

MULTIMAX

MULTISTOREY, MAXIMUM TIMBER

**AFFORDABLE HOMES WITHIN
PLANETARY BOUNDARIES**

PLAYBOOK

JUNE 2025

PROJECT COLLABORATORS



PROJECT FUNDERS



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1. INTRODUCTION

The housing and climate crises are entwined. The key challenge: how can we create the good, secure, and affordable homes people need within planetary boundaries? The MultiMax System has been designed as a practical response to this urgent challenge and as an open resource to help diverse communities and neighbourhoods to better meet their housing needs on their own terms.

This report forms the first of two booklets detailing the MultiMax System:

1 - MULTIMAX - PLAYBOOK

Booklet 1 presents the research behind MultiMax and the story of WeCanMake's real-world demonstration sites. It explores how the system unlocks infill sites for affordable homes, and how using homegrown timber can reconnect construction with local materials and culture, while fostering long-term stewardship. Aimed at community groups, councils, and not-just-for-profit developers, the PlayBook is an open source resource for people and places to adapt and adopt to create decent and affordable homes within planetary boundaries in their own context.

2 - MULTIMAX - PATTERNBOOK

Booklet 2 outlines the design principles for MultiMax residential developments, providing a comprehensive methodology for creating sustainable and resilient low-rise timber housing. Primarily intended for designers, it offers technical guidance, a framework of design considerations, and best practice principles to support the effective application of the MultiMax System while addressing key aspects such as fire safety, moisture management, and structural strategies.



1.1 SUMMARY

MultiMax is a standardised, pre-approved, and replicable homegrown timber 'Kit of Parts' for residential buildings below 11-meters.

'Multi-storey, Maximum-timber', the MultiMax System demonstrates how low-carbon homegrown timber can be safely and affordably used instead of high-carbon construction materials such as concrete and steel.

The system has been designed and tested through working with three real-world urban infill development sites in Bristol. We demonstrate how the MultiMax System can be adapted to the needs of different sites, community contexts, and meet key requirements of affordability and buildability.

MultiMax is made in Bristol through deep co-design with local people. It illuminates how the addition of the right kind of new homes in the right location and supporting social infrastructure can improve the quality of living for existing and new residents, and ease rather than add to planetary burden.

The community-led sector has the potential to play a much bigger role here in delivering the homes we actually need. This is because the community sector prioritises the right to housing as a place for people to live securely and well, rather than housing as an investment to store wealth or a commodity from which to extract a profit.

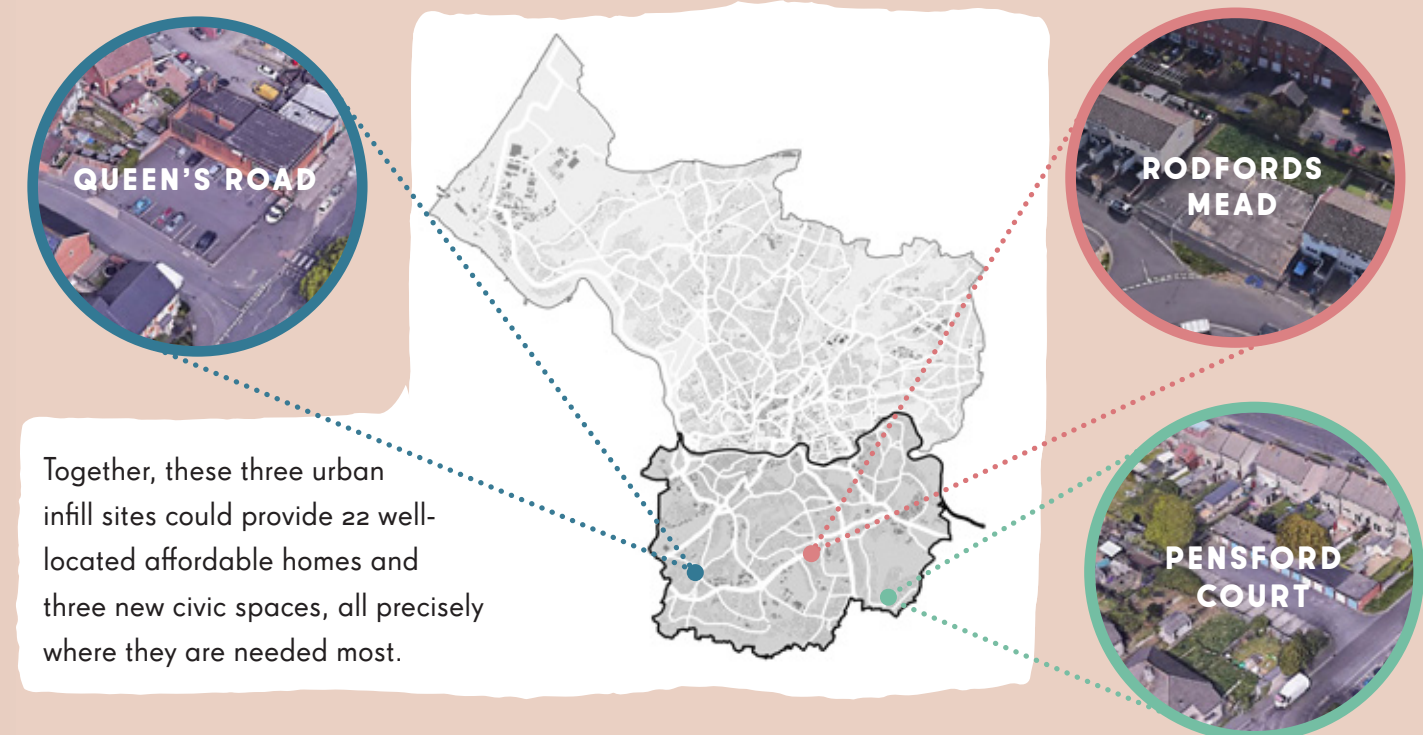
As a pre-approved and replicable Kit-of-Parts for low-carbon affordable homes, MultiMax is designed to help grow the community-led sector by making it quicker, easier, and more cost-effective to unlock urban infill sites for affordable homes.

We actively invite communities, councils, and not-just-for-profit developers across the UK to adapt and adopt the MultiMax System for their own context to help meet housing needs within planetary boundaries. Our hope is that, together, we can move beyond the current crises into a new more regenerative relationship with land, materials, and each other.^[1]

1.2 THREE REAL WORLD SITES

MultiMax has been designed through working with three real world urban infill sites in South Bristol. Working in collaboration with Black South West Network, WeCanMake secured preferred developer status for the sites through Bristol City Council's innovative Community-Led Housing Land Disposal Policy. This policy makes available public land at Social Value (rather than a monetary land cost) for communities to develop affordable homes.^[2]

Testing the MultiMax System on real sites means that it not just a speculative design exercise. It is functional tool that can practically respond to material site constraints, the realities of the UK planning system, and diverse community needs. Prototyping in this way makes "what if" questions such as "what if we designed homes within planetary boundaries?" tangible, and helps turn abstract ideas into existing realities. This report focuses on one of the three sites - Rodfords Mead - demonstrating how the MultiMax system has been applied there.



The collaboration between WeCanMake and Black South West Network is driven by a shared recognition of the urgent need to bring spatial, racial, and climate justice together in order to develop the kinds of homes and social infrastructure required to enable everyone to thrive. There is an important role for community-led housing to play here: diversifying homes to better match the growing cultural diversity of people and place; in developing the agency of diverse communities to lead change; and ensuring new housing counters structural inequalities, including race, age, and class.

1.3 KEY FEATURES OF THE MULTIMAX SYSTEM

The MultiMax System offers a pathway for communities, local authorities, and other not-for-profit housing providers to create affordable homes within planetary boundaries – safe high-quality, characterful homes that people actually want to say yes to. Key features include:

PRE-APPROVED SAFE SYSTEM

The system provides clear design parameters and a set of replicable key details. The system has been fire-tested, with BlokBuild, and is currently going through type-approval warranty process. This all helps reduce uncertainty and costs for community-led and not-just-for-profit housing developers.

LOW-CARBON HIGH-VALUE DESIGN

The system transforms homegrown sources of low-quality timber into high-value design in the structure of the building, locking away carbon for long-term use and making the most of valuable resources.

DESIGNED FOR INFILL

The system is designed for the gentle densification of existing neighbourhoods, making use of infill sites and adding value in the form of new affordable homes, precisely where they are needed most.

MEETING DIVERSE HOUSING NEEDS

Addresses the diverse housing needs of different neighbourhoods through enabling flexible layouts for 1-3 bedroom apartments, which can be adjoined or detached to make larger or smaller homes as required over time.

PLACE-SPECIFIC MATERIAL PALETTE

Material specification and the production of the system is optimised for low-embodied and operational carbon, maximising opportunities to integrate locally-sourced natural and non-extractive materials to add vernacular character to the building.

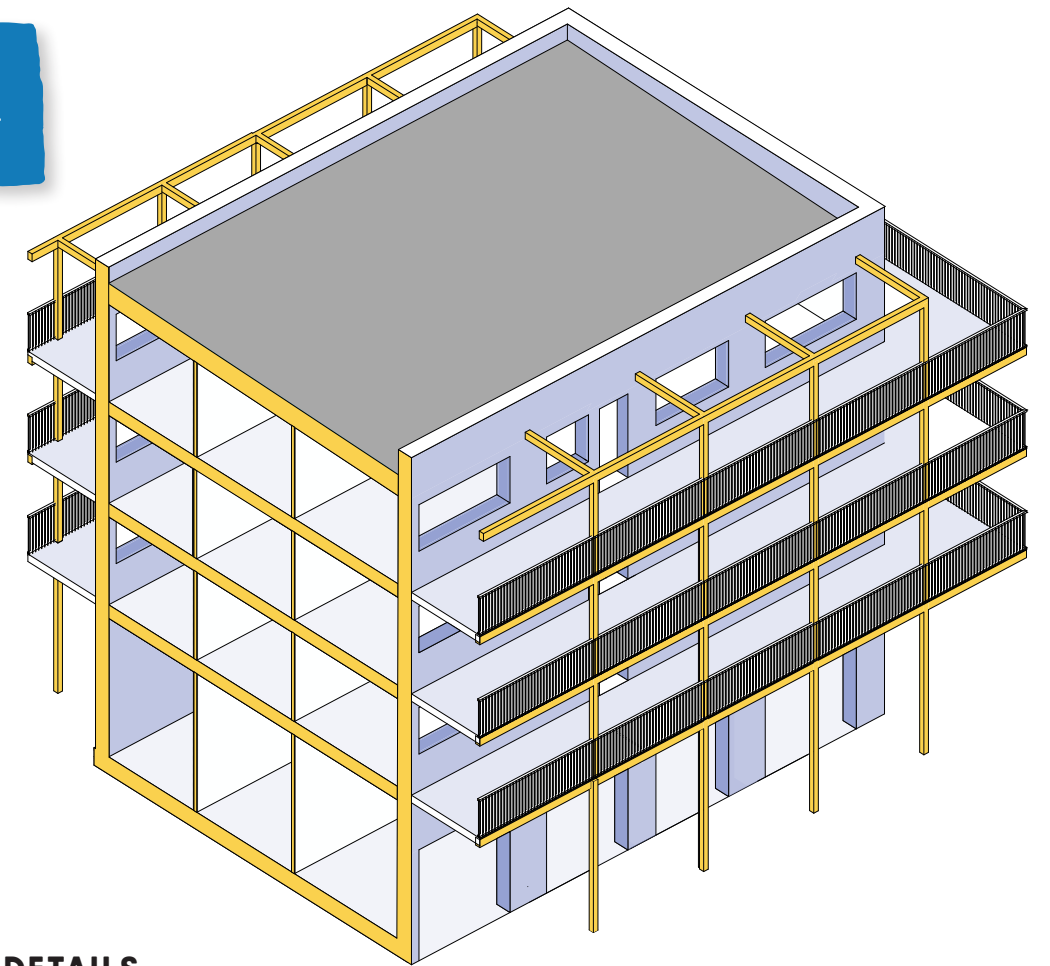
MORE THAN JUST UNITS

Alongside creating affordable homes, MultiMax integrates in space for community and civic use at ground floor level. This enhances social infrastructure and quality of life for people already living in the neighbourhood as well as for new residents moving in.

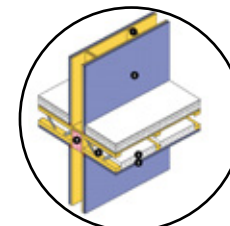
SYSTEMATISED AFFORDABILITY

Simplified and systematised design – with a specified material palette that can be locally-sourced and built using a standardised construction process – helps lower costs, creating a high-performance cost-effective product that favourably compares with high-carbon masonry construction and volumetric MMC.

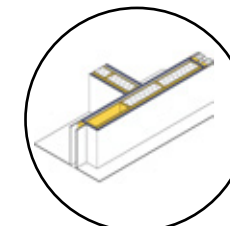
For the full collection of details see [chapter 3 in the Pattern Book](#).



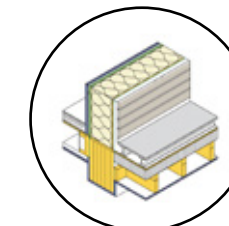
REPLICABLE KEY DETAILS



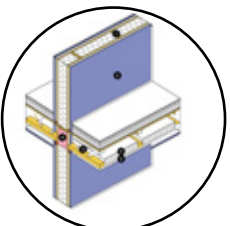
Load bearing internal partition



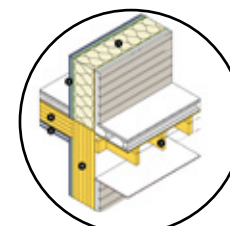
Internal wall junction



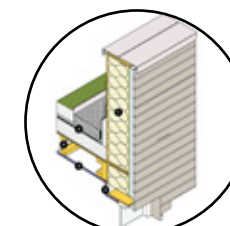
Terrace



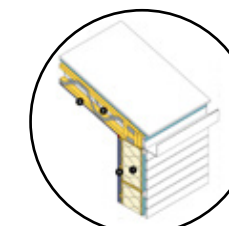
Load bearing party wall



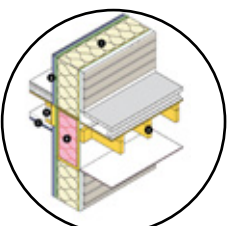
Ground-first floor junction



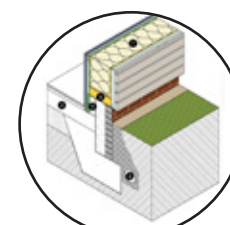
Parapet



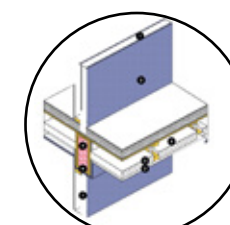
Pitched roof



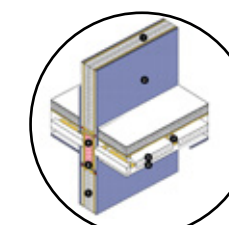
Walkway junction



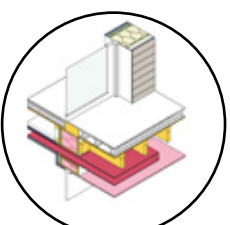
Ground floor junction



Non load bearing internal partition



Non load bearing party wall



Service penetration

1.4 A LOW-CARBON HIGH-PERFORMANCE BUILD SYSTEM

The MultiMax System was applied to one of our real-world typical infill sites, Rodfords Mead. In depth Lifecycle Carbon Analysis and performance reviews were then conducted.

