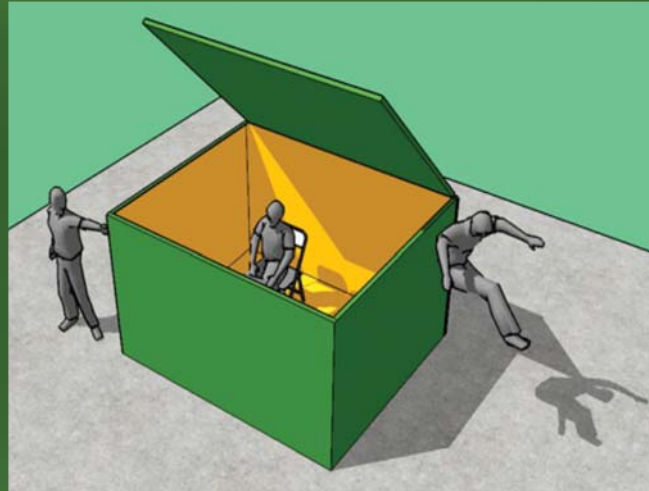




# Issues and challenges: **sourcing sustainable products & technologies**

Gary Wilburn





## Issues and challenges

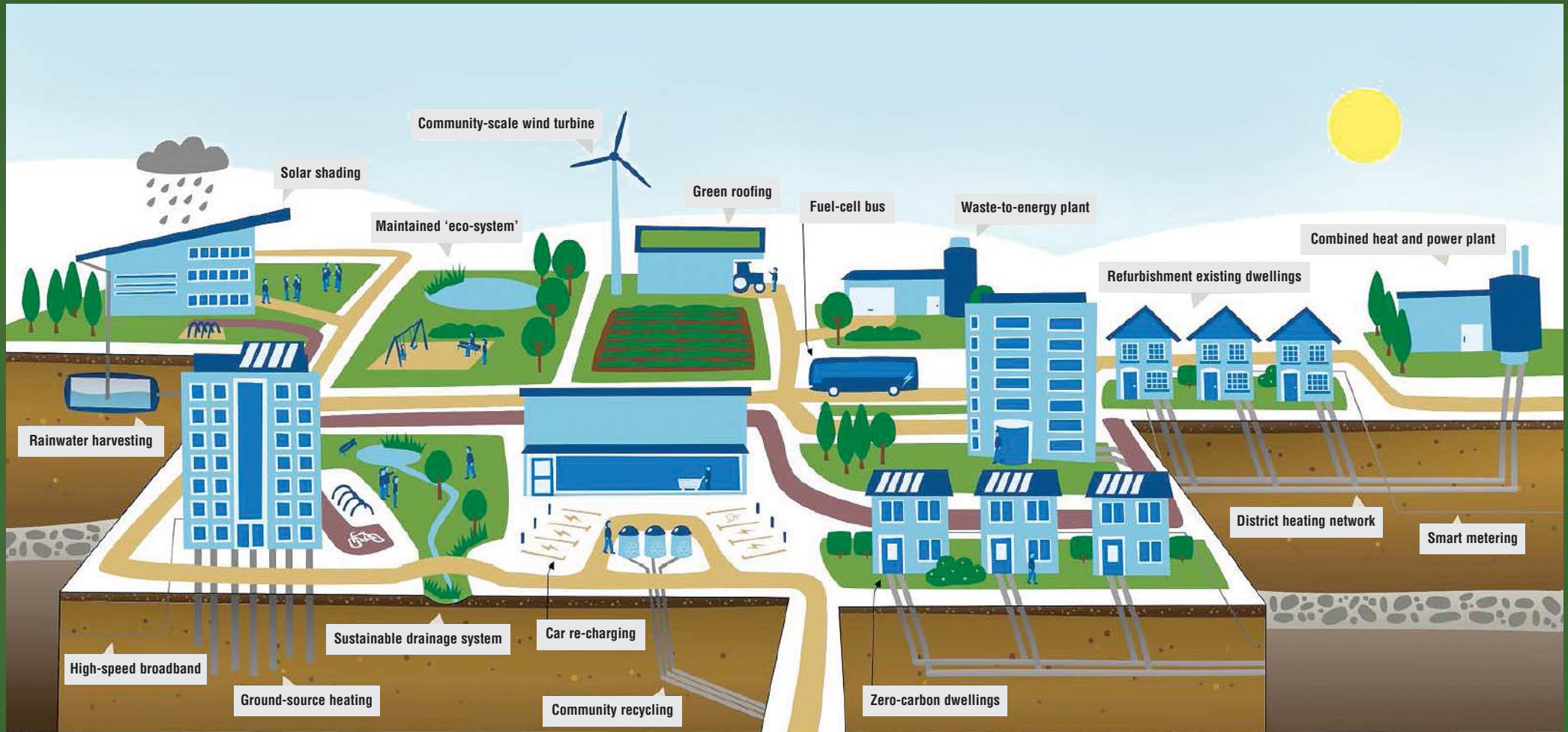
- It is not only building skills and alternative solutions that are the challenge
- Avoiding *Greenwash!*: can only be understood with knowledge
- Human behavior, habits and methodologies need to change, this need not cost money but takes commitment
- Embrace the principles of continuous improvement, do not accept convention
- *Involution*: combining innovation and evolution
- Proving low energy building performance: Building physics and dynamic modeling



