

Design + Access Statement

RIBA Stage 3

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Project Name

Hillcrest, Merthyr Tydfil

Client

**Merthyr Tydfil Housing
Association**

pentan
architects

22 Cathedral Road
Cardiff
CF11 9LJ
www.pentan.co.uk
info@pentan.co.uk
02920 309010

Revisions Schedule

Revision	Description	Drawn	Check	Date
P1	Issued for approval.	JJ	CW	03-01-2025
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Introduction

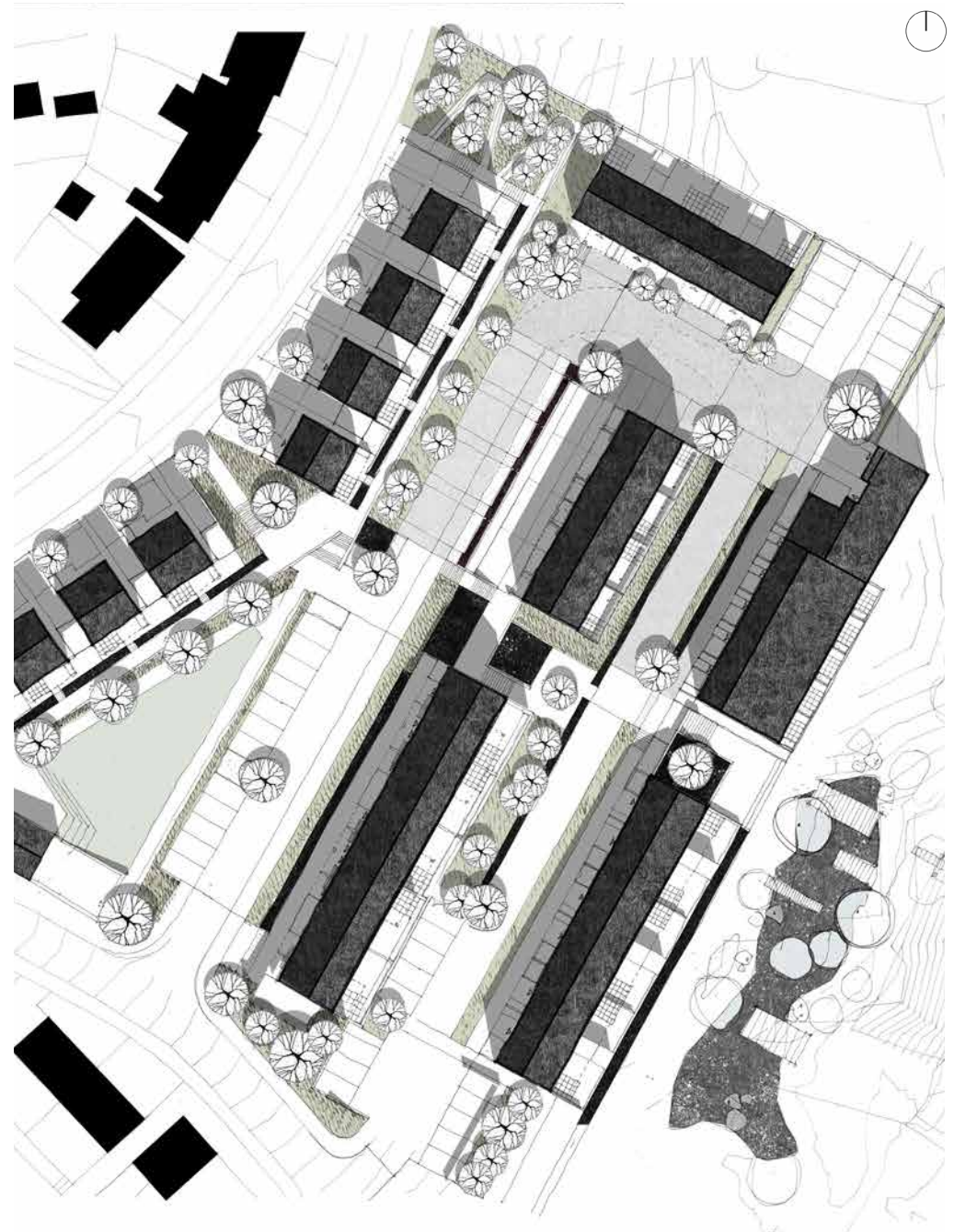
This Design and Access Statement accompanies a full planning application for the development of 47 new affordable homes; consisting of 1, 2 and 3 bedroom properties. Substantial landscaping and biodiversity enhancement works are included which work with the sloping topography to create rain gardens, extensive public amenity and communal landscape spaces.

In 2021 MTHA began working with the Welsh School of Architecture on a research-based piece of work seeking to develop a 'Merthyr Standard'; a set of design/construction principles for housing development in Merthyr which consider the topographical, landscape, climate, character and cultural characteristics of the County. This piece of work was seeking to also respond to the challenges of the housing crisis and growing issues around energy cost and affordability, climate emergency and need for whole life carbon reduction, together with aspirations of the Placemaking Wales Charter.

Through this exercise, a number of sites were considered, including the enquiring site; the applicant had been in discussions with MTCBC about delivering affordable housing on land within their control. As the design development process continued, further site-specific surveys were undertaken, together with on-going research into other recognised design precedents within the UK. A number of workshops and presentations were held over the following months/years with both Council Officers and stakeholders from the community, including existing tenants, who provided feedback on the evolving designs which were presented in both plan form and tested using cardboard models.

More recently MTHA engaged with Pentan Architects appointed to progress the work undertaken by the Welsh School of Architecture and evolving it into a planning submission and progressing the WG technical scrutiny process. The team has twice engaged with the Design Commission for Wales. The design was further evolved based on their comments and with the input of the wider design team, which has culminated into a thoroughly resolved proposal which is being submitted for approval.

NOTE: Some of the content in the early sections of this DAS has drawn from the research project led by the WSA. For clarity, we have not individually credited each image or body of text. MTHA and the design team acknowledge the significant contribution to this project the WSA have made setting it off in the right direction.



An early vision of the scheme.

Purpose

TAN 12 defines a Design Statement as 'a communication tool which outlines how the design of the proposal has been considered from the outset of the development process and how the objectives of good design have been used to inform this.'

The purpose of this document is to analyse the context of the site in respect of planning policy and the local character of the area, whilst having regard to each of Welsh Government's five objectives of good design.

Aim

The aim of this document is to:

- Provide an overview of the site context, which has aided in shaping the proposals.
- Demonstrate the steps taken to appraise the context of the development and how the design of the development takes that context into account.
- Explain the design principles and concepts that have been applied to the development.
- Explain the policy or approach adopted for access and how policies relating to access in the development have been considered; and
- Explain how specific issues which might affect access to the development have been addressed.



