



The C2 Tower in the Vergers district in Meyrin

by Chloé Franchetti / 2019-04-08 16:38:52 / France / 6609 / FR

Primary energy need :

70 kWhep/m².an

(Calculation method :)

ENERGY CONSUMPTION

Economical building

< 50	A
51 à 90	B
91 à 150	C
151 à 230	D
231 à 330	E
331 à 450	F
> 450	G

Energy-intensive building

Building **A**

Building Type : Collective housing < 50m
Construction Year : 2018
Delivery year : 2018
Address 1 - street : Place de la Diversité 7 1217 MEYRIN, Suisse
Climate zone : [Dfb] Humid Continental Mild Summer, Wet All Year

Net Floor Area : 10 978 m²
Construction/refurbishment cost : 30 420 000 €
Number of Dwelling : 99 Dwelling
Cost/m2 : 2771 €/m²

Certifications :

MINERGIE-A

General information

Gateway to the west of the Vergers district in Meyrin, Switzerland, the C2 Tower is a **12-storey building with 99 ZDLOC units on commercial ground**. The distribution of the different typologies of the 2 to 5 pieces is done according to the solar orientation. The large apartments on the south-east and south-west facades have balconies. The small apartments are on the north-east and north-west facades.

The sixth floor stands out because it includes activities reserved for tenants and technical premises. The central position of the ventilation and sanitary appliances makes it possible to reduce the grip of the ducts in the dwellings but also to reduce the electrical consumption. It also offers on the half of the plateau a vegetated terrace reserved for residents.

The C2 Tower is a pioneer masterpiece. It applies to the MINERGIE A standard. In this, it covers the electrical energy needs of common premises and equipment thanks to the installation of LUCIDO facades and photovoltaic solar collectors integrated in the parapets of the balconies as well as on the roof.

With its bold design, it strongly shows that it is a sustainable building, with a strong identity and enviable aesthetic qualities.

Sustainable development approach of the project owner

In more than 25 years of activity, GROUP H has acquired a unique expertise in innovative and aesthetic sustainable constructions by producing iconic buildings, such as the Palais de l'Equilibre, a symbol of sustainable development at EXPO 02 in Neuchâtel. It is today a landmark of the Geneva region but above all an identity building of CERN, European Center for Nuclear Research. In its desire to push the exercise to the extreme, GROUPE H has also designed, with many engineering partners, the New Goûter Refuge at 4000m altitude in Mont Blanc.

Groupe H wanted to maintain its leading position in sustainable construction with the completion of the C2 Tower in the Vergers eco-neighborhood in Meyrin. This new district, exemplary on the environmental level, was a requirement defined by the local and cantonal authorities in the localized neighborhood plan. The district is based on the three pillars of sustainable development: social solidarity, environmental responsibility and economic efficiency, in line with Group H's construction policy and objectives.

The owner was also made aware from the beginning of the problem and enthusiastically welcomed the idea of building the Minergie A standard, which consists in covering the energy needs for the operation of the technical installations (ventilation units, pumps, etc.) by renewable energies.

Group H has given proof that it was possible to build an energy-efficient building at 4,000 meters as a duty now to do in the plains and in cities. Successful challenge with the completion of the C2 Tower, a pioneer in sustainable construction.

Architectural description

The C2 Tower is a 12-storey building with 99 units on commercial ground. On the ground floor of the tower are business premises and shops connected to the sports esplanade and on the ground floor of the activity areas on one level facing the Jardin des Sports.

The dwellings in the upper floors have two standard plans except for the 6th floor, which includes tenants' activities, including a common children's play area, family celebrations and technical rooms.

The distribution of the various typologies (from 2 to 5 pieces) is done according to the solar orientation. The large apartments are on the south-east and south-west façades and feature balconies. The small apartments are on the north-east and north-west façades. The 2 levels of basement combine the necessary premises for housing and activities such as cellars, depots and technical premises.

