

Agenda



1. Shedding light on the reclamation trade



2. Reuse Toolbox



3. Feedback from the field



4. Environmental Aspects



5. Perspectives

Lessons learned from Pilot Operations: an overview

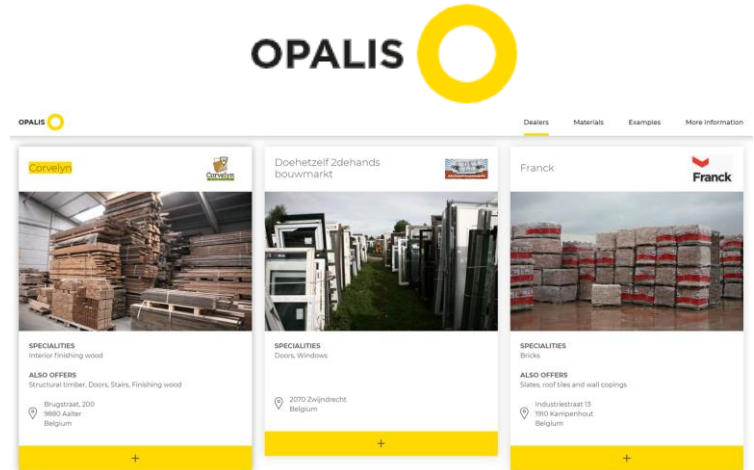
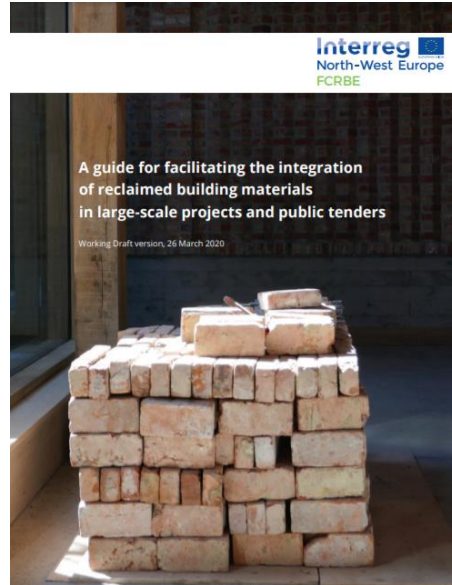


Florence Poncelet
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Hugo Topalov
Bellastock

3 tools

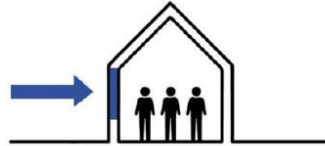


Tested and promoted through **37 pilot operations**

Pilot operations



Extracting a batch of materials from a demolition site towards reuse sectors.



Integrating a reused building element in a construction or rehabilitation project.



Pilot operations



37 pilot operations through the NWE region

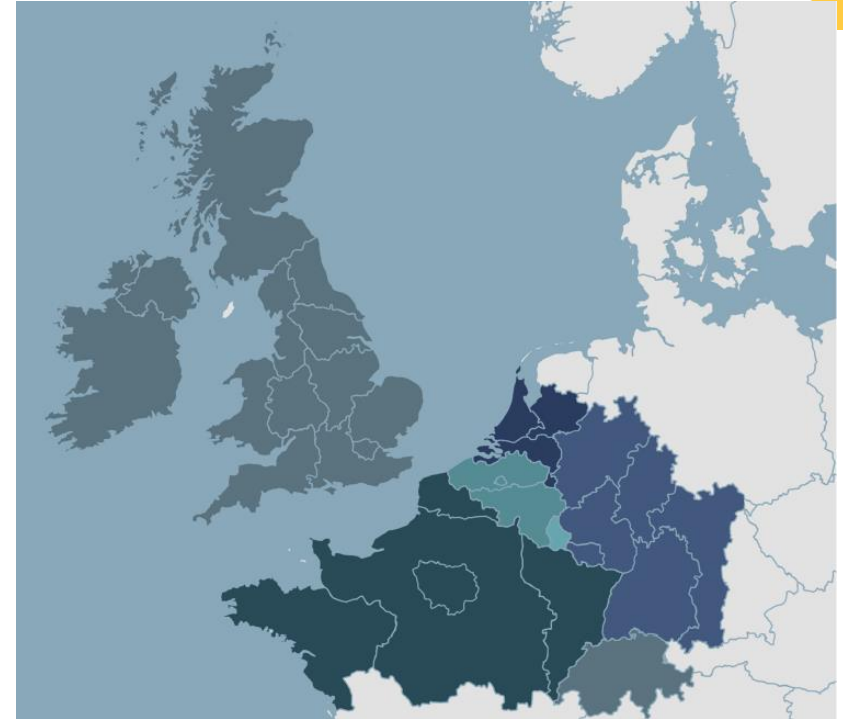
- 16 pilots on integration
- 21 pilots on extraction

