DESIGNING RURAL FUTURES

A NEW APPROACH TO DALES HOUSING



MCMULLAN
STUDIO

YORKSHIRE DALES
National Park Authority

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The Howgills. Cotter Force. Attermire Scar.

With places as wonderful as their names, the Yorkshire Dales National Park is a tribute to Mother Nature. The area deserves housing that enhances its natural wonders.

This means designing homes and neighbourhoods that pay tribute to its landmarks, heritage, landscape, communities and spirit while innovating to meet new challenges and opportunities.

Our vision and values

This report also sets out our vision for world-class Dales housing, and the values every new project should embrace to turn that vision into reality. These values seek to balance the need for contemporary housing solutions that meet modern aspirations and the need to protect, reflect and enhance the outstanding local culture and landscape.

In keeping with our grassroots approach, this report aims to engage and inspire a wide audience - from planners and architects to builders and future Dales residents. Above all, it presents a remarkable opportunity to establish a world-class benchmark in rural housing and begin a new chapter in the Dales story.

Rethinking rural housing

The Dales are more than just beautiful views. Tens of thousands of people call them home. Sadly, more young people are moving out of the area than are moving in. For example, the 16-34 population is 17.5% in the Lakes and Dales compared to 26% nationally.

Why are they leaving? The lack of affordable housing, limited employment opportunities and poor infrastructure, including public transport, mean rural life is unattractive if not impossible for many young people.

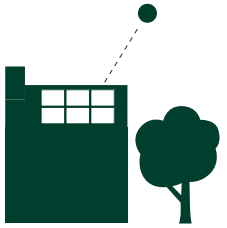
While there are many reasons young people are turning their backs of rural life, the impact is clear. Their departure threatens the future of the Dales as a viable and vibrant place to live and work. Encouraging younger generations to make the Dales their long-term home requires a radical new approach to rural housing. Simply increasing housing supply is not enough.

The Yorkshire Dales National Park needs innovative, high-quality, affordable and sustainable homes to support a growing, diverse and resilient local economy. The challenge is to design homes that build the rural communities of the future.

This document is a tool that will help you meet the challenge.



Affordability



Sustainability



Local Distinctiveness

Our scope

Designing homes that answer the needs and dreams of locals while respecting the area's heritage and fragile natural beauty is a challenge. It's also an extraordinary opportunity to transform life across the Yorkshire Dales National Park by creating the dynamic rural communities of the future.

Each new project should begin another chapter in the Dales story - inspired by new generations, lifestyles and innovations. With vision and ambition, the challenges faced by the Dales can inspire a new benchmark in rural housing in the UK and beyond.

Target audience

This document aims to inspire anyone who may be planning, designing, delivering or hoping to live in new housing in the Yorkshire Dales National Park. It focuses on the design of innovative rural housing, including extensions, infill and completely new neighbourhoods.

Architects can use the documents innovative blueprints to evolve their own designs. Or take inspiration from a series of examples showing how we have approached the design of distinctive developments well-loved by the local community.

We also hope this book will encourage locals, developers and planners to embrace a shared vision for the Dales.

Flexible approach

A pattern document for the Dales needs to be as varied and characterful as the place. So instead of laying down rigid design rules, we set out some general principles framed around our core objectives to inspire high-quality design with a distinct sense of place.

Throughout the book, we explore the idea of 'local distinctiveness' and why it's important when boosting housing supply. Focusing on key aspects of design, we aim to show in detail what makes a bold and brilliant rural home.

We've combined a palette of local forms, colours, crafts, materials and textures with modern design, techniques and innovations to help you create housing that is cost-effective, sustainable, in harmony with its surroundings and resolutely contemporary.

We hope this flexible approach will lead to homes that are living landmarks in their own right - architectural snapshots of modern Dales life.

Holistic strategy

To achieve our goal of world-class rural housing, we consulted with some of the world's leading experts across a diverse range of disciplines, including sustainability engineers, modular manufacturers, local planners and YDNPA landscape advisers.

This holistic strategy will help ensure every new project contributes to the long-term sustainability, resilience, biodiversity and economy of the Dales.

The role of the YDNPA

We prepared this document on behalf of the Yorkshire Dales National Park Authority.

Designated in 1954, the Yorkshire Dales National Park is one of 15 National Parks in the UK and covers an area of 1,762 square kilometres. It is administered by the Yorkshire Dales National Park Authority, which has two main purposes:

1. To conserve and enhance the natural beauty, wildlife and cultural heritage.

2. To promote opportunities for the understanding and enjoyment of the special qualities of the National Park.

In carrying out its role, the Authority has a duty "to seek to foster the economic and social wellbeing of local communities".

We have sought to reflect those ambitions throughout this document.

1

THE DALES



A UNIQUE LOCATION

The Yorkshire Dales National Park (YDNP) is located 80 km north-east of Manchester and covers an area of 2, 179 km2 - four times bigger than the city of Leeds. Otley, Ilkley, Leeds and Bradford lie to the south, Kendal is to the west, Darlington to the north east and Harrogate to the south east. The national park also includes the Howgill Fells and Orton Fells in the north west. Parts of the dales to the south and east of the national park are located in the Nidderdale Area of Outstanding Natural Beauty, not the YDNP.

The Yorkshire Dales were designated a national park in recognition of its exceptional natural beauty. Its sweeping moorland summits, carved by intimate dales and dramatic limestone features, are traced with patterns of stone walls, barns, settlement and industry that reveal a legacy of land use dating back through the centuries. While distinct to the area, it is a landscape of national importance.



A heritage of harmony

The Yorkshire Dales National Parks is a treasured natural landscape. It includes many areas prized for their remoteness, tranquillity and nature conservation.

Despite its apparent wilderness, the Dales we see today are cultural landscapes - shaped by over 10,000 years of human interaction with nature. This heritage of man and nature existing in harmony is fundamental to the Park's present-day character. It continues to exert a powerful influence on modern land use, woodland patterns, common land and fields. It also shapes the character of villages, towns and the people who call them home.

Heritage is central to their sense of identity and community. For new housing to answer the needs and ambitions of local people, it must reflect their spirit, history and natural surroundings. That way, future generations can live and work in harmony with the Dales.

A history of diversity

Formed over millions of years by water and glacial erosion, the Dales are a diverse collection of landscapes. There are over 20 main dales, each one unique in character and atmosphere.

Dominated by the Three Peaks of Ingleborough, Whernside and Penyghent, the Western Dales are home to underground caves carved in the limestone by thousands of years of water erosion. While the rugged Northern Dales of Swaledale and Wensleydale contrast with the gentler scenery of Nitterdale in the east and less remote Southern Dales of Wharfedale and Littondale. To the south of the National Park lies a highly populated industrial area. To the north lies thinly settled uplands stretching to the Tees and beyond.

The human landscape is equally diverse. Today, approximately 20,000 people live in scattered farms, villages and small market towns across the National Park. These communities developed over centuries as early settlers began farming along the length of the valleys and rivers that formed them. Settlements tended to cluster on valley floors where the land was more fertile and easier to farm than the harsher Fells.

Travel along the valleys was easier than travel between them. So each individual dale developed its own unique culture and character, shaped by the agricultural bounty, weather and terrain of its surrounding landscape.

Modern Dales life is still inspired by the agricultural calendar. Different communities are brought together by agricultural shows, local events and celebrations that mark highpoints throughout the year. Events range from the Masham Sheep Fair and Gargrave Show to the more modern Dark Skies Festival.



Cultural Landscape



Natural Landscape

A home should be a secure and stable foundation on which to build your future. Sadly, for too many people in rural areas it is a constant source of stress, financial insecurity and disillusion.

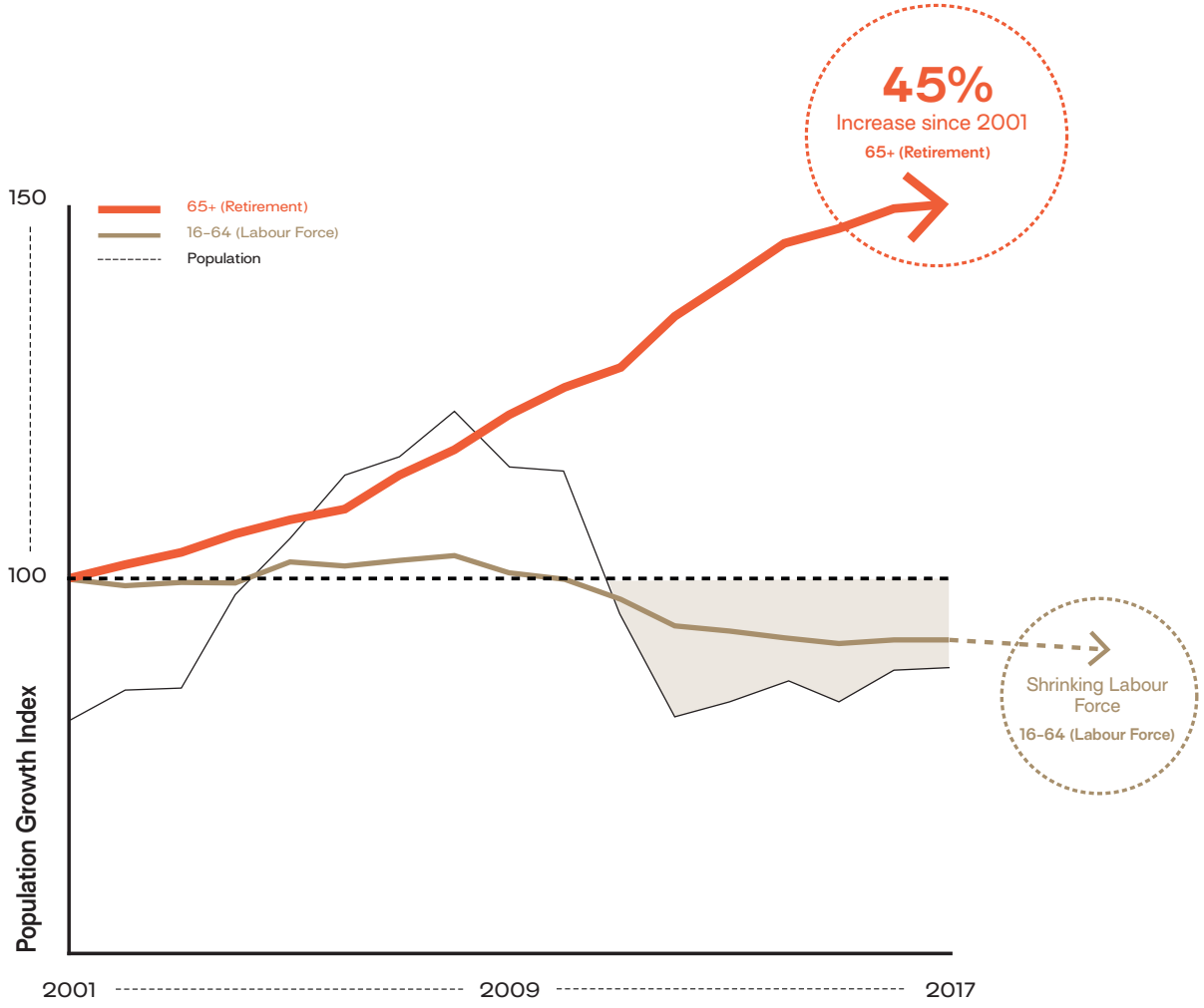
High house prices, low wages, high levels of second home ownership, and an ageing population have reduced the stock of affordable housing, especially for young adults. Even the most affordable homes cost 8.3 times wages in rural areas compared with 7 times in urban places. No wonder the Dales has 44% fewer 16-34-year-olds than the national average.

Rural areas desperately need affordable homes designed to make people feel healthier, happier and more fulfilled every day. Homes that enable them to realise their potential in life - no matter what their age, gender, sexuality, race or background. Failing to tackle the crisis will turn more and more villages into commuter dormitories with fewer local jobs, declining public services and loss of a genuine community life.

Building a small number of well-designed homes will make all the difference to the sustainability of the community and its services. But we also need to create opportunities for people in small rural communities to find secure, high-quality employment and to build successful businesses. Creating flexible housing that provides workspaces within the home or communal workspaces nearby is an important consideration.

The need for targeted housing

As we stated at the start of this document, the Dales is experiencing an exodus of young people. There are also many older people keen to downsize but who can't find smaller, affordable alternatives locally. These two distinct scenarios show how important it is to target great rural housing to the people and communities that need it most.



Source: Edge Analytics, ONS

A NEW MODEL OF CONSTRUCTION

Another crisis is looming in the Dales - a skills shortage in the construction industry.

Not enough young people are entering the industry to replace skilled workers who retire. There are many reasons why. On-site working conditions are uncomfortable. The culture is seen as ‘laddish’. Productivity is poor. Training and apprenticeship programmes have not recovered from the last recession.

These issues were raised by the 2016 Farmer Review of the UK Construction Labour Model: ‘Modernise or Die’. It called for greater innovation and offsite manufacture to be adopted in housebuilding.

The acute labour shortage and rising costs means we need a new model of construction in rural areas. We need to make better use of rural resources and labour, and introduce innovations that will require the local workforce to develop new skills for the future.

This is ‘Sustainability’ in the broadest and deepest sense. Communities being supported by a responsive built environment that grows and changes with minimum waste and best use of resources: economic, material and human.



The need for and benefits of a new method of construction

Our vision is aligned with the principles of the YDNPA and the desire to increase affordable housing through sustainable development in the area.

These values will address issues identified in the Yorkshire Dales National Park Local Plan 2015-30 (draft Local Plan 2023-40) and Supplementary Planning Documents, and the Management Plan 2019-24.

To realise our vision, we identified a set of values every new project should embrace. Each project should:

- Be distinct to its location.
- Reflect a deep understanding of the Dales, its landscape and its history.
- Provide contemporary solutions to modern aspirations.
- Incorporate cost-effective modern methods of construction.
- Bring benefits to the local economy - during and after construction.
- Enhance a sense of place and community.
- Create choice for locals.
- Encourage and support diversity.
- Be flexible enough to revolve and evolve around residents.
- Be sustainable on every level.
- Protect, reflect and enhance the local landscape.



