SPECIFIC DEFECTS REPORT

Relating to cracking
London Borough of Enfield

FOR

Mr and Mrs X

Marketing by:

www.1stAssociated.co.uk

0800 298 5424

CONTENTS

INTRODUCTION AND INSTRUCTION

We have been instructed by Mrs XXX to prepare an independent report on XXX. We carried out a visual inspection (non evasive) of the property on XXX.

The weather was a cold and dry winter's day at the time of the inspection.

We are Independent Chartered Building Surveyors and professional members of:-

The Royal Institution of Chartered Surveyors (RICS)
and
The Independent Surveyors and Valuers Association (ISVA).

The work has been carried out as per our standard Terms and Conditions of Contract which have been emailed to you as part of the confirmation of our instructions. If you would like further clarification please do not hesitate to contact us.

SITUATION AND DESCRIPTION

The subject of the inspection is the left hand side two storey house of a pair of semi-detached properties typically built post war as part of a local authority development (all assumed).

Subject property (red) and neighbours property (green)

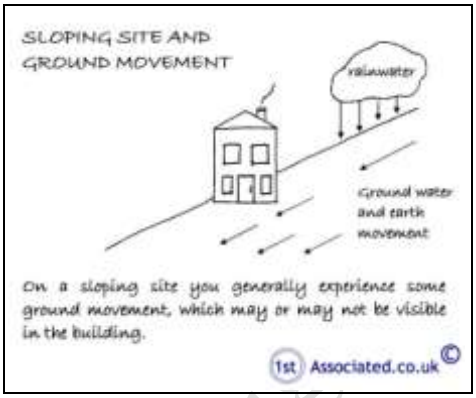
The house is of a non traditional construction, we believe, commonly known as a BISF house which stands for British Iron and Steel Federation. This is a system build which effectively means the building is built on a structural frame and clad. Please see further information on BISF Houses within the Appendices and also on Non-Traditional Houses.

Generic sketch of metal frame house

The property has been altered and extended over the years such as the porch extension to the front (as per the photo), the kitchen extension to the left hand side and the conservatory to the rear.

Porch extension recently subject to insurance claim and has had underpinning

The property sits with a small garden to the front and a smallish garden to the rear all sitting on a sloping site.



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SYNOPSIS

The owners have had lifelong occupancy of the property. In approximately 2008 problems were noted with the property that were reported to the insurance company. The insurance company appointed XXX as their representatives to act as loss adjusters.

From what we understand, monitoring work has been carried out over the years and subsequent underpinning and work to the entrance porch.

As a conclusion to the insurance work XXXhave offered:

1) Monetary settlement.

2) Redecoration prior to the work of the neighbouring/adjoining property taking place.

3) Redecoration following the work taking place in the neighbouring/adjoining property.

Our brief is to establish if the cracking problem has been resolved.

Work to the neighbouring/adjoining property to right side

Our first comment would be that actions 2 and 3 above relate to work being carried out on the adjoining/neighbouring property which we have not had details of, please see our request for information. From our understanding the Local Authority/Housing Association are proposing ground stabilising work or similar.

Neighbouring house to right side

EXECUTIVE SUMMARY

Summaries are not ideal as they try to précis often quite complex subjects into a few paragraphs. Here we give a summary of the problem and our various suggestions on how to solve it and all costs it relates to.

Progressive movement/differential movement

From our one off inspection we would comment that there appears to be a problem with progressive movement/differential movement in this property which is not resolved.

Although this is difficult to confirm from a one off inspection, we would say that from our discussions with the occupiers they advised that new cracks have opened up and old cracks are changing size. As such we would consider that this insurance claim needs to remain open until movement issues and associated problems are resolved satisfactorily.

We would recommend:

1. Soil samples are taken to establish the ground conditions (we believe they may be clay).

2. Monitoring is carried out for a year on the property to establish the amount of movement.

3. The structure is exposed to see if there are any defective elements within it. Typically in a BISF house, from our experience, the junction points are areas where issues can occur but there may also be asbestos issues from the original construction.

Work in conjunction with adjoining property

In our experience any work in relation to movement will have to be carried out in conjunction with the adjoining property. Work and liaison needs to take

place as the work to both properties should be complementary rather than in isolation.

Valuation

Our concern is also that the works need to be considered from the point of view of how they will affect the value of this property. We would draw to your attention that extensive structural work such as underpinning can have a considerable affect on the market value of a property.

We feel that only by carrying out further research can an educated decision be made as to how resolve the problems within this property. We would however draw to your attention that the neighbouring houses to the left hand side have been rebuilt so it would be worth contacting the owners to see what rationale they went through before they decided to rebuild.

