

Adaptive Reuse Strategy: Bohemian Rhapsody Analysis

Lecture#2

By Mi-T. Chang

The 18th-century polymath **Johann Wolfgang von Goethe** famously stated that "*Architecture is frozen music*," implying that a building translates a musical composition into a tangible, permanent form. [1, 2]

- **Rhythm and Proportion:** Both disciplines rely on math. Classical and Renaissance architects like **Andrea Palladio** utilized **Pythagorean musical intervals** (chords like 1:1, 2:1, 3:2) to dictate the height, width, and length of their rooms. A colonnade of pillars creates a visual "beat" or rhythm. [1, 2, 3]
- **The Philips Pavilion (1958):** Designed by legendary architect **Le Corbusier** and composer/architect **Iannis Xenakis**, this structure was an explicit translation of mathematical and musical equations. Xenakis literally modeled the building's sweeping hyperbolic curves after the glissandi (sliding notes) of his orchestral piece *Metastaseis*. [1, 2]

Why Bohemian Rhapsody is in this lecture?

BOHEMIAN RHAPSODY

EXPLAINED





Which of this Porcelain Vase is the real Ming dynasty vase?

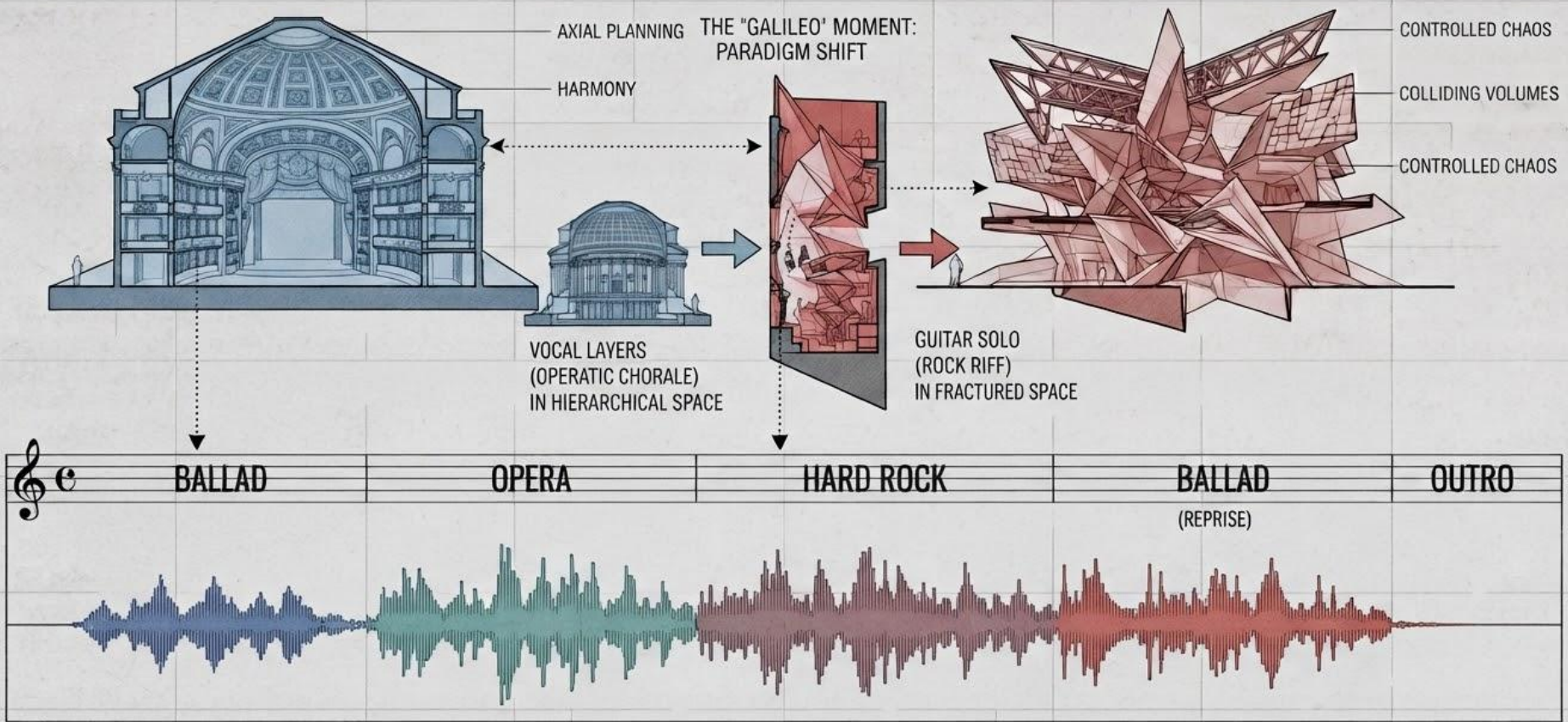
Why is one cost about at least \$100K and other only \$30?

JUXTAPOSITION:

PARADIGM OF BOHEMIAN RHAPSODY

CLASSICAL (SYMMETRY/ORDER)

DECONSTRUCTIVISM (FRAGMENTATION & COMPLEXITY)



Architecture concept very often come from literatures, arts, and music.

Medium	Shared Concepts with Architecture	Architectural Manifestation
Music	Rhythm, Harmony, Interval, Duration	Repeating columns, acoustic curves, proportional room volumes
Literature	Narrative Arc, Metaphor, Dialogue, Memory	Sequential entryways, thematic materials, allegorical monuments
Fine Arts	Perspective, Abstraction, Texture, Form	Cantilevered geometry, kinetic facades, open-plan minimalism

This lecture is NOT only based on the book: “Old buildings, new forms :
new directions in architectural transformations”

by

Bollack, Françoise Astorg, author





New layers or envelopes that
redefine the existing structure's
boundaries.



SANTA CATERINA MARKET

Barcelona, Spain

1997–2005

Enric Miralles & Benedetta Tagliabue Architects, EMRT



Image: Getty

ABOVE Aerial view of Ciutat Vella, Barcelona.

OPPOSITE The undulating tile roof covers the historic market.

The Santa Caterina market is located in the old town (*Ciutat Vella*) of Barcelona. The project consists of the reuse of a market built in 1848, the first covered market in the city, along with the construction of fifty-nine tent-subsidized apartments, an underground garage, and a waste-processing facility for the market and the La Ribera district. An aerial photograph of Barcelona gives an immediate understanding of the old town's physical environment with its dense pattern of narrow crooked streets, buildings, and courtyards, contrasted with the surrounding nineteenth-century city and its grid of regular blocks. The partial reuse of the 1848 structure, its inclusion in a minimally destructive urban renewal plan, and its architecture represent a more nuanced attitude toward urban revitalization than was the "practice of extensive and sometimes unchalcant demolition" associated with the 1992 Olympics.

The architects reuse the white masonry walls of the 1848 market, with their graceful arcades, and spread over them an undulating roof blanket made of several free-form vaults covered with colorful tiles from Seville. The roof is supported by three main girders running across the vaults and, in some areas, cutting through them.

The northwest facade on *Avinguda de Francesc Cambó*, the main street, is composed of the arcaded wall of the original market, overlapped by the ends of the new vaults. The small apartment buildings are nestled on the southeast corner, and, along with a new wood lattice enclosure for the market, they define an irregular-shaped courtyard whose small size seems comfortable in this district.





ABOVE Main entrance facing
Arriagada de Viñedo, Cambé.

RIGHT Second-floor walkway and
first floor below.

OPPOSITE Main floor.







WOHLFAHRT-LAYMANN HOUSE

Frankfurt, Germany

2004-6

Möhrner, Schlüter, Wenzel Architects



Google Maps

ABOVE: Aerial view of the site in the Tannus area.

OPPOSITE: Entrance facade; the original building is now a sandy beige while the new construction is gray.

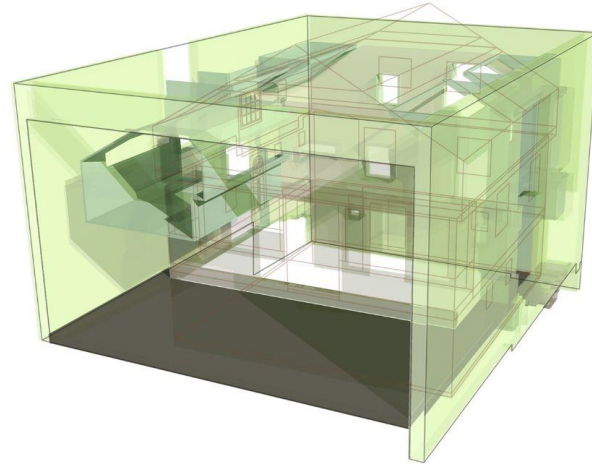
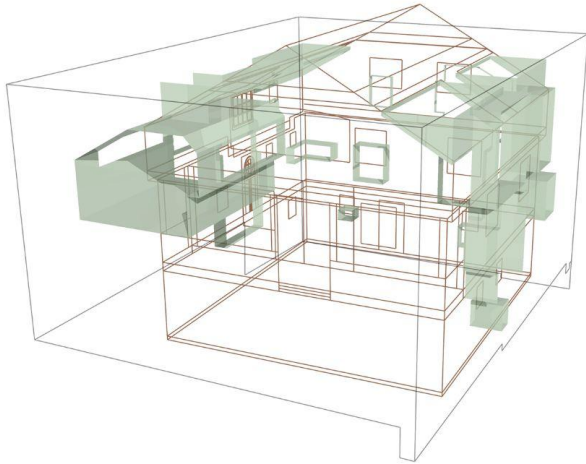
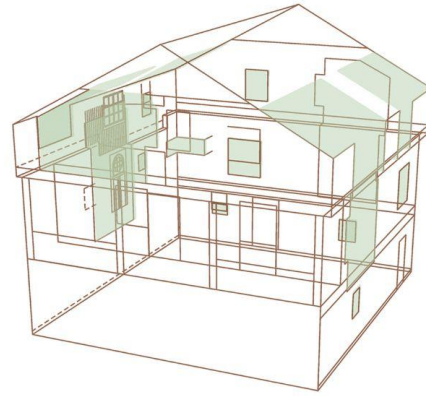
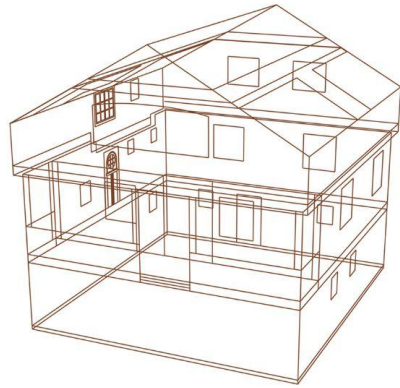
This project involves the expansion of a 1930s house in a scenic valley of the Tannus area, a well-to-do suburb of Frankfurt. Given the client's need for additional space and issues of non-compliance with the new energy code, the initial plan was to replace the house with a larger building. However, after a detailed inspection of the site the architects recognized the quality of this very picturesque, traditional cottage, and the idea was born to use this modest building as the starting point for the design. In the end the architects decided to radically transform this archetypal little building at the same time as they kept it.

To quote the architects: "Old Building-New shell!" The cottage is enclosed in a new enclosure whose plan is angled a few degrees in relation to its perimeter. This simple gesture, small as it may seem, is emblematic of the architects' design approach, which seeks to heighten awareness of the simultaneous existence of the cottage and the new enclosure. With this small twist, the space between the old walls and the new is stated as a positive space, not a leftover, and visitors are invited to enjoy it. The inner house is broken open in several places to expand existing rooms by projecting them into the new, larger enclosed space or even through the roof as the roof of the inner house is opened: "Paradoxes occur—from inside and outside—a seemingly normal reality becomes distorted. A simple, traditional 'cottage in the country' is dissolved, transformed, and simultaneously fortified—in the sense of a metamorphosis."

The color scheme further explicates the relationship of old and new, container to contained, and connective tissue between old building









RIGHT, ABOVE New space created by opening the roof under the new enclosure.

RIGHT The original house juxtaposed with new elements.

OPPOSITE At the entrance, the materials and colors of new and old come together.



Le-Fresnoy Arts
Center
France
Bernard
Tschumi



LE FRESNOY NATIONAL STUDIO FOR CONTEMPORARY ART

Le Fresnoy, France

1995/97

Bernard Tschumi Architects



Google Maps



TOP Aerial view of the park at Le Fresnoy.

ABOVE Tschumi's conceptual sketch.