The structure of the building is made of concrete and is designed to free the façades of load-bearing elements. The façades are of the "active" type of the LUCIDO brand and the photovoltaic solar collectors integrated in the parapets and balconies.

Producing electrical energy with photovoltaic panels on a high-rise building IGH, is a challenge because the surface of the roof is extremely limited. The choice was therefore to place the photovoltaic solar panels in the balcony parapets it was still necessary that the power produced is sufficient to supply electricity to all power plants and electrical equipment common premises. In such a context, every building element, every economy counts.

By arranging the technical installations at mid-height, it was possible to reduce the power of the technical power stations and the necessary electrical powers.

The technical centers occupying only a small area of a plateau, it was possible to set up the same level of laundry and offer residents a large panoramic terrace for daily games, the organization of parties family or residents' parties. In this, the chapter "society of the sustainable component" found its full measure.

Building users opinion

Opinion of one of the Group H employees, who lives in the C2 Tower:

"The acoustic comfort is very good in the apartment, my neighbor is a violin and I absolutely have to concentrate in silence to be able to hear it." The majority of the noise comes from the corridor that resonates a lot (children running and shout, etc.).

Regarding the thermal, it's very good too. It is hot in the winter and you can regulate the room temperature via the thermostats. (It may be a bit warm in the summer, but it seems normal when it's over 30 ° outside.)

The quality of the air is very good in my opinion.

The small downside may come from natural lighting. My apartment is oriented northeast and if it is not sunny outside, I am tempted to turn on the light. And conversely, at night the darkening is not complete as the blinds are deported from the facade. In addition, it is quite difficult to put curtains, having the prohibition to pierce the walls of facade not to damage the vapor barrier.

But in general, I am very satisfied with my apartment. "

If you had to do it again?

The North-East and North-West façades could not be made of wood but concrete DUCTAL to meet the requirements of the Fire Department. On the occasion of a new conceptual experience of this type, we will attach more importance to the development of the project with all stakeholders: manufacturers, supervisors, construction companies, etc ... to increase the energy performance of the building while developing perfectly homogeneous architectural concepts.

See more details about this project

<http://www.groupe-h.com/fr/projets/logements-collectifs/tour-des-vergers>

Photo credit

Group H

Stakeholders

Contractor

Name : Philippe Dunand les Vergers SA
Contact : sebastien.van_houcke@orange.fr

Construction Manager

Name : Groupe H Architecture et Ingénierie SA
Contact : M. Hervé Dessimoz
<http://www.groupe-h.ch/fr/accueil>

Stakeholders

Function : Structures calculist
Dessimoz Management Construction SA
dmc@dessimoz.ch

<https://dessimoz.ch/wp/>
civil engineers

Function : Structures calculist
AAB - J.Stryjenski & H.Monti SA
<https://www.aab-acoustic.com/fr>

Function : Other consultancy agency
BG Ingénieurs Conseils SA
<https://www.bg-21.com/>
Fluid engineers / CVSE

Function : Construction company
Construction Perret SA
<http://www.cpsa.ch/contact/>
general Enterprise

Function : Certification company
Minergie Agence romande
<https://www.minergie.ch/fr/?l>
Label Minergie A

Function : Other consultancy agency
Charpente Concept SA
+41 22 721 10 00
<https://www.charpente-concept.com/>
Wood Engineer

Energy

Energy consumption

Primary energy need : 70,00 kWh/m².an

Renewables & systems

Systems

Heating system :

- Urban network
- Low temperature floor heating

Hot water system :

- Urban network

Cooling system :

- No cooling system

Ventilation system :

- Double flow heat exchanger

Renewable systems :

- Solar photovoltaic

Renewable energy production : 100,00 %

Solutions enhancing nature free gains :

Façades Lucido

Environment

Urban environment

Land plot area : 160 000,00 m²

The project

The district of Vergers, exemplary on the environmental plan, was a requirement defined by the local and cantonal authorities in the localized plan of quarter. The neighborhood is based on the three pillars of sustainable development: social solidarity, environmental responsibility and economic efficiency.