Aerial View of the site showing the site ownership boundary and the relationship to the context

Section 1: Project Brief

1.0 Design Team

Architect
AECB Designers
Engineer
Landscape Architect
Planning Consultant
Arboricultural Consultant
Ecologist
Site Survey
Utility and Drainage Survey
Geotechnical Specialists
Employers Agent

Pentan Architects
Pentan Architects
PHG Engineering
TDA
LRM Planning
Treescene
Ecological Services Ltd.
Corner Point Surveys
Utilimap
Terra Firma
Taylor Lewis

1.1 Vision

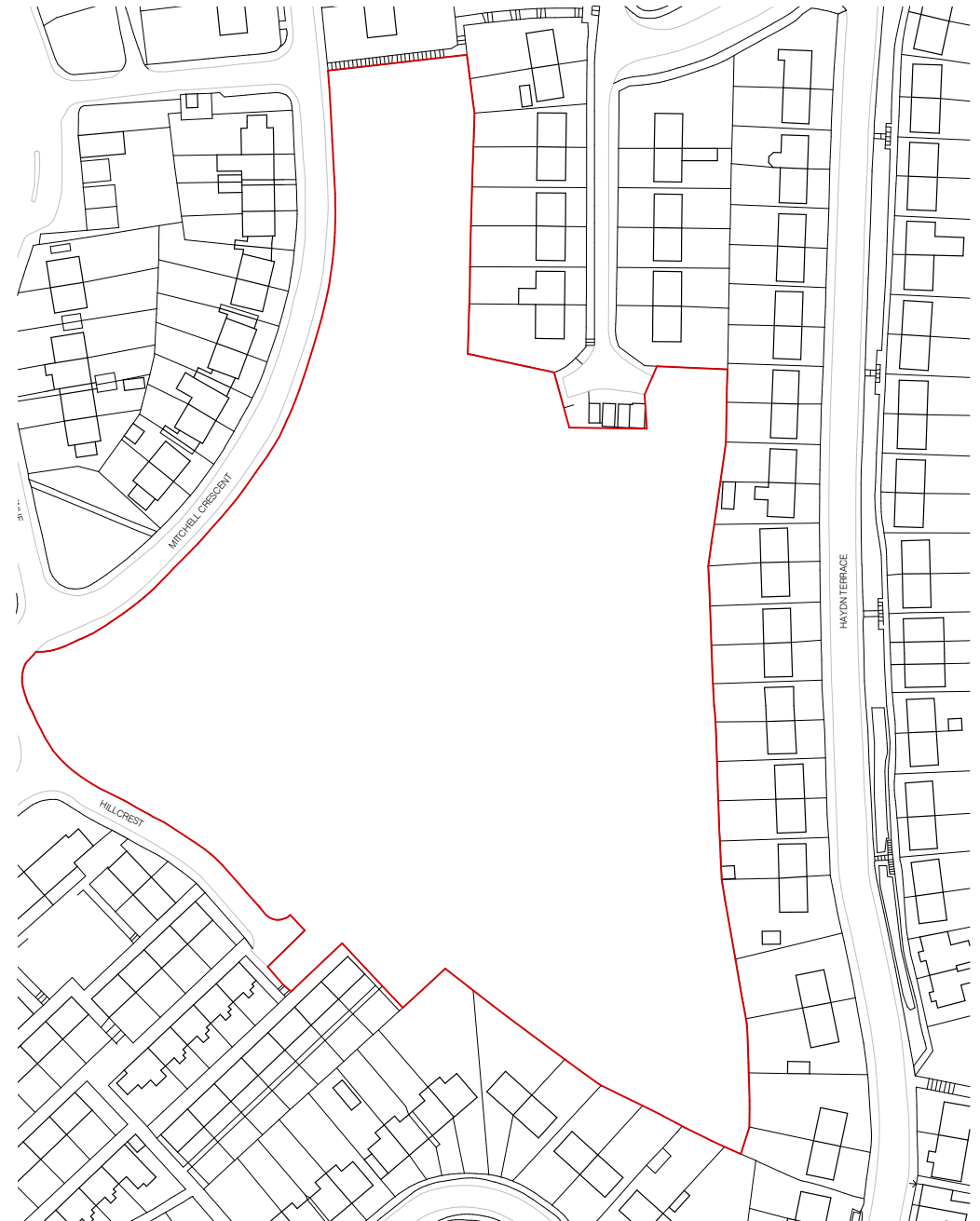
The intention is for the proposed development to be MTHAs first AECB scheme, set within an existing residential community to create an attractive and safe addition that inspires people to take ownership of their environment.

Homes will be spacious, light, practical for family life and designed to maximise energy efficiency. This new development will be designed to encourage and support more sustainable ways of living, providing attractive communal spaces, opportunities for walking and cycling and purposeful green/blue infrastructure that will serve as an exemplar for future development.

Progressing the work of the WSA-led research project the scheme is the forerunner of the Merthyr standard and develops a set of house types and approach to public and private amenity which aims to better deal with the challenges of building in the county.

1.2 Deliverables

- 47 homes; a healthy mix of 1, 2 and 3 bedroom homes.
- SuDs landscape features which create places for socialisation, play and community.
- Providing a generous series of public spaces where the community can gather, informally and for larger social events.



Site Location plan indicating the site ownership in blue, and the proposed site development boundary in red.

1.3 Context to Housing Need

“Home has never been so important for MTHA and our tenants. We need to develop more homes than ever before, but we need to consider the impact of the climate emergency and changes in housing supply and demand on the development, design and construction of new homes.”

Lee Roberts, MTHA Director of Development

The Well-being of Future Generations (Wales) Act came into force in April 2016. It requires that public bodies think longer term in their decision-making, by working together with people and their communities to create a Wales that we all want to live in, now and in the future. In the same year, the Environment (Wales) Act 2016 put into place legislation requiring that the nation's natural resources be managed in a more sustainable, pro-active, and joined-up way. More recently, widespread recognition of the climate emergency escalated the perceived urgency of decarbonisation and in 2019, the UK Committee for Climate Change stated that Welsh Government should target no less than a 95% reduction in carbon emissions by 2050 (CCC, 2019).

The Welsh housing stock is among the oldest and least efficient in Europe. Of the 1.4 million dwellings that existed in 2017 (StatsWales, 2018), one third were built before 1919, and just 6% were built in the last 30 years. Despite numerous energy efficiency initiatives, almost a quarter of Welsh households reportedly experience fuel poverty, with a significantly higher proportion of homes at risk in the future (NEA 2017). The housing stock currently produces 21% of Welsh carbon emissions (BEIS 2018). Each year in Wales, less than half the new homes needed are constructed. Low rates of replacement and an under performing housebuilding sector mean that more than 90% of the homes that exist today are likely to remain in use by 2050 (PPIW, 2015), severely compromising our potential to meet international decarbonisation targets.

Locally, there has been a rise of 220% in homeless presentations in Merthyr in just three years (754 cases reported in 2019/20, compared with 2438 cases in 2022/23). Placemaking lies at the heart of recent changes to national planning policy and has been enthusiastically adopted by the wide range of signatories to the Placemaking Wales Charter, which requires that “the positive, distinctive qualities of existing places are valued and respected.



Left: the seven goals embedded in WFGA require an holistic approach to quality and a focus on long term benefits rather than short term issues such as capital cost and expedience.

Image source: <https://gov.wales/well-being-of-future-generations-wales>

Below: More than half of new UK homes are reported as being too small, while many people prefer the design of older housing. (RIBA HomeWise, 2015)

Image and report: <https://www.dezeen.com/2015/12/03/new-build-homes-uk-too-small-riba-architecture/>



The unique features and opportunities of a location, including heritage, culture, language, built and natural physical attributes, are identified and responded to.” (Design Commission for Wales, 2020) Planning policy TAN12 states that “understanding the site and its immediate and wider context is the basis for a meaningful and sustainable design response, and is the responsibility of all those involved in the design process”.

There is a clear need throughout Wales for more housing, and for homes that perform better. Planning Policy Wales Edition 10 (December 2018) cites the importance of adhering to WFGA principles, if we are to develop a “vision of the Wales we want” (p.2). The document connects ‘good’ design with placemaking and positive development. However, there are remarkably few examples in Wales (or elsewhere in the UK) of ‘good’ housing that meet the holistic goals established by the WFGA.

