ES42995/RBS/NT2/MH/JAN2

RESIDENTIAL BUILDING SURVEY

Pre-Cast Concrete Frame House
Wiltshire

Aerial view – 360 photo

FOR

Mrs X

Prepared by:
INDEPENDENT CHARTERED SURVEYORS

Marketing by:

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CONTENTS

INTRODUCTION

Firstly, may we thank you for your instructions of date; we have now undertaken an independent Building Survey (formerly known as a Structural Survey) of the aforementioned property. This Survey was carried out on date.

The Building Survey takes the following format; there is an introductory section (which you are currently reading), which includes a synopsis of the building, and a summary of our findings.

We then go through a detailed examination of the property starting with the external areas working from the top of the property down, followed by the internal areas and the buildings services. We conclude with the section for your Legal Advisor and also attach some general information on the property market.

We are aware that a report of this size is somewhat daunting and almost off-putting to the reader because of this. We would stress that the purchase of a property is usually one of the largest financial outlays made (particularly when you consider the interest you pay as well).

We recommend that you set aside time to read the report in full, consider the comments, make notes of any areas which you wish to discuss further and phone us.

We obviously expect you to read the entire report but we would suggest that you initially look at the summary, which refers to various sections in the report, which we recommend you read first so that you get a general feel for the way the report is written.

As part of our service we are more than happy to talk through the survey as many times as you wish until you are completely happy to make a decision. Ultimately, the decision to purchase the property is yours but we will do our best to offer advice to make the decision as easy as possible.

REPORT FORMAT

To help you understand our Report we utilise various techniques and different styles and types of text, these are as follows:

GENERAL/HISTORICAL INFORMATION

This has been given in the survey where it is considered it will aid understanding of the issues, or be of interest. This is shown in "italics" for clarity.

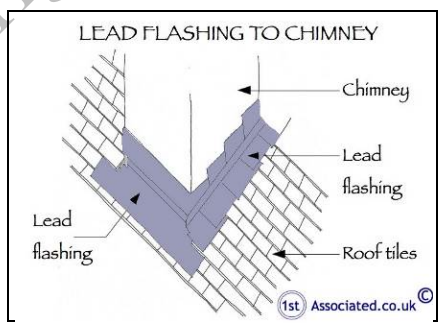
TECHNICAL TERMS DEFINED

Throughout the Report, we have endeavoured to define any technical terms used. This is shown in "Courier New" typeface for clarity.

A PICTURE IS WORTH A THOUSAND WORDS

We utilise photographs and sketches to illustrate issues or features. In some photographs a pencil, pen, circle or arrow has been used to highlight a specific area. We also use sketches to give guidance and clarity on various issues in the property and we use them to help you understand the issues, scenarios and situations better.

Flashing around chimney



Example sketch

ORIENTATION

Any reference to left or right is taken from the front of the property in Eastfield, including observations to the rear, which you may not be able to physically see from the front of the property.

ACTION REQUIRED AND RECOMMENDATIONS

We have used the term **ACTION REQUIRED** where we believe that there are items that you should carry out action upon or negotiate upon prior to purchasing the property. Where a problem is identified, we will do our best to offer a solution. However, with most building issues, there are usually many ways to resolve them dependent upon cost, time available and the length of time you wish the repair/replacement to last.

SYNOPSIS

SITUATION AND DESCRIPTION

This is a two storey right hand semi-detached property.

There is a reasonable sized front garden, with access to the rear garden to the right side. The rear garden slopes away from the property towards X Lane on the x Road (which seemed quite busy at the time of the survey).

Parking is on the roadside on a first come first serve basis, which is slightly awkward due to this being a corner property in X, Name of village.

Type of non-traditional building

This is a non-traditional building. There are many different types of non-traditional buildings. These are generally split into categories of:

1. Metal frame – a metal frame supporting the structure.
2. Pre-cast concrete - cast in a factory and then brought to the site.
3. In-situ concrete - cast at the site.
4. Timber frame – a timber frame supporting the structure.

Each of these main categories then has many, many different types.

With this particular building the structural frame is formed of reinforced concrete, with cladding to the sides.

There were 100's of different types of houses built in pre-cast concrete. We believe this particular one is a Reema property, which were built between 1945 to 1966. Around were 17,600 built. We believe these properties were originally built for the Armed Forces, then became the ownership of Housing Associations, both of which in our experience have altered and amended buildings like this over the years as standards have changed. With this era of house, for example, asbestos was popular and has generally since been removed; please see our specific comments on this.

As mentioned our database shows that this property was built between 1945 to 1966. If the exact age of the property interests you your Legal Advisor may be able to find out more information from the Deeds.

ACTION REQUIRED: Your legal advisor needs to check and confirm all of the above.

Putting Life into Perspective!

Some of the things that were happening around the time the property was built:

1939-1945	World War II
1947	The Polaroid camera is invented by Edwin Land, say cheese!
1948	Olympic Games held in London, known as the Austerity Games
1950	The concept of artificial intelligence for computers was developed by Alan Turing (MOD)
1952	Princess Elizabeth becomes Queen at the age of twenty five.
1954	Roger Bannister breaks the four minute mile barrier.
1958	Ian Donald invents ultrasound to examine babies in the womb.
1960	The average house price in England is only £2,500
1962	Telstar, the first communication satellite is launched
1966	England beat Germany to win the 1966 World Cup at Wembley
1969	Neil Armstrong takes man's first steps on the moon

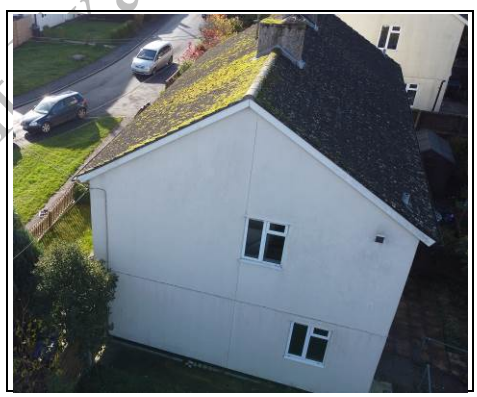
LOCATION PLANS

EXTERNAL PHOTOGRAPHS

Front view

Rear view

Both semis



Right gable

Front garden

Rear garden, sloping away towards the road. Fences need repair.

ACCOMMODATION AND FACILITIES

(All directions given as you face the front of the property)

The plans below are based on your property (not specific plans for this property).

Ground Floor

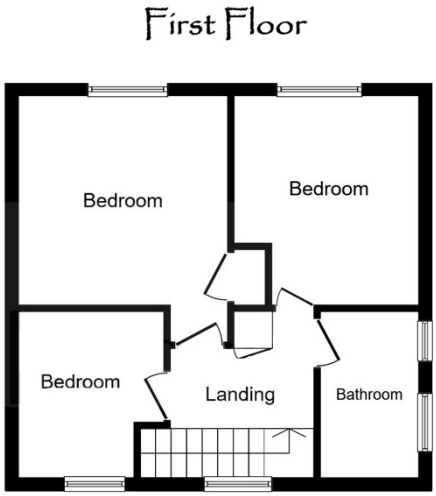
The ground floor accommodation consists of:

1) Entrance hallway and Staircase
2) Cloakroom
3) Lounge
4) Kitchen

First Floor

The first floor accommodation consists of:

1) Landing
2) Front left bedroom
3) Front right bedroom
4) Rear left bedroom
5) Rear right bathroom



Outside Areas

Parking is on the roadside on a first come serve basis. The property is on the corner of the road, therefore it may be difficult to park close to your property.

There is a reasonable sized garden to the front, with a triangle of grass in front of the building, which we assume is maintained by the Local Authority.

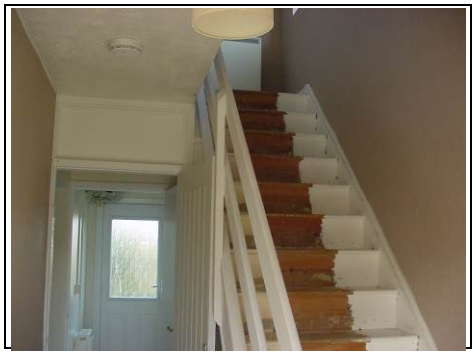
The rear is a good sized garden, on a sloping site running towards X Lane. The boundary to the rear is a conifer hedge and dilapidated fencing, which needs repair. There is access to the rear on the right side of the property.

Finally, all these details need to be checked and confirmed by your Legal Advisor.

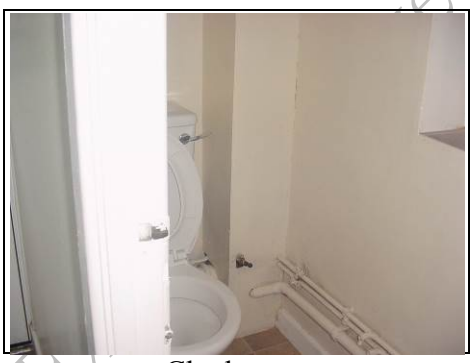
INTERNAL PHOTOGRAPHS

The following photos are of the internal of the property to help you recall what it looked like and the general ambience (or lack of).

Ground Floor



Entrance hallway and staircase



Cloakroom

Lounge

Lounge chimney removed

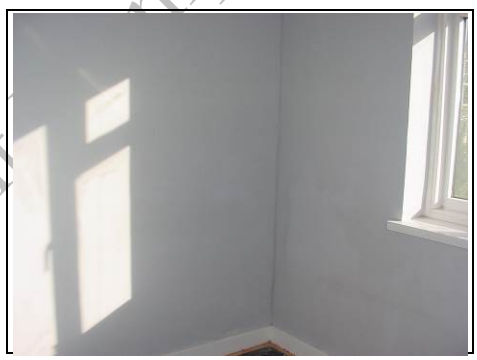
Kitchen

Kitchen looking towards link corridor

First Floor

Landing

Front left bedroom



Front right bedroom

Rear left bedroom

Rear right bathroom

SUMMARY OF CONSTRUCTION

External

Chimneys:	One render chimney
Main Roof:	Steep pitched, clad with concrete tiles
Main Roof Structure:	TRADA style pre-fabricated truss roof Hessian based felt underlayer
Front Porch Roof:	Clad with GRP (glass reinforced plastic)
Gutters and Downpipes:	Profile plastic
Soil and Vent Pipe:	Internal, from ground level looks to be metal, possibly could be asbestos (assumed)
Walls:	Thin render on insulation boards (assumed)
Wall Structure:	Reinforced concrete columns with dense aggregate hollow pre-cast reinforced concrete panels with internal webs - Reema
Fascias and Soffits:	V-shaped pre-formed plastic, possibly GRP, with circular vents
Windows and Doors:	Older style plastic double glazed windows, with trickle vents

Internal

Ceilings:		Plasterboard or proprietary material (assumed)
Perimeter Walls:		Wet plaster and dry lining (assumed)
Internal Walls:		Predominantly studwork (assumed)
Floors:	Ground Floor:	Solid underfoot, assumed concrete
	First Floor:	Timber boarding on timber battens and joist hangers on hollow pre-cast concrete beams (assumed)

Services

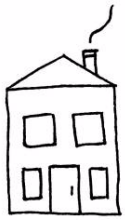
We believe that the property has a mains water supply, mains drainage, electricity (all assumed).

Heating:	Electric storage heaters
Electrics:	The electric fuse board is 1980s-2000s and is located in the rear corridor
Drainage:	The manhole is located to the rear

We have used the term 'assumed' as we have not opened up the structure.

ACTION REQUIRED: Your Legal Advisor needs to check and confirm the above and advise us of anything they require further clarification on before legal commitment to purchase the property.

EXECUTIVE SUMMARY



Summaries are not ideal as they try to précis often quite complex subjects into a few paragraphs. This is particularly so in a summary about someone's future home when we are trying to second-guess what their priorities are, so it is important the Report is read in full.

It is inevitable with a report on a building of this nature that some of the issues we have focussed in on you may dismiss as irrelevant and some of the areas that we have decided are part of the 'character' of this property you may think are very important. We have taken in the region of 230 photographs during the course of this survey and many pages of notes, so if an issue has not been discussed that you are interested in or concerned about, please phone and talk to us before you purchase the property (or indeed commit to purchasing the property), as we will more than likely have noted it and be able to comment upon it; if we have not we will happily go back.

We have divided the Executive Summary into 'The Good', 'The Bad' and 'The Ugly', to help distinguish what in our mind are the main issues.

Once you have read the report we would recommend that you revisit the property to review your thoughts on the building in light of the comments we have made in this survey.

The Good

Survey reports often are full of only the faults and general 'doom and gloom', so we thought we would start with some positive comments on the property!

1.0) This is a non-traditional pre-cast concrete building. Generally, non-traditional buildings can be purchased at a lower price than traditionally built houses in similar areas, albeit that they are more difficult to sell and certainly more difficult/impossible to get a mortgage on and many times is a cash purchase only.

2.0) Good sized gardens.

3.0) Vacant possession.

We are sure you can think of other things to add to this list.

The Bad

Problems / issues raised in the 'bad' section are usually solvable, but often need negotiation upon. However, a large number of them may sometimes put us off the property.

1.0) Non-traditional building – the overview

You need to be fully aware that you are purchasing a non-traditional house; this is an overview:

1.1) Mass Building after the War Years

This house is of a non-traditional construction (as opposed to traditional brick, stone walls and tile and slate roof buildings).

One of the interesting/difficult facts is that many mortgage companies won't lend on them. Whilst we understand you are purchasing case when you come to sell if no mortgage is allowed on the property then it will limit the market.

We would add further that their lending criteria changes from time to time which does mean they will lend on them some of the time and then not lend on them. Much of the buying population seems to be put off by non-traditional buildings (as opposed to traditional brick and stone walls and tile and slate roof buildings).

ACTION REQUIRED: You need to be absolutely certain that you understand the risks of buying a non-traditional construction house.

Please see the information sheets within the Appendices that give a better understanding by the Building Research Establishment of these buildings however you should be aware that this information is dated and not regularly updated.

1.2) Types of non-traditional building and mortgages

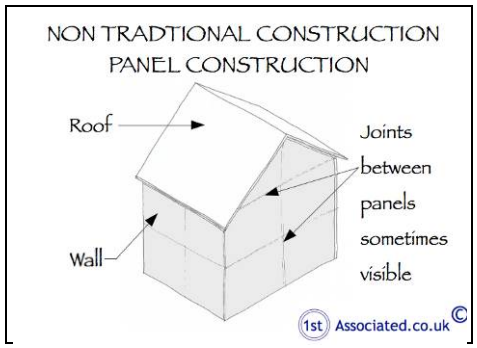
We would reiterate our earlier comments, there are many different types of non-traditional buildings. These are generally split into categories of:

1. Metal frame – a metal frame supporting the structure.
2. Pre-cast concrete - cast in a factory and then brought to the site.
3. In-situ concrete - cast at the site.
4. Timber frame – a timber frame supporting the structure.

Each of these main categories then has many differences. In this case the property is a pre-cast concrete house.

1.3) Pre-cast concrete houses

This house has been built using a pre-cast concrete method. We would term this as large panel construction (often known as LPC), using large panels and reinforced pre-cast concrete (often known as PRC). The concrete would typically have been made in a factory and then brought to the location to be fitted together and then lifted into place, forming the front, rear and right side walls.



Non-traditional panel construction

This particular property is believe to be a Reema construction, which were built between 1945 to 1966 and around 17,600 were built.

Known problems with Reema houses are:

1. Carbonation and high chlorine levels in hollow dense pre-cast concrete panels.
2. Cracked and spalling window and door reveals and sills.
3. Cracked floor beams.
4. Pointing at panel joints, cracked or missing.

1.4) Is the structural frame sound?

The risk with buying any structural framed property is if the structural frame is sound or not. The only way to be 100% certain is to open up the structure which we would be happy to do but you do need to get permission from the existing owners and also ensure that you have a builder who can put back the openings to a satisfactory standard. We typically ask for a minimum of three openings of one metre square.

> **ACTION REQUIRED:** If you wish to be 100% certain then you need to have the property opened up, with a minimum of three different openings. We are more than happy to comment on this if you arrange for the builders to open up and then the closing up, as well as getting permission from the owner/Local Authority.

1.5) Key areas on non-traditional buildings

In our experience key areas are generally at ground level, first floor level and roof level where the structural frame is joined together which should be checked for deterioration. This could be caused by water discharging onto the base of the property to condensation in the higher level structural frame.

1.6) Dangers with Non-Traditional Construction

Most non-traditional buildings of the major categories that have been identified by the Building Research Establishment have known weak areas however we (the whole of the construction profession) are still in the investigation stage/finding out stage with non-traditional buildings.

We have included a list of the Designated Defective properties within the Appendices.

1.7) Non-traditional houses, can they be made into mortgageable houses?

As the pre-cast reinforced concrete non-traditional building it does limit the market for selling into. We understand these are typically sold cash, although if you recall we had a discussions where you said you understand that one of the other purchasers thought he could get a mortgage on this property.

There are some companies who do specialise in carrying out work to non-traditional houses to make them mortgageable. We recently came across one where the entirety of the walls were removed, the roof held in place, then the walls re-built, which of course is a costly and difficulty operation but it does then move the property to being a traditionally built building.

However, where it is a semi-detached property, such as this, we have found there can be problems where the neighbouring property is non-traditional. Therefore it is best done with your neighbour, where both of you change your buildings to a traditional construction. Although generally in most areas there is a maximum road value of properties and you could unfortunately end up spending the money to have this work carried out to make it into a mortgageable but still not be able to recover your money in full. You need to look at this in detail.

> **ACTION REQUIRED:** If you do wish to do this then you need to look at it in detail and we would be more than happy to comment further if you contact us in writing with your proposals and any particular company you wish to you.

1.8) <u>How does a structural frame property work?</u>

What is known as a traditional construction utilises the walls to give strength to support the roof and the floors, whereas a non-traditional building tends to use a structural frame, which in this instance we believe is a concrete frame, from which the concrete panels are then hung.

1.9) <u>Whatever else you find will very much depend upon what the homeowners have done after the original construction</u>

This could mean for instance that this property that was until been managed by a Housing Association would have had work carried out. It depends how long ago the property was in the hands of a Housing Association as to what they may or may not have done to it;

For example:

Common work would have been to remove any asbestos.

Please see our comments regarding this further on within this report.

1.10) Housing Association owned

We understand the house was previously owned/managed by a Housing Association. They normally have fairly good records (or as good as records get with property management) of what amendments/alterations have happened to the property.

ACTION REQUIRED: We would ask the Housing Association for a history of repairs and issues and works that have been carried out to it, particularly in relation to things like asbestos and insulation.

We would be more than happy to comment on anything your Solicitor wishes us to with regard to this historic data.

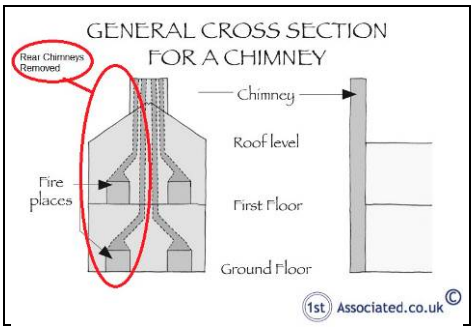
Looking specifically at your Property

2.0) Chimneys

The original chimney has been modified by having the front of the chimney removed, which we can see in the lounge.

Lounge – chimney removed

Front of chimney removed in roof space, black oval indicates where that part of the chimney once was



Chimney removed

We can see a crack to the rear of the chimney, where there looks to have been a leak coming in for some time as there is rot visible around the chimney.

Close up of chimney
Aerial view – 360 photo

Crack to rear render

Rot around chimney

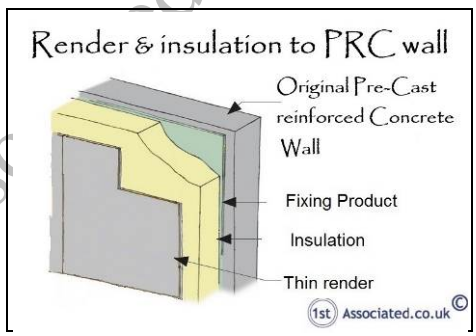
ACTION REQUIRED: You can either repair the chimney externally and then add in new roofing timbers, which work many need scaffolding. Alternatively you may be able to carry out some form of repair internally on a temporary basis.

ANTICIPATED COST: In the region of £200 to £500 unless scaffolding is required, then we would expect this cost to double, if not triple. Please obtain quotations.

Please see the Chimney Section of this Report.

3.0) Original pre-cast reinforced concrete wall insulated?

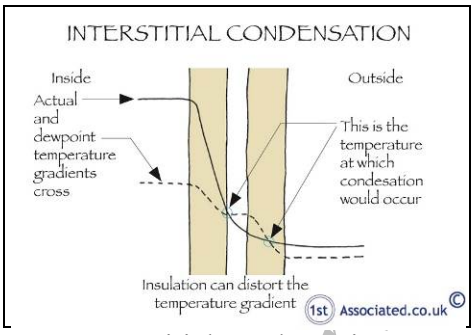
From what we can see, the original pre-cast concrete has had an insulation covering with what is known as a thin render; see sketch and close up photo.



Insulation onto a PRC wall

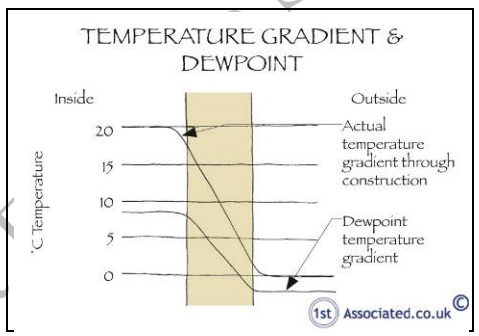
Tap testing the wall

Whilst adding insulation generally is a good thing on older properties, as very little thought was given to thermal efficiency of buildings until after the Oil Crisis of 1973, when it started to be introduced as a requirement of Building Regulations (obviously long after this property was built), there have however been problems with adding insulation to buildings where interstitial condensation has occurred.



Interstitial condensation

Interstitial condensation is condensation within the structure, which for example, can cause accelerated rusting of the reinforcement and general deterioration to the concrete. This is where the dew point is occurring in the wall. There are various tests to establish where the dew point will be. The adjacent sketches do not represent the walls you have, it is just the concept of interstitial condensation and temperature gradient that we are showing in the sketches.



Dew point

Interstitial Condensation Defined

This is condensation within a material rather than on the surface of the material.

