How Many Lives for a Building?

Francis Rambert (Paris)

How many lives? The angle of the question stresses a very important subject: transformation as creation. We have to keep in mind this famous statement by Carlo Scarpa: "preservation means transformation".

The exhibition "Un bâtiment, combien de vies?", prepared by la Cité de l'Architecture et du Patrimoine, presents 72 projects selected in Europe. It goes beyond requiring obsolete buildings to be upgraded to current standards or to be renovated to put forth the idea of transformation as an act of fully-fledged creation. The exhibition offers a chronological perspective on an international scale that, over 50 years, has set down milestones in the evolution of the transformation-versus-destruction debate.

And if we *systematically* stopped demolishing in order to build? That's the point.

After the postwar reconstruction guided by a sense of urgency, then the "bulldozer-renovation" of the 1960s and 1970s, driven by the tabula rasa ideology, the time has come to transform existing buildings and urbanised territories.

Faced with the terrible reality of urban sprawl, the hungry consumer of natural spaces, the city of the 21st century is seeking new and more compact models. Everything is now a question of re-conquest, re-appropriation, reuse, recycling. This urban renewal has thrust us into the era of superimposition, of palimpsest. It opens up the way for reinterpretation, even for "reinvention", one of Viollet-le-Duc's favourite approaches.[1]

There is logic in transforming the built heritage: the densification of the city encourages it, the reflection on durability leads to it. This is undoubtedly what the new spatial, technical and programmatic experimentation of the 21st century is, in an economic equation that must be solved. "The durable is the transformable", Christian de Portzamparc sums up.[2]

Whether it is a radical restructuring or a subtle mutation, the idea here is not to "preserve" at any cost, but clearly to transform: because a building does not conform to the demands of a period, because it is sometimes urgent to invent a new use. Reflection on a new programme is decisive in order to make the operation viable, keeping in mind that economics are at the heart of the subject. The cost of removing asbestos from buildings erected during the boom years of 1945 to 1975 weighs heavily in the balance.

Mutability seems to be a major subject of modernity today: Ricardo Bofill with the Fàbrica in Barcelona, Lina Bo Bardi with the Sesc Pompeia in São Paulo, Renzo Piano with the Lingotto in Turin, Dominique Perrault with the Research Centre in Saint Germain en Laye, Herzog & de Meuron with the Tate Modern in London have each in turn demonstrated this by developing very interesting theoretical approaches. Their buildings have thus become icons of transformation. Let's look at some thematic examples.

The challenge of transforming the un-transformable

Sammlung Boros in Berlin, Realarchitektur, 2008

As its new life is devoted to contemporary art, the bunker (very well designed by Karl Bonatz in 1945) underwent a dual transformation: on the one hand, the development of exhibition spaces in the concrete shell, on the other, the building of a penthouse as a superstructure. Whereas on the outside the operation was carried out by addition, inside it was done by subtraction (fig. 1).

Bunker-Tea room in Vreeland, Netherlands, UNStudio architects, 2006

In a genuine metamorphosis, the prismatic metal building engulfs the original building of 1936 without making it disappear. Then a geometry exercise begins by developing a new cantilevered structure of about 10 metres. This project is a "sculpture that grows out of another sculpture", as the architects emphasise.[3] This "camouflage" performance was made possible by the bunker that serves as a counterweight to the extension.

Gemini Residences in Copenhagen, Denmark, MVRDV, 2005

The radicality of MVRDV's concept responded to the brutalist architecture of the existing object of 1963: rather than attempting openings in the concrete shafts so that housing units could be inserted inside the carcass, the architects preferred to preserve the void of the central core and graft an inhabited envelope on the exterior. The central space takes on a strong character, enlivened by sculptural staircases and panoramic elevators. By means of a six-metre-deep cantilevered structure, the housing rings totally envelop the cylinders on eight levels, creating terraces in a single continuous movement (fig. 2).

Fig. 1: Sammlung Boros Berlin

Fig. 2: Gemini Residences Copenhagen

Memorial in Rivesaltes, France, Rudy Ricciotti, 2015
Faced with the subject's sensitivity, an internment camp built in 1939, the architect designed a building that was decidedly not loquacious. The strategy was to occupy the only possible void without touching the plan's organisation or the integrity of the existing barracks. The result is an enormous oblique plate that barely emerges from the surface: 230 metres long and 20 metres wide, a concrete monolith, a block of material. "This mass has a very tectonic relationship with the ground", Rudy Ricciotti stresses.[4]

Culture as a trigger for transformation

The National Centre of Dance in Pantin, France, Antoinette Robain et Claire Guieyesse, 2004
Built by Jacques Kalisz as an administration centre in 1972, this sculptural concrete building, an example of brutalist architecture, for decades had been judged by the population as oversized and unfriendly. The municipality had to take the decision to leave the building and sold it for one symbolic French Franc. Then the Ministry of Culture took charge of this architectural work and launched a competition in order to transform it into a dance centre. The architects renovated the exterior to preserve this well designed "architecture d'auteur".

