Pedagogical Greenhouse of the Grand Parc in Saint-Ouen

by Adrien Leduc / 2014-02-24 18:55:54 / France / 30797 / FR

Primary energy need :

148 kWhep/m².an

(Calculation method : RT 2005)

ENERGY CONSUMPTION

Economical building *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 Type : Other building
Construction Year : 2013
Delivery year : 2013
Address 1 - street : 6, place de la République 93400 SAINT-OUEN, France
Climate zone : [Cfb] Marine Mild Winter, warm summer, no dry season.

Net Floor Area : 1 750 m² Autre type de surface nette
Construction/refurbishment cost : 2 716 114 €
Cost/m2 : 1552.07 €/m²

Certifications :

General information

architectural Description: The greenhouse is designed as a programmatic extension covered the large park of Saint-Ouen. Covering an area of ââ1380m2, this is a great volume offering various educational, cultural and educational activities. This equipment is designed single piedavec the soil of the island shares on which it is located. Once the contest won a large deconcertation work with local associations has established a "project program" to allow park users to discover the topics related to gardens, park, biodiversity, water, auclimat and even culinary arts. The greenhouse is therefore both a tool dÃ©monstrationet almost living. Conceptually, the greenhouse has been designed as a global unvolume glass, insulating a landscape, a climate. Parts and trees are distributed maniÃ¨rejudicieuse to create spaces for strolling and exposure temporairepouvant include various scenic features such as picture rails. Unjeu views presents the walker along the greenhouse through laquelleil perceives domestic volumes, any picture rails and orange. A climate managementdifferentiated: The educational greenhouse is a hybrid building, chevalentre building and market garden greenhouse. A large glass volume de1380m Â² allows the establishment of unclimat conducive to plant production. The rest of the program is contenudans local structure in wood, themselves protected by the greenhouse. This organizing principle in Russian dolls allows a differentiated climate building management. The building is actually two buildings: a heated to 11.5 Â° C and patches of wood located endessous emissions. The greenhouse is managed in an almost natural way by a system of meteorological sensors while larch islands are controlled by users, piece by piece,

they can control throughout del year.

DPE in progress.

Sustainable development approach of the project owner

The pedagogical emissions is a central element of the operation of the Grand Parc de Saint-Ouen, emblematic project ZAC des Docks. As such, it meets the key issues defined by the city:The greenhouse favors exchanges and is a place of conviviality. It is accessible to all and provides a framework to develop animations leisure especially during school holidays (sharing gardens, cultural activities, festive and artistic, leisure, catering ') It is a tool to develop and sustain good practice in matters EnvironmentalIt participates in respect of fauna and flora existing, is energy efficient and is relevant in the light setting, it integrates a project highlighting the presence of water.The park and the emissions are based on the elements of great landscape, the ecology of the place, the history and elements of architecture, the park Abel Mezieres, on practices that relate to the gardens, to make them evolve . The integrated project reappropriation of this heritage.

Architectural description

The greenhouse is designed as a programmatic extension covered the large park of Saint-Ouen. Covering an area of ââ1380m2, this is a great volume offering various pedagogical, educational and cultural activities. This facility is designed to level with the soil of the island shares on which it is located.Conceptually, the greenhouse has been thought as a global volume insulating glass landscape, climate. The rooms and trees are left judicious manner in order to create space for strolling and temporary exhibition may include various SCENOGRAPHICAL devices such as picture rails. A set of views presented to the walker along the greenhouse through which it perceives the interior volumes, the eventual picture rails and trees.The greenhouse has three chapels of 9.6 m with a minimum of posts. The entire volume was realized double-glazed with clear concrete floor quartze. Of reservations in the slab were allowed to plant orange trees in the ground.The central space is indicated to the production area. On the east facade opens wide to create a very large porosity with functional and architectural gardens. Gardeners associations can thus move freely greenhouses up their cultivation plots. South are arranged key local creating internal paths between exhibitions envelopeGlass and interior volumes. A set of views presented to the walker along the greenhouse through which it perceives the interior volumes, the eventual picture rails and trees. Each piece is in constant dialogue with the outside. Associative local open wide in grace greenhouse with large bay raw larch.