2

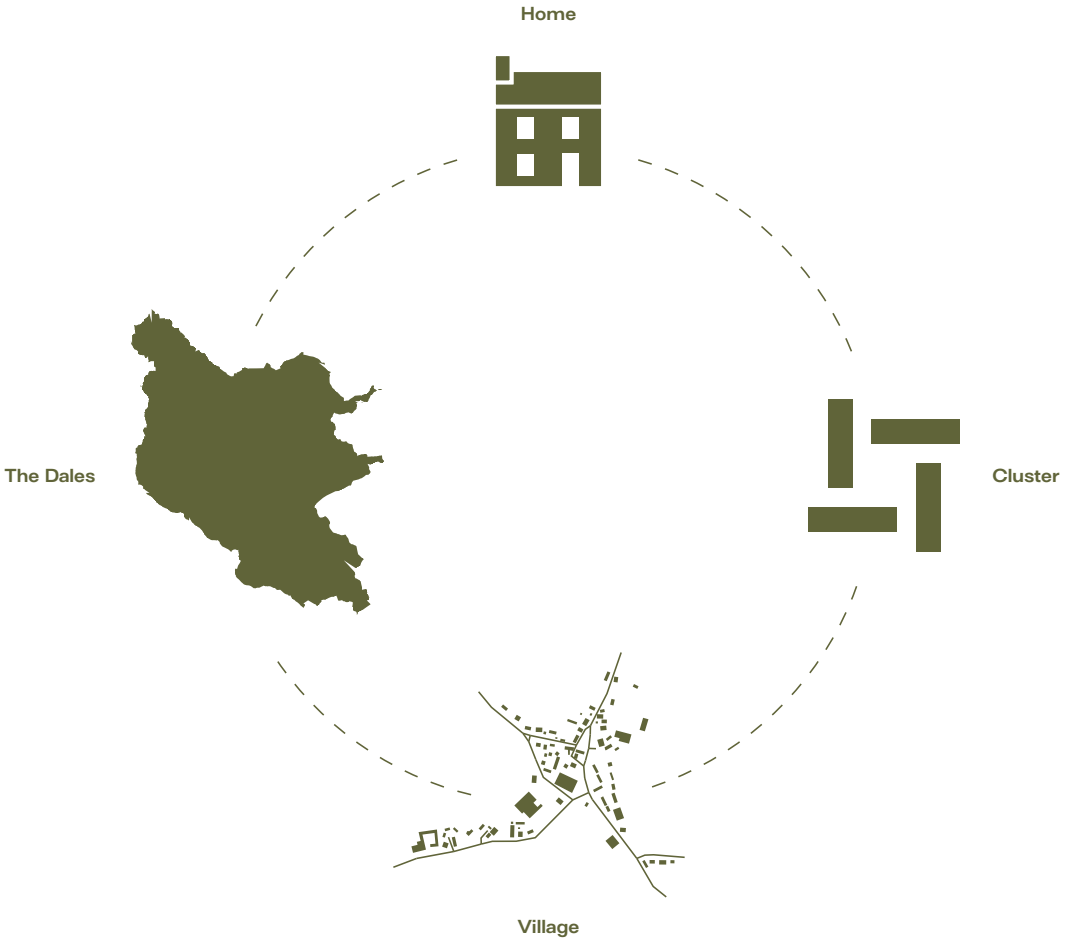
THE FUTURE VILLAGE

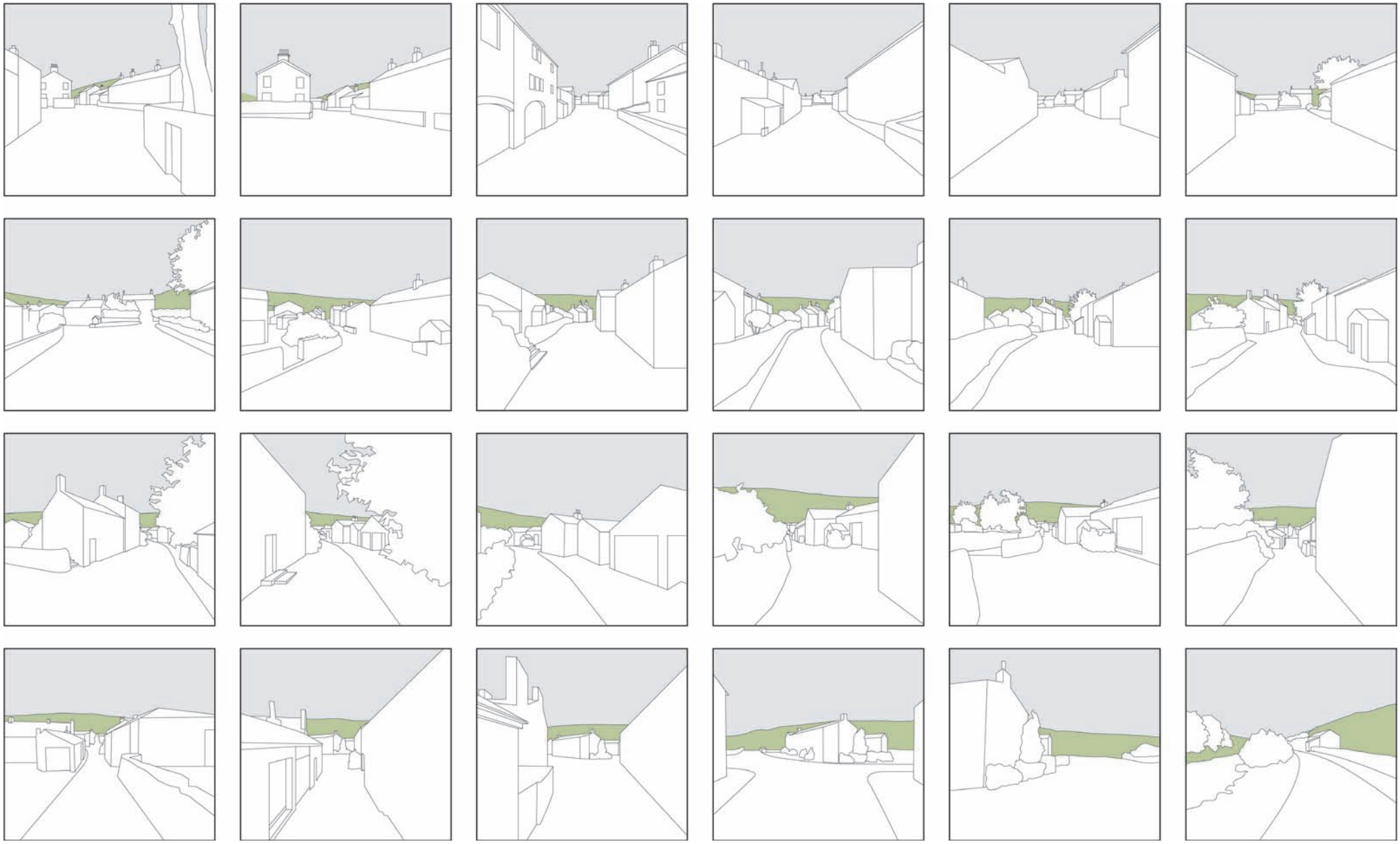

HOG ROAST
WALKERS

ZOOM IN, ZOOM OUT

People and nature make the Dales unique. By zooming in and zooming out, we were able to think beyond the home to focus on creating vibrant, integrated communities.

These new rural clusters are designed to strengthen and enrich people's relationship with their community and the outstanding landscape.





EVOLUTION OF VILLAGE LIFE

Village life in the Dales has evolved over 10,000 years. Early farmers cleared the woodland and developed the fields, creating the patchwork of dry-stone walls and barns typical of the area. Later settlers also left their mark - building villages and roads, cultivating crops and building distinctive farmsteads and field barns. A settlement pattern emerged with hamlets and villages in lowland areas and isolated farmsteads on the uplands. It's a pattern we recognise today.

Today's farming landscape of the Yorkshire Dales is a reflection of the field systems that went before. The area's rivers also retain their significance. Each of the main dales has its own river with many places named after the waterway that runs through it. Early settlements developed along the rivers which provided a source of drinking water and sanitation. Over time, roads followed these river routes.

These river catchments still provide the key framework for human settlement and transport corridors today. Understanding the relationship between village, river and landscape is key to understanding the modern Dales village.





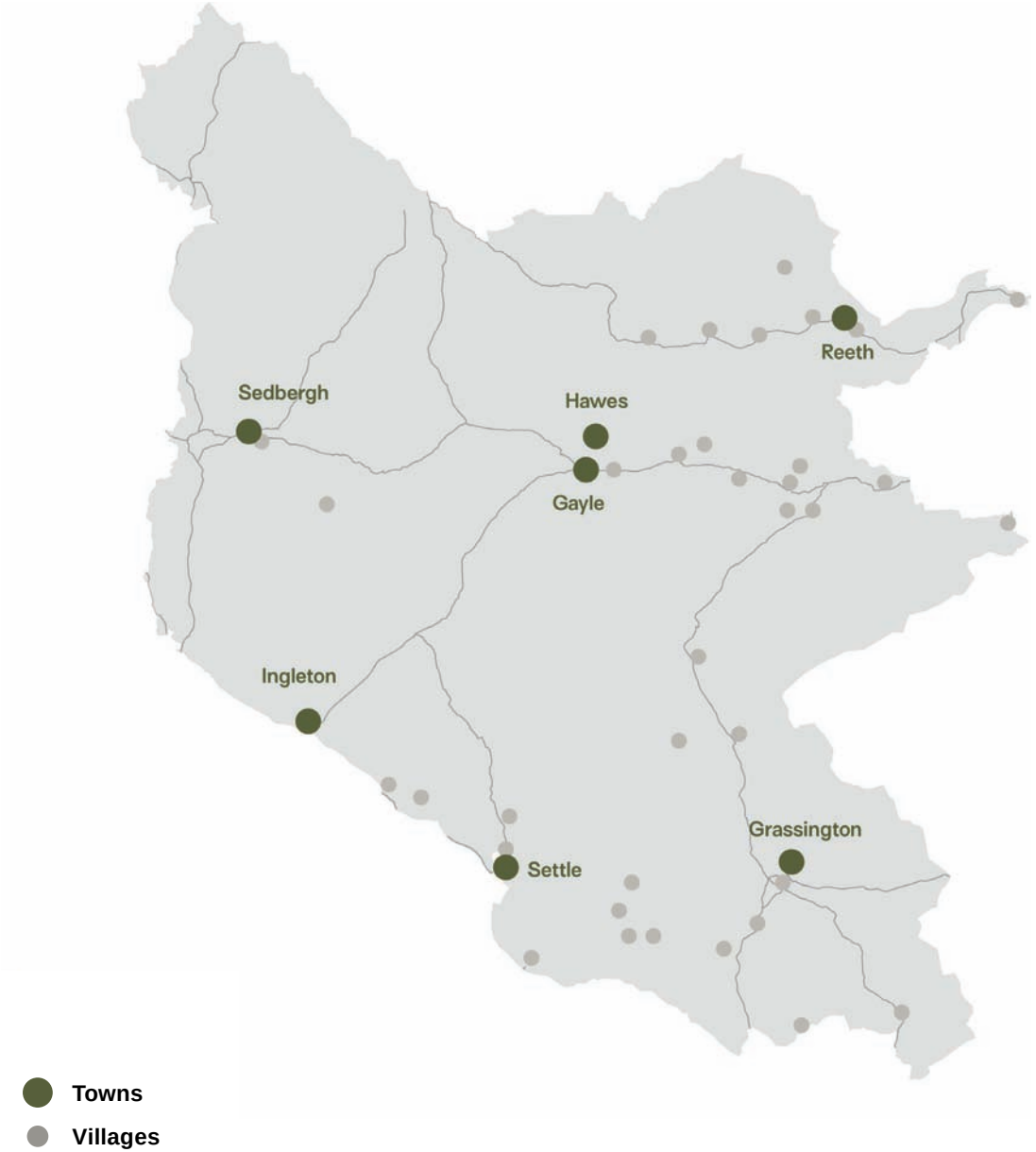


Settlement characteristics within the Park



The character of every settlement is determined by complex interactions between the settlement and its landscape, including processes of growth or decline through history, patterns of change in the local economy and design or development decisions by landowners and residents.

As a result, Dales settlements vary greatly in terms of pattern, scale, spaces and building types. Some villages have a distinctive loose-knit form, allowing for a variety of views, both within the settlement and out over the Dales beyond. Others have an enclosed character with only limited views. Open spaces within settlements such as greens, squares, gardens – even wide streets – contribute significantly to the unique form and character of a settlement.



Settlements within the Park

INTERCONNECTED SETTLEMENTS

Understanding the relationship between settlements is important. It will enable us to deliver the most appropriate housing based on infrastructure, amenities and the level of interaction between people from different settlements. Creating resilient and sustainable housing as a whole, not just within the boundaries of each settlement, will reinforce community relationships that have established over time.



Satellite

A small settlement that springs from a larger one and relies on its amenities.



Dependent

A group of similar sized settlements that pool amenities.



Solo

Small independent hamlets and villages - each with its own unique character.







In recent decades, village life has been transformed. The rise of new businesses that are not based on the land is a remarkable opportunity for locals to acquire new skills and enjoy secure, high-quality employment. With the right housing, transport, infrastructure and support, villages have the potential to return to their traditional position as thriving centres of rural enterprise.



3
A CLUSTERED APPROACH

The best developments are easy to understand. They have a distinct centre with buildings and spaces arranged in a way that supports the entire community. Unlike plot-by-plot developments, clusters can evolve in harmony with the people who call them home.

Evoking local Dales farmsteads, the most successful residential clusters consist of a loose grouping of homes round a shared communal open space for growing, gathering and events. Terraces are another feature of successful clusters. They frame views, create unexpected vistas and optimise density.

Clustering of houses gives a new development an intimate human feel from the outset. It's also easy to adapt to the particularities of the site, and expand to suit the community's changing needs. For example, clustered homes can be interlinked to create a diverse range of spaces across a larger site.

As developments evolve, new clusters can be linked to existing streets, rivers and village amenities to ensure locals remain engaged with the whole community. Clustering enables communities to grow and thrive organically.



We believe new developments should grow out of the existing local context and positively shape its future.

Here are some important factors to consider to achieve that goal:



Thinking beyond the home

If we think beyond the individual home, we can create places where communities can flourish; health and wellbeing are enhanced; the natural character of the Dales can be maintained, and future generations will aspire to live. We need to design good neighbourhoods.



Designing good neighbourhoods

Good neighbourhood design begins with an understanding of the local physical, historical and cultural contexts as a way of exploring potential design narratives. Capturing a ‘distillation of place’ helps to deliver new neighbourhoods with a strong identity and sense of belonging.



Connecting old and new

Inspiration for connecting new developments to the local context can come from a variety of sources. For example, vernacular building forms and materials, local history, the grain of surrounding settlements, topography and geology. Designers should avoid pastiche and instead find innovative, contemporary solutions to the needs and aspirations of modern village life.



Settlement density

Density needs to remain compact to avoid sprawl. However, higher density developments should not result in loss of open space. Instead, higher density developments can inspire creative ways to maximise the impact of open areas. For example, positioning vehicle parking away from the main development and using greenery to enhance people’s enjoyment of open spaces.



Settlement form

A comprehensive understanding of the qualities that make each settlement form distinctive is fundamental to the success of any new development.



