Delivering quality products with full technical support for diffusion open buildings

Airtight, Windtight & Natural Insulation

Products & Training
Our parent company MacCann & Byrne was founded in 1906 in Athboy in County Meath, Ireland. Originally a builders merchant, the company now produces and distributes high quality timber and building products. The business is to this day family owned.

In 2000 Ecological Building Systems was set up as a subsidiary company to MacCann & Byrne to supply a bespoke range of diffusion open natural insulation and air and windtight building membranes, tapes and seals to the Irish market.

In 2006 Ecological Building Systems UK was incorporated to promote our range of products to the UK building market. The UK Technical, Sales and Distribution Centre is based near Carlisle in Cumbria.

We are proud to have developed strong partnerships and friendships with our European partners over the last 15 years to enable us to import bespoke, quality, ecological building products to the UK.

We have comprehensive brochures available for all our products. This brochure is intended as an introduction to Ecological and our range.

Team Ireland
Niall, Aaron, Adrian, Peter

Team UK
Fintan, Krzysztof, Penny, Stephen

www.ecologicalbuildingsystems.com
Sole suppliers and distributors in the UK for:

**pro clima**
Intelligent airtight and windtight building systems

**Gutex**
Vapour permeable wood fibreboards for insulating roofs, walls and floors

**CALSITHERM CLIMATE BOARD**
Internal calcium silicate boards, plaster and accessories - ideal for renovation

**esb elka**
High performance, diffusion open, structural, wood particle board

**Smart Six**
Adaptable expansion system for roofs, walls and floors

**Thermo Hemp**
Natural insulation

**Thermo Jute**
Natural insulation

**Wellhofer**
Attic Hatches

**Optime**
Downlight protector housing units

**Passive eco wall**
Ecological, Diffusion Open Wall

**Distribution**
Warehousing, stock and buying

**Training**
Fabric first and airtightness courses

---

**Products and index**

- **pro clima** 4 - 5
  Intelligent airtight systems

- **pro clima** 6 - 7
  Intelligent windtight systems

- **Gutex** 8 - 9
  Wood fibreboard

- **Calsitherm** 10
  Climate Board

- **esb elka** 11
  High performance strong board

- **Smart Six** 11
  Smart insulation Xpander

- **Thermo Hemp** 12
  Natural insulation

- **Thermo Jute** 12
  Natural insulation

- **Wellhofer** 13
  Attic Hatches

- **Optime** 13
  Downlight protector housing units

- **Passive eco wall** 14
  Ecological, Diffusion Open Wall

- **Distribution** 15
  Warehousing, stock and buying

- **Training** 16 - 17
  Fabric first and airtightness courses
Think of a home made from healthy, more natural and diffusion open insulation

. . . a home with rooms free from cold draughts and uncomfortable heat variations

. . . a home where there’s virtually no heating or cooling bills

Think of building a Passivhaus - a home for life!
Our technical expertise and leading range of ecological products provide the highest specifications for diffusion open, healthy, low energy sustainable buildings

We provide

- Airtightness & Insulation specification guidance and site support
- Design guidance
- Advice on meeting Building Regulations
- U Value calculations
- Hygrothermal Modelling (WUFI) of building components
- Airtightness Installation DVD
- Airtightness specification clauses by GreenSpec
- A bespoke ‘Centre of Knowledge’ showroom
- CPDs and Technical Briefing Seminars
- Copies of more in-depth relevant reports and samples
- Extensive technical support on website
- In-house training with our pro clima Intelligent Airtight Systems Training and Better Building Fabric First Courses

Proud to be members of:
Why build for airtightness?
Sustainable design and construction to achieve low energy, PassivHaus and zero carbon homes are now at the forefront of the building and planning process. Codes and standards are in place which aim to reduce carbon emissions and create homes that are healthier and more sustainable. The only way to achieve PassivHaus, low carbon and zero carbon buildings is to ensure a high level of airtightness is attained.

That means designing and installing a continuous seal around the internal fabric of the external envelope to eliminate unwanted draughts. Once the airtight vapour check is in place and sealed with flexible and durable tapes, seals and glues, it ensures that the insulation functions to its optimum performance, saving energy and drastically reducing carbon emissions for the lifetime of the building.

The airtight vapour check also ensures that interstitial condensation risk is minimised, ensuring no structural damage from moisture, mould, rot and damp.

What is an ‘Intelligent’ Airtight System?
pro clima are pioneers and market leaders of an ‘Intelligent’ airtight system. This differs greatly from conventional vapour barriers and vapour checks.

The technology used in pro clima membranes, INTELLO PLUS and D8+ ensures membranes may become more vapour ‘diffusion open’ when required. This means that they have the ability to alter their vapour diffusion resistance depending on the average relative humidity surrounding the vapour check.
The pro clima tapes, TESCON VANA, No.1, and UNITAPE are currently the only tapes yet to pass the Kassel Institute accelerated aging test for 100+ years performance.