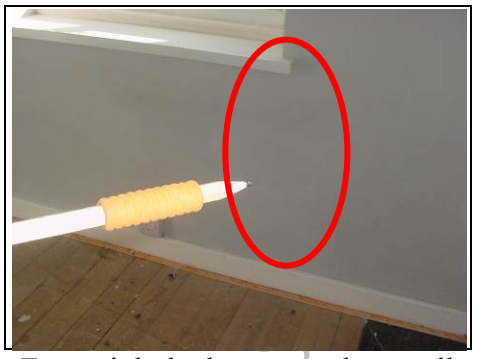
The adjacent photo is not your property but is one we recently surveyed and is an example of a lintel with reinforcement showing through.


Deterioration to concrete lintel with reinforcement showing through
(Not your property)

ACTION REQUIRED: Your legal adviser to check and confirm what insulation has been added and whether it has any form of Guarantee, and if dew point calculations were carried out.

4.0) Structural movement and cracking

There are various cracked visible to the ceilings and walls. We feel these will continue in the property, as you have a mixture of different types of construction.



Front right bedroom crack to wall

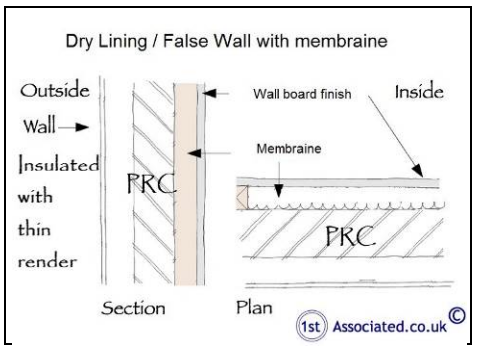
Externally we think a modern insulated wall with a thin render has been added over the top of the original reinforced concrete panels. Then a line inside, either with original fibreboard or proprietary board and/or a plasterboard.

Crack below window

This mix of different materials often causes differential movement, in the form of cracking.

One way to help with this is to have good air movement and relative humidity in the property; please see the next section.

ACTION REQUIRED: If you want to be 100% safe and as this is a one-off inspection, particularly bearing in mind we cannot actually see the pre-cast reinforced concrete structure, we would recommend the existing owners take out an insurance claim, advising that the cracking has been noted by a structural surveyor (this should cost them nothing other than time to write the letter/email).



PRC dry external insulation to PRC

This usually means that the insurance company will carry out a monitoring exercise (the Building Research Establishment recommend monitoring any cracks for a minimum of one year) to establish if there is any progressive movement.

Your future liability should be limited to the cost of the excess on the insurance providing the insurance company is happy for you to take over the insurance claim.

Your solicitor needs to ensure this is a legally watertight process and ensure your liability is limited to paying the excess on the insurance only.

As mentioned earlier in this section, the only way to investigate the original pre-cast concrete frame is to open up the structure. We recommend a minimum of three areas of one metre square.

Please see the Walls Section of this Report.

5.0) Dampness to front right corner

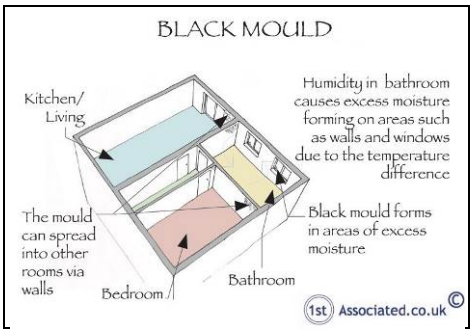
Within the property in the front right bedroom is dampness to the front right corner. As we discussed, the bargeboard has come away slightly and there could be wind driven rain getting into this area. However, we would also add that these sort of corners do attract black mould as then tend to be cold areas.

Front right corner, where approximate area of dampness is

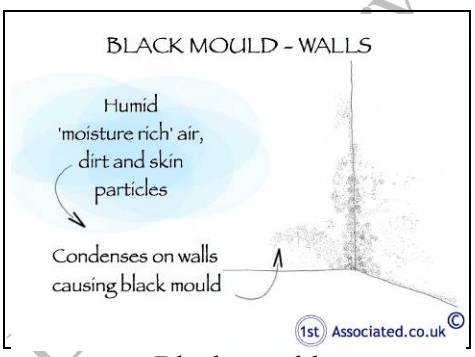
Front right bedroom with dampness in the corner

Condensation, black mould, relative humidity and air circulation

Talking more generally, this type of property is prone to getting condensation and black mould, both surface condensation and black mould that you will be able to see, but also, as discussed, it can get interstitial condensation, which is condensation inside the structure, which then makes the reinforcement of the concrete rust, causing deterioration.



Black mould



Black mould

We found vents in many of the ceilings and we believe condensation may be a problem in this property.


Vent in ceiling

ACTION REQUIRED: We would recommend large humidity controlled extract fans are added to the kitchen, the bathroom and any areas that are used for drying clothes internally during winter months (we would assume that clothes will be dried externally during the warmer months). By large extract fans we mean 150mm.

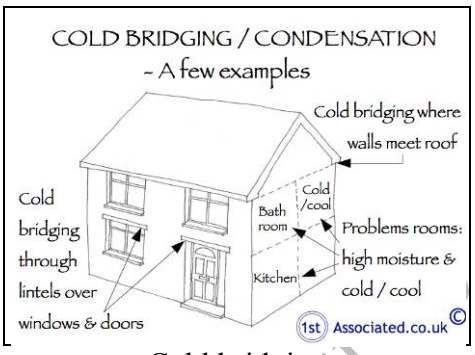
Where we have had persistent problems in the past we have used positive pressure fans. If you get such problems please feel free to call us.

ANTICIPATED COST: We would anticipate costs between £250 - £500 per extract fan depending upon the wiring required. We always recommend quotes are obtained before work is agreed/commenced.

Please see the Dampness Section of this Report.

6.0) Thermal/cold bridging

This property is far more likely to have thermal/cold bridging problems than a traditional property due to their concrete construction which can lead to black mould.



Cold bridging

Cold bridging defined

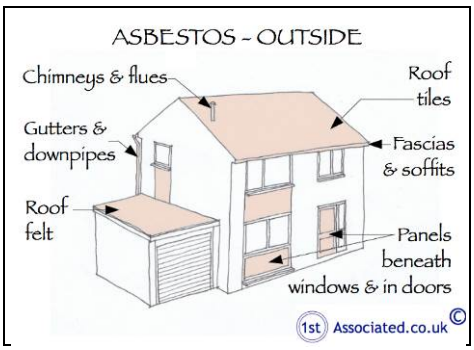
Cold bridging is caused by a colder element in the structure allowing coldness to pass through the structure much quicker when warm moist air is present in the property. Cold bridging is often caused by things like having a shower or a bath, cooking or washing, particularly if you are drying washing on the radiators. This is also caused by the general climate which results in condensation on the element.

ACTION REQUIRED: Please see our article in the Appendices.

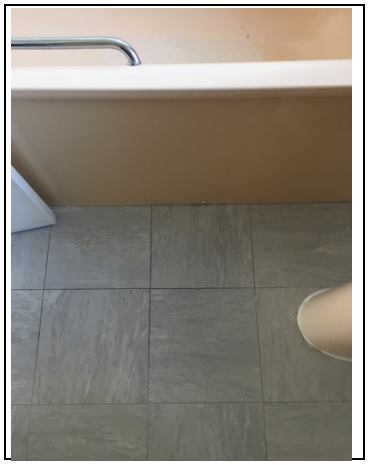
7.0) Asbestos

From reading the original specification of this type of building, it would have originally have had asbestos cement sheets on the roof and, as discussed, in the bathroom there are thermo-plastic tiles which do have an element of asbestos. The rear soil and vent pipe may also be asbestos, however it is difficult to see from ground level, or via our aerial photos and needs further investigation.

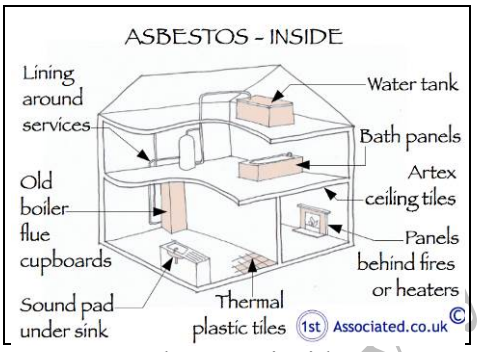

Soil and vent pipe difficult to view but it may be asbestos?



Asbestos - outside



Thermo-plastic tiles



Asbestos - inside

Also upon close inspection of the textured painted ceilings (often known by their trade name of Artex) we believe that some of it may be the older style, which can have asbestos;

For example:

In the front lounge.

When this property was built asbestos was a common popular material which was used almost as commonly as wood. As mentioned it formed the roof material and it also generally formed such things as the fascias and soffits, the gutters and downpipes.

Textured painted ceiling

The adjacent generic sketches show typical areas where asbestos can be found in these properties.

Our insurance company requires us to advise we are not asbestos surveyors and advises us to recommend asbestos surveyors are instructed and that you have your own asbestos survey carried out.

ACTION REQUIRED: Your legal advisor to specifically ask the owners/Housing Association if there is an asbestos report has been carried out on this property and if so what date and whether the asbestos test took samples. If they have not then you need to carry out your own asbestos report with samples taken and the recommended action carried out.
We would always recommend any asbestos is removed from a property

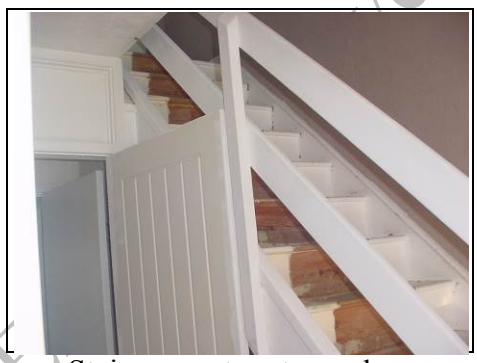
as it can not only be dangerous, it can affect the value of the property.

ANTICIPATED COST: Asbestos costs can vary considerably; we are forever surprised at the variety in quotes. Please obtain quotations.

Please see the Other Matters Section of this Report.

8.0) Staircase not up to standard

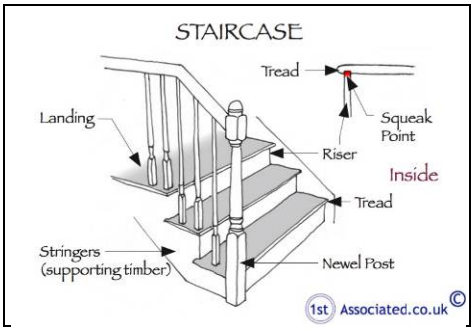
The staircase is not up to modern day standards. A modern day staircase has a limited opening of 100mm sphere (circle), roughly the size of a young person's head, to ensure they cannot fall through the staircase. This is why you typically see a balustrade/newel post etc.



Staircase not up to modern standards

ACTION REQUIRED: Amend staircase to modern day standards.

ANTICIPATED COST: In the region of £500 to £1,000; please obtain quotations.



Example of staircase with stringers/supporting timbers

Please see the Internal Joinery Section of this Report.

9.0) Fences

We would fence the garden as there is quite a drop to it, as well as what seems to be busy road to the rear of the property.

ACTION REQUIRED: Fence the rear of the garden.

ANTICIPATED COST: £1,000 to £3,000, depending upon how much you do. We recommend you have concrete posts as these last longer and are stronger. Please obtain quotes.

Vegetation and dilapidated fence to rear of garden

Services

10.0) Dated electrics

The electrics are 1980's-2000's and better are now available.

ACTION REQUIRED: We recommend you replace the fuse box with a modern one in a fire resistant metal casing.

Fuse box

We also recommend an Institution of Engineering and Technology (IET) test and report to be carried out by an NICEIC registered and approved electrical contractor or equivalent.

ANTICIPATED COST: £250 to £500 for a test and report and plus any work recommended and £250 to £500 for a new fuse board; please obtain quotations.

11.0) Electric Storage Heaters


Electric storage heater

The property is heated via electric storage heaters. You may wish to upgrade to a modern electric radiator, or even LPG (liquate petroleum gas) or oil via an oil tank.

ACTION REQUIRED: We recommend you upgrade the heating.

ANTICIPATED COST: Depends upon what you do. This can range from a modern fan assisted electric radiator to a completely different type of system. We suggest to see if there are any grants available.

Please obtain quotations.

Please see the Services Section of this Report.

The Ugly

We normally put here things that we feel will be difficult to resolve and will need serious consideration.

You need to fully understand what you are purchasing

You need to be absolutely certain that you understand you are buying a non-traditional building and the associated issues that can go with these inherent problems and also when you come to sell the property.

Other Items

Moving on to more general information.

Maintenance

There is the basic maintenance that you would associate with any building such as clearing gutters, checking that the gutters are not leaking and are falling towards the downpipes and redecoration etc. A budget for such work must be allowed to ensure it is maintained in a good condition. This will prevent undue and unnecessary deterioration.

With a non-traditional building you may also have deterioration occurring that there is little that you can do about as it is part of the structure and part of the character that we spoke to you about regarding this type of building and that unless you do major work, such as rebuilding the walls you effectively have to live with.

Services

Whilst we have carried out a visual inspection only of the services within the property we would always recommend you have your own specific testing for each of the services.

Electrics

The electric fuse board is 1980s to 2000s and is located in the hallway. The Institution of Engineering and Technology (IET) recommend a test and report whenever a property changes occupancy. This should be carried out by an NICEIC registered and approved electrical contractor or equivalent.

Originally when this property was built it would have been heated via coal fires.

Drainage

Whilst we have lifted the manhole cover to the rear of the property the only true way to find out the condition of the drains is to have a closed circuit TV camera report to establish the condition of the drains. In this age of property there have often been leaks over the years.

Water Supply

There is danger in older properties of having a lead water supply; we would recommend that you speak to the water company to ask them if they have carried out such replacement.

> **ACTION REQUIRED – SERVICES:** We would reiterate that we recommend with regard to all services that you have an independent check by a specialist contractor.

DIY/Handyman Type Work

There are numerous other items that we would class as DIY or handyman type work such as redecorating in your own style to turn the property into your home. We have detailed these and other issues within the main body of the report.

Purchase Price

We have not been asked to comment upon the purchase price in this instance, we have however referred you to sources of general information on the housing market within the Information on the Property Market Section, which can be found in the Appendices at the end of the Report.

Every Business Transaction has a Risk

Every business transaction has a risk, only you can assess whether that risk is acceptable to you and your circumstances. You should now read the main body of the Report paying particular attention to any "**ACTION REQUIRED**" points.

Estimates of Building Costs

Where we have offered an estimate of building costs please remember we are not experts in this area. We always recommend you obtain quotations for the large jobs before purchasing the property (preferably three quotes). The cost of building work has many variables such as the cost of labour and estimates can of course vary from area to area when giving a general indication of costs. For unskilled labour we currently use between £75 and £125 per day (the higher costs in the city areas) and for tradesmen we use between £100 and £200 per day for an accredited, qualified, skilled tradesman. Other variations include the quality of materials used and how the work is carried out, for example off ladders or from scaffold.

If you obtain builders estimates that vary widely, we would advise the work is probably difficult or open to various interpretations and we would recommend a specification is prepared. It would usually be best to have work supervised if it is complex, both of which we can do if so required.

SUMMARY UPON REFLECTION

The Summary Upon Reflection is a second summary so to speak, which is carried out when we are writing the second or third draft a few days after the initial survey when we have had time to reflect upon our thoughts on the property. We would add the following in this instance:

There are a fair number of things to think about. The main one is you need to fully understand what you are purchasing and the limitations and restrictions this type of property has, and the inherent defects in it that you need to accept are part of the characteristics of the building, or be prepared to spend a lot of money resolving.

We would refer you to our comments in the Executive Summary, 'Good', 'Bad' and 'Ugly' Section and ask that you re-read these.

As a general comment for any work required we would always recommend that you obtain at least three quotations for any work from a qualified, time served tradesperson or a competent registered building contractor prior to legal completion.

We would ask that you read the Report in full and contact us on any issues that you require further clarification on.

AERIAL VIEW – 360 PHOTOS

Where permission has been obtained from the owners we have carried out aerial photographs using an aerial drone, stationary drone or a mono-pod pole (where the environment and weather is suitable).

Drone and mono-pod pole

Front entrance GRP roof
~ Aerial View - 360 Photo ~

Concrete tile roof
~ Aerial View - 360 Photo ~

Chimney and right gable end
~ Aerial View - 360 Photo ~

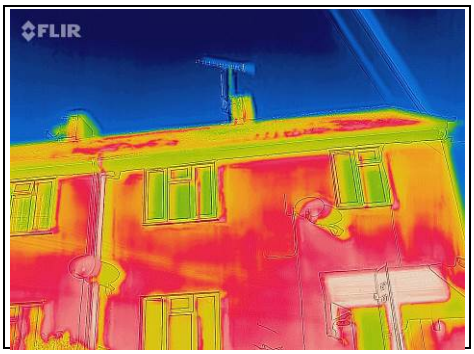
Chimney and moss on tiles
~ Aerial View - 360 Photo ~

Parking to on roadside to front
~ Aerial View - 360 Photo ~

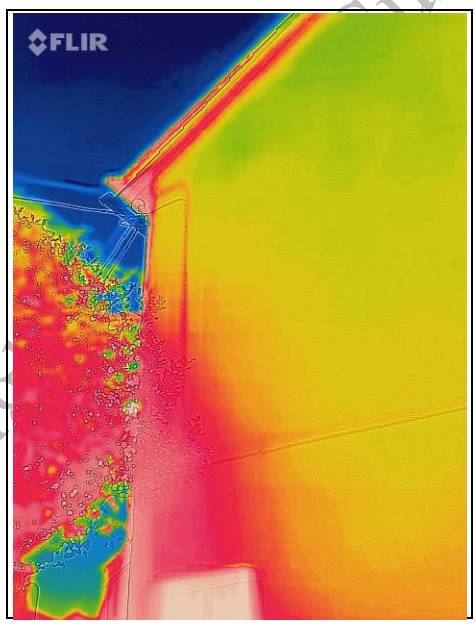
THERMAL IMAGE PHOTOGRAPHS

The property was not pre-heated so there was not ideal conditions however we have taken some thermal images as below. We use thermal imaging photography to help us with the survey. Not only does it establish warm and cold areas, it also helps us identify materials within the property.

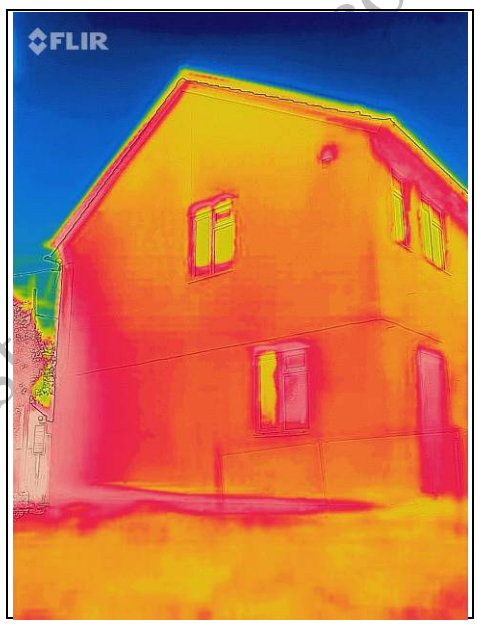
(Key to the colours; blue = cold, red = warm, green/yellow = cool)



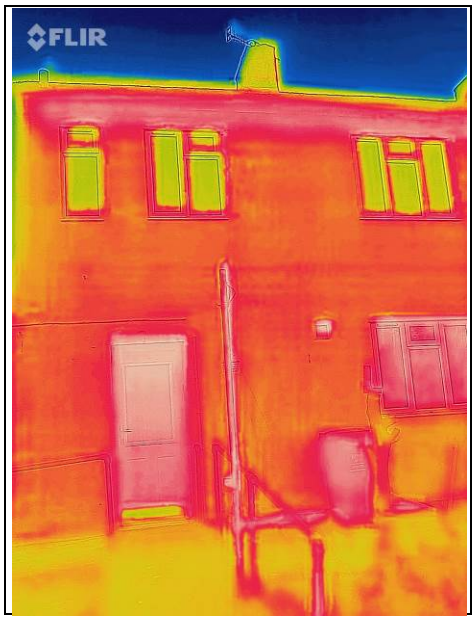
Front of property



Front right corner,
where the dampness is



Right gable end



Rear of property

MORE ABOUT THE REPORT FORMAT

Just a few more comments about the Report format before you read the actual main body of the Report.

TENURE – FREEHOLD (OR AS GOOD AS)

We have assumed that the property is to be sold Freehold or Long leasehold, with no unusual or onerous clauses and that vacant possession will be available on completion. Your Legal Advisor should confirm that this is the case.

ESTATE AGENTS – FRIEND OR FOE?

It is important to remember that the estate agents are acting for the seller (usually known as the vendor) and not the purchaser and are therefore eager to sell the property (no sale – no fee!). We are employed as Independent Chartered Surveyors and offer an independent point of view.

SOLICITOR/LEGAL ADVISOR

To carry out your legal work you can use a solicitor or a legal advisor. We have used both terms within the report.

TERMS OF ENGAGEMENT/LIMITATIONS

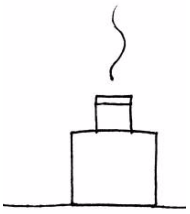
This report is being carried out under our terms of engagement for Building Surveys, as agreed to and signed by yourselves. If you have not seen or are not happy with the terms of engagement please phone immediately 0800 298 5424 or email the secretary from which this survey came from.

OUR AIM IS ONE HUNDRED PERCENT SATISFACTION

Our aim is for you to be completely happy with the service we provide, and we will try and help you in whatever way possible with your property purchase - just phone us.

THE DETAILED PART OF THE REPORT FOLLOWS, WORKING FROM THE TOP OF THE PROPERTY DOWNWARDS

EXTERNAL



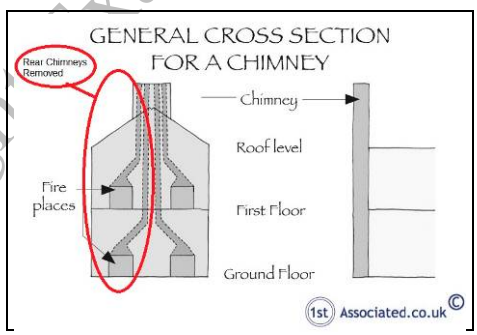
CHIMNEY STACKS

Chimneys developed originally from open fires placed within buildings. From this, the chimney has developed to its present day format where it is used as an aesthetic feature and focal point rather than purely just to heat the room.

There are is one chimney to this property, located to the left side and sits on the Party Wall (all directions given as you face the property).

