01

LIFE EcoTimberCell

Bulletin LIFE EcoTimberCell

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Our world is changing and

the way we build as well

With the contribution of the LIFE financial instrument of the European Union

Contents

The Project

Contexto

In today's world, it is essential to take action on building processes to achieve the objective of **reducing greenhouse gas emissions** to which the European Union is committed.

The **European Directive on Energy Efficiency** reflects this very well, pointing out that buildings are crucial to achieving the Union's objective of **reducing greenhouse gas emissions by 80 to 95 % by 2050** compared to 1990.

Since buildings account for 40% of the EU's final energy consumption, reducing their energy consumption is seen as the most effective way to help mitigate climate change.

Birth

In this context, the **LIFE EcoTimberCell** project [LIFE17 ES/CCM/74] **was born in 2018**: *Ecological cellular structural systems for a Building model for Climate Change Mitigation and Forest value enhancement*

LIFE EcoTimberCell is a Pilot project Close to market within the priority area **Mitigation of Climate Change** for the reduction of greenhouse gas emissions, which aims to reduce greenhouse gas emissions through an innovative building solution.

Innovative building solution

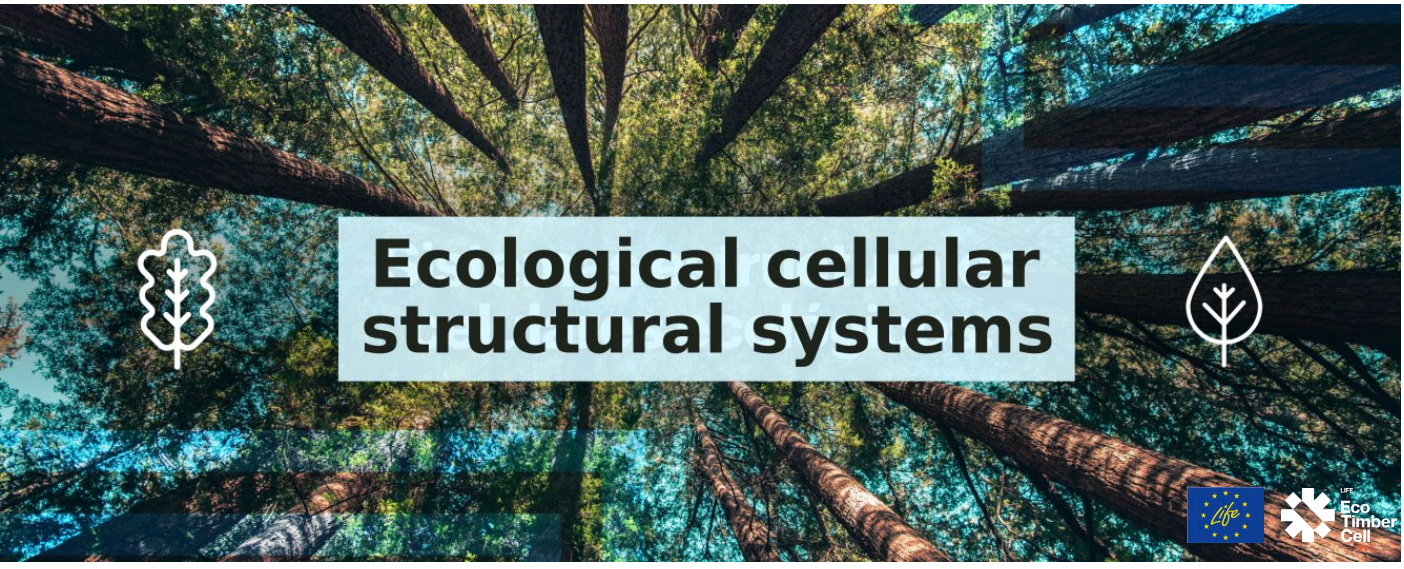
LIFE EcoTimberCell proposes the creation of **low-carbon building elements, which also involve long-term carbon sequestration** with sustainable materials through **EcoTimberCell systems (ETC)**.

