SPECIFIC DEFECTS REPORT

Relating to whether or not to buy a non-traditional construction house

Dunstable, Bedfordshire LU6

FOR

Ms W

Prepared by:
GEM Associates Limited
INDEPENDENT CHARTERED SURVEYORS

CONTENTS

INTRODUCTION AND INSTRUCTION

We have been instructed to prepare a report helping aid the decision whether to buy the non-traditional construction house or not.

We have carried out a visual inspection of the property.

The weather was a cool summer's day at the time of the inspection.

The instructions have been carried out under our standard terms and conditions, which are available on our website and were forwarded to you prior to our confirmation of instruction

SYNOPSIS

Ms W is considering buying her Local Authority rented property and is after advice on various matters:

1. Further information about the type of house that she lives in – this is known as a non-traditional house. Refer to Appendix Three for non-traditional houses and Appendix Four for Cornish Type Two construction.

2. Options that she has with regard to making the property mortgageable within the current climate.

3. Comments with regards to improvements on the property – external insulation / kitchen extension / timing – wanting the work to be carried out during the better weather.

CONSTRUCTION SUMMARY

External

Chimneys:	One brick chimney
Main Roof:	Pitched, clad with concrete tiles
Gutters and Downpipes:	Plastic
Walls:	Pre-cast reinforced concrete houses, often known as PRC houses
External Joinery:	Plastic double glazing with trickle vents
Foundations:	Not inspected and known

Internal

Not inspected

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

EXECUTIVE SUMMARY

Executive summaries are always “dangerous” as they try and encapsulate relatively complex problems in a few precise and succinct words. Having said that here is our executive summary and recommendations:

We would conclude that from a visual inspection of the external of the property it does not show any excessive deterioration considering its age, type and style. However, due to its type of construction, which is generally known as non-traditional construction, it is not readily mortgageable without major works, which normally involves the removal of the concrete elements of the property, i.e. the external walls plus possibly beams internally.

The houses are considered non-traditional construction as they are built in pre-cast reinforced concrete which can deteriorate in certain instances. This specific type of construction is known as Cornish Type 2 construction. Please see Appendix Four.

Bearing in mind the various criteria that you mentioned to us we therefore feel that it would be best to continue living in the property as it is; either rented from the Local Authority or in your own ownership.

As we are not party to your finances we cannot advise on which is the best option (as well as not being financial advisers), although we would comment that generally mortgages have a cheaper interest rate than personal loans, as the mortgage companies have the security of the property and they can re-possess if you do not carry on with your loan payments, which you do not have with a personal loan, which is why the interest rate is higher.

With regard to improvements we would divide this into three areas:

1. Possible Local Authority improvements by adding external insulation (known usually as structural insulation panels). As you have examples/show homes nearby we suggest you write to the Local Authority (Recorded Delivery) and ask them when they are likely to carry out the external insulation of the property and, if at all possible, wait for this work to be carried out. To carry this out as a one-off on your property would be expensive (as you would not get the economics of the scale of the works that the Local Authority get) and also it is difficult to do just one half of the property. It would also not solve the problem of the property being unmortgageable as the concrete walls would still remain, simply with the insulation panels added over the top of them.

2. With regard to extending the property to increase the size of the kitchen, from our discussions with you we gather you feel that you have been waiting five years already for this improvement! Therefore we would recommend you need to speak to the Local Authority about carrying out the improvements yourself and it would simply make the house more of a home to you.

3. Timing. You spoke about wanting to get the work carried out so that it was being built in the better weather. If this is the case you do need to allow several months to obtain Local Authority Approval in the form of Building Regulations and Planning Permission.

We are glad to recommend building contractors Pete Rowe. We would refer you to the discussion that we had when we met you.

We hope the above covers all the points that you wish to consider. If you would like to discuss these further please do not hesitate to contact me directly.

Time Line – A brief history of the structure

1940's – 1960's	Properties built using non-traditional construction techniques, sometimes also known as system buildings
1976	Tiling and cement banned after a collapse of a swimming pool and buildings with beams of greater spans than 5 foot are required to be inspected.
Mid 1980's	'Right to buy' meant that many properties that did not meet modern mortgage requirements were part of the 'right to buy' process and alterations have taken place to make the properties mortgageable.
2000's	Decent Homes Act means that Local Authorities are required to improve the standards of a property. Please see Appendix with regard to the Decent Homes Act.