Rebuilt houses to left side

SURVEY FINDINGS

A brief summary of what was found.

1. From our visual external inspection we noted:
   (All directions given as you face the front of the property)

1.1 Main building

1.1.1 Roof

Originally these properties would have had an asbestos roof. This looks to have been replaced although it should be noted that we have not been in the roof space and a full asbestos report should be carried out.

Roof

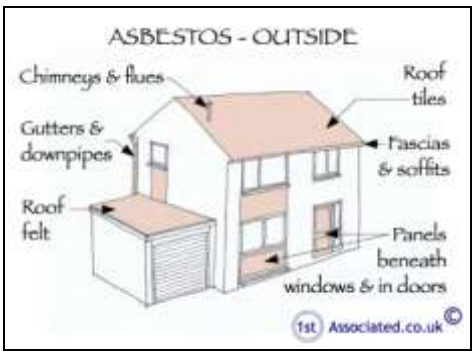
We would recommend an asbestos report is carried out on the property as a whole to establish if there is any asbestos and its condition.

Movement in a property such as what appears to be occurring in this instance may of course damage asbestos and cause a health hazard.

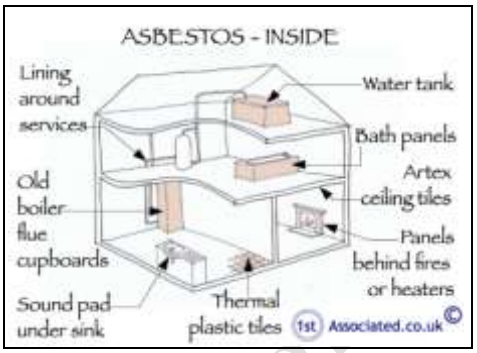
ACTION REQUIRED: Asbestos report to be carried out with samples.

Our insurance company requires us to advise we are not asbestos surveyors.

Typical areas where asbestos can be found in these properties:



Asbestos - outside



Asbestos - inside

Note: these are generic sketches to help aid understanding of where asbestos can be found.

1.1.2 **Fascias and soffits – overcladding**

The fascias and soffits are plastic which could be over cladding asbestos.

Overclad fascias and soffits

1.1.3. **Walls**

Vertical tiling to first floor and proprietary cladding to the ground floor which could be overcladding asbestos.

1.1.4. **Windows**

Plastic double glazed with crack to the glazing to the front lounge window which is an indication of movement in the property.

1.1.5 **Foundations**

Typically this type of non traditional building would have been on a raft foundation but there may be special circumstances such as the soil conditions that have given the deviation from this original foundation type or in

addition to this there may be new work that has required the addition of further foundations.

1.2. Porch

The porch is out of true with the main building as shown by the difference in the cover bead where the porch meets the main building.

Cover bead at bottom of porch

Cover bead at top of porch

ACTION REQUIRED: We request further information with regards to the work carried out here.

1.2.1 Foundations

Piled, we are advised they are forty feet deep; we haven't had any information relating to this.

1.3 Kitchen extension left side

1.3.1 Roof

Tiled roof as per main roof (not accessed)

1.3.2 Fascias and soffits

Plastic

1.3.3. Walls

Painted block walls

1.3.4. **Windows**
Plastic double glazed windows

1.3.5. **Foundations**
We assume traditional concrete foundation of approx 1.2m deep

1.4 Conservatory

Plastic double glazed conservatory.
Cracking noted to entrance door to conservatory and to the tiled floor adjacent to the conservatory.

1.5 Outside areas

1.5.1 Front:

Crack to garden wall

Crack to front garden wall

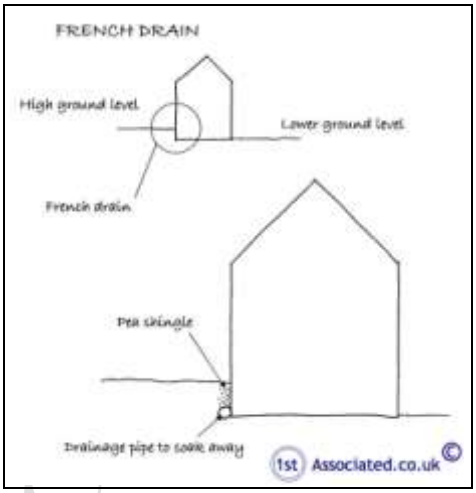
Cracking in path

Crack to path

1.5.2 Rear:

Sloping site

We would propose that a French Drain may be beneficial to the rear of the property.



