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THE
HOME-GROWN
HOMES
PROJECT

Home-Grown Homes Project

A study for improving the timber
construction supply industry in Wales

Phase Two Report

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This report was written by David Hedges of Woodknowledge Wales

EXECUTIVE SUMMARY

The Home-Grown Homes Project, delivered by Woodknowledge Wales (WkW), has explored how a robust timber supply chain rooted in local Welsh forestry products can underpin the delivery of genuinely low-carbon social housing. Running from 2018 to 2026 across two phases, the project has sought to catalyse meaningful transformations across the interconnected sectors of forestry, timber manufacturing, and social housing construction. It has done so through carefully targeted interventions while actively supporting Welsh Government policy objectives in decarbonisation, affordable housing, forestry development, the circular economy, and the foundational economy.

Phase One (2018–2021) laid essential foundations by generating a comprehensive body of knowledge. It produced detailed reports, practical tools, and accessible guidance designed to inspire wider adoption of home-grown timber in high-performance, low-carbon social housing schemes. These resources targeted a wide audience, including social housing developers, architects, engineers, timber frame manufacturers, wood processors, forestry managers, and landowners. The full suite of Phase One outputs is available on the [Woodknowledge Wales website](#) and continues to inform practice.

Phase Two, running from April 2023 to March 2026, shifted the focus firmly towards implementation and real-world impact. It provided direct support for the ministerial priorities outlined in the 2021–2026 Senedd Programme for Government. In particular, the project contributed expertise and practical resources to the development and subsequent rollout of Wales' first [Timber Industrial Strategy – Making Wood Work for Wales](#), launched in July 2025.

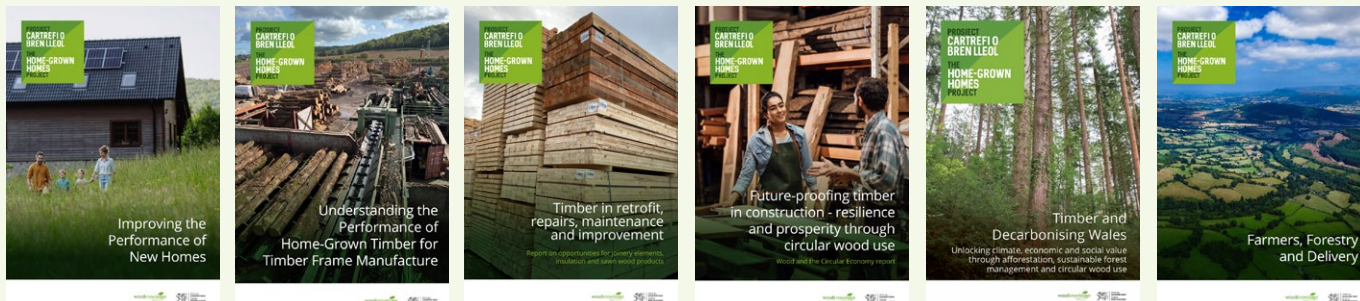
Throughout Phase Two, the project operated across multiple strategic strands. These included stimulating demand for timber in construction, strengthening domestic supply chains, reducing both embodied and whole-life carbon emissions, closing the persistent building performance gap, addressing critical skills shortages, and maximising the long-term environmental, social, and economic value of Wales' woodlands — including through integration with the [National Forest for Wales](#).



Key Outputs and Outcomes

- **Greenhouse Gas Removals (GGR):** The project produced two influential reports that positioned Wood in Construction (WIC) as a highly scalable and cost-effective mechanism for Greenhouse Gas Removal. [The first report](#) highlighted the UK's current policy gaps regarding biogenic materials and put forward practical recommendations such as financial incentives, carbon credits, reduced VAT rates, mandates for timber use in public buildings, building regulation reform, insurance risk-sharing models, strengthened domestic supply chains, enhanced training and R&D, and improved carbon measurement and reporting. A national task force was proposed to oversee quantification and governance of WIC as a recognised GGR solution. [The second report](#) highlighted real-world examples of Passivhaus-standard social housing projects demonstrating that timber construction is ready for an immediate scaling-up.