LIFE EcoTimberCell will suppose a substitution of products derived from Intensive Energy Use Industries, such as concrete and steel in the building.

The building of dwellings with this system will increase the demand for certified local wood, which will enhance **sustainable forest management** and the creation of **local green jobs**, settling population in the rural environment.

Local sustainable forest management

The ETC systems developed in the project are based on certified local wood, obtained from the mountains of the Euroregion Galicia-North of Portugal with high forest potential.



LIFE EcoTimberCell Team

LIFE EcoTimberCell is developed thanks to the union of **5 entities** that participate in the project, which provide a specific and complementary function to develop the ETC systems and make them reach the market.

The **Platform for Structural Wood Engineering** of the **University of Santiago de Compostela** (**USC-PEMADE**). Research centre specialised in the development of structural products in wood. **Coordinator beneficiary**

Betanzos HB is a leading company in the construction of boards that brings its innovation in this area and its successful business experience

The **Centre for Wood Technology in Asturias**, providing knowledge in the area of structural adhesives and with a climate change and carbon footprint laboratory

The **Catalonia Institute of Construction Technology** with almost 40 years of experience, and qualified certifying body in the European Union since 1996

3edata is a spin-off of the USC, a technology-based company and specialist manager in agroforestry and environmental projects

Co-funding

European Union finances the LIFE EcoTimberCell project through the **LIFE Programme** by 60%. The body in charge of its management is the Executive Agency for Small and Medium Enterprises (**EASME**) as an agency of the **European Commission**.

Lines

Developing products for building up, with **negative carbon footprint**, made with local woods.

Promoting of **low energy building** with wood-based products

Minimizing waste once the building lifespan is achieved (wood-biodegradable)

Objectives

Saving energy during the production process of the elements

Increasing the local wood added value

Reducing the energy demand during the **use of the building**

Increasing the local certified wood **demand**

Saving in the generation of building wastes

Reducing environmentally harmful substances in adhesives

Expected Results

Creating the Cells EcoTimberCell (ETC), EcoTimberCell+ (ETC+), structural systems ETC Frame and ETC Box; and modular architectural systems ETC Home.

Placing on the market the family of EcoTimberCell products, with CE branding and environmental certifications.

Manufacturing and commercialisation through a Company (USC Spin off); of structural elements and modular dwellings.