OPPOSITE The addition envelops the original buildings.

This intervention incorporates a series of 1920s buildings into a larger ensemble to create an art school with workshops, galleries, and events spaces for the National Studio for Contemporary Art. The existing buildings were freestanding structures that were part of a leisure park that had been popular with the residents of the surrounding working-class neighborhoods. They included a former skating rink, dance hall, cinema, and horseback-riding ring, all of which had stood empty since the early 1970s.

The intervention spreads a large sheltering roof, an umbrella, over the earlier buildings and adds a new building to house support spaces in the form of a horizontally flipped Z to the east of the existing fair halls.

Bernard Tschumi described the program: "Ten thousand square meters of an international center for contemporary arts were to be inserted into Le Fresnoy in Tourcoing, France. A school, a film studio, a médiathèque, spectacle and exhibition halls, two cinemas, laboratories for research and production (sound, electronic image, film and video), administrative offices, housing, and a bar/restaurant: this is the multiple and expansive program of the new center."

The older buildings were not in good condition, either structurally or in terms of waterproofing, but the architect was reluctant to demolish them. As he observed, "We could either demolish the parts that were the most affected by time—among others, the beautiful vaulted hall to the south of the complex—and thus lose a large part of the magic of the site, or we could faithfully and at great expense restore all parts that were weakened or susceptible to further deterioration." The architect saw a third alternative, one that could "radically protect the most spectacular

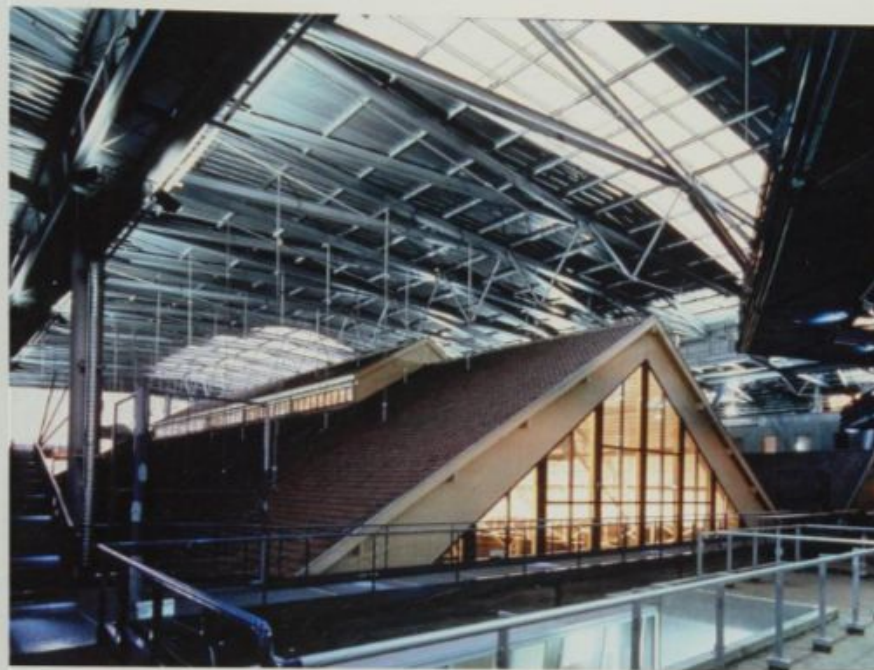








ABOVE AND OPPOSITE New media library.
RIGHT Catwalk between buildings.



Bunny House
New Jersey
By architect Adam
Kalkin



BUNNY LANE

The home is a contrast in new and old, a uniting of differences.

Photo Credit: © Peter Aaron/OTTO

HOUSE ON BUNNY LANE

Bernardsville, New Jersey

2001

Adam Kalkin, Architect



Joseph Ratti

ABOVE Aerial view of the site near Bernardsville, New Jersey.

OPPOSITE The original cottage was joined by new construction. Its gable is outlined in the wall.

This building is on a bucolic wooded site that was once part of the Pfizer estate in suburban New Jersey. In the 1890s Charles Pfizer brought a tea house, piece by piece, from Japan along with the makings of a Japanese garden, and he brought a gardener from Japan as well. The tea house was reassembled on the property on the edge of a lake, and a small wood cottage was built nearby for the gardener. The estate was divided into smaller holdings some time after Pfizer died in 1929. Adam Kalkin, who owns the site of the gardener's house, wanted to preserve the now unused cottage by "putting it in an airplane hangar." The original cottage had been expanded by the addition of a wing, which Kalkin removed: the profile of this wing is visible in the new metal shell as a glazed area in the profile of a house within the metal cladding. The "airplane hangar" is a capacious wrap that houses two "buildings," one old, one new. The cottage and porch are at one end of the new metal shell, and at the other is a three-story grid of nine rooms of equal size, which the architect likens to a generic office building. Between the two is an ample, loosely configured living space opening to the outdoors through two glazed oversized roll-up garage doors. This world under the airplane hangar has an urban feel in its assembly of disparate elements and their ad hoc, seemingly unplanned relationships.

According to Kalkin, the old house is a Readymade, and the combination of his liking "things off-the-shelf" that can be tweaked with his interest in heterotopia are central to the making of this particular place. The clapboard exterior of the cottage has been restored; the interior has been altered to incorporate "a cook's kitchen" and a library whose walls

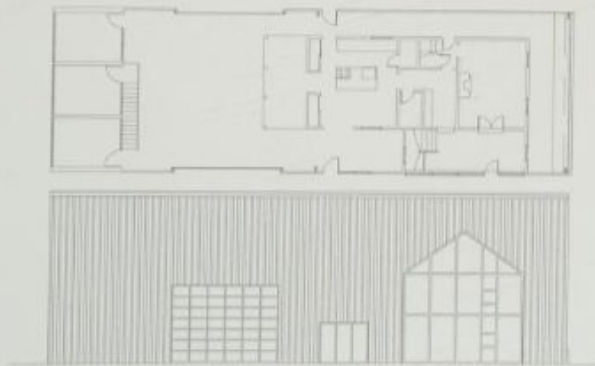


are painted in red lacquer and so finely designed and perfectly decorated that it could be, as the architect says, "in a white shoe apartment building on Park Avenue."

The old house has been saved, as an artifact to be cherished, but it has also become a part of a larger living puzzle where old and new pieces are assembled under a generic envelope that is so large that it creates a new kind of interior/exterior space with varied, rich, casual, "in-between" spaces between the cottage and the metal shell. The gardener's cottage has lost its original relationship to the landscape and its original function as shelter from the elements, although its diminutive scale, domesticity, and coziness still make it feel like a refuge within the larger metal siding enclosure. The vernacular cottage is now re-presented in a new collection, assembled, curated, adapted by the architect from cherished objects and recreated memories, to build a new world made from various forms of the existing world.

OPPOSITE The chimney from a demolished addition is now a freestanding element on the terrace.

BELOW AND OPPOSITE, BELOW Cross section, plan, and longitudinal elevation.





TOP AND RIGHT An open living space separates the cottage from the "office building."

ABOVE Internal view space between the cottage and the new metal shed.

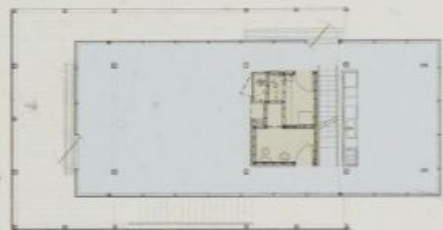
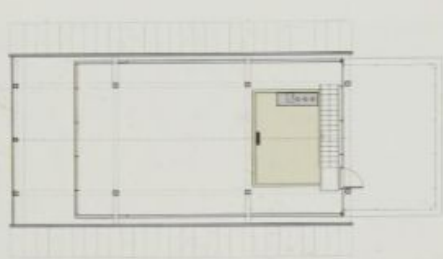


West Ground floor plan
and sections.



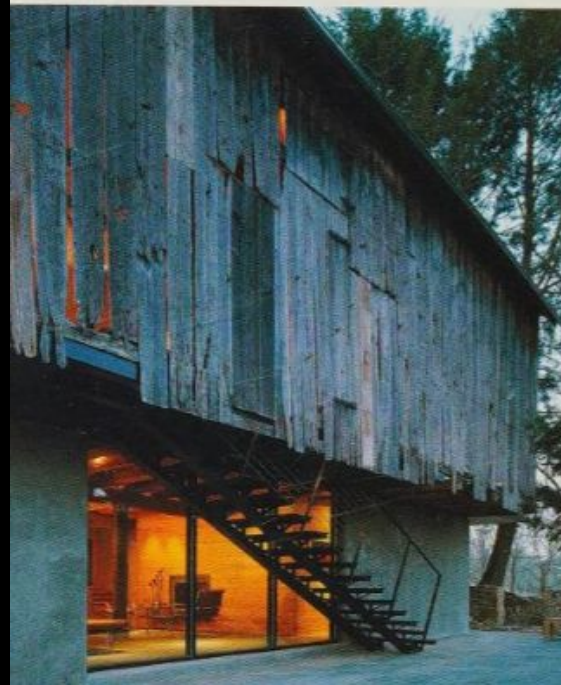
Doma
Gallery
Maryland





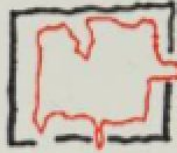
LEFT Ground, first, and second floor plans.

ABOVE Sections; insertion indicated in blue.

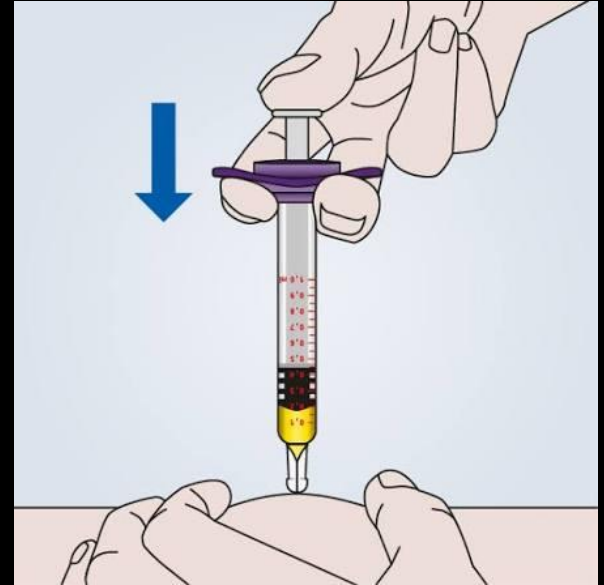




INSERTIONS

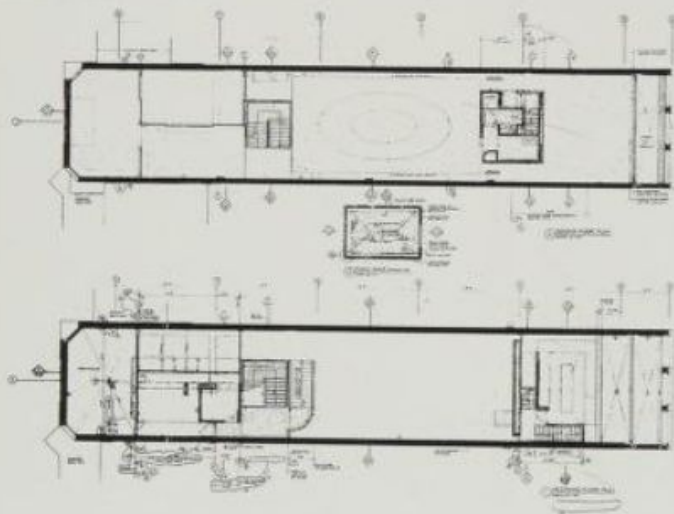
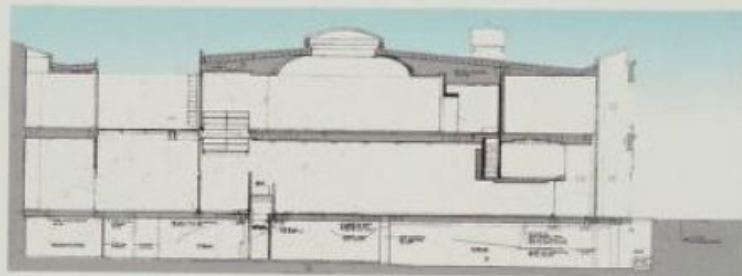


Targeted interventions that activate or repurpose interior spaces.

