

VELINDRE

CANCER

CENTRE

**A HFMA WEBINAR PRESENTATION
By Velindre University NHS Trust**

JANUARY 2023



VELINDRE

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CENTRE

1. Introduction ~ David Powell.

2. The Story so far ~ The Site, the Design Brief, The Design, Carbon & Energy. ~ Phil Roberts.

3. Biodiversity and Landscape ~ Rupert Grierson.

4. Green Transport ~ Craig Salisbury.

5. Community Benefits ~ Hannah Moscrop.

6. Joining for the Question, and Answer, Session ~ Professor Phil Jones our Consultant Advisor on Carbon and Energy.



RESEARCH PAPERS ~ BIOPHILIA AND BIOPHILIC ARCHITECTURE

Search completed by: BM Coles
General Health benefits/biophilic design/nature



GIG
CYMRU
NHS
WALES

Ymddiriedolaeth GIG
Prifysgol Felindre
Velindre University
NHS Trust



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GIG CYMRU | NHS WALES
LIBRARY SERVICE



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y Brifysgol

UK ranks lowest of 14 European countries for 'nature connectedness' and wellbeing

Numbers are scores given to each country based on the study

	Nature Connection	Biodiversity	Wellbeing
Italy	4.67	0.51	61
Portugal	4.63	0.51	65.13
Czech R	4.47	0.5	62.35
Bulgaria	4.43	0.49	63.94
France	4.36	0.42	61.97
Greece	4.35	0.55	63.45
Estonia	4.29	0.44	56.45
Spain	4.29	0.49	67.55
Germany	4.27	0.37	58.23
Netherlands	4.21	0.41	61.52
Finland	4.17	0.29	60.61
Sweden	4.05	0.3	58.97
Ireland	3.96	0.28	58.97
UK	14th 3.71	11th 0.32	14th 54.13

Guardian graphic. Source: Country-level factors in a failing relationship with nature, Miles Richardson, Iain Hamlin, Lewis R Elliott & Mathew P White, Ambio (2022)

A grayscale microscopic image showing a dense field of various organisms, including what appear to be bacteria, fungi, and other microorganisms, serving as a background for the text.

"Genetics has been found to account for only about 10% of diseases, and the remaining 90% appear to be from environmental causes."

- Center for Disease Control

Our Challenge 'To Deliver the UK's Greenest Hospital'

The challenge:

Deliver a new cancer centre and landscape that are: an exemplar of low-carbon design and sustainability.

What makes this a Green Hospital?

- It adopts a holistic approach to its design.
- It aims to protect and enhance biodiversity.
- It has adopted a Green Transport Plan.
- It will use natural, bio-renewable and non-toxic materials.
- It delivers a Low-carbon, low-energy, hospital from cradle to grave.
- It will deliver a biophilic hospital campus working to deliver the healing properties of nature to its users.
- It will engage with staff, patients and the community to help us deliver these aims.

The design choices we make now, will have an enormous impact on our ability to meet these aims.

The Site and its Relationship to the City

Key factors

- Secluded and enclosed.
- Surrounded by nature.
- Has no presence beyond itself.
- Has developed a life of its own.
- Discrete, but intricately connected.



NEW VELINDRE CANCER CENTRE

DESIGN COMMISSION FOR WALES PRESENTATION

Illustrative Masterplan

As Approved at Outline Planning

Landscape Elements

1. Enhanced Lowland Meadow Grassland
2. 400 m capacity car park for public use
3. 2.5m wide rain waterways for hospital
4. Entry Plaza with pedestrian planting, ornamental trees and drop-off to hospital
5. Central 2m wide play area, meadow planting, ornamental trees and access paths
6. Faceted planting and pedestrian with spherical water feature for staff, patients & visitors
7. Mounded Purple haze shrubs along meadow
8. Seduced timber footpaths and benches along the water edge
9. Ecological lowland friendly grassland habitat and ornamental water feature
10. Native Woodland Garden with timber decking and medicinal herb beds
11. Mowing area for maintenance
12. Diverse green areas looking out over the town and nature
13. Birch Grove associated with Central for learning for staff and visitors
14. Footpathway between estate and interconnectives
15. Protected buffer zones (1.2m wide)
16. Long 150m SSE planting
17. Local timber fence screening
18. Clomogarden (low planting)
19. TPO Oak Tree with 1.8m wide path on slope
20. Enhanced wild flower meadow to be planted with native berry rich species
21. Enhanced grassland and lowland meadow 7.5m wide of grassland about 10m
22. 28m x 4m access path / stairs
23. Internal access paths through meadow and grassland area
24. Terrace for staff and family in meadow garden
25. Shopped ornamental path through MRE
26. Secondary access meadow grassland path
27. Timber Boardwalk through wetland habitat
28. Upland parking area and drive

Architectural Elements

- A. Manager's Office
- B. Emergency Ward 111
- C. Waiting
- D. Radiology
- E. Pharmacy, Out Patient and Physio
- F. Control Building
- G. SACT / Pharmacy
- H. Admin, Staff and Train



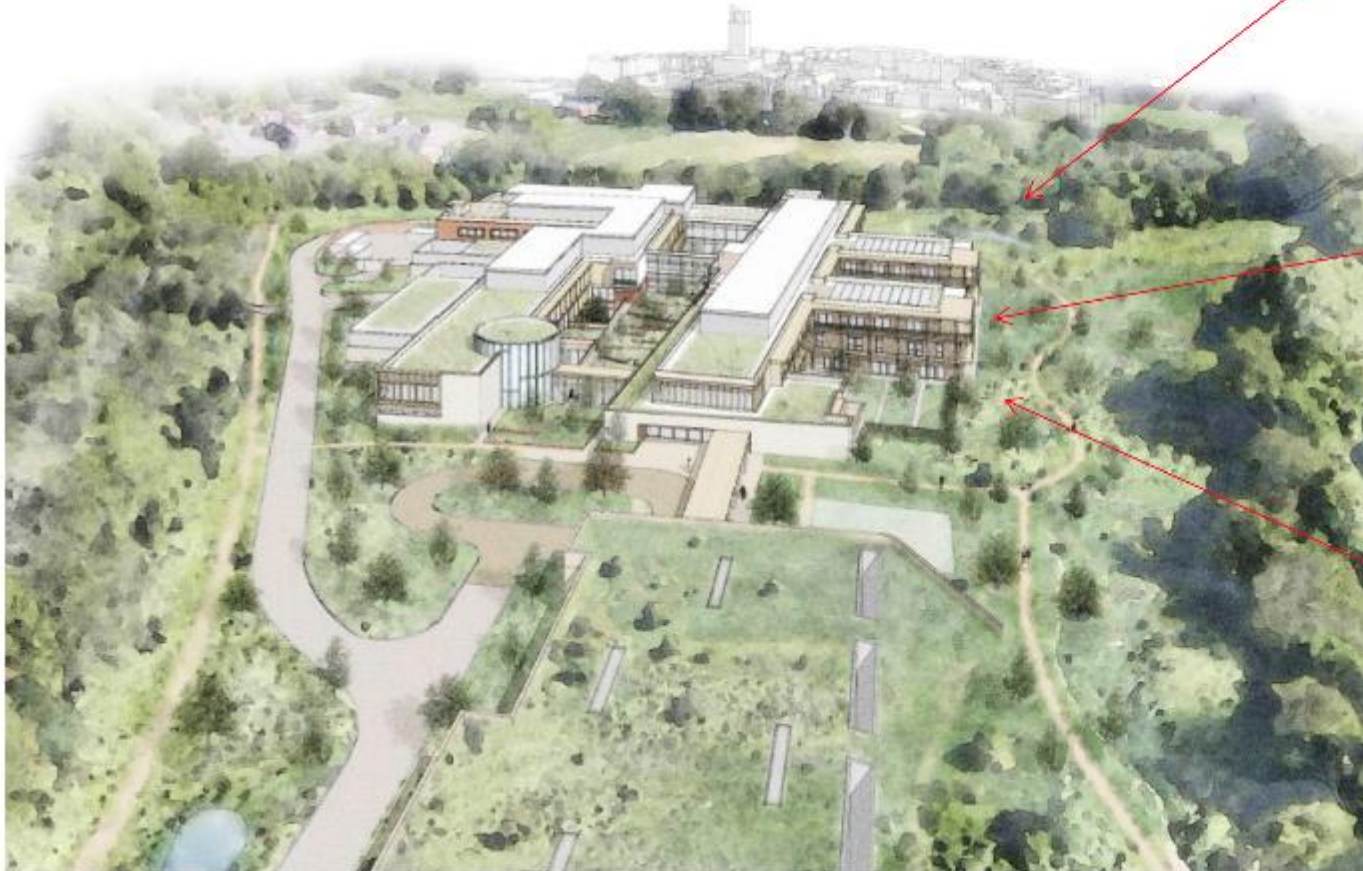
16/04/2018



HASSELL

The John Cooper Architecture ~ Reference Design

1. Reference Scheme Adopting the principles



Velindre University NHS Trust,
Design Brief

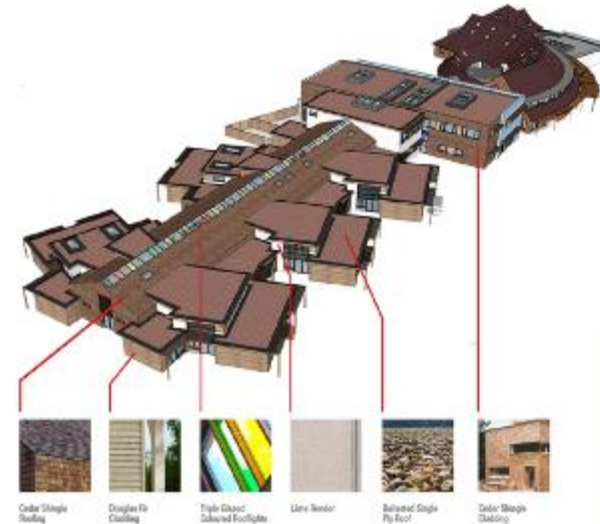
Velindre University NHS Trust,
Staff Feedback

Velindre University NHS Trust,
**Reference Design
Commentary**

Sharing Our Vision ~ The Use of Case Studies.

