

Elim Farm, Crowborough

A case study in eco-renovation

by
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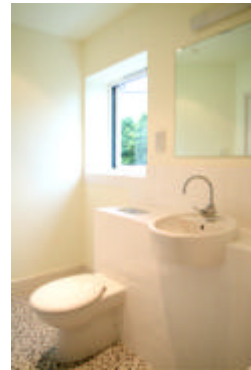
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1. PROJECT PREPARATIONS
2. DEMOLITION / SITE CLEARANCE
3. CONSTRUCTION
4. CONCLUSIONS
5. MORE INFO

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PROJECT PREPARATIONS

- What do you want to achieve?
 - BRE EcoHomes scheme
- Sustainable Design
- Choosing Sustainable Materials / Systems
 - Embodied Energy
 - Resource Use
 - Toxicity
 - Recycled content / Recyclability
 - Cost !!
 - **Balance between criteria**

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DEMOLITION / SITE CLEARANCE

- Waste Mgmt
 - No burning except untreated timber
 - Skip company that recycle aggregate, metal, timber
 - Sell copper / lead
- Re-using materials
 - Bricks
 - Timber
 - Roof tiles
- Garden
 - Photograph as much as poss.
 - Careful about removing trees



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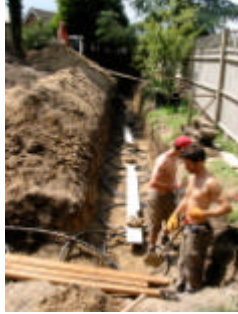
CONSTRUCTION

- Sourcing Materials
 - Builders Merchants
 - Eco Builders Merchants
 - » *The Green Building Store*, Yorkshire
 - » *Construction Resources*, London
 - » *EcoMerchant*, Kent
 - Timber Yards for Untreated FSC Timber
 - » Use Boron timber treatment (Borax)

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- **Groundworks**

Ground Source
Heat Pump
Ground Array



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- **Downstairs Floor**



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• External Cladding



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• Internal Insulation



➤ Sheep's Wool Batts



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• Sustainable Systems

SPACE HEATING

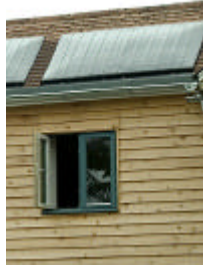
- Ground Source Heat Pump
- Underfloor heating



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HOT WATER

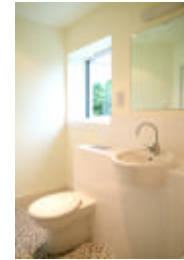
- Solar Thermal



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WATER EFFICIENCY

- Rainwater Harvesting



- Dual flush toilets
- Shower flow restrictors
- Aerating taps

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• Finishing

- » Plaster not plasterboards where possible
- » 70% Recycled Chipboard floors
- » Eco Paints
- » Wool Carpet
- » Linoleum in wet areas

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CONCLUSION

- Cost
 - ~£1200 per sqm
 - Sustainability = ~8% onto Build Cost BUT immediately covered by increase in Sale Value
 - Up to 50% lower running costs
- Eco-Renovation vs. Newbuild
 - Retro-fit of sustainable materials & systems less effective and "pay back" time an issue
 - No VAT reclaim on materials
 - Budgeting very difficult
 - More time consuming / expensive

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MORE INFO

- www.greenerlivinghomes.co.uk
- "The Whole House Book"
(Harris & Borer)
- "Eco-Renovation"
(Harland)



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