See more details about this project

http://www.sequano.fr/portfolio/ecoquartier-des-docks/

Stakeholders

Stakeholders

Function : Contractor

SEQUANO AMENAGEMENT - Frédéric Lemerre

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Function : Other consultancy agency

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Function : Other consultancy agency

BIOTOPE - M. RAVARY

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Function : Assistance to the Contracting Authority

RE-SOURCES (AMO développement durable) - Sophie LEBRETON

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Contracting method

Lump-sum turnkey

Energy

Energy consumption

Primary energy need : 148,00 kWhep/m^2.an

Primary energy need for standard building : 329,00 kWhep/m^2.an

Calculation method : RT 2005

Breakdown for energy consumption : Energy consumption of wood islands (BBC)Heating = 60.36 kWhep / mÂ². YearCooling = 1.47 kWhep / mÂ². YearFans kWhep = 49.7 / mÂ². YearLighting kWhep = 27.25 / mÂ². YearAuxiliary = 9.39 kWhep / mÂ². Year

Real final energy consumption

Final Energy : 57,44 kWhef/m^2.an

Envelope performance

Envelope U-Value : 0,40 $W.m^{-2}.K^{-1}$

More information :

THE Serre object:aA VEGETABLE GREENHOUSE twist:A greenhouse is traditionally a volume of glass that captures the calories provided by the sun and protects the plants from the elements. In exchange, the temperature can be very high during the day and very low overnight. Thanks to the intervention of professionals emissions and has a fine study of climatic principles, the project leverages pedagogical emissions at the same time constraints and advantages of conventional greenhouses.The greenhouse is composed of three chapels ORIENTED east-west to catch the wind and refresh volume. Climate double glazing replaced the traditional envelope with profiles "Eco Klima" home CMF. Solar thermal screens capture a portion of energy by confining the heat at night and by protecting the greenhouse too large a contribution to the UV day. Finally, the south faÃ§ade features a sun breaks allowing to avoid strong sunlight in summer.B. The woodaA high-performance envelopeThe envelope frame rooms are wood structure is Douglas fir, larch cladding and is insulated with wood fiber. The windows are double glazed with a layer of air argon paired a thermal film. All guarantee perfect insulation with the volume of emissions during warm periods.

Building Compactness Coefficient : 0,18

Indicator : EN 13829 - n50 » (en 1/h-1)

More information

The pedagogical greenhouse is a hybrid edifice, a horse between the building and vegetable greenhouse. A large volume glass 1380m Â² allows the establishment of a climate conducive to the production of plants. In this volume are arranged associative premises, mielerie, kitchen and bathrooms. This program

is contained in the local structure in wood, themselves protected by the greenhouse. This organizing principle in Russian dolls allows a climate management differentiates the building.The building is made up of two buildings: a greenhouse heated to 11.5 Â° C and islands wooden BBC is below. All calculations tightness therefore focuses on volumes BBC, the greenhouse is managed in an almost natural way by a system of meteorological sensors and an envelope possessing ranked AEV in compliance.

Renewables & systems

Systems

Heating system :
- Heat pump
- Fan coil
- Others

Hot water system :
- Individual electric boiler

Cooling system :
- Reversible heat pump
- Others
- Tape
- VRV Syst. (Variable refrigerant Volume)

Ventilation system :
- Natural ventilation
- compensated Air Handling Unit
- Double flow heat exchanger

Renewable systems :
- Other, specify
- No renewable energy systems

Smart Building

Environment

Urban environment

Green space : 120 000,00

The pedagogical greenhouse, a project within a large project:A Context:Right in the heart of the Parisian agglomeration and situated on the banks of the Seine, Ã©coquartier docks on 100 ha aims to develop a neighborhood exemplary life and innovative in matters of urban and environmental quality, functional and social diversity of density and urban continuity. Supported by the State under eco-neighborhood development in Ile-de-France, the project is also accredits the Region 'New Urban Areas. It stands out as Ecoquartier by the deployment of a network of district heating operating at 75% renewable energy and a network of pneumatic garbage collection, the establishment of shared public parking, for an alternative water management rain and buildings energy efficient. Sequano area Interior has prepared a system of environmental management on Zac des Docks which was realized by the iso 14001 certification operation.At the center of this district the large park of 12 hectares was born and this is the Isle of Shares and pedagogical emissions that were inaugurated in December 2013. Isle of Shares and the park permit to the city of Saint-Ouen to find the river. In fact, the park is in landscape feeder surface and ponds that collect river water. Isle of Shares and emissions are directly fromthe history of Saint-Ouen, they welcome the allotments associative fabric. The pedagogical greenhouse has its place and can accommodate creches, schools and associations as well as exhibitions. The Audonien apiary also possesses an appendix.B The objectives of the eco-district:'Urban renewal of Saint-Ouen by the reconquest of the Docks: The territory of the docks has been held for more than a century by large industrial rights ISOLATED the urban fabric. It is now to return this land to people and connect again the city center to the river reclaiming its banks.'The mixite and diversity of the project: The mixite will result in a range of housing, activities and entertainment. Social, functional, generational, the mixite will fit in the different strata of the city, offices and housing may overlap has ground floor animes welcoming shops, activities and community facilities.'Revive the River: After long turns back to the Seine, the new Docklands returns to the river in all its components: ecological (corridors Plant), landscaping (park and walk along the river) and economic.'Exemplary environmental future project: Urban Docks project fits into the context of sustainable development and solidarity. Environmental quality of theproject is understood in all its dimensions (water, energy, materials, health, hazards, pollution ') and will be throughout the operation.'The partnership approach: The City of Saint-Ouen guarantees the overall coherence of the urban project Docks. Sequano Amenagement was commissioned by the City to 'PIECE this project through a partnership approach.

