

# **Traditional Tudor Timber Frame Properties**

## **and their common problems**

If you need help and advice with regard to traditional timber frame properties, or modern timber frame properties, structural surveys, building surveys, structural defects reports, including things such as cracks, dampness, condensation, foundation problems, etc, please free phone 0800 298 5424 for a friendly chat.

### **Property problem information sheets**

This is one article in a series of articles covering different property eras and their typical problems. We have looked at:

1. Traditional Tudor timber frame
2. Georgian and Regency
3. Victorian and Edwardian
4. Post-War years
5. Modern timber frame

In this article we are looking at traditional Tudor frame properties and their associated problems.

We would advise that the property problems can be very specific to the area and location of the property, or even the direction it is facing, i.e. north, south, east or west elevations can each have their individual problems. The defects and problems also relate to the mixture of building materials used, this can range from small repairs to where alterations and extensions have been carried out, and, of course, the age and general standard of the original construction and any additional maintenance that has taken place on taken place on the property. Having said all of that we have given you a general indication of the typical problems that traditional Tudor frame properties have, which we hope will be a useful free guide.

This series of free property problems articles unfortunately cannot be conclusive, as there are whole books, thesis', Phd's, Doctorate studies have been written on smaller subjects! If we could refer you to some we would recommend:

### **General books on the era, or period, of property:**

The Repair and Maintenance of Houses by Ian Melville FRICS and Ian A. Gordon FRICS. Estates Gazette publication

Recognising Wood Rot and Insect Damage in Buildings, which is a Building Research Establishment report (BRE).

Discovering Timber Frame Buildings by Richard Harris, Published by Shire Limited

A Checklist for Structural Surveys of Period Timber Framed Buildings, Text and illustrated by David J. Swindells and Malcolm Hutchings, Published by the Royal Institution of Chartered Surveyors

## **Building surveying from the top down**

In this series of problem property articles, we have looked at the properties from the top down, much as a surveyor would when carrying out a building survey, or, as it is commonly known, a full structural survey, or an engineer's report. You will find different property problems and defects, everything from dampness in the walls to condensation (very difficult to tell the difference between the very different costs in putting right), to articles on cracking, foundations and drains, in the quick link section of the [www.1stAssociated.co.uk](http://www.1stAssociated.co.uk) website.

## **Tudor properties**

The Tudor era was from the late 1400's through to the early 1600's. We think it is much more accurate to give general dates, as, unlike the reigning monarchies in question, the style of construction didn't instantly stop on their death or abdication.

## **Key features of a traditional timber frame property**

Interestingly, timber frame properties do not necessarily enable you to see the timber frame. This can be hidden with the render, hopefully, a pargeting lime based render, as opposed to a modern cement based render. There are several cases where surveyors have been sued where they have not identified the problems of a cement based render on a timber frame and how it can accelerate rot, particularly if it hasn't got any details, such as a bell mouth detail to the base.

Getting back to what they look like, they are fairly rectangular and low. Lots of them wouldn't have had a first floor and this has been added at a later date. Then you find you will get rooms in the roof, often known as eyebrow roofs. The traditional view of a timber frame building is a black and white timber structure, often box frame, where you can see the square boxes of the timber and also the relatively tall, triangular crucks frame properties.

## **Traditional Tudor timber frame problems**

Typical problems at high level to the chimneys, flashings, roof verges and roof ridges

### **High level problems**

High level problems mean that scaffolding is likely to be required or some form of access platform, be it from a cherry picker or hoist. This can often be where the main costs are when carrying out a project, as health and safety on a building project is of the utmost importance.

### **Chimney problems**

Chimneys were added after the original construction, in most cases, with the original chimney being, literally, a hole in the roof, or in the gable ends of the property, depending upon the type of property. A chimney was very much a modern accessory. The adding of a chimney can sometimes be an issue (has been an issue for many years) with water getting in where they join the main roof and general spalling of brickwork, particularly where a soft red brick has been used or where a cement mortar has been wrongly used for repointing. We have also found that aerials fixed by wires, or screw fixed, can cause point loading and lead to deterioration of the chimney.

