

SNHBM

Horizon Europe: Built4People partnership Feedback on Horizon 2020 experience from SNHBM

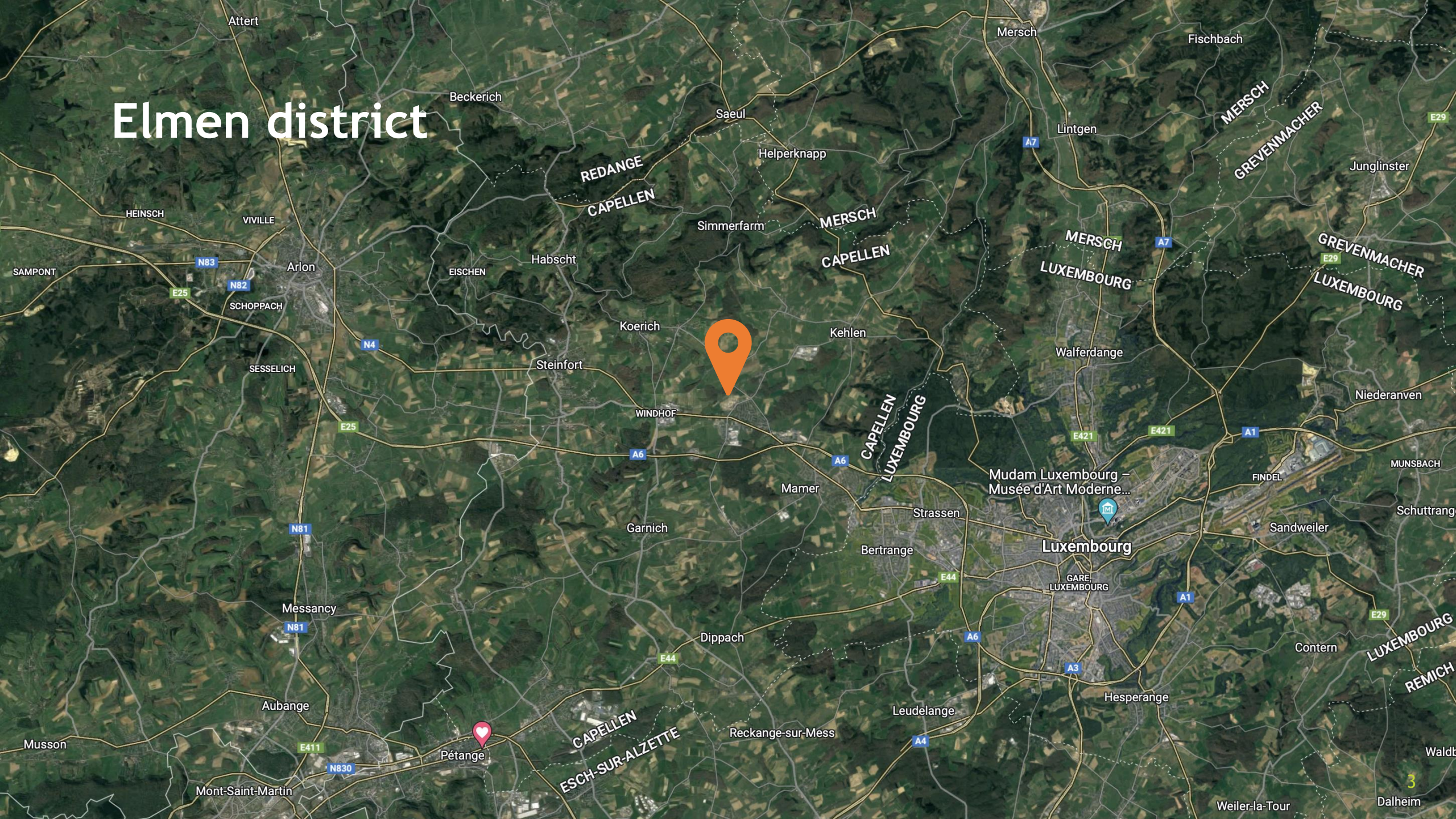
Julien Bertucci, Head of Sustainable Development and Innovation,
SNHBM - Société Nationale des Habitations à Bon Marché

