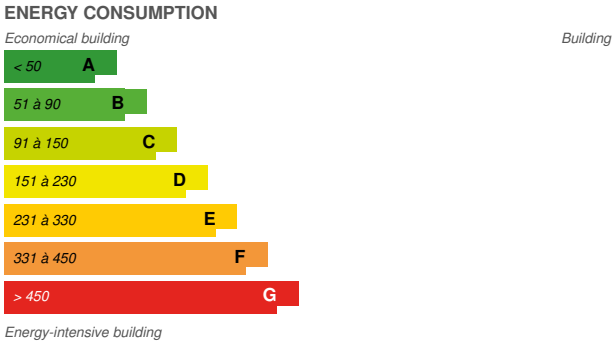
Les Canaux: eco-rehabilitation in a circular, innovative and humanist economy

by Christelle Davrieux / 2022-05-19 00:00:00 / France / 2632 / FR

Primary energy need :

96.1 kWhep/m^2.an

(Calculation method : RT existant)



Building Type : Office building < 28m
Construction Year : 1882
Delivery year : 2022
Address 1 - street : 6 quai de la Seine 75019 PARIS, France
Climate zone : [Cfb] Marine Mild Winter, warm summer, no dry season.

Net Floor Area : 797 m^2 SHON
Construction/refurbishment cost : 1 383 000 €
Cost/m2 : 1735.26 €/m^2

Certifications :

General information

From the services of Les Canaux to the association Les Canaux

The building "des Canaux" was built in 1882 for the administration of Les Canaux services in the 19th arrondissement in Paris. In 2010, the administration left the premises. In 2016, the City of Paris decided to turn the building into **the Maison des Économies Solidaires et Innovantes, a showcase for the circular economy, supported by the association Les Canaux**.

Chaired by Yann Arthus Bertrand, the association advises, trains and supports economic actors committed to solidarity and the planet, in France and internationally. It offers concrete tools to all those who wish to develop their social and environmental impact in their work or business.

In 2017, the City of Paris made the building available to the association to develop its activity.

The building needed to be renovated and adapted, and the City of Paris decided **to make it an exemplary work site, in terms of the environment, particularly the circular economy, and solidarity**. In Paris, the building sector accounts for 80% of energy consumption and more than 20% of the carbon footprint and produces around 1.9 million tonnes of waste per year.

Phase 1 of the works - 2016-2017

Phase 1 of the works concerned the interior refurbishment of the first and second floors, now used as offices. **95% of the materials, products and equipment used were reused, bio-based and/or eco-labelled. 95% of the materials, outgoing products and waste from the site were reused or recycled.** The City of Paris, which acted as project manager and project supervisor, won the Territoria de bronze award in the "Public Space Development - Urban Planning" category from the Observatoire National de l'Innovation Publique in 2018 for this work.

Phase 2 of the work - 2020-2022

In March 2020, the City of Paris signed a design-build contract to launch phase 2 of the renovation of the Maison des Canaux with the same objective, a building that is as virtuous as possible, particularly in terms of the circular, social and innovative economy. The consortium headed by the Grand Huit architectural firm was selected. The building site was handed over at the beginning of March 2022 after one year of work.

The programme of works for phase 2 consists of:

- improving the building's energy performance (insulation, ventilation and innovative heating);
- creating an outdoor terrace with a pergola, allowing the extension of the Canals' activities and integrating an access ramp for accessibility for all;
- redesigning the ground floor and the basement to improve the reception of the public and the functionality of the building.

The design-and-build contract amounts to €1.7 million (including tax), for which the City has received 3 co-financing sources: the stimulus plan (€465,000), the Ile de France Region (€18,000) and the Parisian participatory budget (€100,000).

