Welcome to BUILD UP

The European Portal for Energy Efficiency in Buildings

WEBINAR

Circular talks

Let's talk circular social and affordable housing

18 April 2023

10:00 - 11:30 and 14:00 - 15:30 CET

BUILD UP
The European Portal For Energy Efficiency In Buildings

DRIVE

ALMA MATER STUDIORUM UNIVERSITÀ DI BOLOGNA

UIPI INTERNATIONAL UNION OF PROPERTY OWNERS

HOUSING EUROPE

Architects' Council of Europe
Conseil des Architectes d'Europe
ace-cae.eu

HOUSEFUL

Drive 0 has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No. 841850. HOUSEFUL has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No.776708.

Mainstreaming circularity in the social housing sector - the role of the EU

- **Philippe Moseley**, Sustainable Industrial Policy and Construction at DG GROW
- **Carles Oliver Barceló** & **David Mayol Laverde**, Technical Department at the Balearic Social Housing Institute (IBAVI)
- **Isabelle Quet-Hamon**, Sustainable Housing Department at Paris Habitat
- **Hugo de Vries**, Area Wonen (Uden)
- **Raphaëlle Brune**, Society for Housing of the Brussels-Capital Region (SLRB/BGHM)

Following the presentations, we will have approximately 30 minutes for discussion with panellists

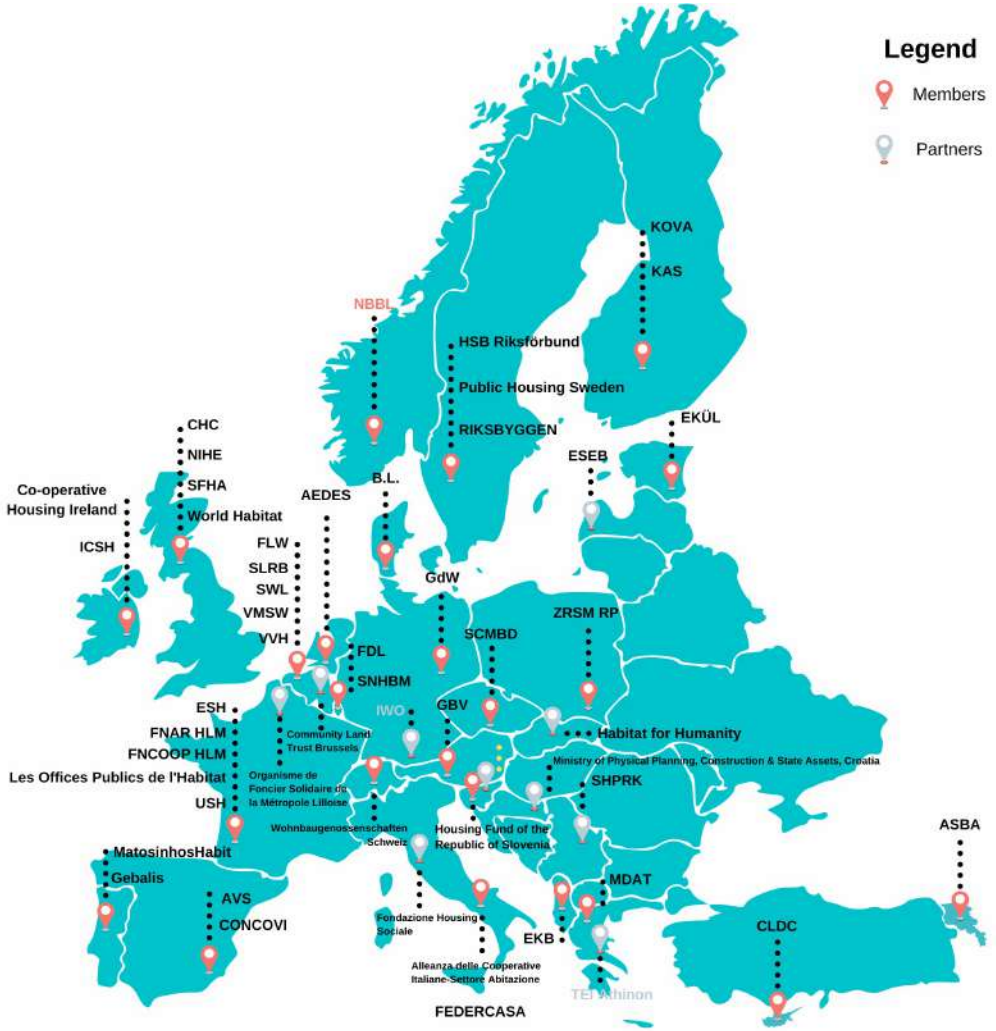
- Please ask your questions -

HOUSEFUL DRIVE ARV

The richness of the Housing Europe Network

- 43,000 local housing organisations
- 25 countries
- Over 25 million dwellings
- roughly 200,000 new dwellings per year
- over 200,000 dwellings refurbished per year
- roughly €40bn in new investment per year
- 7,500+ staff employed by the federations
- 300,000+ staff employed by local providers

One goal
To provide decent & affordable housing for all



EU policies supporting the green transition of construction

Mainstreaming circularity in the social housing sector

18 April 2023

Philippe Moseley,
Policy Officer, Construction Unit, DG GROW

Policy context

Political imperative

European leadership

Changing legislative context

Environmental impacts of construction

Opportunities of a shift from linear to circular economy

European Commission

The EU construction industry ecosystem

- 9.6% of EU Gross Value Added (EUR 1 158 billion)
- 25 million jobs, 5.3 million firms
- Low productivity
- Low innovation uptake
- High environmental impact

Annual Single Market Report 2023:
https://ec.europa.eu/docsroom/documents/48877

European Commission

Transition Pathway

Transition pathway: https://europa.eu/!FcbxNr

- Introduction

1. Competitiveness
2. Skills and talent
3. Enabling framework
4. Research, Innovation, Technology
5. Funding
6. Towards a fair and safe built environment

- Annexes

Transition Pathway for construction

Recommended action	Actors	Timeframe
3.1 Consider setting **preparing for re-use and recycling targets** for construction and demolition waste and its material-specific fractions, in the context of the Waste Framework Directive	EU/MS	M
3.4 **Prioritise renovation over demolition** and reconstruction in policies, programmes and developments Industry and	EU/MS	S/M
3.7 Strengthen requirements for **pre-demolition audits** and selective deconstruction in capital investment projects, in line with the EU Construction & Demolition Waste Management Protocol	EU/MS	M/L
3.11 Invest in continual and predictive **maintenance of buildings and infrastructure works** to extend their service life	MS/owners	S/M/L
3.14 Encourage **disclosure of buildings' environmental performance**, both designed and as built, to enable benchmarking according to Level(s)	Industry and MS	S

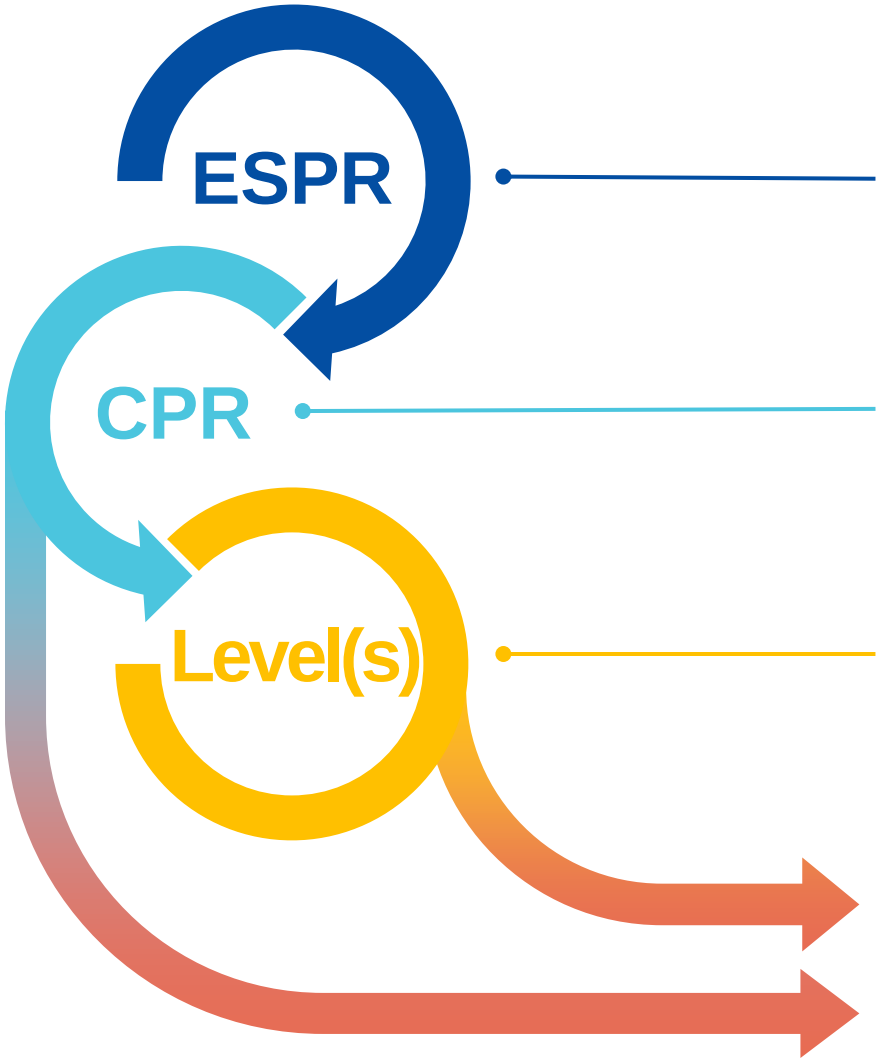
Construction Products Regulation (CPR)

- Lays down EU-wide rules for marketing construction products
- Undergoing revision to:
  - ✓Improve functioning of single market for construction products
  - ✓Integrate sustainability requirements

CPR review:
https://europa.eu/!Dy69pr

European Commission

National Regulatory framework



Ecodesign for Sustainable Products Regulation
Setting performance and information requirements for products placed on the Single Market

Construction Products Regulation
Delivery of environmental information from construction products and implementation of requirements

Level(s) methodology
Sustainability assessment of buildings

National approach
Environmental building assessment
Product Public procurement

European Commission

CPR: facilitating circularity

Used or remanufactured construction products	Clarify + establish conditions for marketing	Art. 10(2) and (3), and 12
	Protocol on dismantled construction products (safe re-use / remanufacturing)	Art. 29
	Information on reparability, re-use, remanufacturing + recyclability	Art. 22(2) and Annex I Part D
	Maximum flexibility: • Unchanged used products on the EU market excluded • Voluntary assessment • Member States may exempt certain used products if they circulate only in their territory	Art. 2 (2), 10, 12, and 22
Surplus products	Permitting a second life	Art. 12
Closed material circles	Member States: may establish mandatory deposit-refund systems + ban destruction of products	Art. 7 (7) and (8)

EU Taxonomy for sustainable activities

- Objective: direct investments towards “sustainable” projects
- Climate Change Adaptation & Mitigation (in force since January 2022)
- Water, Biodiversity, Pollution, Circular Economy (expected soon)

EU Taxonomy:
https://europa.eu/!WV46yv

European Commission

EU Taxonomy: circular economy draft DA

Annex II chapter 3 ‘Construction and real estate activities’

Construction and renovation of buildings:

- Treatment of waste (pre-demolition audits, sorting, preparing for re-use, recycling)
- Calculation and disclosure of life cycle emissions
- Design for adaptability and deconstruction
- Recycled content thresholds for top 3 materials used by weight
- Use of electronic tools

Draft Delegated Act consultation until 3 May 2023:
https://europa.eu/!x4YKQy

High Level Construction Forum

20 April: session on the green transition of construction (online)

- 2050 Whole life carbon roadmap for buildings: presentation of modelling results and work to develop the roadmap
- Study on measuring circular approaches
- EU end-of-waste background data study
- Sign up for HLCF mailing list: https://europa.eu/!dXKubx

European Commission

Measuring the application of circular approaches in the construction industry ecosystem

European Commission

#SingleMarket

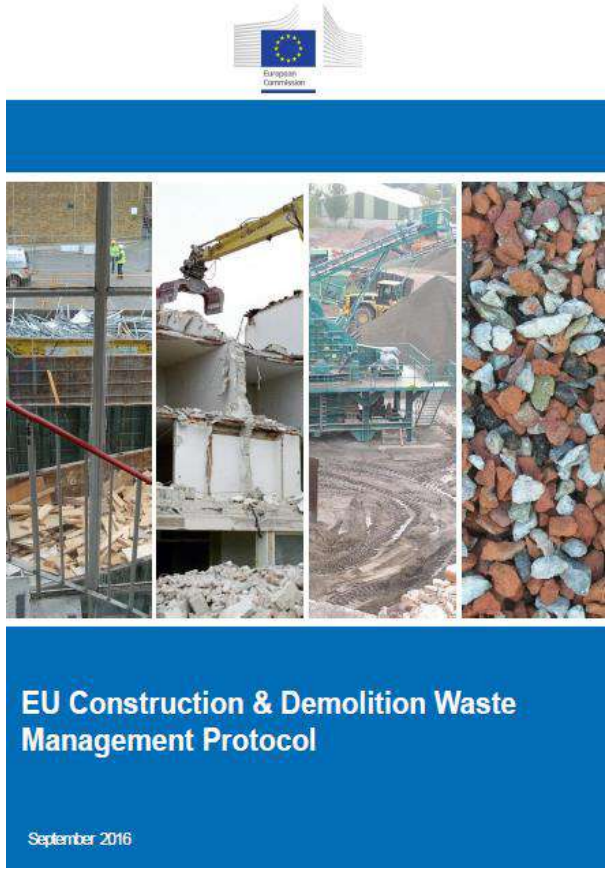
- What drives construction actors to apply circular approaches?
- What indicators could they use for reporting of circularity?

Study website: https://europa.eu/!RpW4xD

European Commission

Guidance

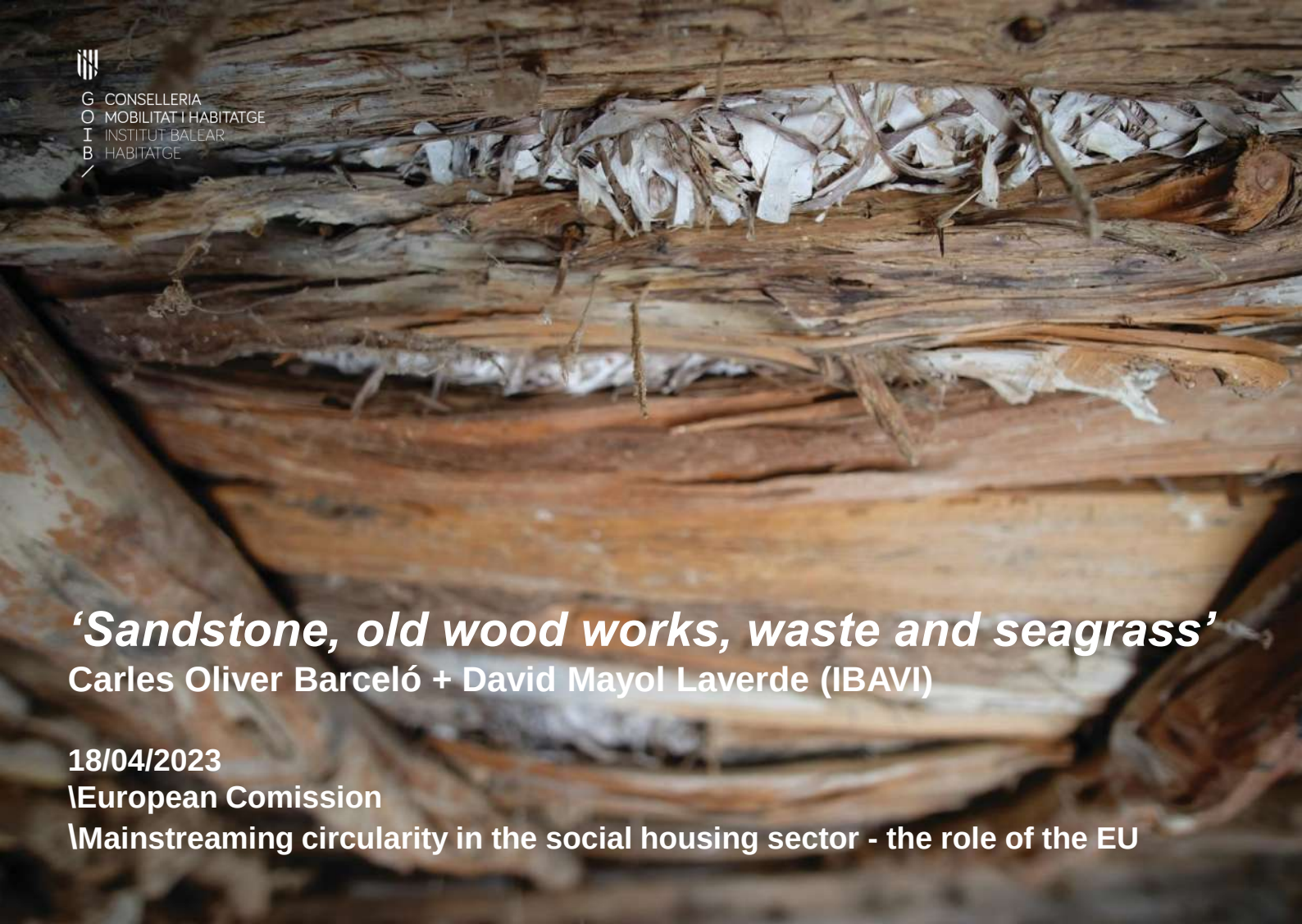
- **EU Construction & Demolition Waste Management Protocol**
- Available in 15 languages
- https://ec.europa.eu/docsroom/documents/20509/
- Revision being planned