Many companies and organisations received support:

Public and private developers, architecture offices, (de)construction companies & organisations, contractors, engineers ...

Many buildings elements were moved during the projects:

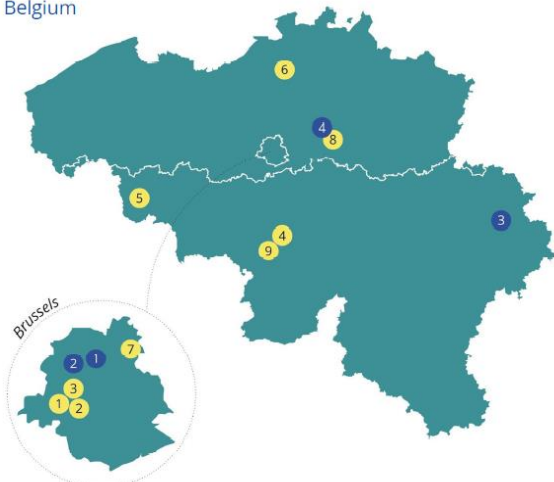
Interior and exterior finishings, technical and sanitary elements, structural concrete and steel, bricks, carpentry, roof tiles, windows and doors, lighting,...



Pilot operations



Belgium



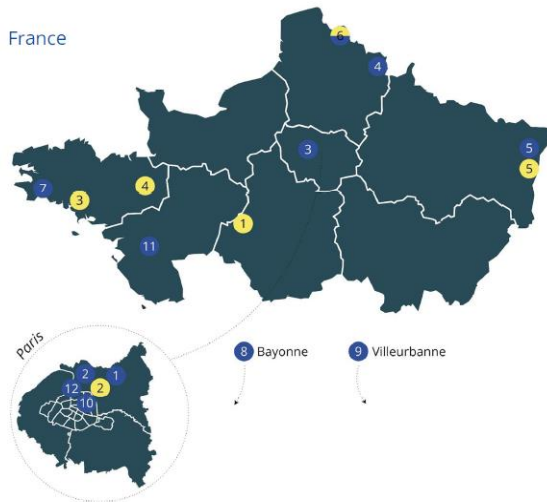
Pilots on extraction

- 1 Petite Île - Reconversion of an industrial site, Brussels
- 2 Belgatue - Tram workshop, Brussels
- 3 KeyWest - Warehouse, Brussels
- 4 Charleroi football stadium - Deconstruction, Charleroi
- 5 Cimenterie Delwart - Housing in an old plant, Tournai
- 6 Ideale woning - Demolition of a social housing block, Lint
- 7 Jules Bordet - Deconstruction of an office building, Evere
- 8 Hertogensite - Renovation of an institute, Leuven
- 9 SWCS - Renovation of an head office, Charleroi

Pilots on integration

- 1 Greenbizz II - Sustainable business incubator, Brussels
- 2 Pavillon - Renovation & extension of a park pavilion, Brussels
- 3 SPW Malmédy - Extension of an office building, Malmédy
- 4 Fonteinstraat - Renovation of social housing, Leuven

