PROTEKTOR®

# INTRODUCTION TO PROTEKT

## BUILDING A SUSTAINABLE FUTURE



**Jonathan Doe**
Title

# Welcome

The manufacturing and fabrication of steel has become increasingly important in driving the construction of safe and sustainable structures. However, this brings with it a large number of potentially problematic outcomes. Any architect who wants to make their imprint on green construction projects today needs to have a solid awareness of the ways in which steel contributes to a more sustainable future. This includes everything from the use of energy to the repercussions of carbon emissions.



PROTEKTOR

## RESPONSIBILITY

At **Protektor Group UK** we consider it our responsibility to ensure that the materials we work with come from reliable sources, are long-lasting and are economical. Steel is the material of choice when it comes to structural integrity; yet, not all steel is created equally.

## INNOVATION

At **Protektor Group UK** we consider it our mission is to innovate products that inspire and accelerate the building industries transition towards a sustainable future. Sustainability is embedded in Protektor's DNA and this philosophy is carried forward into the Protekt brand

**PROTEKT**

## SUSTAINABILITY

With a deep knowledge of the science behind decarbonisation at our fingertips, and a wealth of cutting-edge technology at our disposal, the moment has come to provide architects, developers and contractors throughout Europe with the ability to develop sustainably sourced building solutions that go beyond the base requirements of building regulations.

## OUR FUTURE

With **PROTEKT** at the forefront of what we do, we refocus the fabrication of steel with a fixed eye on environmental responsibility, to secure a healthy future in the built environment for generations to come.

# Contents





# Introduction to PROTEKT

## “Protect” defines as;
## “Keep safe, from harm or injury.”

**PROTEKT** is responsible for ensuring that Protektor Group UK makes a conscientious and tangible contribution to the steel industry’s push towards Net Zero and #responsiblesteel.

## Driven by PROTEKT, Protektor Group UK has made a pledge to:

**Reduce our $CO_2$ intensity by 25% by 2030**

**Reach Net-Zero by 2040, ten years in advance of the global goal**


We are firmly committed to the goals of the Paris Climate Agreement, which calls for a climate-neutral society by the year 2050. This is necessary for us to achieve our goals of containing the rise in global temperatures and reducing $CO_2$ emissions as quickly as possible. In the same spirit, we are taking measures to actively promote the #responsiblesteel effort as well as the FIS 2050 Roadmap.

As a leading supplier of building materials in the UK, it is our obligation to reduce the amount of carbon emissions produced by the industries in which we are active.


As a UK company, we have committed to reducing the $CO_2$ intensity of our fabrication process by 25% by the year 2030. With an overarching goal of reaching net-zero emissions by the year 2040, ten years earlier than our original plan. These objectives are some of the most aggressive goals that any cold-rolled steel fabricator in the country has ever set, and they are a reflection of our intention to drive genuine improvement.

# The Current State of Carbon Emissions in the Global Steel Industry

## WHERE WE ARE:

Each year, more than 2 billion tonnes of steel are produced, accounting for around 5% of global $CO_2$ emissions.

Global demand for steel is expected to rise to 2.5 billion per year by 2050.

## WHERE WE NEED TO BE:

Annual greenhouse gas emissions must fall to a total of about 500 million tonnes of $CO_2$ by 2050.

An industry wide reduction of carbon intensity from about 1.85 tonnes of $CO_2$ per metric tonne of steel to just 0.2 tonnes.

Due to its strength, longevity and versatility, steel remains one of the most commonly specified materials in the design and construction of buildings.

At the same time, it is widely accepted that the construction industry is increasingly responsible for the predicament we are currently in regarding climate change. Increased steel production and the carbon emissions that are linked with it are contributing to this, it is our responsibility as conscientious professionals to adopt a thoughtful approach when it comes to the manufacture, sourcing and fabrication of steel profiles and sections.

At present, the steel industry is struggling to achieve the necessary balance between the increasing demand for steel on a global scale and its capacity for sustainable smelting, manufacturing, and rolling.