INSPECTION

This is a specific defects report, which we were asked to advise upon as stated in the synopsis.

Our inspection has consisted of:

- External inspection only.
- Interview with two neighbouring properties

SURVEY FINDINGS

We were advised that the property was redecorated in 2008.

We can see no external cracking to the painted concrete surface to indicate concrete cancer, although we would advise that the only true way to establish if there is concrete cancer is to drill holes into the structure and carry out tests. Please see Appendix One.

Phone/Internet/contacts investigation

Brickwork Option

Removal of ground floor and first floor and replacement with brickwork

ANTICIPATED COST: In the region of £40,000 to £50,000. As discussed, there are specialist firms that carry this out and also a knowledgeable local builder could with the right supervision.

ANTICIPATED TIME: Two to four months. It may need your double glazed windows to be re-positioned.

Insulation Option

Add external insulation, with a SIP structural insulation panel.

ANTICPATED COST: We have not had a price back on this.

ANTICIPATED TIME: One month to two months. It may need your double glazed windows to be re-positioned.

Interviews

Cornish Type One building. We have interviewed a person near to you who has had a brick external added to their property to make the property mortgageable. This is a single storey house with a single storey of brick, known as a Cornish Type One house. Costs for this work were in the region of £25,000 in 2002. The work takes between two and four months.

Nearby property where bricks have replaced the concrete

The second storey is within a mansard hipped roof.

Example of a Cornish Type One property undergoing construction

We have spoken to a neighbour, who has a Cornish Type Two property, like yourself. They have had structural insulation panels added to the outside of the property by the Local Authority. The work takes between one to two months. Please see Appendix Five.

Cornish Type Two property that has had structural insulation panels added externally by the Local Authority

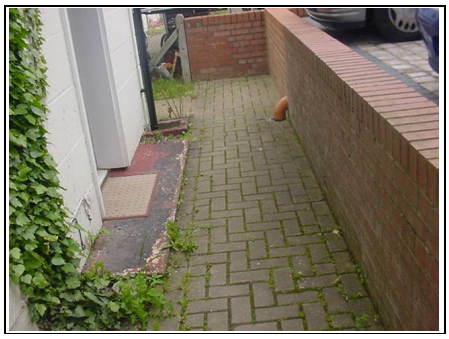
Example of a Cornish Type Two property under construction

Other Issues

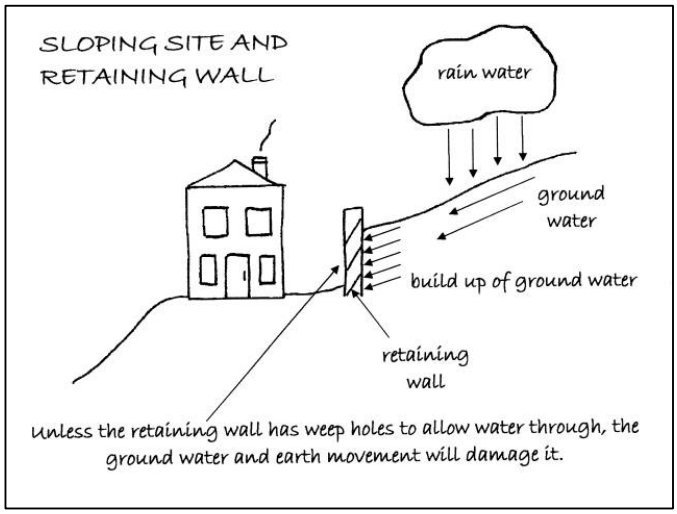
There are various other issues with this property that are site specific but do need consideration and that may add to the costs. These are the sloping nature of the site, which we discussed with you, and the tree to the front.

Sloping Site

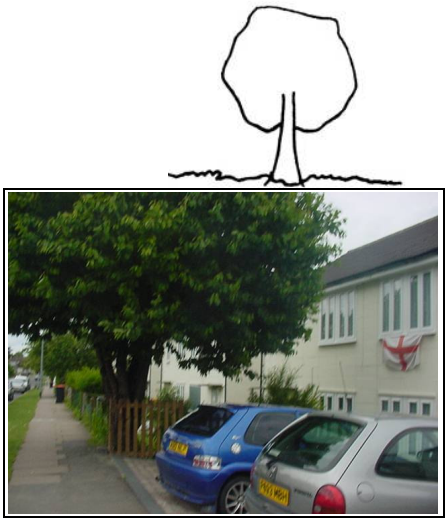
The property sits on a sloping site. There is a retaining wall adjacent to the front of the property.