France



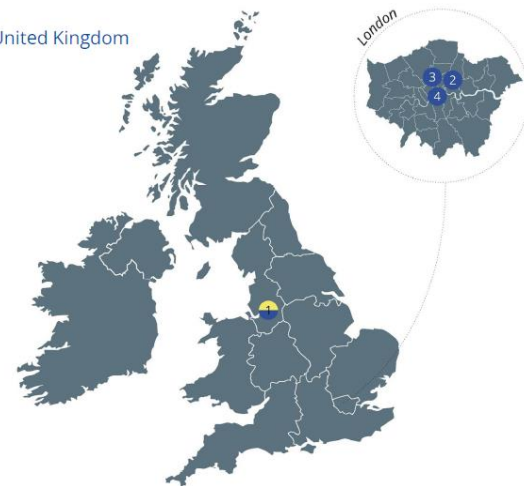
Pilots on extraction

- 1 Sanitas - Deconstruction of apartment buildings, Tours
- 2 CNAP - Office building deconstruction, Pantin
- 3 Lanester - Social housing deconstruction, Lanester
- 4 Elan Bâtitseur - Offices, Rennes
- 5 Nextmed - Hospital, Strasbourg
- 6 La Fabrique des Quartiers - Housing renovation, Lille

Pilots on integration

- 1 DERECON - Concrete modules, Seine-Saint-Denis
- 2 Port Chemin Vert - New social housing block, Aubervilliers
- 3 Dance center - Interior design of a dance center, Paris
- 4 Fourmies - Third space in an old supermarket, Fourmies
- 5 Manufacture des tabacs - Factory conversion, Strasbourg
- 6 La Fabrique des Quartiers - Housing renovation, Lille
- 7 Quimper Station - 2 pilots on the station, Quimper
- 8 Patxa'Ma - Deconstruction of an eco village, Bayonne
- 9 L'Autre Soie - Development project, Villeurbanne
- 10 La Maison des Canaux - Heritage building retrofit, Paris
- 11 La SAMOA - Urban public spaces, Nantes
- 12 La Chapelle - Housing renovation, Paris

United Kingdom



Pilots on extraction

- 1 Our Town Hall - Public town hall restoration, Manchester

Pilots on integration

- 1 Our Town Hall - Public town hall restoration, Manchester
- 2 Slight house - Construction of a private house, London
- 3 Spencer rise - Renovation of a private house, London
- 4 Grosvenor - Refurbishment project, London

Pilot operations : factsheets

This page contains a grid of 30 factsheets, each detailing a pilot operation project. Each factsheet includes a title, a brief description, and various images related to the project. The projects are organized into a 6x5 grid.

Project Name	Project Name	Project Name	Project Name	Project Name
GREENBIZZ II Developing a new business model for the construction market	LA CHAPELLE Reviving an abandoned industrial building for the residential market	DERRECOM Demolition and reconstruction of residential concrete structures	FLAN BÂTISEUR Addressing a new building typology in a mature building context	DANCE CENTER Reusing a former dance studio for a new cultural project
PAVILLON Developing a new business model for the construction market	SLIGHT HOUSE Creating a new building typology for a new urban context	Port Chemin Vert Reusing a former industrial building for a new urban context	NEXTEED Addressing a new building typology in a mature building context	FOURMIES Addressing a new building typology in a mature building context
LA FABRIQUE DES QUARTIERS Small scale urban regeneration with a high potential of reproducibility	MANUFACTURE DES TABACS A new small parking for a public project	SPW Malmédy Reusing a former industrial building for a new urban context	UNAP Addressing a new building typology in a mature building context	KeyWest Reusing a former industrial building for a new urban context
Our Town Hall Reusing a former industrial building for a new urban context	QUIMPER STATION Large scale urban regeneration for a public project	Fonteinstraat Reusing a former industrial building for a new urban context	Lanester Reusing a former industrial building for a new urban context	Charleroi Football stadium Reusing a former industrial building for a new urban context
SWCS Reusing a former industrial building for a new urban context	JULES BORDET Reusing a former industrial building for a new urban context	DELWART CEMENT PLANT Reusing a former industrial building for a new urban context	Petite Ile, City Gate II Reusing a former industrial building for a new urban context	La Maison des Canaux Reusing a former industrial building for a new urban context
				LA SAMOA Reusing a former industrial building for a new urban context

