
FreakingNews.com


Sustainability
John Carter



Take the One Planet Challenge

If everyone lived as we do in the UK we'd need three planets to support us.

That's why we need One Planet Living. But the good news is reducing your environmental impact to a sustainable level is possible and can give you a better quality of life. The ten One Planet Living principles cover all aspects of your life from saving energy and reducing waste to your health and happiness. People all around the world are taking up the One Planet Living challenge.

Calculate your impact

Use our questionnaire to calculate your ecological footprint and carbon emissions. We've got two options; choose the quick and easy version (5 minutes) or the full calculator (15 minutes) which gives more accurate results and a detailed action plan.

Your Action Plan

After calculating your impact you'll get a personalised Action Plan packed with practical things you can do to achieve One Planet Living. We've included links to useful information and products that will make it easier for you to shrink your footprint.

Get Started ▶

Get Started and Calculate Your Impact

Already started using the One Planet Living Calculator? Retrieve your details here.



10 principles of sustainability

This Calculator & Action Plan is based on the 10 One Planet Living principles. Your Action Plan will help you achieve One Planet Living.

ONE PLANET LIVING®

Frequently Asked Questions | Find Out More

CoP21

Conference of the Parties of the United Nations Convention on Climate Change.

Agreed, in Paris, in late 2015, to limit global warming to 1.5 degrees Celsuis.

CoP25 is just about to start, in Madrid

With 2° Celsius of warming, large parts of the world's surface will become less habitable. The people of these regions are likely to face wilder extremes: worse droughts in some places, worse floods in others, greater storms and, potentially, grave impacts on food supply. Islands and coastal districts in many parts of the world are in danger of disappearing beneath the waves.

(Think, Fairbourne, on the west coast of Wales.)


Is Heathrow airport’s proposed third runway sustainable ?

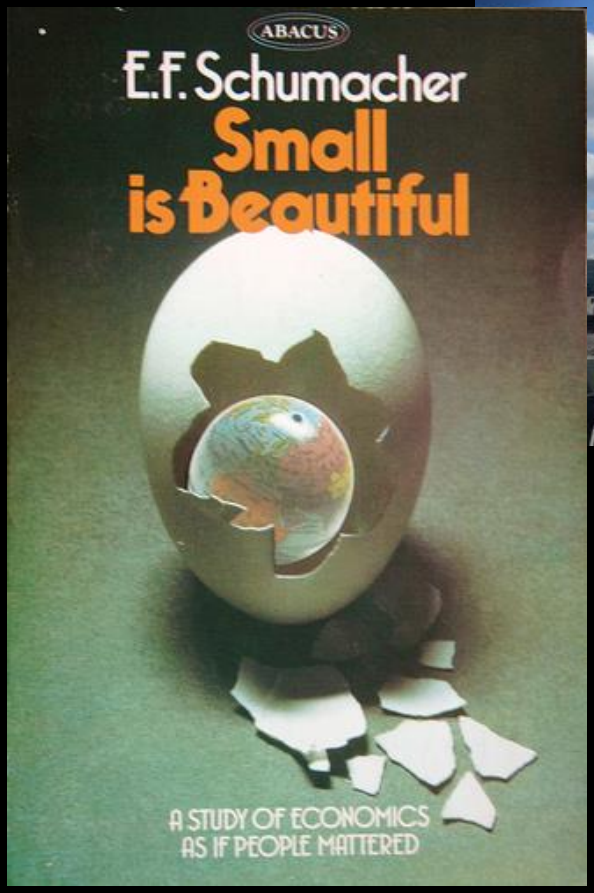
George Monbiot 2016

- “Sorry, but you cannot build new runways and prevent climate breakdown.
- The correct question is not “where?”. It is “whether?”. And the correct answer is no. The prime minister has just announced that her cabinet will recommend where a new runway should be built. Then there will be a consultation on the decision. There is only one answer that doesn’t involve abandoning our climate change commitments and our moral scruples: nowhere.
- The inexorable logic that should rule out new sources of oil, gas and coal also applies to the expansion of airports. In a world seeking to prevent climate breakdown, there is no remaining scope for extending infrastructure that depends on fossil fuels. The prime minister cannot uphold the Paris Agreement on climate change, that comes into force next month, and permit the runway to be built.”

- (Published in *The Guardian*, 19th October 2016.)


Sustainable ?
Just 15% of people in this country take 70% of the flights







Big is better

ZERO CARBON BRITAIN

Rethinking the Future



Centre for Alternative Technology
Canolfan y Dechnoleg Amgen

But ZCB dates from 2013. Things are moving (forwards ?):

So, what has changed since the 2013 ZCB scenario?

Recognition from core science that delivering on climate on time is an urgent challenge e.g. Sir David King.

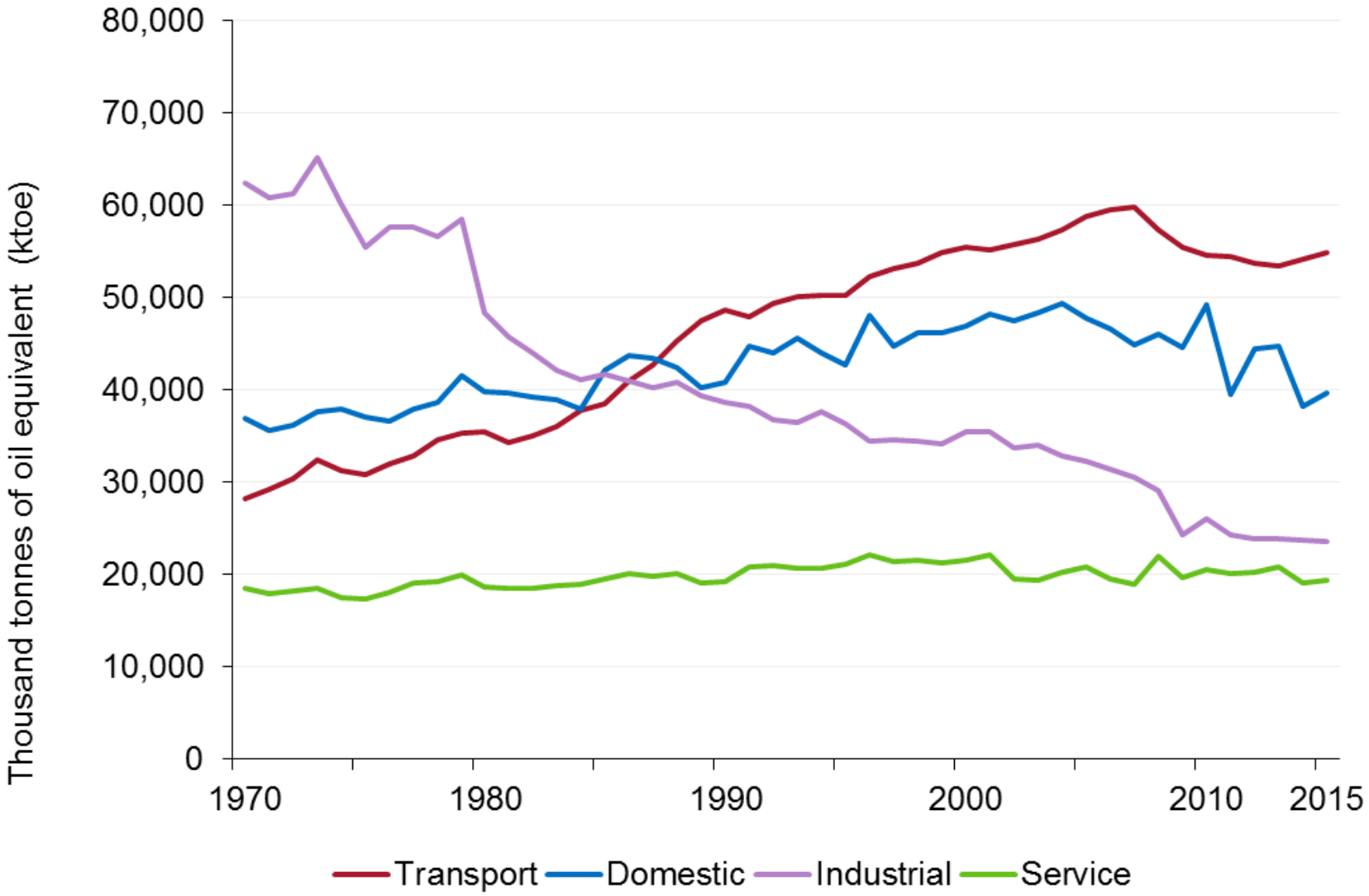
Window for net zero has moved to centre stage – drastic increase in civic and political engagement.

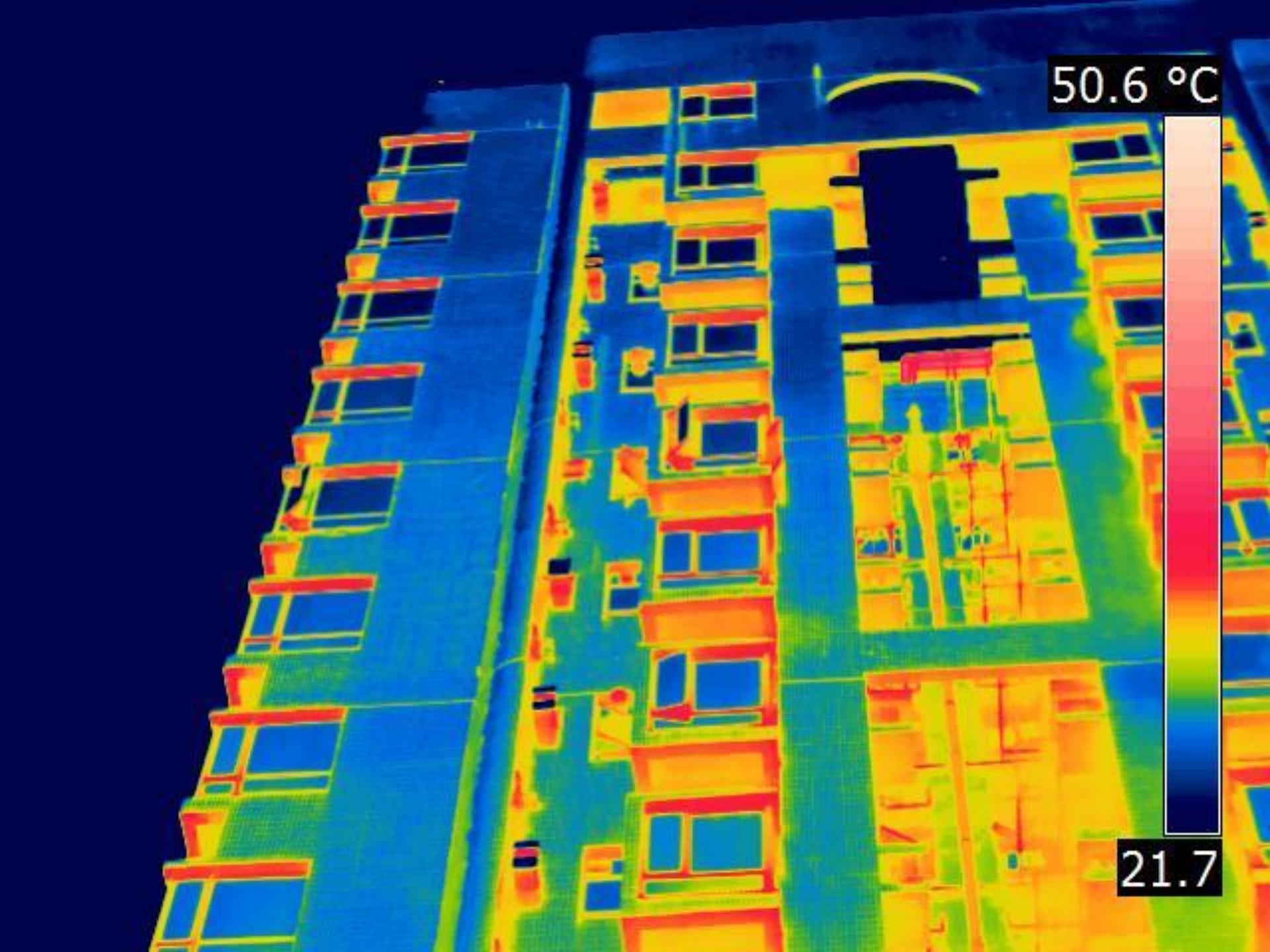
Greater confidence in key technologies e.g. power-to-gas, battery storage.