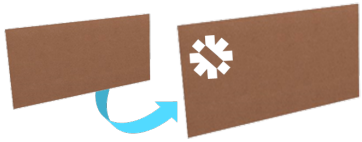
CO_2 Reduction

Waste Reduction

Sustainable Forest Management

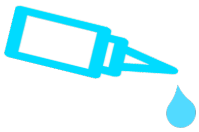
Actions

C1 High-performance fibreboard



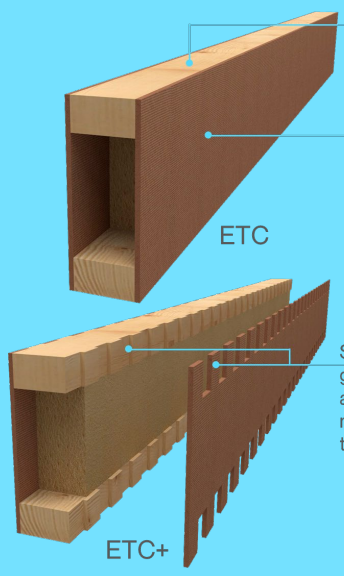
Adapted to EcoTimberCell

C2 Lignin as adhesive

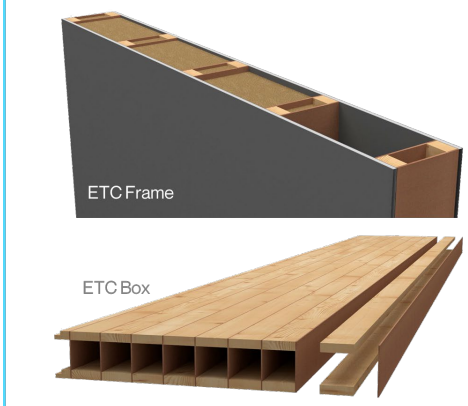


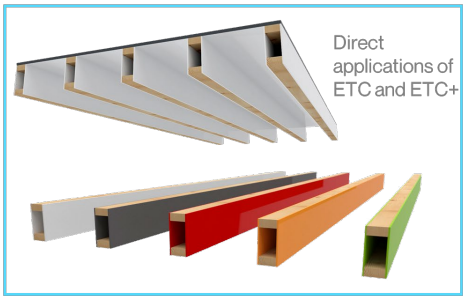
Ecological, No hazardous substances

C3 Cell development: EcoTimberCell and EcoTimberCell+

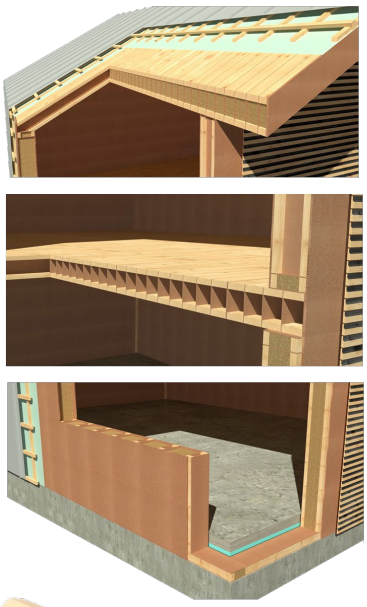


C4 Structural ETC Systems

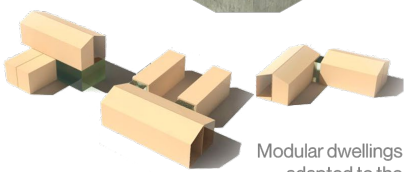




C5 Design details



C6 ETC Home



Modular dwellings adapted to the environment

C7 Certification of ETC systems

Final product approval

C8 Business and marketing

Creating a Spin-off

C9 Transferability

Strategy for replicability and transferability

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News

PEMADE will lead the LIFE EcoTimberCell project for a sustainable building with local wood.

[07/10/2018]

The Platform for Structural Wood Engineering (PEMADE) of the Campus Terra of the University of Santiago de Compostela will lead the LIFE EcoTimberCell project for a sustainable building with local wood.

The project will promote sustainable, efficient building and better local forest management.

The Campus Terra of the University of Santiago de Compostela, through the **Platform for Structural Wood Engineering** (PEMADE), proposed last year the project **LIFE EcoTimberCell** to the European Commission, a proposal focused on Climate Change Mitigation, in collaboration with the company **Betanzos HB**, **the Forest Technology Center for Wood** (CETEMAS) and the **Institute of Construction Technology of Catalonia** (ITEC).

This project, approved by the European Commission, has a budget of **2 million euros**, of which the EU will collaborate with 59%, while the rest of participants assume the remaining 41%, becoming a commitment to efficient building, sustainable forestry production and the promotion of local green employment.

The **LIFE EcoTimberCell** project, entitled "**Ecological cellular structural systems for a model building to mitigate climate change and enhance the value of the forestry sector**", has as its main objective to reduce energy consumption in the building sector through the development of local wood building products from sustainable forest management. It promotes the replacement of high carbon footprint building materials such as concrete and steel, as buildings and construction currently account for 40% of energy consumption in the EU. In addition, these systems will be fully recyclable at the end of their useful life, reducing waste.

The development of the EcoTimberCell building systems will be carried out in the facilities of **PEMADE**, a research, development and innovation centre in the field of wood engineering for structural purposes, with the collaboration and support of the other entities in the project: Betanzos HB, a Galician manufacturer of high-density wood fibreboard located in Betanzos; the **CETEMAS** Foundation, a centre and R&D centre in the area of the Monte-Industria value chain in Asturias; and the **ITEC** Foundation working in the construction sector from Catalonia.