French drain

2. **Record of cracks within property taken from our visual internal inspection**

2.1 **Lounge**

Cracking around window
Cracked glass
Distortion to entrance door between lounge and dining room

Crack to front right hand corner

2.2 **Dining room**

Crack to tiles, although we are advised this is a long term cracking which has opened up in recent times

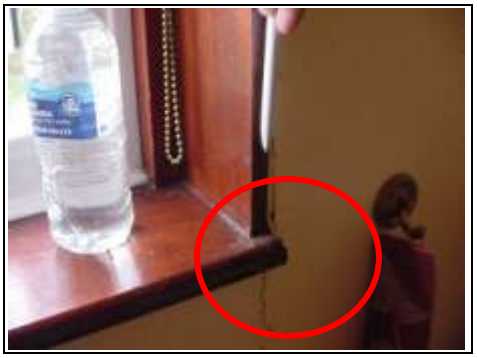
Crack in dining room tiles

Distortion above door to conservatory

Crack to dining room/ access to conservatory

2.3 **Bedroom front right**

Cracking around both sides of the window (it was not possible to access the wardrobe area on the right hand external wall



Crack to left hand side of window

Close up of crack, approx half a metre to a metre in length

Crack on right hand side to base of wall near window

Wall to ceiling crack

2.4 **Bedroom/study rear right**

Cracking around air vent/window at high and low level

Crack next to window

Crack around air vent

2.5 **Bathroom**

Cracking at wall to ceiling junction which has been repaired

Repaired crack

2.6 **Hallway**

Crack at top of stairs

Crack at top of stairs

2.7 **Doors and windows**

Throughout the property doors and windows are particularly difficult to open and shut, for example in the front right bedroom, the cupboard door has to be kicked closed and the bedroom window on the right hand side cannot be opened and the left hand side window is showing a gap and light visible.

Doors unable to shut between lounge and dining room

We have not had the benefit of viewing any of Cunningham Lindseys or their associate's reports.

Note: we have not moved furniture or fixtures and fittings.
The full areas inspected are identified within the inspection part of the report and this should show anything in this section

SUMMARY UPON REFLECTION

The Summary Upon Reflection is a second summary so to speak, which is carried out when we are doing 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:

Recommended way forward

1. We feel that further investigation needs to be carried out; there still appears to be movement in this property.

2. A solution needs to be agreed jointly with the neighbouring property to co-ordinate the work they are carrying out rather than working in isolation.

Our main concern is that following our very basic look at the property and discussions with the occupier, there still appears to be movement occurring.

Concerns about proposed solution

We believe that the different solutions offered to conclude the insurance claim don't resolve the problems. We would add further that the specification seemed to be generic rather than written specifically for this issue.

Value of the property

We would also draw to your attention that a property that has had structural work carried out to it can in our opinion have considerable impact on the value. This needs to be taken into consideration when looking at the different solutions.

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.

APPENDICES

Inspection

Photographic Record

Construction Summary

Accommodation and Facilities

Time Line

Correspondence

Specification

Location Maps

Requests for Information

Contact Information

Estimate of Costs

BISF House Information Sheet

Non Traditional Housing

Settlement, subsidence and heave and the part clay soils play in this

Limitations

INSPECTION

Our inspection has been specifically related to the cracking issues detailed below:

Visual Inspection

Our inspection has taken the format of a visual inspection:

External

1. External of the property of the:

    1.1 Front

    1.2 Left

    1.3 Rear

    We have had the benefit of a x 16 lens on a digital camera

Internal

2. Internal of the property, we have viewed:

    Ground Floor

    i. Lounge

    ii. Dining room

    iii. Bedroom front right

    iv. Bedroom/study rear right

    v. Bathroom

vi. Hallway

2 Roof space

In this instance the roof space has not been inspected.

3 Surrounding areas

3.1 Front
3.2 Rear
3.3 Rear garden

4 Owner/occupier

We have had discussions with the owners/occupiers.

5 Neighbours

The neighbours of the adjoining property were not in at the time of our inspection however we have spoken to neighbours in the road.

PHOTOGRAPHIC RECORD

This is a record of the properties condition and surrounding area taken on the day of our survey.