EXECUTIVE SUMMARY



- **Enabling Supply:** Work in this area included three detailed case studies of sawmills operating at different scales, a comprehensive [Sawmill Survey](#) revealing operational realities (including capacity utilisation around 70% and predominant output in lower-value products), a practical [Timber Framers' Embodied Carbon Tool](#), an accompanying discussion paper on optimising whole life carbon, and a Supply Chain Mapping Tool to support prioritisation of home-grown and reclaimed timber.
- **Market Stimulation & Embodied Carbon:** A standout output was the launch in May 2025 of the [ESECT](#) (Early Stage Embodied Carbon Tool for Low Rise Housing) — a simplified, non-numerical, interactive online decision support tool developed in partnership with the Alliance for Sustainable Building Products (ASBP) and [Good Homes Alliance](#). Targeted at development managers and senior decision-makers in social housing, it helps embed consideration of embodied carbon from RIBA Stages 1–3 and highlights the carbon benefits of timber construction. Complementary work on sustainable placemaking demonstrated the critical influence of early site-wide and master planning decisions on overall carbon performance. In parallel, Building Performance Evaluation (BPE) activities led to a proposed six-stage [Quality Assurance pathway](#) designed to close the well-documented performance gap between designed and in-use energy performance.
- **Timber Construction Elements & Home-Grown Timber:** The project built a strong evidence base for establishing domestic manufacturing capacity in glulam, high performance timber windows, and wood-fibre insulation. It examined technical and commercial barriers to greater use of home-grown timber in [timber frame manufacturing](#) and in [retrofit, repairs, maintenance, and improvement \(RRM&I\)](#) works. [Circular economy principles](#) were advanced through a series of webinars and a targeted roundtable involving investors and insurers, exploring reclaimed timber integration and systemic barriers to cascading use.
- **Education & Skills:** A broad portfolio of initiatives addressed skills gaps across forestry and advanced timber manufacturing. Outputs included new qualifications, CPD programmes (such as the Timber 101 webinars), careers roadshows, curriculum guidance for higher education, and innovative engagement tools like the immersive online game [Forest Nation World](#). Recommendations emphasised four key principles: awareness, incentives, access, and clear progression pathways, supported by deeper industry-education partnerships.
- **Afforestation & Farm Forestry:** [Detailed analysis](#) examined Wales' current and future timber resource requirements to support decarbonisation. Reports highlighted the limitations of afforestation alone and advocated hierarchical and circular use models to maximise economic (GVA), employment, carbon storage, ecosystem services, and housing delivery benefits. Complementary studies explored farm woodland potential under the Sustainable Farming Scheme, [early adopter experiences](#), and the application of [Terrestrial Laser Scanning \(TLS\)](#) technology for improved valuation and management.
- **Timber Industrial Strategy & National Forest:** WkW played an active role in the core working group for the Timber Industrial Strategy and contributed practical case studies during the public consultation phase. Work on the [National Forest for Wales](#) explored pathways to deliver high-value construction timber alongside recreation, health, and biodiversity outcomes, including through a dedicated workshop on aligning commercial forestry with the National Forest vision.

EXECUTIVE SUMMARY

Engagement and Impact

Robust stakeholder engagement underpinned all activities. A formal stakeholder analysis informed targeted communications, while a business-to-business strategy leveraged Communities of Practice, events, thought-leadership content, newsletters, and social media. The WoodBUILD conference series grew significantly in scale and influence. Over the three years of Phase Two, the WkW website attracted nearly 400,000 visits, with substantial downloads of reports, tools, and guidance. Newsletter readership increased by almost 170%, and social media presence expanded markedly.

Conclusions

Phase Two has generated practical tools, robust evidence, and actionable recommendations that are already shaping policy, industry behaviour, and investment decisions in Wales. Although the full transformative change envisaged at the project's outset remains a work in progress, the foundations laid are substantial. Continued implementation of the Timber Industrial Strategy, in close partnership with initiatives such as [Tai ar y Cyd](#), provides a credible pathway to significantly increase the proportion of home-grown timber used in low-carbon social housing.

The drivers for change — decarbonisation imperatives, acute housing need, resource efficiency goals, and aspirations for greater self-reliance — are stronger today than when the project began in 2018. The opportunity for Wales to become a genuine leader in sustainable, timber-based construction has never been greater. Realising this potential will require sustained collaboration, courageous policy support, and a pipeline of high-quality demonstrator projects that convert evidence into widespread practice — ultimately delivering lasting environmental, social, and economic benefits for the people and communities of Wales.



INTRODUCTION

The central questions driving the Home-Grown Homes Project have remained consistent and urgent since its inception: How can a timber supply chain grounded in local Welsh forestry products meaningfully support the delivery of low-carbon social housing across Wales? What fundamental transformations are required within the forestry, manufacturing, and housing construction sectors to make such homes a mainstream reality? And what specific interventions could deliver genuinely transformative impact across the entire supply chain?

Woodknowledge Wales (WkW), a social enterprise dedicated to advancing the Welsh wood economy for public good, has pursued these questions through the Home-Grown Homes Project with determination and collaboration. This report provides a comprehensive summary of progress and achievements during Phase Two, covering the period from April 2023 to March 2026.

Phase One (2018–2021) delivered a foundational evidence base. It produced a suite of reports, practical tools, and sector-specific guidance aimed at social housing developers, architects and engineers, timber frame manufacturers, wood processors, forestry managers, and landowners. All outputs remain freely accessible via the [Woodknowledge Wales website](#) and have continued to influence thinking and practice well beyond the formal end of that phase.

Where Phase One focused on generating knowledge and identifying opportunities — applying lessons from pioneering high-performance, low-carbon timber social housing projects to stimulate Wales’ forest industries and shape policy — Phase Two concentrated on implementation and embedding change. It supported the translation of

new policies on decarbonisation, social housing standards, forestry, the circular economy, and the foundational economy into tangible sector development. A particular focus was informing and then actively supporting the creation and early implementation of Wales’ landmark [Timber Industrial Strategy – Making Wood Work for Wales](#).

The central purpose of Phase Two has been to help realise the ministerial objectives set out in the 2021–2026 Programme for Government. Welsh Government policies have increasingly recognised the strategic opportunity presented by forestry and timber — as a route to decarbonisation, rural economic development, improved housing quality, and greater resource resilience. This report details the specific outputs delivered, the differences they are already making on the ground, and the longer-term contributions they are positioned to deliver for Wales’ environmental sustainability, social wellbeing, and economic prosperity.