Respecting boundaries

Respect for the existing edges and boundaries of a settlement is important. Their precise configuration is a key ingredient in the distillation of a place as they help define its character in relation to its neighbours. Where possible, new developments should seek to celebrate boundaries by incorporating them into their designs.



Living streets

Village streets are more than simply thoroughfares. They are where people meet to discuss daily life and gather to celebrate festivals and events.

New developments need to create ‘living streets’ where the whole community can come together. Plants, trees and landscape should permeate the streets to reflect their dynamic nature, provide shade and shelter, improve air quality and enhance their visual appeal. Local planting also plays an important role in increasing biodiversity.



Streets for people, not just cars

There are many ways to arrange parking that can enrich a development. In our approach to designing new schemes, we have hidden cars from the street while still making them accessible. For example, removing access to parking from the front of the homes creates more street space where greenery, neighbourly interaction and safe play can all flourish.



Providing for modern life

All the requirements of modern life need to incorporated into the design. For example, special places for recycling, rubbish, bicycles and utility meters so streets are not cluttered with bins, racks and meter boxes.



Open space as community hub

Attractive streets and open spaces can become focal points for the whole community. A good example is the traditional village green where everything from cricket matches to bonfire displays encourage locals and visitors to gather.

If we are to create developments that mature into sustainable neighbourhoods, we need to design great quality spaces for the whole community to enjoy and maintain. For example, communal growing plots, woodland running tracks and clearings made for stargazing.



Planning for every need

With careful planning, new developments can provide for all our needs. From open spaces for recreation and inviting streets that foster a sense of community to more practical considerations such as parking.



Creating connected neighbourhoods

Connectivity is key to creating harmonious new neighbourhoods. Car dependency poses a great threat to the health and wellbeing of rural residents. It also leads to the isolation of economically poorer residents. For example, the fashion for cul-de-sacs can trap residents in a warren of unconnected streets that disconnects people from surrounding green spaces and facilities. In turn, this promotes unhealthy, inactive lifestyles and stifles interaction with neighbours.

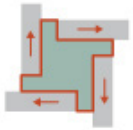
New developments should aim to connect people with their surroundings by creating easy routes for them to walk or cycle to local amenities, including schools, shops and landscape. A network of footpaths and cycle lanes, sheltered from the elements, can promote a healthier lifestyle and stronger sense of community.



1. Shared space



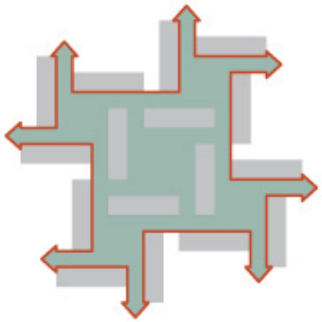
2. Individual terraces



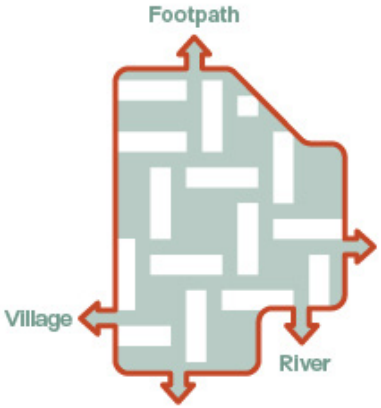
3. Separate terraces



4. Open connections



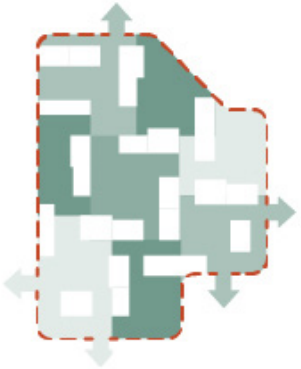
5. Neighbourhoods connected



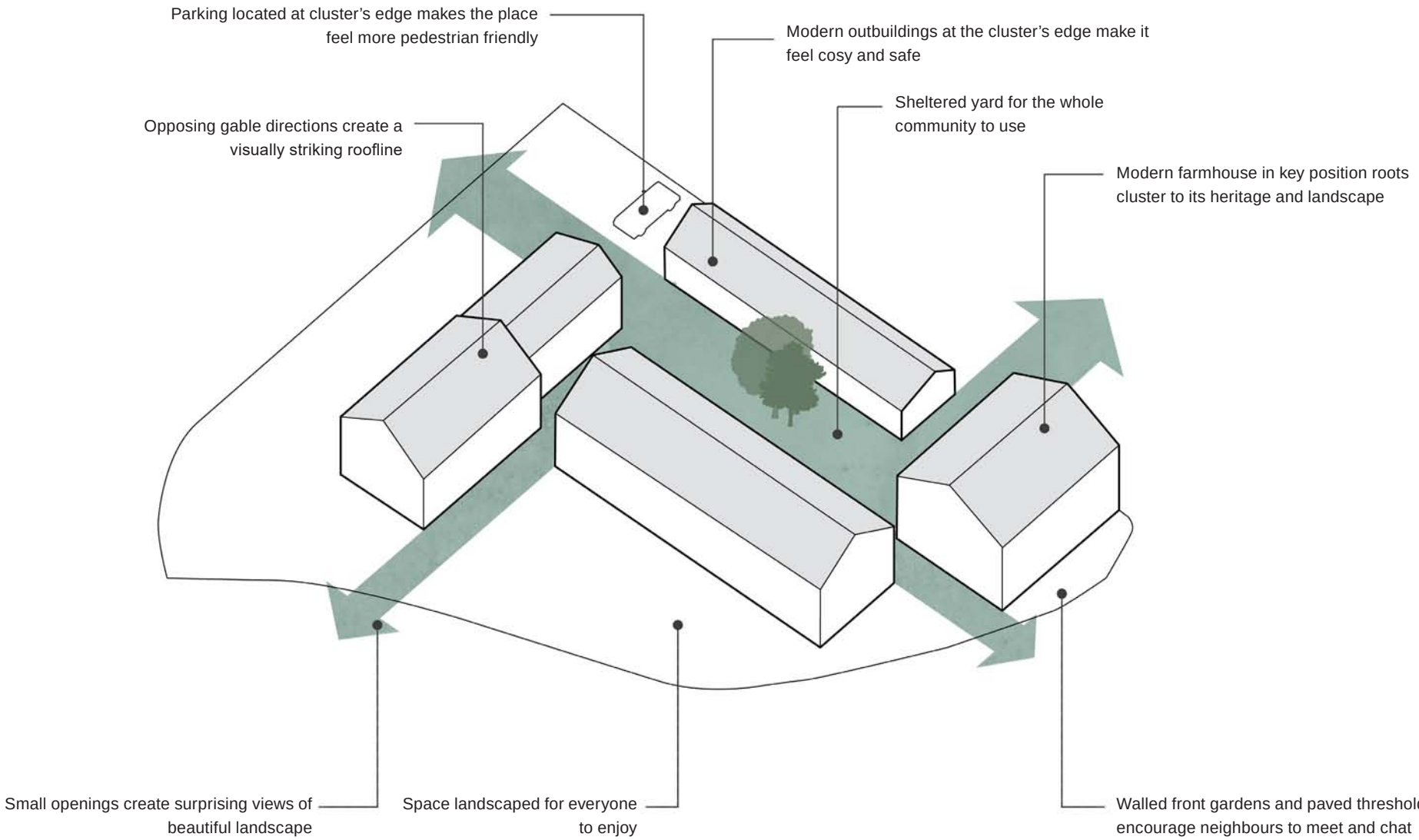
6. Village connected



7. Housing diversified



8. Clusters with character


Parking located at cluster's edge makes the place feel more pedestrian friendly
Modern outbuildings at the cluster's edge make it feel cosy and safe
Sheltered yard for the whole community to use
Opposing gable directions create a visually striking roofline
Modern farmhouse in key position roots cluster to its heritage and landscape
Small openings create surprising views of beautiful landscape
Space landscaped for everyone to enjoy
Walled front gardens and paved thresholds encourage neighbours to meet and chat

Electric vehicle charging point provided at parking site

Preserve central area for communal space; allocate parking closer to site perimeter

Native plants and trees to foster local biodiversity and provide shading in summer

Centralised battery storage, storing electricity from PV panels and releasing it to homes and car charging points to support grid electricity in case of peak demand

East/west facing skylights

Consider blinds or external shading to limit solar gain in summer

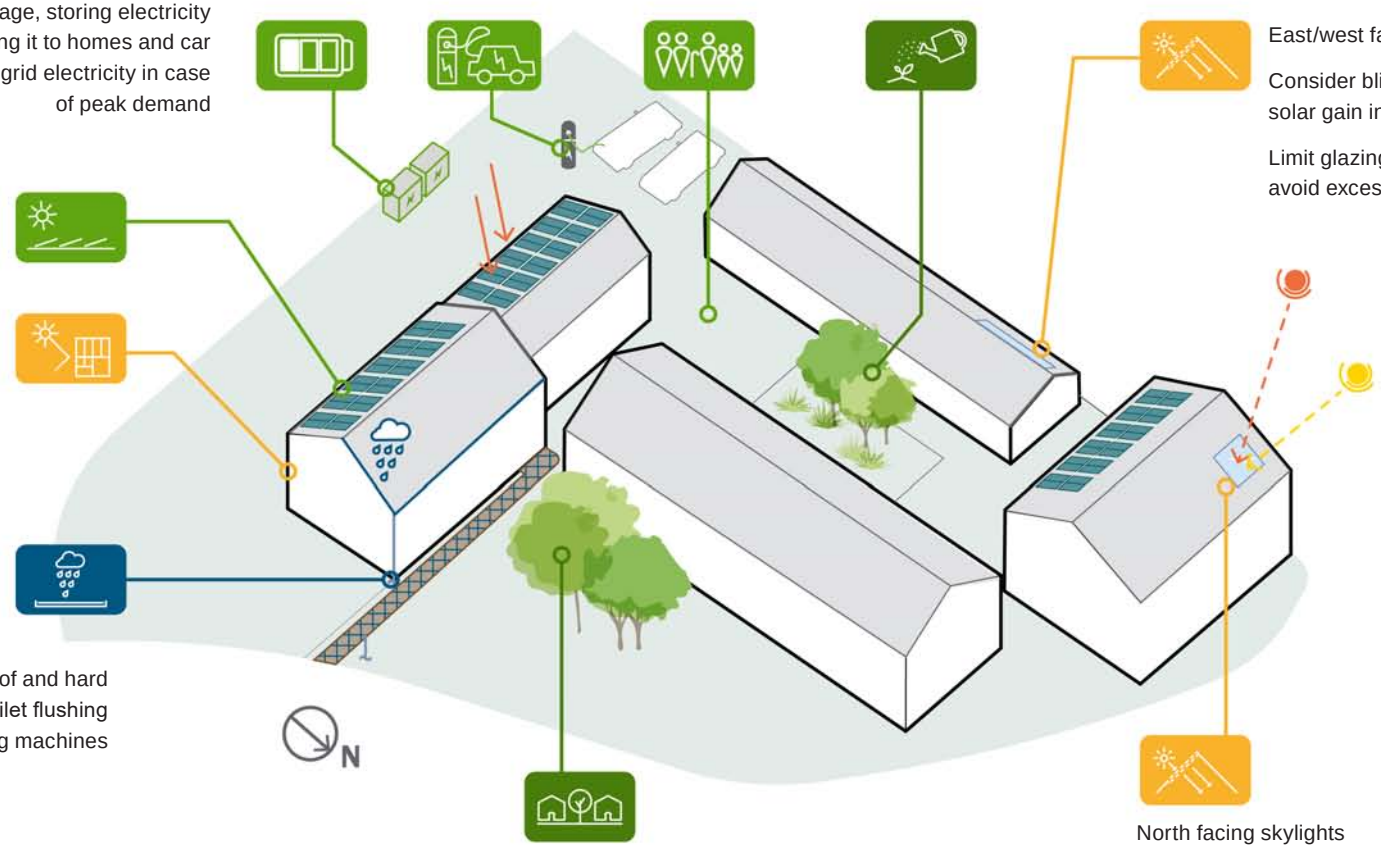
Limit glazing ratio to 10% of roof area to avoid excessive heat loss in winter

South facing PV panels

South facing windows

Consider overhang/recess to block direct isolation around midday in summer months

Limit WWR to 15% on south side to avoid excessive solar gain in summer



Rainwater collection from roof and hard surfaces for irrigation, toilet flushing and washing machines

Tree planting to enhance outdoor comfort

North facing skylights

Skylights to be placed on northern roof orientations to provide access to ample diffused daylight

Limit glazing ratio to 10% of the roof area to avoid excessive heat loss in winter

4

HOMES FOR MODERN LIFE

The distinctive character of Dales houses is largely a product of the local climate, the availability and qualities of local natural materials and local building traditions. Although there are exceptions, Dales houses tend to be robust, solid and functional buildings with little architectural ornamentation.

Our objective was to adopt the spirit of the Dales vernacular while introducing elements of innovation. This means drawing on the characteristics of local buildings - their scale, use of materials, and relationship to the landscape - while responding to modern lifestyles and aspirations.

Modern village communities are a mixture of rural and urban people and ideas. The challenge is to conserve their unique character without limiting their relevance to future generations. The solution is to identify successful and appropriate elements of local Dales vernacular and use them to inspire and influence the design of new buildings and spaces.







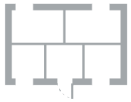


We identified the following key elements - common across the Dales:



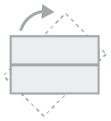
Form and Massing

- Straightforward agricultural forms.
- Compact terrace massing to reduce heat loss and heating costs.
- Simple double pitched roof at a shallow pitch.
- Simple gabled forms and eaves and verges.
- Cost-effective in construction.



Plan Form

- Narrow, rectangular shallow plan that allows for good daylight into the rooms – even with smaller openings.
- Narrow house width facilitates low, shallow sloping pitch roof.
- Additional floor area can be provided on new build narrow plan houses by introducing single storey extensions.



Orientation

- Orientation usually reflects the direction of prevailing weather patterns, settlement pattern and layout.
- South-facing windows to maximise daylight, reduce the need for artificial lighting and increase passive solar gain.
- Blank gable elevations that face west to protect principal elevations from wind and rain.



Openings

- Repetition and with deep reveals to create economies of scale, support robust massing, and help protect windows from bad weather.
- Small window openings that reduce heat loss and create buildings with a high solid to window ratio.



Proportions

- Balanced proportions with neither a horizontal nor vertical emphasis.
- Relatively low building height, a shallow pitched roof, and low eaves (horizontal emphasis) is balanced by gables, chimneys and windows (vertical emphasis).



Chimney

- Internal chimney stacks straddling the ridge and positioned at the gable ends.
- Chimney stacks of all shapes and sizes.
- Chimney treated as the heart of the home, not merely a functional device.
- The hearth treated as an important part of a home - designed for cooking, heating and gathering.