The project develops many innovations:

- **a pioneering building in reuse and unique in France**, with the majority of the works made from second life materials exclusively from the Ile-de-France region. It is worth noting that more than 90% of the terrace is made of reused materials, including the metal structure of the shell;
- the installation of natural ventilation with heat recovery, a very rare example in rehabilitation;
- **the rehabilitation of a traditional Parisian interior insulation technique**, plaster on wood lath, thanks to a fire resistance test;
- a major mobilisation of SSE structures in the Ile-de-France region: in the project management team, the craftsmen suppliers and the works companies.
- **A recovery rate of more than 90% for materials and waste.**

An atypical and local grouping

Rare in projects of this scale, **the design-build contract has enabled a unique collaboration in the service of responsible construction.**

The Grand Huit architectural firm, leader of the winning consortium of the design-build contract, has placed the human element and the preservation of resources at the heart of its practice. It formed a group of project managers and craftsmen, mostly from the Social and Solidarity Economy, who worked hand in hand from the project's outline. The majority of the cost of the work was allocated to two integration companies in eastern Paris (Travail et Vie and Apij-Bat). The other companies in the contract, their subcontractors and suppliers, also located in an area close to the project, are key players in the field of reuse and solidarity in the Ile-de-France region.

The Grand Huit architectural firm was the perfect conductor of the operation, and **succeeded in creating a poetic and sensitive architecture from its values.**

Key partners in the success of the project

To carry out this operation, the City of Paris was assisted by Tribu Energie in improving energy performance and installing renewable energy heating, from the development of the programme to the acceptance of the work, and in assessing the building's greenhouse gas emissions (construction products and energy) and the carbon gains from reuse.

It is also supported by Ekopolis as part of the Bdf - Bâtiments durables franciliens (sustainable buildings in the Parisian region) approach, a support, evaluation and learning system for construction and rehabilitation operations. The project was awarded the Bdf Gold level, the highest recognition of the support system, in the design and implementation phases.

Bellastock, in the framework of the European project Facilitating the circulation of reclaimed building elements in Northwestern Europe (FCRBE), contributed its expertise on the insurance of the reuse of metal beams, donated by Est ensemble and Sequano. This feedback was presented to the European partners in Brussels by the City of Paris.

Inter-site synergies have been set up internally by the City of Paris and with many other contracting authorities to recover reused materials. In particular, the APHP, Est-Ensemble and its developer Sequano, Seine Saint Denis Habitat, the RIVP and Elogie-Siemp have contributed to the project through their donations. The physical and digital reuse platforms were also widely solicited.

The Centre Scientifique et Technique du Bâtiment (CSTB) conducted the fire test, which made it possible to experiment with a thermal screen composed of 100% bio-geosourced materials from the Ile-de-France region, wood lath and plaster coating, and thus to do away with the metal lattice, which has a heavy carbon

impact, imposed by fire safety regulations.

Sharing experience

This demonstrator also has an educational purpose. Various site visits have been carried out. They have enabled about a hundred Parisians to visit the site and more than 50 employees of the Parisian community.

The City of Paris worked with the service provider Wild Time Records to capitalise and formalise the lessons learned from this operation in various communication media (article, video, motion design). These materials are available on the website: passerelle écologique paris, a platform dedicated to eco-responsible construction by the City of Paris.

Circular building paths

In order to perpetuate and develop circular economy practices and in particular reuse, the City of Paris (DLH), Les Canaux, Ekopolis and the Scop Grand Huit have experimented with a training scheme called "Les Chemins du Bâtiment circulaire" as part of this operation.

This is a theoretical and practical training course for the entire chain of actors, project owners, project managers and workers. The mix of participants, city employees and outsiders (landlords, architects, local mission, etc.), is sought to encourage the sharing of knowledge. For the first session, participants included City of Paris operations managers, social landlords, private architects, City of Paris masons and carpenters, and agents of integration companies.

Supported by the Ademe and the participatory budget, this scheme aims to be extended to other sites, including those of the City of Paris.

Mobilisation of the City of Paris employees

The City of Paris led the rehabilitation operation.

The project management team from the Housing and Habitat Department (DLH) received the City of Paris' internal innovation trophy in the ecological and climate challenges category in November 2021.

The DLH also worked in close collaboration with all the other departments. The operation once again revealed the abundance of professions and skills within the City of Paris.

Building users opinion

The occupants are very satisfied. Their needs have been taken into account and the philosophy of the work implemented highlights the association's missions.