Retaining wall



Trees

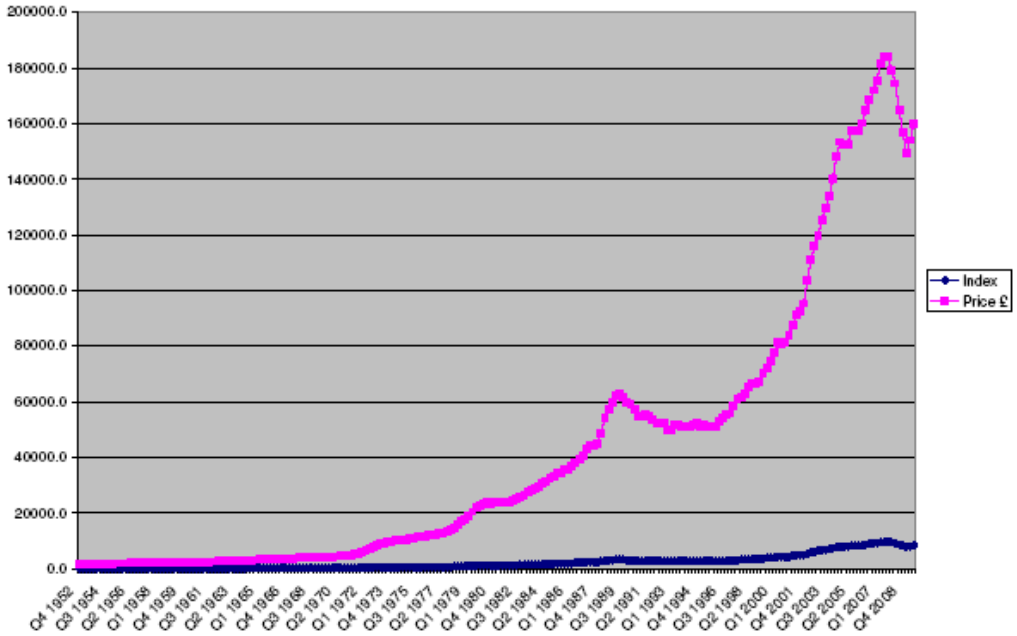


There is a tree nearby to the front of the property, which also needs to be taken into consideration from the roots/subsidence point of view and also pollen/sap onto the brickwork/insulation panels.

Trees near to property

When is it a good time to buy?

This is a graph of house prices over the years; with the lower line being bridged wages. As you can see there have been some quite drastic changes in the property market to date and it is nothing more than crystal ball gazing as to what the market will do.



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:

To make the property mortgageable you will have to replace the concrete element and this may still not satisfy some mortgage companies as the adjoining semi-detached property will still be concrete. 99% of people require a mortgage to purchase a property, if it was not mortgageable then this would considerably reduce the number of people that can buy the property. We have worked with investors that buy for cash and tend to be looking at discounts of the region of 25% to 40% and they are well aware of the limited number of people that will be able to purchase this type of property.

To make the property more liveable the adding insulation in the form of structural insulation panels would be a good method of improving the warmth in the property. However, if you carry this out on your own then it is likely to be expensive. Also there will be an awkward detail between yourselves and your neighbouring semi-detached house.

We understand your wish to improve the property but if you can wait for this work to be carried out by the Local Authority this will be the best option. We are concerned that you are in danger of being in a halfway house point, where you purchase the property and structural insulation panels are added to the remainder of the properties which will then mean it is very unlikely anyone would replace the concrete beneath and even if you did go to the cost and expense of re-constructing your property with brickwork you may still not be able to get a mortgage.

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.

Mark G. Hurst
BSc MSc FBEng Chartered Building Surveyor

For and on Behalf of
Gem Associates Limited
Independent Chartered Surveyors

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 we have only looked externally.

2. The Inspection

a) 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 relate to the specific defects shown to us only.

b) Floors

We have not opened up the floor structure. We have only been inside the house to have discussions with Margaret Winslet.

c) Roofs

The Surveyor will not inspect the roofs in this instance.

d) Boundaries, Grounds and Outbuildings

The inspection will not include boundaries, grounds and outbuildings unless specifically stated (none stated).

e) Services

No services inspected.

f) 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.

g) 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.

h) 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

a) 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

a) 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.

b) 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.