Crack to adjoining property

Crack on adjoining property between original building and extension

New cracking, we are advised by owners/occupiers on the road

CONSTRUCTION SUMMARY

External

Flue:	Flue to roof
Main Roof:	Pitched, clad with concrete tiles
Roof Structure:	Not viewed, typically metal frame
Gutters and Downpipes:	Plastic
Walls:	First floor: vertical tiling Ground floor: cladding Kitchen extension: white painted brickwork Porch/conservatory: plastic double glazed
External Joinery:	Plastic double glazed windows
Foundations:	Original property: typically raft foundation assumed) Front porch: we are advised has been underpinned Left extension: typically a strip foundation of approx 1.2m deep Conservatory: typically raft foundation

Internal

Ceilings:	Proprietary boarding (assumed)
Walls:	Studwork/proprietary boarding (assumed)
Floors: Ground Floor:	Concrete (assumed)
First Floor:	Typically metal joist system

ACCOMMODATION AND FACILITIES

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

Ground Floor

The ground floor accommodation consists of:

1) Entrance porch

2) Lounge front right

3) Dining room rear right

4) Conservatory rear right

5) Catering kitchen to left and associated store

First Floor

The first floor accommodation consists of:

1) Double bedroom front right

2) Single bedroom front left

3) Bathroom rear left

4) Bedroom/study rear right

Outside Areas

There is a small garden to the front and a smallish garden to the rear with a swimming pool all sitting on a sloping site.

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

TIME LINE – A brief history of the structure

This has been based upon a telephone conversation with Mr X at 2.30 pm on XXXX.

DATE	DESCRIPTION
XXX	Property built. Occupied by family of Mr X
XXX	Kitchen extension
XXX	Development to rear of property
XXX	Windows replaced
XXX	Porch replaced
XXX	Conservatory replaced

REQUESTS FOR INFORMATION

From XXX:

> We would like full details with regard to the monitoring work that has been carried out on the property as a whole and also detailed working drawings with regard to the piling that was carried out to the porch.

Insurance company:

> Full details required in respect of the movement and the work carried out in relation to the porch.

From the Housing Association/Local Authority/owners/occupiers:

> Information required from the Housing Association/Local Authority/owner/occupiers of the work being carried out on the adjoining/neighbouring property.

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 £100 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.

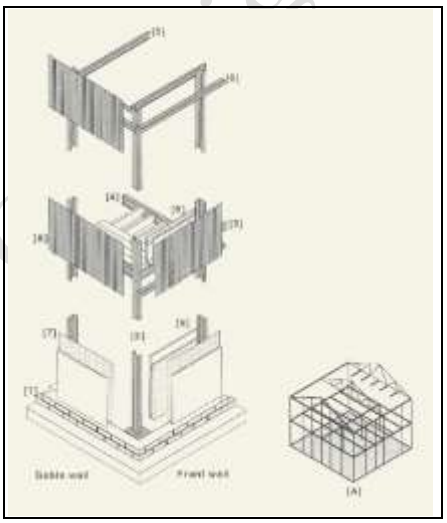
If you obtain builders estimates that vary widely, we would advise the work is probably difficult or open to various interpretations and we would recommend a specification is prepared. It would usually be best to have work supervised if it is complex, both of which we can do if so required.

BISF House Information Sheet
British Iron and Steel Federation

This article has been written by a Chartered Surveyor based upon our findings and experience over the years of surveying these types of properties. If you would like to discuss BISF properties further with us please free phone 0800 298 5424 for a friendly chat.

Introduction to BISF Houses

BISF stands for British Iron and Steel Federation. The BISF house is a pre-fabricated steel structure originally built with a shallow pitched asbestos roof, panelling to higher level and render to lower level. Between the metal frames are timber struts and insulation with an inner plasterboard or hardboard which originally had a design life of between ten and twenty years.



BISF house structural detailing sketch

Non Traditional Constructions Overview

There are considered to be around one million properties built from non-traditional construction. The Building Research Establishment (BRE) have over 500 systems listed between 1900 and 1976 excluding RAT Trad and post 1976 timber framed construction. There were approximately 35,000 BISF houses built over a period of 6 years. It was only exceeded by non-traditional buildings of aluminium bungalows which were 55,000, Easy Form which was a concrete system which had 90,000 built and Wimpey No-fines which had 300,000 built. BISF buildings do tend to stand out. They are predominantly built by Local Authoirities.

BISF house many years later

BISF property with metal profile sheet roof (has asbestos roof been removed or has it been overclad?) and metal profile sheet at first floor level and render at ground floor level and older style double glazed windows. .

BISF house with a profile metal roof, (again has asbestos roof been removed?), plastic cladding at first floor level (is there insulation between the profile metal sheets and the plastic cladding that is causing condensation) with pebbledash render at ground floor level and modern double glazed windows

BISF Houses were built with a purpose and a set timescale in mind

It should be remembered when looking at these buildings that they were after the War to fulfill the requirements of a lack of housing. Equally they also fulfilled the need for work and allowed the factories that had been producing things for the war effort to then change and use these buildings.

Is a BISF house unmortgageable?
It depends on when you ask the question!