See more details about this project

https://passerelle-ecologique.paris/
https://passerelle-ecologique.paris/chemins-batiment-circulaire/articles-maison-des-canaux/
https://passerelle-ecologique.paris/isolation-de-la-salle-du-rdc/articles-maison-des-canaux/
https://passerelle-ecologique.paris/demarche-batiments-durables-franciliens/articles-maison-des-canaux/

Photo credit

Grand Huit

Stakeholders

Contractor

Name : Ville de Paris - Direction du Logement et de l'Habitat
Contact : christelle.davrieux[a]paris.fr ; isabelle.lardin[a]paris.fr
https://passerelle-ecologique.paris/home/les-canaux/

Construction Manager

Name : Grand Huit - Scop d'architecture
Contact : contact[a]grandhuit.eu
https://grandhuit.eu/

Stakeholders

Function : Thermal consultancy agency

SWITCH

g.ripanti[a]switch.coop

http://www.switch.coop/

BET heating ventilation water management

Function : Structures calculist

TISCO

olivier.corsin[a]tisco.fr

http://www.tisco.fr/

BET structure

Function : Site manager

Les Canaux

contact[a]escanaux.com

http://lescanaux.com/

Association for the promotion of solidarity and innovative economy

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Function : Construction Manager

Bellastock

cecile.marzorati[a]bellastock.com

https://www.bellastock.com/

BE reuse metal structure

Function : Assistance to the Contracting Authority

TRIBU Energie

Nicolas.Desmars[a]tribu-energie.fr

https://www.tribu-energie.fr

AMO energy performance

Function : Others

APAVE

laurent.dandres[a]apave.com

https://www.apave.fr/

Technical control

Function : Others

SATELIS

contact[a]satelis.org

https://satelis.org/

Safety and health protection coordination

Function : Company

Travail et Vie

tetvie.canaux[a]gmail.com

https://www.travailetvie.org/

Cleaning, logistics, site life and sorting management - Integration company

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Function : Company

Duarte Construction

entduarte[a]gmail.com

Structural work and demolition

Function : Company

APIJ-BAT Coopérative

Finishing work - Work integration company

Function : Company

BOSIO

secretariat-bosio[a]orange.fr

plumbing-HVAC

Function : Company

SME

sme.elec[a]orange.fr

electricity

Function : Company

Général Métal Edition

gmedition[a]sfr.fr

http://www.generalmetaledition.fr/
Structural steelwork (subcontractor)

Function : Company

SARL David et fils

contact[a]menuiseriedavid.fr

https://www.menuiseriedavid.com/
Exterior carpentry (subcontractor)

Function : Company

APPARAT

apparat91[a]yahoo.fr

implementation of a load lift (subcontractor)

Function : Others

ASSOCIATION ELIPS - ECOLE LOCALE ET ITINERANTE DE LA PIERRE SECHE

elipspierreseche[a]free.fr

Training in dry stone construction (subcontractor)

Function : Others

A Travers Fil

gestion[a]atraversfil.org

https://www.atraversfil.org/
Realization and installation of a reused solid oak trellis for the fence of the outdoor terrace (subcontractor)

Function : Others

Atelier Rare

atelier.rare[a]gmail.com

http://www.construire-solidaire.fr/portfolio-item/atelier-r-are/
Manufacture and installation of end grain parquet (subcontractor)

Function : Others

Les Résilientes

eugenie.de.lariviere[a]gmail.com et geraldinetubery[a]orange.fr

http://les-resilientes.com/
manufacture of tapestry from reused carpet and draperies and curtains in reused fabric

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Function : Company

Lauclem

contact[a]laurentineperilhou.com

http://laurentineperilhou.com/

Realization of macramé filling of the gates for the closure of the outdoor terrace (subcontractor)

Type of market

Realization

Energy

Energy consumption

Primary energy need : 96,10 kWhep/m^2.an

Primary energy need for standard building : 98,30 kWhep/m^2.an

Calculation method : RT existant

Breakdown for energy consumption : - 58.3% heating (wood boiler); - 39.2% lighting; - 0.6% ventilation; - 1.9 auxiliaries (DHW is not counted in the existing RT calculation for this type of building).

Initial consumption : 208,10 kWhep/m^2.an

Envelope performance

Envelope U-Value : 0,94 $W.m^{-2}.K^{-1}$

More information :
The volumetry of the building has not been modified. Nevertheless, complete interior insulation has been installed on the exterior walls of the ground floor and R+1 (the exterior walls of R+2 and the attic already benefited from interior insulation). In addition, the majority of the single-glazed exterior joinery has been replaced by double-glazed joinery.

