Welcome

Sustainable Earth Buildings

CobBauge Phase 2 Kick-off Event

3rd September, RICS

Afternoon agenda

Time	Subject	Speakers
13:30	Registration and Coffee	
14:30	Intro to afternoon and heads up for evening programme	Steve Goodhew
	CobBauge 1st Phase and what we will be undertaking for phase 2	Steve Goodhew
	The Buildings	François Streiff and Anthony Hudson
	The Training	Tom Morton, Becky Little & François Streiff
	The Monitoring	Jim Carfrae, Matthew Fox, Malo Le Guern
	Conclusions Q&A and pointers for the afternoon	Steve Goodhew, Karen Hood-Cree (MC)
16:30	Wine, canapés & networking	

Evening agenda

Time	Subject	Speakers
17:00	Introduction to the evening sessions and brief recap of phase 1	Steve Goodhew
	New Cob	Barry Honeysett
	Design and CobBauge	Gabriela Lavatelli & Anthony Hudson
	The New Pilot Buildings	François Streiff, Matthew Fox
	Embodied energy, lowest U values and regulations	Jim Carfrae
	CobBauge, UK/French housing and the future	Anthony Hudson, Steve Goodhew & François Streiff
	Feedback Q&A	Steve Goodhew, Karen Hood-Cree (MC)
19:10	Wine, networking and nibbles	

Housekeeping

- Toilets
- Fire escapes (no test alarms are planned)
- Please be careful of any electrical wires that are used to power any displays
- Please only ask ‘burning questions’ at the end of each presentation, for questions that can wait please hold them for the Q&A and/or the networking slots.

CobBauge the 1st Phase;

Cob Mixes; thermal and structural

Project Partners

- Lead Partner – University of Plymouth
- Ecole Superieure D'ingenieur des Travaux de la Construction de Caen (ESITC)
- Syndicat Mixte du Parc naturel régional des Marais du Cotentin et du Bessin (PnrMCB)
- Earth Building UK and Ireland (EBUKI)
- Université Caen-Normandie (UCn), and
- Hudson Architects, Norfolk, UK (HA)

The Material

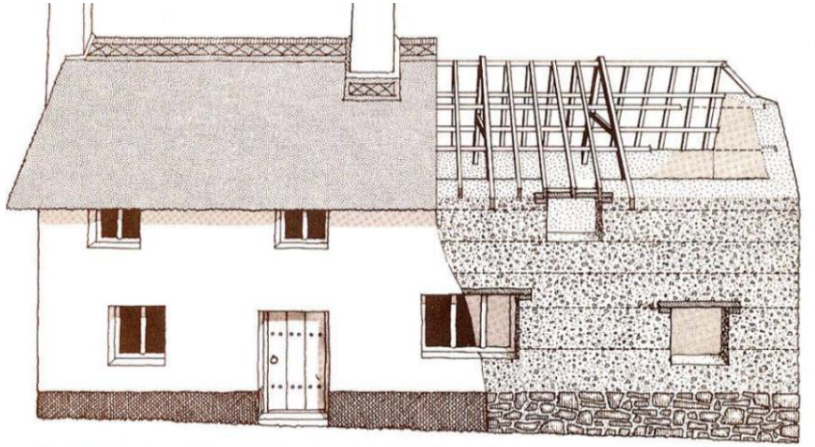
Cob

Layer of subsoil mixed with straw, laid upon a plinth in layers of approx 700mm high.

Allowed to dry before the next layer is laid and the windows and doors cut out afterwards.