The environmental impact is increasing; it is projected that the worldwide demand for steel will reach 2.5 billion metric tonnes per year by 2050. As a result of this, the global steel industry must reduce its annual emissions to a total of around 500 million tonnes of $CO_2$ by the year 2050. This reduction is critical if the construction industry as a whole is to achieve the goals that were determined in the Paris Climate Agreement of 2015.

In order for the industry to accomplish this goal, the carbon intensity of its production will need to be reduced from approximately 1.85 tonnes of $CO_2$ per metric tonne of steel to just 0.2 tonnes. This calls for a fundamental shift in how steel is manufactured and how it is fabricated.




The path to decarbonisation for steel companies is mostly dependent on **three key factors**:

### ENERGY EFFICIENCY

While efficiency has improved over the last few decades, energy still takes up a vast share of steel production costs (from 20% to 40%, according to the World Steel Association).

While steel is undoubtedly relied upon as a sustainable construction medium, being a leading lightweight alternative and a recyclable one, there is still much to be done to harness its durability and versatility whilst optimising energy conservation.

### SWITCHING TO ALTERNATIVE FUELS

Steelmakers worldwide must navigate the fast developing alternatives and advancements in manufacturing, as alternative fuels and production methods may be the only solution to reduce our industry's carbon intensity.

While BF/BOF efficiency programs and biomass reductants offer exciting potential as alternative fuel sources, technological advancements in steel production are still ongoing. It is up to all of us to find ways to adopt cleaner alternatives into our day-to-day operations.

### CUTTING-EDGE INNOVATION

Around the world, the steelmaking industry is taking innovation, together with decarbonisation a lot more seriously.

There have been exciting steps in recent years, such as redistributing energy to worthwhile causes, absorbing manufacturing byproducts into smarter recycling processes and introducing processes for cleaner air during production, to reduce overall emissions.

**PROTEKT's** ambition is to drive progress in the delivery of all three key factors.

# The Origins of PROTEKT

## NET ZERO

Since the later years of the previous decade, Net Zero has gradually become the benchmark to which all industrial sectors' environmental efforts have been measured, steel manufacturing, sourcing and fabrication is no different. It is one of the key factors in one of **PROTEKT's** principal goals and one of the fundamental reasons **PROTEKT** exists.

The term "Net Zero" is used to describe a situation in which the quantities of greenhouse gas emissions that are created and those that are eliminated are in a state of stability. This idea is fundamental to accomplishing society's climate-related goals on a global scale.

According to the findings of the Intergovernmental Panel on Climate Change (IPCC), the United Nations body for assessing the science of climate change, "We will not be able to put an end to the global climate crisis unless we achieve Net Zero".

To make it happen, we need global, industry-wide comprehensive road maps which clarify how Net Zero can and will be achieved.

Net Zero architecture means creating sustainable structures while reducing our global impacts on climate change. For this to happen, we need to achieve Net Zero steel.




## THE PARIS AGREEMENT

United Nations Climate Change

At the United Nations Climate Change Conference (COP21), world leaders formed the historic Paris Agreement, which establishes long-term climate goals that are intended to serve as a blueprint for all nations:

- Reduce by a significant amount global emissions of greenhouse gases in order to keep the rise in global temperature in this century to no more than 2 degrees Celsius, while continuing to make efforts to keep the rise to no more than 1.5 degrees.
- Review the commitments made by countries every five years.
- Provide financing to developing countries in order to mitigate climate change, improve resilience, and enhance their abilities to adapt to the impacts of climate change.

The Agreement requires all countries to make pledges to reduce their emissions and collaborate with one another to adapt to the effects of climate change. It also requests that governments increase the severity of their obligations over the course of the Agreement's duration.

The climate change agreement that was reached in Paris in 2015 has a significant effect on the way that the steel sector functions. Architects are able to construct long-term sustainable building designs by first comprehending the rationale behind the existence of this agreement and then determining the most effective way to benefit from it. These designs will safeguard the environment while also incorporating the most cutting-edge technologies.