Spotlights : realization of an inventory



Realization of the inventory

Before the visit : Gathering documents

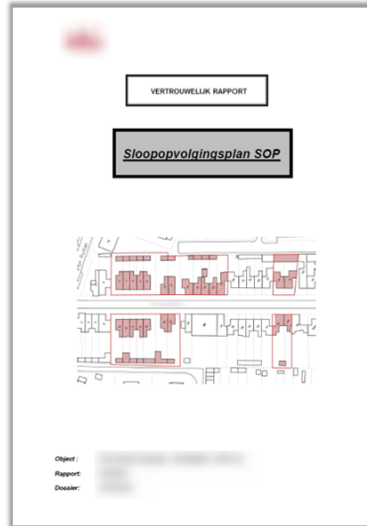
- Demolition inventory
- Plans

Making the inventory

- Differentiate different types of elements
- Dismantling tests



© BBRI



DONNEES DE BASE							
Identification	Photo	Quantité	Dimensions	Masse	Localisation sur site	Etat	Remarques(s)
n°	nom lot	unité cube	unité dim	unité cube total lot			
		unités cube	unité dim	unité cube total lot			ne pas prendre en compte les briques des fondations -> pas de réemploi
bricks pleines, lot 1, sous-bassement		211,27 m ³	17/17,5 * 4/4,5 * 8 cm	tonnes 443,67	bricks basses, maisons 5, 7, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 20, 22	état général moyen, fissures localisées dans les briques mais aussi escalier de fissures dans les joints	ces briques sont plus foncées, moulées à la main. Vu leur aspect moins esthétique, il faut être plus prudent pour ce lot là
bricks pleines, lot 2 sur-bassement		528,18 m ³	17/17,5 * 4/4,5 * 8 cm	tonnes 1109,5	bricks hautes, maisons 5, 7, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 20, 22	bon état général fissures dans le joint à un endroit mais dans les briques à un autre.	quand même dures à enlever 1 brique à la main (début par facilement puis très dur) mais les briques ont l'air de résister. Couche gris externe, couche interne beige et poussiéreuse (chaux ou tartare)
bricks pleines, lot 3 muret de jardin		8,6 m ³	17,2/18,5 * 4,7/5 cm	tonnes 18,06	annexe et maisons de jardin (5, 7, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 20, 21, 22, 23, 25, 27, 29, 41, 46, 48)	bon état général	à l'extérieur une couche plus dure (ciment) de 1 cm mais au centre: beaucoup plus friable -> facile à démonter. Bricks clairs et plus foncés. Bons candidats pour le réemploi
bricks pleines, lot 4, annexes		36,875 m ³	17,2/18,5 * 4,7/5 cm	tonnes 77,438	annexe (5, 7, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 20, 21, 22, 23, 25, 27, 29, 41, 46, 48)	bon état général	à l'extérieur une couche plus dure (ciment) de 1 cm mais au centre: beaucoup plus friable -> facile à démonter. Bricks clairs et plus foncés. Bons candidats pour le réemploi

Spotlights : realization of an inventory

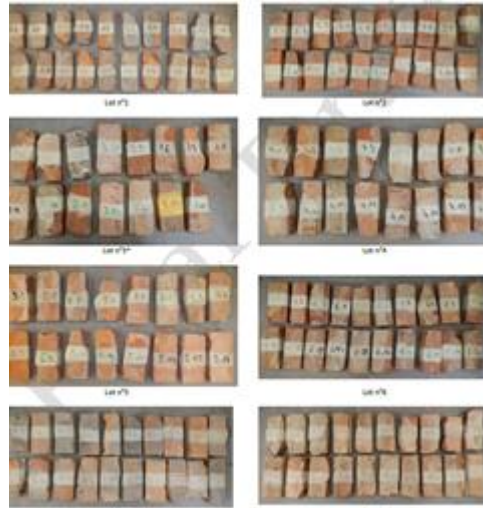


Complementary studies

- Laboratory tests on bricks
- Life Cycle Analysis
- Financial estimate of the dismantling operation