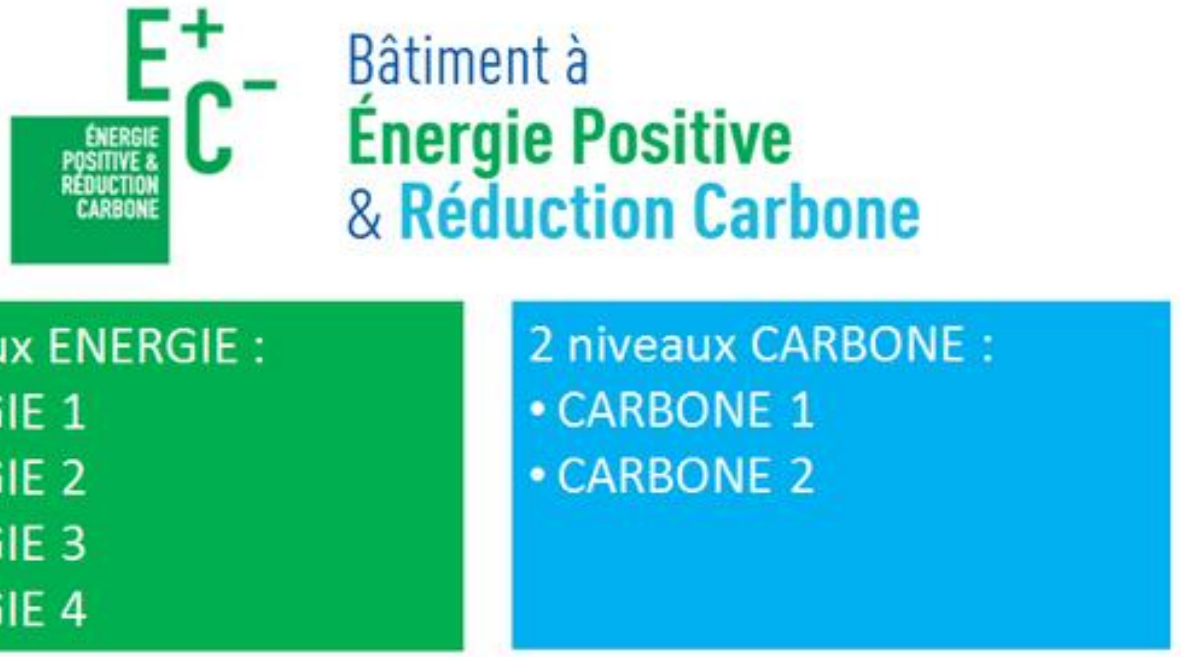
ALWAYS needs '*gud 'at and boots*'

Traditional method of cob construction showing mixing, placing material on the wall, compaction by treading and paring back the wall face.



A typical 17th century cob house showing some constructional details. The wall is built off a stone plinth in several layers, or lifts, and lintels and roof timbers are supported on the cob, using timber pads or cross pieces where necessary.

