Sustainability and responsibility

Economic Forestry Group Ltd. (EFG)
The umbrella company of EFG (Forestry), Titan Timber and Eco Homes Direct

> “By 2050, 2.5 billion new inhabitants are predicted to populate cities across the world, doubling the projected demand for new building construction and tripling the land area we will consume in the process. If constructed and maintained with regeneratively sourced and renewable, bio-based materials—timber, bamboo, plants, and agricultural waste products—buildings, infrastructures, and entire urban systems can reliably store significant amounts of bio-genic carbon.”
>
> *Bauhaus Earth, A Charter for the City and the Earth*[1]

Our pledge, from forest to family

Economic Forestry Group (EFG) Ltd., the umbrella organisation of European forestry consultancy EFG (Forestry) Ltd., Titan Timber Ltd., and Eco Homes Direct Ltd., spans the entire timber supply chain from forest to affordable, low carbon engineered timber homes.

We believe that timber frame housing has a pivotal role to play in reducing the carbon footprint of construction while providing healthy, affordable and low-energy family homes for all.

Our journey starts with a seed dispersed from a cone, which combined with millions of others puts down roots in the earth. After growing for less than an average human lifetime, the conifer seeds transform into a pine or spruce forest from which nature’s most eco-friendly building material, softwood, can be harvested and engineered.

At Economic Forestry Group Ltd. (EFG) we take the care and management of forests seriously, from the standing tree right through to our low carbon, low energy eco-homes. We scrutinise every step of the supply chain to incorporate best sustainability practices into forestry, manufacturing and construction.

All our timber, with no exceptions, is legally and responsibly sourced from forest stands accredited to nationally recognised forest certification schemes. The ecosystem and habitats of plants and animals sharing our woodlands are important to us, and the schemes we support take into account the importance of maintaining biodiversity.

Our timber processing mills provide chain of custody (CoC) certification so that we can prove traceability of certified material as it flows through the supply chain. This additional layer of independent certification provides further assurance of our commitment to responsible resource and supply chain management.

[1]*Toward re-entanglement: a charter for the city and the earth is a call to action for the healthy and regenerative re-connection of human activity with the Earth’s natural systems, June 2022. The charter is the vision behind the Barcelona Protocol of October 2022.*

Only responsibly sourced, certified timber

EFG's global softwood and engineered wood products sourcing organisation, Titan Timber, offers comprehensive import and export services to suppliers and buyers in Canada, Scandinavia and the Baltics. The group's European sourcing business, Novastar Baltic Sia, marked its 20th year in Riga, Latvia, in 2023.

All timber sold by Titan/Novastar or used in the manufacturing processes for our Eco Homes closed timber panel building system is certified by either the Programme for the Endorsement of Forest Certification (PEFC) or the Forest Stewardship Council (FSC).

The FSC, headquartered in Bonn, Germany, operates certification schemes designed to ensure that forests are managed to preserve biological diversity and benefit the lives of local people and workers. In addition, wood and construction products made from FSC certified wood can contribute to sustainability rating schemes for green buildings, including BREEAM, the Building Research Establishment Environmental Assessment Method (BREEAM) offered globally via BREEAM International, and the North American LEED (Leadership in Energy and Environmental Design) system.

The PEFC, based in Geneva, Switzerland, promotes sustainable forest management through independent third-party certification. The membership organisation works to advance responsible forestry, providing forest owners with a tool to demonstrate their responsible practices and empowering consumers to buy sustainably. The PEFC also endorses the Canadian forest certification system, the Sustainable Forestry Initiative (SFI).

PEFC declared in March 2022 that all timber originating from Russia and Belarus is 'conflict timber' and cannot be used in PEFC-certified products[2]. This decision followed the adoption of the Resolution on Aggression against Ukraine by the UN General Assembly[3]. FSC has also suspended or terminated all certificates in Russia and Belarus that allow the sale or promotion of FSC products[4]. In alignment with the PEFC's and FSC's position, Titan and Novastar have adopted extra checks to ensure no resources or raw materials are from sanctioned countries.

PEFC and FSC accreditation starts with sustainability. Forest harvesting must meet strict guidelines to ensure replanting and regeneration is monitored to keep growth levels ahead of extraction. The regulations also ensure the preservation of ecosystems and the welfare of indigenous people and forestry workers.

EFG sources its raw material in the northern hemisphere, from Canada to Finland, where growth is slower due to the colder temperatures, yielding dense, high-quality fibre which is essential for stability and strength.