Thank You! Merci! Gracias! Diolch!

https://single-market-economy.ec.europa.eu/sectors/construction/construction-transition-pathway_en

EU Construction Ecosystem



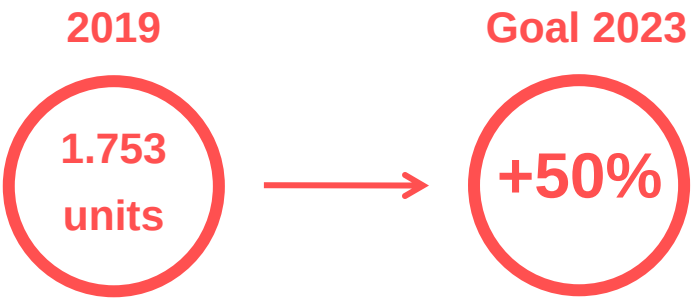
‘Sandstone, old wood works, waste and seagrass’

Carles Oliver Barceló + David Mayol Laverde (IBAVI)

18/04/2023
\European Comission
\Mainstreaming circularity in the social housing sector - the role of the EU


IBAVI
Institut Balear de l'Habitatge
Govern de les Illes Balears

/ HOUSING PROMOTION



/ HOUSING PROMOTION

/ REALITY IN 2023: +72% GUARANTEED INCREASE

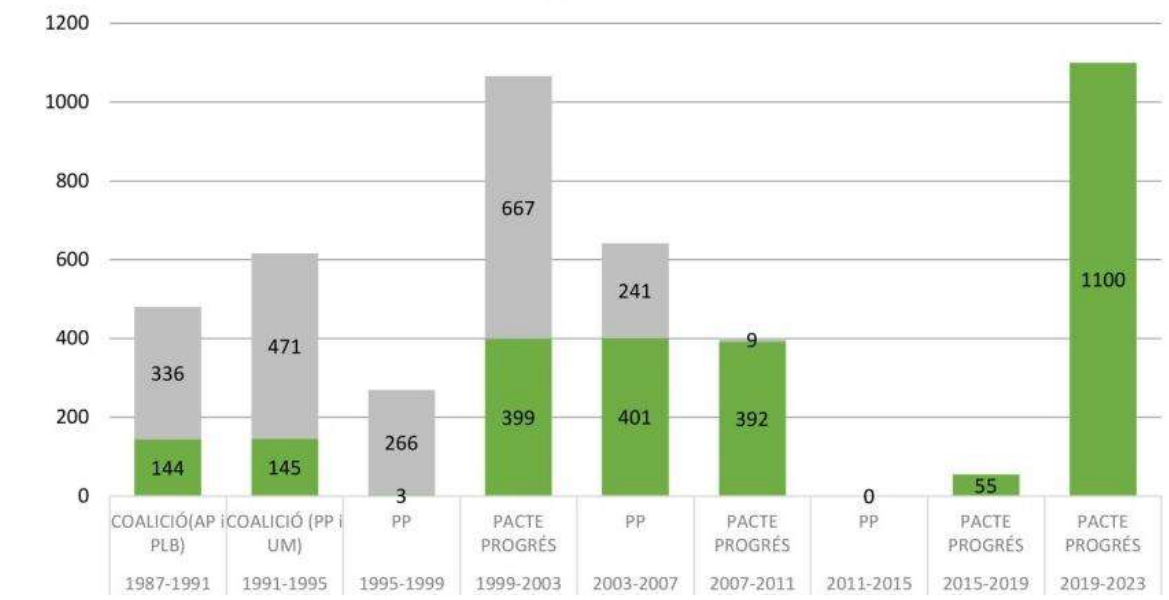
+ 1.173 NEW HOUSES BUILD TO RENT (2019-2023)

+ 103 HOUSING REHABILITATION BUILD TO RENT

/ BUDGET: +225.000.000 € *

*** Including parking slots and other premises**

// AFFORDABLE & SOCIAL RENT



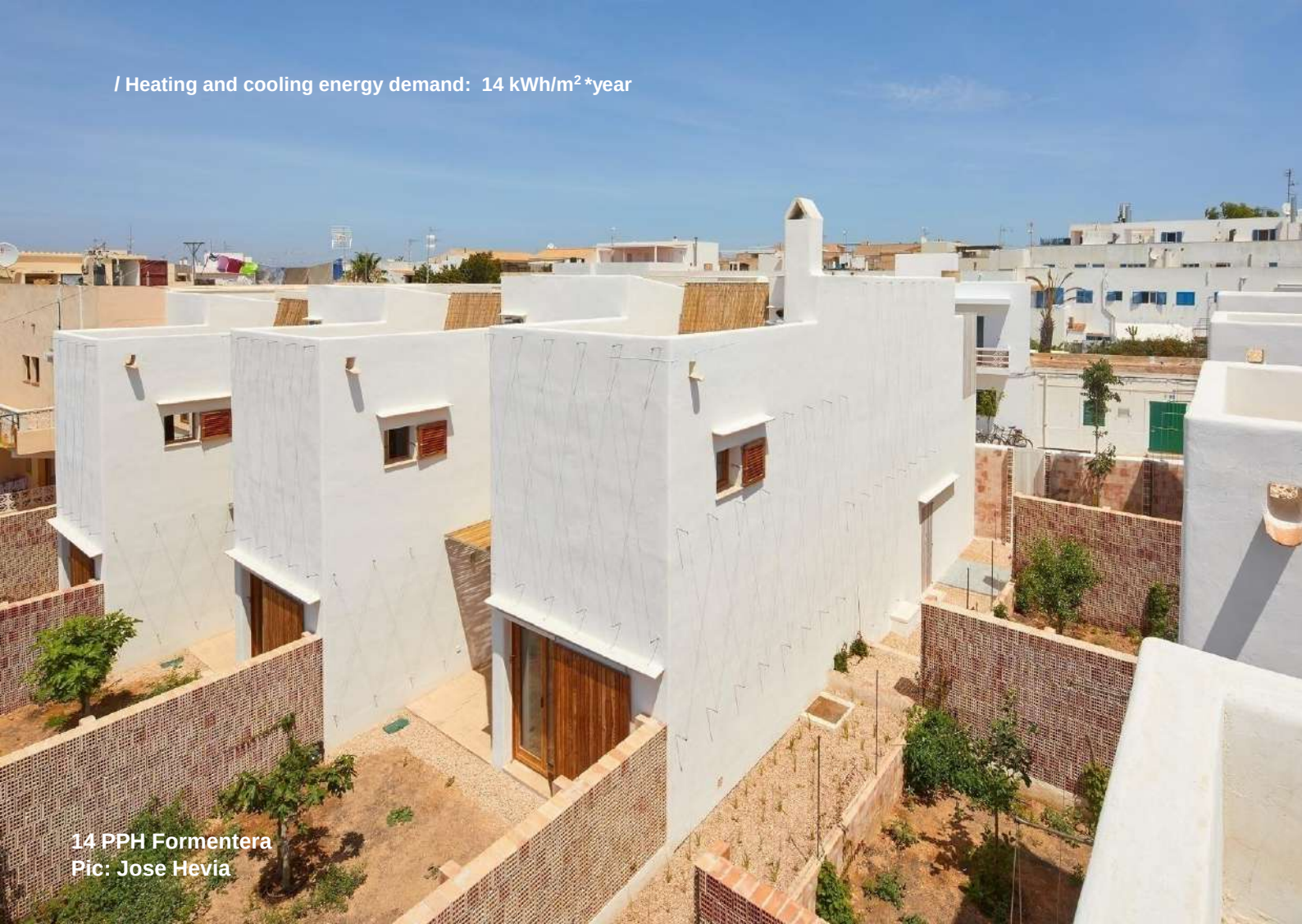
LIFE REUSING POSIDONIA

CONSELLERIA
MOBILITAT I HABITATGE
INSTITUT BALEAR
HABITATGE


WE DON'T INHABIT A HOUSE,
BUT AN ECOSYSTEM
Pic: CRAM Foundation

14 PPH Formentera/ Posidonia insulation, density 185 kg/m^3

/ Heating and cooling energy demand: 14 kWh/m^2*year



14 PPH Formentera
Pic: Jose Hevia

/CO_2 emissions during buiding construction:

Project:	**445,84**	**kgCO_2/m²**
Reference building:	**1.134,80**	**kgCO_2/m²**
Reduction:	**60,71%.**	

14 PPH Formentera
Pic: Jose Hevia

14 PPH Formentera
Pic: Jose Hevia

14 PPH Formentera
Pic: Marià castelló

Measuring tools

NEWS ARTICLE | 2 June 2021

EU honours outstanding LIFE projects

The Awards recognise the most innovative, inspirational and effective LIFE projects in three categories: nature, environment and climate action. For this 15th edition, a virtual ceremony took place during the EU Green Week 2021 – Europe's most prestigious environmental event.

THE WINNERS

From 15 finalists, three projects were chosen by a high-level jury as this year's winners.

LIFE Award for Nature:

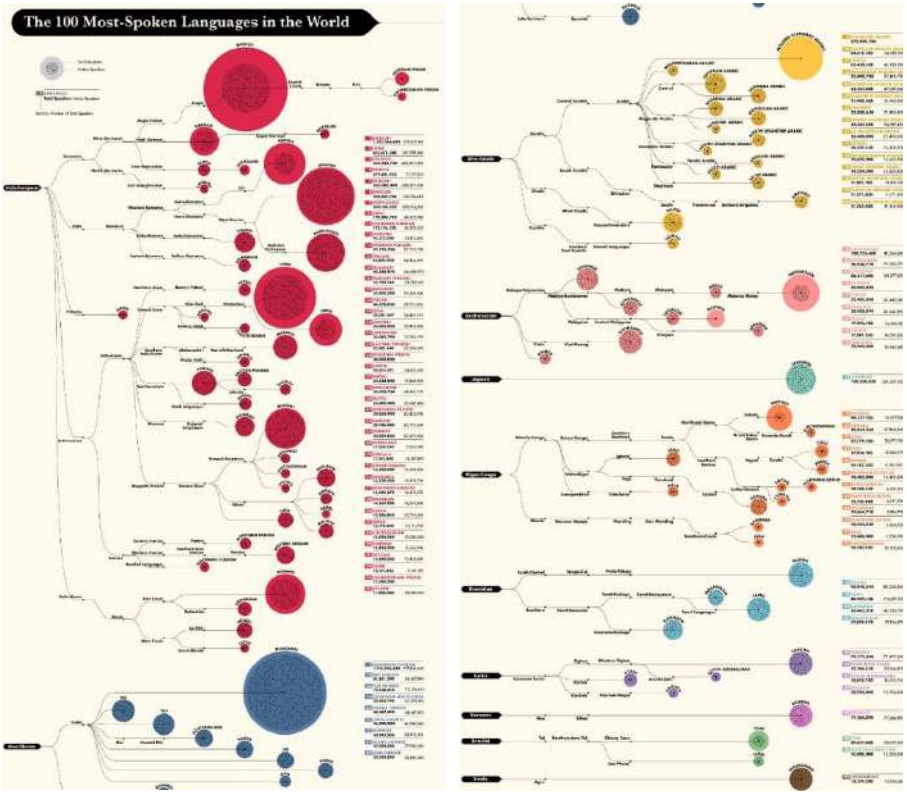
In the Slovak Republic, the **LIFE ENERGY** team put a stop to many birds colliding with powerlines. They installed 8 600 bird flight diverters along 77 km of the most dangerous areas. These diverters protect 700 birds from collisions every year. The team also planted 550 trees to enhance existing wind breaks, helping the birds to see power lines better.

LIFE Award for Environment:

The team behind **LIFE REUSING POSIDONIA** used dried *Posidonia oceanica* seagrass as an effective and inexpensive thermal insulation in 14 social housing units for poor and disadvantaged people on the Balearic island of Formentera (Spain). This local, traditional and environmentally friendly construction method reduced emissions by 60%, cut energy use by 75%, and water by another 60%.

“We people see and think through the Language[1]”

[1] *‘the limits of my language mean the limits of my world’’. Tractatus, Ludwig Wittgenstein, 1921.*



7.000 spoken languages in the world
Pic: Word.Tips

Map of resource and heritage

Son Gotleu, Palma

Pic: José Hevia

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GOVERN DE LES ILLES BALEARS
IBAVI HABITATGE

Stone

Earth

Wood

Posidonia oceánica

Demolition resources

Local natural materials (Mallorca)

/ Using materials without CE mark

Construction Products Regulation (EU) 305/2011 entered into force. It requires that all construction products that are covered by Harmonised standards are CE marked.

‘For construction products that are not (fully) covered by a harmonised standard there is an alternative route to CE marking, but it is recommended to use the available expertise at the product contact points and technical assessment bodies, especially for new markets and not-harmonised products.’

And now the question:

‘HOW are we going to go from 14 to +1.000 sustainable social housing units in 4 years?’


