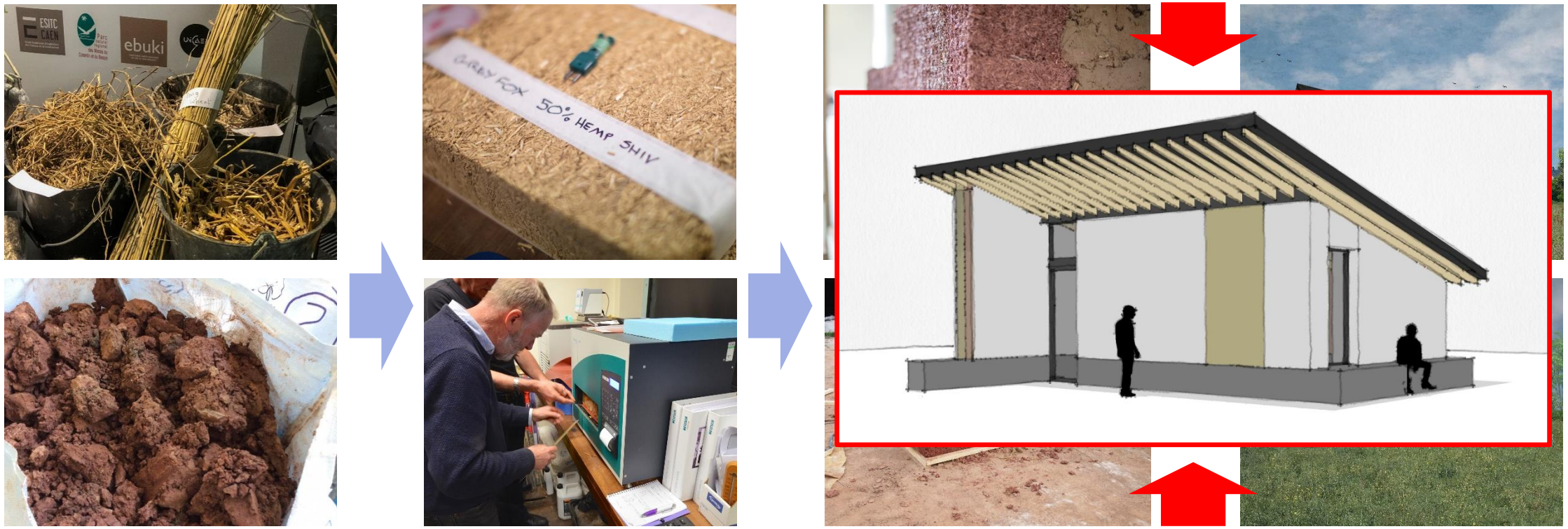
The pilot buildings

Why do we need a Pilot building?

It’s a question of scale.

Making the jump from square samples and trial walls to somebodies home takes a leap of faith.

It’s a question of scale.



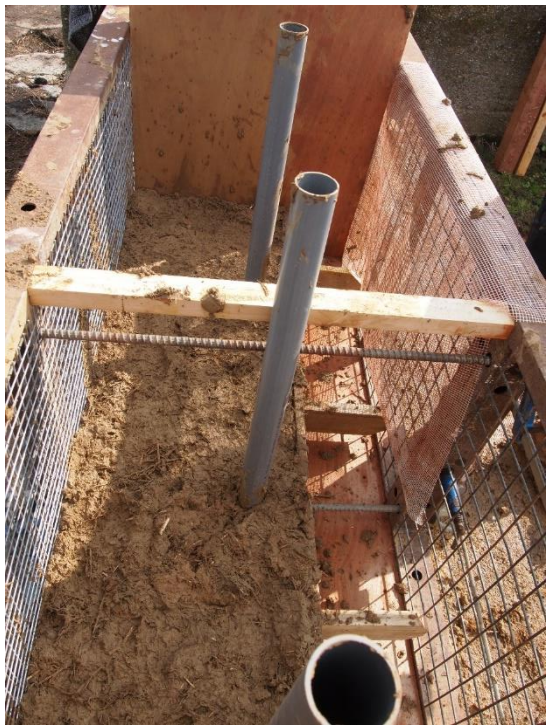
An intermediary stage is to create small scale pilot buildings.
To test ideas / scenarios / methods before using them on a habitable building.