Chimney One, located to the left side

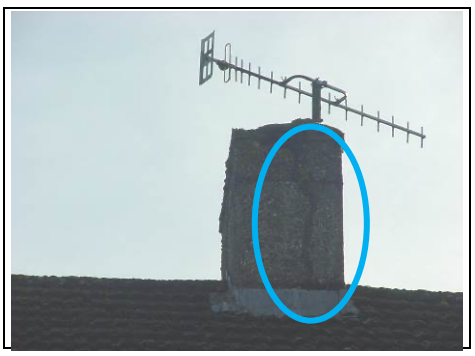
This chimney is render finished with a lead flashing. The chimney pots appear to be missing and there is a crack to the rear. Just as importantly, within the roof space we can see that the front part of the chimney has been removed. From what we can see of the external of chimney it is in below average condition considering its age, type and style.



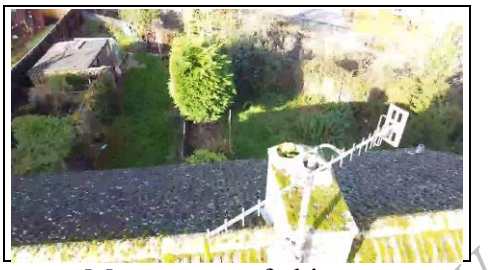
Chimney removed

We noted an aerial attached to the chimney which we are not keen on as it cuts into the render and de-stabilises the chimney.


Left chimney
Aerial view – 360 photo


Crack to rear of chimney

Lead flashing
and aerial attached to chimney



Moss to top of chimney
(flaunching)
Aerial view – 360 photo flashing

ACTION REQUIRED: Please see our comments in the Executive Summary.

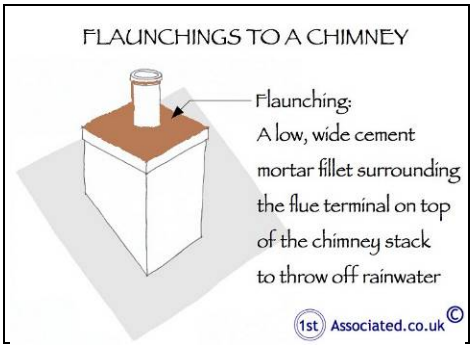
You cannot use the chimney unless major work is carried out to it.

Flashings Defined

Flashings prevent dampness from entering the property, usually at junctions where materials change. Such a junction is the one between the chimney and the roof.

Flaunchings Defined

A low, wide cement mortar fillet surrounding the flue terminal on top of the chimneystack to throw off rainwater.



Flaunching

Party Walls

The party wall relates to shared items, such as chimneys and the firewalls. If you do any work on these you will need to deal with the Party Wall Act. Here is a brief explanation of it.

Party Structures Defined - Party Wall Etc. Act 1996

A structure that both parties enjoy the use of or benefit from. An example of this would be where both parties gain support from a wall or utilise a chimney or chimneys.

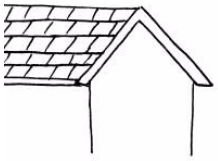
Any work to party structures, such as party walls or party chimney stacks, require agreement under the Party Wall Act. We would be more than happy to offer you help and advice in this matter.

We would recommend you go and meet the neighbours before you legally commit to purchase the property to make sure you get on with them, although we understand from our discussions you already know some people who live in the area.

Finally, we have made our best assumptions on the overall condition of the chimney stacks from the parts we could see above roof level. The inspection was made from ground level within the boundaries of the property (unless otherwise stated) using a x16 zoom lens on a digital camera and/or aerial photographs. A closer inspection may reveal latent defects.

Please also see Chimney Breasts, Flues and Fireplaces Section of this Report.

ROOF COVERINGS AND UNDERLAYERS



The Roof Coverings and Underlayers section considers the condition of the outer covering of the roof. Such coverings usually endure the extremes of climate and temperatures. They are susceptible to deterioration, which ultimately leads to water penetration. The property may or not have an underlayer dependent upon the age of your property, please read on:

We will consider the roofs in two areas:

1) Main roof
2) Front porch roof

Main Roof

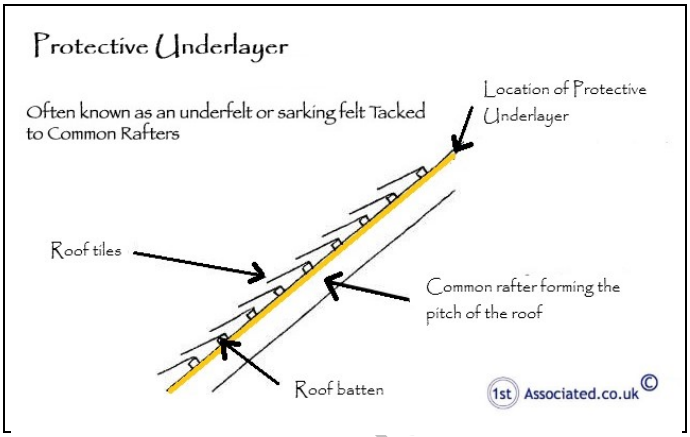
The main roof is pitched and clad with concrete tiles. From ground level, this looks in average condition considering the roof's age, type and style. It has a moss covering.

ACTION REQUIRED: Carry out periodic inspections and maintenance of the roof, as required.

Concrete tiles with moss covering
Aerial view – 360 photo

Protective Underlayer (Often known as the sarking felt or underfelt)

From the 1940s onwards felts were used underneath tiles/slates to stop wind damage and water penetration, these in more recent years have been replaced with plastic equivalents. These are commonly known as underfelts but now the name is not really appropriate, as felt is not the only material used.



Protective underlayer

When we inspected the loft space we found a Hessian base Bitumen membrane. This type of membrane has been used since the 1960s. We generally found it to be in average condition, with damage in some areas which is what we typically find.

This photo shows deterioration to the underlayer with it hanging it down.

Front Porch Roof

This is shallow pitched, clad with GRP (glass reinforced plastic and a lead flashing where it meets the wall.

Porch roof
Aerial view- 360 photo

We would comment that GRP does get brittle over time. This looks a fairly basic construction and you may want to rebuild and add a front porch.

Underside of GRP roof

All the roofs were inspected from ground level with the aid of a x16 zoom lens on a digital camera and/or aerial photographs.

Finally, we were only able to see approximately seventy to eighty percent of the main roof properly from ground level or via any other vantage point that we managed to gain. We have made our best conclusions based upon what we could see, however a closer inspection may reveal other defects.

For further comments with regard to ventilation please see the Roof Structure and Loft Section.

ROOF STRUCTURE AND LOFT

(ALSO KNOWN AS ROOF SPACE OR ATTIC SPACE)

The roof structure or framework must be built in a manner which is able to give adequate strength to carry its own weight together with that of the roof covering discussed in the previous section and any superimposed loads such as snow, wind, foot traffic etc.

Main Roof

Roof Access

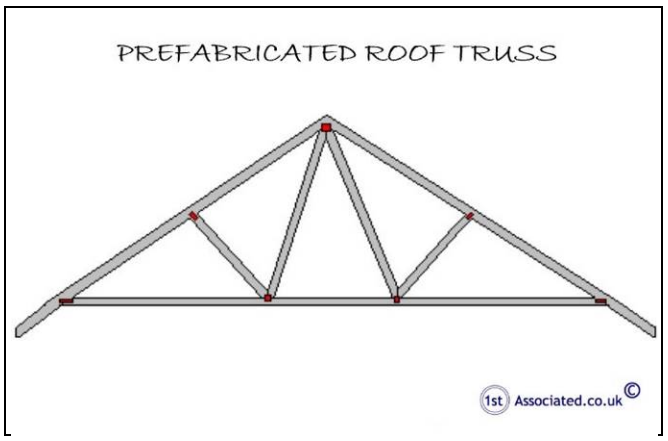
The main roof is accessed via the loft hatch located in the front left bedroom. There is no loft ladder, electric light and there were old floorboards lying down in the roof. We recommend that these be added and secure the floorboards, as it will make the loft space safer and easier to use.

The whole of the loft has been viewed by torchlight, which has limited our viewing slightly.

Roof Structure

This type of roof structure on a non-traditional house has a TRADA style pre-fabricated roof truss.

These are bolted together and are relatively unusual. The Timber Research and Development Association (TRADA), originally based nearby at Princes Risborough but partly relocated to Watford, were the forerunners of the modern day prefabricated truss.



Pre-fabricated timber roof

Common problems with these are that the bolts rust. In this particular case the ones we saw were in average condition. Without the manufacturers' calculations and installation details we cannot comment categorically on the roof.

Roof Timbers

We have inspected the roof structure for:

1. Serious active woodworm
2. Structurally significant defects
3. Structurally significant dry rot
4. Structurally significant wet rot

Our examination was limited by the general configuration of the roof and the insulation. What we could see was generally found to be in average condition for its age, type and style, with some dampness coming in around the chimney and the front of the chimney has been removed. It is feasible that there are problems in the roof that are hidden.

General view of roof with ridge board

The roof truss has metal fixings

Front of chimney removed

Dampness coming in around chimney

Gable end wall concrete structure

ACTION REQUIRED: The only way to be 100 per cent certain is to have the roof cleared and checked.

Fire Walls

The property has one reinforced pre-cast concrete firewall which is located to the left side (all directions given as you face the property). The firewalls are also Party Walls.

This was the only place we could truly see the wall structure in the entire building.

Fire Walls Defined

Fire walls help prevent the spread of fire through roofs and are a relatively recent Building Regulation requirement.

Water Tanks

The water tank looks old and we would recommend it is replaced.


Water tank

ACTION REQUIRED: We recommend you replace the water tank.

We would always recommend that water tanks at the very least be drained down and cleared of any debris etc. (we have seen dead birds and other unmentionable things in these tanks). As you are often cleaning your teeth with this water it is best that it is as clean as possible!

Ventilation

We were pleased to see the white pre-formed plastic vents that have been inserted under the Hessian protective underlayer, as this allows better ventilation in the roof and it does indicate to us that there are problems with condensation in this property, as mentioned elsewhere within this report. The vents help with air flow and air movement in the roof space and reduce the chances of condensation, which is very important in this type of building.


Vents in roof


Pulling the vent partially out


Pulling the vent completely out

Please also see our comments about using humidity controlled extract fans in the property.

Insulation

There is a lot of insulation in the roof, we would normally be saying having a lot of insulation is a good thing, however you do need to be aware that you can create condensation in the structure with too much insulation and you need to have air movement, which is why it is good the vents have been added in the roof.

You may also wish to look into using a positive pressure air movement system.

Please see the Thermal Efficiency Section of this Report.

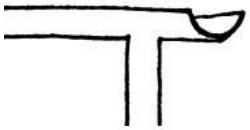
Electrical Cables

We can often identify the age of an electrical installation by the age of wiring found in the roof. In this case we could not see it due to the mass of insulation.

Please see our further comments in the Services Section of this Report.

Finally, we would ask you to note that this is a general inspection of the roof, i.e. we have not examined every single piece of timber. We have offered a general overview of the condition and structural integrity of the area.

GUTTERS AND DOWNPIPES



The function of the gutters and downpipes is to carry rainwater from the roof to the ground keeping the main structure as dry as possible.

Defective gutters and downpipes are a common cause of dampness that can, in turn, lead to the development of rot in timbers. Regular inspection and adequate maintenance are therefore essential if serious problems are to be avoided.

Gutters and Downpipes

The gutters and downpipes are profile plastic. They are in average condition for their age, type and style. There does look to have been some replacement plastic, based upon the different colours, so you may have some of the older plastic which does tend to get affected by sunlight and become more brittle over time.

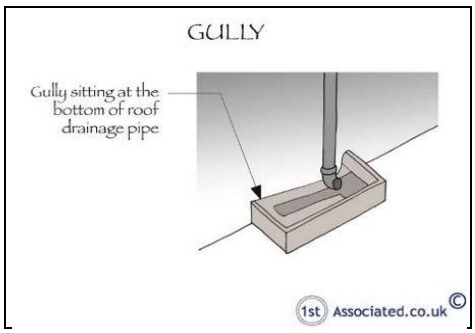
Profile plastic gutter

Generally we would comment there may be some minor leaks but most people would be happy to live with these providing repairs are carried out within the next six to twelve months.

Downpipes feed directly into shallow surface gullies

The downpipes feed into shallow surface gullies. We much prefer to see a gully as per the sketch below.

Downpipes feed directly into shallow surface gullies



Gully

ACTION REQUIRED: We would always recommend you stand outside the property next time it rains heavily and see how well the drains cope with the rainwater particularly looking at the guttering and the joints.

We also recommend that the gutters and downpipes are cleaned out, the joints are checked and the alignment checked to ensure that the gutters fall towards the downpipes.

Soil and Vent Pipe

The soil and vent pipe is internal, it can be seen externally at roof level to the rear right corner. We are not sure whether it is metal or asbestos as it is difficult to view. It has a lead flashing.


Soil and vent pipe

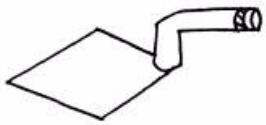
Asbestos was fairly commonly used in this era of building.

Please note we are not asbestos surveyors.

ACTION REQUIRED: Please see our comments in the Executive Summary.

Finally, gutters and downpipes and soil and vent pipes have been inspected from ground level. As it was not raining at the time of the inspection it is not possible to confirm 100 per cent that the rainwater installation is free from blockage, leakage etc. or that it is capable of coping with long periods of heavy rainfall. Our comments have therefore been based on our best assumptions.

WALLS



External walls need to perform a variety of functions. These include supporting upper floors and the roof structure, resisting dampness, providing adequate thermal and sound insulation, offering resistance to fire and being aesthetically presentable.

Non-traditional building (sorry to repeat ourselves)

To reiterate, it is really important you understand this is a non-traditional construction house. There are generally considered to be four different types:

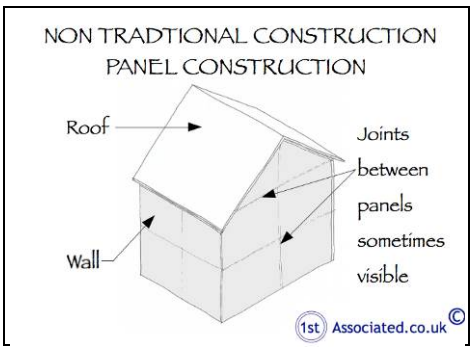
1. Metal frame – a metal frame supporting the structure.
2. Pre-cast reinforced concrete - cast in a factory and then brought to the site.
3. In-situ concrete - cast at the site.
4. Timber frame – a timber frame supporting the structure.

In this case we believe it to be a pre-cast concrete construction and from our searches via our data bases that we have we believe it to be a Reema style of which around were 17,600 built between 1945-1966.

> **ACTION REQUIRED:** Please see our comments in the Executive Summary and articles in the Appendices.

How this property was originally built

Originally this property had pre-cast concrete walls externally. These were generally large panels that were manoeuvred into place and linked together off a structural frame.



Non-traditional panel construction

How is this property now built?

We believe that an insulated panel has been added onto the original construction, with what is known as a thin render (traditionally renders were much thicker than these). This was a chemical mix onto a mesh.

Reinforcement visible
(not your property)

Silicone render information

ACTION REQUIRED: We could go into detail with regard to the different types of render but we feel it would be best for your legal adviser to check and confirm what render was used and what guarantee was available. Typically we are finding guarantees are between 10 and 25 years.

Please see our comments in the Executive Summary.

Render

As mentioned, the external walls are finished in a thin painted render on insulation boards.

We have carried out a tap test (literally hitting the render with the back of a hammer). We found it to be in average condition for its age, type and style.


Tap testing the render

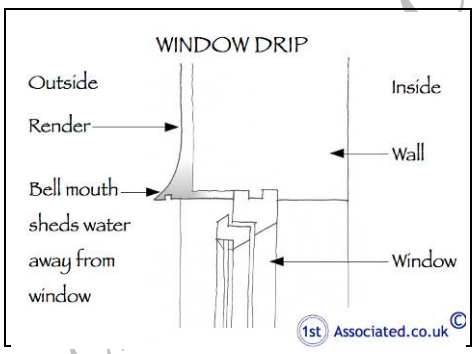
ACTION REQUIRED: Please see our comments in the Executive Summary regarding the thin render.

Render Detailing

You can normally tell whether the render is good or not by the drip detail over the window and the bell mouth to the base of the property.

Window Drip Detail

In this case we found a drip detail to the windows.

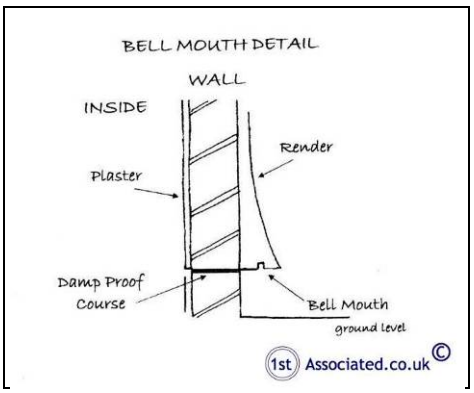


Window drip


Drip detail over window

Bell mouth to base of property

To the base of the render there was a bell mouth detail.



Bell mouth detail

Bell mouth to base of render

Cracking

We would remind you that any hairline cracks that appear need to be sealed/repointed as soon as possible to stop dampness and water getting in.

Painted render

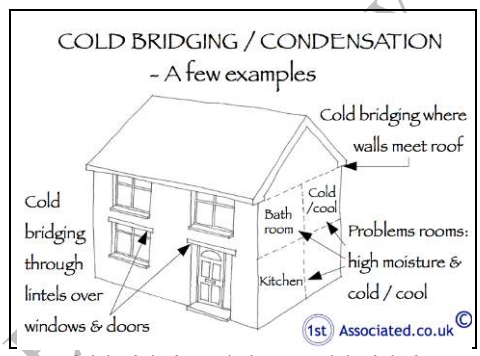
Although this render appears painted it may not be. Some of them have what we call as a through colour, which is where the colour is incorporated in the render, meaning they effectively do not need painting, although they can get pattern staining from rain etc so do need cleaning.

Cold Bridging

Originally the property would probably have had concrete lintels, possibly metal lintels. These can create cold/thermal bridging, although having insulation put over the top of them will limit this. Please see our article in the Appendices at the back of the report.

Cold Bridging Defined

Cold bridging is caused by a colder element in the structure allowing coldness to pass through the structure much quicker when warm moist air is present in the property, often caused by things like having a shower or a bath, cooking or washing, particularly if you are drying washing on the radiators. This is also caused by the general climate which results in condensation on the element.



Cold bridging / thermal bridging

Finally, the external walls have been inspected visually from ground level and/or randomly via a ladder. Where the window and door lintels are concealed by thin render / plasterwork we cannot comment on their construction or condition. In buildings of this age concrete lintels or metal lintels are common, which can be susceptible to deterioration that is unseen, particularly if in contact with dampness.

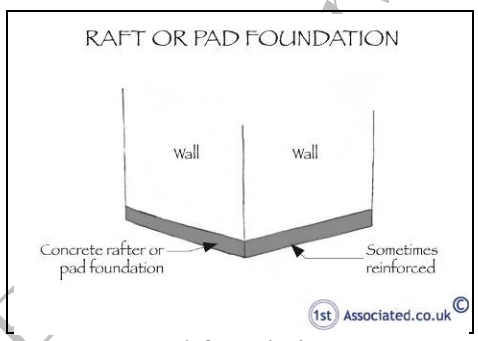
Our comments have been based upon how the thin render / plaster has been finished. We have made various assumptions based upon what we could see and how we think the thin render / plaster would be if it were opened up for this age, style and type of construction. We are however aware that all is not always at it seems in the building industry and often short cuts are taken. Without opening up the structure we have no way of establishing this.

FOUNDATIONS

The foundations function is, if suitably designed and constructed, to transfer the weight of the property through the soil. As a general comment, many properties prior to the 19th Century have little or no foundations, as we think of them today, and typically a two-storey property would have one metre deep foundations.

Foundations

Typically these were on a pad foundation. There are various types, often with the edges thickened.



Pad foundation

Building Insurance Policy

You should ensure that the Building Insurance Policy contains adequate provision against any possibility of damage arising through subsidence, landslip, heave etc.

It is your responsibility to check out prior to commitment to purchase that insurance is available on the property on the basis of the things we have reported in the survey. Much as we would like to we are unable to keep up with the changing insurance market and give you advice with regard to this.

Cracks

Please remember to talk about any cracks identified within the property. Often insurers will refer to progressive and non-progressive cracking. Unfortunately this is something we are unable to comment upon from a one-off inspection; the Building Research Establishment recommend a year of monitoring of any cracking.

We would refer you to our comments with regard to building insurance throughout this report.

Finally, we have not excavated the foundations but we have drawn conclusions from our inspection and our general knowledge of this type, age and style of property.

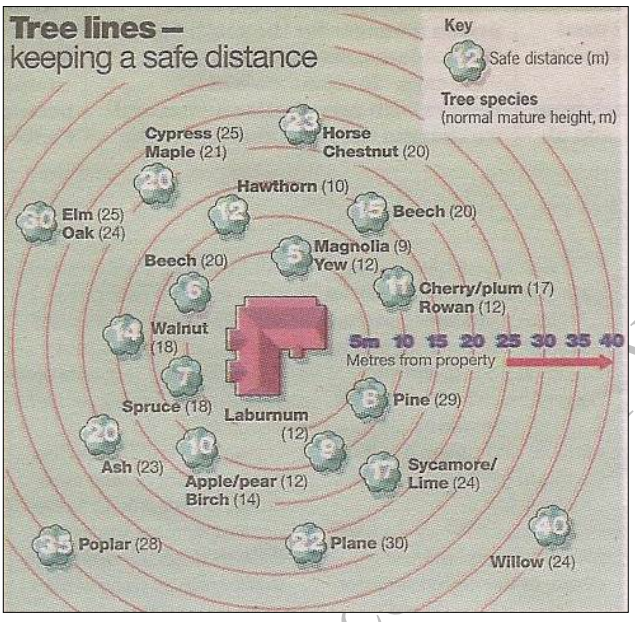
We would always recommend that you remain with the existing insurance company of the property.

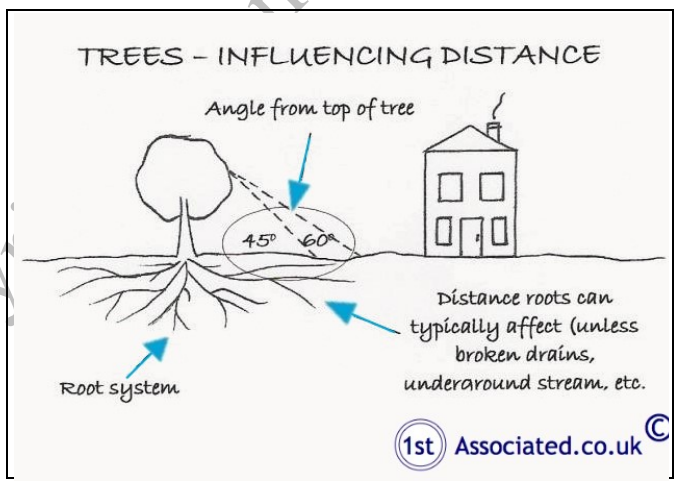
As no excavation has been carried out we cannot be 100 percent certain as to how the foundation has been constructed and we can only offer our best assumptions and an educated guess, which we have duly done.