LOW EMBODIED CARBON

268

KGCO₂E/M²

Embodied carbon is all the upfront CO₂ emitted in the production of the building. This includes the production of materials as well as their transportation.

Achieves LETI A rating as it has embodied carbon A1-A5 of <300 kgCO₂e/m².

ACHIEVES LETI A RATING FOR UPFRONT & WHOLE LIFE EMBODIED CARBON



LOW OPERATIONAL ENERGY

39

KWH/M²/YR

Operational energy is the energy a building uses through on-going use, such as heating and lighting. One of the key performance indicators is Energy Use Intensity (EUI), measured in kWh/m²/yr.

This meets the Net Zero Carbon Building Standard of <40kWh/m²/year. The space heating demand is just 6kWh/m²/yr

ACHIEVES NET ZERO CARBON BUILDING STANDARD FOR OPERATIONAL ENERGY



LOW WHOLE LIFE EMBODIED CARBON

Whole Life Embodied Carbon is the total carbon emissions from a building's materials and construction over its entire lifespan, including production, use, and disposal.

Achieves LETI A rating with an embodied carbon A-C excluding sequestered of <750kgCO₂e/m² This is less than the 2030 RIBA A-C target for completed buildings of <750kgCO₂e/m².

491

KGCO₂E/M²

PASSIVEHAUS



The system can achieve Passivhaus certification, provided that all necessary design measures and construction details are carefully implemented to meet performance standards.

COMPETITIVE COST



£2600M²

MultiMax build costs have been benchmarked against conventional masonry build and volumetric MMC and demonstrates its competitiveness. For Stage 3 costings, MultiMax comes in at £2600 m², compared to £3700m² for Cat 1 MMC, and £2100m² for standard masonry.^[3]

HIGH SEQUESTERED CARBON

-106

KGCO₂E/M²

Sequestered carbon is the CO₂ captured and stored within building materials. This includes carbon absorbed by bio-based materials, such as timber, during their growth, which remains locked in for the lifespan of the building.

106 kgCO₂e/m² is equivalent to 39% of the buildings upfront embodied carbon.



For more detail on the carbon consideration of the MultiMax system see [section 2.8 in the Pattern Book](#).

1.5 GOOD HOMES THAT DON'T COST THE EARTH

Home is the first infrastructure of everyday life: home is shelter, safety, and stability.

Yet for a growing number of people, this infrastructure is crumbling, out of reach, or missing all together.

Since the 1980s, the UK's increasingly financialised housing system has prioritised the production of housing as an investment vehicle to extract profit from and store wealth, over and above its function as an essential social infrastructure that provides shelter and security for people to live well.^[4]

The latest figures show that 8.5 million people in England have unmet housing needs, including 3.7 million people living in overcrowded conditions and 3.5 million households living in homes that fail the Decent Homes Standard.^[5] To solve this housing crisis, the UK Government has pledged to create 1.5 million new homes in the life of this parliament.

This bold pledge needs to be matched with an even bolder rethink of where, what, how, and for whom these homes are built. Quality, tenure, materials, and long-term affordability all matter – not just quantity and speed.

As currently geared, 1.5 million new homes will do little to increase housing access or affordability and may actually make it worse – particularly for the 4.2 million people (1.6 million households) with unmet housing needs for whom buying a home, privately renting, or even so-called 'affordable products,' such as shared ownership, remain out of reach.^[6]

Without thinking beyond "units delivered", there is an acute risk that an expansionist supply-side housing strategy will fail to deliver for those people and communities most in need; all while reinforcing wealth and spatial inequalities and jeopardising any hope of the UK meeting its legally binding climate commitments to become Net Zero by 2050.

Unreformed, the 1.5 million homes target could lock in more of the same from the UK housing system – something neither people nor the planet can afford.

1.6 A FINANCIALISED HOUSING SYSTEM IN ACTION

Genuinely affordable homes are largely missing from UK housing supply. Delivery of homes for social rent has flatlined at around just 4% of total new homes created per annum, with additions continuing to be outstripped by losses through Right to Buy.^[7]

The UK government spends the most it has ever done on housing, yet 88% of this spend – a colossal £25 billion a year – goes on Housing Benefit payments; an overwhelming proportion of which is a direct subsidy to an increasingly unaffordable and poorly regulated private rented sector.^[9]

There has been a sharp rise in over consumption of housing space. Over one third of households possess two or more bedrooms above the national bedroom standard and one quarter enjoy more than double the national space standard. This means that households and individuals enjoying excess housing are more numerous than those in deprived housing.^[11]

The UK has experienced rapid growth in homes bought as 'additional dwellings' (second homes, holiday homes, Airbnbs, buy-to-lets, etc); increasing from 15% in 2016 to 45% by 2023.^[8]

The "Big 6" volume housebuilders who dominate housing supply in the UK carefully limit construction of new homes to the "market absorption rate" whereby their profits are protected and even inflated to supernormal levels.^[10]



1.7 A HOUSING WASTE AGE

Housing is a resource and carbon intensive industry with stretched global supply-chains – from dredging sand to make concrete and open-pit mining to extract iron-ore for steel, to burning fossil fuels to heat, cool and power homes. Business as usual delivery of those 1.5 million homes risks wasting precious resources on high-carbon, poorly designed, low quality, unaffordable 'units' that will break the UK's legally binding commitments to reach Net Zero by 2050.

Housing accounts for 17% of all CO₂ emissions in the UK.^[12] With an estimated 50% of carbon from buildings by 2035 coming from embodied carbon, it is not enough to decarbonise just through switching in-use energy to renewable sources^[13]

A meagre 1-1.5% of new homes currently meet the highest environmental standards^[15]. The industry is continuing to build homes that are climate liabilities which need to be retrofitted almost as soon as they complete and lock in significant additional future resource requirements^[16]



Resources are being systematically wasted on low-quality units, with 75% of all housing produced in England since 2007 assessed as "mediocre" or "poor", and not meeting the "basic requirements for civilised living"^[14]

The UK construction industry generates 62% of the UK's waste, and 32% of all waste sent to landfill. While 75% of this has a residual value, it is not currently reused or recycled^[17]

By continuing with current targets, policies and practices, housing alone will consume the UK's entire carbon budget for meeting 1.5°C before 2050^[18]

1.8 RE-IMAGINING OUR RELATIONSHIPS WITH LAND, MATERIALS AND PEOPLE

The challenge is clear: How can we create homes in ways that centre unmet needs and be delivered within planetary boundaries^[19]?

Generating answers requires looking beyond the mainstream financialised housing development industry. Mariana Mazzucato – the leading economist who has popularised the concept of mission-led government which Labour has embraced – makes clear this means engaging with the rich diversity of experimentation at the edges of public, social, and community-led housing.^[20] Doing so could create a structural shift in how we do housing, more specifically right-sizing the role of financialised housing delivery from its current predominance to a much more balanced delivery model.^[21]

The work of WeCanMake is offered as a source of innovation and learning towards this shift alongside others, including the community land trust movement and a renewed focus on delivering not-for-profit council housing.^[22]

As a community-land trust in Bristol, WeCanMake operates as a neighbourhood test-space, imagining and making homes in ways that build social infrastructure, community wealth, and a just transition.

WeCanMake takes an integrated "full stack" approach to meeting housing needs within planetary boundaries, all focused on enabling the gentle densification of the existing urban fabric within a neighbourhood, this includes new build in infill sites and the retrofit of existing homes.

WeCanMake has completed 2 homes and has 50+ more in its development pipeline. WeCanMake has a neighbourhood factory where it trains local people to use digital fabrication technology and biomaterials to make the components for new-build and retrofitted homes.

While recognising that this work represents one modest experiment, WeCanMake seeks to demonstrate what is possible: where seemingly small shifts can produce bigger changes in the wider system, and illuminating a replicable innovation pathway for the delivery of genuinely affordable homes within planetary boundaries at scale.

In contrast to the Pattern Books of the volume house builders associated with churning out of formulaic designs, our MultiMax Playbook offers a collection of practices and principles that recognise that a good home is more than just bricks and mortar. Critically, the process of making a home offers the chance to reimagine and reconnect our relationship with land, materials, and each other.

1.9 READING THIS REPORT

This report shares the research behind MultiMax on how to unlock urban infill sites for genuinely affordable homes – swiftly, efficiently, and within planetary boundaries. This includes the designs for our real-world demonstrations sites using the lenses of land, material and people:

- **LAND** – We explore how the MultiMax System can be used to unlock an abundant but too often overlooked more sustainable source of well-located land for development – urban infill sites in existing neighbourhoods;
- **MATERIALS** – We demonstrate how different types and qualities of homegrown timber can be integrated at a system level to reconnect how we design, source, and build our homes with our local material context and culture;
- **PEOPLE** – We unpack how system design can address unmet housing needs and generate value in a community through localised production and long-view stewardship.

This research builds on our previous ‘Homegrown Homes’ project, which shared WeCanMake’s applied research and development to design and source a new low-carbon, single dwelling type-home using the homegrown timber resources within our 100-mile bioregion.

MultiMax also builds on the New Model Building (NMB) framework from our collaborators Waugh Thistleton Architects, which outlines design principles for mid-rise residential developments using low-carbon engineered timber, with a goal to reduce embodied carbon while maintaining safety, durability, and compliance with UK Building Regulations and NHBC standards.



**WAUGH
THISTLETON
ARCHITECTS**



**WE
CAN
MAKE,
BLOKBUILD
AND PRICE
AND MYERS**

Our approach to using timber in construction innovation is underpinned by the design expertise of Waugh Thistleton Architects – a globally-recognised leader in low-carbon design and a pioneer in the innovative use of mass timber. Civil and structural engineers on the project are Price & Myers, who bring their cutting-edge engineering and performance testing tools with a specialism in timber engineering. The research and development for MultiMax has been supported by the Forestry’s Commission’s Timber in Construction Innovation programme. To develop the MultiMax System, we are proud to have worked with:

THE INNOVATION TEAM



**WE
CAN
MAKE**
Research + Design Architects



**WAUGH
THISTLETON
ARCHITECTS**
Technical Architects



**PRICE &
MYERS**
Structural Engineers



BLOKBUILD
Structural System designer and manufacturer



E3
Mechanical & Electrical Engineers



EFFECTIS
Fire Engineers



**BRISTOL CITY
COUNCIL**
Supply of sites for community-led homes



**BLACK SOUTH
WEST NETWORK**
Spatial and racial justice



2. LAND

MultiMax is designed to help unlock a well-located, but often overlooked, sustainable source of land for development – urban infill sites in existing neighbourhoods. Urban infill sites have a reputation for being tricky and costly to develop compared to greenfield or larger development sites. MultiMax uses a system approach to help overcome these hurdles.

The Kit-of-Parts uses a common core structure, and suite of material and construction specifications that can be flexibly deployed in different combinations to accommodate diverse site constraints and community aspirations. Pre-approval from key regulations, such as building control, makes the system simpler and more cost effective for communities to use.

The aim is to unlock the development of infill sites in a way that improves the quality of living in the neighbourhood as a whole - for both existing residents and new people moving in.

2.1 UNLOCKING URBAN INFILL SITES

Making more efficient use and adaptive reuse of existing urban space and infrastructure has been shown to have a greater impact on reducing overall energy use and natural resource depletion than any other development strategy.^[23] Construction and transport emissions can be cut by preventing urban sprawl; around 20% of infrastructure costs can be saved compared to greenfield development; and green space and wildlife habitats are protected from development. Across Europe – including the UK – recent research has shown that almost all projected housing needs could be met by re-using sites and buildings within the existing urban fabric.^[24]

MultiMax is designed to adapt to the constraints of different size and shape urban infill sites. The same system components and set of standardised details can be flexibly configured to create homes over two, three, and four storeys, up to a height of 11 metres.

The standardised design includes a structural core that accommodates kitchen, bathroom, and circulation space. From this core, a range of spatial arrangements are possible to support different combinations of residential and community uses. Material specifications for the cladding can be adapted to reflect the vernacular context.

The MultiMax System is designed for buildings up to 11 meters in height, as defined by Diagram D6 in Approved Document Part B of The Building Regulations. Below 11 metres there is more opportunity to maximise the use of homegrown timber and other biomaterials, whereas buildings exceeding 11m are considered higher-risk and consequently subject to tighter regulations.

This height – which accommodates a maximum of four storeys – feels an appropriate human scale height to enable gentle densification of the existing urban fabric, helping ensure new additions do not create an overbearing impact in the neighbourhood.

For more detail on the layout consideration of the MultiMax system see [section 2.1 in the Pattern Book](#).

- KEY
- Home
- Community and civic uses
- Plant space

	3 HOMES/FLOOR	4 HOMES/FLOOR	5+ HOMES/FLOOR
2 STOREY			
3 STOREY			
4 STOREY			

Figure: The MultiMax System can flex to different site constraints and housing needs.

2.2 TYPES OF INFILL

Using digital mapping software, WeCanMake tested potential infill building heights across the makeup of the existing built environment in South Bristol. This set rules that (1) any new infill building should not be more than one storey higher than adjacent buildings, and (2) within certain proximities of surrounding buildings, any infill development should be single storey. These rules reflect policy set out in the National Planning Policy Framework and locally in Bristol Council's Urban Living Strategy; both of which encourage more efficient use of land, but balances this with encouraging scales of development appropriate to context.

Overall, this mapping exercise found that only a handful of infill sites in South Bristol should exceed four storeys, indicating that the MultiMax System could be appropriate for the large majority of typical urban infill sites.

MORE THAN HOUSING

One important note of caution should be heeded in the design and deployment of any urban intensification strategy. For neighbourhoods to flourish, people need more than housing. Infill sites are an opportunity to insert affordable homes precisely where they are needed most. But consideration should also be given to other social, cultural, and ecological needs and uses. As we show later, MultiMax responds to this challenge through integrating social infrastructure at ground floor level.

Not all urban infill sites will be suitable for housing and there will be other equally valuable ways to intensify the quality of urban living – for example as urban micro-forests or playscapes. A mix of uses for developing infill sites across an urban area is ideal.



