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GENK

Positive energy neighbourhoods for Europe's fair, effective and resilient energy transition

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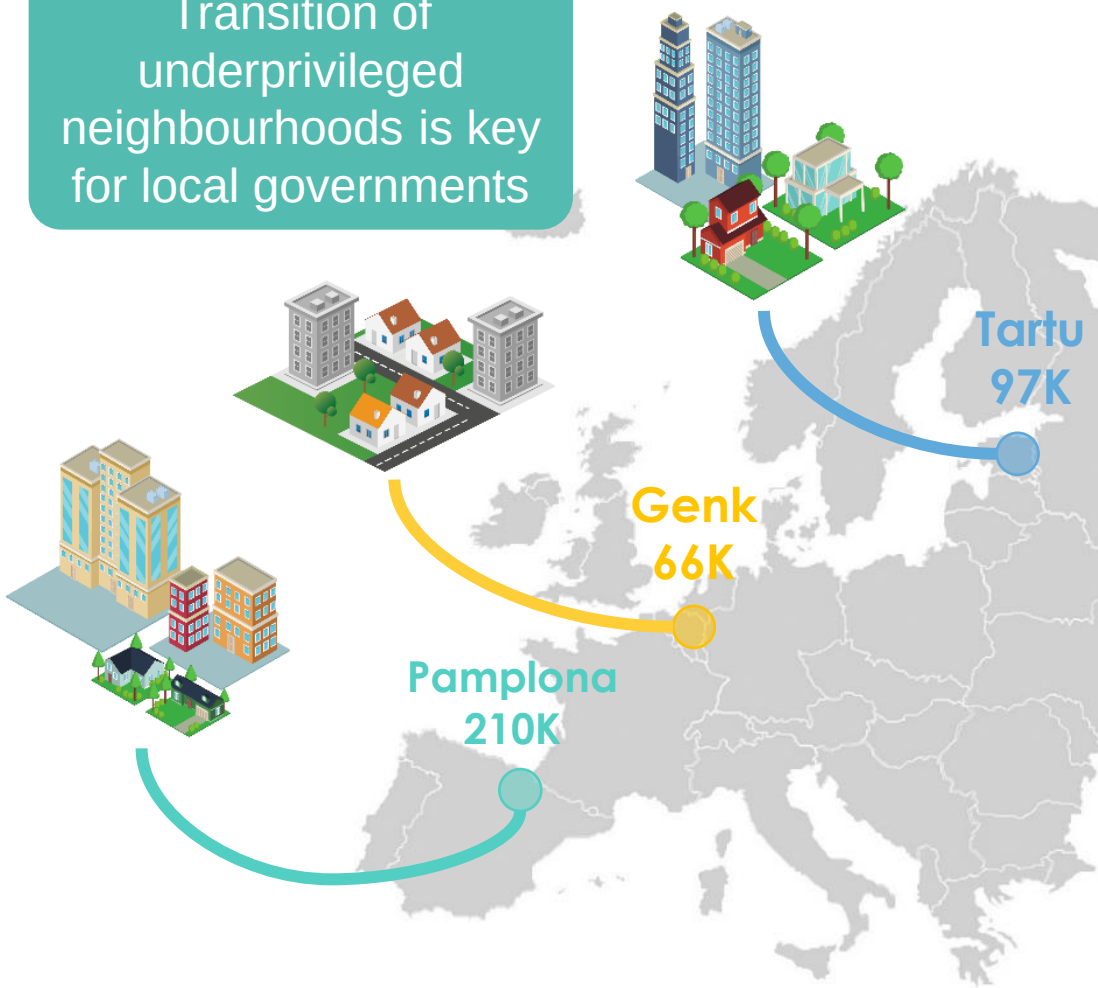
LEADING THE TRANSITION TO POSITIVE ENERGY NEIGHBOURHOODS

Revitalisation of urban areas towards Positive Energy Neighbourhoods (PEN)

Transition of underprivileged neighbourhoods is key for local governments



75%

of Europeans live in urban areas

700

out of 800 European cities are small to medium-sized

1. **POSITIVE ENERGY NEIGHBOURHOODS** *within existing urban contexts*
2. **LIVING LAB SETTING** *innovation processes in real-life test environment*
3. **OPEN INNOVATION** *to enable commercially viable solution packages*


WINTER IS COMING

3 Living Labs, 3 different settings

Tartu (EE): renovation of 3 Soviet-era apartment buildings to PEN

Genk (BE): single family housing district, neighbouring to a sandbox area

Pamplona (ES): blending large tertiary building with social housing

How to enable the locals' engagement?