## There are opportunities in ALL sectors and not always new-build Housing retro-fit challenge (Source BERR 2008)

- 80%+ of housing stock in the UK in 2050 already exists
- 500,000 houses to be transformed per year at approx £20,000 - 30,000 house for 40 years
- 200,000 construction jobs required to support the task
- The largest ever UK Engineering Project

# Sustainable communities: how many opportunities do we want?

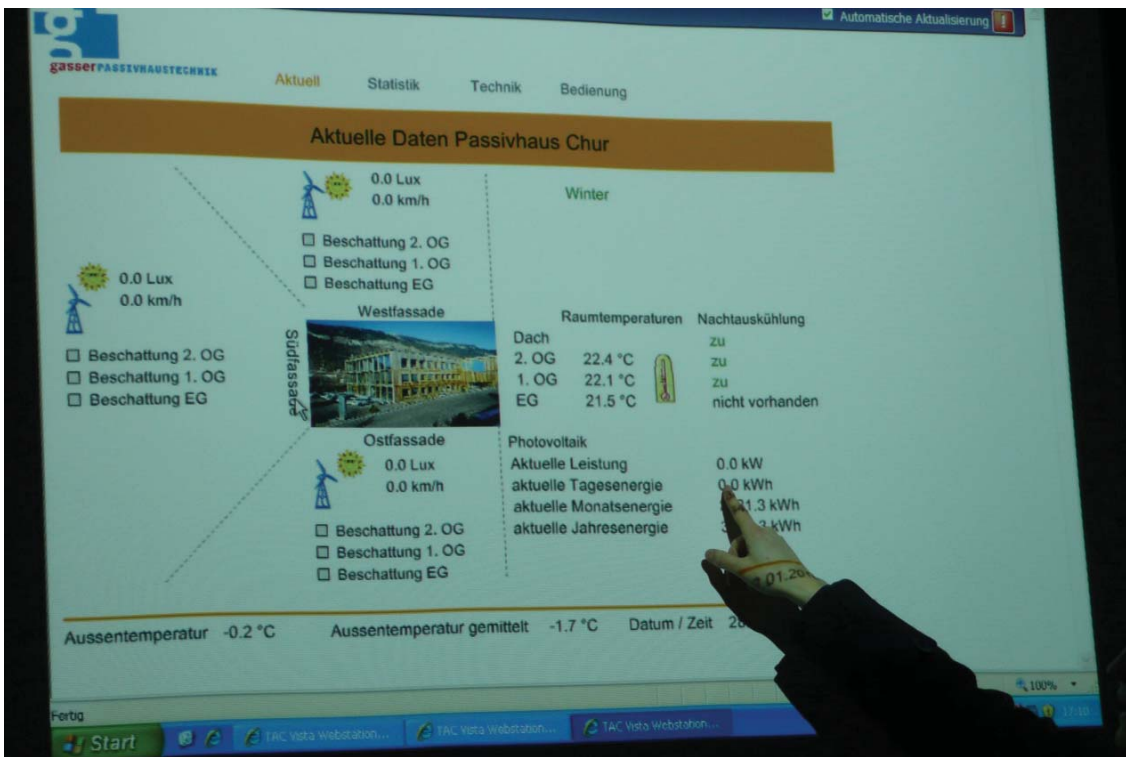


There are examples around the world (even in the UK), get out and see them!



**Sourcing sustainable products & technologies**







**Case studies: Designing to a higher level**







## Hammarby 'cradle to cradle' strategy

### GLASHUSETT

1. GlashusEtt – The environmental information centre of Hammarby Sjöstad. The place to find information on both environmental issues and exciting green technology (solar cells, fuel cells, sedum roofs, etc.). A partnership between the Stockholm Water Company, Fortum, the Stockholm City Development Administration and the Stockholm City Waste Management Administration.

### ENVIRONMENTAL BLOCKS

2. Holmen, NCC. Winner of the first prize in the City's environmental competition, Best New Construction.
3. Kobben, SBC Bo. Winner of the second prize.
4. Viken, Svenska Bostäder. Winner of the third prize.
5. Sundet, JM. Winner of the third prize.
6. Lugnvatnet, Familjebostäder. Winner of the third prize.

### WATER

7. Prepared soil for filtration of storm water from streets.
8. Storm water basin with wetland for storm water from streets.
9. Storm water basin with filtration (also power grid station).
10. Channel for storm water from buildings and gardens only.
11. Green roofs and yards collect storm water locally.
12. Sjöstadverket. Experimental wastewater treatment plant and spearhead-projects for new wastewater treatment techniques.
13. Pumpstation for wastewater.

### ENERGY

14. Fortum's Thermal Power Plant. Supplies Hammarby Sjöstad with district heating and district cooling from treated wastewater and biofuels.
15. Biogas cookers are installed in approximately 1,000 apartments on Sickla Udde and Sickla Kaj.
16. Biogas production facility.
17. Solar cells on the roof of JM's block, Fjärden, providing electricity used in the communal areas.
18. Solar cells for the Grynnan block.
  1. Solar cells on GlashusEtt.
  2. Solar cells for the Holmen block.
  4. Solar panels on the Viken block to heat the hot tap water used by the tenants.
  6. Solar cells for the Familjebostäder's building.
  9. Power grid station (also storm water basin).