Build tight and Ventilate right!
By choosing the pro clima range, you can be confident that you are implementing a robust, durable and energy efficient airtight and windtight system to your build.

Why is windtightness important?
To achieve maximum thermal efficiency the insulation must be completely sealed on both sides. The insulation is protected against the elements on the roof by SOLITEX PLUS membrane and on the walls by the SOLITEX FRONTA WA range of membranes. The construction is now windtight externally and airtight internally, similar to wearing a windbreaker over a woollen jumper – perfect!

That’s why it makes environmental and economic sense to seal tight and ventilate right!

Tapes & Seals
Pro clima has established one of the most comprehensive ranges of tapes and seals available on the market today. We have solutions for every conceivable airtight junction, no matter what the build; timber, block, steel. The pro clima tapes, TESCON VANA, No.1, and UNITAPE are currently the only tape yet to pass the Kassel Institute accelerated aging test for 100+ years performance. With solid acrylic glue used in the pro clima tapes and glues you can be sure of a permanent airtight seal even in humid climate conditions like Ireland and the UK.

SOLITEX PLUS/SOLITEX PLUS CONNECT
Vapour permeable windtight roof tile underlay

SOLITEX FRONTA WA
Monolithic fully windtight breather membrane for walls

SOLITEX FRONTA QUATTRO
Monolithic windtight fully breathable membrane for use on open jointed facades

www.ecologicalbuildingsystems.com
pro clima products have been independently tested and approved by the Sentinel-Haus Institute to meet their stringent standards for healthy buildings with good indoor air quality.

At Ecological we have been supplying the pro clima range of airtight and windtight products since the year 2000. pro clima were founded in 1981 and are now active in over 20 countries. pro clima products are manufactured according to the highest quality standards of Europe and solely distributed in Ireland and the UK by Ecological Building Systems, working with a network of trained stockists.

In an independent consumer watchdog publication in Germany 8 leading airtightness system brands were tested. Pro clima was confirmed as the best and most reliable system on the market.
Wood fibreboard

For over 80 years, GUTEX, a Black Forest family-owned and operated company, has produced insulation fibreboards from wood at its plant in Waldshut-Tiengen, Germany.

Today GUTEX is a leader in innovative, environment-friendly manufacturing and can manufacture single-ply, wood fibreboard insulation in thicknesses up to 240mm!

GUTEX insulating wood fibreboards are the ideal choice for both home improvement and new buildings.

Some of their most distinct qualities are:

- Low thermal conductivity, which guarantees excellent protection in winter against cold.
- Highest possible volumetric heat capacity for the best protection heat in summer.
- Superb water vapour permeable design, which regulates humidity and produces pleasant interior living conditions.
- Unsurpassed absorption of impact and structural noise.
- The raw material for all GUTEX insulation boards comes solely from wood that is harvested and grown using sustained forestry management practices (PEFC and FSC).

Why GUTEX?

- Biologically harmless
- Environmental-friendly manufacturing
- Less additives
- No breaking, chipping or loss of individual plies
- Tightly jointed insulation
- Reduced installation time
- Increased strength with reduced bulk density
- Diffusion open
- Superior quality and functional reliability
GUTEX Multiplex-top
A single ply external sarking board for use in roofs and walls. It is uniformly water resistant due to paraffin impregnation. Suitable for new builds and upgrading the insulation of existing buildings.

GUTEX Ultratherm
A thicker single ply external sarking board for use in roofs and walls. It is uniformly water resistant due to paraffin impregnation. Suitable for new builds and upgrading the insulation of existing buildings.

GUTEX Thermoflex
A flexible wood fibre batt. It may be applied between rafters, studs and floor joists.

GUTEX Multitherm
A single ply external sarking board for use in walls. It is uniformly water resistant due to paraffin impregnation. Multitherm provides optimum thermal performance internally or externally on walls with vented facades or internally on roofs. Suitable for new builds and upgrading the insulation of existing walls.

GUTEX Thermowall
A single ply external wall insulation system. For use with GUTEX’s approved render system.

GUTEX Thermoinstal
Specifically designed to create a thermal bridge free service zone (i.e., between OSB and internal finish). It is a compression resistant insulation board with single ply homogenous structure.

GUTEX Thermofloor
A versatile impact insulation board suitable for all floor applications, including wet and dry screed. Suitable for loads up to 5kN/m².

GUTEX Thermosafe-wd
A highly compression resistant wood fibreboard which may be applied as a thermal insulation for floors and walls. It features a homogenous single ply structure.

GUTEX Thermoflat
Designed for flat, wood, concrete and sheet metal roofs. It has a high compression resistance and features a single ply structure. It is uniformly water resistant due to paraffin impregnation.