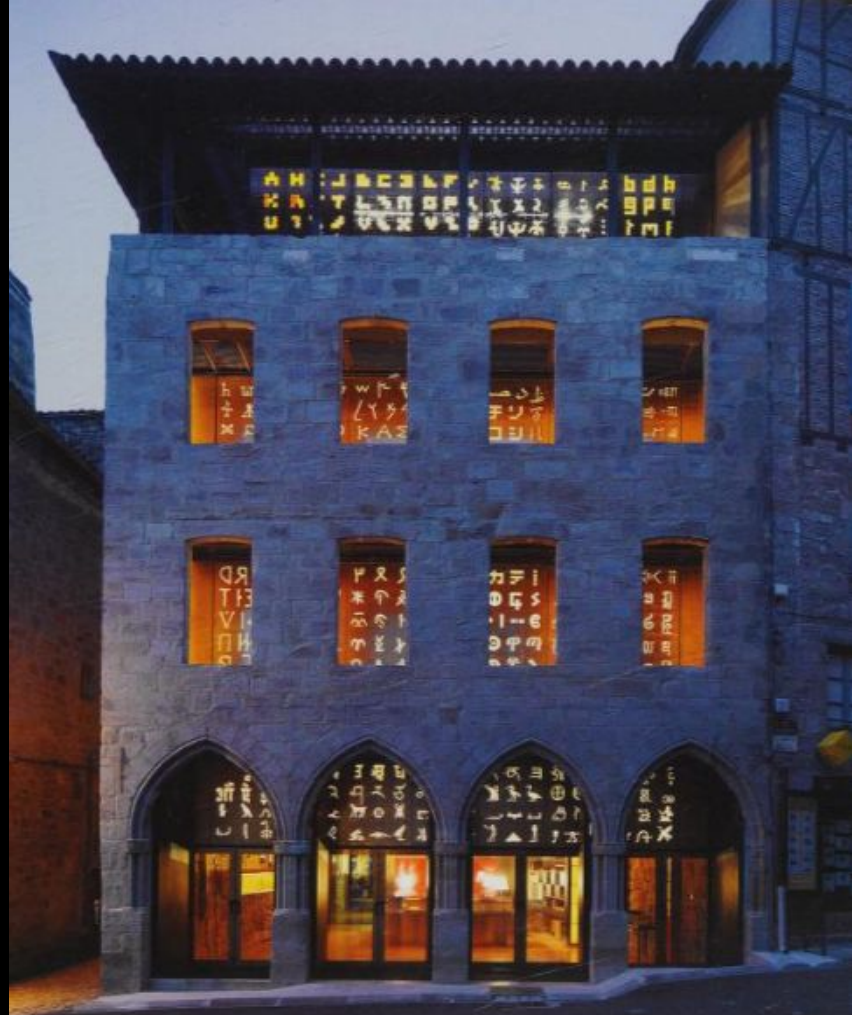


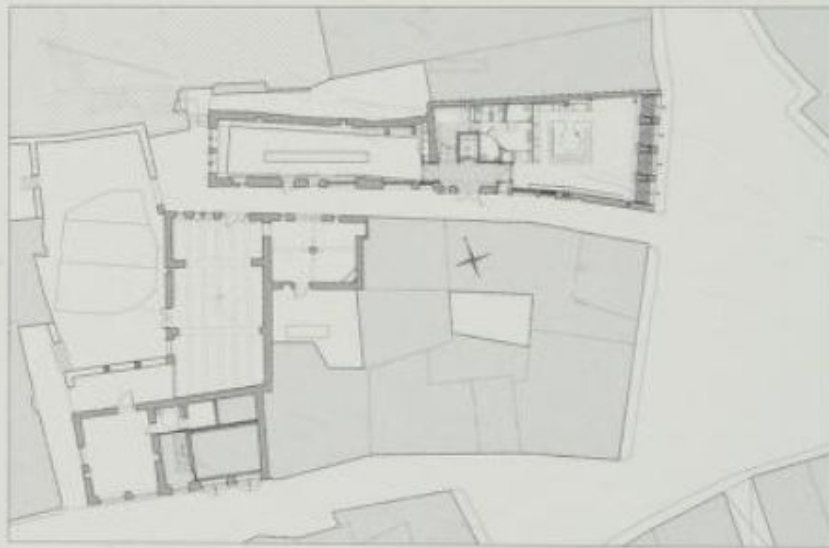
Champollion
Museum France













ABOVE Third-floor exhibition gallery facing the Place Champollion

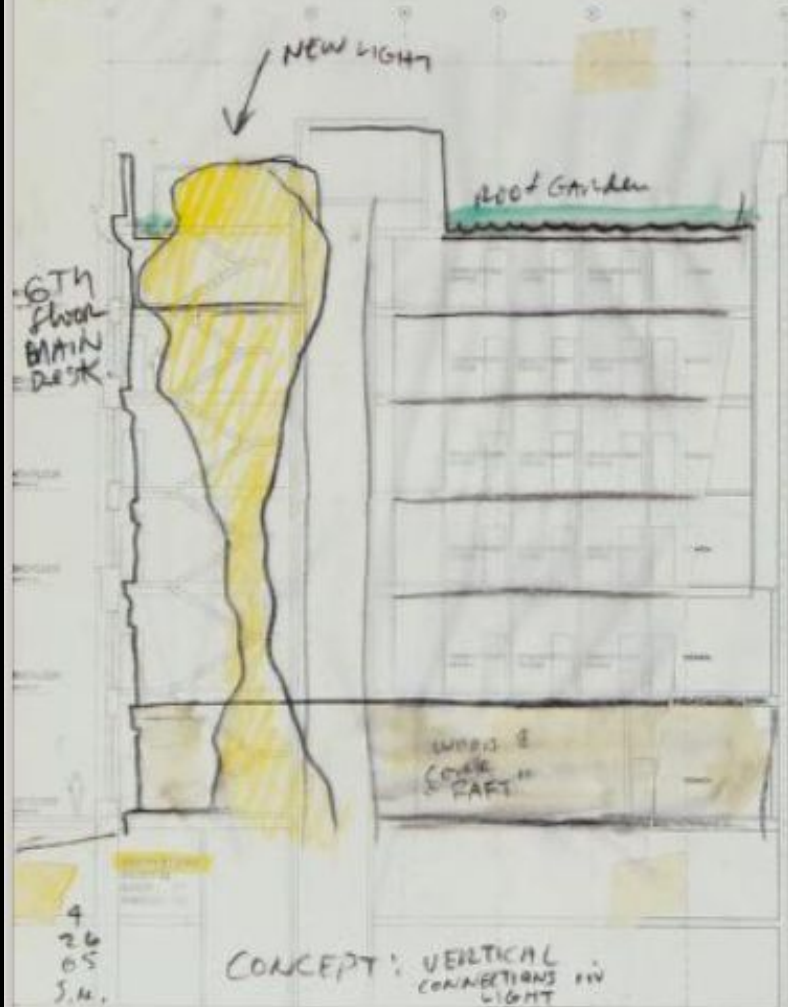
OPPOSITE Fragments of frescoes remain on the stone wall of the original building.



New York
University
Philosophy Dep.
NY Steven Hall







RIGHT Ground floor plan; stair lower right.

BELOW LEFT Stair section.

BELOW RIGHT Colored glass strip inserted in windows.



LA CENTRALE RESTAURANT

Beirut, Lebanon
2000
Bernard Khoury Architect



Google Maps

ABOVE: Aerial view of the Salt neighborhood.

OPPOSITE: Original window openings are visible through the new horizontal lattice.

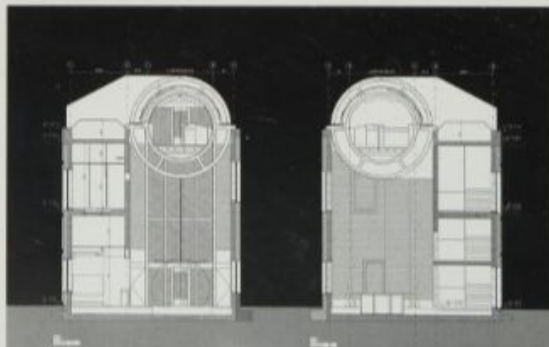
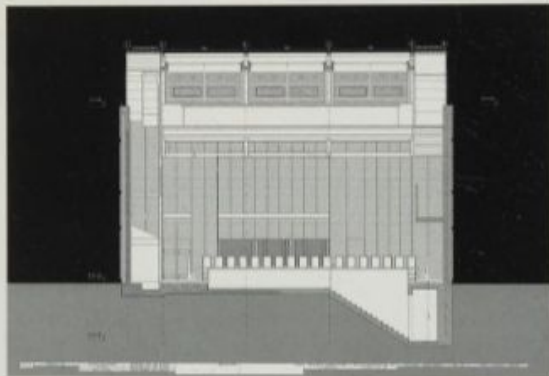
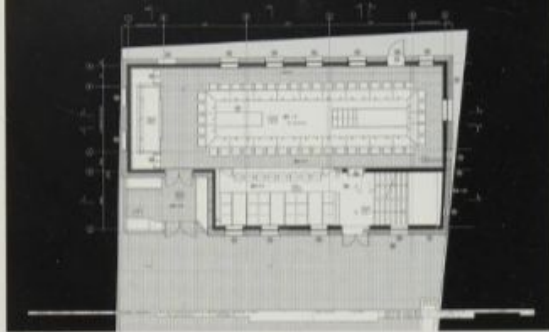
To create La Centrale, a bar and entertainment space, a new three-story space has been inserted into a modest two-story residential building built in the 1920s. While the interior is highly finished and contemporary, the exterior walls retain all the signs of the civil war that raged in Lebanon from 1975 to 1990 and almost destroyed the building. This fragile relic was protected from demolition by a local preservation ordinance.

There must be—or must have been—hundreds of such buildings in Beirut with plain stucco facades, punched window openings, a simple door. But the war had left this one, and probably many like it, in ruins. The program called for reuse as a restaurant, and the architect's response was not to restore its exterior to the mythical perfection of a prewar condition but to preserve the scarred walls and to carefully insert a new structure within.

The facade was stabilized between an exterior steel structure holding steel-mesh screen panels and an interior poured-in-place concrete shell that braces the back of the old wall and creates a new interior space, with openings matching those of the old building. On the outside, behind the steel screen, the facade, which is now out of reach behind the mesh but not out of view, retains the signs of age, war, and an inaccessible past. Bernard Khoury has said that this design "changes the poetic dimensions of decay."

One enters through a modern insertion, a notch in the left corner of the facade designed to contrast with the original building. The interior surfaces of the exterior walls are treated with a horizontal lattice through which the outlines of the existing windows are visible. Aside from this





LEFT, TOP Ground floor plan; new entrance at left.

LEFT, CENTER, AND BELOW Sections.

OPPOSITE Facade before intervention and now framed by steel structure and mesh.

fine texture reminiscent of that of the exterior, the interior space is in stark contrast to the modest exterior. The three-story space appears vast, almost threatening, and is dominated by a sleek, cylindrical volume, looming at the top, containing the bar.

We are used to seeing form as a clearly identifiable three-dimensional object and new as different, memorable, a new solid in our architectural landscape. That this building has been saved but at the same time removed from practice, removed from being touched or experienced in the traditional way might not seem to constitute a new form. Here our expectations upon approaching, entering, opening and closing windows, seeing out of windows meet with a blank state: they are but a reflection somewhere in the distance. This building has become an object—or is it a conceptual art piece?

The building is a generator for a new urban statement: the wall creates a new urban context where the ruin becomes active and makes possible a new kind of interior space, a shell where the interior activity has a strange relationship with the city. The new building could not exist without the old shell. Both are completely dependent on each other: the liner depends on the shell for its protection, and the shell depends on the liner for its continued usefulness. Ultimately each enhances the other's pathos and emotional power. The form is new without looking new: it is an encasing, a layering in depth of existing, old, ruined architectural elements and textures, carrying memory and images. By making its reuse possible, the architect has brought the building into the present, but his treatment of the exterior walls hides it behind a veil, offering it to us as a melancholic ghostly presence. The new form is actually not a form at all but rather an "objet trouvé," a found object, re-set, re-framed, colonized: a modest vernacular building re-presented as high art.

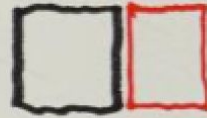




ABOVE: New entry plaza from above.
OPPOSITE: Rear facade.