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.

c) 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

a) 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.

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

c) 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).

APPENDIX ONE

Concrete Cancer

Carbonation, or neutralisation, is a chemical reaction between carbon dioxide in the air with calcium hydroxide and hydrated calcium silicate in the concrete. The water in the pores of Portland cement concrete is normally alkaline with a pH in the range of 12.5 to 13.5. This highly alkaline environment is one in which the embedded steel is passivated and is protected from corrosion. According to the Pourbaix diagram for iron, the metal is passive when the pH is above 9.5.[3] The carbon dioxide in the air reacts with the alkali in the cement and makes the pore water more acidic, thus lowering the pH. Carbon dioxide will start to carbonate the cement in the concrete from the moment the object is made. This carbonation process will start at the surface, then slowly move deeper and deeper into the concrete. The rate of carbonation is dependent on the relative humidity of the concrete - a 50% relative humidity being optimal. If the object is cracked, the carbon dioxide in the air will be better able to penetrate into the concrete. When designing a concrete structure, it is normal to state the concrete cover for the rebar (the depth within the object that the rebar will be). The minimum concrete cover is normally regulated by design or building codes. If the reinforcement is too close to the surface, early failure due to corrosion may occur. The concrete cover depth can be measured with a cover meter. However, carbonated concrete only becomes a durability problem when there is also sufficient moisture and oxygen to cause electro-potential corrosion of the reinforcing steel.

One method of testing a structure for carbonation is to drill a fresh hole in the surface and then treat the cut surface with phenolphthalein indicator solution. This solution will turn [pink] when in contact with alkaline concrete, making it possible to see the depth of carbonation. An existing hole is no good because the exposed surface will already be carbonated.

One method of testing a structure for carbonation is it can lose strength with heat or time (conversion), especially when not properly cured. With the collapse of three roofs made of pre-stressed concrete beams using high alumina cement, this cement was banned in the UK in 1976. Subsequent inquiries into the matter showed that the beams were improperly manufactured, but the ban remained.

APPENDIX TWO

HIGH ALUMINA CEMENT

This are extracts from the Hansard Papers that goes on in government and relate specifically to the high alumina cement problems in May 1975.

“I am indeed grateful to have this opportunity of raising this subject under the Adjournment procedure. I am sure that the Minister will welcome this opportunity to debate the problems connected with the use of high alumina cement.

Those words—or the abbreviation "HAC"—are rapidly and relentlessly becoming a combination of misery, apprehension, worry and fear for thousands of people in the United Kingdom. I must make it clear that I am not an engineer. Nor am I a design consultant. However, I have the responsibility, as do all Members of Parliament, of representing thousands of people from my constituency. Today I speak not only for my own constituents but on behalf of a far wider franchise.”

And they further went on to say:

“We know that high alumina cement has been used extensively in the United Kingdom as a construction material during the past 20 years. We know also that it has been in use in other countries. I understand that at the outset two of the great merits of high alumina cement—so the manufacturers claimed—was that it set quickly and, especially important, that it was resistant to salt water. These were no doubt two of the reasons for its tremendous commercial boom in this country.

What we now know is that concrete made with high alumina cement undergoes changes in its crystalline structure. This, among the construction and engineering fraternity, is known as conversion. This causes loss of strength, and this loss of strength can be generated by moisture or warmth.

Many professionals in the construction field have had growing concern about some of the methods and materials which have been used in design and construction for a long time. In February 1974 the collapse of the school roof beam at the John Cass School, Stepney, perhaps demonstrated their concern, and this near-tragedy sparked off the current alarm which is now so prevalent in this country.

It must be understood by those with anxiety about this matter that high alumina cement is a perfectly adequate cement when used properly, and it is generally accepted that houses built with HAC parts are not at risk. However, if high alumina cement is mixed incorrectly it can cause "rotting" and then the beam cannot take the strain. A recent letter from the Department of the Environment to local authorities advises that the risk of structural failure is small in buildings with HAC with spans of up to five metres, so that the risk of structural failure is probably confined to spans of more than five metres. Undoubtedly this crucial point is one of the dozens of questions which will have to be answered at some stage and to which the country will want to know the answers by the Department in due course, such is the anxiety at present.

