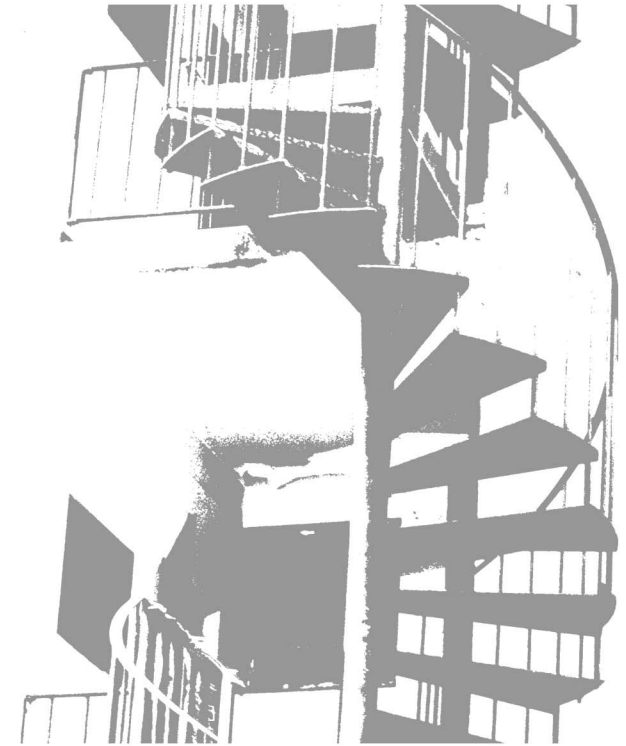


# precedent *studies*

## THEORETICAL, TYPOLOGICAL AND COMPONENT PRECEDENTS



# modern archetype *precedent*

## THE APPLICATION OF MODERN PRINCIPLES

Fig. 5.1. The Villa Savoye, framed by the surrounding landscape



The first precedent analyses a modern archetype. It is included in the study to examine the implementation of modern design strategies.

### Villa Savoye

Poissy, France  
1928-1931

Le Corbusier and Pierre Jeanneret

The last of Le Corbusier's purist villas, the Villa Savoye (fig. 5.1.) freely and confidently expresses a decade of ideals: *"It is a pure white box suspended above the landscape on a grid of thin columns or pilotis and every element of the house... the pilotis, rooftop garden, open plan layout, horizontal strip windows, clear functional separation, and the influence of the automobile... are elegantly composed to create a 'machine for living'."* (Gans 1987:65)

When the Villa Savoye was built, Poissy was a small town to the north-west of Paris. The site was a meadow outside the town partly enclosed by trees with views to the north and west (fig. 5.3). The structure is a powerful expression of an elevated primitive shape (fig. 5.4) with openings that reveals glimpses of the interior. The elevations get animated by the interplay of light and shade, solid and void, and carefully framed views, a purist composition.

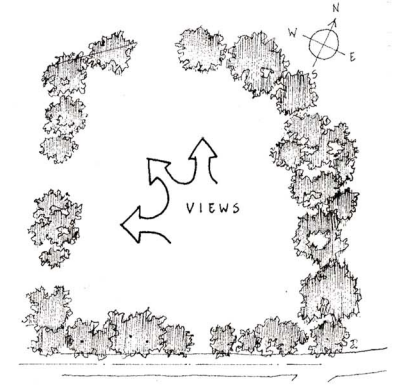


Fig. 5.3. An aerial view of the site and its views



Fig. 5.2. A sketch of the Villa Savoye

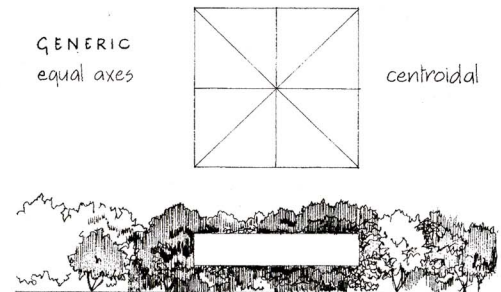


Fig. 5.4. Villa Savoye as an elevated basic primitive

### The Five Points of a New Architecture

The villa is a pure rendition of the 'five points of a new architecture' based on the potentials of the reinforced concrete frame: The entire major volume is raised on pilotis (point 1), sheathed by simple planes that is disengaged from the columns within (point 5). It has a single, elemental strip window that dominates each of the four facades (point 4). It has a free plan (point 3), and culminates on the roof terrace (point 2), as the end of the spatial journey.

### Promenade Architecturale

Only by moving through the spaces of the villa can it truly be understood and appreciated. It's an architectural walk that offers a series of constantly varied, unexpected, sometimes astonishing views. Le Corbusier described the experience of as 'l'espace arabe', also known as 'promenade architecturale', in reference to the common architecture of North Africa, with its unfolding spaces and shifting viewpoints. The column placement, bay dimensions, even window mullion consciously orchestrate the promenade. The user realises he is experiencing a temporal progression through an ingenious link of spaces that allow a gradual exploration of the project. The perception of space and the elements surrounding it changes progressively depending on the location of the user in space and time within the villa.

Originally, the promenade began when the Savoyes' chauffeur pulled out of their garage in Paris, preferably in the late-model Voisin auto of

which Le Corbusier was so fond, for the hour drive to Poissy. Following the lead of the pilotis, the green planes, and the vertical mullions receding beneath the white box, the chauffeur would drive around the glass enclosure, designed specifically to accommodate his car's turning radius (fig. 5.5 & 5.6), and drop the passengers at the front door. Although a perimeter pilotis blocks the path from the front door to the landscape, inside the house it is replaced by a more classically disposed pair of columns framing a reception area.

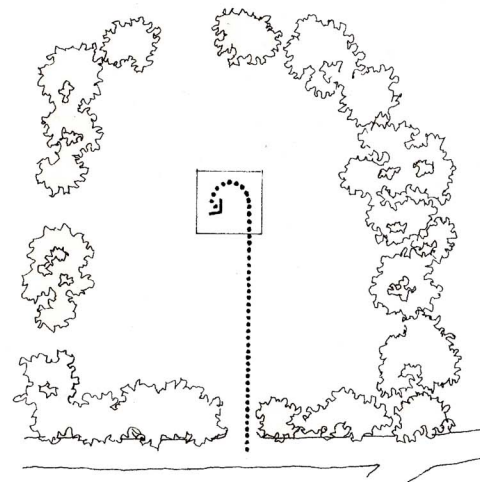


Fig. 5.5. The route the car followed on site

Fig. 5.6. The ground floor volumes in perspective indicating:

1. The column structure
2. The perimeter of the first floor cantilever slab
3. The curved glass enclosure shaped by the turning radius of the car
4. The classically disposed pair of columns framing the entrance
5. The position of the ramp in the centre of the space, pulling the user up in the building

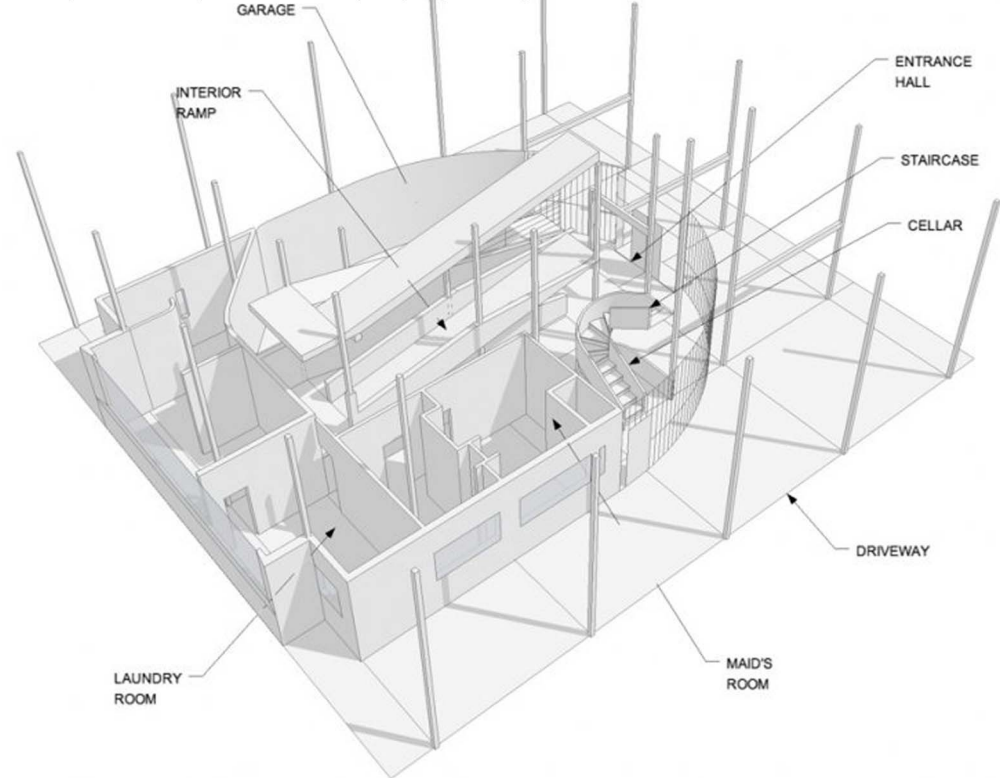




Fig. 5.7. The 'box' elevated on pilotis, freeing the ground floor for circulation



Fig. 5.8. The glass curve and entrance of the villa

Fig. 5.9. The two means of vertical ascent within the villa, part of the 'promenade architecturale'



Deborah Gans notes (1987:66-67) that throughout the house runs the sculptural counterpoint of the two contrasting means of ascent: *"the spiral stair for the servants and the ramp for the Savoyes. As the passenger goes past the entrance door and into a vestibule, a ramp placed in the axis of the entrance invites the user to go to the upper floor. For Le Corbusier, the ramp was the preferred route because, as a kind of tilted floor plane, it connects the separate storeys in a continuous path through space-time as incremental stairs cannot. Siegfried Giedion found this sense of space-time continuum radically modern, an artistic equivalent of relativity theories in physics."*

On the first floor, a much more fragmented composition of coloured planes in space replaces the initial impression of the house as a pristine cube hovering above the landscape (fig. 5.10). While the ramp unifies the space vertically, it also slashes apart the box. It shifts from inside to outside, from the centre of the house to the edge of the terrace, in a continual state of tension. The glass walls, the strip windows that wrap both interior and terrace, and the roof that extend beyond the boudoir, all further disintegrate distinctions between outdoors and in. In the master bathroom, the skylight and a tilted chaise evocative of the undulating landscape bring the values of the outdoors deep inside the house.