JUXTAPOSITIONS



Targeted interventions that activate or repurpose interior
Contrasting elements that highlight temporal or material
differences.



MUSÉE DES BEAUX-ARTS

Lille, France

1996-97

Ibos & Vitart Architects



David Weiss

ABOVE: Aerial view of the Place de la République, Lille.

OPPOSITE: Musée des Beaux-Arts reflected in the facade of the addition.

In 1990 the city of Lille organized a competition for the expansion of its one-hundred-year-old Musée des Beaux-Arts. The winning scheme by Ibos & Vitart Architects added 5,000 square meters to the building and created a new courtyard. The original museum, designed by Parisian architects Bertrand and Delmas and opened in 1892, faces a large public square. The building is a grandiose assembly of independent forms, each with its own distinct roof arranged symmetrically on both sides of a long hall. The U-shaped plan is an arrangement of *front corps-de-logis* facing the public square, with two symmetrical wings behind it framing an open atrium, which was enclosed in the 1930s. Surprisingly, the entrance is on the left side of this monumental facade, undermining the hierarchical organization.

The addition is a freestanding six-story glass building facing the back of the museum across a new open courtyard. It is connected to the existing building at the basement level, where an auditorium and new exhibition galleries are located. At ground level, the new wing houses a café that opens up to the courtyard, but it is otherwise occupied by curatorial functions. Its front and back facades are highly differentiated: the courtyard facade is a scenographic *tour de force* that holds a mirror to the old building, while the city facade is an opaque green glass curtain wall executed in a neutral modern manner. Both are enigmatic in their own way.

This is a scenographic idea in which the new building acts both as a backdrop to the museum and as a window to the infinite. The relationship of the old to the new is visually intriguing; it is one of opposites





ABOVE Musée des Beaux-Arts

FRONT The glass facade of the addition incorporates reflective silver strips.

OPPOSITE, ABOVE Corridor between the glass curtain wall and the red wall.

OPPOSITE, BELOW The courtyard accommodates monumental sculpture and a cafe.



MAISON FOLIE

Mons, Belgium

2005

Atelier d'Architecture Maladue



George Proust

ABOVE: Aerial view of Mons.

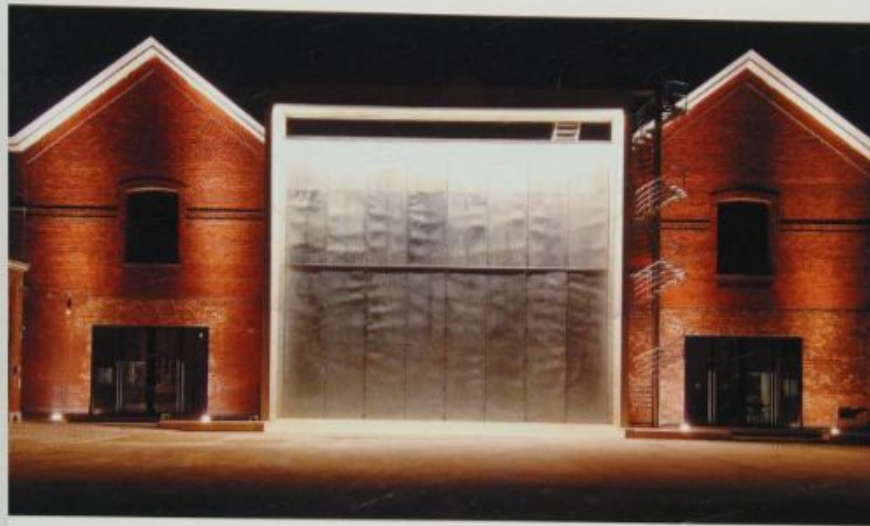
OPPOSITE: The addition fills the space between two wings of the former school building.

In 2004 the city of Lille in northern France was selected as the European Capital of Culture. The region that encompasses Lille and southern Belgium saw an influx of funds in support of cultural initiatives, and the notion of "Maison Folie" was born. The term "folie" alludes to the small structures built in the eighteenth century on aristocratic estates and used as a diversion from court life.

The concept for the Maison Folie initiative was the reappropriation of the many architectural "leftovers"—*riches architecturales* in French—for cultural purposes. The program for each Maison Folie provides facilities for performances and other artistic activities to the surrounding neighborhoods. This example reuses a former school site with two buildings framing a courtyard, in front of which was a larger open area lined with ancillary buildings. The existing buildings were simple brick structures with pitched roofs; the interior spaces were similar to other schools of the region with the same windows, same stairs, same paint color—a familiar vernacular.

The design covers the open space between the two buildings with a flat roof and closes this new two-story interior space with a gigantic metal door held in a concrete frame. This new space is used as a stage for performances; the audience sits in the large open space in front of it. The rooms in the school are used for exhibitions, cafe, rehearsals, and so on. Their walls have been left "as is," with the *pentimento* of older surfaces, construction operations, and other signs of age exposed.

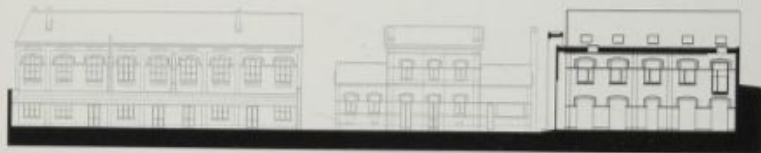
The formal idea is a juxtaposition of memory and a minimalist modern statement. The basic concept, it seems, is to position the project





as an art object itself. La Maison Folie seems to be a piece with the art of the 1960s and 1970s and its aim is to foster social activism. The stance is not only that art is to be found everywhere for those who know how to look, but also that art is a means of social awakening leading to social awareness and hence to social reform.

The raw surfaces, the peeling paint, the ruinous states of walls, the nostalgia, the shared experience of the beauty of all these disintegrating surfaces, all this past in the process of being almost out of reach, but still within the grasp of our outstretched hand – all of this forms the mental context of the "piece" based on the simple idea of enclosing a schoolyard.



TOP Building before the addition.

ABOVE AND RIGHT Sections.

OPPOSITE Panels in the facade fold back to form openings of various sizes.





ABOVE AND OPPOSITE Panels retract completely to create a proscenium for performances.



LIBRARY EXPANSION

Nembo, Italy

2002-7

Archea Associati



Enrico Mani

ABOVE Aerial view of Nembo.

OPPOSITE The main library and addition with access to the town path between them.

The small city of Nembo, near Bergamo, decided to adapt a derelict 1897 building, expanding it for use as a public library. According to Giuseppe Pezzano of Archea Associati, "The strategic position within the urban tissue, the architectural character of the original structure, closed on three sides, and the need for more space made it necessary to add a new wing, in the form of a new construction that is placed so as to close the only open side and form an enclosed open-air court."

The scheme was based on three principles: the existing courtyard had to be closed; the new use as a library had to be legible; and the existing path along the back of the building connecting the town to the fields had to be preserved. The addition is three stories high, a long rectangle in plan, slightly higher than the eaves of the existing building. It is the fourth side of the courtyard, but it stands beside the older building without touching it. It is an abstract glass volume entirely surrounded by a screen wall of thick terracotta tiles randomly rotated along their vertical spine and perceived at first sight to be a collection of red books rotating in the wind.

Visitors enter through the main entrance of the original building on the Piazza Italia. The lobby leads to an arcaded portico surrounding the open courtyard, and, on the left, to a new steel stair floating within the existing walls. The stair provides access to the basement under the courtyard and, through the basement, to the addition.

The architects renovated and "classicalized" the original building by rebuilding vaults where they were missing or where they should have been. They also inserted glass into the arches of the portico to create





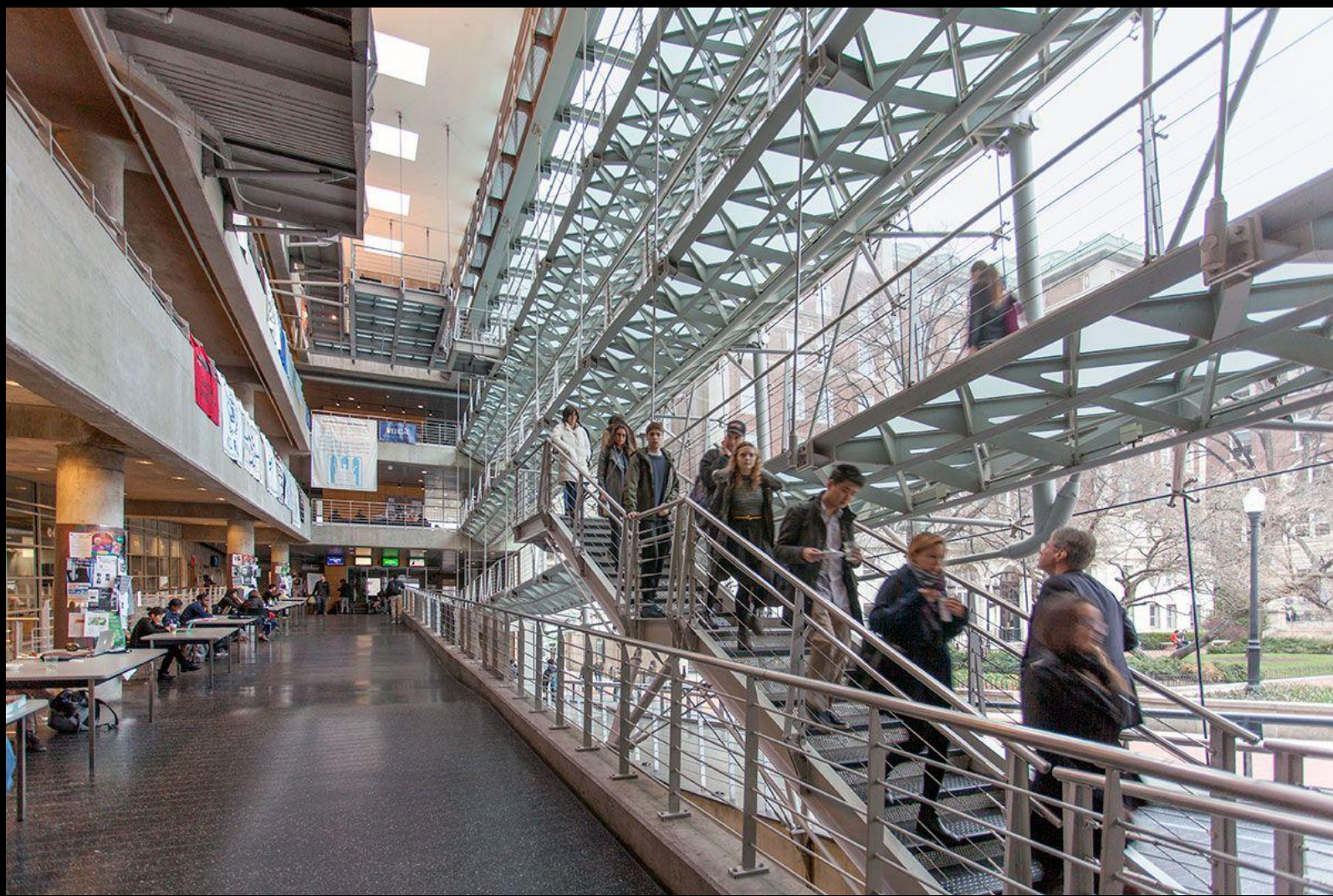
ABOVE: The addition closes off the courtyard between the two wings of the original building.

OPPOSITE, ABOVE: On the interior of the addition, natural light is diffused by the screen of terracotta panels on the facade.

OPPOSITE, BELOW: The path from via Roma to the fields on the outskirts of town passes between the original building and the addition.

