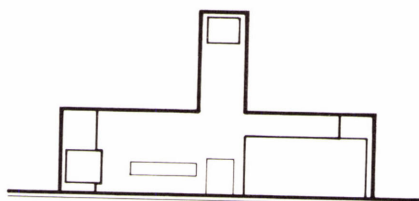
HIERARCHY

VENTURI RA



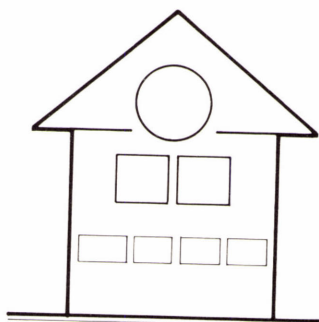
Venturi House

- From most important to least
 1. Silhouette of building
 2. Recess at entrance
 3. Curved form above entrance windows



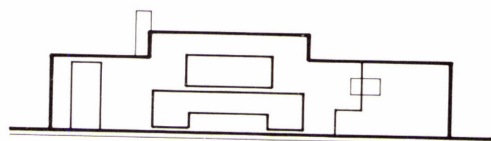
Fire Station

- From most important to least
 1. Silhouette of building
 2. Change in brick color
 3. Three large square openings
 4. Remaining openings in facade



Tucker House

- From most important to least
 1. Silhouette of building
 2. Circular window and roof form
 3. Large square windows
 4. Remaining windows



Brandt House

- From most important to least
 1. Silhouette of building
 2. Central window openings
 3. Cutouts in facade at outdoor spaces
 4. Chimney and remaining window openings

ORDERING IDEAS

LAYERING

Layering is the vertical or horizontal juxtaposition of parts wherein one part is in front of or on top of another. Most of the time the layers are physically distinct elements with the surfaces or limits of the elements forming the layers. However, at times the layers can be implied, resulting from color or material changes.

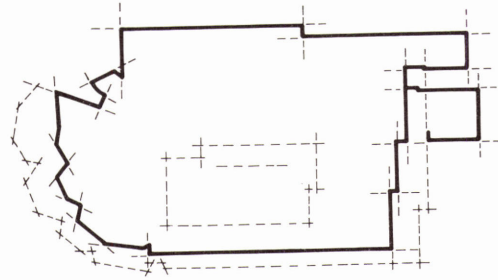


ALVAR AALTO

LAYERING

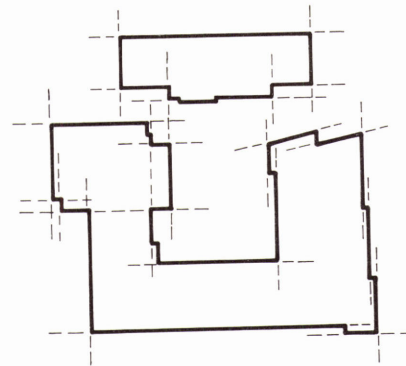
Cultural Center

- A series of relationships created by the configurations of exterior walls seen one against another.



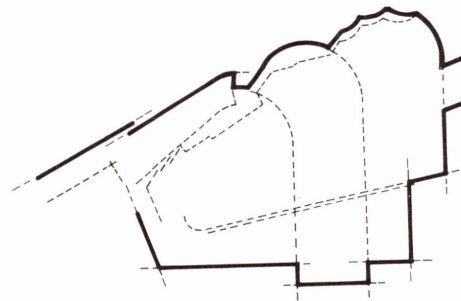
Town Hall

- A series of relationships created by the configurations of the exterior walls and roof planes seen one against another.



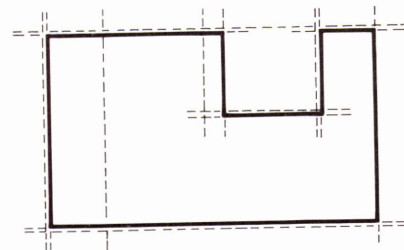
Imatra

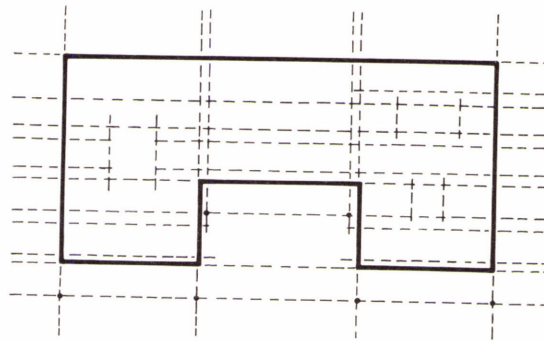
- A series of relationships created by configuration of exterior walls, wall thicknesses, and ceiling articulation seen one against another.



Enso/Gutzeit

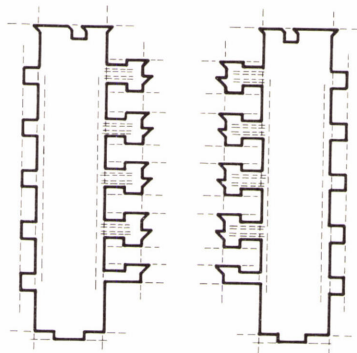
- A series of relationships that occur within the building skin, and between the walls defining exterior, entry and lightwell seen one against another.





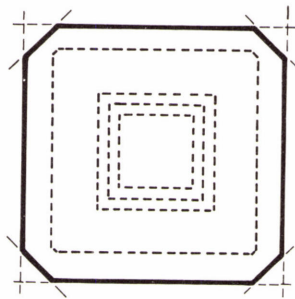
Kimball Art Center:

- A series of relationships in an orthogonal grid configuration that is consistent with the structural vault system.



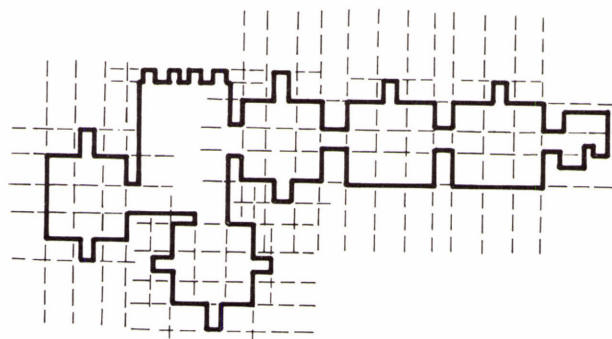
Salk Institute

- A series of relationships formed by surfaces that contain and define circulation, and the smaller building elements seen against the mass of the major use spaces.



Exeter Library

- A series of concentric squares progressing from building skin to interior lightwell, with structural elements, furniture, space defining walls and openings seen one against another.

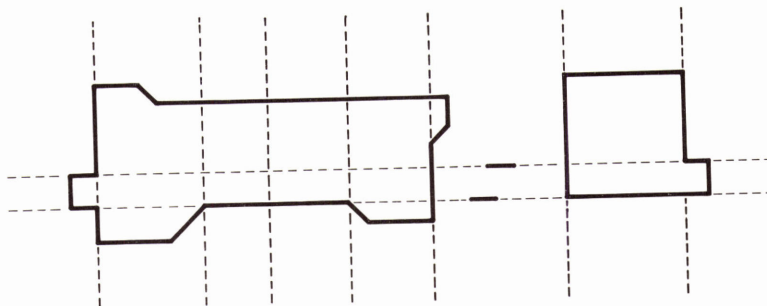


Richards Medical Laboratory

- A series of relationships in an orthogonal grid configuration that is consistent with the structural system, exterior walls, service towers, seen one against another.

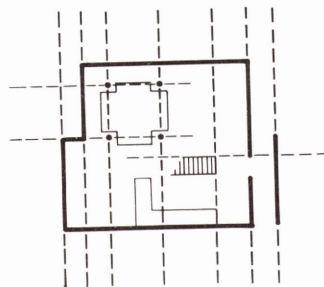
Hines House

- A series of relationships created by exterior walls, articulation of spine, and frames along spine seen one against another.



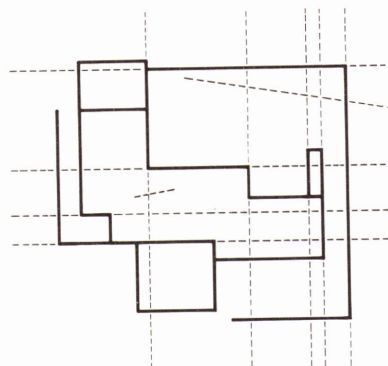
Sea Ranch

- A series of relationships created by interior space modulating elements, exterior walls, and appendages seen one against another.



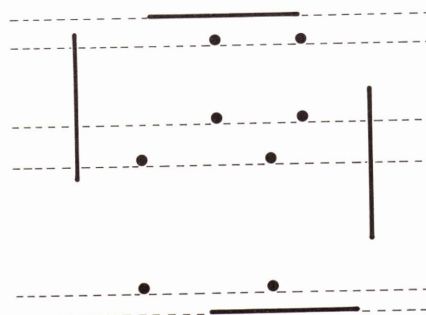
Burns House

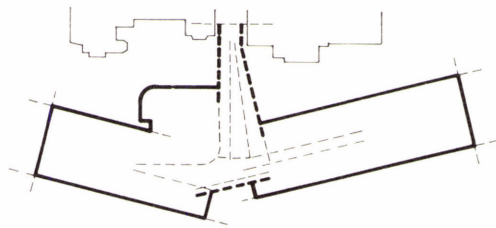
- A series of relationships created by exterior walls and bent seen one against another.



Moore House

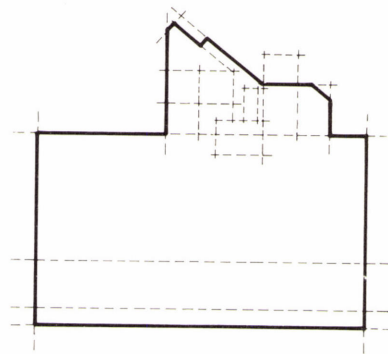
- A series of relationships created by exterior walls and aediculae seen one against another.





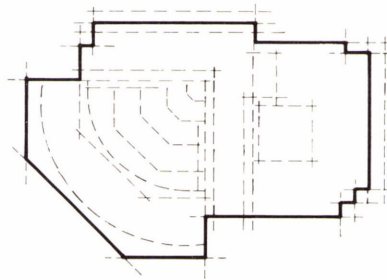
Olivetti

- A series of relationships created by the surfaces of major circulation lines seen one against another.



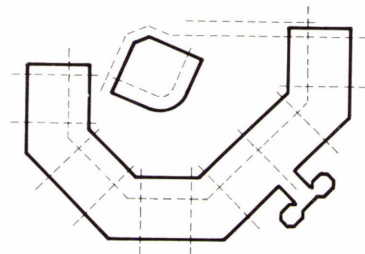
Leicester

- A series of relationships created by the exterior surfaces seen one against another.



Cambridge History

- A series of relationships created by the configuration of major glazed rooms and exterior wall surfaces seen one against another.

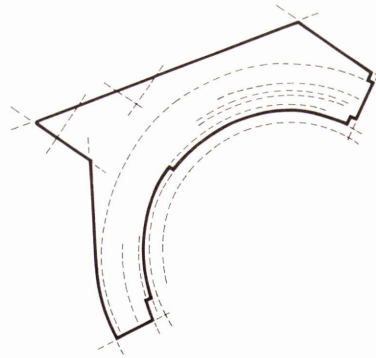


Oxford Dorm

- A series of relationships created by the structure and exterior wall surfaces seen one against another.

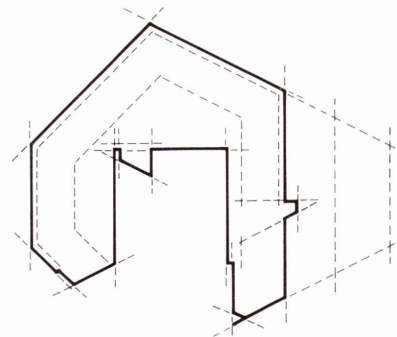
Library

- A series of concentric relationships that are consistent with the screen wall, the exterior wall, structure, and interior furnishings seen one against another.



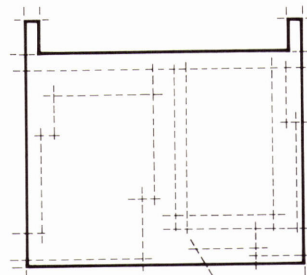
M.D.R.T.

- A series of concentric relationships that are consistent with exterior walls, structure, and interior sub-divisions seen one against another.



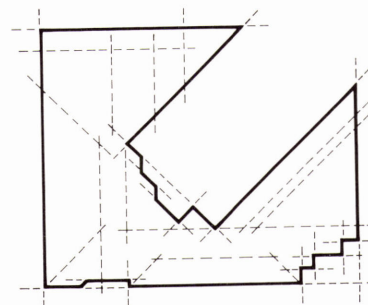
Music Building

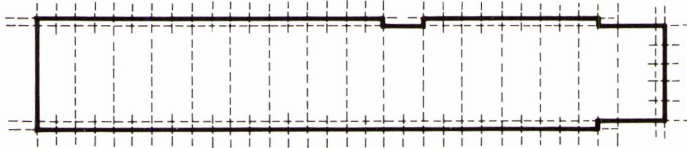
- A series of relationships that are consistent with exterior walls, building overhangs, and interior subdivisions seen one against another.