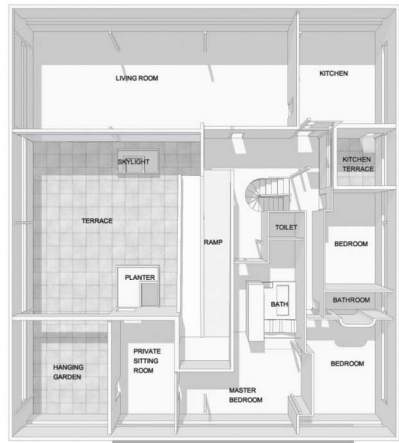


Fig. 5.10. The first floor plan

Fig. 5.11. A perspective of the first floor indicating:

1. The column structure
2. The fragmented composition of spatial elements
3. The ribbon or strip windows present on each facade
4. The free facade, as a result of the column structure
5. The position of the ramp at the edge of the interior space and terrace, moving from the inside to the outside
6. The glass wall between the living room and terrace, blurring the boundary between inside and outside

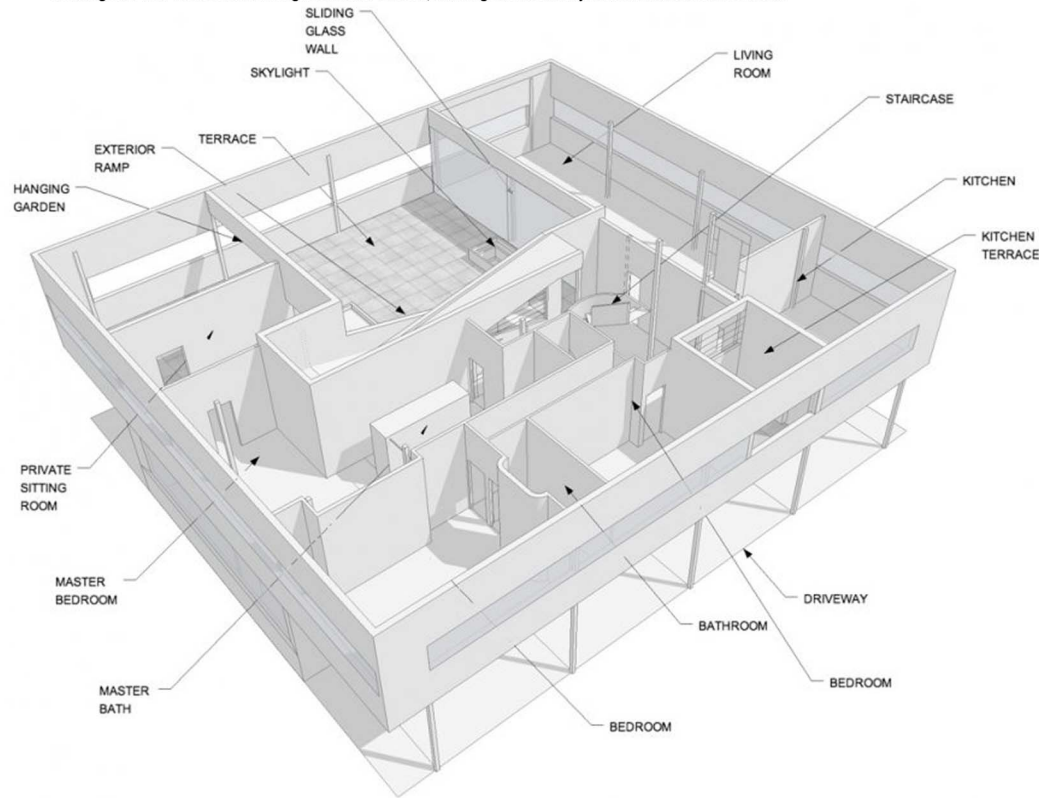


Fig. 5.12. A view of the terrace from the living room



Fig. 5.13. The edge between inside and outside spaces

On the second floor the ramp reaches its resolution in the roof terrace's framed view of the countryside, which is a reversal of the original spatial perception of the user, where the building is framed by the landscape. Originally, Madame Savoye's bedroom was to have occupied this level, but the window in the screen wall seems culmination enough (Gans 1987:65-67).

Fig. 5.15. A perspective of the second floor plan indicating:

1. The freely formed screen walls
2. The culminating point of the ramp
3. The framed view in the screen wall at the end of the ramp

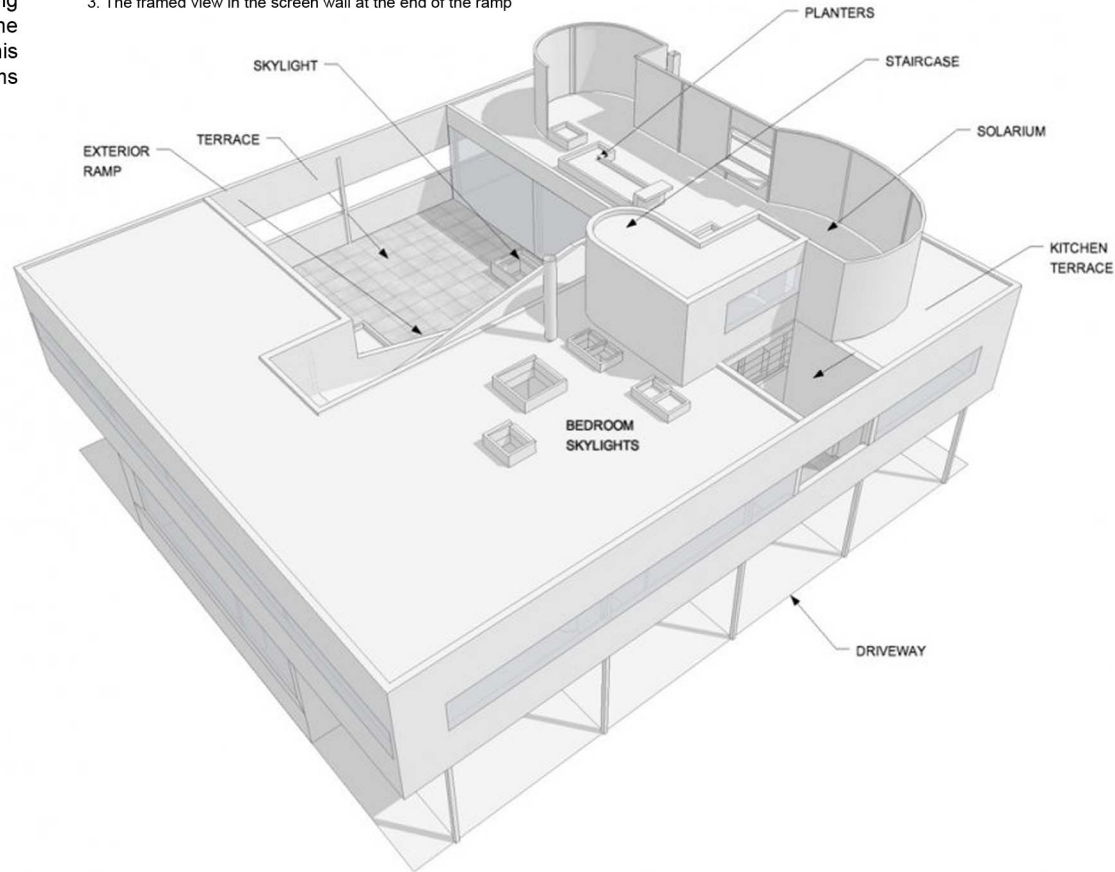


Fig. 5.14. The second floor plan



Fig. 5.16. The ramp leading from the terrace on to the roof



Fig. 5.17. The framed view at the end of the ramp

# contemporary theoretical *precedent*

## 'PROMENADE ARCHITECTURALE' AS FORM DETERMINANT

Fig. 5.18. The sedate exterior reveals nothing of the dynamic interior program

Fig. 5.19. Bergisel Ski Jump, one of Zaha Hadid's more famous projects



The following discussion focuses on a precedent which translates circulation and movement within the urban context into architectural form, a form of "promenade architecturale", the expression of meaning through the sequential experience of space. The precedent will act as a guiding tool throughout the design process, informing decisions at different levels of development. The production of meaning and the lack thereof is considered so as to determine an appropriate design response to the theoretical context. The precedent to be discussed is the Lois and Richard Rosenthal Center for Contemporary Art in Cincinnati, USA (fig. 5.18), designed by the London-based architect Zaha Hadid. The methodology employed will be briefly considered to determine the position in relation to the production of meaning.

### Lois and Richard Rosenthal Center for Contemporary Art Cincinnati, USA 1997 – 2003 Zaha Hadid Architects

The Rosenthal Centre for Contemporary Art is a charged statement by the architect Zaha Hadid, as it fits almost too discreetly into its conventional urban setting of innercity Cincinnati. The description "contextual" seems appropriate

between the Modern high-rises, low boxy buildings, small scale, turn-of-the-last-century brick buildings and an Art Deco hotel (Stephens 2003:87). An approach unexpected from the avant-garde architect, whose previous works include the Vitra Fire Station, 1993 (fig. 5.20), and Bergisel Ski Jump, 2002 (fig. 5.19).



Fig. 5.20. The Vitra Fire Station, Hadid's first built project

The Rosenthal Centre's sedate exterior (fig. 5.18) seems to be in contrast with Hadid's forte, circulation. A forte manifested in particular by the use of the ramp, where she pushes "promenade architecturale", in Le Corbusier's words, to the hilt (Stephens 2003:87). Upon entering the centre one realize the exterior is by no means a prologue to what lies within, as Hadid's major moves occurs only on the inside.

Skin/Sculpture



The building's corner location led to the development of two different, but complementary, facades. The south façade, along Sixth Street, forms an undulating, translucent skin, through which passersby see into the life of the Centre. Offices, organised along this side provide day lit working environments and views of the city, while these activities provide the façade with human animation. The east façade, along Walnut, is expressed as a sculptural relief. It provides an imprint, in negative, of the gallery interiors.

### The Urban Carpet

The first clue to the spatial drama that lies within the expansively glazed corner lobby is the seamlessly poured-in-place concrete floor that begins outside the building, continues inside and eventually curves upward at the far end of the building (fig. 5.21). A design based on the concept of an "Urban Carpet" whereby the surface of the street flows into the building, curves up into the dramatic vertical circulation, extending the urban activity of the city to the interior. The street grid is thus pulled into the centre, connecting the centre to its surroundings.

Here the idea of a gallery as a continuation of the street is at its most explicit. The space of the lobby is completed by buildings across the street, and the streetscape of signs and newspaper vending machines acquires the status of exhibits (Moore 2003:41).