Lerner
Hall
NY
Bernard
Tschumi

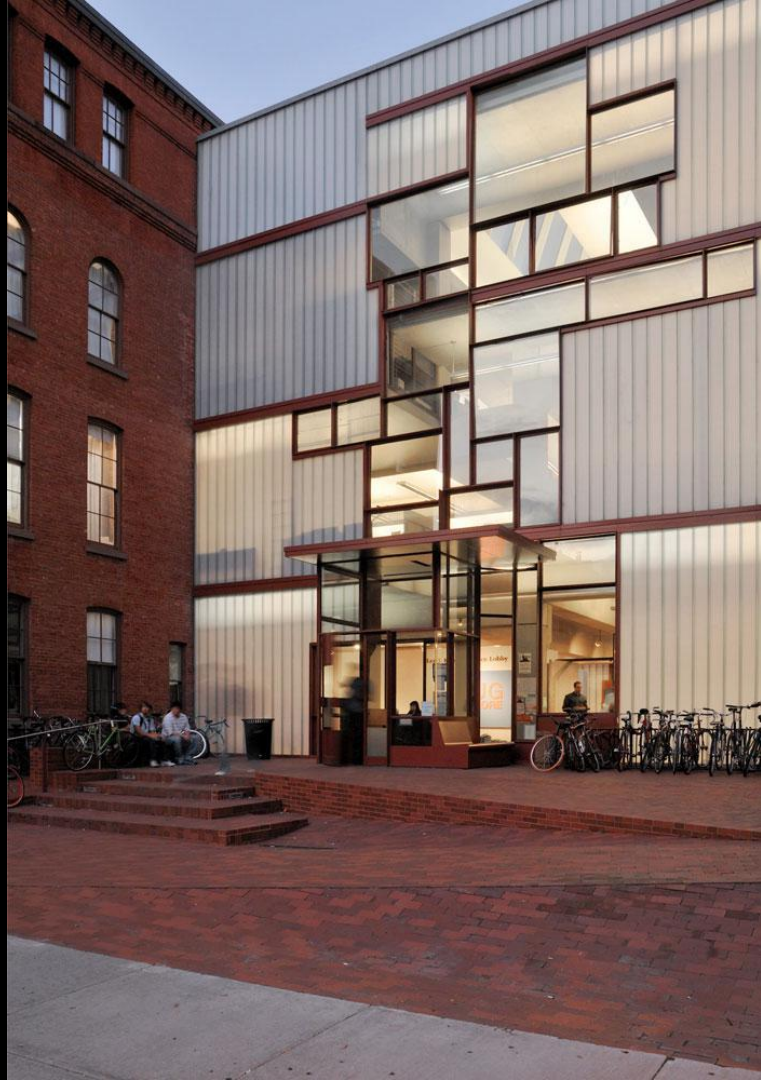






Higgins
Hall
Steven
hall





PARASITES



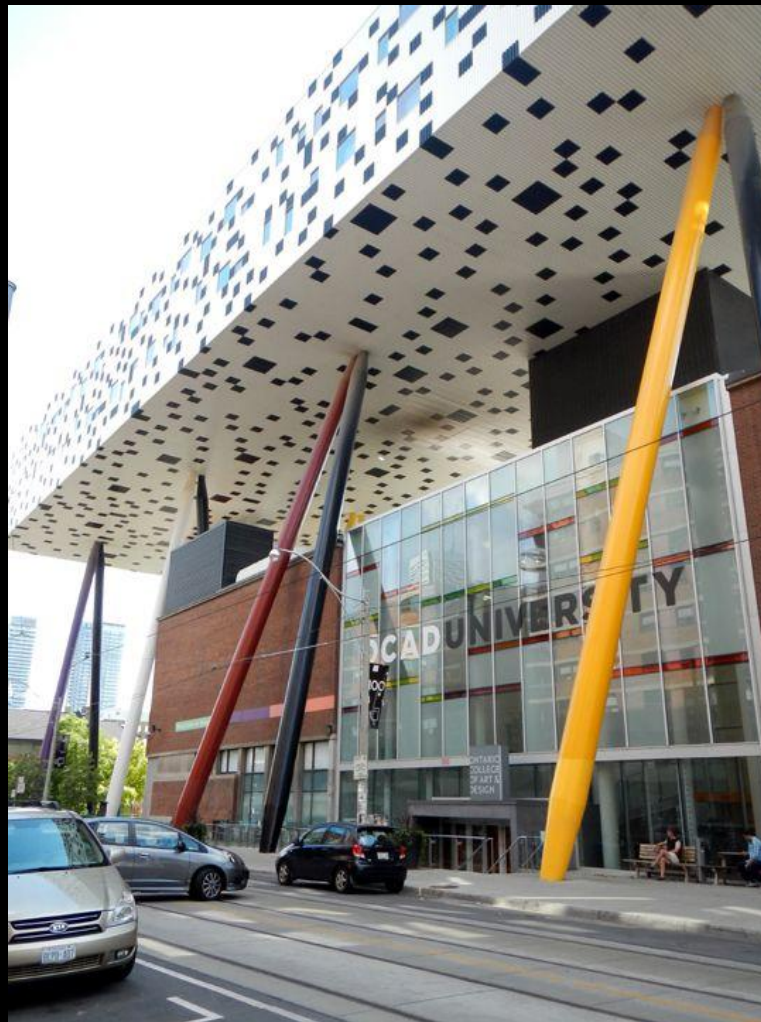
Dependent additions that coexist with and transform the host building. Bibliography 2

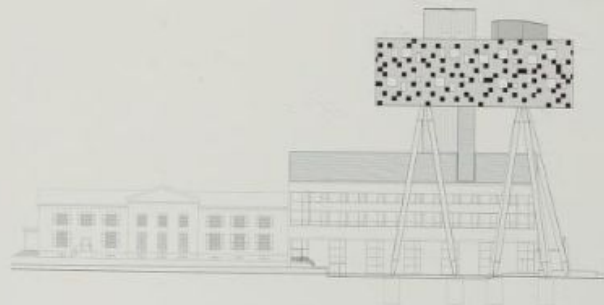
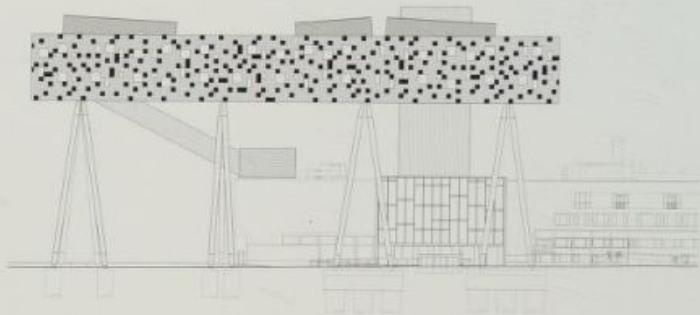


Custom
Building
Boston



OCAD
University
Toronto

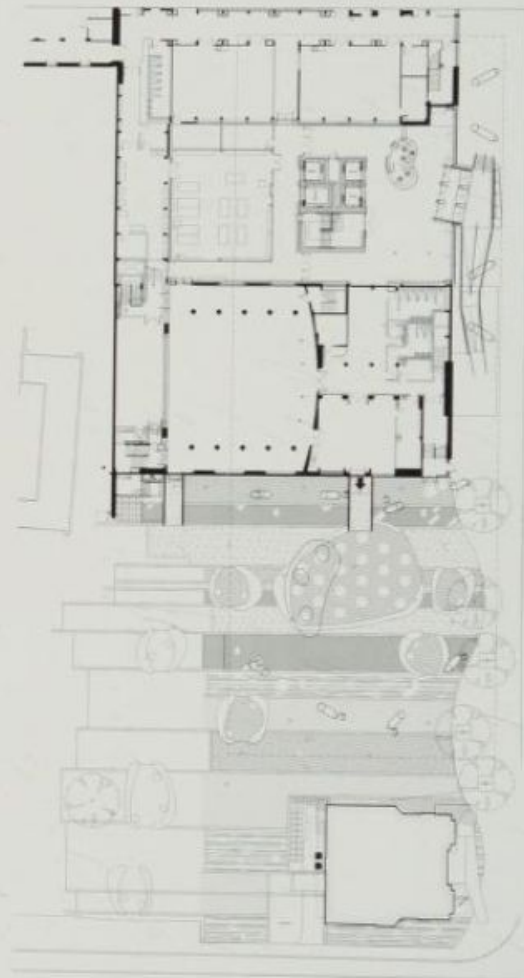
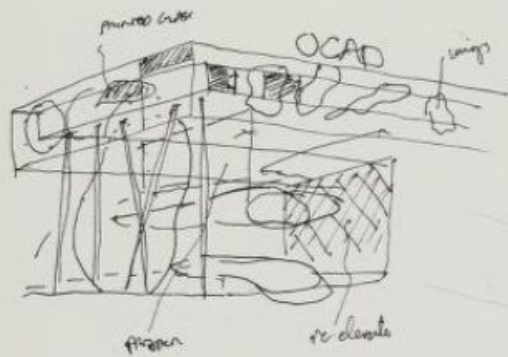




ABOVE Study elevations, McCaul Street (top) and south elevation with Grange Park at left.

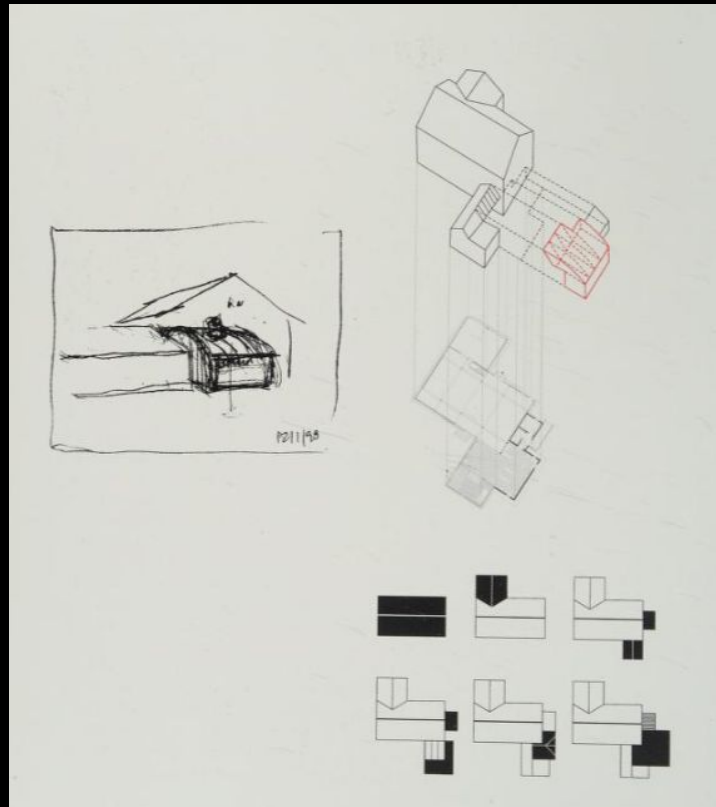
OPPOSITE Addition seen from McCaul Street (top) and from Grange Park.





Chesterwood
Gallery
Massachusetts





Fire and Police
Station
German





Rucksack
House
Germany
By by Stefan
Eberstadt







ABOVE, LEFT Air raid shelter in Munich, where Ebershoff developed the Rucksack concept.

ABOVE, RIGHT Yves Klein, *Un Homme dans L'Espace-Le Peintre de l'Espace Se Jette dans la Vie*, 1960.

FAR LEFT Overhead view.

LEFT AND BELOW Plan and section; cable support is slung over existing building and anchored at the rear.