Student Union

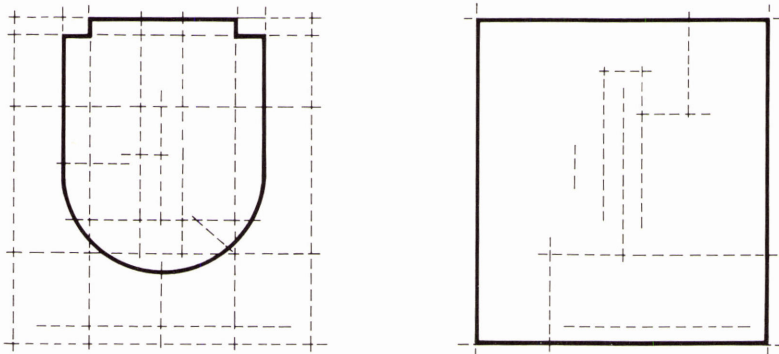
- A series of relationships that are consistent with exterior walls, screen walls, and interior subdivisions seen one against another.





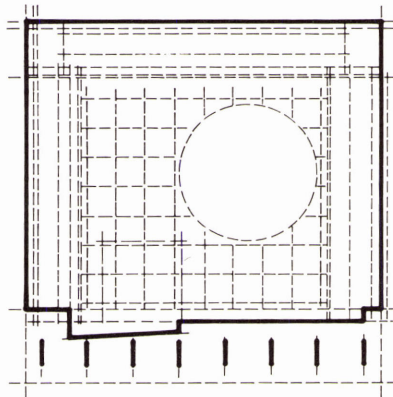
Marseilles

- A series of orthogonal relationships consistent with the building enclosure, sun screens, and structure seen one against another.



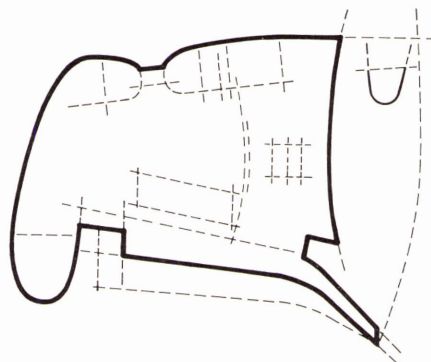
Villa Savoye

- A series of relationships consistent with the orthogonal structural grid, building enclosure, and vertical circulation seen one against another.



Assembly at Chandigarh

- A series of relationships consistent with the orthogonal structural grid, building enclosure, sun screening, and surface interior forms and circulation seen one against another.

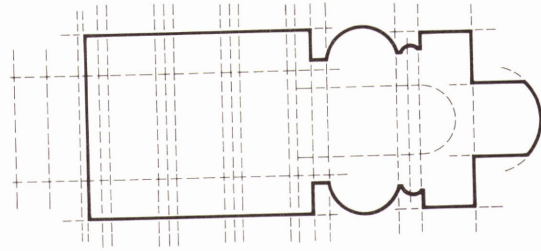


Ronchamp

- A series of relationships consistent with the building enclosure, roof overhangs, dominant interior surfaces and functions seen one against another.

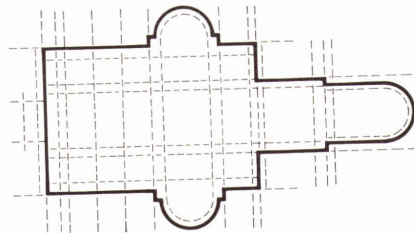
Redentore

- A series of relationships that are predominantly in an orthogonal configuration that is consistent with the structural elements and exterior walls seen one against another.



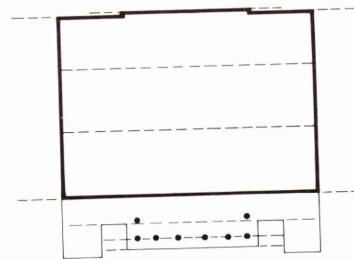
San Giorgio

- A series of relationships that are predominately in an orthogonal configuration that is consistent with the structural elements and exterior walls seen one against another.



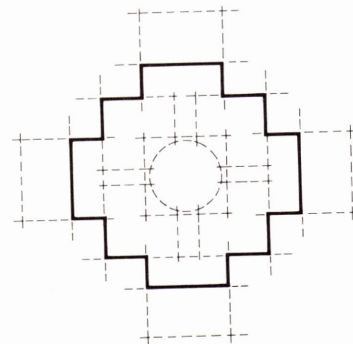
Malcontenta

- A series of parallel relationships formed by surfaces that articulate the entry stairs, portico, entry wall, interior walls bordering central space and rear wall.

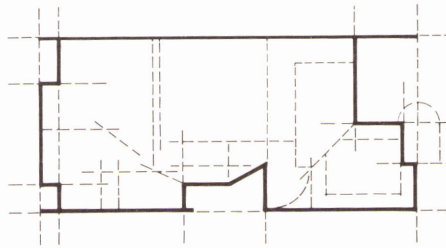


La Rotonda

- A series of concentric squares progressing from central space outward.

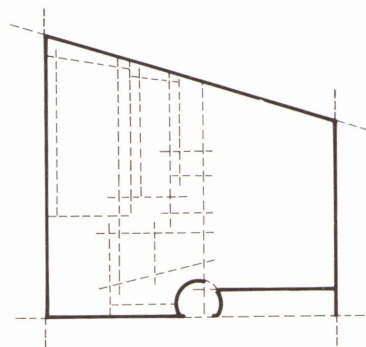


LAYERING



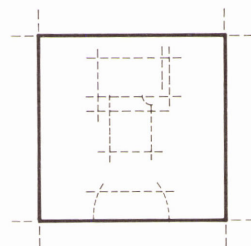
Venturi House

- A series of relationships that connect the building with exterior walls, interior subdivisions, and fireplace seen one against another.



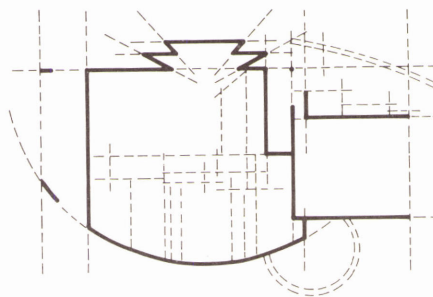
Fire Station

- A series of relationships that connect the building with the exterior walls and major interior subdivisions seen one against another.



Tucker House

- A series of concentric relationships that begin at center of square and progress outward to exterior walls.



Brandt House

- A series of relationships that connect the building with exterior walls, major interior subdivisions and changes in ceiling and floor heights seen one against another.

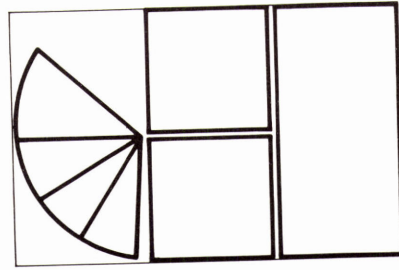
PARTI



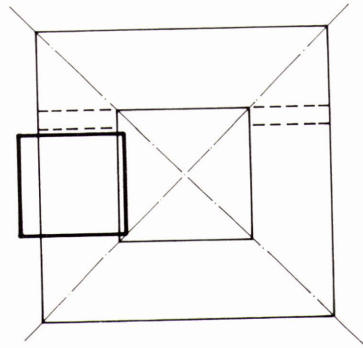
PART I

The parti is the dominant idea of the building which embodies the salient characteristics of that building. The parti diagram encapsulates the essential minimum of the design, without which the scheme would not exist, but from which the form can be generated.

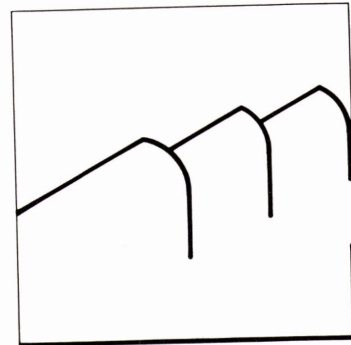
Cultural Center



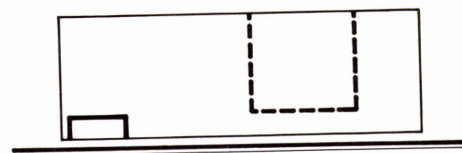
Town Hall

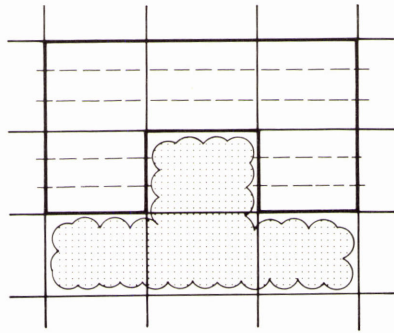
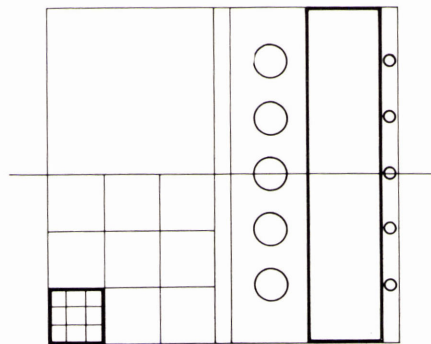
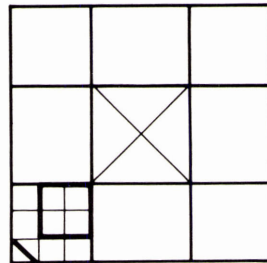
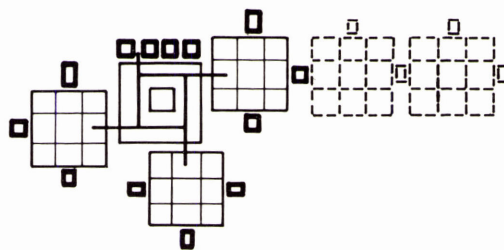


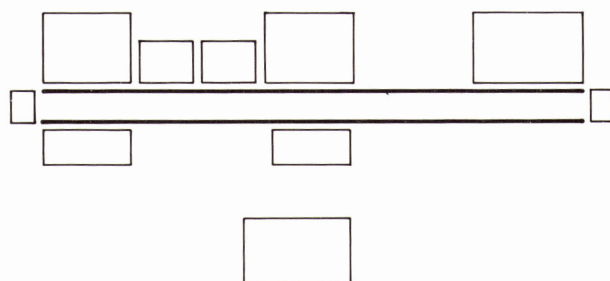
Imatra Church



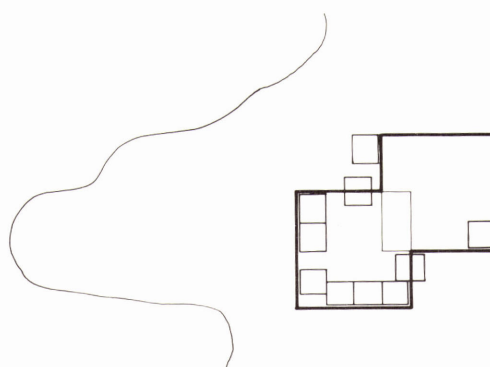
Enso/Gutzeit



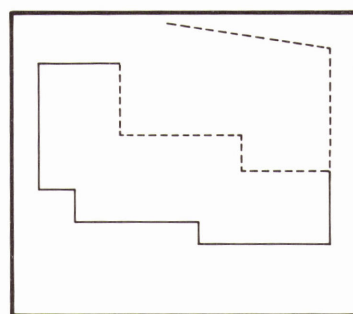
*Kimball Art Center**Salk Institute**Exeter Library**Richards Medical
Laboratory*



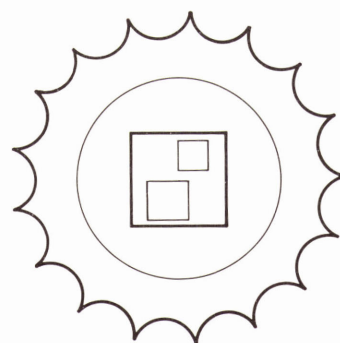
Hines House



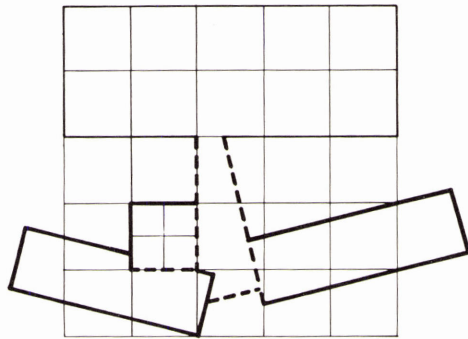
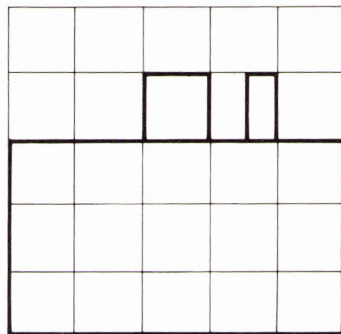
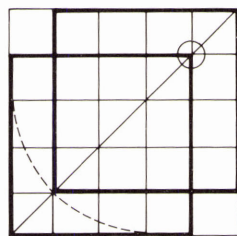
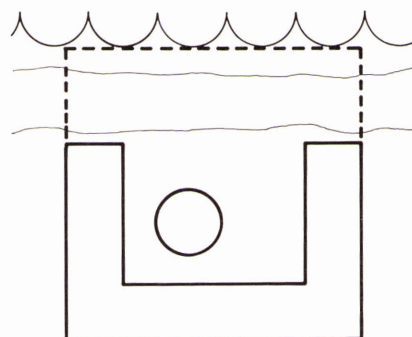
Sea Ranch



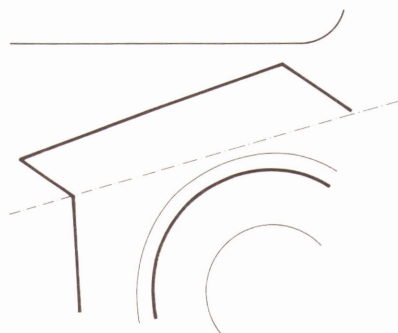
Burns House



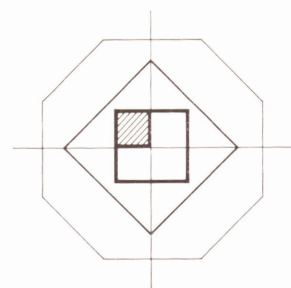
Moore House

*Olivetti**Leicester**Cambridge History**Oxford Dorm*

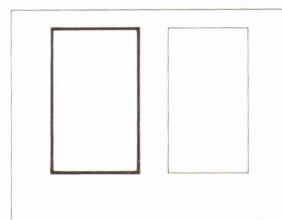
Library



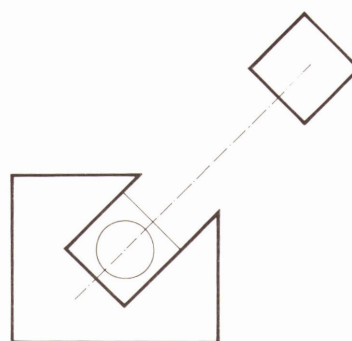
M.D.R.T.