# The Origins of PROTEKT


## #RESPONSIBLESTEEL

**ResponsibleSteel™** is a global initiative that focuses on the manufacturing of socially and environmentally responsible steel with a worldwide footprint of net zero emissions.

Through this initiative, companies at every level of the steel supply chain, have pledged to work together to rebuild the steel sector as a sustainable entity, developing new standards and certifications that will drive progress and continuous improvement throughout the supply chain.

This joint endeavour of stakeholders includes some of the most influential companies in the steel manufacturing and supply sectors, including Protektor Group UK.



## FIS 2050 ROADMAP

The FIS 2050 Roadmap is the UK Green Building Council's plan for accomplishing a Net Zero built environment by 2050.

The roadmap highlights the growing need to quickly close the policy gap on Net Zero homes and embodied carbon, to deliver the UK's interim target to cut 78% of emissions by 2035.

The Roadmap provides the first estimate of the annual carbon reductions that are required from buildings and infrastructure in order for the United Kingdom to reach its goal of being Net Zero by the year 2050.

The roadmap details action plans for the 14 most important stakeholder groups, for which they say a paradigm shift in their standard operating procedures is essential.


The following are examples of recommendations that are detailed in the FIS 2050 Roadmap:

- Nationwide retrofitting of existing homes
- Energy performance disclosure for non-domestic buildings
- Adoption of a design for performance approach to new buildings
- Whole life carbon measurements and agreed limits

**PROTEKT** encourages the adoption of these guidelines in the steel production industry so that it can pass on the benefits to those who design and construct the Net Zero buildings of the future.

# PROTEKT
# Mission and Values

## Protektor’s mission is to...

“Innovate products that inspire and accelerate the building industries transition towards a sustainable future.”

Sustainability is embedded in Protektor’s DNA and this philosophy is carried forward into the **PROTEKT** brand.

The **PROTEKT** brand is therefore built on the following **four key values:**

**Responsibility**

**Intent**

**Commitment**

**Ethics**

## “More responsibility, less impact”

is the ongoing commitment to sustainable product development. With people and planet at the core of Protektor’s operational strategy, we are working throughout our supply chain to build a better world.

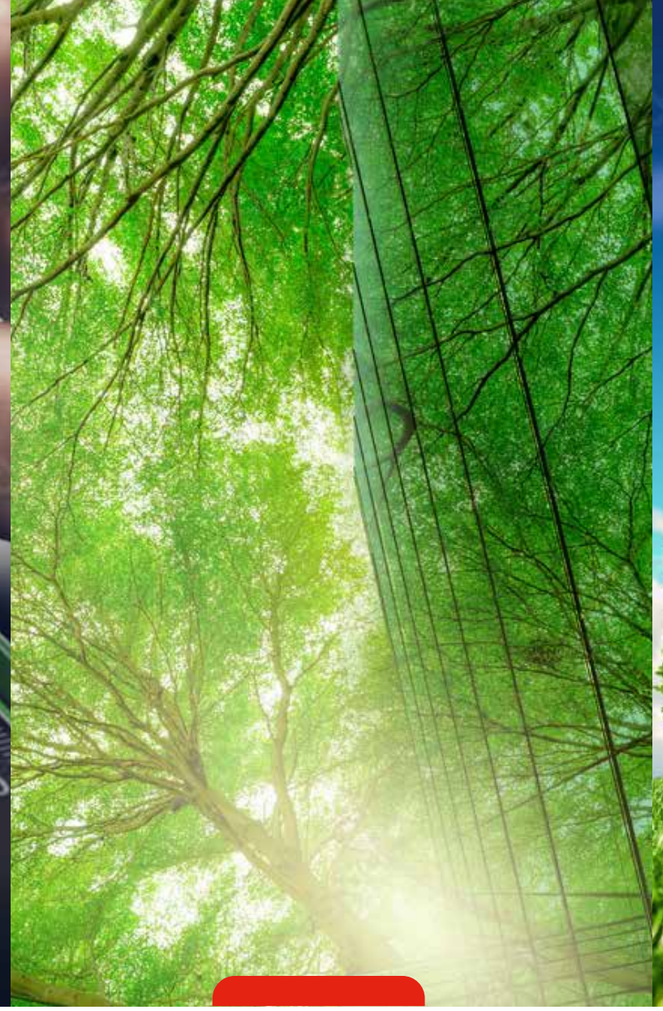
**More responsibility, less impact.**

## Responsibility

Openly acknowledging Protektor's responsibility at an organisational level is paramount to UK industry success. Protektor acknowledges Accelor Mittel's call for a collective commitment and is responsibly following and contributing to the steel industries' Net Zero 2050 roadmap.