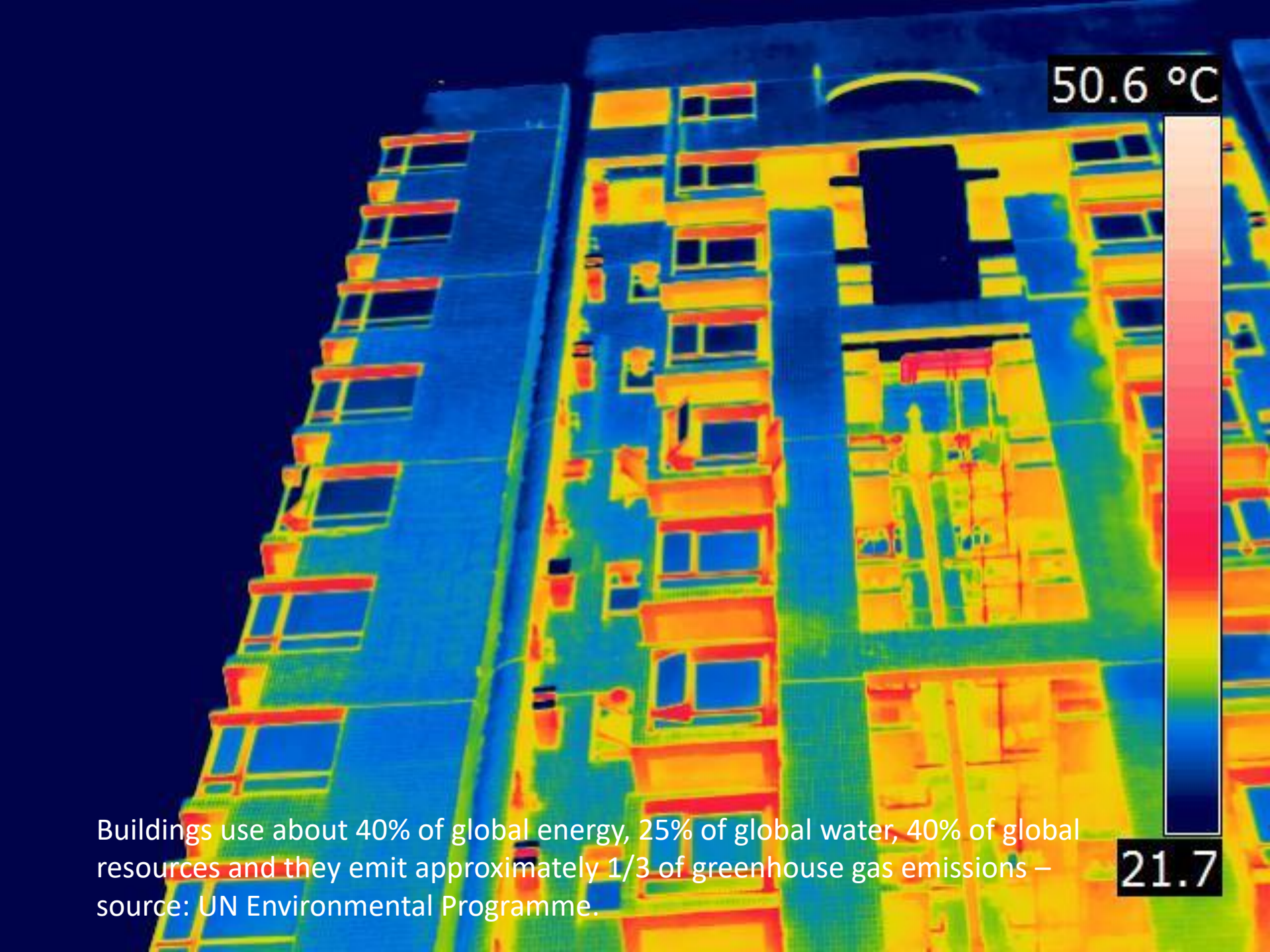
CAPEX costs have fallen more rapidly than expected increasing deployment – e.g. photovoltaics, offshore wind

But ZCB dates from 2013. Things are moving (forwards ?):

- Despite cost falls, planning and grid issues are still holding back UK onshore-wind.
- New emerging innovative technologies – e.g. electric lorries and ships now possible.
- More electric storage.
- The shift to electric vehicles is now a question of when, rather than if.
- Nuclear costs have risen.
- Multi-solving & ZCB – e.g. increased recognition of co-benefits such as jobs, social justice, health.
- The growing role of both protection and restorative agriculture to help solve the bio-diversity loss emergency.
- Greater awareness of health and climate benefits resulting in increased public demand for plant-based diets.
- Despite exemplar eco-home projects, there is still no national plan for building retro-fit.


Thousand tonnes of oil equivalent (ktoe)
80,000
70,000
60,000
50,000
40,000
30,000
20,000
10,000
0
1970
1980
1990
2000
2010
2015
Transport
Domestic
Industrial
Service

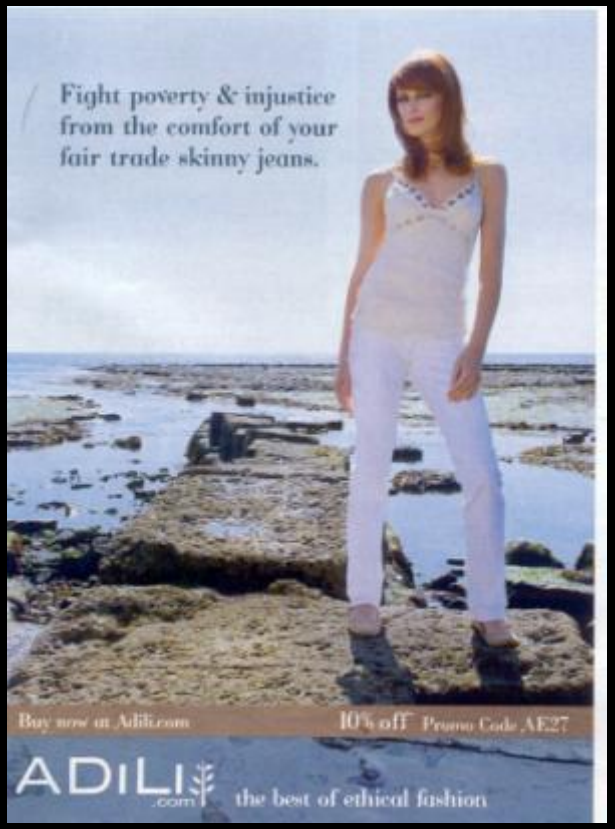

50.6 °C
21.7



Buildings use about 40% of global energy, 25% of global water, 40% of global resources and they emit approximately 1/3 of greenhouse gas emissions – source: UN Environmental Programme.



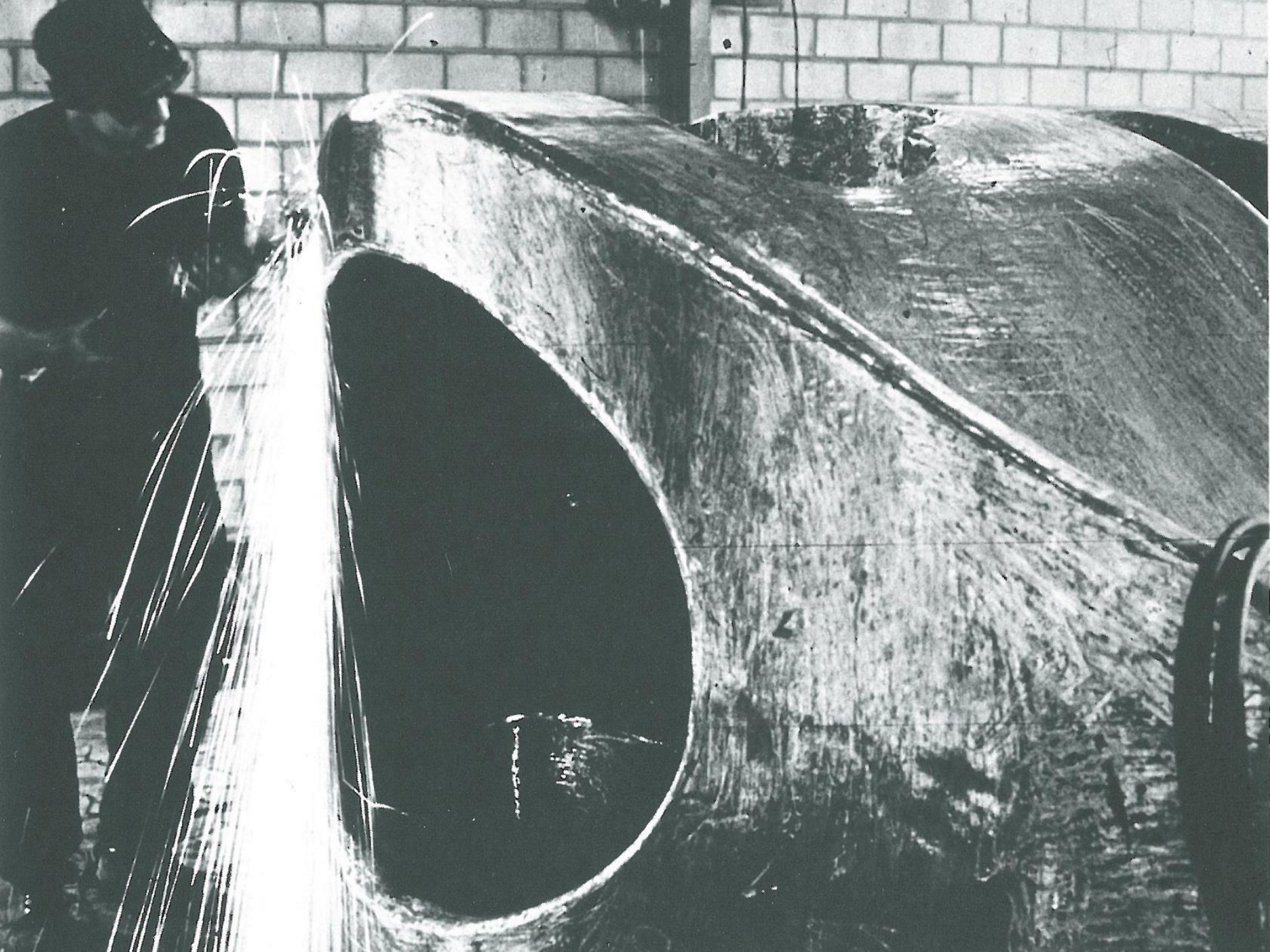

Hellman
Emperor's NEW (SUSTAINABLE) CLADDING
"WOULDN'T THE MOST SUSTAINABLE SOLUTION BE NOT TO BUILD IT AT ALL?"


Fight poverty & injustice from the comfort of your fair trade skinny jeans.
Buy now at Adili.com
10% off Promo Code AE27
ADILI .com
the best of ethical fashion


Wow, these stockings have a 30% smaller carbon footprint than normal ones. I must buy two pairs!
CRACKERS
SWEAT-SHOP-FREE
ECO-LEES
Sugar
I'm CARBON NEUTRAL
HD DiVX MPEG-4/J
ORGANIC HORMONE-FREE
DVD PLAYER

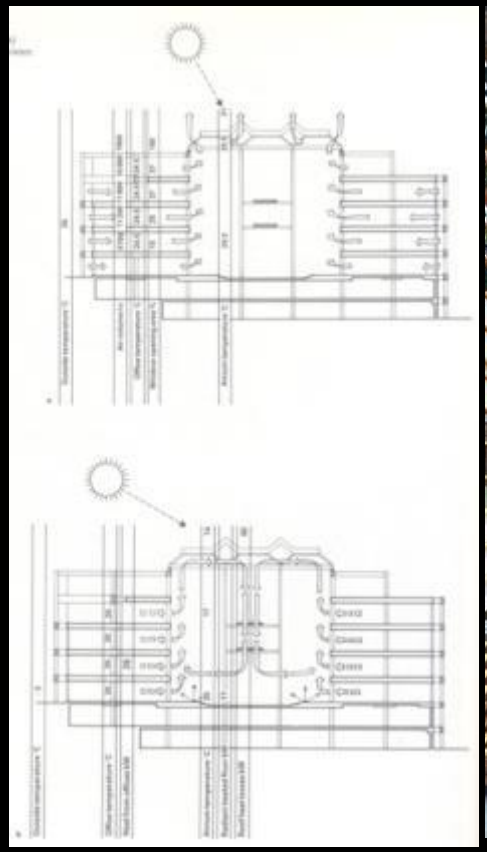

[redacted] THERMAL WINDOWS.
THE NATURE OF EFFICIENCY.