Successive economic recessions and a determined focus on technical compliance and cost over quality have taken their toll on new housing. Expectations around capital cost have been driven so low that it is no longer possible to deliver ‘good’ housing for established notions of capital cost. Consistently poor quality has led to low expectations and a lack of aspiration, and self-reinforcing cycle of mediocrity.

“The UK is heavily dependent on a handful of volume house builders motivated by short-term profitability. This model has served us badly. It has, of course, failed to create more than about half the new homes that the country needs. But more fundamentally, it has failed us in the quality of design and placemaking. As well as poor workmanship, abysmal space standards and an absence of investment in innovation and building skills, the major house builders have let us down by reneging on promises to include affordable homes.”

Richard Best, foreword to The Housing Design Handbook (Levitt et. al., 2019)
The most recent edition of the Welsh Development Quality Requirement: Creating Beautiful Homes and Places establishes that “housing quality is as much about the value of the external spaces created as it is about the design of the homes. Homes and their environs should therefore focus on the role of placemaking.” (WG, 2021) At this time, capital cost remains critical in determining whether a project is delivered or not, and severely constrains the potential for quality in the holistic sense.

The financial legacy of BREXIT has compounded economic constraints through a sharp and significant uplift in the capital cost of construction. A number of factors provide clear reasons to re-evaluate our expectations around cost and quality:

Short term:

The Covid19 pandemic and associated lockdown period has forced people to think more carefully and in new ways about the place they call home. The capacity and flexibility of our homes have been tested, and many of us have considered how we might live differently in the future. The national response to the pandemic has also demonstrated our capacity to change behaviour rapidly, revealing a resilience in people that was perhaps not previously recognised.

Medium term:

WFGA, the Environment Act and recent planning policy on placemaking all require that the benefits of better quality homes and places be prioritised over short-term expedience. For legislation to be satisfied, we must develop housing and neighbourhoods that focus less on capital cost and more on the wider benefits for occupants, the surrounding community, and the nation as a whole.

Longer term:

There will be strict penalties for Wales if international decarbonisation targets are not met. The future implications of climate change are still being deciphered, but any discussion of future housing models must respond fully to the climate emergency, both in terms of the technical performance of the homes that are built and in terms of the behaviour of the occupants. If we do not plan properly for decarbonisation, we are only adding to the retrofit burden.

To effect change in this context, it is necessary to demonstrate how high quality homes and neighbourhoods can be designed, built and occupied such that they holistically and affordably meet WFGA aspirations.

1.4 Historic Site Context

“Merthyr Tydfil was a town with a single purpose... to make iron and steel. Iron transformed Merthyr from a small rural hamlet to the largest town in Wales and the centre of the world’s iron making industry.”

Chris Pyke (2014)

The physical and historical context of Merthyr is dense, contradictory and challenging. The specific geographical and geological character of the landscape meant that key natural resources were abundant and widely available. This made Merthyr an ideal location for early development of industrial processes and practices. From the Eighteenth Century, these processes transformed the landscape over a period of decades into the ‘seat of the industrial revolution’, generated seemingly endless trade and wealth that flowed downstream to make Cardiff – at one time – the busiest port in the world, and incubated knowledge that spread world-wide over the years to come.

The subsequent decline of UK coal and steel industries, which began more than a century ago, has left Merthyr without a clear purpose or identity. Scars in the landscape have not healed. The Welsh Index of Multiple Deprivation (2019) measures eight types of deprivation including health, employment and housing. It identifies Merthyr as the county with the second highest concentration of deprivation overall (with three quarters of communities located in the most deprived half of Wales), and the highest concentration of ‘health’ and ‘housing’ deprivation anywhere in Wales.”

Merthyr Tydfil has become synonymous with deprivation and disadvantage. It is amongst the worst place in Wales and the UK on far too many indicators of wellbeing and wealth, from one of the ten worst places to live to one of the lowest household incomes.” Victoria Winckler, Director of the Bevan Foundation. In this challenging context, access to good quality housing remains a basic human right. Through a process of research, analysis and investigation, four key challenges that must be addressed by any development in the county borough were identified, and are discussed over the following pages, these are topography, community, climate and affordability.

Interrogation of each challenge alongside a review of local, historic and more contemporary responses resulted in the development of a set of design Principles for housing in Merthyr (see section 1.3). The application of these principles was then tested in a proposal for new housing on the Hillcrest site, which is described in section 2 of this report. Section 3 culminates with a summary of key lessons learnt.



Above: Penydarren Ironworks in the early 1800s. Photo courtesy of the Alan George Archive, image source <https://www.merthyr-history.com/?tag=richard-crawshaw>



Right: The remains of a blast furnace at Cyfarthfa Ironworks, one of a handful of ruined fragments that testify to the scale of industry that powered Merthyr through three centuries of industrial growth and change.

Image by Morgan Owen – own work, CC BY-SA 4.0, <https://commons.wikimedia.org/w/index.php?curid=61361026>

1.5 Four challenges

Challenge 1: Topography

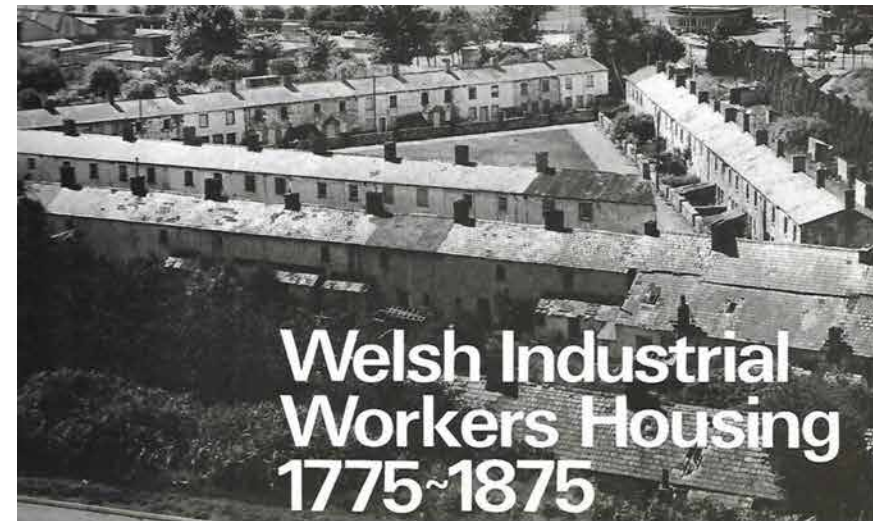
By its very nature and location at the head of the Taff valley, topography is a key challenge for development in Merthyr. Many of the sites that have been allocated for housing but lie undeveloped are compromised by steep slopes, which make access difficult and construction expensive. However, with these constraints come opportunities. Sloping sites provide opportunities for views and visual links to the wider landscape. Much of the land in Merthyr slopes to the south, affording good solar access and reducing overshadowing. Historically, different approaches have been adopted to building housing on sloping sites, which can be summarised as streets that run with (along) the slope, and streets that run against (down) the slope, resulting in significant differences in form, organisation and character.

Challenge 2: Community

One of the defining characteristics of key historic examples of Merthyr housing is not the houses themselves, but the spaces between, and the degree to which they create community – “individual residential areas each had a strong social identity.” (CADW, 2019) One example from Merthyr’s rich history is the Triangle in Pentrebach (pictured right on Jeremy Lowe’s “Welsh Industrial Workers Housing 1775-1875”, pub.1977). A common space at its heart holds the neighbourhood together and gives it vitality. Such spaces traditionally take the form of a garden courtyard, a playspace at the centre of a block, a reclaimed alley, or a community room. In the image below, dwellings are both separated and joined by spaces for practical amenity and social interaction; the street is a ‘place for life’ rather than a route for vehicles. The Triangle was Listed Grade 2 in 1975 and demolished in 1977.