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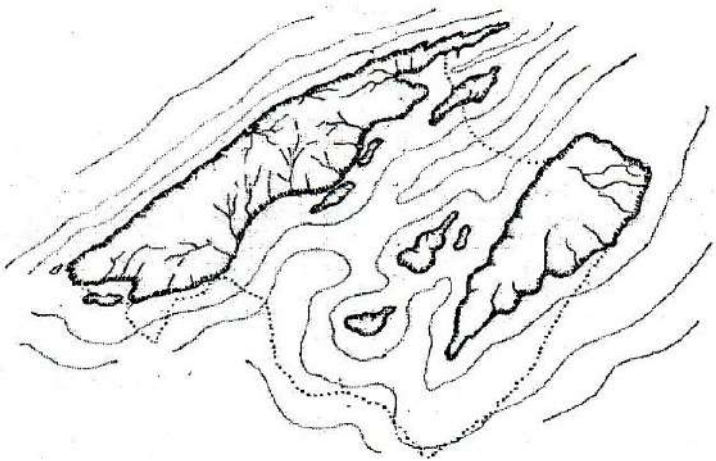
SANDSTONE



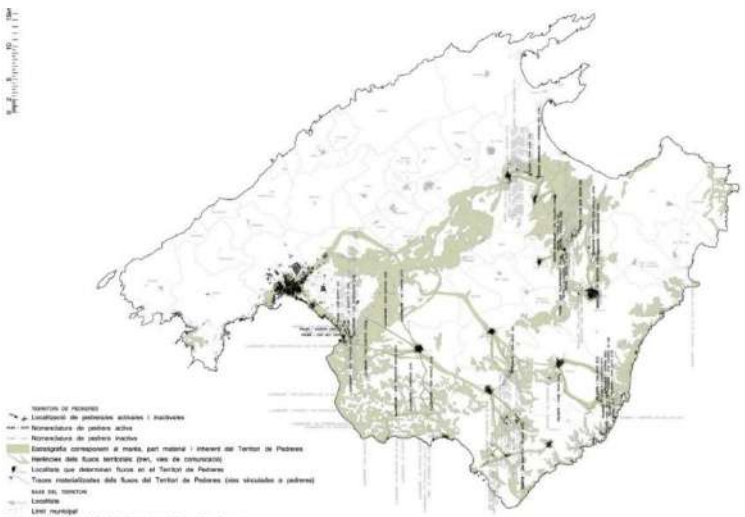
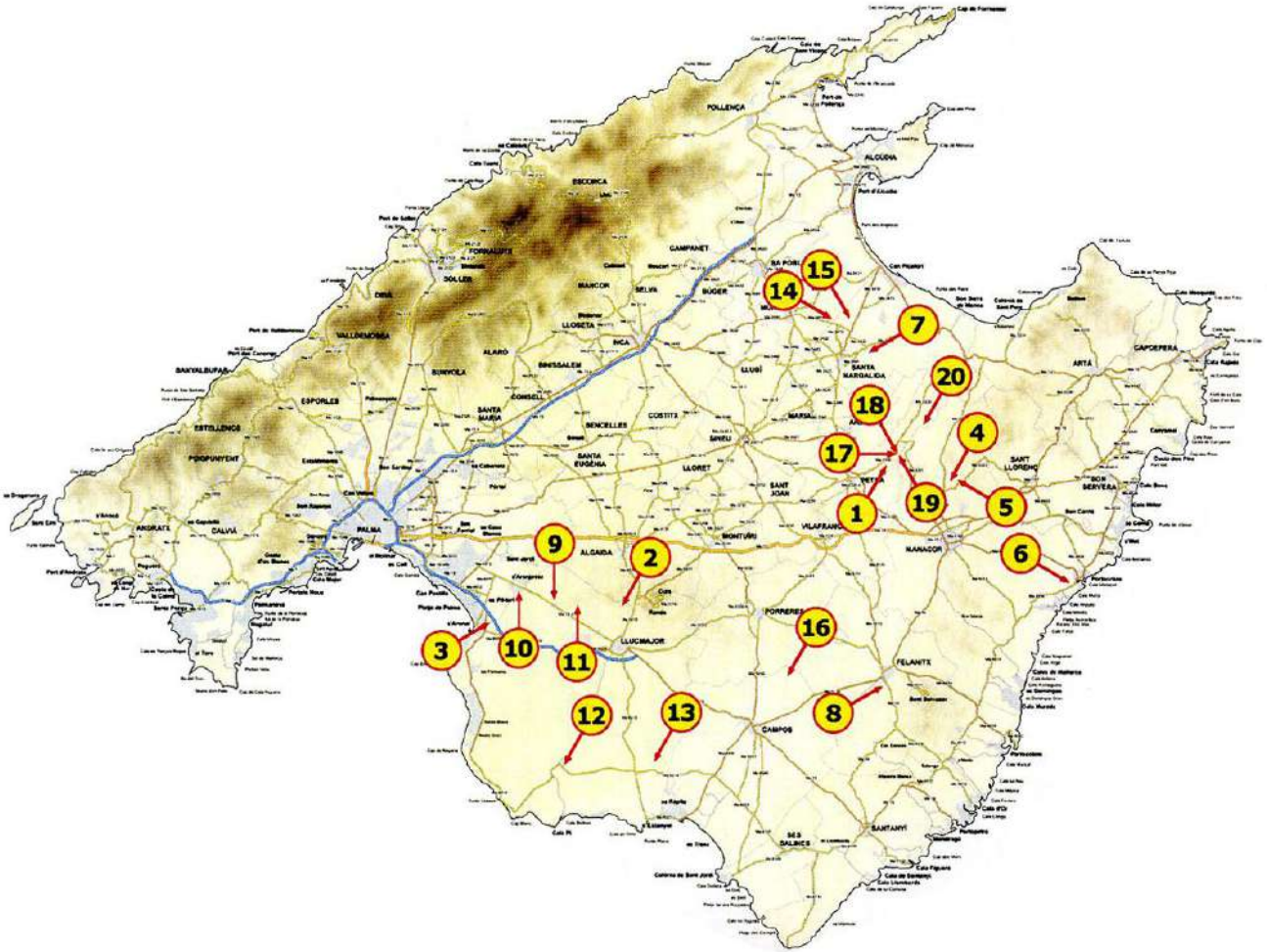


Fig. 1 Extensió del Territori de Pedreres.



Source: EL MARÈS, Ramon Sánchez Cuenca, 2010

Quarries' extinction

Vernacular & institutional

\Heating and cooling energy demand: 7,49 kWh/m^2*year

8 PPH 39th Salvador Espriu st. Palma.

Pic: Jose Hevia

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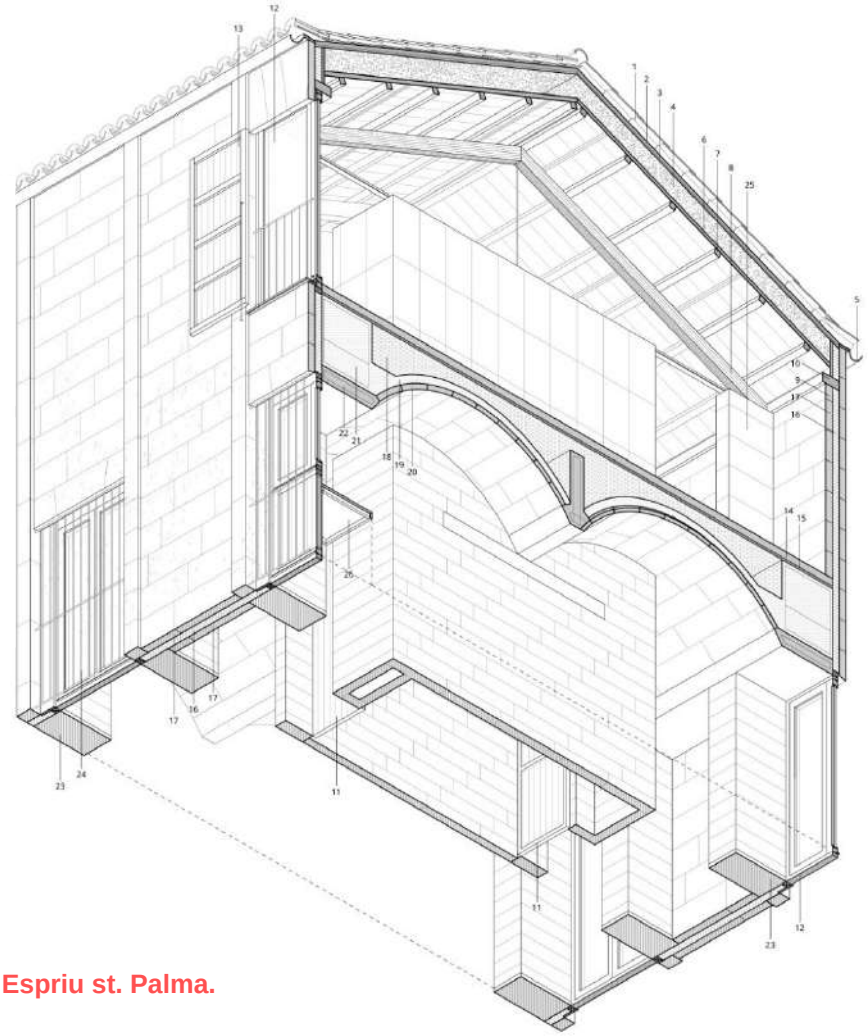

8 PPH 39th Salvador Espriu st. Palma.

Cross section

8 PPH 39th Salvador Espriu st. Palma.

Pic: José Hevia

8 PPH 39th Salvador Espriu st. Palma.

Pic: José Hevia

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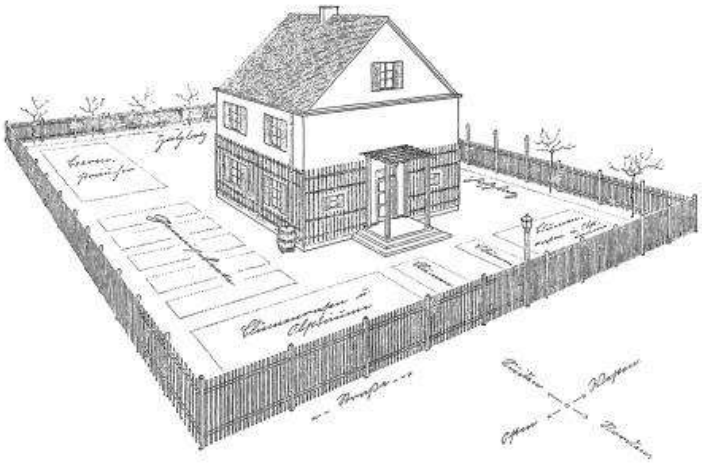
Pic: José Hevia



'The less we require our work to be entirely new, the more refined it will become'

Stephen Bates, Lecture of the Heinrich Tessenow Gold Medal for architecture, november 2006

Pic: Heinrich Tessenow – Ein Baumeister, 1876-1950

6 PPH 21st Ses Monges st. Santa Eugènia.

Pic : Milena Villalba

G. CONSELLERIA
O. MOBILITAT I HABITATGE
I. INSTITUT BALEAR
B. HABITATGE

/ Heating and cooling energy demand: 4,80 kWh/m^2 *year

6 PPH 21st Ses Monges st. Santa Eugènia.

Pic : Milena Villalba

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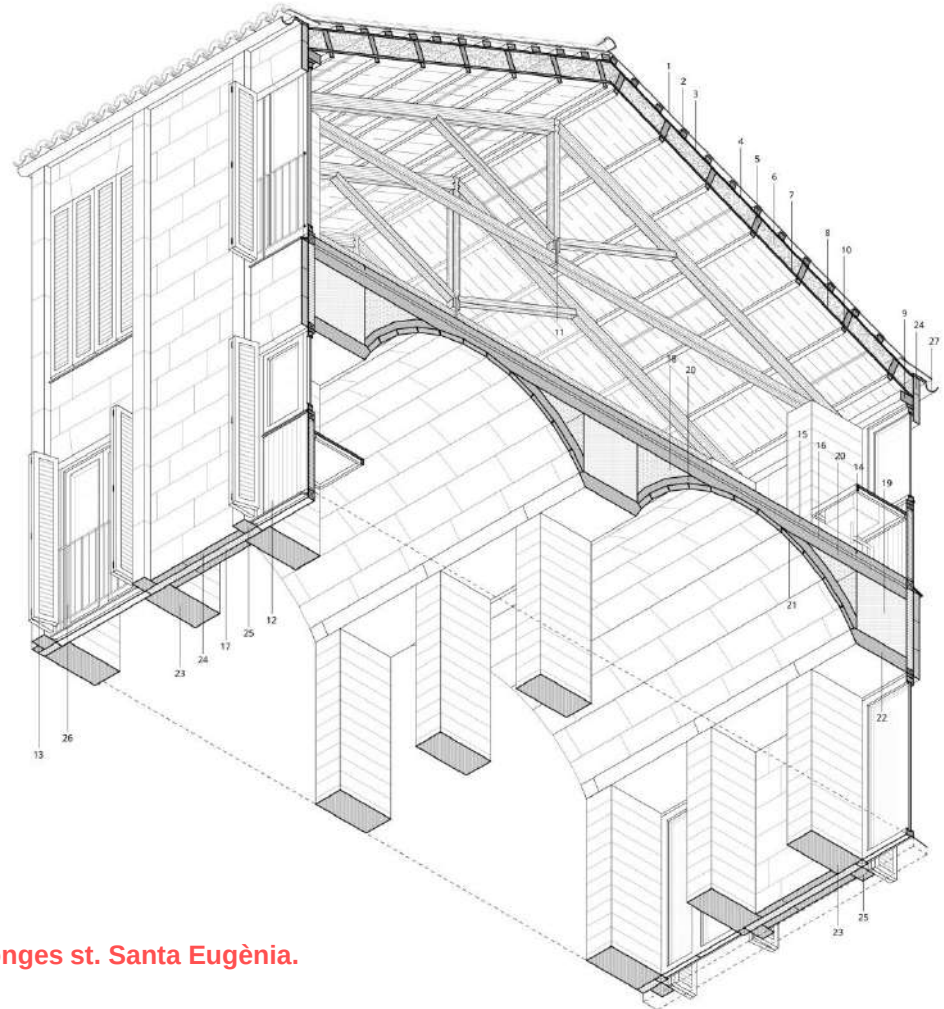
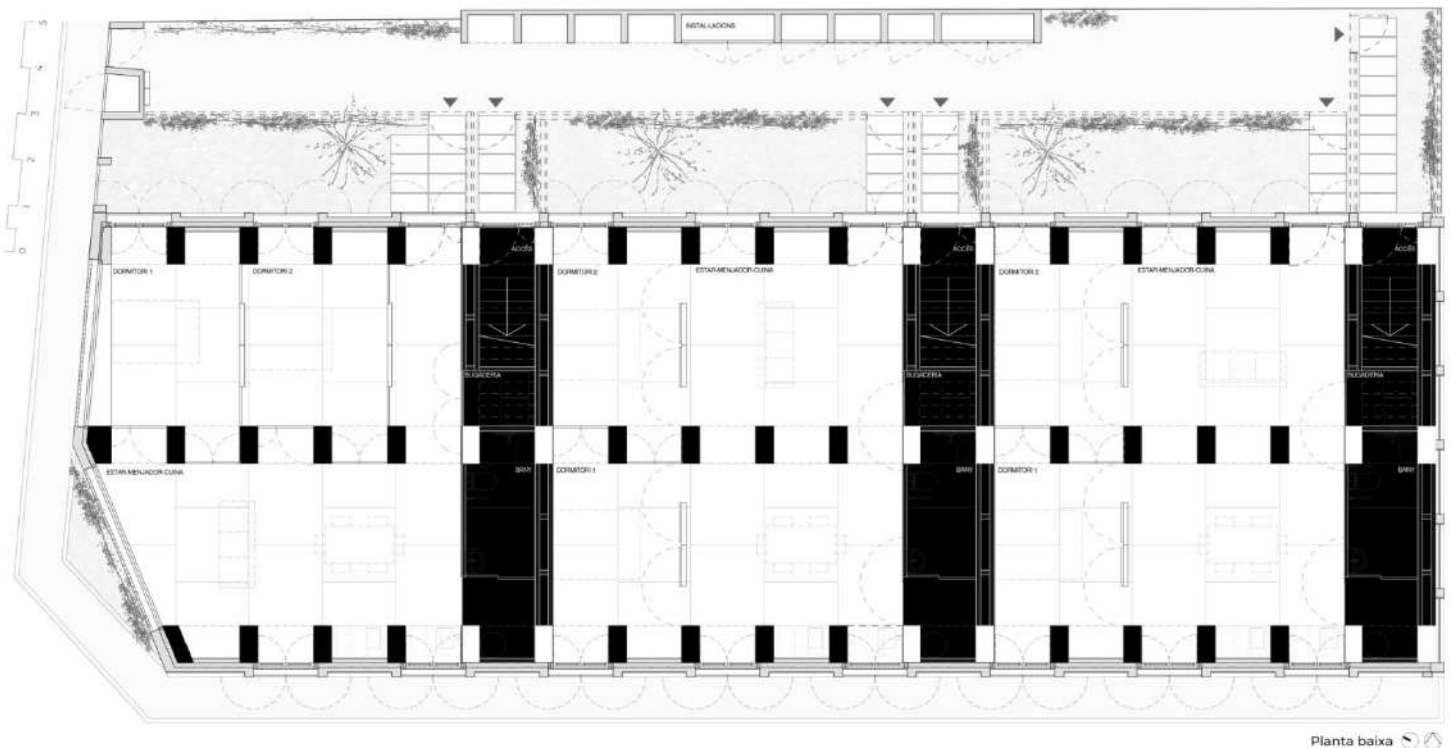


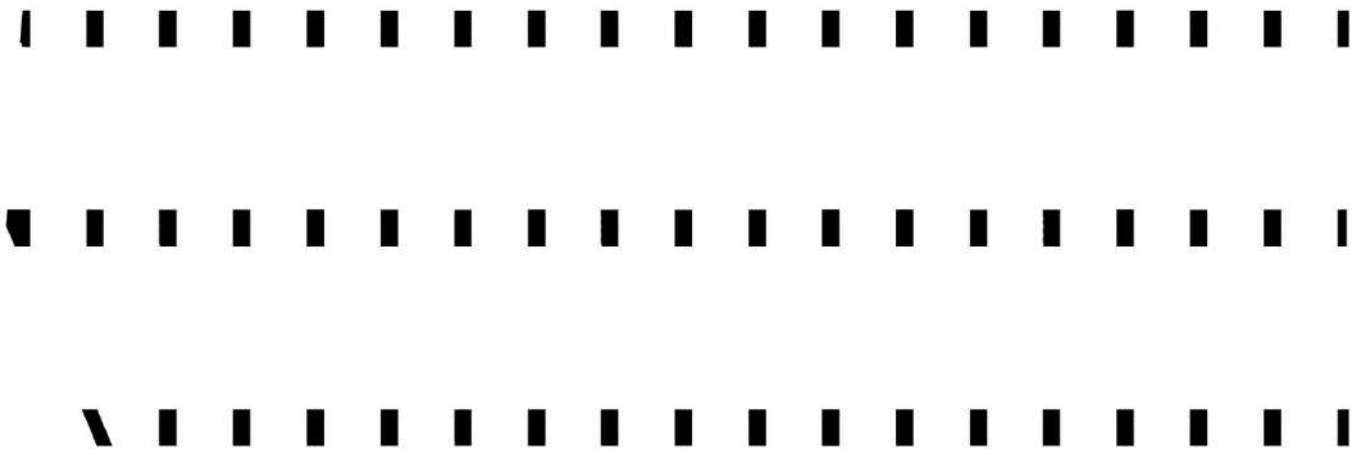
6 PPH 21st Ses Monges st. Santa Eugènia.