### COMMUNICATIONS/TRANSPORT

21. Tvärbanan, a light rail link.
22. Ferry berth with boat traffic to Södermalm (also to central Stockholm at certain times of the year).
23. Old quay restored to form a footpath and cycle route.
24. Footbridge made from stainless steel for long-term durability.
25. Car-pool parking with the best parking spots, right in front of the door.
26. Fuel station for cars running on electricity, biogas or ethanol.

### NEW AND EXISTING GREEN SPACES

27. New tree-lined avenue that stretches throughout Hammarby Sjöstad.
28. Luma Park. New local park with green hills, Japanese cherry trees (*Prunus serratula*) and a playground. The park also contains a preserved old house.
29. Preserved old trees (birch, elm and lime).
30. Nesting rafts for seabirds. The City of Stockholm Environmental Administration's project designed to promote the biological development of Stockholm.
31. Reed park with oiled wooden footbridges. Viewing points and rest areas.
32. Preserved riparian woodlands with birch and alder.
33. Ecoducts. A green crossing providing enhanced access to the Nacka nature reserve. (A vast forested area with footpaths and cycle routes).
34. Oak-covered slope with 150 old oaks. One of the finest stands in the southern part of the city of Stockholm.
35. Special adaptation of buildings for the oak-covered slope.
36. The Sjöstad parterre and surrounding blocks – awarded the Kasper Sahlin prize for the best block in Sweden, 2005.
37. The Lugnet parterre – scheduled.

### THE HEALTHY CITY

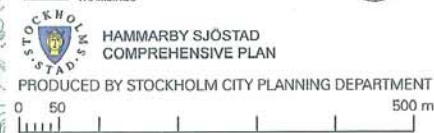
41. Cycle route along the Lugnets Allé and Hammarby Allé thoroughfares.
42. Hammarbybacken – slalom ski slope.
43. Sports hall.
44. The Nacka nature reserve.
45. Beach at Sickla Sjö.
23. Old quay restored to form a footpath and cycle route.
46. The Culture House – scheduled.
47. Kulturama – school and culture house.
48. Fryshuset – upper secondary school specialising in sports and culture.
49. Playground in Ekbacken.
50. Playground in Redaren and Sjöfarten – scheduled.
51. Pleasure boat moorings.
52. Dieselverkstaden, culture house.

### WASTE AND RECYCLING MATERIAL

19. One of the docking points where the refuse collection lorry connects to the pneumatic waste disposal unit.
20. Collection centre for the stationary pneumatic waste disposal system.
1. GlashusEtt also houses a collecting point for hazardous waste.

### OTHER

38. Listed factory buildings from the 1930s. Restored and now used as office premises.
39. Sickla lock and salmon ladder.
40. Södra Länken (motorway) lowered to reduce traffic noise.



# Hammarby Sjöstad klart 2012



GATU- OCH  
FASTIGHETSKONTORET

Besqab  
Borätt  
Bo Trygg  
ByggVesta  
Einar Mattsson  
Erik Wallin Bygg  
Familjebostäder  
Folkhem  
HEFAB  
HSB

JM  
Katarinastiftelsen  
Lennart Ericsson Bygg  
Mälartornet  
NCC  
Peab  
Primula  
Reinhold Gustafsson  
Riksbyggen  
SBC

SISAB  
Skanska  
SKB  
SSSB  
Statoil  
Stockholmshem  
Svenska Bostäder  
Wallenstam  
Veidekke  
Fabège



Hammarby  
Sjöstad

[www.stockholm.se/hammarbysjostad](http://www.stockholm.se/hammarbysjostad)







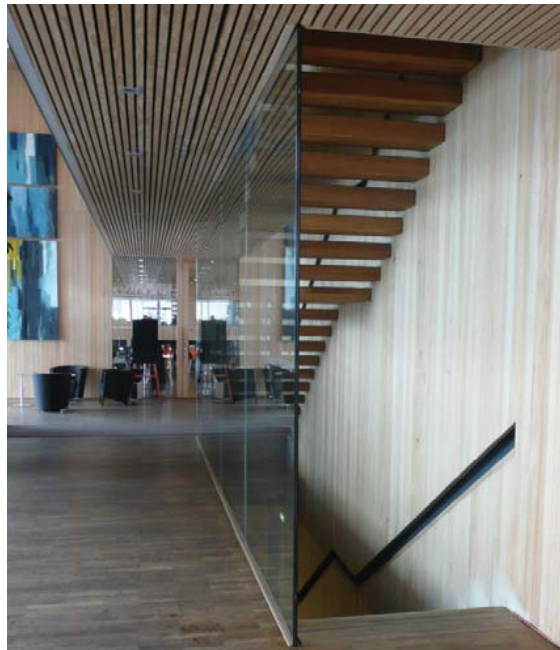
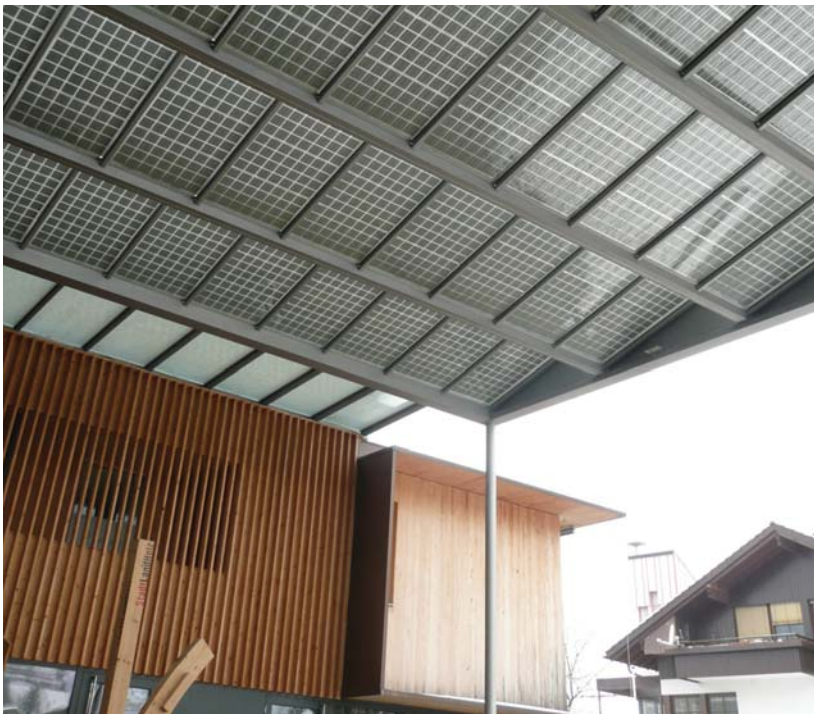