It is probably more true to say that they are difficult to mortgage. With the Right to Buy Scheme in 1979 five million council house tenants were given the right to buy their homes under the Conservative Government proposal. Those who had lived in their house for three years got a discount of 33% and then it increased in stages, people who had been tenants for 20 years got a 50% discount. Michael Heseltine, the Secretary of State for the Environment said that the Bill laid the foundations of social revolution allowing people to own their own homes. Roy Hattersley of the Labour Party fought it. Most importantly the Government said they would offer tenants 100% mortgage from the Local Authorities. It was considered a vote winner for Margaret

Thatcher in 1979 and 1983 and Labour dropped their official opposition to it in 1985 and by 2003 1.5 million council houses had been sold.
The reason why the properties are unmortgageable outside of Council mortgages are:

1. Corrosion and deterioration of the frame that is hidden by the structure
2. Properties are poorly thermally insulated for today's standards
3. Noise transfer between buildings

Improvements to bring up to current standards could involve a thorough check of the steel frame, replacement of the asbestos roof and increase in insulation without promoting condensation and a reduction in the noise transfer between the properties with the addition of new double glazed windows. We have had costs quoted at between £20,000 - £50,000 depending upon the alterations already taken place and mortgage company requirements.

Knowsley Housing Trust advise costs in 2004 (however bear in mind that they do not need to get a mortgage) as:

Structural render	£8k
Roof insulation	£4.3k
Windows	£2.1k
PVC doors	£1k
Fascias and soffits and rainwater goods	£0.5k
Bathrooms	£0.9k
Central heating	£2.3k

As the vast majority of houses sold in the UK are mortgaged it is essential that these properties are mortgageable to sell to the majority of the market.

Specific Problems on BISF Houses

BISF house asbestos roof problems

When deteriorating asbestos can be a health hazard, complete replacement recommended. The roof material has to be appropriate for the strength of the roof structure and in our experience they need replacing with a profile metal sheet and insulated. However this also needs to be ventilated to prevent corrosion from occurring.

BISF house steel structure problems

Risk of deterioration to the base of the steel structure and around the window areas and high humidity areas such as bathrooms and kitchens.

BISF house walling problems

Profile metal sheeting to the upper areas and a render on an expanded metal lath to the ground floor areas with a timber frame and a fibreglass insulation and plasterboard. The frame is formed with rolled steel angles and channels. The roof is formed from tubular steel trusses which we believe are mock truss centrally (this needs to be checked and confirmed).

BISF house insulation problems

Improvements in the insulation can result in condensation. External structural insulation panelling is recommended which is difficult to do (unless both yourself and the neighbouring property are carried out otherwise there will be a step in the external wall).
Structherm is often quoted as the only suitable insulation rendered panel system as this is accepted by ninety per cent of the mortgage companies (obviously subject to variations in the market) and is available with a long term guarantee.

BISF windows and doors problems

Originally steel frame timber glazed. Now the majority have been replaced with double glazed windows.

BISF party wall problems

The dividing wall between properties. We have seen quoted as 30mm thick or as a studwork.

Voice of Experience

We recently spoke to a contractor who has spent several decades renovating the steel framed properties for a range of clients from Local Authorities, property developers and individuals. It is refreshing to hear first hand the issues that they have come across over the years. We thought we would relay some of these in this article.

The first myth or urban rumour is that the BISF buildings were temporary buildings for only ten years, they are meant to have a design life of far longer. He concurred with our findings that originally they had asbestos roofs with metal cladding to the upper sections and render to the lower. Over the years they have done almost anything and everything to these properties. He had also been involved in some cases where he had looked at them for loss assessors where they had burnt down and they had renewed the structures inside out. It has been the main focus of their business over the past three plus decades. Interestingly he advised that he had come across asbestos which had been covered over in the roof but the majority of times it has been removed. He has come across the phenomena of insulating the underside of the roof, i.e. the pitched section which is what we have found. This is quite common although he is uncertain as to how effective it is and indeed thought that with the wind blowing through the rest of the structure it was better to put the insulation actually in the ceiling void of the upper floor as we traditionally do. He made interesting comments that he had seen a variety of lightweight roof structures over the years. They do need to be lightweight due to the way the roof is constructed. The majority of them have metal sheeting as protective coating.