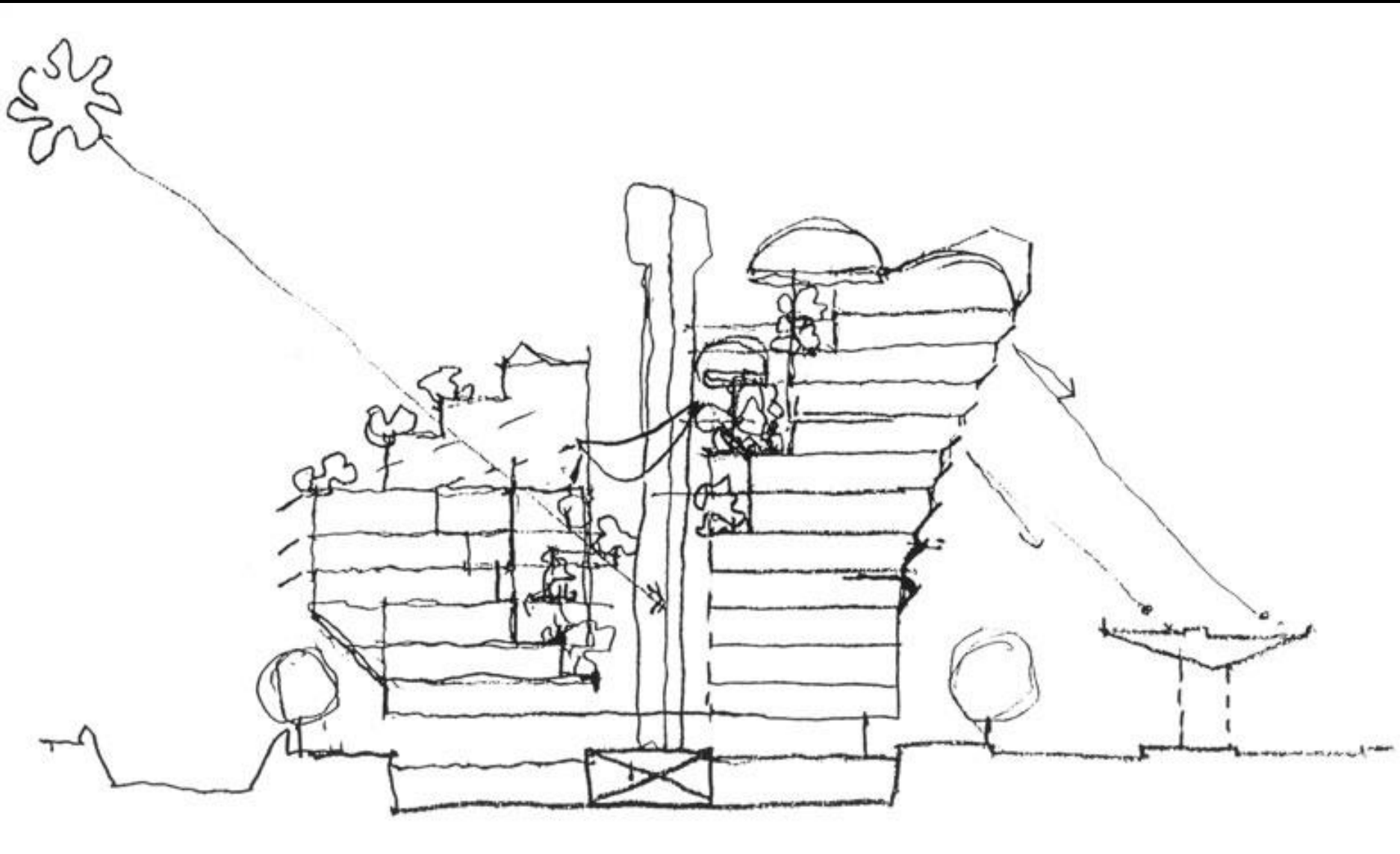



EDVARD MUNCH
EDVARD MUNCH
L'ŒIL MODERNE
Centre Pompidou





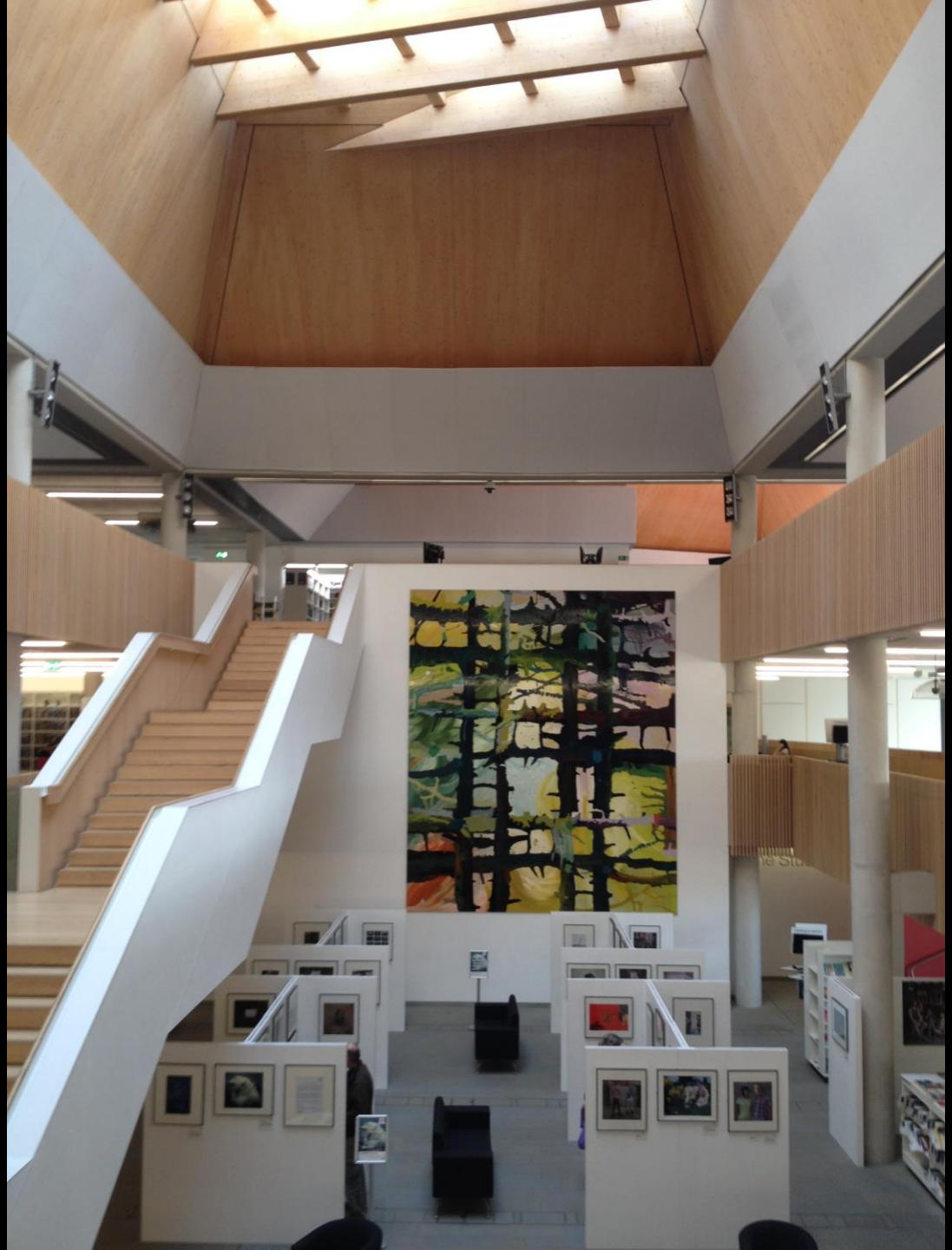






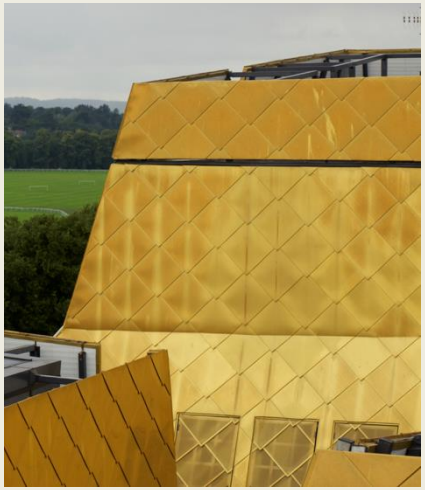
ENVIRONMENTAL DESIGN
Building Form

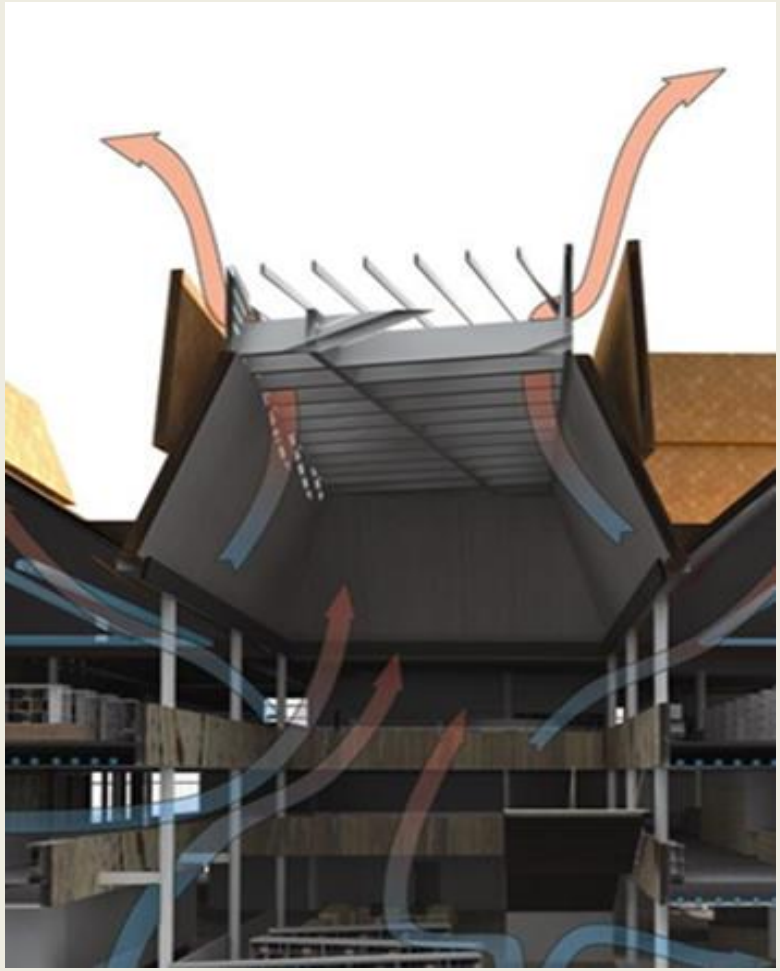




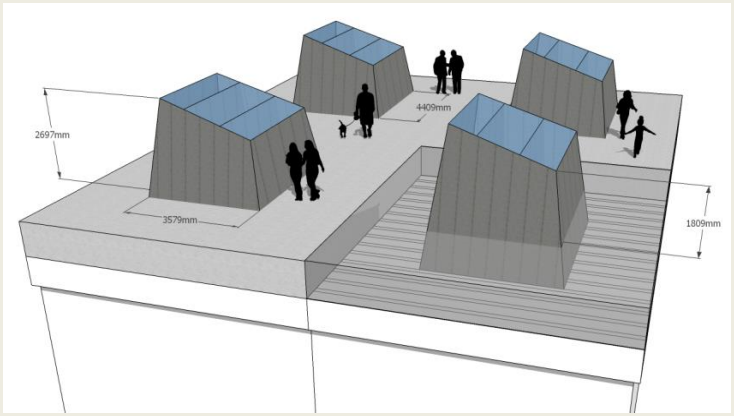
ENVIRONMENTAL DESIGN
The roof cones

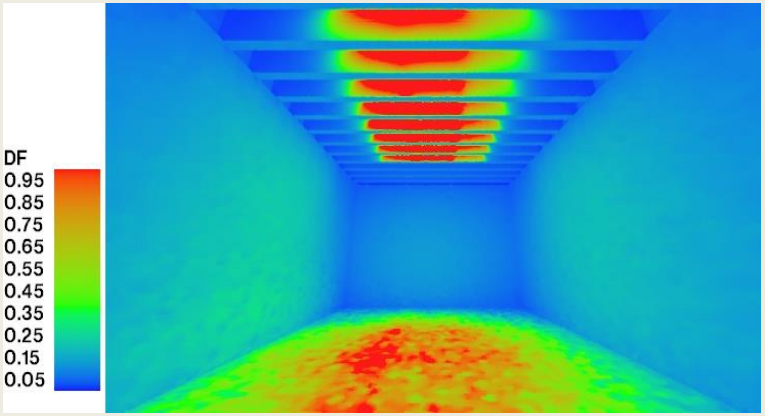






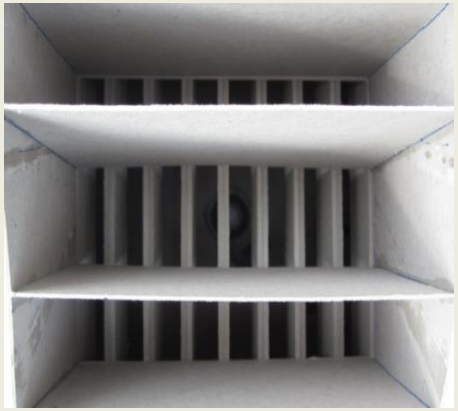
Physical models











MAX FORDHAM



















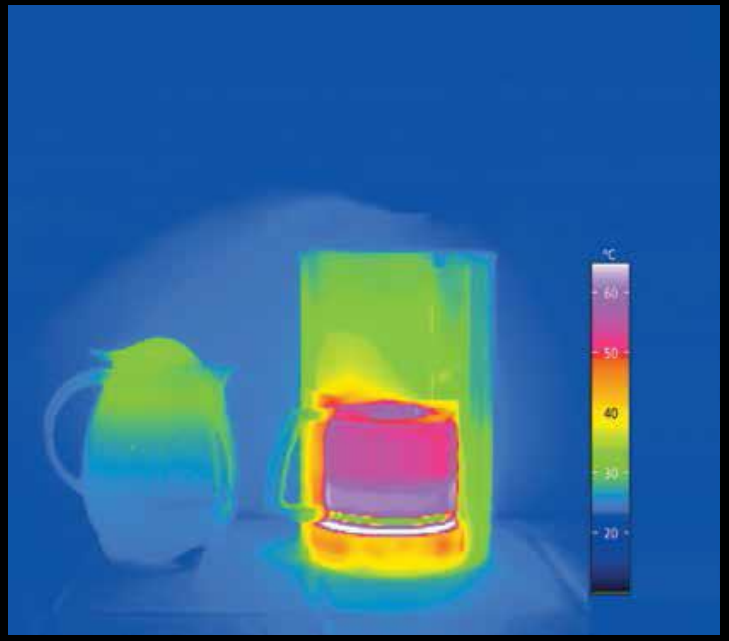

Spaces are provided for business support, with open plan offices and hatcheries for start-ups alongside seminar rooms



Passivhaus






°C
60
50
40
30
20



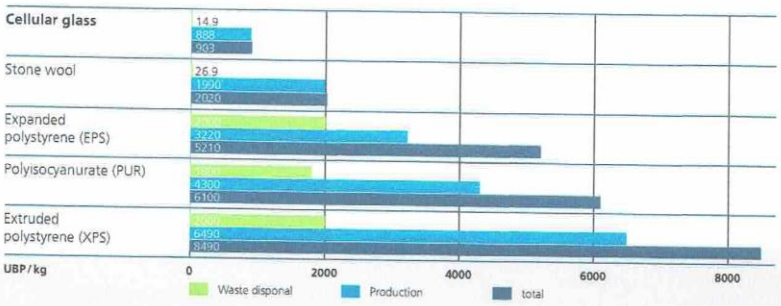



Kings

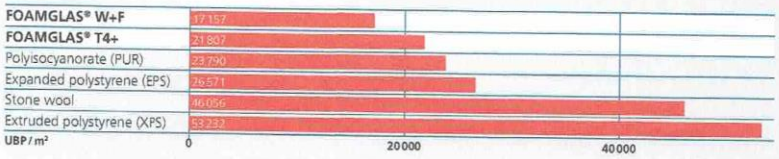

WARMCEL

FOAMGLAS® stands comparison

The environemental pollution score (UBP 2006**) for the production and waste disposal of FOAMGLAS® is 903 points/kg (insulation). This puts FOAMGLAS® into the pole position in eco-balance. Other insulation products show points between 2020 (stone wool) anc 8490 (Extruded polystyrene).



Compared to surfaces, with a specified insulation value of 0,20 W/m²K, FOAMGLAS® performs very well. The environmental pollution score (UBP 2006**) of cellular glass is 17 157 points (FOAMGLAS® W+F), 21 807 points (FOAMGLAS® T4+) per square meter. Other insulation products show 23 790 points (PUR), 26 571 points (EPS), 46 056 points (stone wool) and 53 232 points (XPS) for an identical U-value (see table).



Insulation	?	?D*	d	weight per m²	UBP* per kg	UBP per m²
	kg/m³	W/mK	m	kg/m²	UBP/kg	UBP/m²
FOAMGLAS® T4+	**115**	**0.041**	**0.21**	**24.15**	**903**	**~ 21 807**
FOAMGLAS® W+F	**100**	**0.038**	**0.19**	**19.00**	**903**	**~ 17 157**
Polyisocyanorate (PUR)	30	0.026	0.13	3.90	6100	~ 23 790
Stone wool	120	0.038	0.19	22.80	2020	~ 46 056
Expanded polystyrene (EPS)	30	0.034	0.17	5.10	5210	~ 26 571
Extruded polystyrene (XPS)	33	0.038	0.19	6.27	8490	~ 53 232

* The data are taken from building database KBOB/EMPA, june 2009.

** The environemental pollution score (UBP 2006) quantifies the pollution coming from resources, water consumption, emissions into air, water and ground and also for the waste disposal. The environment pollution through grey energy and global warming are included in the UBP score.

