

Chesterfield Non . Traditional Housing

Structural Survey of Non Traditional Housing Stock

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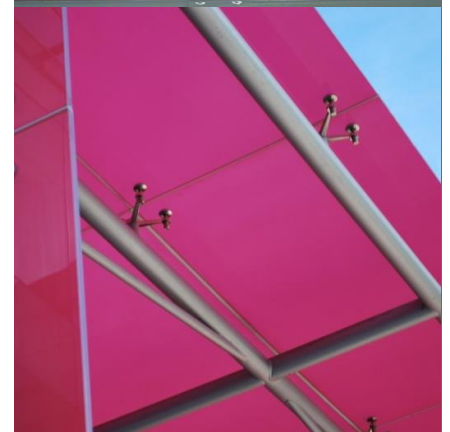
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1.0 Introduction

Curtins Ltd was appointed directly by Savills on behalf of Chesterfield Borough Council to undertake a stock condition survey of their non-traditional housing stock. This was carried out in March/April 2014.

This report is prepared on the basis of providing information which will enable the structural condition of the stock to be properly managed and the appropriate budgets to be allocated by Chesterfield Borough Council. Chesterfield Borough Council has a total of 348 properties covered by this report (See Section 3.0 for the breakdown). The stock has been analysed by type under the following headings:-

- BISF
- BL8
- Cornish
- Reema
- Timber
- Trusteel
- Unity

This report identifies the following:-

- Assessment of the condition of the existing structure for the given construction type.
- Assessment of the extent of repair works required for the property to achieve a likely future life in excess of 30 years.
- Assessment of budget costs for the works to achieve a 30 year life.

In the main report extra items have been added on some types (for example new doors and windows which would normally be replaced when a building is overclad, but is not essential if the windows have been recently replaced).

The condition of the structure, in general terms, is related to the durability of the materials used, how well they have been designed, detailed and constructed and how exposed the completed structure has been to the weather, how well the property has been maintained and the age of the property. Thus older systems which have their structure exposed tend to be in a worse condition than younger systems where the structure is protected by an external envelope of a cladding system. Our strategy therefore has been to assess the degree of work required to repair the properties to achieve a 30 year life, subject to normal routine maintenance. The costs of routine maintenance which would apply equally to a property of traditional construction is not included in our assessment of costs.

2.0 Executive Summary

Curtins were appointed directly by Savills on behalf of Chesterfield borough Council to undertake a stock condition survey of their non-traditional housing stock. This was carried out in March/April 2014. Chesterfield borough Council has a total of 613 non-traditional properties. However owing to previous external cladding schemes Curtins were unable to survey all properties and therefore 71 Reema properties, all 80 Tarran bungalows, 2 Cornish properties, 109 Reema flats and 3 BISF properties that had been incorrectly identified were omitted, consequently this report is based on 309 properties.

The stock has been analysed by type, which can be broadly broken down into precast concrete, steel framed and timber framed properties as follows:-

Concrete Construction	Steel Construction	Timber Construction
Cornish	BISF	Timber
Reema	BL8	
Unity	Trusteel	

217 of the non-traditional stock covered by this report (62%) are designated as being defective in terms of the Housing Defects Act 1985. These are Cornish (2), Reema (66), Reema Flats (27) and Unity (110), Unity Flats (12). The concrete properties removed for this report, 2 Cornish, 71 Reema, 109 Reema Flats and 80 Tarran, whilst not part of this report are still classed as defective.

We have assumed when determining the extent of the works required these will not be delayed inordinately such that the structural elements are decayed beyond repair and require complete replacement. In many cases we have recommended an insulated render which will provide a new weather resistant envelope to the outer wall and should halt the structural deterioration. In the main body of the report extra items have been added for new windows and doors which would normally be replaced when the building is overclad, but may not be essential if the windows have been recently replaced.

In brief, we outline our budget costs for each house type below and the priority for the repair. In establishing the priority for the repair we have started with matters which relate to immediate structural integrity or stability as being the most critical as these affect safety. After the priority is based on durability issues and how sensitive the structure is to deterioration of a particular element. Thus a system with isolated columns which could collapse if the reinforcement were to corrode would be given a higher priority over a large panel system which could lose significant amounts of reinforcement and still remain stable.

Generic Type	No of Dwellings	Total Cost for 30 Year Repair	Extra Over costs	Totals	Priority of Repairs
BISF	29	£487,635.00	£139,200.00	£626,835.00	6 Years 5 . 10
BL8	55	£624,670.00	£264,000.00	£888,670.00	2 Years 1 . 5
Cornish	2	£12,900.00	£23,500.00	£36,400.00	3 Years 1 . 5
Reema	93	£720,000.00	£508,000.00	£1,228,100.00	4 Years 1 . 5
Timber	23	£0.00	£0.00	£0.00	7 Maintenance Only
Trusteel	24	£200,280.00	£158,400.00	£358,680.00	5 Years 5 . 10
Unity	122	£4,616,800.00	£1,392,000.00	£6,008,800.00	1 Years 1 . 5
Sub Total:	348	£6,662,285.00	£2,485,100.00	£9,147,385.00	
25% Contract Prelims & Profit		£1,665,571.00	£621,275.00	£2,286,846.00	
Totals:		£8,327,856.00	£3,106,375.00	£11,434,231.00	

When assessing costs (see budget costs in Section 8.0 and the cost summary attached to the executive summary) we have not allowed for routine maintenance which would apply to all properties. Costs have been based on our experience, recent contracting pricing and reference to specialist contractors. All pricing is based on Q4 2014. The costs have allowed 25% addition for the contractor's preliminaries, overheads and profit but are **exclusive** of the following:-

- Design and other professional fees.
- Planning and Building Regulations fees.
- Party Wall Act matters.
- Undertaking internal modifications or refurbishment to meet Decent Home Standard or otherwise, specifically replacement kitchens, bathrooms, plumbing, heating and electrical systems and decorations are not included.
- Windows, doors and roof coverings are shown as an extra over item.
- Improving thermal performance (although where overcladding has been recommended the cost of insulation has been included).
- Fascias and gutters, except where overcladding is required and this is included or necessary to protect the structure.
- Repairing out-houses, lean-to's, garages, extensions etc and the increased costs to the repair of the house due to the proximity of these elements.
- Foundation and ground floor slab works other than making an allowance when localised problems have been found in a specific system.
- Damp proofing other than as necessary to protect the structure.
- Asbestos assessment and removal or remediation other than where known asbestos cladding is to be removed to enable new cladding to be installed.
- Contingency
- Decanting of tenants
- Tenant compensation for disturbance.
- VAT

3.0 Composition of Non . Traditional Housing Stock

The table below provides a breakdown of the non-traditional stock which is the subject of this report. The number of houses has been amended from the database given to Curtins Ltd by Chesterfield Borough Council to take into account any property that has been previously refurbished.

House Type	Area										Total:
	Birdholme	Brimington	Boythorpe	Chesterfield	Dunstan	Grangewood	Hasland	Mastin Moor	Newbold	Staveley	
BISF		25							1	3	29
BL8	13					42					55
Cornish				2							2
Reema Reema Flats			37 27							29	66 27
Timber								8	10	5	23
Trusteel										24	24
Unity Unity Flats		12	64		7		48		55		110 12
Total:	13	37	64	2	7	42	48	8	66	61	348

The address lists for all the non-traditional houses are included in Appendix A of this report with the properties surveyed highlighted.

4.0 System Type Descriptions

Non-traditional forms of construction were encouraged when craftsmen skilled in traditional building materials were in short supply, particularly after the Second World War but were also low cost. They generally consist of prefabricated frames and infill panels, mainly in reinforced concrete, but timber, steelwork and other metals were also used. Today most system built houses use timber or lightweight steel frames.

The decay mechanism of reinforced concrete was poorly understood until the 1970s and no assessment of the likely life of non-traditional dwellings was ever made at the time of design and construction, except for some lightweight temporary buildings which were given a 20 year life expectancy.

The foundations to most properties are trench fill or strip footings in the vast majority of cases, and investigation of the footings would, therefore, usually only be undertaken where signs of settlement cracking were noted.

The typical structural arrangement of the various dwelling types contained within the house stock is listed below. More detailed information is available in the appropriate BRE publications e.g. *The Structural Condition of Cornish Houses*+etc.

A brief description of the generic systems is given below; where the investigations of the stock have identified variations to the descriptions given, these have been noted.

4.1 BISF



Classified as defective by the Secretary of State under Part XV1 of the Housing Act 1985

The BISF house is a steel framed system constructed in the 1940s/50s in semi-detached format.

The steel framework is a simple beam and post framework using RSC posts externally, box posts internally and RSJ floor beams and lightweight roof trusses.

The external wall cladding at ground floor is of expanded metal lathing spanning between posts and finished with render. At first floor the cladding is of profiled steel sheets supported on RSA sheeting rails. The walls are lined internally with plasterboard with a thin glass fibre insulation quilt. The walls were overlaid with an insulated render system.

The party walls are of cavity blockwork and the partitions are of timber stud.