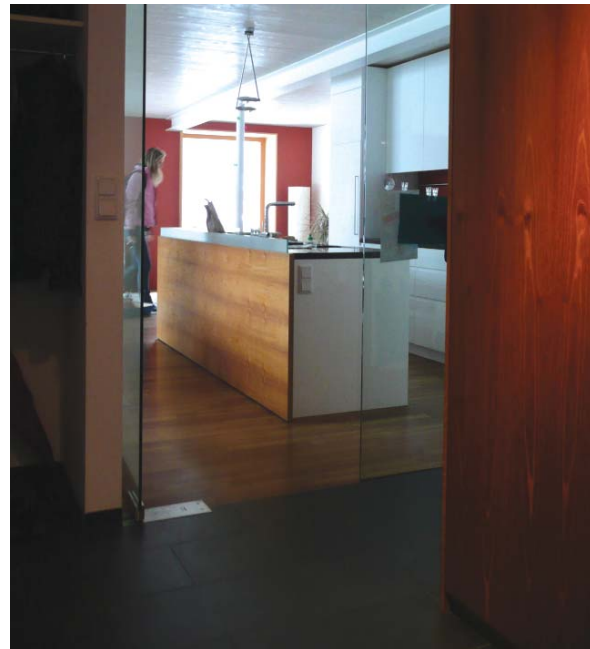


## Passivhaus Construction

- Use of bioregionally sourced materials
- Manufactured, high quality solution
- Off-site modular format
- Maximising insulation, minimising energy use
- Known technology and construction details