INFILL PLAYSCAPES



URBAN MICRO-FORESTS



2.3 EMBRACE ABUNDANCE

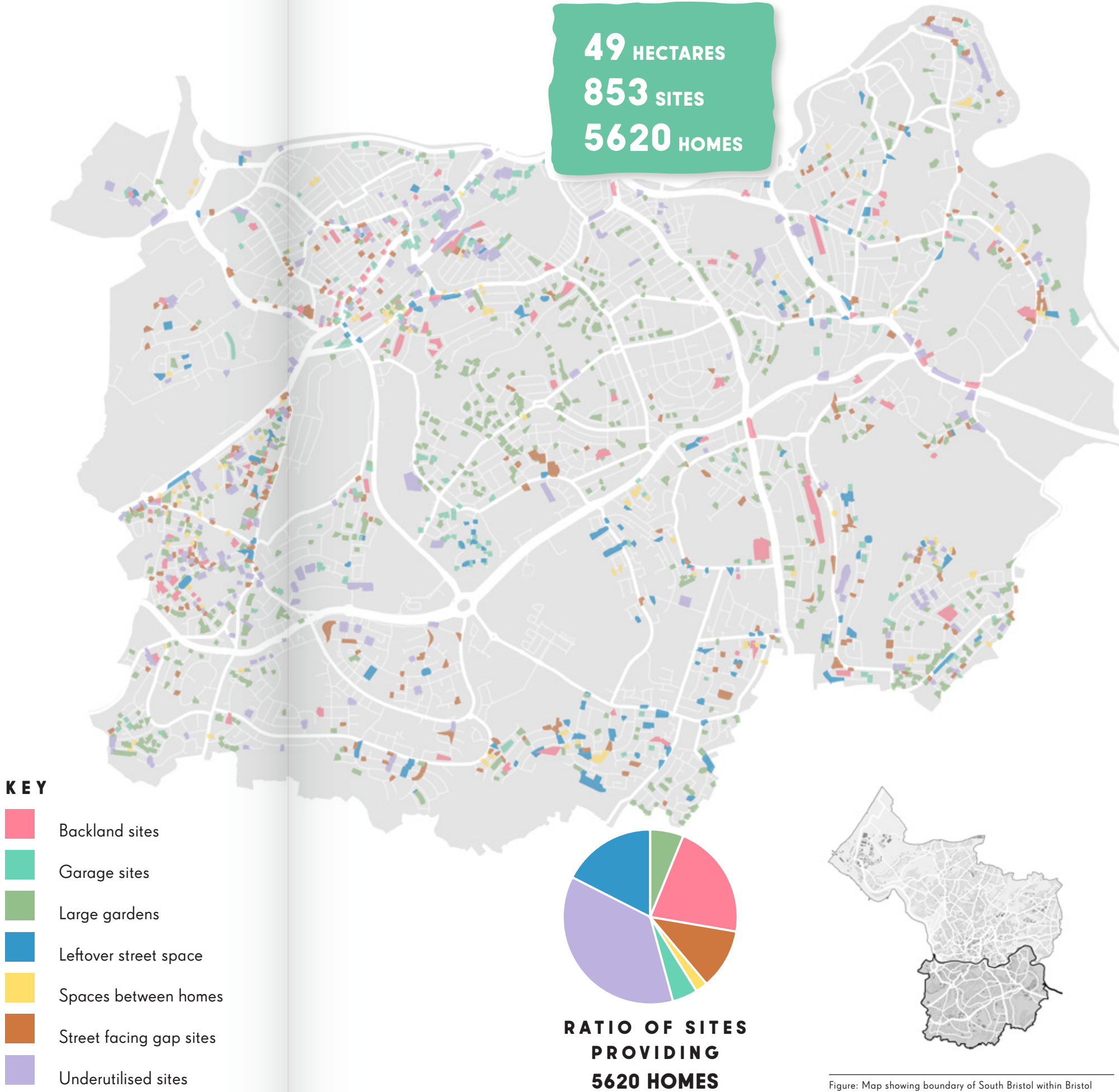
Other cities and regions are adopting urban infill to create well-located homes that can enable more healthy, sustainable and affordable living. For example, Victoria in Australia has created a digital twin to identify well-located sites for new homes^[26]; and Los Angeles has just begun a “small-plot big-impact” programme to unlock the 1,040 infill sites it has identified for development^[27]. Meanwhile in the UK, Lewisham’s Small Sites programme estimates that over 20% of its housing needs could be met through urban infill sites.^[28]

WeCanMake worked with Oxford Brookes School of Architecture to map potential urban infill sites across South Bristol. Selecting only those sites in public ownership, 853 infill sites were identified, adding up to 49 hectares of land. With a maximum height of four storeys (and most coming in below that), development of these sites could make space for up to 5,620 new affordable homes.

Further site analysis and co-design with the local community is needed to establish what kind of intensification will best improve the overall quality of living in the area. Not every site will be suitable for housing. All the options - including playspace, urban forests, and other social infrastructure uses - would need to be considered.

None-the-less, the analysis demonstrates the aggregate power of small. Unlocking urban infill sites at scale could begin to provide an alternative to greenfield sprawl and carbon-hungry high-rise development.

Such a strategy has value for local authority areas like Bristol, which is highly constrained in terms of its urban form and has a high level of housing need with over 21,000 households registered on HomeChoice (the Council’s housing waiting list). Bristol’s draft Local Plan sets out a requirement for 12,000 affordable homes to be delivered by 2040.^[29] Unlocking urban infill sites for community-led affordable homes could make a significant contribution to meeting these needs.



2.4 DENSIFY TO ENHANCE

Gentle densification through urban infill development should be about more than just boosting the number of units. It is also a chance to enhance the overall quality of life and service offer within the neighbourhood where development is taking place.

The MultiMax System does this by integrating shared community and civic space on the ground floor that can serve the whole neighbourhood, with residential apartments above. Each new urban infill development can thereby become a micro-anchor that helps foster social reconnection and community life at neighbourhood level, delivering a community-wide increase in satisfaction per developed metre.^[30]

The three sites WeCanMake has tested the MultiMax System approach on include two former garage sites that had fallen into disrepair and were afflicted by fly-tipping and anti-social behaviour, and an under-used carpark. A “more than housing” approach means that their redevelopment becomes acts of urban acupuncture, healing the urban fabric and generating flows of wider social and economic value around them.

Designing infill development in this way – where existing residents can see the value of developing sites in actively contributing to the wider quality of living within their hyper-local area – means local people are much more likely to welcome densification, helping to de-risk and speed up planning.



Figure: Axonometric showing Rodfords Mead



Figure: Artists impression of Rodfords Mead

2.5 STEWARDSHIP FOR THE COMMON GOOD

Community land trusts are asset-locked and cannot extract commercial profits from their land or homes. Community-led development creates an opportunity to take land and homes out of the market and permanently lock-in affordability and community benefit, protecting it from profit extraction, including Right to Buy^[31].

Bristol City Council has been a leader on this agenda, actively using its stock of publicly owned land to promote uses that foster the development of long-term public goods. This includes developing a pioneering Community-Led Housing Land Disposal Policy that has established the transfer of council-owned land to community groups for ‘Social Value’, rather than monetary value. This innovative policy is driven by the recognition of the greater and longer-term value to the council of permanently

affordable land and homes in community hands over and above the short-term financial value of a capital receipt.

Disposing of land for Social Value in this way is a policy ripe for replication and scaling up within Bristol and beyond, and could become a blueprint for growing a ‘Common Good Land Bank’ to help grow not-for-profit housing delivery. Such a move would provide a powerful counterweight to the all too familiar newspaper headlines about commercial developers land-banking to limit housing supply and drive up prices^[32]. Equally, it provides a long-view alternative to short-term fire-sales of council assets that provide temporary budgetary relief but lead to the overall depletion of assets for the common good.^[33]



Figure: Welcoming the local community at Rodford Dreams

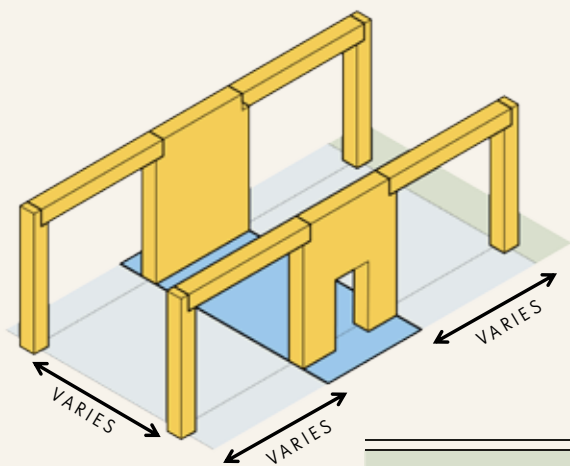
2.6 OVERCOMING CONSTRAINTS

Developing small infill sites can be more complex and costly than greenfield sites. MultiMax embraces the constraints of urban infill and streamlines the process through a Kit-of-Parts system with a standardised design and material specification that can be flexibility applied to different sites.

The design includes a structural 'core' to accommodate kitchen, bathroom and circulation space, from which a range of spatial arrangements are possible to support different combinations of residential and community uses; and material specifications (ie. cladding) can be adapted to make best use of locally available bio- and re-use materials and reflect the vernacular context.

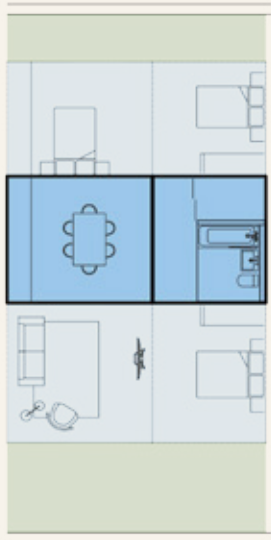
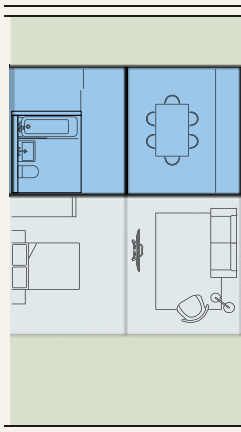
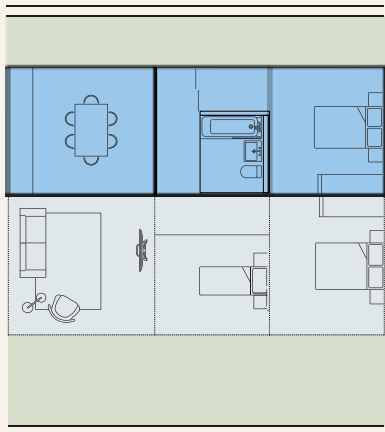
To simplify the development process and help reduce risks and costs further working with the BlokBuild cassette-based system, MultiMax has been fire-tested and is now going through type-approval warranty process.

STRUCTURAL 'CORE'



KEY

- Structural 'core' (kitchen/bathroom/services)
- Variable non structural element (living/bedroom/office etc.)
- Balcony/deck access
- Structure



For more detail on the structural consideration of the MultiMax system see [section 2.2 in the Pattern Book](#).

2.7 RODFORD DREAMS: 'CAN WE GO HIGHER?'

'Rodford Dreams' has become the community nickname for a neglected former garage site on Rodfords Mead in Hengrove.

Fed up with the fly-tipping and anti-social behaviour that had troubled the site for years, WeCanMake worked with the local community to begin to imagine what else the space could be. As a creative way to open up dialogue, we took inspiration from a Swiss planning practice ('Baugespann') which requires that 1:1 scale model of whatever is proposed must be erected on site prior to any development.



We used scaffolding poles to create a pop-up version of a four-storey building, and residents were invited to occupy the space and used blocks to imagine, prototype, and test possible future uses for the site.

Conversation and creativity flowed, surfacing ideas including affordable homes, a bike repair shop, a community kitchen, a café, an artist studio and gallery, and a space for play.

Following the community prototyping day, WeCanMake successfully bid for the site through Bristol City Council's innovative Community-Led Housing Land Disposal Policy.



WeCanMake then took on formal stewardship of Rodfords Mead and installed some basic infrastructure, including planters and a cargo container. This has enabled us to establish the site as a live rehearsal space, working with the community to test out and iterate ideas for the site's use. From play events, craft workshops, community meals and a circus skills session, over 140 local people have been involved in shaping the future of the site.

Tracked through interviews, event feedback, and surveys over a six month period in 2024, the overwhelming response from local residents has been that the site should be developed, and that any new building should be at least three storeys to fit the homes and other uses that the community wants and needs locally.

Many people asked if we could build higher because of all the different uses they wanted to fit.



2.8 RODFORD DREAMS: OVERCOMING CONSTRAINTS

Before submitting a full planning application, WeCanMake engaged with the Council through a pre-application process to gather feedback on our early designs.

The Council acknowledged the lack of community infrastructure in the area, and recognised that the proposed community space would help address this need. However, they also raised concerns about the building's size and suggested removing the community space to create a simpler two-storey housing scheme.

Whilst minimising impact on neighbouring homes is important, there was overwhelming support - including from the neighbouring households - for three storeys and more community infrastructure in this area.

Working within the parameters of the MultiMax System, we have revised the design to address the Council's concerns while ensuring the community space is retained. This process demonstrates how the system can adapt to overcome different site constraints and respond to local contexts and regulations.



Figure: Sketch of Rodford Meadows proposal submitted for pre planning application

The following changes were made in response to the planners' concerns:

Building Height & Roof Form: The second floor has been redesigned with a pitched roof and dormer windows to better complement the surrounding terrace. This adjustment reduces the number of homes from seven to six but crucially retains the community space on the ground floor.

Deck Access: The second-floor deck access has been removed and replaced with an internal stair core, improving daylight and reducing visual impact. However, the first-floor deck access remains, with individual front doors that contribute to the street's character.

Private Balconies: The rear balconies have been removed to improve privacy and prevent any overlooking into neighbouring gardens.

Outdoor Space: The rear garden has been redesigned to incorporate both private and communal garden areas, improving shared outdoor space.



Figure: Sketch of amended design in response to pre-app feedback



3. MATERIALS

This chapter shares how the MultiMax System helps to reconnect how we design, source, and build our homes with our local material context and culture.

With upfront carbon accounting for up to 70% of the whole life carbon emissions of a building^[34], there is an urgent need to rethink what and how we build. Homegrown timber has huge potential as a low-carbon construction material. It provides an alternative to high-carbon products such as steel and concrete, and removes carbon dioxide from the atmosphere and stores it in products with a long service life.

The MultiMax System transforms homegrown sources of low-quality timber into high-value design and long-term use in the structure of its buildings. At the same time, the system maximises opportunities to integrate locally-sourced natural and non-extractive materials into non-structural uses (such as cladding). This makes the most of locally available resources to develop a place-specific material palette that adds vernacular character and creates homes that enhance and add character to existing neighbourhoods.

3.1 WOOD FOR GOOD

The UK has a legally binding commitment to reduce carbon emissions by 100% against a 1990 baseline by 2050. At the same time, increased volatility in global supply chains and rising material costs due to conflict and trade tariffs are mobilising efforts to repatriate the UK's material supply chain.

As a low-carbon construction material that removes carbon dioxide from the atmosphere and stores it in products with a long service life, homegrown timber has huge potential to positively meet both these challenges.

However, the UK currently has a chronically low level of forest cover (just 13.5%) and imports over 80% of the timber it uses. Of the timber the UK does grow itself, more than two thirds is squandered on burning for fuel and transitory products such as packaging and fencing.^[35]

If homegrown trees are to perform their vital role in decarbonisation, it is essential that we structure and design our use of timber to exceed the time it takes for the tree the timber came from to grow.