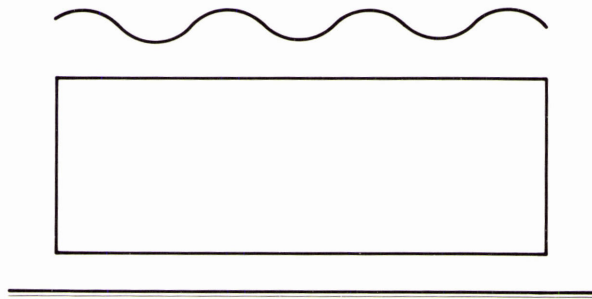


Music Building

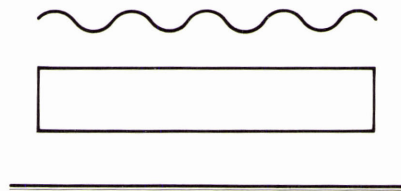


Student Union

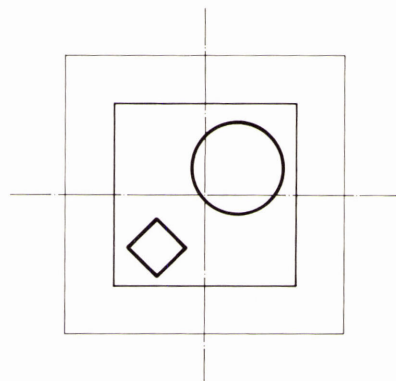




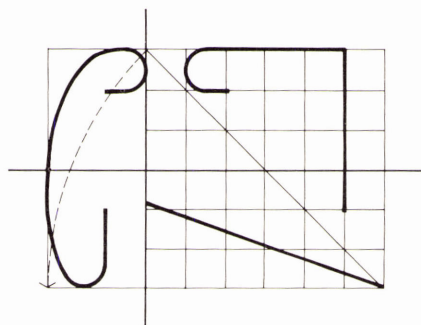
Marseilles



Villa Savoye

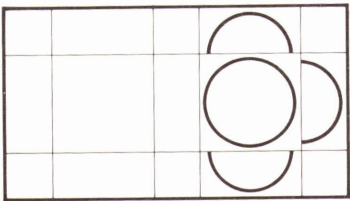


Assembly at Chandigarh

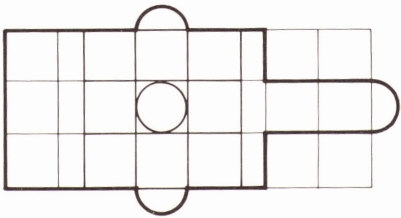


Ronchamp

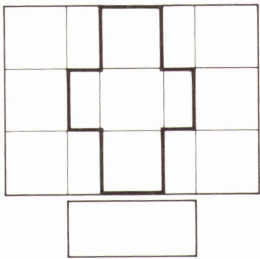
Redentore



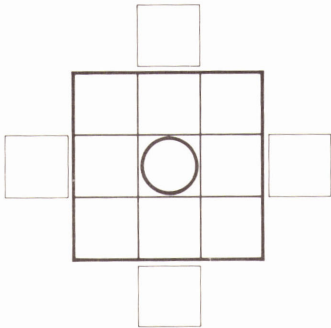
San Giorgio



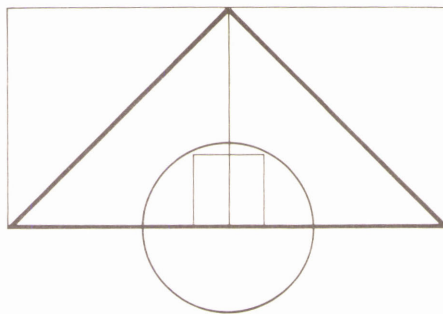
Malcontenta



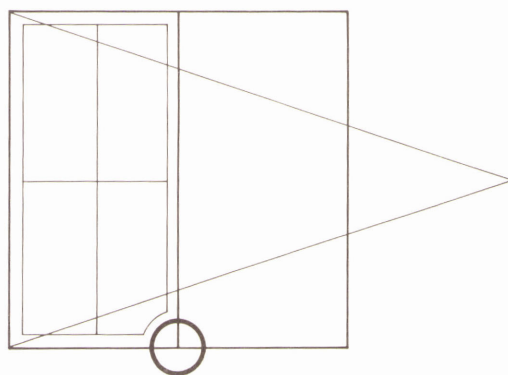
La Rotonda



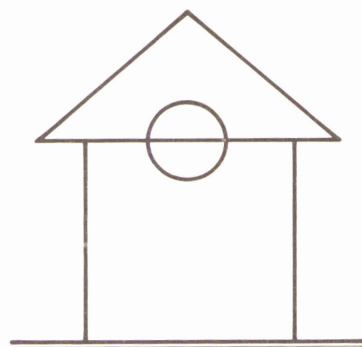
PARTI



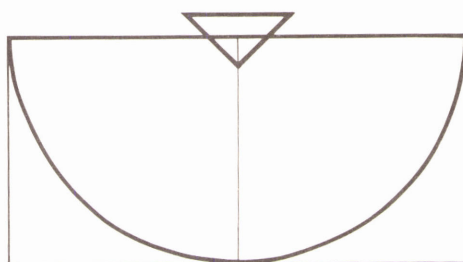
Venturi House



Fire Station



Tucker House



Brandt House

Appendix

Alvar Aalto

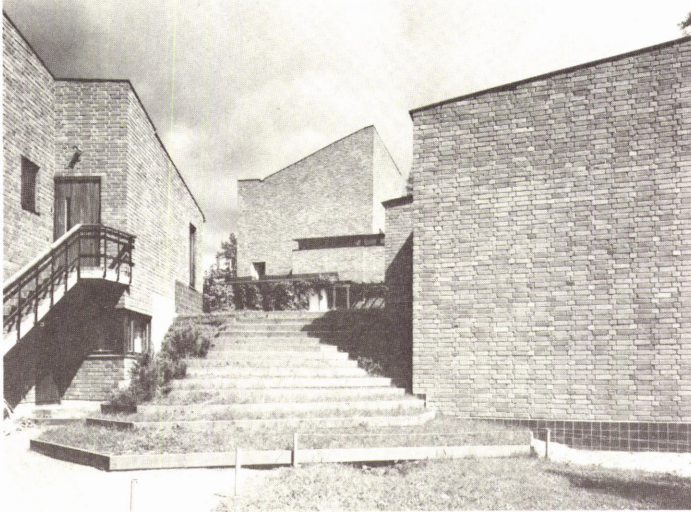
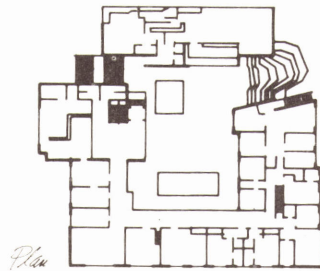
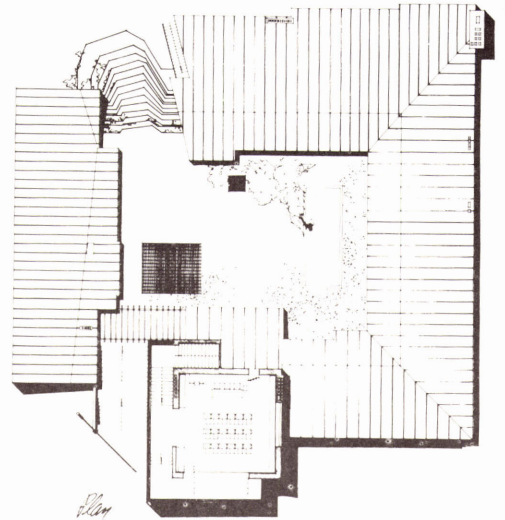


Photo: By Museum of Finnish Architecture

Saima Hall



Plan



Plan

Elevation

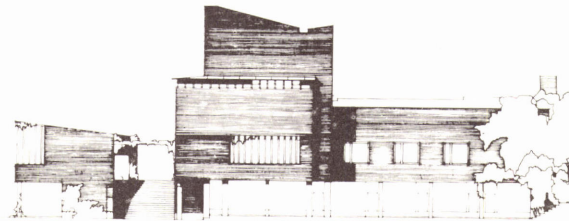
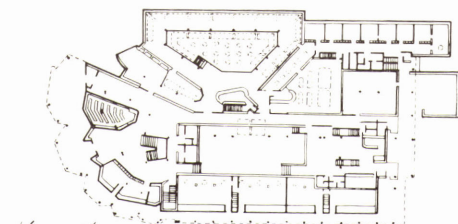
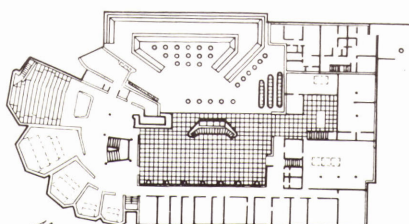


Photo: By Museum of Finnish Architecture

Wolfsburg Cultural Center



Lower Floor



Upper Floor



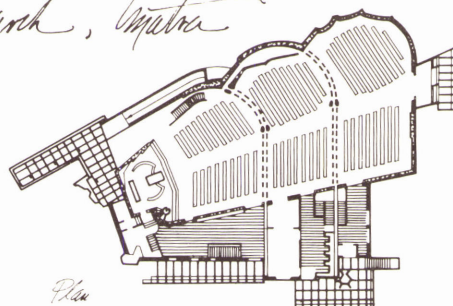
Sketch

Wolfsburg

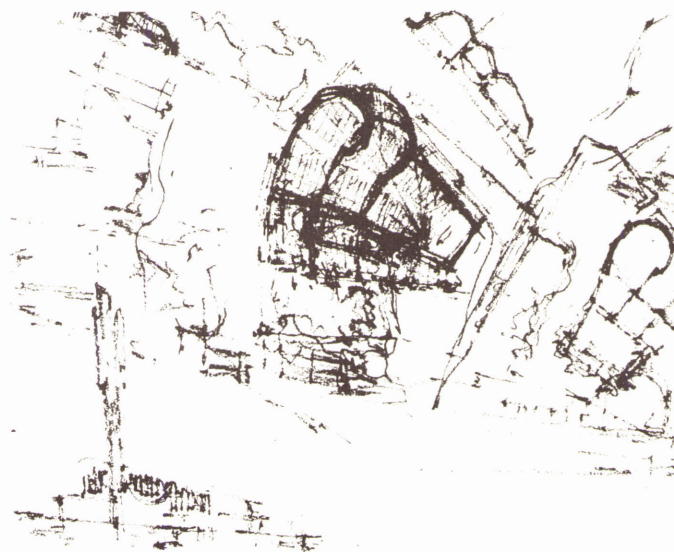


Elevation

Vuokseniska March, Imatra



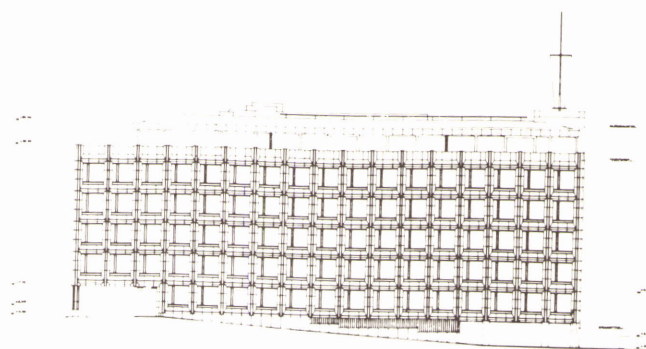
Plan



Developmental Sketches

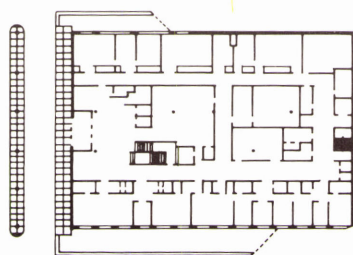


Prof. The Museum of Natural History

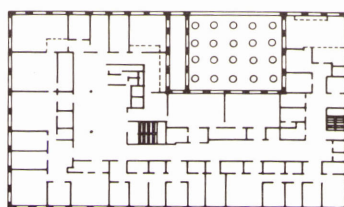


Elevation

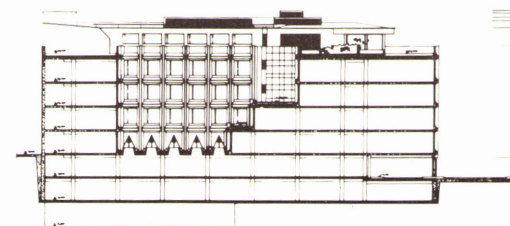
Emp / Hatzeit Office Bldg.



