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Second life of a brutalist icon: EDF's housing towers

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Case Studies from the Field: Energy & Climate Management in Modern Buildings

Case Study Title: **Second life of a brutalist icon**

Name of building: **EDF's housing towers**

Location: Ivry-sur-Seine

Original architect:

Atelier de Montrouge : Jean Renaudie (1925-1981), Pierre Riboulet (1928-2003), Gérard Thurnauer (1926-2014) and Jean-Louis Véret (1927-2011) architects

Date of construction: 1963-1967

Heritage Designation Status (not required): Protected MH (List of French Historical Monuments)

Submitted by: Catherine Blain, architect, PhD, researcher Ensap of Lille (France)

Role in the project: Architectural Historian

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Date: _ 09/2016

PART 1

Nature of project (please check all that apply)

Mechanical system repair, replacement or addition

Building envelope repair or replacement

Control system installation or upgrade

Window or glazing repaired or replaced

Lighting optimized

Renewable energy used

Passive systems

Active systems

Green rating system recognition

Please specify:

Regulatory compliance with an energy code

PART 2

1. Briefly describe the building, its significance and the conservation direction. (200 words max)

The project consists on two small raw concrete towers of 5 and 7 storeys (and respectfully of 13,30m and 14,30m sides), renovated between 2011 and 2016 and now considered as a "real historical treasure of the city". Upon delivery in 1967, these small towers, real "architecture-sculptures", had been recognized by critics as a manifesto of the Modern Movement. For the architects of Atelier de Montrouge, this project of "stacked townhouses" (of 100m2) created in response to a commission for staff housing units, primarily represented a new model for the

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development of other urban housing programs. Abandoned in the late 1990s by the owner, the national electricity company (EDF: Electricité de France), these towers came close to being demolished. Squatted for over a year while their owner was trying to sell to the highest bidder (2001-2002), they fell into a state of serious disrepair before being saved by their inclusion on the list of Historical Monuments (2003). The subsequent renovation project slowly emerged and was steered by a private developer and a specific architect, who were well aware of the issue of preserving modern heritage: Paul Chemetov, an architect contemporary of the Montrouge team. Managed firmly over the long-term, the building is finally coming to completion. Almost all the apartments, which very quickly found buyers, were occupied in summer of 2016.

2. Briefly describe the project, the issues that catalyzed the project and any specific conservation challenges. For example, was the project initiated by excessive energy use, comfort issues or maintenance challenges? (300 words max)

Among others, Chemetov believes that the existing building, the “djà là”, shows the ways of its transformation, as he wrote recently: “An intervention of an existing building, if not done in opposition but in sympathy with what is already there, always leads to convincing results” (*Le Monde*, 11 juin 2014.). His aim was a restoration of the towers in their “iconic state”, as close as possible to the initial project; while, at the same time, bringing them up-to-date regarding the new norms of comfort and thermic performance.

These guidelines drove the renovation project. The new real estate program maintained the towers as dwellings but introduced however a significant change: company staff housing became private co-ownership, with a different financial model – therefore the layout of the small tower was cut in two. This change led to reorganize the heating system, moving from the original central heating system (with water radiators) to an individual electric system, as well as to improve the soundproofing of the apartments (original carpets or linoleums were replaced by floating wood floorings). Besides, the intervention aims to preserve the original appearance of the buildings, notably by insulating the concrete façades from the inside and by restoring the rhythm of the original woodwork of the windows — using a new kind of joinery, made of grey anodized aluminum — as well as the original external shutter system.

3. Briefly describe the type and level of background research, analysis and diagnostics undertaken. (500 words max)

The project as well known and documented (see notably bibliography entries below).

The renovation project was elaborated on the basis of the original drawings (held in the archives) completed by meticulous site surveys.

The work of Paul Chemetov’s team was closely followed by the State Historical Monument architect. Each decision, and especially the exterior cleaning and concrete treatment, had to be discussed and approved. This collaboration was very fruitful – which is not always the case.

. Catherine BLAIN, *L'Atelier de Montrouge. La modernité à l'œuvre (1958-1981)*, Arles : Ed. Actes Sud-CAPA, 2008.

. Catherine BLAIN, “Référence. Atelier de Montrouge. Les tours EDF d'Ivry (1963-1967). Un prototype d'habitat urbain”, *AMC* n° 137, October 2003, p. 80-85.

4. Tell us where the energy used by the building comes from. For example, how is the electricity generated (coal, nuclear, hydro, renewables, etc.)? Is natural gas used? Is there district heating and cooling? If possible, describe the Carbon impact of the building’s energy use. (300 words max)

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See point 2 - More details could be given by the architect.

- Describe the place where the building is located. Is it dry or humid? How many seasons are there? Is the location coastal or continental? Are there day/night temperature fluctuations? Is there snow and ice? (300 words max)

According to http://www.discoverfrance.net/France/Paris/Paris_climate.shtml :

A mild Climate > “the City of Paris benefits from a temperate climate as a result of its location in Western Europe and the warming effects of the Gulf Stream. Nestled in the Paris Basin, situated midway between an oceanic climate to the west and a semi-continental climate to the east, Paris enjoys mild winters and relatively clement summers.”

Temperatures > “between 5°C (41°F) during winter and 20°C (68°F) in summer”; “the coldest winter was in 1953-1954, when the thermometer dropped to -15°C (5°F).”; “the hottest recorded temperature reached 40.4°C (104.7°F) on 28 July 1948”

Precipitation > “Spring, from March to May, is the driest season. Rainfall is distributed fairly evenly throughout the other seasons. Average annual precipitation is 607-641 mm (24-25 inches). The most rainfall recorded in a single day was on 24 August 1987: 95.7 mm (3.77 in).”