In a welcome move, the Government has recognised the potential value of homegrown timber in its renewed commitment to the Timber in Construction Roadmap. This sets out a vision for how UK timber can play a key role in reducing embodied carbon in the built environment, drive investment in tree planting and forest management, and to create domestic supply chains and new green jobs.

Contributing to this important shift, MultiMax is designed to maximise the use of homegrown timber in four ways through:

- 1** Transforming low-grade waste timber into high-value construction products;
- 2** Creating a new vernacular material palette that engages the full diversity of the homegrown soft and hard woods available and suitable for use in construction;
- 3** Re-localising the production of housing through neighbourhood factories that are able to more directly engage and support local networks of foresters, and timber producers and suppliers;
- 4** Systemising the safe use of timber in construction in terms of both fire and moisture.



3.2 MAXIMISING THE VALUE OF HOMEGROWN TIMBER IN CONSTRUCTION

Trees are the ultimate carbon capture and storage technology and offer a viable alternative to steel, concrete and aluminium in the transition to Net Zero. During its production, one metric tonne of concrete releases 159kg of CO₂ into the atmosphere, steel 1,240kg and aluminium 9,300kg. Wood, in contrast, absorbs a net 1,700kg from the atmosphere, over and above the energy expended in growing, harvesting and processing it.^[36]

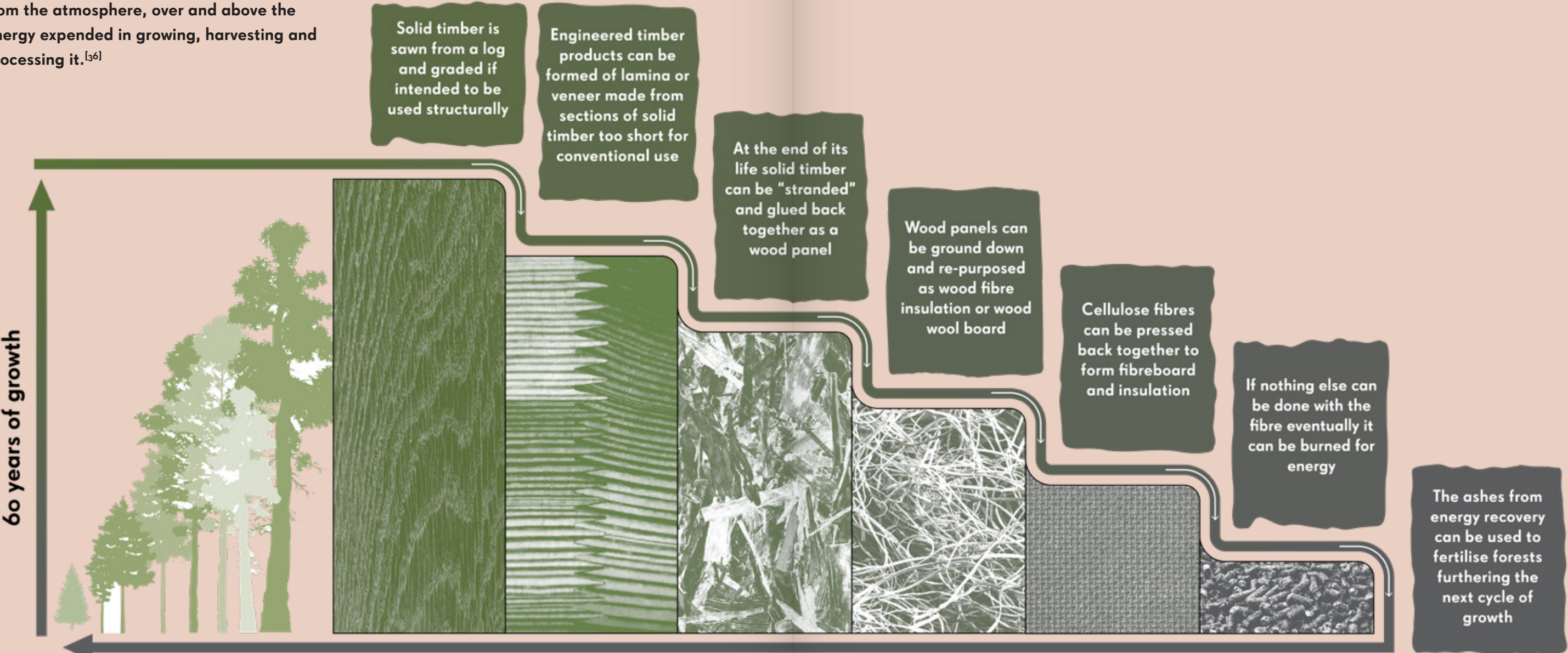


Figure: Cascading reuse of timber - Keeping it in as large a section as possible for as long as possible

At the moment however the UK currently wastes most of the stored up carbon in its homegrown trees on transitory products or burning for fuel.

By better understanding the opportunities for the use, reuse and recycling of timber in different products at various stages through the construction process, carbon can be sequestered for the longest possible time. This means a piece of solid timber can have many uses before eventually being used for energy recovery. There are important factors that can ease the transition between different uses and reuses, for example, minimising the use of contaminants like glue and ensuring fixings are easy to dismantle.

The MultiMax System uses homegrown sources of low-quality timber and transforms them into high-value design in the structure of its buildings, locking away carbon long-term.

MultiMax does this by using OSB form structural timber cassettes. OSB (or Oriented Strand Board) is a type of engineered wood, formed by adding adhesives and then compressing layers of wood strands (flakes) in specific orientations to create a new sheet material. The wood strands themselves are made up of “wood thinnings”, a by-product from the management of forests. Currently, this “waste” material is most commonly diverted into burning for fuel – a transitory use that

instantly releases all its stored-up carbon. Over the timescale needed to reach Net Zero, burning thinnings for fuel leads to net increases of GHG emissions, even compared to burning coal.^[37]

Using thinnings for making OSB has significant benefits. First, it transforms the timber into a long-term structural construction product, able to lock up carbon for 60+ years. Second, it provides a comparatively rapid route to market for increasing timber in construction. Conifers – the main source of UK homegrown timber for construction – take 40-50 years to reach maturity. In contrast, thinnings are ‘crop’ ready for harvest in as few as 15 years.^[38]

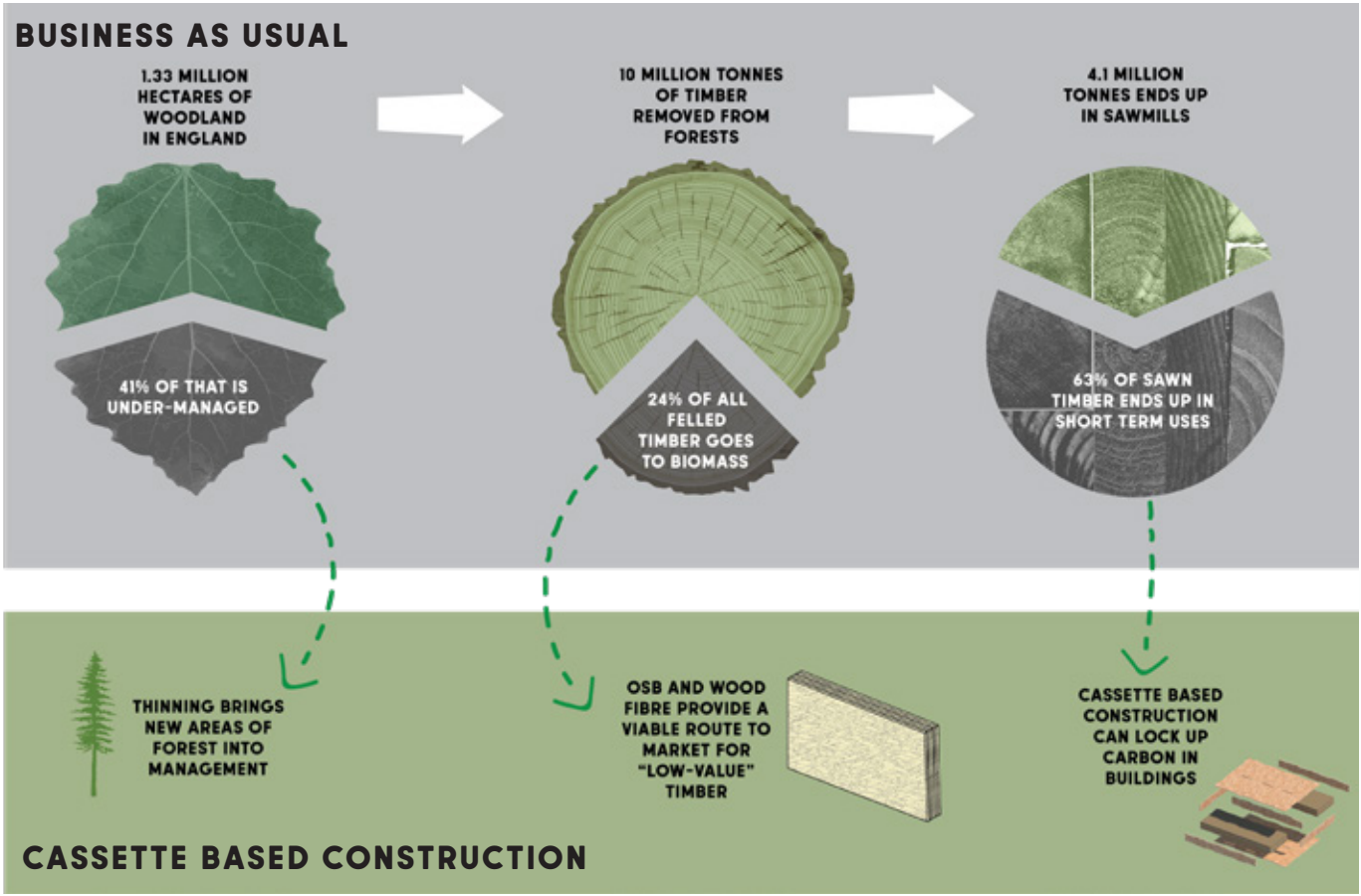


Figure: Current forest and milling practises and possible cassette based solutions along the supply chain

There are additional co-benefits of thinning. It incentivises more attentive and sustainable forest management practices (a significant issue for much of England’s under-managed woodland) and the process itself stimulates the roots of the thinned trees promoting faster and healthier growth.

MultiMax further maximises the use of low-grade timber for high-value uses by integrating wood fibre insulation into the system. Insulation is key to the performance of any building, helping keep warm in winter and cool in summer. Using biomaterials that sequester carbon mean that low operational carbon is not achieved at the cost of additional embodied carbon, as is the case in many oil-based insulation products.

Typically made from the waste and off-cuts from timber processing in sawmills, wood fibre insulation is not currently produced in the UK, but there is a strong market potential for it to work^[39]. BE-ST in Scotland are leading research on commercialising homegrown wood fibre insulation; and there are indications that a production plant for loose-fill wood fibre insulation in Wales using waste material from furniture production could open soon.

WeCanMake worked to identify wood fibre insulation products that can be flexibly integrated now into the MultiMax System and switched out in future builds with homegrown equivalents once available in the UK. For example, SteicoFlex – currently manufactured in Poland – performs at a level comparable to mineral wool insulation.

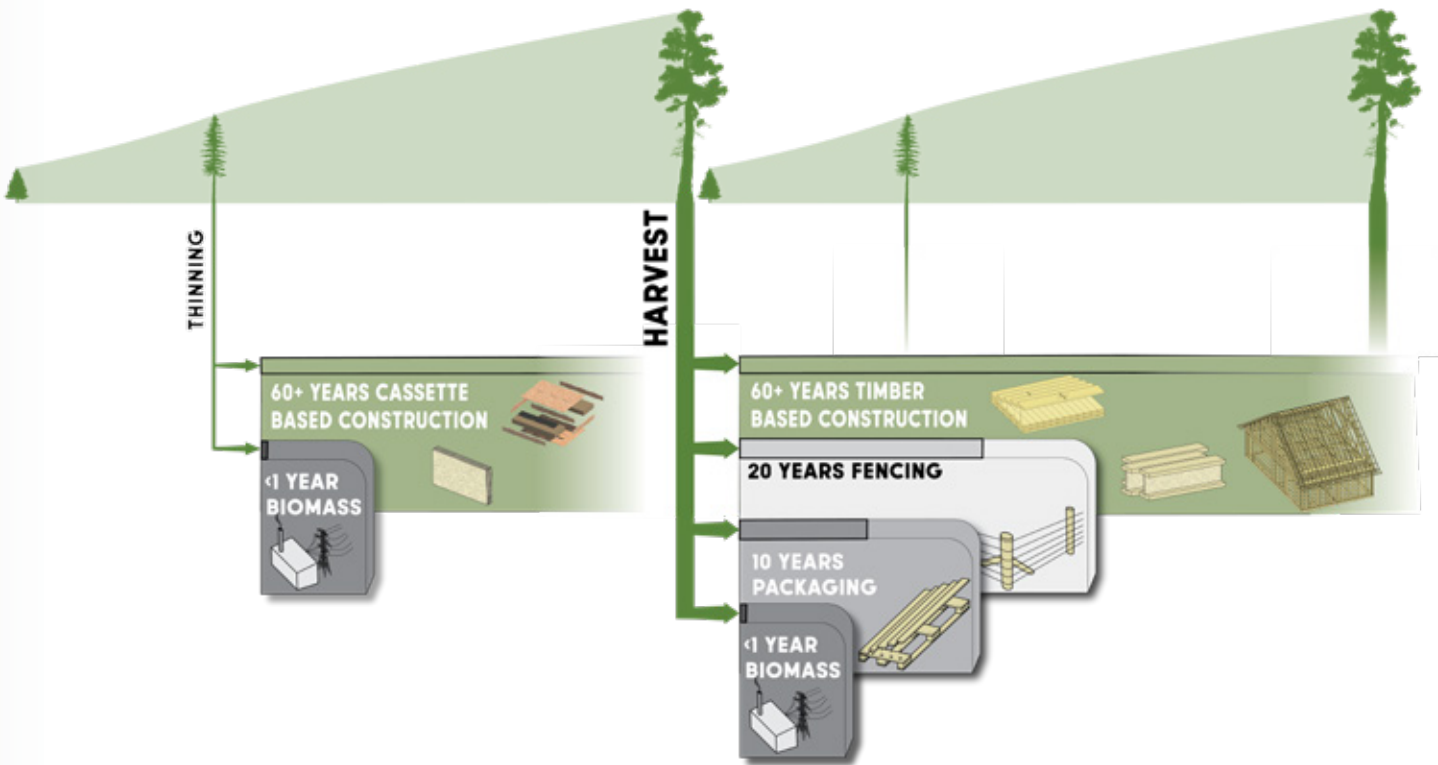


Figure: Lifespan of a tree - long term uses are vital to locking up carbon

3.3 A NEW VERNACULAR MATERIAL PALETTE

Inserting new homes into the existing urban fabric places heightened importance on context and character. For infill homes to be a welcome addition to a neighbourhood, material and vernacular choices are critical, helping bridge the gap between old and new. Equally, the materials used for infill development creates an opportunity to reconnect with our local natural material context and culture – a connection that has been largely lost in the predominance of place-less volume housebuilder developments.