Among the final results are the **EcoTimberCell (ETC) systems**, created from local wood of sustainable forest management, which will enable a profitable building of energy saving; also, **ETC housing modules** will be created to design passive single-family houses of almost zero consumption. However, the project does not end with the development of these elements, but a spin-off of the USC will be responsible for the marketing, export and evolution of these ETC systems in the future.

LIFE EcoTimberCell continues with the initiative developed in the **LIFE Lugo+ Biodynamic** project, coordinated by the City

Council of Lugo, in which PEMADE and the **Sustainable Forest Management Unit** are participating to apply solutions for adapting to Climate Change in cities, such as the construction of buildings in structural wood.

Jornada de Presentación y Lanzamiento del Proyecto LIFE EcoTimberCell [10/10/2018]

On 15 October, the presentation of the LIFE EcoTimberCell Project will take place in the Meeting Room of the **Higher Polytechnic School of the Campus of Lugo**. The members of the project, as well as representatives of the University of Santiago de Compostela, the City Council of Lugo and the Galician Wood Cluster will attend the

presentation..

Launch of the LIFE EcoTimberCell Project [16/10/2018]

On Monday 15 October 2018, LIFE EcoTimberCell project was launched at the Lugo Polytechnic School of the Campus Terra of the University of Santiago de Compostela.

The event was organized in two parts:
-A **public event** in which the LIFE EcoTimberCell project was presented to society. It was attended by the Vice-Rectory of the Lugo Campus for Research, Transfer and Innovation, as a representative of the University of Santiago de Compostela (Elvira López), the Mayoress of the City Council of Lugo (Lara Méndez) and the Vice-President of the Lugo County Council (Argelio Fernández) as representatives of the LIFE Lugo+Biodynamic project, linked to this project by its thematic; as well as the president of the Wood Cluster (Jose Manuel Iglesias), representing the companies of the wood value chain.

On behalf of the project partners participated the director of the Platform for Structural Engineering of Wood and director of the project LIFE EcoTimberCell, Manuel Guaita, the technical director of the Catalonia Institute of Construction Technology (ITEC), Ferran Bermejo, the director of innovation and development of Betanzos HB, Rosa Arcas and the Scientific Director of the Center for Technology and Forestry of Wood (CETEMAS), Juan Majada.

At this event, the LIFE EcoTimberCell project website (https://www.life-ecotimbercell.eu/) was presented, which is already up and running and will be incorporating more information on the project in the coming months.

-A **working meeting** of the technical team of all the project partners to organize the work and report on the progress made in these first steps of the LIFE EcoTimberCell project. This meeting is part of the meetings of the project coordination and management teams that will develop it throughout the LIFE project in its more than 3 years of duration. In it, the LIFE EcoTimberCell team visited the Kick off meeting of the LIFE Climate Change projects held recently in Brussels.

Also, the project partners visited the facilities of the Platform for Structural Engineering of Wood, where a large part of the actions of the

LIFE EcoTimberCell project will be developed.

LIFE EcoTimberCell presented at EU Raw Week in Brussels [12/11/2018]

LIFE EcoTimberCell was present at the **EU Raw Materials Week** held from 12 to 16 November, through the European Union stand on LIFE Projects.

This week, **organised by the European Commission**, has a series of events that deal with novelties and the state of the art on raw materials, in addition to publicise the work on them that is carried out in the EU. It is a unique opportunity for the international community to exchange views at technological, political and cooperation level, as well as to share knowledge bases on raw materials and their transformation.

In this way, **LIFE EcoTimberCell** made itself known to a specialist public. The aim is to start disseminating the project, which has just begun, with a view to its future transferability and replicability.