Sylvain Kubicki, LIST

10/05/2023

Ceci n'est pas un village

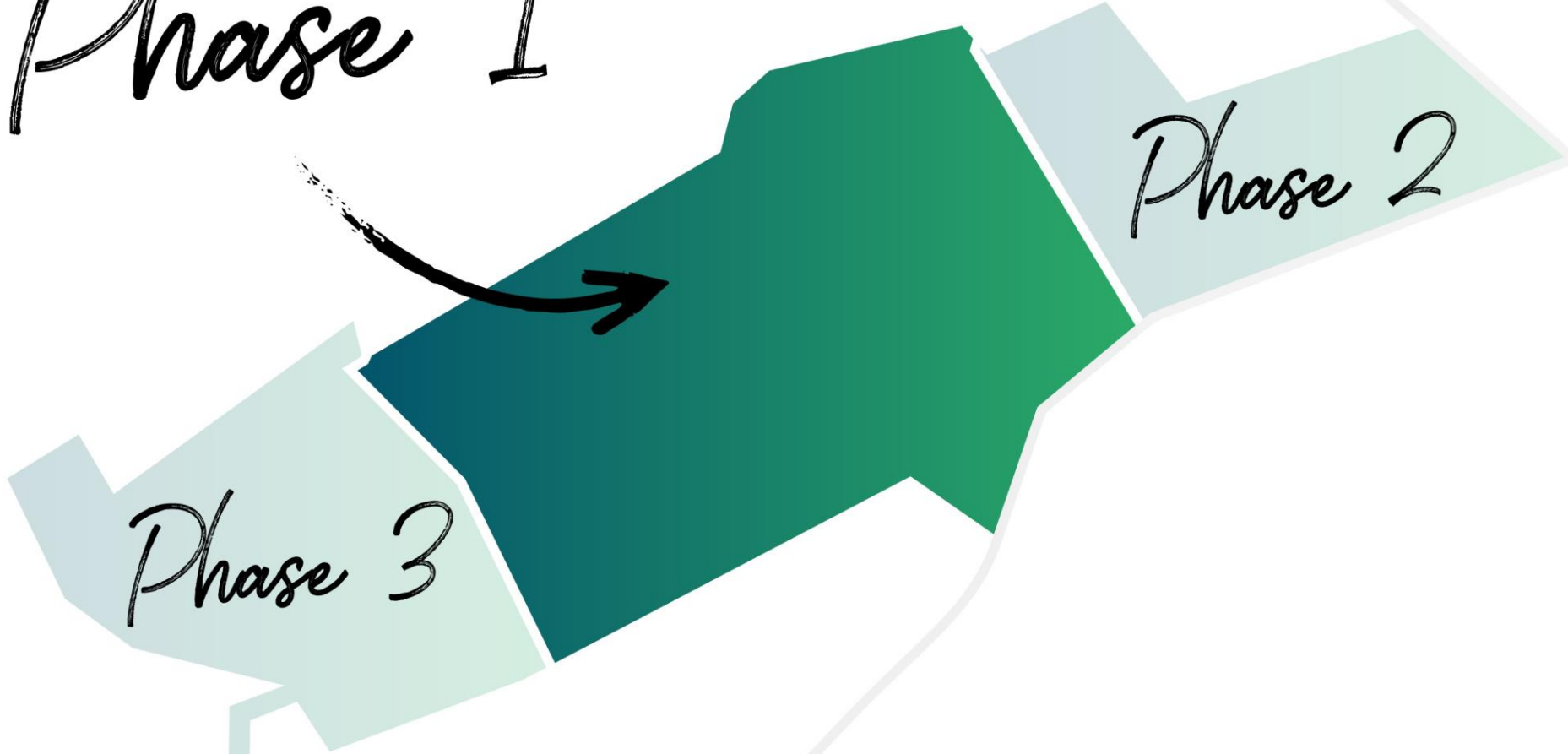
Elmen district

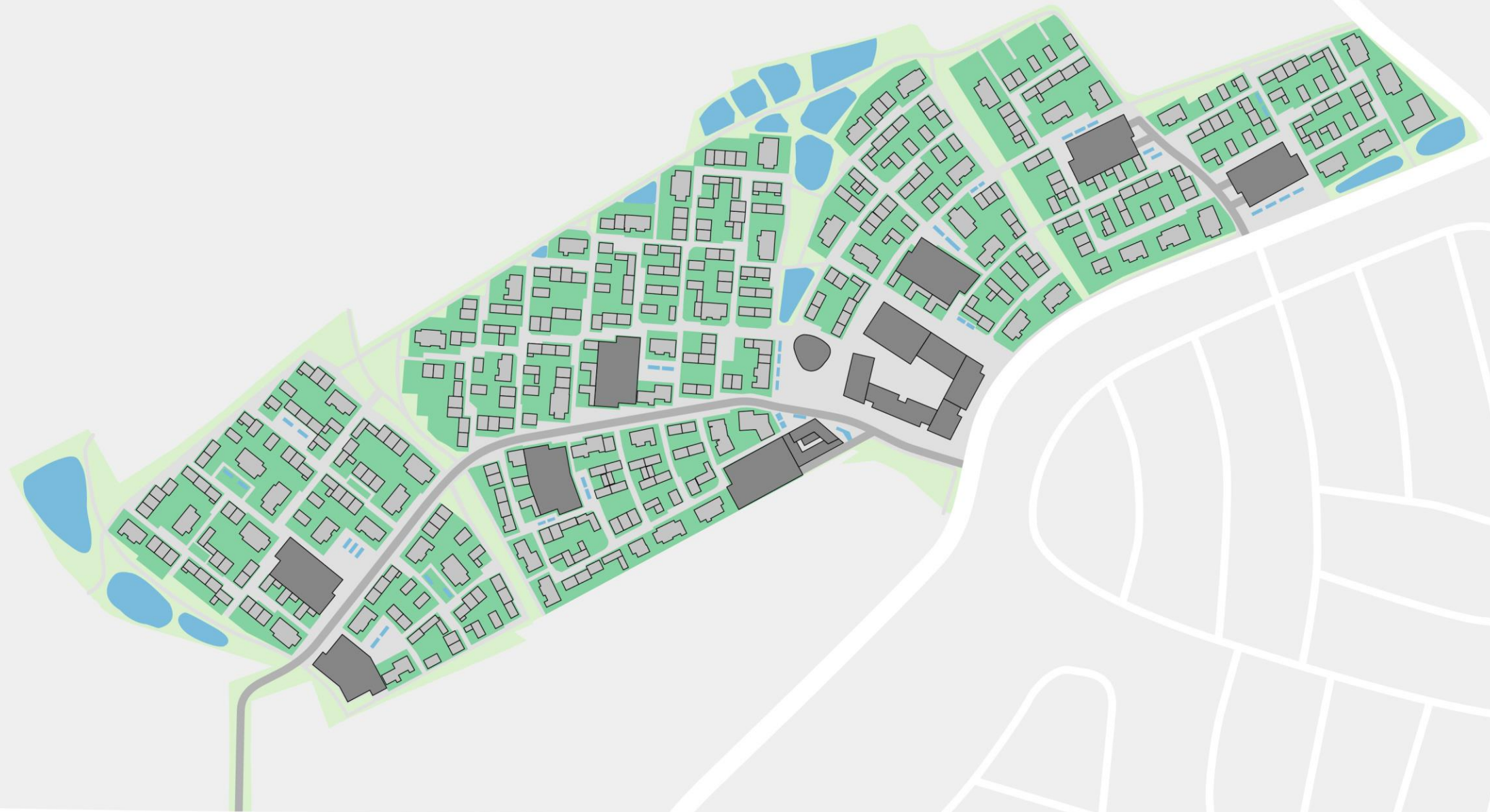


Phase 1

Phase 2

Phase 3





SMART LIVING LAB URBANISME



Qualité de vie dans les rues



20 juin -> 8:00h



20 juin -> 10:00h



20 juin -> 12:00h

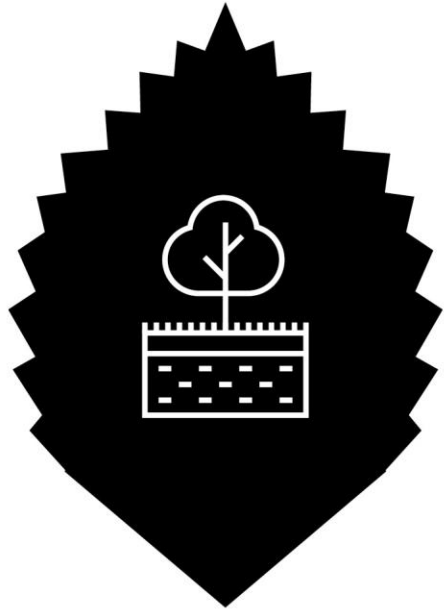


20 juin -> 16:00h



Etude d'enseillement

Durabilité!