## Intent

The intent of the Protektor Group UK is Net Zero by 2050. However, the journey to total neutrality is complex and costly and hence, Protektor must deliver its intent piecemeal, considering optimum pathways that ensure we protect people, places and planet throughout.



## Commitment

Protektor Group UK's environmental commitment is unwavering. Given the urgency of the challenge and the time taken historically for steel innovation and building product technologies to evolve and be accepted at scale, Protektor Group UK is accelerating innovation activity to get the next generation of lower-impact steel profiles out of the lab and into the market.

## Ethics

Ethical sourcing and selecting an environmentally sensitive supply chain is paramount to Protektor making an active and tangible contribution to Net Zero.

# The PROTEKT Roadmap to Decarbonisation

> “In 2018, the production of one tonne of steel resulted in an average release of **1.85 tonnes** of carbon dioxide, the steel industry in total contributed approximately **8%** of the world’s total carbon dioxide emissions.”

worldsteel ASSOCIATION

Decarbonisation in steel manufacturing is critical to achieving any of the climate goals set out in this document. It is therefore the key word in Protektor’s sustainability strategy.

It is important to understand what decarbonisation means in this context, and what self-appointed objectives and measures we are adopting to ensure continued progression in these efforts.

PROTEKT®

**Decarbonisation = Net Zero**

**Decarbonisation = #ResponsibleSteel**

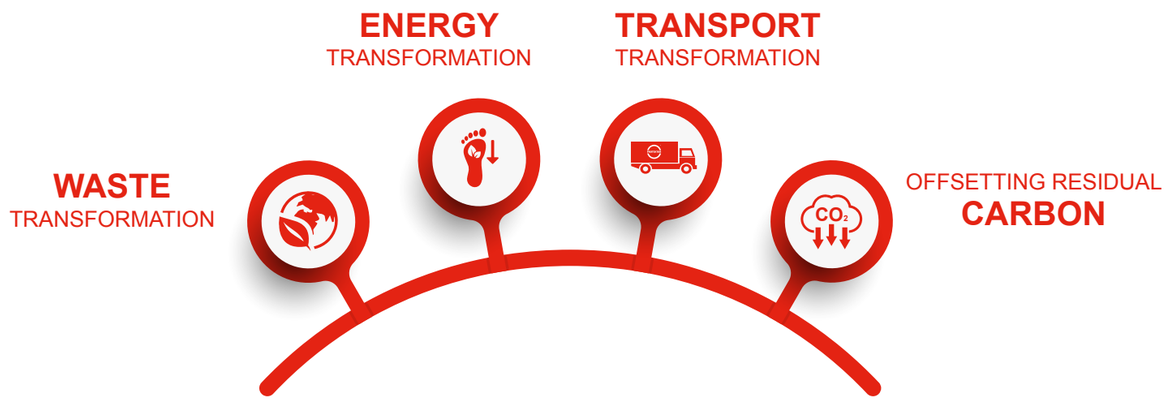


Decarbonisation literally means the reduction of carbon. However, in Protektor’s industrial world, it means adopting economic systems and production practices that sustainably reduce and compensate for the emission of carbon dioxide.

**PROTEKT** frames our decarbonisation activities. We believe that as the prominent UK construction material supplier, we have a responsibility to decarbonise the industries in which we operate.

We have set a group target to reduce our $CO_2$ intensity by 25% by 2030 and to reach net-zero by 2040, ten years in advance of the global goal. These targets are some of the country’s most ambitious of any cold-rolled steel fabricator and are reflective of our intent to drive meaningful progress.