Vernacular architecture that drew its material supplies from its local surrounds was once the norm – from the honey-coloured Bath Stone to the iconic yellow London ‘stock brick’, and the traditional timber-framed and thatched homes that characterised much of East Anglia.

Alongside the structural use of homegrown timber outlined above, the MultiMax System is optimised for integrating in locally-sourced timber for non-structural uses, including cladding, decking, and fit-out. We have focused on creating pathways for specifying the use of the diverse hardwood timbers most commonly found in our South West bioregion.

Compared to standing timber across the UK, there is a much higher proportion of hardwood in the South West, mostly due to a lack of large-scale softwood plantations as found in other parts of the UK. Some of these species like oak already have good routes to market, whereas many others are destined for short-term uses, or are left to rot due to a lack of routes to commercial use.

Getting a more diverse range of tree species into long-term high value construction uses requires care in their specification and designing their use in at a system level.

The diagram below shows the forests within 100 miles of our neighbourhood in Bristol, and the diagram to the right shows the standing volume of the various species of timber that are in our South West region.

Developing this fine grained understanding opens up opportunities for engaging with the rich diversity of timber available locally, and developing relationships directly with local foresters, suppliers, and processors to precisely “fell to order”. Such an approach can help build local economic flows, creating the conditions for green growth and community wealth in the form of local skills, jobs, and infrastructure.

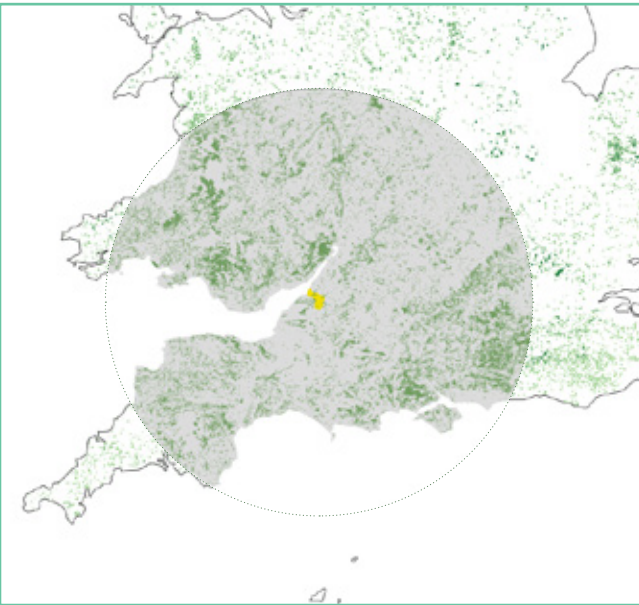
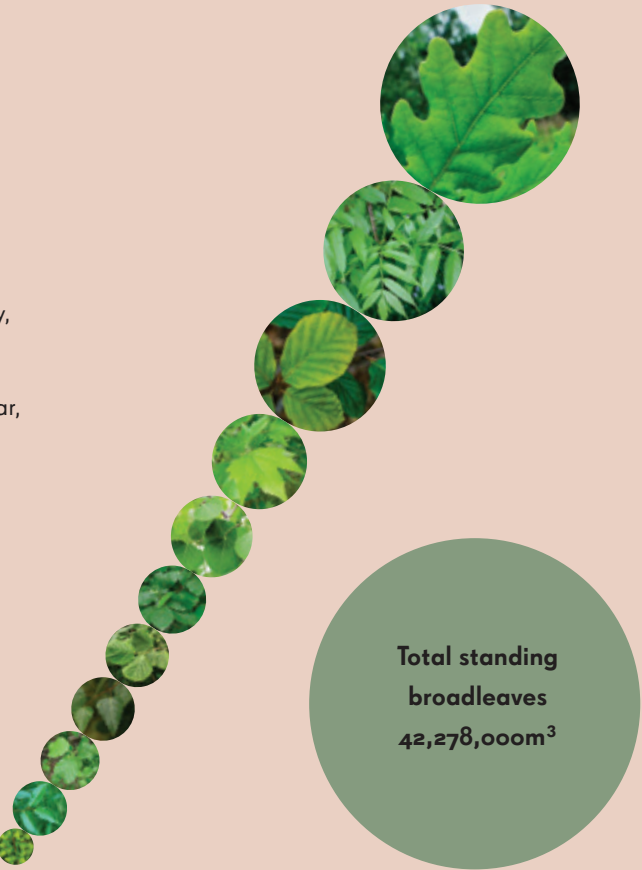


Figure: Forests within 100 miles of our neighbourhood in Bristol

HARDWOODS

- Oak - 14,970,000m³** - Heavy structural use, cladding, interior and exterior joinery, furniture, flooring, decking
- Ash - 7,408,000m³** - Furniture, interior joinery, flooring, veneers. Exterior joinery possible through thermal modification
- Beech - 6,593,000m³** - Sports goods, furniture, interior joinery, flooring, veneers, tool handles
- Sycamore - 3,624,000m³** - Cabinet work, interior joinery, flooring, veneers, turned goods, musical instruments
- Other broadleaves - 2,478,000m³** - Including - poplar, aspen and fruit woods
- Sweet chestnut - 1,777,000m³** - Interior and exterior joinery, cladding, shingles, furniture, heavy carpentry
- Hazel - 1,511,000m³**
- Birch - 1,437,000m³** - Furniture and floors
- Alder - 1,425,000m³** - Furniture and interior joinery
- Willow - 1,174,000m³**
- Hawthorn - 525,000m³**



SOFTWOODS

- Douglas fir - 4,353,000m³** - Heavy construction, flooring, interior joinery
- Sitka spruce - 3,329,000m³** - Interior, furniture, structural use also cladding, decking and exterior joinery when preserved
- Larches - 2,824,000m³** - Cladding, flooring, exterior joinery, structural use, decking, mouldings
- Other conifers - 2,429,000m³** - Including cedars, hemlocks yew and cypresses
- Norway spruce - 2,201,000m³** - Interior, flooring, structural use also cladding and exterior joinery when preserved
- Scots pine - 1,743,000m³** - Flooring, structural use, mouldings also exterior joinery, cladding and decking when preserved
- Corsican pine - 1,383,000m³** - Interior, structural use also exterior joinery when preserved

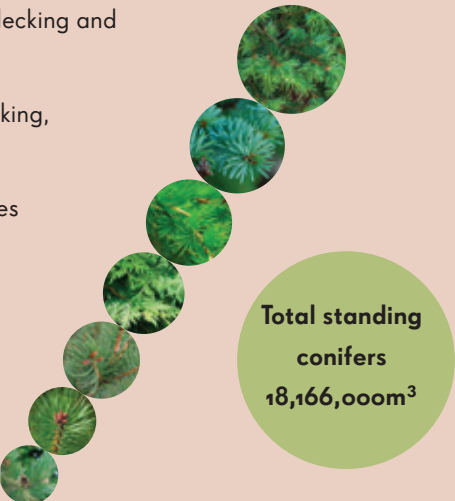


Figure: Standing volume of the various species of timber that are in our South West region^[40]

3.4 RE-LOCALISING HOUSING PRODUCTION

The UK housing industry is unusually concentrated, with the top three housebuilders delivering 25% of new homes, and the top ten typically producing 40-50%.^[41] With their vertically integrated business models and centralised supply-chains, the value of new housing tends to wash through the communities where development is taking place, and the homes reflect little – if any – of their local material and vernacular context.

There are opportunities to generate community wealth in the form of local jobs, skills and infrastructure, both in where the materials are sourced, and how the homes are made.

The MultiMax System is designed to be produced using a localised discrete cassette-based Modern Method of Construction (MMC), system, whereby quality-controlled neighbourhood-based fabrication facilities can produce the digitally-designed components which are then combined into a high-performance and precise product. This cassette-based system provides greater scope for localisation because:

- Its material build ups are more flexible and so can integrate local bio and re-use materials;
- It requires a less specialised workforce to make and install so they are also more accessible for use by regular trades;
- It doesn't require the set-up costs of a large centralised factory, and can maintain flexibility if there are delays in planning or on-site – all too often an occurrence in the UK development environment.

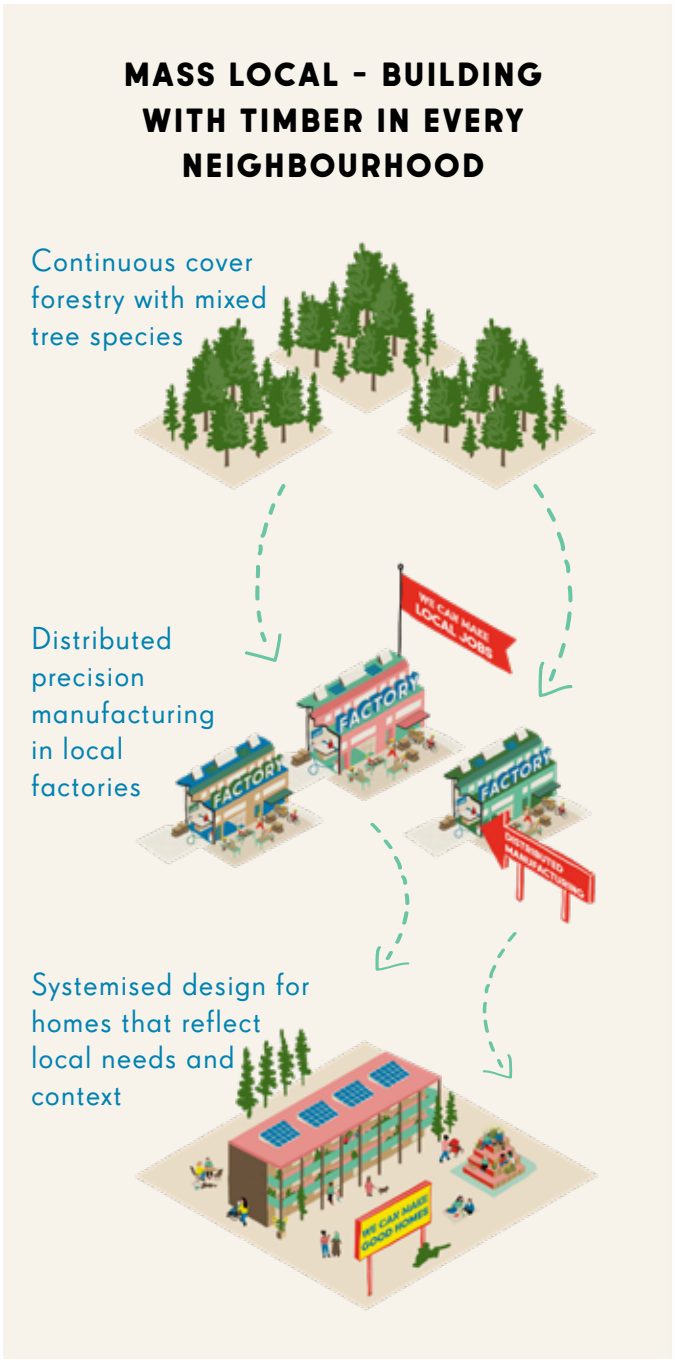


Figure: A mass local approach to building with timber in every neighbourhood

This distributed approach to working with networks of place-based neighbourhood factories connected to localised material supply-chains of homegrown biomaterials opens up a new “mass local” way to build affordable homes and a new kind of future-facing vernacular architecture.

Research undertaken by Open Systems Lab indicates that there is capacity for 100 neighbourhood factories distributed in communities across the UK, producing together a total of 2200+ low-carbon affordable homes a year – a similar output at a lower capital cost than one centralised volumetric MMC factory.

WHAT ARE MODERN METHODS OF CONSTRUCTION (MMC)?

Modern Methods of Construction (MMC) is a catch-all term that covers many kinds of products and technologies. It broadly means factory-based manufacture and assembly of standardised parts for homes, which are then transported to site for final construction. If done well, MMC can dramatically reduce construction waste and time on-site through precision design and fabrication.

MultiMax has been designed using a discrete component system of timber cassettes, of which

there are a variety of available systems that could be used within the MultiMax System. Following testing out using a range of different cassette-based systems through doing some demo builds with trades and community members in Knowle West, WeCanMake selected BlokBuild's cassette-based system to build its first two homes. MultiMax has been developed using BlokBuild's detailing. Tests to ensure compliance, including fire tests and warranty approval, have been carried out using the BlokBuild system.



Figure: WeCanMake home build using BlokBuild system

3.5 THE SAFE USE OF TIMBER

The greatest risks to the safe functioning and durability of buildings are fire and moisture. Utmost care needs be to taken to ensure each material – and how it is used in combination with other materials – is appropriate, and that risks are carefully managed. This applies as much to incombustible materials such as steel and concrete as it does to more combustible natural materials such as timber and hemp. For example, non-combustible steel beams can warp and fail under the heat of a fire, whereas in a same conditions mass timber beams can retain their structural integrity.

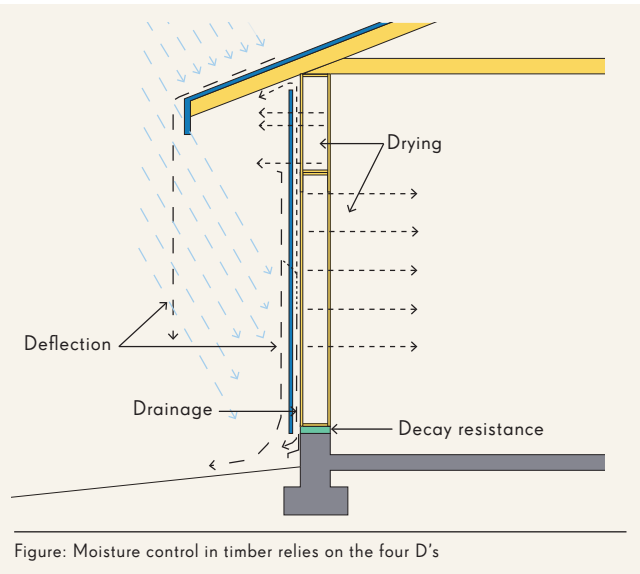
FIRE

A well-designed fire strategy is essential for safeguarding lives and ensuring building resilience. By integrating fire safety measures throughout design, construction, operation, and maintenance, a fire strategy helps prevent fires, limit their spread, support safe evacuation, and enable efficient firefighting intervention. The MultiMax Pattern Book includes more detail about the systems approach to fire regulations in [chapter 2.5](#) and [appendix 4.4](#).

Management of common areas is a key part of a robust fire strategy. This is especially important in deck access schemes where such areas are used as a means of escape. The MultiMax System deals with this by splitting the public access decks from private amenities decks that can be occupied with furniture. This division is achieved by setting a maximum width for access decks - more information can be found in [section 2.4 of the Pattern Book](#).

MOISTURE

Effective moisture management is essential for the durability and performance of timber buildings, and relies on the four Ds: Deflection, Drainage, Drying and Decay Resistance. The MultiMax System highlights the importance of considering moisture risks at every stage – design, construction, and occupancy. By implementing robust design strategies, careful construction practices, and continuous monitoring, the risk of moisture damage can be minimised, ensuring a long lasting and resilient building.