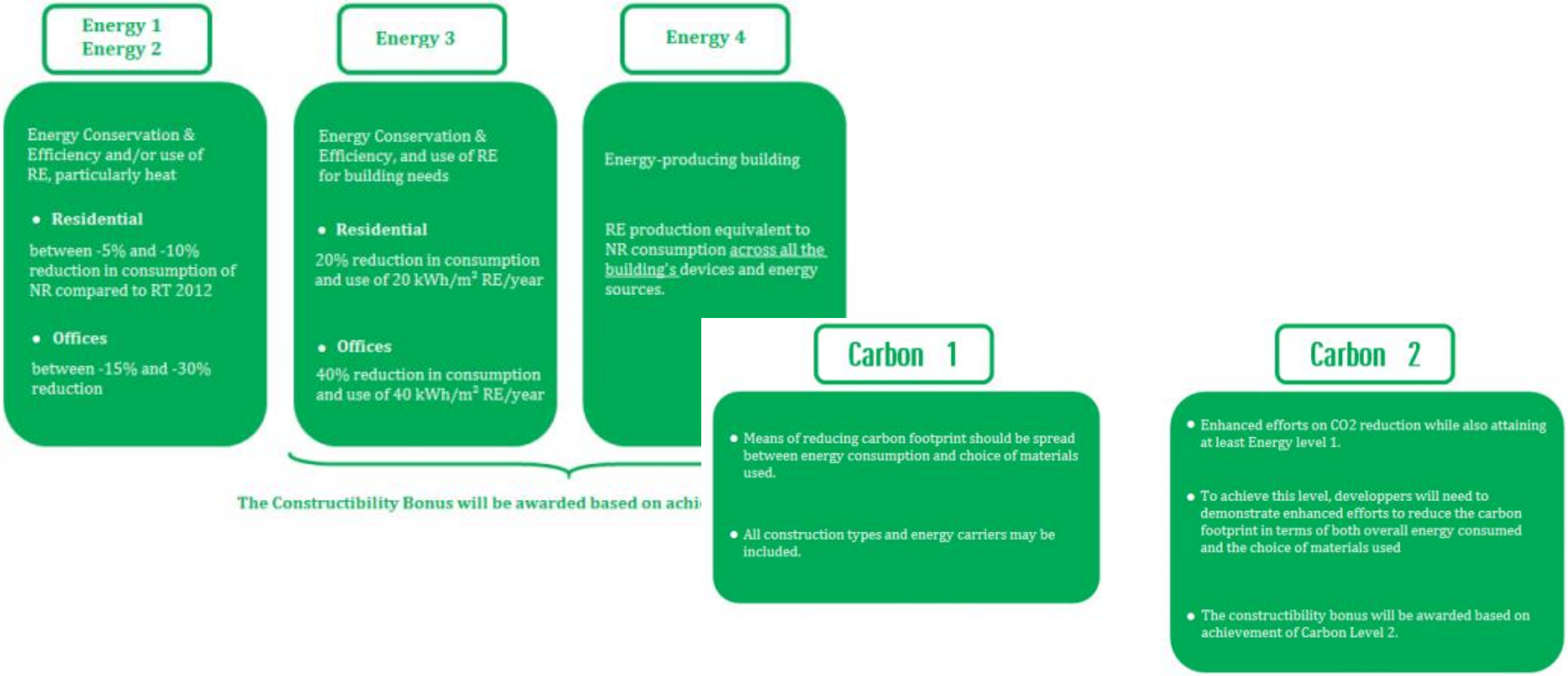
New French Regulation RE2020



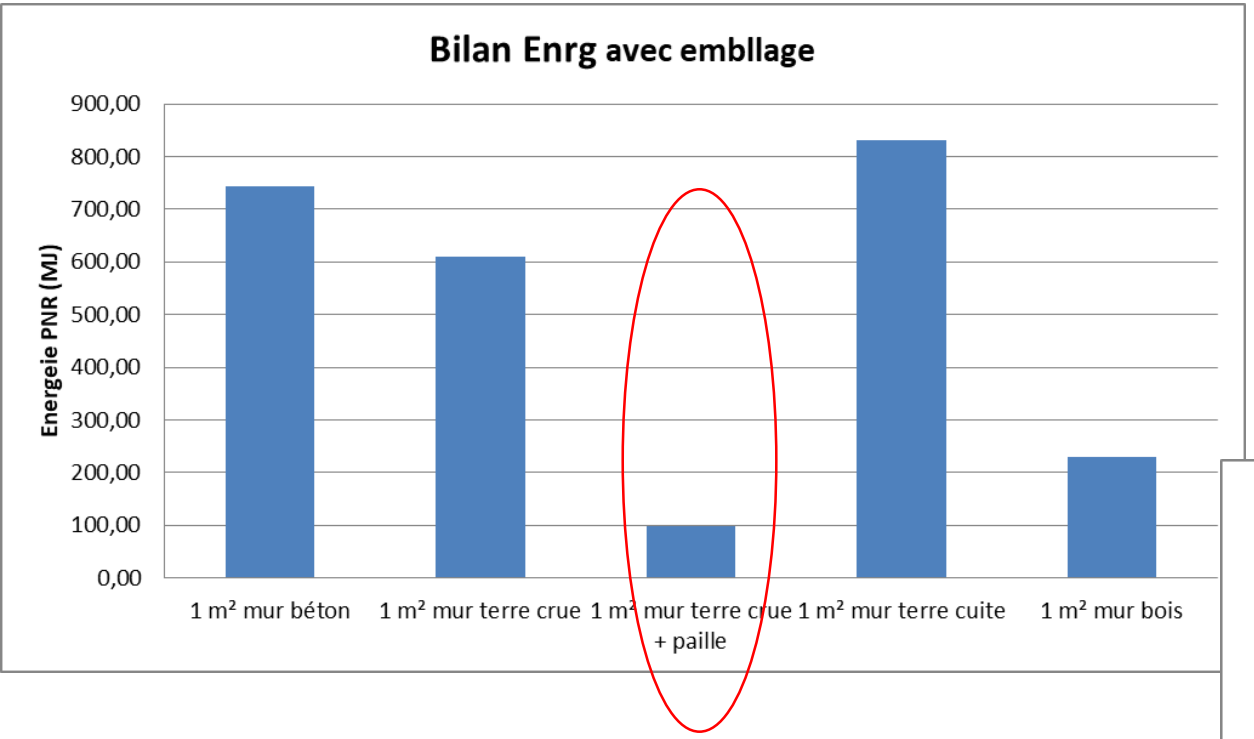
LCA based

- Construction sector (FR):
  - 120 MtCO2 → 30 % Carbon Emission in France
  - 250 kWh/m²/an → 45 % Energy Consumption in France