With regard to the wall cladding he advised that he had seen many different ways of looking at wall cladding over the years but the most cost effective was to use the existing cladding as a backing for insulation and then add a cladding onto that. He has seen everything from brick to stone to timber finishes. He commented that cladding was popular although he wouldn't recommend it due to it always seeming to discolour if it was plastic and/or need regular maintenance if it was timber. He also advised that the lower sections were often best in a different material although he wouldn't recommend render which was what they were originally carried out in. This was because of the differential movement between the steel frame and the render structure left cracks. It was often best to have some form of cladding or different materials to the upper parts and brick to the lower parts. He also commented that if they were working on a lot of houses for a landlord such as a Local Authority or Housing Association then they would tend to mix and match them as each house would have an individual look and overall made the general look more appealing. Interestingly he said whilst the steel frame structure is strong enough to resist fires (and remember he has actually seen these buildings after a fire) he commented that you do need to be careful with the amount of weight that you hang from them.

Of course he commented that he would be more than happy to come and view any BISF property to comment further. Most importantly we think is that he would actually be able to give a firm price on the amount of work due to their experience.

Inspection

Surveyor's inspections can take the form of a non intrusive visual inspection or in the form of an intrusive/destructive inspection where the walls are opened up exposing the framework. Some reports say the use of borescopes however in our experience borescopes do not give a suitable view of the area so we would recommend opening up of the structure.

BISF Information and Action Required

You need to establish the exact mortgage requirements on the property at the time that you wish to purchase as these will change from time to time.

Independent Chartered Surveyors

If you truly want an independent expert opinion from a chartered surveyor on system buildings then we have experience with the BISF system building and other system buildings. We can help you get a mortgage on these and give impartial advice as to whether you should be getting a mortgage on them, as well as carrying out a property survey, an engineer's report or whatever else your mortgage company has requested. Please contact us on free phone 0800 298 5424 for a chartered surveyor to give you a call back.

Surveying articles

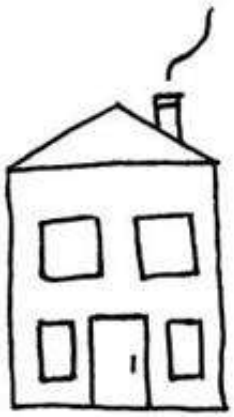
We hope you found this article on BISF housing interesting and if you have any experiences that you feel should be added to this article that would benefit others, or you feel that some of the information that we have put is wrong then please do not hesitate to contact us (we are only human).

The contents of the web site are for general information only and is not intended to be relied upon for specific or general decisions. Appropriate independent professional advice should be paid for before making such a decision.

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:

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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.

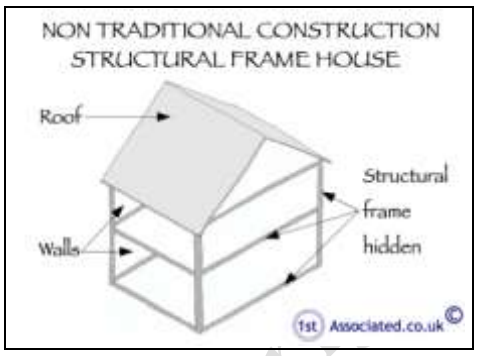
We have seen during our surveys other more recent innovations within the modern timber frame market, such as using composite wood products for floor joists and also for the flooring, together with an increased use of external cladding, as it is more economical and faster to put up than brickwork.

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

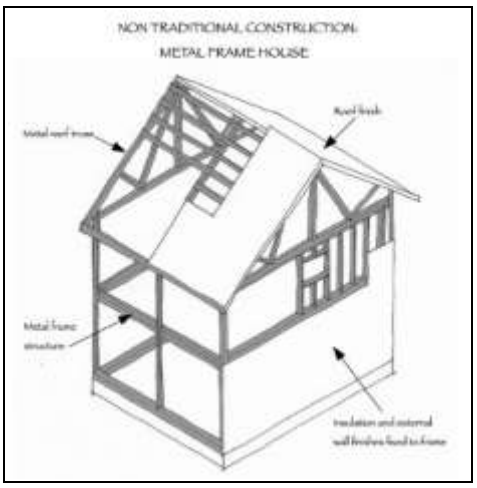
Structural frame



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

Non-traditional metal frame house

Marketing by:

www.1stAssociated.co.uk

0800 298 5424

Close up of cladding on non-traditional 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

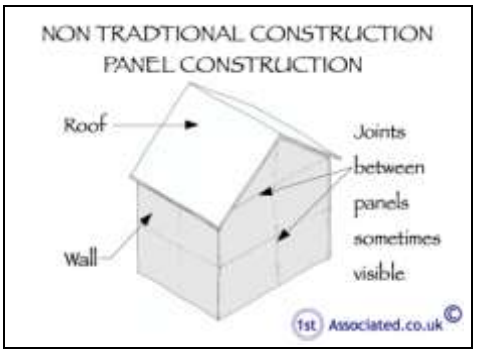
The adding of modern things can affect the building

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.