### Jigsaw Puzzle

In contrast to the "Urban Carpet", which is a series of polished, undulated surfaces, the galleries are expressed as if they had been carved from a single block of concrete and were floating over the lobby space. Exhibition spaces vary in size and shape, to accommodate the great range of scales and materials in contemporary art. The views into the galleries from the circulation system are unpredictable, as the stair-ramp zigzags upward through a narrow slit at the back of the building. Together, these varying galleries interlock like a three-dimensional jigsaw puzzle, made up of solids and voids.

### Vertical Circulation

As the "Urban Carpet" turns and rises, it leads the visitor to the internalized vertical void, where flights of stairs leap across in improbable long spans and intersections of very oblique and very acute angles (fig. 30). This gives shape to the concept of an interiorized city (Moore 2003:41). This vertical journey begins as the first mezzanine ramp rises through the full length of the lobby, which functions as a open, day-lit, "landscaped" expanse that reads as an artificial park. The mezzanine ramp continues to rise until it penetrates the back wall, on the other side of which it becomes a landing at the entrance to the galleries. The deep steep void seems similar to a cliff and chasm, which is mediated by the use of these criss-crossing mezzanine ramps, allowing glimpses of the city (fig. 5.22).



Fig. 5.21. The east cross section reveals the continuation of the floor surface to form the back wall

The building becomes a choreography of interior and exterior in which the sensations of being inside and out keep changing places and the same elements are presented alternately as object and space. It does not seek a closed perfection in itself, but can only be completed by content and context (Moore 2003:41-42).

#### Theoretical Precedent Conclusion

The theoretical approach of the centre relies on "promenade architecturale", the production of meaning through movement. The gallery is a continuation of the street, continuing the experience of the city within the building, in a sequential journey of space and the city.

The most successful portion of the design is the clear separation within the building between gallery and traffic space. The juxtaposition between these two works well, with the angular stairs activating otherwise static gallery volumes. The stairs climb up through a narrow space, thus creating a void, which plays nicely with the massive volumes making up the rest of the structure as galleries.

Sadly some of the gallery spaces appear small, and oddly shaped. As a result of this, some critics (Moore 2003:29) feel the building forces acknowledgement at times when perhaps the work presented inside should be admired.

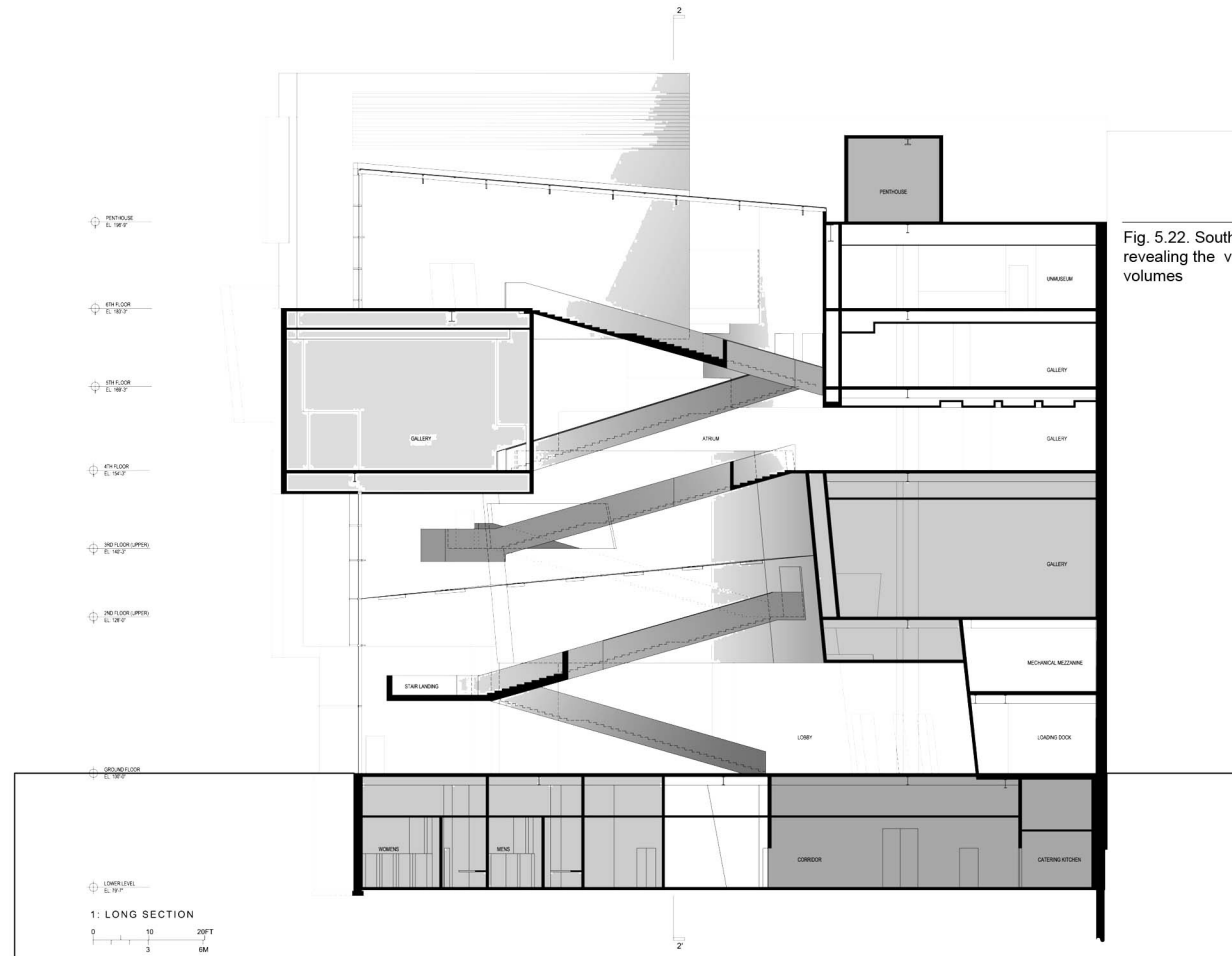


Fig. 5.22. South cross section through the centre revealing the vertical movement between the gallery volumes

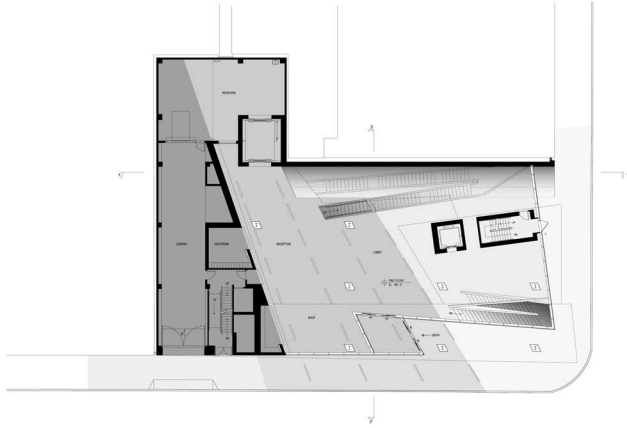


Fig. 5.23. Ground floor plan

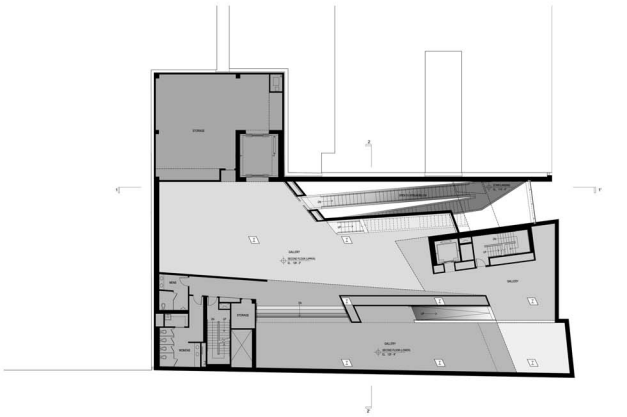


Fig. 5.24. Second floor plan

Although the rear wall of the museum is poured concrete (this page), the structural frame is steel, with steel columns encased in concrete. The fourth level of the atrium is punctuated by Inigo Mangano-Ovalle's *Cloud Prototype for an Edition of 3* (opposite).



Fig. 5.25. View of the ramping staircases from the top

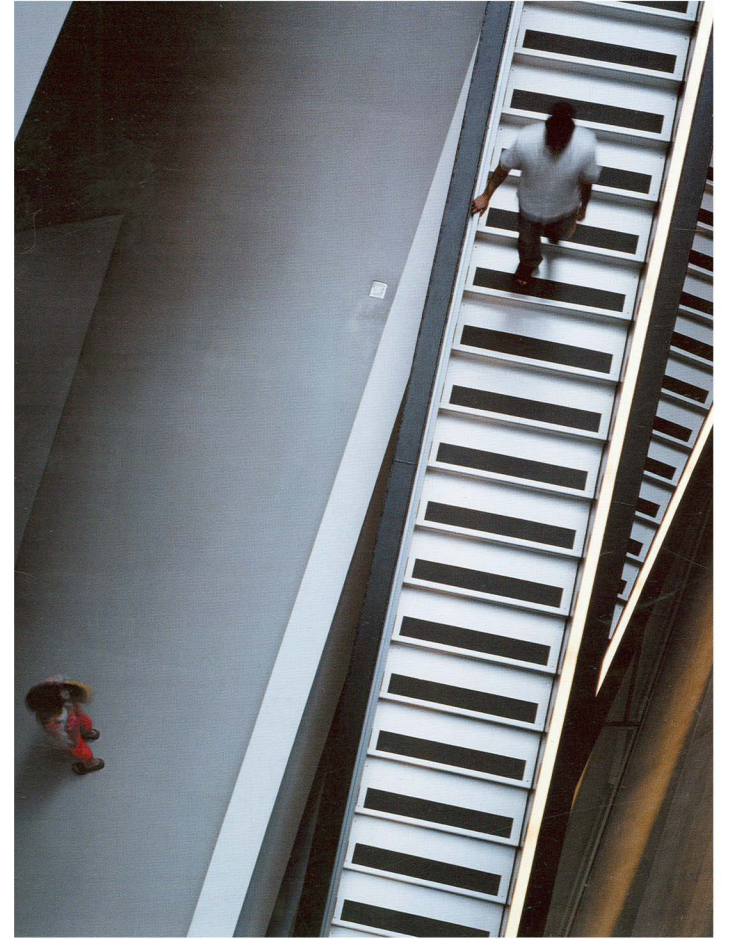


Fig. 5.26. A view from the fourth floor onto the circulation void

# typological precedents

## TRANSPORT INTERCHANGES

The following section involves the analysis of different typological precedents to inform the functional and technical requirements of the proposed composite facility. This is necessary as functional boundaries are blurred and the stitching of these distinctive functionalities, into a comprehensive legible urban meeting space is paramount to the successful functioning of the network. The areas that will be reflected upon can be more or less clustered in three categories, namely road transport interchanges, media sources and waiting spaces.

