

**Your Complete Roofing Solution**

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# Pen-Y-Dre High School, Merthyr Tydfil

**Pen-Y-Dre High School Becomes First Carbon Neutral Refurbishment School in Wales.**

Renowned for its high standards of discipline, behaviour and achievements, Pen-Y-Dre High School is Merthyr Tydfil's award-winning education centre. The school caters for the educational and development needs of 800 pupils aged 11-16.

Set in a beautiful green campus, Pen-Y-Dre is famous for its outstanding academic and sporting facilities. The school's extensive site can accommodate a variety of activities including a full size swimming pool. Pen-Y-Dre High School is more than an educational building, it is at the heart of the local community, and is used by many groups outside the traditional school day.

When Pen-Y-Dre High School were looking to refurbish their buildings, they approached Jim Allen award winning Architectural Service Manager at Blaenau Gwent council, looking for a long-term solution to update their site.

## Client Brief and Design

Building lasting relationships is important to Alumasc, and this project is testament to that. After collaborating on several successful projects, Jim approached the Alumasc team to survey the roof area of the site, with a view to providing a durable and green proposition.

After an initial survey of the roof, our team agreed that to meet the clients brief, Alumasc's Derbigum Olivine system was the best option. Not only would it meet the need for longevity and durability with its 35 year warranty, the system would substantially reduce CO<sub>2</sub>, assisting in making Pen-Y-Dre the first net carbon High School in Wales.

## The First of its Kind

Calculations carried out by the team demonstrated there were several benefits to the Derbigum Olivine system compared to a traditional felt roof. This environmentally friendly roofing system neutralises CO<sub>2</sub> via an irreversible chemical reaction when it comes into contact with rainwater. Its proven performance means that 1m<sup>2</sup> of olivine has the capacity to capture approximately 1.75kg of CO<sub>2</sub>.

The teams' calculations highlighted the U value of the current roof was very poor. Installing the Derbigum Olivine system would improve the performance to 0.1, increasing the efficiency of the construction, keeping heat flow through the structure to a minimum, therefore reducing the school's energy costs.

With these calculations alongside a 35 year warranty, the proposal was instrumental to secure funding for the new refurbishments to Pen-Y-Dre High School, helping the school deliver their vision to become carbon neutral.

## Technical Information

Alumasc's innovative roofing system comprise a premium CO<sub>2</sub> neutralising reinforced APP polymer modified bituminous waterproofing membrane, underlays, insulation boards, with air and vapour control layers.

Surfaced with a naturally occurring mineral upper layer, this layer initiates a chemical reaction with CO<sub>2</sub> from rainwater, irreversibly neutralising the pollutant on contact.

The Olivine granules cause a chemical reaction in CO<sub>2</sub> in rainwater which converts it to silicon dioxide (sand) and magnesium carbonate, two products harmless to the environment.

Complete with BBA certification, Derbigum Olivine is a fully warranted system with a life expectancy of up to 50 years. Although the olivine grains decrease in size with each reaction, the grains are large enough to span an impressive 30 years before having completely reacted. Not only is the system durable, it is sustainable, as the membranes used are 100% recyclable.

## Long Term Relationships

We pride ourselves on building strong relationships within the industry. Our clients trust us to deliver on our promises. Having worked with Jim Allen and Morgan Sindall on previous successful projects meant they knew they were in a safe pair of hands. Construction of the site is being completed whilst the school is still in operation. Together with the contractors the Alumasc team are supporting the build to ensure minimum disruption to the school's activities.

As part of the Alumasc Roofing service we offer transparent quality checking and timely site reporting. We are always on-site to assist clients before, during and after the installation.

All projects come with their challenges but a roofing supplier's ability and willingness to tackle them in collaboration with the client and contractor is of key importance to Alumasc Roofing.

## Project Data:

**Project:** To deliver a 7,000m<sup>2</sup> sustainable roofing system.

**Products:** Derbigum Olivine

**Performance:** CO<sub>2</sub> neutralising capabilities, improved U value with a 35-year warranty.