Last week's Daily Express caused panic amongst house owners of high alumina cement properties and the question was raised:

Thousands of home owners in my constituency and throughout the country have tried to put their property on the market and have been greeted with an opening question from a potential buyer "Does it contain HAC?" If the answer was "Yes", it is distinctly probable that the negotiations ended abruptly.

A home is the biggest and most important thing the majority of us ever buy, and it is only natural that caution is exercised. At the moment I think that caution has become distorted by the wretched bandwagon effect which, alas, is so often a feature in society today.

Then there are people seeking a mortgage who find that not all the building societies like to see the phrase "high alumina cement" in the surveyor's report, and a fee is wasted. There are people working in buildings which have stood the test of time—for two decades, perhaps—with HAC, but suddenly they develop concern because of the bandwagon effect. At present rumour and concern are rife and I am convinced that the Government have a clear duty to hasten their findings and urge upon the Building Research Establishment that the direction of its investigations warrants a 24-hour day until its research and advice is made known to this country. The cost to the nation could be enormous when taking into consideration the loss of amenity. There is also disruption of education and the concern of parents for the safety of their children. It is estimated that Birmingham alone could cost over £10 million to strengthen or replace the buildings. It is estimated that 22,000 buildings could well be involved. Newspapers and the mass media carry the claim that this programme could cost £2,000 million to remedy. The speculation is endless, in private, in the local authorities, and elsewhere."

The Building Research Establishment, which at the time was the foremost research body with regard to buildings looked into the matter.

I ask the Minister to convey to his right hon. Friend the Secretary of State the fact that there are serious accusations against the length of time and the methods being used by the Building Research Establishment to finalise its report. It might be better to assume that all HAC beams in excess of the 5 metre span are suspect. If not, tell the nation they are safe and dispel the worry. I cannot help but feel that one of the schemes which the Department should consider is the use of glass reinforced polyester. A glass reinforced polyester U-shaped beam can be installed around the suspect high alumina cement beam so that the new beam carries the entire load. The GRP beam would withstand any HAC collapse. Glass reinforced polyester's many benefits and properties will be well known to the Building Research Establishment.

I close by expressing a hope which I imagine is one held by many Members. The Government must do and say something quickly. Further testing is merely postponement. Further delay enables rumour, innuendo and anxiety to spread like wildfire. Not unnaturally, the mass media has seized upon the frailty of the scene,

and the Government have a clear duty to restore a rational balance and dispel the low morale of many people within the community.

The Blight of HAC Housing

My next point concerns the 61,000 people in England and Wales living in accommodation in which HAC has been used. Those people find that their property is effectively blighted. They are unable to sell or move, and they face the evaporation of their life's savings. I urge the Minister to introduce as soon as possible a system of certification so that those buildings which are not at risk can be authoritatively identified, and those properties which are at risk should be treated in the same way as properties which are affected by planning blight. The analogy is quite clear. Through no fault of their own but through the action of public bodies they find that the value of their accommodation is diminished. I therefore urge that they should be entitled to sell to the local authority or to the Government their properties at pre-blight value as in the case of properties affected by planning blight.

There is considerable concern in my constituency that the Department of the Environment Circular 271 referred to a working party set up to represent "all public sector interests", and made no reference to private sector interests. I hope the Minister will take the opportunity to reassure all the people living in these buildings that the Government will not sell them down the road and that they are urgently identifying solutions along the lines which I have outlined to solve the human and structural problems.

Concrete

Concrete itself is, of course, a very old building material, and examples of Roman concrete still survive. Most concrete today is made from Portland cement of which the basic ingredients are limestone—or chalk—and clay. The cement is mixed with sand or aggregate and water in varying proportions according to the type of concrete required. Concrete made from Portland cement is durable but it takes some little time to reach its full strength. In high alumina cement, as its name suggests, the main compounds are calcium aluminates. Concrete made from high alumina cement reaches its greatest strength quickly, and so it has hitherto appeared an attractive material to use to help to produce much-needed building components.

But, as we are now finding out, concrete made from high alumina cement is liable to undergo changes in its crystalline structure even when it is used in a normal environment. This process is known as conversion, and it is accompanied by a loss of strength in the concrete. This loss of strength can take place slowly or quickly. and the ultimate strength of the concrete when it is fully converted depends on how strong it was to start with. Whether or not this loss of strength means that the building in which it is used becomes unsafe in turn depends on the way in which the concrete was used and on the overall design of the building.