Another local example now demolished is Rhydycar. Built in Merthyr Tydfil circa. 1795, two rows of ‘ordinary’ houses defined a shared territory between them, which was occupied by a slim street, allotments, gardens and outbuildings (plan, below). Five of the houses were relocated and rebuilt at the National Museum Wales at St Fagans (image bottom right) when the remainder were lost. The row is consistently reported as the most popular exhibit at the Museum of Welsh Life, which begs the question whether its popularity is due to nostalgia or something more meaningful.

Below: Interwoven terraces run both along and down the topography contours, resulting in a distinctive and legible grain



Challenge 3: Climate

Wales, like much of the west coast of the UK, is dominated by 'severe' climatic conditions. Merthyr lacks the softening gulf stream effect felt throughout Cornwall and the South Wales coastline. Located where the landscape climbs out of the valleys towards the Brecon Beacons, it feels the full force of unbroken south-westerly Atlantic winds on a regular basis. The exposed climate is a defining characteristic of Merthyr, and a key challenge.

The climate is also changing. As global warming continues to intensify, extremes of weather will be more common, exacerbating the local tendency for 'four seasons in one day'. Elevated levels of fabric performance are likely to be needed. The LETI (London Energy Transformation Initiative) Climate Emergency Design Guide outlines an appropriate building performance specification for small and larger scale housing developments. It requires that projects deliver net zero operational carbon, do not burn fossil fuels and achieve a level of energy performance in-use that is in line with our national climate change targets. The specification stipulates levels of fabric performance that go considerably further than UK Building Regulations, alongside low carbon sources of heat such as electric heating.

However, no UK standards successfully prescribe a standard for regenerative design – for housing that not only does less bad, but challenges designers and constructors to do the most good. "Even the most rigorous and eco-efficient business paradigm does not challenge basic methods and practices...our concept of eco-effectiveness means working on the right things... instead of making the wrong things less bad." (Cradle to Cradle, William McDonough & Michael Braungart)



Fabric U-values (W/m².K)

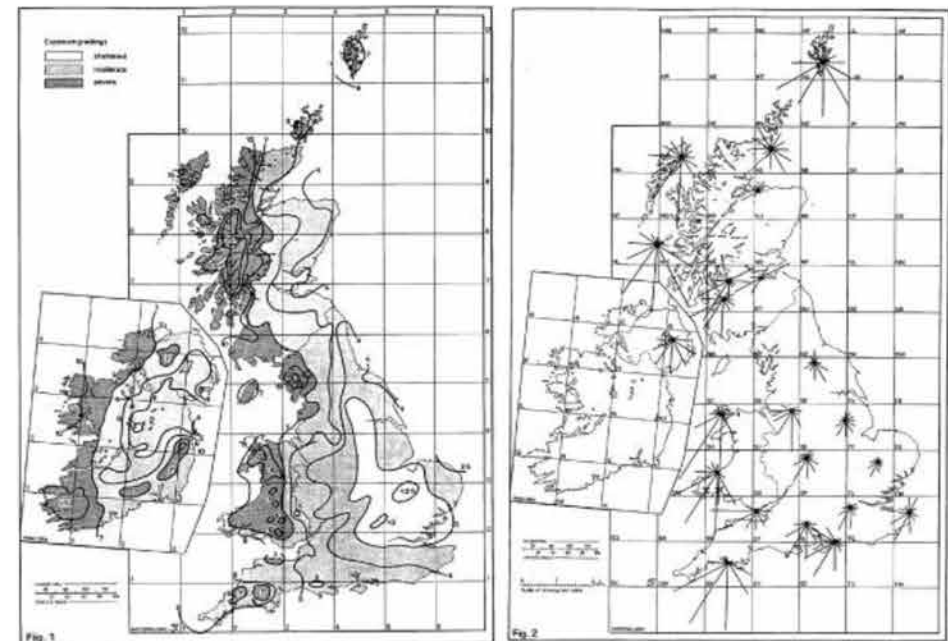
Walls	0.13 - 0.15
Floor	0.08 - 0.10
Roof	0.10 - 0.12
Exposed ceilings/floors	0.13 - 0.18
Windows	0.80 (triple glazing)
Doors	1.00

Efficiency measures

Air tightness	<1 (m ³ /h. m ² @50Pa)
Thermal bridging	0.04 (ψ-value)
G-value of glass	0.6 - 0.5
MVHR	90% (efficiency) ≤2m (duct length from unit to external wall)

Above: Fabric performance standards for climate change, as stipulated by the LETI (London Energy Transformation Initiative) Climate Emergency Design Guide <https://www.leti.london/cedg>

Below: Merthyr is colder, wetter, windier and more exposed, with wind driven rain from the South West



Challenge 4: Affordability

The recent and ongoing cost of living crisis has impacted on all aspects of life in the United Kingdom. Since late 2021, prices for essential goods have risen faster than household incomes, resulting in a fall in real incomes. There are numerous causes - a rise in inflation, both in the UK and globally, and the ongoing economic impact of the COVID-19 pandemic, the Russian invasion of Ukraine, and inevitably also Brexit. When Ofgem increased the household energy price cap by 54% in 2022, the average household's fuel bills increased by a considerable margin, leading to a considerable increase in fuel poverty. The construction industry has been particularly impacted. Changes arising due to BREXIT caused many non-national workers to leave the UK, and introduced considerable red tape. Labour and materials shortages resulted, causing delays and consequently further increases in cost:

“Build costs increased by 8.7% last year (2022) and are up 24% since 2020, according to the BCIS. Materials costs have risen 43% in two years, while labour costs are up by nearly 10%. Data from the ONS points to even faster rates of inflation for individual building materials, particularly those that are energy-intensive, or in high demand.”
Oliver Knight (2023)

While everyone has been affected by increases in the cost of living, the impact on poorer households has inevitably been disproportionate. For the communities of Merthyr, times are particularly hard. Historically, the design and construction of housing has responded to economic crises. Streets of houses built in Abersychan in the 1870's (top right photograph, page 11) provide a model for economy based on a language of simplified forms, standardised plans and sections, and repetitive components - windows, doors and stairs. Materials and labour were sourced locally, and were sufficiently adaptable to cope with other challenges such as steeply sloping sites (pictured). During the European housing crisis of the 1920s, the German concept of Existenzminimum (literally “minimum dwelling”, bottom right image) successfully delivered housing schemes by adopting similar principles – simple, standardised forms and repetitive elements that together make dwellings more economical to build, often complemented by productive growing spaces for residents.

More contemporary efforts over the last decade have included micro-housing solutions with diminished space standards, and the relatively recent success of collaborative housing models such as co-housing schemes, with opportunities for future residents to reduce the cost of construction through ‘sweat equity’.

There has also been a drive to increase levels of self-build housing across the UK, which is historically very low compared to elsewhere in Europe (and particularly low throughout Wales).

For future housing to be viable in Merthyr, affordability is a clear challenge that must be addressed. Through careful design and specification, homes must be affordable to build, even when other challenges such as sloping topography make construction more expensive. The same homes must also be affordable to maintain, a challenge compounded by the exposed climate. And finally, they must be affordable to occupy, if they are to avoid worsening the already high levels of fuel poverty that exist in the area.



