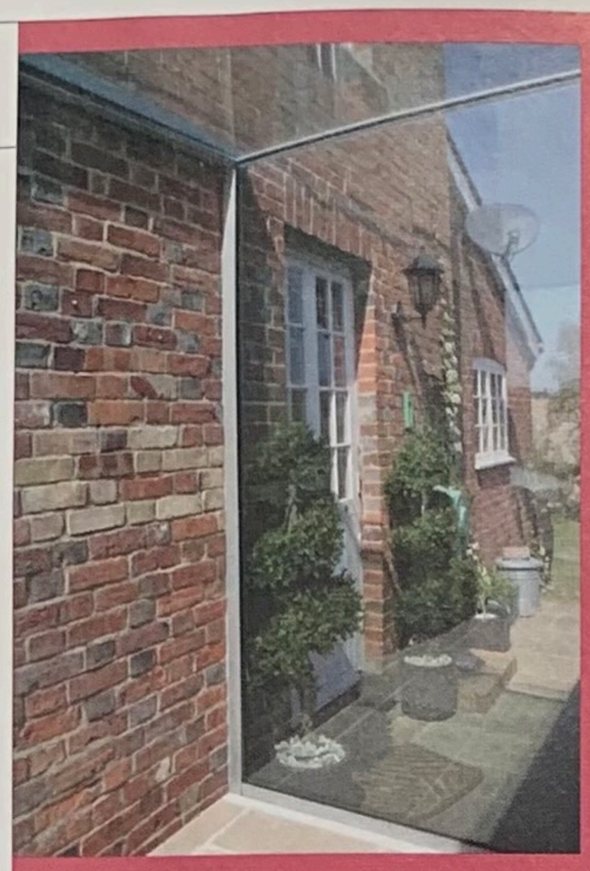

Ion Glass was commissioned to create a fully bespoke structural glass link in this listed oast house to connect the newly built dining and entertainment area to the kitchen in the original building. Made from clear laminated glass the panels are double-glazed for full heat insulation, ensuring the link is fully compliant with Building Regulations and heat loss regulations. The glass wall and roof panels were individually manufactured to fit precisely within the space.

Each wall panel is set into bespoke stainless steel channels at floor level and fixed between stainless steel angles to the walls on either side. Pressed zinc flashings ensure the glass is structurally integral to the building and fully watertight.

THINK ABOUT ORIENTATION

If you opt for a seamless glass box then there are a few things to keep in mind regarding solar gain and ventilation. If the space faces due south you'll need a method of controlling solar gain. This can be done by using some of the structure as shading — structural overhangs, for example. There are also specialist coatings that can be added to the glass to reduce solar heat gain. Your specialist glass supplier will provide an indication of what's available.

DON'T OVERLOOK VENTILATION

Although a glazed link is just a passage from one building to another, it's still important to consider how to ventilate it. External doors, windows and rooflights are all good options. This may seem like an obvious design detail, but it's not one to overlook.

CONSIDER THE ROOF LINE

The roof of a glazed link could be solid laminated glass or alternatively you could choose an insulated lantern arrangement, which can be flat or pitched.

A fully-glazed roof should never be totally flat. In order to shed water, it needs a slope somewhere between 3° and 5°. There are specialist coatings that can be applied to the glass to assist with maintenance and reduce the amount of residue left on the it, including a range of water-repellant applications.

Designing a solid roof with a central glazed rooflight will draw light into the centre of the link. The main challenge here will be the thickness. When it comes to roofs, the easy way to get around this is to favour a flat roof with solid laminated glass. The glass specified for such a roof (or wall), is not likely, even if laminated in several sections, to be more than 75mm at the very most.

PLANNING REGULATIONS

There's no getting around the necessity of working within the bounds of what your local planning authority will deem appropriate. Furthermore, if the house is listed, or in a conservation area or area of outstanding natural beauty, you will have to enter into dialogue with the local conservation officer.

Conservation officers are there to advise and protect any heritage assets within a defined area. They will judge any proposal on its merits. In many cases conservation officers will look favourably on pure, transparent structures like the ones we're discussing here, as they allow existing structures of historical significance to exist without any visual distraction.

THE COST

The most affordable glazed links will be those that span the shortest distance between new and old buildings and use standard sizes of extruded steel or aluminium rather than specialist lengths and shapes for roof pitches. Using glass for the entire structure, including beams and columns, will always be the most expensive option.

If your structural engineer specifies laminated glass, which has the outer pain heat treated to make it stronger and less prone to damage, the cost would be around £1,500/m². H

WHAT TO CONSIDER

1. Research your architect, structural engineer and specialist supplier of glass and check they have a track record with such structures.
2. Make sure the orientation of the space will not create major solar gain and overheating if the roof is glazed.
3. Think about how you might hide the structure into adjacent walls, to create a seamless space.
4. Check if you need to consult with planning and Building Regulations and seek approval.
5. Consider maintenance with a glass structure, how will you do this or reduce the need to do it?