INVENTORY OF CARBON & ENERGY (ICE) SUMMARY

Materials	Embodied Energy & Carbon Coefficients			Comments
	EE - MJ/kg	EC - kgCO2/kg	EC - kgCO2e/kg	EE = Embodied Energy, EC = Embodied Carbon
Aggregate				
General (Gravel or Crushed Rock)	0.083	0.0048	0.0052	Estimated from measured UK industrial fuel consumption data
Aluminium	Main data source: International Aluminium Institute (IAI) LCA studies (www.world-aluminium.org)			
General	155	8.24	9.16	Assumed (UK) ratio of 25.6% extrusions, 55.7% Rolled & 18.7% castings. Worldwide average recycled content of 33%.
Virgin	218	11.46	12.79	
Recycled	29.0	1.69	1.81	
Cast Products	159	8.28	9.22	Worldwide average recycled content of 33%.
Virgin	226	11.70	13.10	
Recycled	25.0	1.35	1.45	
Extruded	154	8.16	9.08	Worldwide average recycled content of 33%.
Virgin	214	11.20	12.50	
Recycled	34.0	1.98	2.12	
Rolled	155	8.26	9.18	Worldwide average recycled content of 33%.
Virgin	217	11.50	12.80	
Recycled	28	1.67	1.79	
Asphalt				
Asphalt, 4% (bitumen) binder content (by mass)	2.86	0.059	0.066	1.68 MJ/kg Feedstock Energy (Included). Modelled from the bitumen binder content. The fuel consumption of asphalt mixing operations was taken from the Mineral Products Association (MPA). It represents typical UK industrial data. Feedstock energy is from the bitumen content.
Asphalt, 5% binder content	3.39	0.064	0.071	2.10 MJ/kg Feedstock Energy (Included). Comments from 4% mix also apply.
Asphalt, 6% binder content	3.93	0.068	0.076	2.52 MJ/kg Feedstock Energy (Included). Comments from 4% mix also apply.
Asphalt, 7% binder content	4.46	0.072	0.081	2.94 MJ/kg Feedstock Energy (Included). Comments from 4% mix also apply.
Asphalt, 8% binder content	5.00	0.076	0.086	3.36 MJ/kg Feedstock Energy (Included). Comments from 4% mix also apply.
Bitumen				

Extract from: www.circularecology.com - free download of their inventory of carbon and energy (ICE) database.


Wood-Mizer


LOVE



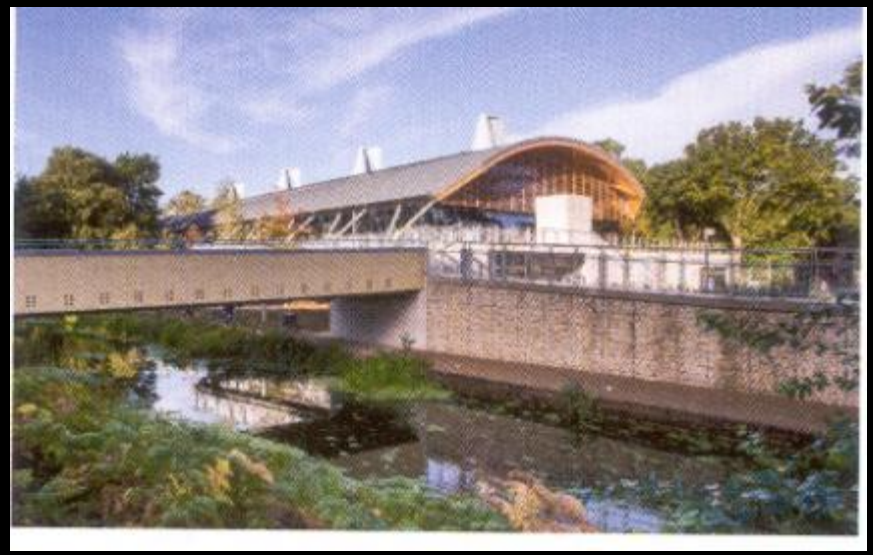


Round-wood pole roof at Hooke Park, Dorset; engineers: Buro Happold.



The interior of the grid-shell building at the Weald and Downland Museum of Ancient Buildings in Sussex, here being used for a green building fair; architects: Edward Cullinan, engineers: Buro Happold.








IKO
IKO
IKO
IKO
ght
BOSCH









TRADITIONAL LOW-TECH, LOW-ENERGY/ LOW-CARBON MATERIALS

HIGH PERFORMANCE HIGH-CARBON MATERIALS

HIGH PERFORMANCE, BUT ALSO HIGH IMPACT

LOW-CARBON MATERIALS PROVIDE MOST OF THE BULK, POSSIBLY NET-NEGATIVE-C

Peter Harper's 80%-20% principle:

- Aim for 80% low-carbon Materials & 20% meta-industrial materials in building projects.

- For example, glass is high carbon, but it is long-lived and has huge energy benefits (day-lighting and solar gain).
- For example, straw and hemp-lime are low-carbon, eminently renewable and help to create healthy buildings.

