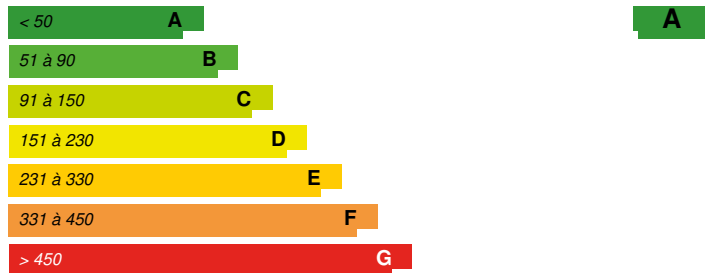


Minami: 32 contemporary homes designed for families

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Building Type : Collective housing < 50m
Construction Year : 2013
Delivery year : 2015
Address 1 - street : 69002 LYON, France
Climate zone : [Cfb] Marine Mild Winter, warm summer, no dry season.

Net Floor Area : 3 400 m²
Number of Dwelling : 32 Dwelling

General information

Opened on the water, the 32 apartments of Minami are unique: all through, they benefit from an optimal opening on the outside, the rooms in the North opening on the calm garden, the salons and their terraces in the south benefit from a View on the Place Nautique.

The south façade of Minami is equipped with dual-glass photovoltaic panels, offering controlled brightness and a notable source of energy recovery.

All units are equipped with a state-of-the-art home automation system.

The inhabitants will be accompanied personally to better manage their energy consumption.

-> Find the case studies of the 2 other buildings (Higashi & Nishi) in the "Buildings" database. -> ---> Find the case study of the entire Hikari project in the "Neighborhoods" database.

Sustainable development approach of the project owner

The project is fully in line with Lyon Confluence's sustainable development policy, in line with the 5 axes of Agenda 21 in Lyon and meets the very high energy performance level set by the specifications: it must be BEPOS all-purpose considered. Designing a positive energy building in a densely populated urban area, on the block scale and not in the neighborhood, is a challenge that is essentially addressed by:

- an architecture favoring the implementation of passive devices
- maximum use of renewable energies present in situ
- the judicious integration of façade surfaces with photovoltaic panels
- storage and energy transfer favored by the diversity of the program.

However, limiting the reasoning to a "positive energy" criterion can be reductive if the design does not fit into a more global logic, taking into account criteria such as carbon balance, gray energy or notions of use And maintenance and operation.

Architectural description

A BIOCLIMATIC APPROACH

The development of HIKARI Lyon Confluence is the result of the collaboration between a multidisciplinary and Franco-Japanese design team led by architect KENGO KUMA and a leading and innovative promoter Bouygues Immobilier / SLC bringing its vision of the market. The envelope of the buildings of HIKARI Lyon Confluence was the subject of a bioclimatic approach through which architects, thermicists, energy engineers, lighting engineers and environmentalists tried to passively treat most of the comfort and Reduction in energy requirements. The "user comfort" of HIKARI Lyon Confluence, a skilful balance between the many parameters that contribute to the quality of the spaces (orientation, light, atmosphere, use, ...), has been the permanent focus of the " Project team in order to make the mix of the program attractive and its positioning relevant to the market.

ATTACHMENT TO THE CHOICE OF MATERIALS IN A "C TO C" LOGIC

The development of a project with a demonstration objective implies a definition of the choice of materials, systems and equipment going down to the smallest details. On HIKARI Lyon Confluence, it was in a "Cradle to Cradle" logic that these choices were made, in order to minimize the carbon footprint of the operation and allow recycling as long as possible of the materials used.

Building users opinion

I wanted to live in this new district in full development, considering its layout that unites all the conveniences of a city center in terms of shops, services and transport, and leisure, in an exceptional setting Just a stone's throw from the historic city center, which can be reached on foot along the banks of the Saône River.

I made the decision to buy my apartment in the HIKARI complex, for the place, but also for its innovative technologies for positive and renewable energies, plus a system of consumption management using home automation. The clean and innovative architecture of the building as well as the view of the Darse were also at the origin of my decision.

Experience

I live for a year in the building, I appreciate the exceptional quality of its thermal and sound insulation. The HEMS OMOTENASHI system set up by Toshiba using the tablet supplied to us allows us to control our consumption of electricity and heating according to the needs of each and according to our presence or absence in the apartment. I have already found that the use of this system, added to the good thermal insulation saves heating.