Products

Product

ECO KLIMA

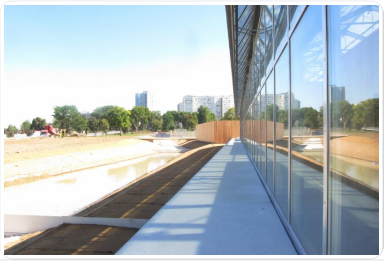
CMF

cmfcommunication@cmf-groupe.com - Zone industrielle - BP 10001 44370 VARADES

http://www.cmf-groupe.com/

Product category : Gros œuvre / Charpente, couverture, étanchéité

Facade building curtain vitree derive the principle of emissions.



Filtering Gardens

PHYTORESTORE

o.borot@phytorestore.com - 146 Boulevard de Charonne 75020 PARIS

http://www.phytorestore.com/

Product category : Aménagement extérieurs / Gestion des eaux pluviales

"Filtering Gardens ®" is a registered trademark INPI under the number 99/827094 Phytorestore which has exclusive use of the products and services 31, 37, 40 and 42.This brand has been created to protect the specific gait filtering gardens. Dedies designed as landscaped areas to the depollution of water, air and soil thanks to plants (phytoremediation), gardens Filtering meet the 5 principles in effect since 19901) Treatment Principle: each filter garden is primarily a site for the treatment of depollution a load of well characterized pollution. The sizes and garden plants are selected according to the pollution and the volumes to be treated. There is a commitment to results guaranteed.2) Principle landscape: each filter is a unique garden LANDSCAPE establishment conceived as a park or public garden with pedagogical courses according to rules of "ecological design" as well specific functions take precedence over form.3) Principle of biodiversity: garden each filter is designed to promote biodiversity by creating provisional sites for wildlife. The species chosen are from the local natural area. Birds and amphibians are populating the filtering gardens grace the "ecological habitats" deliberately set 'out at from a data bank is constantly updated since1990.4) Economic Principle: each filter garden is realized with the help of simple and economic techniques of local businesses in priority. It represents less than a conventional solution pupil and running costs much lower than traditional investment solutions.5) Management Principle: each filter is a garden area that requires maintenance work similar to those of a "garden" because it is not a wild or natural area it takes little to intervene, but a "garden" necessitating maintenance actions. Each realization is carried out with a plan differentiated management and training for at least 1 year.