Cross section



6 PPH 21st Ses Monges st. Santa Eugènia.

Ground floor plan/ drawing Pau Munar



6 PPH 21st Ses Monges st. Santa Eugènia.

Ground floor plan/ drawing Pau Munar

6 PPH 21st Ses Monges st. Santa Eugènia.

Pic: José Hevia

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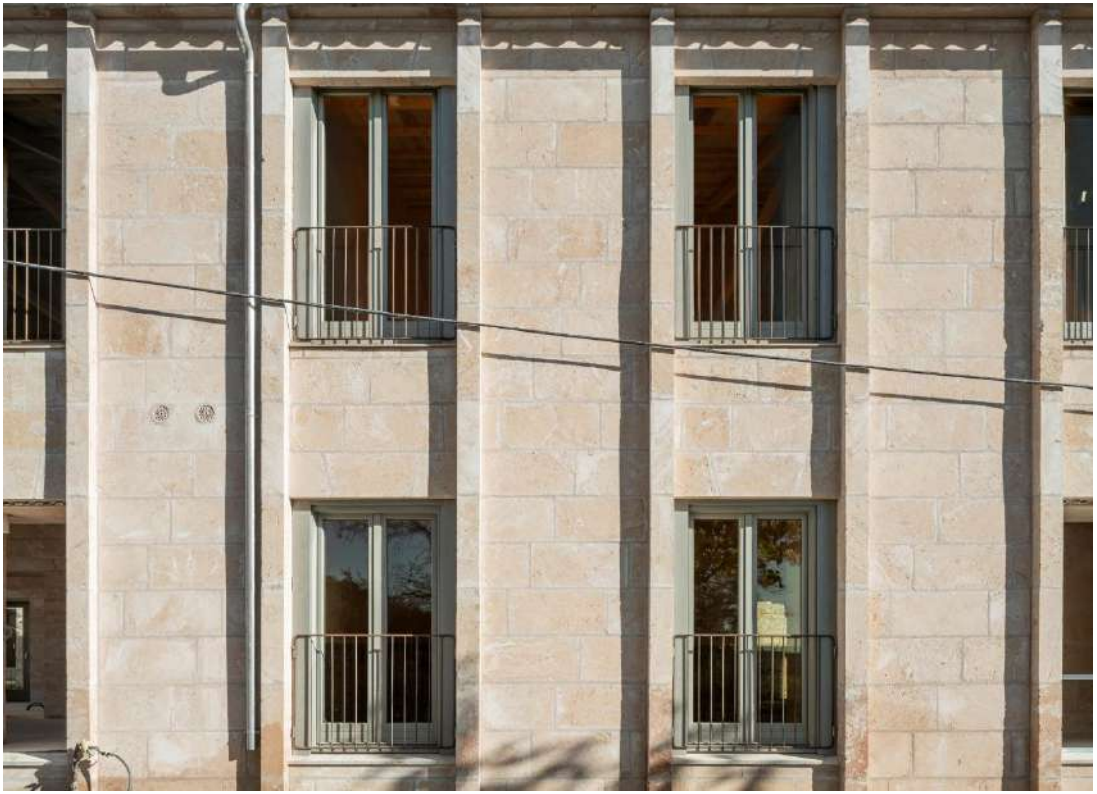

6 PPH 21st Ses Monges st. Santa Eugènia.

Pic : Jesús Granada

6 PPH 21st Ses Monges st. Santa Eugènia.

6 PPH 21st Ses Monges st. Santa Eugènia.

Pic: José Hevia

6 PPH 21st Ses Monges st. Santa Eugènia.

Pic : Milena Villalba

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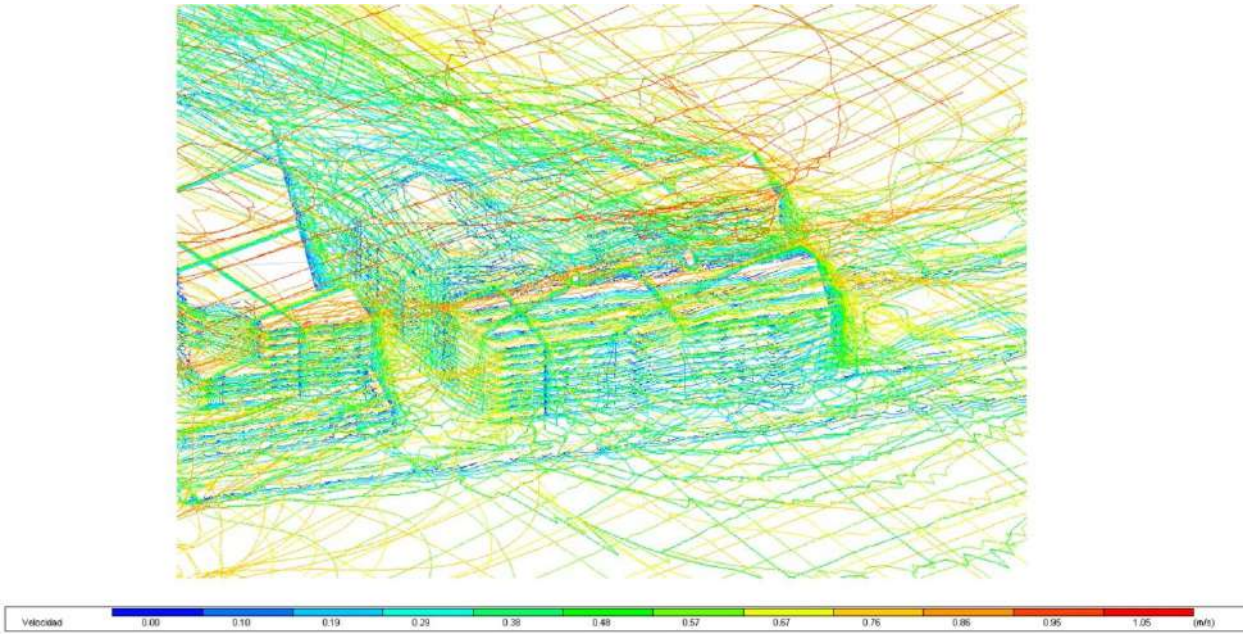
6 PPH 21st Ses Monges st. Santa Eugènia.

Pic: Jesús Granada



6 PPH 21st Ses Monges st. Santa Eugènia.

Summer breeze simulation

Updating the quarries' facilities


CLAY
PG01


/Heating and cooling energy demand: 4,50 kWh/m2 *year
24 PPH 72nd Pere Matutes Av, Eivissa.
Estudi 08014
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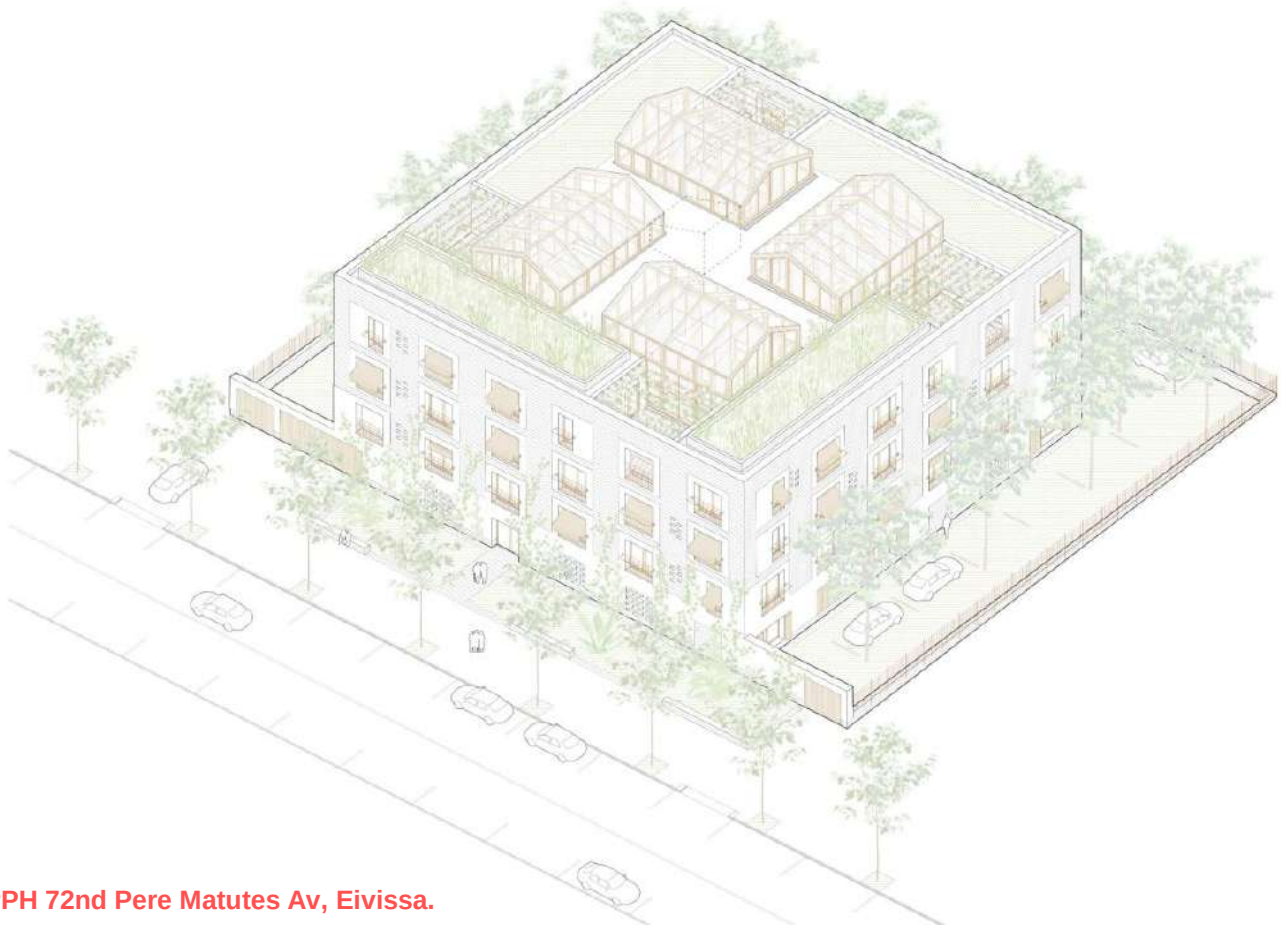
Estudi 08014



24 PPH 72nd Pere Matutes Av, Eivissa.

Estudi 08014

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Estudi 08014

24 PPH 72nd Pere Matutes Av, Eivissa.

Estudi 08014

24 PPH 72nd Pere Matutes Av, Eivissa.

Estudi 08014

WOOD


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48 PPH 62nd Olivera Av. Magaluf, Calvià

Lloc arquitectes

Lloc arquitectes

48 PPH 62nd Olivera Av. Magaluf, Calvià

Lloc arquitectes

48 PPH 62nd Olivera Av. Magaluf, Calvià

Lloc arquitectes

48 PPH 62nd Olivera Av. Magaluf, Calvià

Lloc arquitectes

WOOD + SANDSTONE

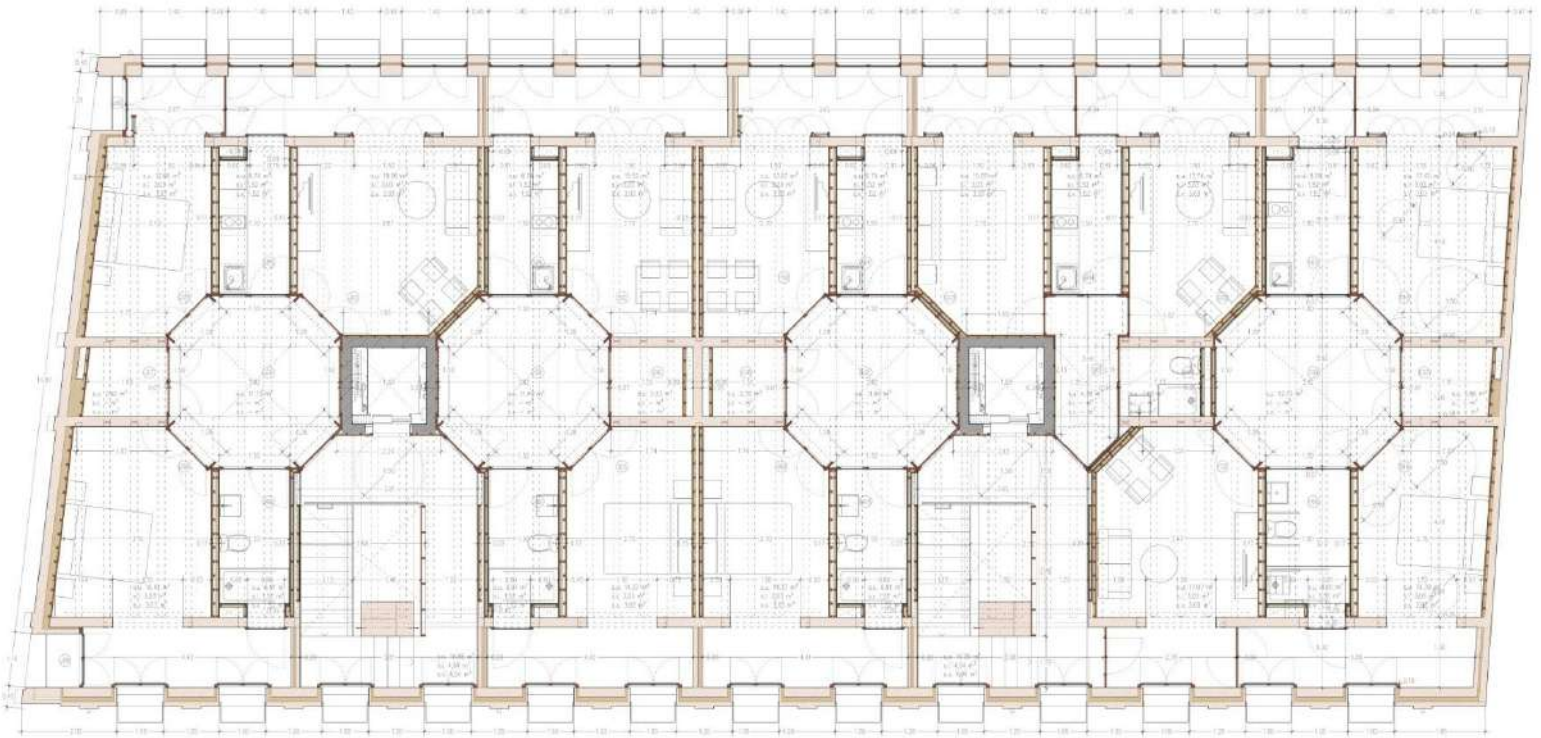
15 PPH Es Rasquell, Binissalem.