The first floor is of timber joists supported on a grillage of steel floor beams.

The roof structure is constructed from lightweight steel trusses supporting RSA purlins and lightweight steel roof sheeting.

The ground floor is of concrete and the foundations are of conventional concrete strip.

4.2 BL8 Bungalow



Classified as defective by the Secretary of State under Part XV1 of the Housing Act 1985.

The BL8 Bungalow is an aluminium framed system constructed in the 1950s.

The structure is a lightweight aluminium framing constructed from recycled aluminium. The framing is a mix of $\%T+$, $\%G+$ and $\%T+$ sections forming simple beam and post arrangement. The external walls are of corrugated aluminium sheeting, lined internally with plasterboard, with glass fibre insulation in the cavity.

The party wall is of similar construction to the external wall.

The roof is constructed using timber trussed rafters to support lightweight steel roof sheeting.

The ground floor is concrete and the foundations are of concrete strip.

4.3 Cornish



Classified as defective by the Secretary of State under Part XV1 of the Housing Act 1985.

The Cornish Unit Type 1 system build dwelling is a PRC beam and post construction built in the 1950s in 2 storey semi-detached and flat formats.

The ground floor external walls comprise storey height 225 x 100mm concrete columns which are at 1100mm centres. The columns are rebated to receive thin concrete wall panels which are stitch bonded internally and externally to form a cavity wall. On some units the internal leaf is replaced with a thin breeze block or plasterboard panel. The wall construction sits on a plinth unit and is capped off with a coping unit at first floor.

The first floor accommodation is located within a timber framed mansard roof with sloping tiled walls externally and plasterboard internally.

The party wall is of blockwork and the partitions are also generally of blockwork although some walls can be of stud.

4.4 Reema



Classified as defective by the Secretary of State under Part XV1 of the Housing Act 1985.

The Reema system built house is a large concrete panel property constructed in the 1960/70s in bungalow and semi-detached house format.

The external walls are formed with large coffered, storey height concrete panels with an exposed aggregate surface. The internal finish consists of timber framing and plasterboard. At the junction of each concrete panel there are reinforced concrete columns which are poured on site.

The party wall comprises of large concrete panels and plasterboard. Internal partitions are generally timber stud and partitions.

Ground floor normally comprises of a ground bearing concrete slab with a thickening under the external and party walls.

The first floor consists of tongue and grooved boarding, timber joists and a plasterboard ceiling.

Roof construction comprises of concrete tiles, timber trusses and a plasterboard ceiling.

4.5 Timber



The timber bungalow is a timber framed system built property in detached and semi-detached formats.

The external walls comprise of a spa dashed fibreboard on 18mm plywood on 115mm timber studs filled with Rockwool insulation and a plasterboard internal finish.

The party wall comprises of timber studs with plasterboard. All internal partitions are timber stud.

The ground floor is a suspended ground floor comprising of timber joists and boarding.

Roof construction comprises of roofing tiles, timber trusses and a plasterboard ceiling.

4.6 Trusteel



The Trusteel Mk11 bungalow is a steel beam and post system constructed in the 1950s in semi-detached format.

The frame is constructed from lattice steel columns and beams to form a simple beam and post structure with lightweight steel roof trusses.

The external walls are constructed from brickwork or stonework with an inner leaf comprising timber stud and plasterboard. The party walls are of cavity blockwork and the partitions are of brickwork or blockwork.

The first floor is constructed from tongue and grooved boarding supported directly on lattice steel floor joists.

The roof is constructed from a lightweight steel truss system supporting steel purlins and a concrete tiled finish.

The ground floor is of concrete and the foundations are of concrete strip.

4.7 Unity



Classified as defective by the Secretary of State under Part XV1 of the Housing Act 1985.

The external walls comprise storey height precast reinforced concrete columns with bases anchored to the foundation. Horizontal metal braces between columns at first floor and eaves level and diagonal bracing to the corner columns restrain the columns. Externally precast concrete panels are tied to the columns with copper straps and an inner leaf is formed with lightweight concrete blocks.

The first floor to the houses is of timber secondary joists spanning between steel primary joists, in turn spanning onto the columns. The floor is finished with timber boarding and the ceiling is of plasterboard.

The roof structure consists of timber trusses at column centres with large span tiling battens between supporting concrete roof tiles.

Party walls are constructed with two skins of blockwork.

The ground floor is a ground bearing concrete raft slab which is thickened out to support the loadbearing walls.

5.0 Investigation Strategy

The purpose of this investigation is to establish the structural condition of the non-traditional properties and advise on the extent and cost of structural refurbishment to ensure a minimum future life of thirty years.

Little desk-top information was available concerning the history, maintenance records or details of the particular variants of the property types. Due to this lack of background information our report is based upon Curtins visual and intrusive observations.

Initially, Curtins Consulting undertook a general assessment based on previous knowledge of the housing stock to establish the most appropriate sampling and inspection regime. Based upon this information an initial assessment of the likelihood of each construction type achieving a further minimum 30 year life was made.

This report is based upon visual inspections, discussions with Chesterfield Borough Council employees and detailed intrusive investigations. It is not feasible when undertaking this type of survey to inspect every property. Therefore, a sampling regime has been adopted that is considered to be representative of the stock as a whole.

The purpose of the detailed survey is to verify and augment the findings of the initial assessment and previous studies by undertaking visual and intrusive investigations and associated laboratory analysis where appropriate.

The extent of the investigation has been particularly influenced by our experience and knowledge of the potential defects that can occur in these types of buildings. It is arranged into the following sections:-

- External and internal visual inspections.
- Exploratory (intrusive) investigations.
- Laboratory testing.

Information from our knowledge and experience has been used to determine the scope of the investigation, namely:-

- Number and type of site tests.
- Extent and location of inspections.
- Number and type of samples for laboratory analysis, where required.

The number of properties of a particular construction type selected for inspection and subsequent investigation varied dependent upon the total number of properties within that construction type and their vulnerability to defects (based on Curtins knowledge of that particular construction type).

Curtins determined the number of surveys required based on their population location. The property addresses were chosen by us on a random basis except where a particular property had been identified with a specific defect worthy of special investigation during the impressionistic survey. This method is preferred rather than investigating the houses in the worst condition which can lead to a pessimistic view of the overall condition of the stock and to over estimating the repair cost. It does mean however that there can be defects in some properties which have not been picked up by the examination of those nearby. Experience suggests that when this occurs the problems tend to be localised and do not have a significant effect on the overall cost profile of the stock. The extent of inspection was determined to reduce that risk. Whilst these criteria are applicable to the properties where detailed testing occurred (see Appendix A for specific addresses) the units selected are considered to be representative of the overall stock.

The sampling regime adopted is such that where components are visible, a representative sample of those elements either noticeably suffering from or most likely to suffer from degradation are tested. Where the components are not visible, testing has been undertaken in areas considered to be most vulnerable to degradation. The results obtained are used as the basis of the recommendations and are given as being representative of the stock as a whole. However, as the entire structural fabric of every building cannot be inspected due to the lack of void properties no property was exposed to reveal its complete structure) there is no guarantee that the worst of most aggressive areas of degradation have been identified.

The present structural assessment is confined to consideration of the principal structural elements of each of the construction types. The condition of guttering, rainwater goods, canopies, outbuildings and external fixtures and fittings, together with gas, water and electrical services, central heating, flues, bathrooms and kitchen fittings and internal decorations and the presence or otherwise of asbestos are all excluded from consideration. These are the subjects of a separate stock condition survey carried out as part of the overall appraisal of the Chesterfield Borough Council housing stock.

Detailed subsoil investigations were excluded from the survey although any evidence of structural movement associated with foundation instability if present has been recorded during the visual inspections. Whilst many of the foundation solutions adopted at the time of construction would not comply with current standards, it is most likely that any settlement due to inadequate foundation size or depth would have already occurred. However, this does not exclude the potential risk of future movement, for example, as a result of flooding, drainage failure, root action or geological event. The risk of foundation movement is generally no more than for traditionally constructed properties built at the same time. No evidence of sulphate attack of the ground floor concrete slabs was found during the surveys, therefore, no samples were taken from this element of the properties.

The structural assessments exclude items of a geotechnical and environmental nature. The assessment of potential foundation problems is confined to a review of information provided on historic problems and observations made on site.

During our survey we did not find any significant structural cracking in the properties which is indicative that the foundations are performing adequately and that there are no significant ground related problems. Information provided for review has not been substantiated or validated by independent research or investigation. Curtins Consulting cannot be held responsible for any errors, discrepancies or inaccuracies in the information provided by the Council or its representatives.

No testing for asbestos, visual or physical, has been carried out during the preparation of this report.

6.0 Assessment of Potential Defects

The investigations sought to determine the presence of the following defects, all of which have a direct influence on the long term durability and performance of the structural elements.

6.1 Steelwork

Problems with steel frame structures relate to the potential breakdown of the protective coating system, if present which can lead to corrosion of the steel elements in a damp or wet environment.