CaixaForum in Madrid, Herzog & de Meuron architects, 2008
The field of operation was a small power plant of 1899 and the adjoining gas station area. As only the brick envelope of the plant was listed, the architects were free to adapt this double hall to a new cultural life. In this context of restrictions and tight space, the architectural scenario also provided a genuine urban strategy: good-bye was said to the gas station, which opened up public space, while the industrial building was raised to free up a diagonal passage. The covered square leads to the open square without the least discontinuity in this sequence of public spaces. Through this approach, the architects clearly separated the elements of the programme, creating de facto two worlds: the underground universe, notably with the auditorium built under the new square, and the hanging universe, with exhibition rooms, a restaurant and offices.

Macro museum in Rome, Odile Decq & Benoît Cornette architects, 2010
The Peroni brewery that developed its industrial activity in a mostly residential fabric launched its conversion to culture in 1999. In a second phase, the museum turned into a block and the new building became the support of an elevated square. By opening a fifth façade towards the city, the architect offered a public space not planned in the programme, at the end of the museum's itinerary. This terrace is a landscape in itself with its broken lines and colour that contrasts with the palette of the Eternal City.

Media library André Malraux in Strasbourg, France, Jean-Marc Ibos, Myrto Vitart architects, 2008
Taking advantage of the magnificent 1938 concrete structure with its columns topped by pyramidal capitals, the architects imagined their expansion project as "the strict vertical and horizontal extension" of the existing building.[5] The former silo, which has become the entrance to the media library, announces the theme through its spectacular 30-metre-high atrium: the praise of concrete and reuniting the whole by means of the colour red, a chromatic guide in the new cultural spaces. A 1,000 m² double-skin façade offers the reader

Fig. 3: Médiathèque Strasbourg

Fig. 4: FRAC Nord-de-Calais in Dunkerque

more natural light and the building a new through display (fig. 3).

Le Silo in Marseille, France, Carta Associés architects, 2011
Caught in the interplay of infrastructures, between docks and a raised highway, the wheat silo built on piles in 1927, stretches its mass over 130 metres. Its new use was a dual challenge: how could the expressive architecture of the period be capitalised on and how could one shift from grain processing to sound processing. The variable-capacity theatre is housed in the upper part of the building to take advantage of the "breast rooms," a series of concrete cones that supplied the sack-filling space with grain. It became the theatre's lobby.

FRAC Nord-Pas-de-Calais in Dunkerque, France, Lacaton & Vassal architects 2013
The question was how to install the Fonds Régional d'Art Contemporain (FRAC) in a former industrial cathedral 35 metres high above the Dunkerque port.
   "The duplication is the attentive response to the identity of the halle," was the answer by Lacaton & Vassal.[6] In this project that proposes the dual option of conservation/duplication, the void is side by side with the solid, and the opaque with the transparent. By preserving this "sensation of space" in the existing hall, the architects have made the place sacrosanct while offering a total freedom of usage, enabling this height potential to be used (fig. 4).

Fondation Jérôme Seydoux-Pathé in Paris, Renzo Piano Building Workshop, 2014
At the centre of a Haussmannian block, an unexpected form emerges, rising 25 metres at its highest point. Organic, this

architecture is the result of the interpretation of urban planning rules on this triangular plot, respecting distances vis-à-vis façades in the centre of the block. The neighbours have benefited from the curved object's typology which increases the potential of light penetration. This action of regenerating the Parisian urban fabric was designed with the idea of reducing the building's footprint on its site. A small amount of vegetation succeeds in finding a role in this scenario on reconquering the dense city.

The mutation of working places

"57 Métal" in Boulogne-Billancourt, France, Jakob+MacFarlane architects, 2004
Designed to manufacture trucks, this plant built in 1984 along the Seine showed capacity to be transformed into a communication centre. Without touching the building's zinc envelope, whose specificity is that there is no difference between the façade and the roof, Jakob+MacFarlane took advantage of this architecture cadenced by a large sawtooth roof and offering height variations. Lightweight honeycomb panels on large white folded and hung picture rails naturally extend the roof's lines. This system redistributes the free space (fig. 5).