Lower floor



Upper Flank



Section

FENSO-GUTZEIT /
TOMITALO, PRINZ
PRINZ CC, 1900.
PRINZ 18.07.18 ALVA KALO, AR

Louis Kahn

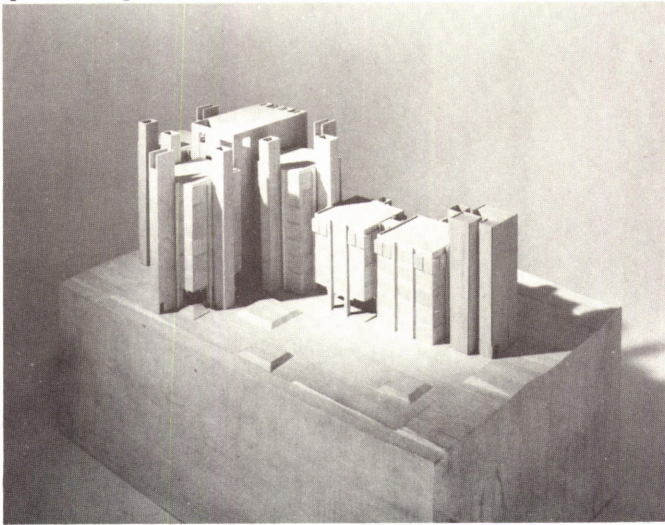
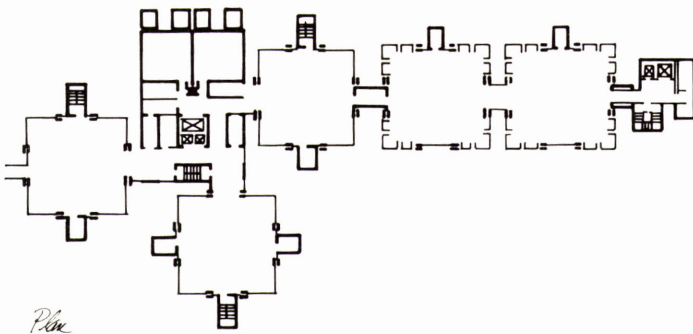