The bold eco-neighborhood project includes the construction of 1,350 new housing and public facilities in more than 30 buildings. Built on a plot of approximately 16 hectares, the district will eventually accommodate some 3'000 new inhabitants and 10'000 m² of commercial space.

Owner of nearly half (47%) of building rights, the Commune was involved in creating the conditions to allow Orchards to achieve the exemplary objectives set for this district. This translates, for example, into the fact that all buildings carry the Minergie A® energy standard. This is an important project, as the construction of this new district will cause a 15% increase in the population of the municipality.

The objectives of the neighborhood

The City of Meyrin has set as its priority objectives to achieve the performance of the Minergie-A label for all Vergers buildings. To carry out external development combining environmental performance, social attractiveness and economy of means. To achieve this, the choice was made to implement a so-called "participatory" approach, to encourage citizen participation and give voice to all stakeholders interested in the project.

In 2012, an evolving "eco-district objectives" charter was drawn up, in order to define precise objectives of performance to be achieved for the eco-district. This charter addresses many issues such as: energy efficiency and reduction of greenhouse gas emissions, the quality of construction and occupant comfort, the ecological and social value of outdoor spaces, water management, clean site, the management of household waste, social diversity, animation and urban conviviality, eco-activities and finally mobility.

The 3 founding principles

In the Orchards, a major effort was made in the coherence of the whole, this is illustrated in particular through the following three main conceptual axes, which guided the conceptualization of the district, underlined its values and influenced its development:

1. Mutualization of public spaces
2. The choice of participatory approach
3. Meyrin allocates surface rights to participatory cooperatives

<https://www.lesvergers-meyrin.ch/ecoquartier/les-vergers>

Products

Product

polished

Lucido Solar

info@lucido-solar.com

<http://www.lucido-solar.com/>

Product category : Gros œuvre / Structure, maçonnerie, façade

The product was enthusiastically accepted by all stakeholders.



Costs

Construction and exploitation costs

Renewable energy systems cost : 510 000,00 €

Total cost of the building : 30 304 200 €

Additional information on costs :

installation of photovoltaic panels

Contest

Reasons for participating in the competition(s)

The C2 Tower applies the MINERGIE A standard. It covers the electrical energy needs of common premises and equipment thanks to the installation of **LUCIDO façades and photovoltaic solar collectors integrated** in the parapets of the balconies as well as on the roof.

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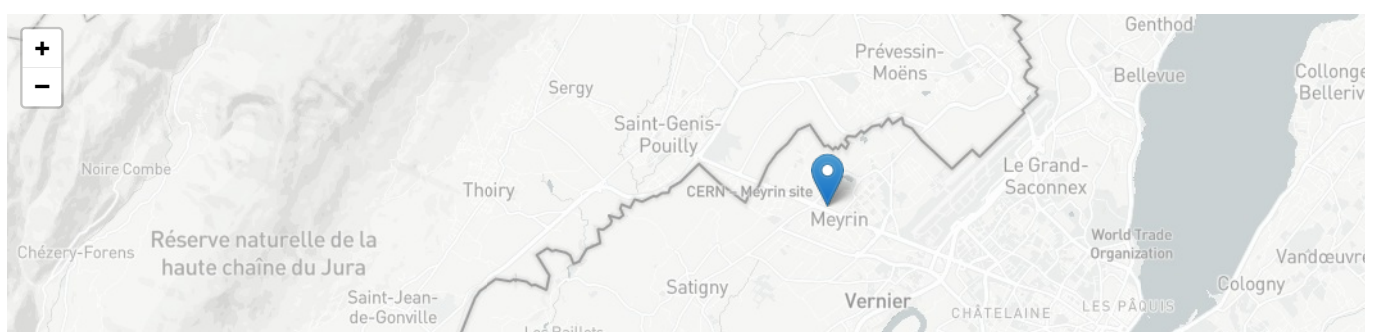
Building candidate in the category



Energie & Climats Tempérés



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