Finishes, panels and coverings should be removed to facilitate a visual inspection of the steel frame. The bottom ends of steel posts, or other members partially built into an outer wall or similar damp locations, are vulnerable to corrosion that can reduce their structural capacity.

Similar problems can occur with steel components of other system types.

6.2 Timber

Problems with timber frame structures relate to the rotting of the frame and deterioration or inadequate fixings. This generally first occurs in the soleplates of the property, but can also be found at window and door reveals, and is usually caused by water penetration through poorly maintained cladding or inadequate inclusion of damp proof courses, changes in cladding type and at flashings.

6.3 Reinforced Concrete

Deterioration of the reinforced concrete elements is caused by corrosion of the steel reinforcement and degradation of the concrete matrix, either independently or as a result of steel corrosion. Concrete is inherently alkaline and this alkalinity protects the encased steel reinforcement from corrosion. However, the protection can be reduced by the action of acidic gases present in the air (such as carbon dioxide and sulphur dioxide). This process is called carbonation. If the depth of carbonation is greater than the concrete cover surrounding the reinforcement steel, the risk of reinforcement corrosion increases, reducing the strength of the reinforcement, the integrity of the concrete, including cracking and spalling and leading to a reduction in structural capacity.

Corrosion can increase or be more severe in the presence of high levels of chloride ion within the concrete; common if chloride based admixtures were used in the concrete during the construction process (normal practice up to the late 1960s) or in an area subject to air borne salts such as in a coastal environment or near to major highways. Therefore, the following characteristics need to be assessed in order to determine the structural condition and future durability of the concrete.

- Chloride ion content.
- Carbonation depth.
- Cover to reinforcement.
- Quality of workmanship during construction.
- Presence of cracking, spalling or other visible defects.

6.3.1 Chloride Ion Content

Chloride attack on reinforcement is aggressive and can occur despite the alkalinity of the surround concrete. It sets up an electrolytic cell, which encourages the migration of chloride ions from surrounding areas to the site of the attack on the reinforcement. This results in localised deep pits in the reinforcement, which decreases the cross sectional areas significantly, before sufficient rust has formed to crack the concrete to the surface. As this form of reinforcement attack is hidden from view, it is potentially a serious cause of weakness to reinforced concrete and it can progress undetected.

Consequently, it is important that the level of chloride in the concrete is established. Concrete samples are taken, by collecting the debris from drilled holes or by chipping pieces of concrete from the corners of components.

6.3.2. Carbonation Depth

There are five basic factors that contribute towards the resistance of concrete to carbonation, as follows:-

- The type and proportions of the materials used in the concrete mix.
- The compaction achieved during casting.
- The curing regime to which the concrete has been subjected.
- The environment in which the concrete is located.
- The presence of coatings.

The depth of carbonation is a good indicator of the quality of the concrete, the degree to which the concrete has suffered from weathering and the approximate time scale before the reinforcement is affected by corrosion.

The depth of carbonation is determined by spraying the surface of the drill hole with liquid Phenolphthalein (ph) indicator. This clear liquid turns un-carbonated concrete purple. The colourless zone can be measured as the carbonation depth.

6.3.3 Cover to Reinforcement

Measurement of depth of cover is necessary to establish the potential vulnerability of corrosion occurring in the reinforcement. It is of importance that reinforcement is afforded adequate protection from the carbonation process in order for it to remain effective and protected within the concrete section; too little cover can lead to premature corrosion resulting in cracking and spalling of the concrete face and, ultimately, failure of the component.

Reinforcement cover was established through opening up of the units and drilling holes together with the use of a cover meter.

6.3.4 Quality of Concrete Construction

Poor quality can arise as a result of deficiencies in the original mix specification or bad workmanship on site during the compaction and curing of the concrete. It often leads to one or more of the following problems:-

- Weathering and frost attack of the concrete surface leading to cracking, spalling and loose concrete, often due to low cement content reducing durability, or poor compaction.
- Porous concrete which allows deeper penetration of moisture and corrosion of the reinforcement.
- Where the concrete components are cast in thin sections, resulting in little or no cover.
- Lack of fit between components at joints due to poorly formed connections.

6.4 Masonry

Masonry is usually treated as being a traditional durable material. However masonry has been widely used in the non-traditional systems such as a cladding. Problems associated with masonry predominantly relate to workmanship such as poor quality mortar, inadequate fixing or quantity of ties, poor or missing DPM and cavity trays and mortar droppings in cavities. Masonry can also be affected by wall tie corrosion and frost damage.

7.0 Investigation & Findings

7.1 BISF

Current information provided by the Client indicates the following distribution of BISF houses in Chesterfield Borough Council's ownership:-

District	No.	Inspected	% Sample
Brimington	25	3	12%
Newbold	1	0	0%
Staveley	3	0	0%
Total:	29	3	10%

Inspection/Observations

Element	Observation.
a) Foundations	Generally the foundations are performing satisfactorily with no evidence of any significant movement.
b) Steel Frame	All BISF properties had been rendered over the original covering, therefore inspections were limited to boroscope holes. However from these limited inspection we were able to determine that the steel columns were in good condition with no signs of surface rust.
c) Roof Construction	The roof steelwork generally appeared to be in good condition with only relatively minor surface corrosion only. The roof had been refurbished as the original covering had been removed and a metal roof tile sheet had been fixed with new

timbers, consequently the roof construction appeared to be in good condition.

- d) External Walls The properties have been subject to a refurbishment scheme. (Date not known). At ground floor there is a spa dashed render up to first floor level where PVCu cladding has been applied up to eaves level. The existing render and steel sheeting are still insitu and concealed by the new finishes.

The refurbished walls appear to be performing satisfactorily. We did note however that there are some vertical cracks in the render which may coincide with the location of the steel columns and areas of debonded render.

- e) Ground Floor The ground floor slabs were generally found to be in good condition and free from any significant cracks or distortion.

- f) First Floor The timber first floor is generally performing satisfactorily.

7.2 BL8

Current information provided by the Client indicates the following distribution of BL8 bungalows in Chesterfield Borough Council's ownership:-

District	No.	Inspected	% Sample
Birdholme	13	0	0%
Grangewood	42	6	14%
Total:	55	6	11%

Inspection/Observations

Element	Observation.
a) Foundations	Generally the foundations are performing satisfactorily with no evidence of any significant movement.
b) Aluminium Frame	From our limited inspections with a boroscope the aluminium appeared to be satisfactory. However from previous contracts Curtins have undertaken we are aware that owing to impurities in the aluminium (zinc and copper) decay can occur to the frame with the column feet and bottom channel particularly prone to decay.
c) Roof Construction	The roof construction consists of timber trusses at approx. 1.2m centres with timber battens spanning between trusses. The roof structure is the original construction but the roof covering has been changed for a profiled metal sheeting. All appears to be in good condition with no signs of decay evident. No roof bracing evident.

- d) External Walls The aluminium profiled sheeting is relatively satisfactory. There are areas of flaking paint particularly on the soffit and some sheets are deformed and some isolated areas of decay.

- e) Ground Floor The ground floor slabs were generally found to be in good condition and free from any significant cracks or distortion.

7.3 Cornish

Current information provided by the Client indicates the following distribution of Cornish houses in Chesterfield Borough Council's ownership:-

District	No.	Inspected	% Sample
Chesterfield	2	1	50%
Total:	2	1	50%

Inspection/Observations

Element	Observation.
a) Foundations	Generally the foundations are performing satisfactorily with no evidence of any significant movement.
b) Concrete Frame	<p>The concrete frame consists of storey height concrete columns bearing onto a concrete plinth and supporting concrete lintel at first floor level. Lateral stability is achieved by a ship lap concrete between the concrete columns. The concrete frame is generally in good condition and free from any significant cracking.</p> <p>All chloride testing of the concrete structure was in the low+category.</p>
c) Roof Construction	The roof construction, including the mansard is of a traditional roof construction of purlins and rafters. The timber purlins bear onto the party wall by means of a steel angle. The bearing on some purlins is relatively short and should any decay occur at the bearing end the bearing stability would be suspect, however at present it is satisfactory.

The roof covering is displaying signs of ageing with slipped tiles evident.

- d) Ground Floor The ground floor slabs were generally found to be in good condition and free of any significant cracks or distortion.

- f) First Floor The timber first floor is generally performing satisfactorily.

7.4 Reema

Current information provided by the Client indicates the following distribution of Reema houses in Chesterfield Borough Council's ownership:-

District	No.	Inspected	% Sample
Boythorpe	64	5	8%
Staveley	29	6	20%
Total:	93	11	12%

Inspection/Observations

Element	Observation.
a) Foundations	Generally the foundations are performing satisfactorily with no evidence of any significant movement.
b) External Concrete Panels.	The large concrete panels that form the external concrete walls are providing good protection from the elements. There are isolated areas of rusting reinforcement and spalled concrete throughout the housing stock but these in their present format are of no structural significance. Joints between panels have also eroded and should be repaired as required.
c) Roof Construction	The roof construction comprises of timber roof trusses which were in good condition with little sign of decay or damp ingress. However it was noted there was an absence of any bracing across the roof trusses. The roof tiles are generally in good condition.