Titan has solid softwood supply lines in the Nordic and Baltic regions for wide-ranging dimensions, and in Canada for Canadian Lumber Standard (CLS) sizes used in timber frame manufacture. Our timber is kiln-dried, cut to defined tolerances and strength-graded under licence to meet both EU Timber Regulation (EUTR) and UK Conformity Assessed (UKCA) standards for use in housing and construction. Joinery (appearance) grades are also available for first and second fix materials, and in durable species such as western red cedar for cladding.

[2]*Timber from Russia and Belarus considered 'conflict timber', PEFC, March 4, 2022.*

[3]*UN General Assembly Resolution A/ES-11L.1 March 2, 2022.*

[4]*No FSC material from Russia and Belarus until the invasion ends, FSC, March 8, 2022.*

In combination with solid wood products, Titan sources engineered wood products made up from laminations and laminated components, as well as Oriented Strand Board (OSB) which is used in timber frame panel construction, webs for engineered beams and for tongue and groove flooring. Particleboard, often referred to as chipboard, is available with moisture resisting adhesives, and supplied with peel-off protective facings that provide protection during construction. As with solid wood, these materials are all accredited to either PEFC or FSC certification standards.

Softwood: Renewable, recyclable, climate-friendly

The Potsdam Institute for Climate Impact Research (PIK) has estimated that housing 90% of the growing global urban population in timber houses instead of steel and concrete could save 106Gt of additional greenhouse gases by 2100, equivalent to 10% of the remaining carbon budget for the Paris agreement's goal of limiting global warming to less than 2°C by 2100[5].

According to PIK's study, urban homes built with wood could play a vital role in climate change mitigation due to their long-term carbon storage potential, while the additional timber needed, roughly 140 million hectares, could be sourced from timber plantations established on harvested forest areas, which would not encroach on agricultural land needed to produce food.

When timber is harvested from forests, the embodied carbon is stored in the harvested wood product for decades, offering the potential for a carbon sink impact if the amount of wood entering the market exceeds the amount of wood being discarded annually. In addition, harvested wood products typically have a lower fossil carbon footprint than alternative products, so, using wood in construction can lower fossil emissions by reducing the production of cement and steel, resulting in a substitution impact[6].

On average, the embodied energy of a timber building is 28–47% lower than for concrete and steel buildings respectively, according to a study by Aalto University's School of Engineering in Finland which found that the mean and median values of embodied emissions are 2.92 and 2.97 gigajoules per square metre for timber, 4.08 and 3.95 GJ/m2 for concrete, and 5.55 and 5.53 GJ/m2 for steel buildings[7].

"The embodied energy difference between wooden and non-wooden buildings is noteworthy , the researchers said, "making wooden buildings a potential solution for climate change."

[5]*Land use change and carbon emissions of a transformation to timber cities, Potsdam Institute for Climate Impact Research (PIK), published in Nature Communications, August 30, 2022.*

[6]*Contribution of Wood-based Products to Climate Change Mitigation, part of the Managing Forest Ecosystems book series, Lauri Hetemäki, Jyrki Kangas and Heli Peltola. published by Spinger Nature Switzerland AG, August 2022.*

[7]*Life cycle energy analysis of residential wooding buildings versus concrete and steel buildings: A review. By Daniel Schenk and Ali Amiri, Building Environment Department, School of Engineering, Aalto University, Espoo, Finland, September 28, 2022.*

Gateway to Super E®

Canada is the birthplace of the original passive house concept developed in 1976 by engineer Harold Orr. Since the first passive house was built in Saskatchewan in 1977, the technology and build concept has been adopted worldwide, promoted by the Canadian Government's Super E® team. Hundreds of Super E® homes have been built in the UK.

Eco Homes Direct is the UK's gateway to the Canadian Super E® build system, bringing the concept to several manufacturers in South Wales, Berkshire, Gloucester, and Northern Ireland, representing significant investment and upskilling. Unlike open panel timber frame systems where insulation and internal boarding are fitted on the construction site, our precision-engineered wall panels are supplied with insulation, air and vapour barriers already installed.

We believe that by prefabricating most of the house in factory conditions we ensure accuracy, reduce labour and waste on site, and improve efficiency, ensuring that our homes score highly when evaluated against the Code for Sustainable Homes, a voluntary national standard for England.

The route to net zero

In 2019, the UK became the first country in the world to commit to achieving net zero by 2050. Put simply, net zero means achieving an equal balance between the amount of greenhouse gases being emitted and removed from the atmosphere to slow down and reduce the effects of climate change.