Frost test

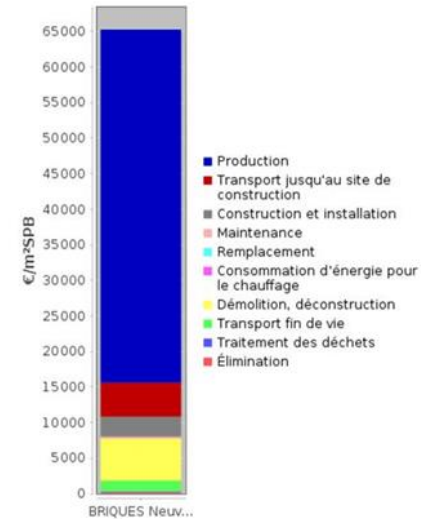


Bricks samples



... and results

© BBRI



LCA study - new brick © BBRI



83% reduction of environmental impact by using reused bricks



Exterior bricks suitable for reuse



GREENBIZZ II

Encourage diversity

BRUSSELS - BE - 2021 - 4.500 m² - Public procurement

About

- New construction of production areas
- Design & Build procurement
- Integration of reclaimed building materials

Challenges

- Implementation of a strategy
 - minimum reuse requirements
 - extra points when exceed this minimum
- Prospect of reproducibility for similar future development



Spotlights : adapting public procurement documents (integration)



Reuse performance to be determined :

- Quantitative "reuse" objectives
 - a. Minimum requirements
 - b. Opportunities
 - c. Initiatives
- Qualitative selection of the team

Batch TX	Field of application	R or O*	Reuse performance	U
Architecture	EXT doors, windows and frame	O	10%	price
	IN doors, windows and frame	R	50%	pce
	Floor coverings	R	50%	m ²
	Wall coverings	R	50%	m ²
Technical equipment	Sanitation	O	25%	pce
Outdoors	EXT Floor coverings	R	60%	m ²

R = Requirement, O = Opportunity

Spotlights : adapting public procurement documents (integration)



→ **Room for manoeuvre**

→ **Diversity**

→ **Flexibility**

Spotlights : adapting design to reuse



Slight House

Creative bonding with reclaimed bricks for a new private house

London - UK - 2021 - 87 sqm - Private procurement

About

- Cladding of a façade of a new Londonian private house

Challenges

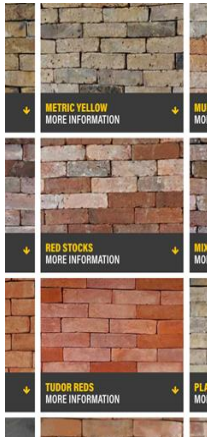
- Finding the right type of reclaimed brick and how to install it



Spotlights : adapting design to reuse

- Choice of reused bricks at the design stage

→ Determine types of reuse materials from the **beginning of the project**



© London Reclaimed Brick Merchants

- Standard and predictable nature of the chosen brick

→ Rely on materials that are **stable** on the reuse market and whose **characteristics are known**