- d) Ground Floor The ground floor slabs were generally found to be in good condition and free of any significant cracks or distortion.

- e) First Floor The timber first floor is generally performing satisfactorily.

7.5 Timber

Current information provided by the Client indicates the following distribution of Timber bungalows in Chesterfield Borough Council's ownership:-

District	No.	Inspected	% Sample
Mastin Moor	8	0	0%
Newbold	10	2	20%
Staveley	5	1	20%
Total:	23	3	13%

Inspection/Observations

Element	Observation.
a) Foundations	Generally the foundations are performing satisfactorily with no evidence of any significant movement.
b) External Walls	The external walls are of timber frame construction with spa dashed panels. The walls are in good condition providing an adequate protection from the elements. We did note one instance of damp ingress but this is able to be rectified through maintenance. We did expose the sole plates which may be prone to decay, however the sole plates inspected were free from decay.
c) Roof Construction	The roof construction comprises of timber roof trusses which were in good condition with no sign of decay or damp ingress. The roof tiles are generally in good condition.

- d) Ground Floor The suspended ground floor appeared to be performing satisfactorily with no evidence of structural movement. We noted however that the bottom spa dashed panel partially covered the air vents. This will restrict the free air flow under the ground floor and could result in decay of the ground floor joists.

Whilst this report does not cover services, we did note that the overflow pipe from the header tank at 27 Burbage Road was not connected

7.6 Trusteel

Current information provided by the Client indicates the following distribution of Trusteel bungalows in Chesterfield Borough Council's ownership:-

District	No.	Inspected	% Sample
Staveley	24	3	12%
Total:	24	3	12%

Inspection/Observations

Element	Observation.
a) Foundations	Generally the foundations are performing satisfactorily with no evidence of any significant movement.
b) Steel Frame	The steel frame which is located behind the outer brickwork in the cavity. Whilst any steelwork within a cavity can be prone to decay, however all the steelwork inspected was in good condition with only minor signs of corrosion.
c) Roof Construction	The steel structure within the roof void was in good condition with no sign of decay evident. All roof tiles were in good condition providing adequate protection against the elements.
d) External Walls	The external walls are constructed from brickwork. This was found to be in good condition with no signs of cracks or fractures evident.

The cantilevered canopies over the entrance doors were showing signs of movement as the fixings are beginning to fail.

e) Ground Floor

The ground floor slabs were generally found to be in good condition and free of any significant cracks or distortion.

7.7 Unity

Current information provided by the Client indicates the following distribution of Unity houses in Chesterfield Borough Council's ownership:-

District	No.	Inspected	% Sample
Dunston	7	0	0%
Hasland	48	7	15%
Newbold	55	4	7%
Brimington	12	0	0%
Total:	110	11	10%

Inspection/Observations

Element	Observation.
a) Foundations	Generally the foundations are performing satisfactorily with no evidence of any structural movement. However 103 Callow Lane dies display signs of ground movement.
b) Concrete Frame	<p>The concrete frame consists of concrete columns located in the cavity behind the cladding panels. All columns inspected appeared in good condition with no signs of cracking or spalling concrete.</p> <p>Concrete dust samples were taken and tested for chloride content. From the samples taken more than one columns per property had chloride content in the high to very high category, and therefore are prone to corrosion.</p>

8.0 Recommendations

8.1 BISF

The BISF properties were subject to a major refurbishment when the properties were overclad with a spa dashed render at ground floor level and PVCu strip cladding at first floor level. Since the refurbishment the properties have performed well and subject to normal maintenance should provide adequate protection to the properties.

When the refurbishment was undertaken the existing cladding was left insitu, consequently no inspections were undertaken to the existing steel frame, which can be prone to corrosion. We therefore do not consider that the current refurbishment will provide a 30 year design life.

In order to achieve improved thermal performance and extended longevity we recommend the following:-

- Remove existing cladding in order to inspect the existing steel frame.
- Make any repairs necessary to the steel frame. Paint all steel columns up to a height of 500mm with a bitumen paint.
- Fix 18mm marine quality plyboard to the steel frame.
- Fix external insulation to the plyboard.

Subject to the above we consider that the BISF properties will achieve a design life of 30 years.

8.2 BL8

The BL8 bungalows are in relatively good condition given their age, however, very little has been improved to the original construction since they were built 60 years ago.

In order to improve their appearance, thermal performance and longevity we recommend the following works.

- Remove the bottom 500mm of the existing sheeting, inspect the structural frame, make good any defects and fix 18mm marine quality plyboard.
- Supply and fix treated battens and boarding to the existing structure. Fix new external wall insulation.
- Supply and fix new GRP canopy.

Subject to the above we consider that the BL8 bungalows should achieve a design life of 30 years.

8.3 Cornish

The Cornish properties have performed well over the years. The concrete structure is in reasonable condition with very little spalled concrete evident. The properties have a poor appearance and are thermally poor. We therefore recommend the following:-

- Undertake any concrete repairs required.
- Supply and fix external wall insulation
- New canopy.

Subject to the above we consider that the Cornish properties should achieve a design life of 30 years.

8.3 Reema

The Reema properties have been maintained well, however, some of the joints have eroded and there are areas of spalled concrete evident. Many of the tenants complained the properties were very cold and expensive to heat, we therefore recommend the following:-

- Make good all joints.
- Undertake all concrete repairs.
- Supply and fix external wall insulation.
- New flat roof covering.

Subject to the above we consider that the Reema properties should achieve a design life of 30 years.

8.5 Timber

All timber bungalows inspected are in very good condition as we did not note any sign of decay to the structure and the walls are insulated. Whilst the walls may not be insulated to modern standards they do provide a comfortable environment for the tenants.

We would not recommend any major refurbishment to the timber bungalows but good general maintenance over the next 30 years. As part of the maintenance the external Stenni board should be cut back around the air vents under the ground floor in order to maintain a good air flow.

8.6 Trusteel

Structurally the Trusteel properties are in good condition as the steel frame inspected appeared to be in good condition. Trusteel properties have no insulation in the structure therefore they are very cold for the tenant. Whilst the easiest way to include insulation in the structure would be to install cavity wall insulation. WE WOULD NOT RECOMMEND THIS, as this will cause condensation in the cavity which could result in corrosion of steels within the cavity. We therefore recommend the following:-

- Open pockets in the brickwork and inspect all columns. Make good as required.
- Secure brickwork back to the steel frame.
- Supply and fix external wall insulation.
- New canopies.

Subject to the above we consider that the Trusteel bungalows should achieve a design life of 30 years.

8.7 Unity

The Unity properties have stack bonded panels externally which have open joints and cracked panels. The structural columns which are located in the cavity behind the panels have high chloride results and therefore cannot remain untreated. Normally we recommend a corrosion inhibitor to counteract the high chlorides, however owing to the location of the concrete columns we cannot apply any inhibitor, consequently the columns should be removed. We therefore recommend the following:-

- Prop the first floor and roof.
- Remove all external walls.
- Extend the foundations.
- Construct a new brick and block cavity with wall insulation.
- New windows and doors.
- Demolish chimney.

Please note during these works the tenants must be decanted.

Subject to the above we consider that the Unity properties should achieve a design life of in excess of 30 years.

9.0 Budget Costs

The following spreadsheets provide an overall build up of the costs of the repair works to the properties. This is broken down into the following sections.

30 year repair. Repairs to make the properties last at least 30 years providing routine maintenance is also undertaken.

Extra over costs. Repairs which are either not directly related to the system such as localised subsidence repairs, or doors and windows which would logically be replaced whilst cladding repairs are being undertaken and overcladding which primarily for thermal rather than structural protection purposes.

The works for the Airey properties should be undertaken initially but all works should be completed in years 1 . 5.

Costs have been based on our experience, recent contract pricing and reference to specialist contractors. All pricing is based on Q3 2010. The costs have allowed 25% addition for contractors preliminaries, overheads and profit but are exclusive of the following:-

- Design and other professional fees.
- Planning and Building Regulations fees.
- Party Wall Act matters.
- Undertaking internal modifications or refurbishment to meet Decent Home Standard or otherwise, specifically replacement kitchens, bathrooms, plumbing, heating and electrical systems and decorations are excluded.
- Windows and doors are shown as an extra over item unless installed at the same time as the overcladding.
- Roofing works (except where strengthening work is required or where flat roofs require maintenance to protect the structure).

- Fascias and gutters, except where overcladding is required and this is included or necessary to protect the structure.
- Repairing out-houses, lean-to's, garages, extensions etc. and the increased costs to the repair of the house due to the proximity of these elements.
- Foundation and ground floor slab works other than making an allowance when localised problems have been found in a specific system
- Damp proofing other than as necessary to protect the structure.
- Asbestos assessment and removal or remediation other than where known asbestos cladding is to be removed to enable new cladding to be installed.
- Contingency
- Decanting of tenants.
- Tenant compensation for disturbance.
- VAT

BISF House (Semi detached)

Minimum Repairs	30 Years
Remove existing cladding	£2,500.00
Repair existing frame	£750.00
Batten and Boarding	£3,125.00
EWI, incl side extn	£8,140.00
Canopy	£1,000.00
Fascia/soffit/gutter	£800.00
Waste pipes	£500.00
Minimum Repairs Total	£16,815.00

Extra Over Costs	
Windows & Doors	£4,800.00
Extra Over Costs Total	£4,800.00

The costs exclude main contractors fees , overheads ,preliminaries and profit.