Photo of Richards Medical Center

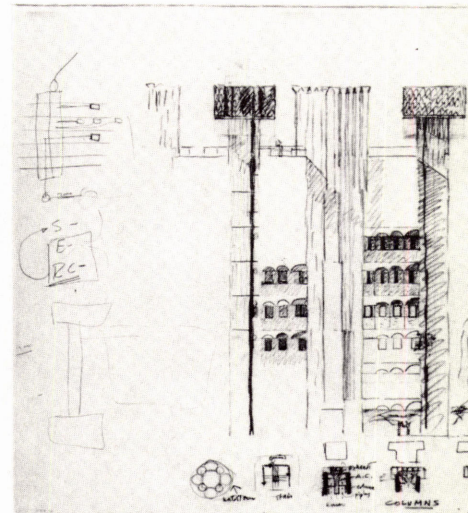
Richards Medical Center



Plan



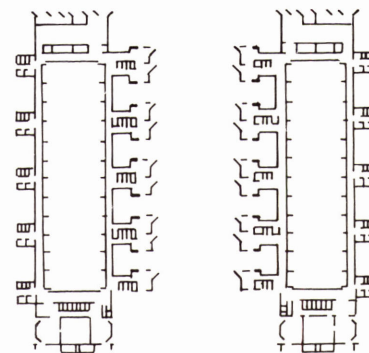
Sketch



Details

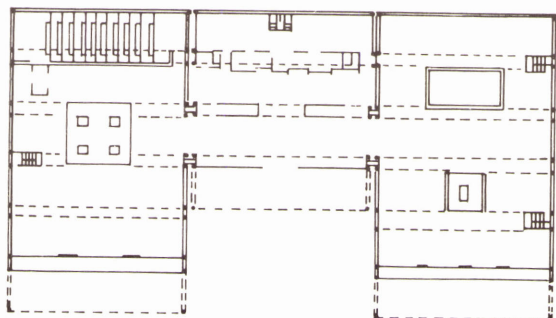


Photo of Richards Medical Center

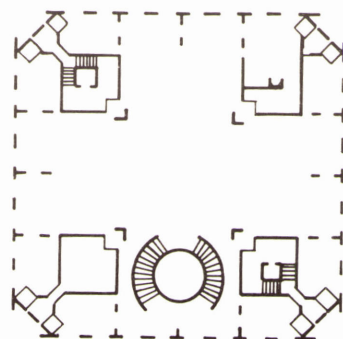


Salk Institute

Louis Kahn

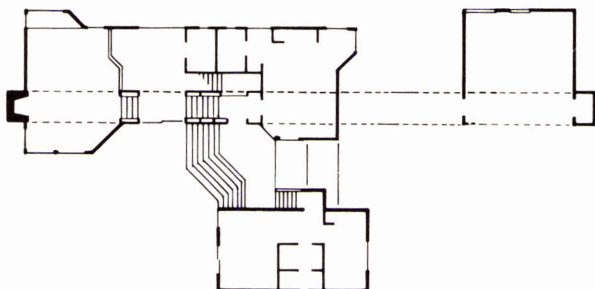


Kimbell Art Museum

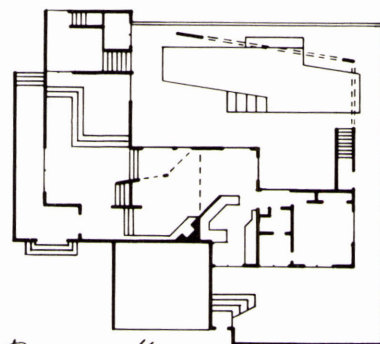


Exeter Library

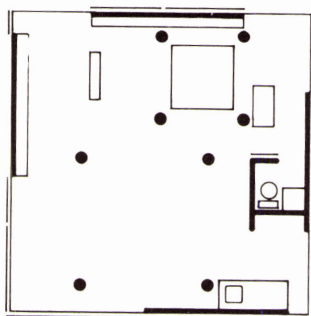
Charles Moore



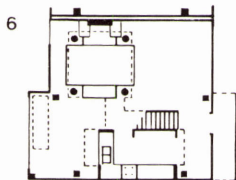
Harris House



Burns House



Moore House



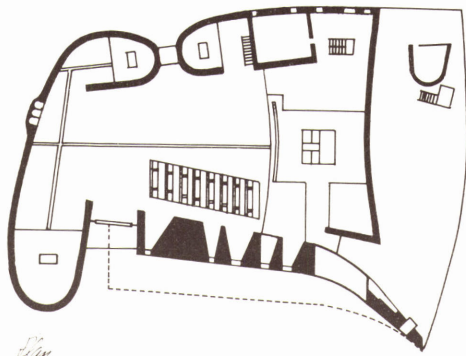
Sea Ranch

de Cousin

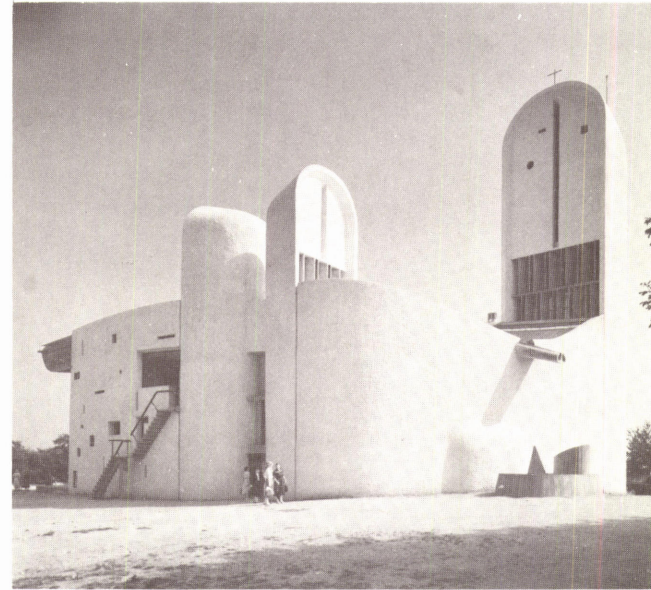


Notre Dame du Haut

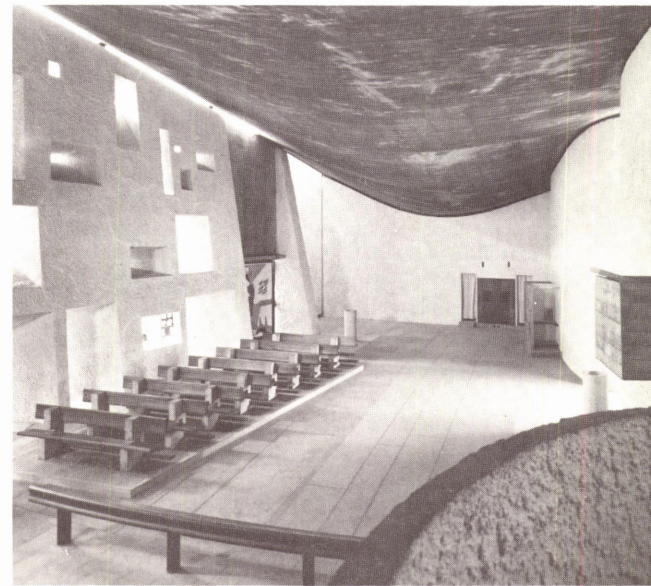
Notre Dame du Haut, Ronchamp



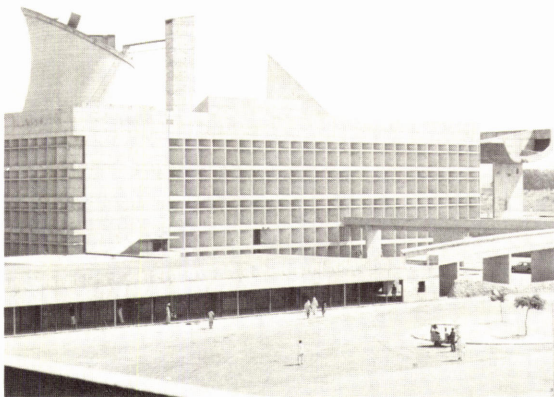
Plan



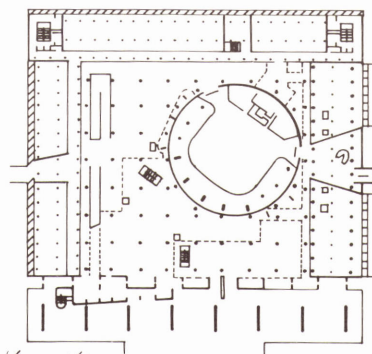
Exterior View



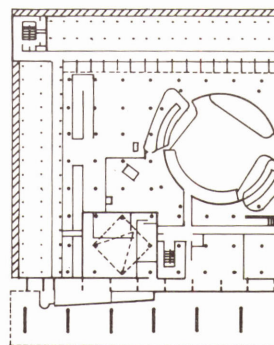
Interior View



Assembly Building, Chandigarh

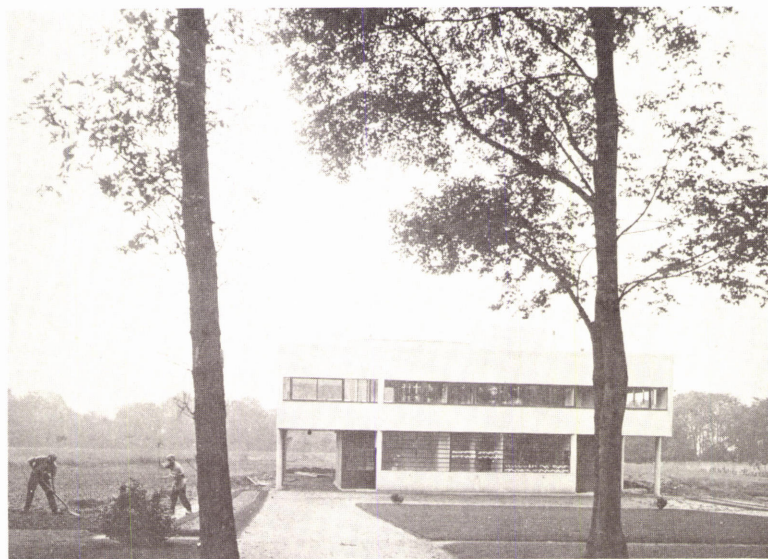


Lower Floor

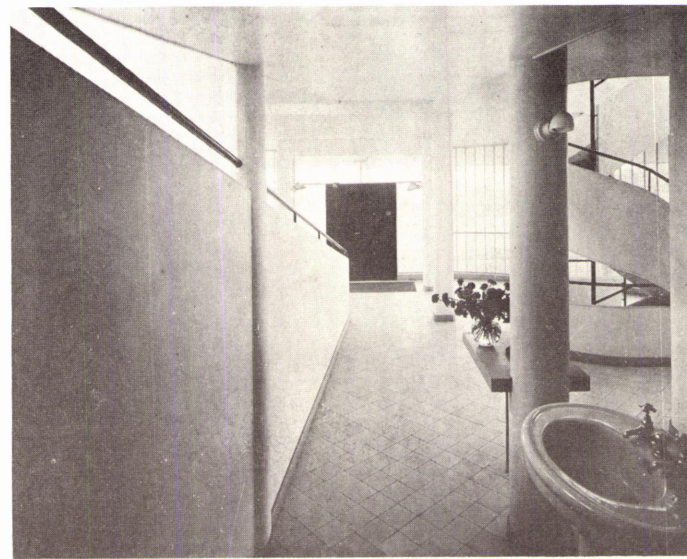


Upper Floor

Assembly Bldg, Chandigarh



Villa Savoye at Poissy

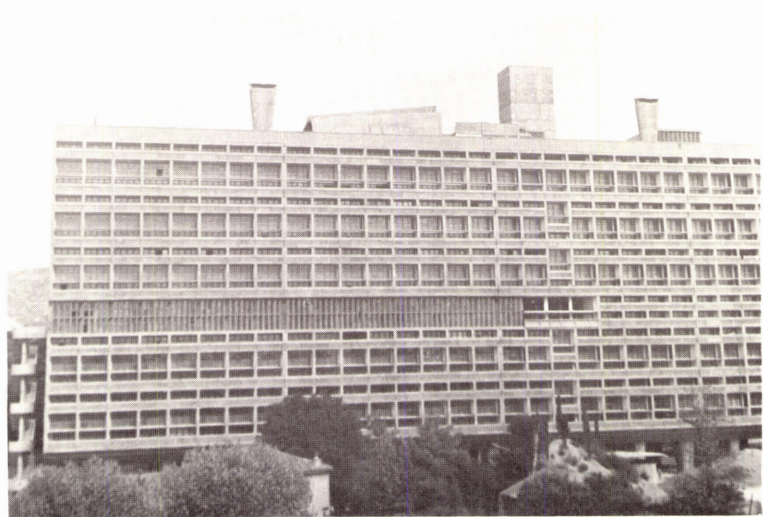
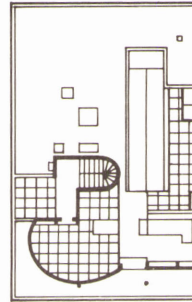
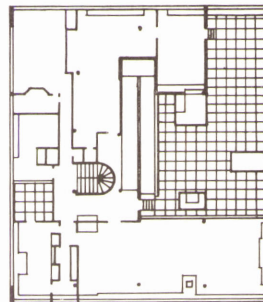
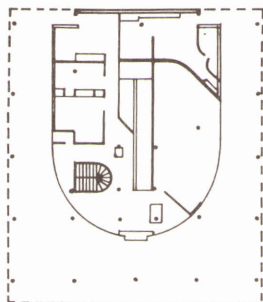


Interior View

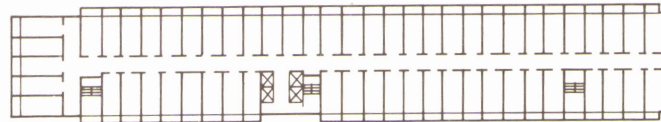


Sketch

Floor Plan



Unité d'Habitation, Marseille



Typical Upper Floor

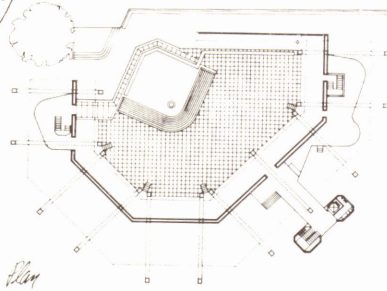
Unité d'Habitation, Marseille

Jane Stirling

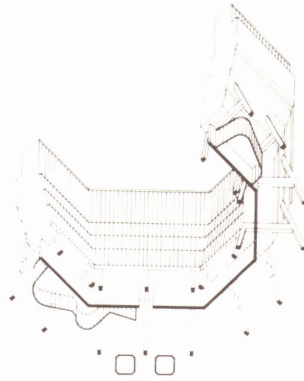


Photo: Patrick - Jane Stirling

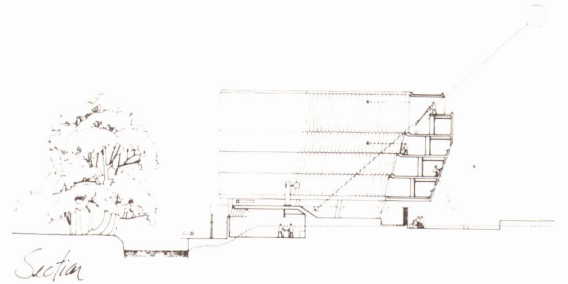
Queens College Dormitory



Plan



Developmental Sketches

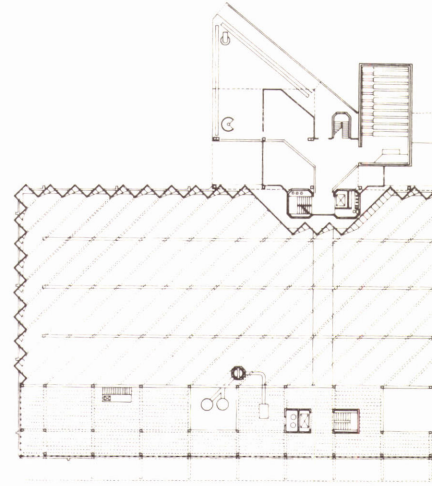
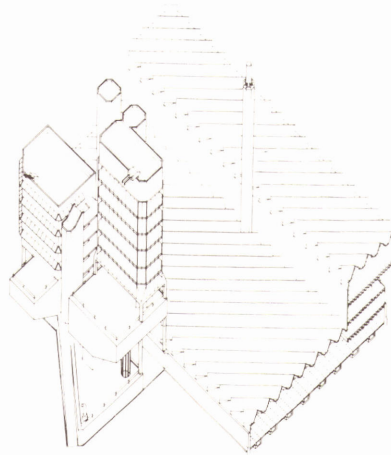


Section

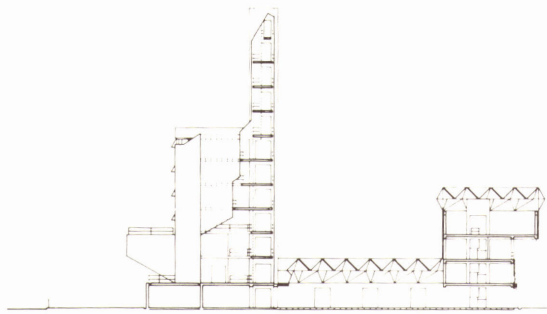


Photo: Patrick - Jane Stirling

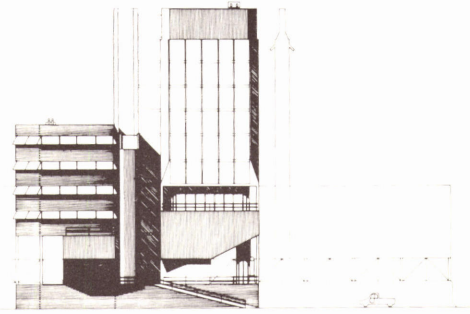
Leicester Laboratories



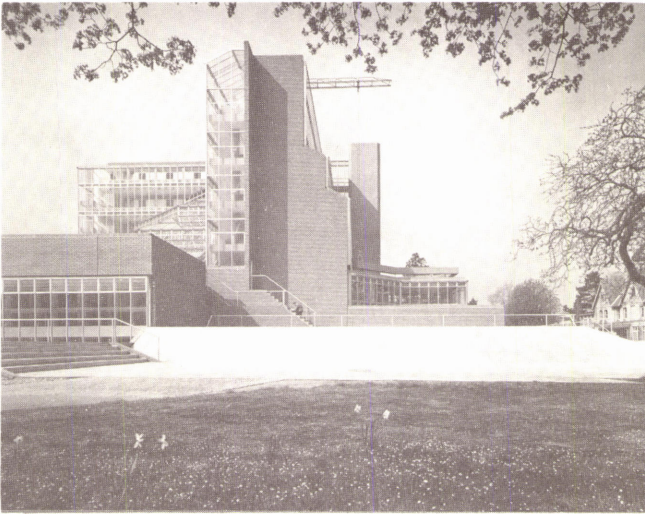
Plan



Section

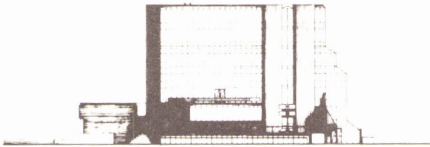


Elevation

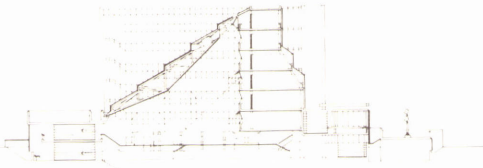


1966 Donald Young Architects

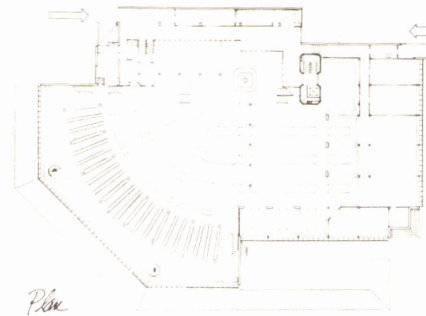
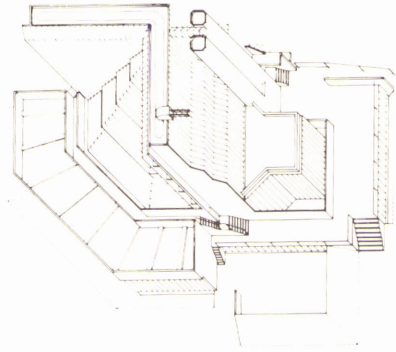
Cambridge History Faculty Bldg.



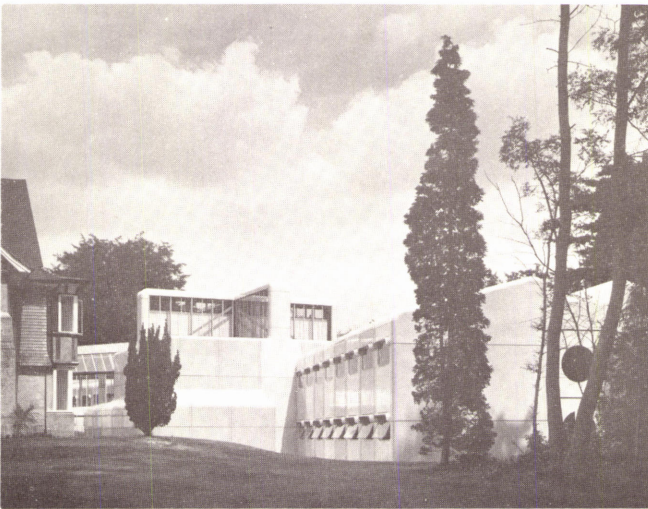
Elevation



Section

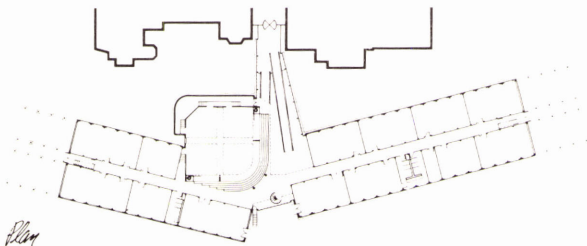


Plan

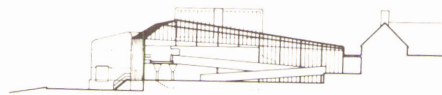


1966 Donald Young Architects

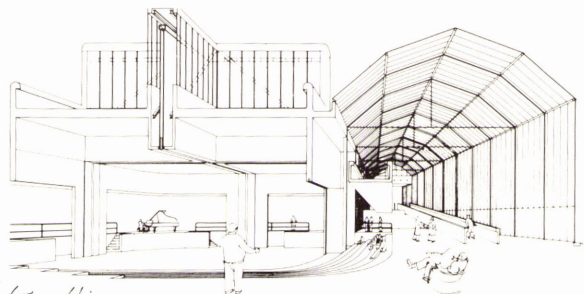
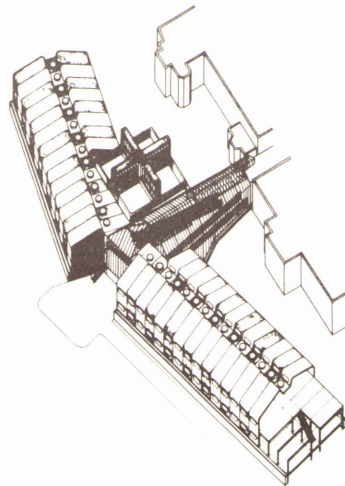
Olivetti Training Center