Why do we need a Pilot building?

- For any innovation to succeed it needs to be accepted by industry and have people who understand how to use the product.
- The material needs to be monitored to provide evidence that the buildings can perform as expected.
- To provide a case study that can be compared with non-CobBauge buildings.

What we learn from cobbauge 1 :

- A combination of 2 optimized mixes can reach the thermal regulations
- Light earth + cob can be implemented together in a formwork
- the simultaneous implementation makes it possible to obtain a strong connection between the two mixes



What we need to achieve

- the use of formwork saves time on the building site
- site organization allows us to optimize the implementation and the deadlines of construction site
- What tools allows us to reduce drudgery and make the work effective
- Building details to meet a demand for modern aesthetics and the requirements of regulatory performances (permeability to air, water, process durability, repairability ...)

Many other key-points

- **Soil selection:** Site tests for clay content - Additives – Aggregates/clay Importing materials to site – Where can we build?
- **Construction:** Shuttering Lifts - Drying time
- **Alternatives:** Prefabrication
- **Orientation :** Density or insulation – which side?
- **Foundations:** Materials - Embodied energy - Thermal bridging - Drainage
- **Plinth:** Height Interface between CobBauge and plinth
- **Roof:** Overhangs - Wall plate
- **Finishes:** Need for external finish? – Renders – Plasters - Rainscreens
- **Services**

METHODOLOGY

- Inventory of traditional/modern cob building details
- Inventory of transferable light earth and strawbale details
- determine the most common configurations
- draw the details for these configurations by crossing these reference details, the approach of engineers and architects with those of builders
- implement them to check their feasibility and adapt them if necessary
- entrust the construction to companies trained in the basic principles of cobbauge, observe the organization, work with them on the possible improvements
- Produce a guide for cobbauge