The costs exclude professional fees and management charges, decant and tenant disruption compensation costs.

The costs are net present value (Q2 2014) and are exclusive of vat.

Estate	Total Num of Units	Architype	30 Years (Exc EO Costs)		Extra Over Cost	Estate Costs
			Unit Cost per Property	Overall Cost	Windows & Doors	
BISF Properties						
Brimington	25	25	£16,815.00	£420,375.00	£120,000.00	£540,375.00
Newbold	1	1	£16,815.00	£16,815.00	£4,800.00	£21,615.00
Staveley	3	3	£16,815.00	£50,445.00	£14,400.00	£64,845.00
Sub Total	29	29		£487,635.00	£139,200.00	£626,835.00
25% Contr Prelims + Profit				£121,908.75	£34,800.00	£156,708.75
OVERALL BUDGET COSTS				£609,543.75	£174,000.00	£783,543.75

Budget Repair Costs

The costs exclude main contractors fees , overheads ,preliminaries and profit.

The costs exclude professional fees and management charges, decant and tenant disruption compensation costs.

The costs are net present value (Q2 2014) and are exclusive of vat.

BL8 Bungalows (Semi detached)

Minimum Repairs	30 Years
Remove bottom 500mm	£900.00
Repairs to structure	£500.00
Batten and board	£2,100.00
EWI	£4,620.00
Fascia/soffit/gutter	£800.00
Waste pipes	£500.00
Roof Bracing	£750.00
Canopy	£1,000.00
Minimum Repairs Total	£11,170.00

Extra Over Costs	
Windows & Doors	£4,800.00
Extra Over Costs Total	£4,800.00

BL8 Bungalows (Detached)

Minimum Repairs	30 Years
Remove bottom 500mm	£1,140.00
Repairs to structure	£600.00
Batten and board	£2,800.00
EWI	£6,160.00
Fascia/soffit/gutter	£800.00
Waste pipes	£500.00
Roof Bracing	£750.00
Canopy	£1,000.00
Minimum Repairs Total	£13,750.00

Extra Over Costs	
Windows & Doors	£4,800.00
Extra Over Costs Total	£4,800.00

The costs exclude main contractors fees , overheads ,preliminaries and profit.

The costs exclude professional fees and management charges, decant and tenant disruption compensation costs.

The costs are net present value (Q2 2014) and are exclusive of vat.

Estate	Total Num of Units	Architype		30 Years (Exc EO Costs)		Extra Over Cost	Estate Costs
		Semi-Detached	Detached	Unit Cost per Property	Overall Cost	Windows & Doors	
BL8 Properties							
Birdholme	13	13		£11,170.00	£145,210.00	£62,400.00	£207,610.00
Grangewood(Semi)	42	38		£11,170.00	£424,460.00	£182,400.00	£606,860.00
Grangewood (Detached)			4	£13,750.00	£55,000.00	£19,200.00	£74,200.00
Sub Total	55	51	4		£624,670.00	£264,000.00	£888,670.00
25% Contr Prelims + Profit					£156,167.50	£66,000.00	£222,167.50
OVERALL BUDGET COSTS					£780,837.50	£330,000.00	£1,110,837.50

Budget Repair Costs

The costs exclude main contractors fees , overheads ,preliminaries and profit.

The costs exclude professional fees and management charges, decant and tenant disruption compensation costs.

The costs are net present value (Q2 2014) and are exclusive of vat.

Cornish (Mid-Terrace)

Minimum Repairs	30 Years
Concrete repairs	£500.00
EWI	£2,640.00
Canopy	£1,000.00
Fascia/soffit/gutter	£600.00
Waste pipes	£500.00
Canopy	£1,000.00
Minimum Repairs Total	£6,240.00

Extra Over Costs	
Windows & Doors	£5,600.00
Roof and Mansard	£5,500.00
Extra Over Costs Total	£11,100.00

Cornish (Semi-Detached)

Minimum Repairs	30 Years
Concrete repairs	£500.00
EWI	£2,860.00
Canopy	£1,000.00
Fascia/soffit/gutter	£800.00
Waste pipes	£500.00
Canopy	£1,000.00
Minimum Repairs Total	£6,660.00

Extra Over Costs	
Windows & Doors	£5,900.00
Roof and Mansard	£6,500.00
Extra Over Costs Total	£12,400.00

The costs exclude main contractors fees , overheads ,preliminaries and profit.

The costs exclude professional fees and management charges, decant and tenant disruption compensation costs.

The costs are net present value (Q2 2014) and are exclusive of vat.

Estate	Total Num of Units	Architype		30 Years (Exc EO Costs)		Extra Over Cost	Estate Costs
		Mid-Terrace	Semi-Detached	Unit Cost per Property	Overall Cost	Windows & Doors	
Cornish Properties							
Chesterfield (Mid)	1	1		£6,240.00	£6,240.00	£11,100.00	£17,340.00
Chesterfield (Semi)	1		1	£6,660.00	£6,660.00	£12,400.00	£19,060.00
Sub Total	2	1	1		£12,900.00	£23,500.00	£36,400.00
25% Contr Prelims + Profit					£3,225.00	£5,875.00	£9,100.00
OVERALL BUDGET COSTS					£16,125.00	£29,375.00	£45,500.00

Budget Repair Costs

The costs exclude main contractors fees , overheads ,preliminaries and profit.

The costs exclude professional fees and management charges, decant and tenant disruption compensation costs.

The costs are net present value (Q2 2014) and are exclusive of vat.

Reema Properties (Semi detached)

Minimum Repairs	30 Years
Make good joints	£400.00
Concrete Repairs	£500.00
EWI	£6,050.00
Fascia/soffit/gutter	£800.00
Waste pipes	£500.00
Roof Bracing	£750.00
Minimum Repairs Total	£9,000.00

Extra Over Costs	
Windows & Doors	£5,600.00
Flat roof	£750.00
Extra Over Costs Total	£6,350.00

The costs exclude main contractors fees , overheads ,preliminaries and profit.

The costs exclude professional fees and management charges, decant and tenant disruption compensation cost

The costs are net present value (Q2 2014) and are exclusive of vat.

Estate	Total Num of Units	Archtype		30 Years (Exc EO Costs)		Extra Over Cos	Estate Costs
		Semi-Detached	Flats (2 flats are classed as 1 semi-detached house)	Unit Cost per Property	Overall Cost	Windows & Doors	
Reema properties							
Boythorpe	37	37		£9,000.00	£333,000.00	£234,950.00	£567,950.00
Staveley	29	29		£9,000.00	£261,000.00	£184,150.00	£445,150.00
Boythorpe			14	£9,000.00	£126,000.00	£88,900.00	£214,900.00
Sub Total	66	66	28 flats		£720,000.00	£508,000.00	£1,228,000.00
25% Contr Prelims + Profit					£180,000.00	£127,000.00	£307,000.00
OVERALL BUDGET COSTS					£900,000.00	£635,000.00	£1,535,000.00

Budget Repair Costs

The costs exclude main contractors fees , overheads ,preliminaries and profit.

The costs exclude professional fees and management charges, decant and tenant disruption compensation costs.

The costs are net present value (Q2 2014) and are exclusive of vat.

Trusteel (1 Bed)

Minimum Repairs	30 Years
Inspect all column feet	£1,800.00
Remedial wall ties	£630.00
EWI	£3,465.00
Fascia/soffit/gutter	£800.00
Waste pipes	£500.00
Canopy	£1,000.00
Minimum Repairs Total	£8,195.00

Extra Over Costs	
Windows & Doors	£6,600.00
Extra Over Costs Total	£6,600.00

Trusteel (2 Bed)

Minimum Repairs	30 Years
Inspect all column feet	£2,000.00
Remedial wall ties	£710.00
EWI	£3,905.00
Fascia/soffit/gutter	£800.00
Waste pipes	£500.00
Canopy	£1,000.00
Minimum Repairs Total	£8,915.00

Extra Over Costs	
Windows & Doors	£6,600.00
Extra Over Costs Total	£6,600.00

The costs exclude main contractors fees , overheads ,preliminaries and profit.

The costs exclude professional fees and management charges, decant and tenant disruption compensation costs.

The costs are net present value (Q2 2014) and are exclusive of vat.