The **PROTEKT** roadmap to decarbonisation features **four pillars** that are the foundations of our 2040 ambition:



# The Four Pillars

## 1 WASTE TRANSFORMATION

As rather the steel sector is such a vital component of the infrastructure supporting global manufacturing, it is critical that production methods be optimised to achieve the highest level of both efficiency and sustainability possible.

During the manufacture of steel and fabrication of steel profiles and sections, waste can have a negative impact not only on the environment but also on profitability; hence, minimising or eliminating waste can result in preservation of the environment as well as considerable end-user cost savings.

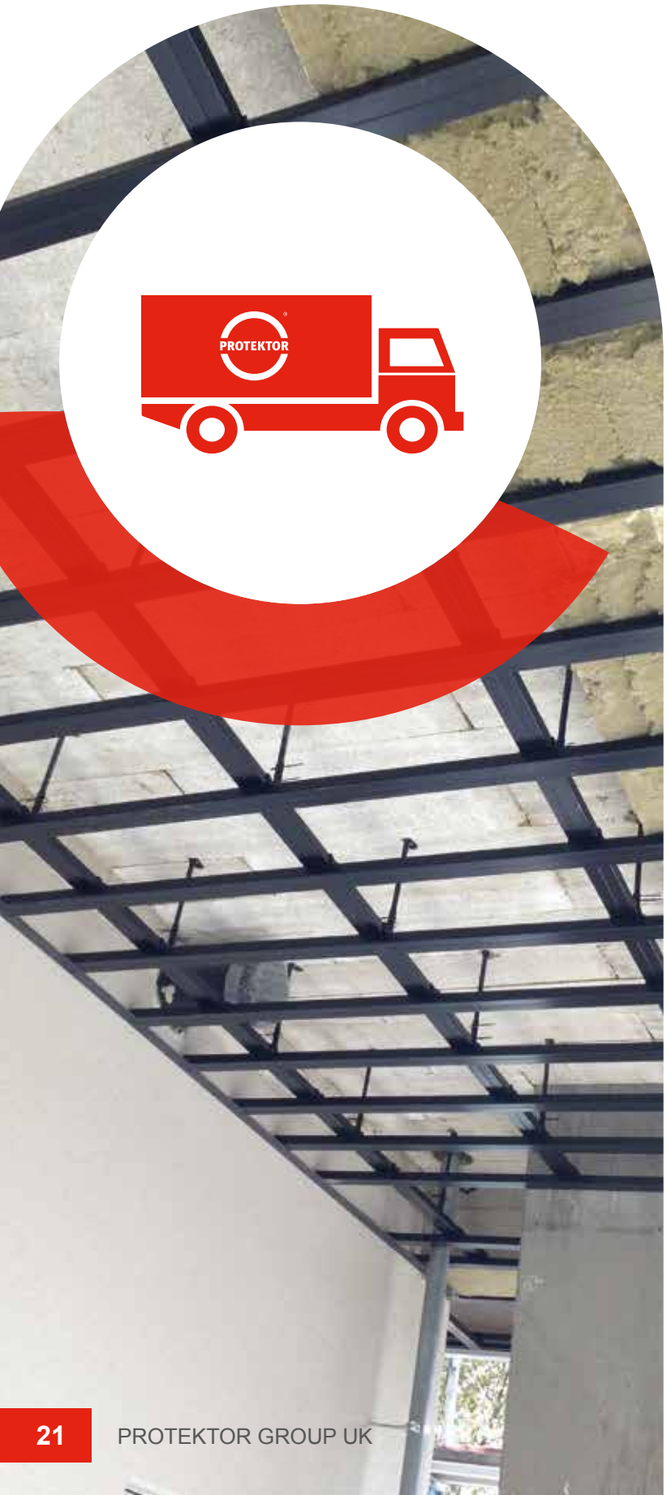
It's vital that we continue to optimise our consumption of raw materials in our production processes. Minimising waste and ensuring that our byproducts meet tight quality control requirements so that they can be used in other industry sectors. Material management, waste reduction and cradle to cradle steel processing and processes are all key drivers of transformative success.