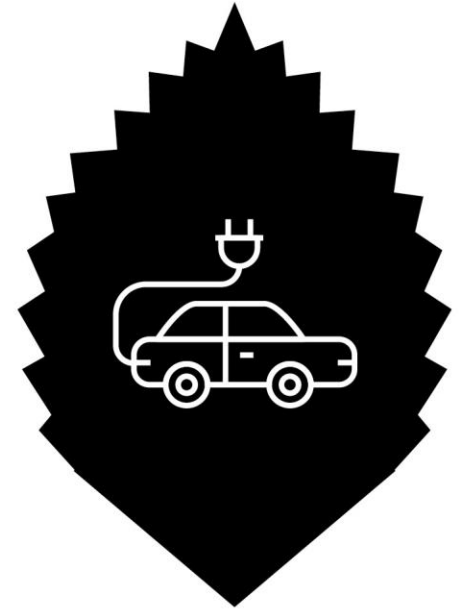
Gestion
du sol



Bassins de
rétention d'eau



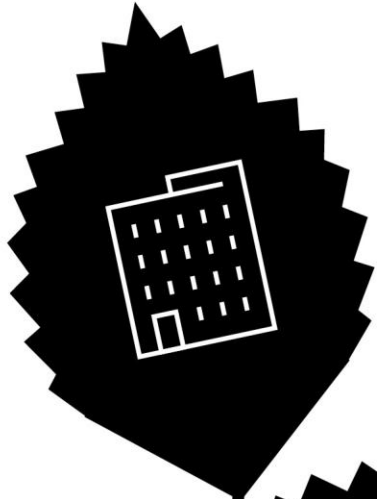
Espaces
verts



Stationnements
centralisés

SMART LIVING LAB QUARTIER

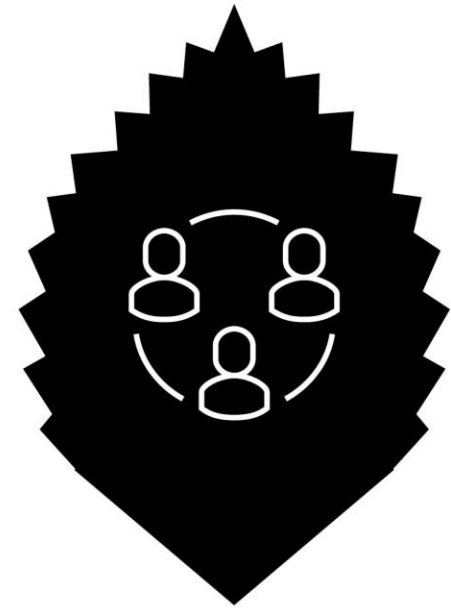
Elmen !