ACKNOWLEDGEMENTS

Governance for the project was provided by a dedicated Steering Group whose membership combined policy, sector, and delivery expertise. Over the three years of Phase Two the members were:

- **Representing Welsh Government:** Ann Burgoyne, Steve Cranston, Nigel Elias, Shan Lloyd Williams, Gail Merriman, and Robin Staines
- **Representing Community Housing Cymru:** Sian Howells
- **Representing the Welsh Local Government Association:** Jim McKirdle
- **Representing Natural Resources Wales:** Andrew Wright and Miriam Jones-Walters
- **Representing Powys County Council:** Dafydd Evans and Tom Simmons

This group offered strategic direction, monitored performance, and ensured alignment with broader policy goals.

The successful delivery of Phase Two of the Home-Grown Homes Project would not have been possible without the generous support and active involvement of a wide range of individuals and organisations. We are particularly grateful to the Steering Group members for their direction and scrutiny. Our thanks also go to everyone who participated in workshops and surveys, shared their knowledge and experience, contributed data and case studies, reviewed drafts, or engaged with the project in other ways.

We have been fortunate to work with partners who brought not only specialist knowledge but also a genuine shared commitment to the project's goals. The collaborative spirit, common purpose, and determination shown by all involved have been central to the progress made and leave us well placed to build on this foundation in the years ahead.



BACKGROUND

The Home-Grown Homes Project had its origins in 2016, when Powys County Council and several local housing associations began exploring how their collective demand for new homes could create a deliberate “market pull” to encourage greater use of home-grown Welsh timber. In 2018, Woodknowledge Wales was commissioned to lead an action-research study to investigate this potential in depth.

At that time, several significant challenges were evident. The wider societal benefits of Wales’ coniferous forestry resource were poorly understood by many stakeholders. Very little Welsh-grown timber found its way into construction applications, particularly structural or high-performance uses. The potential contribution of the timber frame manufacturing sector to social housing needs was vaguely articulated and often misaligned with actual requirements. Against this backdrop, the study set out to identify, test, and refine practical interventions capable of transforming the Welsh timber construction supply chain while simultaneously accelerating the delivery of genuinely low-carbon social housing.

The project was conceived and delivered during a period of relative policy vacuum regarding timber in construction. Its approach therefore emphasised building shared understanding, fostering cross-sector collaboration, and systematically surfacing both barriers and opportunities across forestry, timber processing and manufacturing, and social housing development.

Phase One concluded in 2021 and the [Project Report](#) provides a summary of its results. In the intervening period, WkW focused on knowledge transfer, embedding tools and guidance within industry networks, and supporting early policy development. Partnerships with social housing providers, contractors, timber frame manufacturers, and the forestry and land-use sectors proved particularly fruitful.

In 2022, Welsh Government agreed to fund a second phase. Following a competitive procurement process led by Powys County Council, WkW was awarded the contract in March 2023. Phase Two thus ran from April 2023 to March 2026 (later extended by one year to allow completion of key deliverables). Its overriding purpose has been to support effective implementation of Welsh Government policy across decarbonisation, resource efficiency, the foundational economy, housing, manufacturing, and forestry. This has meant actively stimulating demand for home-grown timber while simultaneously enabling and strengthening supply — all within a highly complex, multi-stakeholder system where coordinated change is essential to unlock greater economic, social, and environmental value.



OBJECTIVES

Funding for Phase Two was provided by Welsh Government to Powys County Council, enabling the Council to support a range of national priorities. These included the 2021 Programme for Government, the 2021 Trees and Timber Deep Dive recommendations, the Welsh Development Quality Requirements 2021 (WDQR 2021), the emerging Timber Industrial Strategy, and the Tai ar y Cyd (TAYC) project.

The specific objectives for Phase Two were deliberately designed to build directly on Phase One findings and recommendations. They were:

- Supporting local authorities and housing associations to assess and reduce upfront and embodied carbon in new housing stock, including through the development of practical tools for measurement and reduction strategies.
- Exploring viable options for recognising and incentivising Greenhouse Gas Removal through wood used in construction.
- Collaborating with the sawmilling and processing sector to increase the volume and quality of construction-grade timber produced in Wales.
- Developing markets and enabling supply for timber-based construction products, such as wood-fibre insulation and high-performance timber windows.
- Working across secondary, further, and higher education to build the skills base required for a thriving Welsh wood economy.
- Assessing Wales' future timber supply needs in the context of economy-wide decarbonisation and supporting the forestry sector to plan woodland creation accordingly.
- Providing expert input to the development and implementation of the national Timber Industrial Strategy.
- Supporting the National Forest for Wales by offering expertise on how it can produce high-quality construction timber while simultaneously delivering recreation, health, and other public benefits.
- Championing innovative approaches to low-carbon placemaking that integrate timber construction at scale.

These objectives provided a clear framework for delivery while allowing flexibility to respond to emerging policy developments and sector needs.



OUTPUTS AND OUTCOMES

GREENHOUSE GAS REMOVALS

A significant strand of work in Phase Two examined how the use of wood in construction could be incentivised and scaled as a recognised Greenhouse Gas Removal (GGR) mechanism. This work aimed to boost domestic timber use while contributing directly to UK and Welsh Net Zero ambitions.