Architype

St. Michael's Hospice



MEETING EXPECTATIONS

1. It has a landscape experience offering variety and choice, with both informal greenspaces & formalised lawns, growing gardens, native planting, ponds etc.
2. It works well with the topography and has great views to the landscape from light and airy internal spaces.
3. It is Informal and comfortable in scale, with disaggregated forms and the optimisation of views and orientation for light and solar gain.
4. It is highly energy efficient through highly insulated structure.
5. It uses natural, low-carbon materials, including the use of a timber structure.
6. It has great interiors, which are light and airy, with interesting geometry featuring non-toxic natural materials that deliver a non-institutional.



Sharing our vision – use of case studies

Biophilia and Greening the Building





THE CANCER CENTRE:
The Selected Design.

PROJECT DRIVERS



CONNECTED TO THE OUTDOORS
Thoughtfully designed outdoor environments, will meet the needs of patients at all stages of rehabilitation and help to integrate green spaces into the lives of those who work at the hospital.



FILLED WITH NATURAL LIGHT
Designing to optimize daylight is a core of our work. Windows at the end of corridors and skylights in rooms without direct daylight will create a warm, soothing environment.



HEALING
Our design puts patients at the centre to create comfortable, healing environment by integrating stimulating spaces.



HOMELY
Our design will create a comforting, homely atmosphere to bring a sense of normality back to patient's lives.



SUSTAINABLE
Our design ensures that resources are used intelligently so that the buildings have a long service life through flexible solutions. Many of White's hospital projects have achieved LEED Gold rating based on the assessment of energy, indoor environment and materials. At White, we use a material database to assess and evaluate the environmental properties of a material, selecting based on minimal health or environmental impact.



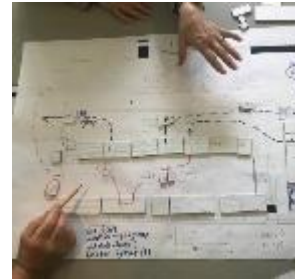
FUNCTIONAL
Simply put, the building should work. It should be able to effectively support the activities occurring within it. In order to meet this objective, it was necessary to investigate existing and anticipated processes.



INTEGRATED INTO THE COMMUNITY
Our design will create links with the surrounding towns to ensure connectedness and give back to the local communities.



ADAPTABLE
We aim to protect the future of the hospital as the building requirements develop over time, by creating adaptable spaces. Change is axiomatic in healthcare and can result from a wide range of influences including growth, medical issues and social necessity.



DESIGNED WITH USERS
Our scheme will put the needs of patients at the centre and we aim to design with the various users of the building to ensure an inclusive and functional design.



ACCESSIBLE TO ALL
Accessibility will always be at the forefront of our design requirements. Our approach is to create accessible and inclusive environments, catering to the experiences of different types of patients. It is essential that a clear approach to wayfinding for users of the building is integrated from the start, to make sure the building is legible for all.



EVIDENCE BASED DESIGN
Our broad knowledge of healthcare design assures that our design is based on evidence, for a thoughtful and considered patient experience.



ECONOMICAL
All government has a fundamental duty to make wise use of limited resources. The program must promote the use of shared spaces, maximizes standardization and establishes critical adjacencies.

A BUILDING IMMERSED IN GREEN LANDSCAPE

The architectural form of the facility maximises views to nature and opportunities for direct access to the outdoors. The integration of landscape within the hospital provides a sense of wonder, fresh air and nature and enhances the experience of visitors. The direct connections to nature can help patient recovery as well as the well-being of staff.



Immediate adjacency of green space to built footprint interface allows physical and visual integration, bringing the 'outside in'; creating a living 'green skirt' to the nVCC.



Far-reaching green connectivity to the building, both physical access and views extending out into green landscape.

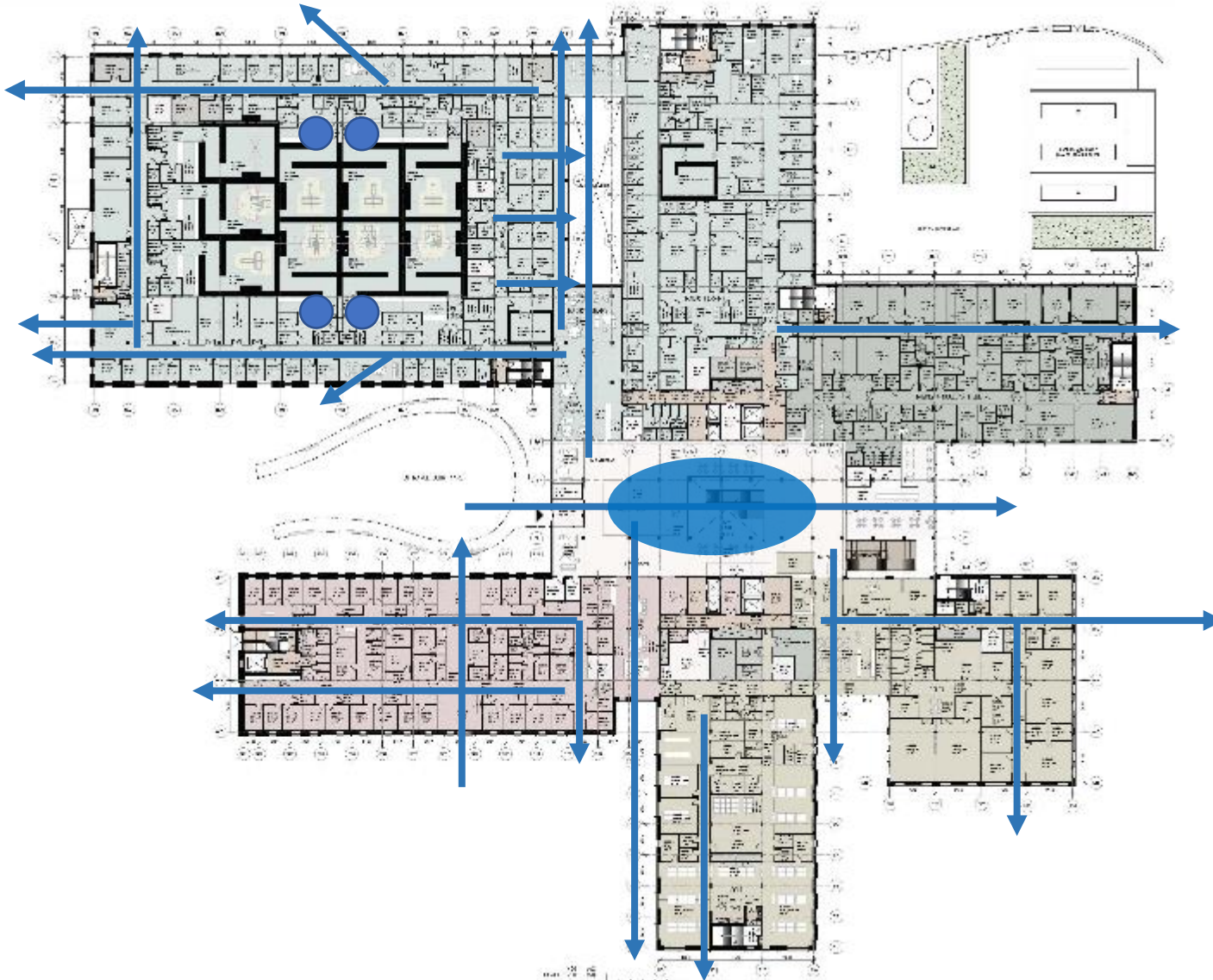


View to garden from east entrance



Impact: Character and Innovation.

A.01 ~ There are clear ideas behind of the building.



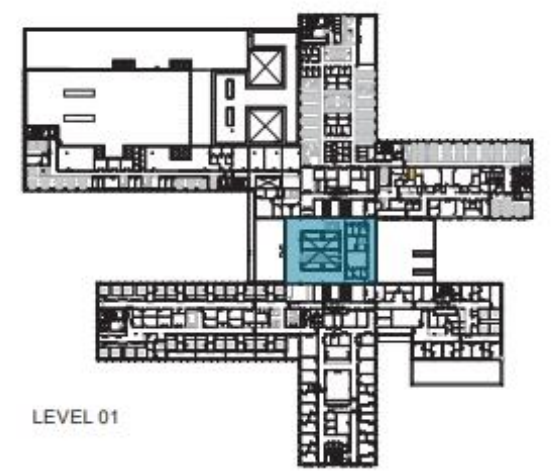
All the primary circulation flows are made in daylight, direct or borrowed, maximizing connections with and views into the landscape.

The Design Strategy

The design strategy is based on a central 'Lolfa' space, a three-storey, central hall that provides access to all departments, without the need for any corridor access or complex wayfinding mechanisms.

It provides clear and unambiguous vehicular access from the principal, northern access road, the proposed metro station, and the pedestrian footfall from the existing Whitchurch Sanatorium.

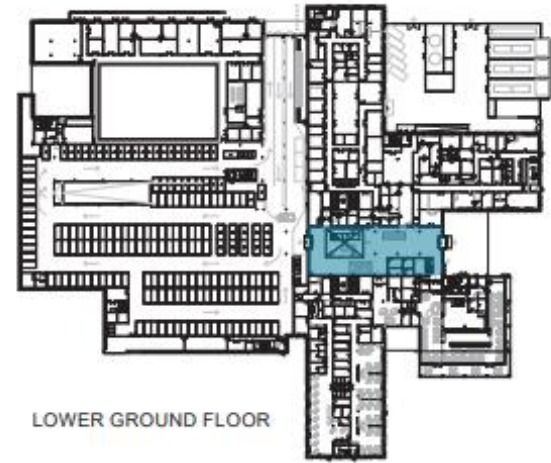
Wayfinding is clear, legible, and 'Y Lolfa' is both welcoming and uplifting.



LEVEL 01



GROUND FLOOR



LOWER GROUND FLOOR

LOLFA- THE CORE SPACE



LOLFA- THE CORE SPACE

Section



LEVEL 02

Admin



Reference Image: White Arkitekter Nodi



Reference Image: White Arkitekter Katsan Roof Terrace, Stockholm

Impact: Staff and Patient Environment.

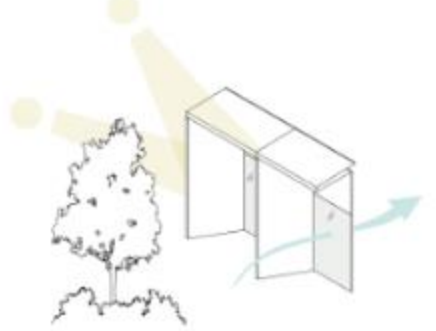
The interior of the building is attractive, in appearance.