Habitat /
Hébergement



Services
de proximité



Vie
communautaire



9 maisons-témoins

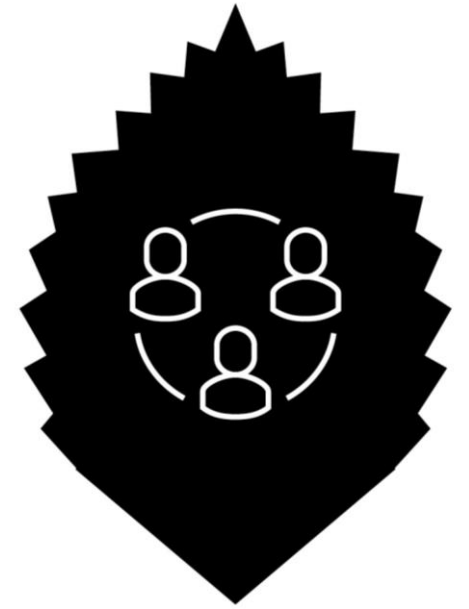




4 typologies de résidences

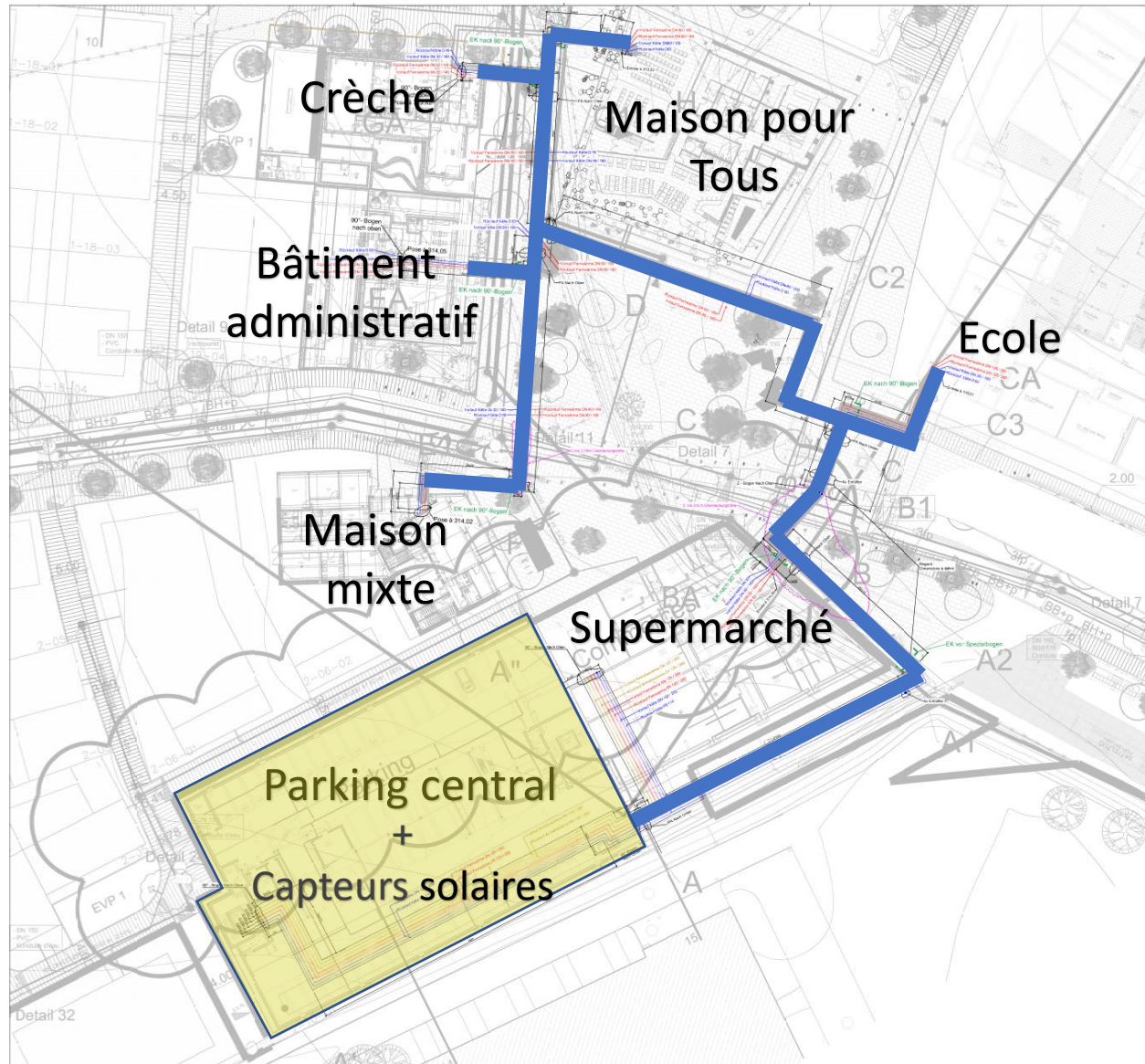


Jardin communautaire



SMART LIVING LAB

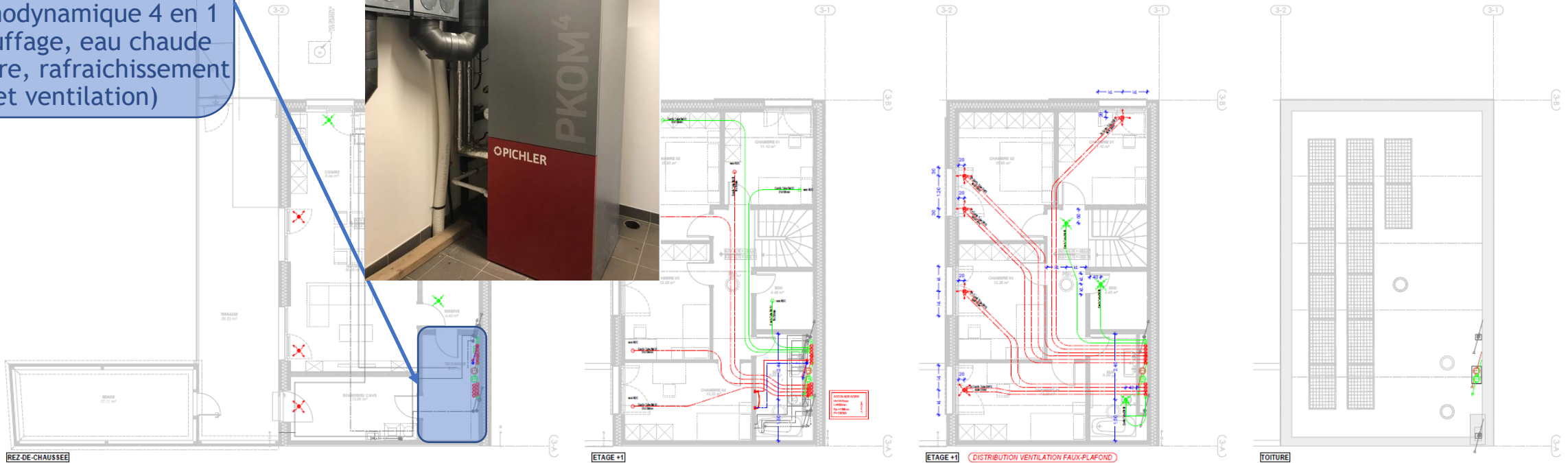
GESTION ET PRODUCTION ENERGETIQUE



NZEB-Standard (nearly zero energie buildings)

Système principal énergétique:

Groupe de ventilation thermodynamique 4 en 1 (chauffage, eau chaude sanitaire, rafraîchissement et ventilation)