GUTEX Thermosafe-nf
A superior impact insulation board with tongue and groove joints, supplied with spruce joint strips for easy installation. This system is especially suitable for long and short plank flooring, which screws to the spruce joint strip.

GUTEX Thermosafe-homogen
A single ply homogenous insulation board with excellent properties for protection against the heat in summer and the cold in winter. Used in conjunction with GUTEX sarking boards to optimise thermal performance cost effectively.

GUTEX Thermoroom
An internal wall insulation system for use with GUTEX’s approved render system. Ideal for internal insulation of masonry walls in new, old and historic buildings.
Calsitherm

Climate Board
Mould prevention & thermal insulation in one!

CALSITHERM CLIMATE BOARD is used to insulate the internal surface of existing external masonry walls and window reveals. Insulating internally ensures that the existing external façade remains intact, this may be particularly relevant in brick, stone, Listed and Heritage buildings.

Made from calcium silicate a micro-porous mineral building material which is highly capillary open. The high PH and molecular structure of the material means that mould growth is inhibited.

Do it once, do it right!

www.ecologicalbuildingsystems.com
elka strong board

High performance, diffusion open, structural, wood particle board.

- Suitable for external and internal use
- Compatible with breathable diffusion open construction (u=24)
- Structural board suitable for use in humid conditions (P5)
- 40% Higher transverse tensile strength than OSB
- Odour neutral and supports healthy IAQ
- Can be painted directly

Smart Six

Smart insulation Xpander

Create extra insulation space with this adaptable expansion system for roofs, walls and floors

The principle of the system is to simply install an engineered beam onto the existing construction or to combine this beam with a specifically designed pocket, which in turn, increases the volume of insulation which can be installed. Any element of the building fabric can be insulated over a broad range of depths.
Thermo Jute

Upcycled insulation made from natural jute fibres

Thermo Jute 100 is made using recycled jute fibres from cocoa and coffee bags, a unique and perfect example of upcycling.

Available in batt form in thicknesses from 30mm to 220mm and two widths, 375mm and 580mm.

With a thermal conductivity of 0.038 W/mK, Thermo Jute 100 possesses outstanding thermal insulation properties making it one of the most cost effective insulations available on the market.

Thermo Jute has outstanding sound absorption properties and the ability to store heat, generated by solar radiation, keeping it warm in winter and cool in summer.

Thermo Hemp

Natural insulation

With a thermal conductivity of only 0.038 W/m2K, Thermo-Hemp possesses outstanding thermal insulation properties making it one of the most effective insulations available on the market.

- Heathier for you - made from natural hemp plant fibres grown without any chemicals or toxic additives. Thermo Hemp is totally safe and easy for you to install.
- Heathier for your home - with its hygroscopic properties hemp regulates humidity offsetting condensation risk. What’s more it’s naturally resistant to mould growth and insect attack and has outstanding fire resistance.
- Heathier for the environment as well as having low embodied energy during manufacture, hemp is carbon negative as it locks in carbon during its growth.
Wellhofer

Pre-insulated and pre-sealed for airtightness

Manufactured and engineered in Germany the unit has been tested to stringent DIN standards to comply with airtightness and insulation requirements.

The Wellhofer hatch remains airtight even under blower door test conditions

- Fully Certified Airtight Attic Frame Sealing System & Door - Certified Class 4
- Size 600 x 1200mm
- Includes Timber Ladder
- Size 600 x 600mm also available

Optime

Flush mounted housing for downlights

Designed as an innovative one stop solution for achieving a safe, easy to install sealing system for downlights.

Airtightness best practice dictates that surface penetrations of the external envelope should be minimised. Downlights present particular challenges for airtight design and continuity of the insulation layer. However, if downlights are present there is a robust solution in the OPTIME Downlight Protector housing units.

Optime Mini
200mm x 200mm x 140mm

Optime Maxi
320mm x 320mm x 160mm

Optime Downlighter
Protector Mini Box with pro clima Stoppas

Pro clima Stoppas
Airtight plugs for conduits

Ask about the new Wellhofer Certified Passive House Attic Hatch
PASSIVE EcoWall

Ecological, Diffusion Open

PASSIVE EcoWall combines high levels of energy efficiency and safety from potential problems associated with condensation risk. With minimum embodied energy, and high levels of comfort and health, using natural materials with a significantly reduced carbon footprint.

PASSIVE EcoWall consists of a combination of internal plasterboard, SPANO DURÉLIS VapourBlock with pro clima airtight tapes and seals, THERMO-WOOL/THERMO JUTE natural insulation and GUTEX weather resistant wood fibreboard.

The complete range of products utilised in PASSIVE EcoWall are available direct from Ecological Building Systems. (pro clima products are sourced via our network of stockists). The system has been tried, tested and used on a number of low energy and Passive House Certified constructions.