1. DAYLIGHTING + SHADING

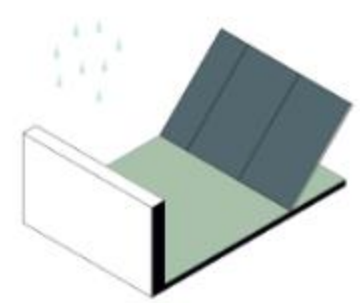
a. Summer sun - high angle sun can be controlled using horizontal shading, in particular on south

b. Winter sun - vertical shading devices on east/west glazed façades to prevent overheating from low angle sun.



4. GREEN ROOFS + RAINWATER CAPTURE

Biodiverse roofs work to reduce heat flux through the assembly, and retain rainwater runoff through substrate and drainage layers.



5. PV PANELS

Solar ray-harvesting PV panels installed with a setback from parapet.

6. INSULATION

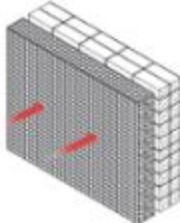
Envelope to achieve 0.1 u-value through double layer of hempcrete blocks.

2. AIRTIGHTNESS

Interior lime renders, exterior membranes, and low-e, argon-filled triple glazed window to prevent air leakage.

3. THERMAL MASS

Gabion walls used - store heat throughout the day and release overnight.



DESIGN STRATEGIES

Cross vent most effective



Adjacent wall vent alternative to cross vent



7. NATURAL VENTILATION

Pathways for optimum airflow through spaces.

8. WINDOW AREA

Carefully designed window-to-wall ratios to minimise heat loss and provide solar heat gain.



40% glazed area north and west façades



30% glazed area south and east façades

Passive design strategies incorporated into the design.

Ventilation with heat recovery.

0.1 U value with avoidance of thermal bridges.

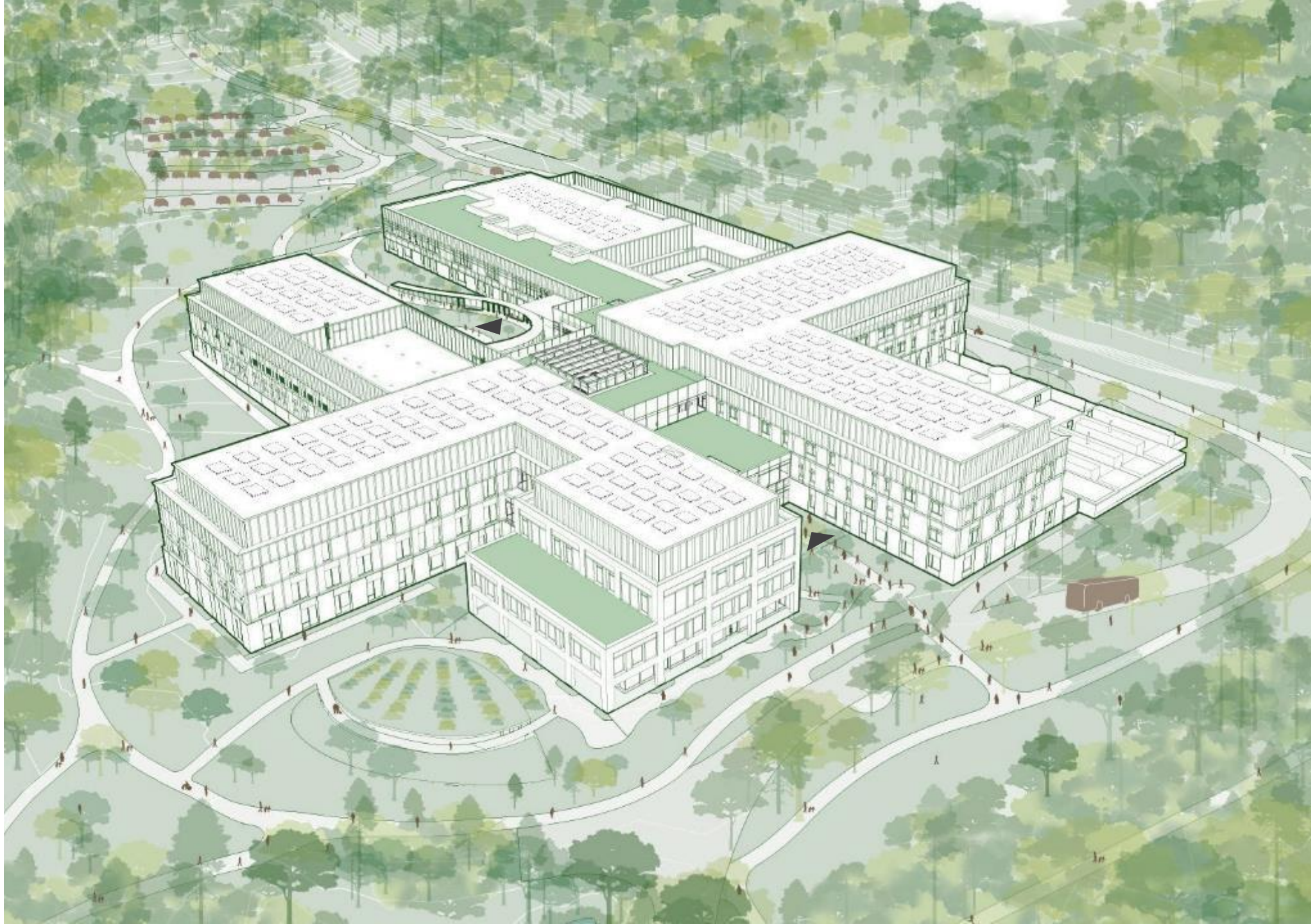
High levels of air tightness

Solar shading to prevent overheating.

Use landscape and trees for summer cooling and shade.

Highly insulated walls with natural materials to prevent heat loss.

Position of glazing chosen to avoid cold-bridging.



5.5 APPEARANCE

5.5.8 FAÇADES - PROPOSED STRATEGY

PROPOSED EXTERIOR MATERIAL PALETTE

The building is conceptualised as a series of volumes, divided into two wings, each with its own material language, and interconnected by a transparent volume at the core (the Lolfa) and by a gabion stone base that grounds the upper levels to the earth.

Drawing inspiration from both the local building and landscape contexts, the material palette for the exterior facades of the nVCC is in keeping with the overall low-carbon goals of the design brief. The external facade palette is indicated below.



GABION
4mm gauge welded mesh cage with stone aggregate sourced from local quarry.



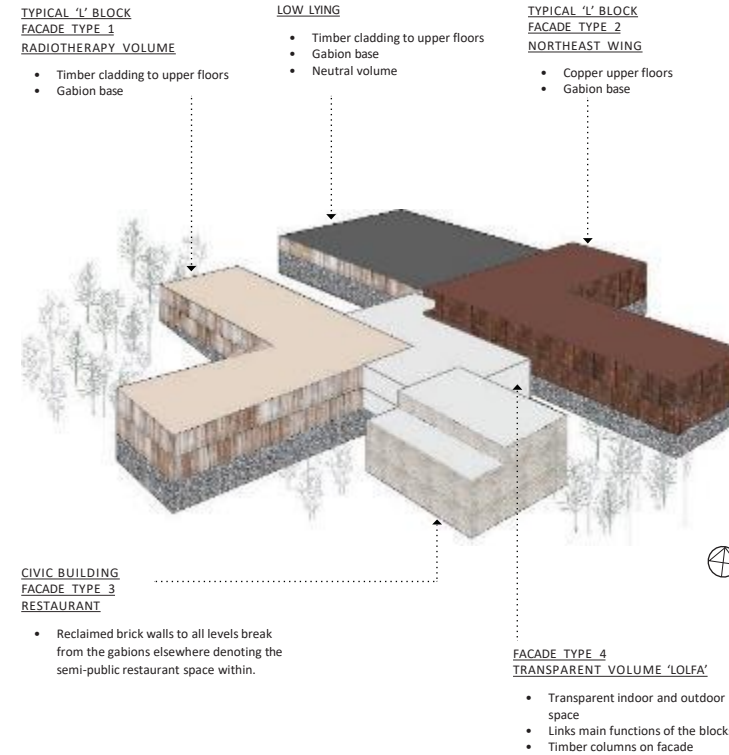
COPPER METAL CLADDING
Preferred: recycled pre-oxidised copper or similar.



TIMBER CLADDING
Preferred: Thermowood or similar



BRICK
Preferred: reclaimed and assembled with lime mortar to absorb CO₂.















Carbon and Energy Usage

ENERGY AND CARBON

A Summary of our Aims.

Energy Use Addressed by:

- **Optimising thermal performance by a fabric first approach.**
- **Installing efficient HVAC.**
- **Using renewable energy.**

Reduce Embodied Carbon by:

- Using off-site construction.
- Using environmentally friendly, low-carbon materials.
- Providing good access to natural light and fresh air.
- Maximise the potential for generating renewable energy on site.
- Explore the potential for large scale electrical energy storage.
- Creating a balance between building energy demand and grid energy supply linked to vehicle charging.
- Incorporating extensive tree planting, and landscaping on site for carbon benefits and evaporative cooling.
- Enhance energy demand and other green features that contribute to health and well-being and reduce energy demand.
- Sequester any shortfall by 'on and off-site' tree planting