Flexibility

- Farmsteads and field barns featured flexible layouts that were easy and uncostly to adapt to changing economic, agricultural and social needs. For example, from storing crops to housing livestock.
- Architecture evolved and revolved round the residents resulting in folk architecture in its purest form.



Materials

- Natural local stone for walling and roof coverings.
- Prevalence of natural materials creates scope for using innovative, sustainable materials in new designs.

Local Inspiration

From the Ingleton Waterfalls to Malham Cove, the Yorkshire Dales National Park is always an inspiration.

So why should locals settle for uninspiring homes?

They deserve housing that inspires and delights every day. Housing as beautiful and dynamic as its natural surroundings. And where health, optimism and wellbeing are built into the fabric. Flexible, affordable homes that revolve and evolve round them. Millennial. Empty nester. Entrepreneur.

Eco-thrifty dwellings that are sustainable for life.

Although Dales houses share some broad characteristics as set out in the previous section, closer inspection reveals a high degree of variety.

No two houses are the same. This creates a challenge when planning modern housing: How do we create diversity and choice within an informal built environment?

We've created four different types of building which each provides a diverse and flexible mix of accommodation. To maximise flexibility and choice and minimise construction costs, buildings are constructed using prefabricated modules that are interchangeable across the four different types of house.

The design challenge is to balance harmony with diversity.

The delivery challenge is to achieve variety and quality while also streamlining production at a time of skills shortages and rising costs.

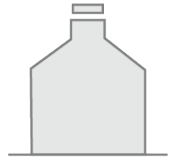
Our designs were inspired by these iconic buildings found across the Dales and reinterpreted for modern life:



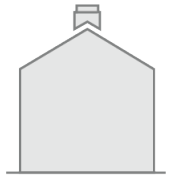
Outbuilding



Barn



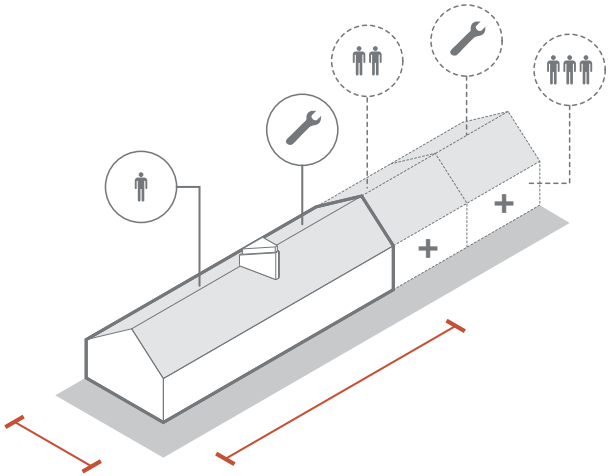
Cottage



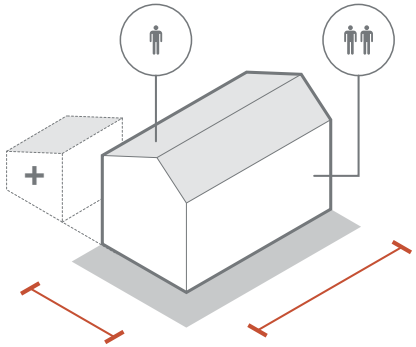
Farmhouse

Our flexible modular approach will enable residents to choose the best layout for their lifestyle. As their lives evolve, residents can change the layout by making small, uncostly adjustments. For example, to facilitate inter-generational living or homeworking.

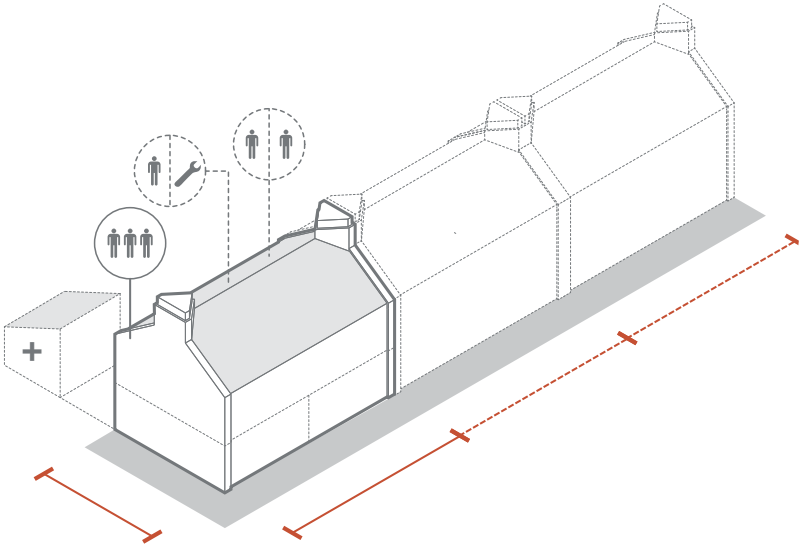
Modularity also means housing can respond to the distinct character and demands of each village. Greater choice for people helps create popular, inclusive and sustainable places. It's also an incentive to create a wider range of pre-designed homes.



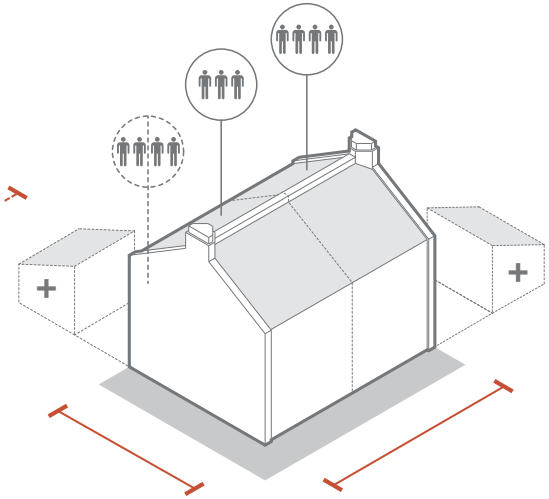
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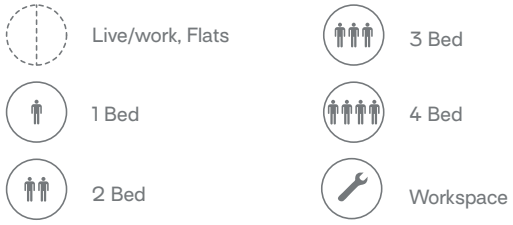
Barn



Cottage



Farmhouse



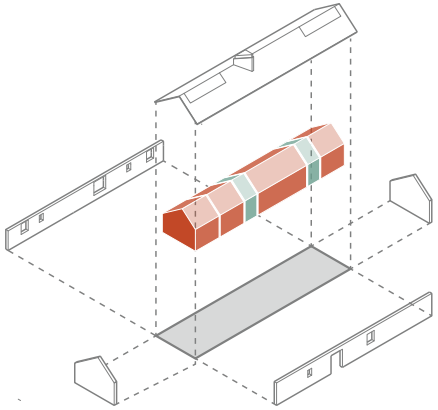
Flexibility and choice – unit breakdown of the housing typologies

Modern Methods of Construction are fundamental to achieving that objective. They enable high-quality buildings to be constructed cost-effectively at speed with less impact on the environment, site and community. They also introduce new technologies into the local supply chain with reskilling opportunities for the local workforce. This creates the potential for a new local skilled workforce and a more resilient market able to provide long-term, high-quality employment.

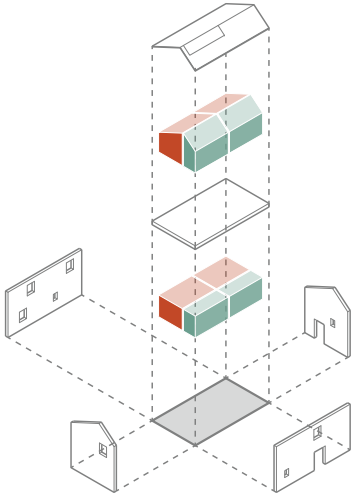
On a practical level, modern precision-engineered and factory-based technologies can speed up the housebuilding process. This significantly reduces the environmental impact, site waste and the number of vehicles on local roads.

Construction workers can build in safe factory environments that attract and support a more diverse and inclusive workforce. In turn, this attracts new talent into the industry.

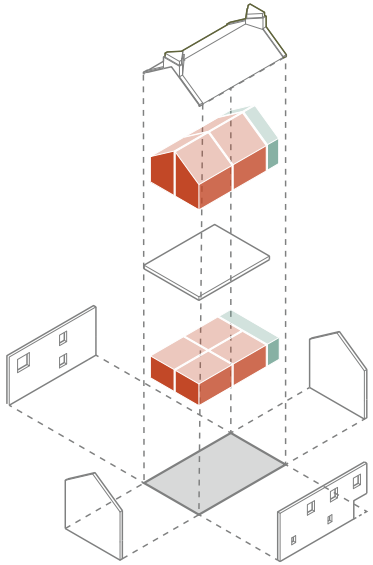
Consumers benefit from greater choice. Modularity makes it easier to personalise designs, add extensions and create flexible layouts that evolve over time. Architects can be more ambitious in their designs.



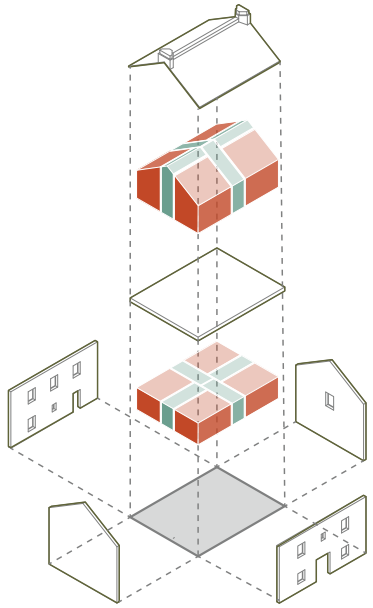
Outbuilding



Barn



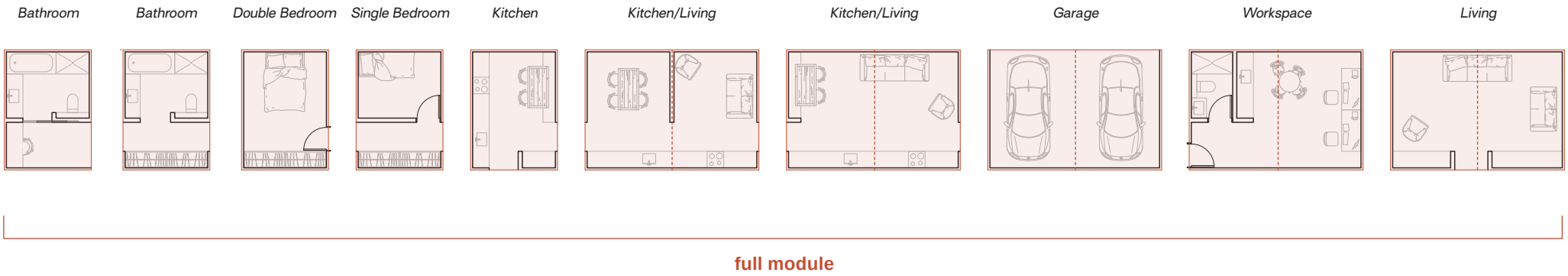
Cottage



Farmhouse

Flexibility and choice – modular application within the housing typologies





Flexibility and choice - a plan for every need



Inspired by local vernacular, our proposed elevations are deliberately simple. Confident modular window units are common to all four building types. They are consistently positioned in height and in relation to internal rooms. Deep reveals which limit light pollution help protect the ‘dark skies’ status of the National Park.

A thoughtful internal layout helps generate generous street elevations so that each home contributes to the wider streetscape.



Elevation principles

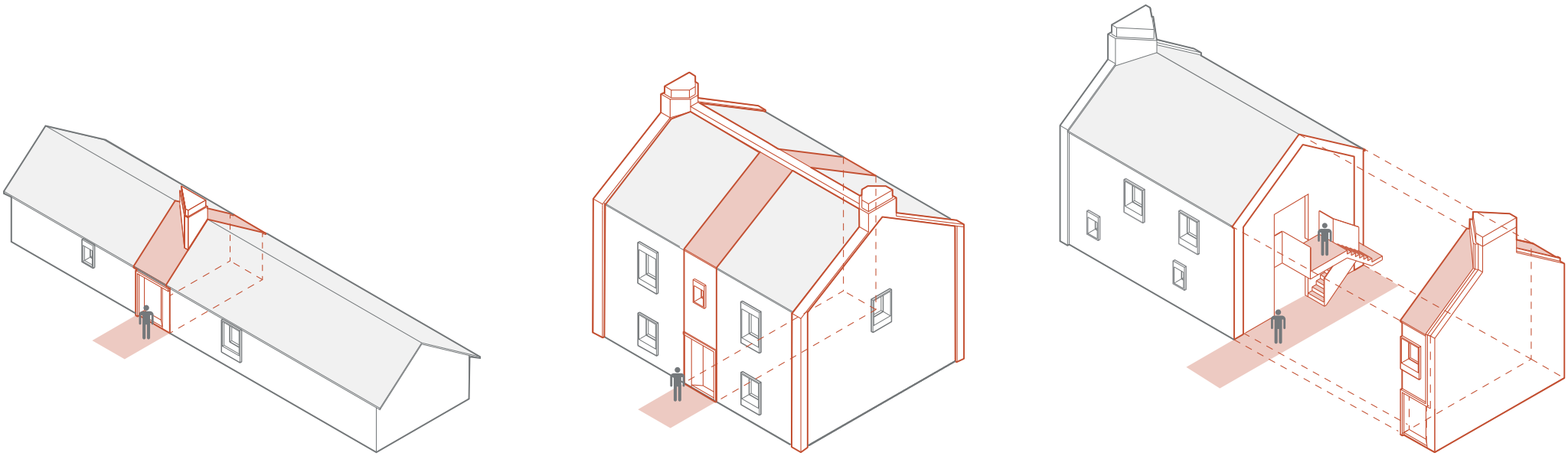
We want to return the chimney to its central position in rural home.

We've taken the human-scale qualities of the chimney - a place to cook and gather - and reinterpreted it for modern times by transforming it into a benchmark of sustainability that provides an extraordinary source of light and ventilation.

Our modern chimney will be a focal point for home life. The moment people cross the threshold, the sight of it should make them feel at home. Its double-height space connects life upstairs and downstairs as light, air and sounds travel up and down. It also provides a nook to sit or work.

Using recycled ceramics designed by a local artist evokes traditional decorated hearths. It also builds sustainability into the fabric of the chimney. The introduction of craft and materials means it can be easily adapted to suit the taste of residents and respond to colours found in the surrounding landscape. In time, we hope these decorated hearths will become synonymous with Dales architecture - possibly spawning an artisan ceramics industry in the area.

