

EDUCATION

SCHOOLS | ACADEMIES | COLLEGES

A quick guide to flat roof design, construction
and asset management



OUR PHILOSOPHY



WHO ARE **WE**?

Axter innovate, design and make high quality, reliable waterproofing systems that are built to last.

Our mission is to protect buildings and people from the elements by designing and manufacturing the highest quality waterproofing membranes, while delivering an 'above and beyond' service that instils trust in our customers and positions us as a premium yet cost effective provider.

HOW CAN WE HELP **YOU**?

For educational building refurbishment projects we help clients to proactively manage their building asset portfolio in order to avoid roofs falling into disrepair and suffering potential classroom disruption.

Our vast experience in this sector ensures we not only deliver on the practicalities of design, regulatory compliance, safe implementation and long-term performance, but that we understand the importance of budgeting and can assist with all stages of the funding process.

WATERPROOFING IS FUNDAMENTAL. THAT'S OUR PHILOSOPHY.

NEWLY FORMED ACADEMIES

As part of the process of transferring an Academy from Local Authority control, a lot of the due diligence emphasis is around assessment of educational performance, historic, current and future admissions data, finance, operations, leadership, management and governance. These are important in their own rights as they are critical and must be properly assessed.

However, the risks of not assessing the current condition of the buildings and land and not understanding the future maintenance, improvement and repair as well as running costs could result in significant outlays being incurred later that cannot then be recovered or insufficient funds being set aside for these elements.

Some Academies and Trusts appear unaware that the property (and land costs) are a significant part of their annual expenditure, or fail to notice that their building stock may be dated and in need of significant investment to bring it up to current standards, especially for elements such as roofs where deterioration may not be directly visible. This could therefore have significant impact on the teaching environment, leaving the Trust with no option later but to further delay repair/ replacement works or worst case closure of classrooms and key support spaces as no funds are immediately available.



A pro-active approach will ensure that credible and quantifiable evidence is submitted to a sponsor and this must include the extent of any liabilities that form part of the transferred building and land assets. The condition survey which addresses all aspects of the Academy's built environment is a major part of this and provides the Sponsor or new Academy with a costed appreciation of the risks and liabilities identified, with details ranked under a scoring criteria of A-D for condition and 1-4 for priority. The roof will form a major part of this.

CIF

The Condition Improvement Fund (CIF) is a government incentive that's designed to help schools and academies improve the condition of their buildings and premises. Applicants apply for financial resources through the Education and Skills Funding Agency (ESFA) via an online portal and the fund addresses:

- ✓ Health and safety issues
- ✓ Building compliance
- ✓ Expansion projects
- ✓ Improving energy efficiency

The core priority is to address any significant condition needs, keeping buildings safe and in good working order. As such, many roofing works will fall within the CIF's high priority level for maintaining building condition of a teaching environment or key support space.

DESIGN INSTALLATION GUARANTEE

A GUIDE TO A DEFECT FREE ROOF...



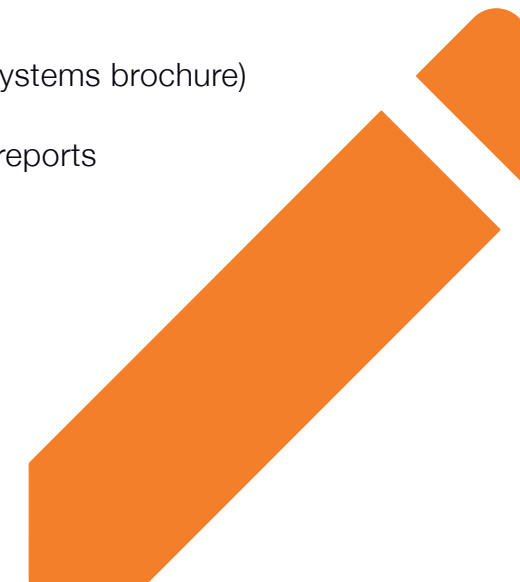
1. IDENTIFY & ANALYSE

- Early engagement with all parties to fully understand the clients' requirements will ensure that the correct material specification is produced based upon the immediacy, scope and needs of the building, as well as the budget and guarantee duration needed.
- For refurbishment projects, a comprehensive assessment of the existing roof make-up and analysis of key details will involve one or all of several processes, including; Core samples, roof survey, drone survey, moisture mapping, thermographic imaging etc.
 - Identification of risk and liabilities, with roof areas individually marked and ranked under a scoring criteria of A-D for condition and 1-4 for priority
 - Assessment of key statutory requirements:
 - ✓ Fire safety checklist
 - ✓ BB93
 - ✓ Thermal Compliance – Part L
 - ✓ Access – Part M