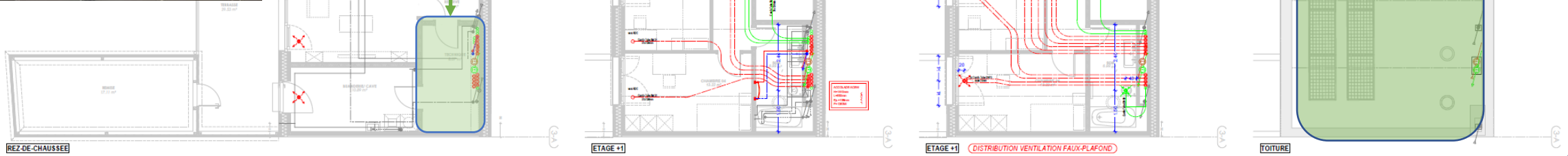




Batterie Stockage
Onduleur

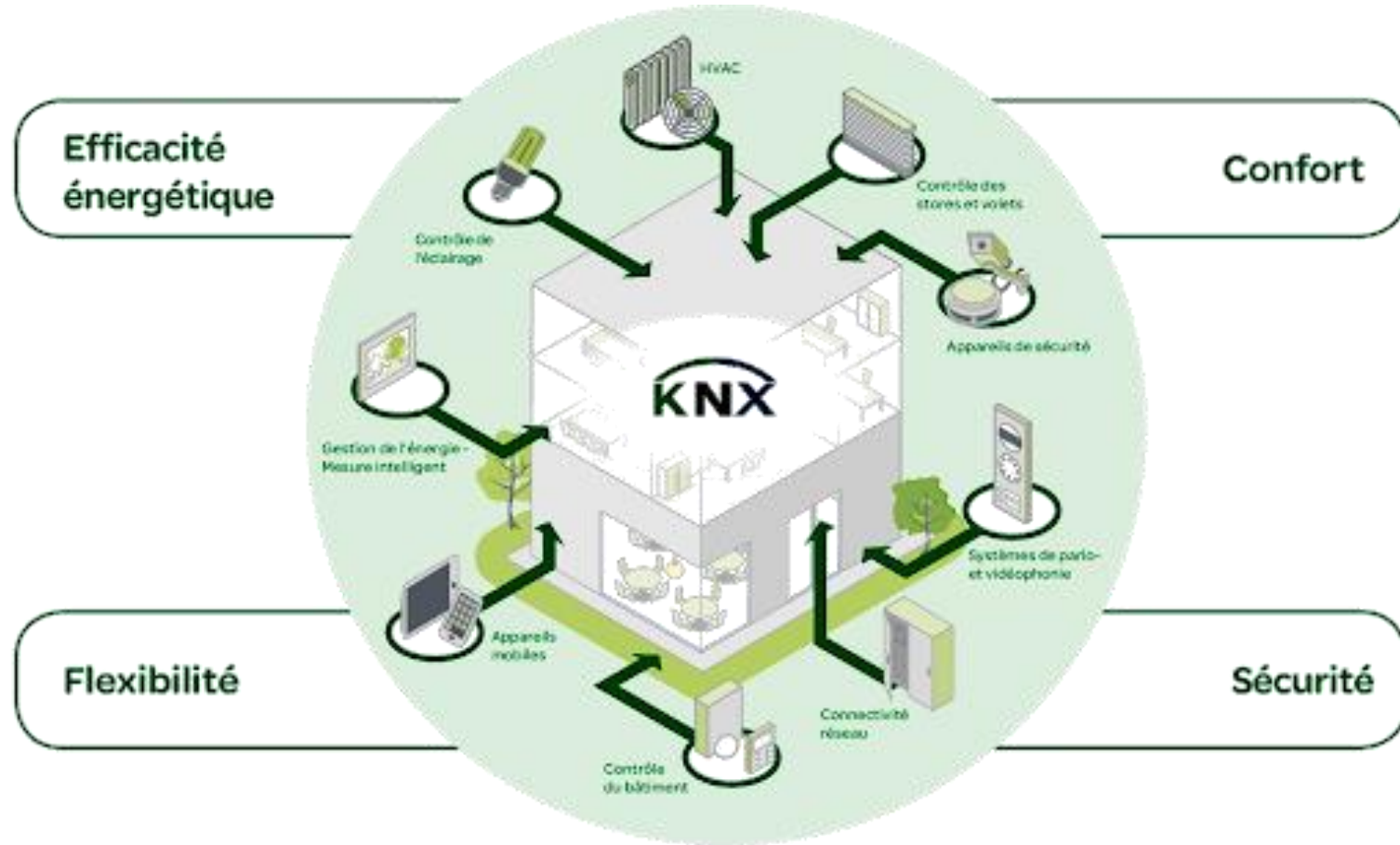


Production électricité
photovoltaïque



SMART LIVING LAB SMART HOME

Smart Home

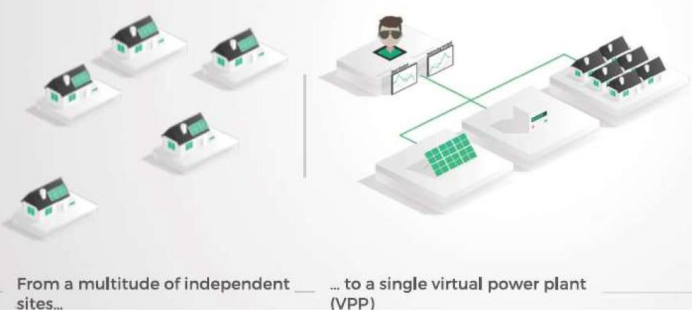


SMART LIVING LAB COMMUNAUTE ENERGETIQUE VIRTUELLE

Projet Pilote Smart District - Smart Home

By aggregating the devices of end customers, cluster makes it possible to use the energy available locally in various markets

What is EIBP:cluster?



- Analyse markets opportunities
 - Spot market
 - Balancing markets
- Search optimal solutions
- Check and validate transfer

From a multitude of independent sites... to a single virtual power plant (VPP)

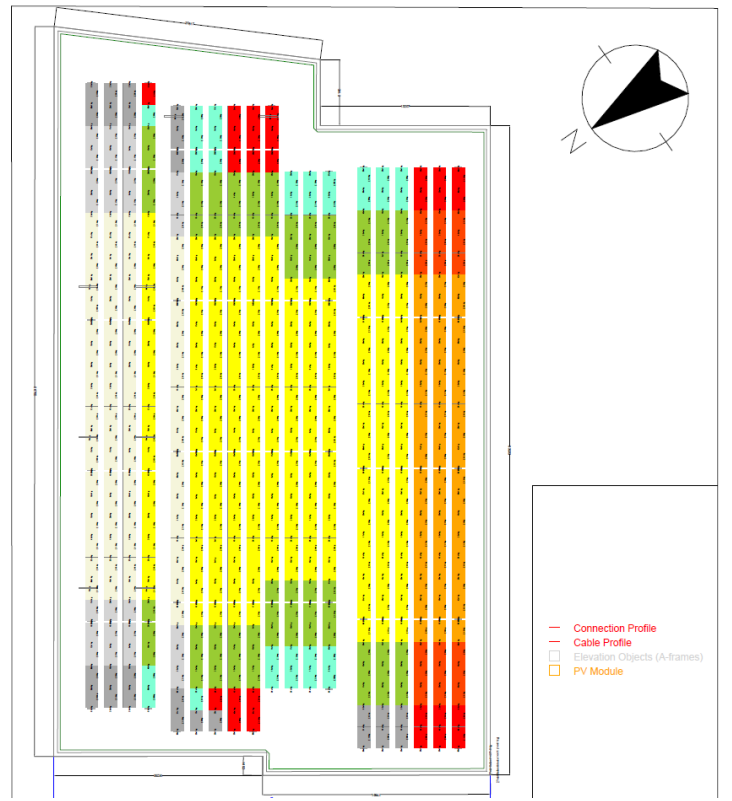
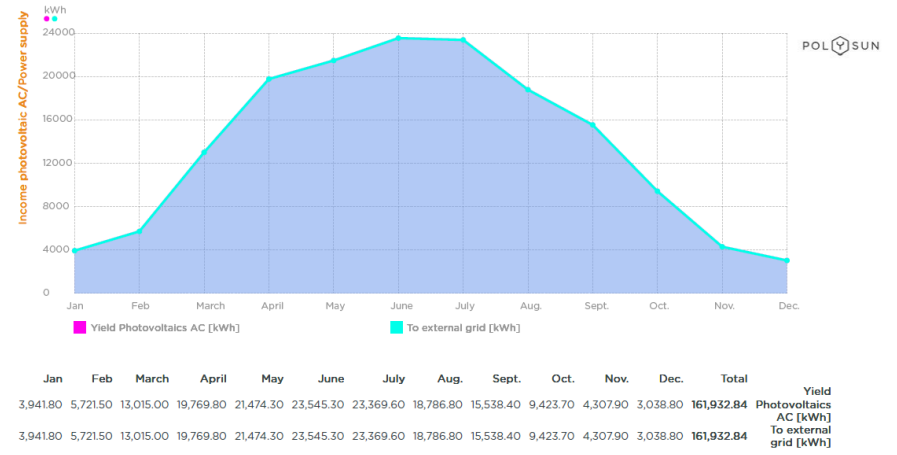


Take a look into your community

SMART LIVING LAB

MOBILITE DURABLE ELECTRIQUE

- Production électricité photovoltaïque
 - Chaque parking est équipé d'une installation
 - Capacité de +/- 180 kWp



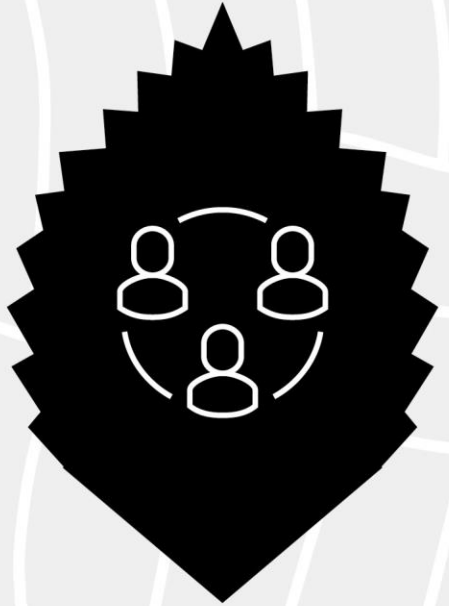
SMART LIVING LAB VIE COMMUNAUTAIRE

Places de ruelle

Places de quartier

Place centrale

3 typologies de places





© WW+

Bâtiment mixte



Maison pour tous



© TETRA KAYSER ASSOCIES SA ARCHITECTES

Parkings centralisés



EPC RECAST

ENERGY PERFORMANCE
CERTIFICATE RECAST



EPC RECAST INFORMATION

Project title	Energy Performance Certificate Recast
Starting date	01/09/2020
Duration in months	40
Call identifier	H2020-LC-SC3-EE-2019
Type of action	Innovation Action
Topic	LC-SC3-EE-5-2018-2019-2020 Next-generation of Energy Performance Assessment and Certification
Key words	EPC, BIM, SRI, Smart Readiness, Inverse modelling, IoT, smart meters, ISO, CEN, retrofit, building passport, digital logbook, residential, reliability, user-friendliness, comparability
EU Contribution	2,5 M€