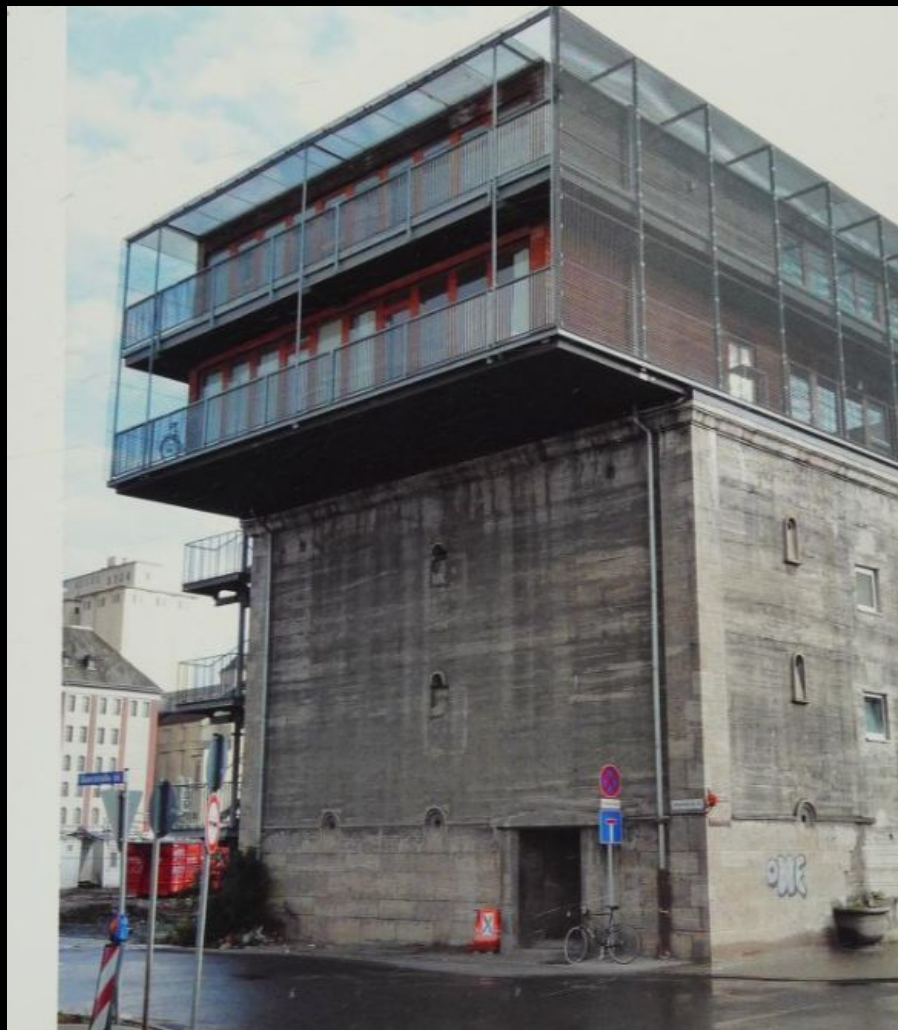
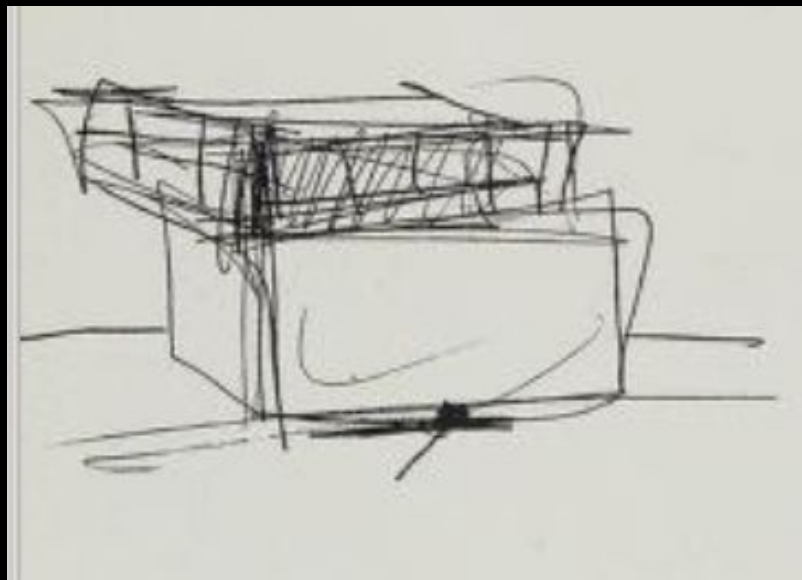


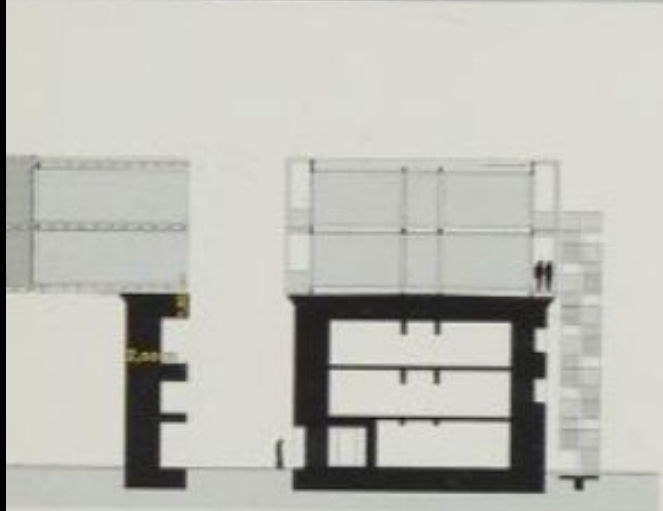




Culture
Bunker
Germany







Culture
Center
Germany





GEMINI RESIDENCES "FROSILØEN"

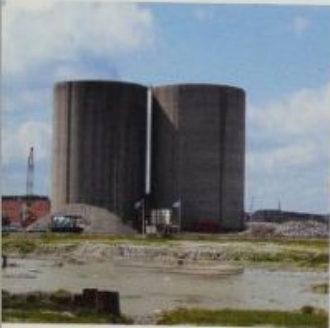
Islands Brygge, Copenhagen, Denmark

2001-5

MVRDV & JJW Arkitekter



Google Maps



TOP Aerial view of Islands Brygge in Copenhagen Harbor.

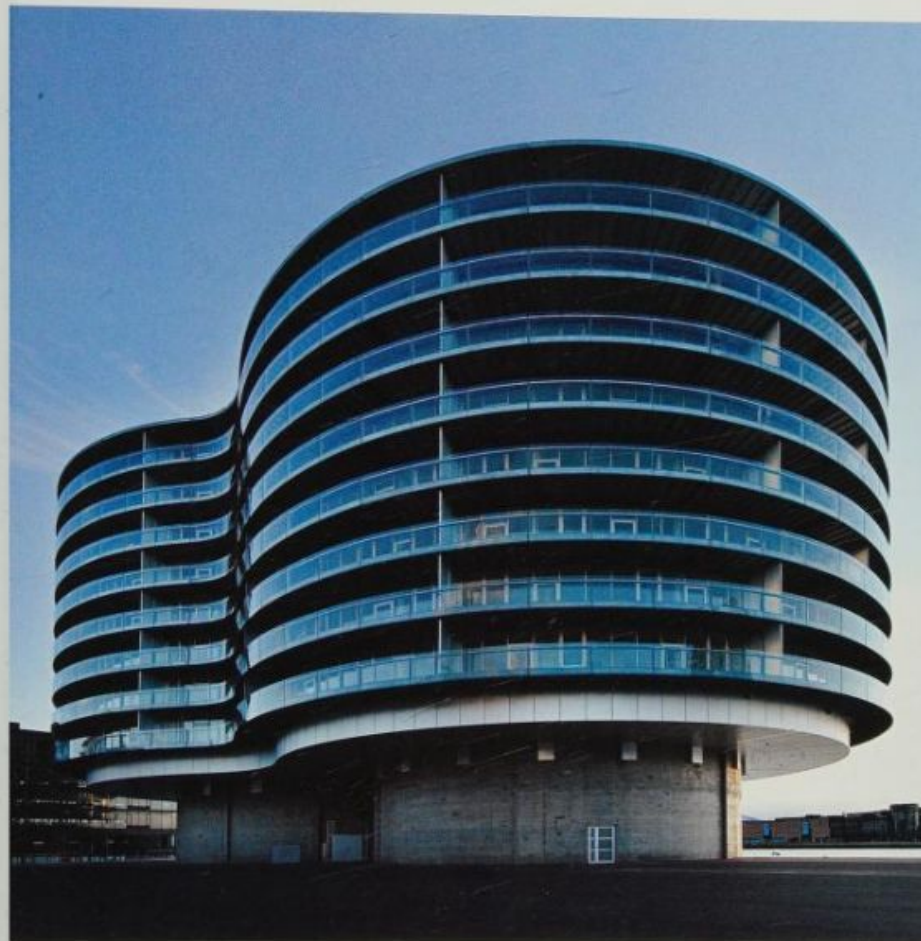
ABOVE Grain silos before intervention.

OPPOSITE Grain silos wrapped with apartments and balconies.

This project, located in Copenhagen Harbor, reuses two grain silos, built in 1963 by the Danish Soybean Cake Factory, to provide eighty-four apartments and parking.

The two concrete silos are used as a core onto which the architects have grafted a series of floor plates accommodating the new program. The residential perimeter consists of two concentric rings: one for the living spaces—open plans with kitchens and bathroom cores freestanding in the apartments—and one for balconies. The plan of the rings is generated by the center point of the silos. As a result, the form of the new parasite is a direct magnification of the concrete core. The eight stories of residences are lifted off the ground and cantilevered outward, and the walls of the silos can be seen supporting the new sleek, sinuous glass balconies above the second floor. The interior void provides access to the apartments via common balconies, again following the geometry of the original construction. The historic void can be experienced, and it plays a part in the life of the building.

The architects have commented on the recovery of industrial areas in the contemporary city, stating that "excellent views, waterfronts, proximity to the center and an original character make most of these developments instant successes. The most wanted apartments in these projects are usually the converted warehouses that combine a modern





802 NINTH AVENUE

New York City
2009

Clemons Inc. with Anton Associates



George Weller

ABOVE Aerial view of Far West Side of Manhattan.

OPPOSITE The metal and glass addition rises beside the nineteenth-century tenement and extends across the roof.

This is an addition to a four-story tenement, one of two designed by James W. Cole in 1887 and still standing on Ninth Avenue between 53rd and 54th Streets in Manhattan. The owner wanted to build to the maximum square footage allowed under current zoning regulations and the existing tenement was underbuilt according to the current allowable floor area ratio (FAR).

To achieve the maximum area allowed under current zoning regulations, the project adds two residential floors on top of the existing four-story building and four stories on a narrow side yard to the north of the building. New retail space, now occupied by a café/restaurant, was created on the ground floor by replacing the masonry wall with a glass wall. The original building and the addition are a single entity. Both are entered through the original tenement stair, which has been extended to provide access to the new floors. Similarly the existing fire escape on the Ninth Avenue facade has been extended to serve the addition. The original building had four apartments per floor, and this pattern remains in place up to the fourth floor. On the fourth floor, the two buildings begin to mesh to provide larger apartments. The rear unit becomes a duplex at the front (clearly visible in the pattern of windows just above the triple-height commercial space added to the north). The fifth-floor plan frees itself from the tenement pattern altogether, providing one unit on the front end, at the back, the lower floor of a duplex apartment extending to the sixth floor.

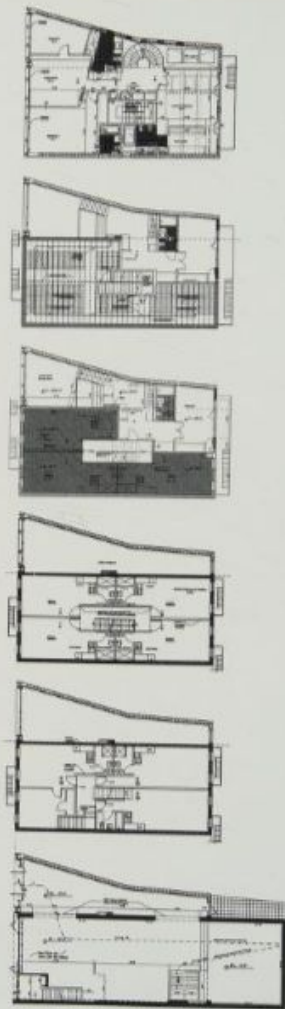
The addition differs from the original in its materials and scale.





ABOVE AND RIGHT Section and plans.

OPPOSITE The tenements retain their primacy when seen from the south.



stated by the extension of the fire escape to the addition, and it is clearly felt in the everyday use of the original stair. This is a sheltering parasite, but an addition that depends on the existing building as it serves to renew it.

A number of deft moves (like the slight cant of the fifth-floor glass wall, the continuous beam connecting the buildings at the ground floor, and the large expanse of glass) emphasize the visual differences. The interpenetration of both volumes in three dimensions and of both street facades creates an interesting relationship of old and new, of host to parasite. A diagram of this addition probably would be a C-clamp holding the existing building, although the reality of the interior spaces is more complex.

Many tenement buildings are demolished because they are not particularly cherished, but this example has a better chance of survival than others because it has been transformed into a new building.





LEFT The new entrance and retail space provide a continuous base for the combined buildings.

OPPOSITE The original cornice becomes a platform for a balcony.