For more detail on moisture considerations of the MultiMax system [see section 2.8 in the Pattern Book](#).

3.6 RODFORD DREAMS : THE NEIGHBOURHOOD MAKERS

As part of the co-design process for developing proposals for the Rodfords Dream infill site, WeCanMake recruited six local residents as a crew of “Neighbourhood Makers” to collectively explore what might be possible.

Through a series of hands-on workshops in Autumn 2024, the residents deep dived into different design aspects, with a key focus on exploring what kinds of bio and re-use materials could work on the site. Materials they explored included local sourced timber, clay, hemp, and even mycelium. Their ideas for Rodford Dreams were developed into design proposals for the site, which were then shared as a neighbourhood exhibition on the site itself for wider feedback.

Strikingly, alongside the importance of high quality physical materials, residents also prioritised the importance of the emotional and social building blocks needed to improve their neighbourhood.



“We could have a [large commercial developer] here and they wouldn't care about any of this – they would be just bung in as many houses as possible... There's so much value in being part of this!”

Local Resident





4. PEOPLE

This chapter shares how MultiMax takes a systemised and simplified approach to design and construction, and a collaborative approach to the on-going care and maintenance of the buildings and land.

We share how this applies to both to the 'hardware' of the structure, and the 'software' of the operation of the building. This creates opportunities for connections between people and fosters long-view stewardship that bakes in the ability to adapt to changing needs over time, and centres people's safety, agency, and sense of belonging.

Finally, we share how WeCanMake is using MultiMax to unlock infill sites in South Bristol, focusing on the creation of affordable housing for people who currently have the least access to a decent and secure home.

4.1 LONGVIEW STEWARDSHIP

There is a growing recognition that solving the housing crisis requires a fundamental shift in policy, practice, and dominant business models: away from treating housing as a consumer good and source of wealth, towards understanding home as a human right that is essential to people's health, well-being and a decent life.^{[42][43]}

Enabling such a shift means embracing the relational qualities of housing. Home connects the human and material, the domestic and the social, and the near and far of finance and power. As Tim Ingold writes, "dwelling" means more than a just physical structure; it also means to build, to preserve, and to care for.

MultiMax is designed to actively build relationships between people, land and materials, with spaces and opportunities for connection, reciprocity, and active stewardship. It does so by flexibly combining the 'hardware' of its physical structure with the 'software' of policies and practices of ownership, tenure, maintenance, and management.

Overall, MultiMax is designed to positively adapt to and engage with variations in vernacular material palettes and the differing housing hopes and needs of diverse neighbourhood and community settings.

The "golden thread" was the term coined by Dame Judith Hackitt during her review of building regulations and fire safety in response to Grenfell tragedy, and pointed to the urgent need to replace all too often fragmented and opaque technical information about the construction and maintenance of buildings with a more holistic and durational approach. The new Building Safety Act 2022 was a welcome start to encoding this more rigorous approach but is currently limited to what are considered high-risk buildings.

How we design, source, and build our homes within our local material context opens up opportunities for designing in more active and open forms of stewardship across our wider built environment. These opportunities include considering the sourcing of materials, how they are combined in construction, and the care and maintenance required over their whole lifecycle.

MultiMax applies the idea of the 'Golden Thread' as longview stewardship in five practical ways:

1 Maximises the local sourcing of homegrown biomaterials. Much like the farm-to-fork movement that fosters valuing the provenance of where our food comes from, this helps build direct relationships with local foresters and other producers of biomaterial construction products, creating shared knowhow and understanding around localised material palette and how its resources can be best used.

2 Creates a construction system that is simple with limited specialised component parts that can be accessibly understood by regular trades. The system includes clear specifications on how to build each key detail, including the different wall types, floor to wall junctions, and fire and moisture protections.

3 Provides a mechanical, plumbing, and electrical set-up that has been designed in at a system level to work with the structure of the building. This minimises the occurrence of random installation holes and amendments to the building fabric, which are at much greater risk of creating performance and maintenance problems.

4 Buildable by regular local trades, which means there is a locally available and accountable workforce with the knowhow and experience to maintain the building over time.

5 A systematised user manual for the whole building, with clear instructions for owners and residents on how to care, adapt and work with the natural material structure over time - from the right way to drill a hole to fix a new shelf to how to replace a cassette that has been damaged. Find out more in section 2.9 of the Pattern Book.

Overall, Multi-Max creates a comparatively simple yet robust constructed built form, helping to limit the potential for gaps between designed and built performance.

Moreover, as a community land trust, WeCanMake is able to hold the stewardship of the land and buildings from the inception of co-design with future residents, through the construction process, to management in perpetuity for community benefit, creating that all-important golden thread of knowhow and accountability.

4.2 ADAPTABLE LIVING

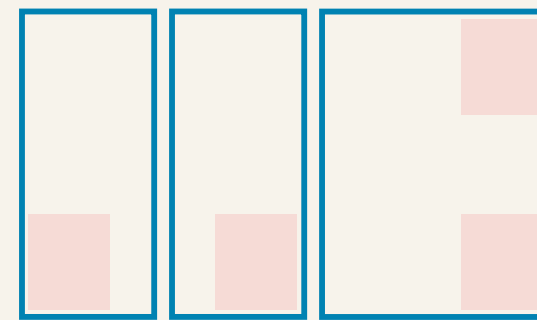
There is strong evidence of the benefits of adaptable buildings. These include promoting functional and environmental value, economic viability, and social equity through structures being able to flexibly and efficiently cater to changing needs and uses over time.

The MultiMax System enables this kind of adaptability through a stable core structure that supports flexible uses over time. Key features include:

- Apartments can be arranged in combinations of 1 to 6 bedrooms, and smaller apartments can be joined to make larger homes over time. This supports families as they grow through different life-stages and positively provide for more culturally diverse patterns of living, such as multi-generational families.
- Generous double decks create a platform for common space on each floor, connecting neighbours and creating a shared and flexible space for everyday interactions and relaxation.
- The ground floor is designed to accommodate a wide range of civic and community uses – for example a community kitchen, bike repair shop or artist studios. Individual structural bays can also be switched to homes or live/work spaces as required.

For more detail on the layout flexibility of the MultiMax system see [section 2.1 in the Pattern Book](#).

BASE VERSION

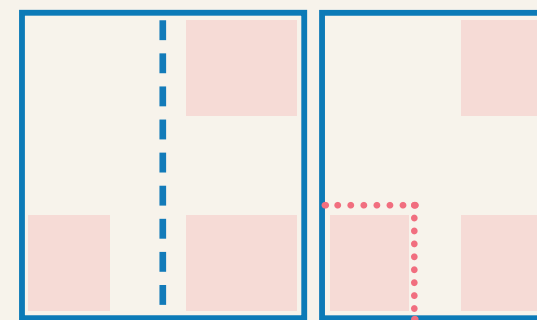


1 BED

1 BED

2 BED

ADAPTED VERSION



3 BED

3 BED

KEY

- Indicates private bedroom
- - - Two one bed homes combined to create a three bed home
- Internal partition added to create additional room for growing family



4.3 DESIGN FOR HUMAN FLOURISHING

Here, we focus on how WeCanMake has combined the hardware of the MultiMax System with the software elements of co-design, ownership, tenure, and management to unlock infill sites in Bristol. All with the aim of creating housing – and vital social infrastructure – for people who currently have least access to a decent and secure home. Key features include:

100% GENUINELY AFFORDABLE HOMES

Many so-called affordable products, such as Affordable Rent, Shared Ownership, and First Homes, remain out of reach to many people in housing need. Genuinely affordable Social Rent homes comprise less than 5% of homes currently delivered by the mainstream housing system.^[44] In contrast, 100% of WeCanMake homes are for Social Rent. Future residents must be on the Council’s housing waiting list with an eligible housing need. Allocation decisions take into consideration a Local Lettings Policy, which prioritises people with a connection to the area (defined as living, working, or caring for someone in the neighbourhood). From a long list of potential future residents who meet these criteria, WeCanMake (as the CLT providing the housing) makes the final tenancy offers.

LAND IN COMMUNITY HANDS

Rather than traded for profit, land is taken out of the market and held for community benefit in perpetuity. Land is secured through the Bristol Council’s innovative Community-Led Housing Land Disposal Policy, which transfers land to community-led housing groups for Social Value rather than a capital receipt. This removes the need to recover the cost of the land from commercial home sales or high rent prices. The site is held as a regenerative asset by the WeCanMake CLT, enabling the value of the land and building to be recycled by borrowing against its value to support future community-led developments. Borrowing against a built asset helps reduce the cost of borrowing, enabling the savings to be reinvested in the creation of more affordable homes and social infrastructure.



GROWING SKILLS & AGENCY

Local residents and trades are integrated in the co-design and construction process, with open opportunities where people are supported to share their knowhow and grow their skills: from live prototyping possible future uses on site, to sourcing materials, to training in construction skills. This approach combines traditional trades with digital skills and biomaterial construction skills: For example WeCanMake has run a series of free Trade Schools where local residents can learn DIY skills and get hands-on with homegrown biomaterials and a digital fabrication kit in our neighbourhood factory. Trade Schools are designed as a pathway to support local people to be a part of the fabrication and construction crew for the delivery of the sites.



4.3 DESIGN FOR HUMAN FLOURISHING

COLLABORATIVE HOUSING

In the UK most commercial and social housing management regimes tend to reductively treat people as either consumers or service beneficiaries. WeCanMake is focused on more collaborative approaches whereby residents are invited to be active citizens in the management and maintenance of their homes, and, in the process, help build a stronger sense of agency, security, and belonging.

WeCanMake has developed a distributed co-op model whereby a Resident Management Agreement devolves a level of responsibility and budget to self-management by the residents themselves. This is supported with training and the ability for the level of self-management to 'staircase' up and down over time depending on the capacity and appetite of residents.

This collaborative housing model has helped scale the community-led housing sector across Scandinavia, Switzerland, and Austria, and has been successfully used in the UK by Coin Street in London, and Homes for Change in Manchester.^[45]



MORE THAN JUST UNITS

The effects of loneliness and social isolation have been shown to be comparable to smoking, obesity and physical inactivity.^[46] With evidence that six in 10 adults in the UK feel lonely most, often or some of the time, loneliness has become a public health emergency. The critical role of the built environment and housing in this epidemic is beginning to be recognised. WeCanMake seeks to create more sociable housing in three practical ways:

- A Local Lettings Policy that considers family connections and the caring needs future residents may have. Fostering connections within extended families at neighbourhood level is recognised as a key strategy for reducing loneliness;
- Relational Tenancies whereby households in extended families can take up tenancies within the same MultiMax building. This can help nurture networks of mutual care within families, which is increasingly valuable in the context of an ageing population and stretched adult social care budgets. Equally, such an approach responds to the need for new housing typologies that better support more culturally diverse family structures, including multi-generational living;
- Social infrastructure is built-in, with space for a range of different community and civic uses at ground floor where local residents can meet, socialise, and do things together – from cooking to celebrating family and cultural events.





5. GROWING BETTER FUTURES TOGETHER

Everyone should have access to a decent and secure home that doesn't cost the earth. A critical challenge remains as to whether the Government's mission to deliver 1.5 million new homes can be done in a way that keeps us within 1.5°C – the scientifically and politically established 'safe limit' to avert the worst impacts of climate change and preserve a liveable planet.

Continuing with business-as-usual delivery, housing alone will consume the UK's entire carbon budget for meeting 1.5°C before 2050.^[47] Furthermore, it could lock in the UK's over-reliance on a small number of financialised volume housebuilders, whose track record for prioritising the extraction of profits over providing high-quality affordable homes has contributed to only 2% of the public trusting them to deliver the homes people want or need.^[48]

WeCanMake seeks to show that another way is possible.

5.1 GROWING BETTER FUTURES TOGETHER

Multi-storey, Maximum-timber, the MultiMax System demonstrates how homegrown timber can be safely and affordably used in place of high-carbon construction materials such as concrete and steel. Through a combination of systemised design and digital production in neighbourhood factories, and community stewardship of land and homes, a new “mass local” way of building is possible.

MultiMax offers a “full stack” homegrown timber housing offer to support the gentle densification of existing neighbourhoods by unlocking the hidden abundance of well-located urban infill sites - providing homes and social infrastructure precisely where they are needed most.

The system can flex up to four storeys, adapt to fit the tightest of infill sites, and has a variable skin of cladding that can reflect different local vernacular, material supplies, and cultural contexts. MultiMax does this in a way that meets the forthcoming Future Homes standard, and can be tailored to meet Passivhaus standards. It also meets the operational energy targets set by the UK Net Zero Carbon Buildings Standard – an innovative new standard for setting operational and embodied carbon performance within limits which allows the UK built environment to stay within its own allocation of the remaining carbon budget and limit warming to 1.5°C.

It achieves all of this at a build cost that is comparable to conventional high-carbon, masonry construction.

FEASIBILITY AND MUTUAL GROWTH

Systemised designs, layouts and material specifications help streamline the process of working out what kind of development is feasible on a particular site. WeCanMake is also in the process of becoming a Registered Provider (RP) of Social Housing, which opens up access to Homes England Affordable Housing Grant – an often critical element in making any affordable housing scheme feasible.

WeCanMake is exploring options with others in the sector^[49] for how this RP function could work as a mutualised service to support other community groups to access grants. As an active member of the growing movement of community-led housing groups, and to contribute to the wider diversification of housing, WeCanMake is making available a small fund to support other community-led groups to undertake feasibility studies to see if the MultiMax system could work for them.

[Click here to find out more and register your interest](#)

5.2 RODFORD DREAMS: CONNECTING PEOPLE, LAND AND MATERIALS

Building homes within planetary boundaries could feel unduly restrictive. But what if, as Rachel Solnit asks, climate change could mean abundance rather than doom?^[50] By connecting people with the land and materials their homes are made with, there is a chance to create something of what Solnit calls for: a sense of meaning, deep connection, and generosity – exactly the kind of abundance we collectively need to meet the climate crisis and make most people’s lives better.

In the winter of 2025, 10 people from our neighbourhood took a trip to a forest in Hampshire where they met sustainable forester Bill Maynard, on whose family-owned forest some of the trees that will form part of the build on Rodford Dreams are growing.

For some of the residents it was the first time they had ever stepped foot in a forest. Together, neighbours explored the mixed woodland, cooked food over a camp-fire, and planted 100 new saplings in an area of land equivalent to the footprint of the MultiMax design for the Rodford Dreams site.



“I can’t believe I am standing in a forest, next to a tree, that will be part of the new homes in our neighbourhood.”

Jim, local Resident



“I planted that whole row of trees. I want to come back and see them as a forest in 20 years from now.”

Malesha, local resident



5.3 PATHWAYS TO DEVELOPMENT

The MultiMax System is designed to reduce barriers to low-carbon construction for communities, councils, cooperatives, and non-just-for-profit developers, making it simpler, cost effective, and swifter to build genuinely affordable homes where they are needed most. MultiMax doesn't replace the need for a qualified design team. But it does help open up the development process for communities to create more of the homes they need and hold on to more of the value.