Traditionally, chimneys were a characteristic feature of the skyline. We reinterpret this tradition to celebrate a new era in sustainable rural housing.



The chimney – the focal point of the home in each typology

We want to deliver lifelong homes for people in the Dales. We also want to create dwellings that provide environmental benefits for them, the community, the Dales and the planet.

Our ‘Eco Thrifty’ approach lets us do both.

We created designs and chose materials based on their sustainability, energy performance, quality and durability over decades, not years. It means we can build health and wellbeing into the fabric of each home while protecting the outstanding natural surroundings. It also means we can establish a new benchmark in sustainable rural housing that offers human-scale solutions to the climate emergency.

The challenge of overheating

The greatest challenge with new environmentally friendly homes is how to avoid overheating. With well-insulated walls and roofs, high-efficiency windows and airtight construction, once heat gets inside a modern home there is nowhere for it to go unless a window is opened.

Windows therefore must be well-shaded, big enough to create a high level of air movement and designed to maximise ventilation across and up through the home. They must also provide comfortable and secure sleeping conditions at night.

All our buildings feature south-facing windows that are protected by deep window reveals. This allows free-flowing ventilation throughout the entire space. Rooflights in the chimney combine with door openings to the staircase. This forms an atrium that also helps ventilate the whole home.

Creating Healthy Homes

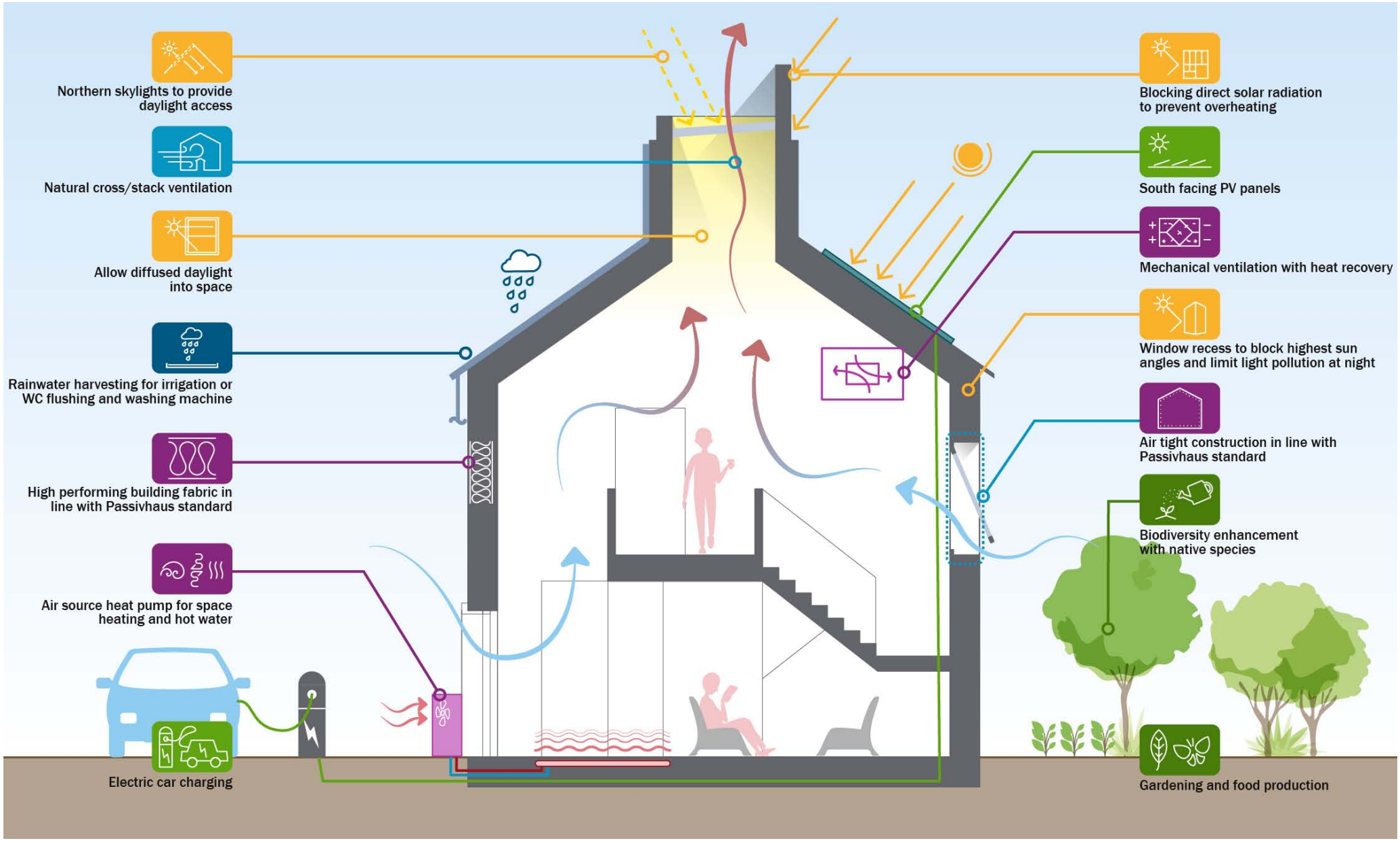
A healthy home is one that incorporates healthy design elements, non-toxic building materials, and proper construction techniques. It “breathes”, emits no toxic gasses, and is resistant to mould and decay.

To achieve these goals, we must consider the impact of materials on human health and the environment across the entire life cycle of the building, not simply the operational phase of a project. For example, while all insulation helps the environment by limiting heat loss, natural fibre insulation can be composted. This means it has a much lower - and often negative - carbon footprint throughout its lifecycle.

The house can be ventilated naturally using cross ventilation, using two windows on opposite sides, as well as stack ventilation. Stack ventilation uses the effect of buoyancy, the pressure difference between air of different temperatures, to drive ventilation. This is usually achieved through openings spanning over a certain height difference. In our case, this can be achieved using ground and first floor windows as air inlets, ventilating out through the chimney.

Translating the traditional chimney into a modern ventilation feature repurposes an established typology into a contemporary integrated design solution. Using the pressure difference induced by wind and buoyancy of hot air rising through building, this strategy will ensure heat and indoor pollutants purge in summer to ensure thermal comfort and fresh air. This effect can be further enhanced by the aerodynamic design of the chimney profile that creates an additional pressure difference. Being exposed and orientated towards the predominant wind direction increases pressure difference and suction forces on the leeward side, whilst being heated by sun further drives the ventilation by increasing the temperature gradient within the chimney.

In addition to that, the chimney can allow daylight deep into the space where it would not reach through windows only. Having a light and reflective finish within the double height chimney space further scatters daylight to maximise its distribution into the house.


Northern skylights to provide daylight access
Natural cross/stack ventilation
Allow diffused daylight into space
Rainwater harvesting for irrigation or WC flushing and washing machine
High performing building fabric in line with Passivhaus standard
Air source heat pump for space heating and hot water
Electric car charging
Blocking direct solar radiation to prevent overheating
South facing PV panels
Mechanical ventilation with heat recovery
Window recess to block highest sun angles and limit light pollution at night
Air tight construction in line with Passivhaus standard
Biodiversity enhancement with native species
Gardening and food production



Daylighting

Undertake a daylight assessment of each dwelling according to BS EN 17037:2018 ‘Daylight in buildings’ and meet relevant criteria to maximise use of natural light and reduce use of artificial lighting

Overheating

Undertake an overheating assessment of each dwelling according to CIBSE TM59 ‘Design methodology for the assessment of overheating risk in homes’ (2017) and meet the relevant criteria to reduce overheating risk

Passive design

Prioritise a passive design approach to the design and construction of each dwelling to reduce building energy demand. In particular, consider the following aspects:

- Consider building form to reduce exposed surface area
- Enhance building fabric performance specifications (i.e. U-values, airtightness, thermal bridging)
- Review window-to-wall ratio to balance daylight throughout the year, passive solar gain in winter and overheating risk in summer
- Consider mechanical ventilation with heat recovery (MVHR) with summer by-pass to reduce heating and cooling loads
- Provide natural ventilation to reduce use of mechanical ventilation and improve thermal comfort

Operational energy

Undertake an operational energy assessment of each dwelling according to CIBSE TM54 ‘Evaluating Operational Energy Performance of Buildings at the Design Stage’ (2013) to estimate actual operational energy performance and reduce performance gap

Low environmental impact materials

Undertake a life cycle assessment (LCA) of the proposed development according to RICS ‘Whole life carbon assessment for the built environment’ (2017) to assess the embodied carbon emissions of materials and inform material selection

Sustainable materials

Specify sustainably and locally sourced construction materials, and rapidly renewable materials, where possible, to reduce environmental impact of materials. Specify low volatile organic compound (VOC) finishing materials according to Home Quality Mark (HQM) criteria, to improve indoor air quality

Construction waste management

Develop and implement a Resource Management Plan (RMP) covering the non-hazardous waste related to on-site construction and, where applicable, dedicated off-site manufacture or fabrication (including demolition and excavation waste) generated by the building’s design and construction. Divert at least 70% (by volume) or 80% (by weight) of non-hazardous construction waste and at least 80% (by volume) or 90% (by weight) of demolition waste from landfill

Operational waste

Consult with the waste collection authority and, if appropriate, provide internal and external waste storage for both recyclable and non-recyclable household waste according to HQM criteria. Consider providing composting facilities for garden and food waste to each dwelling according to HQM criteria

Circular economy

Apply circular economy principles to each development according to UKGBC ‘Circular economy guidance for construction clients: How to practically apply circular economy principles at the project brief stage’ (2019)

Water

Adopt water efficient fittings and, where possible, implement rainwater and/or greywater recycling for toilet flushing, washing machines and irrigation, to minimize potable water consumption

Sustainable drainage

Achieve greenfield run-off rates and manage surface water run-off as close to its source as possible. Prefer green over grey features, in line with the following drainage hierarchy:

- rainwater use as a resource (for example rainwater harvesting, blue roofs for irrigation)
- rainwater infiltration to ground at or close to source
- rainwater attenuation in green infrastructure features for gradual release (for example green roofs, rain gardens)
- rainwater discharge direct to a watercourse (unless not appropriate)
- controlled rainwater discharge to a surface water sewer or drain
- controlled rainwater discharge to a combined sewer

Resist the use of impermeable surfacing unless unavoidable, including on small surfaces such as front gardens and driveways. Design and implement drainage in ways that promote multiple benefits including increased water use efficiency, improved water quality, and enhanced biodiversity, urban greening, amenity and recreation

Biodiversity

Apply good practice principles for achieving biodiversity net gain in the proposed development according to CIRIA C776a ‘Biodiversity net gain. Good practice principles for development. A practice guide.’ (2019)

Local food production

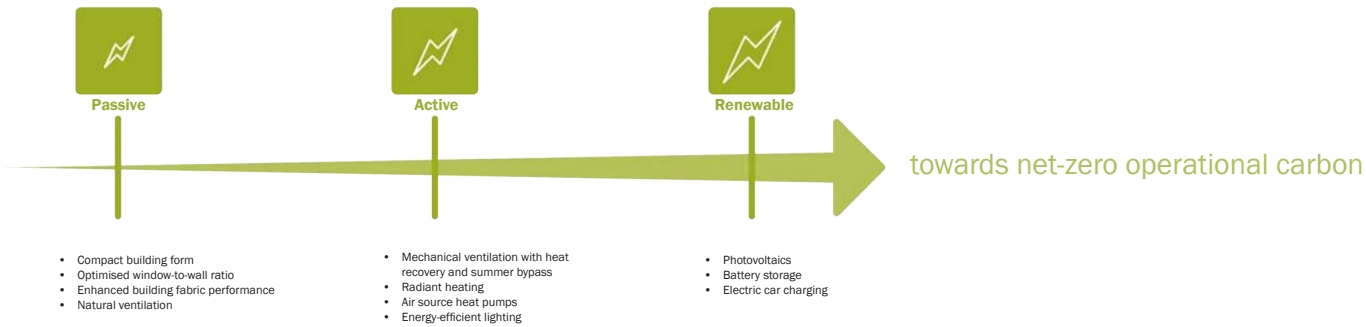
Identify and enable potential areas within the proposed development to be used for food production

Sustainable transport

For each dwelling consider providing cycle storage based upon the size of the home according to HQM criteria and at least one electric vehicle charging point (EVCP) for private parking. Where possible, the EVCPs should be fed by renewable energy sources, such roof-mounted photovoltaic panels

Smart homes

Provide digital connectivity to and within each home according to HQM criteria to enable increasingly digital lifestyles



The proposed prototypes aim to be zero carbon in operation. In order to minimise energy and CO2 emissions to the atmosphere arising from the operations of, and within, the dwellings, the following energy hierarchy has been applied to the design strategy of the proposed prototypes:

- minimising energy consumption through passive design measures
- supplying energy efficiently through active design measures
- maximising energy generation from on-site renewables

The three principles outlined above have been applied in sequence and systematically in the proposed dwellings.

Passive design measures

The energy efficient building design of the proposed dwellings will minimise the need for energy in operation while maximising the comfort of users during the lifetime of the buildings. The integration of passive design principles will enable the building to be less reliant on heating, cooling and ventilation systems and minimize dependence on artificial lighting. This is achieved by taking advantage of natural energy flows to maintain thermal comfort.

To limit heat losses across the building envelope a number of measures have been implemented. These include efficient built form, optimised window-to-wall ratio, high levels of insulation and airtightness, and reduced thermal bridging.

The building envelope is compliant with the Building Regulations Part L 2013 standards, as described in the Approved Document L1A (ADL1A) 2013 (“Conservation of fuel and power in dwellings”), incorporating 2016 amendments, and go beyond the limiting U-values, design air permeability and thermal bridging set out in ADL1A 2013, in order to limit heat losses in winter and heat gains in summer.

Good detailing and construction site management will be effected in order to achieve an estimated design air permeability of at least 3m3/(h.m2) at 50Pa, which is 70% better than the Building Regulations standard as described in the ADL1A 2013, and an enhanced thermal bridging y-value of 0.08W/(m2.K), which is almost 50% better than the Building Regulations standard as described in the ADL1A 2013.

Natural ventilation will allow energy savings of the electricity used for fans and pumps, while avoiding overheating in summer. Through careful design of the façades, the dwellings has been fitted with openable windows to supply outdoor fresh air and extract indoor exhaust air. Natural air flow in dwellings has been enhanced by the use of openable chimneys in summer.