TREES

Trees within influencing distance of a property can affect the foundations by affecting the moisture content of the soil.

There are no trees within what we would term as influencing distance but you do need to speak to your insurance company as they may have a different interpretation for insurance reasons.





Influencing distance of trees to a property

Influencing Distance Defined

This is the distance in which a tree may be able to cause damage to the subject property. It is not quite as simple as our sketch; it depends on the tree, its maturity, the soil type etc., etc.

Finally, insurance requirements with regard to trees have varied over the years and in our opinion have got ever more onerous. We have seen the notifiable distance of a tree away from a property to have been reduced over the years and we reiterate our comments elsewhere within this report that you need to make enquiries with regard to the insurability of your property in relation to trees and other features when you purchase the property.

Please also refer to the External Areas Section.

DAMP PROOF COURSE

The Building Act of 1878 required a damp proof course to be added to all newly built properties within the London area. It also required various other basic standards. These requirements were gradually taken up (or should that be grudgingly taken up) throughout London and then the country as a whole, although this took many years for it to become standard practice.

All modern properties should incorporate a damp proof course (DPC) and good building practice dictates that a differential of 150mm (6 inches) should be maintained between the damp proof course and ground levels. In this case we cannot see a DPC due to the render insulation. Typically one would have been built in as work proceeded. It is more condensation that is a problem in this type of property that is sometimes mistaken for rising damp.

Your attention is drawn to the section of the report specifically dealing with dampness.

Finally, sometimes it is difficult for us to identify if there is a damp proof course in a property. We have made our best assumptions based upon our general knowledge of the age, type and style of this property.

FASCIAS AND SOFFITS AND WINDOWS AND DOORS

This section covers fascias, soffits and bargeboards and windows and doors, and any detailing such as brick corbelling etc.

Fascias and soffits offer protection to the rafter feet and also allow the securing of the guttering. Windows primary functions are to admit light and air, but they also have thermal and sound properties. The doors allow access and egress within the property.

Bargeboards, Fascias and Soffits

The fascias and soffits are V-shaped in a pre-formed material, possibly plastic, possibly GRP (glass reinforced plastic), with circular vents.

Awkward fascia detail

The bargeboard is now covered with dirt and grime and would look far better if cleaned.

Dampness coming into front right

We noted dampness coming into the front right bedroom. It may be that a bargeboard has come loose and wind driven rain is getting in.

ACTION REQUIRED: Repair and/or clean.

Please see our comments in the Executive Summary.

Front right corner, where dampness is

Windows and Doors

The property has older style plastic double glazed windows with trickle vents, which generally look to be of an average quality.

Trickle vent

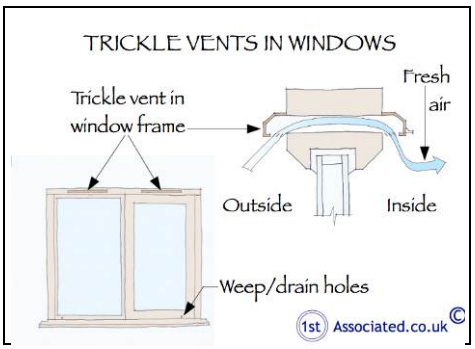
We would draw your attention to the fact that sealed double glazed units can fail, particularly as a result of poor workmanship during installation. Failure of the seal leads to condensation between the two panes of glass and simply replacing the affected units may not provide a satisfactory long-term solution.

Transferable Guarantees

Enquiries should be made as to the existence of any transferable guarantees by your legal advisor. Generally it is considered that double glazed units have a life of about ten years.

Trickle Vents Defined

Trickle vents allow a trickle of air through, therefore stopping/reducing the likelihood of condensation occurring within the property.



Trickle vents

Finally, we have carried out a general and random inspection of the external joinery. In the case of the fascias and soffits it is typically a visual inspection from ground level. With the windows and doors we have usually opened a random selection of these during the course of the survey. In this section we are aiming to give a general overview of the condition of the external joinery. Please also see the Internal Joinery section.

EXTERNAL DECORATIONS

The external decorations act as a protective coat for the building from the elements. Where this protective covering has failed, such as with flaking paintwork, the elements will infiltrate the structure. This is of particular concern as water is one of the major factors in damage to any structure.

We recommend that the bargeboards, fascias and soffits are cleaned. You should at the same time check that the airflow from the fascias boards goes through into the roof space, as often it gets blocked by the roof insulation, and there is a lot of insulation in the roof.

Regarding the render, as discussed we think it may have a permanent colour.

> **ACTION REQUIRED:** Your legal adviser to check and confirm with the previous owner whether this render needs to be painted or not, and if there is any guarantee with regard to it.

Finally, ideally external redecoration and cleaning is recommended every four to five years dependent upon the original age of the material, its exposure to the elements and the materials properties. Where painting/cleaning takes place outside this maintenance cycle repairs should be expected. Ideally redecoration and/or cleaning should be carried out during the better weather between mid-April and mid-September.

Please see our comments in the External Joinery section.

INTERNAL

CEILINGS, WALLS, PARTITIONS AND FINISHES

In this section we look at the finish applied to the structural elements such as the plasterwork applied to the ceiling joists, walls or partitions, together with the construction of the internal walls and partitions.

Ceilings

From our visual inspection of the ceilings and our general knowledge of this age and type of construction we believe that the ceilings are likely to be plasterboard or there may be proprietary boarding as this was fairly common in this era of property.

Textured paint

Many of the ceilings have textured paint (commonly known by their trade name of Artex). We believe there is an outside chance of some of this being older type of textured paint, which often had Asbestos content.

Please note, we are not asbestos surveyors.

ACTION REQUIRED: Please see our comments in the Executive Summary.

Older style textured paint

Plasterboard Defined

The usual name for Gypsum plasterboard which is building board with a core of aerated gypsum, usually enclosed between two sheets of heavy paper, used as a dry lining.

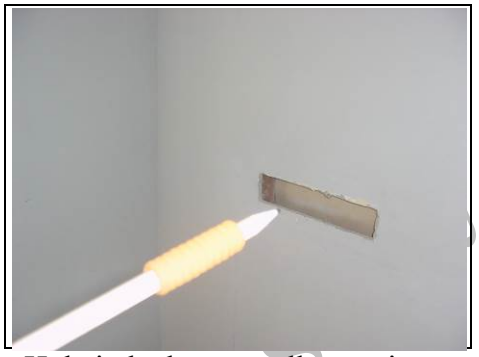
Proprietary boarding Defined

Proprietary boarding are one off specially manufactured boards commonly used in years gone by which are now popular again.

Internal Walls and Partitions

These are, we believe predominantly studwork.

It is impossible to determine the construction without opening up the walls and we have therefore taken an educated guess as this is typical in this type of construction.



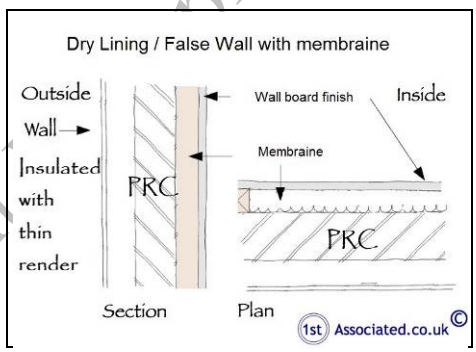
Hole in bedroom wall exposing a studwork partition

Perimeter Walls

In this case we cannot see the concrete structure at all, we can only see the dry lining and wet plaster to it.

We cannot be one hundred percent certain of the wall construction without opening them up which goes beyond the scope of this report.

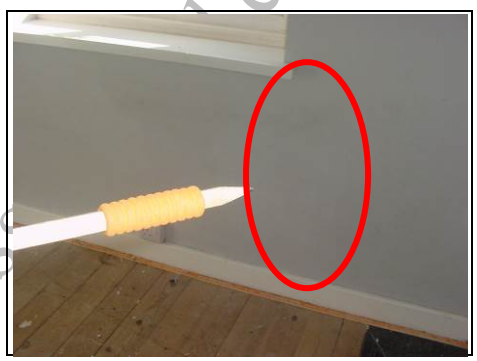
This comment has been based on the visual look of the wall which is relatively "smooth" and normally means a modern finish.



PRC dry external insulation to PRC

Cracking

We noted cracking to some of the walls.



Front right bedroom crack to wall

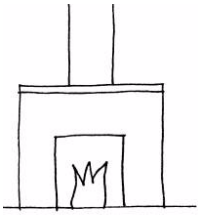
Crack below window

ACTION REQUIRED: Please see our comments in the Executive Summary.

Finally, ceilings, walls and partitions have been inspected from floor level and no opening up has been undertaken (unless permission has been obtained by yourselves). In some cases the materials employed cannot be ascertained without samples being taken and damage being caused.

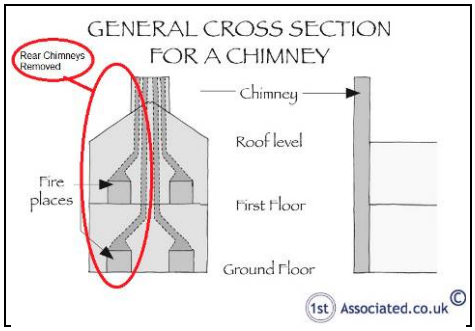
We cannot comment upon the condition of the structure hidden behind plaster, dry lining, other applied finishes, heavy furniture, fittings and kitchen units with fitted back panels.

CHIMNEY BREASTS, FLUES AND FIREPLACES



With the advent of central heating fireplaces tend to be more a feature than an essential function in most properties.

Half of the chimney breasts are located to the left side of the property, as half have been removed. The chimney breast in the lounge is no longer there and has been removed all the way from ground level up to roof level; the one in the kitchen was present. We do not think the chimney is usable in its present form and indeed there is a crack at roof level and it needs various repairs just to make it watertight.



Cross section showing where half of the chimney has been removed

Chimney removed in lounge

ACTION REQUIRED: Please see our comments in the Executive Summary.

Finally, we will comment on the condition of the chimney breast where we can see the chimney breast. If we can see a chimney breast has been removed we will inspect for signs of movement and advise. However, often the chimney breasts are hidden so we cannot comment. Also additional support can be concealed very well when chimney breasts are hidden particularly when plastered over.

Your Legal Advisor needs to specifically check with the Local Authority for removed chimneys and associated chimney breasts and Building Regulations Approvals and advise by e-mail immediately if chimney breasts are found to have been removed. We would recommend opening up the structure to check the condition. If we are not advised we will assume the relevant Building Regulations Approval has been obtained. It is strongly recommended that flues be cleaned and checked for obstructions prior to use to minimise the risk of hazardous fumes entering the building.

Please also see the Chimney Stacks, Flues Section of this report.

FLOORS

Functionally floors should be capable of withstanding appropriate loading, preventing dampness, have thermal properties and durability. In addition to this upper floors should offer support for ceilings, resistance to fire and resistance to sound transfer.

Ground Floor

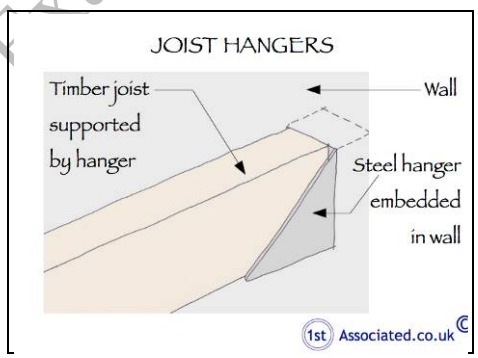
The floors felt solid under foot so we have assumed that they are constructed in concrete.

First Floor

We believe the floors are timber boarding on timber battens on to joist hangers. Sometimes a specialist system was used in non-traditional construction.

Joist and Floorboard Construction Defined

These are usually at first floor level consisting of a joist supported from the external walls, either built in or, in more modern times, sitting upon joist hangers, sometimes taking additional support from internal walls, with floorboards fixed down upon it.



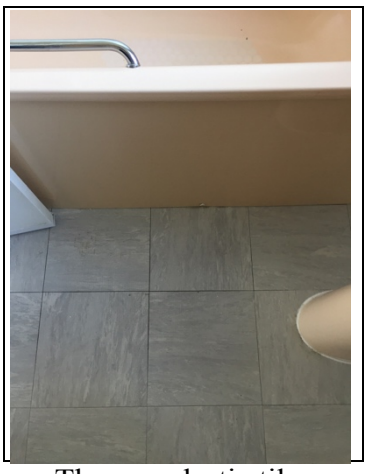
Joist hangers

Thermo-plastic tiles

There are some thermos-plastic tiles in the bathroom, which may contain asbestos.

Again, please note we are not asbestos specialists and you should have your own asbestos survey carried out to be 100% certain.

ACTION REQUIRED: Please see our comments in the Executive Summary.



Thermo-plastic tiles

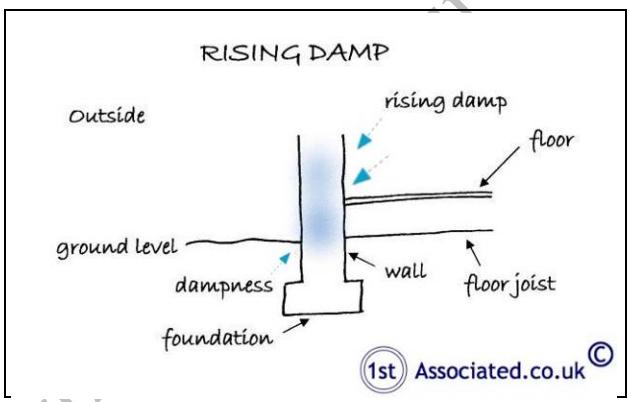
Finally, we have not been able to view the actual floors themselves due to them being covered with timber, floor coverings, thermo-plastic tiles etc. The comments we have made are based upon our experience and knowledge of this type of construction. We would emphasise that we have not opened up the floors in any way or lifted any floorboards.

DAMPNESS

In this section we look at any problems that are being caused by dampness. It is therefore essential to diagnose the source of the dampness and to treat the actual cause and not the effect of the dampness.

Rising Damp

Rising damp depends upon various components including the porosity of the structure, the supply of water and the rate of evaporation of the material, amongst other things. Rising damp can come from the ground, drawn by capillary action, to varying degrees of intensity and height into the materials above. Much evidence points towards there being true rising damp in only very rare cases.



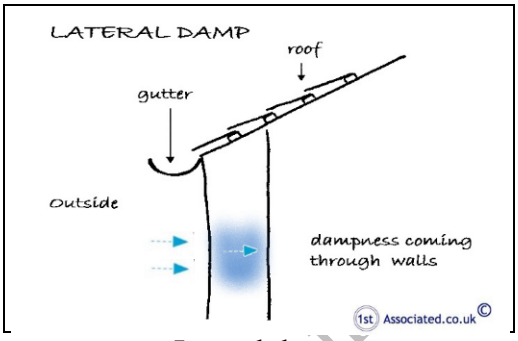
Rising damp

A visual inspection and tests with a moisture meter have been taken to the perimeter walls. In this particular case the walls are a mixture of wet plaster and dry lining so we were unable to get damp readings in most areas.

Testing for rising damp

Lateral or Penetrating Dampness

This is where water ingress occurs through the walls. This can be for various reasons such as poor pointing or wall materials or inadequate gutters and downpipes, such as poorly jointed gutters.



Lateral damp

We used a resistance meter on the external walls. It was in line with what we typically find. Again the walls are wet plaster and dry lined so we were unable to get damp readings in most places.


Testing for lateral dampness

Condensation

This is where the humidity held within the air meets a cold surface causing condensation.

At the time of the inspection there were signs of condensation in the form of black mould.

We noted vents in the ceilings and think this property may have a problem with condensation.


Blackness to corner of front right bedroom, possible condensation, possible roof leak


Vent in ceiling

Condensation depends upon how you utilise the building. If you do your washing and then dry it in a room without opening a window you will, of course,

get condensation. You need to have a balance between heating, cooling and ventilation of properties and opening windows to air the property regularly.

Extract fans in kitchens, bathrooms and drying areas

A way of helping to reduce condensation is to have good quality large extract fans with humidity controlled thermostats within the kitchens and bathrooms and also in any areas where you intend to dry clothes which are moisture generating areas.

ACTION REQUIRED: Please see our comments in the Executive Summary.

We would recommend large humidity controlled extract fans be added to kitchens, bathrooms and any rooms used as drying areas.

ANTICIPATED COST: We would anticipate costs between £250 - £500 per extract fan depending upon the wiring required; quotations required.

Finally, effective testing was prevented in areas concealed by heavy furniture, fixtures such as kitchen fittings with backboards, wall tiles and wall panelling. We have not carried out tests to BRE Digest 245, but only carried out a visual inspection.

INTERNAL JOINERY

This section looks at the doors, the stairway, the skirting boards and the kitchen to give a general overview of the internal joinery's condition.

Doors

The doors are a mixture of the older style plain panel doors on the first floor and modern painted timber panel doors to the ground floor.

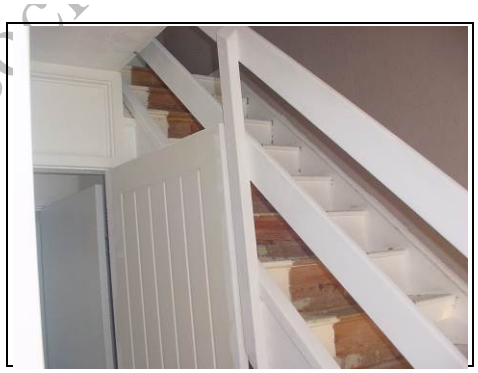
Painted timber panel door to ground floor

Plain panel door on first floor

Staircase

We were unable to examine the underside of the stair timbers due to it being lined where we could see it, which precluded our inspection, so we cannot comment further upon the stair structure. We can, however, say that the lining gives a resistance to the spread of fire if such circumstances were to occur.

The staircase would not meet current Building Regulations, although there is no retrospective requirement to change it as far as we understand, however we would recommend it is altered from a safety point of view.



Staircase not up to modern standards

Stairs lined

ACTION REQUIRED: We recommend balustrades are added to meet the 100mm sphere so people cannot fall between them.

Please see our comments in the Executive Summary.

Kitchen

We found the kitchen in average, subject to some wear and tear as one would expect.

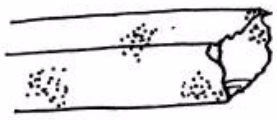
We have not tested any of the kitchen appliances.

ACTION REQUIRED: We recommend adding in large good quality humidity controlled extract fan.

Kitchen

Finally, it should be noted that not all joinery has been inspected. We have viewed a random sample and visually inspected these to give a general over-view of the condition. Please also see the External Joinery/Detailing section.

TIMBER DEFECTS



This section considers dry rot, wet rot and woodworm. Wet and Dry rot are species of fungi, both need moisture to develop and both can be very expensive to correct. We would also add that in our experience they are also often wrongly diagnosed.

As this is a concrete framed building it doesn't rely on timber in the usual way and as such the likelihood of dry rot and wet rot that causes structurally significant damage is considerably reduced, some would argue almost eliminated altogether. However we still do check for dry rot and wet rot.

Dry Rot/White Rot

Dry rot is also sometimes known by its Latin name Serpula lacrymans. Dry rot requires constant dampness together with a warmish atmosphere and can lead to extensive decay in timber.

Dry rot is unlikely as this is a concrete frame structure. We would advise that we have not opened up the floors and we had a limited view of the roof.

Wet Rot/Brown Rot

Wet rot, also known by its Latin name Contiophora puteana, is far more common than dry rot. Wet rot darkens and softens the wood and is most commonly seen in window and doorframes, where it can relatively easily be remedied. Where wet rot affects the structural timbers in a property, which are those in the roof and the floor areas, it is more serious.

We did note some wet rot in the roof, adjacent to the chimney.

> **ACTION REQUIRED:** Please see our comments in the Executive Summary.

Again, we would advise that we have not opened up the floors and had a limited view of the roof.

Woodworm

Active woodworm can cause significant damage to timber. There are a variety of woodworm that cause different levels of damage with probably the worst of the most well known being the Death Watch Beetle. Many older properties have woodworm that is no longer active, this can often be considered as part of the overall character of the property.

In a non-traditional building we look in both the roof and at the floors where we can view them to see if there is any woodworm. Woodworm is not a common problem as the main structure is in concrete. In this instance we did not note any woodworm.

Our inspection is usually restricted by insulation covering some of the timbers and general stored items in the roof, as it is restricted throughout the property by general fixtures and fittings.

> **ACTION REQUIRED:** If you wish to be 100 per cent certain that there is no woodworm the only way would be to check the property when is emptied of fixtures and fittings etc.

Finally, when you move into the property, floor surfaces should be carefully examined for any signs of insect infestation when furniture and floor coverings are removed together with stored goods. Any signs that are found should be treated to prevent it spreading. However, you need to be aware that many damp and woodworm treatment companies have a vested interest in selling their products and therefore have fairly cleverly worded quotations where they do not state if the woodworm they have found is 'active'. You should ask them specifically if the woodworm is active or not.

We would also comment that any work carried out should have an insurance backed guarantee to ensure that if the company does not exist, or for whatever reason, the guarantee is still valid. More importantly it is essential to ensure that any work carried out is carried out correctly.

INTERNAL DECORATIONS

With paints it should be remembered that up to 1992 lead could be used within paint and prior to this most textured paints (commonly known as Artex) contained an element of asbestos up to 1984, so care should be taken if the paintwork looks old and dated.

Internal decorations are in dated condition. You may wish to redecorate to your own taste. It is very difficult to advise on how frequently redecoration should take place. This very much depends upon the use and abuse the decoration gets, for example, within hallways this tends to be greater than for example within a spare bedroom.

Finally, we would draw your attention to the fact that removal of existing decorative finishes may cause damage to the underlying plasterwork necessitating repairs and making good prior to redecoration.

THERMAL EFFICIENCY

Up until the mid 1940s we did not really consider insulation in properties, for example it was only in the 1960s that we started putting insulation in the roof and then it was about 50mm, in the 1970s this was upgraded to 100mm. Then we started to think about double glazing and cavity wall insulation. Since then insulation standards have increased considerably and today we are looking at typically using insulation not only in the roof but also in the walls, floors and windows and more recently considerable work has been carried out on how efficient boilers are within properties. Care has to be taken that properties are not insulated disproportionately to the ventilation as this can cause condensation and you should be aware that you need to ventilate any property that is insulated.