Subjects that need consideration throughout the discussion include circulation, interior breakdown and spatial connectivity, as these are the issues that will determine rationality in organization. The aim of analyzing these precedents is not to inform the design language, but merely to inform decisions with regards to spatial functionality and integration.

### Central Bus Terminal

Lugano, Switzerland  
 Mario Botta  
 2002

For both transport planners and users, bus travel tends to be regarded as a marginalised activity, and its associated buildings and

infrastructure too often reflect lowest common denominator thinking, but in Switzerland, there is a more civilised approach to public transport.

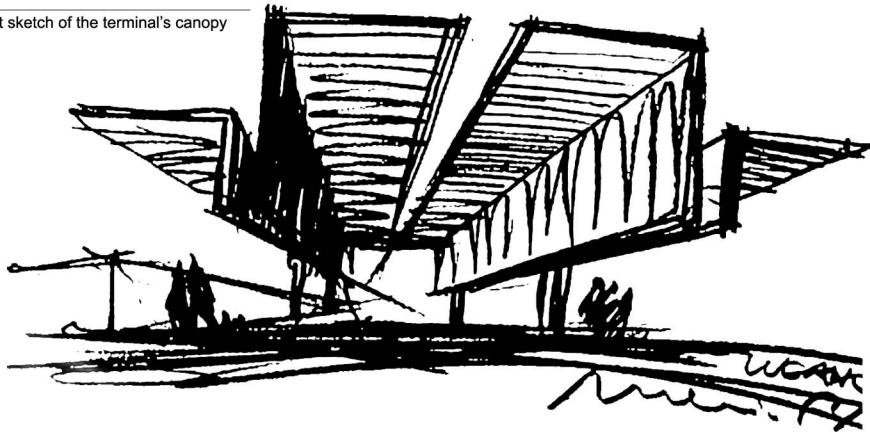
With the introduction of the Bus Rapid Transit System within the context of Pretoria, a look at a successful public transport interchange is essential to analyse factors which can change this perception.

Mario Botta, the noted exponent of Ticino regionalism (Slessor 2003:63), was commissioned to design a new bus terminus for the town of Lugano, Switzerland. Arguably the most famous living Swiss architect today, with work experience as an assistant to both Le Corbusier and Louis I. Kahn, his familiarity with their ethos is evident in his essentially Modern approach, with a Postmodern edge. Botta's buildings are often based on simple geometric forms, such as the cylinder and the cube, but with a strong respect for topographical conditions and regional sensibilities.

#### Design Principles

The terminal occupies the northern edge of the Piazzale ex Scuole, a long rectangular square, the southern part of which is given over to car parking, making it a dynamic, blaring hub of traffic and activity. The building's main task was

Fig. 27. Concept sketch of the terminal's canopy



to provide protection from the elements, but also be easily accessible by both passengers and vehicles. Botta's solution is a strong, simple intervention (fig. 5.27) that anchors the disparate jumble of the square and defines patterns of movement through and around it.

The main move is a huge translucent canopy, constructed from steel and polycarbonate (fig. 5.28), in a contemporary reinterpretation of the heroic iron and glass canopies of the nineteenth century consisting of a central nave 7m high flanked by two 5m high side aisles, which extends 70m along the site. Buses pick up and deposit passengers in the lofty main tunnel, while the side aisles mark distinct zones of activity along the terminal's edge, sheltering a series of bus stops on the north side and a scooter park to the south. Narrow profiles and many one way streets forced the design of a 'one way bus terminal', but due to a smart network design all main lines serve this terminal without any snags.

Resting on four columns positioned midway along the canopy; the monumental structure appears to be hovering 2,5m above the ground, but this minimal means of support results in virtually unimpeded circulation through and around the terminal. The main nave is supported by two pairs of 70m long steel beams each 2m deep, doubled up lengthways to form a muscular composite structure cantilevered off the central quartet of columns. The roof structure of the side aisles cantilevers at right angles of the main beams. The steel frame is wrapped in thin sheets of translucent polycarbonate cladding



Fig. 5.29. The canopy changes colour according to the seasons. The canopy lit in a violet colour at night.



Fig. 5.30. The canopy in pink

Fig. 5.28. The canopy of the interchange by day



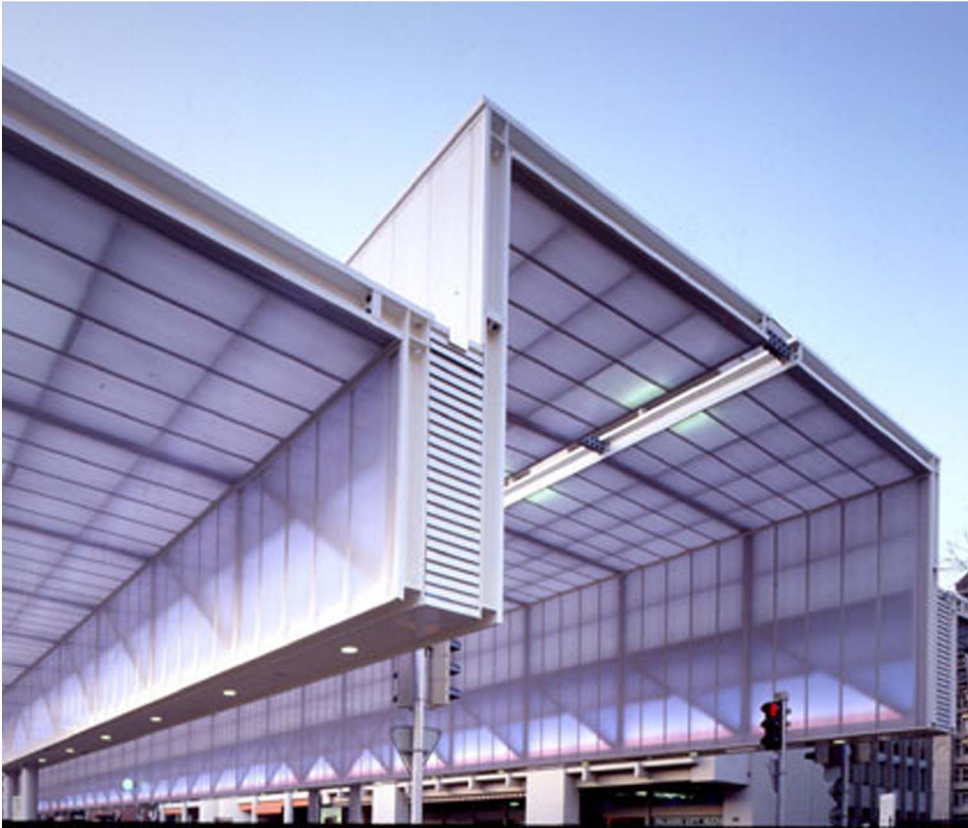


Fig. 5.31. The polycarbonate skin of the canopy

that gently diffuses light like a fragile membrane (fig. 5.29 & 5.30). White and coloured light sources set within the polycarbonate skin transform the structure into a source of illumination after dark: hovering benignly over the square the giant canopy glows with soft light.

As an attempt to civilise the usual dreary experience of bus travel, Botta's scheme combines the rational and romantic. Designed to give the bus station a sense of civic identity, the monolithic form is a deliberate dominant presence, but this is tempered by its delicately diaphanous skin. Future additions will hopefully include a row of shops along the south side facing the car park, which will further enliven the urban realm.

#### Design Influence

The choice of precedent lies in the simplicity of the design solution Botta employed within the realm of transport infrastructure. The reduction of the canopy to an elemental skeleton of functionality and the clever use of new materials, all leads to the emergence of a relevant contemporary facility.

The simplicity of the structure is the result of respecting circulation as the main activity of the facility, maximizing unobstructed movement lines and views, which is an important principle to consider in transport architecture.

The choice of materials adds another layer of interactivity with the urban fabric, the luminosity of the canopy, serves as a visual beacon in the city,

and can be used to establish a recognizable brand with the public, making the network easily identifiable.



Fig. 5.32. The location of the Vauxhall Cross Interchange in the centre of a multitude of converging roadways

## Vauxhall Cross Interchange

London, England  
 Arup Associates  
 2002

Vauxhall Cross Interchange is a new transport hub in south London. Designed by Arup Associates, this striking ribbon-like structure undulates for 200 meters before reaching skyward in a dramatic statement that adds an important landmark to the area.

The original site layout consisted of a complex junction of six major roads. It had 12 bus routes running through the area and a high level of cycle use, due to the severe congestion and gridlock. Accidents were becoming more frequent and the necessity of an intervention evident.

The solution was found in the replacement of the existing infrastructure with a multi-modal system consisting of a four lane, one way gyratory system, with dedicated bus and cycle lanes. This was done to minimizing bus traffic on busy roads and to integrate a new bus station with the existing tube and rail services. The bus station pulls pedestrian movement into a central manageable area and provides a simplified interchange for all users.

Further enhancements include footpaths that have been widened with a variety of footpath finishes to clearly indicate the intended use of each area for visually impaired persons and wheelchair users. Improved lighting and a CCTV

have all improved security in the area, and the interchange incorporates photovoltaic technology to draw energy from daylight, generating as much as 30% of the energy required to power the bus station - enough to light eight three-bedroom houses for an entire year.

### Design principles

The bus station has been realized as a 200m long, 12m wide, undulating stainless steel ribbon, which rises in a super-long cantilever. The steel structure consists of three undulating ribbons, clad in textured stainless steel (fig. 5.33). The development of this idea is a functional response to the aspirations and constraints of the site and brief. The undulations echoing London's iconic bus and Tube route maps, dating back to the 1930's. The folds along the length of the canopy reflects the frequency of bus stands, providing seating and glazed sheltered spaces in each dip and raking support for the canopy above. It rises over the height of double-decker buses, oscillating between 5, 5 and 6, 5 meters (fig. 5.34).

The open canopy, rather than an enclosing building, offers free and safe access through permeability and visibility, not obstruction and an emphasis along the concourse is on movement rather than occupation.

The principal circulation between modes and the key operational accommodation are found were the canopy shoots into a cantilever. Over sailing

the circulation area and projecting over the most prominent vista of the site, it announces the location of the interchange with force.