Renewables & systems

Systems

Heating system :
- Wood boiler

Hot water system :
- Individual electric boiler
- No domestic hot water system

Cooling system :
- No cooling system

Ventilation system :
- Natural ventilation
- Double flow heat exchanger

Renewable systems :
- Wood boiler

Environment

Risks

Hazards to which the building is exposed :
- Flooding/Slow flood
- Geotechnical drought (Clay soil shrinkage and swelling)
- Urban heat island

Risks measures put in place :

The attached climate risk assessment tool for the existing building before works highlighted three types of building sensitivity at different levels:

- medium sensitivity to the heat wave hazard => In response, the project creates an island of freshness by installing vegetation on the outdoor terrace. It improves summer comfort with the installation of blinds on exposed windows and shade veils on the terrace. The terrace pergola and plantings have been designed to facilitate the growth of shade climbing plants. The operation of the natural ventilation is adjustable allowing ventilation at night to bring

freshness and closing the day to keep the freshness. Joinery has been changed with better thermal resistance. The interior insulation of the walls also improves summer comfort.
- high sensitivity to the hazard of drought and shrinkage swelling of clays -> In response, the recovery of part of the rainwater on site makes it possible to be economical in the use of drinking water and to compensate upstream for the drought risk
- strong sensitivity to the flood hazard -> In response, the project tries to mitigate the risks upstream with, in particular, the recovery of rainwater on site for watering the plantations and the water supply to the toilets. In addition, low-tech was implemented as soon as possible to make the building functional even in the event of a power cut due to flooding: natural ventilation, manual handling of removable systems (partitions, gates, blinds, etc.)

To find out more about adapting the building to climate change:

Click here

Urban environment

An industrial site until the 1970s, the Bassin de la Villette is now a cherished place to stroll for Parisians. The Maison des Canaux, a former building of the administrative department, bears witness to industrial activity. With increasing attendance, the Bassin de la Villette is a place of breathing and reconnection with water, birds, boats that opens up a perspective of Greater Paris via the Canal de l'Ourcq.

Located at the junction of the Quai de la Seine and Place Stalingrad, the building occupies an exceptional urban space. It opens an urban sequence towards the MK2 cinema, another preserved witness to the commercial past of the basin, a real major logistics center of the capital. Open to the city, surrounded by public space, the building is accessible by cyclists and walkers, by the main axes of gentle traffic laid out along the water.

The project strengthens the building's connection to the public space with the installation of a calade ramp which provides level access to a terrace and to the ground floor accessible to the public. This exterior layout has been designed to accommodate biodiversity. The low wall, the dry stone calade and the large trellis support perennial and native vegetation. Existing rose bushes have been carefully transplanted into the new layout. Nesting boxes for the existing sparrow colony have been added and the flora has been designed to accommodate this small bird, protected in Paris.

Rainwater is collected from the roof to water the plants. The terrace becomes a shady refuge in summer.

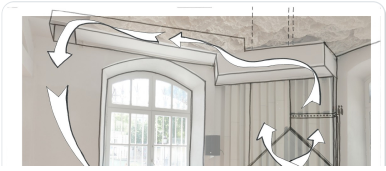
Products

Product

SWITCH

http://www.switchenergies.fr/

Product category : Génie climatique, électricité / Ventilation, rafraîchissement



Costs

Construction and exploitation costs

Cost of studies : 171 330 €

Total cost of the building : 1 383 000 €

Subsidies : 583 000 €

Additional information on costs :
The total cost is that of the design-build contract with the Grand Huit group for studies and works.

Circular Economy

Reuse : same function or different function

Batches concerned by reuse :
- Structural works
- Structural framework
- Facades
- Locksmithing-Metalwork
- Indoor joineries
- Outdoor joineries
- Floorings
- Partitions

- Isulation
- Suspended ceilings
- Raised floors
- Electricity
- Plumbing
- Landscaping
- others...