Participation in the Conference "Wood is present and future. Pine wood construction in the era of bioeconomy" [11/12/2018]

The director of the **LIFE EcoTimberCell Project**, Manuel Guaita, participated on 11 December in the seminar on the importance of pine wood in the bioeconomy for the construction sector, in which he introduced to attendees the LIFE EcoTimberCell project and how it aims to promote the use of wood in construction by replacing other construction elements with a high impact on climate change such as steel or concrete.

This seminar organized by the **Xunta de Galicia** and the **Forest Technology Centre Lourizán**, with the collaboration of the **Galician Agency for Agrifood Quality** (AGACAL) is part of the technical seminar prepared annually on pine. In 2017 it dealt with the genetic improvement of the species and its use by industry. This year the conference focused on the importance that wood is having in today's society, since all over the world people talk about wood as a star in this age of bioeconomy, even starting its use in the chemical sector, textiles, ... and increasingly in construction. For all these reasons, the aim of this conference was to promote the use of wood from Galicia's pine forests in Galician construction.

The **theme** of this day fit perfectly with the objectives of the project LIFE EcoTimberCell, which was well received by attendees, members of the community of neighboring mountains of Galicia, forest owners, technical administration and other people interested in

the matter. With LIFE EcoTimberCell, the use of local sustainably managed wood, including pine, will be promoted for constructive uses. Creating more added value in Galicia.

Completed Catalog of Commercial Structural Adhesives on the Market and Revision of New Ecological Adhesives [13/12/2018]

The **Forest and Wood Technology Centre (CETEMAS)** has completed the catalogue of Commercial Structural Adhesives in the Market and the Revision of New Ecological Adhesives in the experimental development phase or in the international validation phase.

This activity is part of action A1 of the LIFE EcoTimberCell project, whose objectives are:

-To **define the characteristics and requirements** to be met by an adhesive defined as structural.
-To carry out an updated documentation of the **structural adhesives existing in the market**, obtaining their technical characteristics and evaluating their suitability to the different types of structural wood products.
-**Bibliographic review** of past and present research on the development of new adhesives.

This activity is an important preliminary step for the correct development of the **EcoTimberCell and EcoTimberCell+ cells**, as well as the rest of the products derived from them that will lead to the ETC Home, modular homes that promote the demand for local wood from sustainable forest management..

Presentation of the LIFE EcoTimberCell project to representatives of the Agència d'Habitatge de Catalunya (AHC) [10/01/2019]

On 10 January, ITeC, a partner in the LIFE EcoTimberCell project, visited representatives of the Agència d'Habitatge de Catalunya (AHC), specifically the director of Building Quality and Housing Rehabilitation Jordi Sanuy, the director of Operational Direction of Housing Rehabilitation and Improvement Josep Linares, as well as the Head of External Action Anna Mestre, who were presented with the LIFE EcoTimberCell project and its possibilities for integrating into the rehabilitation of housing of the future, which promotes construction adapted to climate change, a construction with wood in which LIFE EcoTimberCell has much to say.

The visit was framed in knowing different projects that are being developed from the AHC related to construction from a point of view of tackling climate change. After learning about the H2020 Plug-N-Harvest and 4RinEUprojects, the attendees learned about the LIFE EcoTimberCell project and how it aims to be a **driving force of change in the paradigm of construction**, supporting a **local bioeconomy**.

4RinEU
Reliable models for deep renovation

Presentation of the LIFE EcoTimberCell project to urbanism representatives of the City Council of Carballo [22/01/2019]

On January 22nd, the **Engineering Platform of Structural Wood**, **coordinator of the LIFE EcoTimberCell project**, received the visit of representatives of the City Council of Carballo, specifically the Councillor for Planning and Urban Mobility Milagros Lante, the municipal archITeCt Alfredo Garrote, as well as the professor of the Higher Technical School of ArchITeCture Mónica Mesejo, to whom the LIFE EcoTimberCell project was presented as well as its possibilities to be integrated in the urban planning of the future, in which the construction adapted to climate change is promoted, a construction with wood in which LIFE EcoTimberCell has a lot to say.

