REUSE OF MATERIALS

2021 portfolio

CONTENT

PHILOSOPHY

Mobius develops the reuse of materials in the construction industry by providing advice, and sourcing and supplying reusable construction materials.
Involved in waste minimisation and the sensible use of material and energy resources, mobius offers a fresh perspective on the construction process.
Keen to recover construction waste by treating it as a material resource, mobius undertakes to give it a new lease of life while guaranteeing its technical viability.
Mobius carries out construction materials reuse assessments, provides in-situ or ex-situ master plans, before packaging, transporting, storing, preparing, elaborating and supplying reused materials as an alternative to new materials.

Mobius is a key player in waste reduction and the limited use of natural raw materials in the construction sector, through reuse and recovery. It all started with a series of simple observations, in no particular order of importance :

RAW MATERIALS

Attempts are being made to assess the likelihood of depletion of the raw materials we need for our economy. Even though certain estimates are the subject of debate, evidence-based indicators clearly show that we have already drained the most accessible deposits. Beyond the economic impact which is beginning to be felt, the burden placed on the environment by new mining techniques is most alarming.

ENERGY

Construction is the largest energy user, with 45% of national consumption. A distinction must be drawn, however, between “usage energy” (heating, air conditioning, lighting, operation) and energy used to produce the material from which the building is made. Over the lifetime of a high energy efficiency building, the proportion of the latter is estimated at 30% to 50%. While significant efforts are being made to reduce “usage energy”, there is still much work to be done in terms of “material energy”. As such, the longer shelf life of materials and equipment is a major lever.

CO_2

As energy and material production/mining are intrinsically linked, greenhouse gas emissions (first and foremost CO_2), notably associated with construction (the country’s 4th largest emitter), have triggered an extremely serious climate, economic,

social and environmental crisis for living beings, by stressing the obvious: unlimited production in a world with finite resources makes no sense. In the same way as for energy, reuse is a highly effective, yet underused alternative.

EMPLOYMENT AND ECONOMY

Most materials are imported, thereby producing a number of negative externalities: CO_2 impact of international transport, disappearance of employment areas in importing countries, mass inflow of products manufactured under unregulated, if not precarious social conditions. Reuse therefore provides a viable social solution by introducing structures with a potential to create low-skilled jobs, notably industrial, unlikely to be relocated. This business segment is conducive to the transition from a carbon economy to a potentially carbon-neutral economy.

Mobius has developed two types of services, which may seem heterogeneous when juxtaposed, but make much sense when put into practice.

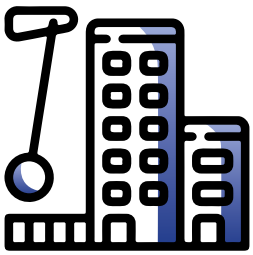
Mobius Conseil offers an alternative perspective on the (de)construction process by proposing a resource-focused interpretation of waste management. Solutions in terms of resource assessments, project ownership assistance and environmental project management are ideal for project owners keen to ensure their operations are consistent with an environmental impact limitation approach.

Mobius Production implements the processes necessary for the placing of reusable construction products on the market. After a product planning phase, Mobius creates the technical line necessary for its implementation.

SKILLS

ADVICE

We offer a new perspective on the construction and deconstruction process through our involvement in waste minimisation and the sensible use of resources.
We assist Project Owners and Project Managers in the recovery of materials from existing buildings by the reuse and the integration of reusable materials in new or renovated buildings.



CLEANING / DEMOLITION OPERATIONS:
Assistance with selective deconstruction!

1. RESOURCE INVENTORY
Identification of the reuse potential: quantification, qualification, evaluation of the reuse effort.

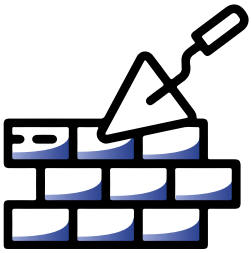
2. MASTER PLAN
Proposal of reuse deployment: conservation, donation, sale.