TEd'A arquitectes

GOIB CONSELLERIA MOBILITAT I HABITATGE
INSTITUT BALEAR D'HABITATGE

15 PPH Es Rasquell, Binissalem.
TEd'A arquitectes


TEd’A arquitectes



15 PPH Es Rasquell, Binissalem.

TEd'A arquitectes

15 PPH Es Rasquell, Binissalem.

TEd'A arquitectes

15 PPH Es Rasquell, Binissalem.

TEd'A arquitectes

RAMMED EARTH BLOCKS

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/Heating and cooling energy demand: 6,64 kWh/m^2 *year

43 PPH María Teresa León st. Eivissa.

Peris + Toral arquitectes

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Peris + Toral arquitectes

43 PPH María Teresa León st. Eivissa.

Peris + Toral arquitectes

43 PPH María Teresa León st. Eivissa.

Peris + Toral arquitectes

43 PPH María Teresa León st. Eivissa.

Peris + Toral arquitectes

43 PPH María Teresa León st. Eivissa.

Peris + Toral arquitectes

43 PPH María Teresa León st. Eivissa.

Peris + Toral arquitectes

RAMMED EARTH WALLS

6 PPH 41st Cabussó st. La Ribera, Palma.

Àngels Castellarnau + Bunyesc arquitectes

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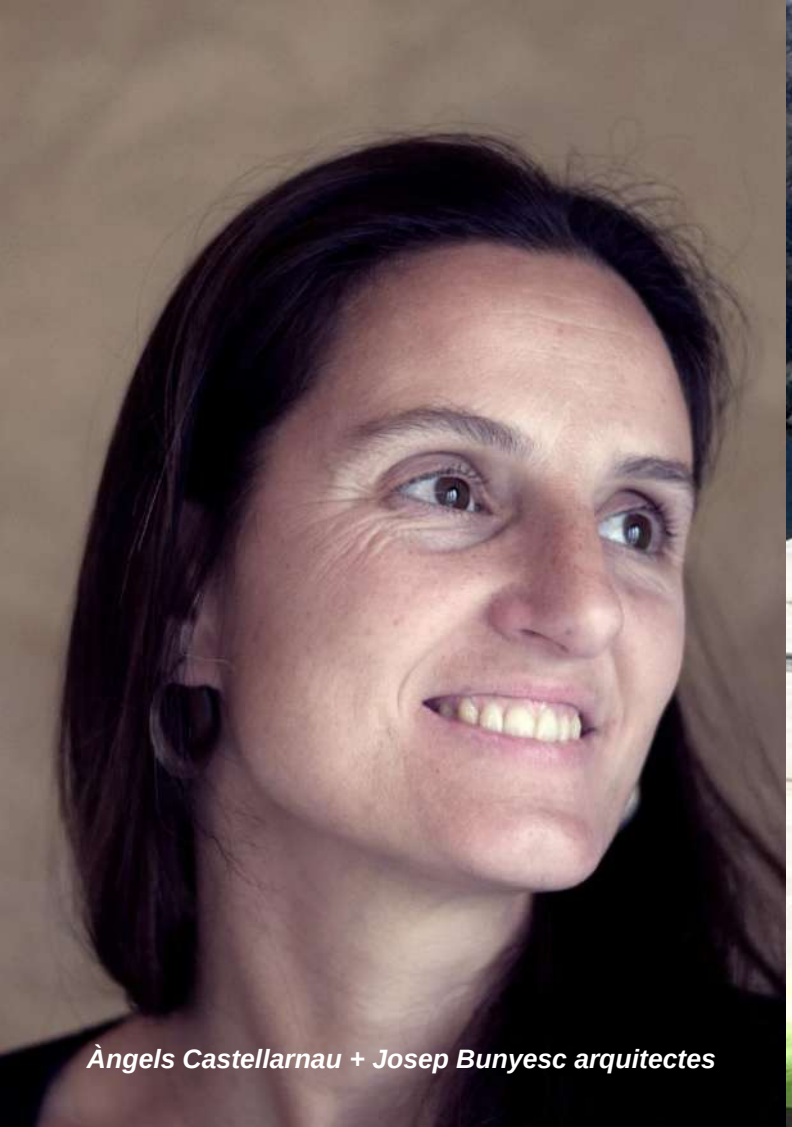

Àngels Castellarnau + Josep Bunyesc arquitectes

6 PPH 41st Cabussó st. La Ribera, Palma.

Àngels Castellarnau + Bunyesc arquitectes

6 PPH 41st Cabussó st. La Ribera, Palma.

Àngels Castellarnau + Bunyesc arquitectes

6 PPH 41st Cabussó st. La Ribera, Palma.

Àngels Castellarnau + Bunyesc arquitectes

35 Temporary cohousing units, Es Castell, Menorca.

MOIX (Miguel bernat, Izaskun González, Oriol Valls)

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MOIX (Miguel bernat, Izaskun González, Oriol Valls)

35 Temporary cohousing units, Es Castell, Menorca.

MOIX (Miguel bernat, Izaskun González, Oriol Valls)

35 Temporary cohousing units, Es Castell, Menorca.

MOIX (Miguel bernat, Izaskun González, Oriol Valls)

URBAN MINING

25 Temporary cohousing units, 3rd Lope de Vega st. Palma.

H arquitectes

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25 Temporary cohousing units, 3rd Lope de Vega st. Palma.

H arquitectes

H arquitectes

25 Temporary cohousing units, 3rd Lope de Vega st. Palma.

H arquitectes

25 Temporary cohousing units, 3rd Lope de Vega st. Palma.

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25 Temporary cohousing units, 3rd Lope de Vega st. Palma.

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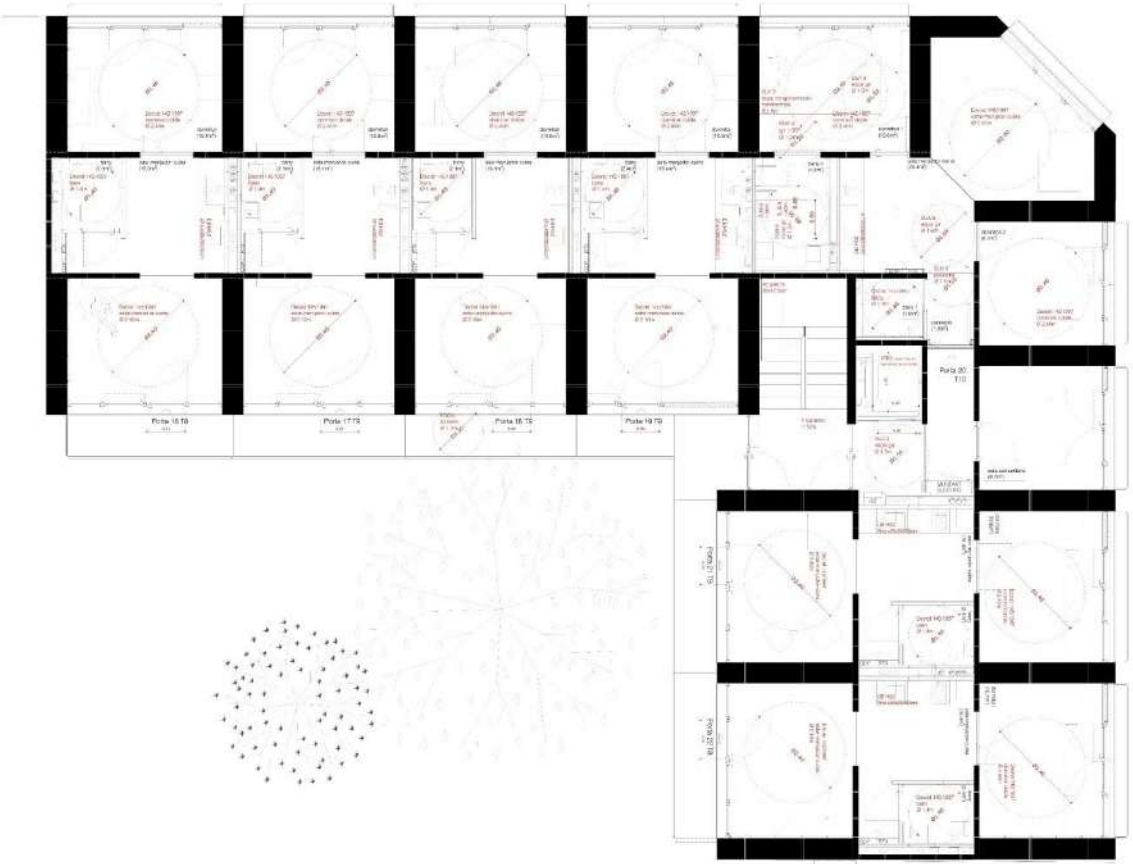


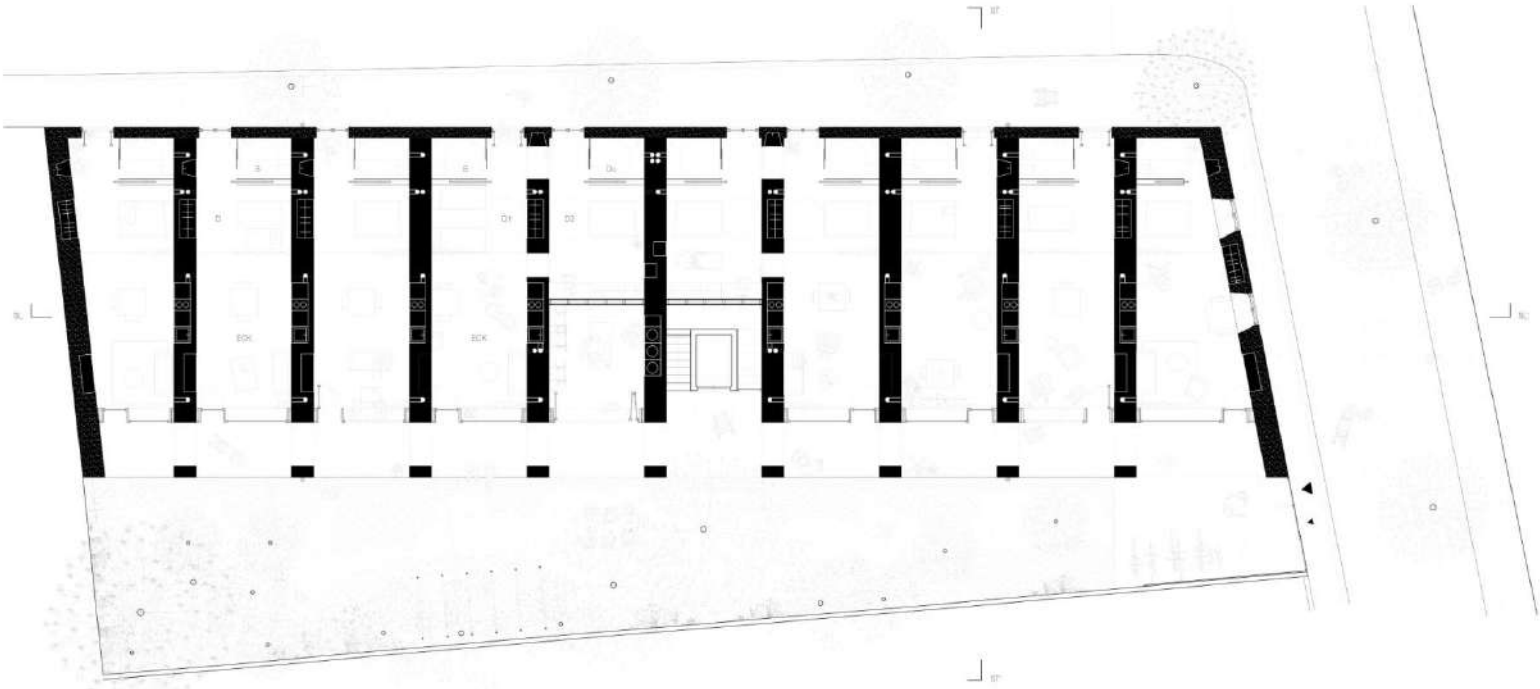
25 Temporary cohousing units, 3rd Lope de Vega st. Palma.

H arquitectes

17 Temporary cohousing units, 19th Alacant st. Formentera.

Taller 11


Taller 11



17 Temporary cohousing units, 19th Alacant st. Formentera.

Taller 11

17 Temporary cohousing units, 19th Alacant s

Taller 11

17 Temporary cohousing units, 19th Alacant st. Formentera.

Taller 11









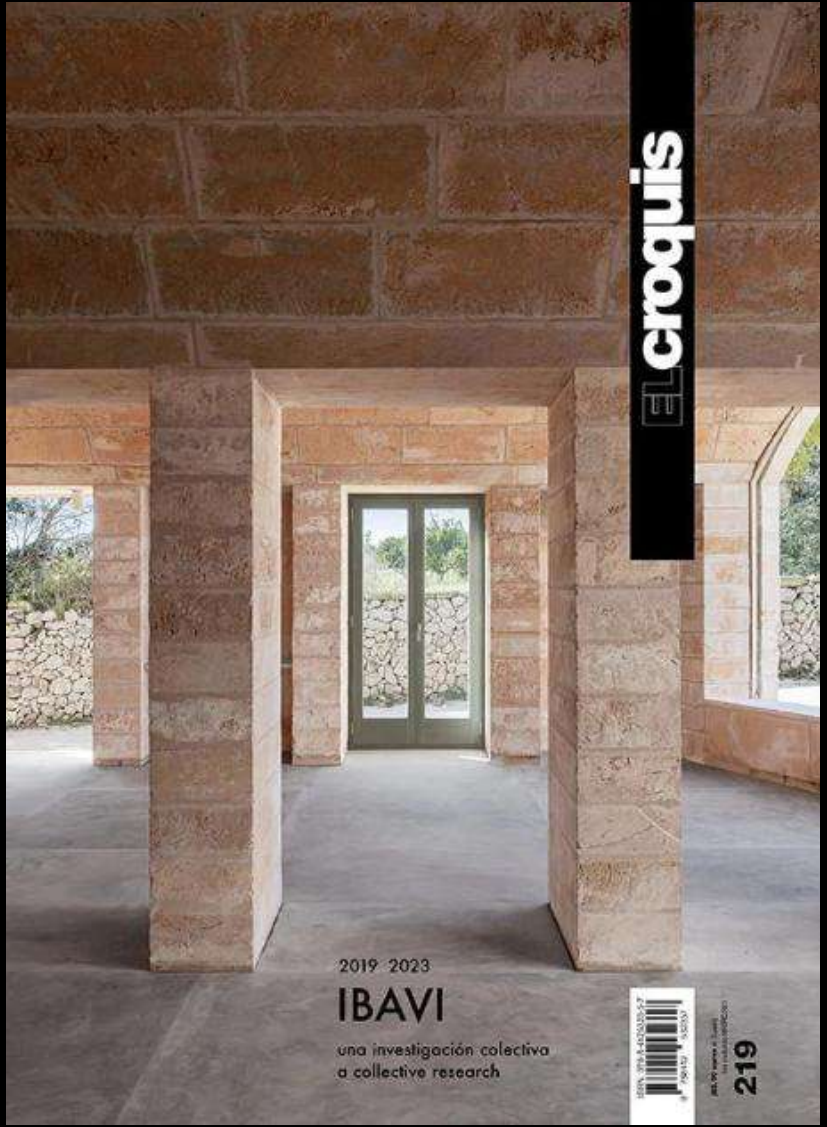











EL croquis
2019 2023
IBAVI
una investigación colectiva
a collective research
219

EUROPEAN
COMMISSION

Brussels, 15.12.2021
COM(2021) 802 final

2021/0426 (COD)

Proposal for a

DIRECTIVE OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL

on the energy performance of buildings (recast)

(Text with EEA relevance)

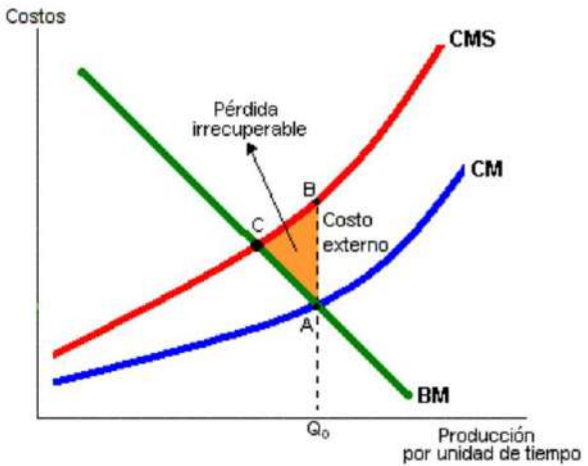
{SEC(2021) 430 final} - {SWD(2021) 453 final} - {SWD(2021) 454 final}

“Article 7:

a) It specifies that as of 2030, new buildings must be zero-emission buildings; new public buildings must be zero-emission as of 2027.

