

Introduction à l'événement final

Introduction to the final event



CobBAUGE

Interreg 
France (Channel) England
Manche

Why optimised Cob?

Pourquoi Cob optimisé?



ENVIRONMENTAL
BUILDING
RESEARCH
WITH
PLYMOUTH
UNIVERSITY

 ESITC
CAEN
Ecole Supérieure d'Ingénieurs
des Travaux de la Construction

 Parc
naturel
régional
des Marais du
Cotentin et du Bessin

 ebuki
FOSTERING EARTH BUILDING
IN THE UK AND IRELAND

 UNICAEN
UNIVERSITÉ
CAEN
NORMANDIE

Why optimised Cob?

Pourquoi Cob optimisé?

- Proven technology (estimated 24,000 cob building exist in the UK and similar numbers in Northern France)
- Energy Efficient (Plenty of anecdotal evidence that Cob building are warm in winter and cool in summer)
- Good internal environment (A number of researchers have shown that internal conditions in Cob Buildings have stable temperatures, lower moisture levels and in some instances lower levels of VOCs and particulates).

Why optimised Cob?

Pourquoi Cob optimisé?

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- A vernacular form familiar to local people
- Lower embodied energy values
- Many of these Cob buildings have existed for centuries.

Why optimised Cob?

Pourquoi Cob optimisé?

Materials/Layer	Energy MJ/kg	Carbon kg CO2/kg	Density kg /m3	kg/m2 X MJ/kg gives MJ/m2
Traditional cavity wall				
Render	0.85	0.136	1800	30.6
Block	0.75	0.107	2200	132
Insulation (Fibreglass)	28	1.35	100	280
Brick	3	0.24	1900	370.5
Plasterboard	6.75	0.38	1800	164.025
Paint MJ/squ M	21	0.73		21
Mortar	0.97	0.146	1800	523.8
PVC DPC	134	4.2	1500	0.333
Stainless steel wall ties	56.7	6.5	3000	2.405044
				1524.663

Why optimised Cob?

Pourquoi Cob optimisé?

Materials/Layer	Lime render			kg/m2 X MJ/kg gives MJ/m2
	Energy MJ/kg	Carbon kg CO2/kg	Density kg /m3	
Lime Render	5.3	0.76	1800	190.8
Cob Thermal	0.1	1	400	8
Cob Structural	0.1	1	1500	60
Fibre	33.5	1.7	50	67
Lime Render	5.3	0.76	1800	190.8
Paint MJ/squ M	21	0.73		21
PVC DPC	134	4.2	1500	0.333
				537.933

Why optimised Cob?

Pourquoi Cob optimisé?

CobBauge wall	Stabilised earth render *			
				kg/m2 X
	Energy	Carbon	Density	MJ/kg
Materials/Layer	MJ/kg	kg CO2/kg	kg /m3	gives MJ/m2
Stabilised earth render	0.62	0.76	1500	22.32
Cob Thermal	0.1	1	400	8
Cob Structural	0.1	1	1500	60
Fibre	33.5	1.7	50	67
Stabilised earth render	0.62	0.76	1500	22.32
Paint MJ/squ M	21	0.73		21
PVC DPC	134	4.2	1500	0.03
				200.67

Traditional cavity wall				
	Energy	Carbon	Density	kg/m2 X MJ/kg
Materials/Layer	MJ/kg	kg CO2/kg	kg /m3	gives MJ/m2
Render	0.85	0.136	1800	30.6
Block	0.75	0.107	2200	132
Insulation (Fibreglass)	28	1.35	100	280
Brick	3	0.24	1900	370.5
Plasterboard	6.75	0.38	1800	164.025
Paint MJ/squ M	21	0.73		21
Mortar	0.97	0.146	1800	523.8
PVC DPC	134	4.2	1500	0.333
Stainless steel wall ties	56.7	6.5	3000	2.405044
				1524.663

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Pourquoi Cob optimisé?

This all sounds excellent! So why optimise?

**Currently Cob building materials
do not conform to local and national
building regulations**



Now for the results of CobBauge1

Maintenant pour les résultats de CobBauge1