## 2 ENERGY TRANSFORMATION

If we are conscientious about the fuel choices we use, we can ensure that sustainable manufacturing practices are implemented, which will have long term benefits for everyone involved. These long term benefits range from better quality end products being constructed, to fewer emissions, to reduced overall running costs in the supply chain.

The heavy-side steel industry has made huge strides in energy efficiency in the last decade. However, to further reduce our Scope 2 emissions, those operating in the lighter engineering segment of profile fabrication, must continue the trends set above and expand even further the use of alternative non-fossil, clean fuels in production processes.

# The Four Pillars



# 3

## TRANSPORT
### TRANSFORMATION

The procedures of disposal at the end of life and downstream transportation are strong examples of Scope 3 emissions. It is absolutely necessary for businesses in the steel industry to adopt preventative measures in order to manage Scope 3 emissions. These preventative measures can include monitoring supplies and implementing environmentally friendly supply chain practises.

A customer-focused and logistics-driven company like Protektor places a strong emphasis on the contribution that transport makes to Scope 3. In order for us to achieve our own objectives, we must make a greater effort to lower the amount of emissions produced by our logistics procedures.

In the spirit of PROTEKT, this has already begun. More efficient engines and vehicles are being introduced across our own fleet and that of our suppliers, with electric powered being at the forefront. We are also driving a shift from road to rail to ensure more energy-efficient transport of people and, where possible, products.