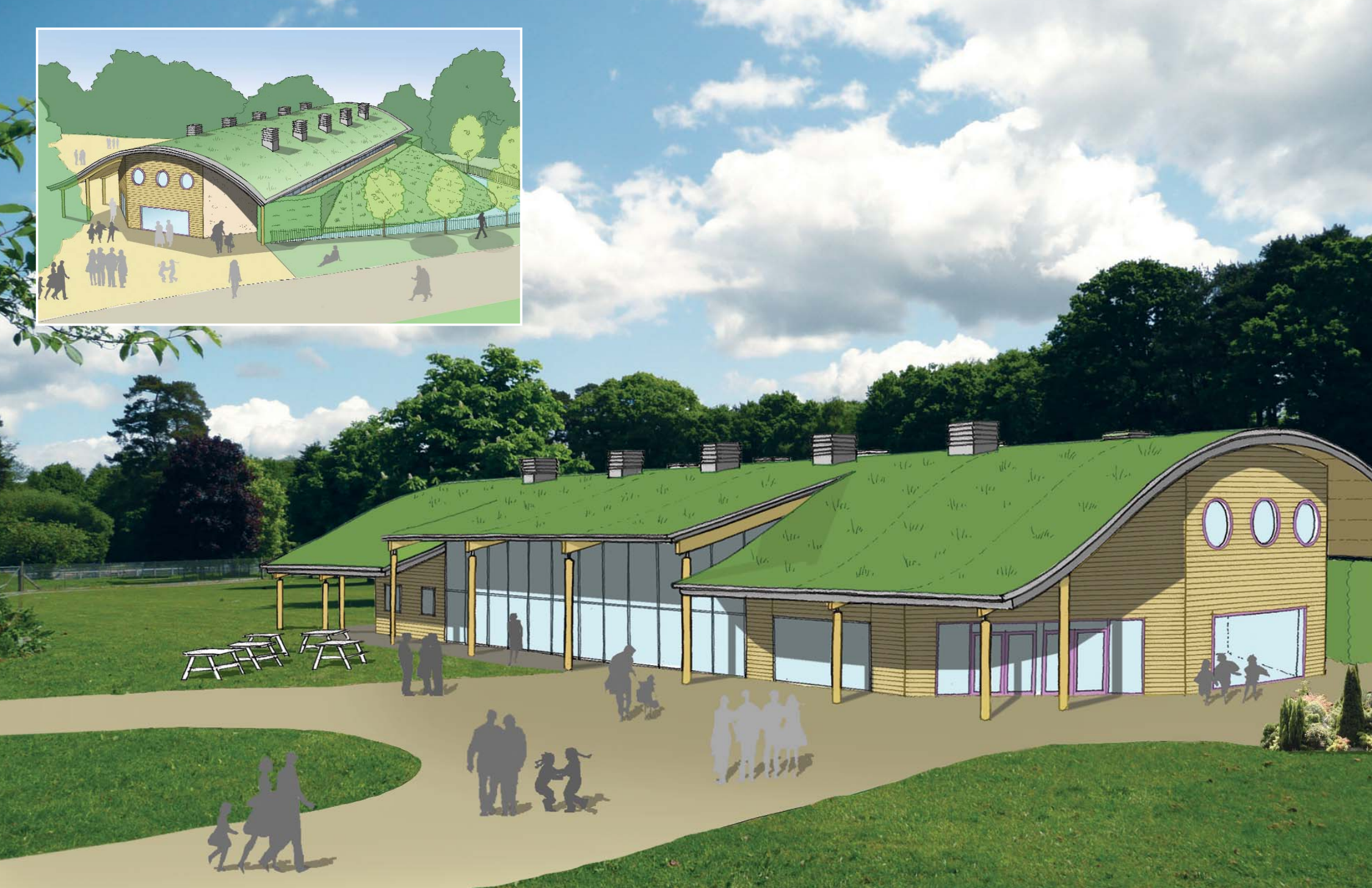


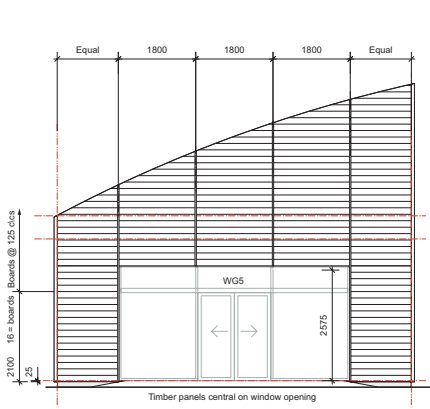
# Paultons Park

New low carbon attraction building

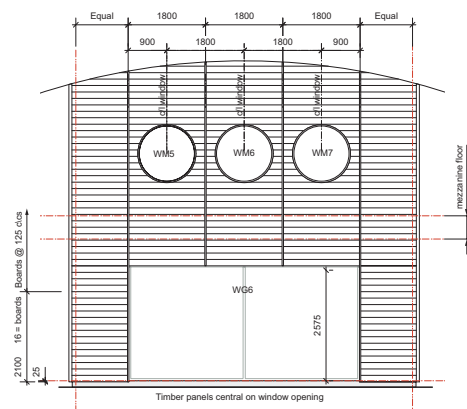
Wildflower roof

Naturally ventilated indoor play area



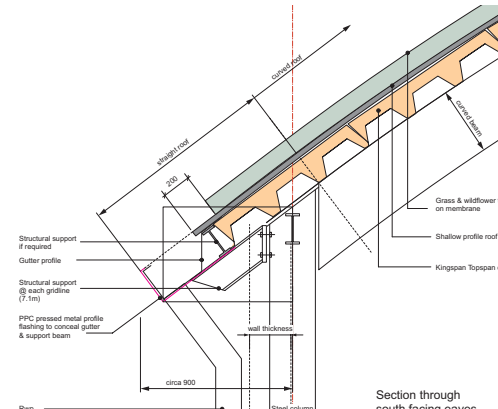