2021/12/15 Proposal for a Directive of the European Parliament and the Council on the Energy Performance of Buildings

El equilibrio en presencia de costos externos se da a la cantidad producida donde el costo marginal privado iguala al beneficio marginal. El productor no considera en sus decisiones el costo externo. En esta situación el beneficio marginal es menor que el costo marginal social, por tanto este equilibrio del mercado es ineficiente. El mercado se ubica en el punto A, mientras que la situación de eficiencia se daría en el punto C. La zona ubicada entre los puntos ABC es una pérdida irrecuperable de bienestar para la sociedad.

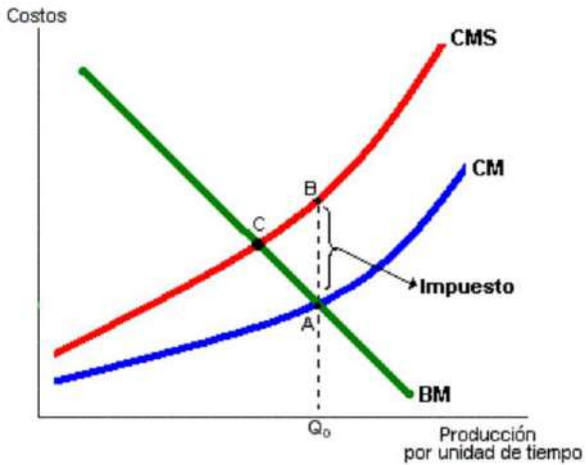


- **Impuestos**

El gobierno puede establecer un impuesto igual al costo marginal externo. El efecto del impuesto es lograr que el costo marginal privado más el impuesto se igual al costo marginal social, CM + impuesto = CMS.

Este impuesto es llamado impuesto pigouviano, en honor del economista británico Arthur Pigou, quien fue el primero en proponer que se enfrentaran las externalidades de esta manera.

La figura muestra cómo se alcanza el nivel eficiente de producción con un impuesto a la contaminación.



Alumina plant accident, Ajka, Hungary 2010

Alumina plant accident, Ajka, Hungary 2010

La triste história del río Yangtze

En china, más del 80% de toda el agua subterránea está tan contaminada que no puede destinarse ni para usos agrícolas. En el sudeste de dicho país el 70% del agua contaminada es responsabilidad de las industrias textiles de la zona.

El río Yangtze es conocido como el río más largo de China y recibe el 40% del desecho industrial y textil de todo el país. Cada año se lanzan allí más de 25 millones de toneladas de desechos, según la WWF. La industria textil posee vertidos con una alta carga tóxica, provocada por muchos metales como el arsénico o el cadmio, que pueden provocar una mortalidad del 100% a las especies marinas.

Rana Plaza, Bangladesh. 2013. 1,000 dead, 2.000 wounded


Hydro
CIRCAL®
Recycled
Aluminium

Chatham House Report

Johanna Lehne and Felix Preston

Making Concrete Change

Innovation in Low-carbon Cement and Concrete

#ConcreteChange

Source: Johanna Lehne, Felix Preston, 2018

In conclusion, contribute to these targets:

3.4 By 2030, reduce by one third premature mortality from non-communicable diseases through prevention and treatment and promote mental health and well-being

13.2 Integrate climate change measures into national policies, strategies and planning

5.1 End all forms of discrimination against all women and girls everywhere

12.2 By 2030, achieve the sustainable management and efficient use of natural resources

12.5 By 2030, substantially reduce waste generation through prevention, reduction, recycling and reuse

Optimal multiplier effect

17.17 Encourage and promote effective public, public-private and civil society partnerships, building on the experience and resourcing strategies of partnerships

10.1 By 2030, progressively achieve and sustain income growth of the bottom 40 per cent of the population at a rate higher than the national average

7.1 By 2030, ensure universal access to affordable, reliable and modern energy services
7.2 By 2030, increase substantially the share of renewable energy in the global energy mix

8.2 Achieve higher levels of economic productivity through diversification, technological upgrading and innovation, including through a focus on high-value added and labour-intensive sectors

8.3 Promote development-oriented policies that support productive activities, decent job creation, entrepreneurship, creativity and innovation, and encourage the formalization and growth of micro-, small- and medium-sized enterprises, including through access to financial services

8.4 Improve progressively, through 2030, global resource efficiency in consumption and production and endeavour to decouple economic growth from environmental degradation, in accordance with the 10-year framework of programmes on sustainable consumption and production, with developed countries taking the lead

Circularity within Area

The routemap tot circularity at Area until 2035

area
Laat wonen leven

What is already happening about circularity within Area?

Origin

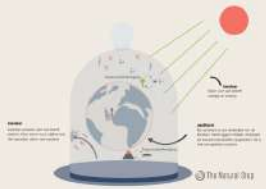
- The Natural Step
- Business plan 2022-2027
- Sustainability agenda 2022-2025
- Business plan circularity 2022

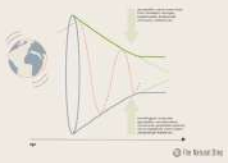
- A project that stoped!

area
Laat wonen leven

Securing 5 level framework

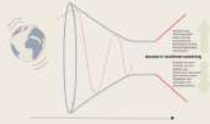
systeem





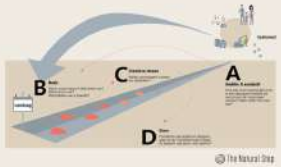
Hoe ziet het systeem eruit waarin je je bevindt?
Wie spelen een rol in jouw systeem? Wat zijn hun belangen en behoeften?
Wat is er allemaal al gedaan rondom ecologische en sociale duurzaamheid? Door wie?
Welke wetten en regels moet je volgen?
Wie zijn je concullega's, partners, leveranciers en klanten?
Wat zijn de (ongeschreven) regels en overtuigingen in je systeem?
Wat zijn versnellers en vertragers voor verandering?
Waar zit je negatieve impact nu? Waar zitten kansen en uitdagingen?

succes



Hoe ziet de toekomst eruit als je succesvol bent?

strategie



Welke strategieen kies je om stap voor stap je succesvolle toekomst te realiseren?
Hoe maak je gebruikt van de ruimte tussen behoeften en behoeftenbevrediger om kwaliteit van leven te vergroten?
Hoe zet je backcasting in als strategie om deelambities en projecten te ontwerpen?

actie

Welke eerst kleine stapje kun je morgen al zetten?
Toets je stap, idee of project aan de hand van de 4 spelregels

hulpmiddel

Welke hulpmiddelen brengen je sneller richting jouw succes?
Welke instrumenten meten wat je graag wilt meten in relatie tot je ambities?
Welke hulpmiddelen helpen je proces te versnellen?
Welke hulpmiddelen helpen om je lange termijn ambities te borgen?

area
Laat wonen leven

Cooperate

External

- Advisors
- Demolition workers

Internal

- Projectteam
- Assetmanager / Assetteam
- Real estate departement

area
Laat wonen leven

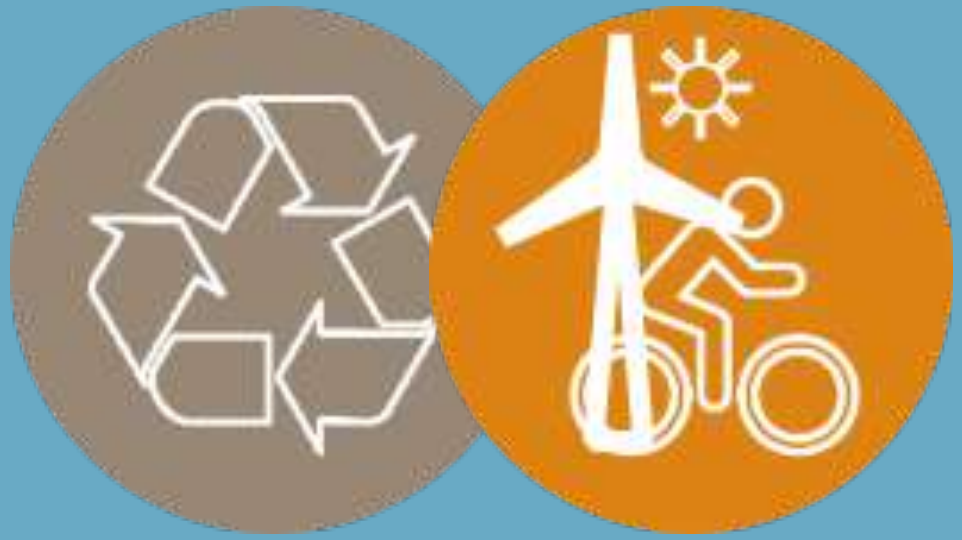
What is circularity

Area summarizes Circularity in 3 streams :

- Direct reuse of materials
- Indirect reuse of materials
- Clean inflow

area
Laat wonen leven

Circularity and CO2



The core objectives for Circular Construction are identical to those of the energy transition:

- Protecting material stocks
- Protecting the environment
- Protecting existing values

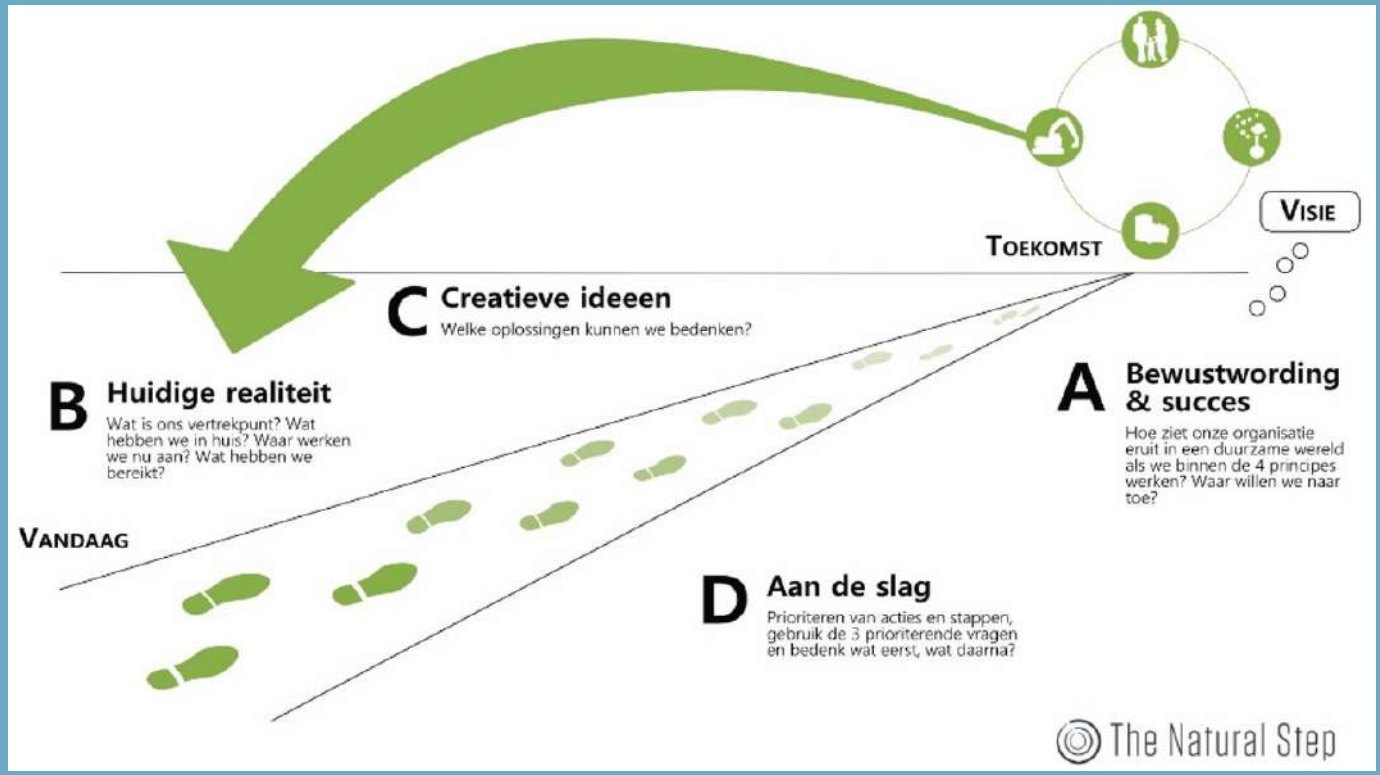
Important to make integral choices and common sense

to use!

Area circularity

TNS approach

- Awareness and success
- Current reality
- Creative ideas
- Get started



area
Laat wonen leven

Bewustwording en succes

- Doelen als kader
  - Projecten
    - MPG
    - BCI
    - Materialenpaspoort
  - Onderhoud
    - Targets in dagelijks onderhoud

      Reparatie, mutatie en vraaggestuurd
- R-ladder
- S-lagen model (layers of Brand)

area
Laat wonen leven

MPG versus BCI

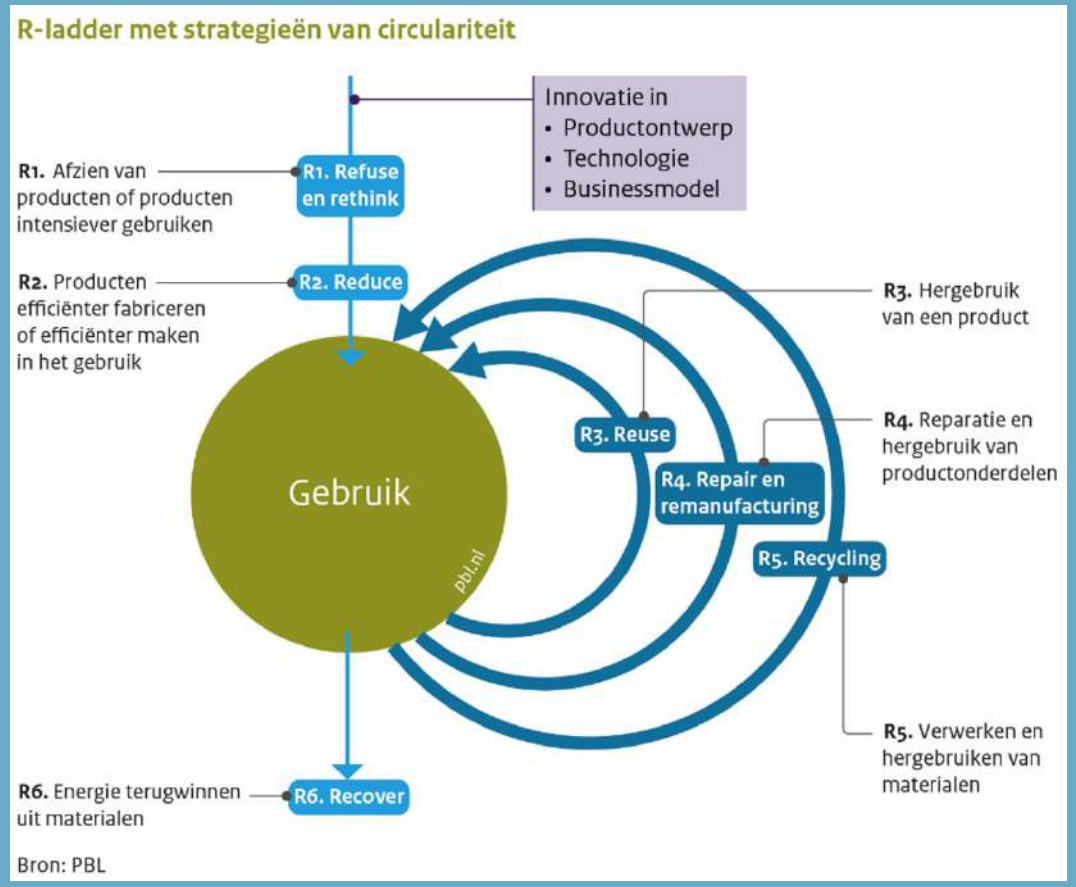
Met de BCI aan de knoppen draaien

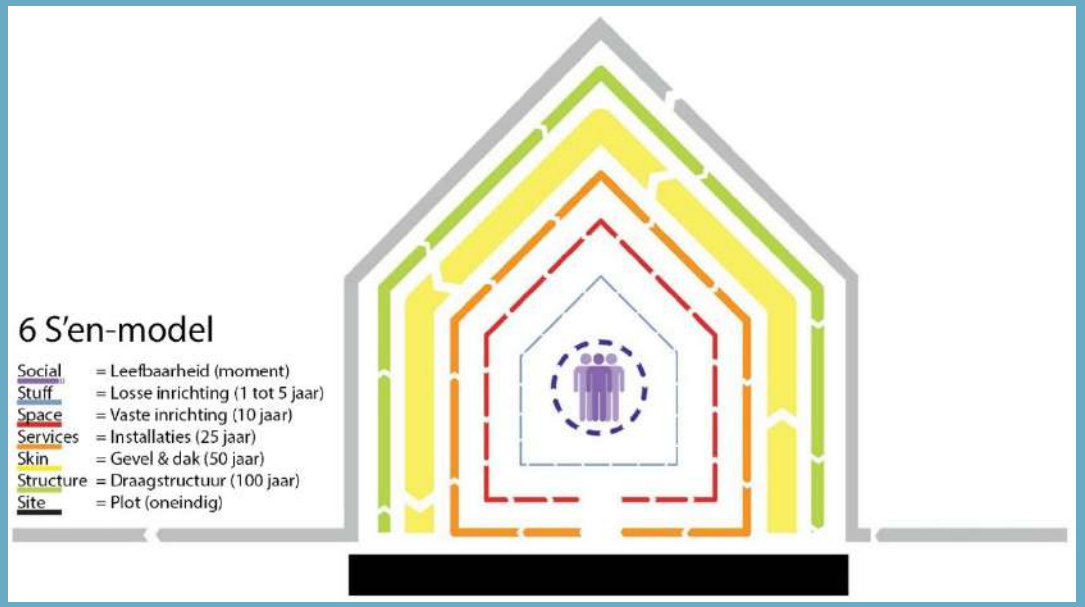
area
Laat wonen leven

Goals

Measuring	2023	2025	2030	2035
MPG legislation *(Minimum requirement)*	0.80	0.65	0.50	0.40
MPG new construction *(Goals)*	0.65	0.50	0.40	0.30
MPG renovation and transformation	-	-	0.40	0.30
BCI assetmanagement	Nulmeting	+5%	+10%	+15%
BCI MPG new construction	>45%	>55%	>65%	>75%
10% reuse	In case of complaint and mutation maintenance			
Materials passport	Mandatory for new construction	Mandatory for all construction		