As part of the drive to net zero, the United Nations' Food and Agriculture Organisation (FAO) estimates that consumption of primary processed wood products will grow 37% by 2050. "Wood is renewable, recyclable, climate friendly and versatile and is increasingly being used to replace non-renewable materials," the agency observed. "It is a critical material to the efforts to address the global threats to climate, biodiversity and environment caused by the excessive use of non-renewable materials[8]."

In January 2023, a consortium of 11 timber industry associations including Timber Development UK (TDUK), of which EFG's Eco Homes Direct is a member, launched the Timber Industry Net Zero Roadmap setting out a route to net-zero by 2050[9]. Policy recommendations include moving over to electric powered vehicles for the transportation of products, and hydrogen for harvesting, with a key target to reduce road-going transport emissions intensity by 25% by 2030, and 50% by 2035.

Zero carbon-ready homes are seen as key to achieving the net zero target. The UK Government has pledged to introduce a Future Homes Standard by 2025 and established a Future Homes Hub, bringing together 170 experts from 100 organisations, to investigate options for building lower carbon homes[10]. The Hub's plan lays out a clear set of actions for the homebuilding industry to find the most practical ways to measure and reduce whole-life carbon at scale, while continuing to build better homes and communities. In response, Timber Development UK (TDUK) has stated that timber frame construction rightly features in the Hub's assessments as a leading solution to reducing upfront carbon emissions.

[8]*Global forest sector outlook 2050, Assessing future demand and sources of timber for a sustainable economy, Food and Agriculture Organisation of the United Nations, 2022.*

[9]*Ready for Zero, Evidence to inform the 2025 Future Homes Standard, 28 February 2023.*

[10]*The timber industry Net Zero Roadmap: How the timber sector can address the climate crisis and build a Net Zero future, Timber Development UK (TDUK), January 24, 2023.*

"Timber frame homes can provide quick build times, cheap costs and options for offsite construction, all whilst saving an average of four tonnes of CO2 compared with an equivalent masonry house," TDUK stated. "While 85% of Scottish homes are already built using timber, only 22% of English new-build homes are currently timber-framed. This demonstrates that the means to reduce embodied carbon using this method already exists in the UK[11]."

As a stepping stone towards the Future Homes Standard, the UK Building Regulations Part L (Conservation of Fuel and Power) were tightened in June 2022 to reduce CO2 emissions by 31% for dwellings and 27% for other buildings, with full implementation from June 15, 2023. As a result, architects and homebuilders are prioritising a fabric first approach to improve insulation and airtightness, which when coupled with MHVR (Mechanical Ventilation and Heat Recovery) systems, significantly reduces domestic energy consumption with the added benefit of saving up to 80% of the cost of heating a building.

Wood is 12 times more insulating than concrete, 350 times more insulating than steel and 1,500 times more insulating than aluminium[12]. Eco Homes Direct's house-as-a-whole timber frame system, originally developed in Canada, amplifies the natural insulative properties of wood with its unique closed panel walls featuring factory fitted insulation.

At Economic Forestry Group, we have been on a journey of continuous improvement towards net zero for more than 20 years. Our house-as-a-whole concept based on KWh/m2 energy targets exceeds thermal and acoustic regulations as standard and can be specified to match Passive House performance.

Building new homes using traditional brick and block methods can seldom deliver the energy savings of closed panel timber construction or match its affordability.

Unlike many building materials, wood, often referred to as the climate commodity, not only absorbs carbon but can be grown and harvested over and over again. A single hectare of coniferous woodland soaks up 1.8 to 12.0 tonnes Co2 (tCo2) per year, a unit that represents carbon uptake or loss. If carbon retained in wood products is included, the level of carbon sequestration rises to 14.5 tCO2 per hectare[13].

Eco Homes Direct offers highly insulated, precision-engineered low carbon homes that are affordable to all. The future of building is already here, and with it, the future of our planet.

Contacts

Ian Campbell

Group Director

E-mail: Ian.campbell@ecohomesdirect.co.uk

Phone: +44 7973 229705

Wendy Lisney

Global Head of Communications

E-mail: wendy.lisney@economicforestrygroup.com

Phone: +44 7802 162110

[11]*What does the Future Homes Hub mean for the construction sector? Timber Development UK (TDUK), February 2023.*

[12]*EcoTree, Denmark, March 2023.*

[13]*Quantifying the Sustainable Forestry Carbon Cycle Summary Report, Forest Research, the Research Agency of the Forestry Commission, June 2022.*