NORTH WEST ELEVATION

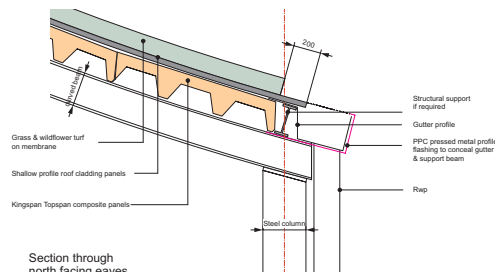


WEST ELEVATION

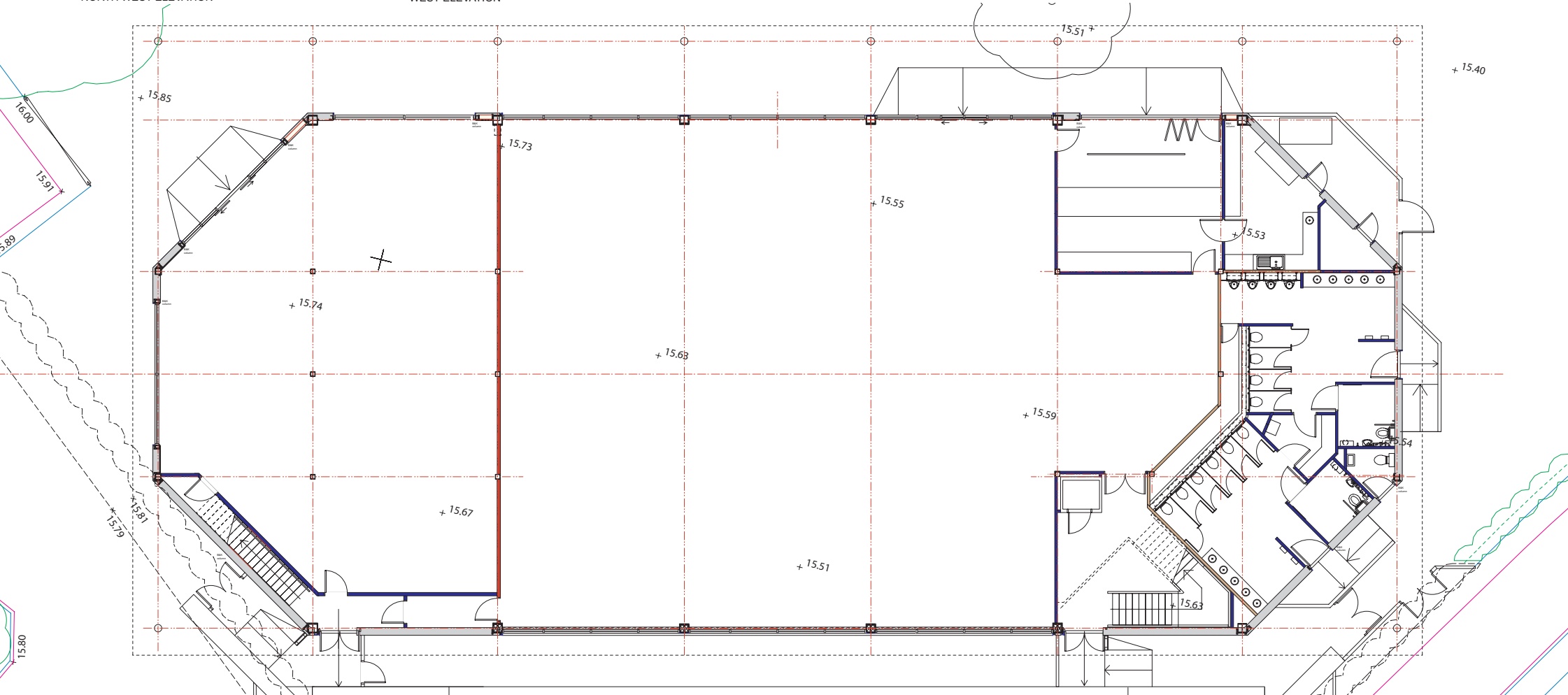
± 7.5



Section through south facing eaves  
(Wall construction not shown for clarity)



Section through north facing eaves  
(Wall construction not shown for clarity)