DIAGRAM 1

Low Energy Design Principles

Reduce regulated operating energy

heating
cooling
ventilation
Lighting

Reduce embodied energy

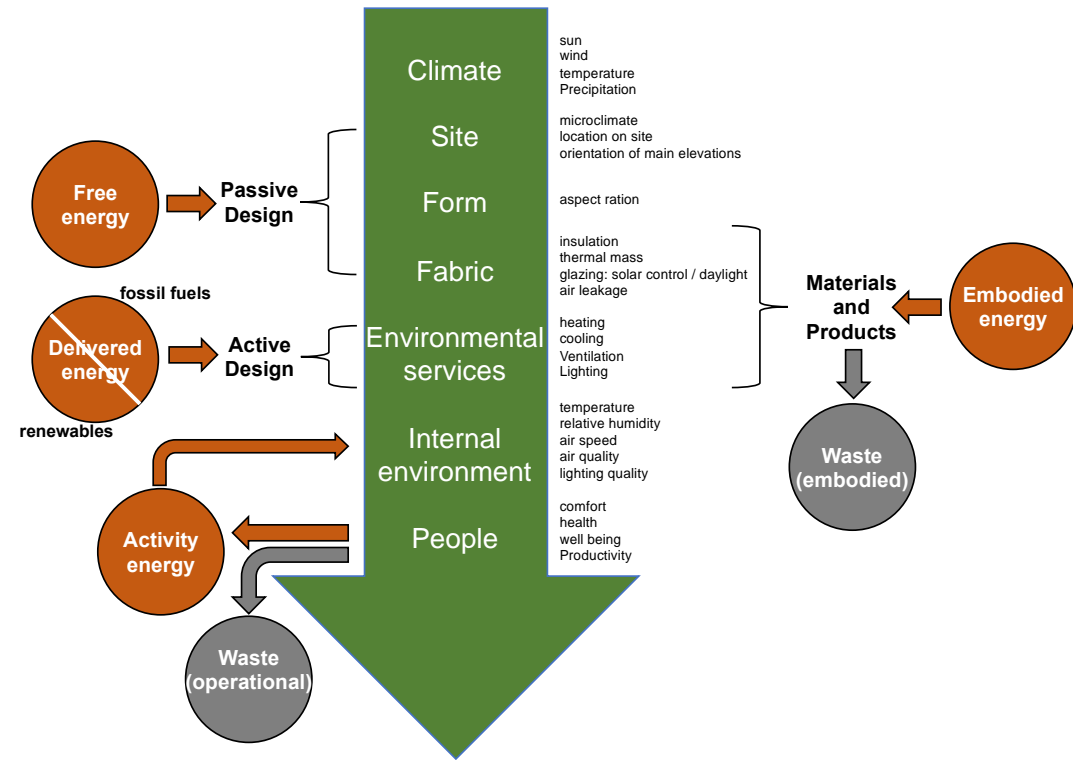
use of timber and biomaterials
low carbon materials (e.g. concrete)
modular construction / reduce waste

Reduce process energy

appliance
medical equipment

Renewable energy and energy storage

Solar PV / wind / biomass / heat pump technology/Bio-fuel CHP
Storage: battery / grid / thermal storage in building and ground



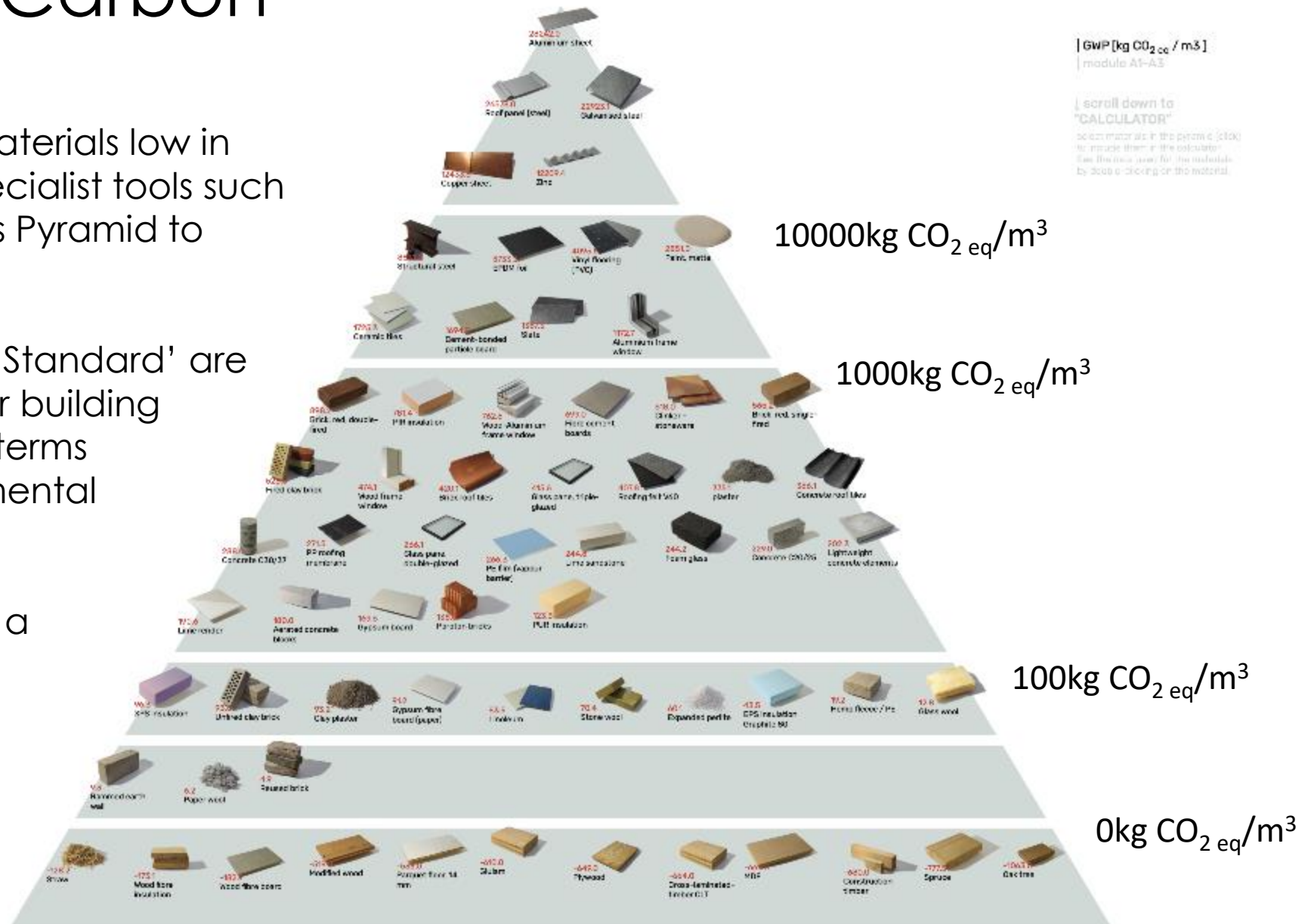
Materials and Carbon

The scheme has specified materials low in embodied carbon, using specialist tools such as the Construction Materials Pyramid to inform their selection.

Other tools such as the 'Well Standard' are being used to measure wider building performance of materials in terms of their toxicity and environmental credentials.

The scheme has undertaken a detailed analysis of its material choices.

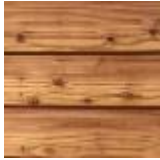
THE CONSTRUCTION MATERIAL PYRAMID THINK ABOUT AMOUNTS



5.9 POTENTIAL MATERIAL PALETTE: CLADDING

NATURAL

Welsh Larch Timber Cladding



22 mm

GWP per 1m² of wall area includes 15x44mm battens

15^{+/-5}
kgCO₂e/m²

DURABILITY ●●●○
AFFORDABILITY ●●●○
CONSTRUCTABILITY ●●●●
REUSE/RECYCLABILITY ●●●○
NON-TOXICITY ●●●○

Biogenic Carbon

per 1m² of wall area 22 kgCO₂e/m²

Welsh Stone Panel



20 mm

GWP per 1m² of wall area includes aluminium track

16^{+/-5}
kgCO₂e/m²

DURABILITY ●●●●
AFFORDABILITY ●●●○
CONSTRUCTABILITY ●●●○
REUSE/RECYCLABILITY ●●●○
NON-TOXICITY ●●●○

Limestone Panel



20 mm

GWP per 1m² of wall area includes aluminium track

14^{+/-5}
kgCO₂e/m²

DURABILITY ●●●●
AFFORDABILITY ●●●○
CONSTRUCTABILITY ●●●○
REUSE/RECYCLABILITY ●●●○
NON-TOXICITY ●●●○

TRADITIONAL

Glass-Reinforced Concrete



22 mm

GWP per 1m² of wall area includes aluminium track

40^{+/-5}
kgCO₂e/m²

DURABILITY ●●●●
AFFORDABILITY ●●●○
CONSTRUCTABILITY ●●●○
REUSE/RECYCLABILITY ●●●○
NON-TOXICITY ●●●○

Fibre Cement Board



8 mm

GWP per 1m² of wall area includes aluminium track

19^{+/-5}
kgCO₂e/m²

DURABILITY ●●●○
AFFORDABILITY ●●●○
CONSTRUCTABILITY ●●●○
REUSE/RECYCLABILITY ●●●○
NON-TOXICITY ●●●○

Hemp & Lime Render



20 mm

GWP per 1m² of wall area includes 18mm OSB

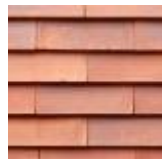
8^{+/-5}
kgCO₂e/m²

DURABILITY ●●●○
AFFORDABILITY ●●●○
CONSTRUCTABILITY ●●●●
REUSE/RECYCLABILITY ●●●●
NON-TOXICITY ●●●●

Biogenic Carbon

per 1m² of wall area 9 kgCO₂e/m²

Terra Cotta Panel



20 mm

GWP per 1m² of wall area includes aluminium track

90^{+/-5}
kgCO₂e/m²

DURABILITY ●●●●
AFFORDABILITY ●●●○
CONSTRUCTABILITY ●●●○
REUSE/RECYCLABILITY ●●●○
NON-TOXICITY ●●●○

Brick



103 mm

GWP per 1m² of wall area includes lime mortar

85^{+/-5}
kgCO₂e/m²

DURABILITY ●●●○
AFFORDABILITY ●●●○
CONSTRUCTABILITY ●●●○
REUSE/RECYCLABILITY ●●●○
NON-TOXICITY ●●●○

Profiled Aluminium



2 mm

GWP per 1m² of wall area includes aluminium track

65^{+/-5}
kgCO₂e/m²

DURABILITY ●●●○
AFFORDABILITY ●●●○
CONSTRUCTABILITY ●●●○
REUSE/RECYCLABILITY ●●●●
NON-TOXICITY ●●●○

Profiled Zinc



0.7 mm

GWP per 1m² of wall area includes aluminium track

30^{+/-5}
kgCO₂e/m²

DURABILITY ●●●●
AFFORDABILITY ●●●○
CONSTRUCTABILITY ●●●○
REUSE/RECYCLABILITY ●●●●
NON-TOXICITY ●●●○

MATERIALS



Key Materials Specified Include:

- Lime plaster.
- Clay plaster.
- Recycled facing bricks.
- Recycled copper.
- Accoya and larch, timber cladding.
- Cross laminated timber structure.
- Natural, locally sourced, stone gabions.
- Hempcrete blocks.
- Rubber, Marmolium, and other natural, non-vinyl, floor coverings
- Green roofs.
- Triple glazed timber/aluminium composite windows.
- Natural fabrics for furnishings.
- Non-toxic paint systems.

How do the new and existing buildings energy performance compare?