The cantilevers combine their urban role with a functional purpose by carrying Photovoltaic plates. With the arms of the cantilevers at a 20° inclination facing south they are covered with a photovoltaic array to generate power for the building operation, and to actively display the application of the Mayor's Energy Strategy policies to a new public building.

The canopy is accompanied by a cluster of small freestanding buildings, providing offices for staff, lifts to the underground station ticket hall, public toilets, and a unit for onsite bus controllers. The principle building is an asymmetrical two-story structure wrapped in corrugated stainless steel. Its lines follow those of the canopy giving it a vehicular aesthetic.

#### Structure and fabric

The linear undulating form was configured into a repetitive modular arrangement of stainless steel-clad, paint-protected, mild steel portal framing. This comprises a longitudinal spine of two parallel i-beams on raking box section columns supporting cantilevered cross-rafters on plan appearing much like a toy rail track. The long span of the typical module minimized the frequency of foundations and potential impact of buried obstructions. The roof sheeting and soffit lining formed a sandwich-like structure within which services and drainage could be discretely

Fig. 5.33. The ribbon-structure forming shelter and seating

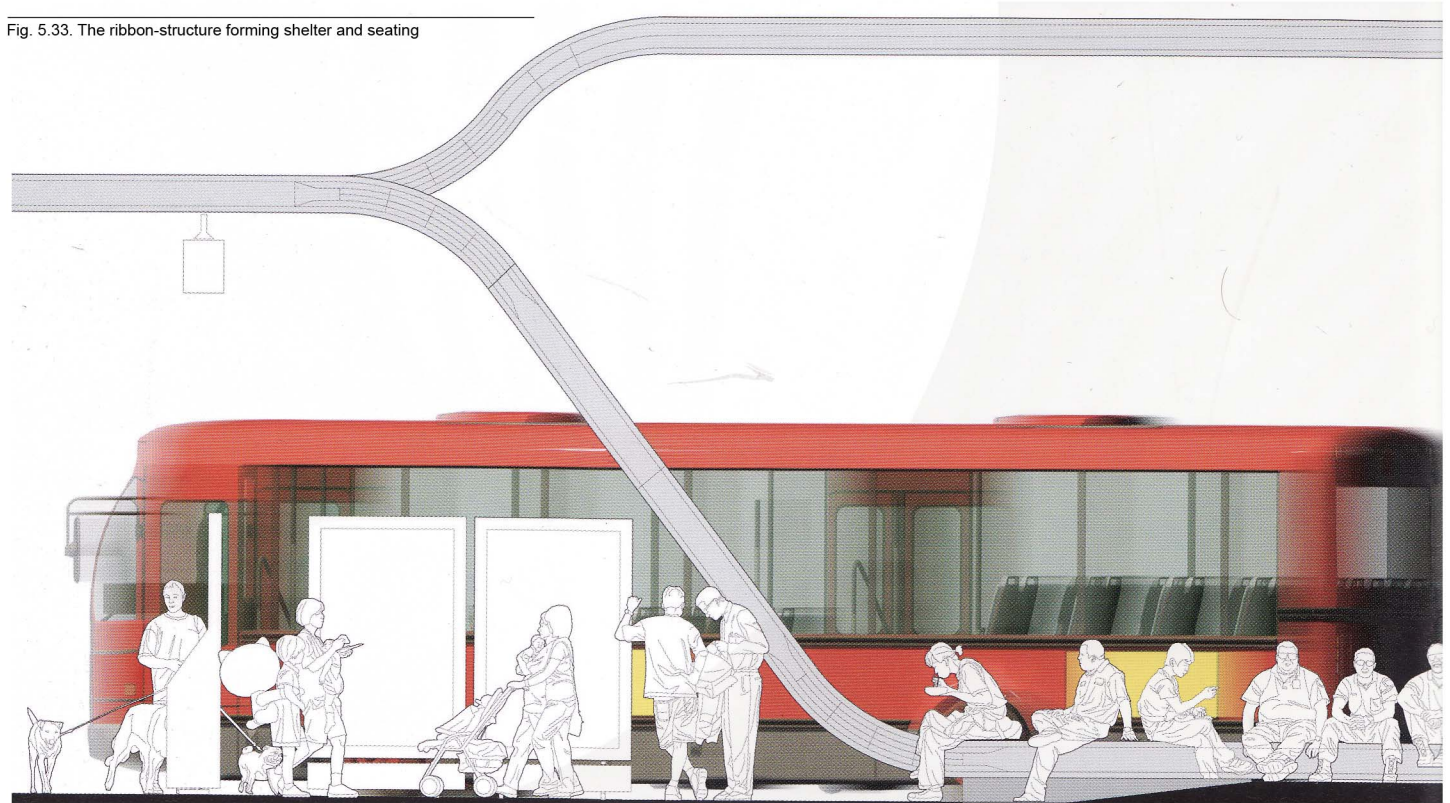
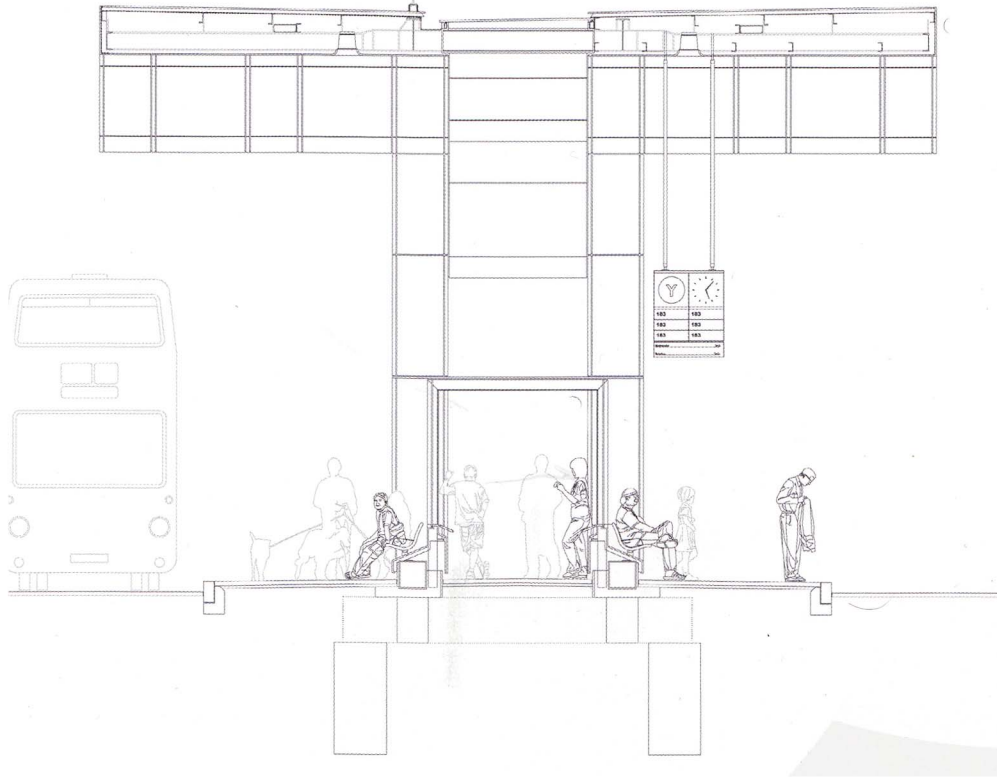




Fig. 5.34. The ribbon-structure forming shelter and seating



distributed, and the typical module was then modified geometrically at the northern end to provide the steel box section springing frame, for the two projecting tapered cantilevers. The cladding system comprises 1.6mm thick linen-finished stainless steel sheets, fixed to a cold-formed purlin subframe, increasing to 2.0mm thick at the lower level of the raking column legs to enhance resistance to accidental damage and vandalism.

#### Regeneration and urban context

The brief called for the project to draw together an integrated visual approach to the area around the interchange, and so the design pulled together lighting, signage, materials, graphics, furniture, and public art, cohering with the architecture to create a contemporary interchange that expresses itself as a catalyst for urban regeneration. The project has thus become a community focal point, facilitating appropriate pedestrian access to future high density mixed use development opportunities as identified in the local authority's plan for the surrounding area.

As urban design, the project forms a sculptural marker for significant new corridors whose axes intersect at the soaring cantilevers. By day, the ribbon allows daylight to enter throughout the circulation area and displays itself in its bold choice of material and sculptural form. By night it becomes an animated floodlit beacon, offering both visual excitement and a well-lit safe environment.

Due to the prominence of the project, an in-depth and wide-ranging consultative process was key at stages of the design programme. Arup Associates liaised closely with the Metropolitan Police to incorporate measures to reduce the risk of crime. Additional CCTV cameras, excellent lighting, good sight lines, and material transparency, help deter criminals and drastically improve the urban environment. Critical input was also incorporated into the design, including increased shelter, additional public toilet facilities (including a French-style pissoir for travelers from local nightclubs), and more retail. Input also extended to choices of materials, fabric, and color.

#### Conclusions from the Vauxhall Interchange

Though the canopy of the Vauxhall Cross Interchange is an eye catching design, with high visibility to passing traffic, pedestrians, occupants of surrounding buildings and passengers on passing trains, the major motivation for choosing Vauxhall Cross Interchange as a precedent lies in the parallel lines that can be drawn between its location in the fractured urban field of movement paths and its similarity to the Berrals' site. Both are situated on oddly shaped, highly visible islands that form the centre of several converging roadways, and thus face similar constraints and opportunities.

Provision for pedestrians and cyclists as well as the improvement of traffic flow were essential to increase accessibility to the interchange.

The first phase of the scheme seeks to address these issues as well as better integrate public transport services and provide improved facilities for public transport, especially bus users, pedestrians and cyclists.

Rail services are provided by Vauxhall railway station, which is on the main Waterloo to Exeter line and Reading line. The station is on the opposite side of the junction of Bondway and South Lambeth Place from the bus station. The first phase of the Vauxhall Cross Interchange works (for which planning permission was not required) included closing off Bondway and South The Lambeth Place to through traffic and provision of a pedestrian crossing of the bus lanes directly linking the railway station with the bus station site. Formerly, buses stopped at various places on the road network around the station and in many cases some distance away or across busy roads.

An accommodation unit is located under the canopy and provides facilities for the bus controller, driver's mess, area traffic controller office and public toilets. There is also a lift to improve the link between the bus station and the underground station below.

The intelligent material choices, used to construct the canopy were selected for both their robustness and ease of maintenance in addition to artistic inspiration. The design enabled prefabrication and rapid construction. In addition, the structure and fabric of the building were chosen to be appropriate for the harsh urban environment.