Two major reports were produced in collaboration with the [Alliance for Sustainable Building Products \(ASBP\)](#) and [Bangor University's BioComposites Centre](#). The [first policy-focused report](#) highlighted the UK's lack of coherent, targeted policy support for biogenic materials such as timber. It recommended a package of practical measures including financial incentives and carbon credits, reduced VAT on timber products, mandates for minimum timber use in public buildings, reform of building regulations, insurance risk-sharing arrangements to de-risk innovative timber projects, strengthening of domestic supply chains and manufacturing capacity, investment in training and R&D, and improved systems for carbon measurement and reporting. The report also advocated establishment of a national task force to govern, quantify, and report on WIC as a formal GGR solution, drawing on successful international models.

The [second, follow-up report](#) demonstrated that timber construction is not a future aspiration but a ready-now solution. It profiled three leading Passivhaus-standard social housing projects — Tai ar y Cyd, Agile Homes, and MAKAR — which deliver high-quality, low-carbon, carbon-storing homes at meaningful scale. Recommendations included mandating minimum levels of timber use in public projects, creating a national carbon inventory for buildings, providing incentives linked to verified carbon storage, funding expansion of UK engineered wood manufacturing, and reforming insurance frameworks to reduce perceived risks.



The overarching conclusion was clear: Wood in Construction represents one of the most scalable and cost-effective routes available to help the UK meet its requirement to remove approximately 75 MtCO₂e per year. Policymakers were urged to act decisively to harness proven technologies and supply chains, simultaneously addressing the housing crisis and climate emergency.

OUTPUTS AND OUTCOMES

ENABLING SUPPLY

This workstream sought to redirect a greater proportion of Welsh timber into higher-value, long-life construction products. The goal was to increase carbon storage in buildings, reinforce local supply chains, and advance Wales' climate and economic objectives.

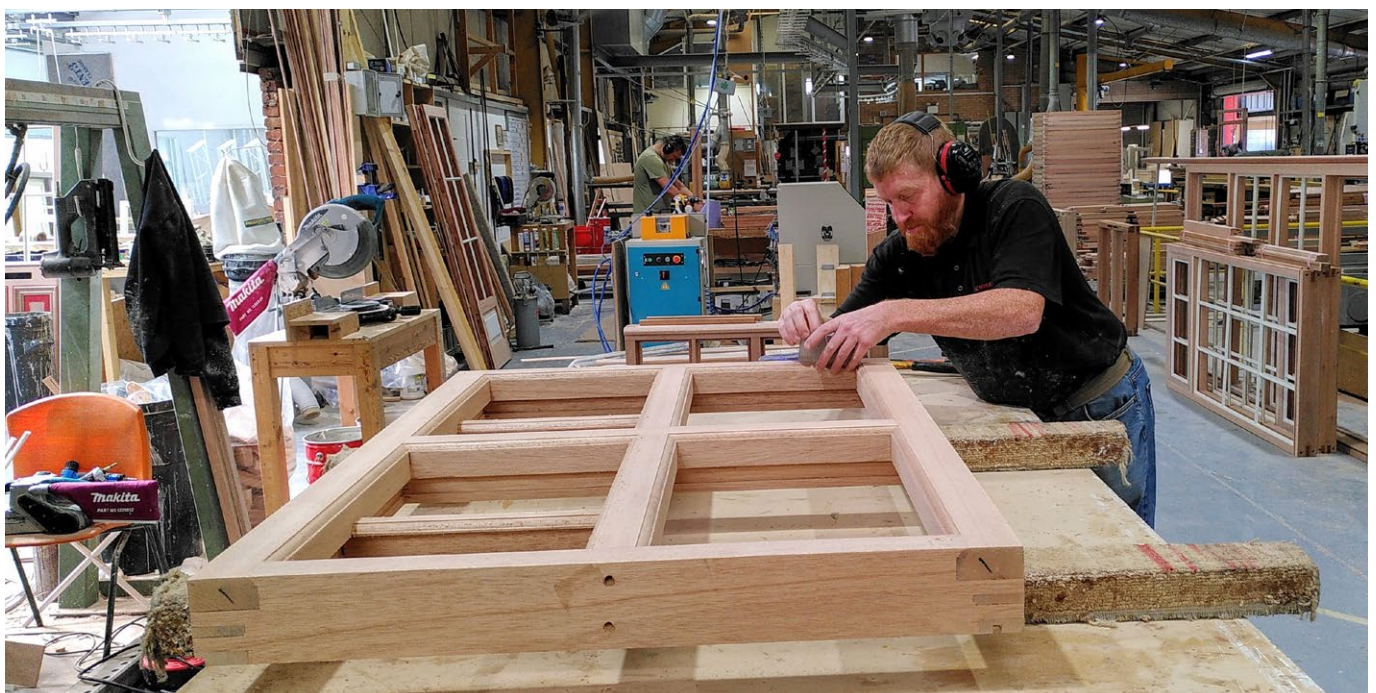
Key deliverables included three [in-depth case studies](#) illustrating the operations and challenges faced by small, medium, and large sawmills in Wales. A sector-wide [Sawmill Survey](#) provided valuable data: 20 participating small and medium-sized mills process around 5,360 tonnes annually (with 80% sourced locally), operate at approximately 70% capacity, and primarily produce cladding and fencing, with only occasional output of high-value structural timber.

Practical tools developed included the [Timber Framers' Embodied Carbon Tool](#) — a user-friendly spreadsheet enabling timber frame manufacturers to calculate, reduce, and report embodied carbon while maximising the biogenic carbon stored in their products. This was accompanied by a discussion paper titled "Optimising Whole-life Carbon," which critiqued policies focused solely on operational energy and made the case for greater attention to embodied carbon, the advantages of local and home-grown materials, and the importance of accounting for transport emissions and smarter investment decisions.