Existing building 20/21	Existing Hospital Area 17700m ²	kWh/yr	kWh/yr	New Hospital Area 31945m ²	Notes
	kWh/yr	kWh/m ² /yr	kWh/yr	kWh/m ² /yr	
Heating			1,314,217	41.14	
Domestic hot water			360,979	11.3	
Heating (total)	3,376,561	190.8	1,673,918	52.4	73% reduction (/m ²)
oil	40,000	2.3			
Lighting	584,277	33.01	1,054,504	33.01	assumed old as new
Cooling				28.2	Only comfort cooling in regulated - moved process cooling to unregulated
Auxiliary (fans, pumps)			1,017,768	31.86	Only in new
Site (external lighting, car park vent)			319,450	10	Only in new
PV			-946,530	-29.63	Although relatively small – has a big impact on reduction
Total regulated	4,000,838	226	4,021,876	125.9	44% reduction (/m ²)
Total electric	3,150,596				Subtract estimated lighting from old unregulated 33.01
Unregulated	2,566,319	145	5,760,003	180.31	Assumed for old from electricity figure minus lighting?
Total difference	6,567,157	371	9,775,170	306	18% reduction (/m ²)

Is it expensive to go electric?

Energy Costs New Building For Space Heating and DHW

Notes:

Increased energy use of all electric compared to gas heating – 10%

Three time as much energy needed for gas due to COP of electric heating

All electric £/year	Electricity cost	Gas heating £/Year	Gas cost
£1,506,367	15.4p/kWh	£1,358,964	2.2p/kWh
	Difference	+£147,404	10%

Greenhouse Gas Emissions.

Notes:

CO2 emissions of all electric compared to gas heating are reduced by – 32%

This because 3 times as much energy needed for gas due to better COP of electric heating

		Energy use kWh/year	CO2 emission factor kgCO2/kWh	CO2 emissions kg/year	
Gas heating	gas	1,675,040	0.33	1,658,290	
	electric	8,106,566	0.26	2,107,707	
				3,765,997	
All electric	electric	9,781,606	0.26	2,543,218	
				2,543,218	
			difference	1,222,779	-32%

Less Quantifiable Benefits

General Costs (expect green building costs to be less than additional 12.5%)

The World Green Building Council's report in 2013,

- Based on a variety of building types in the US, the UK, Australia, Singapore and Israel, summarised a range of benefits from adopting a green building approach. It stated that, whilst increased design and construction costs associated with a new green building are perceived to be as high as 29%, the actual cost increases found in practice are less than 12.5%, and sometimes equal to, or even slightly less than, the costs of a standard building.

Lower operating costs (O+M costs reduced by 5%?)

- A study by McGraw-Hill (MacGraw Hill 2013) looked into the payback period for green investments and operating costs. It was found that over a one-year and a five-year period, new green buildings were expected to reduce operating costs by 8% and 15% respectively.

Higher market value

- Pivo and Fisher (Pivo G and Fisher JD, 2009) found that green buildings had up to 5.9% and 13.5% higher market value. A study by McGraw-Hill (MacGraw Hill 2013) found that building values were expected to increase by 7% and asset values by 5% for new build.

Other Benefits

COMMUNITY

- Jobs.
- Facility for community use
- Skills and training.
- Contributes to Local economy.
- Less pollution.
- Community forest for environment, social prescribing and carbon sequestration.

NATIONAL / GLOBAL

- Carbon emissions reduction.
- Reduced use of resources.
- Security of energy supply.
- Improved public health and wellbeing, and reduced health related costs.
- Reduced environmental damage.

The Positive Impacts of Continuous Cover Forestry



VELINDRE

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HFMA WEBINAR PRESENTATION
Biodiversity and Landscape

JANUARY 2022

Rupert Grierson

Macgregor Smith



THE EXISTING SITE

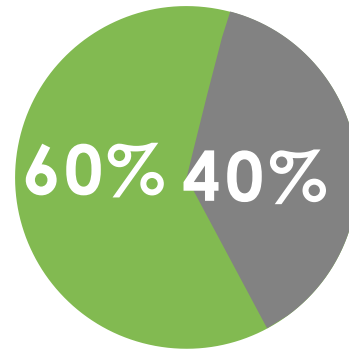
 Canolfan Ganser Felindre
Velindre Cancer Centre



SETTING A CLEAR AND AMBITIOUS BRIEF



CORE DESIGN
PRINCIPLES



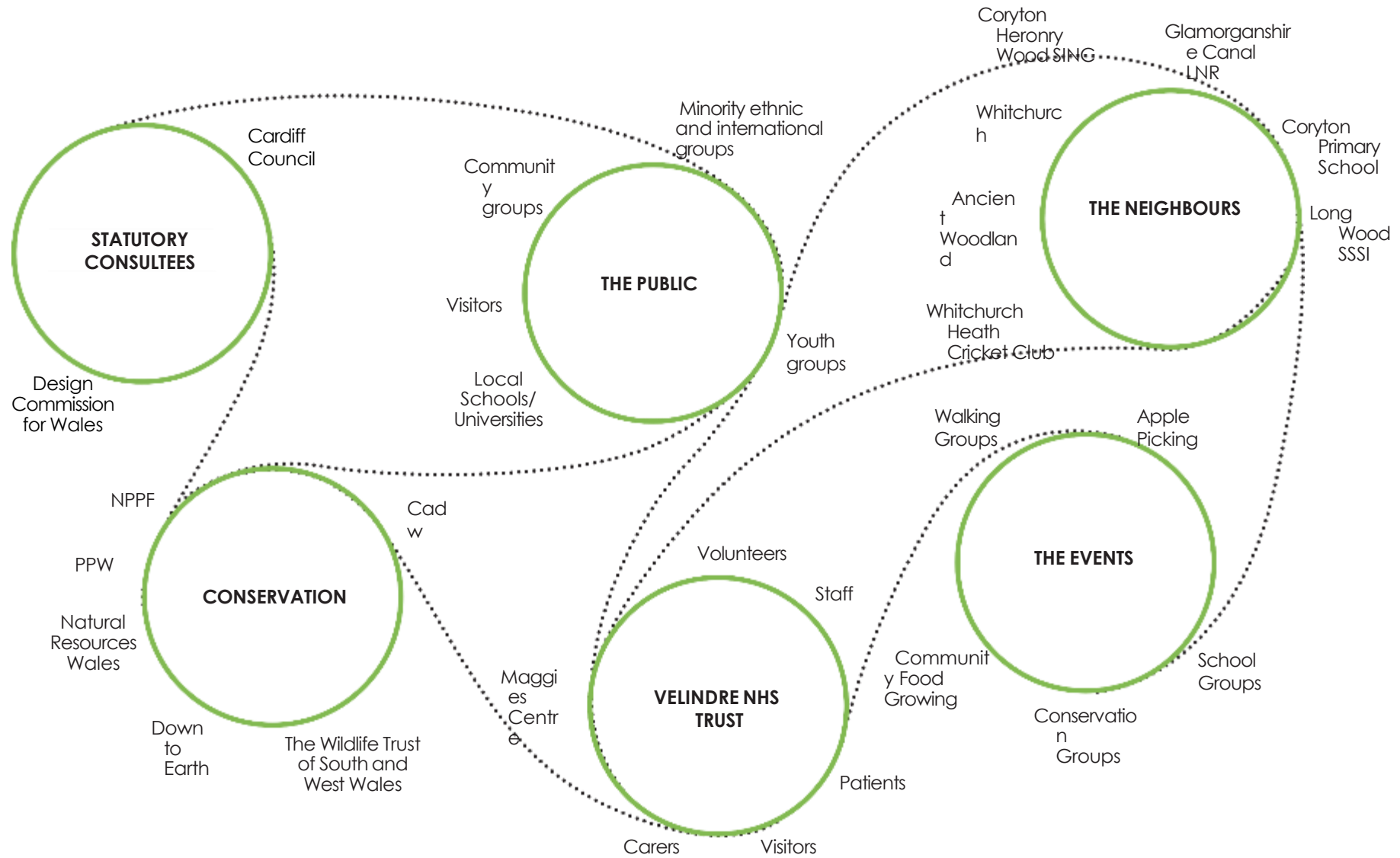
60% GREEN / 40%
BUILT FOOTPRINT



THE GREENEST HOSPITAL
IN THE UK

UNDERPINNED WELL-BEING OF FUTURE GENERATIONS (WALES) ACT 2015

COMMUNICATION AND TEAM WORK



REFERENCE SCHEME

Canolfan Ganser Felindre
Velindre Cancer Centre

SITE AREA
7.86 ha



- ① Wildlife underpasses
- ② Woodland approach
- ③ Green roof with meadow grasses transplanted locally
- ④ Maggie's Centre
- ⑤ Woodland gardens
- ⑥ Kitchen garden
- ⑦ Therapeutic garden with cancer treatment plants
- ⑧ SUDs pond
- ⑨ Orchard
- ⑩ Hedgerow - Dormouse habitat
- ⑪ Roof terraces - green gardens



WATER
MANAGEMENT



RENEWABLES



GREEN
INFRASTRUCTURE



TREE COVER



BIODIVERSITY
ENHANCEMENT

LANDSCAPE VISION



ECOLOGY

KEEP IT WILD

MAXIMISE BIODIVERSITY
& HABITAT CONNECTIONS

EMBED ROBUST BLUE - GREEN
INFRASTRUCTURE



HEALTH/WELLBEING

PROMOTE RESEARCH
& UNDERSTANDING

SUPPORT RECOVERY &
HEALING
HOLISTIC APPROACH TO
WELL-BEING



COMMUNITY

PROVIDE
RECREATIONAL
RESOURCES
EDUCATION & OUTREACH

REFERENCE LOCAL HISTORY
& HERITAGE

ECOLOGY



SITE BASED INITIATIVES

CONNECTED WOODLAND



TREE COVER INCREASE
12%



MEADOW ENHANCEMENT



OFF-SITE BASED INITIATIVES

OFFSITE
BIODIVERSITY
ENHANCEMENT

NET GAIN SUBJECT
TO FURTHER
ASSESSMENTS



GREEN RATIO

64%:

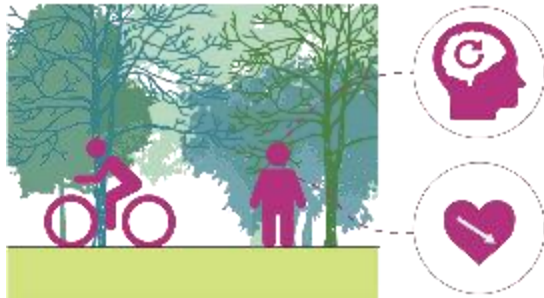
Soft

36%

Hard

HEALTH AND WELL-BEING

WHAT BENEFITS DO NATURAL ENVIRONMENTS BRING?:



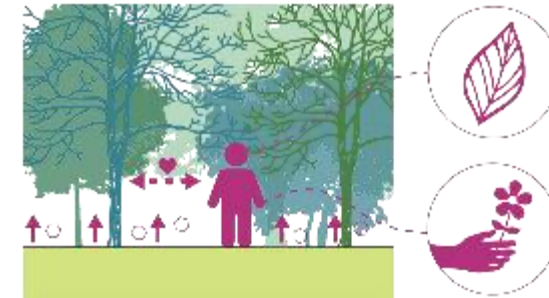
1. Better physical & mental health
2. Restores and aids recovery
3. Encourage healthy recreation & social connection

WHY IS THE NATURAL ENVIRONMENT IMPORTANT FOR HUMAN HEALTH?:



1. Biophilia
2. High perceptual fluency account
3. Increased immunity
4. Optimal stimulation
5. A restorative environment

HOW DOES THIS INFORM THE DESIGN OF THE SPACES?:



1. Calm, serene garden spaces rich in plant species
2. Secluded spaces but open to distant vistas
3. Views out to landscape from every part of the building
4. Site-wide intervention to promote wildlife and woodland species
5. Balance of passive and active recreation

COMMUNITY

THE KITCHEN GARDEN



THE PHYSIC GARDEN



THE ORCHARD GARDEN



LINAC GARDEN



NATURAL PLAY





Canolfan Ganer Felindre
Velindre Cancer Centre



ACORN SCHEME



- KEY**
- VCC Site Boundary
 - Maggie's Centre Site Boundary
- LANDSCAPE STRUCTURES**
- Garden Check Dams in Meadow Grates
 - Jolly to Pond
 - BH1 Bush Hide
 - OC Outdoor Classroom
 - OH1 Opened Hoppers
 - SMMS Play Pop Stand
 - MS1 Mat Shelter
 - RUS Generator Grounded Enclosure
 - GCC Tiller Hydroponic Grates, with integral seating
 - G Domestic Animal Groups
 - Walled Underpass/Tunnel (at levelled board)
 - Downland grade connectivity pipes/structure (planting as well as underpass in sky walkway)

NOTES

The technical design stage will include detailed coordination of all site use with landscape finishes, including the following:

- Using the chambers / cover sites are located either within areas of high canopy, or in soft landscape areas where the cover will be more visually intrusive and are clearly accessible.
- Ensuring that covers are covered in terms of type (hard top, soft top, etc.) and material.
- Ensuring that planting ability is not lost in coordination with other proposed landscape features, taking into account any technical requirements.

- SOFT LANDSCAPE**
- Meadow - Neutral Grassland Meadow
 - Meadow - Seasonally Wet Meadow
 - Meadow - Permanently Wet Meadow
 - Meadow - Shrub Island Meadow
 - Amusement Pond - with Aquatic Planting
 - Recreational Planting Green including any Planting Trees
 - Newly Provisioned Domestic Habitat Planting
 - Trees
 - Permanently Mown Grass Paths
 - Garden Planting - Private Herbaceous / Shrub etc.
 - Garden Planting - Public Garden
 - Kitchen Garden

NOTES - For all soft landscape data please refer to drawing VCC-CAM-EX-XX-D-L-0000 General Arrangement - Soft Landscape Summary

NO.	SYMBOL / REF TO DRAWING	REVISION DESCRIPTION	BY	DATE	FILE
1					

CLIENT

CONCEPT

ARCHITECTS

STRUCTURAL ENGINEERS

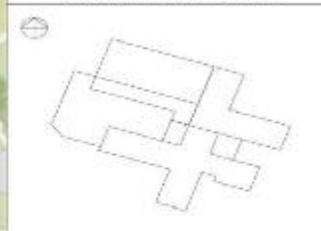
MECHANICAL ENGINEERS

ELECTRICAL, CIVIL, PLUMBING & HEATING ENGINEERS

LANDSCAPE ARCHITECTS

GENERAL CONTRACTOR

STAGE 3 Velindre Cancer Centre



SCALE	PROJECT NO.	DATE
A1 1 : 1000	0700100100	16/12/22
DESIGNED BY	PROJECT MANAGER	APPROVED BY
MD	HSS	HSS

Camline
Velindre Cancer Centre
General Arrangement
Landscape Master Plan

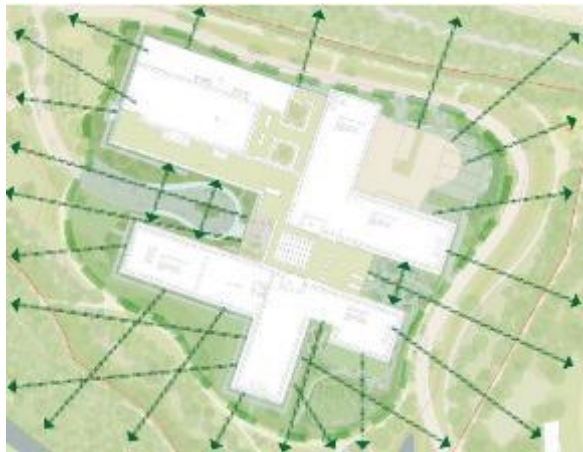
VCC-CAM-EX-XX-D-L-300002

1:2000 (A2)
SCALE 1:1000 (A1)