Passivhaus





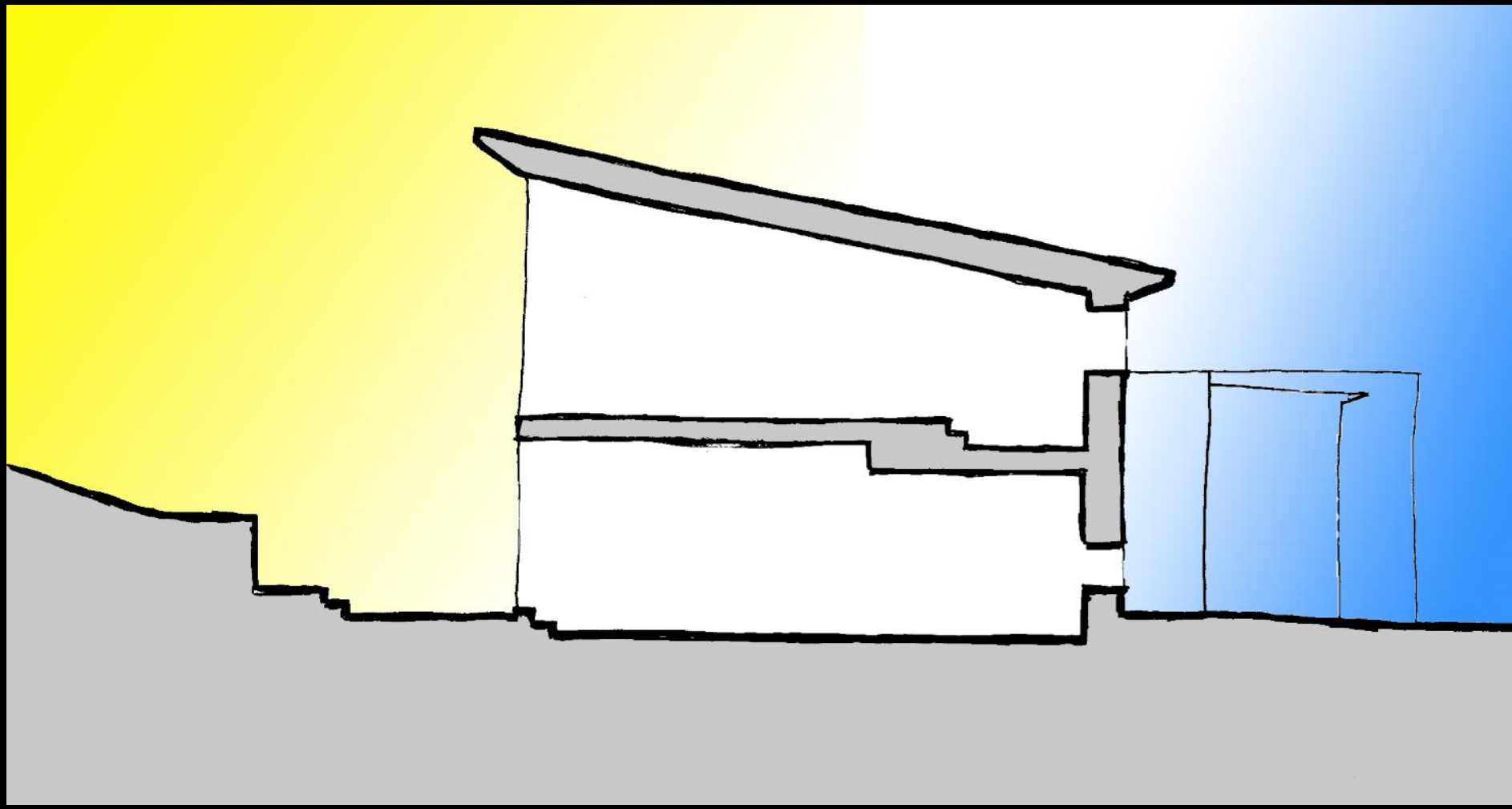



8 17:41

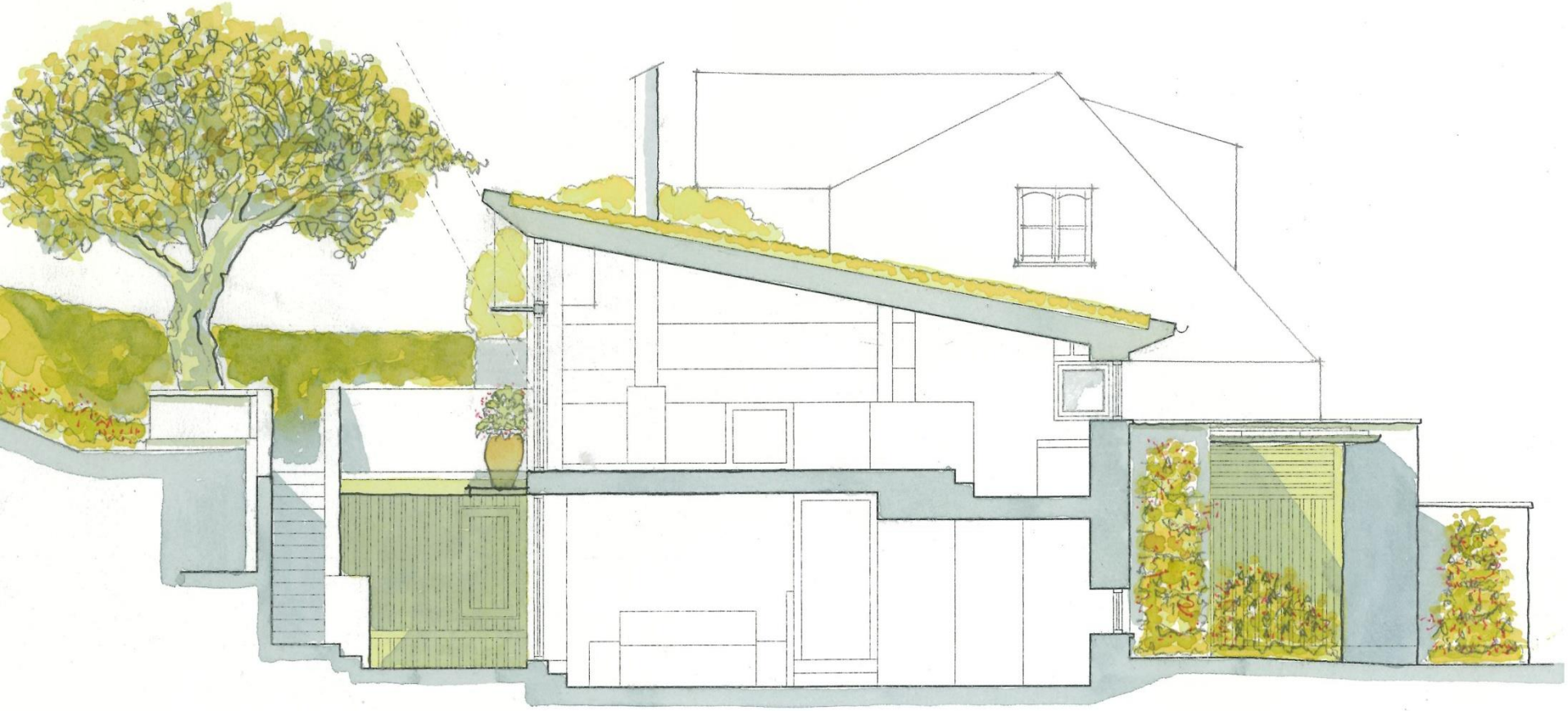

8 17:41
VE03 DXV


8 17:27

12 11:46



REVISIONS



PROJECT: THE ORCHARD, HOLFORD

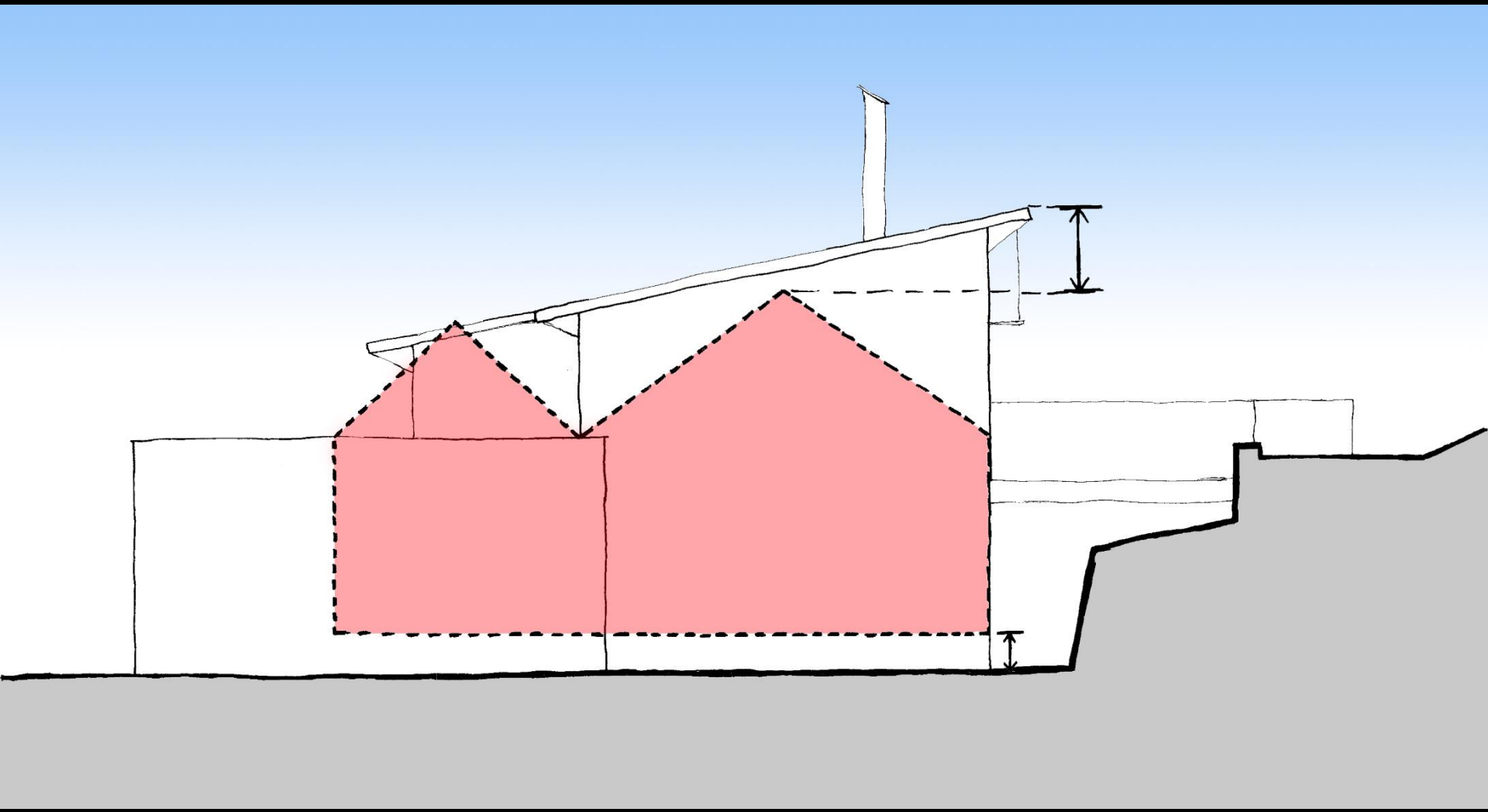
CLIENT: MR. JOHN CARTER

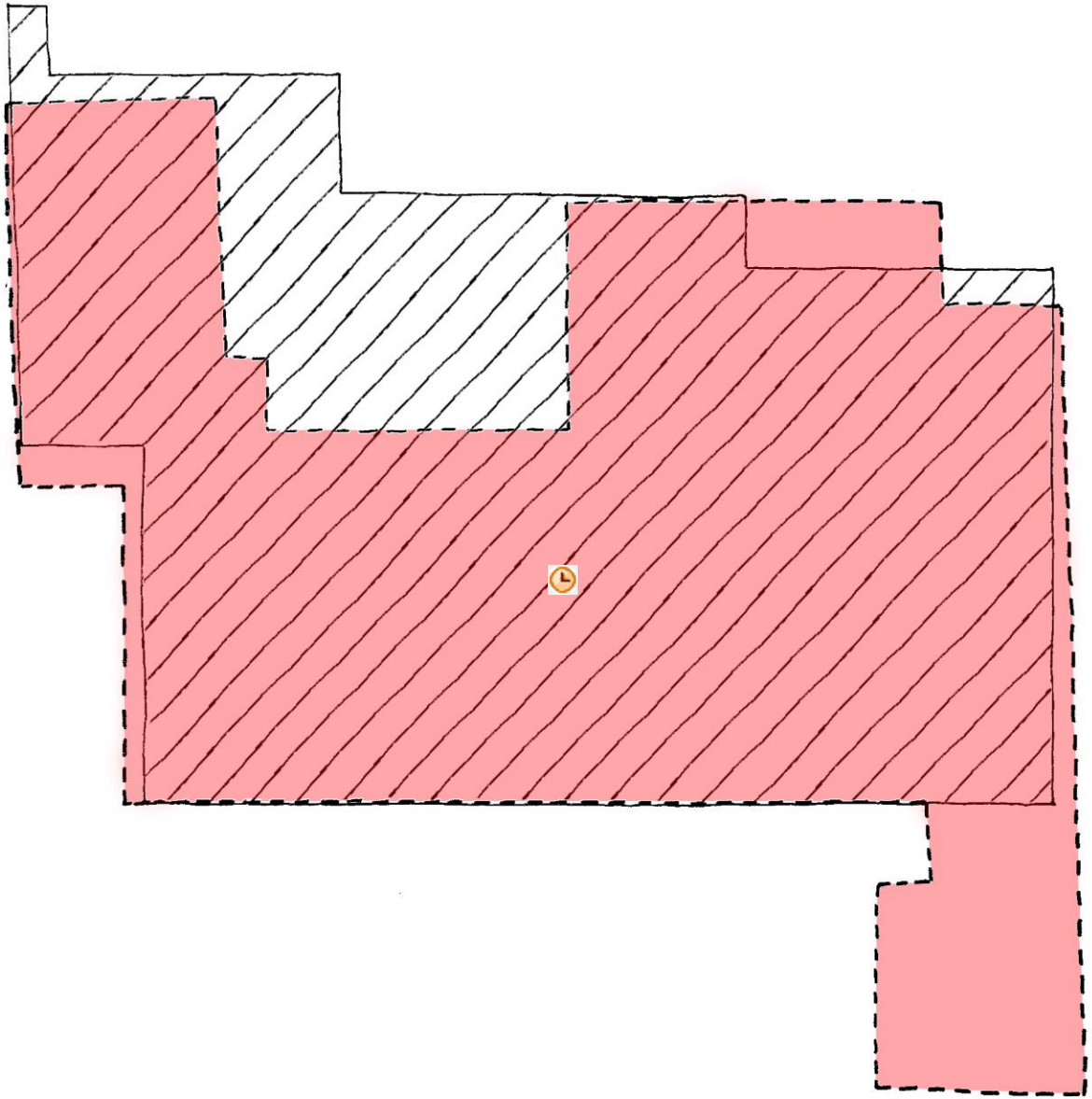
DRAWING TITLE: SECTION A,A

PENTAN PARTNERSHIP
Architects
22 Cathedral Road Cardiff CF11 9LJ
t: 029 2030 9010 f: 029 2030 9011
info@pentan.co.uk

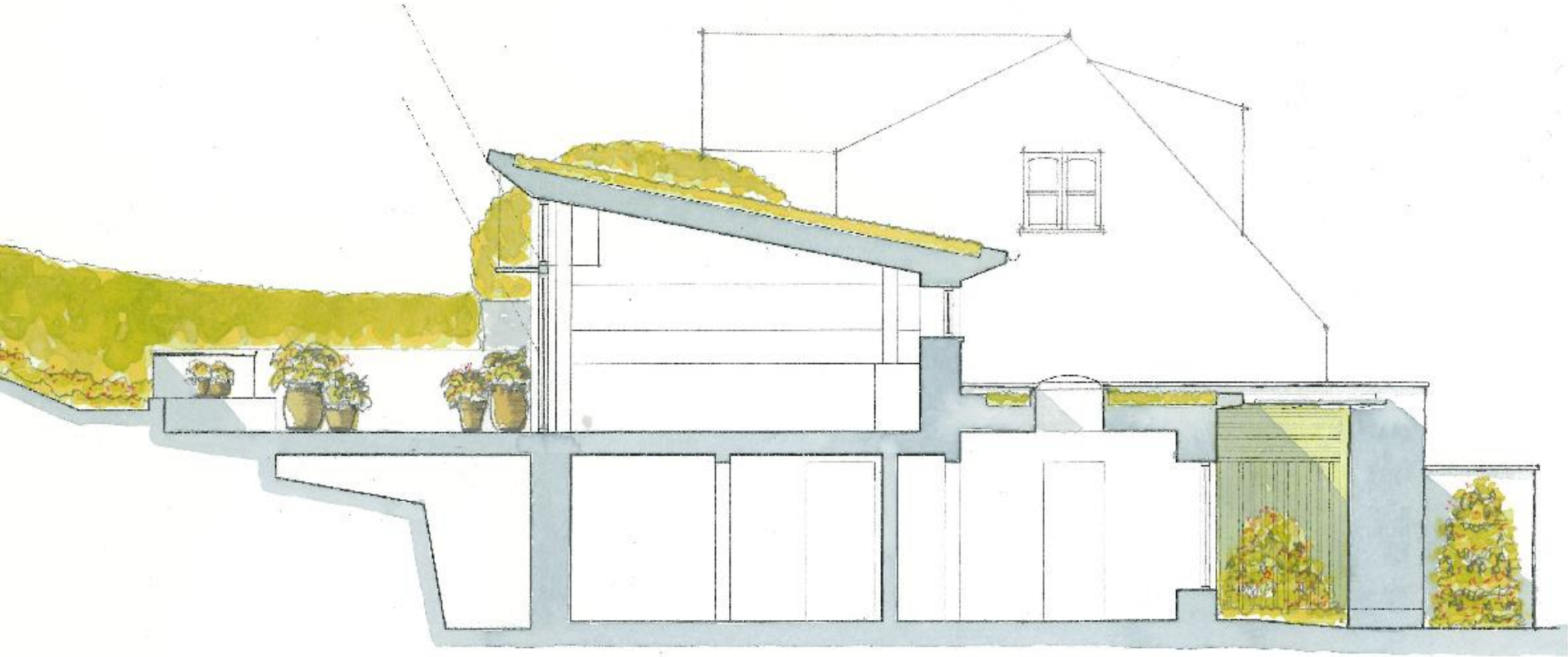
DATE	SCALE	DRNG No.	REV
MAR '09	1:50 @ A3	2968/PA/014	

NOTES: Do not scale. All dimensions are in millimetres unless stated otherwise.