Zoopla (and others may do similar) show an energy assessment of how much typical energy bills will be on a property. We have not had feedback on how accurate this is as yet however we feel it is an interesting step forward in looking at energy efficiency of a property, although there are all sorts of arguments as to how the energy efficiency calculations are carried out.

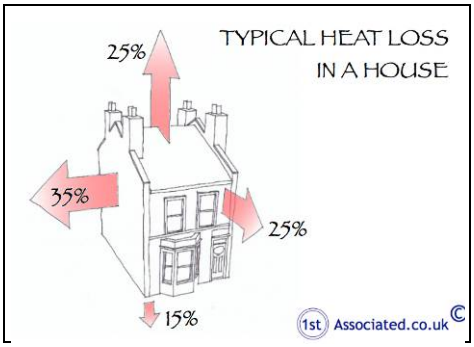
Thermal Imaging

A typical thermal image of this age of property would look like this.

Thermal imaging photo of front of property

Roofs

Some roof insulation was present although not to current Building Regulations requirements of 300mm. In this type of property you have to be very careful if you insulate not to create a condensation situation as this is when we feel you get most accelerated deterioration to the roof frame and the structural frame.



Typical heat loss

Walls

The walls to this property are a mixture of the original pre-fabricated concrete walls with dry lining inside, although sometimes insulation is added (your legal adviser needs to make enquiries with regard to this), sometimes in a worst case scenario it can even be asbestos used to line the walls, although we have no record of this from the Building Research Establishment (BRE) database.

Externally the walls have an insulation with a thin render.

> **ACTION REQUIRED:** Your Legal Adviser to specifically request any information in relation to insulation and also if dew point/ interstitial condensation risk analysis has been carried out.
>
> Please see our comments in the Executive Summary.

Windows

The windows are double glazed and therefore will have reasonable thermal properties.

Services

Service records should be obtained for the boiler and the electrics. It is essential for the services to be regularly maintained to run efficiently.

> **ACTION REQUIRED:** We would recommend you ask the owners for energy bills and service records for the past few years.

Summary

Assuming the above is correct, this property is average compared with what we typically see, assuming there are no problems with interstitial condensation.

Further information can be obtained with regard to energy saving via the Internet on the following pages:

HTTP//www.est.org.uk, which is by the Energy Saving Trust and includes a section on grant aid.

or alternatively www.cat.org.uk (Centre for Alternative Technology)

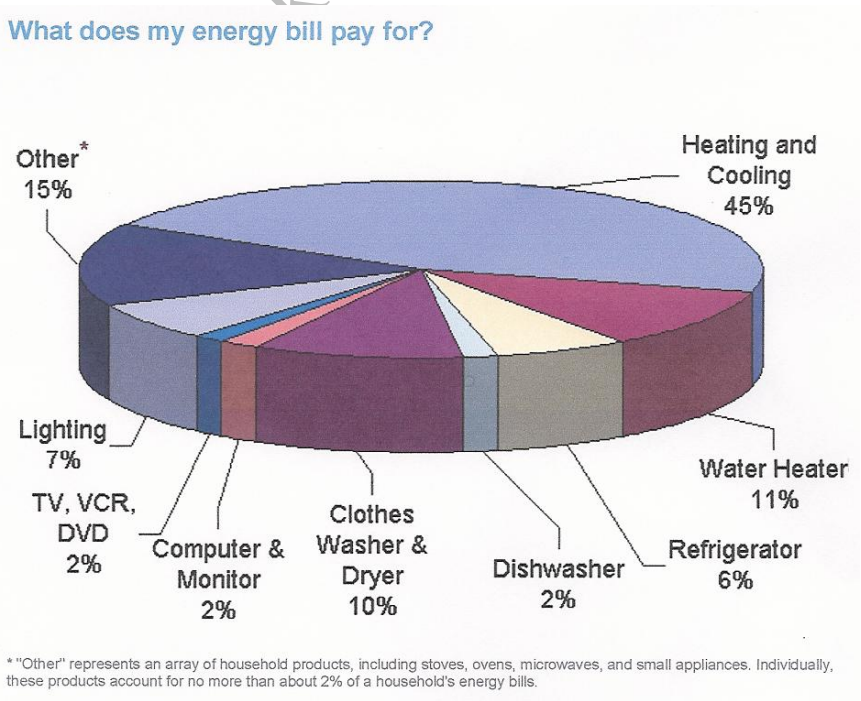
or Sustainable Energy Without the Hot Air by David J C MacKay HTTP//www.withouthotair.com/Videos.html to download for free or buy a paper copy as we did.

It is worth watching the video How Many Light Bulbs? by David J C MacKay – can be viewed on YouTube

HIPs

We understand that HIPs were suspended from 20th May 2010. Energy Performance Certificates are required before a sale completes. Please note we have not seen the Energy Performance Certificate.

Finally, we would comment that energy we feel will become a major consideration in years to come, particularly with the greater focus in modern buildings on energy efficiency.



OTHER MATTERS

In this section we put any other matters that do not fit under our usual headings.

Security

No security system was noted. It is a personal decision as to whether you feel one is necessary. We are not experts in this field and therefore cannot comment further. We suggest you contact a member of NSI (National Security Inspectorate), obtainable through directory enquiries, or your local Police Force for advice on a security system.

Fire / Smoke Alarms

Some smoke detectors were noted we were disappointed to see these were battery operated. We prefer fire alarms to be hard wired into the main power supply.

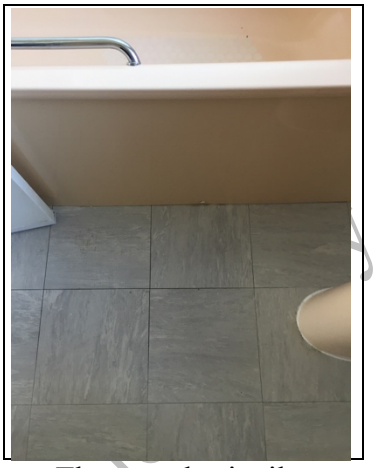
> **ACTION REQUIRED**: We would recommend, for your own safety, that additional smoke detectors are installed. We would always recommend a hard wired fire alarm system and are also aware that some now work from a wireless signal which may be worth investigating. Whilst fire is relatively rare it is in a worst case scenario obviously devastating.

Insurance

We would always recommend staying with the existing insurance company, and then if there are any problems you should not have the difficulty of negotiating with two insurance companies passing the blame between each other.

We would refer you to our comments with regard to building insurance throughout this report.

Asbestos



Thermo-plastic tiles

In a property of this type there was asbestos particularly to the roofs. There may also be other asbestos elements such as fascias and soffits, cladding, internal walls and ceilings and ductwork around services.

In this case we believe the thermo-plastic floor tiles contain asbestos and the textured painted ceilings may also contain an element of asbestos.

Asbestos was commonly used post war until it was banned only in the UK relatively recently. It is rumoured that it was still used after this point in time where products were imported from countries where it is not banned.

Our insurance company require us to advise we are not asbestos specialists and recommend you have an asbestos survey carried out by a specialist asbestos company.

ACTION REQUIRED: Please see our comments in the Executive Summary.

If you wish to confirm you are 100 percent free of asbestos you need to have an asbestos survey carried out.

SERVICES

This survey does not include any specialist reports on the electricity supply and circuits, heating or drainage, as they were not requested. The comments that follow are based upon a visual inspection carried out as part of the overall Building Survey.

Services and specialist installations have been visually inspected. It is impossible to examine every detail of these installations without partially dismantling the structure. Tests have not been applied. Conclusive tests can only be undertaken by suitably qualified contractors. The vendor/seller should be requested to provide copies of any service records, test certificates and, ideally, the names and addresses of the installing contractors.

BROADBAND CONNECTIVITY

We are sometimes asked with regard to the Broadband Connectivity in the area. We have identified some websites which we believe are useful for this:

https://www.broadband.co.uk/
Advises whether there is phone line broadband or Superfast or Ultrafast broadband in an area.

https://www.ofcom.org.uk/
Allows you to check broadband availability, check mobile availability and run a speed test.

We would also recommend speaking to the neighbours to see what they have used and of course it is always good to get to know your neighbours.

ELECTRICITY

It is strange to think that electricity only started to be used in domestic properties at the turn of the 19th century with gas lighting still being the norm for a good many years after.

Periodic inspections and testing of electrical installations is important to protect your property from damage and to ensure the safety of the occupants. Guidance published by the Institution of Engineering and Technology (IET) recommends that inspections and testing are undertaken at least every 10 years (we recommend every five years) and on change of occupancy. All electrical installation works undertaken after 1st January 2005 should be identified by an Electrical Installation Certificate.

Fuse Board

The electric fuses and consumer units were located in the hallway. The fuse board looked 1980's-2000's and better are now available.

Fuse Board

Earth Test

We carried out an earth test in the kitchen area to the socket point that is normally used for the kettle, this proved satisfactory.

Earth test

Surface mounted cables

Many of the cables are surface mounted, as is often the case in non-traditional buildings. Sometimes it is possible to cut these into the walls if you are not keen on them, other times the type of structure restricts this.

ACTION REQUIRED: Please see our comments in the Executive Summary.

We recommend you upgrade the fuse board to a modern one in a fire resistant casing.

As the property is changing ownership an Institution of Engineering and Technology (IET) test and report and any recommendations should be carried out by a NICEIC registered, or equivalent, approved electrical contractor or similarly approved.

In addition to this your Legal Advisor is required to make full enquires with the owners to establish if any electrical installation work has been carried out and to provide suitable certification for any works carried out after 1st January 2005. Any comments made within this report or verbally do not change this requirement.

For basic general information on this matter please see the appendices at the end of this report.

PLUMBING AND HEATING

In this section we do our best from a visual inspection to look at how the water is supplied to the property, how the supply is distributed around the property, how it is used to heat the property and how it is discharged from the property.

Water Supply

The controlling stopcock was not located. It is important that its presence is established in case of bursts or leaks.

> **ACTION REQUIRED:** Ask the owners or Estate Agent to show you where it is, although we would not expect most Estate Agents to know where it is.

Water Pressure

When the taps were run to carry out the drainage test we checked the pressure literally by putting a finger over the tap and this seemed average. The Water Board have to guarantee a certain pressure of water to ensure that things like boilers, particularly the instantaneous ones have a constant supply of pressured water (they would blow up if they didn't!).

Cold Water Cistern

Please see our comments in the Roof Section.

Hot Water Cylinder

There is a hot water cylinder located in the airing cupboard.

Hot water cylinder

The hot water cylinder is factory insulated, which indicates that it is relatively new (they were first used around the 1980's). This cylinder will therefore have a good thermal efficiency, although not as good as the more modern hot water cylinders.

Plumbing

The plumbing, where visible, comprises copper piping. No significant leakage was noted on the surface, although most of the pipework is concealed in floors, walls and ducts.

Heating

Heating is via electric storage heaters.

ACTION REQUIRED: You may wish to upgrade these. Please see our comments in the Executive Summary.

Electric storage heater

Ten Minute Heating Test

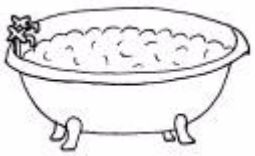
There was no owner / occupier at the property and therefore we do not turn the heating on in case there is a problem with it.

ACTION REQUIRED: We recommend you return to the property with the estate agent to turn the heating on to ensure it is working.

Finally, it should be noted that the supply pipe from the Water Company stopcock to the internal stop tap is the responsibility of the property owner.

We cannot comment on the condition of the water service pipe to the building. It should be appreciated that leaks can occur for some time before signs are apparent on the surface.

BATHROOM



In this section we consider the overall condition of the sanitary fittings such as the bathroom, the kitchen, the utility room and the cloakroom.

Bathroom

The property has a pink/salmon colour three piece bathroom suite, consisting of a bath, wash hand basin and WC, which looks average condition, subject to some day-to-day wear and tear, as one would expect.

Pink/salmon coloured bathroom suite

We would comment that any colour bathroom suite but white tends to date fairly quickly.

ACTION REQUIRED: We recommend a humidity controlled extract fan is added.

Finally, although we may have already mentioned it above we would reiterate that it is important to ensure that seals are properly made and maintained at the junctions between wall surfaces and baths and showers etc. We normally recommend that it is one of the first jobs that you carry out as part of your DIY on the property, as water getting behind sanitary fittings can lead to unseen deterioration that can be costly, inconvenient and difficult to repair.

MAIN DRAINS

The sanitary system, as we know it now, came into being some 100 years ago during the Victorian era and works so successfully today it is often taken for granted. It is only in recent years that re-investment has taken place to upgrade the original drainage systems.

It is assumed that the foul drains from the property discharge into a public sewer; this should be confirmed by your Legal Advisor prior to exchange of contracts, who should also provide information in respect of any common or shared drains including liability for the maintenance and upkeep of the same.

The cold taps have been run for approximately quarter of an hour in the kitchen. No build up or back up was noted.

Inspection Chambers / Manholes

For your information, inspection chambers / manholes are required to be provided in the current Building Regulations at each change of direction or where drainage runs join the main run.

We have identified one inspection chambers / manholes.

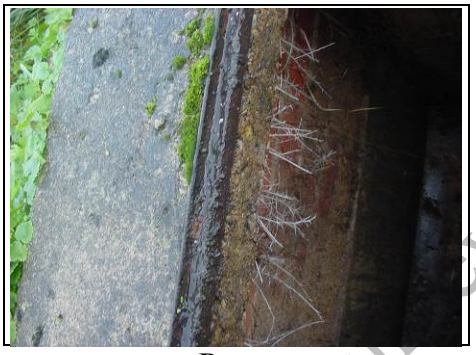
Manholes Defined
Access areas which usually fit a man (or woman) into them and are put in where the drains change direction.

Inspection Chamber / Manhole One, located to rear

We duly lifted the cover and found it to be clear at the time of our inspection, although there were roots at the top of the manhole which need clearing.

From what we could see it is concrete.


Rear manhole


Roots

We have only undertaken a visual inspection of the property's foul drains by lifting covers and running water from the taps within the house.

Drains are normally shared in a property of this age as this was common practice in this era of property.

Finally, it must be emphasised that the condition of the property's foul drains can only be ascertained by the carrying out of a test; such a test has not been undertaken. Should there be leaks in the vicinity of the building then problems could occur, particularly with respect to the stability of the building's foundations. Drainage repairs are inevitably costly and may result in damage being caused to those areas of the property beneath, or adjacent to, which the drains have been run.

Rainwater/Surface Water Drainage

Whilst very innocent looking rainwater downpipes can cause lots of problems. If they discharge directly onto the ground they can affect the foundations and even if they are taken away to soak-aways they can attract nearby tree roots or again affect foundations.

Some rainwater drains are taken into the main drainage system, which is now illegal (as we simply do not have the capacity to cope with it), and can cause blockages to the main drains! Here we have done our best from a visual inspection to advise of any particular problems.

We have been unable to determine the ultimate means of rain/surface water disposal. In this era of property they are likely to be combined/shared drains which are where the foul water and the surface water combines. These can be

a problem during heavy rainfall and peak periods, such as the 9 o'clock rush to work.

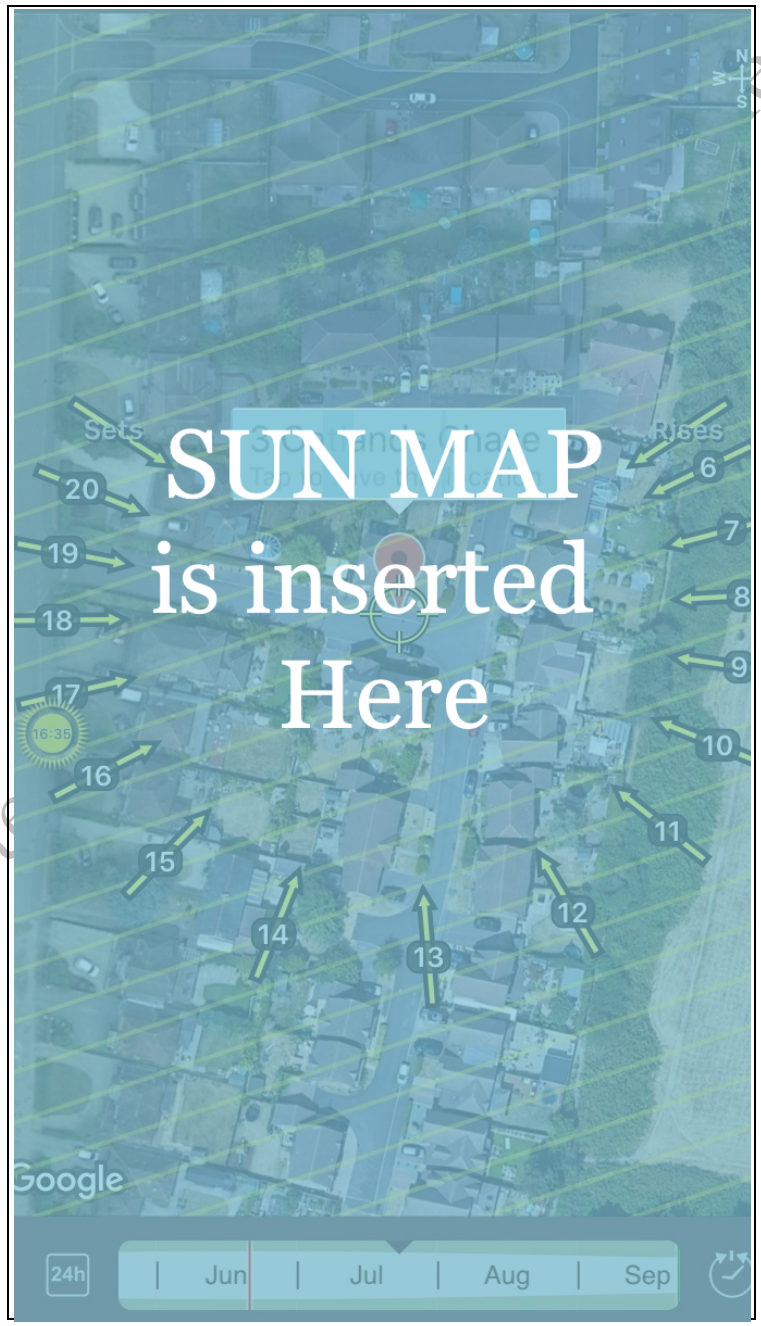
Finally, rain/surface water drains have not been tested and their condition or effectiveness is not known. Similarly, the adequacy of soak-aways has not been established although you are advised that they tend to silt up and become less effective with time.

Please also see our comments within the Gutters and Downpipes section.

OUTSIDE AREAS

Sun Map

As previously mentioned, the Sun Map shows the suns path as it travels around the property at a specific date; the date can be seen at the very bottom of the picture. The arrows show the sun's position using a 24 hour clock face around the property.

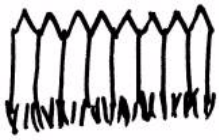


PARKING

Parking is on the roadside on a first come first serve basis, which may prove difficult as the property is on the corner of the road.

Parking on roadside to front of property
Aerial view – 360 photo

EXTERNAL



Front Garden

There is a reasonable size garden to the front, with grass and a path to the entrance door.

Front garden

Fence

There is a shared triangle of grass opposite the front, which we assume is Local Authority owned and maintained.

Rear Garden

The rear garden is a good size, on a sloping site, running towards the Lavington Road, which was busy at the time of the survey. The fence to the rear is dilapidated and we recommend this is replaced from a safety point of view.

Overgrown garden

Area of hard standing with vegetation growth

ACTION REQUIRED: Replace fence.

Boundaries

The left hand boundary (all directions given as you face the property) is usually the responsibility of the subject property.

There is normally a 'T' marking which boundary is yours on the deeds which you can obtain from Land Registry.

Finally, whilst we note the boundaries, these may not be the legal boundaries. Your Legal Advisor should make further enquiries on this point and advise you of your potential liability with regard to any shared structures, boundary walls and fences.

Neighbours

We did not knock on any doors, however the neighbour two doors away came over to say hello, thinking we were the purchaser of the house and seemed very friendly.

POINTS FOR YOUR LEGAL ADVISOR

If you wish to proceed with your purchase of the property a copy of this report should be forwarded to your Legal Advisor and the following points should be checked by him/her:

a) Responsibility for boundaries.

b) Rights for you to enter onto the adjacent property to maintain any structure situated near or on the boundary and any similar rights your neighbour may have to enter onto your property.

c) Obtain any certificates, guarantees or approvals in relation to:
   i) Removal of any chimneys in part or whole.
   ii) Certificates confirming chimneys have been swept
   iii) Roof and similar renewals.
   iv) External Wall Insulation (EWI)
   v) Dew point risk analysis.
   vi) Information on internal lining
   vii) Information with regards to overcladding
   viii) Amendments/removal of any walls in part or whole.
   ix) Double glazing or replacement windows.
   x) Drainage location, maintenance and repairs.
   xi) Timber treatments, wet or dry rot infestations.
   xii) Rising damp treatments.
   xiii) Asbestos
   xiv) Boiler and central heating installation and maintenance.
   xv) Electrical test and report.
   xvi) Planning and Building Regulation Approvals.
   xvii) Have there been any structural problems referred to insurance companies, any insurance claims, monitoring or underpinning, etc.
   xviii) Any other matters pertinent to the property.

d) Confirm that there are no defects in the legal Title in respect of the property and all rights associated therewith, e.g., access.

e) Rights of Way e.g., access, easements and wayleaves.

f) Liabilities in connection with shared services.

g) Adjoining roads and services.

h) Road Schemes/Road Widening.

i) General development proposals in the locality.

j) Conservation Area, Listed Building, Tree Preservation Orders or any other Designated Planning Area.

k) Confirm from enquiries that no underground tunnels, wells, sewers, gases, mining, minerals, site reclamation/contamination etc., exist, have existed or are likely to exist beneath the curtilage of the site upon which the property stands and which could affect the quiet enjoyment, safety or stability of the property, outbuildings or surrounding areas.

l) Our Report assumes that the site has not been put to contaminative use and no investigations have been made in this respect.

m) Any outstanding Party Wall Notice or the knowledge that any are about to be served.

n) Most Legal advisors will recommend an Environmental report or a similar product is used by you to establish whether the area falls within a flood plain, old landfill site, radon area etc. If your Legal Advisor is not aware of Environmental reports or similar please ensure that they contact us and we will advise them of it. Any general findings should be brought to their logical conclusion by using appropriate specialist advisers.

However, with regard to Environmental reports or similar general reports on the environment please see our article link on the www.1stAssociated.co.uk Home Page.

o) Any other matters brought to your attention within this report.