Association:

It seemed useful to a majority of co-owners to form an association, to create a link between us, so that everyone can get the best possible involvement in this project which, in order to live and last, needs the support of the greatest number square. Our association is involved in the life of the district and therefore, sets the spotlight on HIKARI and thus on this energy and architectural model, within this exemplary and sustainable urban space. Our association will also make its contribution, so that our neighborhood retains its peaceful character or everyone, inhabitants, visitors, can live there, work there and or walk there sharing values of good living together in a space that " We must respect and protect for the quality of life that it represents.

Testimony of Sylvère ETIENNE invited to the meeting of the European delegation visiting HIKARI on Tuesday 8 November 2016, hosted by SPL LYON CONFLUENCE, BOUYGUES Europe, TOSHIBA.

See more details about this project

<http://www.construction21.org/france/city/fr/hikari-premier-ilot-urbain-a-energie-positive.html>

<https://www.construction21.org/france/case-studies/fr/higashi-image-de-marque-et-confort-de-travail.html>

<https://www.construction21.org/france/case-studies/fr/nishi-des-villas-suspendues-sur-un-immeuble-de-bureaux.html>

Stakeholders

Stakeholders

Function : Contractor

Bouygues Immobilier/ SLC Pitance

v.nether@bouygues-immobilier.com - 04 72 68 28 33

<http://www.bouygues-immobilier.com>

Bouygues Immobilier is committed to continuously improving the technical and architectural quality of its buildings and satisfying its customers. It is the first developer to be ISO 9001 certified in France.

Function : Designer

Kengo Kuma & associates

16 rue Martel - 75010 Paris (0144889490)

<http://kkaa.co.jp/>

Architect and engineer, Kengo Kuma is a graduate of the University of Tokyo. After a degree at Columbia University, he founded his architecture firm, Kengo Kuma & Associates in 1990.



Function : Assistance to the Contracting Authority
Manaslu Ing

<http://manaslu-ing.com/>

MANASLU Ing. Is an engineering and consulting company with a strong technical expertise in the fields of building energy and based on an original methodology developed by the CEA INES.

Function : Others
NEDO (New Energy and Industrial Technonology DevelopmentOrganization)

NEDO is a Japanese public agency, equivalent to Ademe in France, responsible for supporting innovation and R & D in new forms of energy and environmental and industrial technologies.

Function : Manufacturer
Toshiba

<http://www.toshiba.fr/>

Toshiba was selected by NEDO as an industrial partner for the coordination of the various projects constituting the demonstrator Lyon Smart Community

Energy

Energy consumption

Primary energy need : 14,00 kWhep/m².an

Primary energy need for standard building : 28,00 kWhep/m².an

Calculation method :

Breakdown for energy consumption : /!\ The energy consumption is calculated for the entire HIKARI island!The HIKARI package should consume between 50 and 60% less than current thermal regulation standards.

Envelope performance

More information :

The south face of Minami has a special feature: a double skin of photovoltaic panels bi-glass developed by Toshiba for this building.

More information

HIKARI is designed to consume approximately 1400 MWh and produce about 0.2% more.

Renewables & systems

Systems

Heating system :

- Combined Heat and Power
- Solar thermal

Hot water system :

- Solar Thermal

Cooling system :

- Gas absorption chiller
- Canadian well

Ventilation system :

- Canadian well

Renewable systems :

- Solar photovoltaic
- Heat pump (geothermal)
- Biomass boiler

On-site energy production:- A cogeneration plant in vegetable oil and a photovoltaic plant. Total production of 476 MWh, equivalent to the consumption of approximately 160 households. It covers 80% of the electrical requirements and more than 90% of the heating needs.- Photovoltaic panels: they transform solar energy into electricity. They cover the balance of the island's electrical requirements.- Absorption machine: production of chilled water, from the heat of cogeneration and the cold of the water table. It covers 80% of the cold needs of offices and shops.- Geothermal: draws freshness in the waters of the Saône and participates in cooling.

Smart Building

BMS :

Centralized management of building parameters: HEMS (Home Energy Management System)

Smartgrid :

All units are equipped with a state-of-the-art home automation system. Automatic management of thermal and visual comfort conditions with possibility of manual control: heating, cooling and sun protection positions.