For examples of the quality of our surveys please use the following links:

http://www.1stassociated.co.uk/building-survey/rbs-marlow2.pdf

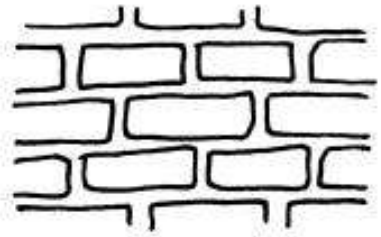
http://www.1stassociated.co.uk/building-survey/rbs-kingston1.pdf

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).

Settlement, subsidence and heave and the part clay soils play in this

If you would like further advice on any then please phone 0800 298 5424 for a friendly chat. If you need help and advice with regard to a structural survey (or building survey, as it is now commonly known; structural survey being the old term for it) or a structural problem or an engineers report, or you need a report specifically tailoring to your requirements please do not hesitate to call us for a friendly chat on 0800 298 5424.

<u>The magical properties of clay</u>

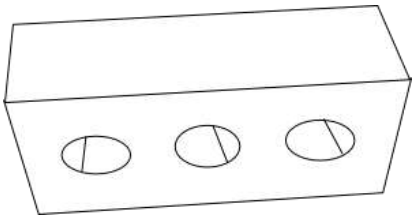


Clay has several unique properties. It can both cause problems when it is a clay soil that your house is built upon and be useful when it is used for the bricks that your house is made of.

Clay expands and contracts, depending upon its moisture content. It is at its bulkiest at 40% to 60%, however, it changes form if it gets wetter or dryer. It is this change of its bulk that causes problems. When the clay soil gets too wet the clays bulk becomes larger and almost pushes the property out of the ground. This is known as heave. When the clay dries out it becomes dust like, then we get settlement of foundations and subsidence of the building, as its bulkiness has reduced considerably.

Its ability to change size wouldn't be such a problem if it weren't that most London properties are built on clay, and there are many areas of clay throughout the country, such as Bedfordshire and Peterborough, which, interestingly enough, are also known for brick making.

Finding out if your property is built on clay soil



There are several ways of finding out if your property is built on clay soil.

Cracks

If the property has historic cracks it may be that it is built upon clay. It is best to check before you panic. You can do this by looking at maps geological maps or ringing up your friendly insurance broker, as they have a postcode index as to what areas are considered high risk with clay and which aren't. However, we must add that these maps are quite general and that when we were on a course many years ago we asked how these maps were originally made. We were advised that students were employed during their summer holidays, so the reliability of them, it could be argued, is limited for the purposes of identifying if clay is under your building, as they were originally produced to help farmers.

Clay test

This is what a good surveyor would do if they had come to investigate problems with your foundations and the owner of the property was happy for them to dig up the garden! We take a lump of soil from the garden; this should be approximately the depth of the foundations. If it is Victorian or Edwardian property it may be a lot less, in a modern property it is likely to be 1 metre to 1.2 metres, to even 1.4 metres deep.

On a summer's day you can leave the lump of soil in the garden for it to dry out in the sun. When it dries out if it becomes powdery and much lower in volume then it is clay. Equally, if it rains and it becomes a larger volume then it is clay. Also, if it not warm you can leave it inside on the radiator. We believe (although we would need to check it) that a growth or reduction of approximately 30% (for some reason 28% is ringing bells). This type of clay is known as shrinkable clay.

Not all clay expands and contracts

We would add that not all clay expands and contracts. The deeper clay tends to be the more stable and harder clay and therefore doesn't expand to the same extent.

Clay that is used for brick making

We thought we would just add something about clay that is made for the use of brick making.

Old soft red bricks

The older bricks, were possibly even sun baked rather than fired, used a softer red clay. They have their own oil so they can affectively cook themselves.

You will also notice that it is the softer red clay bricks, even up the post-war era, that tend to be affected first by spalling.

Blue clay

Blue clay is fairly well known. This type of clay tends to be the harder clay and produces harder bricks and you may find bricks made out of this clay. A classic brick, and generally considered the hardest brick, is the Accrington brick and you would have to dig deep for this clay, i.e. normal clay would be dug at about 30 feet, or the metric equivalent!

Yellow or white clay

A yellow or white clay, that is used in a London stock brick, is harder than the soft red bricks but not as hard as the blue clay bricks.

Fletton brick

The one thing that used to confuse us for many years is what is the difference between a Fletton brick, a stock brick and a common brick. A Fletton brick, we believe, has its origins in Fletton near Peterborough, where bricks are

produced in such quantities that it became the common name. Stock bricks tend also to be a common brick, but it specifically relates to bricks that don't have their own oils to fire, they would typically have to have methane today and years gone by coal dust to fire them, where as the soft red bricks tend to have their own oil that they can fire in. Therefore, you tend to find many of the older properties have a red brick as they were fired in the "sun. The term common brick is a generic name.