1.6 Design Principles

“Design which is inappropriate in its context, or which fails to grasp opportunities to enhance the character, quality and function of an area, should not be accepted, as these have detrimental effects on existing communities.” TAN 12: Design, Welsh Government, para 2.6

The following guiding principles for the design of new housing in Merthyr are drawn from the WSA research project which studied the physical, historical and social context:

	Merthyr housing heritage:	Principle for future housing:
Social principles	- Streets and courts - Located close to work - Colour relief - Proximity / intimacy with neighbours - Shared amenity space - Areas for cultivation	- Streets and courts - Provide for home office / co-working - Opportunities for personalisation - Balancing intimacy with privacy - Hierarchy of public and shared spaces - Ecologically rich gardens, growing spaces
Form and organisation	- Simple forms - Semi-basement to deal with slope	- Simple buildable forms - Maximise functional space, avoid waste
Technical performance	- Economy through repetition/ standardisation - Local resources - materials - Local resources - skills - Local resources - energy - The roof as a protective element - Climate and wind driven rain	- Repetition/ standardisation - off site? - Locally grown, low impact materials - Training and using local skills - LETI Standard- roof as energy producer - The roof as a protective element - Robust external envelope - Designing out over heating



above right: a vision of the landscape as a patchwork quilt of buildings and nature - naturally occurring and continuous ecological corridors, integrated with built form.

below right: Maryfield Housing, Bo'ness by Malcolm Fraser Architects (2011) combines simplicity and economy in a challenging climate. Image source <https://www.ads.org.uk/case-study/maryfield-housing>

1.7 Brief

Placemaking (key aspects)

Promote neighbourliness and social interaction

Residents should feel valued and proud of their new homes and neighbourhoods and feel a sense of belonging regardless of income and background whilst tackling social isolation.

A place that's great to grow up in

Create safe, welcoming and accessible environments that encourage children to play in the street and provide opportunities for formal and incidental play where possible and close to home including attractive natural play elements integrated into the landscape design and SuDs approach.

Well connected and easy to get around

Places that are great to grow old in

Neighbourhoods which support older people in being active members of the community.

Designed with community input

Local people often know and understand their area better than anyone, and can make valuable contributions to the design process and the eventual proposals.

Incorporate landscape

Integrated with the wider landscape, sensitive to its local character, linking with and drawing in neighbouring green infrastructure into its design.

Protect & enhance biodiversity

Recognisable

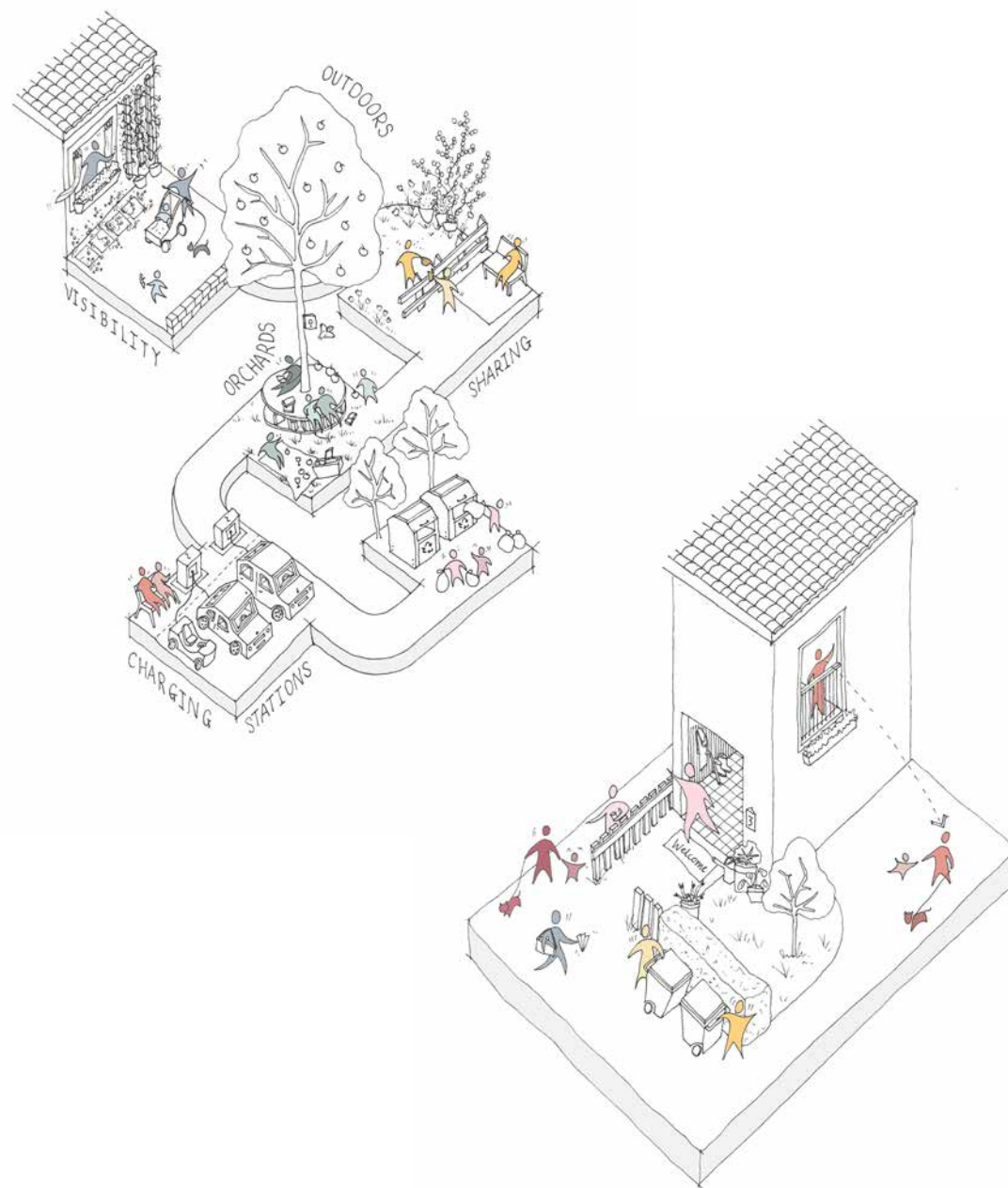
Reflecting the best aspects of local character, history and culture.

An articulated townscape

Contextually responsive townscape utilising building height, scale and massing.

Create a legacy of high quality attractive homes

A key feature of the new development should be the use of brick, being the most commonly used material in the vernacular architecture taking account of the need for durability and low maintenance.



1.8 Sustainability Goals

Adopting a Fabric first approach

Our focus will be on making the building fabric work as hard as possible. This scheme is aiming to meet AECB Standards as an alternative means of meeting Requirement 1(d) within WDQR 2012, which states that new homes must achieve EPC A (SAP92 Energy Efficiency Rating or greater) through minimum fabric standards set out in Appendix E – Elemental specification for the DER/TER of Approved Document L1 or alternatively through independent certification in accordance with the Energy Hierarchy for Planning in Welsh Government's Planning Policy Wales.

Design in renewable technologies

Low carbon heating systems that exclude the use of gas, will be expected for our new homes that can include:

Although not required to meet the AECB CarbonLite Standards, the provision for Photovoltaic panels are included to allow for MTHA to future-proof the dwellings if energy demand increases.

Heating via either Air Source Heat pumps (ASHP) or Heat Exhaust Air Pumps

Mechanical heat recovery systems (MVHR).

Overheating strategy

Each house type has been assessed as part of the AECB (Passivhaus PHPP method) analysis of the designs.

Electric Vehicle charging points

Whilst EV vehicle ownership amongst residents is currently negligible, the provision of infrastructure for electric charging points to all parking spaces will be included.