LOCAL AUTHORITY ENQUIRIES

Your Legal Advisor should carry out Local Authority searches to ascertain whether the property is a Listed Building and whether it is situated in a Conservation Area. They should also find out any information available with regard to Planning Applications and Building Control. We have not made any formal or informal Local Authority enquiries.

Finally, your Legal Advisor should carry out any additional enquiries they feel necessary and if they find anything unusual or onerous then we ask that they contact us immediately for our further comments.

It is our policy not to offer a conclusion to ensure that the Building Survey is read in full and the comments are taken in context.

If you would like any further advice on any of the issues discussed or indeed any that have not been discussed!

Please do not hesitate to contact us on 0800 298 5424 or send an email directly to whoever produced the report.

For and on Behalf of
Independent Chartered Surveyors

This Report is dated: Date

REFERENCES

The repair and maintenance of houses
Published by Estates Gazette Limited

Life expectancies of building components
Published by Royal Institution of Chartered Surveyors and Building Research Establishment

Surveying buildings
By Malcolm Hollis
Published by Royal Institution of Chartered Surveyors Books.

House Builders Bible
By Mark Brinkley
Published by Burlington Press

LIMITATIONS

Our limitations are as the agreed Terms and Conditions of Engagement.

CONDITIONS OF ENGAGEMENT

The report has been prepared in accordance with our Conditions of Engagement dated Date and should be regarded as a comment on the overall condition of the property and the quality of its structure and not as an inventory of every single defect. It relates to those parts of the property that were reasonably and safely accessible at the time of the inspection, but you should be aware that defects can subsequently develop particularly if you do not follow the recommendations.

ENGLISH LAW

We would remind you that this report should not be published or reproduced in any way without the surveyor's expressed permission and is governed by English Law and any dispute arising there from shall be adjudicated upon only by the English Courts.

SOLE USE

This report is for the sole use of the named Client and is confidential to the Client and his professional advisors. Any other persons rely on the Report at their own risk.

APPROVALS/GUARANTEES

Where work has been carried out to the property in the past, the surveyor cannot guarantee that this work has been carried out in accordance with manufacturers' recommendations, British/European Standards and Codes of Practice, Agreement Certificates and statutory regulations.

ONLY HUMAN!

Although we are pointing out the obvious, our Surveyors obviously can't see through walls, floors, heavy furniture, fixed kitchen units etc. they have therefore made their best assumptions in these areas.

As this is a one off inspection, we cannot guarantee that there are no other defects than those mentioned in the report and also that defects can subsequently develop.

WEATHER

It was a mild autumn day at the time of the inspection. The weather did not hamper the survey.

As you are probably aware there has been some record breaking weather recently:

2018 being the driest start to a summer.
December 2015 was the wettest month
August 2004 the wettest August on record in many areas.
2003 was the driest year on record
2000 was the wettest year on record

This may have adverse effects on many buildings in years to come or the not too distant future.

NOT LOCAL

It should be noted the surveyors may not be local to this area and are carrying out the work without the benefits of local knowledge on such things as soil conditions, aeroplane flight paths, and common defects in materials used in the area etc.

EMPTY PROPERTY

The property was empty at the time of our survey, we were therefore not able to carry out our usual question and answer session or have our questionnaire filled out.

JAPANESE KNOTWEED

We have not inspected for Japanese Knotweed. We would advise that we are finding that some mortgage valuation surveyors are setting valuations at zero on any property with Japanese Knotweed and are reluctant to lend where it is present.

A BBC news report dated April 2018 states that the latest research has been carried out by Swansea University, where they carried out trials near Cardiff and Swansea and tested 19 main methods of controlling the plant and they found that none of these methods eradicated it. See our article:

https://buildingsurveyquote.co.uk/japanese-knotweed-buildings-and-resveratrol/

ACTION REQUIRED: You need to carry out your own research on this matter/due diligence before you legally commit to purchase the property and be aware that it could be in neighbouring properties which you do not have direct control over.

INSPECTION LIMITED

Unfortunately in this instance our inspection has been limited as:

1) We did not have a full view of the roof due to the insulation covering the ceiling joists and general configuration of the roof.

2) We did not open up the walls as we could not see a way of doing this without causing damage.

3) We did not open up the ground floor or the first floor as we could not see a way to do it without causing damage.

4) The property was empty we did not have the benefit of talking to the occupiers or them answering our usual question and answers.

THANK YOU

We thank you for taking the time to meet us at the survey.

BUILDING INSURANCE

We do not advise with regard to building insurance. You need to make your own enquiries. Some areas may have a premium, some buildings may have a premium and some insurers may be unwilling to insure at all in certain areas. You need to make your own enquires prior to committing to purchase the property. Please be aware the fact a building is currently insured does not mean it can be re insured.

We would comment that non-insurability of a building we feel will affect value. It is therefore essential to make your own enquiries with regard to insurance before committing to purchase the property and incurring fees.

ACTION REQUIRED: You need to contact an insurance company today to make enquiries with regard to insurance on this property.

TERMS AND CONDITIONS

Our computer system sends two copies of our Terms and Conditions to the email address given to us when booking the survey; one has the terms attached and the other has links to the Terms and Conditions on our website (for a limited time). If you have not received these please phone your contact immediately.

APPENDICES

1. The electrical regulations – Part P of the Building Regulations
2. Information on the Property Market
3. Designated Defective Houses
4. Sources of Information from BRE
5. Examples of non-traditional housing
6. Non Traditional Housing
7. Condensation and Cold Bridging Article

THE ELECTRICAL REGULATIONS
PART P OF THE BUILDING REGULATIONS

Here is our quick guide to the Regulations, but please take further advice from a qualified and experienced electrician.

From 1st January 2005, people carrying out electrical work in homes and gardens in England and Wales must follow new rules in the building regulations. All significant electrical work carried out in the home will have to be undertaken by a registered installer or be approved and certified by the local authority's building control department. Failure to do so will be a legal offence and could result in a fine. Non-certified work could also put your household insurance policy at risk.

If you can't provide evidence that any electrical installation work complies with the new regulations, you could have problems when it comes to selling the property.

There will be two ways in which to prove compliance:

1. A certificate showing the work has been done by a Government-approved electrical installer - NICEIC Electrical Contractor or equivalent trades body.
2. A certificate from the local authority saying that the installation has approval under the building regulations.

Homeowners will still be able to do some minor electrical jobs themselves. To help you, we've put together this brief list of dos and don'ts.

Work You Cannot do Yourself

- Complete new or rewiring jobs.
- Fuse box changes.
- Adding lighting points to an existing circuit in a 'special location' like the kitchen, bathroom or garden.
- Installing electrical earth connections to pipework and metalwork.
- Adding a new circuit.

INFORMATION ON THE PROPERTY MARKET

We used to include within our reports articles on the property market that we thought would be of interest and informative to you, however we were concerned that in some cases these did not offer the latest information. We have therefore decided to recommend various websites to you, however it is important to realise the vested interest the parties may have and the limits to the information.

www.landreg.org.uk

This records the ownership of interests in registered land in England and Wales and issues a residential property price report quarterly, which is free of charge. The Land Registry is a Government body and records all transactions as far as we are aware, although critics of it would argue that the information is often many months out of date.

www.rics.org.uk

The Royal Institution of Chartered Surveyors offer quarterly reports via their members. Although this has been criticised as being subjective and also limited, historically their predictions have been found to be reasonably accurate.

www.halifax.co.uk and www.nationwide.co.uk

Surveys have been carried out by these two companies, one now a bank and the other a building society for many years. Information from these surveys is often carried in the national press. It should be remembered that the surveys only relate to mortgaged properties, of which it is generally considered represents only 75% of the market. It should also be remembered that the national coverage of the two companies differs and that they may be offering various incentives on different mortgages, which may taint the quality of information offered. That said they do try to adjust for this, the success or otherwise of this is hard to establish.

www.hometrack.co.uk

This gives information with regard to house sale and purchase prices.

www.motleyfool.co.uk

We also like the Motley Fool website which is a general financial site and although it is selling financial services and other services they do tend to give a very readable view of the housing market.

www.rightmove.co.uk

This is probably the largest Internet search engine for estate agency sales and also has useful information with regard to prices of property (but it is not the same as having a chartered surveyor value it).

www.zoopla.co.uk

This is a good website for seeing the prices of properties for sale in a certain postcode area.

Designated Defective Housing

Page from Building Research Establishment Database of Non-Traditional Buildings

In the early 1980s, investigation of fire damage to an Airey house revealed cracking to the structural PRC columns caused by inadequate cover to the embedded steel reinforcement and chemical changes to the surrounding concrete. Subsequent investigations by BRE showed that a number of other house types built in the immediate postwar period exhibited similar defects, and that these would eventually lead to structural failure.

Accordingly, in 1984 the Government brought forward legislation to compensate owners who had bought, in good faith, houses from the public sector with serious structural defects which could not have been known about, or discovered on survey, at time of purchase. The Housing Defects Legislation (now Part XVI of the Housing Act 1985) allowed the Secretary of State to designate particular dwelling types as inherently defective, and empowered local authorities to operate a Scheme of Assistance for eligible owners, either by way of repurchase or by way of reinstatement ('repair'). Over 28,000 households were aided under the Scheme of Assistance which is now substantially complete, with only a tiny handful of eligible properties remaining to be or repurchased or reinstated."

Most 'repairs' were carried out using systems of reinstatement licensed, inspected and certificated by PRC Homes Ltd, a wholly owned subsidiary of NHBC, but not all owners used this route, and in addition some local authorities carried out 'partial repairs' to their own stock which did not remove all the defective PRC structural elements from the dwelling. Surveyors encountering a house type which has been Designated Defective are therefore advised to check whether any 'repairs' carried out were in accordance with a PRC Homes Ltd licensed system, and certificated as such. PRC Homes Ltd was wound up in 1996. After that, houses repaired under licensed systems were generally accepted for mortgage purposes with an ordinary NHBC warranty."

The legislation did not allow for any 'betterment' during reinstatement, and therefore while, superficially, the appearance of a reinstated house may have changed dramatically, key identification characteristics such as window and door openings, and roof pitch, will remain constant, as demonstrated in the Before and After photographs of the houses below. Once again, it needs to be stressed that the presence of a new brick skin on such a house does not of itself signify that the house has been reinstated in such a way that it is generally acceptable for mortgage purposes.

Cornish Unit Type II (upper) and Airey (lower) houses before and after repair.

Thirty house types were eventually designated as inherently defective, in separate legislation in England, Wales, Scotland and Northern Ireland. The subsequent BRE research programme into all non-traditional housing revealed no further house types which met the Government's criteria for designation. However, it should be noted that designation was by reference to a construction drawing forming part of the Order, rather than a named house type, and some local authorities have determined that the construction of Lilleshall (P075) and Cheecol Keeland (P035) houses is substantially in accordance with the construction shown in the designation documents for Dorran (P046) and Woolaway (P138) houses, respectively.

Under the 'Notes for surveyors' on the relevant pages, a warning symbol appears:

The house types listed below are designated as inherently defective under the Housing Defects legislation (they are shown under the names and reference numbers listed in the Handbook):

Airey (P003)
Ayrshire County Council (P010)
Blackburn Orlit (P024)
Boot Beaucrete (P025)
Boot Pier and Panel (P026)
Boswell (S007)
Cornish Unit Type I (P039)
Cornish Unit Type II (P040)
Dorran (P046)
Dyke (P047)
Gregory (P055)
Mac-Girling (P078)
Myton (P087)
Newland (P090)
Orlit (P091, P092)
Parkinson (P094)
Reema Hollow Panel (P101)
Schindler (S049)
Smith (P107)
Stent (P110)
Stonecrete (P113)
Tarran Temporary Bungalow (P115)
Tee Beam (P117)
Ulster Cottage (P122)
Underdown (P123)
Unitroy (P126)
Unity Type I (P127)
Unity Type II (P128)
Waller (P129)
Wates (P130)
Wessex (P132)
Whitson-Fairhurst (P134)
Winget (P137)
Woolaway (P138)

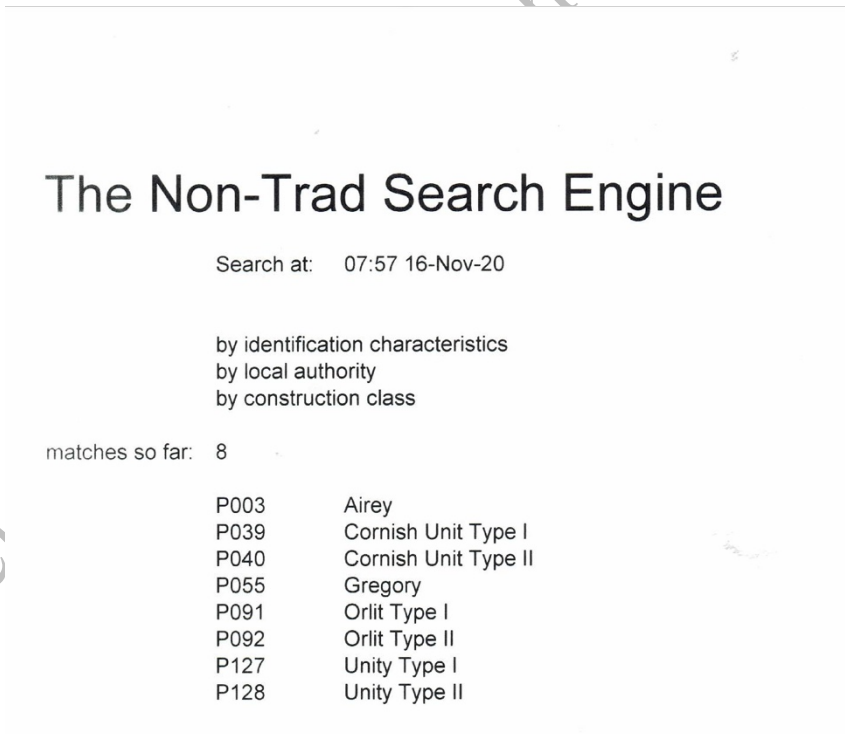
Sources of information

Our source of this investigation of non-traditional houses has been produced from our data base, by examination of Building Research Establishment (BRE) material on traditional houses and a visual inspection.

We searched for identification characteristics, local authority and construction class. We have included examples from our search.

We would also advise that we had a limited inspection of the structure and could only see it within the roof space (we recommend the property is opened up in three areas of one metre squared each opening).

We have, however, discounted the Airey construction, the Cornish Unit Types One and Two and the Gregory, based upon what we could see within the roof space and the general overall shape of this type of building. This leaves the Orlit Type One and Two or Unity Type One and Two as possibilities.



The Non-Trad Search Engine

Search at: 07:57 16-Nov-20

by identification characteristics
by local authority
by construction class

matches so far: 8

P003	Airey
P039	Cornish Unit Type I
P040	Cornish Unit Type II
P055	Gregory
P091	Orlit Type I
P092	Orlit Type II
P127	Unity Type I
P128	Unity Type II

If we refer you to the Designated Defective list, both the Orlit Type I and II and the Unity Type I and II have been Designated Defective; see our full description. This means that the property is not mortgageable as it stands today.

We reiterate our comment that we have based our information on a very limited view of the original structure from within the roof space and other overall characteristics.

We understand that the estate agents first of all said this property was an Airey, then thought it may be a Reema. There are three types of Reema construction and we have included the most likely ones, which are the Reema Hollow Panel, which we have referred to within the report. However, we cannot find any information on the BRE database that they were built in this area.

The Reema Hollow Panel is Designated Defective. Reema Conclad is not, but has specific problems and is possibly Designated Defected. It is identified that the BRE have not investigated this.

We think it is unlikely that it is the Reema Contrad, as it shows a brickwork gable and a vertical tile front and rear.

Reema Hollow Panel

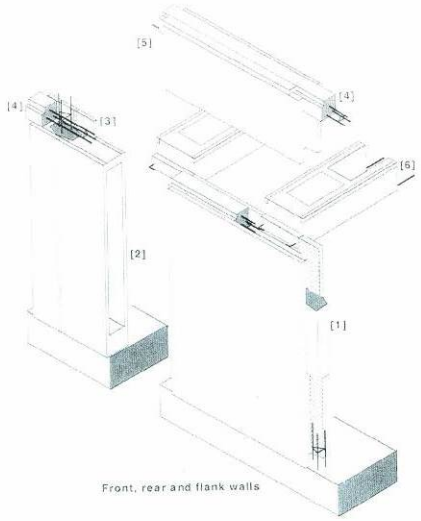
Manufacturer: Reema Ltd

Designers:

Period built: 1945–66

Number built: 17,600

Alternative names: Bourne
Engineered Homes
Nadder
Reema
Stour
Wylye



Front, rear and flank walls

IDENTIFICATION CHARACTERISTICS

Bungalows and 2-storey semi-detached houses.
Medium or shallow pitch hipped or gable roof covered with concrete tiles or asbestos cement sheets.
External walls of storey height exposed aggregate PC panels or tile hanging.

NOTES FOR SURVEYORS

Carbonation and high chloride level in hollow dense PC panels.
Cracked and spalled window and door reveals and sills.
cracked floor beams.
Pointing at panel joints cracked or missing.

The system was also used for flats.

REFERENCES

BRE Report BR 53
BRE Report BR 116
NBA Certificate March 1966, September 1967

CONSTRUCTION

Substructure: Pad foundations below junction of each panel. Concrete slab.
External walls: RC columns **[1]**, storey height room size dense aggregate hollow PRC panels with internal webs **[2]** with hollow core comprising 1 ½" external leaf, 6 ½" cavity, 1" inner leaf lined with fibreboard **[3]**. RC ring beams **[4]** at first floor and eaves level cast into trough-shaped panel heads. Timber wall plate **[5]**.
Separating wall: Dense aggregate hollow PC panels.
Partitions: PC panels. Some non-loadbearing walls of timber stud lined with plasterboard.
Ground floor: Concrete.
First floor: Timber boarding on timber battens in 10 ½" hollow PC beams **[6]**.
Ceilings: Plasterboard.
Roof: Timber rafters and purlins and concrete tiles or asbestos cement sheets.

VARIANTS

External walls of PRC panels cast with integral window sills.
Flank wall recessed relative to the gables instead of joined flush at corners.
Gable wall formed by abutting triangular panels at wall plate level.
First floor of timber joists on joist hangers.

Reema Conclad

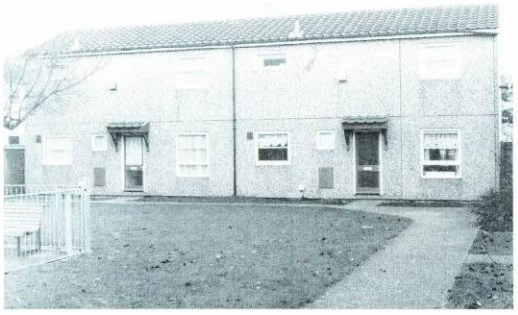
Manufacturer: Reema Ltd

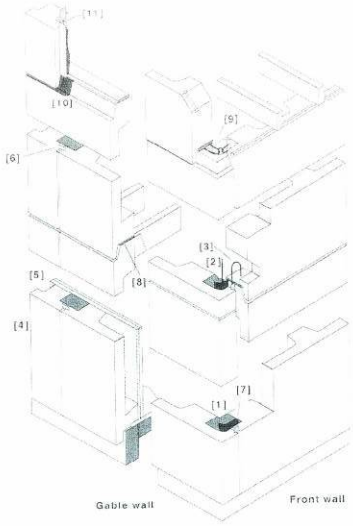
Designer:

Period built: 1967–1970s

Number built:

Alternative names: Engineered Homes
Reema
Reema Coffered Panel
Reema Waffle Panel





IDENTIFICATION CHARACTERISTICS

Bungalows and 2-storey semi-detached houses.
Medium pitch gable roof covered with concrete tiles or flat roof.
External walls of storey height exposed aggregate PC panels throughout.

NOTES FOR SURVEYORS

Not investigated by BRE. Guidance on inspection and assessment of reinforced concrete durability is given in:

Corrosion of steel in concrete (BRE Digest 444, Pts 1–3)
Repair and maintenance of reinforced concrete (BR 254)
Carbonation depths in structural-quality concrete (BR 19)

The system was also used for flats.

REFERENCES

BRE Report BR 116
CIBSA 1970

CONSTRUCTION

Substructure: Concrete underbuilding. Concrete edge beam. Concrete slab. DPC.
External walls: RC columns **[1]** reinforced locally with 1 MS bar **[2]** at intermediate floor levels. Lifting loops **[3]** in tapered zone at base of column. Storey height room sized 7" exposed aggregate ribbed PC panels **[4]** with 2" external leaf and 5" cavity. Ribs located and levelled by dowels contained within tapered concrete joints. Timber framing lined with polystyrene backed plasterboard **[5]**. Baffle **[6]**. Vertical DPC **[7]**. Drypack **[8]**. Steel staple **[9]** tying steel reinforcement loops projecting from panels. DPM **[10]**. MS plate **[11]** bolted to gable wall and gable wall apex panel. Paired support bearing.
Separating wall: 7" storey height PC panels.
Partitions: Timber stud lined with plasterboard.
Ground floor: Concrete.
First floor: Timber joists on galvanised joist hangers.
Ceilings: Plasterboard.
Roof: Timber trusses and concrete tiles.

VARIANTS

External walls of 8 ½" ribbed PC panels with 3 ½" outer leaf.
External walls of 6" waffle wall panels.
External walls of 7" PC panels comprising: at base of panel, 3" outer leaf, 1" insulation, 3" loadbearing inner leaf; at top of panel, 4" outer leaf, 1" insulation, 2" inner leaf.
External walls with windows cast in.
External walls of 8" PC panels comprising 3" outer leaf, 1" insulation, 4" inner leaf connected with phosphor bronze ties.
Floors of PC panels.
Floors of T&G boarding on PC panels.
Flat roof of PC slabs.
Separating wall of 5 ½" PC panels.
Paramount partitions.

Reema Contrad

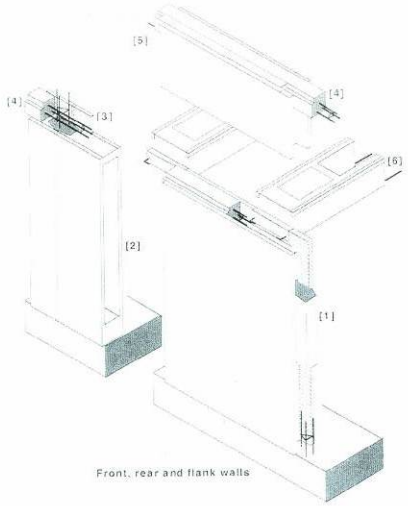
Manufacturer: Reema Ltd

Designers:

Period built: 1945–66

Number built: 17,600

Alternative names: Bourne
Engineered Homes
Nadder
Reema
Stour
Wylye



Front, rear and flank walls

IDENTIFICATION CHARACTERISTICS

Bungalows and 2-storey semi-detached houses.
Medium or shallow pitch hipped or gable roof covered with concrete tiles or asbestos cement sheets.
External walls of storey height exposed aggregate PC panels or tile hanging.