École nationale supérieure d'architecture de Paris-Val-de-Seine in Paris, Frédéric Borel architect, 2007
The former Sudac compressed air distribution plant (1891) was transformed into an architecture school. As the school could not be inserted in the only hall that was preserved, an extension had to be designed to admit 2,000 students. A fruitful discussion on conservation plus creation was then begun. "I don't share that very contemporary and almost

Fig. 5: 57 Métal in Boulogne-Billancourt

mystic fascination with the existing, with minimal interventions, with the refusal to dare interpretation," says Frédéric Borel,[7] incidentally very respectful of a building for which the construction interest was to show it to its best advantage (fig. 6).

École nationale supérieure d'architecture in Clermont-Ferrand, Du Besset-Lyon architects, 2015
In this transformation of a sanatorium (built in 1936) into an architecture school, the architects have been faced with the problem of crossing two conflicting logics: preservation and the precaution principle, that is, preserving as best as possible the building's image while adapting it to seismic standards as the school is located in a volcanic region. To manage this paradox, the strategy will be to keep only the south façade of this 110-metre-long blade-building, a fine sequence of modernity, and demolish what is behind it to rebuild. In this major surgical operation, a steel structure will replace the former concrete structure.

Offices in Paris, Atelier d'architecture Franck Hammoutène, 2012
Converting the former Galeries Lafayette warehouses, built in 1913, was obvious, given that the primary function of this industrial building opened real potentialities. The ex-
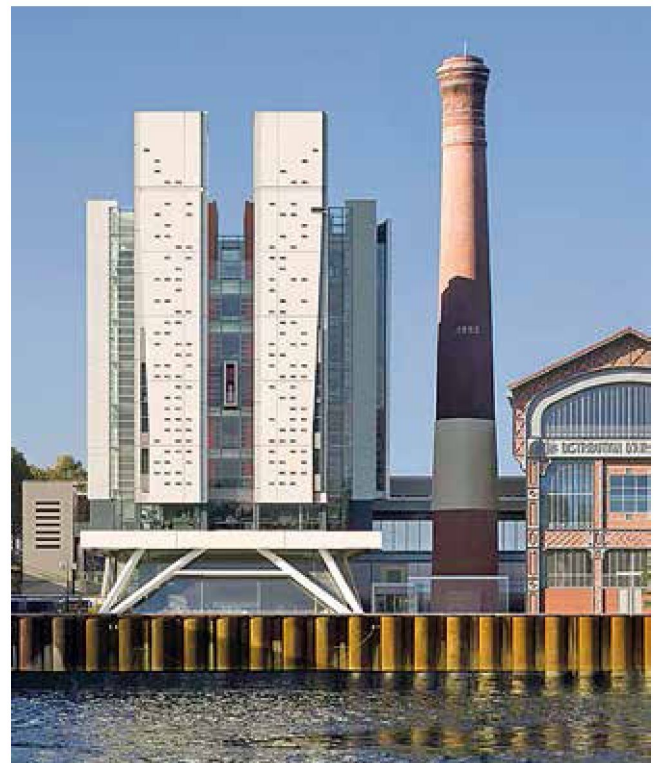

Fig. 6: École nationale supérieure d'architecture de Paris-Val-de-Seine in Paris

isting building (already transformed in the 1960s) had to be stripped of its "finery", only the steel structure being kept. By highlighting the framework, "the quintessence of the original building was re-identified", the architect points out.

**Offices in Boulogne-Billancourt, France,
Dominique Perrault architecture, 2015**
Built in the early 1970s alongside the Seine, this monumental service group of nine towers marks the entrance to Boulogne-Billancourt. But what should be done with this cluster typical of the 1970s? Dominique Perrault took hold of this geometry to reinforce it with the initial idea of "lighting the entrance of the city".[8] The first approach was volumetric: apart from an additional hexagon on the avenue side, he created a 5,000 m² base, bringing together the services available to the 5,000 people who work in a 100,000 m² hub. The next was plastic: he took the opportunity of the upgrading of the façades to print a new rhythm on them with a facet system.

The major question: recycling for the living

Student housing in Arcueil, France, TVK architects, 2010
As part of an urban renewal operation, the transformation of an office building from the 1970s into housing (a 106-unit student residence) marks the encounter between a skin and a framework. In a radical attitude the building was stripped of its façade and deprived of its monumental central core, ensuring vertical circulation. The students profit from a large bay window and direct access to the generous walkways supported by raw concrete brackets.