12 11:22



PROJECT THE ORCHARD, HOLFORD

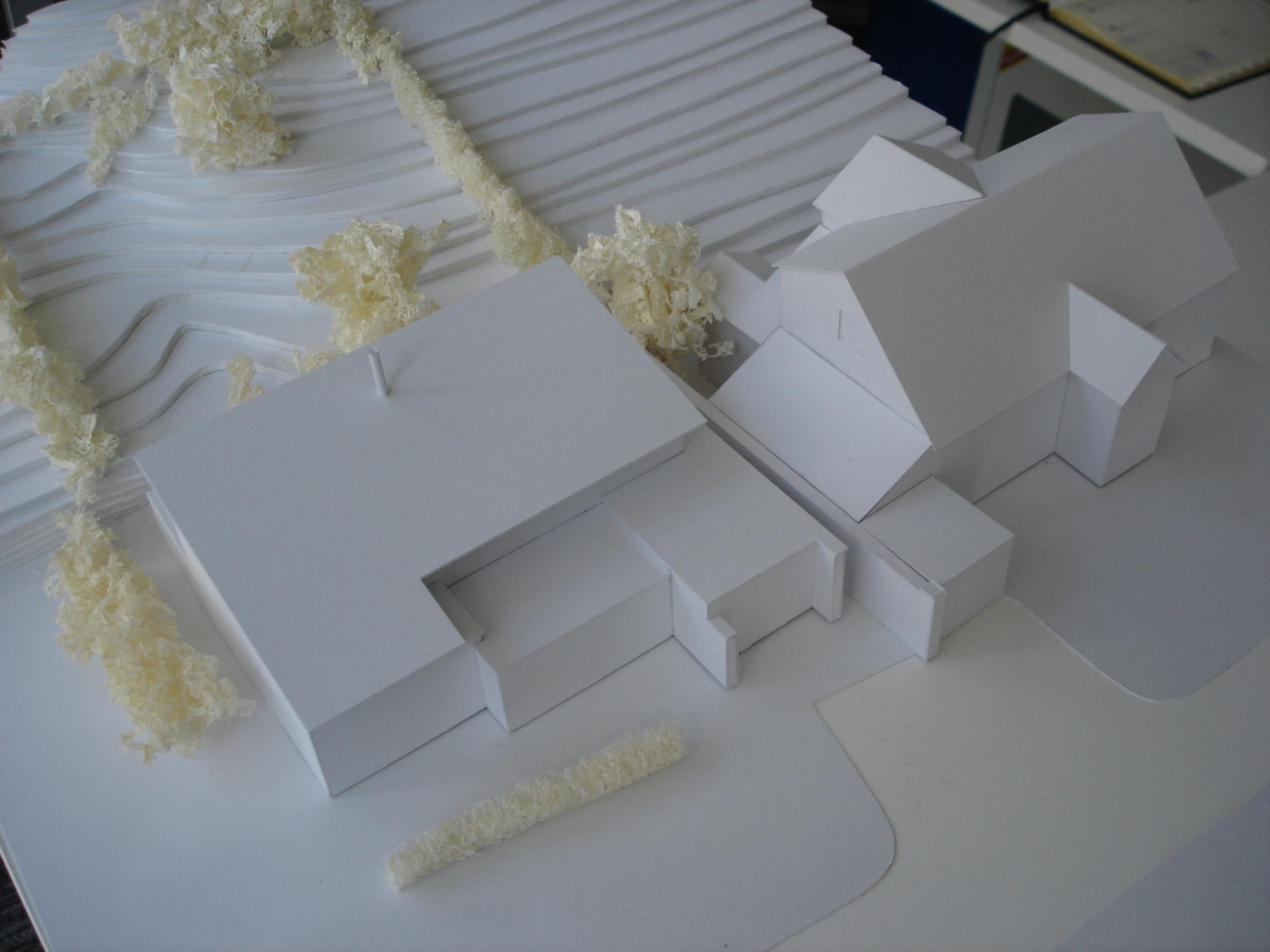
CLIENT MR JOHN CARTER

DRAWING TITLE SECTION B,B

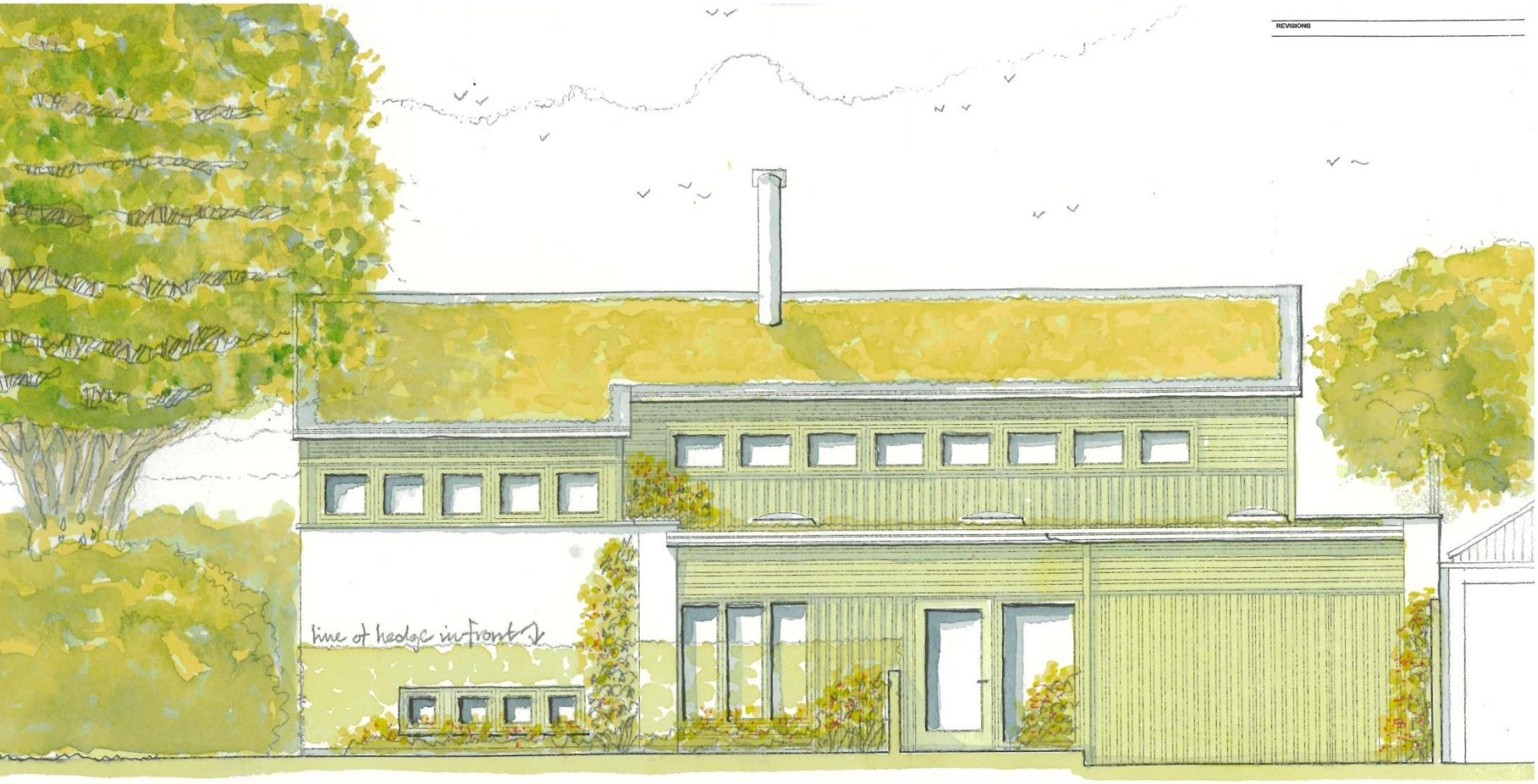
PENTAN PARTNERSHIP
Architects
22 Cathedral Road Cardiff CF11 9LJ
t: 029 2030 9010 f: 029 2030 9011
info@pentan.co.uk

DATE	SCALE	DRAWING No.	REV
MAR '04	1:50 @ A3	2960/PA/015	

NOTES Do not scale. All dimensions are in millimetres unless stated otherwise.



REVISIONS



PROJECT THE ORCHARD, HOLFORD

CLIENT MR. JOHN CARTER

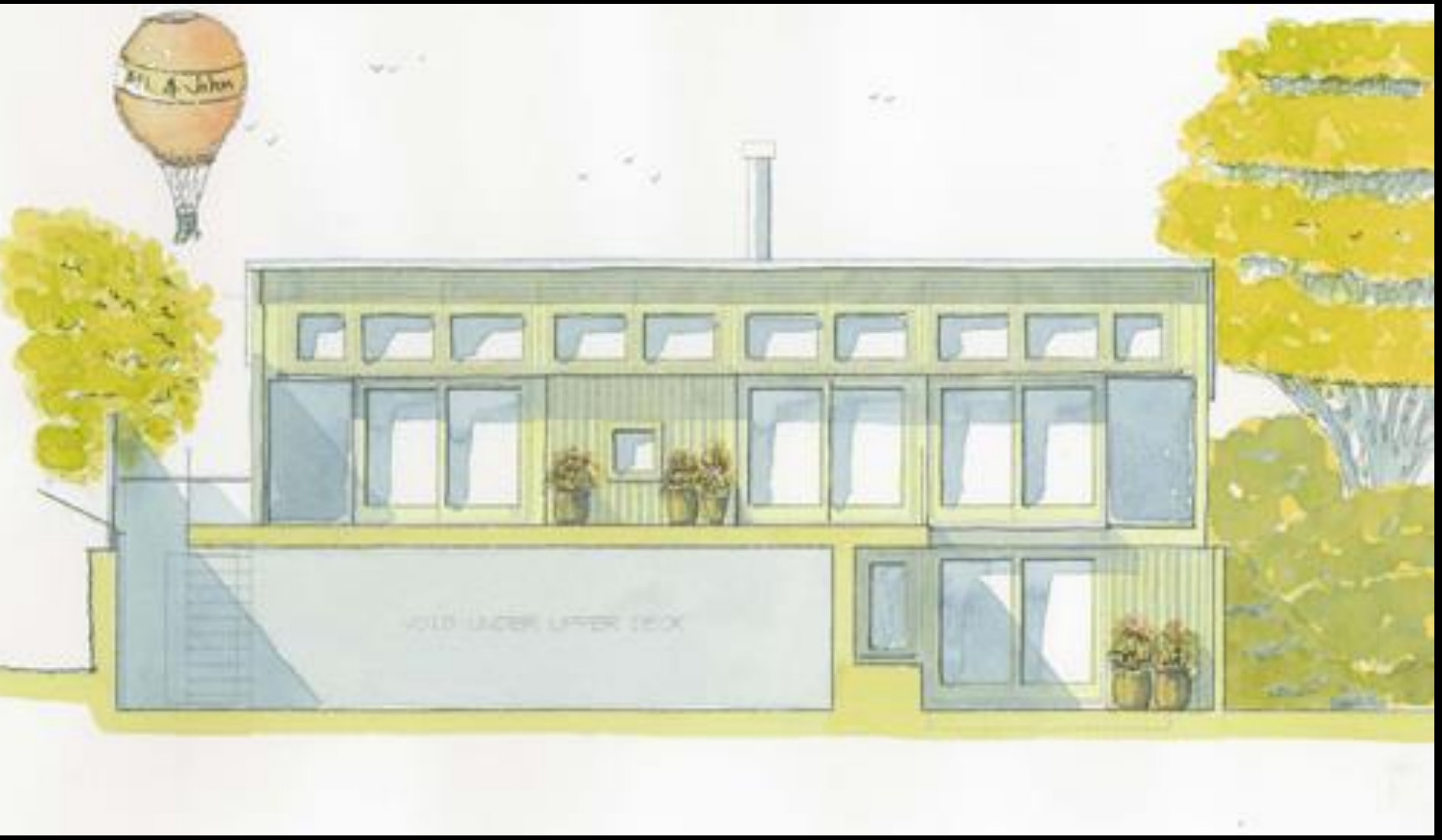
DRAWING TITLE

NORTH ELEVATION

PENTAN PARTNERSHIP
Architects
22 Cathedral Road Cardiff CF11 9LJ
t: 029 2030 9010 f: 029 2030 9011
info@pentan.co.uk

DATE	SCALE	DRNG No.	REV
MAR '09	1:50 @ A3	2968/PA/010	

NOTES Do not scale. All dimensions are in millimetres unless stated otherwise.


Bill & John













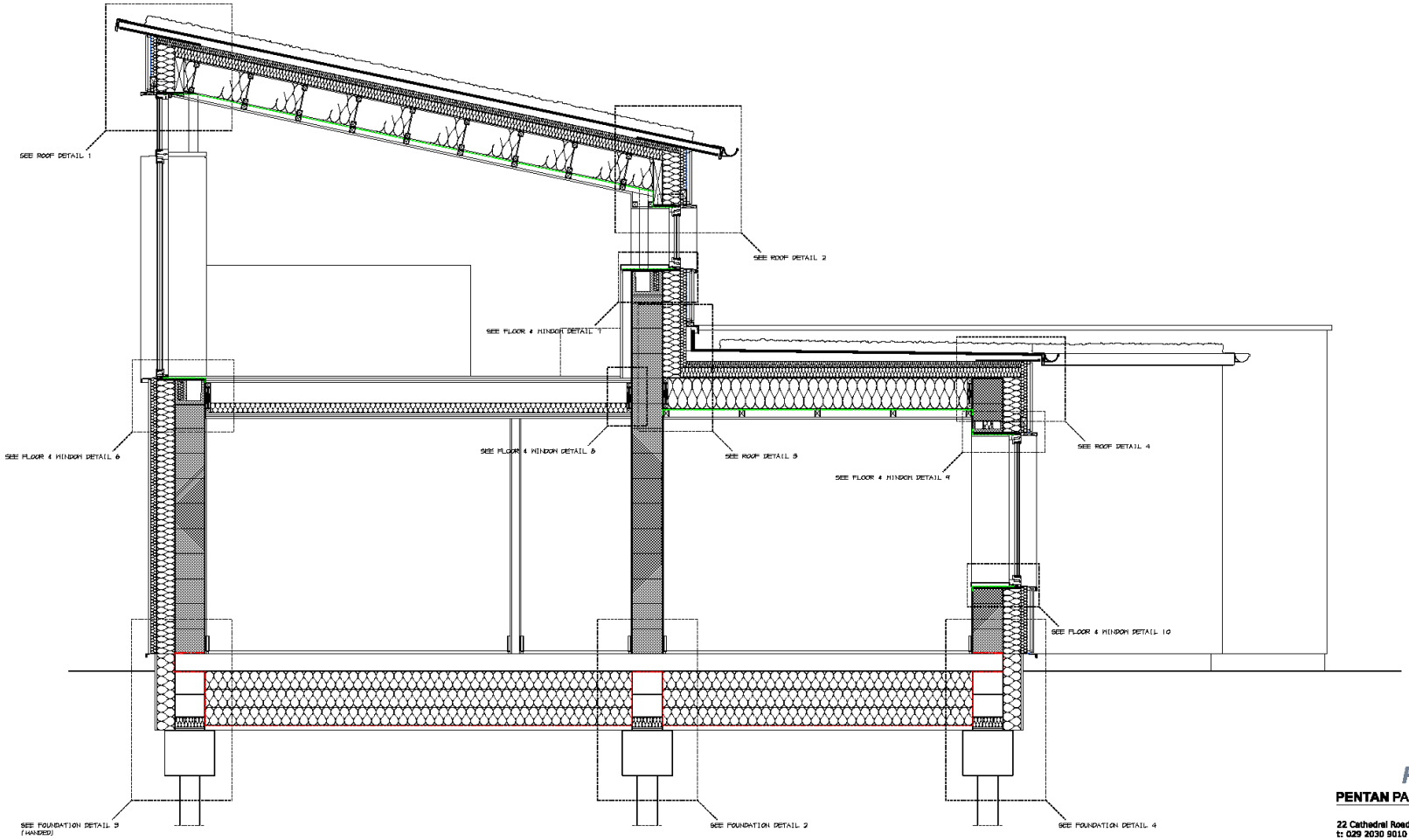



PRESS


MOPLAN



REVISIONS



PRELIMINARY

PENTAN PARTNERSHIP
Architects
22 Cathedral Road Cardiff CF11 9LJ
t: 029 2030 9010 f: 029 2030 9011
info@pentan.co.uk

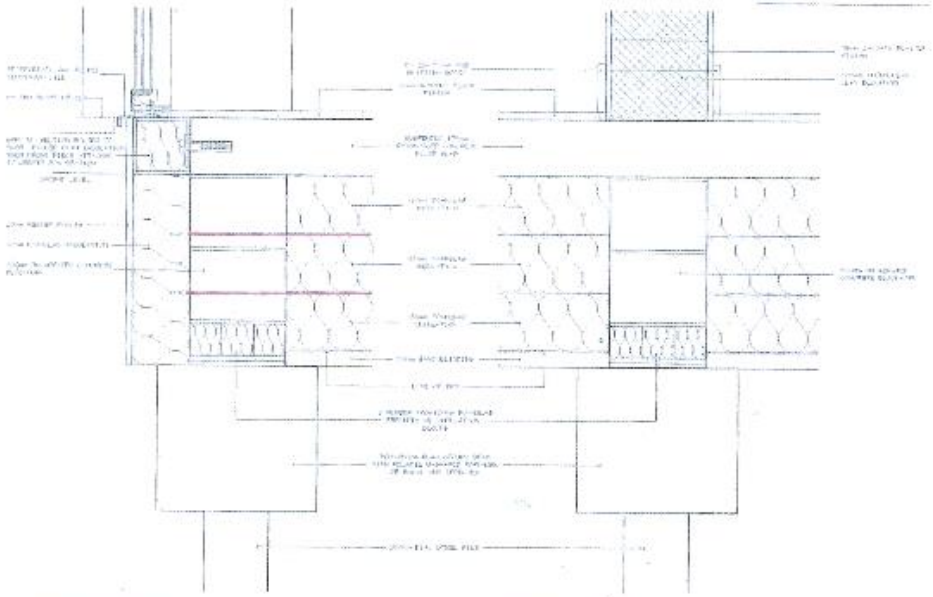
PROJECT
THE ORCHARD, HOLFORD

CLIENT
JOHN & ALI CARTER

DRAWING TITLE
SECTION B-B

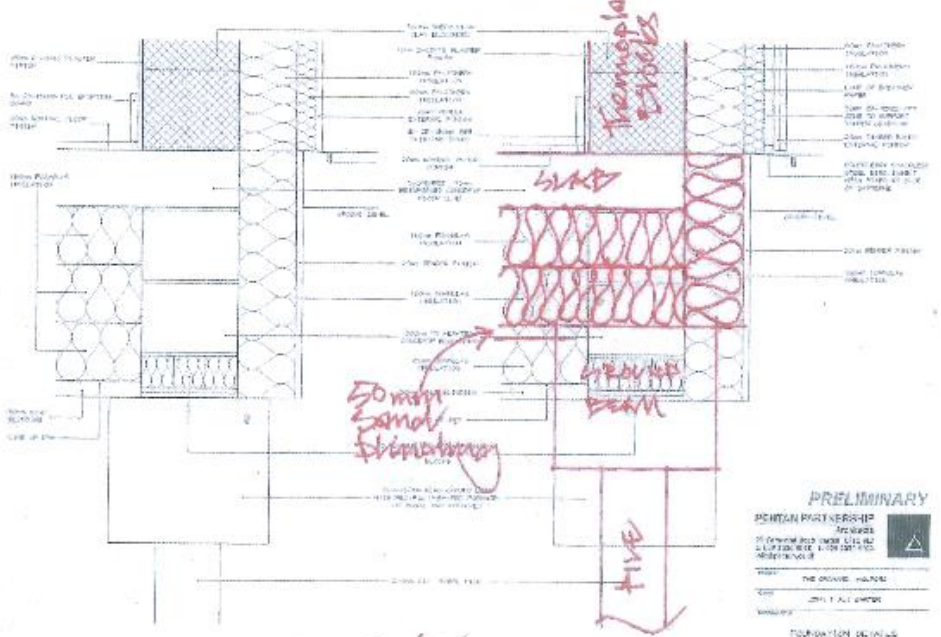
DATE	SCALE	DRWG No.	REV
JUN '11	1:20 @ A1	2960/CP/041	

NOTES Do not scale. All dimensions are in millimetres unless stated otherwise.