Plan



Section



Section View

Mitchell - Hargrave

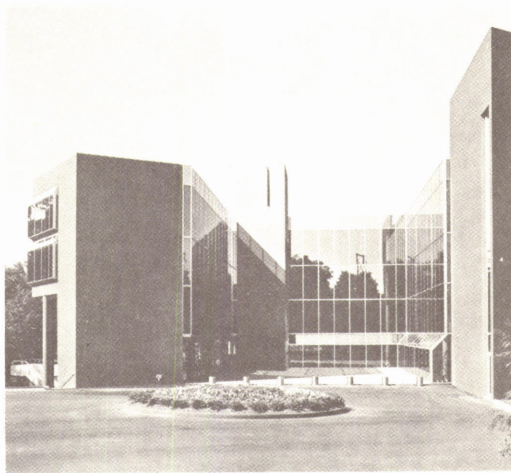
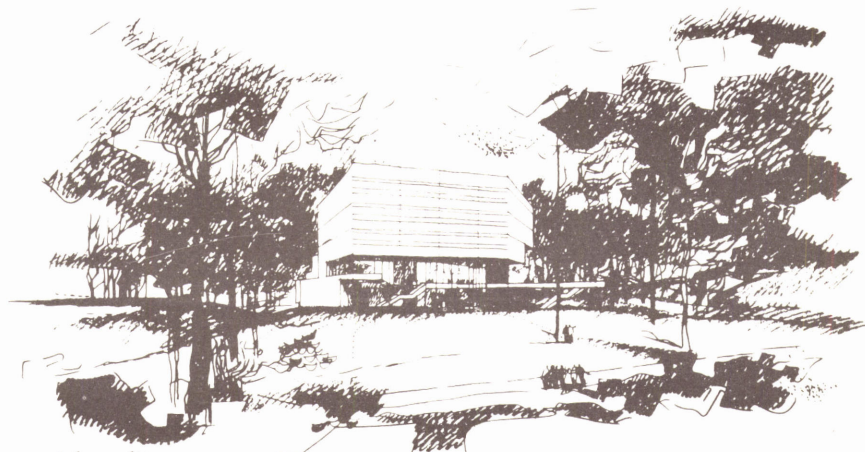
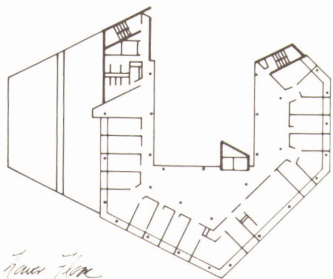


Photo: Mitchell Hargrave Architects

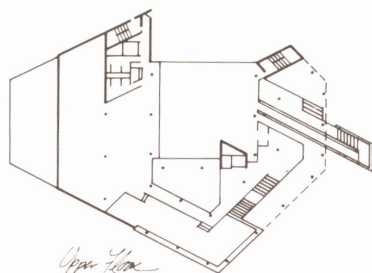


Exterior View

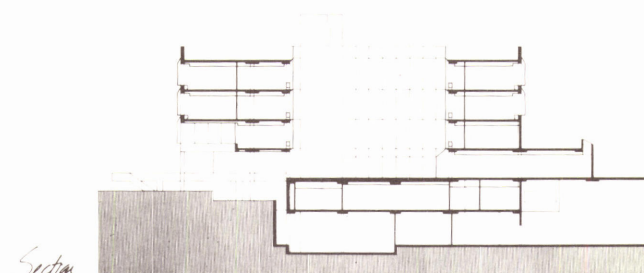
MDFT Foundation Hall



Lower Floor



Upper Floor



Section

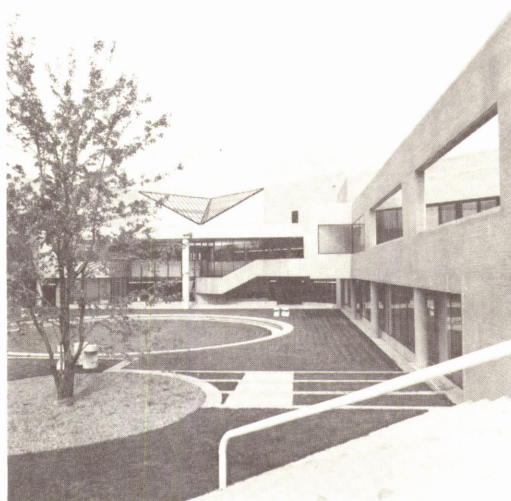
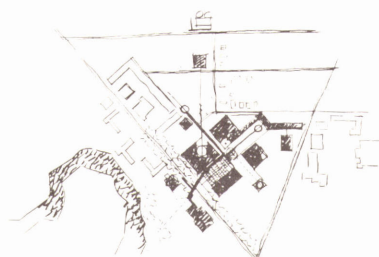
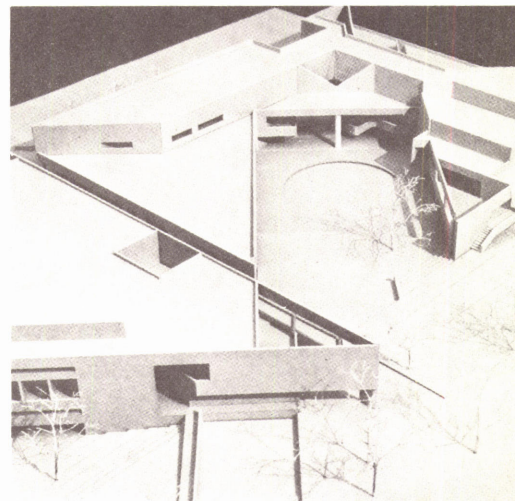


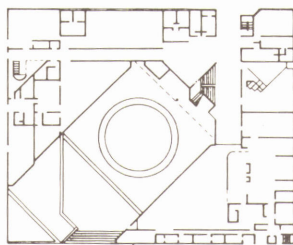
Photo by William E. Hargrave



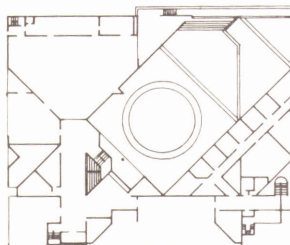
Plan



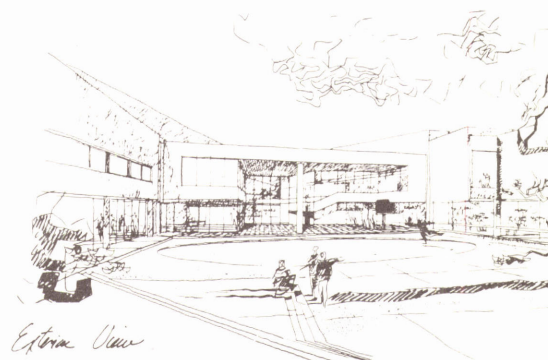
Student Union at Plattsburgh



Lower Floor



Upper Floor



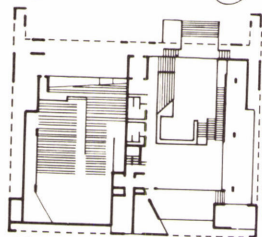
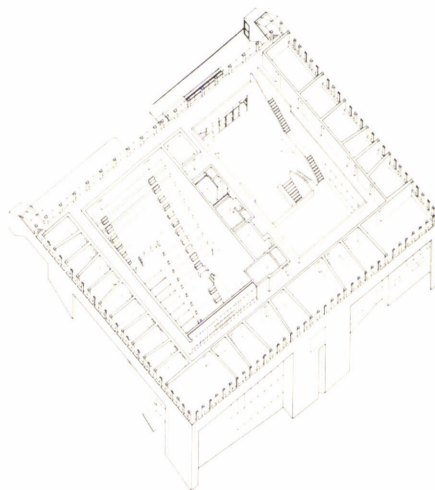
Exterior View

Mitchell - Kungola

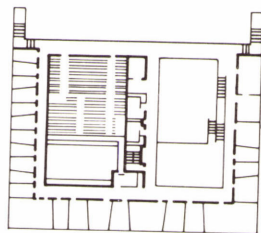


Photo by William E. Hoffmann

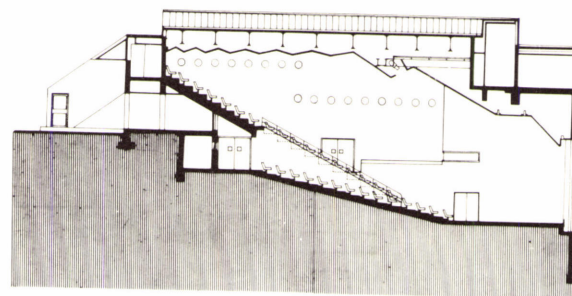
Kang Music Bldg.



Lower Floor



Upper Floor



Section

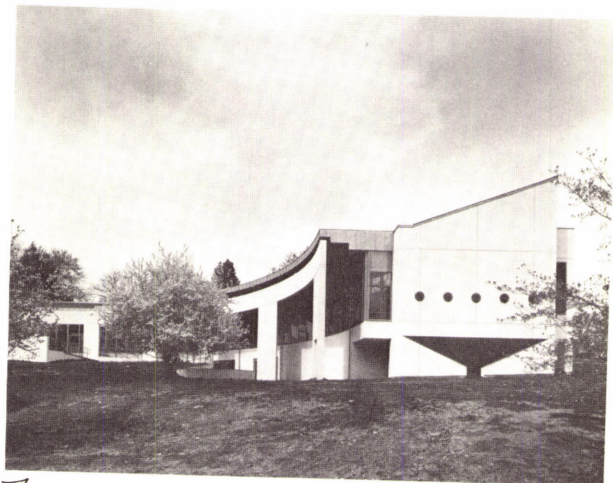
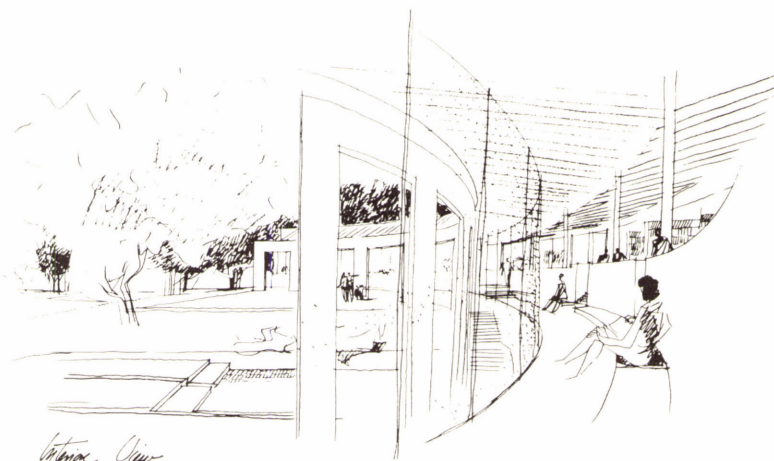
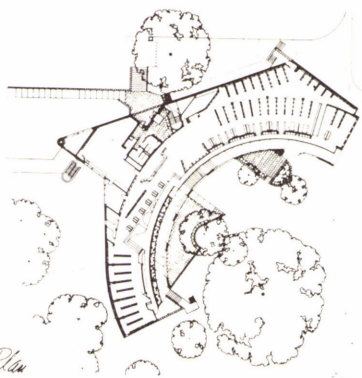