Fig. 5.35. The shelter volume created by the ribbon structures

# typological precedents

## MEDIATHEQUE AS PUBLIC MEDIA SOURCES

Fig. 5.36. Exterior of Sendai Mediatheque



The Mediatheque can best be described as a composite building, a place for gathering and sharing information through the latest electronic, digital, visual and printed means. Its greatest contribution lies in the setting of higher standards for what meaningful civic architecture ought to be for a contemporary society in the information age.

### Mediatheque

Sendai, Japan

2001

Toyo Ito Associates, and Architects

Briefed to replace the old library of the city Sendai, with an unprecedented unique public facility, the Japanese architect Toyo Ito decided to make the boundaries of the hitherto self-contained library more ambiguous by integrating the facility spatially with other functions (Ito 2001:7). It marks a clean break with the set programs of the traditional library, redefining it in terms of new information technologies. A new type of civic institution, for an information-hungry time.

The Mediatheque was intended to express the fluid dynamics of the modern city in which light and movement are layered atop its physical structure and vibrate around vortexes of energy.

For Ito, this was to be a bridge between real and conceptual, a physical embodiment of the electronic labyrinth which many now inhabit – especially the young in Japan (Webb 2001:48)

### Conceptualization and Structural Summary

Visible as what seems to be a dematerialized illusion, the centre is seen as a transparent block whose supports are wrapped in glass (fig. 5.36). The design can be pared down to three fundamental elements: plates, tubes and skins (fig. 5.38). Instead of a typical concrete or steel frame, the architects and engineers devised an unusual structural system that employs 13 bundled “tubes” to support steel-and-concrete floor plates. Wrapping around the entire structure are glass-and-metal skins that allow a high degree of transparency.

Inspired by an image of seaweed swaying underwater, the tubes were designed to change contour and diameter as they move up through the building. In addition to their structural role, most of the tubes also serve as conduits for mechanical systems, daylight, and people. The tubes, which range in diameter from 7 to 30 feet, are made of steel pipes that are 5 to 10 inches in diameter.

Floor plates supported by the tubes are made of two layers of steel plate with ribbing in between and three inches of lightweight concrete on top. Although it required complex calculations and fabrications, the unorthodox structure creates a remarkably open perimeter and flexible interior.

#### Facilities

The importance of Sendai Mediatheque as a precedent lies in the various media components available to the public. Each level corresponds to a “different mode of communication between people or between people and different types of media” (Pollock 2001:192).

Within each floor functional borders are blurred and fixed barriers are few. For the most part the floor levels are “differentiated spatialities” that occur naturally where the tubes and other vertical elements are placed in a horizontal field.

Moving through the levels: Cars can be parked in the Mediatheque’s basement garage, while 100 bicycles can be secured in a covered lot on the ground level just outside the west entrance. More than just a lobby or a starting point for exploring the rest of the seven-story building.

The ground floor features an indoor plaza complete with a café, bookshop and central square, that can be enclosed and used for exhibitions and other presentations & from the ground floor all paths lead to a second-floor information center containing loosely designated areas for periodicals and Internet-ready computers, as well as administrative offices and

children’s book sections. A formal double-height library, with its casual seating overlooking the street, open stacks for 160 000 books, and quiet study areas at the rear occupies the third floor, while the reference section fills a fourth-floor mezzanine. A series of small galleries can be rented by the general public, and those on the sixth floor are reserved for professional exhibitions and performances. At the top of the building an audiovisual center, where visitors have access to an array of computers, CD players, and DVD monitors, are arranged in groupings around the floor perimeter & a 180-seat theater, a conference room, and an administrative area are all ganged together.

#### Inclusive design

Another aspect of Sendai Mediatheque worth discussing, are the high level of inclusiveness. Volunteers are there to help disabled persons with access to information and includes the following:

**Face-to-face readings:** Members of Sendai Reading Service Club and volunteers read requested materials face-to-face with visually-impaired persons (materials of choice, such as books and magazines in the Library, books brought in, pamphlets, or instruction manuals for home electrical appliances).

**Production of recorded types and the transcription of data into Braille:** A service for transcribing normally-printed materials into Braille and recorded types (materials of choice, such as books and magazines in the Library, books brought in, pamphlets, or instruction

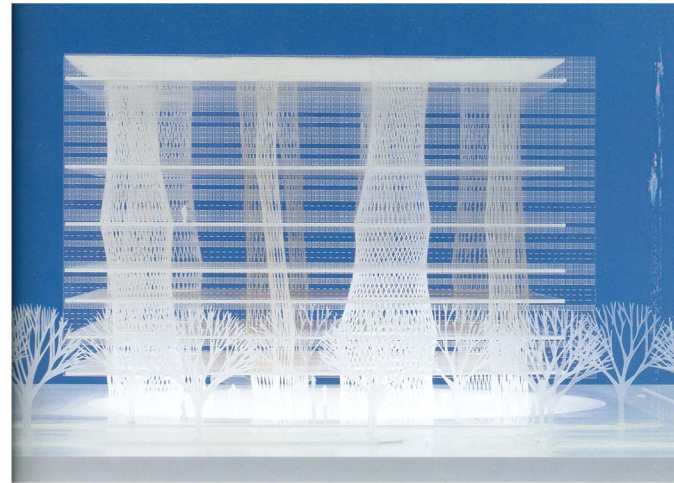


Fig. 5.37. A three-dimensional model of the three structural elements of the facility: the tube, plate and skin.

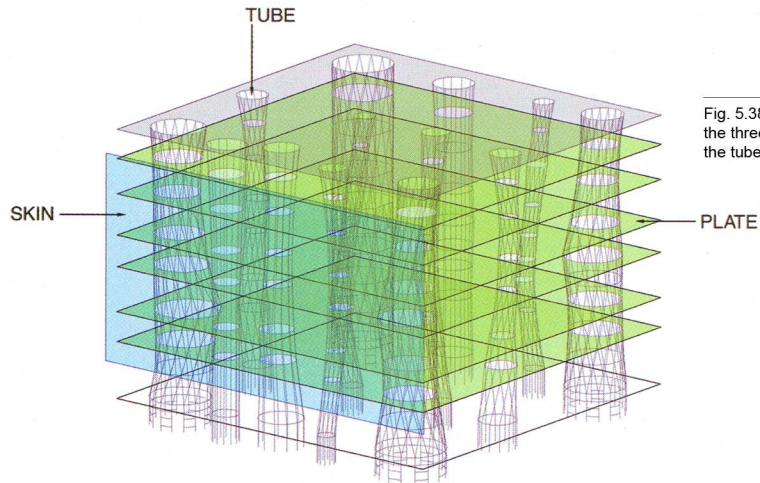


Fig. 5.38. A three-dimensional illustration of the three structural elements of the facility: the tube, plate and skin

Fig. 5.39. Terminals for searching catalogues within the library



Fig. 5.40. Magnifying readers for the visually-impaired



manuals for home electrical appliances).  
**Assistance in operating speech-based computers:** A service to help visually-impaired persons to operate a computer with special screen-reading software.

**Information on facilities, equipment and appliances for the visually-impaired:**

- To browse Internet Web sites and read normally-printed materials and data in Braille: 3 personal computers specially designed for the visually-impaired (include Braille display, screen-reading software, screen-expansion software, and Website-reading software)
- To read normally printed materials: 6 magnifying readers (2 fixed and 3 portable) screen-reading software, screen-expansion software, and Website-reading software)
- To read normally printed materials: 6 magnifying readers (2 fixed and 3 portable) & 2 voice readers
- Videos with subtitles: Subtitled videos can be viewed in the library, or borrowed or received via e-mail

Other considerations for achieving a highly accessible public facility include:

- Textured floor blocks
- Voice guide system
- Tactile models
- Public fax machine
- Magnetic loop
- Infrared voice aid appliance
- "Bodysonic" chairs
- Flash lamps
- Lending of wheelchairs
- Lending of PHS

#### Conclusions from Media Sources

Though the difference in scale between Sendai Mediathèque and the media source within the proposed nodal facility is considerable, the emphasis remains the same. A general shift toward the use of all types of media for the acquisition, editing, and distribution of information.

This approach fuse digital technology with more traditional methods, which translate into a state of flexibility, presenting the opportunity to provide a public service open to the cross section of society, as a tool for education, entertainment and business.

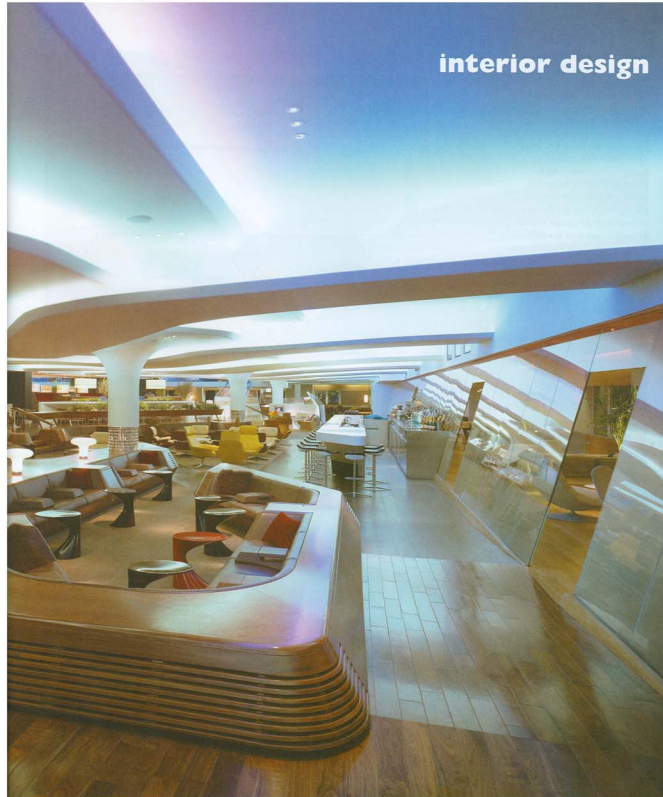
The study of Sendai Mediathèque reveals the wide range of activities possible within the realm of information exchange. Though not all are to be integrated into the proposed facility, the demonstration of functional groupings within the spatial layout can be useful for planning an optimal spatial flow.

The equipment available, especially in terms of technology and inclusiveness are exemplary.

# typological precedents

## WAITING SPACES

Fig. 5.41. Interior view of the Virgin Atlantic Clubhouse



Airport lounges as an architectural type, are at the anonymous end of the design spectrum. It reeks with exclusivity and receives little or no attention as a typological precedent as it is viewed as a mere transitional space for the rich, but the design team of Virgin Atlantic's Heathrow Clubhouse managed to engage the traveler in such a way that merits a closer look.