Climate resilient neighbourhoods

Sustainable Urban Drainage Systems (SuDS) will be an integral part of the design and will integrate rainfall management with the use of the development by people and nature to give attractive multi-functional spaces maximising biodiversity and people's quality of life.

Promote active travel

Developments should promote walking and cycling and minimise unnecessary car-based journeys.

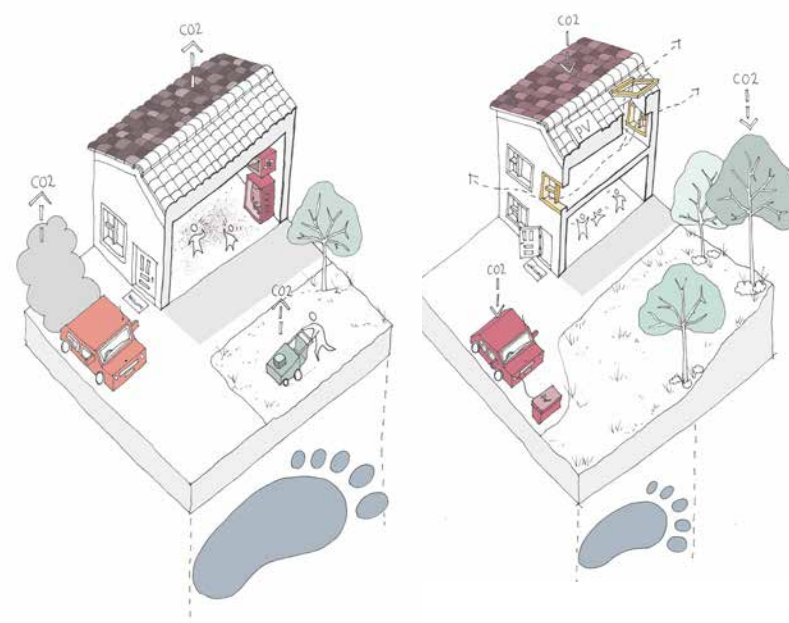
The AECB Vision for Hillcrest

The intention is for the Hillcrest development to be an exemplar AECB housing scheme, responding to the Climate Emergency and providing energy efficient, well insulated, affordable and comfortable homes.

The AECB CarbonLite New Build is aimed at those wishing to create high-performance buildings using widely available technology.

It is estimated that following this method will reduce overall CO₂ emissions by 70% compared to the UK average for buildings of each type – a highly significant result given the relative ease and low cost with which this standard can be met.

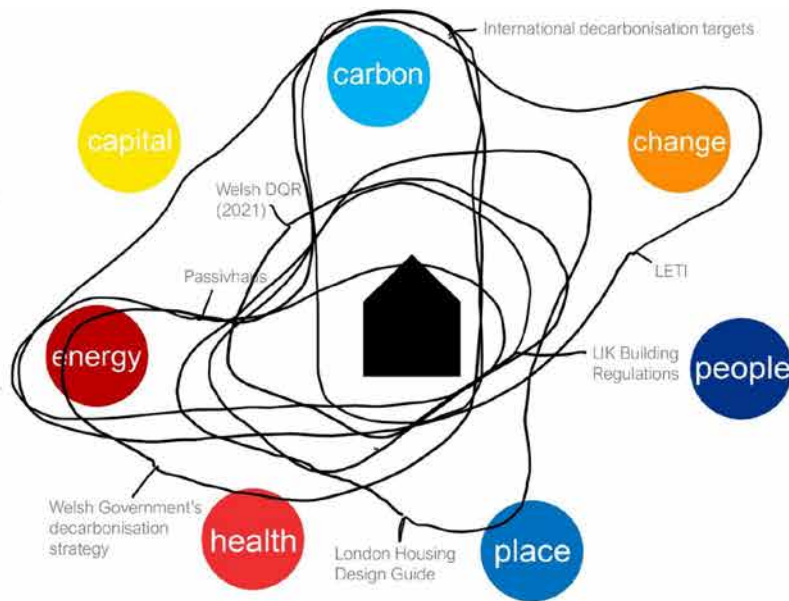
Airtightness shows quality in a building. Airtightness makes ventilation/heating systems work properly whilst improving insulation's effectiveness. This helps with reducing our fuel bills and increases health & comfort through the elimination of mould and condensation.



1.9 WFGA and housing standards

The seven Wellbeing of Future Generations (WFGA) goals (figure, right) establish that all new housing built in Wales with public money must be sustainable, resilient, healthy, equitable, cohesive, culturally aware and globally responsible. The project described in the preceding section attempts to deliver benefits that meet all seven WFGA goals.

Many different regulations and standards influence the quality of the homes that are built in the UK. The diagram below maps the focus and reach of some key ones, including international decarbonisation targets, UK Building Regulations, LETI (London Energy Transformation Initiative) guidance, the Passivhaus standard, the London Housing Design Guide, Welsh DQR (2021) and Welsh Government's decarbonisation strategy:

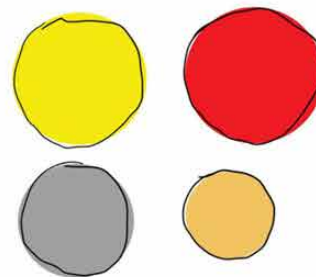


Some regulations and housing standards such as UK Building Regulations are concerned with many WFGA agendas, but are typically not sufficiently onerous for housing to be required to meet WFGA aims. Other standards such as Passivhaus and LETI are concerned with just one or two agendas. These standards are less likely to be enforced, but more likely to result in housing that meets some WFGA aims. Most importantly, none of the housing standards or regulations commonly adopted in the UK require that housing quality be considered holistically, to an extent that would satisfy WFGA.

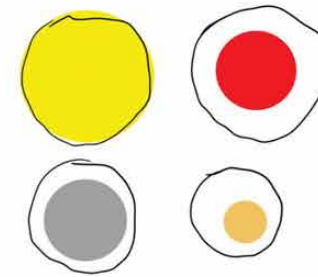
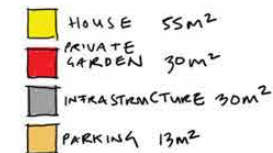
Conversely, some of the key standards and mandatory regulations constrain housing developments in unhelpful ways, and even run counter to WFGA aspirations. The diagram to the right describes the minimum amount of land occupied by a typical home built to comply with current social housing standards (Welsh DQR), the national Welsh Parking Standard and Secured by Design (SBD).

The 'compliant' land use bubble diagram (below left) demonstrates how housing schemes that use land effectively (density > 40 dwellings/hectare) AND comply with the above standards will have little or probably no space whatsoever for anything that caters for amenity, ecology or community.

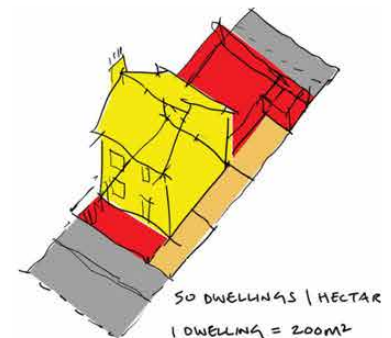
The scheme as described in this report requires a relaxation on the national parking standards. This in turn reduces the amount of infrastructure needed. The scheme also proposes a relaxation in the amount of private amenity provided, in favour of more (and better) shared amenity space. Boundaries are diminished to emphasise community over privatised space. The scheme proposes around 1000 sqm of amenity (of various kinds) alongside 47 homes. However, to make this work, Local Authority Planning and Highways officers, the Welsh Government Housing Standards team and Secured by Design officers must all see the benefits of this approach, and relax the 'usual' requirements.