Photo by William E. Hoffmann

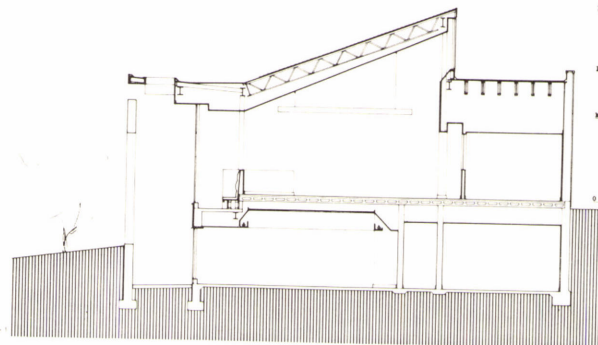
Tredyffrin Public Library



Interior View

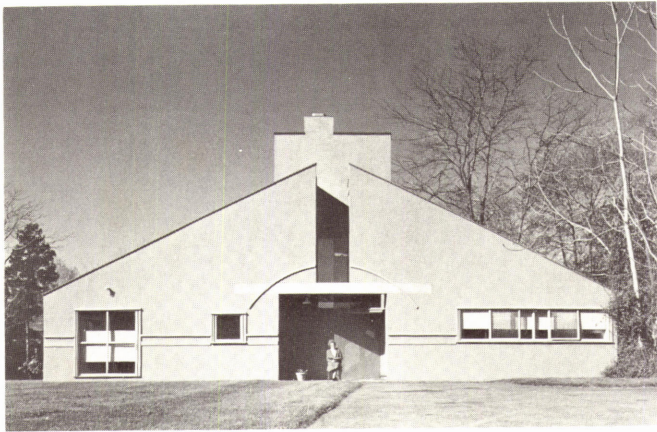


Plan



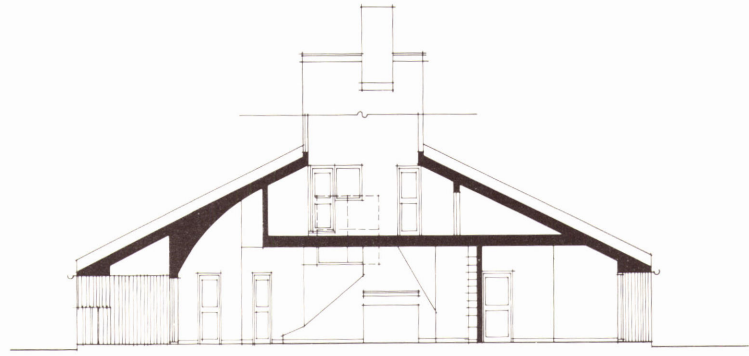
Section

Venturi and Rauch

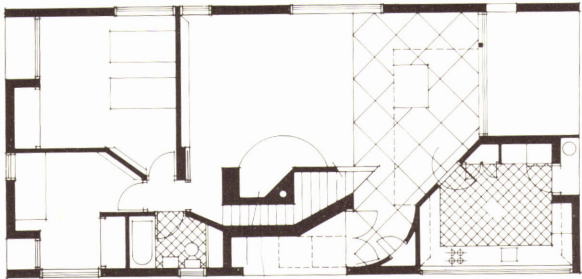


1964 by John F. Lyons

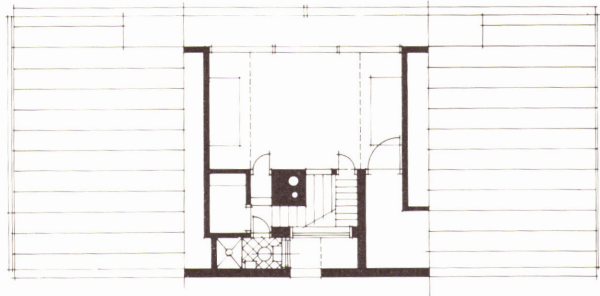
Venturi House



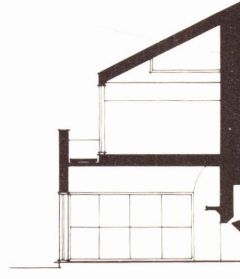
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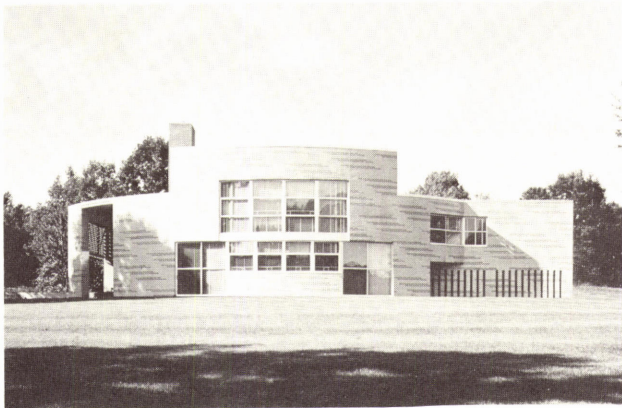
Lower Floor



Upper Floor

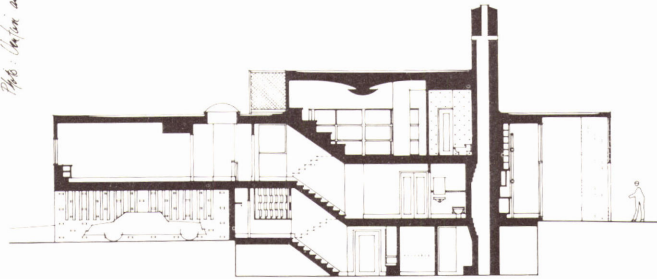


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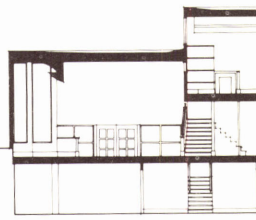


1968 by Venturi and Rauch

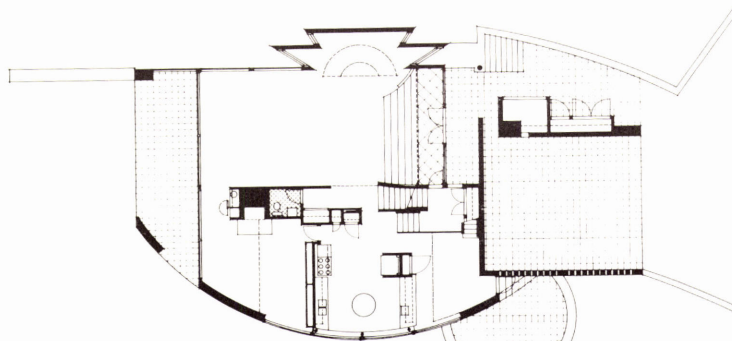
Brandt House



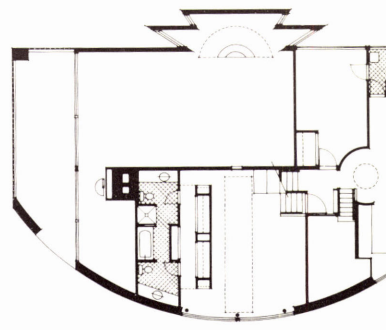
Section



Section



Lower Floor

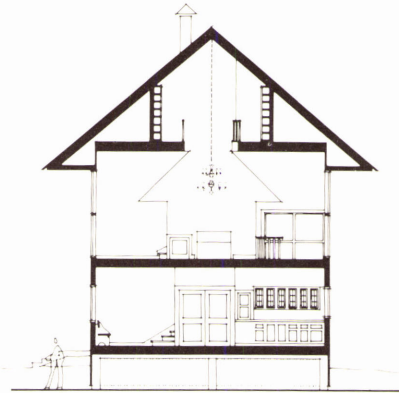


Upper Floor

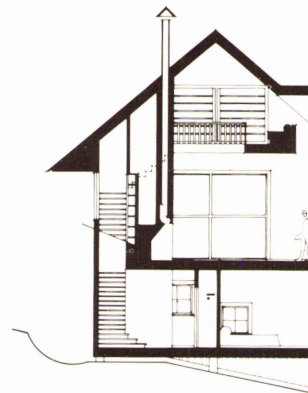


Photo: Venturi and Rauch

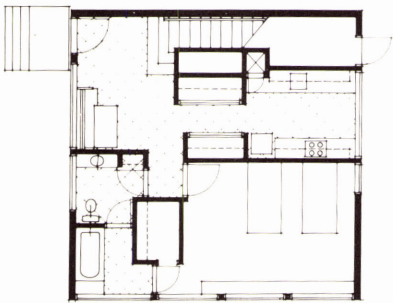
Tucker House



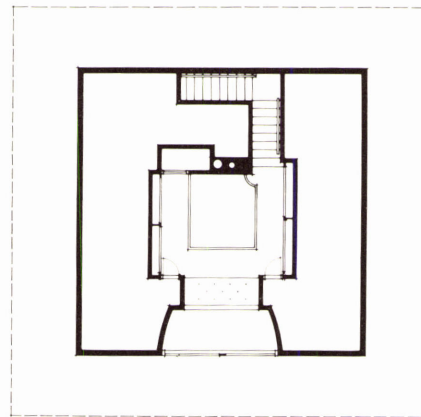
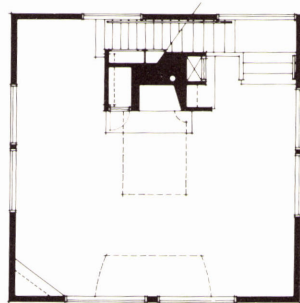
Section



Section



Floor Plan



Elevation

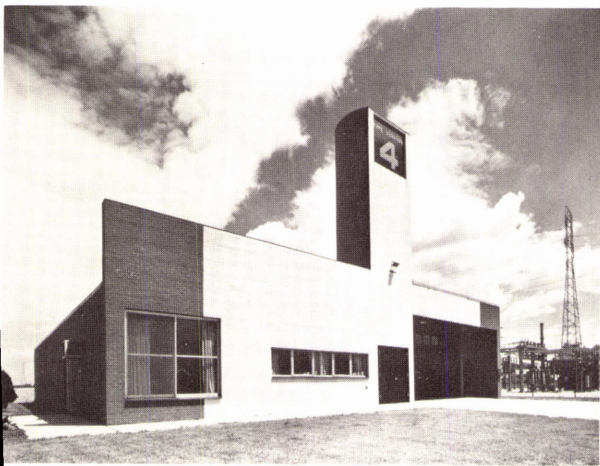
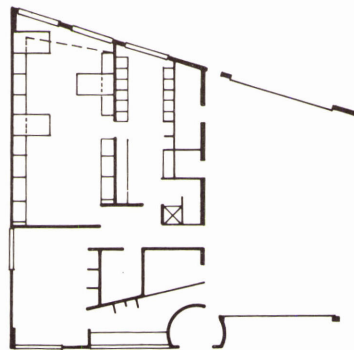