For each batch : Reused Materials / Products / Equipments :

Terrace :

- Metal beams (IPE, HEA, Tube, Purlin, Plates): 8.6 tons
- Metal beams (L and Flat): 2.1 tons
- Decking of the terrace: 80 m² (including 235 ml of joists)
- Low wall, calade (disabled access ramp), planters: 57 m3 of stones
- Rubble: 3 m3
- Topsoil: 2 m3
- Filling of portals: 5 km of climbing ropes
- Wooden trellis: 55 m²
- Shade sail: 90 m²
- Bar grid: 1 unit
- Bricks: 4 m²

Work inside the building:

- Removable partitions: 80 m²
- Ground floor insulation: 76 m² of wooden laths + 35 m² of MDF wooden base
- R+1 insulation: 200 m² of carpet covering + 270 m² of glass wool + 27 m² of MDF wooden base
- Glass wool ventilation ducts: 75.8 m²
- False ceilings Ground floor: 12 m²
- Furniture: Cupboard: 6 m², worktop: 1 unit, benches: 2 units,
- Doors: 10 units
- Hardware associated with doors and furniture: at least 10 handles, locksmithing...
- Sanitary: sinks: 1 unit, toilets: 2 units, basin/sink: 5 units
- Polycarbonate: 5.12 m²
- Windows: 3 units
- Shade sails: 90 m²
- Blackout curtains: 100 m²
- Blackout slats: 15 m²
- External blinds: 160 m²
- Floors: 27 m² of parquet, 45 m² of restored parquet, 4 m² of standing wood mosaic
- Baseboards: 70 ml
- Floors: 33 m² of terrazzo steps + 18 m² restored, 4 m² of concrete slabs,
- Wall tiles: 10.5 m²
- Electricity: 2P+E sockets: 36 units, RJ 45 sockets: 18 units; switch: 1 unit;
- Lights: LED strips: 11 units; light suspensions: 3 units; Spot light: 1 unit
- BAES: 15 units
- Electrical outlets: 66 units
- Switch: 4 units
- Electrical panel: 1 unit
- Cable trays: 32 m
- Faucets: 91 units
- Cork: 300 liters
- Radiator: 1 unit
- Sound diffuser: 3 units
- Light diffuser: 2 units
- Fire alarm panel: 1 unit
- False ceilings in parchment paper: 27 m²

Field of use and material origin :

Terrace:

Structure of the terrace:

- Steel beams (IPE, HEA, Tube, Panne) from a shed demolished by Sequano and donated by Sequano and Est Ensemble, transformed and adapted by GME
- Metal beams (L and Plats), steel decommissioned by the steel mills and bought by GME

Decking of the terrace:

- Dismantling of Parisian landing doors in oak wood from the work of the social landlords RIVP (donation) and Elogie-Siemp (donation) and from the Réavie platform (purchase), transformation into cleats and installation by Atelier R-ARE
- Dismantling of windows from a Parisian building site and transformation into moabi wood strips by Atelier R-ARE

Low wall, calade (access ramp for disabled people):

- Stones (limestone and millstone) and rubble from the demolition of the building walls and reused on site for the base of the terrace by Travail et Vie
- Paving stones and kerbstones from the City of Paris platform and used for the low wall and the calade by Elips and Travail et Vie

Planters:

- Topsoil from the site's planters (removal, amendment and repositioning) by Travail et Vie

Gates:

- Filling of the gates: use of climbing ropes from sports shops and climbing centres recovered by Grand Huit and laid in macramé by Travail et Vie and Lauclem

Trellising:

- Dismantling of Parisian landing doors made of oak wood from the work of the social landlords RIVP (donation) and Elogie-Siemp (donation) by Atelier Rare and transformation and adaptation into trellis by A Travers Fil

Shade sails:

- Creation of a flexible sail by Travail et Vie and Stu-Dio from PVC tarpaulins from the Réserve des Arts and installation by Travail et Vie

Barrier grille:

- Removal and re-installation at another location

Facade:

- Removal and relocation of facing bricks.