Estate	Total Num of Units	Architype		30 Years (Exc EO Costs)		Extra Over Costs	Estate Costs
		1 Bed	2 Bed	Unit Cost per Property	Overall Cost	Windows & Doors	
Trusteel Properties							
Staveley (1 bed)	19	19		£8,195.00	£155,705.00	£125,400.00	£281,105.00
Staveley (2 bed)	5		5	£8,915.00	£44,575.00	£33,000.00	£77,575.00
Sub Total	24	19	5		£200,280.00	£158,400.00	£358,680.00
25% Contr Prelims + Profit					£50,070.00	£39,600.00	£89,670.00
OVERALL BUDGET COSTS					£250,350.00	£198,000.00	£448,350.00

Budget Repair Costs

The costs exclude main contractors fees , overheads ,preliminaries and profit.

The costs exclude professional fees and management charges, decant and tenant disruption compensation costs.

The costs are net present value (Q2 2014) and are exclusive of vat.

Unity Properties (Semi Detached)

Minimum Repairs	30 Years
Soft strip	£500.00
Foundation extension	£7,200.00
Prop floors and roof	£1,000.00
Remove external walls	£2,500.00
New Cavity Wall	£12,500.00
Windows	£3,700.00
Doors	£1,600.00
Plaster	£2,500.00
Woodwork	£1,000.00
Electric amendments	£1,000.00
Heating amendments	£1,000.00
Fascia/soffit/gutter	£800.00
Waste pipes	£500.00
Canopy	£1,000.00
Remove chimney	£1,000.00
Make good footpath	£2,000.00
Minimum Repairs Total	£39,800.00

Extra Over Costs	
New Kitchen	£6,000.00
New Bathroom	£1,000.00
Re-wire	£3,000.00
New Boiler	£2,000.00
Extra Over Costs Total	£12,000.00

The costs exclude main contractors fees , overheads ,preliminaries and profit.

The costs exclude professional fees and management charges, decant and tenant disruption compensation cost

The costs are net present value (Q2 2014) and are exclusive of vat.

Estate	Total Num of Units	Architype		30 Years (Exc EO Costs)		Extra Over Cos	Estate Costs
		Semi-Detached	Flats (2 flats are classed as 1 semi-detached house)	Unit Cost per Property	Overall Cost	Kitchen,Bath, Electrics and Boiler	
Unity Properties							
Dunstan	7	7		£39,800.00	£278,600.00	£84,000.00	£362,600.00
Hasland	48	48		£39,800.00	£1,910,400.00	£576,000.00	£2,486,400.00
Newbold	55	55		£39,800.00	£2,189,000.00	£660,000.00	£2,849,000.00
Brimington			6	£39,800.00	£238,800.00	£72,000.00	£310,800.00
Sub Total	110	110	12 flats		£4,616,800.00	£1,392,000.00	£6,008,800.00
25% Contr Prelims + Profit					£1,154,200.00	£348,000.00	£1,502,200.00
OVERALL BUDGET COSTS					£5,771,000.00	£1,740,000.00	£7,511,000.00

Budget Repair Costs

The costs exclude main contractors fees , overheads ,preliminaries and profit.

The costs exclude professional fees and management charges, decant and tenant disruption compensation costs.

The costs are net present value (Q2 2014) and are exclusive of vat.

Estate	Total Num of Units	Architype		30 Years (Exc EO Costs)		Extra Over Cost	Estate Costs
		Mid-Terrace	Semi-Detached	Unit Cost per Property	Overall Cost	Windows & Doors	
Cornish Properties							
Chesterfield (Mid)	1	1		£6,240.00	£6,240.00	£11,100.00	£17,340.00
Chesterfield (Semi)	1		1	£6,660.00	£6,660.00	£12,400.00	£19,060.00
Sub Total	2	1	1		£12,900.00	£23,500.00	£36,400.00
25% Contr Prelims + Profit					£3,225.00	£5,875.00	£9,100.00
OVERALL BUDGET COSTS					£16,125.00	£29,375.00	£45,500.00

Budget Repair Costs

The costs exclude main contractors fees , overheads ,preliminaries and profit.

The costs exclude professional fees and management charges, decant and tenant disruption compensation costs.

The costs are net present value (Q2 2014) and are exclusive of vat.



Appendix A . Address Lists

ADDRESS LIST - BISF PROPERTIES

5	CENTRAL WALK BRIMINGTON CHESTERFIELD	S43 1AT	3 bed semi detached house
7	CENTRAL WALK BRIMINGTON CHESTERFIELD	S43 1AT	3 bed semi detached house
11	CENTRAL WALK BRIMINGTON CHESTERFIELD	S43 1AT	3 bed semi detached house
17	CENTRAL WALK BRIMINGTON CHESTERFIELD	S43 1AT	3 bed semi detached house
19	CENTRAL WALK BRIMINGTON CHESTERFIELD	S43 1AT	3 bed semi detached house
6	GORMAN CLOSE NEWBOLD CHESTERFIELD	S41 8HX	1 bed semi detached bungalow
19	PAISLEY CLOSE STAVELEY CHESTERFIELD	S43 3NS	3 bed semi detached house
31	PAISLEY CLOSE STAVELEY CHESTERFIELD	S43 3NS	3 bed semi detached house
35	PAISLEY CLOSE STAVELEY CHESTERFIELD	S43 3NS	3 bed semi detached house
35	WHEELDON CRESCENT BRIMINGTON CHESTERFIELD	S43 1AH	3 bed semi detached house
37	WHEELDON CRESCENT BRIMINGTON CHESTERFIELD	S43 1AH	3 bed semi detached house
39	WHEELDON CRESCENT BRIMINGTON CHESTERFIELD	S43 1AH	3 bed semi detached house
1	WIKELEY WAY BRIMINGTON CHESTERFIELD	S43 1BH	3 bed semi detached house
3	WIKELEY WAY BRIMINGTON CHESTERFIELD	S43 1BH	3 bed semi detached house
4	WIKELEY WAY BRIMINGTON CHESTERFIELD	S43 1BH	3 bed semi detached house
8	WIKELEY WAY BRIMINGTON CHESTERFIELD	S43 1BH	3 bed semi detached house
15	WIKELEY WAY BRIMINGTON CHESTERFIELD	S43 1AS	3 bed semi detached house
21	WIKELEY WAY BRIMINGTON CHESTERFIELD	S43 1AS	3 bed semi detached house
23	WIKELEY WAY BRIMINGTON CHESTERFIELD	S43 1AS	3 bed semi detached house
24	WIKELEY WAY BRIMINGTON CHESTERFIELD	S43 1AS	3 bed semi detached house
26	WIKELEY WAY BRIMINGTON CHESTERFIELD	S43 1AS	3 bed semi detached house
28	WIKELEY WAY BRIMINGTON CHESTERFIELD	S43 1AS	3 bed semi detached house
30	WIKELEY WAY BRIMINGTON CHESTERFIELD	S43 1AS	3 bed semi detached house
32	WIKELEY WAY BRIMINGTON CHESTERFIELD	S43 1AS	3 bed semi detached house
33	WIKELEY WAY BRIMINGTON CHESTERFIELD	S43 1AQ	3 bed semi detached house
35	WIKELEY WAY BRIMINGTON CHESTERFIELD	S43 1AQ	3 bed semi detached house
37	WIKELEY WAY BRIMINGTON CHESTERFIELD	S43 1AQ	3 bed semi detached house
39	WIKELEY WAY BRIMINGTON CHESTERFIELD	S43 1AQ	3 bed semi detached house
11A	WIKELEY WAY BRIMINGTON CHESTERFIELD	S43 1AS	3 bed semi detached house