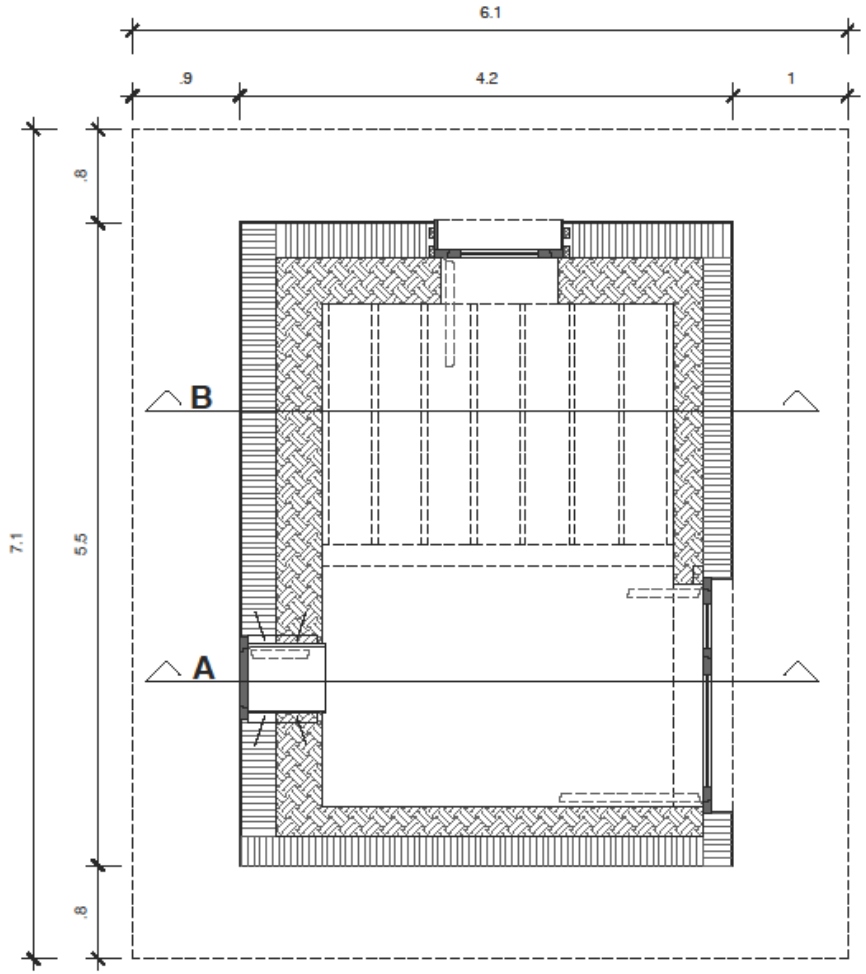
TEST ON 2 PILOT BUILDINGS

- Seeking to develop two pilot buildings
  - One in France
  - One in UK

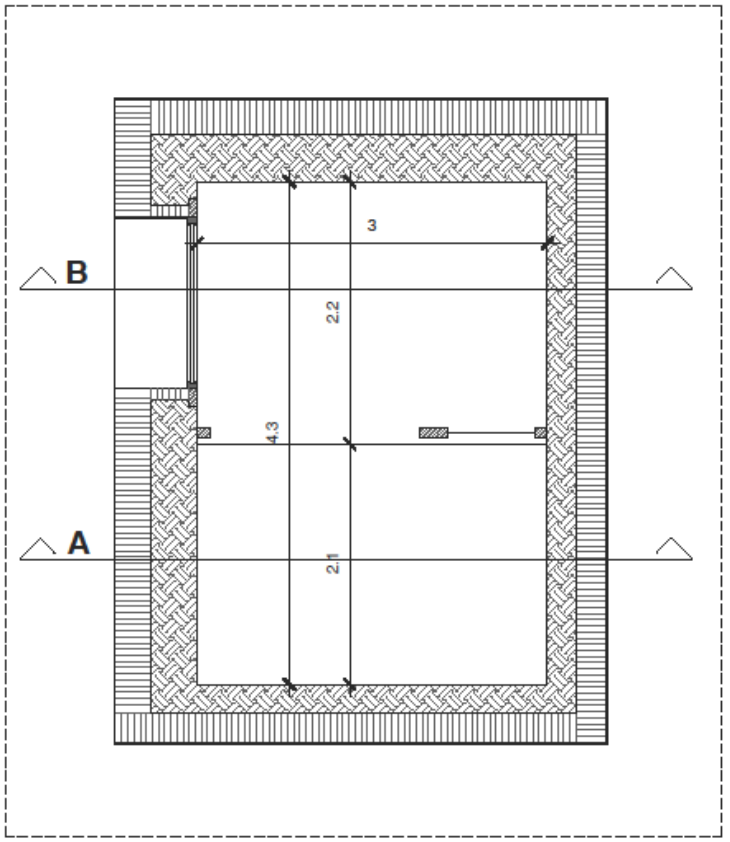
- Comparisons can be drawn from the two.
- Each building set against own legislative context.