# The Four Pillars

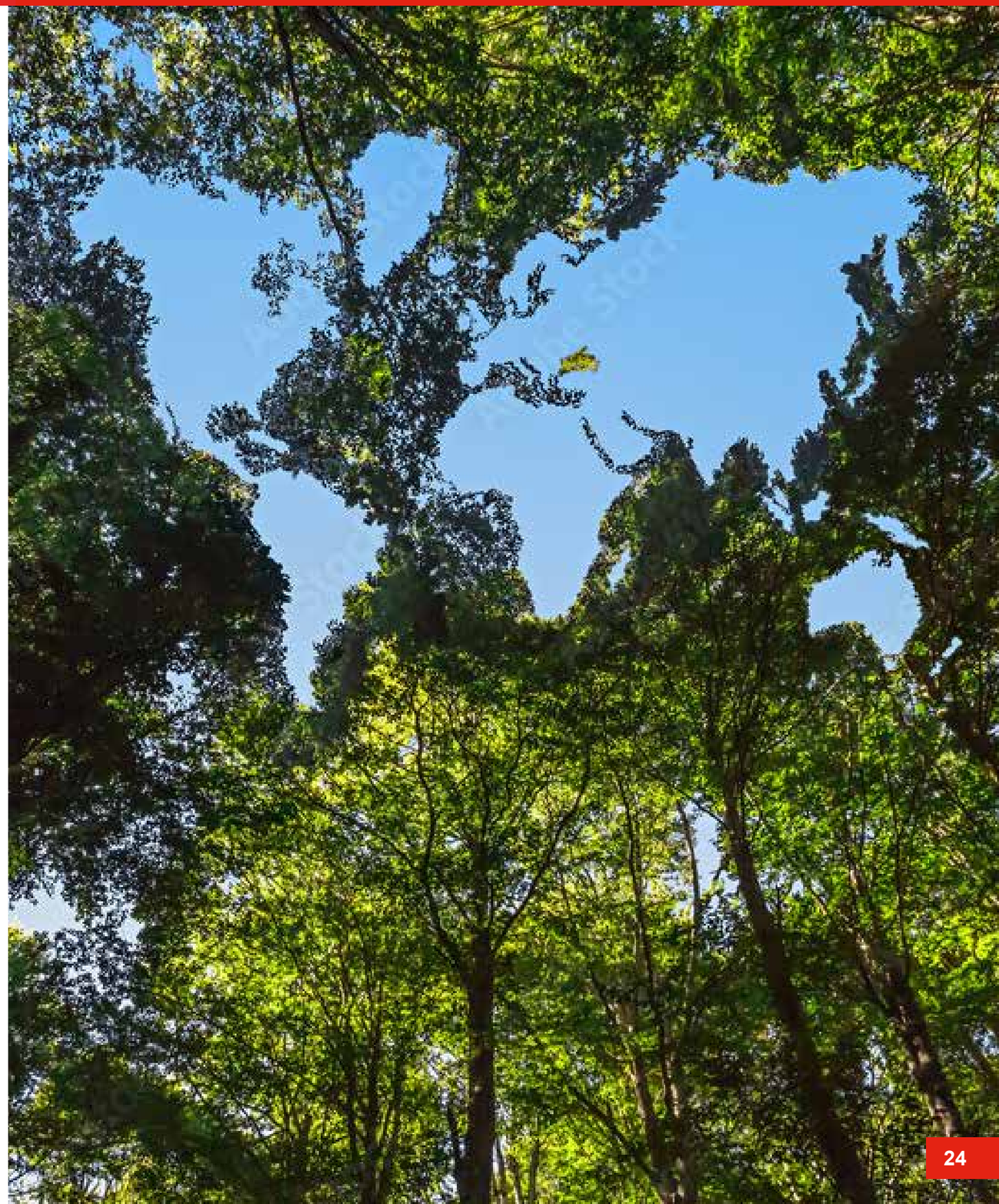

## 4

## OFFSETTING RESIDUAL CARBON

While Protektor is committed to achieving Net Zero by reducing $CO_2$ emissions to the atmosphere from its operations, there are likely to remain residual emissions for which either there will be no feasible technological solution or the solution involves unmanageable economic or social costs.

For these residual emissions, we will acquire high-quality offsets or launch projects to generate carbon credits that would not have necessarily happened without Protektor's intervention.

Protektor are able to meet the stringent criteria set by quality assurance rules because they combine rigorous analysis with sophisticated atmospheric control. This allows them to maintain the product's strength and performance without compromising on standards. In the production and fabrication of steel sections, maintaining control of the presence of residual carbon can result in the creation of improved goods and the identification of potential areas in which further advancements may be possible.

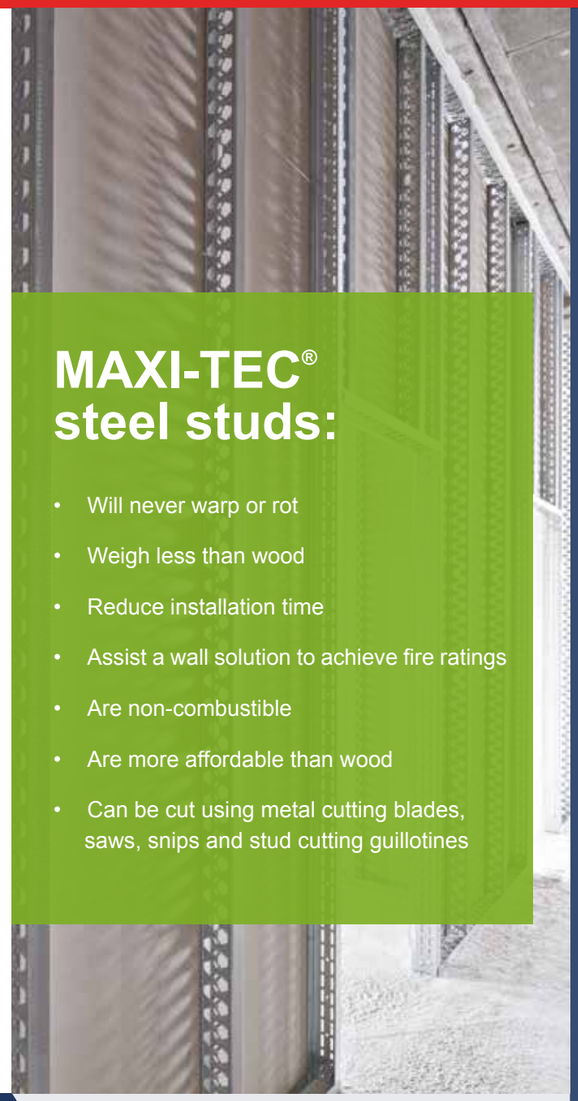


# PROTEKT in Action
# MAXI-TEC®

MAXI-TEC® is a unique product designed to be manufactured using less material, while still retaining performance and specification.