Work inside the building:

Removable acoustic partitions:

- Creation of removable acoustic partitions from textile scraps from a tailor and an insulator made of recycled cotton by Les Résilientes and installation by Les Résilientes and GME (holding and lifting device)

DRC insulation:

- Wooden laths from African content wood supplied by Esiam, chestnut laths from the Le Bon Coin platform and oak wood from the ApijBat workshop: recovery and adaptation by ApijBat
- MDF wood base from a commercial event and installed by ApijBat

Insulation R+1:

- Creation of a tapestry from carpets from trade shows by Les Résilientes and installation by ApijBat
- Purchase from the Réavie platform of glass wool and installation by ApijBat
- Recovery of MDF wood baseboards from an event and installation by ApijBat

Insulation of the hoppers, a wall, the goods lift and the ventilation ducts:

- Purchase from the Réavie platform of glass wool and installation by ApijBat

False ceilings on the ground floor:

- Recovery of wooden radiator covers from the Les Canaux house, adaptation and installation of false ceilings by ApijBat

Furniture:

- Synthetic material worktop bought on the Cycle up platform by Grand Huit and installed by ApijBat
- Paillasses given by the APHP of a Parisian building site and recovered by Travail et Vie and installed by ApijBat as office tables

Interior joinery:

- Doors: adaptation of the existing doors to the places reorganized by ApijBat and recovery of a door of re-use of another building site

Hardware associated with doors and furniture:

- Recovery of handles and locks from the various doors and furniture to be reused

Sanitary facilities:

- Removal in conservation of 3 washbasins and 2 toilets by Travail et Vie and re-installation by ApijBat
- Purchase by Grand Huit of a double washbasin on the Silensi platform
- Purchase of a single sink unit by Grand Huit on the Cycle up platform

Windows:

- Installation of a polycarbonate from an ApijBat workshop as overglazing on the ground floor
- Removal of double glazed windows in the ground floor and re-installation of these windows in another location by ApijBat

Solar protection:

- Creation of blackout curtains from cotton (grandmother's sheet) by Les Résilientes
- Production by Travail et Vie and Studio of external blinds from plastic packaging sheeting from the Arts Reserve and installation by Travail et Vie

Floors:

- Recovery of parquet flooring from a City of Paris site and installation by ApijBat
- Restoration of the existing parquet floor by ApijBat
- Removal and restoration of granito steps from a Seine Saint Denis Habitat demolition site by Travail et Vie, installation by Duarte
- Restoration of existing granito slabs
- Creation of concrete slabs from the walls of a car park on a Parisian site by Bégo réemploi and installation of the slabs as a floor covering by ApijBat
- Creation of standing wood and plaster mosaics from the remains of doors by Atelier Rare and installation of the mosaics on the floor by ApijBat and Atelier R-Rar
- Creation of skirting boards for the ground floor and first floor from dismantled doors by Atelier R-ARE

Wall tiles:

- Careful removal of cement tiles from the ground floor of the ground floor by Travail et Vie and re-installation of wall tiles in the bathrooms by ApijBat
- Production of terracotta tiles by Stu-Dio from planter soil and soil from the Grand Paris Express and installation by ApijBat as wall tiles in the bathrooms

Curtains:

- Realisation of slats to ensure ventilation and hide the hoppers, from carpets recovered from event fairs by Les Résilientes.

Ventilation grids:

- Recovery of radiator grids from the Les Canaux house by Travail et Vie and adaptation and installation by ApijBat

Electricity:

- Recovery of sockets and a switch from Parisian building sites by and installation by SME
- Removal and installation of electrical sockets, switches, electrical panels, cable trays and sound diffusers by SME
- Removal and re-installation of BAES, a fire alarm system by SME

Lighting:

- Recovery of LED strips from a Parisian site and installation by SME
- Removal and installation of LED strips and light diffusers by MHE
- Purchase of hanging lights made from waste by Kataba and Cornichonstudio by Grand Huit

Plumbing:

- Removal and installation of radiators and taps by Bosio

Miscellaneous:

- Recovery of cork scraps from the R+1 insulation by Travail et Vie and use in the light screed of the granito steps by Duarte
- Removal and installation of the false ceilings in greaseproof paper of Fritz Jacquet Junior by ApijBat.

A donation transfer contract between the City of Paris and the donor was drawn up for the RIVP doors, the APHP benches and the granito steps of Seine Saint Denis Habitat. A partnership agreement was signed between the City of Paris, Est Ensemble and Sequano for the donation of metal beams, with an annexed contract for the transfer of said beams between Sequano and GME.