The PNRMCB Pilot Building

- small pavilion of 23 m²

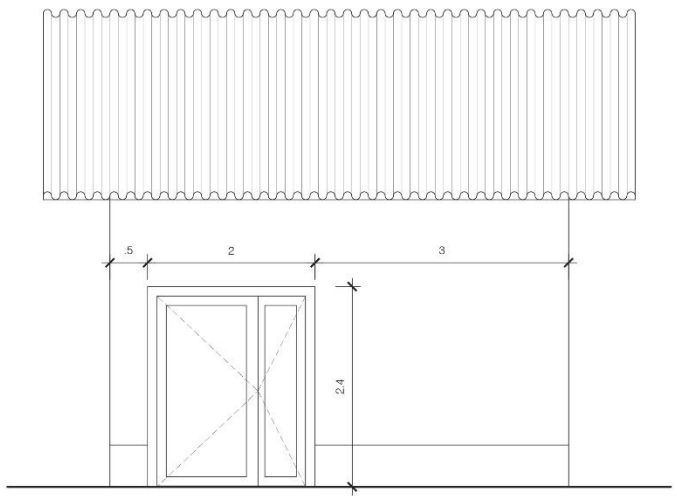


GROUND FLOOR // RDC

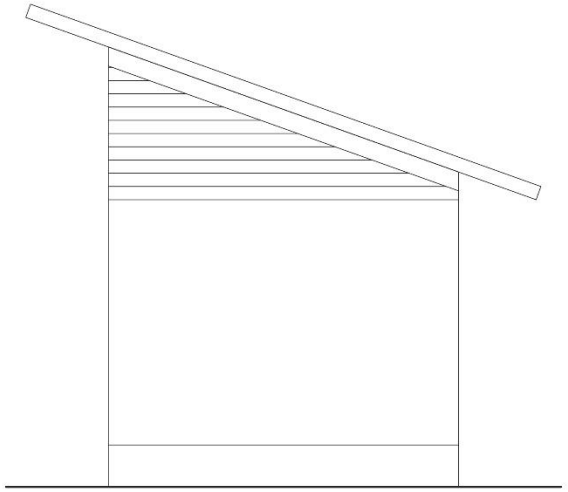


PLATFORM // MEZZANINE

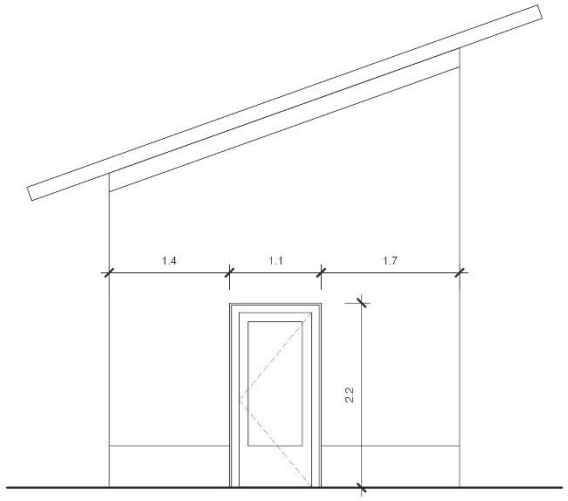
- 2 storeys



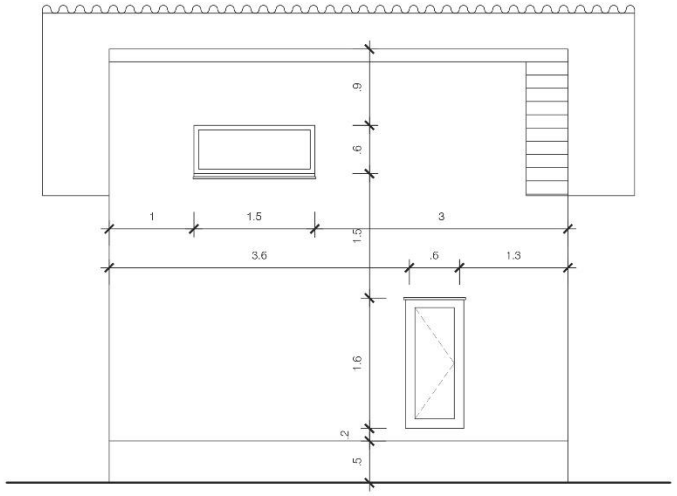
SOUTH // SUD



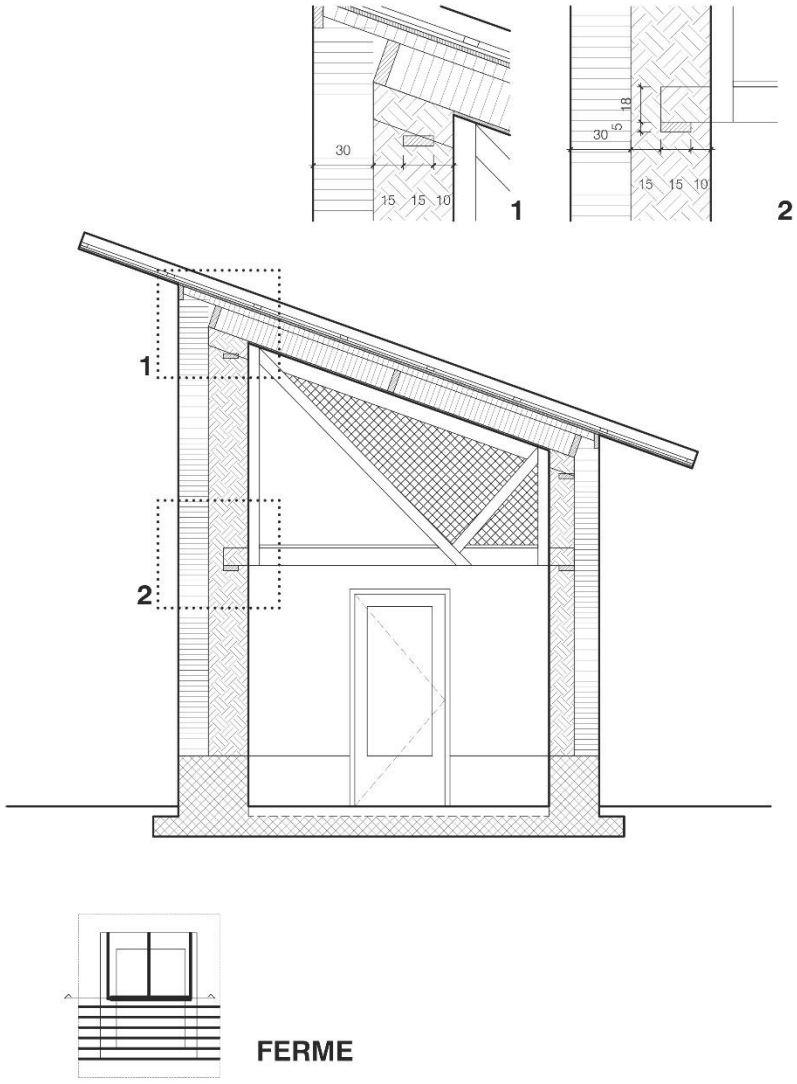
WEST // OUEST

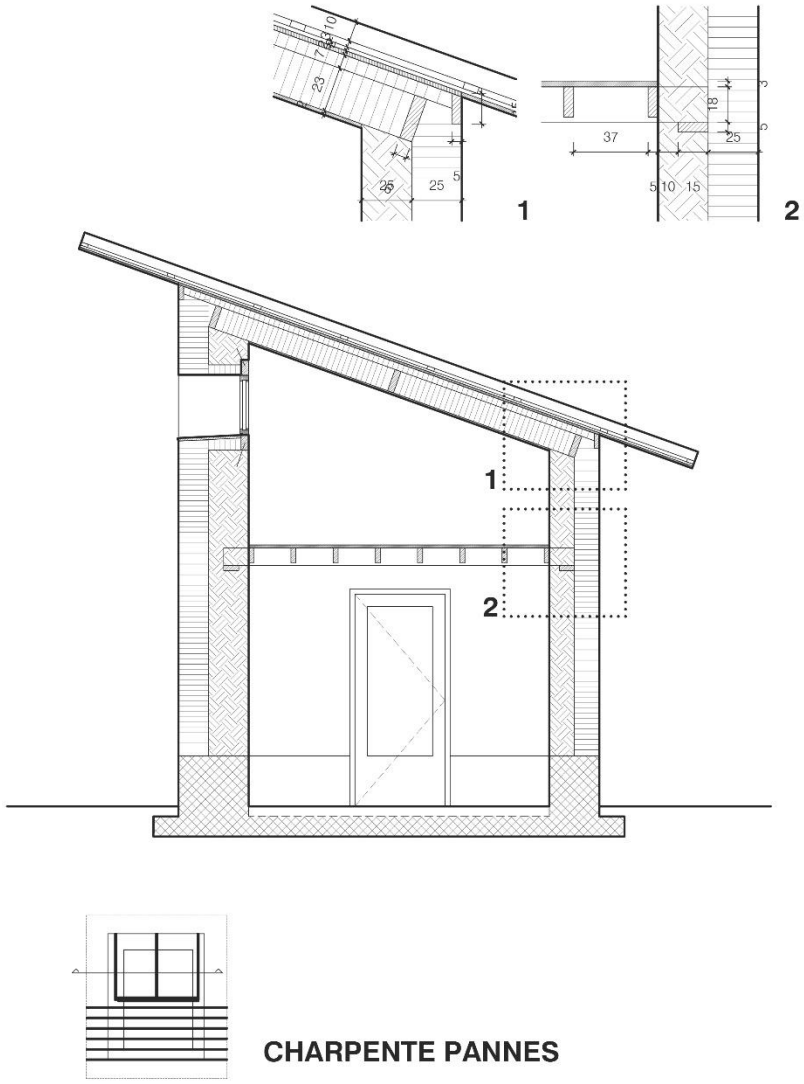