ADDRESS LIST - BL8 PROPERTIES

45	BIRCHWOOD CRESCENT GRANGEWOOD CHESTERFIELD	S40 2HZ	3 bed semi detached bungalow
99	GRANGEWOOD ROAD GRANGEWOOD CHESTERFIELD	S40 2TA	3 bed detached bungalow
103	GRANGEWOOD ROAD GRANGEWOOD CHESTERFIELD	S40 2TA	3 bed detached bungalow
105	GRANGEWOOD ROAD GRANGEWOOD CHESTERFIELD	S40 2TA	3 bed semi detached bungalow
107	GRANGEWOOD ROAD GRANGEWOOD CHESTERFIELD	S40 2TA	3 bed semi detached bungalow
109	GRANGEWOOD ROAD GRANGEWOOD CHESTERFIELD	S40 2TA	3 bed semi detached bungalow
4	HAREHILL ROAD GRANGEWOOD FARM CHESTERFIELD	S40 2JA	3 bed semi detached bungalow
6	HAREHILL ROAD GRANGEWOOD FARM CHESTERFIELD	S40 2JA	3 bed semi detached bungalow
10	HAREHILL ROAD GRANGEWOOD FARM CHESTERFIELD	S40 2JA	3 bed semi detached bungalow
12	HAREHILL ROAD GRANGEWOOD FARM CHESTERFIELD	S40 2JA	3 bed semi detached bungalow
13	HAREHILL ROAD GRANGEWOOD FARM CHESTERFIELD	S40 2JA	3 bed semi detached bungalow
14	HAREHILL ROAD GRANGEWOOD FARM CHESTERFIELD	S40 2JA	3 bed semi detached bungalow
36	KINGSLEY AVENUE GRANGEWOOD CHESTERFIELD	S40 2SZ	3 bed semi detached bungalow
38	KINGSLEY AVENUE GRANGEWOOD CHESTERFIELD	S40 2SZ	3 bed semi detached bungalow
40	KINGSLEY AVENUE GRANGEWOOD CHESTERFIELD	S40 2SZ	3 bed semi detached bungalow
42	KINGSLEY AVENUE GRANGEWOOD CHESTERFIELD	S40 2SZ	3 bed semi detached bungalow
46	KINGSLEY AVENUE GRANGEWOOD CHESTERFIELD	S40 2SZ	3 bed semi detached bungalow
48	KINGSLEY AVENUE GRANGEWOOD CHESTERFIELD	S40 2SZ	3 bed semi detached bungalow
2	MELLOR WAY BIRDHOLME CHESTERFIELD	S40 2UA	3 bed semi detached bungalow
3	MELLOR WAY BIRDHOLME CHESTERFIELD	S40 2UA	3 bed semi detached bungalow
4	MELLOR WAY BIRDHOLME CHESTERFIELD	S40 2UA	3 bed semi detached bungalow
5	MELLOR WAY BIRDHOLME CHESTERFIELD	S40 2UA	3 bed semi detached bungalow
6	MELLOR WAY BIRDHOLME CHESTERFIELD	S40 2UA	3 bed semi detached bungalow
8	MELLOR WAY BIRDHOLME CHESTERFIELD	S40 2UA	3 bed semi detached bungalow
10	MELLOR WAY BIRDHOLME CHESTERFIELD	S40 2UA	3 bed semi detached bungalow
13	MELLOR WAY BIRDHOLME CHESTERFIELD	S40 2UA	3 bed semi detached bungalow
14	MELLOR WAY BIRDHOLME CHESTERFIELD	S40 2UA	3 bed semi detached bungalow
15	MELLOR WAY BIRDHOLME CHESTERFIELD	S40 2UA	3 bed semi detached bungalow
19	MELLOR WAY BIRDHOLME CHESTERFIELD	S40 2UA	3 bed semi detached bungalow
2	ROBIN CROFT GRANGEWOOD CHESTERFIELD	S40 2JB	3 bed semi detached bungalow
3	ROBIN CROFT GRANGEWOOD CHESTERFIELD	S40 2JB	3 bed semi detached bungalow
5	ROBIN CROFT GRANGEWOOD CHESTERFIELD	S40 2JB	3 bed semi detached bungalow
7	ROBIN CROFT GRANGEWOOD CHESTERFIELD	S40 2JB	3 bed semi detached bungalow
8	ROBIN CROFT GRANGEWOOD CHESTERFIELD	S40 2JB	3 bed detached bungalow
9	ROBIN CROFT GRANGEWOOD CHESTERFIELD	S40 2JB	3 bed semi detached bungalow
10	ROBIN CROFT GRANGEWOOD CHESTERFIELD	S40 2JB	3 bed detached bungalow

ADDRESS LIST - BL8 PROPERTIES

12	ROBIN CROFT GRANGEWOOD CHESTERFIELD	S40 2JB	3 bed semi detached bungalow
13	ROBIN CROFT GRANGEWOOD CHESTERFIELD	S40 2JB	3 bed semi detached bungalow
14	ROBIN CROFT GRANGEWOOD CHESTERFIELD	S40 2JB	3 bed semi detached bungalow
15	ROBIN CROFT GRANGEWOOD CHESTERFIELD	S40 2JB	3 bed semi detached bungalow
16	ROBIN CROFT GRANGEWOOD CHESTERFIELD	S40 2JB	3 bed semi detached bungalow
251	STORFORTH LANE BIRDHOLME CHESTERFIELD	S40 2TS	3 bed semi detached bungalow
255	STORFORTH LANE BIRDHOLME CHESTERFIELD	S40 2TS	3 bed semi detached bungalow
1	WINGERWORTH WAY GRANGEWOOD CHESTERFIELD	S40 2JD	3 bed semi detached bungalow
2	WINGERWORTH WAY GRANGEWOOD CHESTERFIELD	S40 2JD	3 bed semi detached bungalow
4	WINGERWORTH WAY GRANGEWOOD CHESTERFIELD	S40 2JD	3 bed semi detached bungalow
5	WINGERWORTH WAY GRANGEWOOD CHESTERFIELD	S40 2JD	3 bed semi detached bungalow
6	WINGERWORTH WAY GRANGEWOOD CHESTERFIELD	S40 2JD	3 bed semi detached bungalow
7	WINGERWORTH WAY GRANGEWOOD CHESTERFIELD	S40 2JD	3 bed semi detached bungalow
9	WINGERWORTH WAY GRANGEWOOD CHESTERFIELD	S40 2JD	3 bed semi detached bungalow
10	WINGERWORTH WAY GRANGEWOOD CHESTERFIELD	S40 2JD	3 bed semi detached bungalow
11	WINGERWORTH WAY GRANGEWOOD CHESTERFIELD	S40 2JD	3 bed semi detached bungalow
20	WINGERWORTH WAY GRANGEWOOD CHESTERFIELD	S40 2JD	3 bed semi detached bungalow
22	WINGERWORTH WAY GRANGEWOOD CHESTERFIELD	S40 2JD	3 bed semi detached bungalow
24	WINGERWORTH WAY GRANGEWOOD CHESTERFIELD	S40 2JD	3 bed semi detached bungalow

ADDRESS LIST - CORNISH PROPERTIES

157	HADY LANE HADY CHESTERFIELD	S41 0DG	3 bed middle terrace house
23	HARVEY ROAD HADY CHESTERFIELD	S41 0BW	3 bed end terrace house

ADDRESS LIST - REEMA PROPERTIES

221	BOYTHORPE ROAD BOYTHORPE CHESTERFIELD	S40 2LR	2 bed semi detached house
223	BOYTHORPE ROAD BOYTHORPE CHESTERFIELD	S40 2LR	2 bed semi detached house
227	BOYTHORPE ROAD BOYTHORPE CHESTERFIELD	S40 2LR	2 bed semi detached house
229	BOYTHORPE ROAD BOYTHORPE CHESTERFIELD	S40 2LR	3 bed semi detached house
255	BOYTHORPE ROAD BOYTHORPE CHESTERFIELD	S40 2LR	2 bed semi detached house
265	BOYTHORPE ROAD BOYTHORPE CHESTERFIELD	S40 2LR	2 bed semi detached house
267	BOYTHORPE ROAD BOYTHORPE CHESTERFIELD	S40 2LR	2 bed semi detached house
1	CALVER CRESCENT STAVELEY CHESTERFIELD	S43 3LY	2 bed semi detached house
3	CALVER CRESCENT STAVELEY CHESTERFIELD	S43 3LY	2 bed semi detached house
6	CALVER CRESCENT STAVELEY CHESTERFIELD	S43 3LZ	3 bed semi detached house
11	CALVER CRESCENT STAVELEY CHESTERFIELD	S43 3LY	2 bed semi detached house
12	CALVER CRESCENT STAVELEY CHESTERFIELD	S43 3LZ	2 bed semi detached house
13	CALVER CRESCENT STAVELEY CHESTERFIELD	S43 3LY	2 bed semi detached house
14	CALVER CRESCENT STAVELEY CHESTERFIELD	S43 3LZ	2 bed semi detached house
18	CALVER CRESCENT STAVELEY CHESTERFIELD	S43 3LZ	2 bed semi detached house
19	CALVER CRESCENT STAVELEY CHESTERFIELD	S43 3LY	2 bed semi detached house
23	CALVER CRESCENT STAVELEY CHESTERFIELD	S43 3LY	2 bed semi detached house
24	CALVER CRESCENT STAVELEY CHESTERFIELD	S43 3LZ	3 bed semi detached house
25	CALVER CRESCENT STAVELEY CHESTERFIELD	S43 3LY	2 bed semi detached house
26	CALVER CRESCENT STAVELEY CHESTERFIELD	S43 3LZ	3 bed semi detached house
31	CALVER CRESCENT STAVELEY CHESTERFIELD	S43 3LY	2 bed semi detached house
39	CALVER CRESCENT STAVELEY CHESTERFIELD	S43 3LY	2 bed semi detached house
42	CALVER CRESCENT STAVELEY CHESTERFIELD	S43 3LZ	2 bed semi detached house
43	CALVER CRESCENT STAVELEY CHESTERFIELD	S43 3LY	2 bed semi detached house
47	CALVER CRESCENT STAVELEY CHESTERFIELD	S43 3LY	3 bed semi detached house
52	CALVER CRESCENT STAVELEY CHESTERFIELD	S43 3LZ	3 bed semi detached house
56	CALVER CRESCENT STAVELEY CHESTERFIELD	S43 3LZ	2 bed semi detached house
2	HADDON PLACE STAVELEY CHESTERFIELD	S43 3NB	2 bed semi detached house
27	HUCKLOW AVENUE BOYTHORPE CHESTERFIELD	S40 2LT	2 bed semi detached house
29	HUCKLOW AVENUE BOYTHORPE CHESTERFIELD	S40 2LT	2 bed semi detached house
31	HUCKLOW AVENUE BOYTHORPE CHESTERFIELD	S40 2LT	3 bed semi detached house
33	HUCKLOW AVENUE BOYTHORPE CHESTERFIELD	S40 2LT	3 bed semi detached house
39	HUCKLOW AVENUE BOYTHORPE CHESTERFIELD	S40 2LT	2 bed semi detached house
41	HUCKLOW AVENUE BOYTHORPE CHESTERFIELD	S40 2LT	2 bed semi detached house
44	HUCKLOW AVENUE BOYTHORPE CHESTERFIELD	S40 2LT	3 bed semi detached house