3. TECHNICAL SUPPORT
Production of meticulous removal, packaging and storage methodologies, drafting of selective removal special technical specifications.

4. ORGANISATION OF COLLABORATIVE REMOVAL DAYS
Administrative, insurance and technical management to allow the removal of elements by craftspeople and associations for the purpose of donation.

5. CONSTRUCTION SITE SUPERVISION
Participation in construction site meetings, supervision of removal, packaging and storage, stock updating when the materials are made available to the recipients.

6. SOCIAL AND ENVIRONMENTAL REVIEW
Monitoring of the environmental benefits: waste avoided, grey energy saved, carbon not emitted.



NEW-BUILD OR RENOVATION:
INTEGRATE REUSABLE MATERIALS INTO YOUR PROJECTS!

1. FEASIBILITY STUDY

Definition of materials compatible with the architectural / technical project and the reuse goals.

2. SOURCING

Search for materials in operations in-situ or ex-situ.

3. NORMATIVE VALIDATION

Monitoring of the technical inspection of the reusable materials to be integrated into the operation.

4. INSURANCE VALIDATION

Management of the insurability of reusable materials: product, biennial and decennial warranty.

5. CONSTRUCTION SITE SUPERVISION

Participation in construction site meetings, monitoring of procurement and implementation of reusable materials.

6. SOCIAL AND ENVIRONMENTAL REVIEW

Monitoring of the environmental benefits: waste avoided, grey energy saved, carbon not emitted.


EUR

PRODUCTION

Mobius develops the reuse of materials in the construction industry by providing the sourcing and supply of reusable construction materials.

By shifting from a waste focus to a product resource focus, Mobius undertakes to extend the lifetime of construction materials and equipment while guaranteeing their technical viability.

1 SOURCING

Search for opportunities in renovation, deconstruction, demolition operations, etc.
Validation of reuse capacity.

2 TRANSPORT

Delivery between the collection site, our plant and the construction site of destination

3 TRACEABILITY PREPARATION

Cleaning, preparation, refurbishment of various items.
Full traceability.
Submission of consignment notes.

4 PACKAGING

Packed on pallet and strapped, ready for delivery.

5 INSURANCE

Decennial product liability.
Commercial general liability.

TEAM

CÉDRIC AMBROGGI
Production Manager

NIKOLAÏ AVGERINOS
Resources Manager

NOÉ BASCH
Graduate engineer from INSA
Founder

YOUNÈS BOUSSENA
Project Manager
Numerical Simulations

ZOÉ CARTER
Study manager
Reuse adviser

ISSOUMAILA DIARRASSOUBA
Foreman

TSERING DORJEE
Reuse reclaimer

AURÉLIEN FURET
ESTP works supervisor
Founder

YVON MISSIALA KIMPOBI
Reuse reclaimer

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Reuse reclaimer

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Study manager
Reuse adviser

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Reuse reclaimer

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Reuse adviser

MARIE MOROTÉ
Communication Manager

ODILE PÉCHEUX
Project Manager
Low-Carbon Strategy

FLAVIE RIGAUD
Project Manager

GUILLAUME ROSE
Agency Director

MARTIN SEUZARET
Study manager
Reuse adviser

ABOUBAKAR SYLLA
Reuse reclaimer

THIBAUT VERGÉ
Administration officer

MATERIAL RESOURCES

Our premises: Offices: 52 rue Letort, 75018 Paris

. 80 m² facility: 12 Workstations, meeting room, kitchen;
. 2 PCs on server, 10 laptops;
. 1 overhead projector;
. 1 A3 multifunction laser printer

Our Premises: Warehouse: 17 rue de Lisbonne, 93110 Rosny-sous-Bois

. 3,500 m² warehouse + 300 m² of offices
. 1 warehouse vehicle
. 3 industrial sanders
. 1 compressor/dehumidifier
. 1 electric pallet truck
. 3 hand pallet trucks
. One equipped workshop
. One carpentry workshop

Assessment equipment

on-site measurement equipment :

. 1 Camera;
. 1 laser telemeter;
. 1 infrared thermometer;
. 1 hygrometer;
. 1 lux meter;
. 1 tablet

Assessment preparation :

. Standard Excel file for the formatting of assessments

equipment for Collaborative Removal Days

Provision of PPE for the members of associations coming to collect equipment on site, during collaborative removal days :

. Helmets;
. Safety shoe covers;
. Gloves;
. Safety vests.