In this connection I must point out that most buildings are designed with ample safety margins which would take care of any loss of strength. It is important to

make clear, and for it to be fully and widely understood, that the mere fact that a building contains high alumina cement concrete must not be taken to mean that it is necessarily for that reason dangerous.

Sir John Cass School, Collapse of Roof

After the collapse of the roof of the swimming bath at the Sir John Cass School in February last year we thought it right to ask local authorities to identify schools and other buildings with roofs of the same sort as the roof that collapsed at Stepney, and to have them appraised, particularly where there were likely to be high temperatures in the roof. At the same time the Building Research Establishment was asked urgently to look into the cause of the Stepney failure. Its report showed that the weakening of the concrete beams in the swimming pool roof was not solely attributable to loss of strength but was also the result of chemical attack on the highly converted concrete. Some serious weakening of the concrete was also found in the gymnasium roof where the conditions of temperature and humidity were less onerous than in the swimming pool.

It was at this stage that we concluded that high alumina cement concrete ought not to be used for structural work in building until further notice, and we put in hand the amendment of the building regulations so that local authorities could reject proposals for work involving the structural use of high alumina cement concrete. We advised local authorities that we considered it inappropriate in general that high alumina cement concrete should be approved for structural use.

Testing of high alumina cement buildings

We also decided that the appraisal and testing of buildings containing high alumina cement concrete should be extended to all buildings with precast prestressed non-composite roof or floor members, or columns, with spans of more than five metres. "Precast" means made separately and not cast in the course of putting up the building. Precast members are often made in factories rather than on site. "Prestressed" means that the concrete was poured around steel reinforcement held under tension. "Non-Composite" means that the member is entirely dependent on its own strength and is not embedded in other material which carries part of the load. And, while I am about it, five metres is equivalent to 16½ft.

Identifying these buildings has not been easy. We are grateful to the cement suppliers who gave us names of many of the precast concrete manufacturers and to the manufacturers who have given us lists of buildings for which they have supplied members. We are grateful, too, to designers and, not least, to the local authorities who have searched their own records and have passed on to private owners all the information that is being obtained from various sources. Of course, this information could not be as selective as we would have wished. Some of the buildings will have spans of less than five metres for which our advice has been, and still is, that appraisal need not, for the time being at any rate, be carried out.

Early Conclusions

I should like to repeat what these conclusions are. First, our earlier conclusion that precast prestressed isolated roof beams represent the main potential hazard is confirmed, and all such beams, regardless of span, should be appraised by structural engineers. Second, the risk of structural failure in floors with spans up to about five metres is small and the Department's earlier advice, that appraisal need not be extended to these floors, still holds good at this stage. In the meantime, as the circular letter also explains, we have set up a special subcommittee of the Building Regulations Advisory Committee to provide further advice on the subject.

Its first task is to determine criteria which structural engineers can use for checking the designs of buildings containing high alumina cement concrete structural members. These checks, supplemented in appropriate cases by visual inspection, would identify those buildings in which safety margins are acceptable without further investigation, and those which require further investigation. Its second task is to determine what categories of buildings contai flings high alumina cement concrete structural members need not be appraised. This subcommittee has been asked to report before the end of July. The sub-committee meets weekly, has already had four meetings, and is holding its fifth meeting today.

Number of buildings with high alumina cement - putting the problem into perspective

It is right that we should put the size of the problem in perspective. Altogether about 22,650 buildings have so far been identified, of which 13,250 are housing, 1,450 educational buildings and 7,950 other buildings. Of these about 11,500 are in the public sector. The greatest estimate of the total number concerned is about 50,000—and, at the risk of repeating myself I must say that even if the total number is as great as this, there is no reason to suppose that more than a few of these will require remedial work. The number so far identified has been only 350.

Why was it permitted to be used in England when it was prohibited in Germany an France?

One of the questions that has been asked more than once and has been asked again today is why was high alumina cement permitted to be used here when its use was prohibited abroad? The examples of Germany and France are often cited. It is true that in Germany the use of high alumina cement was prohibited following the collapse of farm buildings in Bavaria in 1961. But in those cases the cause of the collapse was corrosion of the reinforcing steel and the high alumina cement used in the concrete was of a different composition from that used here. In France I understand there has never been any prohibition on the use of high alumina cement concrete in private buildings. Its use in the public sector was prohibited in 1943 but since 1971 it has been allowed, although subject to strict conditions.