FOUNDATION DETAIL 1

FOUNDATION DETAIL 2



FOUNDATION DETAIL 3

13.02.17

FOUNDATION DETAIL 4

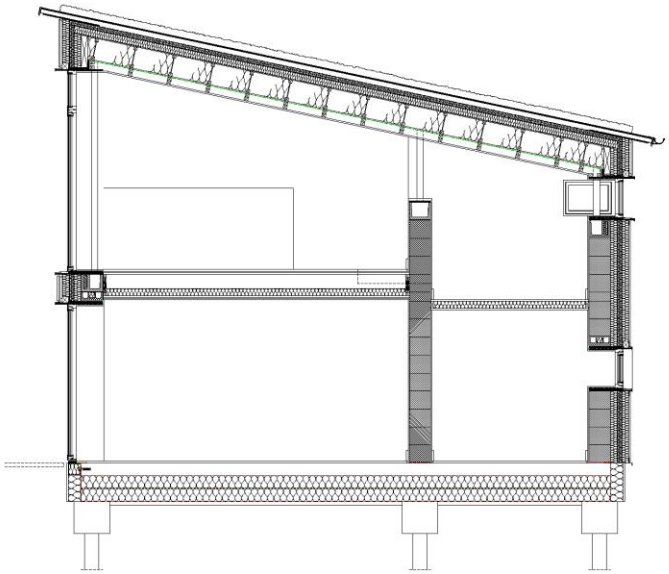
PRELIMINARY

PENTAN PARTNERSHIP
ARCHITECTS

FOUNDATION DETAILS

REVISIONS

A SECTION AMENDED TO NEW HALL CONSTRUCTION 20 SEP '12



PENTAN PARTNERSHIP
Architects
22 Cathedral Road Cardiff CF11 9LJ
t: 029 2030 9010 f: 029 2030 9011
info@pentan.co.uk

PROJECT THE ORCHARD, HOLFORD

CLIENT JOHN & ALI CARTER

DRAWING TITLE

SECTION A-A

DATE	SCALE	DRAWING No.	REV
JAN '11	1:20 @ A1	2168/CP/040	A

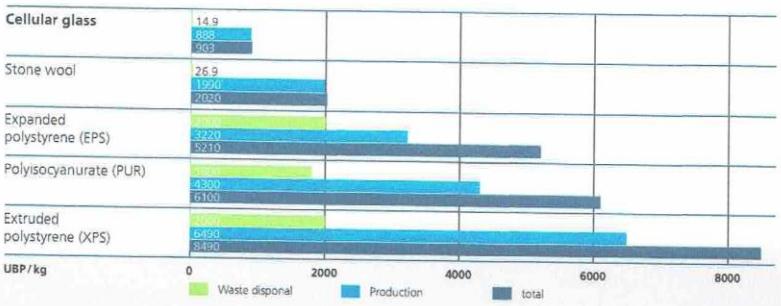
NOTES Do not scale. All dimensions are in millimetres unless stated otherwise.



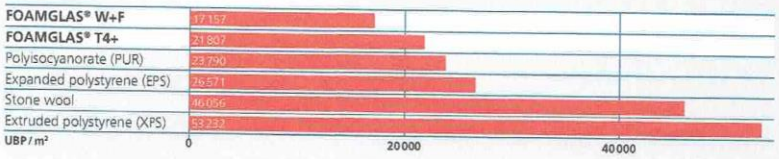


FOAMGLAS® stands comparison

The environemental pollution score (UBP 2006**) for the production and waste disposal of FOAMGLAS® is 903 points/kg (insulation). This puts FOAMGLAS® into the pole position in eco-balance. Other insulation products show points between 2020 (stone wool) anc 8490 (Extruded polystyrene).



Compared to surfaces, with a specified insulation value of 0,20 W/m²K, FOAMGLAS® performs very well. The environmental pollution score (UBP 2006**) of cellular glass is 17 157 points (FOAMGLAS® W+F), 21 807 points (FOAMGLAS® T4+) per square meter. Other insulation products show 23 790 points (PUR), 26 571 points (EPS), 46 056 points (stone wool) and 53 232 points (XPS) for an identical U-value (see table).



Insulation	?	?D*	d	weight per m²	UBP* per kg	UBP per m²
	kg/m³	W/mK	m	kg/m²	UBP/kg	UBP/m²
FOAMGLAS® T4+	**115**	**0.041**	**0.21**	**24.15**	**903**	**~ 21 807**
FOAMGLAS® W+F	**100**	**0.038**	**0.19**	**19.00**	**903**	**~ 17 157**
Polyisocyanorate (PUR)	30	0.026	0.13	3.90	6100	~ 23 790
Stone wool	120	0.038	0.19	22.80	2020	~ 46 056
Expanded polystyrene (EPS)	30	0.034	0.17	5.10	5210	~ 26 571
Extruded polystyrene (XPS)	33	0.038	0.19	6.27	8490	~ 53 232

* The data are taken from building database KBOB/EMPA, june 2009.

** The environemental pollution score (UBP 2006) quantifies the pollution coming from resources, water consumption, emissions into air, water and ground and also for the waste disposal. The environment pollution through grey energy and global warming are included in the UBP score.

FOAMGLAS FLOOR BOARD T4+











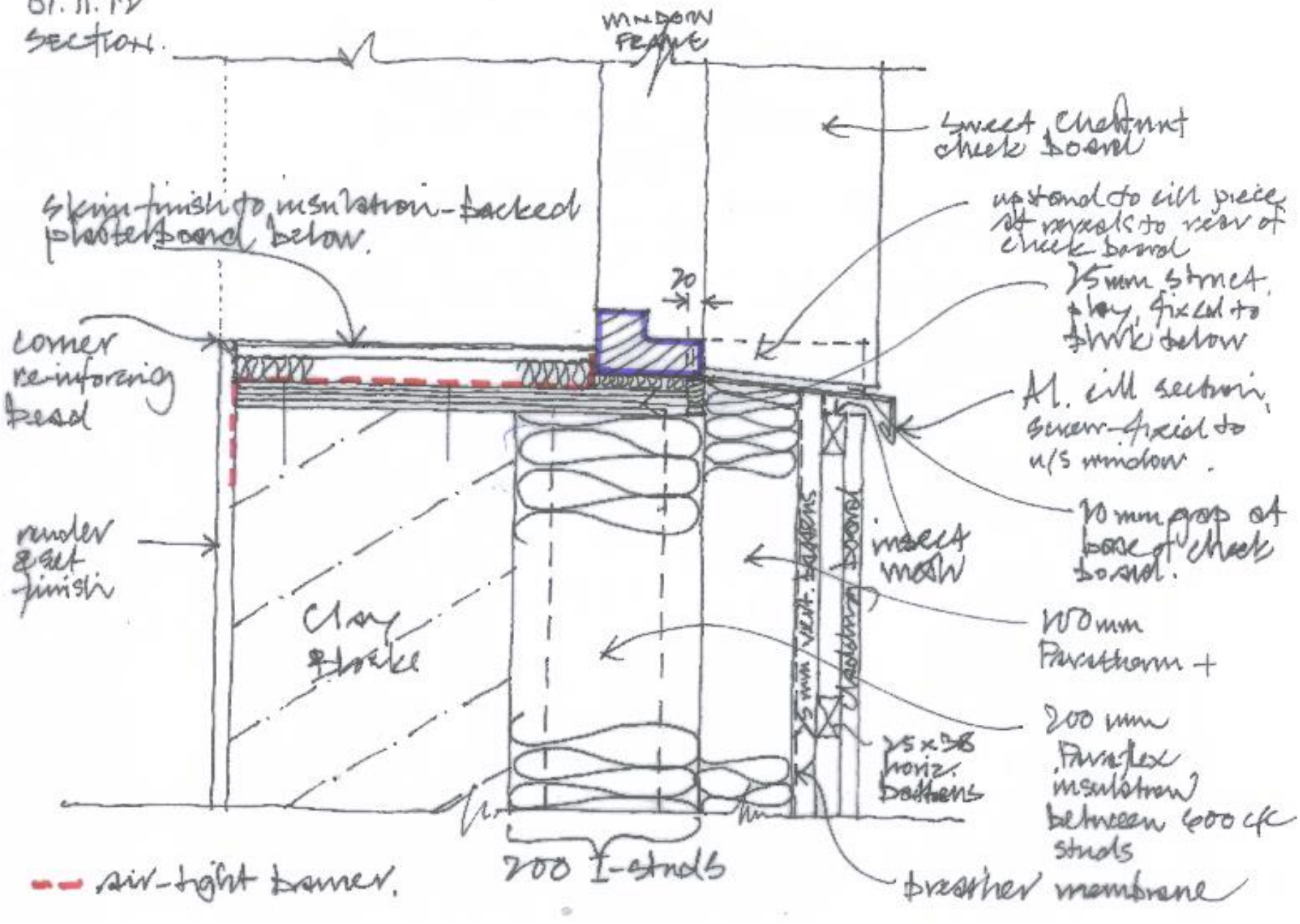




1 : 5

01.11.'12

SECTION.

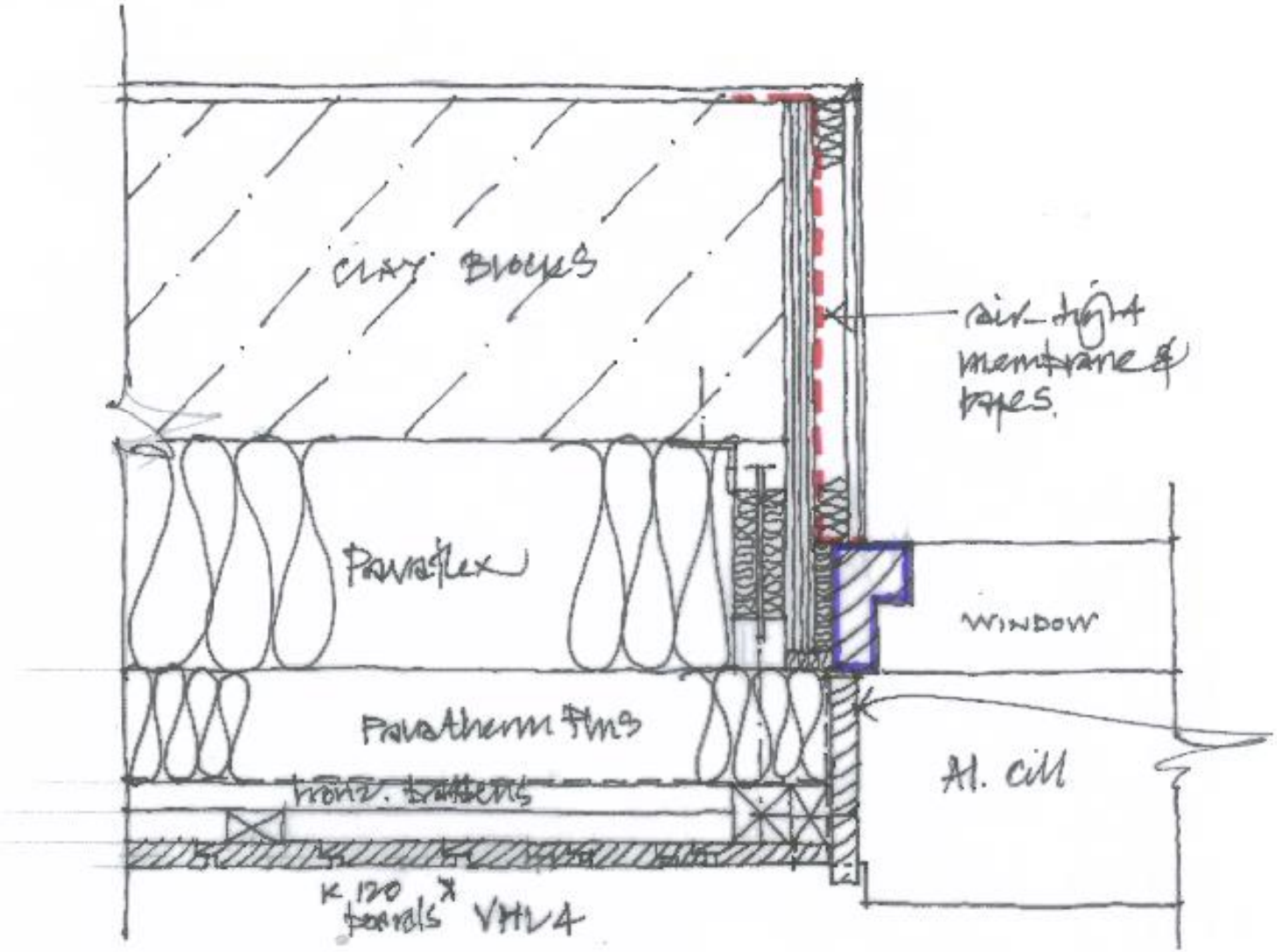



CaberfixD4

1:5

01.11.'17

PLAN NEW.