Next-generation of Energy Performance Assessment and Certification
 TOPIC ID: LC-SC3-EE-5-2018-2019-2020

[Grant](#)

General information	General information	
Topic updates		
Topic description	Programme Work programme part Horizon 2020 Framework Programme Secure, clean and efficient energy	
Conditions and documents		
Submission service	Call BUILDING A LOW-CARBON, CLIMATE RESILIENT FUTURE: SECURE, CLEAN AND EFFICIENT ENERGY (H2020-LC-SC3-2018-2019-2020)	Work programme year H2020-2018-2020 See budget overview
Topic related FAQ		
Get support		
Call information	Type of action CSA Coordination and support action Closed	
Call updates	Deadline model single-stage	Opening date 25 January 2018
Funded project list	Deadline date 13 September 2018 17:00:00 Brussels time	
Go back		
	Type of action IA Innovation action Closed	
	Deadline model single-stage	Opening date 12 March 2019
	Deadline date 10 September 2019 17:00:00 Brussels time	

2019 (Innovation action):

Proposals are expected to demonstrate, depending on the scope addressed, the impacts listed below using quantified indicators and targets wherever possible:

- Improved user-friendliness of EPCs in terms clarity and accuracy of the information provided;
- Enhanced user awareness of building energy efficiency;
- Primary energy savings triggered by the project (in GWh/year);
- Investments in sustainable energy triggered by the project (in million Euro).

Additional positive effects can be quantified and reported when relevant and wherever possible:

- Reduction of the greenhouse gases emissions (in tCO₂-eq/year) and/or air pollutants (in kg/year) triggered by the project.



EPC RECAST in a nutshell

*Innovative **process** and **digital toolbox** to develop and validate
a new generation of EPCs for **residential buildings***

- ✓ To facilitate and improve working practices of **EPC assessors** → **quality** and **reliability** of EPCs
- ✓ To tailor renovation recommendations, highlight benefits for **building owners** → **user-centric** approach



Data collection



Quality checks



*Renovation
roadmaps*



Non-energy benefits





Pilots recruitment in consortium countries

COUNTRY	TOTAL N. PILOT SITES	(Out of which FAMILY HOUSE)	(Out of which FLAT IN MULTIFAMILY BUILDING)
FR	16	6	10
DE	56	0	56
IT	15	4	11
LU	6	1	5
SK	5	2	3
ES	15	1	14



TOTAL → **113** demo sites of which **14** family houses and **99** flat in multifamily building



This project has received funding from the European Union's Horizon 2020 research and innovation programme under the grant agreement number 893118. The European Union is not liable for any use that may be made of the information contained in this document, which is merely representing the authors' view.



POLITECNICO
MILANO 1863



WP3: Demonstration and impact evaluation

Task 3.3 Long Term monitoring of pilots buildings/dwellings

In/out condition



Electrical energy



Thermal energy





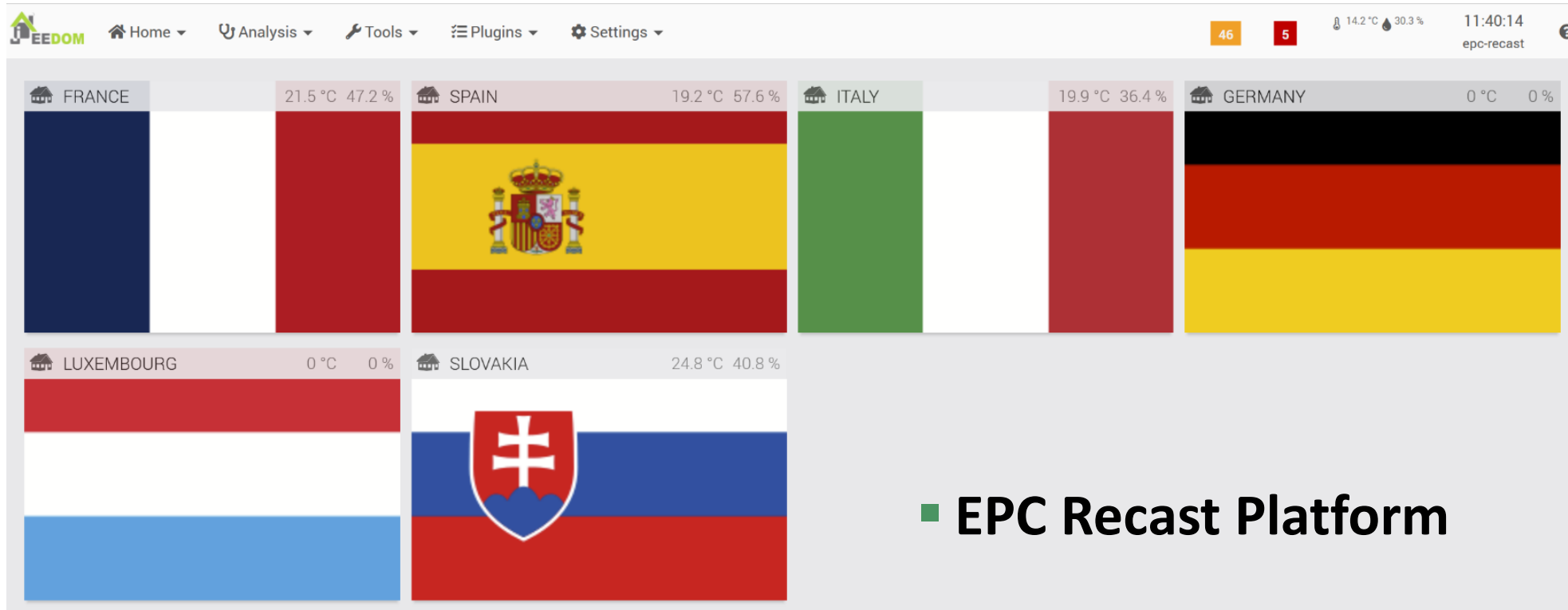
Long Term monitoring in Elmen

- Launch of energy/comfort online monitoring of a dwelling in Olm (SNHBM new low energy-district)