Health and comfort

Water management

Consumption of grey water : 8,00 m^3

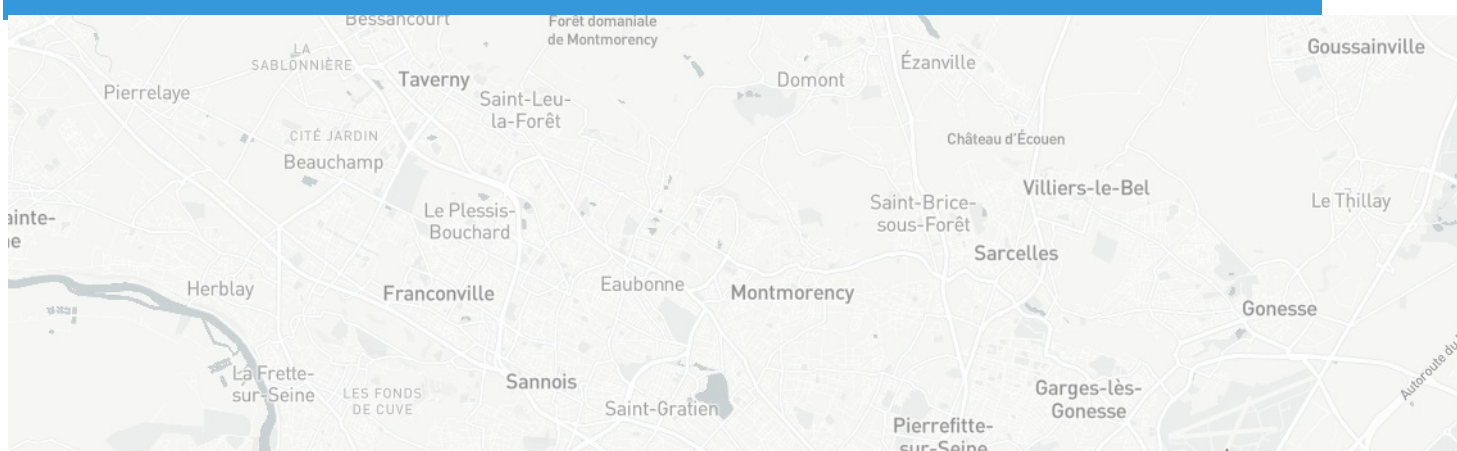
Consumption of harvested rainwater : 1 038,00 m^3

GreywaterFiltering a Garden Â® Greywater (= water from sinks and showers) is planned on treating water park home park and a restaurant as well as the pedagogical emissions.The filiere treatment and comprises, in order to flow the following steps:- 1 look decantation 10 m3 floating and trapping large particles,- 1 first floor of a vertical percolation filters: vertical filters.- 1 second floor of a horizontal percolation filters: horizontal filters.Stormwater treatmentStormwater park, watersheds and pedagogical emissions are collected and treated by specific Filtering Gardens Â®.During their stay of 8 days in the storage tank 10 000 m3 rainwater undergo disinfection and "primary" decantation. Remain to kill COD, BOD5. To do this, the filiere of complementary treatment includes:- 1 first floor 2 vertical filters.- 1 second floor of a horizontal filter

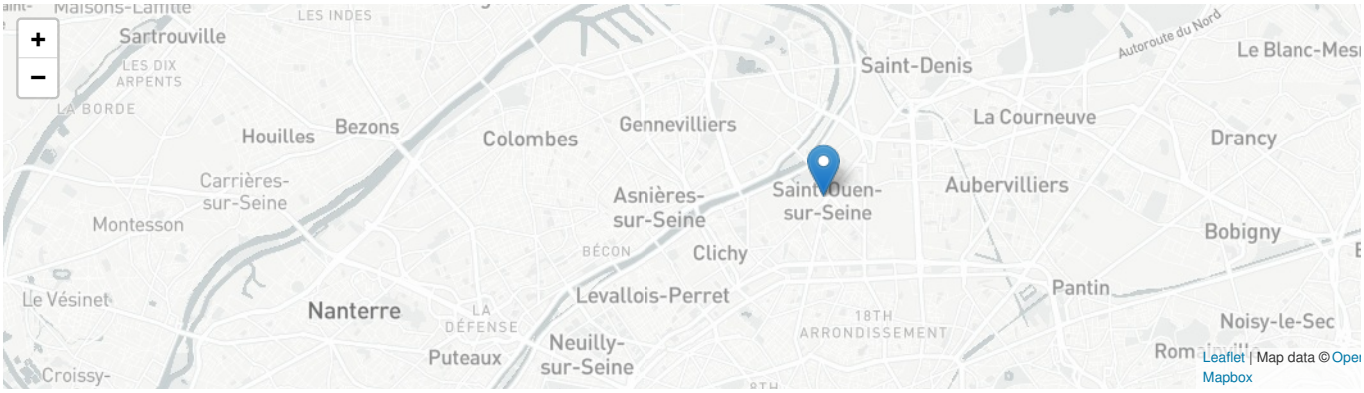
Indoor Air quality

Double CTA flow with heat recuperator allows ventilation of the premises included in the greenhouse. The CTA is equipped with filters to ensure the quality of the air entering new hygienicA blow and a recovery is integrated in each room in order to control the amount of air injected into each new hygienic premises.Wet rooms (bathrooms) possess specific extraction of ports (controlled by mechanical ventilation).Heating and ventilation Serre are insured by another central air handling dual-stream recycling with a portion of the return air.

Contest



GÉNÉRALES DE FRANCE • BTP



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