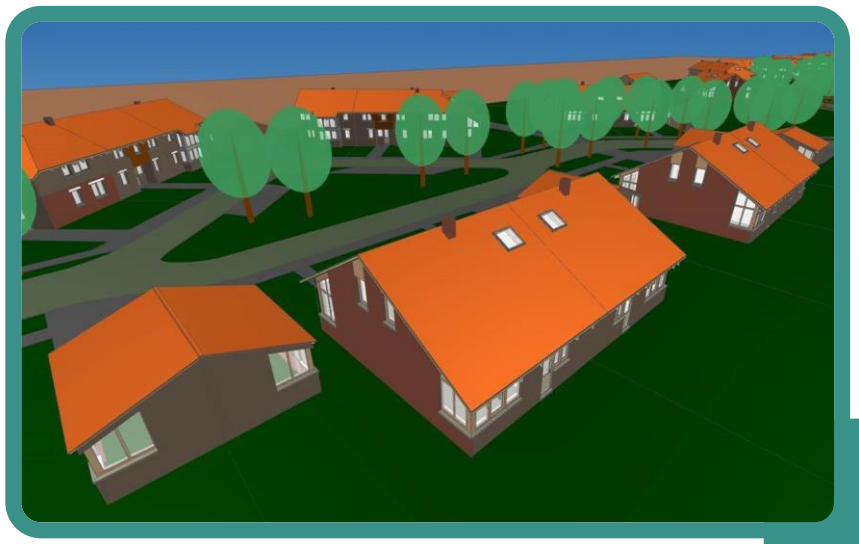
A paradigm shift requires a societal optimisation








Seamless data flows for smarter PEN realisation



AS-BUILT FILE

- Establish digital twin for asset management
- Maintenance, replacements and simulations…

CAM

- Necessary digital output for production line

BIM MODEL NEW SITUATION

- Main building characteristics for permit purposes
- Size, materials, simulations…

BIM MODEL CURRENT SITUATION

- Digitalize blueprint for asset management
- Simulations

POINT CLOUD

- Geometrical data points to represent building in a digital platform

Calibrating Digital Energy Twins on neighbourhood scale

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MEASURING & CALCULATION

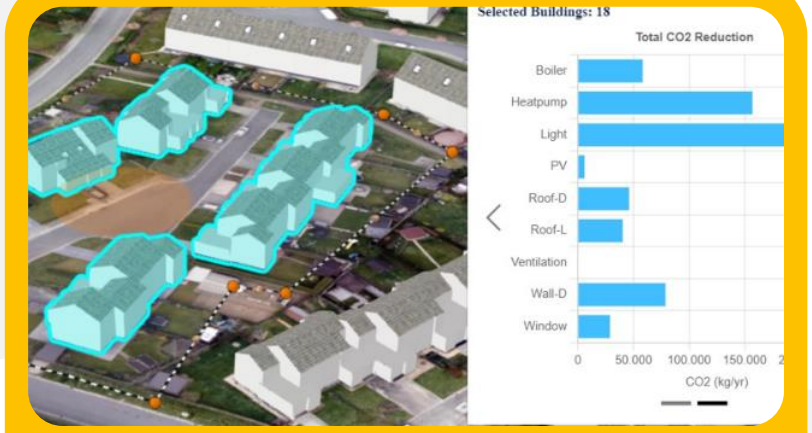
Detailed 3D model of individual buildings

→ *More efficient site visits*

SIMULATE & ANALYSE

Adding information, e.g. renovation passport or logbook

→ *Estimation of current EPC*
→ *Optimisation of renovation scenarios and local climate plans*



REPORT & MONITOR

Aggregation of information
Update status of buildings

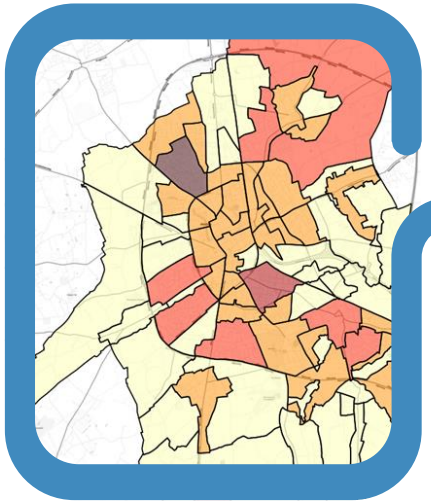
→ *Persuading intuitive 3D visualisation*
→ *Overview of renovation*

EU Policy recommendation

Endorse the identification of high potential neighbourhoods for aggregated renovations