WP3: Demonstration and impact evaluation Long Term monitoring platform



■ EPC Recast Platform

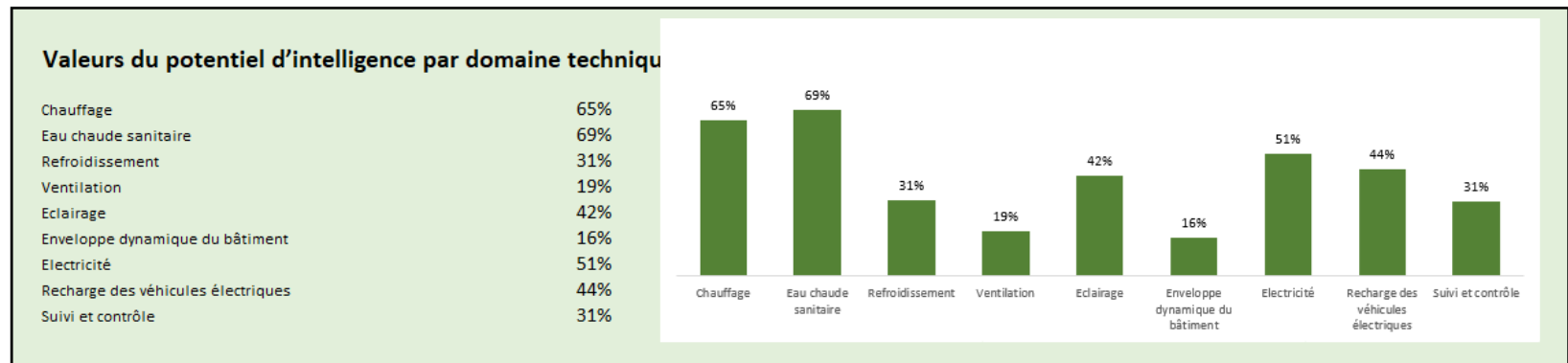
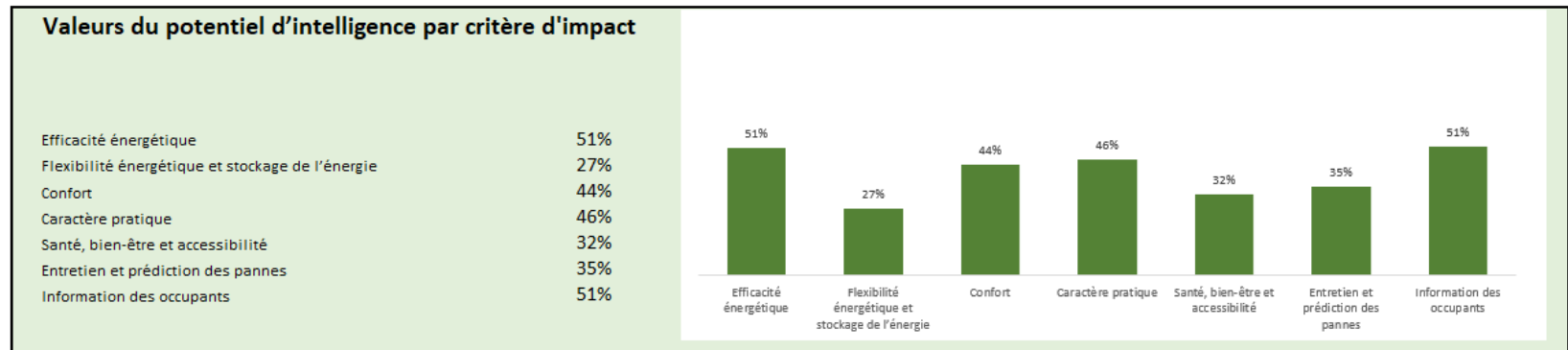
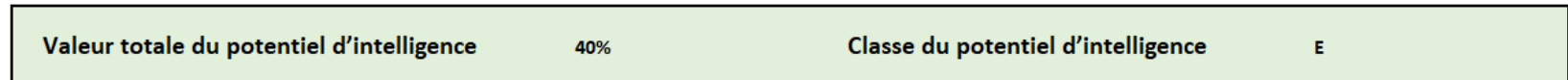


Smart Readiness Indicator / Elmen house

- New EU instrument for rating smart readiness of buildings
- Elmen pilot provides feedback
 - to the EC study
 - to Lux stakeholders

7 critères d'impact

9 domaines techniques



Project title	Adaptable technological solutions based on early design actions for the construction and renovation of Energy Positive Homes
Starting date	01/05/2023
Duration in months	48
Call identifier	HORIZON-CL5-2022-D4-01
Type of action	Innovation Action
Topic	HORIZON-CL5-2022-D4-01-02 Renewable-intensive, energy positive homes
EU Contribution	6 M€

Renewable-intensive, energy positive homes

TOPIC ID: HORIZON-CL5-2022-D4-01-02

[Grant](#)

General Information

Topic description

Destination

Conditions and documents

Submission service

Topic related FAQ

Get support

Call updates

Funded project list

[Go back](#)

General information

Programme
Horizon Europe Framework Programme (HORIZON)

Call
Efficient, sustainable and inclusive energy use (HORIZON-CL5-2022-D4-01) [See budget overview](#)

Type of action
HORIZON-IA HORIZON Innovation Actions

Type of MGA
HORIZON Action Grant Budget-Based [HORIZON-AG] Closed

Deadline model single-stage	Opening date 28 April 2022	Deadline date 06 September 2022 17:00:00 Brussels time
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Topic description

ExpectedOutcome:

Project results are expected to contribute to all of the following expected outcomes:

- Faster transition to the next generation of new constructions and renovation of cost-effective energy positive, climate neutral residential buildings.
- Streamlined integration of advanced smart technologies, renewable energy and storage solutions in residential construction and renovation projects.
- Faster transition to buildings and technical elements that are capable to adapt to different user profiles and lifestyles, improving air quality, human health and well-being parameters.
- Improved skills and competences among the workforce to support a rapid uptake of energy positive buildings in the residential sector.

Scope:

The aim is to move beyond NZEB (nearly zero-energy buildings) for new constructions and to the extent possible, for renovations, and to streamline energy positive buildings, ensuring buildings can marry high energy performance with maximum flexibility and adaptability to a changing society in a cost-effective manner. This is a key challenge for the residential sector in the transformation to a highly energy-efficient and climate neutral EU building stock, where energy positive homes should become the norm.

Proposals should:

- Investigate and demonstrate approaches for the construction of new energy positive residential buildings (and /or the renovation of existing residential buildings), with a focus on multi-family, multi-storey buildings, encompassing all relevant areas:
 - Design phase (aesthetic and technical solutions and their potential, passive and active strategies, sustainable design);
 - Integrated design and construction concepts;
 - Reconfigurable designs and technical elements capable of adapting to different user profiles and lifestyles;
 - Selection and installation of affordable and high performance construction products and materials, building on previous projects;
 - Innovative processes from manufacturing to construction site;
 - Integration of renewable energy production for heating and cooling, electricity production (e.g. BIPV and BAPV), and where relevant, thermal and electrical storage, including shared at neighbourhood and district levels; for existing buildings, cost-effective, innovative solutions that allow to (at least) fully cover the energy consumption of the building (electricity, heat and cooling) with renewable energy.

Each project is expected to include at least three demonstration sites located in different climatic regions.