## Roof problems

### Thatched roof problems

Originally thatched. Many of the roofs have been added after. Thatch is generally a resilient material, as long as it is well maintained with wire mesh to hinder the birds from using it for nesting material. Common roof materials are straw and reed, it used to be known as Norfolk reed. Please see our article on thatched roofs.

### Clay peg tile problems

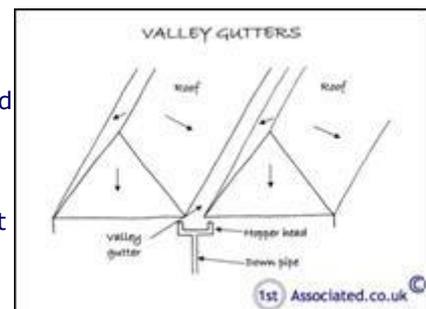
The older style clay tiles will have been held on with wooden pegs, originally oak. These have generally deteriorated over the years, as often as the clay tile, which was originally hand made, and tend to be softer. Many properties are Listed and require these to remain. We often come across clay tiles to the front and a concrete tile to the rear. A more modern machine or wire cut clay tile just doesn't match.

### The problems with matching clay tiles

This is always a difficult one, as in years gone by, systems of matching older clay tiles meant that there was a very good trade in second hand, sometimes stolen, tiles. This resulted in it not being as stringent a requirement on the rarer properties, but sometimes this doesn't look very pretty.

### Awkward extended roof problems

We sometimes find problems where extensions have been added over the years many times, where there is an awkward roof layout, particularly if the valley gutter hasn't been well maintained. Originally, in older properties, these would have been in lead and they have often been replaced with felt, or just tar has been poured over any problems.



### Cut timber roof problems

Cut timber roofs were used, which were designed in-situ (on site, specifically for the property) and the configurations used and the type of timbers were based upon knowledge and experience, so there was usually a lot of timber in them.

### The use of rounded timber

Often people advise us that their timbers within their period timber property are rounded. This is because originally they would literally have used trunks from trees and then quartered them.

The problems that we typically find are woodworm, although we have to add that usually the woodworm is not active and we are coming across cases where it has been treated many, many times, even though it isn't active. We would just comment that it takes a vast amount of woodworm to actually make an older style roof timber structurally unsound. There can also be wet rot and there is a possibility of dry rot, although it is relatively rare.

### Fascias and soffits problems

Thatched roofs won't have a fascia or soffits, due to the way the thatch overhangs. Thatched roofs also don't need gutters and downpipes. Thatched roofs make a great insulation and sunshade, depending upon the time of year, we would add, and the depth on insulation, of course, and how well maintained it is. Wet thatch, of course, does not make good insulation, it's the air in the

thatch that causes the good insulation and this goes when the straw or reed gets wet and mulches together and compresses.

## **Exposed rafter feet problems**

We do find, what's termed as, exposed rafter feet in the older properties. These can be very awkward to decorate. They are simply the ends of the rafters that form the pitch of the roof. They actually make normal fascia's and soffits look relatively easy to decorate in comparison.

## **Wall problems**

### **Crucks frame to box frame wall problems**

A variety of timber frame constructions were used, from the cruck frame to box frame. The varieties depended upon the area and the era. We always considered the timber framework in two categories: the structural frame and the primary timbers and then the in fill timbers being the secondary timbers.

### **Infill to traditional timber frame wall problems**

A variety of infill materials have been used in most timber frame buildings; from the earlier use of wattle and daub with a pargeting plaster, which was a lime based plaster, often with horse or oxen hair (there were a lot of horses around in those days) and in more recent times (by recent we mean in the last few hundred years) brick infill panels have sometimes been used, sometimes in a herringbone pattern for a decorative finish. Many times an older property was rendered over, but also the timbers were left exposed. We think they weren't left as exposed as frequently people have the impression, certainly they weren't black and white, which is often associated with Tudor properties, as this, interestingly enough, was a fashion that the Victorians developed. The original pargeting render colours would have been more natural, being made up from plants, such as saffron that forms the yellows that is often used as a render in Suffolk and Norfolk , or animal products.