CURRENT SITUATION

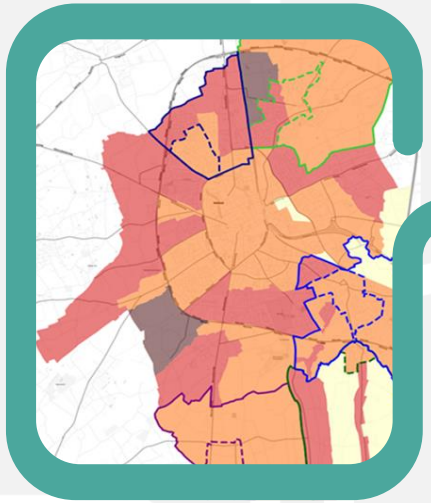
- EPC database
- Actual energy use



RENOVATION POTENTIAL

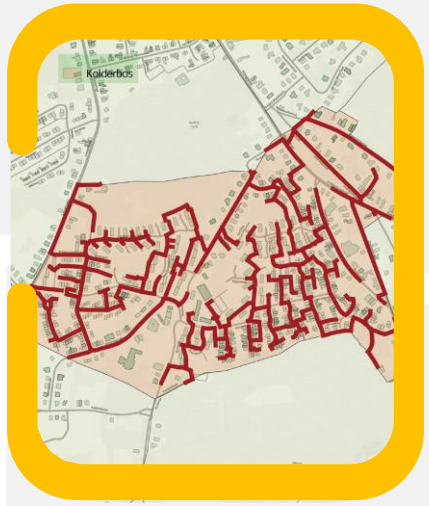
- Technical
- Economical

→ ***Preliminary selection***



OTHER FACTORS

- Ownership
- Income
- Construction year
- City strategy
- …



DISTRICT ENERGY SYSTEMS

CONTACT

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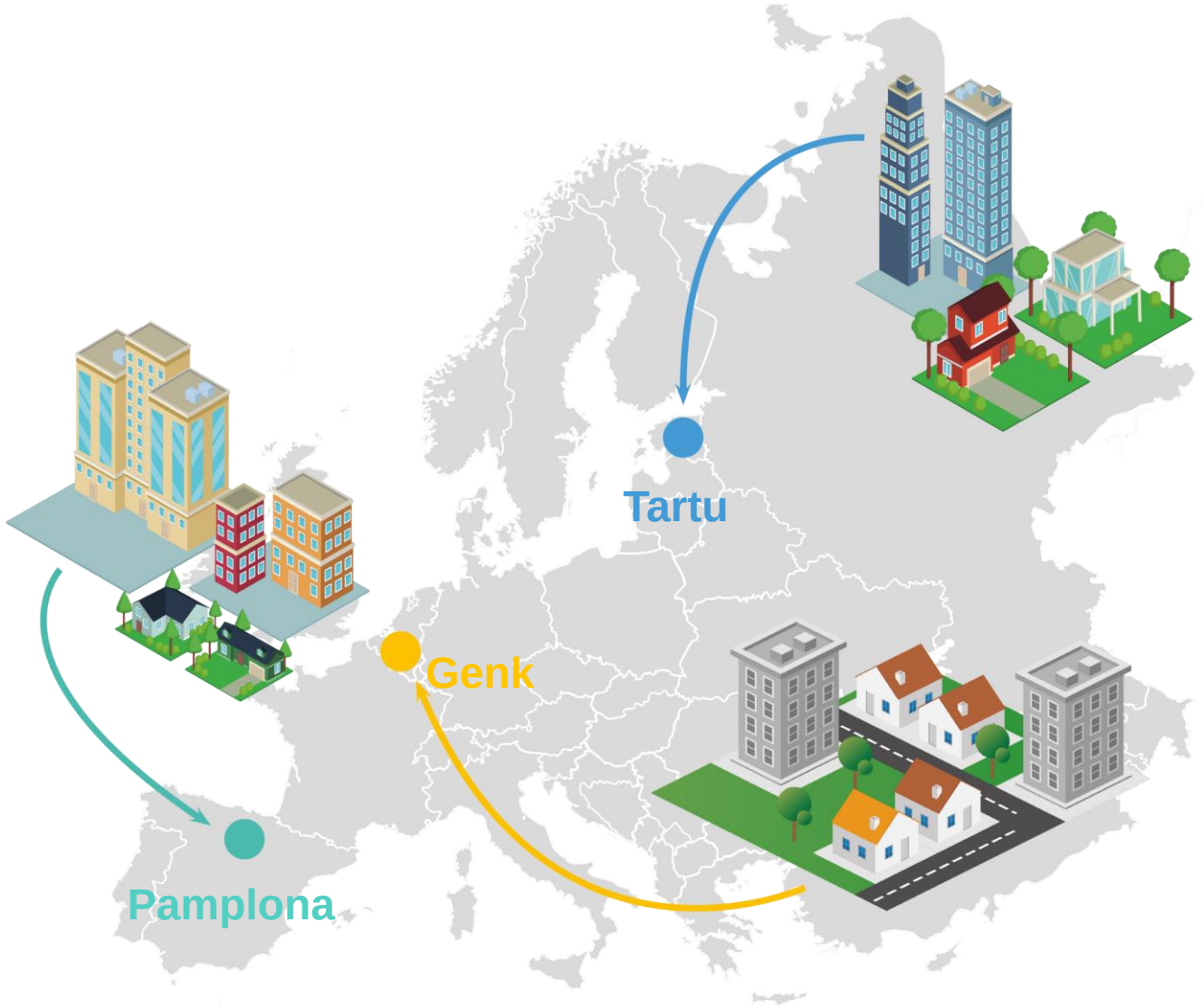

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