CONCEPT

LEGO
FIT



Will

Test and validate a lifecycle long design process for making residential multifamily homes energy positive

By

Delivering highly replicable user-centric, advanced & interoperable solutions adaptable to a wide range of residential buildings



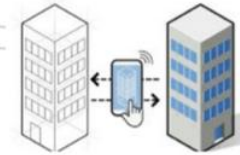
Through

Building and technologies modelling, dynamic BIM models, post-occupancy evaluation, co-financing strategy and circular economy approaches



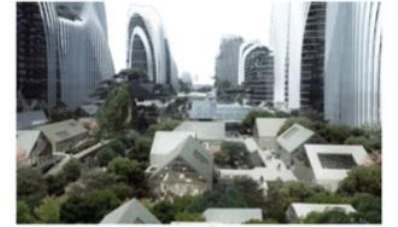
To

- Facilitate projects implementation
- Enhance faster transition to PEDs
- Foster energy efficiency and RES



Achieving

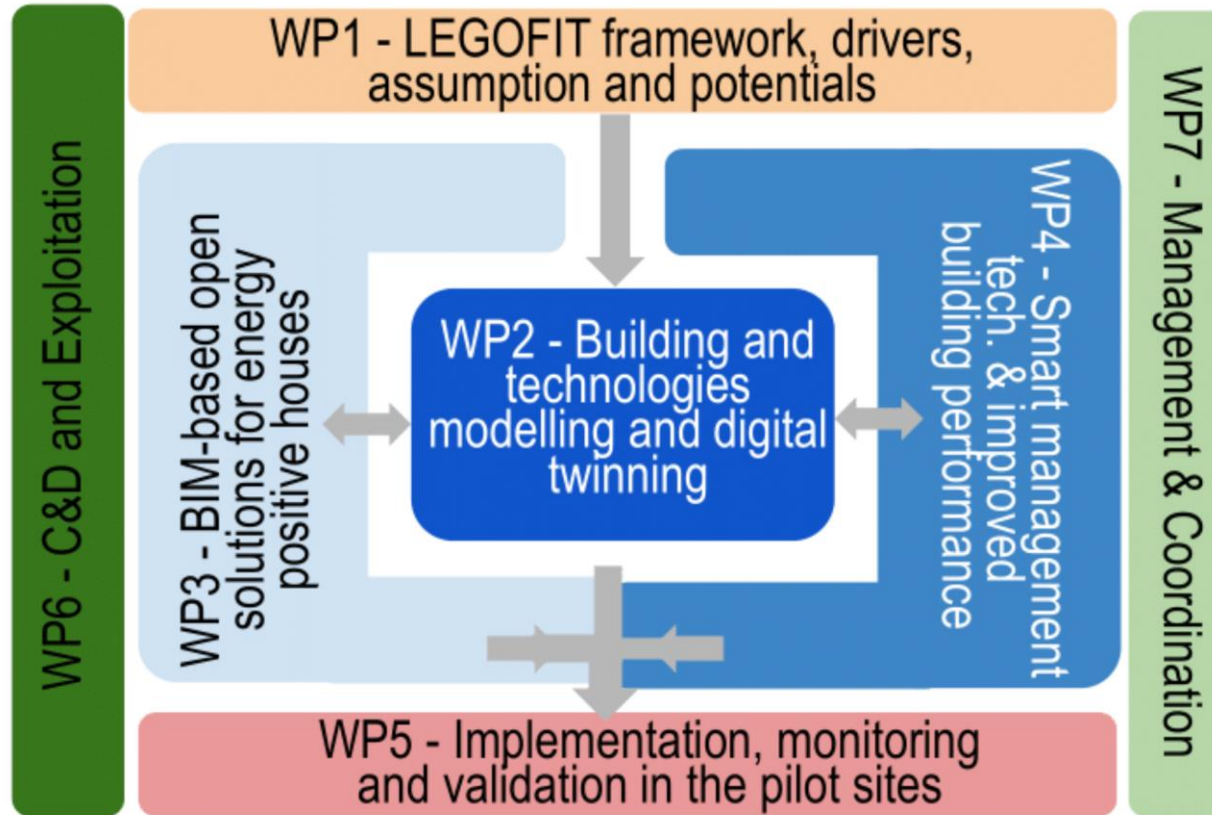
- 146 kWh/m²/year saved
- 29.1 €/m²/year saved in energy bills
- 15.4 kgCO₂ eq./m²/year saved
- Reduced performance gap up to 80%



Demos

SNHBM

LEGOFIT WORKPLAN



SNHBM DEMO – WP5

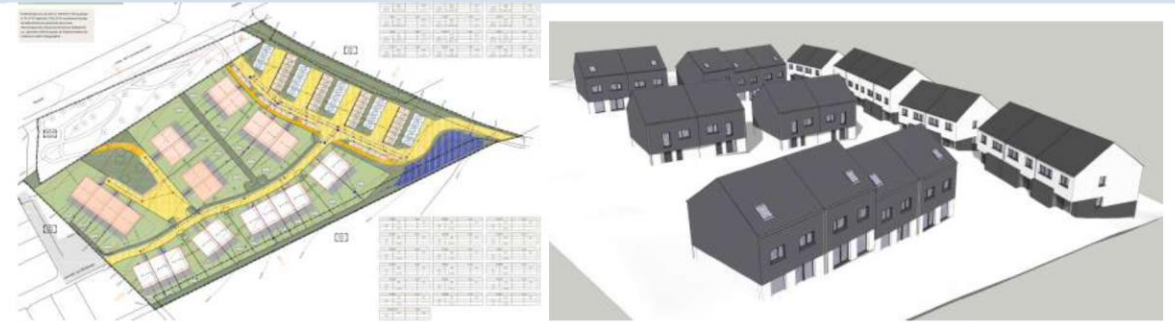
- 24 houses >> deliver a high impact in the project (quantitative)
- ‘Local’ ecosystem (SNHBM+LIST)
- Link amongst EU and national regulations (LENOZ vs. Level(s)) >> policy feedback

#3 - DEMO Luxembourg (To be constructed - New residential building)

Partners Société Nationale des Habitations à Bon Marché (SNHBM), LIST

Location [R7 Schleedewues, Berg, Betzdorf, Luxembourg](#)

Pictures



Climatic area

Oceanic climate: The month with the highest average low temperature is August (11.8°C). The coldest month (with the lowest average low temperature) is January (-1.3°C).

The wettest month (with the highest rainfall) is December (70mm). The driest month (with the least rainfall) is April (36mm).

Focus area & Demo Site Description

The demo site comprises 24 single-family houses and a parking zone with carports equipped with PV panels. For energy production, apart the district PV production of the carport, all the buildings will be equipped with a photovoltaic installation and a residential energy storage system with salt-water batteries. All the photovoltaic production will be managed in a virtual energy community (all the energy produced in the district can be consumed by all the people via a virtual network, for the whole of the consumption of heating and electric energy and for the installation of recharging station for electric vehicle). Self-consumption