Design & drawing

. Autocad: 2D design;

. Sketchup Make: 3D design for the upstream phase;

. Grasshopper: parametric design;

. Revit: BIM design;

. Ganttproject: scheduling.

Representation & DTP

. Adobe suite: Photoshop, Illustrator, Indesign;

. Office suite.

REFERENCES

GRANDS VOISINS

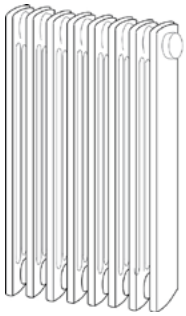
Client : Paris Métropole Aménagement
Delivery : 2018 - 2024
Site : Paris
Programme : Deconstruction - Design - Renovation - New Construction
Surface area : 80,000 m²
Phase : Implementation
Task : Deconstruction - Design - Renovation / Project Ownership Assistance (POA) Overall reuse strategy

Les Grands Voisins, in the 14th ***arrondissement*** of Paris, forms part of the former Saint-Vincent-de-Paul hospital, a complex of 17 structures built at the end of the 19th century on 3.5 hectares.

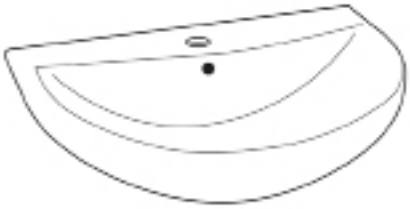
Occupied by associations and action groups since 2012, this site will be converted by ***Paris Métropole Aménagement*** into an eco-district, the Saint-Vincent-de-Paul ZAC (Urban renewal Zone), including 43,140 m² of housing and 6,300 m² of retail space.

Seven of these buildings, Pasteur where a factory used to be, Jalaguier which hosted a laundry room, the site's heating plant, as well as the CED, Petit, Colombani and Rapine buildings where bedrooms and offices used to be, will be destroyed.

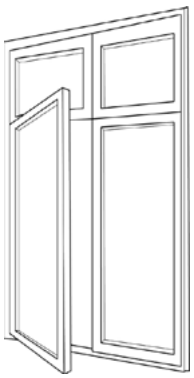
After working on the initial phase, Mobius was awarded PAO tender by ***Paris Métropole Aménagement***. As a result, Mobius supervises removals to give a new lease of life to the numerous materials found on site or within projects spearheaded by associations, action groups, artists and craftspeople from the Paris region.



425
cast iron radiators



120
sinks



376
windows

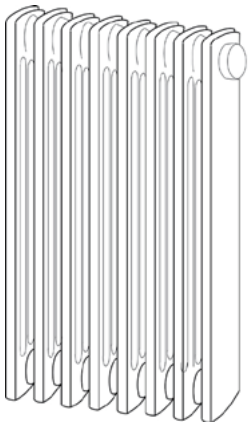
AUTRE SOIE

Client : Est Métropole Habitat
Delivery : 2023
Site : Villeurbanne
Programme : Deconstruction - Design- Renovation
Surface area : 4,700 m²
Phase : Design - Build
Task : Project management, reuse of materials, resource assessment / conservation master plan - ex-situ materials sourcing / construction site supervision / social and environmental review

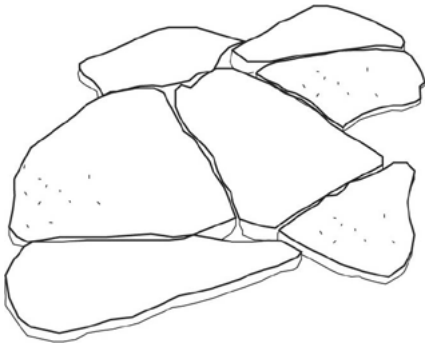
Led by La Ville Autrement GIE (Economic Interest Group) and the CCO, the Autre Soie project covers a surface area of 23,500 m². The programme combines social home ownership with participatory housing, “Housing first” dedicated to eradicating homelessness, social housing and student residence for a total of 278 residential units.