Residential Building Fabric Performance Specifications

Building element	Part L 2013 limiting values	2021 Part L consultation - limiting values	Part L 2013 Notional Building	2021 Part L consultation - Notional Building	PassivHaus limiting values	Recommended minimum values
Roof	0.20 W/(m^2K)	0.16 W/(m^2K)	0.13 W/(m^2K)	0.11 W/(m^2K)	0.15 W/(m^2K)	0.10 W/(m^2K)
Ground/ exposed floor	0.25 W/(m^2K)	0.18 W/(m^2K)	0.13 W/(m^2K)	0.13 W/(m^2K)	0.15 W/(m^2K)	0.10 W/(m^2K)
External wall	0.30 W/(m^2K)	0.26 W/(m^2K)	0.18 W/(m^2K)	0.18 W/(m^2K)	0.15 W/(m^2K)	0.15 W/(m^2K)
Party wall	0.20 W/(m^2K)	0.20 W/(m^2K)	0.00 W/(m^2K)	0.00 W/(m^2K)	-	0.00 W/(m^2K)
Solid door	2.00 W/(m^2K)	1.60 W/(m^2K)	1.00 W/(m^2K)	1.00 W/(m^2K)	0.80 W/(m^2K)	1.00 W/(m^2K)
Window	2.00 W/(m^2K) (double glazing)	1.60 W/(m^2K) (double glazing)	1.40 W/(m^2K) (double glazing)	1.20 W/(m^2K) (double glazing)	0.80 W/(m^2K) (triple glazing)	1.20 W/(m^2K) (double glazing)
Rooflight	2.00 W/(m^2K) (double glazing)	2.20 W/(m^2K) (double glazing)	1.40 W/(m^2K) (double glazing)	1.20 W/(m^2K) (double glazing)	0.80 W/(m^2K) (triple glazing)	1.20 W/(m^2K) (double glazing)
Air permeability	10 m^3/(h.m^2) @ 50Pa	8 m^3/(h.m^2) @ 50Pa	5 m^3/(h.m^2) @ 50Pa	5 m^3/(h.m^2) 50Pa	0.6 ach^{-1} @ 50Pa	3 m^3/(h.m^2) 50Pa
y-value	0.15 W/(m^2K)	0.20 W/(m^2K)	0.05 W/(m^2K)	-	0.01 W/(m^2K)	0.08 W/(m^2K)

Note:

1 unfilled cavity walls with effective sealing at all exposed edges and in line with insulation layers in abutting elements

2 solid walls or fully filled cavity walls with effective sealing at all exposed edges and in line with insulation layers in abutting elements

Active design measures

The majority of the supplied energy will be used to operate the dwellings. By improving the energy efficiency of heating, ventilation and domestic hot water systems, lighting and appliances the need for energy in operation during the lifetime of the building will be minimised.

Localised or centralised air source heat pumps, depending on the size of the development, will provide space heating and domestic hot water to the dwellings. A wet and low temperature hot water (LTHW) underfloor heating system or heated skirting boards are proposed for the habitable spaces, while electric (or dry) underfloor heating system or towel rails are proposed for the bathrooms. Both wet and dry systems will provide an even distribution of heat and are considered the most comfortable form of heating due to the high radiant component and the fact that the heat is provided at low level. In addition, they allow for space flexibility within the dwellings.

A mixed mode ventilation strategy for the dwellings will combine the benefits of mechanical ventilation with heat recovery (MVHR) in winter and natural ventilation in mid-season and summer.

MVHR will allow the thermal energy extracted from the exhaust air to be used to heat the supply air, thus dramatically minimising the need for additional heating in winter. Heat will be recovered from the air extracted at high level from bathrooms and kitchens through plate heat exchangers installed in the ventilation units and exchanged with the incoming fresh air to be supplied at high level to bedrooms and living areas.

The ventilation strategy of bathrooms and kitchens will form part of a balanced mechanical ventilation system. Bathrooms and kitchens would require a mechanical extract. Therefore the extension of this system to a balanced ventilation scheme does not consume much additional electricity.

Fresh air will be ducted from outside to the heat recovery units and then supplied and extracted from grilles located at high level. During summer the fresh air can be brought directly into the dwellings without exchanging heat in order to offer some free cooling. For this purpose the MVHR units will be fitted with a summer by-pass.

To further minimise the energy consumption, energy efficient light fittings will be specified for the residential units and their external areas. All fixed internal light fittings will be energy efficient, i.e. light-emitting diode (LED) lamps. The luminaries in the dwellings will also be manually dimmable to provide visual comfort, while reducing the use of electricity when sufficient daylight is provided or a more relaxing atmosphere is preferred. In the cupboards internal light fittings will be controlled occupancy sensors. All external space light fittings and security light fittings will be energy efficient and controlled through a time switch and daylight or occupancy sensors to restrict operation during daylight hours.

Energy efficient labelled white goods will be supplied to each dwelling in order to reduce the CO2 emissions arising from appliance use. Fridges and freezers or fridge-freezers, washing machines, washer-dryers, dishwashers and cooking appliances should be A rated.

On-site renewable energy generation

In order to reduce the overall CO2 emissions of the proposed development in use, a photovoltaic (PV) system is proposed to generate renewable energy on-site. The PV system would provide electricity for fans, pumps, lighting and small power. Once a specific site is selected, the opportunity to install PV panels on the roof of the building(s) will be explored further to maximise the electricity generation.

The proposed PV system will be coupled with a battery storage system to store excess solar power generated during the day and use it at night. This will allow the dwellings to become more grid independent, be protected against rising electricity prices, take advantage of off-peak charging and peak discharging (buy cheap and use peak), have backup in a power cut, and reduce their carbon footprint.

Battery storage will be in turn connected to electric vehicle charging points provided to each dwelling to help reducing the carbon footprint of the occupants, going beyond the zero carbon target for the dwellings. Motorised vehicles are required to move around the Yorkshire Dales, due to the topography of the area and distance required to reach key services and infrastructures. Therefore, the use electric vehicles is promoted, as less polluting for the environment than conventional fossil-fuelled vehicles









Clockwise from top left: Stone, render, brick and timber



Sedbergh School Boarding Accommodation



Sedbergh School Sports Centre



Boyle and Petyt Primary School



Bushy Lodge Farm



Stone



Metal Cladding



Slate



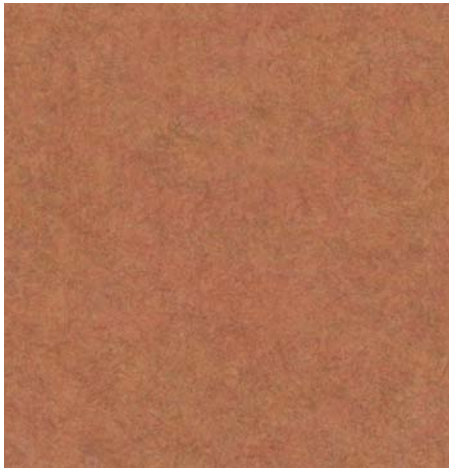
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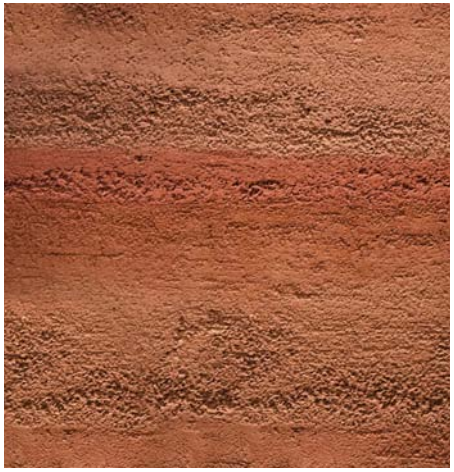
Timber Cladding



Cork



COR-TEN



Rammed Earth

Materials and finishes are designed to blend in with the colours and hues of the natural landscape or village.

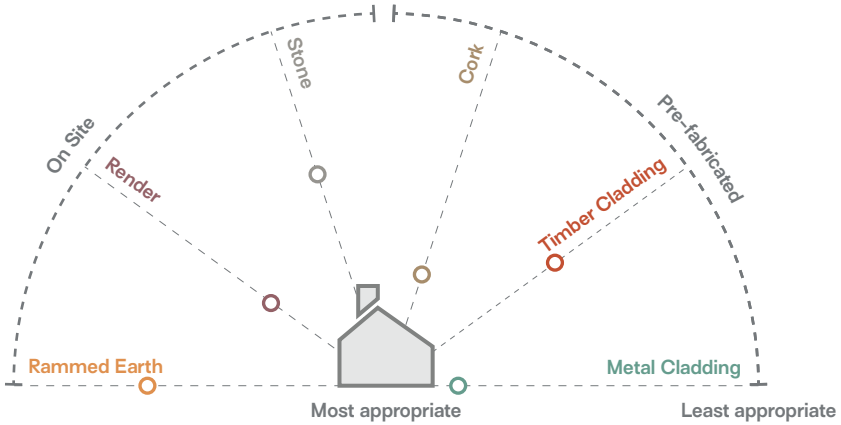
The carcass remains the same. It is designed to accommodate prefabricated cladding systems or local crafted techniques such as stonemasonry. That way façades can be adapted to suit the local environment.

Although we propose using a limited palette of materials, details and components, visual richness and diversity can be achieved by a controlled process of combining and manipulating these elements.

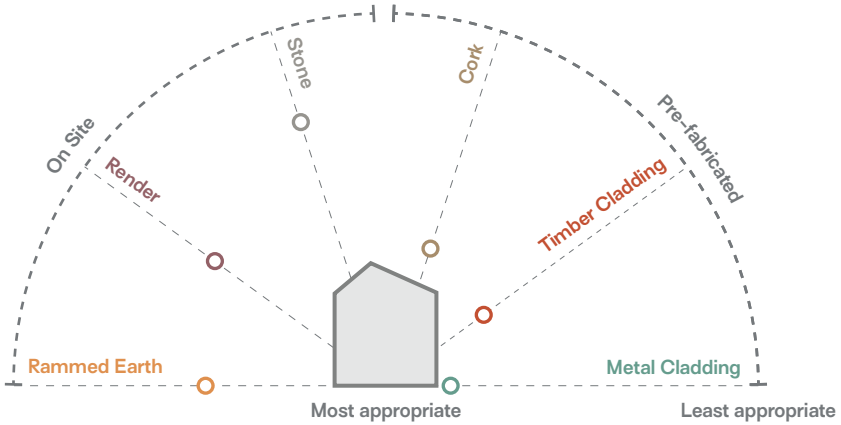
In keeping with the Dales vernacular, details are striking yet robust. Materials were chosen for their low-embodied carbon and natural agricultural qualities. These include timber, cork and hemp. Stone remains an option as it fits into the material palette of every village.



Materials by district



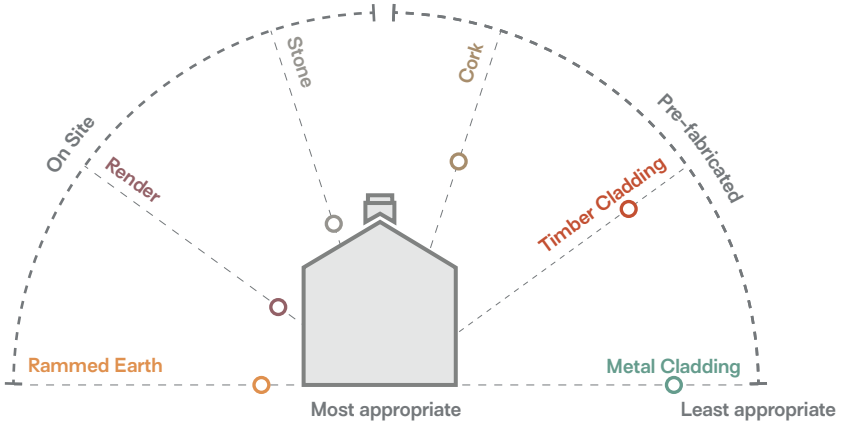
Outbuilding



Barn



Cottage



Farmhouse

From the sustainability point of view, the selection of materials has been undertaken based on the following criteria:

- Environmental impact - To reduce the effect construction products have on the environment by encouraging the selection of products with a low environmental impact, including embodied carbon over the life cycle of the building.
- Bio-based content - To reduce the effect construction products have on the environment by encouraging the selection of products derived from plants and other renewable agricultural, marine, and forestry materials.
- Recycled content - To reduce the effect construction products have on the environment during the extraction of raw materials and foster circular economies by encouraging the selection of products with post-consumer and/or pre-consumer recycled content.
- Recyclability - To reduce the effect construction products have on the environment at the end of their life and foster circular economies by encouraging the selection of products that can be partially or fully recycled at the end of their life.
- Durability - To reduce the need for maintenance, repairs and frequent replacement of materials resulting from damage to exposed elements of the building and landscape.
- Responsible sourcing - To encourage the selection of construction products where sustainable development principles have been followed across the supply chain, including when extracting, processing and manufacturing materials and parts.
- Local sourcing - To reduce the effect construction products have on the environment due to transport-related emissions and foster local economies.
- Indoor pollutants - To minimise negative impacts on health arising from indoor air pollutants emitted from the building and its materials.

As expected, there is no single construction material that can meet all the above criteria at once, but each material proposed for the prototype has its own merits as described hereafter.

Rammed earth for on-site construction and cork for offsite or pre-fabricated construction are among the preferred materials as they are considered low environmental impact, as they have low embodied carbon, are bio-based, can be recycled at the end of their life and can be responsibly sourced. Rammed earth has the additional advantage to be locally sourced. The main disadvantage is that limited durability compared to traditional materials, which is intrinsic of most natural materials.

Render for on-site construction is considered durable and can be responsibly sourced. Depending on the type of binding agent used for its production, it can be become more eco-friendly compared to traditional render products using cement and gypsum as a binder. Lime and clay renders have lower embodied carbon than cement renders, have bio-based content, are recyclable at the end of their life and can help to improve air conditions by absorbing carbon dioxide when used internally. In addition, clay renders have lower embodied carbon than lime renders, are non-toxic, emission-free and reduces the risks for allergies, while lime renders can cause eczema and irritating the skin, mucous membrane and the eyes, which require to adopt protection measures when applied to surfaces.

Stone for on-site construction is mainly proposed for the prototypes as it is a locally sourced material, which has been traditionally used in the area and appreciated for its durability and breathability properties. It can be recycled at the end of its life. An alternative to natural stone that could be used in the prototypes is reconstituted stone, subject to local material availability. Many reconstituted stone products are manufactured using reclaimed aggregates, recycled water and renewable energy, which allow to reduced their embodied carbon significantly compared natural stone products.

The use of timber cladding for pre-fabricated construction provides numerous benefits to the prototypes, including low environmental impact, due to its bio-based nature and recyclability at the end of life, can have recycled content and be easily responsibly and locally sourced. There are numerous naturally durable timbers that can be used for cladding that do not require treating against fungi and insects, improving the durability of the material.

