

Don't get boxed in

Bill Kenyon and Neil Sarsfield, part of a team of technical support engineers at Ultraframe, share their experiences with particular reference to box gutters.

Without doubt, conservatory designers have increasingly pushed the boundaries in the last few years. Whether this is due to companies developing more adoptable systems or because consumers are asking for more complex designs, it is difficult to tell - perhaps it is a combination of both forces in equal measure.

So, whilst company's continue to innovate, have installers skills kept pace? Horror stories, thankfully few and far between, are anecdotal - box gutters screwed to rotten fascia boards or fastened simply with expanding foam. More likely legend than fact, our intention is to focus on the correct installation of box gutters as around 15% of all roofs now feature this component.

•What does it do?

But what is the purpose of a box gutter? Its primary purpose is to take copious amounts of rainfall, usually from one or possibly two adjoining roofs, and dispose of it quickly and effectively. Box gutters also fulfil secondary objectives such as providing access routes for cleaning and also providing structural stability. It is important, therefore, that all known uses of the box gutter are known at the outset, so that proper provision is made for structural performance.

•The survey

An accurate survey is always the best starting point. 'A stitch in time saves nine' can equally be applied to conservatory construction. Always check if wall are plumb and square, vitally important when 90° internal box gutters are concerned. Overlooking or worse, ignoring problems at this stage, will only lead to more serious problems down the line - sloping ridges, glazing bars that are not parallel, polycarbonate or more serious, glass units that do not fit.

When it comes to installation, the box gutter

is normally fitted first. If the box gutter is to be fitted to an existing timber fascia, it is imperative that the condition of the timber is checked. At best this may mean the use of a screwdriver to probe into the timber or it may mean removal of the bottom course of tiles. rafter ends will also need inspections. Timber noggins may need to be inserted behind the fascia board to adequately support the box gutter at the correct fixing centres. Simple wood screws may not be enough and coach bolts may be required.

If the structure is of a masonry construction, the preferred method is the deployment of anchor bolts which are more suitable than hammer activated anchors. Anchor bolts with their hexagonal head and washers not only expand and grip the masonry substrate but also draw the box gutter into the wall.

However, depending upon the width of box gutter, more support may be needed than simply bolting to the structure. 'L' shaped structural support brackets sometimes known as gallow brackets, may be deployed but they must be more than simply a decorative item. Another option is to weld straps across the width of the box gutter at suitable intervals, thereby preventing it from folding in on itself under extreme loads. For box gutters that are manufactured up to 600mm wide we suggest that masonry piers are the only suitable option. These must be tied to the existing building to form a structural pier to support these substantial gutters.

Historically, box gutters were made from steel or lead lined timber. But

today, structural grade aluminium is used which is usually insulated and then capped internally with PVC-U - all with the simple objective of minimising condensation.

Installers need not fear installations that incorporate box gutters - just show a healthy respects. Roofing system manufacturers or fabricators can offer advice - just ensure that it is sought prior to design and installation and not when a problem occurs post installation.