We have chosen extracts from one of the government debates on high alumina cement and hope we will highlight the concerns that were present at the time.

APPENDIX THREE

List of Non Traditional Houses

Airey

Boot Pier and Panel

Cornish Type 1

Cornish Type 2

Dorran

Dyke

Gregory

Hamish Cross

Myton

Newland

Orlit

Parkinson

Reema Hollow Panel

Schindler and Hawksley

Smith

Stent

Stonecrete

Stour

Tarran

Underdown

Unity Type 1

Unity Type 2

Waller

Wates

Wessex

Winget

Woolaway Bungalow

APPENDIX FOUR

Cornish Type 2 PRC Houses Data Sheet

Manufacturer	Central Cornwall Concrete & artificial Stone co
Designer	Unknown
Period Built	1954 - mid 1960s
Number Built	30000 type 1 and 2
Alternative Name	Cornish, Cornish Unit, Selleck Nicholls & Williams

Physical Attributes and Materials Used

- Cornish type 2 PRC houses come in a 2 storey semi-detached format. Roof has a a medium pitched hipped or gable roof. The internal part of the roof is constructed of Timber rafters and purlins and concrete tiles.
- Ground floor consists of concrete.
- First floor is built with timber tongue on timber joists.
- Ceilings are made of plasterboard.
- The exterior part of a Cornish type 2 PRC house consists of storey height PRC columns and horizontal PC panels. Internal and separating walls are made of PC wall block or brick.

Areas which are defective

- Horizontal and vertical cracking of PRC columns.
- High rates of carbonation and significant levels of chloride in PRC columns

Environmental and Eco Ratings

- Original Insulation = F rated
- PRC repaired High Density insulation = A Rated

Energy Efficiency

- Original Heating = F rated
- New Combi 97% efficient boiler heating (if installed) A rated

APPENDIX FIVE

Structural Insulation Panels Data Sheet

SIPTEC Structural Insulated Panels are made up of an energy-efficient Polyurethane foam core, enclosed in a high-density OSB sandwich. The foam core provides super thermal insulation, while the exterior OSB skins account for the high tensile and compressive strength. This superior thermal performance of our SIPS significantly reduces heating & cooling costs, limits air infiltration and creates a quiet draft-free interior.

Windows, door openings and roof gables can be pre-cut within the Sips at the point of manufacture, precision measuring and cutting at the job site are significantly reduced. Sips also make inside finish work easier to complete. Plasterboard goes up fast by affixing it to the interior OSB panel. Cabinets also are installed quickly since they can be bolted directly into the OSB panel and electrical distribution is easily accomplished by running electrical wire through horizontal and vertical chases that can be incorporated into the inside of each Sip panel.

APPENDIX SIX

Decent Homes Act

The Government has set a target to ensure that all social housing meets the Decent Homes Standard. Social housing means homes that are owned by your local authority or a Registered Social Landlord (RSL). RSLs are also sometimes called Housing Associations.

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The basic principles of the Decent Homes Standard are:

- **It must meet the current statutory minimum standard for housing**
  Homes below this standard are those defined as unfit under section 604 of the Housing Act 1985 (as amended by the 1989 Local Government and Housing Act)

- **It must be in a reasonable state of repair**
  Homes which fail to meet this standard are those where either:
  – one or more of the key building components are old and, because of their condition, need replacing or major repair; or
  – two or more of the other building components are old and, because of their condition, need replacing– or major repair

- **It must have reasonably modern facilities and services**
  Homes which fail to meet this standard are those which don't have three or more of the following:
  – reasonably modern kitchen (20 years old or less)
  – a kitchen with adequate space and layout
  – a reasonably modern bathroom (30 years old or less)
  – an appropriately located bathroom and WC
  – adequate insulation against external noise (where external noise is a problem)
  – adequate size and layout of common areas for blocks of flats

- **It provides a reasonable degree of thermal comfort**
  This means that your home must have both effective insulation and efficient heating

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http://www.communities.gov.uk/housing/decenthomes/

This is the link to the Decent Homes page for the Government, saying it is under review and we have therefore made reference to the Waltham Forest website.