Please don’t hesitate to contact our team to discuss further technical and product supply details.

Intelligent airtight and windtight building systems
How to Buy

In the UK we supply the pro clima range of airtight and windtight building products through our network of trained stockists. Please contact us or visit our website to find your nearest supplier. We support our stockists with comprehensive stock quickly and efficiently from our Distribution Centre near Carlisle in Cumbria.

Our other product lines are supplied directly from us at Ecological Building Systems. For competitive pricing on natural insulation and wood fibreboards -

Please contact us direct on 01228 711511

www.ecologicalbuildingsystems.com

sales@ecologicalbuildingsystems.com
To realise low energy healthy buildings we must insist on better building practices and materials from the design stage to the building site and put the fabric first. With our vast experience using award winning products on pioneering low energy projects Ecological Building Systems are in a unique position to impart our knowledge.

To support our products and our customers, we run a comprehensive portfolio of training and have invested in creating a ‘Centre of Knowledge’ at our Headquarters in Athboy. The Centre gives our customers the unique opportunity to view our building systems and discuss their projects in more detail. Our courses are held within the ‘Centre of Knowledge’ Training facility, with areas available to see practical demonstrations.

The two courses we currently provide are:

**Better Building Putting the Fabric First**

This course is taken by Niall Crosson & Roman Szypura (see biographies) and covers:

- Building Physics
- Natural Insulation Applications & Specification
- Airtightness & Intelligent Moisture Management
- Best Practice Detailing

**Intelligent Airtightness Training**

- This course is taken by Peter Smith & Roman Szypura (see biographies) and covers:
  - Background to the theory on Airtightness
  - Intelligent Solutions on Site
  - Practical Demonstration & Systems Overview

We run our courses throughout the year, dates can be found on our website www.ecologicalbuildingsystems.com or by telephoning us on 01228 711511 or e mailing info@ecologicalbuildingsystems.com If you are from the UK we can arrange collection and drop off at the airport, please don’t hesitate to discuss the options with us to participate.

We also offer CPDs throughout the UK, please contact us as above to discuss the requirements for your practice.

**Our ‘Airtightness & Moisture Management Using Intelligent Vapour Checks’ CPD is RIAI Certified.**

This CPD covers:

- Consequences of a lack of airtightness & common failure areas
- Moisture Management & Intelligent Membranes
- How to implement an Airtightness Strategy from the design stage to the final test on site
- Some Intelligent solutions to achieving airtightness including on-site details
- Airtightness standards

We can also offer CPDs on:

- GUTEX Wood Fibreboard Insulation System
- Natural Insulation
- Insulating Existing Buildings

**Niall Crosson**
Ecological Building Systems
Senior Technical Engineer, M.Eng.Sc. BTech, CEPHC. MIEI

Niall holds a degree as a Bachelor of Technology and a Masters of Engineering Science. He is also a Certified Passivhaus Consultant and a board member of the Irish Green Building Council. His expertise is in the area of building physics, energy conservation, hygrothermal analysis, airtightness, natural insulation, and vapour diffusion open constructions.

**Peter Smith**
Technical Sales
Ecological Building Systems

Peter Smith has been with Ecological Building Systems for 10 years, having had many years’ experience as project manager on many new build and significant conservation projects. His interest in the use of lime mortars and plaster in older buildings led to his further interest in compatible vapour permeable and breathable materials, natural insulations, and how they relate to thermal performance.

**Roman Szypura**
Clíoma House Ltd

Born in Germany, Roman undertook a 3 year apprenticeship as a joiner; he then worked for various companies as a carpenter, joiner, airtightness and insulation installer before becoming a freelance craftsman. His primary focus has always been on airtightness, natural insulation (mainly cellulose) and healthy energy efficient building. Roman is a qualified Passivhaus tradesman. He has been involved in more than 100 projects all over Ireland and Europe as a consultant and installer working on a variety of construction types.
Construction industry professionals are finding themselves faced with products and systems that can require very different skills from more traditional building materials and methods.

The ‘Centre of Knowledge’ is used to display best practice detailing with the range of innovative pro clima airtight solutions as well as natural thermal insulation: GUTEX, Thermo Hemp and Calsitherm.

“A very thorough course, executed with real professionalism. You made us feel very welcome, and I am very grateful to you all.”

“Great! Bringing all the theory to life with the demos and practical’s and seeing build-ups in the flesh!”

“The practical session was very useful. I picked up a lot of helpful tips in applying the various tapes and glues. The workshop space is also fantastic and the cut away details are a brilliant way to understand the products and their interaction with each other.”
Comprehensive product brochures are available on the products featured.

Ecological Building Systems UK Ltd
The Brown Building
Cardewlees, Carlisle, Cumbria CA5 6LF
T 01228 711511
F 01228 712280
www.ecologicalbuildingsystems.com
info@ecologicalbuildingsystems.com