The MAXI-TEC® **high-tech** profile range offers the same **durability** and **reliability** the Protektor installers have come to expect with the additional sustainable benefits:

- ✓ Sustainable studs are manufactured with less wastage and are **available cut to length**
- ✓ Sustainable studs are **100% recyclable**
- ✓ Manufacturing process uses less raw material than traditional studs **(up to 18% less material)**
- ✓ Reduced weight and allows reduction in transport costs **(up to 18% lighter)**
- ✓ Reduced weight improves manual handling and improves productivity **(up to 18% lighter)**



## MAXI-TEC® steel studs:

- Will never warp or rot
- Weigh less than wood
- Reduce installation time
- Assist a wall solution to achieve fire ratings
- Are non-combustible
- Are more affordable than wood
- Can be cut using metal cutting blades, saws, snips and stud cutting guillotines

MAXI-TEC® HIGHTECH PROFILES



## EPD Verified

An Environmental Product Declaration (EPD) is an independently verified and registered document that communicates information about the life-cycle environmental impact and life cycle of products.

Due to Protektor's innovative manufacturing process, MAXI-TEC® achieves 1.5 MAT-2 BREEAM® EPD points.

One full load of MAXI-TEC® reduces your embodied carbon by approximately 3 tonnes.

## BREEAM Certified

BREEAM® is recognized industry-wide as the sustainability assessment framework for the built environment.

The BREEAM® process assesses products and projects' sustainability against key influencing factors such as design impact, carbon emissions, durability, resilience, adaptation to climate change, ecological value and biodiversity.

**MAXI-TEC®** profiles are **BREEAM certified** thanks to its:

- Reduction of waste materials and landfill
- Ability to recycle product
- Reduction of $CO_2$ emissions
- Reduction of operating costs
- Improved worker productivity and weight of handled product used

# More Responsibility, Less Impact

We hope you have enjoyed this introduction to Protektor's vision for a sustainable future in steel. As important as it is to architects, it is in fact everyone in the built environment who needs to take responsibility as architects of our shared, sustainable future. Through responsible sourcing of energy and materials, innovative product lines and greener, more streamlined production techniques, **PROTEKT** empowers us to put "More Responsibility, Less Impact" into action every day from now on.



PROTEKTOR

## DECARBONISATION IN ACTION

When these four controls are used in unison, **Protektor** will be able to lessen the amount of carbon dioxide that is produced by its supply chain, manufacturing operations and logistics operations.

## ENVIRONMENTAL PROTECTION

Through the values and methodologies employed under the **PROTEKT** name, we will protect the environment, while also fulfilling the demand for steel in the United Kingdom (UK) as an essential building element.

PROTEKT

## EMPOWERING ARCHITECTS

Architects all over the world stand to gain from the decarbonization of the steel industry because they will be able to construct buildings that not only meet the requirements of the people who will use them, but also make a contribution to a built environment that is more sustainable.

## LASTING INNOVATION

These buildings will have lower emissions and will provide opportunities for innovative design approaches that are beneficial to both people and the environment.

# About
# Protektor Group UK

**Since 1903, Protektor has been conceptualising, certifying and producing some of the building industry's most innovative and sustainable products.**

**Engineered to exacting German standards, but manufactured locally in the UK, Protektor products strive to consistently deliver unrivalled quality.**

As a UK group, we now boast the country's largest in-house manufactured range of exterior and interior profiles. Our customers can access our full assortment of products and services both on and offline and we ensure timely, in-full delivery. Our passion for innovation, our commitment to sustainability and our continuous push for operational excellence sets us apart from others.

## Protektor's mission is to...

To **innovate** products that **inspire** and **accelerate** the building industries transition towards a **sustainable future**.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