EAST // EST

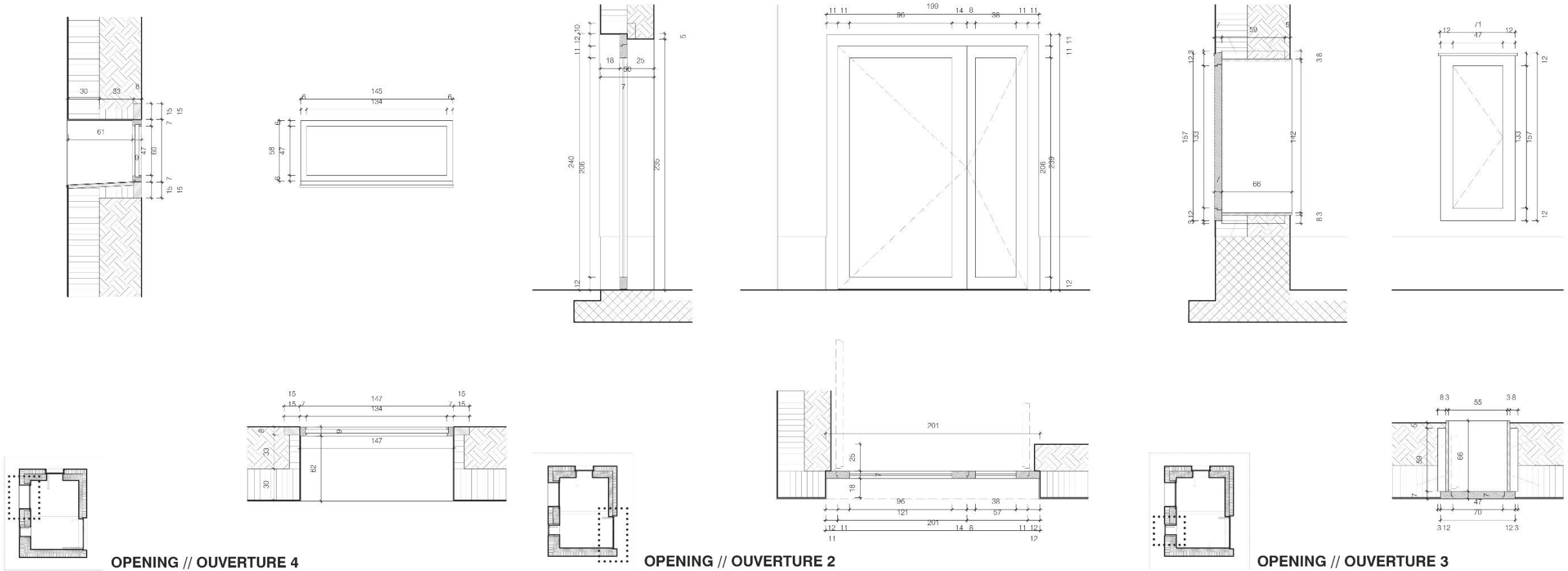


NORTH // NORD





- Connection with the roof framing
- Connection with the floor framing
- Connection with the plinth



- How to create windows/doors on external face, internal face or in the middle of the wall
- How to avoid thermal bridge

Current status

- Building permission granted
- Foundations and plinth done
- First technical meeting
- First lift in progress

The Proposed UK Pilot Building

- Approached by PU estates department who were aware of CobBauge research.

- PU are looking for an external classroom building, which would demonstrate some of the research undertaken at the university.
  - It will be a single room with a small footprint (internal area 25m^2).