Silicone brick

This isn't a brick at all, but, we believe, is made from concrete.

If you truly do want an independent expert opinion from a chartered surveyor, and many of us are also chartered builders, with regard to specific defects reports, structural surveys, commercial surveys, building surveys, engineers reports, home buyers reports or any other property matters please contact 0800 298 5424 for a chartered surveyor to give you a call back.

We hope you found the article 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).

The contents of the web site are for general information only and is not intended to be relied upon for specific or general decisions. Appropriate independent professional advice should be paid for before making such a decision.

LIMITATIONS

Specific Defects Report

1. Conditions of Engagement

Please note: references to the masculine include, where appropriate, the feminine.

Subject to express agreement to the contrary (which in this particular case has been none) and any agreed amendments/additions (of which in this particular case there have been none), the terms on which the Surveyor will undertake the Specific Defects Report are set out below.

Based upon a visual inspection as defined below the Surveyor will advise the Client by means of a written report as to his opinion of the visible condition and state of repair of the specific problem or problems only. In this instance with regards to cracking.

2. The Inspection

2.1 Accessibility and Voids

The Surveyor will base this report on a visual inspection and accordingly its scope is limited. It does not include an inspection of those areas, which are covered, unexposed or inaccessible. Our visual inspection will specifically relate to the cracking.

a. Floors

We have not opened up the structure. We have only carried out a visual inspection and any conclusions will be based upon our best assumptions. We would have expected XXXto have opened up the floors and the structure as part of their investigations.

2.3 Roofs

The Surveyor has not inspected the roofs.

2.4 Boundaries, Grounds and Outbuildings

We have walked around the boundaries on the basis of looking for additional cracking but have not inspected them.

2.5 Services

No services inspected.

2.6 Areas not inspected

The Surveyor will have only inspected those areas identified within the report. His report will be based upon possible or probable defects based upon what he has seen together with his knowledge of that type of structure. If you feel that any further areas need inspection then please advise us immediately.

2.7 Specific Defects Report

As this is a report upon a Specific Defect we do not offer any comment or guidance upon reactive maintenance and/or planned or routine maintenance items.

2.8 Whilst we have used reasonable skill and care in preparing this report, it should be appreciated that the Chartered Surveyors cannot offer any guarantee that the property will be free from future defects or that existing defects will not suffer from further deterioration;

3. Deleterious and Hazardous materials

Unless otherwise expressly stated in the Report, the Surveyor will assume that no deleterious or hazardous materials or techniques have

been used in the construction of the property. However the Surveyor will advise in the report if in his view there is a likelihood that high alumina cement (HAC) concrete has been used in the construction and that in such cases specific enquiries should be made or tests carried out by a specialist.

4. Contamination

The Surveyor will not comment upon the existence of contamination as this can only be established by appropriate specialists. Where, from his local knowledge or the inspection he considers that contamination might be a problem he should advise as to the importance of obtaining a report from an appropriate specialist.

5. Consents, Approvals and Searches

5.1 The Surveyor will assume that the property is not subject to any unusual or especially onerous restrictions or covenants which apply to the structure or affect the reasonable enjoyment of the property.

5.2 The Surveyor will assume that all bye-laws, Building Regulations and other consents required have been obtained. In the case of new buildings and alterations and extensions, which require statutory consents or approval the Surveyor will not verify whether, such consents have been obtained. Any enquiries should be made by the Client or his legal advisers.

5.3 Drawings and specifications will not be inspected by the Surveyor. It is the Clients responsibility to forward any drawings and specifications that he has or knows the whereabouts of to us to include information in our report. If these are not forthcoming we will make our best assumptions based upon the information available.

5.4 The Surveyor will assume that the property is unaffected by any matters which would be revealed by a Local Search and replies to the usual enquiries or by a Statutory Notice and that neither the property nor its condition its use or intended use is or will be unlawful.

6. Fees and Expenses

The Client will pay the Surveyor the agreed fee for the Report and any expressly agreed disbursements in addition.

7. Restrictions on Disclosures

7.1 This report is for the sole use of the Client in connection with the property and is limited to the current brief. No responsibility is accepted by the Chartered Surveyors if used outside these terms.

7.2 Should any disputes arise they will be dealt with and settled under English law;

7.3 This report does not fall under the Third Parties Rights Act.

8. Safe Working Practices

The Surveyor will follow the guidance given in Surveying Safely issued by the Royal Institution of Chartered Surveyors (RICS).