Housing tower Bois-le-Prêtre in Paris, Frédéric Druot, Lacaton & Vassal architects, 2011
Let's talk about a Manifesto for the "more". A social housing tower has stood on the edge of the Paris beltway since the early 1960s. This transformation project, presented as a preferable alternative to razing, permitted the architects to demonstrate that it was less expensive and more rapid than a demolition/reconstruction: the entire operation was successfully carried out, keeping the inhabitants of the 96 apartments in their building. And then, one day, the tenants saw that the façade of their building had been removed and that their own apartment looked out onto the void, before another new element was added and enlarged it! It was with the idea of "more" (light, thermal and acoustical comfort and inhabitable area) that a three-metre-thick double envelope was grafted onto the existing concrete structure.

Penthouse in Berlin, Christof Mayer & Martin Heberle architects, 2010
20th-century industrial buildings often have the advantage of flat roofs, an opportunity to use the model of a greenhouse prefabricated in France. Inside, the house is divided into two spatial units. A brick structure takes over to create the living

hub. An important point is that the owners agreed to the idea that they needed to adapt to climate variations and that, consequently, the space could evolve. To keep within the idea of a low-cost penthouse in which do-it-yourself would be feasible, the interior layouts were designed based on recycled components.

Shishiodoshi House in Rezé, France, Avignon-Clouet Architects, 2010
An unlikely emergence shook the suburban subdivision housing fabric of the Nantes outskirts. The challenge was to double the surface of an existing house without encroaching on the garden and leaving the existing building as intact as possible. Although the context induced the idea of horizontality, the architects preferred a vertical solution with an 11 metre-high tower, a genuine lookout onto the landscape. This house, picked out of a catalogue, was then transfigured, raising it from an ordinary suburban construction to the status of architecture.

The great challenge: continuing the work

Mercado cultural do Carandá in Braga, Portugal, Eduardo Souto de Moura, 2010
The Braga city market was doomed to be demolished. Twenty years later, the architect was asked to return to the former market and take up his work again, bringing the site back to life. Inspired by the mythic Diocletian's Palace, Souto de Moura decided to "reinvent" his first built work (1980-84) by keeping its lines, because he had noticed that although the "market" function no longer worked, the use of the axes was still valid. The ruin was going to be integrated into the design process. The architect removed the roof, left the "hairy" columns (with visible ends of ironwork), designed a garden in the centre of the ruined modern colonnade and created the new pedagogic spaces in the existing linearity.

French Embassy in Warsaw, Pargade Architectes, 2004
Accompanying the fall of the Iron Curtain, the expansion

Fig. 7: Poste du Louvre Block in Paris

Fig. 8: Docks-en-Seine in Paris

Fig. 9: National Maritime Museum in Helsingør, Denmark

of Europe to include new member states such as Poland raised the question of French representation. At the end of the competition for a new embassy in Warsaw, the fate of the building with a very "Cold War" appearance with its metal panels (by Jean Prouvé) that seemed to turn it into a bunker was finally sealed by the transformation option. The winning architect had defended the idea of giving life back to this 1970s building. The new project dematerialises the building's base, replacing the stratum of metal panels with a glass layer, creating a visible link with the park.

Convention centre in Nancy, France, Atelier Marc Barani, 2014

The mail distribution centre had logically taken its place along the railroad tracks. Its conversion into a convention centre challenges the original concept (1964–73, Claude Prouvé) imagined as flexible, because the sorting process already announced its own mutation. Keeping the original building means revisiting its spaces as exploring a new convention centre typology, in this case vertical. Most of the mail sorting will be preserved to take advantage of the open floor spaces and a new building will replace the halls adjoining the station platforms. The link between the two parts is created by a transversal hall cadenced by spatial sequences.

Poste du Louvre Block in Paris, Dominique Perrault Architecture, 2012–2018

120 years after its construction, the mutation of this major building in the new urban expansion of the late 19th century became a case study. The central post office, designed as a "temporary and transformable" structure (1888), was Julien Guadet's construction manifesto (fig. 7). Contemporaneous with the Eiffel Tower, this building-block, seen from the street, totally conceals its structural brilliance: a 100 percent metal framework. Taking this heritage into account, the architect will modify the morphology while retaining

the structure and develop a system of layers that are super-imposed on every other level to incorporate the new programme, including hotel and restaurants. "You circulate in the structure inhabited by new functions; the industrial block becomes an urban block", Dominique Perrault emphasises.[9]

Infrastructure as a source of architecture

Abolition of Slavery Memorial in Nantes, France, Wodiczko + Bonder, 2012

It is the history of a "found space" transformed into a public space, a space nestled in an infrastructure, discovered during research in the city's archives. Transforming a parking lot into a car-free public space was the first act of reconquering this site. The second was reading in the thickness of the infrastructure, on a 350-metre-long section where the artist and the architect decided to refer this memorial thought of as an itinerary, "a metaphorical and emotional evocation." This original approach was based on giving meaning, injecting memory into a residual site, for in the 18th century Nantes was the largest French slave port.