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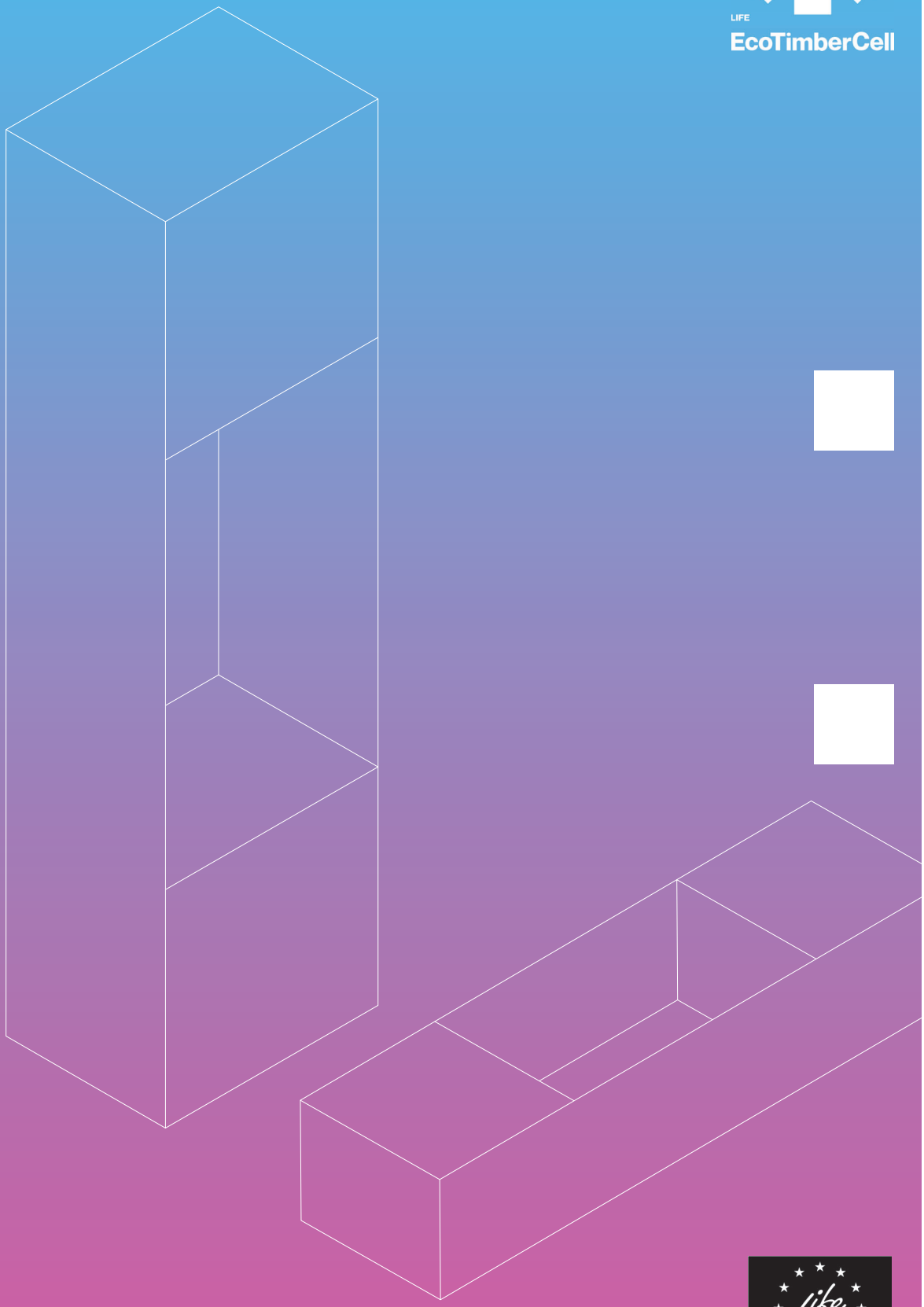
LIFE
EcoTimberCell



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