

# Loft Conversions with Trussed Rafter Roofs

A Trussed Rafter Association Product Data Sheet  
Sheet No.8



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# Trussed Rafter Association

## Product Data Sheet

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***“Trussed rafter members should NEVER be removed or modified in any way without first reinforcing the roof and this will need overseeing by a qualified, professional engineer or architect”***

There is a quiet revolution going on in the housebuilding industry which impacts on many householders. Until a few years ago most house roofs were constructed with simple trussed rafters; lightweight yet robust frameworks constructed from specially selected timber joined with patented connector plates.

In recent years financial pressure and shortage of land has encouraged builders to review their building habits and nowhere more so than in the roofspace. Around one third of all new house roofs are constructed using specially designed 'Room in the Roof' or 'Attic' trussed rafters which are constructed using the same tried and tested techniques as in the past but now intrinsically include roof space accommodation within the design.

Once the trusses are fixed in place you automatically have roof level space for a couple of new bedrooms or a study, all on the same plot size as before. All this and better looking houses too – there can be no denying that the move towards steeper pitched roofs and dormer windows has improved the appearance of new homes.

Is it any wonder then that owners of existing houses aspire to the same advantages of functionality and lifestyle – but there can be pitfalls awaiting the unwary. Firstly, be aware that if your roof pitch is much less than 30° or your roof span less than, say, 6 metres, then a worthwhile roof conversion is likely to be impractical. The only possibility may be to remove the roof completely and replace it with modern 'Room in the Roof' trussed rafters.

If the size of your roof makes conversion to roof space accommodation practical then, before you proceed any further, please take some professional advice from a local engineer or architect. If the home was built at any time within the past 40 years then it will almost certainly have trussed rafters as the structural skeleton of the roof.

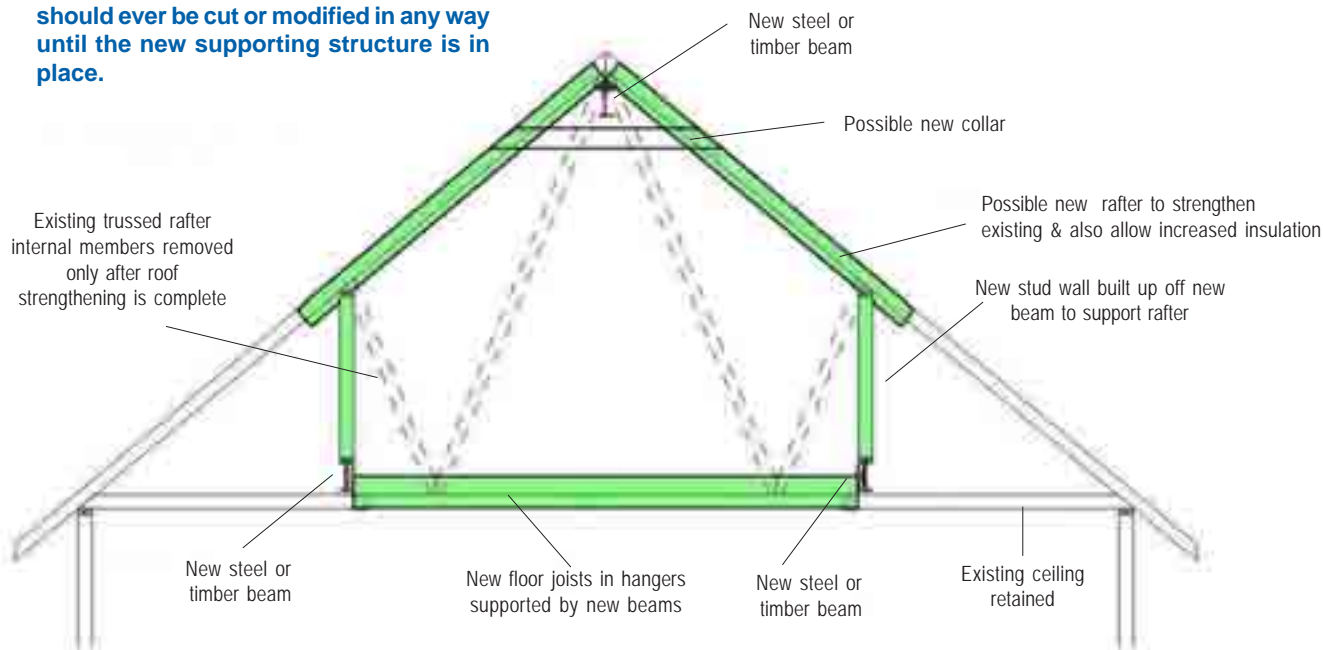
Trussed rafters have many advantages for the builder being strong and lightweight and deriving their overall strength from the combination of external and internal members joined by steel nailplates.

Hereby lies the problem. Trussed rafter members should NEVER be removed or modified without first reinforcing the roof by some other means (for example, the introduction of purlins and binders to support the main members of the truss). Larger



Photo courtesy of the VELUX Company

The following sketch shows a typical but entirely hypothetical solution to trussed rafter roof conversion. Its intention is to emphasise the fact that **NO** trussed rafter should ever be cut or modified in any way until the new supporting structure is in place.



**Fig 1. A typical arrangement of new roof members**

joint members will have to be introduced to support the new floor. This strengthening is not something to be left to the untrained, it does need overseeing by a qualified, professional designer. Not to do so could lead to serious structural implications.

In any event, the conversion of a roof comes under the control of the Building Regulations, not just because of the structural changes but, for example, thermal insulation and fire safety are strictly controlled. In some cases the roof conversion may affect other parts of your property such as the need

for fire doors off the staircase in order to ensure a safe means of escape. Therefore, you are going to need help from a professional.

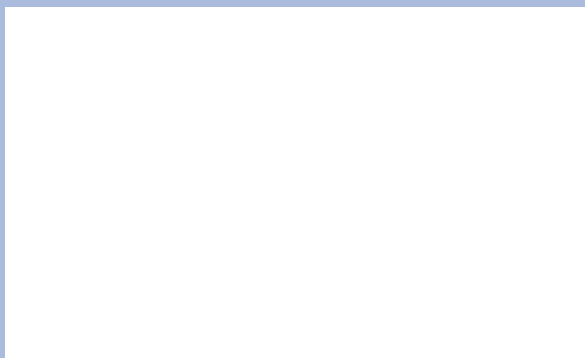
Surely this investment in your property, which could reward you both financially and from a lifestyle point of view, deserves to be supervised by an expert – either a local engineer or architect or by one of the specialist companies who offer roof conversion. As with any company carrying out work on your home, ask for references from them for other similar, successful projects that they have completed.

*This Product Data Sheet has been produced specifically to warn householders of the perils of modifying trussed rafter roofs in order to provide roofspace accommodation without first seeking experienced, professional advice.*

*The solution shown in Fig 1 is for illustrative purposes only and is not intended nor should it be taken to illustrate a specific solution to any individual roof situation.*

*Further detailed reading on trussed rafter roof construction can also be found in the 'Technical Handbook - Site Installation Guide' which is a priced publication available from the Trussed Rafter Association.*

*The guidelines contained within this Product Data Sheet are given in good faith but without liability and its use shall be entirely at the risk of the user.*



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