In some areas of the country weather boarding was a common cladding to timber frame properties, for example, the Essex area.

### **Wattle and daub defined**

Wattle and daub is a building material used for making walls, within which wooden strips are woven. These are usually bound together with straw, animal dung, sand, clay and soil.

### **Weather boarding defined**

Weather boarding is a timber boarding, also known as shiplap boarding, offers a protective covering to the timber frame and therefore needs to be well maintained. It was commonly used in the Essex areas, as well as pargeting or decorative plastering.

### **Weather boarding problems**

Weather boarding needs to be well maintained where it rots. It was commonly used in the Essex areas, as well as pargeting or decorative plastering.

### **Problems with the timber sole plates and the wall plates**

The sole plates are at the very bottom of the structure and the wall plates are at the very top of the structure, just before the roof. In both cases they can be susceptible to rot, be it wet rot,

which in turn can cause woodworm, as this is the sort of environment they like. It is very important that these are checked when you are buying a property by a building surveyor, that specialises in this type of construction.

We find, particularly when the property market is not doing well, that many surveyors will say that they deal in this type of construction but will have had limited experience. We recommend you always ask to see examples of previous properties that they have carried out, as you really don't want a surveyor to be practising on your property, although we can all understand their desire to earn a living, but check and double check that they have carried out surveys of this type, don't take their word for it and ask to see copies of them. If you want to see an example of a timber frame survey, then please visit our website [www.1stAssociated.co.uk](http://www.1stAssociated.co.uk).

## Floors and underground problems

### Floor problems

Floors would originally have been earth, possibly with a lime mix to harden it, sometimes with tiles added.

### Foundation problems

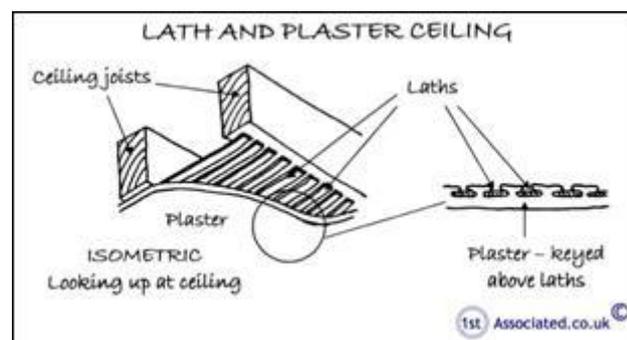
Foundations will be minimal, normally built on ground level. In some cases, although we believe it's rare, timber piles will have been used, typically timber forced straight into the ground vertically to build from.

We have also included wall plates, or sole plates, as they are known, as being a foundation, as the surviving Tudor buildings tend to have a plinth of brickwork or stone, to which a timber wall, or sole plate, is added. These can suffer from deterioration from dampness. Over the years we have seen timber in very bad condition, but unfortunately we have seen the pollution causing more problems. You have to fully understand how the structures work to correctly diagnose how to resolve the problems.

## Internal

### Lath and plaster ceiling problems

Predominantly lath and plaster will have been originally used, there may be some boarding. Today, most modern refurbished sections will have been replaced with plasterboard. The use of these different materials can lead to cracking, though of course it can be much worse if it structural cracking. This needs to be correctly diagnosed.



## A mixture of various styles

Tudor buildings came in many shapes and sizes. The smaller buildings, in particular, tend to have always been extended on. This can cause problems when the original property is obviously timber and the modern extension could be in brickwork or stonework, which acts, and reacts, completely differently. This combination of different property styles is where the real skill of building surveying

comes in, to establish whether they work well together, or, it is probably more correct to say, if they work acceptably together. Many times with older properties we find the original construction is good and sound, assuming it has been well maintained, it is the additions that have been added over the years that are the problem and no doubt we are still making mistakes on properties today.

## **Traditional Tudor towns we know and love**

Chester

Bristol

Norwich

Stratford Upon Avon

Rye