FINDING A SITE

MultiMax is designed flex to fit different spatial constraints to enable development on infill sites that would not otherwise be viable. There is some national level policy support for this type of development, including community-led exception sites,^[51] and the Community Right to Build.^[52]

SPECIFYING AND SOURCING MATERIALS

MultiMax maximises the use of homegrown bio- and re-use materials in construction, utilising what can be sourced within the bioregion. Local sourcing creates the opportunity to go direct to growers, producers, and suppliers, creating localised supply-chain networks. This kind of bioregional supply-chain work is growing and there is excellent knowhow that others can tap into, including the work of Material Cultures,^[53] Civic Square,^[54] Evolving Forests,^[55] and Cloud Forest.^[56]

TRADES AND SKILLS

The MultiMax system requires a less specialised workshop to make, install, and maintain, making it more accessible to regular trades than, for example, volumetric MMC. This creates opportunities for skills learning and jobs within the neighbourhoods where new homes are being built. WeCanMake and BlokBuild have run training programmes, including demo builds and trade schools, to equip communities to build themselves.

For more detail on procurement and how MultiMax maps onto the RIBA Plan of Works, see [section 2.10 in the Pattern Book](#).

COLLABORATIVE HOMES

MultiMax can be used flexibly to support a range of community-led, co-housing, cooperative, and social housing resident and management models. For WeCanMake, the important part is that the land is asset locked to ensure affordability and community benefit in perpetuity.

LOCALISED MANUFACTURE

WeCanMake fabricates components for MultiMax in our neighbourhood factory using the BlokBuild cassette-based system under its BOPAS (Buildoffsite Property Assurance Scheme) license. Communities could set up or access similar fabrication kit in their area; we are beginning to [map such facilities here](#). Localisation of production can also be facilitated by separating out fabrication from assembly, whereby "flat-pack" parts fabricated elsewhere can be assembled close to site.



6. TOWARDS A NEW GREAT BRITISH HOUSING MISSION

As a neighbourhood system demonstrator, WeCanMake aims to make ideas that can seem abstract or unattainable feel tangible and plausible.^[57] Working with real sites and real people, sites like Rodford Dreams become little pockets of the future in the present.

MultiMax is offered as an open-source resource for other neighbourhoods, communities, councils, and not-just-for-profit developers to adapt and adopt for their own areas.

MultiMax represents one example of a growing movement^[58] across the UK and beyond of “entrepreneurship for the common good” that is seeking and creating responses to the challenge of how we can deliver good homes within planetary boundaries. Our hope is that, together, how we do housing can generate a more life-affirming relationship with land, materials, and each other.

Learning from our Rodford Dreams prototype, the next section explores how this movement, including MultiMax, could spread – shifting from the margins to the mainstream of housing delivery in the UK.

TOWARDS A NEW GREAT BRITISH HOUSING MISSION

Mission-oriented innovation aims to produce transformational systemic change by defining ambitious ‘North Stars’, to motivate change and build diverse fleets for navigating and sailing towards them.^[59] **“Everyone has access to a decent and affordable home delivered within safe planetary boundaries”** could be such a North Star mission. It’s bold, tangible, with wide societal relevance that cuts across climate, public health, and social justice, and there is already a growing fleet of purpose-driven innovators leading the charge.

Such a mission would complement the five ambitious missions the Labour Government set out at the beginning of its term,^[60] and give mobilising purpose to its 1.5 million homes target beyond quantity and speed of delivery.

Mission-orientated innovation involves the cultural as much as the technical – embracing belief systems and mental models, as well as new technologies and hard infrastructures. As a starting point, we propose that the mission that “everyone has access to a decent and affordable home delivered within safe planetary boundaries”, could be structured through five essential shifts:



This kind of mission-orientated innovation and system change is less about implementing a top-down vision or instigating a bottom-up rebellion. It is more about seeding and spreading multiple activities in a cross-disciplinary and cross-sectoral way^[63] at all the levels – from the neighbourhood, to council, to metro authority, to bioregion, to national level.

We don’t pretend to hold all the answers. This is very much an open invitation and space for other purpose-driven innovators in the field to add their ideas and experience of motivating and building capacities for change. To move the mission forward, it is important that everyone feels invited.

At all scales, there is a key role for prototyping and piloting, to collectively rehearse new ideas, build trust, and grow new flows of value and patterns of behaviour. With a ‘test-and-learn’ ethos, we can build evidence and insight as we go.

From WeCanMake’s experience developing MultiMax, our live site prototypes in Bristol, and learning with others in the field, we have identified a suite of leverage points, activities, and interventions that could begin to enable a systemic shift towards delivering affordable homes within planetary boundaries, at a scale that matters.

6.1 REGULATE EMBODIED CARBON

Despite embodied carbon emissions from the built environment amounting to more than aviation and shipping combined, these emissions are currently entirely unregulated, with no requirement to assess or control them.^[64]

The Government should mandate the measurement and reporting of whole-life carbon emissions, and place legal limits on the upfront embodied carbon emissions from all construction projects. Implementing Part Z of the Building Regulations would be an important first step, bringing the UK in line with similar legislation in Canada and a growing number of European countries.

TOWARDS A NEW GREAT BRITISH HOUSING MISSION

6.2 SET A NATIONAL TARGET FOR CARBON-STORING BIOBASED MATERIALS

To stimulate the cultivation, processing, and application of biobased construction materials growing new green jobs in reforestry and other biomaterial sectors, a national target should be set. This could be based on the policy set by the Netherlands, which has introduced a target whereby 30% of the materials used in renovation and new construction by 2030 should be biobased^[65]; or in France, where the national government has set a target whereby new and renovated public buildings must be built with at least 50% timber^[66].



6.3 PRIORITISE WELL-LOCATED HOMES

Much attention has been given to reclassifying greenbelt land as “greybelt” to make development easier. However, this risks fuelling more high-carbon urban sprawl.^[67] National and local government could encourage the more efficient use of land and resources more broadly, through incentivising the development of “well located” sites within existing settlements that are already close to infrastructure and services. This could include urban infill sites and sites adjacent to infrastructure, such as train stations.^[68]

This shift could be modelled on the “Well-Located Homes Policy” introduced in Australia, designed to create an alternative to high-carbon sprawl, and which sets a target of delivering 1.2 million well-located homes in existing neighbourhoods, matched with a \$3AUD billion investment fund^[69]. Such an approach in the UK could join up housing delivery with other types of investment to enhance the overall quality of living for both new and existing residents: see for example the government’s proposals to bring back Sure Start Centres.

6.4 JOIN UP HOUSING AND RETROFIT

At both central and local government level, housing delivery and the retrofit of existing homes are unduly siloed, with housing delivery narrowly focused on number of units, and retrofit on energy efficiency and operational carbon.

A report by the Housing Ombudsman highlighted the chronically poor condition of social housing in England.^[70] There is an urgent need for a more integrated approach, whereby retrofit addresses damp, mould, indoor air quality, and over-crowded living conditions, alongside Net Zero emission goals.

This is an opportunity to improve people’s quality of living and get much more value from the existing housing stock. For example, working with Mikhail

Riches Architects and the University of Bath, WeCanMake have developed a model of spatial retrofit for interwar council-built homes, where with some modest adaptation, a 3-bed 1-bath home can be transformed into a 4/5-bed 2-bath home. This spatial retrofit approach improves the building fabric, lowers energy bills, and relieves over-crowding – all in a lower cost and lower carbon way than new build or demolition and rebuild would.

This kind of latent capacity can be found in other parts of the built environment. For example, new research by Historic England has found that retrofitting underused historic buildings could provide between 560,000 and 670,000 new homes in England.^[71]



TOWARDS A NEW GREAT BRITISH HOUSING MISSION

6.5 BRING COMMUNITY-LED INTO THE MAINSTREAM

Research has shown that the community-led sector consistently delivers more of the kinds of homes that people want and the planet needs – homes that perform better environmentally, build in social connection, and have affordability locked in.^[72] Community-led can also speed up delivery because proposals for new homes are brought forward by the community itself, significantly de-risking planning.

However, community-led delivery is currently under performing by the UK's historical standards, and in comparison to much of the rest of Europe. During the 1974-79 Labour Government, 10% of capital spending on social housing went into community-led^[73]. This has not been sustained – community-led now accounts for just 0.7% of UK housing stock.^[74] In places such as Zurich, 25% of all rental flats are not-for-profit with the municipality supporting community-led cooperative development through subsidised land and access to low-cost lending, embracing it as a core strategy for ensuring quality affordable homes for its residents.^[75] The UK could boost community-led delivery by making it easier for communities to access to land and funding:

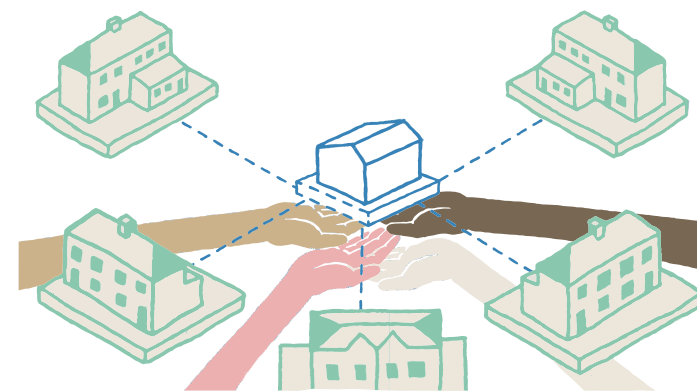
- Councils should use their power to levy local taxes on second homes and invest the income in supporting the delivery of community-led homes.^[76] North Yorkshire has opted to invest 10% a year from its second homes tax in

community-led delivery, creating a £4million+ pot of funding for pre-development and capital costs.^[77]

- Access to Homes England Affordable Homes grant should be opened up to communities, which is at the moment restricted to Registered Providers – a costly (in time and money) status to achieve. Instead, councils could hold the funds and ensure community-led groups achieve the right quality standards to access the grant. Bristol Council took this innovative approach with its Affordable Housing Fund, opening it up to community-led groups to successively deliver affordable homes. This approach could be replicated and scaled across the sector.
- Government subsidies for housing should be progressively shifted from their overwhelming deployment on Housing Benefit (most of which goes directly to poorly regulated and high-cost private landlords) to investing in the creation of additional genuinely affordable homes. A pilot version of this kind of shifting of housing benefit from private landlords to affordable housing developers is proposed as part of MCHLG Small Sites Aggregator as a way of reducing upfront borrowing costs.^[78] 1% per year of the current £25 billion used to subsidise Housing Benefit could instead be used to create an initial investment fund of £250 million, which could grow over time.

6.6 CREATE COMMON GOOD LAND BANKS

A land bank is a public entity designed to put vacant, abandoned, and deteriorated land and properties back to productive use, according to agreed community goals. This includes acquiring neglected land and properties from public and private owners and temporally holding them until they can be transferred to new responsible owners. Transfer is not for the highest price, but in best alignment with goals set by the local community. The practice is well established in the United States where over 300 land banks have been set up.^[79] Such an approach could be applied in the UK and provide an alternative to both land-banking by speculative financialised developers and fire-sales of public assets.^[80] For example, community and cultural organisations are currently collaborating to trial the approach in Plymouth – something for national government and other places to learn from and replicate.^[81]



6.7 INVEST IN 100 NEIGHBOURHOOD FACTORIES

For a comparatively modest amount of £50-100 million, one hundred new neighbourhood factories like WeCanMake's factory in Knowle West could be set up in diverse communities across the UK. Between them, these factories could produce around 2200 homes a year at a much lower cost but similar output as a single traditional volumetric MMC factory.^[82] All those neighbourhood factories would be creating good homes precisely where they are needed most and building community wealth through growing new vernacular jobs, skills, and localised supply-chains to source, design, make, repair, adapt those homes over time.

TOWARDS A NEW GREAT BRITISH HOUSING MISSION

6.8 INVEST IN NEIGHBOURHOODS

Neighbourhoods are being recognised once again as a key site in which to seed and grow regenerative change.^[83] Neighbourhoods are where we form meaningful relationships with people and place, develop a sense of connected ownership and belonging, and build collective agency. Indeed, a review of the last 60 years of government regeneration programmes^[84] showed that only those programmes that actively involved and invested in communities – and the soft and hard social infrastructure^[85] they provide – created and sustained any meaningful positive economic change.

Neighbourhoods cannot be transformed through competitive funding pots administered by Whitehall. Nor can local authorities do the work on behalf of neighbourhoods. Instead, the focus should be on unlocking long-term investment into neighbourhood-based community asset development. Community-led and owned homes, energy, forestry and more could all be part of a

renewed nationwide community wealth building infrastructure whereby agency and accountability is held at neighbourhood level, and where any surpluses generated can be reinvested.

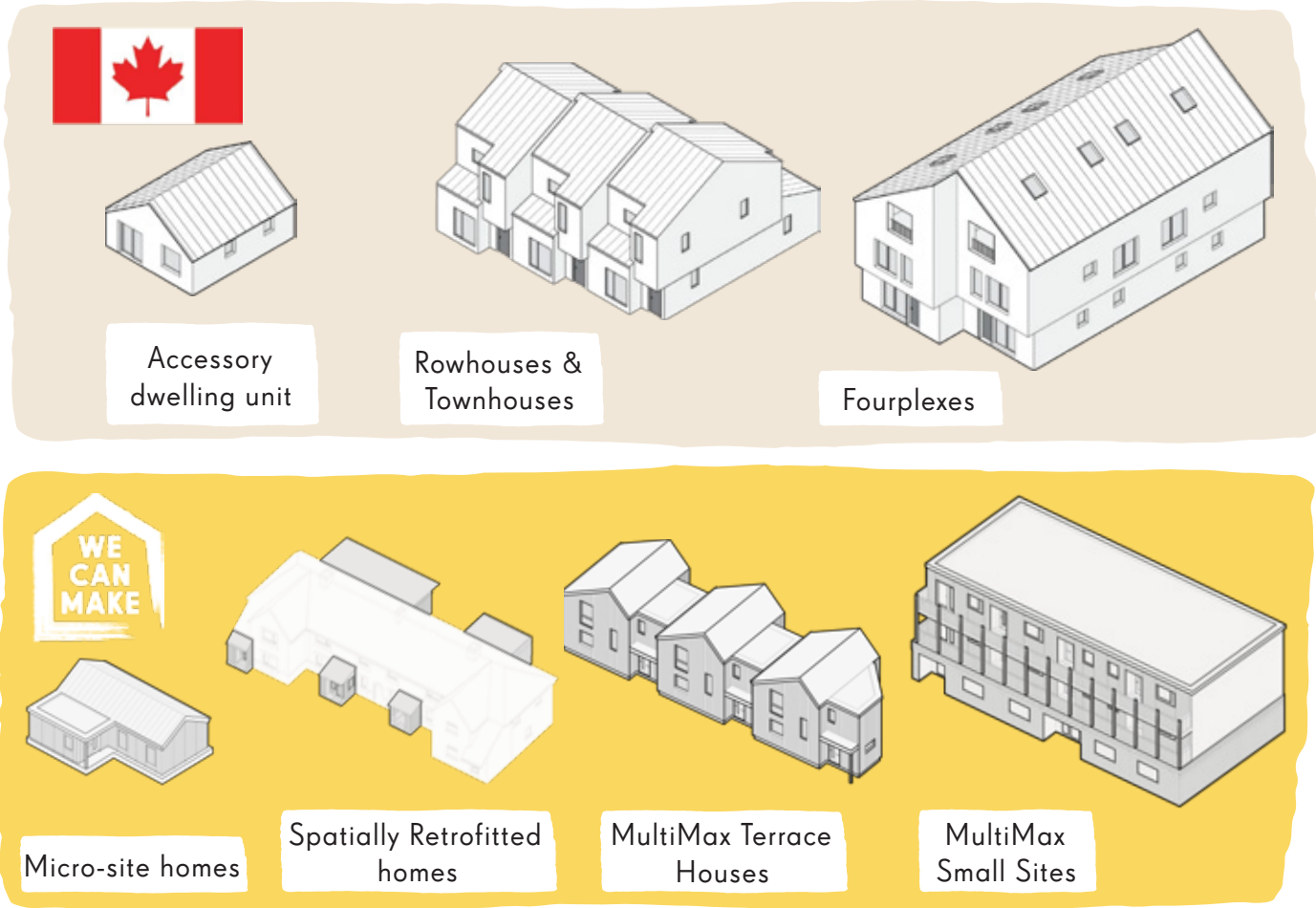
The new Community Wealth Fund^[86] is a welcome contribution towards such a shift. Government could help boost longterm investment in neighbourhoods further by encouraging local government pension funds to include community-led assets in their definitions of place-based investment; enable local authorities to use a proportion of Section 106 and CIL contributions to support communities to set up rolling neighbourhood endowment funds; open up and normalize access for communities to lower-cost forms of government borrowing such as the Public Works Loan Board and Homes England; and invest in initiatives such as the Mycelial Network, a growing network of 30+ organisations across the UK that are collaborating to develop an eco-system of diverse neighbourhood assets as national-scale infrastructure.^[87]