A Supply Chain Mapping Tool was also created to assist Tai ar y Cyd partners in identifying opportunities to prioritise home-grown and reclaimed timber within their projects.

MARKET STIMULATION

Efforts to stimulate demand focused on manufactured wood products while simultaneously working with the existing and emerging manufacturing base to enable reliable supply. This included products such as wood-fibre insulation and timber windows. Building on Phase One successes in raising awareness of timber's benefits in social housing, Phase Two continued engagement with providers to embed guidance in line with WDQR 2021. While many social landlords are receptive to timber construction, practical barriers around time, cost, and non-regulatory requirements often limit uptake. The response was to simplify tools and processes and promote products tailored to Welsh needs and manufactured locally.



OUTPUTS AND OUTCOMES

Early Stage Embodied Carbon Reduction

A flagship output was the [ESECT tool](#), launched in May 2025. Developed collaboratively with [ASBP](#) and the [Good Homes Alliance](#), this interactive online resource helps development managers and senior decision-makers consider embodied carbon from the earliest RIBA stages in an accessible, non-numerical way. It particularly highlights the advantages of timber construction. A subsequent [impact report](#) (March 2026) confirmed that promotion activities had successfully raised awareness, strengthened carbon literacy, encouraged informed design conversations, and helped translate high-level policy ambitions into practical project-level decisions. The tool provides a solid platform for ongoing refinement and wider adoption.

Sustainable Placemaking

Recognising that much carbon-reduction guidance focuses narrowly on individual buildings, the project examined the critical role of early placemaking decisions. Analysis contrasted high-carbon and low-carbon development approaches, with a strong emphasis on timber-based construction. Key findings included:

- Carbon considerations are rarely prioritised early enough; teams often focus primarily on compliance, cost, and viability.
- Embodied carbon assessments typically occur too late and at building level only, overlooking major impacts from site layout, density, landscaping, and infrastructure.
- Strong overlaps exist between good placemaking principles (higher density, reduced parking, optimal orientation, active travel infrastructure) and carbon reduction.
- The greatest opportunities for savings lie in the earliest design stages.

Conclusions emphasised that placemaking fundamentally shapes a development's overall carbon footprint. Well-designed placemaking and carbon reduction can reinforce each other, although site-specific balancing of trade-offs is essential. Recommendations included treating carbon reduction as a core planning matter from the outset, extending embodied carbon thinking to master planning elements (roads, utilities, landscaping), and raising awareness through workshops, roadshows, and practical tools. The work demonstrated that sustainable placemaking combined with timber construction offers a powerful route to truly low-carbon housing in Wales.



Building Performance Evaluation (BPE)

The project also addressed operational carbon and real-world building performance. New homes are frequently designed and signed off to meet demanding energy, comfort, and regulatory standards on paper. In practice, however, many perform differently once occupied: higher energy use, occupant discomfort (too cold, too hot, stuffy), condensation, mould, and poorly commissioned heating and ventilation systems are common complaints. This “performance gap” arises from numerous small, cumulative issues — ranging from insulation detailing and ventilation commissioning to modelling assumptions that fail to reflect how people actually live. Consequences include elevated energy bills, increased risk of fuel poverty, reduced wellbeing, higher maintenance costs, and lower-than-expected carbon savings. Most issues are preventable.

Phase One produced foundational [BPE Guidance and a Toolkit](#). Phase Two tested simplified approaches on live projects, explored scalable and affordable integration methods, and consolidated learning into a practical quality assurance framework. The work highlighted the potential value of a dedicated supporting platform for housing providers.

A proposed six-stage [Quality Assurance \(QA\) pathway](#) emerged, embedding measurable performance benchmarks at design stage, verifying them during construction, and reviewing outcomes post-occupation. Drivers for wider BPE adoption include regulatory pressures, resident wellbeing, and the need for genuine carbon reductions. The pathway aims to move housing providers from mere compliance to real confidence that intention, delivery, and verification align. Better homes result not from specification alone but from integrated processes where performance is clearly defined and systematically checked.

OUTPUTS AND OUTCOMES

Timber Construction Elements

The project actively showcased the technical and market potential of key timber components — timber windows, wood-fibre insulation, and engineered products such as glulam and cross-laminated timber (CLT). This work was designed both to stimulate client demand and to provide a credible evidence base for establishing Welsh manufacturing capacity.

Market intelligence gathered from housing providers helped size potential demand. The conclusion was clear: a strong case exists for domestic production of glulam, high-performance timber windows, and wood-fibre insulation. The *Tai ar y Cyd* pattern book offers an opportunity to aggregate demand and de-risk investment, with prototype projects scheduled to start on site in 2026/27. The Timber Industrial Strategy provides a supportive policy framework, while the [Regenerative Construction Network \(ROOT\)](#) is exploring innovative procurement models for regenerative materials including home-grown timber and reclaimed steel.

Recommended next steps include detailed feasibility studies for glulam and window manufacturing, completion of the technical feasibility study for wood-fibre insulation, and exploration of innovation opportunities in design, processing, business models, and overcoming adoption barriers.

Understanding the Performance of Home-Grown Timber in Timber Frame Construction

A [dedicated study](#) addressed the perception that fast-grown Welsh timber is unsuitable for high-precision structural timber frame applications. Technical challenges — such as greater tendency to twist, warp, or distort due to wider growth rings, larger juvenile wood cores, and reaction wood — were examined in detail.