Lot A, which we are working on, is a former teacher college built in 1820. Once restructured, it will feature 80 residential units and a vast area dedicated to third places such as workshops, catering area, amphitheatre etc.

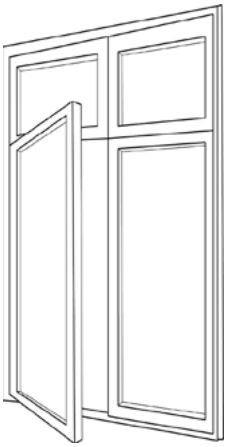
Radiators, stone cladding, light fixtures, cable trays, etc. A lot of items are kept on site, while the rest will be sold to external projects. We are also sourcing other reused products to be integrated into the project.



259
cast iron radiators



1,000 m²
stone cladding



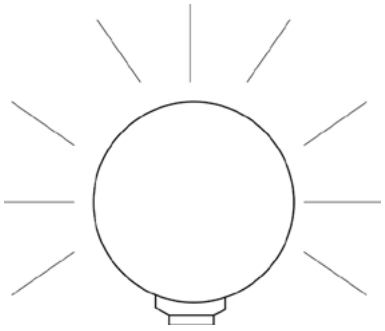
350
windows

MÉNILMONTANT

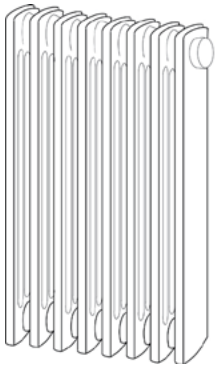
Client : Paris Habitat
Delivery : 2018
Site : Paris
Programme : Renovation
Surface area : 4,700 m²
Phase : Detailed engineering study
Task : Materials reuse assessment

Cité Bonnier, built in the 1920s, comprises 8 apartment buildings (373 residential units) over 4,700 m², interlinked by courtyards and common green areas.
The project consists of renovating this building complex, partially destroying it to make way for shared areas, including the creation of a green and direct access to the public area.

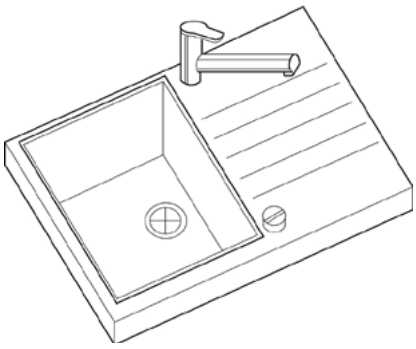
Most of the work will begin with a general refurbishment, including work to ensure compliance with PRM requirements for shared spaces, changes of use for certain premises, as well as the complete restructuring of the residential units which have become too small. More generally, the work will respect the original architecture and its 1996 renovation as much as possible.



90
outdoor wall lights



130
steel radiators



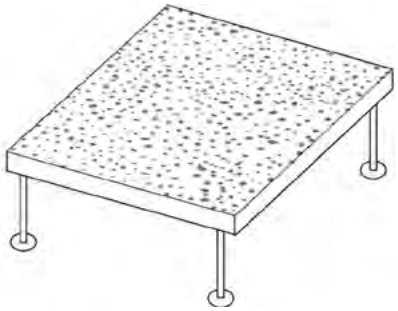
80
sinks

NORD PONT

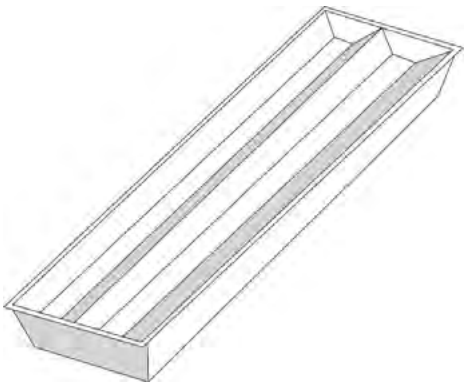
Client : COVEA Immobilier
Delivery : 2016
Site : Paris
Programme : Office renovation
Surface area : 12,000 m²
Phase : Bidding documents
Task : Materials reuse assessment