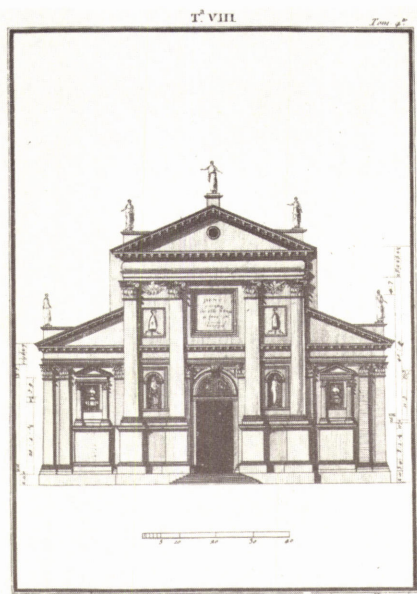
Photo: Venturi and Rauch

Fire Station

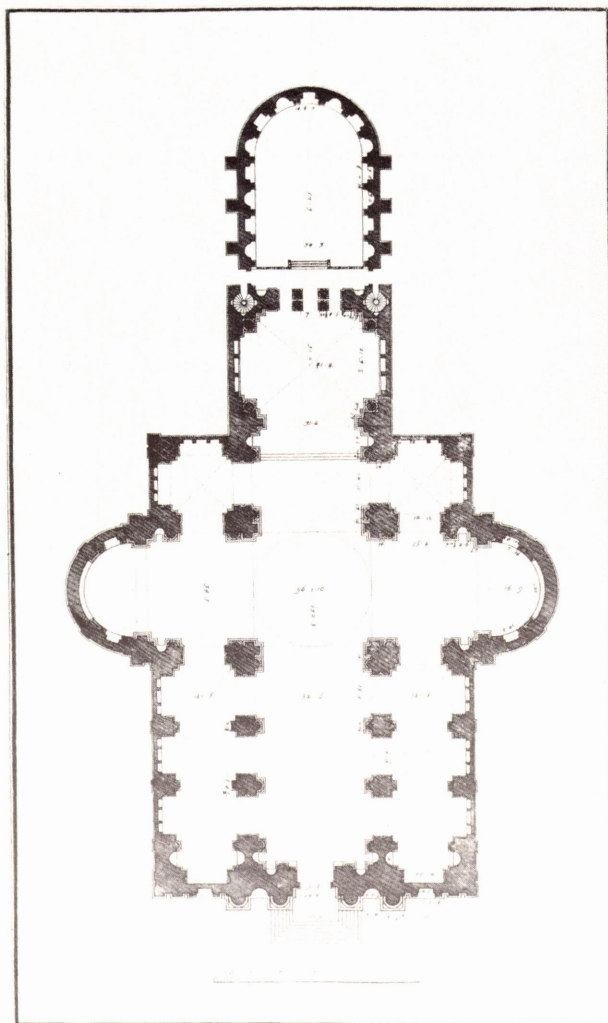


Andrea Palladio

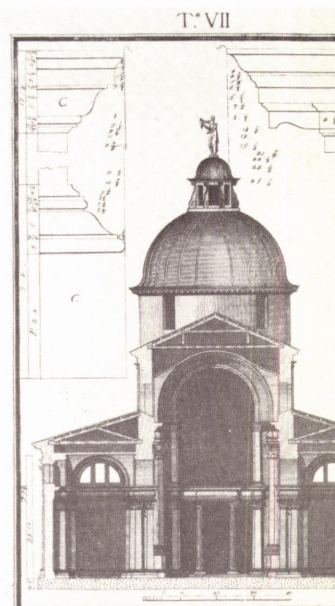
San Giorgio Maggiore



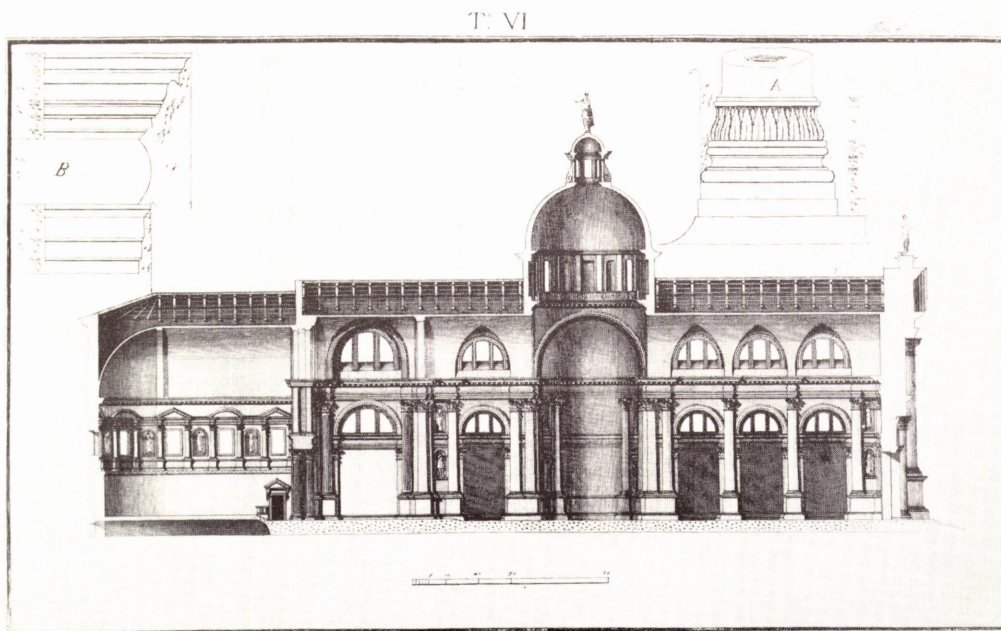
Elevation



Plan

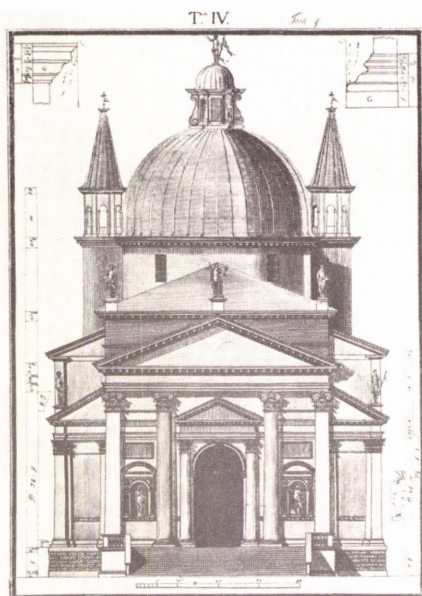


Section

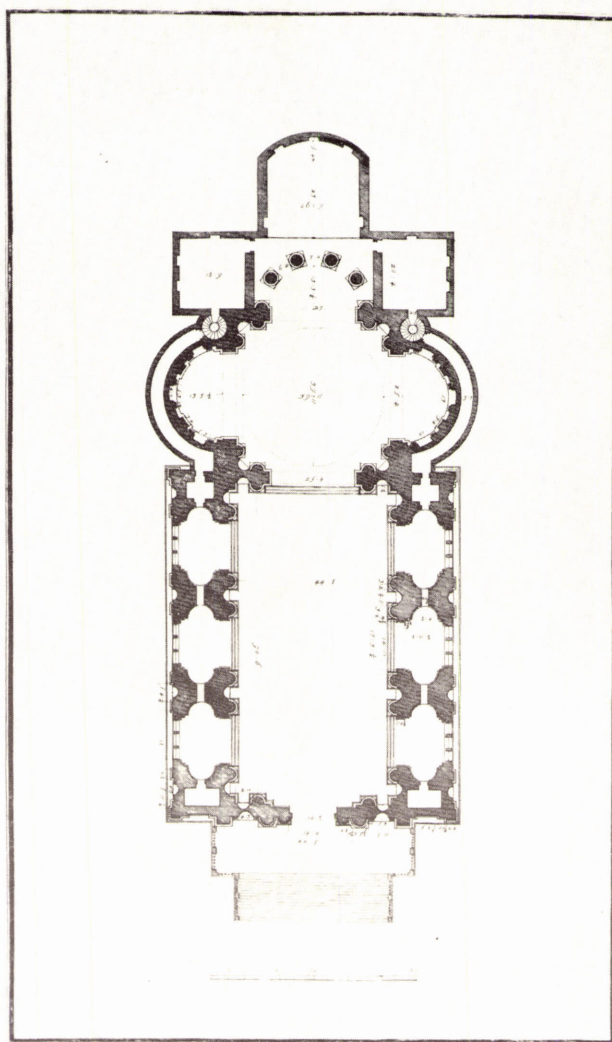


Section

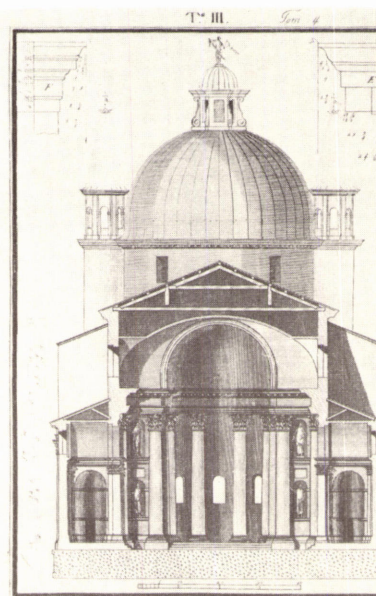
U. Redentore



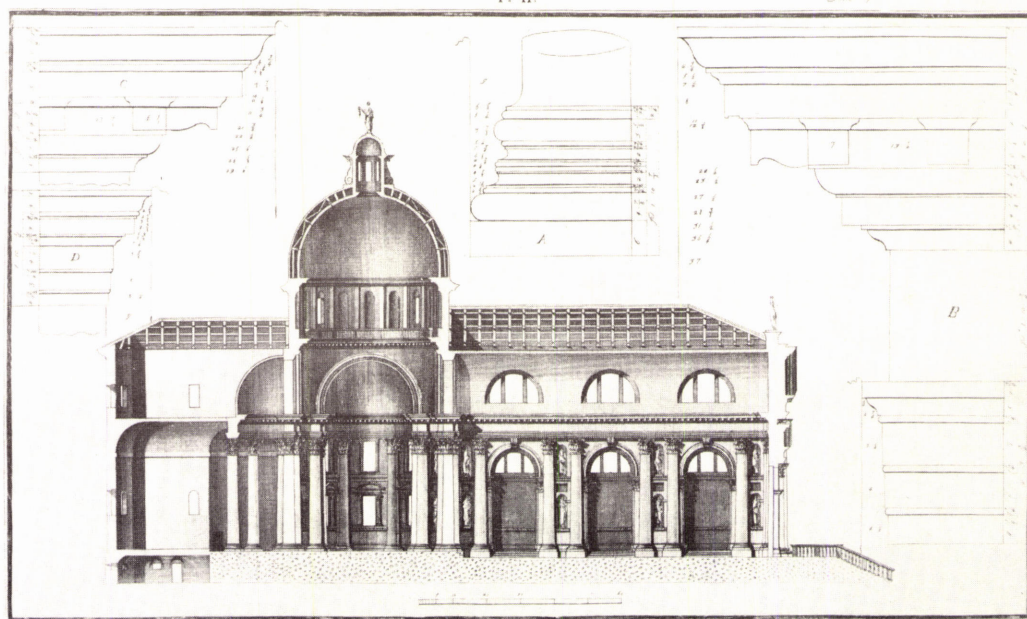
Elevation



Plan



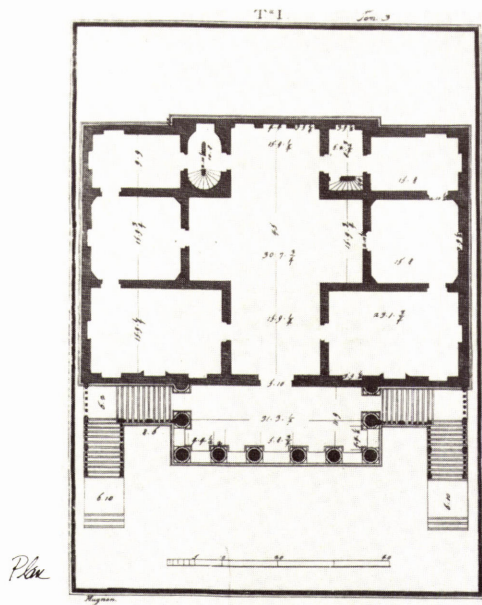
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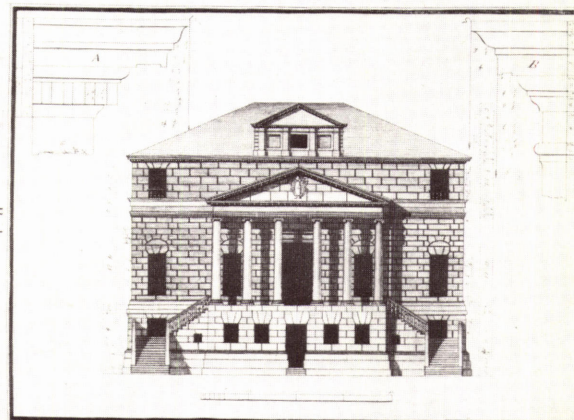
Section

Andrea Palladio

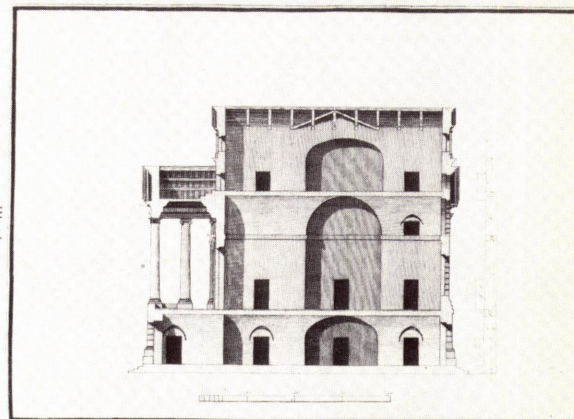
Villa Malcontenta



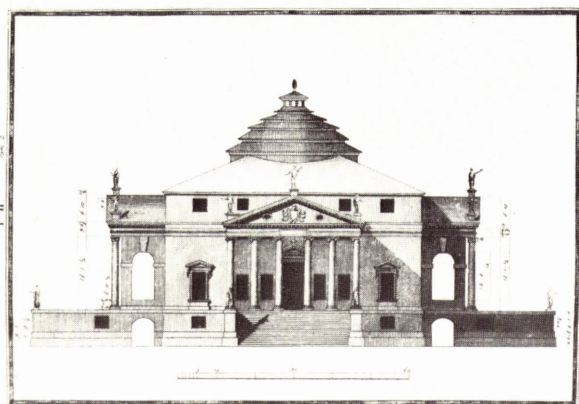
Elevation



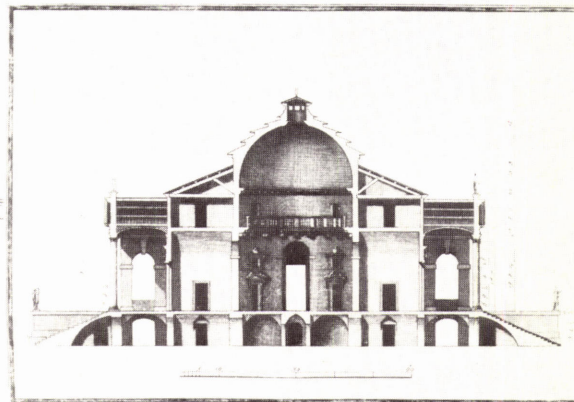
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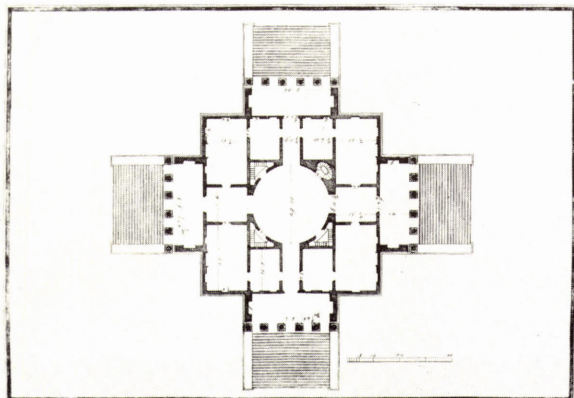
Villa Rotonda



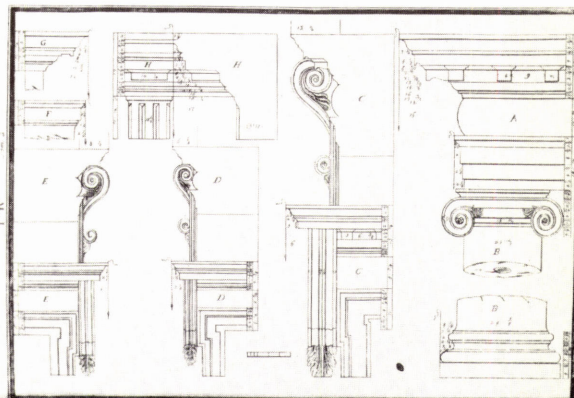
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Plan



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