Finally, metal cladding for pre-fabricated construction has generally a higher environmental impact compared to timber cladding, but can have recycled content and be recycled at the end of life to reduce its embodied carbon. It has usually higher durability compared to timber cladding and can be responsibly sourced too.



Speed and efficiency through pre-fabrication



Innovative materials in rural settings



Thoughtful detailing accentuating simple forms

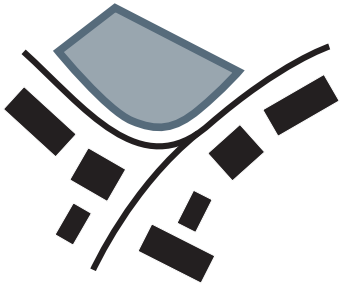


Considered reveals

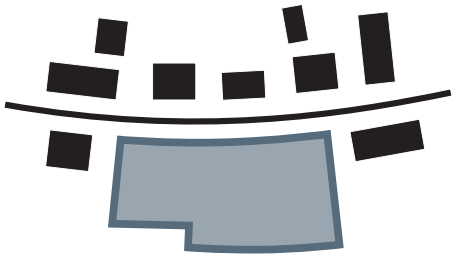
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MODEL SITES

The relationship between housing layouts, local context and the existing community is vitally important. So we've tested the introduction of our housing types and clusters in three different Dales settings: village infill, edge of settlement and larger expansion.

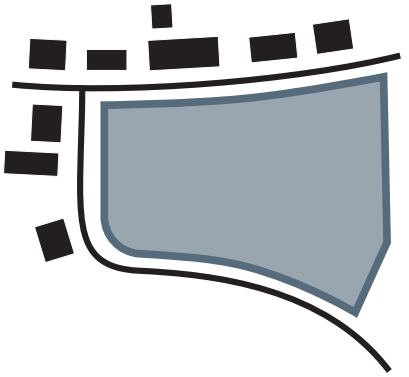
This exercise allowed us to explore how housing layouts could respond to the three most common types of village condition. Each cluster was tested against three core criteria: adaptability to settlement form and density; ability to respect existing boundaries, and capacity to strengthen communal bonds with new public spaces.



Site One: Dales village



Site Two: Edge of settlement



Site Three: Larger development

Characteristics of the three test sites

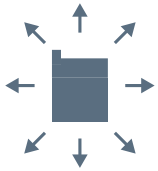
Site One: Dales Village

Situated in Upper Wharfedale, this charming village still shows the signs of Romano-British and early Medieval farming with terraced fields to the north and south. In the 13th century, it was home to a thriving corn market. In later centuries, textiles and lead mining revived its fortunes. The remains of an 18th century smelting mill can still be seen. Today, farming Swaledale Sheep is the main agricultural activity. Homes in the village date from the 17th and 18th century.

We developed an intimate shared space that allowed the surrounding village in and through the site. The aim was to create a new coherent part of the fabric of the settlement.

Stone was used to frame the street edges of the cluster and the main views into and from the site. This created consistency with the existing built-up frontage and local stone houses.

Front doors all face into the inner central space to encourage neighbours to interact and create an immediate sense of community.



Thinking beyond the home

A cosy, welcoming cluster in a prominent location. Connected to local amenities creates a new focal point for the whole community.



Designing good neighbourhoods

The cluster respects its historic setting whilst strengthening communal bonds with a new public space for the community to enjoy.



Settlement form

Responds to the position of nearby buildings to achieve harmony with its surroundings. Faces adjacent road junction to welcome visitors and attract passers-by.



Respecting boundaries

Existing stone wall boundaries are used to define the new cluster and give it an instant sense of belonging. To celebrate local traditions, open spaces beyond the site mirror the layout of nearby fields and green areas.



Providing for modern life

To cater for modern needs without detracting from the surrounding natural beauty, bin and bike storage is kept under covers and away from public view.



Creating connected neighbourhoods

A network of routes meanders through the site to encourage people to interact. Routes are designed to create striking views of the local landscape.



Connecting old and new

Traditional and agricultural materials connect the new cluster with its farming heritage and boost the sustainability of local craft industries.



Planning for every need

Flexible parking spaces and car charging ports can easily be adapted to other uses in future as car usage declines.



Settlement density

The compact layout maximises the site's potential and reflects its dense surroundings without encroaching on the local landscape.



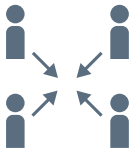
Living streets

A communal yard is paved and landscaped with abundant greenery so residents can gather, socialise, exercise and hold events all year round, whilst remaining connected with nature.



Streets for people, not just cars

A shared surface that can be used by people and cars alike, and parking spaces are positioned out of view at the rear of the cluster to encourage walking and cycling.



Open space as community hub

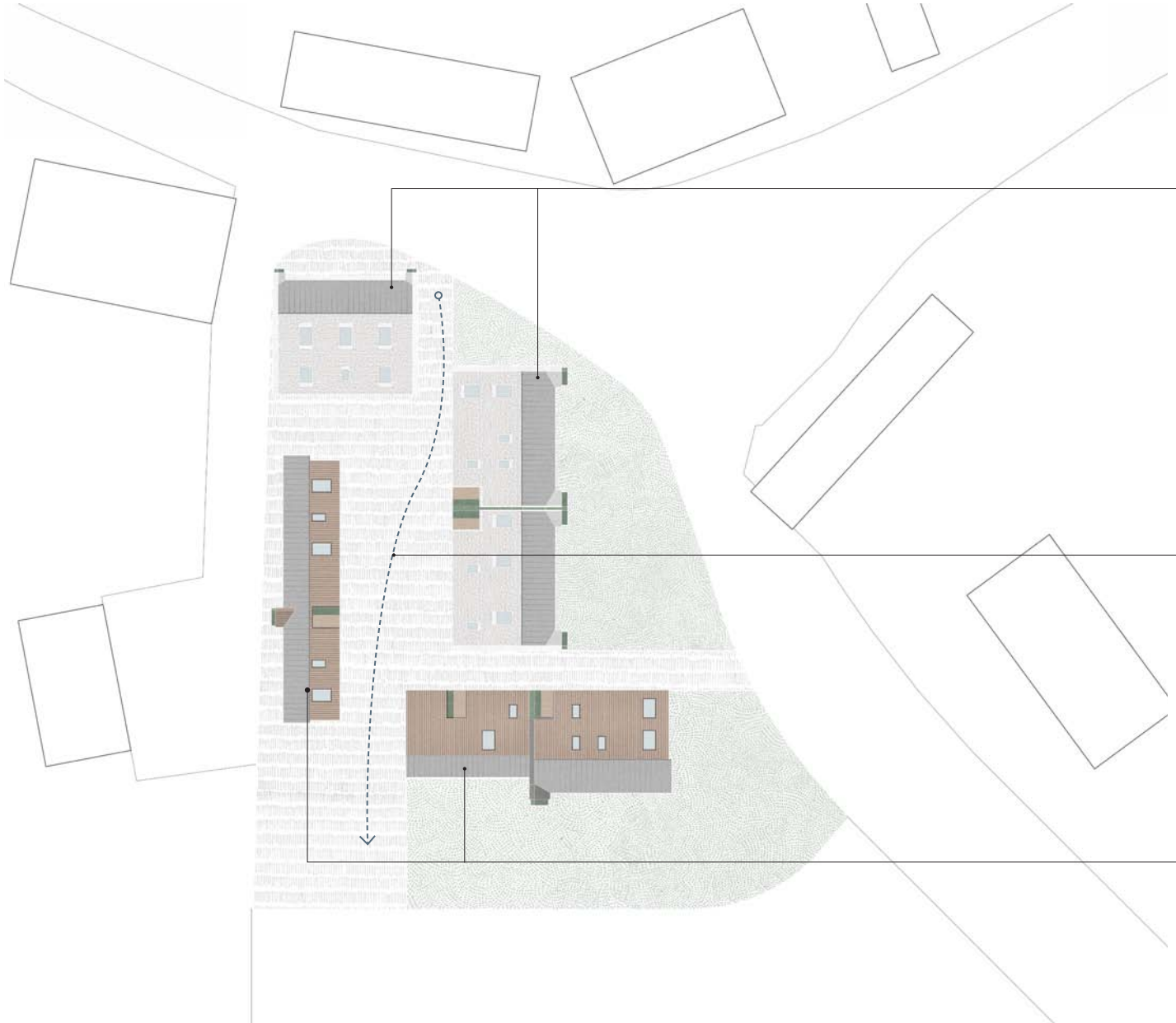
The new public space faces the village's central junction to remove barriers between old and new, and signal to locals it is there for everyone to enjoy.



The importance of clusters

The compact nature of the cluster provides an intimate setting with cover from the elements so the community can gather and socialise throughout the year.





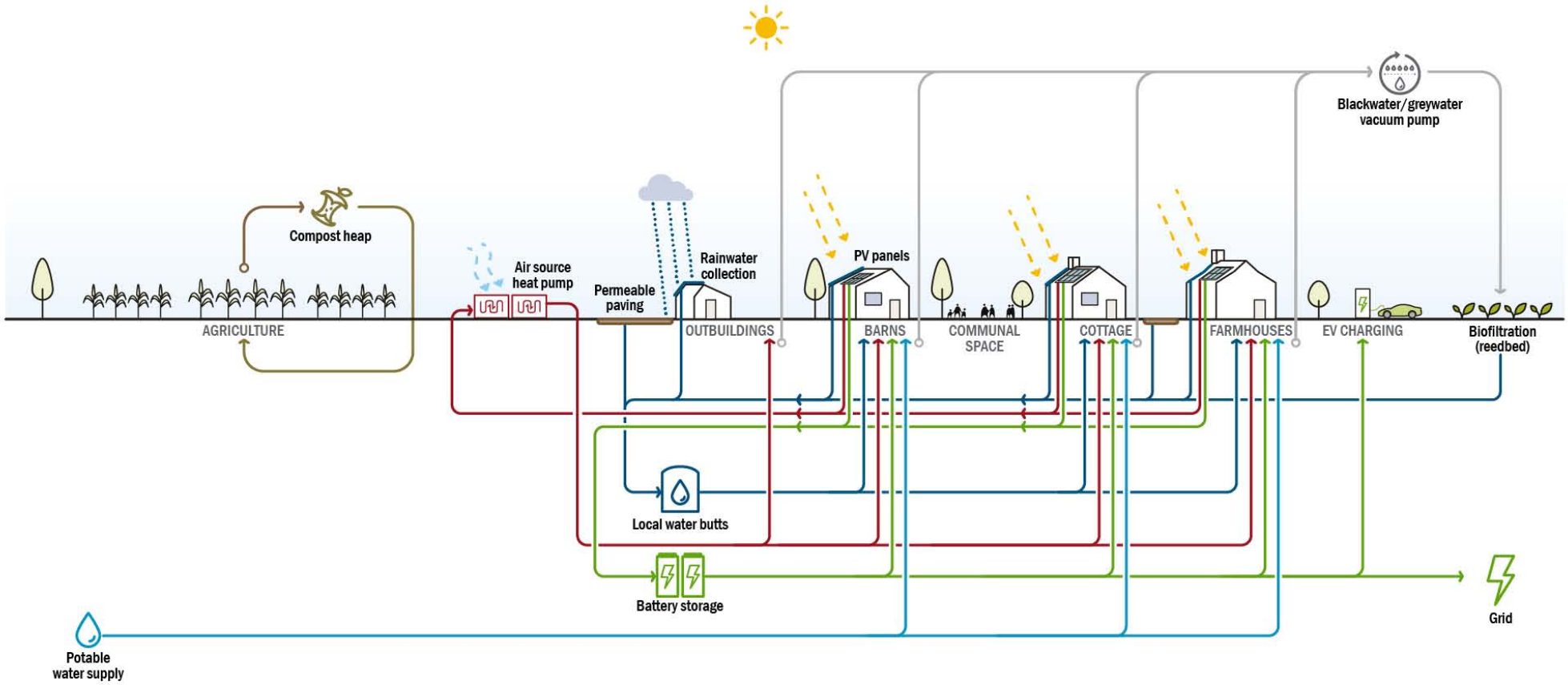
Stone buildings to match existing street frontage and frame street-side public space

Material variety provides visual interest through the cluster, drawing the eye to the landscape beyond

Metal clad buildings towards fields and more enclosed areas





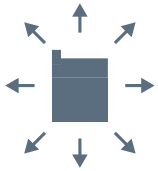

Blackwater/greywater vacuum pump
Compost heap
Air source heat pump
Permeable paving
Rainwater collection
PV panels
AGRICULTURE
OUTBUILDINGS
BARNS
COMMUNAL SPACE
COTTAGE
FARMHOUSES
EV CHARGING
Biofiltration (reedbed)
Local water butts
Battery storage
Grid
Potable water supply

Site Two: Edge of Settlement

Situated in Wensleydale, this village was originally a farming community but the population grew in the 18th century to service a nearby coal mine and water-driven cotton mill - the oldest of its kind still in existence. Today, the villages main economic activities are farming and tourism.

Our development on the edge of the settlement expands the village in a compact way. This means the new cluster is still connected to the village and its amenities. The development's design creates numerous opportunities for residents to grow and share food, hold communal events, meet neighbours and locals from the village.

To root the development in its location, we created carefully orchestrated views of the surrounding landscape.



Thinking beyond the home

A group of clusters, intersecting with each other and the wider landscape, that provides space for a small community to grow.



Designing good neighbourhoods

Blends with the existing context to maximise the freedoms of its edge-of-settlement setting whilst respecting the limitations of heritage, nature and space.



Settlement form

Responds to the position of nearby buildings to achieve harmony with its surroundings. Faces the adjacent road junction to create a friendly and appealing backdrop for communal spaces, and protection from the elements.



Respecting boundaries

Choosing an infill site rather than extending the existing settlement prevents sprawl and protects the area's character. Limited development to the rear of the site also respects historic boundaries.



Providing for modern life

To cater for modern needs without detracting from the surrounding natural beauty, bin and bike storage is kept under covers and away from public view.



Creating connected neighbourhoods

A network of routes meanders through the site to encourage people to walk, cycle and interact. Routes create new and surprising connections with the landscape.



Connecting old and new

Celebrates the location's heritage and agricultural past through the use of local crafts and new materials that are as sustainable and robust as traditional ones.



Planning for every need

The open nature of clusters means the site can easily be expanded into surrounding fields without losing its distinct character or sense of community.



Settlement density

A more relaxed density provides greater community space and reflects the open spacing of existing buildings at the edge of the settlement.



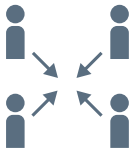
Living streets

A large communal space with varied landscaping extends into the surrounding landscape to connect people with nature by removing the boundary between man-made and natural worlds.



Streets for people, not just cars

A shared surface that can be used by people and cars alike means discreet and unused spaces can be used for parking which reduces the aesthetic impact of parked vehicles.