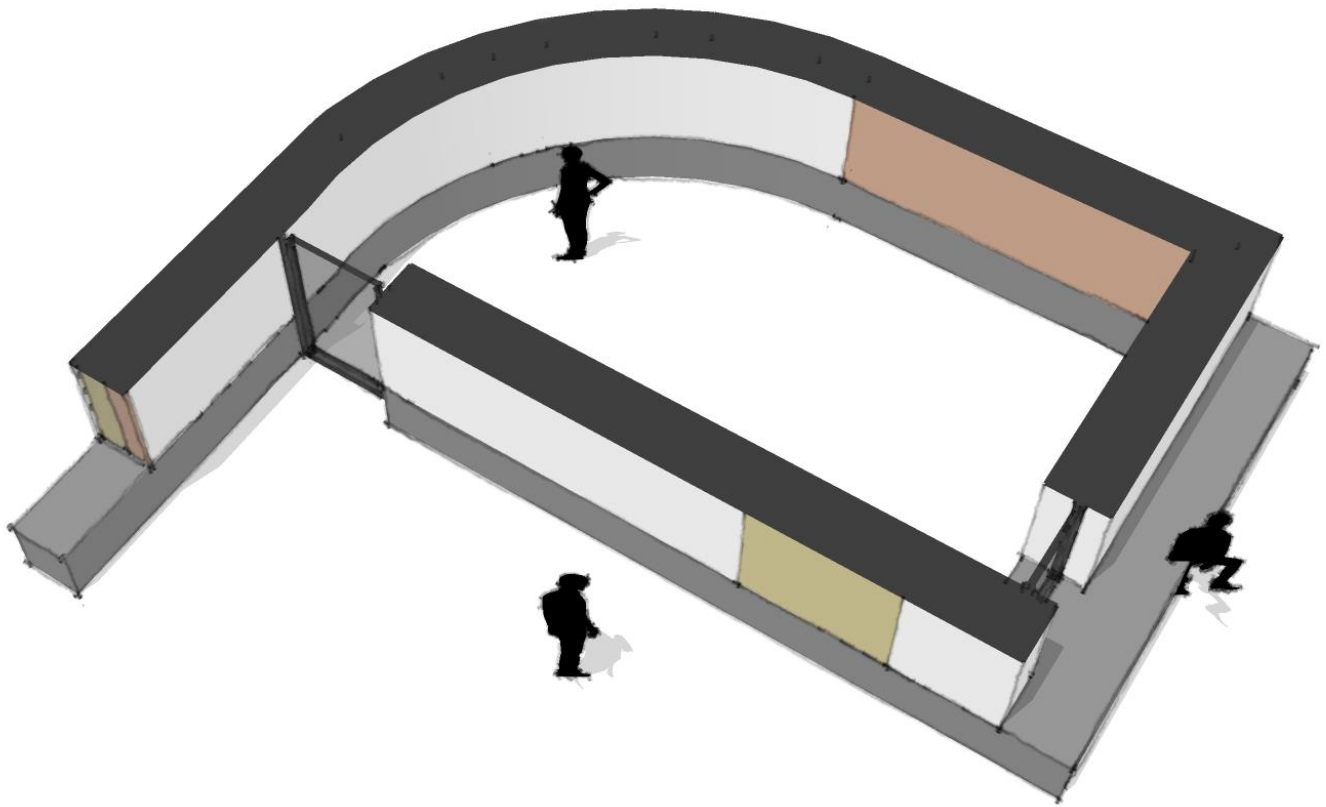
- The building will provide a location for on-site training activities, and help in the preparation of training publication material.

- The building will be set within a garden environment.

The Proposed UK Pilot Building

- Single storey.
- 600mm plinth.
- Mono pitched roof.
- Large eves overhang.
- Few windows and doors.
- Experimentation with timber roof structure and lintels.

The Proposed UK Pilot Building



- Experimenting with a curved wall.
- Using the curve to lead people into the room.
- Testing natural materials. Alternatives to concrete, earth flooring etc.
- Skylight windows for natural light.

Current status

- Establishing budget
- Working up Planning information.
- Developing a program for construction.
- Estimated completion:

  Summer 2020…

  So watch this space!

Thank you


Interreg
EUROPEAN UNION
France (Channel Manche) England
CobBauge
European Regional Development Fund


ENVIRONMENTAL
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PLYMOUTH
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