New French Regulation RE2020



New French Regulation RE2020



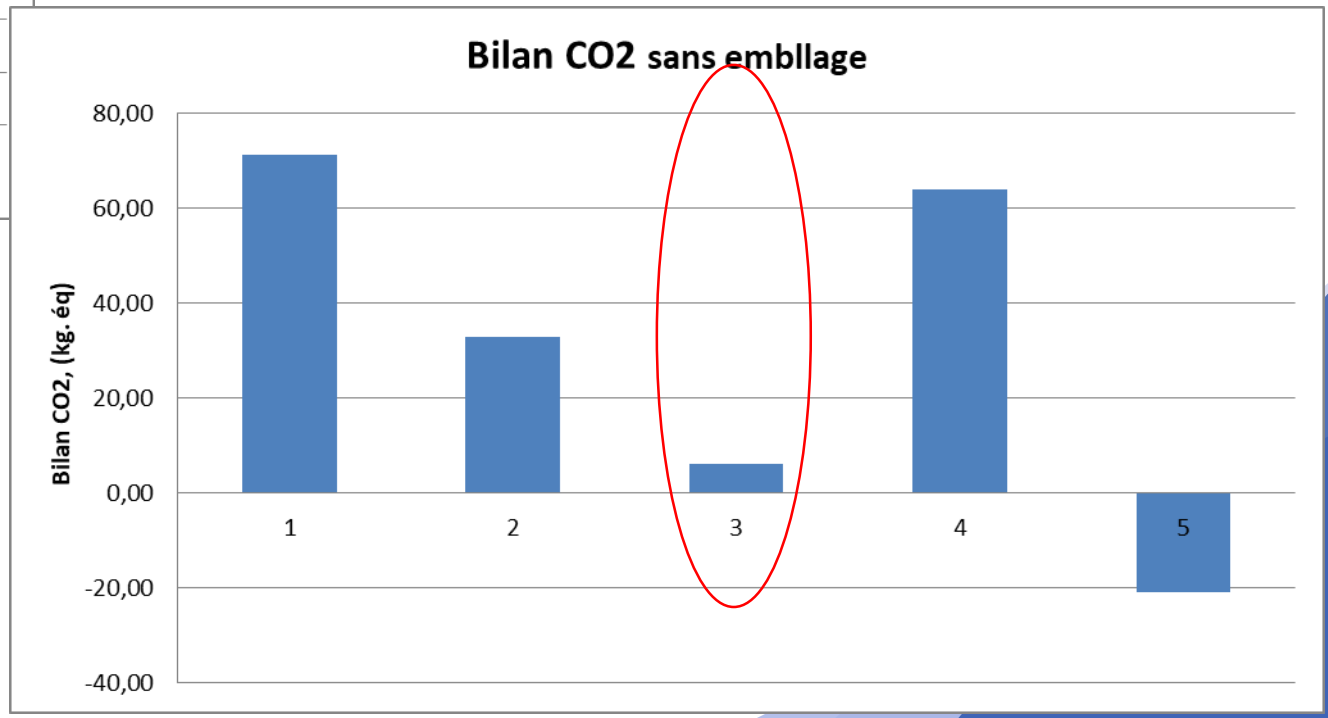
Scenario 1 : 1 m² wall of concrete blocs

Scenario 2 : 1 m² wall of soil

Scenario 3 : 1 m² wall of soil + straw

Scenario 4 : 1 m² wall of bricks

Scenario 5 : 1 m² wall of wood



BOUTOUIL, 2016, Students work, LCA courses

The Project

The CobBauge project (a merging of the English and French words for the technique) will run until July 2023 and has received funding from the Interreg VA France (Channel) England Programme, co-financed by the European Regional Development Fund (ERDF).