R-ladder and S layers





area
Laat wonen leven

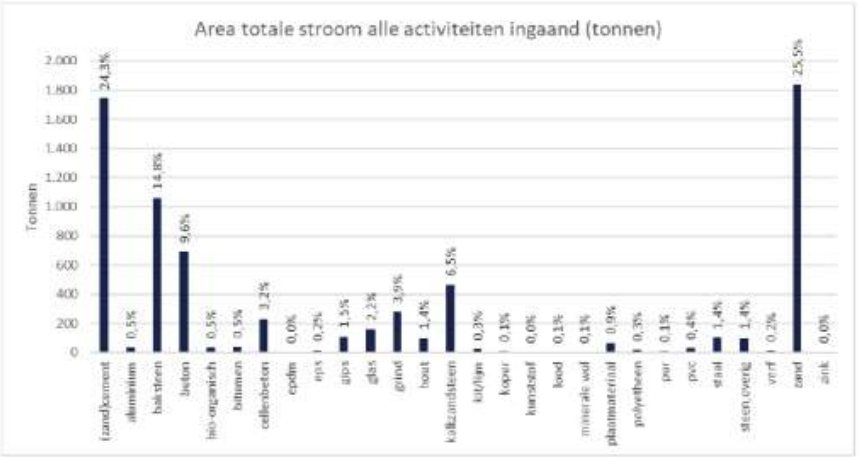
Current reality

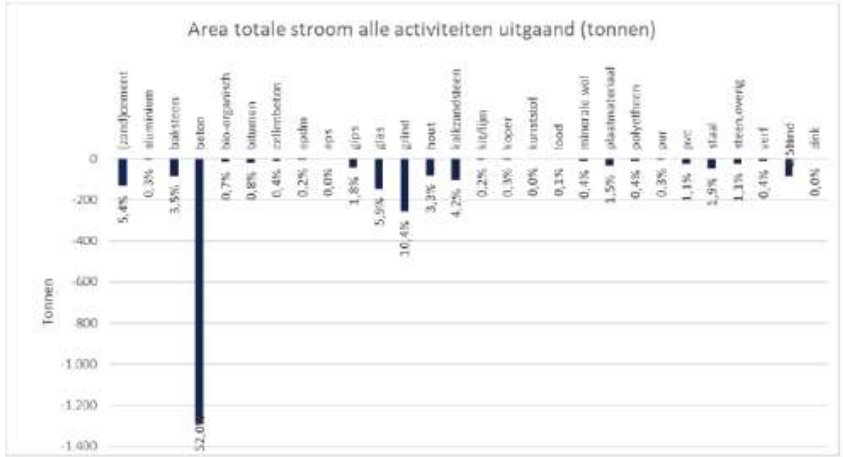
- Value determined existing property
- BCI existing

area
Laat wonen leven

Residual flows = value of existing assets

- We know what's going to be released
- What can we redeploy ourselves
- We can focus on environmental impact (ECI)
- We have a picture of the value
- How can we use these within investment decisions?





area
Laat wonen leven

https://youtu.be/117HwoqJD2M

IN THE
MIDDLE

OF OUR
STREET

area
Laat wonen leven

Questions

area
Laat wonen leven

Sustainable housing – circular economy

Circular economy & material reuse strategy

vivre
ensemble
la ville

Paris Habitat

Avril 2023

Paris Habitat, an old and diversified housing stock

- 126 000 dwellings, 90% located in Paris
- A housing stock built from the XVIth to the present
- The average building is 74 years old, the average housing unit 61
- 62% of buildings and 81% of housing units built before 1982
- We house one Parisian out of nine

Paris Habitat housing distribution in Paris and in 3 neighborhing departments

Paris Habitat

Rehabilitation challenges

1,5%
Old heritage (1700–1918)

36%
HBM Buildings (1919-1948)

20%
Post WWII – 1960's

14%
1967-1974

11%
1970-1981

6%
1982-1988

7%
1990-2000

4,5%
2000's

Paris Habitat

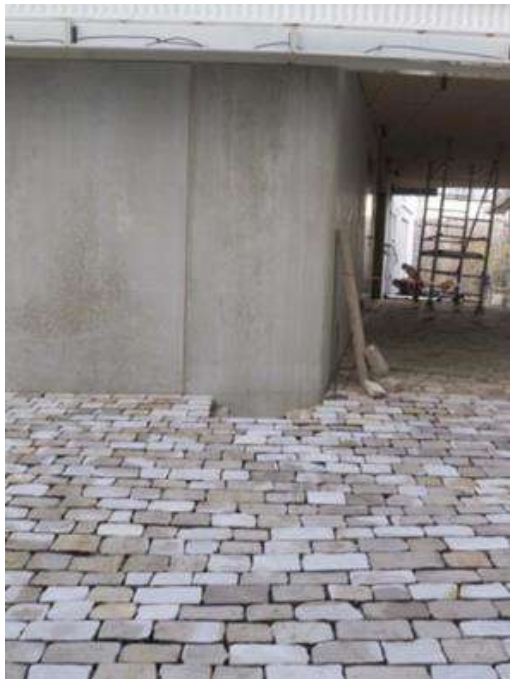
Paris’ construction and density : recycling land use

Low-carbon materials and processes

Biobased materials : Straw , wood ,hemp, Prefabrication, 2nd life , reuse

Paris Habitat

Paris Habitat’s experience on materials reusing



Materials reusing: the experience of the Caserne de Reuilly




39 000 m²
New construction & renovation



CHARM, european project and Paris Habitat's goals

CHARM: Circular Housing Asset Renovation Management

Interreg North West Europe project (2018-2022)

- <u>CHARM goals:</u>

➢ Develop circular economy of building and materials reusing among **social housing companies** in **North-Western Europe**

➢ Promote the **development of circular sectors and stakeholders**

➢ **Systematize** materials reusing on every housing operation

- <u>Mission of PARIS HABITAT on the project:</u>

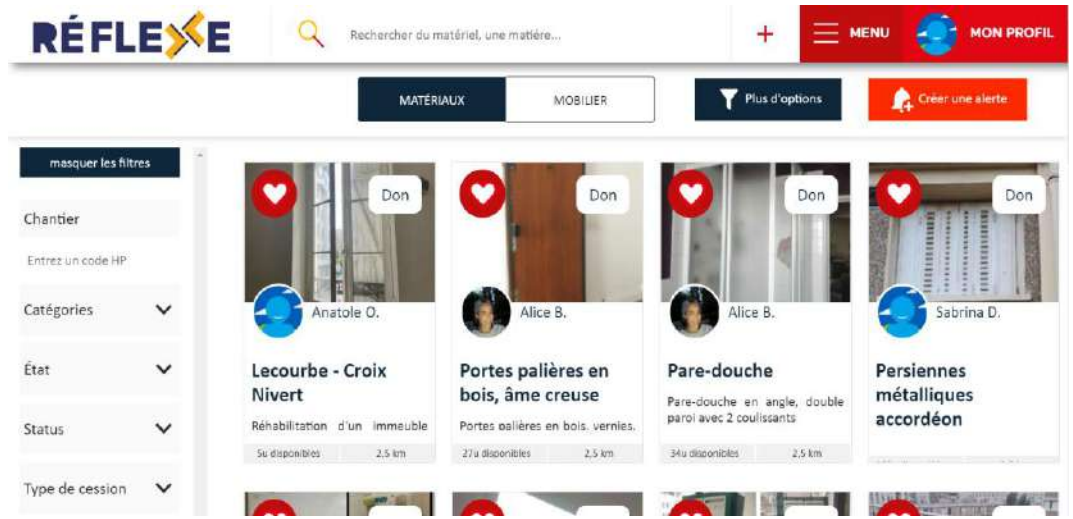
➢ **Experiment materials reusing on 5 demonstration sites (renovation, demolition and re build operations)**

➢ **Experiment materials reusing on refurbishment of dwellings before rental**

➢ **Structure a circular strategy on materials reusing (through adapted specification documents)**

➢ **Develop a material platform for Paris Habitat materials to facilitate reusing opportunities**

The development of a material exchange platform



https://reflexe.parishabitat.fr/

CHARM project : demonstration sites

- **5 demonstration operations:** from light renovation to transformation (including demolition – reconstruction)

- A **sample of dwellings** (**refurbishment before rental**)

Light renovation *Deep renovation* *Transformation*

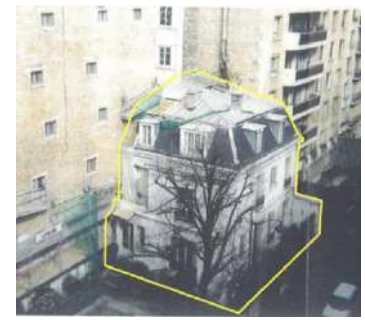
Davout Félix Terrier

Sthrau

Exelmans

Tolbiac Moulinet

Alfred Bruneau



Circular economy & material reuse strategy

Interreg North-West Europe CHARM

Paris Habitat

Example of Sthrau demonstration site

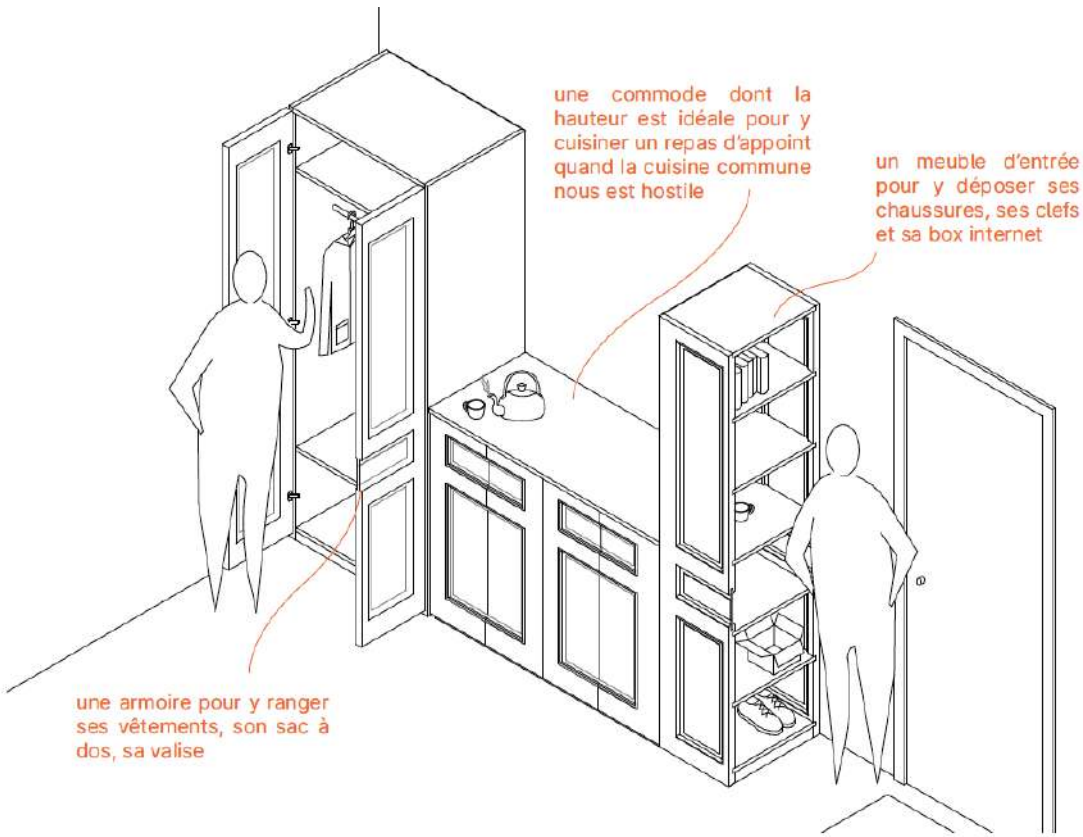
Interreg North-West Europe CHARM
European Regional Development Fund

From wooden landing doors … to furniture →

Example of Sthrau demonstration site

From PVC windows … to interior bay window →

An other exemple of a demonstration site : Exelmans, a former barracks

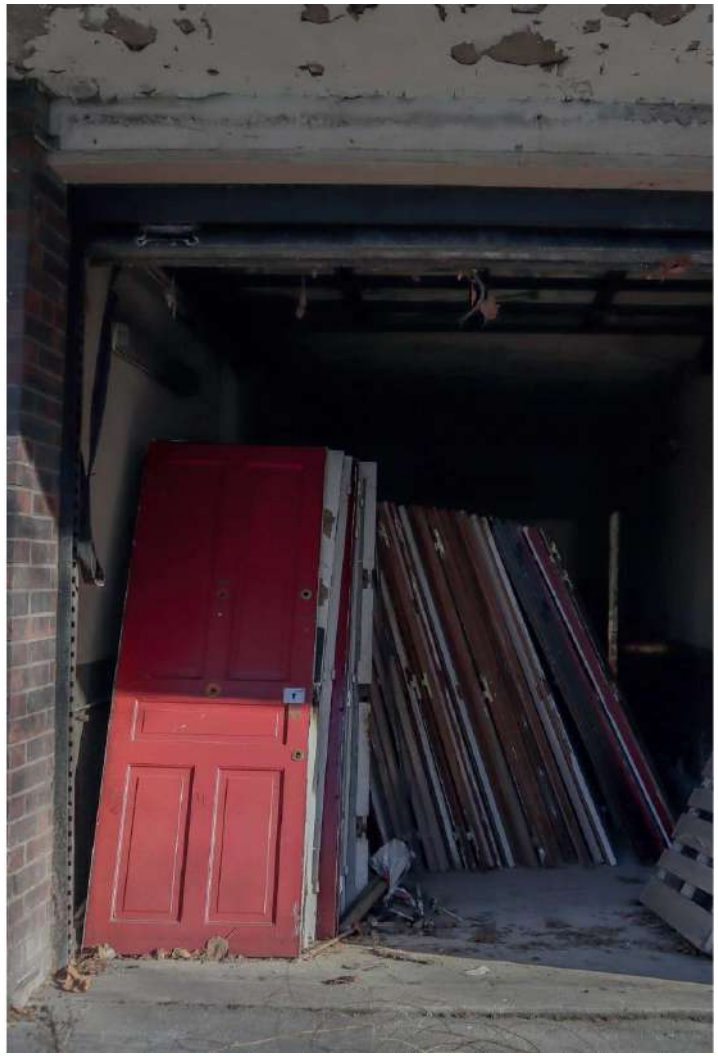


Paris Habitat

Furnitures with reused materials prototypes

Paris Habitat

Materials storage on site in Exelmans



Paris Habitat

Limitations and difficulties

- **Insurance barriers**
  - Insuring the re-used materials
  - Traceability of reused materials
  - Convincing the building inspection offices