Practical interventions were mapped across the full supply chain: from forest management, silviculture, and site selection through log sorting, sawing patterns, kiln drying, and moisture control. Stakeholder consultations with foresters, sawmillers, manufacturers, and researchers confirmed that production of dimensionally stable, construction-grade home-grown timber is technically achievable.



However, current market incentives strongly favour supplying timber into the higher-volume Repair, Maintenance & Improvement (RMI) sector rather than precision manufacturing for timber frame. Technical solutions alone will not shift behaviour. Stronger policy support is required — including regulatory drivers, updated procurement rules, targeted funding mechanisms (such as Social Housing Grant uplifts), and new commercial value propositions for manufacturers. While home-grown timber currently faces commercial disadvantages, external pressures (climate impacts, global supply disruptions) could rapidly alter the picture. The report concluded that the necessary technical knowledge already exists; what is now needed is policy courage and coordinated action to make home-grown timber the commercially preferred choice for high-performance construction in Wales. WkW remains committed to working with all stakeholders to translate these opportunities into practice.

Timber in Retrofit, Repairs, Maintenance and Improvement

Much of the project's focus has been on new build housing but significant potential exists for home-grown and reclaimed timber in the retrofit and RRM&I market, something considered in a [report](#). Despite this potential, current uptake remains low. Major investment programmes are underway, but cheaper imported alternatives (particularly uPVC) often prevail. Even when timber is specified, it is frequently sourced from outside Wales or the UK, forgoing local economic benefits.

Barriers are largely systemic: cost perceptions, regulatory complexity (e.g., PAS 2030/2035), fragmented supply chains, and risk-averse procurement practices. While manufacturers of panel products (chipboard, MDF, OSB) already incorporate home-grown and reclaimed material, this is rare for higher-specification joinery such as windows, doors, and flooring in social housing.

OUTPUTS AND OUTCOMES

ROOT is developing a marketplace to connect local resources, but deeper cultural and systemic shifts are required in specification, procurement, and manufacturing. A stronger focus on embodied carbon can help rebalance decisions. The project posed key policy questions for future action, including how to make standards more accessible for biobased products, how funding streams (WHQS 2023, Major Repairs Allowance, Optimised Retrofit Programme) can better incentivise Welsh timber, and how employer requirements and procurement frameworks can drive uptake. Coordinated policy and practice change is essential to unlock the substantial environmental and economic opportunities in this large and growing market.

Wood and the Circular Economy

Three webinars, delivered in partnership with ASBP and Built by Nature, explored cascading use and circular principles to support the Timber Industrial Strategy and alignment with responsible timber construction guidelines. An in-person roundtable brought together investors and insurers with timber and construction professionals.

Discussions examined barriers and opportunities for manufacturers to incorporate reclaimed timber or wood fibre, and for clients, specifiers, and contractors to adopt these materials. Insights from practice examples informed problem and opportunity statements, policy needs, and actionable industry commitments. A subsequent online survey revealed high levels of conversation but relatively few real-world examples of circular wood use in UK manufacturing or construction.

Key insights included the need for greater flexibility and adaptability in design and delivery processes, earlier supply-chain collaboration, and trust in material properties and individual expertise — qualities often at odds with rigid standards and certification regimes. Participants expressed appetite for pioneering projects as proofs of concept, alongside development of suitable insurance products and carbon accounting approaches that support investment cases. The work contributed to a deeper understanding of the mindset and practice shifts required for a genuine forest-based circular economy in Wales and the UK.

EDUCATION AND TRAINING

Addressing skills shortages in forestry and advanced timber manufacturing was a strategic priority. Close collaboration with schools, further education (FE) colleges, and higher education (HE) institutions delivered a wide range of practical outputs. These included a foundational report on recruitment and diversity challenges, initiatives such as Sustainable Schools of the Future, the immersive game Forest Nation World, careers roadshows (reaching 80 students at Coleg Llandrillo Menai), a new NVQ forestry course at Coleg Sir Gar, guidance for HE institutions (A Curriculum for Climate Action), a new module for Bangor University's MSc in Forestry, and CPD sessions on Timber 101 and hands-on timber grading.



OUTPUTS AND OUTCOMES

The project demonstrated that solving skills shortages requires more than simply creating new courses. A comprehensive approach built around four principles — awareness, incentives, access to learning, and clear employment pathways — is essential. Stronger partnerships between education providers, schools, and industry were identified as critical.

Specific recommendations included leveraging Minecraft Education for youth engagement, supporting college open days, and encouraging industry involvement through guest lecturing, placements, and sponsorship. For higher education, a cultural shift towards sustainability was advocated, with industry playing a more active role in curriculum development and student recruitment.

Additional achievements included a programme of 12 Timber 101 webinars and workshops for professionals, innovative school engagement via Cymbrogi, new qualifications at Black Mountains College, and growing links with institutions such as the Centre for Alternative Technology and the Welsh School of Architecture.

Recommended actions for the future include continued leadership of the Welsh Forestry Skills Group by WkW, expansion of the Timber 101 programme, national scaling of the Minecraft Forests for the Future challenge, strengthened support for curriculum integration, improved FE provision (including potential development of a Forest Industries Training Centre), creation of a clear Timber Skills Strategy, and deeper HE-industry partnerships featuring placements and live projects.