2. PRODUCT SELECTION, DESIGN & SPECIFICATION

- Choosing the right product for the right application
- Axter total roofing product package (please refer to the Axter Waterproofing Systems brochure)
- Detailed material specification schedules, roof survey and separate condition reports prepared for each and every roof
- BIM models of all core systems
- Comprehensive roofing details (project specific and bespoke design as required)
- Compliance with BS, Building Regulations and third party insurer requirements



3. MANUFACTURE & SUPPLY

- ISO9001/ ISO14001 Factory Certification
- Third party certification - BBA, ETA and BRE approvals
- Products ordered, made and delivered direct to site in best condition and on time



4. APPROVED INSTALLATION

- Qualified multi-disciplined contractors
- Specialist product training
- Signed deed of appointment
- In order to ensure a competitive tender, a comprehensive list of national, regional and locally approved and trained Axtershield roofing contractors will be provided. Each company will carry trained operatives in any one or more of the key flat roofing disciplines including: Hot Melt, Reinforced Bituminous Membranes, Single-Ply PVC and Cold Applied Liquids



5. ON-SITE QUALITY ASSURANCE

- Robust Quality Audit inspections by Axter QA team which can be copied in directly to client/site team and the approved Axtershield Installer
- Pre-start meetings in order to agree a scheduled programme of work with regular QA inspections and, where required, third party testing



6. GUARANTEE & MAINTENANCE

- Guarantee Issue - covering design, materials, workmanship and installer insolvency for up to 35 Years.
- Operation and maintenance pack handover
- Free 1st year healthcare check - designed to educate and ensure all future roof inspections are carried out correctly



QUALITY ASSURANCE



Site quality audits

To give further confidence to clients and in accordance with Axter's Quality Assurance procedures, our Quality Division makes scheduled and unannounced visits to sites to assess the quality of the installation and to raise any discrepancies between the original Axter specification and the site as built. The frequency of such visits depends on the size of the contract and type of guarantee specified.

Maintenance

We are committed to ensuring that our roofs out perform the guarantee term and we will always be on hand to assist our clients. Regular (bi-annual) inspection of the completed roofing is imperative to ensure that rainwater outlets and gutters are clear of debris and that any observed defect is rectified by the installer under the terms of the guarantee.

Guarantee

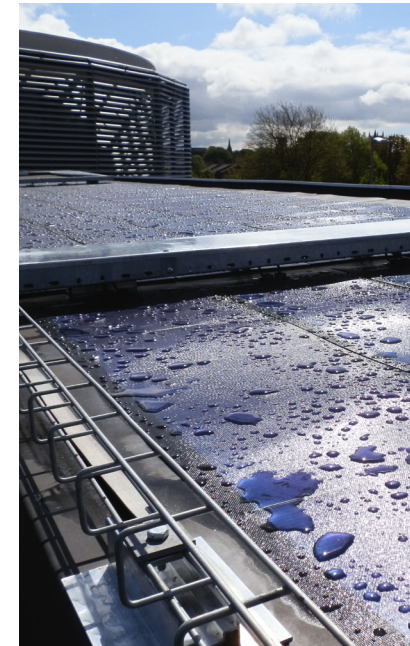
We provide comprehensive insurance backed guarantees for periods of up to 35 years covering materials, design and workmanship. We offer three levels of guarantee and a range of guarantee periods depending on the system specification. Platinum is our most comprehensive guarantee which can be issued for up to 35 years and provides insurance backed protection for workmanship, materials, design and installer insolvency.

USE YOUR ROOF

Provided the structure can withstand the load, flat roofs are a great place to locate green and renewable technologies.

Not only can this save money by lowering energy bills and help improve the environment by reducing your carbon footprint, but it raises awareness amongst pupils and the local community about green and renewable technology, i.e. using the roof space as a teaching resource.

If you are interested in learning about how your roof space can be better utilised, please get in touch.



