

## The Case for Fibre Cement

By Graham Nye, FloR, roofing consultant

Manufacturers' guarantees for roofing products are often cloaked in a maze of conditions that are usually ignored by property owners or managers until such time as a problem with the roof arises.

Building owners do not appreciate the need for regular maintenance of their roofs and this particularly applies to metal roofs where the build-up of moisture and detritus at end laps accelerates corrosion. How often are roofs completed without there being a formal and adequate inspection and maintenance programme established to ensure their longevity?

Anyone with roofing experience extending back a couple of decades or so will have knowledge and experience of a product that had been used for roofing since the early part of this century, namely asbestos cement roofing sheets.

Buildings roofed with asbestos cement sheets were deemed to have a minimum life span of 40+ years. A journey today around the highways and byways of the United Kingdom will see buildings roofed in asbestos cement that are still performing as originally intended having been fixed some 50 years ago.

This product was recognised as the prime roofing sheet for all manner of buildings from large-span factories to domestic dwellings, not only providing weather protection but also exceptional resistance to the ever-increasing attack from rain-borne pollutants and their corrosive effects on sheet surfaces and edges.

Today, asbestos cement has been replaced with fibre cement. Following extensive research, development and testing by manufacturers and indeed the British Board of Agrément, it is clear that fibre cement will have a similar lifespan as asbestos cement.

Fibre cement product guarantees are now available from manufacturers for periods of 30 years and unlike metal profiles will not suffer from all the renowned problems associated with cut edge corrosion, with all its implications for repair and maintenance.

Therefore, there is now a very strong case for specifiers and building developers to reassess the benefits of using fibre cement as a strong alternative to metal profiles.

The benefits to the building owner in using fibre cement is that not only is it completely weatherproof:

- It is also a cementitious product with no metallic content, therefore there is no risk of corrosion.
- It is therefore most suitable for use in aggressive or marine atmospheres,
- It is minimally effected by frost or climatic temperature changes,
- Its vapour permeability significantly reduces the risk of



The 5000m<sup>2</sup> roof at the research facility in Berkshire - Designers - Scottish Agricultural Colleges' Design services.

- condensation,
- It has low thermal conductivity that reduces heat build-up in summer and heat loss in winter,
- It provides excellent acoustic insulation with substantial mean airborne sound reductions,
- There is a significant range of colour finishes.

And most significant of all is the recent development that has eliminated the fragility stigma by the fact that under the latest test for fragility of roofing assemblies (ACR (M) 001:2000) the popular profiles of fibre cement roof sheets suitable for larger projects are now classified as Class C non fragile.

Typically, the benefits of fibre cement over metal were clearly illustrated when architects Taylor Associates of Ayr were presented with the job of designing a new cattle market and auctioneers' ring.

They realised there were several important factors that had to be taken into consideration. Firstly, the new building was to be situated only a short distance from the sea. This meant that exposed metals would be likely to rust very quickly due to the high instance of wind-blown salts.

Secondly, the great numbers of cattle being brought in and out of the building would mean the internal atmosphere - hot and humid - would contribute almost as much to corrosion of roofing materials as salt.

Noise control was also an important consideration. The size of the building meant that care had to be taken to ensure the roof did not amplify rain drumming on it, distressing cattle and distracting people.

Finally, the architects wanted a material that could offer them a wide enough range of colours to ensure they could match the roofing to the landscape. Only fibre cement profiled sheeting could fulfil those requirements - non-metallic (no rust or corrosion), vapour permeable (no condensation), good sound reduction and a real choice of colour finishes.

In respect of vapour permeability, fibre cement sheeting is able to absorb up to 25% of its dry weight in moisture and dissipate it in more favourable conditions. This material characteristic has a significant effect in reducing condensation occurrence.

Mean airborne sound reduction (SRI) performances are expressed in decibels and here again fibre cement excels over metal. A roof which is covered in a 50mm thick composite metal panel will rate an average SRI of less than 24 decibels whereas a fibre cement double-skin insulated system will achieve an average SRI of 41 decibels. Even a single-skin fibre cement roof will rate an average SRI of 26 decibels. These figures are achieved when the products are tested in the critical frequency range of 100 - 3150 Hz.

All these benefits are recognised by many discerning architects and designers and are well illustrated in the photographs. Graham Nye is a roofing consultant and a member of the RDBA, he can be contacted on 01395 224691



The International League for the Protection of Horses new rescue centre near Blackpool - Designers - Smith Gore Chartered surveyors.