Left: land use for housing that complies with WDQR2020, all Wales parking standard and SBD requirements.



Right: land use as proposed – typically one parking space per dwelling, reduced infrastructure and less private amenity.



2.0 Affording a transition from 'less bad' to 'more good'

The LETI (London Energy Transformation Initiative) Climate Emergency Design Guide was used as the initial template for the energy efficiency of this project, and outlines a methodology for development that achieves net zero operational carbon, does not burn fossil fuels, is powered by renewable energy, and achieves a level of energy performance in-use in line with our national climate change targets. <https://www.leti.london/cedg>

However, no UK built environment standards successfully prescribe an approach for regenerative design – for homes and places that not only do less bad, but that challenges designers and constructors to do the most good. In *Cradle to Cradle*, William McDonough and Michael Braungart identify the need for a fundamental change in practice: “even the most rigorous and eco-efficient business paradigm does not challenge basic methods and practices... our concept of eco-effectiveness means working on the right things...instead of making the wrong things less bad.” (2002)

The principles developed by MTHA's Hillcrest project reflect this transition from 'less bad' to 'more good', underpinned by the seven WFGA goals, as follows:

'Less bad' reflects current best practice, including recent (mostly technical) improvements such as those evidenced by the Innovative Housing Programme:

carbon building with low carbon materials, and a focus on renewable energy

energy improved energy efficiency, affordable fuel bills

health breathable construction, natural light, connections to outdoors

'More good' captures the key principles developed for Hillcrest Park, and future MTHA homes, and targets the WFGA goals that current best practice does not address:

capital building simply and affordably with sustainable resources and skills

change design for climate, increased ecological value, meaningful SUDS

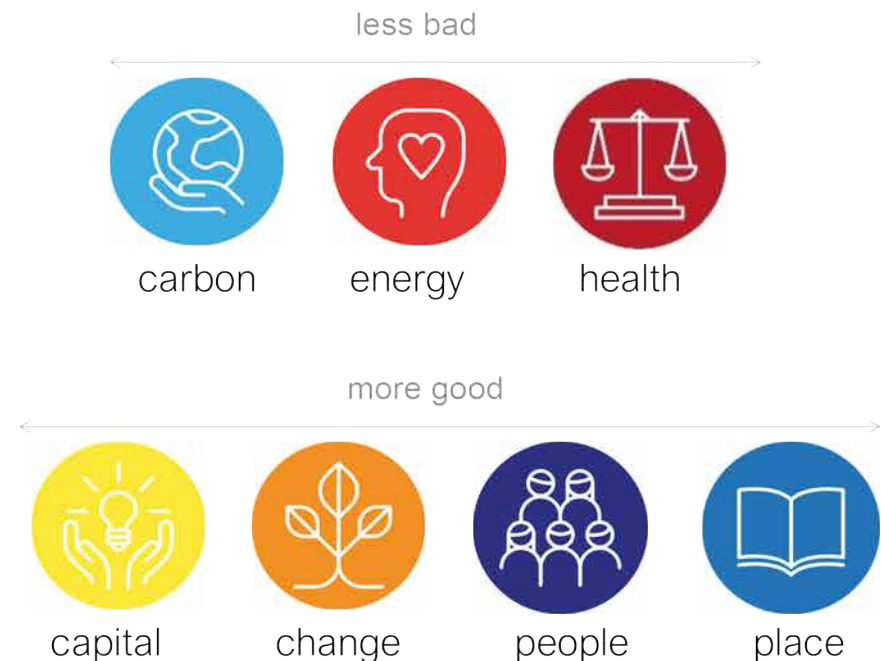
people connected homes not isolated, shared spaces that focus on people over cars

place distinctive places that relate to their context – history, topography and climate

These four themes outline an approach that delivers housing with a combined focus on responding to context, designing for inhabitation, and the use of good placemaking practice to create distinctive, memorable places. As Gordon Cullen warned in his thought-provoking proposal for a new community at Meryculter:

“If people live in houses where do the houses live? If they are homeless all we are left with is the typical endless, featureless suburbia.”

Gordon Cullen (1974)



Section 2: Site & Context Analysis

2.1 Site Analysis

Site Location

Hillcrest Park is located just over a mile north of Merthyr Tydfil town centre, and east of the historic Cyfarthfa estate. The neighbouring Penydarren neighbourhood is easily accessed from the Heads of the Valleys road less than half a kilometre to the north.

The site itself is approximately 1 hectare parcel of open land called 'Hillcrest Park', highlighted red on the Ordnance Survey site location plan (right). Much of the site was previously a quarry. It slopes steeply downwards to the south and east, affording distant views over Dowlais, across the valley, towards Cwm Bargoed.

There is in excess of a 12 metres change in level between the top and bottom of the site. The open site is enclosed by the Hillcrest estate (part of Penbryn) to the south and Galon Uchaf to the north and west.

The neighbouring 'Hillcrest' estate consists of small one and two-storey dwellings arranged in short rows, built form running with the contours. Because of the steep slope, cars are often kept away from the dwellings, which are separated by tarmac pavements and poorly defined patches of grass.

Galon Uchaf, located on top of the hill, overlooks the site and consists mostly of semi-detached two storey family homes with front and rear gardens. It relies on the street for parking. Homes sit elevated and therefore disconnected from the street. These factors diminish the sense of place that exists throughout much of the neighbourhood.



Aerial View of the site showing the site ownership boundary and the relationship to the context

2.2 Culture and community

The surrounding streets are mostly homes in private ownership, pepper-potted with homes that remain in the ownership of social housing landlords. The exception to this is the Hillcrest estate (A), which is made up of relatively small dwellings and owned in its entirety by Merthyr Valley Homes.

There are two schools down-slope from the site – Gellifaelog primary school (B) and a Catholic school for 3-16 year olds, coupled with St. Illtyd's Roman Catholic church (see larger map, previous page). Nearby, there are large amounts of open grassed space (C). Further to the east, Ifor Park provides a range of public amenities and the Bont playing fields is the home of Penydarren boys and girls football club. Otherwise the neighbourhood is almost entirely residential, with a number of corner shops and takeaways serving the wider community.

The site itself can be loosely described as amenity space, but has few features and the slope makes it difficult to maintain. It is really only used by dog walkers and as an occasional shortcut. It is located between three communities (see previous page) and does not clearly 'belong' to any one of them. As such the project provides an opportunity to connect to all three neighbourhoods, and hopefully improve the sense of community that is evident. However, to do so it needs to be made permeable and connected in a way that enables people to negotiate the challenging change of levels across the site (over 12 metres from top to bottom).



Right: photos of site, as follows:

Top – view 1: Mitchell Crescent consist of large, privately owned semi-detached family homes

Middle – view 2: smaller dwellings on the Hillcrest estate to the west of the site provide social housing

Bottom – view 3: downslope, houses along Haydn Tce are disconnected from a street dominated by cars.



2.3 Landscape and ecology

The earliest Ordnance Survey maps of the area (1887) show that the southern half of the Hillcrest site was previously the old Pen-y-bryn sandstone quarries, with woodland occupying the remainder of the area that is now Hillcrest Park. The historic Ordnance Survey maps from 1900 show these quarries reopened, extended and deepened, eroding the woodland. By 1919, residential development had begun to encroach on the landscape. By 1957, the quarry had been filled and remaining woodland cut down, with residential development surrounding the site. Only the Hillcrest estate had not yet been built.