Environmental assessment

Impacts avoided : water, waste, CO2 :

Les résultats du calcul d'impact sont les suivants :

Catégories	CO2 évité (kg)	Consommation Eau évité (m3)	Déchets évités (kg)
Aménagements extérieurs	100	0,8512	226,373572
Aménagements extérieurs / Serrurerie - Métallerie	0	0	0
Charpente	26144,43975	137,5443603	583,3691144
Cloisons	0	0	0
Couverture	0	0	0
Couverture / Aménagements extérieurs	0	0	0
Eclairages	825,3294439	6,572118021	1116,157544
Eclairages			

sécurité	101,5544921	6,720953741	180,4228528
Equipements de génie climatique	0	0	0
Equipements électriques	317,0916204	39,33104794	139,9612671
Façades	110,956	0,602658	42,7984196
Faux plafonds	0	0	0
Faux planchers	0	0	0
Faux-plafonds	0	0	0
Gros-œuvre	122483,8354	826,5138738	159578,0445
Installations sanitaires	538,690943	6,087830568	409,1163135
Isolation	859,3645204	11,50477475	1161,759726
Menuiserie ext	18247,7924	181,1200662	8522,143167
Menuiseries intérieures	1364,797921	984,4354333	1804,880752
Mobilier	362,2680317	2,482330673	279,2440916
Peinture	0	0	0
Plomberie	2270,45	30,88085	6065,646369
Revêtements de sols	2008,295321	69,1387102	1340,53722
Revêtements de sols ou muraux	200,145	0,4378	2535,679586
Revêtements muraux	0	0	0
Sécurité du bâtiment	0	0	0
Serrurerie - métallerie	556,0813636	3,45763418	703,7955718
VRD	0	0	0

	CO2 évité (kg)	Consommation Eau évité (m3)	Déchets évités (kg)
TOTAL	176491,0922	2307,681642	184689,93

Km en petite voiture	Nb de Baignoires rectangulaires	nb d'années de déchets ménagers d'un français

Social economy

Social economy and professional integration :

Candidate groups were judged on competence in the use of social integration up to 12% at the application level.

The consortium selected, whose representative is the Scop Grand Huit, was made up of a large majority of actors from the Social and Solidarity Economy and Professional Integration.

Project management team : only the BET structure is not from the ESS.

- Scop d'architecture Grand Huit;
- SWiTCH: collective of engineers for the heating, ventilation, plumbing BET;
- Bellastock: cooperative society of collective interest (SCIC) of architects, AMOE reuse.

Works team : Their lots represent more than 50% of the amount of the work.

- Work and Life: “Help through work” association. It was responsible for the "Worksite life - Logistics - Sorting - Cleaning" lots, "Dry stone masonry and revegetation", "Wood work - Signage", "Textile works - locksmithing" and "Painting".
- Apij-Bat Cooperative: SA cooperative with a board of directors (judicial liquidation on 5/04/2022). It provided the "Plasterwork, insulation, floor and wall covering", "Exterior joinery" and "Covering" lots.

Subcontractors :

- Itinerant Local School of Dry Stone: training association in the technique of dry stone;
- Les Résilientes: association which is part of the Emmaüs Alternatives network and which produced the tapestries and slats in front of the hoppers from reused carpets, the blackout curtains and the hangings of the removable partitions from reused textiles;
- A Travers Fil: association of carpenters who made the trellis for the terrace from the components of the doors;
- Atelier R-ARE: member association of Construire Solidaire which ensured the dismantling of the doors, the construction of the decking of the terrace, the plinths and the mosaic in wood/plaster;
- Réavie: association that manages physical reuse platforms.

Health and comfort

Water management

A rainwater harvesting system has been put in place to collect runoff water from the roof of the building. The capacity of the stormwater storage tank is 6 m3. This tank is connected to a rainwater management module which supplies the toilets on the ground floor, R+1 and the plant watering outlets on the outdoor terrace.

Indoor Air quality

A double-flow natural ventilation system with heat recovery has been put in place to guarantee air renewal in the large room on the ground floor. The latter has a surface area of approximately 130 m² and serves as an exhibition room, meeting room or even a workshop during events open to the public.