NOTES FOR SURVEYORS

Carbonation and high chloride level in hollow dense PC panels.
Cracked and spalled window and door reveals and sills.
cracked floor beams.
Pointing at panel joints cracked or missing.

The system was also used for flats.

REFERENCES

BRE Report BR 53
BRE Report BR 116
NBA Certificate March 1966, September 1967

CONSTRUCTION

Substructure: Pad foundations below junction of each panel. Concrete slab.
External walls: RC columns **[1]**, storey height room size dense aggregate hollow PRC panels with internal webs **[2]** with hollow core comprising 1 ½" external leaf, 6 ½" cavity, 1" inner leaf lined with fibreboard **[3]**, RC ring beams **[4]** at first floor and eaves level cast into trough-shaped panel heads. Timber wall plate **[5]**.
Separating wall: Dense aggregate hollow PC panels.
Partitions: PC panels. Some non-loadbearing walls of timber stud lined with plasterboard.
Ground floor: Concrete.
First floor: Timber boarding on timber battens in 10 ½" hollow PC beams **[6]**.
Ceilings: Plasterboard.
Roof: Timber rafters and purlins and concrete tiles or asbestos cement sheets.

VARIANTS

External walls of PRC panels cast with integral window sills.
Flank wall recessed relative to the gables instead of joined flush at corners.
Gable wall formed by abutting triangular panels at wall plate level.
First floor of timber joists on joist hangers.

Orlit Type One

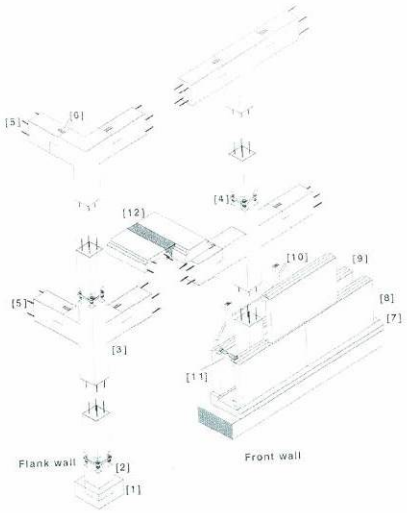
Manufacturer: Orlit Ltd

Alternative name: Orlit

Designer:

Period built: 1940s–1950s

Number built: 17,000 (Types I and II)



IDENTIFICATION CHARACTERISTICS

Bungalows and 2-storey semi-detached and terraced houses.
Medium pitch hipped roof covered with tiles or flat roof covered with asphalt or bituminous felt.
External walls of PRC slabs throughout.

NOTES FOR SURVEYORS

Main PRC columns and beams have only up to 30 mm cover, carbonation depths typically 10–20 mm and significant chloride content.
Cracking of OPC and HAC stitches.
Low quality HAC concrete in stitches.
Cracking of secondary beams, up to 20 mm carbonation and significant levels of chloride content.
Deterioration of other PRC components.

The system was also used for flats.

REFERENCES

BRE Report BR 36
PWBS No. 25

CONSTRUCTION

Substructure: Pad foundations **[1]**. PC stub columns cast into foundations **[2]**.
Frame: 5 ½" x 5 ½" PRC columns with integral beam stubs **[3]**, bolted steel flange connectors **[4]**, 7 ½" PRC beams **[5]** with concrete cover **[6]**.
External walls: 2" concrete base bonding units **[7]**. 1'4" x 2' or 4' x 2' PC facing slabs **[8]**, cavity, 2 ½" lightweight PC slabs **[9]**, plasterboard on timber framing **[10]**. Galvanised MS wall ties **[11]**.
Separating wall: PRC frame cavity wall infilled with foamed slag aggregate concrete blocks.
Partitions: Lightweight concrete slabs.
Ground floor: concrete.
First floor: PRC beams spanning between internal columns. Inverted PRC trough-shaped units with concrete fill **[12]**.
Ceilings: Plasterboard.
Roof: PRC beams spanning between internal columns, inverted PRC trough-shaped units with concrete fill, timber wall plates, timber trusses and purlins and tiles.

VARIANTS

Flat roof of profiled PRC eaves units, screed and asphalt or bituminous felt.

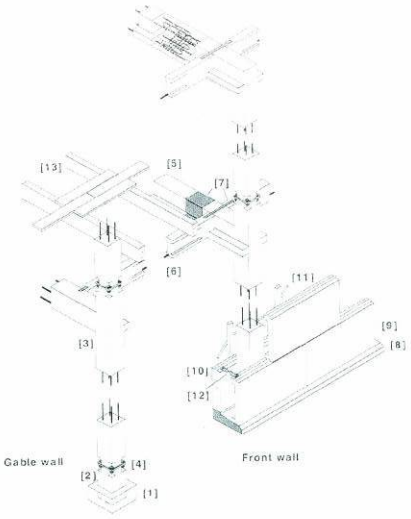
Orlit Type Two

Manufacturer: Orlit Ltd **Alternative name:** Orlit

Designer:

Period built: 1940s–1950s

Number built: 17,000 (Types I and II)



IDENTIFICATION CHARACTERISTICS

Bungalows and 2-storey semi-detached and terraced houses.
Medium pitch gable roof covered with tiles or flat roof covered with asphalt or bituminous felt.
External walls of PRC slabs throughout.
Gable apex tile hanging.

NOTES FOR SURVEYORS

Main PRC columns and beams have only up to 30 mm cover, carbonation depths 10–20 mm and sometimes significant chloride content.
Cracking of OPC and HAC stitches.
Low quality HAC concrete in stitches.
Cracking of secondary beams and carbonation depths up to 20 mm.
Significant levels of chloride in beams.
Deterioration of other PRC components.

The system was also used for flats.

REFERENCES

BRE Report BR 36
PWBS No. 25

CONSTRUCTION

Substructure: Pad foundations **[1]**. PC stub columns cast into foundations **[2]**.
Frame: 5 ½" x 5 ½" PRC columns with integral beam stubs **[3]** and bolted steel flange connectors **[4]**. 7 ½" PRC primary **[5]** and secondary **[6]** beams with concrete cover **[7]**.
External walls: 2" PC base bonding units **[8]**, 2" PC slabs **[9]**, cavity, 2 ½" lightweight PC slabs **[10]**, timber framing lined with plasterboard **[11]**. Galvanised MS ties **[12]**.
Separating wall: PRC frame infilled with foamed slag aggregate concrete blocks.
Partitions: Lightweight concrete slabs.
Ground floor: Concrete.
First floor: Timber boarding on timber beams **[13]** on PRC secondary beams.
Ceilings: Plasterboard.
Roof: PRC beams spanning between internal columns, inverted PRC trough-shaped units with concrete fill, timber wall plates, timber trusses and purlins and tiles.

VARIANTS

Flat roof of profiled PRC eaves units, screed and asphalt or bituminous felt.

Unity Type One

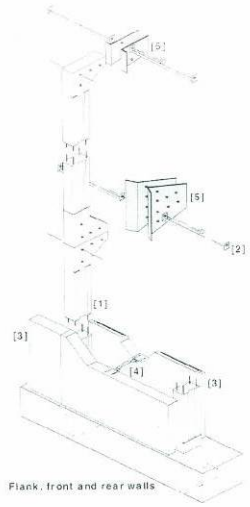
Manufacturers: Unity Structures Ltd
Unity House Construction

Alternative names: Butterley
Unity
Unity Brickclad

Designer:

Period built: 1950s

Number built: 19,000 (includes Types I and II)



Flank, front and rear walls

IDENTIFICATION CHARACTERISTICS

Bungalows and 2-storey semi-detached and terraced houses.
Medium pitch hipped or gable roof covered with concrete tiles.
External walls of stack bonded PC panels, or partial or total brick cladding.
Tile hanging to gable apex.
Splayed PC blocks to corners.

NOTES FOR SURVEYORS

Longitudinal cracking of PRC columns.
Cracking and spalling of PRC lintels.
Corrosion of steelwork at interface between PRC columns and RSJ first floor beams.
Corrosion of copper fixings to cladding.
Significant levels of chloride in PRC panels.
Asbestos cement roofing sheets.

The system was also used for flats.

REFERENCE

BRE Report BR 38

CONSTRUCTION

Substructure: Concrete strip footings. Concrete slab.
Frame: 6' x 3 ½' storey height PRC columns **[1]** with column bases anchored to foundation with mass concrete. Horizontal metal braces **[2]** between columns at first floor and eaves level. Diagonal bracing in vertical plane between columns at corners and adjacent columns and in horizontal plane between columns in front and rear walls and RSJ floor support beams.
External walls: PC panel **[3]**, cavity wall. Copper strap retaining clips **[4]**.
Separating wall: Lightweight PC block cavity wall.
Partitions: Storey height reinforced plaster units.
Ground floor: Timber boarding on concrete.
First floor: T&G or laminated timber boarding on RSJ floor support beams fixed to columns by twin steel end plates **[5]**.
Ceilings: Not known.
Roof: Timber connected to column heads with steel plates, asbestos cement sheets and concrete tiles.

VARIANTS

Frame with twin PRC corner columns.
PRC external wall panels square or chamfered at corners.
Concave splay to PC corner blocks.
PRC columns acting as mullions.
PRC lintels bolted to RSAs bolted to columns.
Cavity closers below window openings.
PRC rafters.
Early houses had concave chamfer to the splayed corner.

Unity Type Two

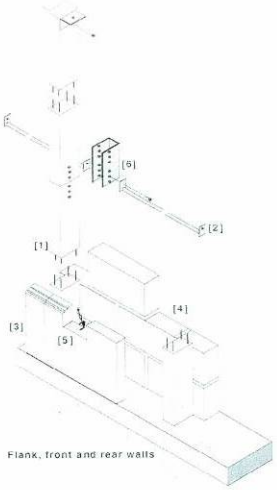
Manufacturers: Unity Structures Ltd
Unity House Construction

Alternative names: Butterley
Unity
Unity Brickclad

Designers:

Period built: 1950s

Number built: 19,000 (includes Types I and II)



Flank, front and rear walls

IDENTIFICATION CHARACTERISTICS

Bungalows and 2-storey semi-detached and terraced houses.
Medium pitch hipped or gable roof covered with concrete tiles.
External walls of stack bonded PC panels, or partial or total brick cladding.
Tile hanging to gable apex.

NOTES FOR SURVEYORS

Horizontal cracking of PRC columns.
cracking and spalling of PRC lintels.
Corrosion of steel at interface between RSJ floor support beam and PRC columns.
Corrosion of copper strap retaining clips.
Significant levels of chloride in PRC external wall panels.
Asbestos cement roofing sheets.

The system was also used for flats.

REFERENCE

BRE Report BR 38

CONSTRUCTION

Substructure: Concrete strip footings. Concrete slab.
Frame: 6" x 3 ½" storey height PRC columns **[1]** with bases anchored to foundation with mass concrete. Horizontal metal braces **[2]** between columns at first floor and eaves level, diagonal bracing in a vertical plane between columns at corners and adjacent columns, and in horizontal plane between columns in front and rear walls and steel floor support beams.
External walls: PC panels **[3]**, cavity, PC blocks **[4]**, copper strap retaining clips **[5]**.
Separating wall: 2 ½" lightweight PC block cavity wall.
Partitions: storey height reinforced plaster units.
Ground floor: Timber boarding on concrete.
First floor: T&G or laminated timber boarding on RSJ floor support beam fixed to columns by RSC end plates **[6]**.
Ceilings: Not known.
Roof: Timber rafters connected to column heads with steel plates, asbestos cement sheets and concrete tiles.

VARIANTS

Frame with twin PRC corner columns.
Cladding at corners square or chamfered.
PRC columns acting as mullions.
PRC lintel bolted to RSAs bolted to columns.
Cavity closers below window openings.
Linings to external wall of plasterboard on timber battens.
PRC rafters.

Airey

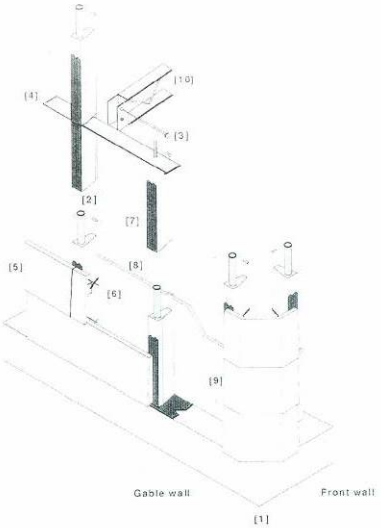
Manufacturers: W Airey & Sons Ltd
R Costain Ltd

Alternative name: Airey new improved duo-slab house

Designer: Frederick Gibberd

Period built: 1945–55

Number built: 26,000



IDENTIFICATION CHARACTERISTICS

2-storey semi-detached houses.
Medium or steep pitch hipped or gable roof covered with tiles or flat roof covered with bituminous felt.
External walls of exposed aggregate PRC panels throughout with upper panels oversailing lower panels.
Splayed PRC corner panels.
Tile hanging or horizontal timber boarding to gable apex.

NOTES FOR SURVEYORS

Cracking of PRC columns.
Water penetration through PRC panels.
High chloride content in PRC panels.

CONSTRUCTION

Substructure: Concrete downstand beam **[1]**. DPC.
External walls: Storey height tapered PRC columns **[2]** reintorced vertically with 1 ¼" steel tube. Steel dowel **[3]** to tubular reinforcement connection at first floor level. Steel locating jig **[4]** at first floor level. 3' x 9 ¾" tray-shaped PRC panels **[5]** copper wired **[6]** to columns, bitumen sealer **[7]**, cavity, plasterboard on timber battens **[8]**. PC corner panels **[9]**.
Separating wall: PC block cavity wall.
Partitions: Timber stud lined with plasterboard.
Ground floor: Concrete.
First floor: Timber boarding on lattice steel joists **[10]**.
Ceilings: Plasterboard.
Roof: Timber trusses, bituminous felt and tiles.

VARIANTS

Separating wall of PRC columns and PRC panel cavity wall.
Timber first floor joists with end plates.
Clinker concrete blocks.
Flat roof of lattice steel joists, timber boarding and bituminous felt.

REFERENCES

BRE Report BR 29
BRE Report Z75
PWBS No. 23

Cornish Type One

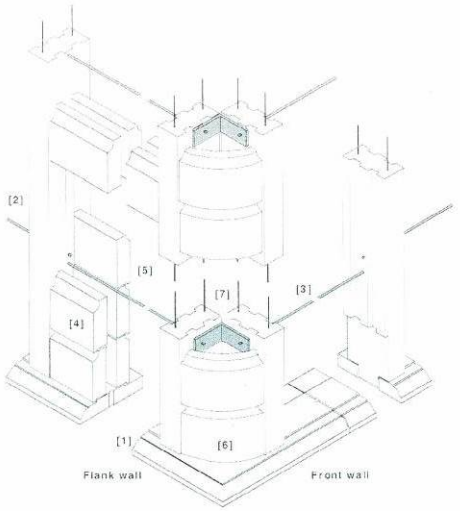
Manufacturers: Central Cornwall Concrete & Artificial Stone Co.
Selleck Nicholls & Co.

Designers: A E Beresford
R Tonkin

Alternative names: Cornish
Cornish Unit
Selleck Nicholls
Selleck Nicholls & Williams

Period built: 1946–1960s

Number built: 30,000 (Types I and II)



IDENTIFICATION CHARACTERISTICS

Bungalows and 2-storey semi-detached and terraced houses.
Mansard medium pitch hipped roof covered with concrete tiles, asbestos cement slates or cedar shingles.
External walls of storey height PRC columns and horizontal PC panels.
Rounded PC corner units.

NOTES FOR SURVEYORS

Horizontal and vertical cracking of PRC columns.
High rates of carbonation and significant levels of chloride in some PRC columns.
Cracking of first floor ring beams.

The system was also used for flats.

REFERENCES

BRE Report BR 35
NTHSc

CONSTRUCTION

Substructure: Concrete strip footings. Concrete block underbuilding. Concrete slab. DPC.
External walls: PC plinth units **[1]** with splayed joints joggle jointed together with mortar. Storey height 9" x 4" PRC columns **[2]** with two grooves. Steel tie rods **[3]**. 9" or 11" x 3' x 3" PC panels **[4]**, cavity, PC panels **[5]**. Quadrant-shaped PC corner units **[6]**, RSA brackets **[7]**. PC lintels and PC cornice units laid in bond.
Separating wall: 9" PC block or brick.
Partitions: Loadbearing walls of 4" dense PC blocks. Non-loadbearing walls of 4" clinker PC blocks.
Ground floor: Concrete.
First floor: Timber boarding on timber joists on PC cornice units.
Ceilings: Plasterboard.
Roof: Timber frame mansard roof, bituminous felt and concrete tiles.

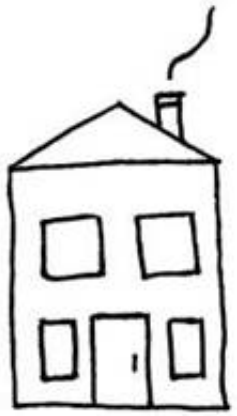
VARIANTS

Twin PRC columns.
Minor variations in PC panel sizes.
Non-loadbearing partitions of timber stud lined with plasterboard.
4 ½" PC block or brick separating wall in roof space.
Roof cover of asbestos cement slates or cedar shingles.
Brick cladding to external walls throughout.

Non-Traditional Housing

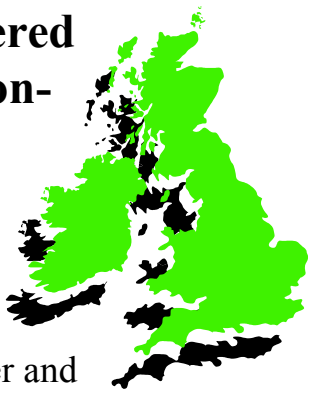
If you need help and advice with regard to independent valuations, property surveys, building surveys, structural reports, engineers reports, defects surveys and structural surveys matters please free phone 0800 298 5424 for a friendly chat with one of our chartered surveyors.

Non-traditional housing, what is it?



We have recently had a phone call asking what non-traditional housing is, as it had been referred to in a valuation that they had had carried out on their property and the lender had decided not to lend on the property because of this. Yet, from what they could see the property was in good order and they knew the person who had lived in it for the past thirty years, with no problems whatsoever. They went and had a look at the property again and it still looked to them like a traditional house and to be in good order. What was more they liked it and it had a big garden too and they were mystified why they couldn't get a mortgage on it.

What do Valuers, chartered surveyors and chartered building surveyors mean when they say non-traditional construction?



It would probably be a better term if the term non-typical construction was used. If you think of a house or a flat and think how they are traditionally built, from the Victorian era it is of brick and tile, or brick and slate, or stone and slate, or possibly render and tile, or render and slate depending upon which part of the country you are from this will be the traditional construction in the area of England, Wales, Scotland or Ireland that you live in. Often traditional construction is as local as the county or Town you live in. Nevertheless it is known as traditional construction.

What is traditional construction? Because equally we could argue that timber frame construction is the traditional type of construction in most areas of the country, but we will leave that argument up for another day.

Where did the term non-traditional construction and traditional construction come from?

We believe it came originally from the mortgage companies as a chartered building surveyor would certainly be more specific with regard to what the construction type is. We believe it was generated by the mortgage companies because they wanted to establish how the vast majority of properties were built and so appeared the terms traditional construction and non-traditional construction.

Non-Traditional construction

Non-traditional construction can really be classed as construction techniques that utilise systems of building, focused on speed and economy of construction. It is the sort of construction that is used where a great deal of housing is required quickly, so it is often used by local authorities to mass build (although today it is also used by commercial construction companies and developers). We have carried out surveys on many different types of non-traditional construction.

This resulted in some one-off designs but the majority of them fall into the category of:

1. Metal frame
2. Concrete frame
3. Timber frame
4. Concrete panel construction
5. Structural insulation panels
6. In situ concrete
7. One-offs

We know we are cheating really with the last category but it is the best way we can think of explaining it.

The absolute bible for this, although it is getting slightly dated is:

Non Traditional Houses – Identifying Non-Traditional Houses in the UK 1918 to 1975 BR469
Compiled and Edited by
Harry Harrison, Stephen Mullin, Barry Reeves and Alan Stevens.
Published by BRE Press (Building Research Establishment).

Many years ago the Building Research Establishment (known as BRE) were part of a Government organisation with the Property Services Agency (PSA) which we would say were the undisputed experts on construction and building problems along with a few Universities such as Reading and Salford Universities who looked on the more academic side. However we would also say that things have changed with commercialism.

We cannot recommend this book highly enough although it will set you back several hundreds of pounds, possibly worth using a search engine to see if you can pick up a second hand copy somewhere.

After the Great Wars we needed houses and homes

In the UK after World War I and World War II our housing stock had been bombed and made safe by being demolished so there were fewer houses. There had also been a lack of maintenance over the war years, as the workforce had been at war, and then the armed forces men were returning and they needed houses quickly. Various methods of non-traditional construction were proposed and built in the 1940's, 1950's and 1960's.

Also, this type of construction has been used during boom years, such as the early 1970's and the late 1980's, where it was hard to build quickly enough for supply and demand. Our comments relate to the UK, there are even variations in the UK.

Non-traditional construction by another name

After the war years we had to build fast and we used many new forms of construction techniques. We will name a few here; these names may have been given to you when you looked at buying a house. We will carry out a brief description of them or you could telephone us on 0800 298 5424:

Airey Houses

These have a concrete plank externally supported on a pre-cast concrete frame with steel tube reinforcements.

Airey houses were made up of concrete planks and are now generally being knocked down and rebuilt as they are not habitable

Street view.
They were named Airey houses after the Member of Parliament that was involved with them rather than the fact that the wind blew through them and they suffered badly from condensation.

Boot

Believed to be named after the contractor of that name. Built on a concrete frame with more traditional brickwork or render typically found externally.

Cornish Unit

Although they are called Cornish Units, we have found them all over the country. They come in various makes and models as do the other houses that we mention. They were traditionally constructed with a concrete frame. The unusual thing was the mansard roofs that ran all the way down to the first floor level.

Dorran

These were pre-cast concrete panel buildings with a concrete ring beam at first floor level with a timber frame internally.

Dye Construction

This was concrete panels which were a storey height secured by metal angle brackets (believed to be steel) with concrete beams forming the first floor.