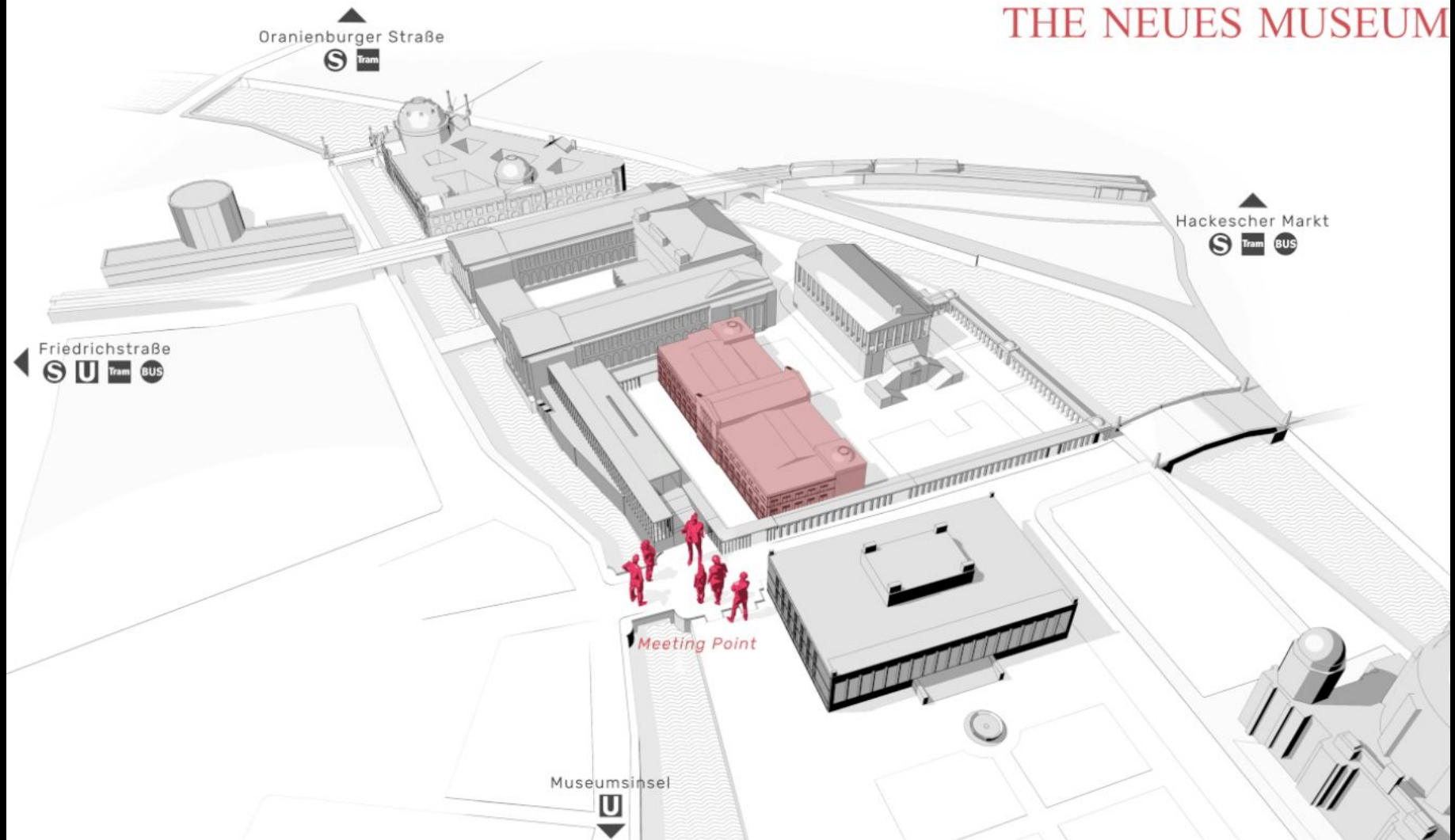
Neues Museum
Germany
David Copperfield







THE NEUES MUSEUM

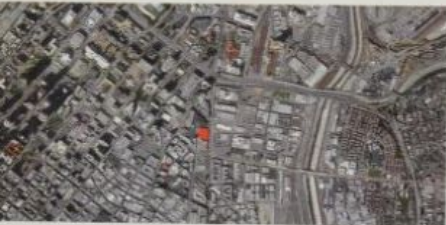


TEMPORARY CONTEMPORARY Museum of Contemporary Art

Los Angeles, California

1982-83

Frank O. Gehry Architect



Google Maps

ABOVE Aerial view of the Little Tokyo neighborhood.

OPPOSITE Lobby and admission desk.

In 1982 the Los Angeles Museum of Contemporary Art commissioned Frank Gehry to design the reuse of two warehouses as temporary exhibition space during the construction of a new museum building, designed by Arata Isozaki. Gehry's idea and its execution were so successful that the building is now a permanent part of the Museum of Contemporary Art, known as the Geffen Contemporary at MoCA.

The project reused the Union Hardware warehouse and an adjacent police garage in the Little Tokyo neighborhood to provide 55,000 square feet of exhibition space. Gehry left the exterior intact, except for new entrance doors and the addition of a new canopy. Made of chainlink fencing and steel trusses, the canopy extended the space into the street and provided a place to congregate and a sign for the building's new use. Inside the old loading dock became a new entrance "lobby." There are two large, open gallery spaces where the original industrial wire-glass skylights and clerestory windows admit natural light.

Faced with a minimal budget Gehry left most of the existing structure "as is," simply cleaning it. As he observed, "We did sweep the floor." He





ABOVE: Aerial view before intervention.

BELOW: Restored exterior.

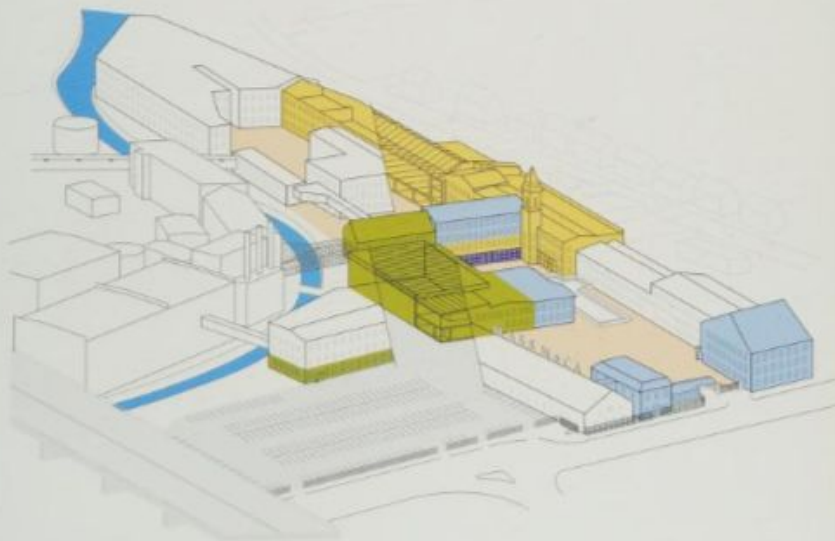
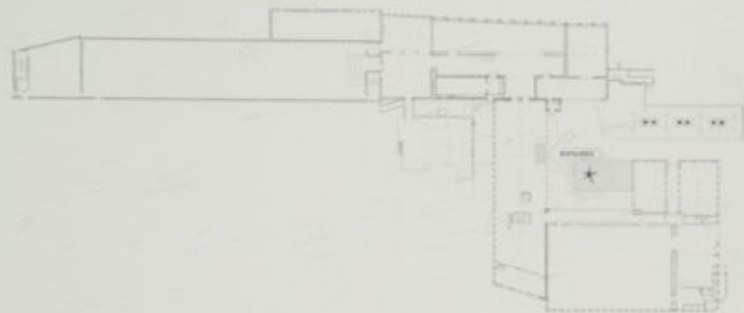
OPPOSITE, ABOVE: Ground floor plan.

OPPOSITE, BELOW: Site planning diagram.

they wanted the work to be open-ended and to "allow things to happen."

The evolutionary line of this type of intervention runs through Scarpa's renovation of the Castelvecchio and the Temporary Contemporary. Geluy's approach wove the new and the old into a coarse textured cloth that retains the distinct parts. At MoCCA, Bruner Cott created a finer weave with overlays and localized interventions. Parts of the complex have been retained as stabilized ruins as are earlier curious overlays; industrial elements are recombined into new objects.

This goes beyond the nineteenth-century fascination with romantic ruins. These ruins were in the distance, frozen in an eternal state of "yesterday," to be viewed but not reached, forever a subject of longing. Now the ruin is brought into the present and traces of those who made the building what it is are integrated into the life of the site. This is a dynamic process, a collective work that is ongoing and produces a physical environment where each individual's contribution is interwoven with the contributions of others and where the passage of time itself is recognized and affirmed.





ABOVE AND OPPOSITE show structure and existing finishes in the galleries.



MONASTERY FOR THE BROTHERS OF TILBURG

Vught, The Netherlands

2000

Max and Suckale Architects



Source: Max

ABOVE: Aerial view of the monastery.

OPPOSITE: A glass connector links the chapel and the new auditorium.

This project, located on an estate at the edge of Vught, a medium-size city in the Netherlands, consists of the threading of several wings into an existing series of buildings built and expanded over the course of three centuries.

Max and Suckale was selected through a competition organized by ZIN, a new entity founded by the Brothers of Tilburg, a lay order, and Bicket, an organization seeking to invest in education ventures geared to mid-career business people. The existing structures included a two-story building in the center (originally an eighteenth-century hunting lodge with a second story added in the nineteenth century), flanked on the right by a chapel and, on the left, by another two-story building. Behind the chapel was a fifteenth-century barn, itself an addition and practically in ruins.

The intervention consists of the addition of an auditorium building, clad in Dutch, to the right and a new residential wing at the rear as well as the reclaiming and expansion of the barn. A narrow two-story link connects the auditorium wing with the existing buildings; this new "spine" is, at times, absorbed into the buildings and, at times, visible from the outside. The plan scheme is direct, pragmatic, and logical.

The key formal idea is the displacement of the boundary between the old and the new. The auditorium is clearly modern, a horizontal volume with a flat roof whose solid upper story floats on a glass base. This upper section is clad in Dutch, a traditional material whose soft edges, scupper details, and weathering are powerful reminders of the material's vernacular origin. This is a hybrid form alluding to the co-existence of two time periods, two aesthetics contained in the same building. The clear





MILL CITY MUSEUM

Minneapolis, Minnesota

2007

Meyer, Scherer and Rockcastle



Google Maps

detail, corner view of the Museum
Street and St. Anthony Falls

detailing structural elements from
the original building remains in the
new courtyard

The Mill City Museum occupies the ruins of the Gold Medal Flour mill on the banks of the Mississippi River. Designed by C. C. Wadsworth in 1878 and rebuilt after a fire by William de la Barre, an Austrian engineer, the building was once the largest flour mill in the world.

This complex, composed of three silos and production buildings served by rail spurs, remained empty for twenty-six years after the mill closed in 1965, when flour milling no longer depended on water power and could be done closer to the wheat fields. The empty buildings burned in a spectacular fire in 1991 and they were left in ruins until 1994 when the Minneapolis Community Development Agency reimagined the site as a catalyst for the area's redevelopment. The project was headed by the Minnesota Historical Society, which retained the firm of Meyer, Scherer and Rockcastle. The new architectural elements and the stabilized ruins create a new building where old and new are intertwined and combined to form a richly layered design.

For Thomas Meyer, this commission was the culmination of a personal journey that began in the late 1960s. As a young man, he would explore the silent industrial sites around the St. Anthony Falls and visit a friend who was living in the deserted Wadsworth Mill. The two became students and watchers of the building. Meyer thought of turning it into a museum of Minneapolis; later, he gave this assignment to his architecture students. By the time Meyer, Scherer and Rockcastle received this commission, the project was infused with a rich array of ideas and feelings developed collectively over time.





ABOVE View from the museum across the courtyard toward the Mausoleum.

RIGHT Original windows opening in the wall.

OPPOSITE New elevator shaft and water corridor.





ABOVE AND RIGHT
 juxtaposition
 of new and old
 materials.

OPPOSITE PAGE
 entry hall.