The CobBauge project aims to improve the thermal performance of Cob whilst still maintaining its structural and moisture related properties.

What happened next?

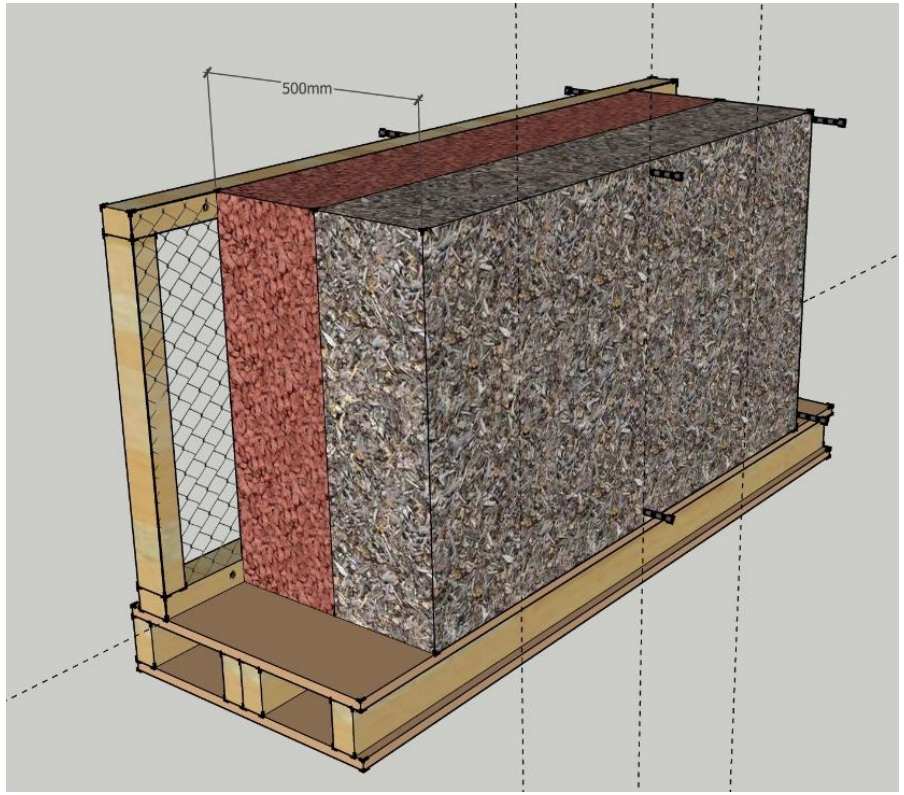
- 20 mixes of Cob that show ‘promise’
- 4 mixes, 2 French and 2 UK that are optimal
- 2 mixes selected for a potential stage 2 project.

This led to a series of design calculations that established the most efficient method of producing a Cob wall to satisfy the thermal regulations. A **thermal and a structural mix in one single system**.