SIGA-Sicrall
www.siga.ch



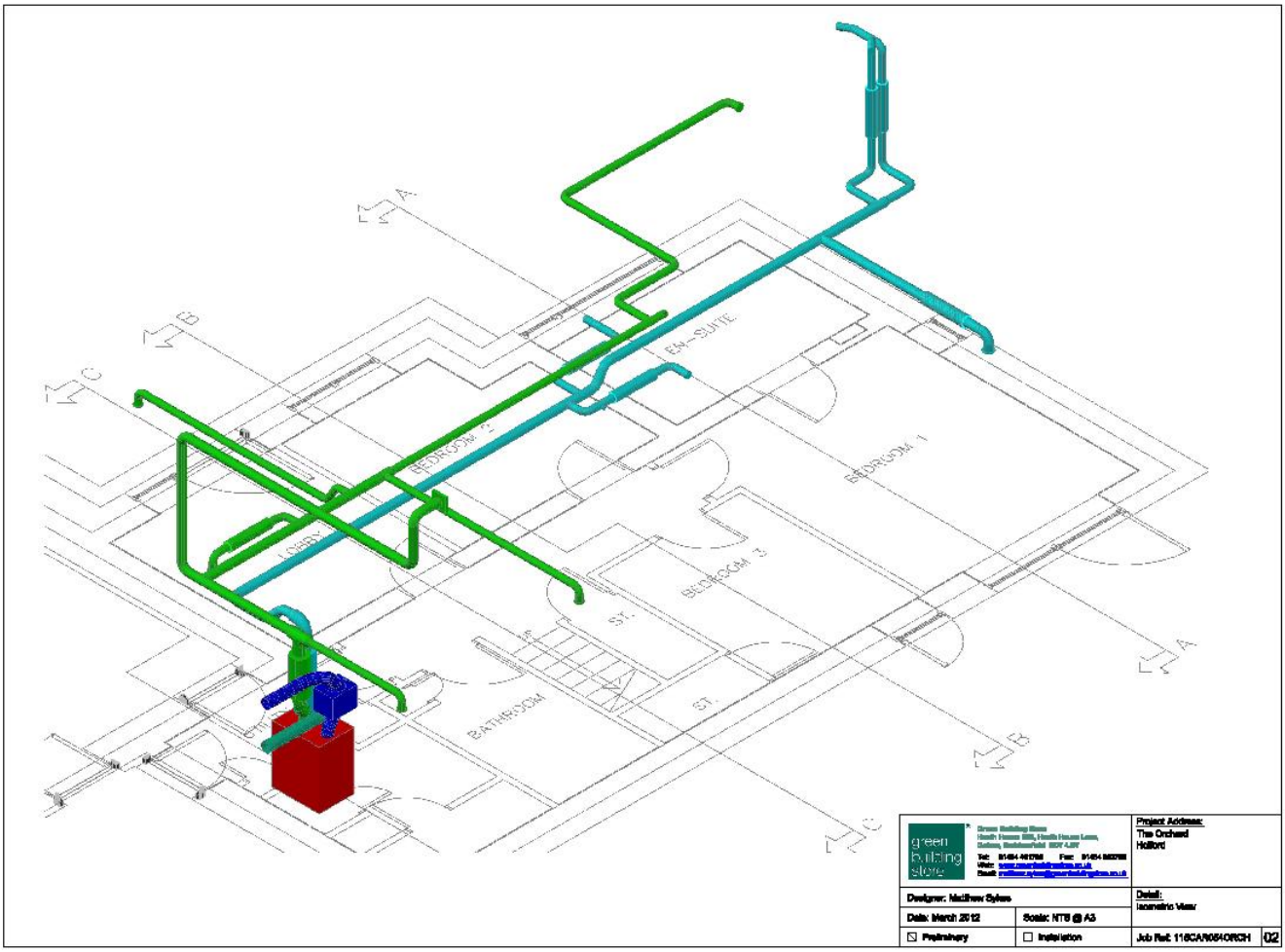



trend






Air Testing
South West



green building store

Project Address:
The Orchard
Holford

Detail:
Isometric View

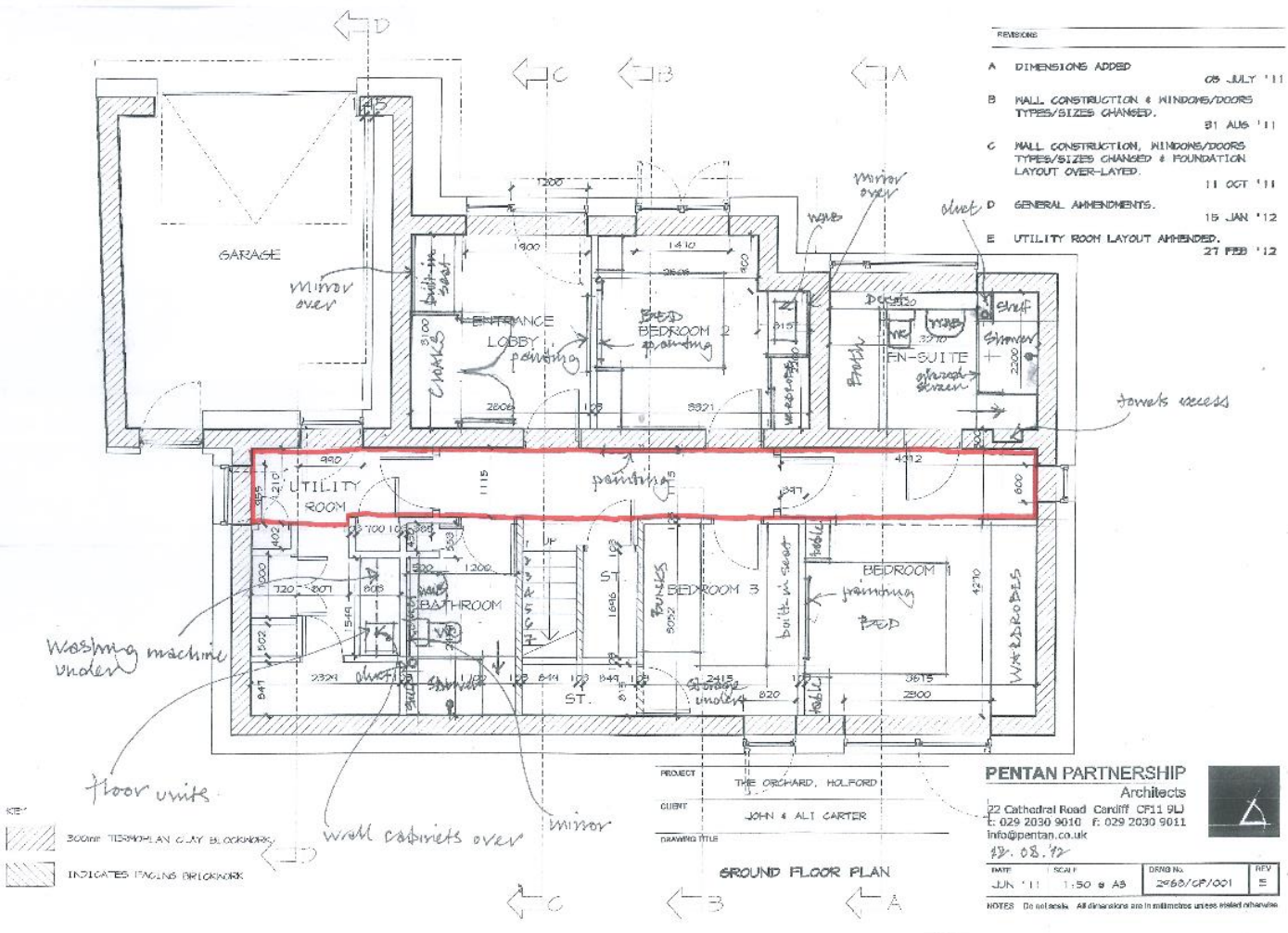
Designer: Matthew Sykes

Date: March 2012

Scale: NTS @ A3

☒ Preliminary ☐ Installation

Job Ref: 116CA/0540R2H 02



REVISIONS

A DIMENSIONS ADDED 05 JULY '11

B WALL CONSTRUCTION & WINDOWS/DOORS TYPES/SIZES CHANGED. 31 AUG '11

C WALL CONSTRUCTION, WINDOWS/DOORS TYPES/SIZES CHANGED & FOUNDATION LAYOUT OVER-LAYED. 11 OCT '11

D GENERAL AMMENDMENTS. 15 JAN '12

E UTILITY ROOM LAYOUT AMMENDED. 27 FEB '12

PROJECT: THE ORCHARD, HOLFORD

CLIENT: JOHN & ALI CARTER

DRAWING TITLE: GROUND FLOOR PLAN

PENTAN PARTNERSHIP
Architects
22 Cathedral Road Cardiff CF11 9LJ
t: 029 2030 9010 f: 029 2030 9011
info@pentan.co.uk

17.08.12

DATE	SCALE	DRWG No.	REV
JUN '11	1:50 @ A3	2960/GP/001	E

NOTES Do not scale. All dimensions are in millimetres unless noted otherwise


Tyvek
Tyvek
Tyvek
Tyvek
Tyvek
Tyvek




TESCON



rotinnel
rotinnel


IKO
IKO
IKO
IKO
ght
BOSCH


CHARD













Take the One Planet Challenge

If everyone lived as we do in the UK we'd need three planets to support us.

That's why we need One Planet Living. But the good news is reducing your environmental impact to a sustainable level is possible and can give you a better quality of life. The ten One Planet Living principles cover all aspects of your life from saving energy and reducing waste to your health and happiness. People all around the world are taking up the One Planet Living challenge.

Calculate your impact

Use our questionnaire to calculate your ecological footprint and carbon emissions. We've got two options; choose the quick and easy version (5 minutes) or the full calculator (15 minutes) which gives more accurate results and a detailed action plan.

Your Action Plan

After calculating your impact you'll get a personalised Action Plan packed with practical things you can do to achieve One Planet Living. We've included links to useful information and products that will make it easier for you to shrink your footprint.

Get Started ▶

Get Started and Calculate Your Impact

Already started using the One Planet Living Calculator? Retrieve your details here.



10 principles of sustainability

This Calculator & Action Plan is based on the 10 One Planet Living principles. Your Action Plan will help you achieve One Planet Living.

ONE PLANET LIVING®

Frequently Asked Questions | Find Out More

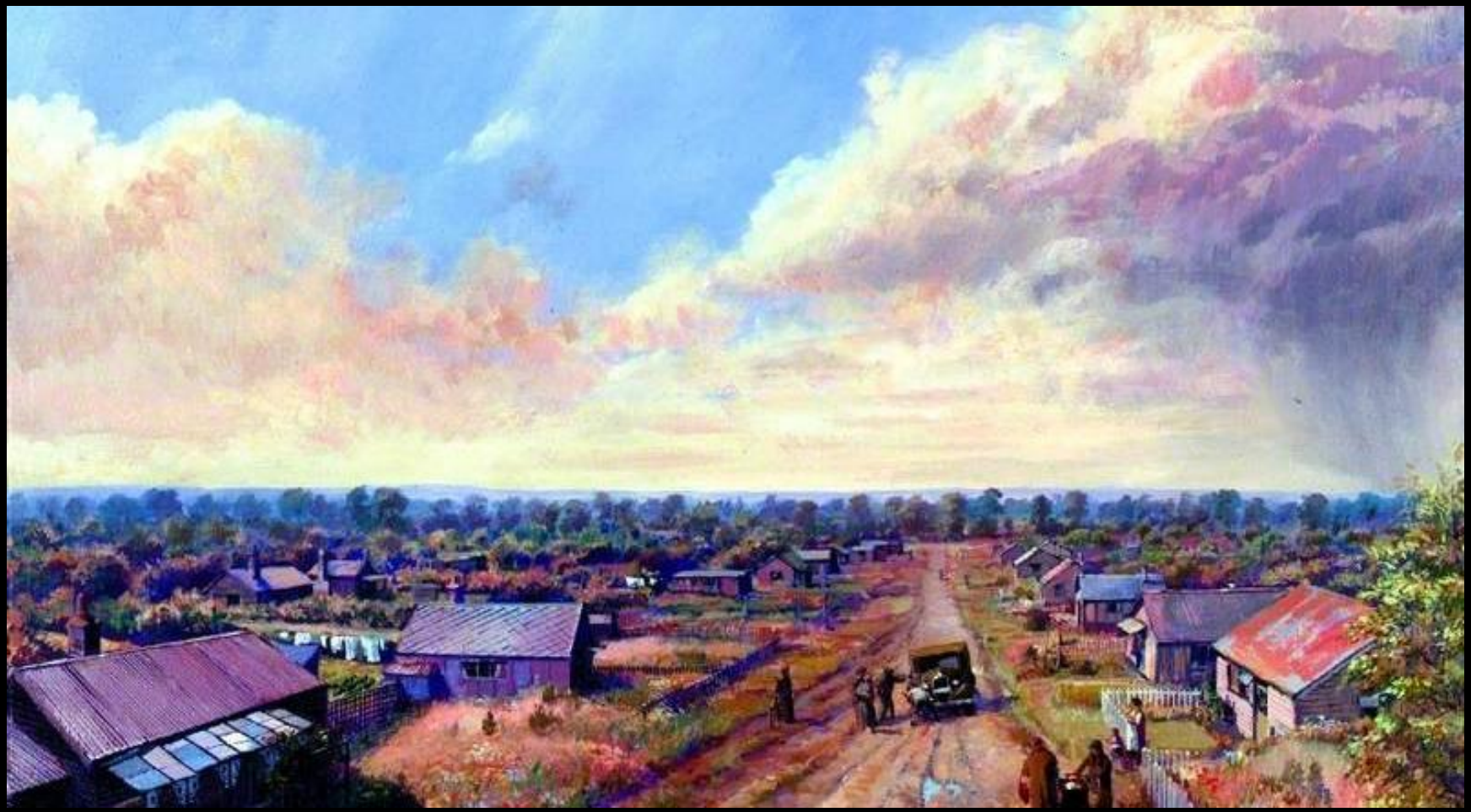
One Planet development Wales



One Planet Living Developments

- The key requirement, for consideration as a One Planet residential development is that over a reasonable period of time (no more than 5 years) the land should provide for the minimum needs of the inhabitants in terms of income, food, energy and waste assimilation, and must be the sole residence of the inhabitants. Any planning application must be supported by a management plan produced by a “competent person”.

Arcadia for all



- “I cannot imagine any other desirable view of the future than an ecologically adapted form of life where architecture returns to early Functionalist ideals derived from biology. Architecture will again take root in its cultural and regional soil. This architecture could be called Ecological Functionalism ……. After the decades of affluence and abundance, architecture is likely to return to the aesthetics of necessity in which elements of metaphorical expression and practical craft fuse into each other again; utility and beauty again united.” (Juhani Pallasmaa, *From Metaphorical to Ecological Functionalism.*)


FreakingNews.com