Kids Pod (Australia) – Mihaly Slocombe

Hufton crow
military-history
museum

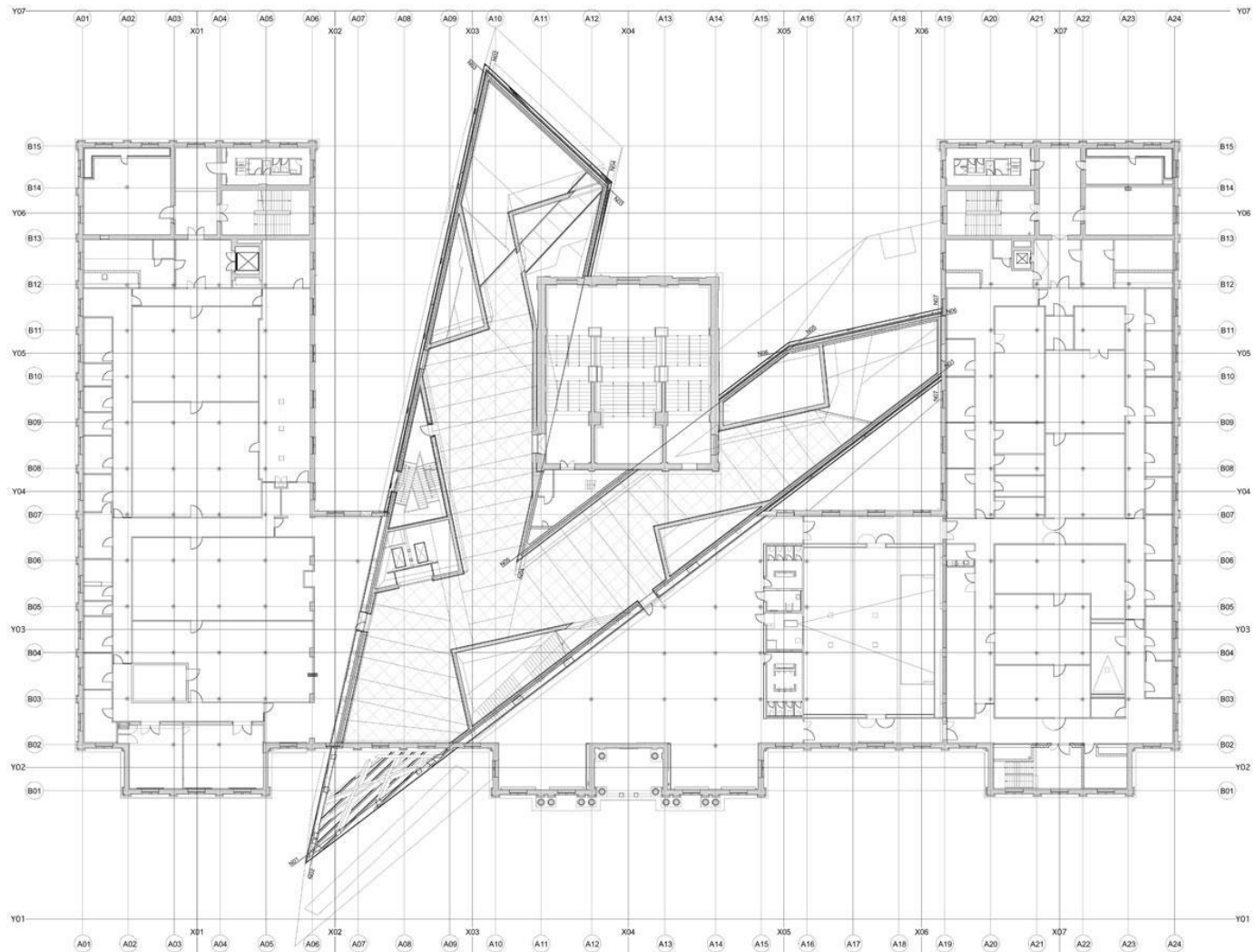
Germany

Daniel Libeskind









Louvre

Museum

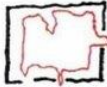
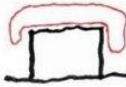
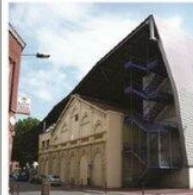
France

I.M.Pei





Summary of Bollack's Adaptive Reuse Strategy

INSERTIONS	PARASITES	WRAPS	JUXTAPOSITIONS	WEAVING
				
New inserted into old Existing as container, protection and nesting	New benefits from old Attaching to side or top New and old become one	New wraps, encasing parts of old, roofs/walls, for protection	New stands next to original, not engage in an obvious dialogue	New weaves in/out of old Old is edited New elements inserted into/over
				
Doma Gallery Baltimore, Maryland W Architecture & Landscape Architecture Photo © Alan Karchmer w-architecture.com	Sharp Centre for Design Toronto, Canada Alsop Architects Photo © Richard Johnson arcspac.com	Santa Caterina Market Barcelona, Spain Enric Miralles & Benedetta Tegliaque Architects Photo © Alex Gaulier arcspac.com	Higgins Hall, Pratt Institute Brooklyn, NY Steven Holl archdaily.com	Mill City Museum Minneapolis, Minnesota Thomas Meyer MSR Architecture Photo © Kris Lindahl (top) Photo © Nikki Tundell (bottom)
				
Champollion Museum Figeac, France Moati & Riviere Architects Photo © Nelly Biaya musee-champollion.fr	Rucksack House Stefan Eberstadt Leipzig, Germany Photo © Claus Bach architectmagazine.com	Le Fresnoy Art Center Tourcoing, France Bernard Tschumi Architects Photo © Monacelli Press	Nembro Library Expansion Nembro, Italy Archea Associati Firenze, Italy architonic.com	Monastery for the Brothers of Tilburg Vught, The Netherlands Marx & Steketee Architecten phaidon.nl

Formal Strategies (Geometric/Generative)	Subtraction	Removing mass to create voids/light wells.	Two Moon (Moon Hoon)
	Folding	Bending 2D planes into 3D volumes.	Air Force Academy Chapel
	Stacking	Vertical/horizontal layering of units.	The Interlace (Ole Scheeren)
	Peeling	Detaching layers of the facade or roof.	Lafayette 148 (Tsz Yan Ng)
	Carving	Sculpting solids (monolithic logic).	Kailasa Temple (Ellora)
	Datum	Using a constant reference (line/plane).	Salvation Army (Le Corbusier)

ADAPTIVE REUSE FORMAL TYPOLOGIES

```
graph TD; A[ADAPTIVE REUSE FORMAL TYPOLOGIES] --> B[EXTERNAL ADDER]; A --> C[INTERNAL MUTATOR]; A --> D[SYSTEMIC FUSION]; B --> B1[• Wraps]; B --> B2[• Parasites]; B --> B3[• Encapsulation]; B --> B4[• Propping]; C --> C1[• Insertions]; C --> C2[• Infill/Plug]; C --> C3[• Carving]; D --> D1[• Weaving]; D --> D2[• Juxtaposition]; D --> D3[• Grafting]; D --> D4[• Melding];
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EXTERNAL ADDER

- Wraps
- Parasites
- Encapsulation
- Propping

INTERNAL MUTATOR

- Insertions
- Infill/Plug
- Carving

SYSTEMIC FUSION

- Weaving
- Juxtaposition
- Grafting
- Melding

Why don't we continue to make same Opera songs? Why don't we continue creating Palace of Versailles?



Whatever you make later is sequentially CHEAP worth of \$2!

ADAPTIVE REUSE FORMAL TYPOLOGIES

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graph TD; A[ADAPTIVE REUSE FORMAL TYPOLOGIES] --> B[EXTERNAL ADDER]; A --> C[INTERNAL MUTATOR]; A --> D[SYSTEMIC FUSION]; B --> B1[• Wraps]; B --> B2[• Parasites]; B --> B3[• Encapsulation]; B --> B4[• Propping]; C --> C1[• Insertions]; C --> C2[• Infill/Plug]; C --> C3[• Carving]; D --> D1[• Weaving]; D --> D2[• Juxtaposition]; D --> D3[• Grafting]; D --> D4[• Melding];
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EXTERNAL ADDER

- Wraps
- Parasites
- Encapsulation
- Propping

INTERNAL MUTATOR

- Insertions
- Infill/Plug
- Carving

SYSTEMIC FUSION

- Weaving
- Juxtaposition
- Grafting
- Melding

Summary Table: Datum in Adaptive Reuse

Datum Type	Adaptive Use Strategy	Why it works
Linear	Walkways / Tracks	Guides the visitor through different eras of the building.
Planar	New Mezzanines / Roofs	Creates a clean "baseline" that hides industrial clutter.
Volumetric	Atriums / Light Wells	Anchors multiple floor levels around a shared visual core.

If you have a historic building with many small, disconnected rooms, inserting a Linear Datum (like a long, modern bridge or hallway) is the fastest way to make the space feel functional and unified.

Subtraction

Instead of adding to a structure, this strategy involves removing mass to create space.

- The Action: Carving out courtyards, light wells, or atriums from a solid volume.
- Purpose: To bring light into deep floor plates or to create a "negative" focal point within a dense building



Architects used high-tech diamond-wire cutting to carve a massive, vaulted atrium out of the center of the concrete silos. Instead of adding walls, they cut away the existing structure to reveal a "honeycomb" interior that resembles a grain of corn



MIT Met Warehouse (Cambridge) – Diller Scofidio + Renfro



Tate Modern (London) – Herzog & de Meuron

- The Building: The Bankside Power Station.
- The Subtraction: The primary move was the complete gutting of the machinery from the massive central hall. By subtracting the industrial equipment, they created the "Turbine Hall," one of the largest indoor public spaces in the world.

Why Subtraction is used in Adaptive Reuse:

- Light Infiltration: Older warehouses are often too "thick" to meet modern building codes for natural light; cutting a core (subtraction) solves this.
- Weight Reduction: Removing heavy interior floors can allow for new, lighter structures to be added on top (Parasite strategy) without overloading the foundation.
- Legibility: It reveals the "anatomy" of the original building that was previously hidden behind walls or machinery.

Stacking & Stratification

Layering volumes or "skins" vertically or horizontally.

- The Action: Placing distinct functional blocks on top of one another, often offset to create terraces.
- Purpose: To increase density on a small footprint or to physically separate different programs (e.g., retail on the bottom, residential on top) while maintaining a clear legible boundary between layers

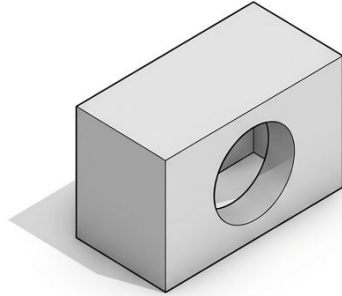
Folding

Treating the building's planes (floors, walls, and roofs) as a single continuous surface.

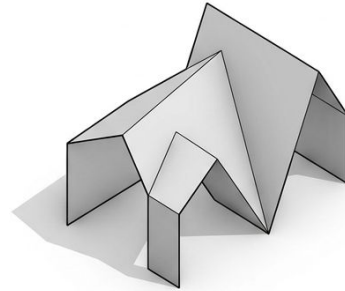
- The Action: Bending a 2D surface into a 3D form, where a floor might transition smoothly into a wall and then into a roof.
- Purpose: To blur the lines between different architectural elements and create fluid, non-linear spatial transitions

Peeling

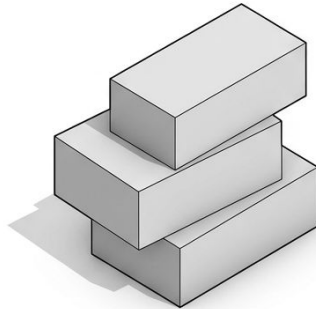
- Lafayette 148 Global Headquarters (Tsz Yan Ng): The exterior concrete "fins" appear to be peeled away from the building's facade to act as a brise soleil, controlling light while adding texture to the envelope.
- Yale Sculpture Building (KieranTimberlake): This building uses a multi-layered envelope that "peels" back different skins (glass, timber, metal) to manage transparency and privacy for the artists inside.



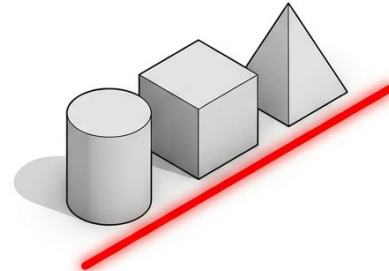
SUBTRACTION



FOLDING



STACKING



DATUM

Summary Table

Project	Datum Used	Function in Adaptive Reuse
High Line	Original Rail Tracks	Organizes paving, seating, and path.
CaixaForum	Lifted Ground Plane	Unifies public entry under a "floating" wall.
Zeitz MOCAA	Grain-shaped Atrium	Organizes 42 silos around a central void.
Tate Modern	Glass Roof Beam	Balances verticality with a horizontal reference.

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