Nord Pont is a 5th category, W-type public access building on 7 levels (GF to 6th floor), for which the Project Owner's representative is COVEA.
The project, with an approximate surface area of 12,000 m², involves the rehabilitation of two building levels only:
- 1st floor: 6,222 m² (offices, meeting rooms, bathrooms, service rooms) including 267 m² of communal space.
- 2nd floor: 6,190 m² (offices, meeting rooms, bathrooms, service rooms) including 246 m² of communal space.

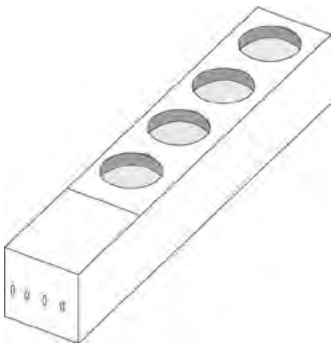
As COVEA is both the owner and the lessee, the office floors will be designed and built so as to reduce adjustments by the lessee to a minimum, while maintaining the standards required to facilitate rental to other lessees. The premises must comply with these standards (size of meeting rooms) with a view to accommodating 660 people and enabling work in open-space or closed offices (50/50).



12,000 m²
raised floor



600
light fixtures



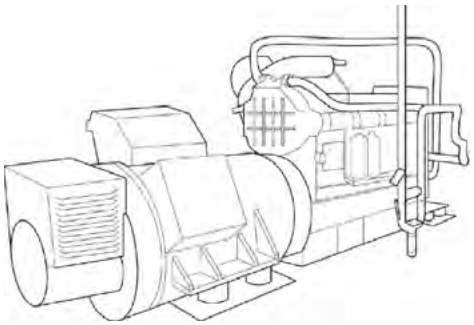
1,000
manifolds

COURCELLES

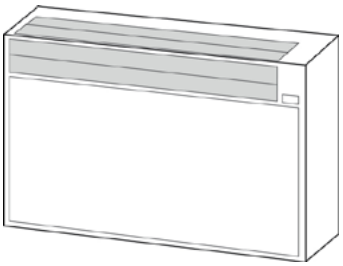
Client : COVEA Immobilier
Delivery : 2018
Site : Paris
Programme : Office renovation
Surface area : 5,000 m²
Phase : Bidding documents
Task : Materials reuse assessment

Located rue de Courcelles, this modern building (1993/1994) of approximately 9,000 m² is being renovated for the COVEA Immobilier Company. It currently features 8 office floors fully occupied by the SIACI ST HONORE Company, in addition to the GF and 3 levels of underground parking.

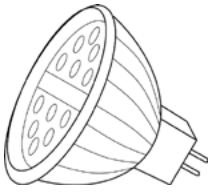
Mobius' assessment will help define building renovation priorities and list all relevant items. This will initially result in the general refurbishment of the building, targeting technical items and materials that are still viable for reuse in particular (assessment phase).