CASE STUDIES



NEWCASTLE UNDER LYME COLLEGE

Location - Newcastle Under Lyme

Client - Newcastle Under Lyme College

Specifier - Newcastle Under Lyme College

Axtershield Installer - Torclad



BEFORE



AFTER

Challenges

Upon the opening of a new Renewable Energy training module the college was embarking on, our client wanted to integrate a live Photovoltaic system both as an investment and more poignantly a teaching opportunity. However, the existing roof structure and waterproofing system didn't allow for a conventional Crystalline array owing to weight load and attachment issues, and so Axter's lightweight General Solar PV modules were the perfect low profile, lightweight option.

Solutions

Lightweight (less than 7kg/m²), low profile (5mm build-up) and hard wearing (Teflon coated), these roofing integrated Amorphous thin film Solar PV modules were the ideal product this type of application. An outline PV array design and payback calculation was provided by Axter, and once instructed the works were installed in a matter of days with all of the modules and tooling being passed up through the Roof Access hatch. The Bandfix Velcro system proved the perfect non-penetrative retro-fit solution.

Systems used

- Axter's General SOLAR Amorphous Thin Film Solar PV system onto an existing TPO membrane
- General SOLAR Amorphous Thin Film PV 136Wp modules
- Bandfix Velcro system

DURHAM LANE PRIMARY SCHOOL

Location - Stockton-on-Tees

Client - Stockton-on-Tees Borough Council

Axtershield Installer - Barclay Roofing



BEFORE



AFTER

Challenges

The existing bituminous waterproofing was showing signs of wear and isolated areas of leaks were occurring, presenting classroom disruption. For funding purposes, the roof area was inspected and separated into two phases. Phase 1 of the roofing works presented a number of potential fire risks with combustible substrates and penetrations. The existing make-up performed poorly when tested against current building regulations (Part L and BB93) and improvements were recommended.

Solutions

Following minor remedial works, the existing substrate was sufficient enough to be utilised as a vapour control layer. Both thermal and acoustic upgrades were introduced with Axter's Hytherm MW mineral wool insulation, ensuring a suitably sound teaching environment. To complete the insulation, Axter's Hyranger Reinforced Bituminous waterproofing system was installed achieving a 20year insurance backed guarantee. In accordance with the NFRC's Safe 2 Torch guidelines, a cold applied liquid was required for detailing to fire risk areas; in this instance, Starcoat R was the system of choice due to uniform aesthetical finish and cost.

Systems used

- HYRANGER 40 PY FP / FORCE SA
- HYTHERM MW THERMAL INSULATION
- STARCOAT R to all fire risk areas

KING SOLOMON SCHOOL

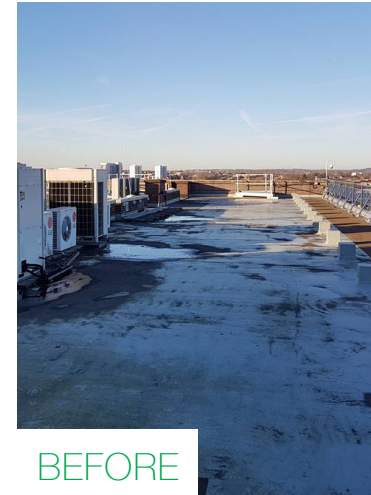
Location - Birmingham

Client - King Solomon International Business School

Developer - Bouygues

Architect - Associated Architects

Axtershield Installer - NRA Roofing & Flooring



BEFORE



AFTER

Challenges

Excessive water ingress was present and the internal top floor of the building was not suitable to be used as a teaching space. Due to the building changing use from office to education, a full survey of the roof covering was required. Excessive moisture was found within the existing asphalt covering. The roof area presented many challenges with complex detailing to existing balustrade posts, live mobile telephone masts and large quantities of plant / M&E installed.

Solutions

A full strip of the roof covering was the only solution due to the high level of water ingress. The existing asphalt covering was removed ready for installation of a new Axter Excel RBM system, with Hytherm ADH PIR thermal insulation. Much of the existing M&E was found to be redundant and could safely be removed from the roof area. The complex detailing to the balustrades and fire risk areas was simplified using Starcoat PMMA allowing for a long term, robust and financially viable solution. High level roof areas were detailed with ease using Starcoat PMMA. Successful installation provided a piece of mind roof covering for the next 25 years, supported by Axter's Platinumshield Guarantee.

Systems used

- EXCEL warm roof with PIR insulation
- STARCOAT PMMA to fire risk areas, complex details and high level curved roof areas





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