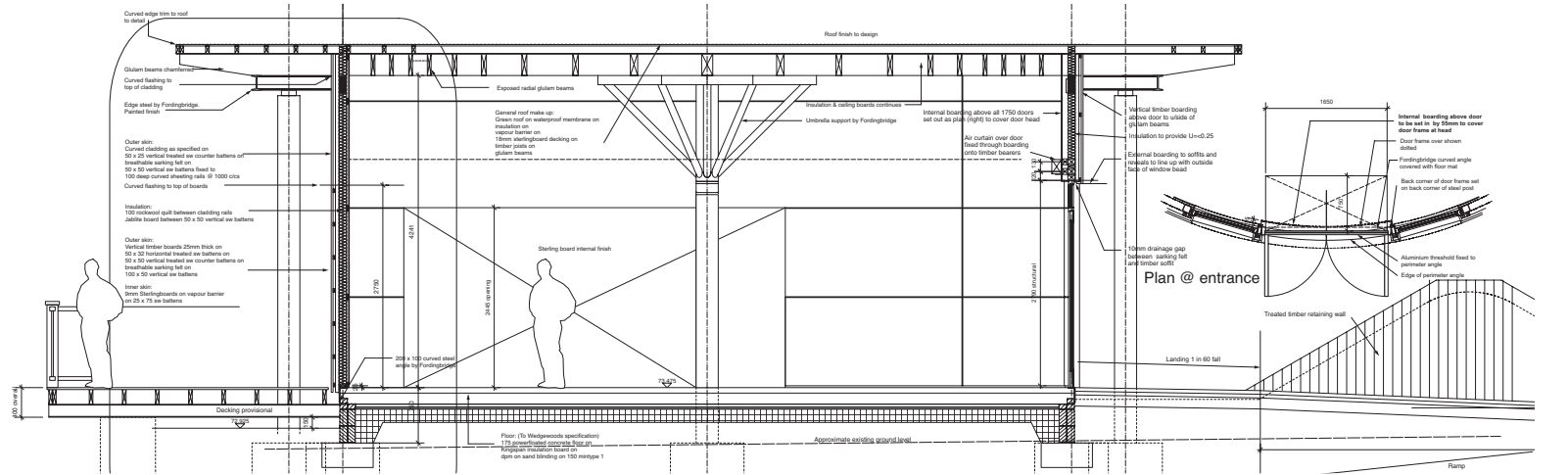
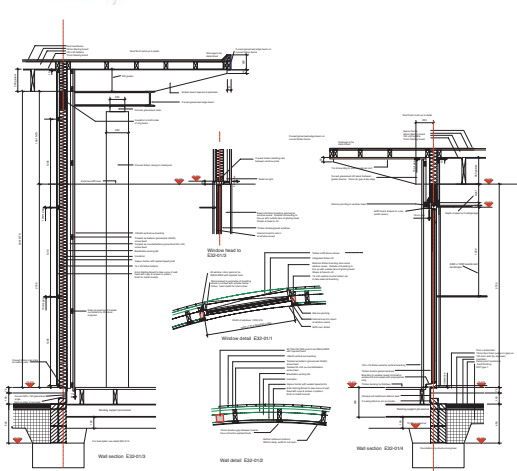
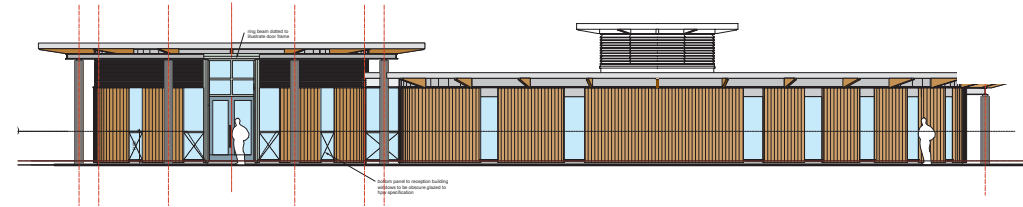
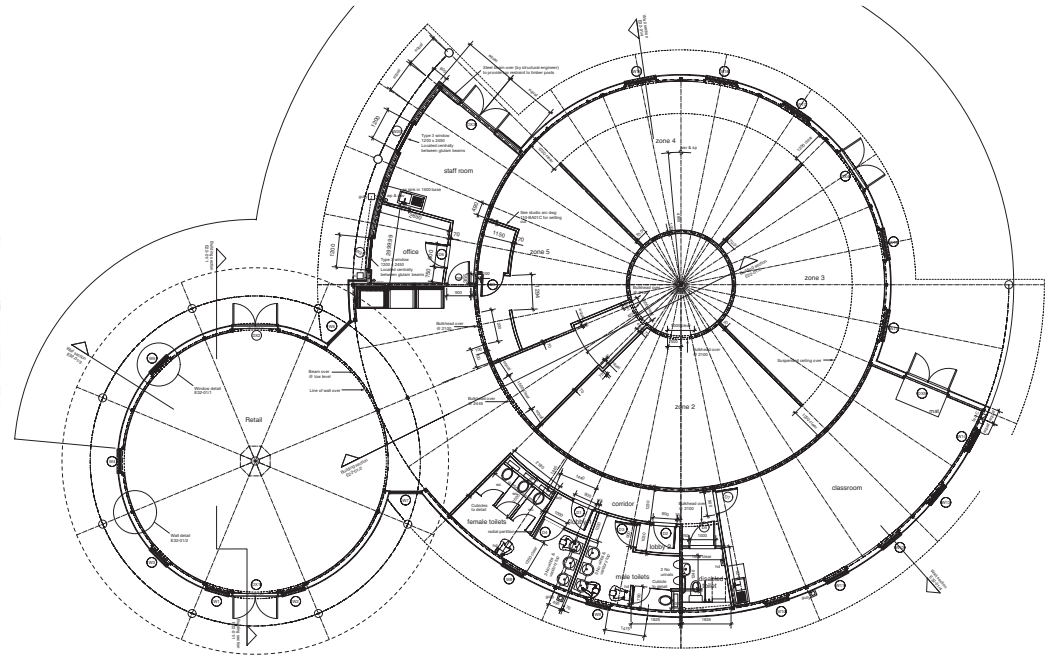
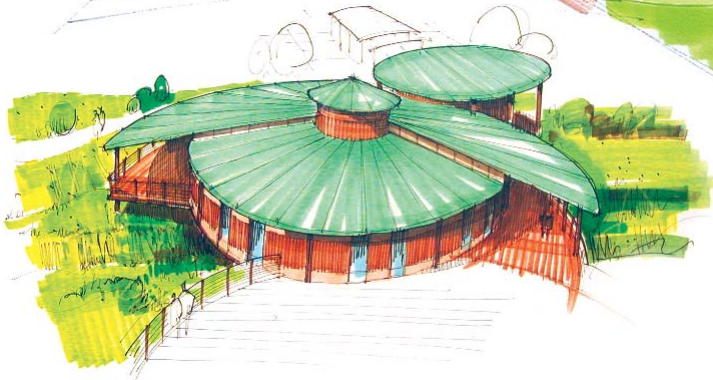


# Visitor Centre

**Taking full advantage of a 54 acre site, HPW created the concept and developed the Visitor Centre to act as a hub for access to:**

- **26 acre Country park**
- **6 permanent mazes**
- **Countryside interpretation exhibition**
- **Retail offer**

A purpose built 4,500 sq.ft. timber framed and clad building. In its countryside setting the centre nestles beneath established trees and oversails two lakes to form a gateway to the visitor attractions and complementary retail operations.







# Bicester Avenue

Award-winning flagship for Wyevale group (formerly Blooms)

Attention to detail and application of sustainability on a large commercial scheme

FSC Timber cladding, low energy lighting, under-floor heating, porous surfacing, rainwater harvesting and SUDS scheme

Locally sourced materials and waste management procedures adopted throughout the build process