Gregory

This is pre-cast concrete, storey height columns with ring beams. These have mansard roofs to first floor level.

Myton

These are concrete panels.

Newland

Steel frame.

Orlit

A feature of these is that they may have a flat roof with an asphalt finish.

Parkinson

These are concrete column construction with a render or pebbledash finish externally.

Reema

Hollow panel. These are structural concrete columns and beams cast in situ.

Stonecret

This is pre-cast reinforced concrete frame with concrete panels, two storeys in height.

Tarran

Pre-cast concrete panels with first floor ring beam. The panels are very wide.

Unity and Butterly

Pre-cast concrete column, metal plated beams. An unusual external finish of a small looking concrete panel.

Wates

Believed to be named after the contractor of that name. Pre-cast reinforced concrete panels with ring beams at first floor level.

Wessex

Pre-cast reinforced panels.

Wimpey No Fines

In situ mould type no fines concrete with a variety of different thickness of walls depending upon the age and type.

Laing Easyform

Comes in both solid and cavity wall forms built from a no fines concrete.

Arrowhead

Steel structural frame albeit that it is lightweight. They tend to have cladding to the front of them.

British Iron and Steel Federation House known as a BISF

These are relatively common although they are now very well disguised with brickwork being built around them. They are a lightweight structural steel frame.

British Iron and Steel Federation House (BISF)

Asbestos roof on BISF house

Dorlonco

They have a very well hidden structural metal frame.

Hawthorn Leslie

This is a mixture of both a metal frame and a timber frame.

Howard

We have come across quite a number of these in our surveys. This uses a lattice work of metal beams.

Lowton Cubit

Possibly named after the contractor. Again this is a steel framed building.

Thorncliffe

Cast iron panels bolted together.

Swedish timber dwelling

Built with a timber frame.

Reema conclad

This is a good example of a large panel concrete house.

This is but a brief run-through of some of the non-traditional houses. There are many, many different types. We have surveyed ones where there are only a few thousand ever produced and we have also surveyed other types of non-traditional houses where there are many thousands produced. In our experience as chartered surveyors they all need their own individual survey as they have their own unique problems.

It may look traditional construction even though it is non-traditional

With the purchasing of these houses over the years and the need to get a mortgage there have been many ingenious ways of making these houses mortgageable as per the following photographs of houses where we have carried out surveys; these are the ones that have been spotted by mortgage company valuers:

Modified non-traditional house

Brick clad modified non traditional house

Brick cladding and other alterations make a non traditional house mortgageable

A mortgage company surveyor may miss a non-traditional house construction

We have now been called in several times to do a Building Surveyor where the owners have not known that the type of construction is non-traditional construction even though they have had a mortgage company valuation. Unfortunately this is due to a lack of knowledge and experience with mortgage Valuers. After all, valuation experts are not building construction experts. We have come across the issue, if it looks traditional construction even though it is constructed in a non-traditional way it may be counted as traditional construction! This tends to be the case where a Valuer has failed to notice the construction type and when we come to carry out a building survey we then identify it. Unfortunately this then means that whoever is purchasing has a very limited mortgage market available to them.

Who lends on a non-traditional construction building?

The answer is the companies interested in lending in this market vary depending on many factors. What is also true is that lenders do vary their lending policies and they may be lending on it one minute and then not lending on it the next.

Modern timber frame houses – are they non-traditional construction?

It could be argued that the houses being built, in what is known as modern timber frame, are as far away from traditional construction as houses that have been classed as non-traditional construction! They have, for example, been built out of concrete.

And this is where non-traditional construction gets really confusing

However, this is where non-traditional construction really is confusing as some non-traditional construction techniques look very similar to traditional construction techniques and can only be identified by the trained experienced eye (we are more than happy to chat about this, please free phone us on 0800 298 5424). As mentioned, even more confusing is there are some non-traditional constructions that are accepted by the banks, building societies and mortgage lenders and others that are not, assuming that the bank valuation surveyor spots them. It is so important to know whether banks, building societies and mortgage lenders will lend on this type of construction if you are considering purchasing.

Is it the way the structure works that makes a building traditional or non-traditional construction

To expand on this, a traditional old style timber frame property is built of oak to a one-off design. It certainly could be classed as the original traditional construction, as most houses were built in this form. However, in more recent times traditional construction has been thought of as brick and tile, or brick and slate, or stone and tile, stone and slate, etc, as we mentioned earlier.

When the original non-traditional housing was built there wasn't too much thought given to making it look externally like a traditional building. Therefore, some complained that they seem to have concrete finishes, be it painted concrete, which looks similar to render, or concrete planks, as in the Airey buildings. We would argue as these were easily identifiable and stood out they were more a target for mortgage lenders not lending on non-traditional construction that looks like traditional construction.

Modern timber frame construction that is non-traditional but will be lent on

Let us first of all explain what modern timber frame construction is. They are very much an engineered timber frame that is an absolute minimum of timber and maximum strength characteristics. The majority are factory made and factory assembled and are built in mass, rather than being a one-off design and they have an external cladding for protection, often brickwork, although in more recent years we have noticed in our surveys that render has been used, or cladding panels of timber and also plastic lookalike timber. Modern timber frame properties are also finished with a membrane to stop any dampness from the external walls getting through (we have seen in our surveys where it does happen it can distort or rot), as it can be in a traditional timber frame property.

The whole idea behind a modern timber frame construction is completely different; we would term a water construction. This is completely different to the traditional timber frame property that was built to breathe. However, the modern timber frame property is then clad with brickwork or stone or cladding, such as vertical tiling, and looks very much like a traditional property.

The whole construction is based around the economics of cheap construction and fast construction, and this type of construction is very much assembled, rather than built by tradesmen, the de-skilling being another element in the economics of the construction. However when all is said and done the mortgage companies, such as the banks and building societies do lend against it.

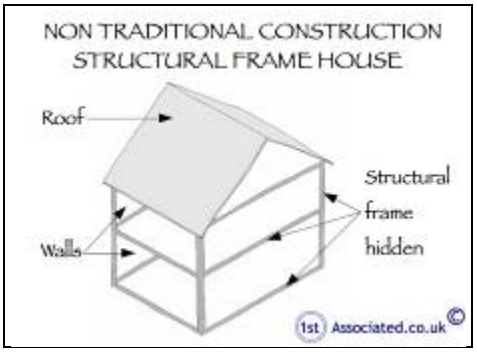
We have seen during our surveys other more recent innovations within the modern timber frame market, such as using composite wood products for floor joists and also for the flooring, together with an increased use of external cladding, as it is more economical and faster to put up than brickwork.

Not lending against non-traditional construction

Interestingly, the techniques utilised for non-traditional construction after the war years tended to use more robust materials and more innovation. They fall into three categories:-

- Structural frame
- Large panel construction
- Innovatory construction

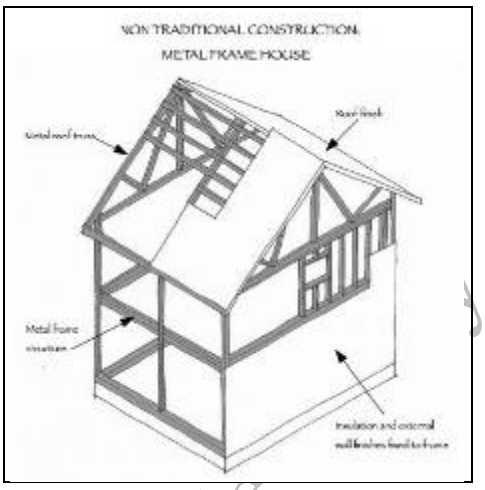
Structural frame



This was very much where a structural frame was erected. The walls were then hung off it. The structural frames can be metal, concrete or wood. The danger factor for a mortgage company lending on this is if there is deterioration within the structural frame that is hidden, we would pick this up during a survey therefore it is critical that a Building Survey is carried out prior to purchasing a non-traditional property. A lot of Local Authority housing was built in this manner, and other National companies requiring housing, such as the Coal Board, and utilising mass production techniques lowered the cost of the housing. These types of houses also tended to use techniques that we hadn't used before in the housing market, although often we would use them in the commercial market.

Metal Frame Structure

Below are photographs of a metal frame house that we have recently surveyed.



Original condition of non-traditional house with roof replacement

Close up of cladding on non-traditional house

Non-traditional metal frame house

Painted cladding to non-traditional property

Close up of old metal windows in a non-traditional house

Features to look out for in non-traditional houses

We thought we would give you some tips on the sort of things to look out for:

Chimneys

Asbestos was a very popular material (yes really) when non-traditional houses were being built.

Asbestos original chimney non traditional house

New chimney on a non-traditional house

Soil and vent pipe

Original asbestos soil and vent pipe on a non-traditional house

New plastic soil and vent pipe on a non-traditional house

Roof Construction

It is important to get in the roof and have a close look or for you to employ a chartered building surveyor that will get in the roof and have a close look (Valuers no longer need to view roofs when carrying out valuations – did you know that?). The below photos are what our surveyor saw on a recent survey:

Rusting to a lightweight metal frame or damage or deterioration to the metal frame of a non-traditional house

Some fixings replacements/repairs to a non-traditional house

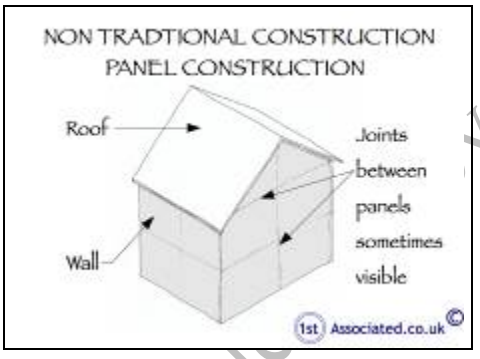
The adding of modern things can affect the building

It is very common these days to have a shower/ bathroom with an extract system. Does that extract system discharge into the roof or does it discharge out of the building? If it discharges into the roof then there can be problems with rusting and corroding of metal and dampness to timber.

Extract vent to outside often discharges into roof which is essential that they do not in this type of roof

Large panel construction

This, as the name suggests, is where rather than building small brick after small brick we used large panels, usually of concrete, which in themselves were a storey height and similar width, about two and a half metres square, and they literally interlocked. There have been problems with the reinforcement used in these and the connections of them, but we haven't come across these problems in the many years that we have been surveying.




Large panel concrete non-traditional house


Jointing to a non-traditional house


General view of a development of non-traditional houses

Innovatory construction

We couldn't think of a better title for this section, but we basically mean constructions that used innovation to look at building houses in a completely new way. An example is the Wimpey no fines concrete system, which is popular and, as far as we know, mortgage companies will lend upon it. It utilises almost a moulding system using form work. There is also pod construction, which is drilling pre-fabricated units, craned and positioned into place and then an outer protective shell put around them. Lots of this type of construction was originally carried out by local authorities, as they had the pressure on them to build a large number of houses, and more recently by commercial companies, which had the pressure on them to make profits or returns for their investors.

Non-traditional houses becoming traditional houses?

We have seen during our surveys over the years there has been a need to convert non-traditional housing into traditional housing. It could be argued that the right to buy Council Housing stock made this an important factor, as it is those people who required a mortgage that required the amendments, as in many cases there was nothing physically wrong with the properties.

Also, large companies holding a large amount of housing stock, such as Council Housing and Housing Associations requiring the housing to be brought up to more modern standards for thermal efficiency, etc, have utilised innovative ways of upgrading (although we are not sure whether that's the right term). Their housing techniques normally involve a cladding system to improve thermal efficiency, along with the check on the structural elements. We have surveyed some of them where they practically re-build the original buildings, which ironically can be very difficult. Whilst we don't know the exact figures we imagine it would be almost as costly as building the property from scratch.

Whistle-stop tour of the non-traditional housing market

There are whole books dedicated to this area, so an article such as this can hardly present the subject of non-traditional housing in detail, but we hope this has given you a flavour and an interest for the subject.

If you truly do want an independent expert opinion from a chartered surveyor, or a chartered building surveyor and are particularly interested in carrying out work on modern timber frame properties and if you are buying such a property please look at our survey examples. We feel our surveys are quite unique, as they are written to your level of knowledge. The surveys include photos and sketches and definitions. The survey will also include an action required section and an estimate of costs in the executive summary. We are more than happy to meet you at the property whilst carrying out the survey to discuss any specific issues you may have or have a general chat about what we have found at the end of the survey. Please contact 0800 298 5424 for a chartered surveyor to give you a call back.

We hope you found the article on Non-Traditional Housing of use and if you have any experiences that you feel should be added to this article that would benefit others, or you feel that some of the information that we have put is wrong then please do not hesitate to contact us (we are only human).

Condensation and Cold Bridging in Non Traditional houses

What is cold bridging, how does it work?

Cold bridging is a term and a problem we believe will become more common in years to come. We are finding more and more examples of Cold Bridging. This happens in certain types of property and to some extent it could be argued that it is a characteristic of that type of property and quite a complex issue to resolve. Unfortunately it means condensation is more likely.

Non traditional house mainly asbestos

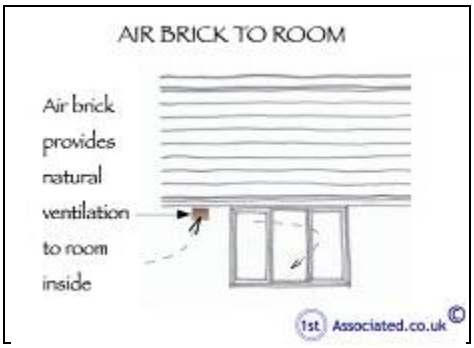
Cold Bridging

Cold bridging is caused by a colder element in the structure or fabric of the building allowing coldness to pass through. When warm moist air is present in the property and it passes through the colder elements of the structure we have what is known as Cold Bridging. This is often caused by a combination of issues. It can occur from things such as having a shower or a bath, cooking or clothes washing, particularly if you are drying washing on the radiators.

British Steel frame house (BISF)

Ventilation is important

It could, in commercial properties, be a large gathering of people breathing (this can cause a lot of humidity) in a building that has stood cold and empty for some time such as a church, village hall, sports centre or a crèche. These human atmospheres create a climate, which can result in condensation on the cold elements of the structure and fabric if the room is not ventilated properly.

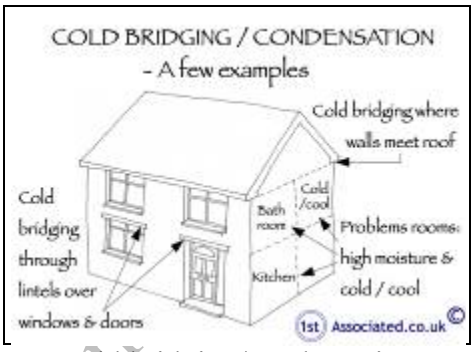


Airbrick provides ventilation

Condensation and Cold Bridging in certain susceptible constructed properties

Survey sketch on Cold Bridging

This is a good indication of the typical things that cause Cold Bridging in a house and how extraction from humidity generating areas such as the kitchen and the bathroom can reduce problems. You do need to look at how you live in the house.



Cold bridging/condensation

Cold Bridging isn't just about condensation on mirrors

Cold Bridging isn't just about condensation on mirrors. Not only can it be an original characteristic of the building it can be encouraged by all types of extension and alterations.

Cold bridging is far worse than condensation as it is caused by an element in the structure, which you can do very little to change without great expense.


Rusting within the roof between the insulation and plastic protective underlayer

Buying a modern building

If you buy a 1980's property for example, with concrete lintels that cause cold bridging, this is a characteristic of the property and it is very difficult to change. However not only could it be a characteristic of the building it could also be caused by alterations that you make to the building.

Metal frame non traditional construction

When is Cold Bridging Likely?

In our experience we have seen cold bridging occurring in:

1) Eras of properties where there are warm elements and colder elements to the building.

2) Where you have a mixture of warm rooms and cold rooms.

For example: Lounges and main bedrooms tend to be warmer than guest or spare bedrooms most of the time. Also sometimes rooms can warm up due to large areas of glass and thermal heat gain, which is very true in some conservatories also.

Black mould and high damp meter readings

3) Humidity internally is high

4) Where it is colder but by no means very cold outside

Problems with 1970/1980 era properties relating to Cold Bridging

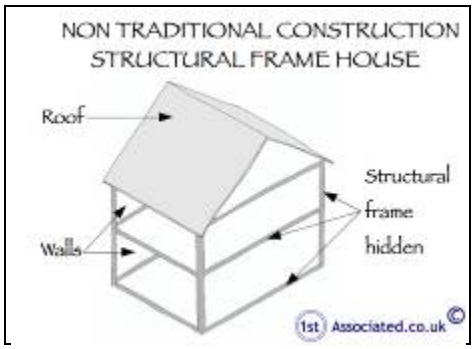
Let us take a look at the 1970's/1980's era of property to give an example of the problems we have come across with this era.

The 1970's is an era where we had just begun to think about insulating due to the oil crisis and where we added insulation into our structures

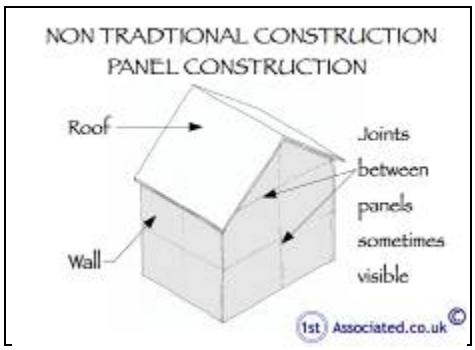
For example with:

1. cavity wall insulation or

2. double glazed windows.



Non traditional structural frame house

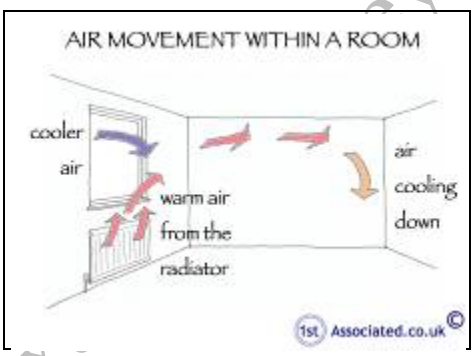


Non traditional panel construction

This meant they were warmer which has meant the significance of a lintel, over a door or window, being colder and allowing the transfer of coldness becomes much more important. This results in condensation that we commonly see above windows in this age and era of property.

How to solve Cold Bridging

The difficulty is resolving cold bridging. Normally, where condensation is involved, if you get the balance of warm and coolness of the air, ventilation and movement you can reduce considerably the chances of condensation. Airing the room by opening the windows, which seems to have gone out of fashion, can help considerably.



Air movement within a room

Where do we most commonly find Cold Bridging?

Our thoughts on this have very much changed as we used to say that cold bridging was typically found in properties from the 1960's/1970's. However we are increasingly finding it in a broader range of properties, particularly Victorian properties, where people are trying to live to modern standards of heating and insulation without understanding that the properties need to breathe as well. We have also found cold bridging in properties where extensions have been carried out and where the extension has been built to a different standard to the original property.


Metal cladding roofs

Can lifestyle be a factor in Cold Bridging?

This is often a contentious and difficult question, particularly where the occupier is a tenant and there is a disagreement between the landlord and the occupier as to why there is mould in the property.


Cooking produces steam and requires ventilation

In our experience the major factor is the size of the family living in a property. This is especially the case with large families with young children and where in turn there is a lot of washing of clothes being done. This is particularly the case in the winter months, with the wet washed clothes being dried on radiators. Also general hygiene washing and not to mention cooking to feed everyone all lead toward a more humid atmosphere.

This is generally known as the lifestyle of occupants and can be a major factor particularly where there are legal cases as to the problems within a property.

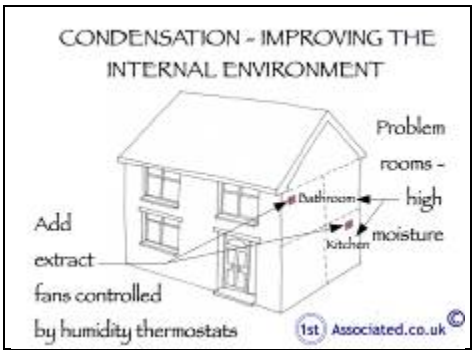
Is Cold Bridging and Condensation a design problem or a lifestyle problem?

This really is a difficult question to answer. We have been involved in a number of cases as expert witnesses or advocates and the answer can vary. We would comment that there are factors that can be changed and factors that can't be changed. For example, the occupiers' lifestyle can in most cases can be amended. This may involve the occupier having an understanding of the problems they are causing. For example, drying lots of washing on a radiator inside may be causing excessive moisture in the atmosphere. Equally not opening the windows and closing or sealing up vents can be a problem.

Non traditional BISF property

Design of the Building

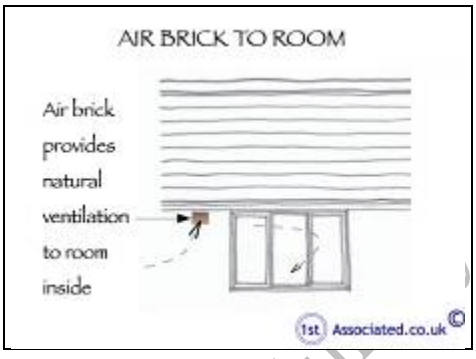
Sometimes it really is down to the design of the property. Where there are cold elements in it, such as a concrete structural frame or concrete lintels, when these are in contact with moist air condensation occurs. Sometimes this is impossible to stop but often it is possible to reduce it by having a better circulation of air with a better heat and coolness balance and the removal of any moist air.



Condensation

Things to remember about an air brick

If you are thinking about adding an air brick then you need to be aware that airbricks don't actually allow that much air through. Although externally a nine by three inch air brick has a lot of gaps, as these gaps taper, it is generally considered that only about one inch square of air regularly passes through the grills.



Air brick may not ventilate room enough

In the winter we have condensation problems but in the summer we don't

The different seasons mean that the building reacts differently. Anyone who has lived in an old property will know that windows and doors, particularly sliding sash windows, will swell during the winter months.

There can be similar issues with a property where, regardless of your lifestyle, during some of the different seasons, for example the winter or a wet spring, taking a shower can relate in condensation even with extract fans running (although this is far less likely).

Removing electric points to view construction

It also depends on what the humidity level is outside as this can be greater than inside. The moisture/humidity will then seek out colder rooms such as spare bedrooms and the corners of cupboards. When you open these at a later date you will be surprised to find black mould.

Cold bridging what can we do?

There are limited things you can do with regards to cold bridging as it is about the original design of the property and needs to be considered as a characteristic. However, we do always recommend large humidity controlled extract fans are added into the bathrooms, kitchens and any areas that you intend to carry out drying of clothes to ensure moisture is removed as quickly as possible.