HFM 446
Lambda
NETZSCH

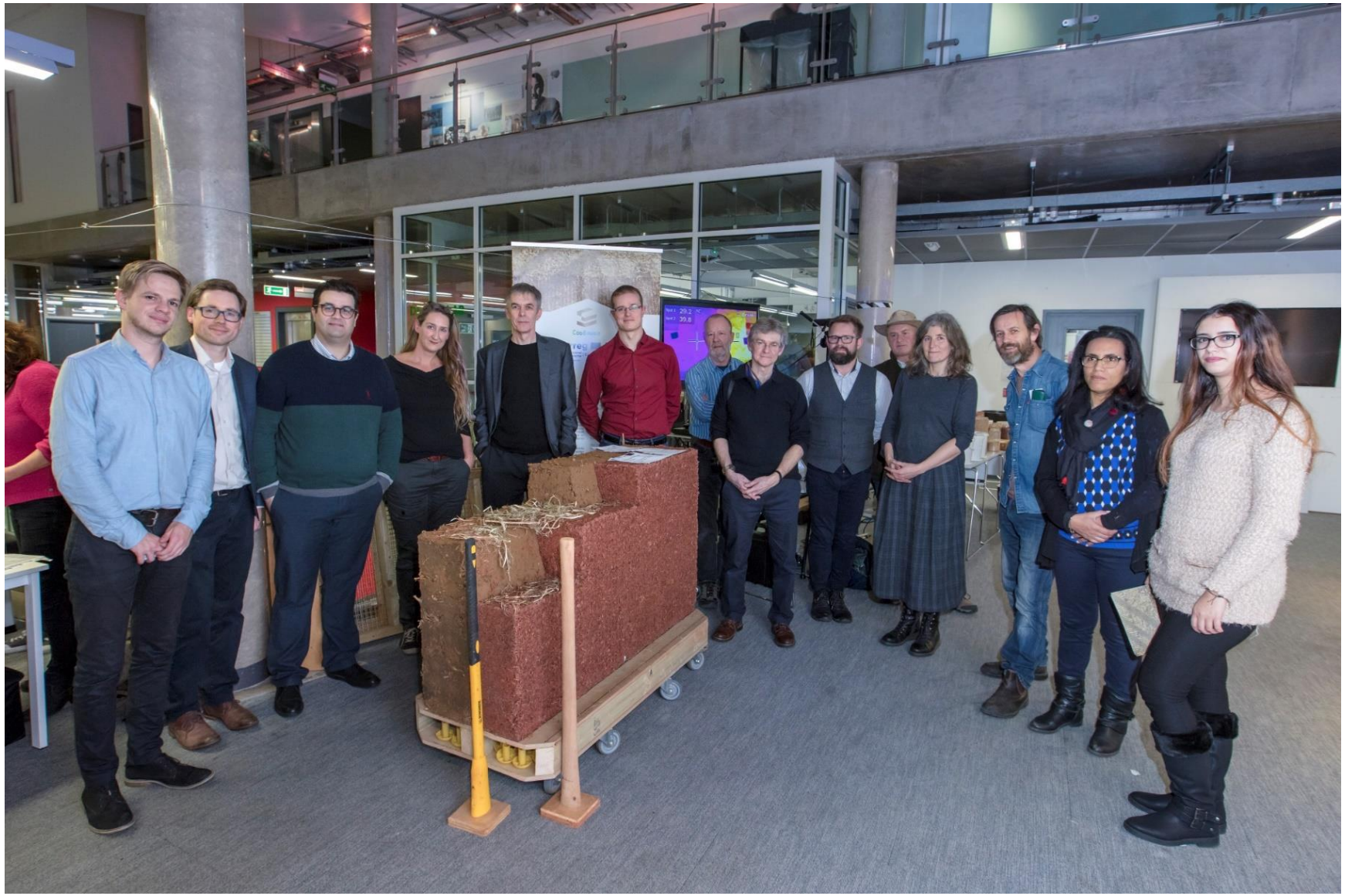
2-layer wall

Composit Cob + finishes	Density kg/m3	Thickness m	Cond. W/m.K	Resistance m2 K/W
Internal surface		n/a	n/a	0.12
Internal insulated plaster		0.03	0.60	0.05
Dense Cob UK6 2.5% Hemp straw	1423	0.250	0.42	0.60
Lightweight Cob UK3 50% Hemp shiv	340	0.250	0.10	2.50
Insulated render		0.03	0.60	0.05
External Surface		n/a	n/a	0.06
Total Resistance				3.38
U-Value W/m2K				**0.30**



The CobBauge Wall

The CobBauge Wall and Partners



CobBauge the 2nd Phase;

Building, monitoring, networks and training

Building

Construction

- Why? The need to prove the new CobBauge technology
- Two buildings to be constructed, one in France and one in the UK.
- Both buildings need to be occupied to give valid comparisons with non-CobBauge buildings

Networks and training

Réseaux et formation

- Why networks and training? For any innovation to succeed it needs to be accepted by industry and have people who understand how to use the product.
- The initial network will be extended, more professionals and practitioners included including SMEs and local and national authorities.
- The two newly completed CobBauge buildings will be the centre point of training activities, both on-site and online materials.

Monitoring of the buildings

Surveillance (des mesures) des bâtiments des mesures

- Why monitor/measure? To provide evidence that the buildings perform as expected.
- Monitoring/measurements to be undertaken over at least two heating seasons
- Measurements taken of Energy, internal air quality and thermal performance.

Thank you …

Now for our 1st main presentation….