Education and training have been positioned as a strategic enabler for Wales' industrial capacity, net-zero goals, and long-term workforce resilience in the wood economy.

AFFORESTATION AND DECARBONISATION

Phase Two included detailed assessment of Wales' current and future timber resource needs to support economy-wide decarbonisation and responsible woodland creation. This work also examined the potential for farm-based tree growing to benefit both farmers and wider society. A series of reports were published.



Timber and Decarbonising Wales

A comprehensive analysis of the Welsh timber supply chain, combined with scenario modelling of increased afforestation and circular economy approaches, delivered a clear message: simply planting more trees is insufficient. Greater value and benefits can be extracted by adopting hierarchical use (directing each log to its highest-value application) and cascading principles (reuse, remanufacturing, and eventual recycling).

Benefits highlighted included increased Gross Value Added (GVA) through higher-value processing and reclaimed material use; job creation across the full value chain (forestry, sawmilling, panel production, mass timber, and reclamation); enhanced carbon sequestration and long-term storage; improved ecosystem services (biodiversity, water and soil regulation, public wellbeing); and greater supply of high-performance, low-carbon timber for affordable housing.

The conclusion was that combining ambitious woodland creation with strong circular and cascading commitments can deliver substantially greater economic, social, and environmental returns while advancing decarbonisation and housing objectives.

OUTPUTS AND OUTCOMES

Scaling Up Farm Forestry to Produce Timber

This strand explored how farm woodlands — often small and under-managed — could be designed and managed to produce useful timber alongside other benefits. Initial focus on collaborative woodland creation shifted in response to developments in the Welsh Government's Sustainable Farming Scheme (SFS).

Lafan Consulting investigated the feasibility of a rights-based trading system linked to the proposed 10% woodland cover requirement. Their report, informed by interviews with experts, revealed widespread stakeholder scepticism regarding scheme complexity, bureaucracy, practicality for many farm types, and risks of low-value woodlands. Recommendations included improvements to SFS design and practical next steps such as direct farmer engagement, ongoing monitoring, further case studies, and establishment of a Community of Practice for farmers with existing woodlands to share knowledge on productive management and agroforestry.

A subsequent study of "early adopter" farmers in mid-Wales (primarily upland Less Favoured Areas) found generally positive attitudes where trees delivered tangible benefits such as livestock shelter, diversification, resilience, and potential future income. However, many viewed woodland as separate from core farming operations when economic returns were uncertain. Key insights emphasised the importance of trusted, face-to-face advice, better communication of productive (rather than solely environmental) benefits, and addressing barriers including regulatory complexity, cultural attitudes to land use, and limited information on timber markets.

The study highlighted peer-to-peer learning opportunities and the potential for woodland management skills to provide additional farmer income. Conclusions stressed the need for farmer-centred, flexible support and stronger links to timber supply chains if farm forestry is to contribute meaningfully to resilient businesses and national timber and climate goals.

Assessing the Current and Future Value of Farm Forestry

Bangor University led a study testing Terrestrial Laser Scanning (TLS — a form of LiDAR) as a more accurate, modern method for assessing tree volume, quality, and potential timber value in small or complex farm woodlands. Eight sites of varying types were surveyed and results compared with traditional manual methods.

Findings confirmed TLS delivers high accuracy and captures fine-scale stem and crown details, enabling better prediction of sawlog volumes and potential for high-value products such as construction-grade timber. This could modernise surveying, improve procurement precision, and direct more home-grown material into long-life, carbon-storing uses.

Limitations remain however: sensitivity to weather, complex data processing requiring specialist skills, the need for automated platforms, and currently higher costs compared with conventional techniques. Overall, TLS shows strong potential to build farmer confidence and integrate farm-grown timber more effectively into supply chains, provided further development makes the technology more practical, affordable, and user-friendly.

TIMBER INDUSTRIAL STRATEGY

Phase Two provided sustained expert support to Welsh Government's commitment to develop Wales' first Timber Industrial Strategy. WkW participated actively as a member of the core working group alongside Natural Resources Wales and Confor. During the public consultation phase in early 2025, a key contribution was the development of practical case studies illustrating different segments of the Welsh timber supply chain. Following the Strategy's launch in July 2025, the project continued to support its implementation through ongoing collaboration and knowledge sharing.



OUTPUTS AND OUTCOMES

TIMBER FROM THE NATIONAL FOREST

Work explored how the [National Forest for Wales](#) (announced in 2020) could deliver high-value construction timber in addition to its core aims of creating connected woodlands, enhancing recreation, health, and environmental benefits. Many new woodlands are expected on private farmland.

Conclusions emphasised the need to prioritise timber for long-life construction products to maximise carbon storage and economic return. Greater focus on secondary processing (e.g., into CLT or glulam) within Wales was recommended, alongside strategies to engage the commercial forestry sector, challenge negative perceptions of home-grown timber, and encourage investment in processing infrastructure.

A supporting study with Bangor University examined [Ecosystem Services Impacts of Woodland Creation and Timber Products](#). It concluded that strategic spatial planning — decisions on where and how to plant, and how timber is subsequently processed — profoundly influences overall benefits. Better integration of traditional Life Cycle Assessment (LCA) with place-based ecosystem services assessment could more fully demonstrate the value of Welsh wood products.