1
power generator



170
air conditioning units



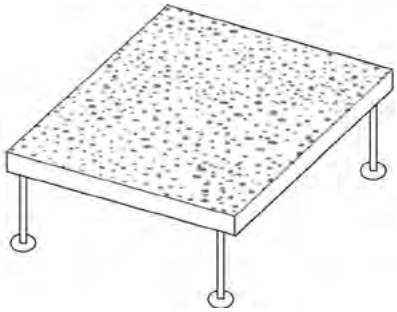
210
LED lights

PULSE

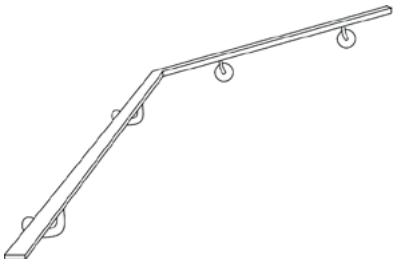
Client : Bateg - ICADE
Delivery : 2018
Site : Saint-Denis
Programme : Offices
Surface area : 30,000 m²
Phase : IMPL
Task : Advice and provision of reused materials

The project, located on the ***Parc des Portes de Paris*** site, will entail approximately 30,000 m² of floor area, most of which is intended for non-residential use, and will be classified as ERP5 in accordance with the French Labour Code.
It will be mostly home to activities on the GF (entrance hall, company restaurant, cafeteria, shops, offices), 7 office floors and 2 underground levels including a car park and service rooms. A terrace on the top floor will host technical equipment as well as a vegetable garden.

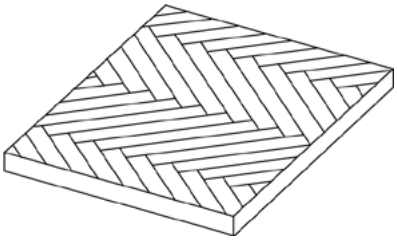
Committed to an innovative approach, this project will apply for environmental certifications and labels. It will comply with RT 2012 and will aim for a 34% improvement on max Primary energy consumption corresponding with the +10% EFFINERGIE threshold. It will also apply for the NF Non-residential buildings certification - High Environmental Quality approach (Certivéa standard version 2015), “excellent” level, the BREEAM Europe Commercial certification, “Very good” scale (2016 standard validated by BRE) and the BBCA label (Low-carbon building), “efficient” level.



22,000 m²
raised floors



1,500 ml
handrails



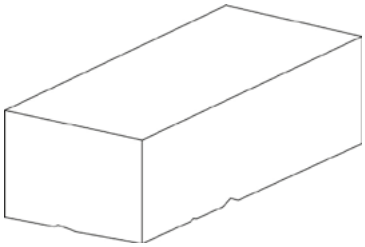
1,000 m²
industrial parquet flooring

MOONWALK

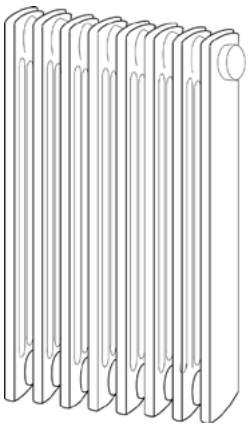
Client : ICADE
Delivery : 2018
Site : Aubervilliers
Programme : Construction of a covered passageway
Surface area : 8,000 m²
Phase : Competition
Task : Collection of reused materials

Designed as a reversible area, the covered street will enable several usage temporalities. During the day, terraces will be used for conferences and seminars. In the evening, terraces will turn into a function room for business cocktails, while the stands may be used by fashion show attendees. Throughout the seasons, the street will come alive with various events relating to the activity in the area, bringing its users together. The covered street will be located on a portion of Avenue des Magasins Généraux and on rue des Fillettes in Aubervilliers.

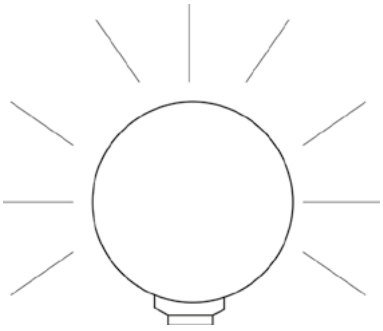
The reuse assessment will help Icade achieve savings (less waste/fewer recovery costs) and gains (reused materials are approximately 25% cheaper than new materials).
The production of paving, furniture items or heating elements will create new local jobs.
The challenges lie in the design of a project with a strong commitment to the circular, local and energy-efficient economy.



8,000 m²
bricks



20
cast iron radiators



130
outdoor wall lights

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