© Studio Bark



© Studio Bark

Spotlights : (de)construction in action



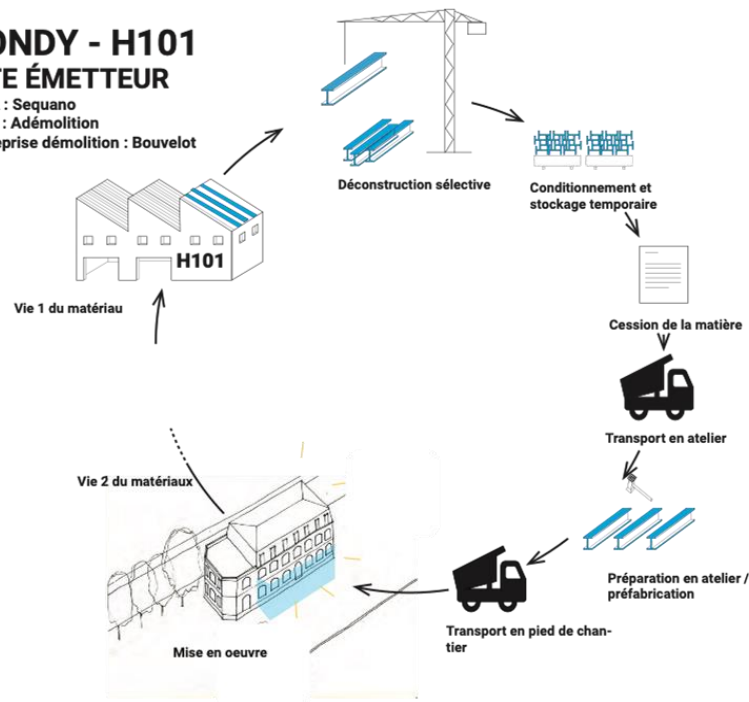
La Maison des Canaux

deconstruction & reconstruction of a steel structure
(site to site reuse)

PARIS - FR - 2021 – public tender – Size : 1009 sq.m

BONDY - H101 SITE ÉMETTEUR

MOA : Sequano
MOE : Adémolition
Entreprise démolition : Bouvelot



MOA : Ville de Paris
MOE : Grand8-tisco_Bellastock
Entreprise de préparation/fourniture/pose : General
MAISON DES CANAUX
SITE RÉCEPTEUR

Spotlights : (de)construction in action



crédits : Est Ensemble / Camille Millerand



crédits : Est Ensemble / Camille Millerand



crédits : Bouvelot TP



Crédits : Ville de Paris



Crédits : Ville de Paris

Challenge

- Searching for reclaimed materials
- Assessing the fitness for use and meet the technical and insurance challenge (collective development of a technical scheme)
- logistic (schedules, storage) and legal aspects

Spotlights : (de)construction in action



NEXTMED

Early XXth finishing works valuable for the reuse market

Strasbourg – FR – 2020 – Public procurement –
6 200 sq.m – 51 tons extracted



CNAP

Dismantling interior elements of an office building for off-site reuse

Pantin – FR – 2021 – public procurement –
4 600 sq.m – 140 tons extracted



SANITAS

Deconstruction of apartment buildings for reuse in multiple sites

Tours – FR – 2021 – public procurement –
16 000 sq.m – 1100 tons extracted



Spotlights : framework actions



V. Jöncheray/Nantes métropole



SAMOA

Nantes – FR - Public procurement

Size : Ile de Nantes (337 hectares)

+ Accord-cadre de travaux

La passation d'un accord-cadre de travaux par bons de commande à prix unitaires amène certaines contraintes. Les prix remis dans l'offre ne pourront pas ou peu évoluer alors que l'offre en réemploi peut être sujette à plus de variabilité que le neuf. Il est difficile d'anticiper la quantité disponible de matériaux recherchés, ainsi que leurs caractéristiques physiques. Pour autant, certaines filières de matériaux de réemploi sont suffisamment développées pour garantir une stabilité satisfaisante.

Cette stratégie décrit leur intégration dans le projet. Elle intervient donc après l'attribution du marché de service (cf. Route A).

Passation de l'accord-cadre



Dans les critères d'attributions, valorise notamment la méthodologie d'approvisionnement des matériaux (sources fiables et stables dans le temps).



Dans le cahier des charges techniques, prévoit une version réemploi (avec des spécifications plus flexibles (12)) et une version neuve (spécifications plus détaillées) pour les matériaux vides.



Propose une méthodologie croisant des sources très fiables (4), mais aussi éventuellement d'autres sources (3) selon son réseau et son expertise.