ACORN LANDSCAPE VISION



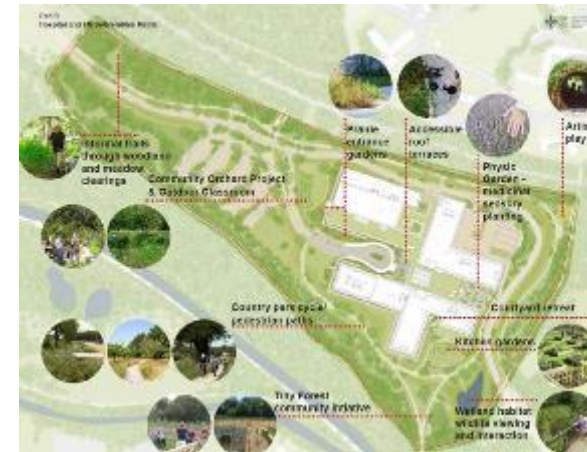
A BUILDING IMMERSED IN GREEN LANDSCAPE



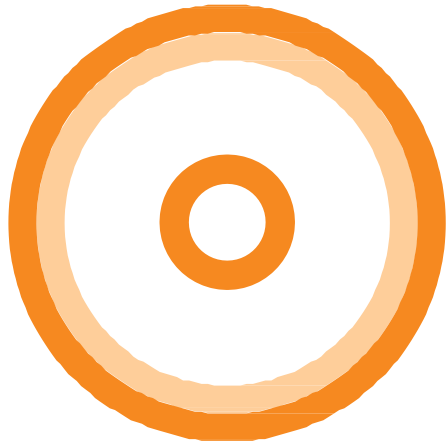
GREEN SPACE 66% :
BUILT SPACE 34%



WIDE AND VARIED GREEN INFRASTRUCTURE AND AMENITY OFFER



BUILDING WITH NATURE



CORE STANDARDS

Standard 1 Optimises Multi-functionality and Connectivity

Standard 2 Positively Responds to the Climate Emergency

Standard 3 Maximises Environmental Net Gains

Standard 4 Champions a Context Driven Approach

Standard 5 Creates Distinctive Places

Standard 6 Secures Effective Place-keeping



WELLBEING STANDARDS

Standard 7 Brings Nature Closer to People

Standard 8 Supports Equitable and Inclusive Places



WATER STANDARDS

Standard 9 Delivers Climate Resilient Water Management

Standard 10 Brings Water Closer to People



WILDLIFE STANDARDS

Standard 11 Delivers Climate Resilient Water Management

Standard 12 Underpins Nature's Recovery



Building
with Nature



VELINDRE

CANCER

CENTRE

HFMA WEBINAR PRESENTATION
Green Travel Plan

JANUARY 2022

Craig Salisbury





How the nVCC's design will support Velindre's Travel Plan



Why we need a travel plan



Planning context – Welsh
Transport Strategy

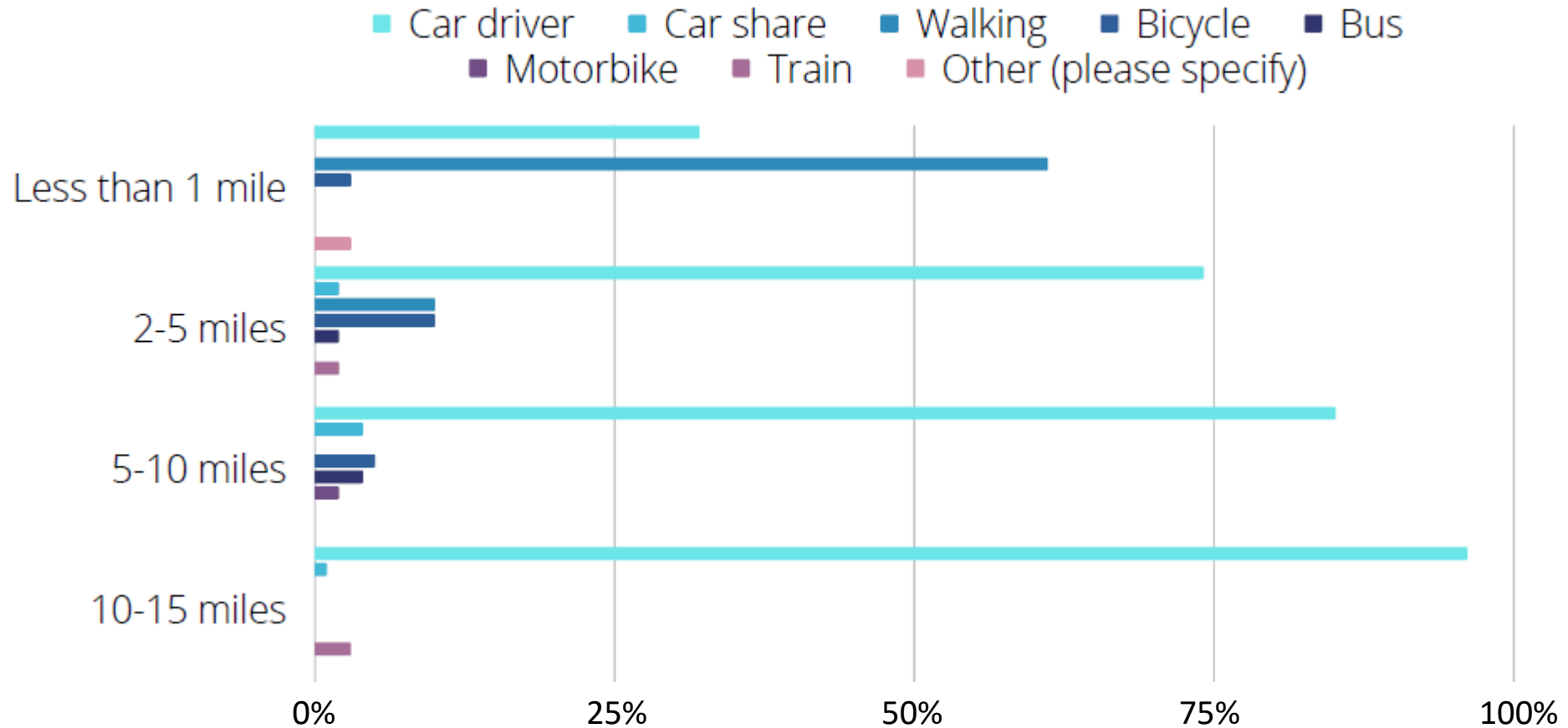


Legislative context



Climate

How staff travel now



Our targets



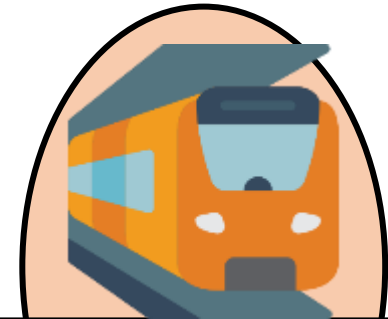
1% increase per annum

2% increase per annum for
staff living within 2 miles



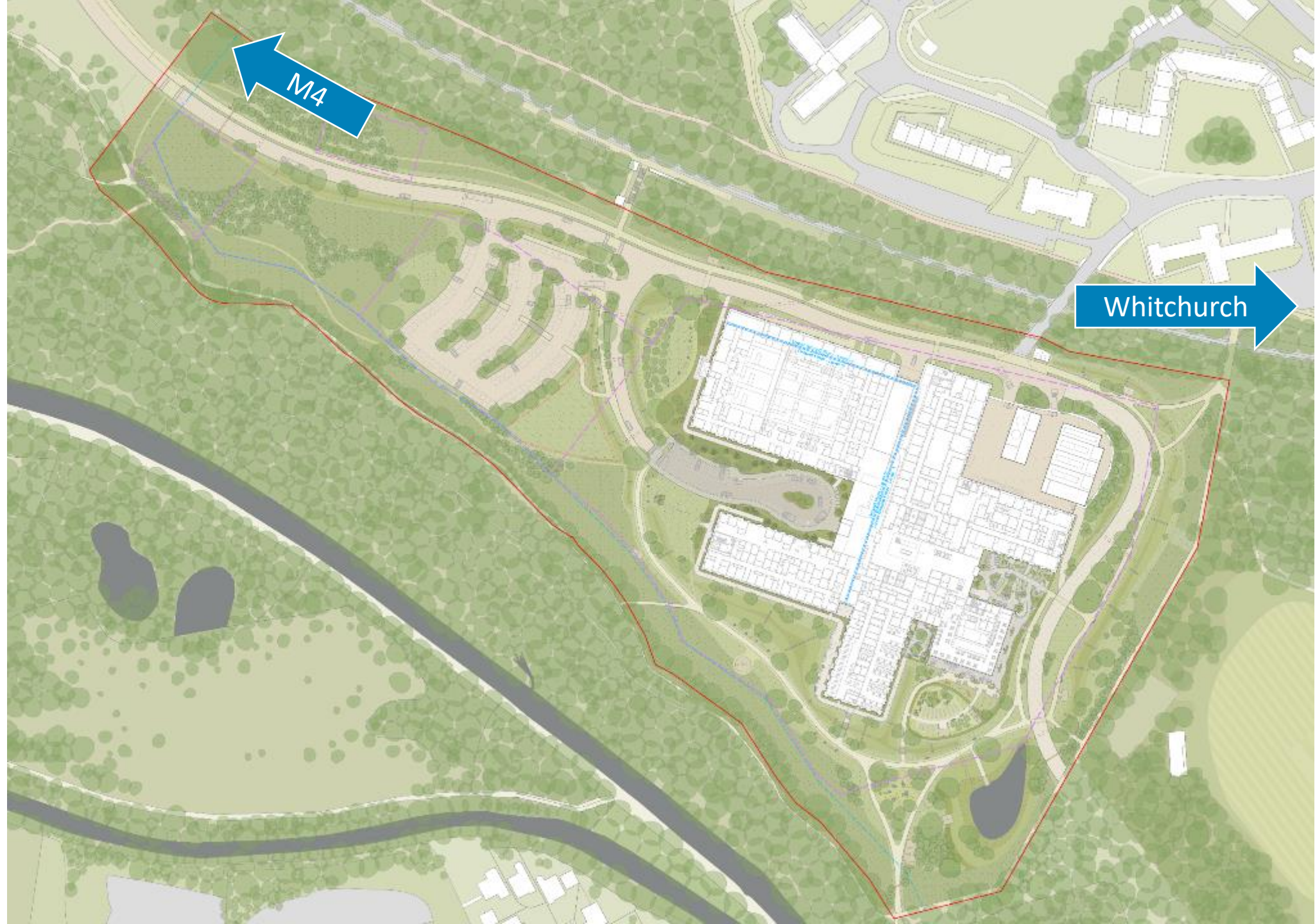
3% increase per annum

4% increase per annum for
staff living within 5 miles



1% Increase per annum

2022 - 2027



M4

Whitchurch

Connectivity

EXISTING CONNECTIVITY

The site is well serviced by trains and buses. There is also a potential extension of the train line at the north of the site with a new metro station planned adjacent to the site. Additionally, the site is easily accessible by bicycle and by foot.

1. Train from Coryton to Cardiff City centre Queen Street
Every 30 minutes
Duration: 30 minutes
2. Bus from Coryton to Cardiff City Centre
Philharmonic JP (bus stop)
Every 15 mins
Duration: 26 minutes
3. Cycle Journey to Cardiff City Centre
Duration: 25 minutes
4. Train from Taffs Well to Radyr Every 15 minutes
Duration: 4 minutes + 19 minute walk
5. Exit from M4 - Coryton Junction
6. Potential new metro station adjacent to site
7. Potential new bus stop and bus route through the site

- Site boundary
- Train lines
- - - Potential extension of the train line
- Train stations
- Bus routes
- Bus stops
- Cycle route
- Existing Public Rights of Way (PROW)



Cycle Journey to Cardiff
Central: 25mins 4.8miles

Safe and well lit walking routes



View to nVCC from south-east public foot and cycle path approach

An architectural rendering of a modern building with a prominent cycle and pedestrian path. The building features a facade of vertical wooden slats and a lower section with stone cladding. A dark SUV is parked in a covered area under the building, and a white van with 'Emergency Ambulance' written on it is also visible. The foreground shows a wide, dark brown path for cyclists and pedestrians, bordered by green grass and various plants. Several trees are planted along the path, and a few people are shown riding bicycles. The sky is overcast.

**Cycle / pedestrian and
vehicle separation**

Cycle access

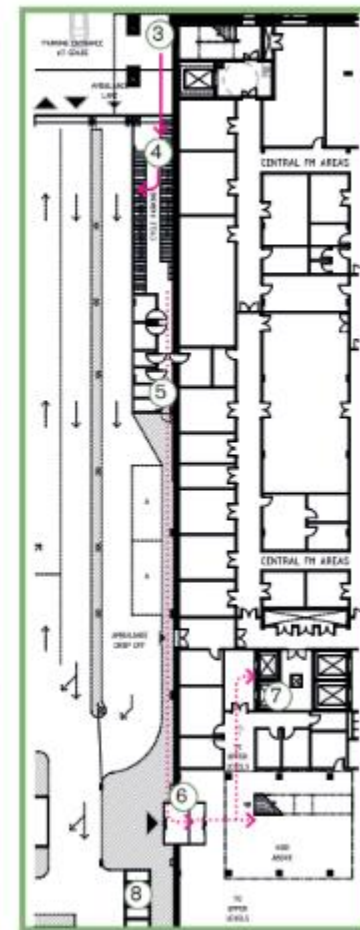
BASEMENT - STAFF SECURE CYCLE PARKING

LOWER GROUND SECURE STAFF CYCLE STORE

1. Dedicated cycle paths along the north access road
2. Safe crossing of service road to north, raised crossing point to ensure cars slow down
3. Dedicated cycle store entrance separate from vehicles
4. 80 cycle parking spaces
5. Changing facilities and showers
6. Direct route from cycle storage to lower ground entrance
7. Direct access to all departments via lift cores
8. 10 additional oversized/accessible bicycle parking stands for use by staff.



Dedicated cycle crossing point

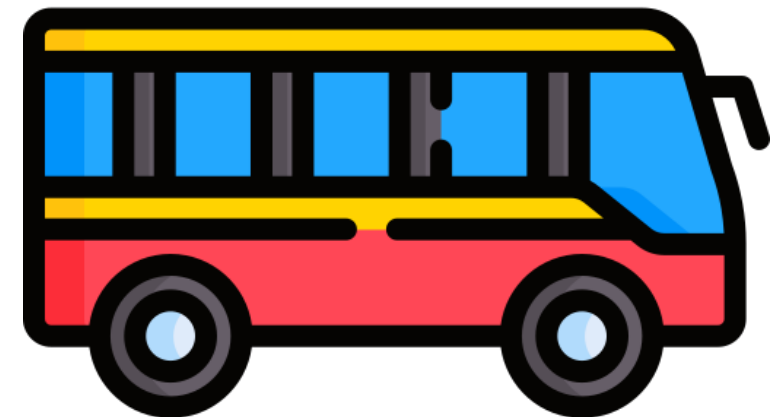


Public transport

- 1 New Metro Station access point
- 2 3m wide key shared pedestrian cycle route, connecting to/from northwest access route to ASDA, and eastern communities of Whitchurch and Park Road.
- 3 Main pedestrian link to Main Entrance of nVCC runs to south of drop off access road - coordinating with car park. Links Movement Node, Main Entrance and wider southern landscapes
- 4 Bus stops coordinate with Metro travel node - East and west bound bus stops staggered and set back minimum 12m stopping distance from pedestrian crossing table, to improve other vehicle movement flow around stationary buses.
- 5 Cycle parking for 24 bicycles enabling green travel network
- 6 Main pedestrian active travel route removed from Orchard and outdoor classroom - to offer greater protection to ecological setting
- 7 Lift shaft, ensuring full accessibility accounting for level change into cutting.