This ventilation system, made up of 4 modules of approximately 450 m3/h, is simple and incorporates little technology, hence its robustness and durability over time.

It is energy efficient compared to a double-flow mechanical ventilation system:

- in winter, it recovers approximately 50% of the heat extracted;
- in summer, thanks to the inertia of the building, the association with the possibility of opening the windows, the large room reaches a level of hours of discomfort (resulting temperature higher than 28°C) of 14 hours per year for a continuous occupancy of 45 people.

Finally, 3 CO2 probes positioned at opposite corners of the large room manage the opening of the ventilation registers by means of a "low tech" and innovative management system thus allowing the renewal of air.

Comfort

Health & comfort :

The double-flow natural ventilation system described in the "indoor air quality" tab provides comfort in winter thanks to the recovery of heat from the extracted air flow. Also, it allows a natural renewal of air which makes it possible to limit the concentrations of CO2.

Contest

Reasons for participating in the competition(s)

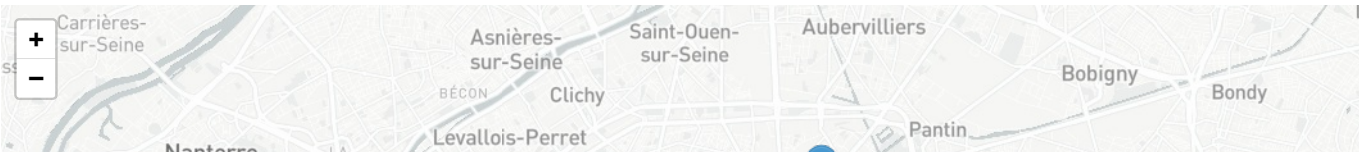
The Building sector in Paris accounts for 80% of energy consumption and more than 20% of the carbon footprint and produces around 1.9 million tonnes of waste per year, of which around a third goes to landfill, mainly materials and 2nd work products.

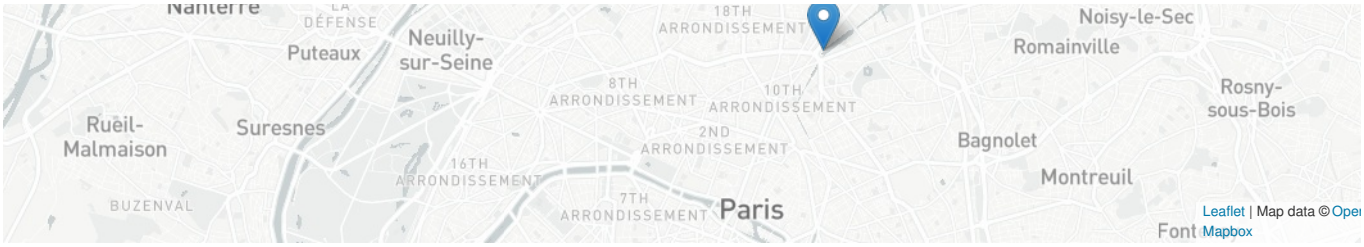
Concerned about these alarming figures, the City of Paris has set itself ambitious objectives in its Climate 2050 plan to make our buildings more virtuous, which it has translated into 10 concrete commitments in the Construction Pact published in 2021: rather to restructure than demolishing, reusing rather than throwing away, using biosourced materials, aiming for zero landfill waste, energy sobriety, low carbon…

For this, the City of Paris must be a driving force in its territory to develop and support these good practices, often carried by Social and Solidarity Economy structures and to encourage the structuring of circular construction sectors with the establishment of reuse platforms, but also to offer places of discovery and training.

These are the objectives of this rehabilitation, to make an exemplary project in this area, proving that it is possible to renovate an old building with materials from re-use, and to make it a high quality, functional and comfortable equipment.

This project must also raise awareness among project owners and Parisians about the benefits of the circular economy in construction. It is for this reason that a significant component is given to communication with the website, and the organization of visits and training, with participatory sites and meeting times with the teams offered throughout the project; and to experimentation with an awareness-raising system aimed at the entire chain of players, Les Chemins du Bâtiment Circulaire.





COMPETITION WINNER

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