### Virgin Atlantic Clubhouse Airport Lounge

Heathrow, England  
 2006  
 Softroom

The design team started by re-analyzed the way in which passengers might wish to use inevitable waiting time between check-in and flight departure, to such an extent that travelers are spending up to four hours in the Clubhouse, rather than the anticipated two. The reason is simple: there is plenty to do and plenty of services to enjoy.

#### Design Principles

The architectural approach has been to treat the main space in the 2500 square meter interior as a single flowing 'landscape'. Rather than divide the volume up into separate rooms, the space is

kept as open as possible, to maximise the Clubhouse's sense of scale. With walls kept strictly to the perimeter areas, furniture and columns are used to identify different areas, resulting in a series of columns are used to identify different areas, resulting in a series of 'landscapes and vistas', a layout that encourages passengers to stroll and explore their surroundings, echoing the patterns of circulation and activity on the ground and in the skies around Heathrow.

Overhead in the main space, a unique sweeping ceiling recalls an expanse of sky. Its undulating geometry, echoed in the layout of the floor, weaves across the space and unites the room along its remarkable length. The plasterwork is formed into a repeating sequence of tiered coffers, carved away from the building's structure, in order to exploit the full height of the space. To successfully disguise the original low floor to ceiling height in the multi-storey concrete structure and to create enough space for the dramatic ceiling design, the ventilation system was relocated. All services were removed from the original suspended ceiling, with air now passing through furniture elements and round sculpted plaster columns (fig. 5.42).

The facilities available within the Clubhouse are limitless, ranging from entertainment to

business. Internet connections are available throughout the facility and the quality of furniture and materials throughout gives a distinct identity to all the different parts of the Clubhouse. Upon entering the lounge passengers are greeted and luggage is deposited in a cloakroom with a manned shoe shine facility before entering the main body of the Clubhouse. Looking across you are given a range of choices, picked out by 'landmarks' each with their own distinct character, which act as focal points.

Guests are welcomed at a concierge desk that offers travel and secretarial support (Alternatively, passengers can press a concierge button on any phone situated around the lounge for service at their seat). Then they can choose from a range of activities and facilities:

**The Office and Library:** A private room with eight business stations, fax machines, telephones, printers, photocopiers and a library with an antique reflection table.

**The Brasserie:** An informal area with a continental feel where diners can choose from a menu to cater for every appetite and sit at individual tables or booths.

**The Deli:** Offering a light food alternative with fresh produce and daily specials. Diners sit along a seven metre marble clad table.

**Grab and Go:** Two stations offering healthy snacks as well as selection of drinks and bottled water.

**Cocktail Bar:** The 14 metre long cocktail bar serving a selection of classic drinks and sophisticated cocktails.

**A spa pool & sauna:** With six steam rooms and six showers.

**A St Tropez Tanning Booth:** Fully automated tanning or spray tan by professional therapist.

**A Poolside Lounge:** A relaxation area.

**A Den:** The games area featuring a pool table and retro video games consoles.

**A Multiscreen:** An entertainment area featuring a state-of-the-art video projection system, which can simultaneously show a multitude of channels or be reconfigured as one single cinema screen.

**A Playground:** Children's activity centre featuring the latest games and toys and dedicated children's television.

**An Observation Deck:** A South-West facing area running along the length of the Clubhouse with large windows for views of the runway.

**A Gallery:** A viewing area behind the bar, which has a dedicated Fumoir.

**A Sky Lounge:** A hideaway mezzanine at the top of a white staircase with loungers, daybeds and leather seating, a skylight and full width sloping windows.

**The Roof Garden:** An outside garden with great views of the runway and airport action.

**'Cowsed at the Clubhouse':** A salon offers a range of treatments available for both men and women.

**'Bumble and bumble':** A hair salon.

Conclusion made from the Virgin Atlantic Clubhouse

A time consuming and largely underestimated part of travel is waiting. The Virgin Atlantic Lounge is a space that acknowledges this.

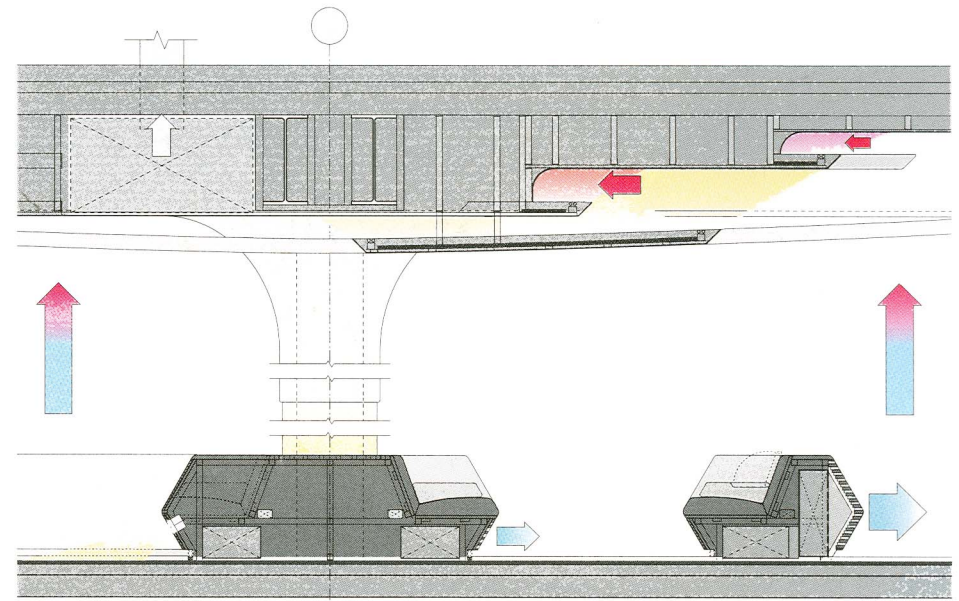


Fig. 5.42. Furniture elements are used to hide the air-conditioning system due to the low floor to ceiling height.

# component precedents

## VERTICAL CORES

Fig. 5.43. The vertical glass towers attached to the original Lloyd's Register building



The following precedents will discuss vertical cores as an integral part of multi-story buildings. By nature repetitive, it's a visual feature synonymous with this typology. In terms of appearance it generally seems like a mere add-on as it is usually pushed in some corner at the back of the building or last on the budget, but its repetitiveness is a testimony to its importance in terms of function.

The small footprint of the Berralls building necessitates looking at ways to clear the interior floor space. One of the possible solutions, involve moving the vertical cores of the structure, such as shafts and vertical circulation, externally, as 'attachments' to the buildings.

The precedents to follow express similar features.

### Lloyd's Register

Fenchurch Street, London

2002

Richard Rogers Partnership

Lloyds Register situated in the heart of London, in a historic Grade II listed building at 71 Fenchurch Street. It was purpose built for the company in 1901 and includes some of the finest sculpture, joinery, plasterwork and metalwork of

the period, but faced the inevitable need for expansion.

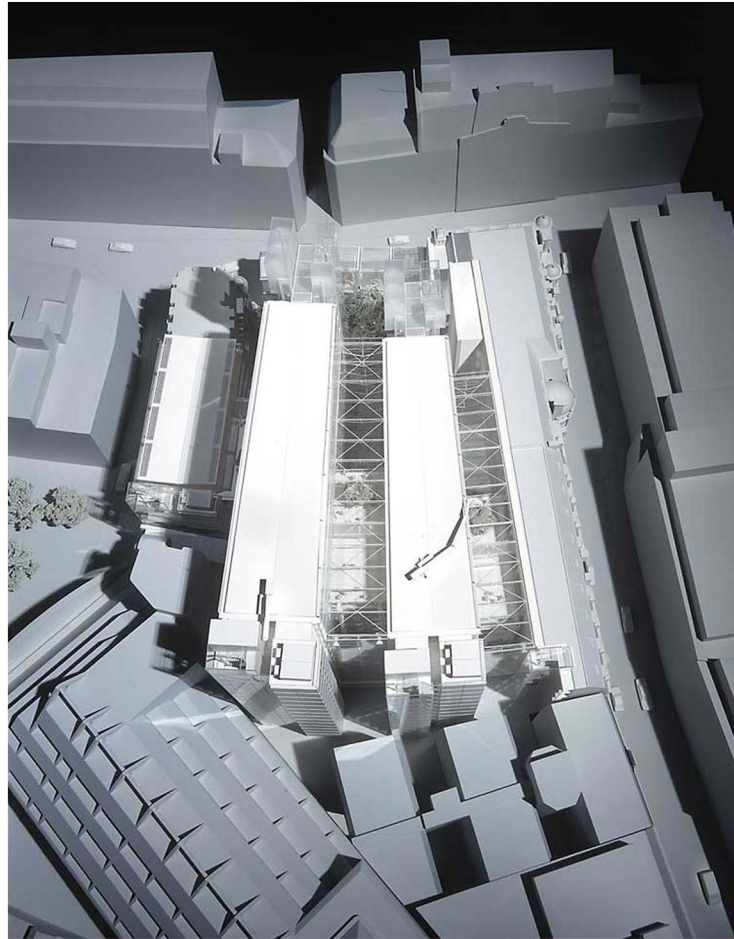
A brief developed to provide 24, 155 square meters of efficient, high quality, modern office space but in order to achieve this a number of key objectives was set, to preserve the historic value of the building and area. This included safeguarding the existing listed building as a flagship for the development, to preserve the Lloyds Avenue conservation area that includes St. Katherine's Churchyard, and to provide an appropriate entrance to the churchyard and a new visual presence to Fenchurch Street.

The site, predominantly surrounded by existing buildings, had to face problems of poor position and access. It was restricted by 71 Fenchurch Street and by the obligation to retain the facades of Coronation House and 68 – 70 Fenchurch Street. To address the challenge of providing the required amount of new accommodation within the remaining space, three slender, tapered rectangular blocks fan out alongside two dramatic glazed atria, varying in height from six to 14 levels. The atria, central to the design concept, allow light into and views out of the building at all levels, despite the restrictions of the site. Most of the proposed accommodation is contained in the two taller blocks, while the third block backs up onto the seven-storey



Fig. 5.44. An aerial view of the context model showing the glass atria between the concrete main buildings, and the cores located at the ends of the rectangular blocks.

Fig. 5.45. An elevation of the context model



retained façade of Coronation House. On the opposite side of the site, a rigorously detailed and uncompromisingly contemporary concrete, steel and glass façade celebrates the only point at which the building makes its presence felt on the street.