Docks-en-Seine in Paris, Jakob + MacFarlane architects, 2008

A string of infrastructures along the Seine, the docks, made up the port of Paris. The Cité de la mode et du design emerged from this vestige of a series of industrial warehouses built in 1907. The strategy was to graft a new skin onto the historic framework. Using the "plug-over" concept, Jakob + McFarlane hung a new very geometric structure on it that was the result of a "systematic deformation" of the existing structural grid (fig. 8).

Kraanspoor in Amsterdam, OTH Architecten, 2007

The architects fought to save this vestige of port industry. Built in 1952, the gigantic gantry of a shipyard, 270 metres

long, almost disappeared to make way for a new urbanism plan, in a dock intended to become a business park. The architects won by proposing its reuse: in an exercise in superimposition, the concrete infrastructure became the base of an office block. The architects handled the project in terms of great flexibility in order to adapt the new building to a possible change in use.

National Maritime Museum in Helsingør, Denmark, BIG architects, 2013

Kronborg Castle rises above the Øresund Strait, haunted by Hamlet's ghost. In the perimeter of this Renaissance monument on the UNESCO World Heritage List, the insertion of contemporary architecture immediately became a challenge. Avoiding a frontal attack, the architects radicalised their stance by keeping away from any co-visibility. This disappearance strategy was made possible by the conversion of one of the former dry docks unused since the end of the 1980s. By opting to keep this void that had existed for a century, BIG decided to invest the thickness of the 150-metre-long infrastructure, the dry dock becoming the museum's central element. Only an interplay of footbridges and inclined ramps makes it possible to touch this void (fig. 9).

This selection of projects gives an idea of the diversity of approaches, both theoretical and technical, and of the transformation process. In this period of planned obsolescence, the reprogramming question may be asked with all the more force.

Zusammenfassung

Der Beitrag folgt der These Carlo Scarpas „preservation means transformation". Demnach kann ein Gebäude, speziell der jüngeren Vergangenheit, nur dann langfristig erhalten werden, wenn es gegebenenfalls einem neuen Bestimmungszweck zugeführt wird. Zu diesem Themenkomplex gab es jüngst eine Ausstellung mit dem Titel „Un bâtiment, combien de vies?", vorbereitet von der Cité de l'Architecture et du Patrimoine in Paris. Sie zeigte 72 Umwandlungs- bzw. Umnutzungsprojekte in Europa. Der Autor greift einige dieser Projekte auf und gliedert sie nach den Unterthemen: „Die Herausforderung, das Nichtumwandelbare umzuwandeln", „Kultur als Auslöser für Umwandlung", „Die Verwandlung von Arbeitsstätten", „Recycling für die Lebenden", „Die große Herausforderung: die Arbeit fortsetzen" und „Infrastruktur als Quelle der Architektur".

Footnotes

1 Viollet-le-Duc, Dictionnaire 1854–1868.
2 Portzamparc, Cyberespace 2009, p. 118.
3 Berkel, Bunkering down 2007, p. 154–155.
4 Ricciotti, Ricciotti architecte 2013, p. 31.
5 Jean-Marc Ibos & Myrto Vitart. http://www.ibosvitart.com/index.php/site/projet/institutionnel/strasbourg-andre-malraux-library/texte [20.7.2016].
6 Anne Lacaton & Jean-Philippe Vassal. http://www.lacatonvassal.com/?idp=61# [20.07.2016].
7 Borel, Le symbolique, 2006, p. 25.
8 Dominique Perrault Architecture. http://www.perraultarchitecture.com/fr/news/3329-les_tours_du_pont_de_sevres_-_citylights_ont_ete_inaugurees.html [20.7.2016].
9 Dominique Perrault. Retrieved from http://www.perraultarchitecture.com [20.07.2016].

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Fig. 6: Nicolas Borel
Fig. 7: DPA
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Fig. 9: https://upload.wikimedia.org/wikipedia/commons/-0/05/Danish_Maritime_Museum_exterior.jpg. Foto: News Oresund, Februar 2014 [20.07.2016]