Users' opinion on the Smart Building functions : Cf. product

Environment

Urban environment

The Hikari islet is at the crossroads between the first development phase of Lyon Confluence and the new district of the Marché Gare developed by the architects Herzog & de Meuron. Located at the corner of Charlemagne and Place Nautique, Hikari benefits from the very high quality environment of the Sainte-Foy-Lès-Lyon hill.

Products

Product

HEMS (Home Energy Management System) Omotenashi

Toshiba

Jessica Boillot (JBoillot@toshiba-tsf.com)

<http://www.toshiba.fr>

Product category : Gros œuvre / Système passif



MINAMI is equipped with centralized management to regulate the production of hot or cold to the absolute minimum, in a synergistic way with the optimized use of point energy overproductions (cogeneration, energy storage, energy recovery). Called Omotenashi ("hospitality" in Japanese), this system of home automation is at the service of the inhabitants. Using a digital tablet delivered when entering the dwellings, the inhabitants consult and control their energy consumption via sensors. The inhabitants can program 3 types of control of their consumption.- Manual- Schedule: program heating or appliances over several weeks- Semi-automatic: this mode allows to realize important energy consumption. The sensors detect the presence in a room or the opening of a window and adjust the temperature of the rooms accordingly.

I was looking to live in this new district in full development, considering its layout that combines all the amenities of a city center in terms of shops, services and transportation, and leisure, in an exceptional setting, All just a stone's throw from the heart of the historic town that can be reached on foot along the banks of the Saône River. My decision I made the decision to buy my apartment in the HIKARI complex, for the place, but also for its innovative technologies for positive and renewable energies, plus a system of consumption management using home automation. The clean and innovative architecture of the building as well as the view of the Darse were also at the origin of my decision. Experiencing life for a year in the building, I appreciate the exceptional quality of its thermal and sound insulation. The HEMS OMOTENASHI system set up by Toshiba using the tablet supplied to us allows us to control our consumption of electricity and heating according to the needs of each and according to our presence or absence in the apartment. I have already found that the use of this system, added to the good thermal insulation saves heating. Association: It seemed useful to a majority of co-owners to form an association, to create a link between us, so that everyone can get the best possible involvement in this project which, in order to live and last, needs the support of the greatest number square. Our association is involved in the life of the district and therefore, sets the spotlight on HIKARI and thus on this energy and architectural model, within this exemplary and sustainable urban space. Our association will also make its contribution, so that our neighborhood retains its peaceful character or everyone, inhabitants, visitors, can live there, work there and or walk there sharing values of good living together in a space that " We must respect and protect for the quality of life that it represents. Testimony of Sylvère ETIENNE invited to the meeting of the European delegation visiting HIKARI on Tuesday 8 November 2016, hosted by SPL LYON CONFLUENCE, BOUYGUES Europe, TOSHIBA.

Costs

Health and comfort

Water management

The rainwater evacuated from the roofs has been recovered in a basement tarpaulin for reuse for watering green areas and in the sanitary facilities of the offices.

Comfort

Health & comfort : The 32 apartments of the Minami building are all crossing thus enjoying an optimal opening on the outside. To the north, the

rooms open onto the quiet garden, and to the south the stays extend (over their entire width) on wide terraces enjoying an unobstructed view of the Place Nautique.

Carbon

GHG emissions

GHG in use : 1,80 KgCO₂/m²/an

Methodology used :

The overall objective is a reduction in the carbon footprint. In order to do this, HIKARI proposes a low-carbon performance by establishing a carbon pre-balance sheet that has allowed two labels to be established: gray energy label, climate label.

GHG Cradle to Grave : 1,80 KgCO₂ /m²

Studies show that HIKARI is classified in Category A in CO₂ emission according to BEPOS (1.8 kg-eq CO₂ / m².an <5 kg-eq CO₂ / m².an)

Life Cycle Analysis

Eco-design material : A particular attachment to the choice of materials was made in a logic of "Cradle to cradle" in order to minimize the carbon footprint of the operation and allow the recycling as long as possible of the materials used.

Contest

Building candidate in the category



Smart Building



Coup de Cœur des Internautes