**Winner**  
Store Design of the Year



**Winner**  
Retail Destination of the Year



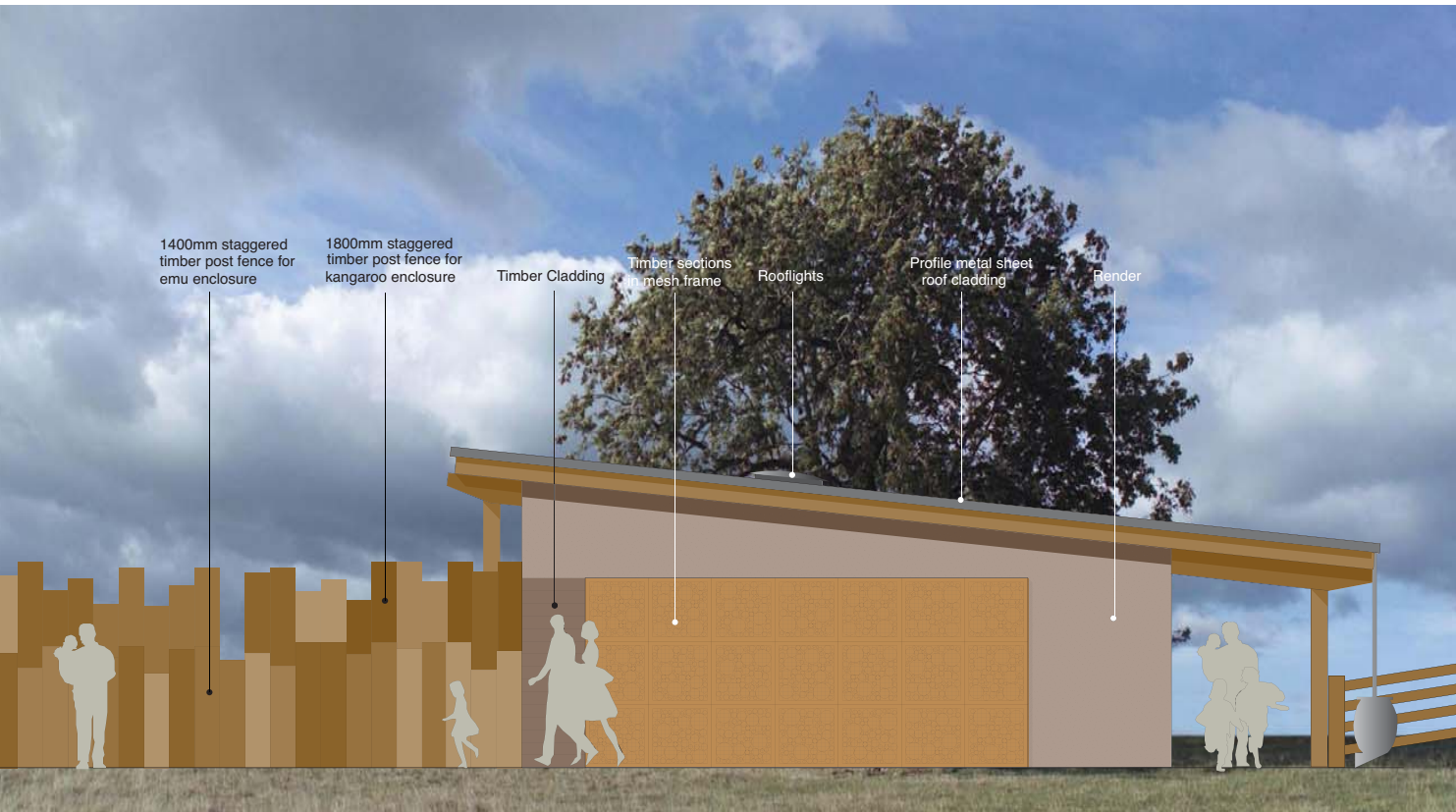
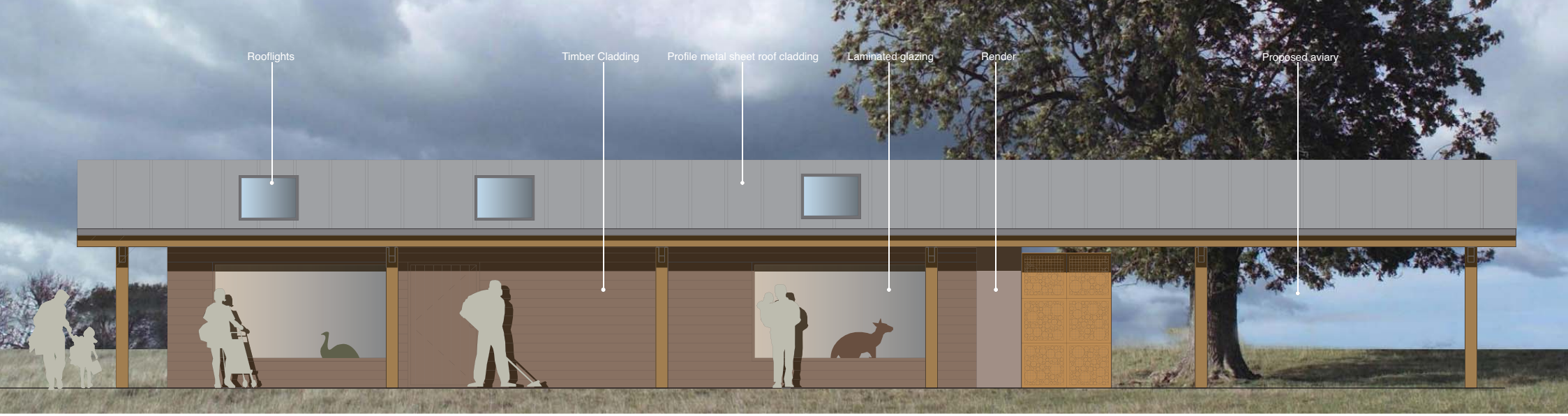
**Bicester Avenue** - Mall entrance



# Marwell Zoo Kangaroo and Emu house

All material found/reclaimed on site

As zero carbon as you can get?





**Thank you...** any questions?