6.9 FAST TRACK FOR AFFORDABLE HOMES WITHIN PLANETARY BOUNDARIES

The Canadian government has created a Housing Design Catalogue that features 50 standardised designs for low-rise housing aimed at creating gentle density and infill development in existing neighbourhoods in all regions of the country.^[88] The designs follow a set of common principles, including adaptability and accessibility, energy efficiency, financial feasibility, use of regional construction methods and materials, and compliance with local regulations and building codes. Community groups, householders, and SME builders who use designs from the catalogue are able to access fast-track routes through the planning process.

The UK could adopt a similar model to accelerate the delivery of affordable homes within planetary boundaries. A combination of community-led exception sites, neighbourhood design codes, development orders, and supplementary planning documents could spread the approach at local authority level. There is equally a key role for metro authorities to coordinate a regenerative design approach that engages with their corresponding bioregions to inform the specification and sourcing of natural and non-extractive re-use materials for the build out of the homes, creating the foundations for housing to be part of a new regionally-driven vernacular green industrial strategy.





7. ENDNOTES

7.1 ECOSYSTEM

HASTINGS COMMONS, HASTING UK

<http://hastingscommons.com/>

Hastings Commons is a collection of buildings and spaces brought from dereliction into use for homes, workspace, leisure and learning, with rents capped to protect affordability, and where good uses are prioritised over profit.

CITIZENS HOUSE, LONDON UK

<https://www.londonclt.org/citizens-house>

Citizens House is an 11-home, genuinely affordable housing project in Lewisham, London. It's the first community land trust in London that has been directly created by the community, using London CLT's unique affordability model. Co-designed with the community, the land and homes will be held in community ownership in perpetuity.

RAISE THE ROOF, BRIDPORT UK

<https://www.raisetherooft.info/>

A collaborative research project in response to the local need for affordable housing, exploring more imaginative ways of building community resilience, beginning with the people and materials of the place.

COLLECTIVE OWNERSHIP, LONDON UK

www.collectiveownership.co.uk

Initiative by London Community Land Trust to create a new platform for not-for-profit, democratic and resident controlled affordable rental homes at scale.

DESIGN COUNCIL HOMES TASKFORCE

<https://www.designcouncil.org.uk/our-work/policy-and-advocacy/design-council-homes-taskforce/>

Advising the government on the design challenge of creating 1.5 million homes within the UK's legally-binding climate commitments.

BUILT BY NATURE, EUROPE

<https://builtbn.org/principles-for-responsible-timber-construction/>

Funder that is accelerating timber construction across Europe. Its Principles for Responsible Timber Construction set a clear framework to build trust, align policies, and drive investment in sustainable timber construction for the future of forests and cities.

WeCanMake is part of a growing eco-system of place-focused and purpose driven “entrepreneurs for the common good” in the UK and beyond. Here are some to explore and connect with:

LAND IN OUR NAMES (LION), UK

<https://landinournames.community/>

LION is a BPOC grassroots collective getting land through reparations Our work addresses the inequalities in access to land and food, and reimagines land stewardship towards climate and racial justice.

NEIGHBOURHOOD PUBLIC SQUARE (CIVIC SQUARE), BIRMINGHAM

<https://bit.ly/LandStoryCS>

CIVIC SQUARE's Neighbourhood Public Square will be founded upon a land agreement designed for regenerative relationships, enshrining the social and ecological provisions of the site for future generations.

HOUSING DESIGN CATALOGUE, CANADA

www.housingcatalogue.cmhc-schl.gc.ca

The catalogue includes 7 regional chapters offering 50 low-rise home designs intended to gently densify existing neighbourhoods.

The designs are aligned with regional building codes, planning rules, climate zones, construction methods and materials.

NUDGE COMMUNITY BUILDERS, PLYMOUTH UK

www.nudge.community

Transforming derelict buildings on a whole street in Plymouth through community ownership and enterprise.

TOWN, UK

<https://www.waretown.co.uk/>

Profit for a purpose developer that is the UK's leading developer of cohousing communities, with over 150 homes in progress across six new developments:

HOMES THAT DON'T COST THE EARTH – DARK MATTER LABS

<https://darkmatterlabs.org/feed/homes-that-dont-cost-the-earth>

A network-building project mapping the policy, financial and technical interventions that can provide affordable homes for all, while protecting and enhancing our environment.

BALEARIC SOCIAL HOUSING INSTITUTE (IBAVI), BALEARIC ISLANDS

https://www.caib.es/sites/expo_ibavi_23/

IBAVI develops housing projects that demonstrate the environmental benefit as well as the economic and construction feasibility of using local bio-based materials. These projects provide reference values that prove these materials provide efficient buildable solutions

EVOLVING FORESTS, UK

<https://www.evolveforests.com/>

Evolving Forests work to craft a more symbiotic relationship between humans and the trees we share the landscape with. They work with people/organisations who want to use more timber in a more considered way, connecting them with those who grow trees for the benefit of the ecosystem, society, and beyond.

WOOD KNOWLEDGE WALES, WALES

<https://woodknowledge.wales/>

Wood Knowledge Wales are championing the collaborative development of forest-based industries for increased prosperity and wellbeing in Wales. They bring together stakeholders from across the supply chain to gather knowledge and demonstrate best practise for timber construction.

WILD HOUSE, BRIGHTON UK

<https://community21.org/partners/wildhouse/>

Built entirely from locally sourced materials, the Wild House demonstrates how housing can exist in harmony with the local landscape and support biodiversity, while enhancing human well-being and connection with nature.

HOUSING AS A HUMAN RIGHT, BARCELONA SPAIN

<https://www.dezeen.com/2024/03/27/barcelona-social-housing-revival/>

Barcelona's Right to Housing Plan (2015-2025) grew the number of social homes from 7,500 to 12,300, by re-establishing housing as a human right, rather than as an investment asset. Several new developments achieve Passivhaus, and integrate natural materials.

COIN STREET, LONDON UK

<https://coinstreet.org/>

Over four decades, ordinary people at Coin Street have found ways to provide affordable and secure housing, to develop underused land in ways that create both economic opportunity and vibrant social infrastructure, and to provide a range of valued services for residents at every stage of their lives.

MATERIAL CULTURES, UK

<https://materialcultures.org/>

Material Cultures argues for the reintegration of architecture and agriculture, understanding buildings as irrevocably linked to landscapes of extraction. Their mission is to work towards a bio-regional construction industry which is integrated into regenerative and socially just land and building systems.

WALLONIE, BELGIUM

<https://shape-affordablehousing.eu/project/introducing-biosourced-materials-to-social-housing/>

Three dwellings have been constructed by social housing providers in Wallonie, using locally-sourced sustainable materials such as terracotta blocks, lime-hemp blocks for wall insulation and cellulose flake insulation, exterior lime plaster and interior clay plaster.

BARRAULT PRESSACCO, PARIS FRANCE

<https://www.dezeen.com/2021/07/29/barrault-pressacco-biomaterials-social-housing-paris/>

Architecture firm Barrault Pressacco used biomaterials including wood and hempcrete to construct a mixed-use building that references traditional Parisian apartment blocks. The building contains 15 homes, and two shops at ground floor level.

HUMAN NATURE, LEWES UK

www.humannature-places.com

Campaigning developer of The Phoenix, a 7.9 hectare brownfield site in Lewes that will prioritise people over cars, be constructed primarily in timber, and be primarily powered by renewable energy.

SEESTADT ASPERN HOUSING, VIENNA

<https://www.dezeen.com/2024/03/05/seestadt-aspern-housing-berger-parkkinen-vienna-social-housing-revival/>

A new social housing development that harks back to the Vienna's golden age of municipal construction. Designed around a “common heart”, the development provides homes, shops and community facilities, and considers how the building can contribute to the social quality of a neighbourhood.

RE:BUILDERS (CIVIC SQUARE) BIRMINGHAM

<http://bit.ly/ReBuildersWM>

Re:Builders was a six-month learning programme for construction professionals in the West Midlands. The programme co-designed an expansive, imaginative, technical and practical approach to the transformative role construction workers can play in social, climate, ecological and built environment transition.

7.2 ENDNOTES

1. Land, materials, people is a framing developed by Civic Square in their work on neighbourhoods as system demonstrators for regenerative change. <https://medium.com/neighbourhood-public-square/3%C2%BAC-neighbourhood-582903b050b2> And It is part of the framing of the Retrofit Reimagined eco-system that WeCanMake is proud to be part of. Watch the film to find out more: https://www.youtube.com/watch?v=8mzhSkCZ_zE
2. <https://www.bristol.gov.uk/files/documents/4953-community-led-housing-land-disposal-policy-2020/file>
3. These costing come from an independent local Quantity Surveyor and were calculated in June 2024
4. <https://www.ucl.ac.uk/bartlett/sites/bartlett/files/2025-05/Modern%20housing.pdf>
5. <https://www.gov.uk/government/statistics/english-housing-survey-2021-to-2022-housing-quality-and-condition/english-housing-survey-2021-to-2022-housing-quality-and-condition>
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7. For example, in 2022/23 while 9561 new social rent homes were created, 14,085 social homes were lost through Right to Buy; an overall net loss of 4525 social rent homes. Meanwhile, government subsidy in the form of housing benefits paid to private landlords for high cost private rented has ballooned to 88% of total government spending on housing, at over £25 billion a year. increasingly unaffordable and poorly regulated private rented sector
8. https://www.ucl.ac.uk/bartlett/public-purpose/sites/bartlett_public_purpose/files/241009_iipp_policy_report_ukhousing_layout2.pdf Estimates of the sensitivity of UK house prices to increases in housing stock consistently show that a 1% increase in housing stock delivers a 1.5–2% reduction in house prices.^{6,7} Taking into account the growing surplus of housing stock relative to number of households, this implies that, all else equal, expanding the housing stock by 20% (approximately 5 million homes) over the next 20 years roughly in line with government projections might bring down prices by around 10%. This contrasts with a 306% increase in mean nominal English house prices since January 2000 (from £75,219 to £305,370).
9. <https://ifs.org.uk/articles/our-burgeoning-housing-benefit-bill-exposes-flaws-housing-policy-and-tax-system>
10. For example, since 2014, the three largest housebuilders by volume (Taylor Wimpey, Barratt and Persimmon - herein, the 'big three') have consistently reported supernormal levels of profitability, with gross profit margins reaching 32% and never falling below 17%. Why have the volume housebuilders been so profitable? Ref: The power of volume housebuilders and what this tells us about housing supply, the land market and the state, <https://housingevidence.ac.uk/publications/why-have-the-volume-housebuilders-been-so-profitable/>
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20. Modern Housing: an environmental common good, Dan Hill and co-chair Mariana Mazzucato <https://media.graphassets.com/rJlqiazpS7ni8zAoKY7X>
21. <https://www.ucl.ac.uk/bartlett/sites/bartlett/files/2025-05/Modern%20housing.pdf>
22. WeCanMake is one of many community-led housing groups withing a growing movement of 'entrepreneurs for the common good' rather than private profit. Others include Hastings Common, which just won the 2025 UN Habitat Gold Award, Homebaked in Liverpool, and Saxondale in Frome. Equally, welcome government announcement [money into council built housing]
23. https://www.systemiq.earth/wp-content/uploads/2024/10/URBAN-REGENERATION-Systemic-Sustainable-Investing_WhitePaper2024.pdf
24. https://www.systemiq.earth/wp-content/uploads/2024/10/URBAN-REGENERATION-Systemic-Sustainable-Investing_WhitePaper2024.pdf
25. Street facing and garden sites are generally part of existing homes. Active opt-in by the household as a way to meet their own housing needs is essential to unlock these sites. See WeCanMake's film + playbook for how WeCanMake has developed a model for council tenants to do exactly this.
26. Regional housing digital twin, Melbourne School of Design, forthcoming.
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38. <https://www.teagasc.ie/news--events/daily/forestry/teagasc-research-into-thinning-practice-will-increase-returns-from-commercial-forestry-operation.php>
39. Nearly a decade ago, Wood Knowledge Wales produced a report detailing the route to creating manufacturing capacity for wood fibre insulation in the UK <https://woodknowledge.wales/wp-content/uploads/PFT-NFIN->

Study-201404117_RevE-2.pdf. The report suggested that capital costs are relatively low, with potential to turn widely available waste timber into high-value construction products.

40. <https://environment.data.gov.uk/dataset/cfe86576-c889-46dd-9a5e-02b95989cacb>
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55. <https://www.evolvingforests.com/>
56. <https://cloud-forest.co.uk/>
57. 3 The concept of a New Great British Housing Mission was first developed by Dan Hill, who has researched and written extensively about mission-orientated innovation and the idea of “[common good housing](#)”. WeCanMake has applied and developed the term here in conversation and collaboration with Dan Hill, and – with Dan – we are exploring how the concept could be developed further. [get in touch if resonates with you – part of building the movement around affordable homes within planetary boundaries].
58. [Ecosystem](#)
59. <https://www.vinnova.se/contentassets/1c94a5c2f72c41cb9e651827f29edc14/designing-missions.pdf?cb=20220311094952>
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