Open space as community hub

A welcoming central square provides a space for the whole community to interact on a daily basis and gather for special events.



The importance of clusters

Combining two clusters means a greater mix of typologies and public spaces can be used, enhancing the character of the whole place.



MATERIALS CONNECTING OLD AND NEW



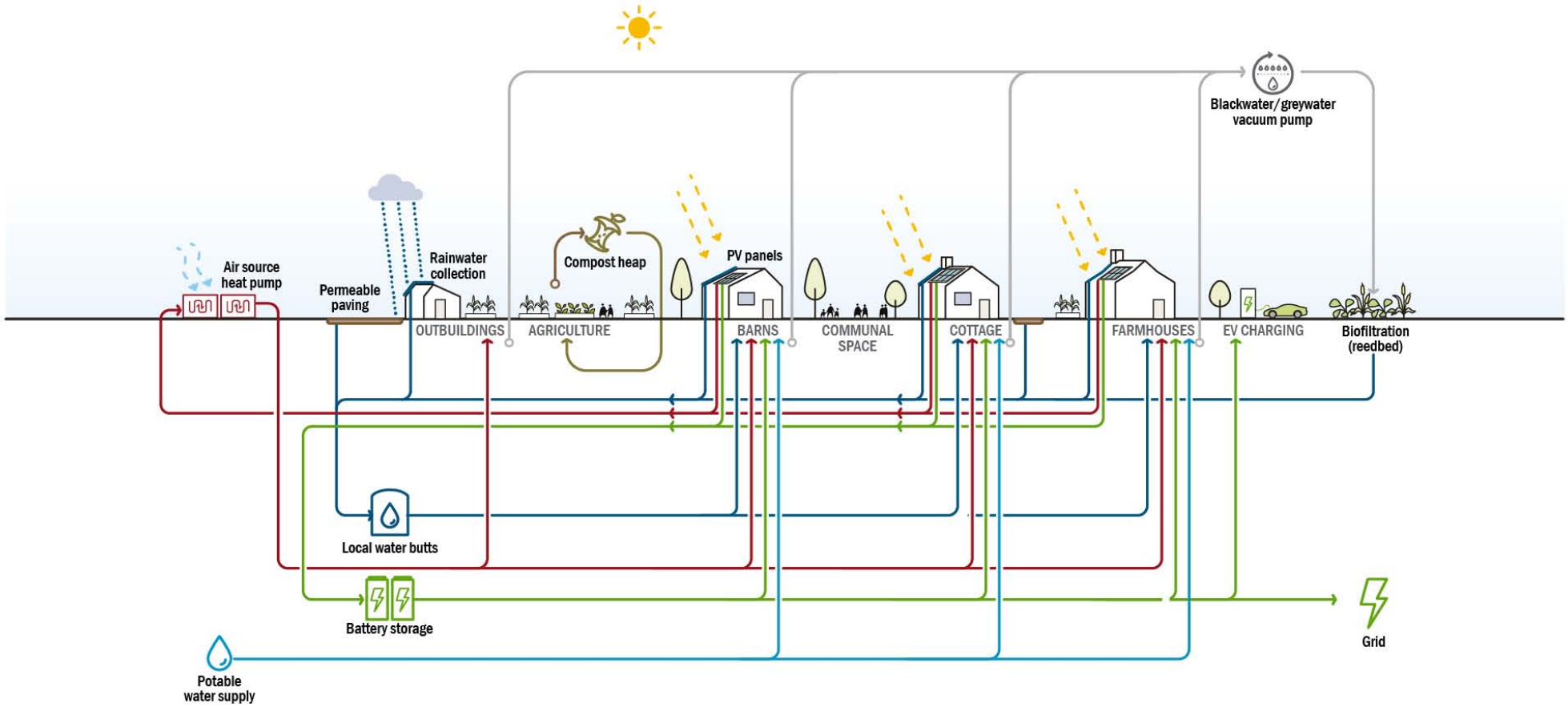
Traditional materials to more prominent buildings and typologies

Material variety provides visual interest through the cluster, drawing the eye to the landscape beyond

Material repetition offers a more cost effective solution

Cork cladding to low lying typologies and fringe buildings, fronting onto the wider landscape




Air source heat pump
Permeable paving
Rainwater collection
Compost heap
PV panels
Blackwater/ greywater vacuum pump
OUTBUILDINGS
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COMMUNAL SPACE
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Biofiltration (reedbed)
Local water butts
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Site Three: Larger Development

This small Dales town sits at the foot of Howgill Fells on the north bank of the River Rawthey. For many years, its main industries were farming and the production of woollen garments. The town has a narrow main street lined with shops. From all angles, the surrounding hills can be seen rising above the houses.

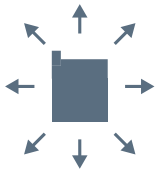
We developed a number of interconnected neighbourhood clusters each with a specific character that contributed to a coherent whole. A series of footpaths and cycle routes connect clusters with each other, the town and the landscape, including the river. These also help promote an active lifestyle.

Buildings are positioned to create striking and often unexpected views of the river - the traditional focal point of the town. This reinforces the river's role as both an outstanding natural feature and important amenity for leisure activities.

A patchwork of green spaces encourages a wide mix of outdoor activities from gardening to socialising. These spaces include communal gardens, a community orchard, allotment gardens with greenhouses, active play areas close to the river and a central square for the whole community to gather.

Clustering of gardens allows neighbours to meet over the garden wall. It also creates 'green corridors' from the river to promote biodiversity.

Our design evokes the patchwork layout of surrounding fields. The project is arranged to resemble the 'patchwork' structure of surrounding fields. This approach puts the landscape at the heart of each cluster - a common feature that ensures each cluster can retain a distinct character whilst remaining connected with its neighbours.



Thinking beyond the home

A large new community that blends with an existing settlement but with its own distinct centre, character and sense of place.



Settlement form

Clusters are used to create a network of interesting routes from surrounding areas and through the site which lead people to an attractive riverside recreation space.



Providing for modern life

To cater for modern needs without detracting from the surrounding natural beauty, amenities are kept hidden from public view by sheds and covers.



Designing good neighbourhoods

The settlement is designed to create a dynamic mix of new connections with surrounding people, places, spaces and landscapes.



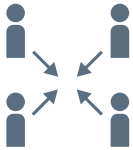
Respecting boundaries

The river is celebrated by transforming it from a boundary into a beautiful landmark and natural resource for the whole community.



Creating connected neighbourhoods

New pedestrian connections between main roads and routes throughout the cluster encourage walking and cycling, and remove the suburban feel of the current road layout.



Open space as community hub

A series of cluster spaces, each with its own character and function, means a diverse mix of locals can enjoy communal activities that all contribute to the settlement's personality.



The importance of clusters

The cluster's flexibility is repeated over a large site to provide an attractive and varied built environment with a sense of place in harmony with its surrounding.



Connecting old and new

Buildings and routes are designed to make the outstanding natural landscape a focal point for contemporary life and constant reminder of the area's farming heritage.



Planning for every need

Considered design is an exemplar for future large developments. Free space is incorporated into the plan so the settlement can grow organically.



Settlement density

Density varies across the site to respond to the local context, address practical needs, and create an interesting sensory experience for locals and visitors.



Living streets

Public spaces are treated as a vital resource for the entire community with architecture used to enhance their visual appeal.



Streets for people, not just cars

A shared surface features car-friendly routes so spaces can be used for safe play and relaxation without limiting the free flow of traffic.



VARIETY AND INTEREST THROUGH MATERIALS



Traditional materials to more prominent buildings and typologies

Repetition of typologies and materials offers a more cost effective solution

Material variety provides visual interest within individual clusters, drawing the eye to the landscape beyond

Metal and cork cladding to low lying typologies ensuring visual interest and visibility into the site along the riverfront

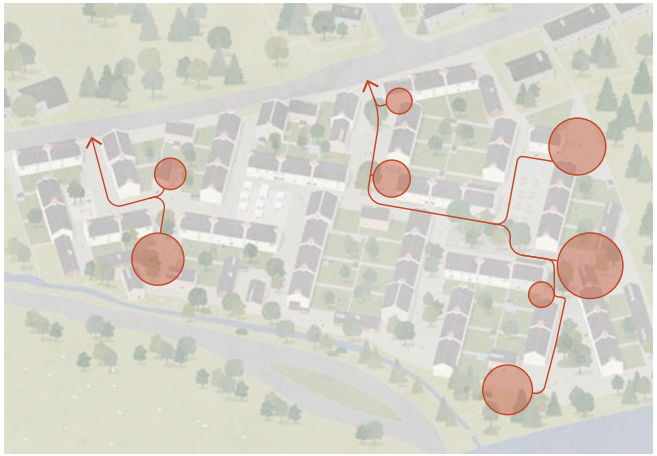


Key spaces

- Communal yard
- Community hub
- Shared Garden
- Allotments
- Community orchard
- Riverside walk
- Village walk

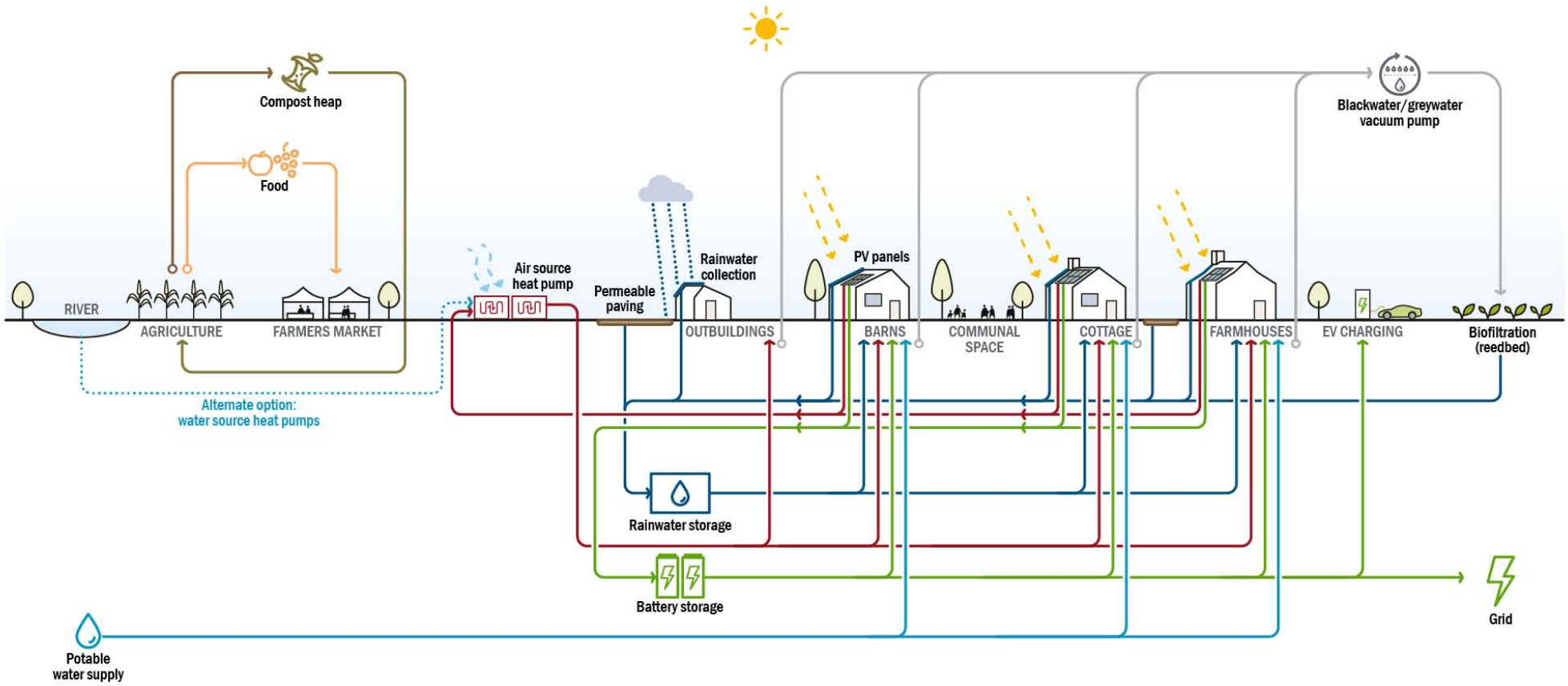


Clustered Garden Spaces



Parking Spaces



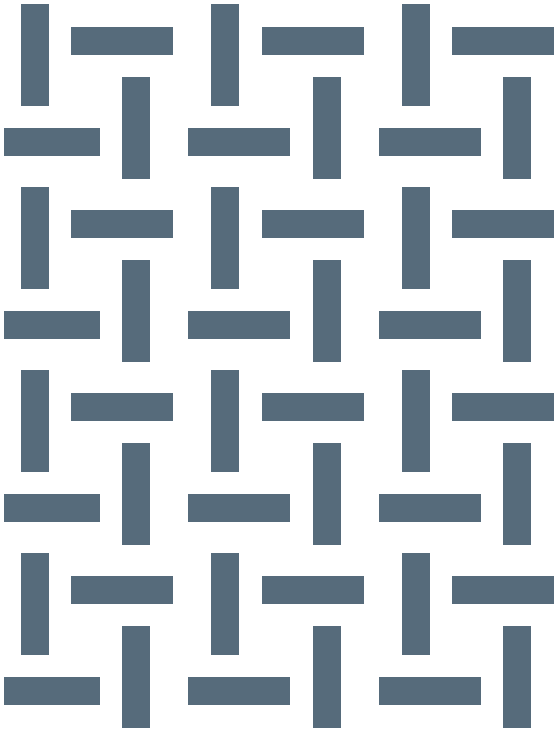

Compost heap
Food
RIVER
AGRICULTURE
FARMERS MARKET
Alternate option:
water source heat pumps
Air source
heat pump
Permeable
paving
Rainwater
collection
OUTBUILDINGS
PV panels
BARNS
COMMUNAL
SPACE
COTTAGE
FARMHOUSES
Blackwater/greywater
vacuum pump
EV CHARGING
Biofiltration
(reedbed)
Rainwater storage
Battery storage
Grid
Potable
water supply



Village infill



Small scale development



Large scale development

An optimistic future

We are optimistic about the future of Dales housing.

The challenges facing the area provide an exciting opportunity to create a new model of rural housing that improves the economic, social and environmental wellbeing of local communities.

Designed to meet the contemporary needs and dreams of locals whilst respecting the area's heritage and natural beauty, this new approach to housing will help create the thriving Dales communities of tomorrow.

Proposals by:

MCMULLAN STUDIO

Produced on behalf of:

YORKSHIRE DALES
National Park Authority

Sustainability:	Atelier Ten
Structure:	Elliott Wood
Landscape:	Harris Bugg Studio

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