Highly transparent clear glazed atria, lifts and stairwells provide instant legibility, and allow views into and out of the building at all levels. People using the fully glazed towers of lifts and stairs animate the building's exterior. Legible in both the broader context of the city and from within the building. Colour-coded steel work also acts as an orientating device. At the front of the main towers are two primary circulation cores facing the churchyard. It consists of two lift cores and staircases, each housing four external glass lifts. The lift cores are supported on a slender structural steel frame that derives all of its lateral stability from the main concrete structure. Secondary cores to the rear of the building house toilets, good lifts and staircases, as well as main services risers.

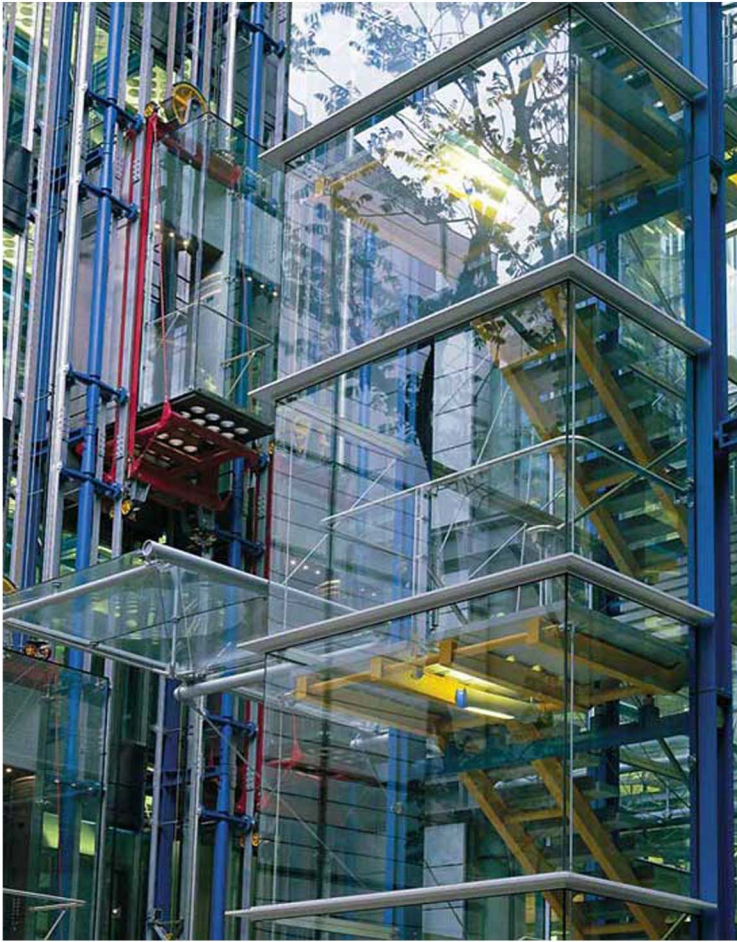


Fig. 5.46. Detail of one of the glazed service towers



Fig. 5.47. The glazed service towers are constructed of light tubular steel frameworks



Fig. 5.48. The new entrance and lift shaft of the Victorian Credon Centre

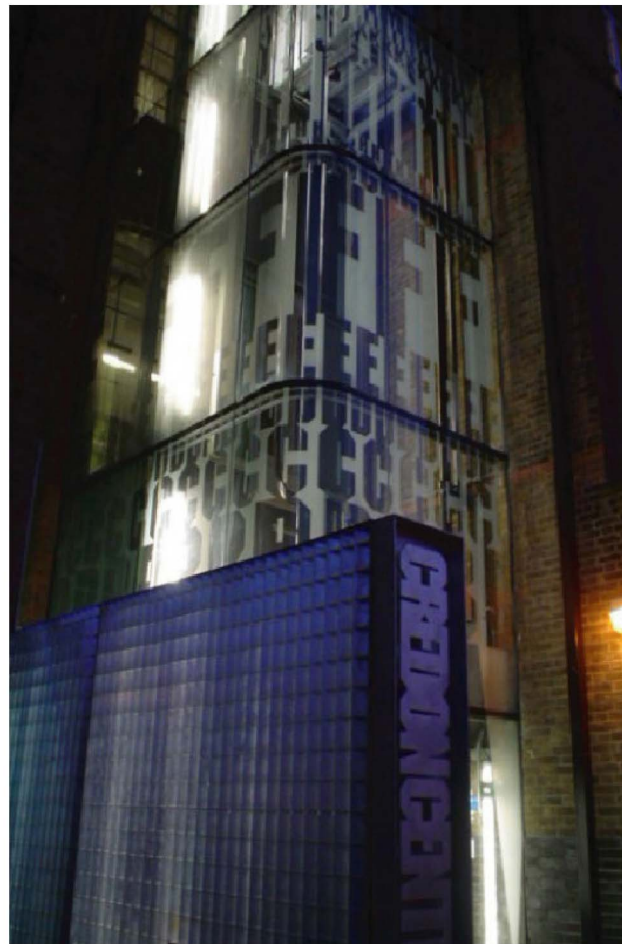


Fig. 5.49. Enamel graphics baked onto glass form a soft glow at night

## Credon Centre – Lift Shaft and Entrance

Newham, London

2006

Walker Bushe Associates

Installing a lift fit for disabled people presented an opportunity for Walker Bushe Associates to redesign the entrance area of the Credon Centre, a further-education institute for teachers, housed in a Victorian school building in Newham, London.

The practice's design was a world away from the initial proposal by Newham council's internal consultants. They had designed a brick Victorian pastiche that, according to Bushe, blocked views and light into the teaching rooms (Soltani 2006:1)

The intervention proposed by Bushe, is much lighter and more appropriate. The lift tower and lobby are a clearly defined glass volume attached to the existing building. Within this all glass frameless enclosure a motor-room-less lift was installed.

The shaft itself is a combination of 24 toughened glass flat sections and laminated glass on the curved corners. The architect specified laminated glass for the curved sections because it was not technically possible to add stove-enamelled letters before or after the toughening process(Soltani 2006: 2).

The lift-tower glazing is decorated on both faces

with graphic patterns: externally with enameled letters of the alphabet, and internally with white numerals printed on a transparent vinyl film, this typographic design was done by graphic designer Linnet Webb Jenkins. The resulting diaphanous effect is reinforced by the glazed lift cabin and lighting in the form of vertical fluorescent tubes. The entrance is distinguished by a rear-lighted wall of polycarbonate sheets covered with coloured film.

#### Conclusions drawn

The significance of this precedent lies in the skillful use of material to differentiate between old and new. The material choice leaves no question on where the intervention starts and end, and the solid nature of the existing brick structure is enhanced by the light touch of the new materials. The additional visual quality of the glowing glass volume at night adds another layer of interaction with the urban fabric, as it forms a visual beacon.

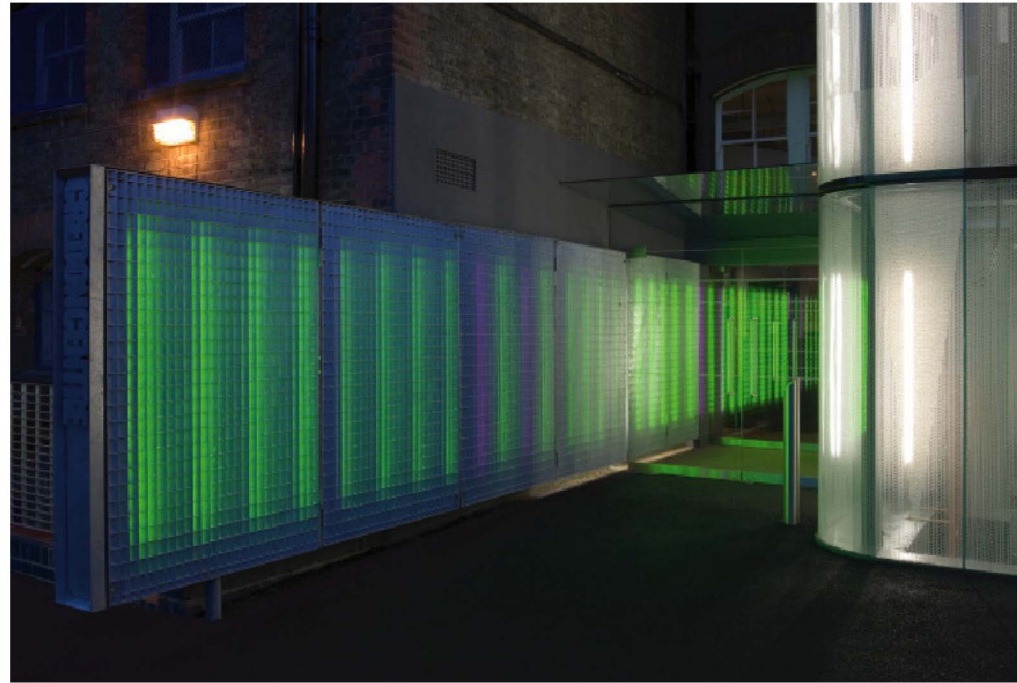


Fig. 50. An internally lit galvanised steel screen with a coloured twin wall polycarbonate lining was designed to help partially sighted visitors to the main entrance doors

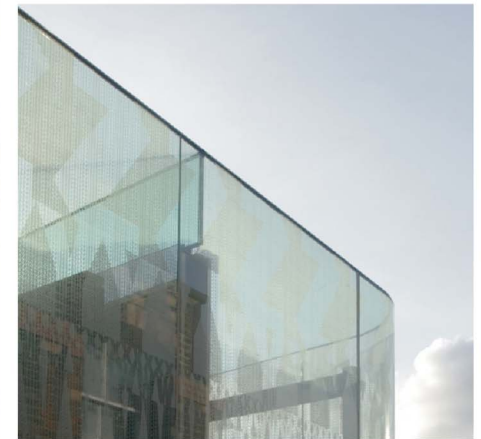


Fig. 51. A detail of the corner's curved laminated glass

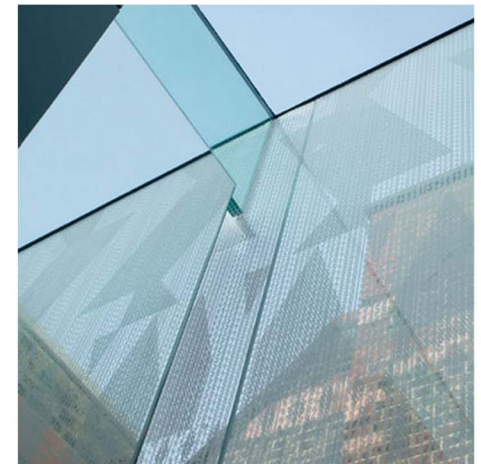


Fig. 52. Detail of glass construction