The Metro logo consists of three red chevrons pointing to the right, followed by the word "Metro" in a bold, black, sans-serif font.



VELINDRE

CANCER

CENTRE

HFMA WEBINAR PRESENTATION
Community Benefits

JANUARY 2022

Hannah Moscrop





Community Benefits, Innovation and Hefyd



Community Benefits



Legislative Context



Trust Aspirations



Communities



Local themed art and design and Welsh culture and language



Ongoing use of the Facilities and grounds for community purposes



Active participation in the local community and/or the creation of work experience, training or graduate recruitment



Open and accessible supply chains that provide opportunities for SMEs and social enterprises to bid for work



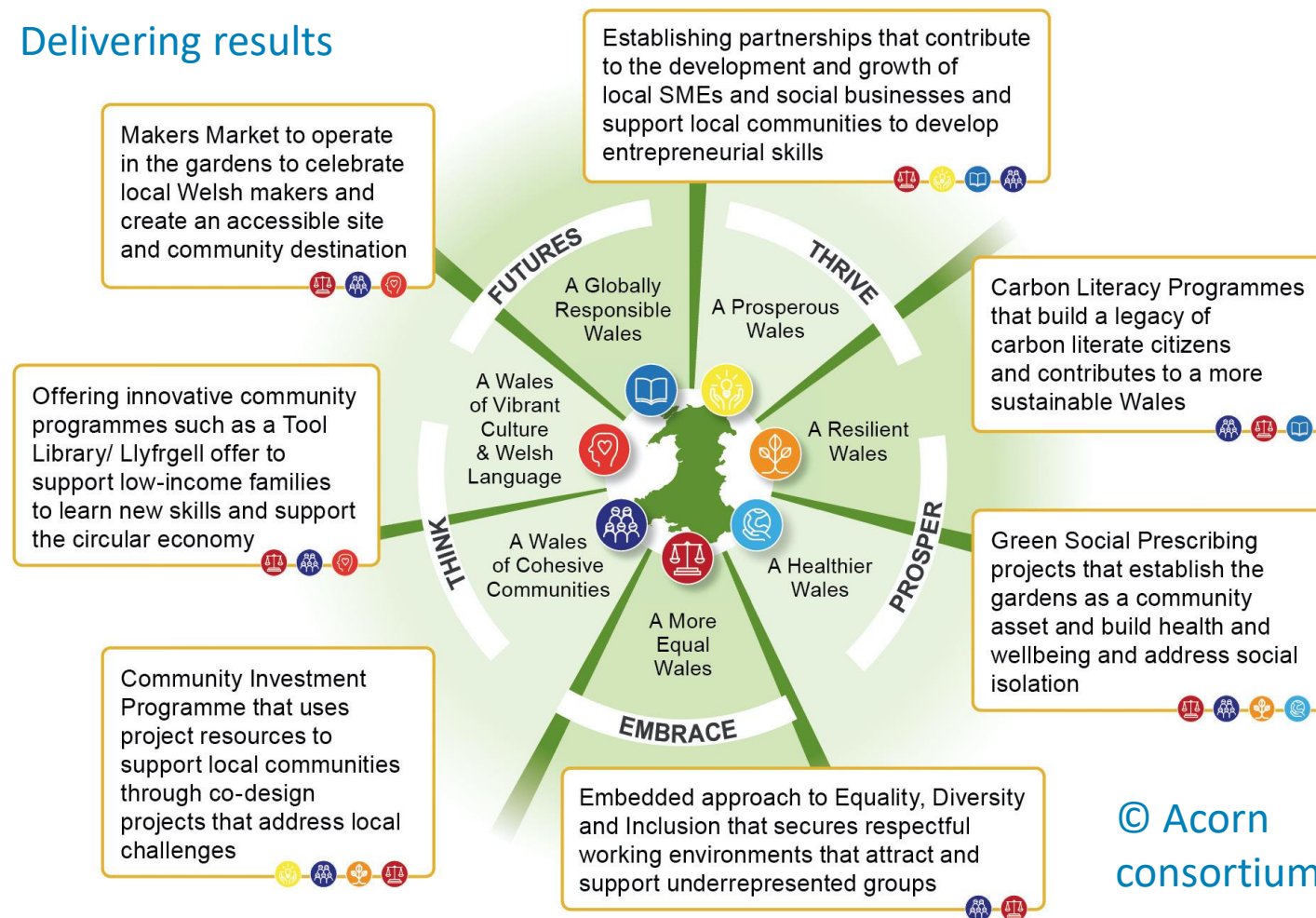
Minimise the environmental impact of the Project and to promote environmental benefits

Community Benefits

Incentivising through procurement

Q	Criteria	Score
CB1	MIM Community Benefits requirements	Pass / Fail
CB2	Enhancements to MIM requirements	2%
CB3	Additional Community Benefits (based on Project Co proposals, i.e. the five aspirations)	4%
		Total maximum score: 6%

Delivering results



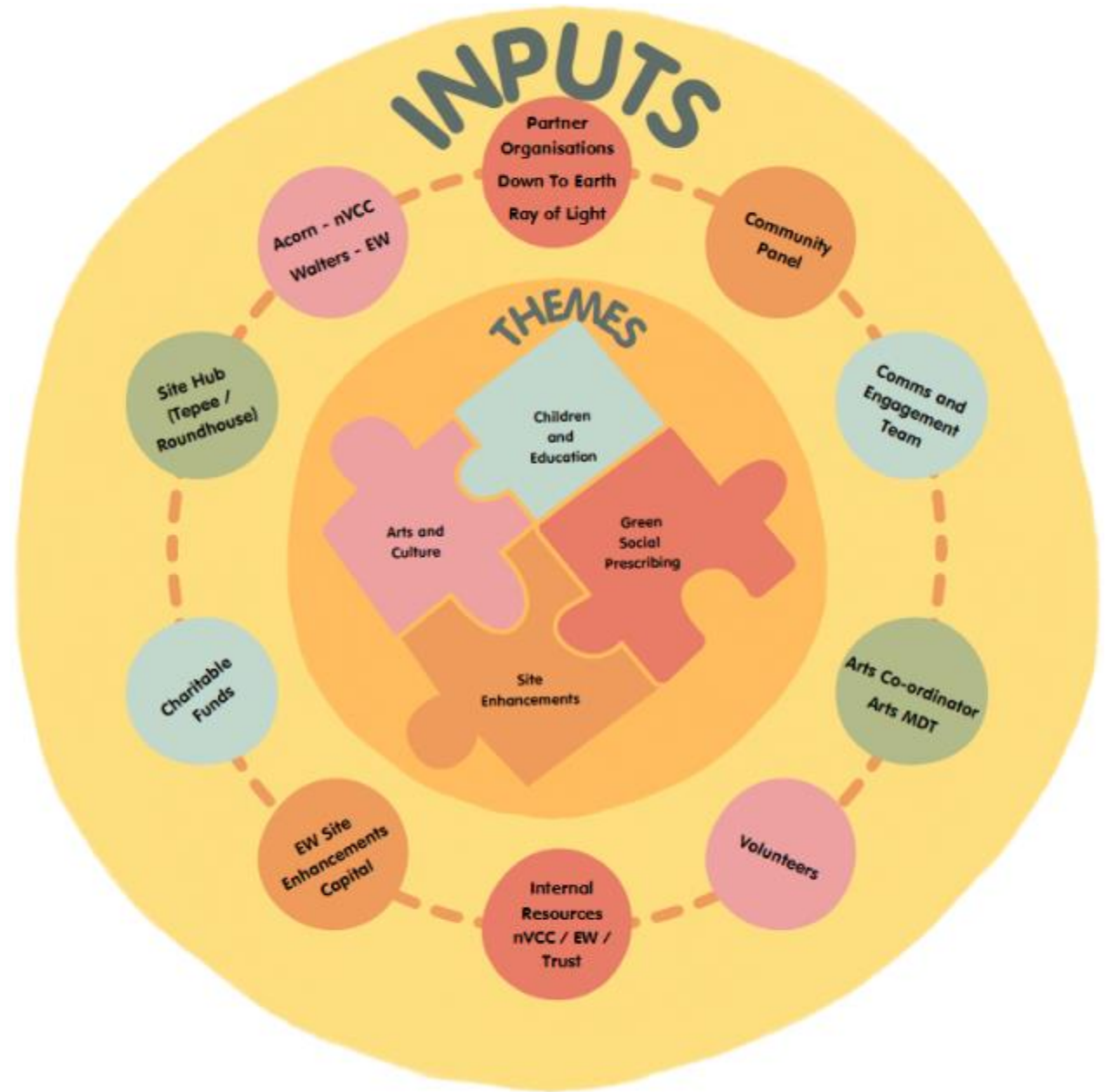


Children and
Education

Arts and Culture

Green Social
Prescribing

Site Enhancements



27 events

300+ books swapped

1 whole bra bank filled

200+ items donated for Working Wardrobe

Hefyd

100+ items donated for Clothes Swap

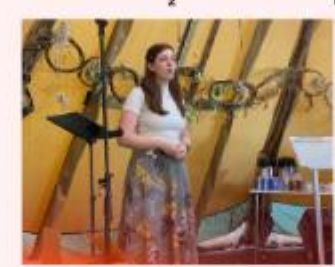
5 planters installed & filled with flowers and sensory plants

14 partners delivered events and initiatives

75+ bug hotels donated to attendees



"There was nothing but smiles all round"



"Kids loved it! We learnt all about hedgehogs"



"It lifted my spirits"



The quality and thought that had gone into all of the activities was excellent."



"Definitely my favourite lunch break ever!"



"It was lovely to be able to have the chance to spend time with my grandsons in a fun and relaxing environment"

Future Steps



From this and this...



To this...

And beyond...?



Innovation



Dynamic Project Evaluation
- Learning for the Project



Partnership, Collaboration
and Engagement



Sharing Knowledge
- Learning from the Project

Any questions?