+ étude du projet



Identifie en priorité des matériaux stables sur le marché du réemploi (4), dont la quantité et les prix seront peu soumis à variations.

+ exécution du projet



Transmet le plus en amont possible à l'entreprise les besoins à venir en matériaux de réemploi pour évaluer la faisabilité de la commande.



Maintient une veille sur l'état des stocks chez les fournisseurs de matériaux de réemploi (4) et les autres sources potentielles.



Spotlights : framework actions



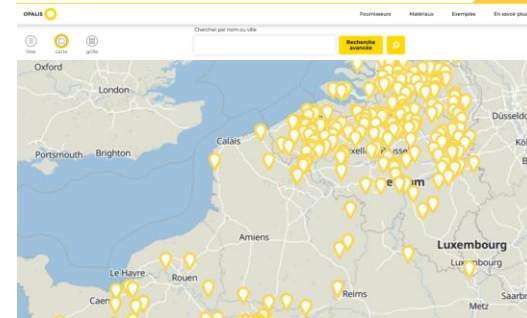
Opération 1



Opération 2



Opération 3



Spotlights : assisting reclaim dealers



Elan Bâtisseur
Rennes - FR - 2021 -
Private procurement
Size : >3000 sqm



Patxa'Ma
Bayonne - FR - 2021 -
private procurement
Size : 1900 sq.m



Lesson learnt

Reuse practices...

Can take place in various contexts and overcome all kinds of obstacles

Implies (mostly) smooth adaptations

Requires all stakeholders' involvement

Requires getting rid of some clichés

Can be highly replicable



Tips

Anticipate

Set a clear objective at the start of the project

Embrace all the possibilities (reuse pathways)

Systematise reuse tools whenever possible

Training

Capitalise on feedbacks



37 pilot operations to discover

GREENBIZZ II
Development of a new generation of green buildings in the residential market.

LA CHAPELLE
Reviving an emblematic residence in the residential market.

DERCOM
Demonstration of reconstruction of residential concrete structures.

FLAN BÂTIMENTUR
Addressing with a new generation of modular building elements.

DANCE CENTER
Reused factory for a small theater design project.

SPENCER RISE
Focus on the design of a new residential project.

SANITAS
Demonstration of a new generation of apartment buildings for the rental market.

PAVILLON
Developing an emblematic house in the residential market.

SLIGHT HOUSE
Concrete housing with reinforced bricks for a new green house.

Port Chemin Vert
The concept.

NEXTEED
Addressing every time building components together in the rental market.

FOURMIES
Setting up a framework allowing conversion in 48 weeks in the rental project.

GROSVENDOR
Setting new rules with a major real estate company.

HERTOGENSITE
Addressing every time building components together in the rental market.

LA FABRIQUE DES QUARTIERS
Small scale rental operation with a high potential of reproducibility.

MANUFACTURE DES FABRICE
A second small parking for a public project.

SPW Malmédy
Addressing every time building components together in the rental market.

UNAP
Addressing every time building components together in the rental market.

KeyWest
Addressing every time building components together in the rental market.

Prixix Ma
Addressing every time building components together in the rental market.

De Ideale Woning
Addressing every time building components together in the rental market.

Our Town Hall
Setting up a new public space in the residential market.

QUIMPER STATION
Large scale rental project in the residential market.

FONTEINSTRAT
Addressing every time building components together in the rental market.

Lanester
Addressing every time building components together in the rental market.

Charleroi Football stadium
Addressing every time building components together in the rental market.

L'Autre Soir
Addressing every time building components together in the rental market.

BELGRADE
Addressing every time building components together in the rental market.

SWCS
The integration of the urban public space in the residential market.

JULES BORDET
Addressing every time building components together in the rental market.

DELWART CEMENT PLANT
Addressing every time building components together in the rental market.

Petite Ile, City Gate II
Addressing every time building components together in the rental market.

La Maison des Canaux
Addressing every time building components together in the rental market.

LA SAMOA
Addressing every time building components together in the rental market.