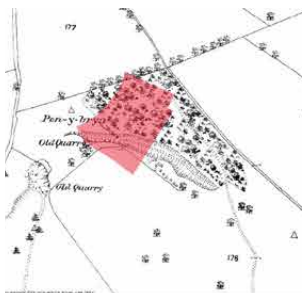
Today, the southern half of the park consists of made ground, sloping at around 1:6 gradient over the plateau'd quarry below. The northern half of the park is grasses, and also slopes steeply down to Haydn Terrace below. The whole of The site is rough overgrown scrub, mostly long grasses with occasional small, self-seeded trees. An ecology survey has been carried out. Overall, the park is of low ecological value, although there is a high likelihood of indigenous protected species that will need to be protected / translocated as part of the proposed works. An area of knotweed has also been identified towards the bottom of the site, which will need to be remediated.

Historic digimap extracts, taken from Ordnance Survey data, as follows: Left - 1870, Middle - 1910, Bottom - 1960

Right: photos of site, as follows: Top - view from Mitchell Crescent (top of site) looking east across the Taff valley.

Middle: view over the steeply sloping site, looking south at existing hardstanding.

Bottom: view up from the bottom of the site, looking west over scrub towards Hillcrest.



2.4 Movement and infrastructure

There are no formal paths across the site, but it is used informally in an uncontrolled way. At the top of the site, the highway runs up to the westerly edge of site, and surrounding dwellings enjoy views and sunlight from the south-east. To the north and east edges of the site, the boundary is mostly comprised of private rear gardens that back onto Hillside Park (note that the scheme as proposed does not run up to these private boundaries, but retains open parkland). Marshall Terrace terminates at the northern boundary of the park (image bottom right). The southerly edge of site is constrained by the access road into the Hillcrest estate (image top right). While this is an adopted road, its gradient (1:6) makes it difficult to negotiate. There is currently an area of hardstanding giving access from this road onto the site.

Statutory searches by key utilities companies have identified that the low pressure mains gas network owned by Wales and West runs throughout the surrounding neighbourhood, including the existing access road, but with no pipework across the site itself. Similarly, Western Power's electricity network runs to all of the surrounding streets, but no electricity supply infrastructure has been identified on or over the site.

The nearest clean and waste water networks run down through the Hillcrest estate to the west, but it may be necessary to connect into the larger system in Haydn Terrace down-slope from the site. No drainage infrastructure was found to cross the site, although a land drain is identified on OS data as running across Hillcrest park, down-slope from the area proposed for redevelopment. The implementation of SUDs drainage for surface water will be a priority for any development on the site.



Above: The proposal should engage with the Hillcrest estate, not turn its back on it. There are opportunities to increase connectivity, and also make use of the natural surveillance provided by the existing houses and bunaglows that overlook the site.

Below: There is also an opportunity to connect a walking route into Marshall Terrace, which has terminated with a hammerhead on the northern boundary of the park since 1960 (see previous page). This would improve the permeability of the area as a whole.



2.5 Built form

The neighbourhoods surrounding the site have a loose, somewhat consistent architectural language. Primary roofs are all pitched, although flat roofs are found on garages, outbuildings and extensions. Typically roofs are concrete tiled with exposed gable ends of render or pebble-dash. Colour is occasionally used to personalise properties. There is also a modest amount of brickwork and applied (decorative) stonework. Generous front and rear gardens are common, formed with hedgerow boundaries unless levels require retaining walls, which tend to be formed in brickwork. While the houses and gardens are mostly ordinary in design, and many need maintenance due to the extremely exposed nature of the area, the excellent orientation, good solar access and long, dramatic views afforded by local topography mean that the site presents real opportunities, in addition to posing considerable challenges.



2.6 Strategic vision: rows, streets and courts

Recent changes to Welsh policy, along with work by DCfW, have raised awareness around the importance of placemaking and its impact on homes and neighbourhoods. However, while programmes such as IHP have highlighted good examples of technical best practice, there have been few recent housing schemes in Wales that demonstrate the importance of sense of place. This project proposes to do so by adopting themes outlined by the Placemaking Charter as the conceptual starting point for the design, and learns from Merthyr's history by placing value on external spaces as well as the dwellings themselves (section 1).

Houses run in rows, typically along the slope, reflecting the wider grain of the neighbourhood, and creating opportunities to form new connections. This means that they all enjoy views and sunlight.

Identity is key to the success of this project. Rather than create a single character for the 42 home project, standardised house types are organised and set in the landscape in different ways, to create distinct shared spaces for amenity or courts, each with a recognisable character.

Movement requires that streets run between these spaces. It is critical that these streets are connected to the dwellings, not divorced from them by level changes or closed boundaries. Priority is given to the pedestrian over the vehicle, although the challenging topography makes it critical that all residents are able to drive (and park) close to their front doors, if access is to be equitable. Permeability is critical if streets are to work as places – connections into the surrounding neighbourhood mean that these new routes and spaces can be used by both residents and the wider community. External spaces vary from relatively private gardens for a single home, to shared courtyards for a cluster of families, to larger more robust public spaces. Together, they create a rich and varied public realm.

For the project to resonate with the wider community, it must provide spaces and places that the wider community value – from green spaces to meet neighbours and relax in, to tree'd edges providing views that will change throughout the year; and from sustainable ecological corridors shared by wildlife and rainwater (SUDS) to quality streetscapes where children can play safely. This mix of uses and resulting diversity are critical if the scheme is to successfully deliver genuine placemaking.



Above: strategic organisation of the proposals in context.

2.7 Site Context Photos

The adjacent drawing highlights the site's immediate context, with the numbers referencing the images of the local housing typologies below.



2.8 Site Photos

The below photos show some of the site's existing features.



View onto the site from Mitchell Crescent



View across the site from Hillcrest.



View onto the site from Mitchell Crescent from the northern corner of the site.



View over the site from Marshall Crescent.

2.9 Site Analysis –Green Infrastructure

KEY

Green Infrastructure

Site Boundary

Whilst the quality of the existing 'landscape' on our site is not of any note from a habitat perspective or from one of public amenity it is part of a wider pattern of green spaces...many of which have been determined to be 'un-developable' due to their topography.

The site is not species rich and is effectively 'land-locked' by the surrounding housing, making connectivity to other green spaces limited. That said, whilst necessarily reducing the amount of 'open' space, we view the development as a chance to significantly improve the variety of habitats on the site and vastly increase the amount of trees and plant species.



2.10 Site Analysis – Access



KEY

- Access Roads
- Site Boundary
- Bus Stops

There are no formal paths across the site, but it is used informally in an uncontrolled way. It has an open aspect and opportunity for connection to the north, east and west.

To the north and east edges of the site, the boundary is mostly comprised of private rear gardens that back onto Hillside Park. Marshall Terrace terminates at the northern boundary of the park. The southerly edge of site is constrained by the access road into the Hillcrest estate. While this is an adopted road, its gradient (1:6) makes it difficult to negotiate. There is currently an area of handstanding giving access from this road onto the site.

The nearest public transport connections - bus stops - lie to the east, along Haydn Terrace.



2.11 Site Analysis -Local Amenity, Community and Education Facilities

KEY

- Amenity/Community Recreation
- Churches
- Site boundary
- Post Offices
- Shops
- Schools

The surrounding streets are almost overwhelmingly residential in nature albeit with a number of corner shops and takeaways serving the community just to the north eastern corner of the site.

There are two schools down-slope from the site – Gellifaelog primary school and a Catholic school for 3-16 year olds, coupled with St. Illtyd's Roman Catholic church. Nearby, there are large amounts of open grassed space. Further to the east, Ifor Park provides a range of public amenities and the Bont playing fields is the home of Penydarren boys and girls football club.