A workshop on “Commercial Timber Production and the National Forest for Wales” brought together National Forest representatives and commercial forestry stakeholders. Themes included perceptions and barriers to involvement, the potential of the National Forest as a public narrative platform to rebuild a “wood culture,” the essential role of productive forestry, opportunities for education and skills development, and landscape-scale management issues (e.g., deer and squirrel control).

The workshop concluded that the National Forest’s strongest future role lies in acting as a unifying, public-facing platform that embraces the full diversity of Welsh forestry — including productive commercial operations — while clearly communicating benefits to society, the economy, and the environment. Suggested next steps included sustained communications, exploration of non-financial incentives, and joint workstreams with industry to co-create practical approaches. Integrating commercial forestry is not merely about inclusion; it is about building a credible, complete narrative that benefits the entire sector and wider Welsh society.



ENGAGEMENT AND COMMUNICATIONS

Effective engagement and communications were integral to project success. A detailed stakeholder analysis completed in May 2024 mapped profiles, developed targeted engagement tactics, and included relationship mapping alongside timber value chain and public activism profiles to assess output relevance.

A communications strategy emphasised business-to-business connections to link timber stakeholders across Wales. Delivery involved Communities of Practice, regular events, thought-leadership articles, website content, 59 e-newsletters (with readership growing by almost 170% from 1,888 to 3,208 recipients), expanded social media activity (LinkedIn connections reaching 2,450), and both public and media relations.

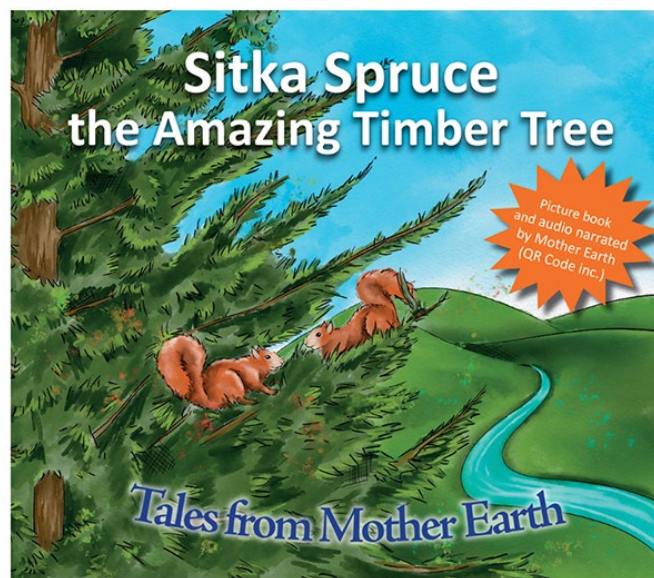
The Woodknowledge Wales website served as the central repository for all outputs, with dedicated project pages and tabs for case studies, reports, tools, and guidance. During Phase Two, the site recorded nearly 400,000 visits and significant numbers of downloads.

The WoodBUILD conference series expanded considerably in scale, impact, and cross-sector participation. Events in [Lampeter \(2023\)](#), [Swansea \(2024\)](#), and [Llandudno \(2025\)](#) featured ministerial input, increased sponsorship, and richer workshop programmes. [WoodBUILD 2026](#) in Trefforest, titled 'Responsible Timber Futures through Policy and Practice', provides an ideal platform to showcase Phase Two outputs.

Additional engagement highlights included collaboration at the Royal Welsh Shows (2024 and 2025), well-attended Communities of Practice meetings, successful site visits and forest walks, two study tours to Scotland for small sawmillers (with a third planned for May 2026), participation in partner events and [Wales Climate Week \(2023–2025\)](#), a [professionally produced video](#) tracing the journey of timber

from forest to home, and distribution of the children's book [Sbriwsen Sitka y Goeden Bren Ryfeddol / Sitka Spruce the Amazing Timber Tree](#) to every primary school in Wales (1,300 copies) plus external organisations. The book's development was sponsored by [Bronwin & Abbey](#), [BSW Timber](#), [Morgan Sindall Construction](#), [Confor](#) and [Euroforest](#).

These activities successfully raised awareness, built relationships, facilitated knowledge exchange, and helped embed project outputs across sectors.



CONCLUSIONS

The Home-Grown Homes Project has spanned eight years across its two phases. Phase Two built directly on the strong foundations established in Phase One and has played a significant role in shaping and supporting policy development and implementation across Wales' timber sector.

Core ambitions have centred on strengthening the timber supply chain to encourage greater production and use of home-grown forestry products in the delivery of low-carbon social housing. This has required coordinated change across forestry, manufacturing, and construction, supported by targeted supply-chain interventions.

While the scale of transformation achieved to date may not yet match the full vision set out in 2018, substantial progress has been made. With continued implementation of the Timber Industrial Strategy and close partnership working through initiatives such as Tai ar y Cyd, the opportunity to realise deeper change remains very much alive.

The external drivers for this agenda are, if anything, more pressing today than at the project's outset. There is growing recognition of the urgent need to decarbonise construction, deliver many more high-quality, healthy, and comfortable homes, expand woodland cover responsibly, extract greater value from every tree harvested, and enhance national self-reliance in timber resources. The potential benefits — environmental, social, and economic — are as significant as ever.

The challenge now is to maintain momentum: to build on the project's successes, forge new and stronger partnerships, and demonstrate through well-designed, practical projects what can be achieved at scale. By doing so, Wales can position itself as a leader in sustainable, timber-based construction — creating a more resilient, lower-carbon, and prosperous future for its communities and natural environment.





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