- **Financial obstacles**
  - Reused materials, still an additional cost
  - Convincing the teams and the construction companies

- **Logistical obstacles**
  - Storage of reused materials
  - Logistic following the removal of reused materials (transportation, storage…)

Paris Habitat

Thank you for your attention

vivre
ensemble
la ville

Paris Habitat

slrb-bghm.brussels

logement social - sociale huisvesting - social housing

BinHome

Uccle - Ixelles
Ukkel - Elsene

Le Clos des mariés

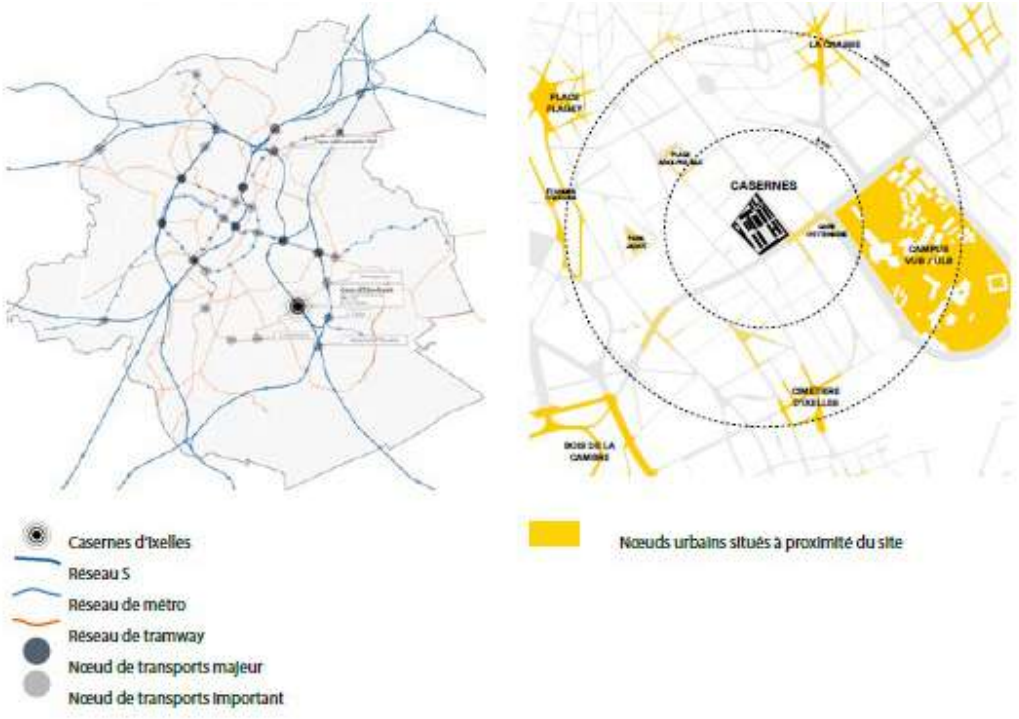
Circular planning

U Square :

Circular planning - An existing site / from 1906 until today

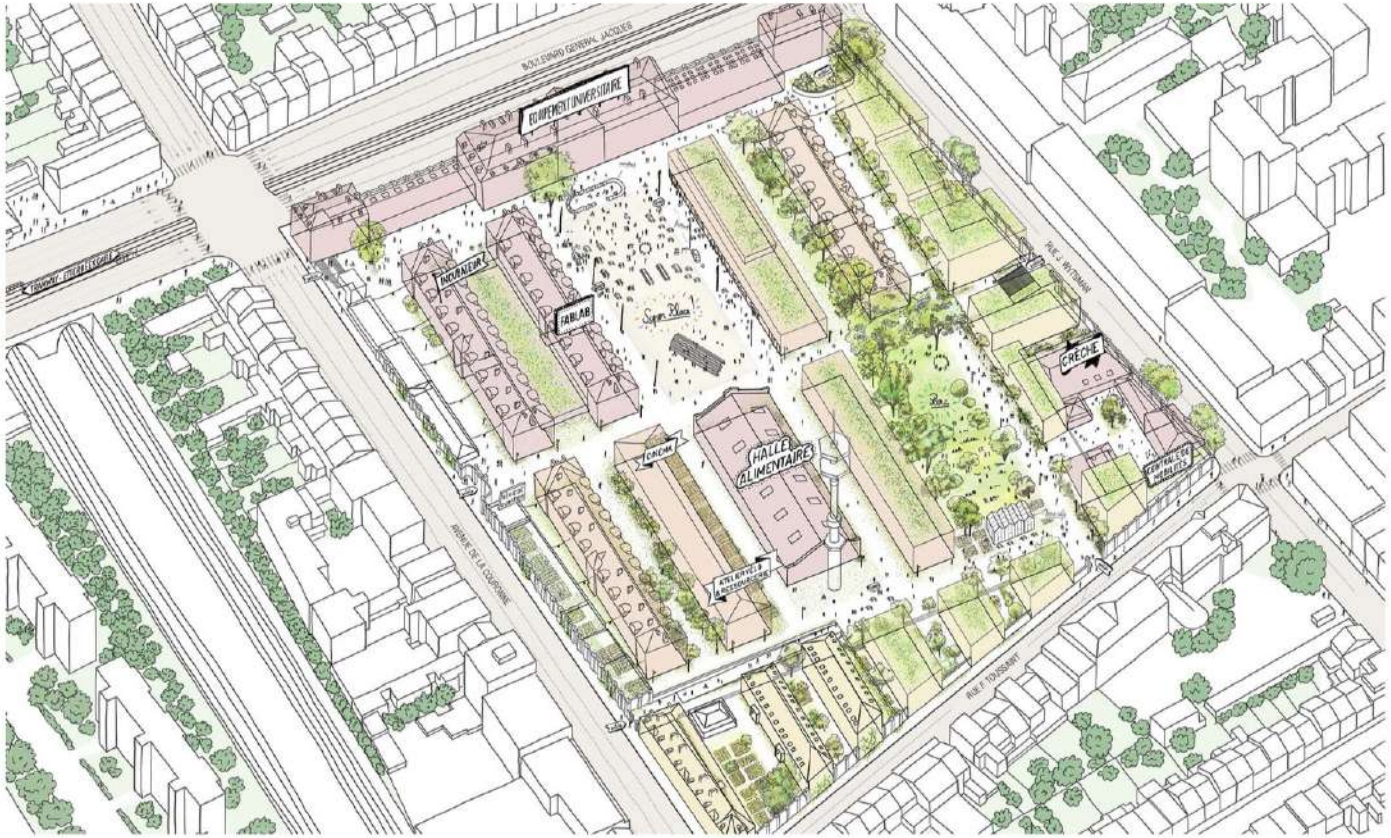
U Square :

Circular planning - location



U Square :
Circular planning - mix of functions

ANYOJI BELTRANDO



Ancienne Caserne d'Ixelles

Projet - axonométrie / © Anyoji Beltrando 2019

Le Clos des mariés

Return to its original function

Clos des mariés localisation / © Atelier Kempe Thill - KaderStudio

Le Clos des mariés :

Resource inventory

Bâtiment S	Carrelage mural céramique
	 
Nomenclature	S.CLA.001
Description	Carreaux en céramique de couleur menthe, datant vraisemblablement de travaux réalisés pour l'installation de sanitaires.
Dimensions	15 x 15 x 0.5 cm
Quantités	120 m²
Potentiel de maintien	Élevé Si le nouveau programme devait s'accommoder de la disposition actuelle des sanitaires.
Points d'attention en cas de maintien	En général, les carrelages semblent être en bon état. Si le maintien est privilégié il faudra remplacer les endroits ayant fait l'objet de tests et en profiter pour faire une inspection approfondie du reste des carreaux.
Résultats des tests de démontage	En fonction de la localisation, la qualité du mortier peut varier ainsi que les conditions d'humidité auxquelles il a été exposé. La facilité de démontage des carreaux dépend de ces facteurs. Parmi les sondages effectués par notre équipe, certains se sont avérés concluants et d'autres moins.Nous estimons qu'il faut prévoir un taux de perte d'environ 40% de la surface totale. Les carreaux démontés sont dans un bon état de propreté. La face arrière est souvent prête à la repose et il reste des joints sur les côtés qui seront facilement nettoyés.
Photo des démontages	 

Inventory / © ROTOR-DC

Le clos des mariés :

Targets set for maintenance and re-use - monitoring table

Clos des Mariés - Usquare			
A/ Synthèse			
Données préliminaires et exigences minimales		*Données du projet*	
Bâtiment existant		*Toutes les masses sont exprimées en kilogrammes*	
Masse totale existante (bâtiments S,T,U,V, en fonction des modèles BIM)	5 847 833		
B/ Taux de maintien		**B/ Taux de maintien**	
Taux de maintien minimum	60%	Taux de maintien atteint	86%
Masse minimale du bâtiment à conserver en tonnes	3 508 700	Masse du bâtiment conservée	5 052 040
B/ Flux sortants		**B/ Flux sortants**	
Matière sortante des bâtiments S,T,U,V	795 793		
Réemploi		*Réemploi*	
Taux minimum de réemploi sortant	10%	Taux de réemploi atteint	52%
Masse minimale de matière sortante à réemployer	79 579	Masse de matière sortante réemployée en tonnes	416 941
Recyclage		*Recyclage*	
Taux de recyclage minimum*	80%	Taux de recyclage atteint	23%
Masse minimale de matière sortante à recycler	636 634	Masse de matière recyclée	181 758
C/ Flux entrants		**C/ Flux entrants**	
		Masse entrante (bâtiments S,T,U,V)	5463657
Réemploi		*Réemploi*	
Taux minimum de réemploi entrant	4%	Taux de réemploi entrant atteint	50%
Masse minimale de matière entrantes à réemployer	218546	Masse de matière entrantes réemployées	2722043
Matériaux recyclés/bio.géo-sourcés		*Matériaux recyclés/bio.géo-sourcés*	
Taux minimum de recyclage entrant	10%	Taux de recyclage entrant atteint	42%
Masse minimale de matière entrante recyclées/bio.géo-sourcées	546366	Masse de matière entrante recyclée/bio.géo-sourcées	2287479
* Si le projet dépasse l'objectif de réemploi des matériaux démontés, l'objectif de recyclage diminue dans une proportion identique. Pour chaque % de réemploi au-delà de l'objectif, l'obje			

Clos des mariés – monitoring table / © Atelier Kempe Thill - KaderStudio

Le clos des mariés :

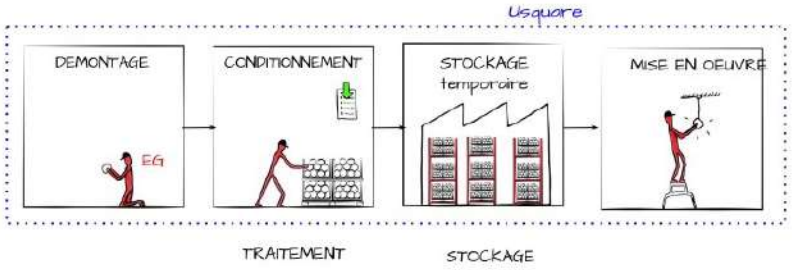
Conservation of existing elements: 83%.

Demolition / Projet / © Atelier Kempe Thill - KaderStudio

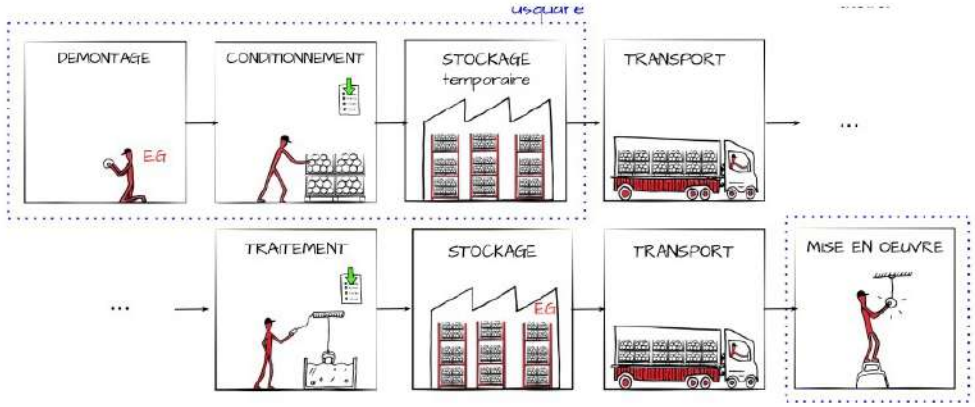
Le clos des mariés :
Deconstruction / reuse / recycling

1. Matériaux réemployés dans la même opération

Option A: reste sur site

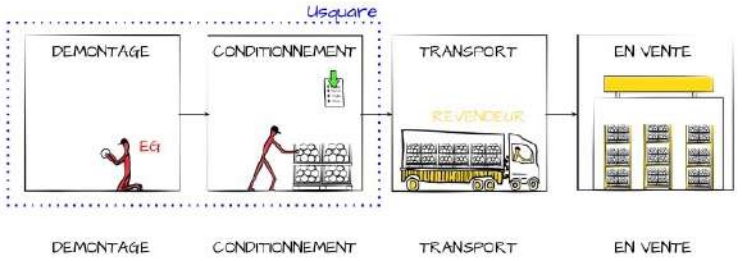


Option B: passage en atelier

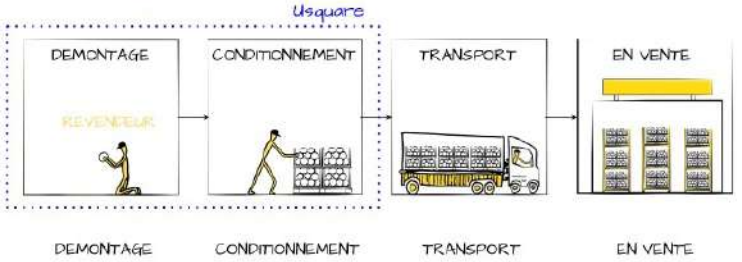


2. Matériaux remis sur le marché professionnel

Option A: démontage par l'entrepreneur



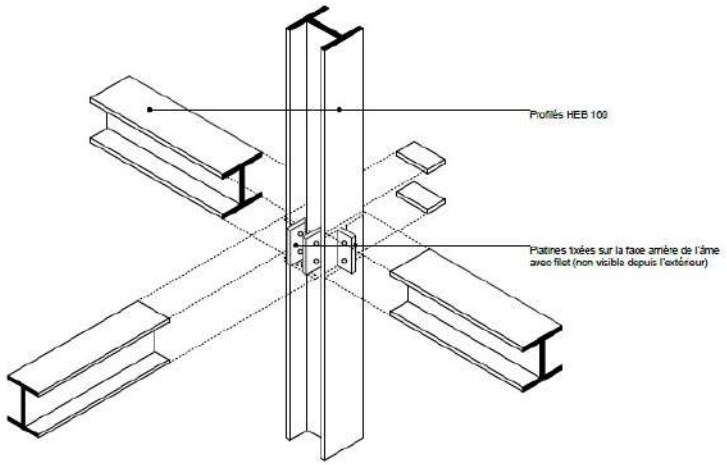
Option B: démontage par le repreneur[1]



Re-use process / © ROTOR-DC

Le clos des mariés :

Reversible design and simplified maintenance



Visualisation - Detail / © KaderStudio

Le clos des mariés :
Construction difficulties

- Certify the company's commitment
- Valuation through the company
- Storage
- Certification of materials
- Open public procurement and flexibility

Visualisation - Detail / © KaderStudio


Thank you

Circular talks

18 April 2023
14:00 - 15:30 CET

Let's talk circular social and affordable housing

BUILD UP
The European Portal For Energy Efficiency In Buildings

Moderated discussion:

Q&A for the promotion of shared learning and feedback on the current EU policies

Moderated by Dara Turnbull, Housing Europe

The project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No. 841850.

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UIPI 1923 INTERNATIONAL UNION OF PROPERTY OWNERS

HOUSING EUROPE

Architects' Council of Europe
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THANK YOU!

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