Snow and Ice ? > “Average number of days with snowfall: 15 days”

- If possible, provide the following information: energy use intensity (EUI), expressed as energy/area/year and the number of heating degree days and number of cooling degree days. (300 words max)
- What makes this an interesting case study for conservation practitioners? (200 words max)

It is a quite unique example, in France, of a good renovation of brutalist housing buildings of the late sixties, protected as Modern Heritage.

It may be a very relevant case study, especially related to the issue of insulating an exposed concrete building.

- Please provide 3-4 sample images (photographs, drawings, maps, etc.) to help illustrate the case study.

Instructions for submitting your application:

- Please save the proposal form (as a PDF) to your computer, using your last name as the file name (example: Smith_modernenergy).
- Send the completed proposal form (and any additional documents as an attachment to sgalerie@getty.edu with “Energy Case Study Proposal” as the subject line.

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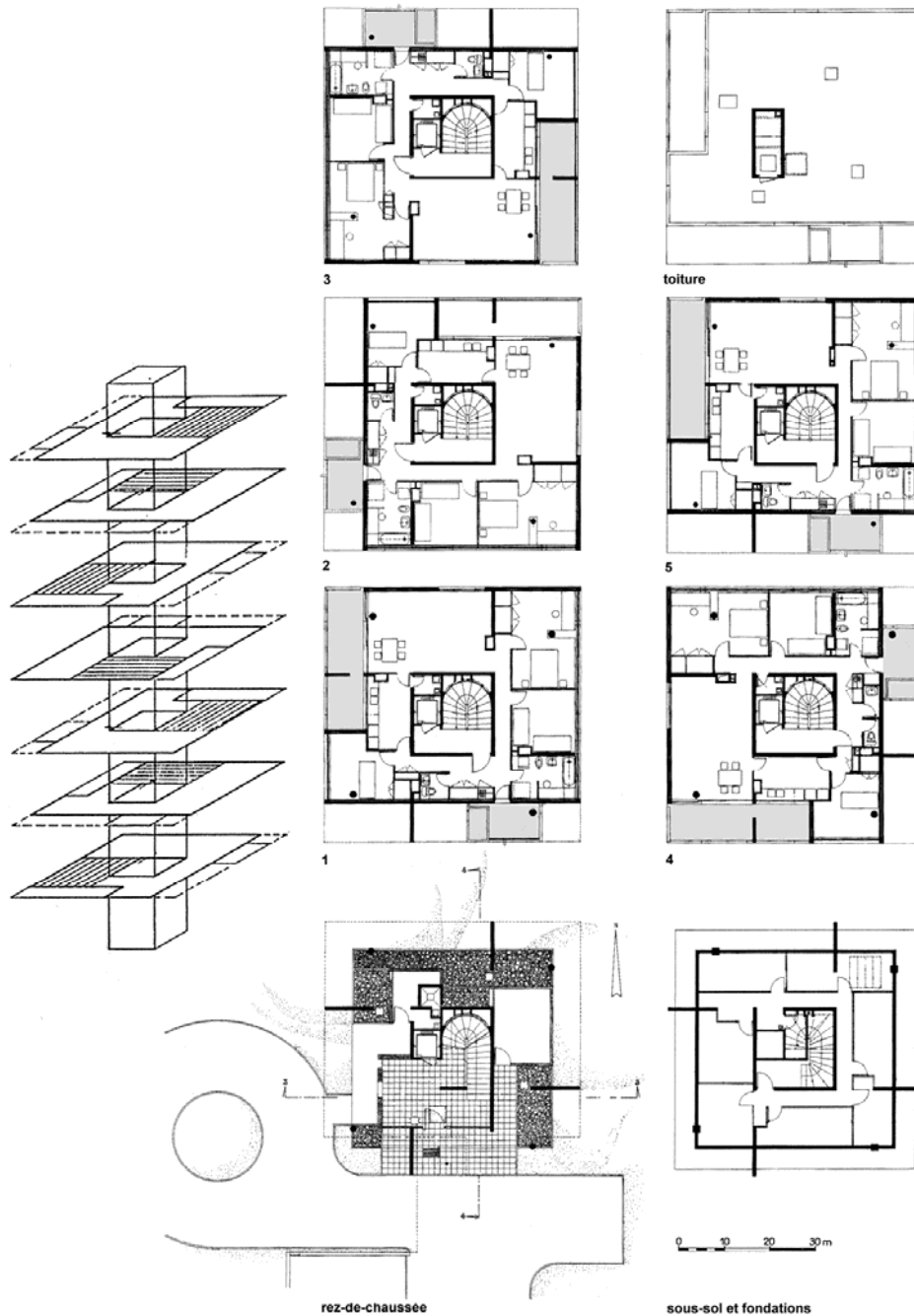


Original view summer 1967
Atelier de Montrouge, EDF's staff housing towers, Ivry-sur-Seine, 1963-67,
© Pierre Joly et Véra Cardot (source : SIAF/CAPA/Archives d'architecture du XXe siècle, fonds ATM)



Actual view summer 2016 (from other side)
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Atelier de Montrouge, EDF's staff housing towers, Ivry-sur-Seine, 1963-67
Layout of the small tower and constructive principle.

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Before (2002) and after (February 2016)
Atelier de Montrouge, EDF's staff housing towers, Ivry-sur-Seine, 1963-67
© Catherine Blain.

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Interior view 7th floor appart., : dining room, living room & bedroom, July 2016
Atelier de Montrouge, EDF's staff housing towers, Ivry-sur- Seine, 1963-67
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