ADDRESS LIST - REEMA PROPERTIES

50	HUCKLOW AVENUE BOYTHORPE CHESTERFIELD	S40 2LT	3 bed semi detached house
52	HUCKLOW AVENUE BOYTHORPE CHESTERFIELD	S40 2LT	3 bed semi detached house
54	HUCKLOW AVENUE BOYTHORPE CHESTERFIELD	S40 2LT	3 bed semi detached house
56	HUCKLOW AVENUE BOYTHORPE CHESTERFIELD	S40 2LT	2 bed semi detached house
58	HUCKLOW AVENUE BOYTHORPE CHESTERFIELD	S40 2LT	2 bed semi detached house
1	LONGSHAW CLOSE STAVELEY CHESTERFIELD	S43 3NE	2 bed semi detached house
3	LONGSHAW CLOSE STAVELEY CHESTERFIELD	S43 3NE	2 bed semi detached house
7	LONGSHAW CLOSE STAVELEY CHESTERFIELD	S43 3NE	2 bed semi detached house
11	LONGSHAW CLOSE STAVELEY CHESTERFIELD	S43 3NE	2 bed semi detached house
12	LONGSHAW CLOSE STAVELEY CHESTERFIELD	S43 3NE	2 bed semi detached house
13	LONGSHAW CLOSE STAVELEY CHESTERFIELD	S43 3NE	2 bed semi detached house
14	LONGSHAW CLOSE STAVELEY CHESTERFIELD	S43 3NE	2 bed semi detached house
17	LONGSHAW CLOSE STAVELEY CHESTERFIELD	S43 3NE	2 bed semi detached house
2	WARDLOW CLOSE BOYTHORPE CHESTERFIELD	S40 2LU	2 bed semi detached house
4	WARDLOW CLOSE BOYTHORPE CHESTERFIELD	S40 2LU	2 bed semi detached house
5	WARDLOW CLOSE BOYTHORPE CHESTERFIELD	S40 2LU	3 bed semi detached house
6	WARDLOW CLOSE BOYTHORPE CHESTERFIELD	S40 2LU	2 bed semi detached house
7	WARDLOW CLOSE BOYTHORPE CHESTERFIELD	S40 2LU	3 bed semi detached house
8	WARDLOW CLOSE BOYTHORPE CHESTERFIELD	S40 2LU	2 bed semi detached house
9	WARDLOW CLOSE BOYTHORPE CHESTERFIELD	S40 2LU	3 bed semi detached house
10	WARDLOW CLOSE BOYTHORPE CHESTERFIELD	S40 2LU	2 bed semi detached house
12	WARDLOW CLOSE BOYTHORPE CHESTERFIELD	S40 2LU	2 bed semi detached house
14	WARDLOW CLOSE BOYTHORPE CHESTERFIELD	S40 2LU	2 bed semi detached house
16	WARDLOW CLOSE BOYTHORPE CHESTERFIELD	S40 2LU	2 bed semi detached house
31	WARDLOW CLOSE BOYTHORPE CHESTERFIELD	S40 2LU	3 bed semi detached house
33	WARDLOW CLOSE BOYTHORPE CHESTERFIELD	S40 2LU	3 bed semi detached house
35	WARDLOW CLOSE BOYTHORPE CHESTERFIELD	S40 2LU	3 bed semi detached house
36	WARDLOW CLOSE BOYTHORPE CHESTERFIELD	S40 2LU	3 bed semi detached house
37	WARDLOW CLOSE BOYTHORPE CHESTERFIELD	S40 2LU	3 bed semi detached house
39	WARDLOW CLOSE BOYTHORPE CHESTERFIELD	S40 2LU	3 bed semi detached house
40	WARDLOW CLOSE BOYTHORPE CHESTERFIELD	S40 2LU	3 bed semi detached house

ADDRESS LIST - REEMA FLATS

237	BOYTHORPE ROAD	BOYTHORPE	S40 2LR	1 bed first floor flat	REEMA
239	BOYTHORPE ROAD	BOYTHORPE	S40 2LR	1 bed ground floor flat	REEMA
241	BOYTHORPE ROAD	BOYTHORPE	S40 2LR	1 bed ground floor flat	REEMA
243	BOYTHORPE ROAD	BOYTHORPE	S40 2LR	1 bed first floor flat	REEMA
245	BOYTHORPE ROAD	BOYTHORPE	S40 2LR	1 bed first floor flat	REEMA
247	BOYTHORPE ROAD	BOYTHORPE	S40 2LR	1 bed ground floor flat	REEMA
249	BOYTHORPE ROAD	BOYTHORPE	S40 2LR	1 bed ground floor flat	REEMA
251	BOYTHORPE ROAD	BOYTHORPE	S40 2LR	1 bed first floor flat	REEMA
257	BOYTHORPE ROAD	BOYTHORPE	S40 2LR	1 bed first floor flat	REEMA
261	BOYTHORPE ROAD	BOYTHORPE	S40 2LR	1 bed ground floor flat	REEMA
263	BOYTHORPE ROAD	BOYTHORPE	S40 2LR	1 bed first floor flat	REEMA
13	WARDLOW CLOSE	BOYTHORPE	S40 2LU	1 bed first floor flat	REEMA
15	WARDLOW CLOSE	BOYTHORPE	S40 2LU	1 bed ground floor flat	REEMA
17	WARDLOW CLOSE	BOYTHORPE	S40 2LU	1 bed ground floor flat	REEMA
18	WARDLOW CLOSE	BOYTHORPE	S40 2LU	1 bed first floor flat	REEMA
19	WARDLOW CLOSE	BOYTHORPE	S40 2LU	1 bed first floor flat	REEMA
20	WARDLOW CLOSE	BOYTHORPE	S40 2LU	1 bed ground floor flat	REEMA
21	WARDLOW CLOSE	BOYTHORPE	S40 2LU	1 bed first floor flat	REEMA
22	WARDLOW CLOSE	BOYTHORPE	S40 2LU	1 bed ground floor flat	REEMA
23	WARDLOW CLOSE	BOYTHORPE	S40 2LU	1 bed ground floor flat	REEMA
24	WARDLOW CLOSE	BOYTHORPE	S40 2LU	1 bed first floor flat	REEMA
25	WARDLOW CLOSE	BOYTHORPE	S40 2LU	1 bed ground floor flat	REEMA
26	WARDLOW CLOSE	BOYTHORPE	S40 2LU	1 bed first floor flat	REEMA
27	WARDLOW CLOSE	BOYTHORPE	S40 2LU	1 bed first floor flat	REEMA
28	WARDLOW CLOSE	BOYTHORPE	S40 2LU	1 bed ground floor flat	REEMA
30	WARDLOW CLOSE	BOYTHORPE	S40 2LU	1 bed ground floor flat	REEMA
32	WARDLOW CLOSE	BOYTHORPE	S40 2LU	1 bed first floor flat	REEMA

ADDRESS LIST - TIMBER PROPERTIES

25	BURBAGE ROAD STAVELEY CHESTERFIELD	S43 3NN	2 bed detached bungalow
27	BURBAGE ROAD STAVELEY CHESTERFIELD	S43 3NN	2 bed detached bungalow
37	LANSBURY AVENUE MASTIN MOOR CHESTERFIELD	S43 3AH	2 bed semi detached bungalow
39	LANSBURY AVENUE MASTIN MOOR CHESTERFIELD	S43 3AN	2 bed detached bungalow
41	LANSBURY AVENUE MASTIN MOOR CHESTERFIELD	S43 3AH	2 bed detached bungalow
43	LANSBURY AVENUE MASTIN MOOR CHESTERFIELD	S43 3AN	2 bed semi detached bungalow
45	LANSBURY AVENUE MASTIN MOOR CHESTERFIELD	S43 3AN	2 bed detached bungalow
47	LANSBURY AVENUE MASTIN MOOR CHESTERFIELD	S43 3AN	2 bed detached bungalow
49	LANSBURY AVENUE MASTIN MOOR CHESTERFIELD	S43 3AN	2 bed semi detached bungalow
51	LANSBURY AVENUE MASTIN MOOR CHESTERFIELD	S43 3AN	2 bed semi detached bungalow
33	MOUNTCASTLE STREET NEWBOLD MOOR CHESTERFIELD	S41 8TX	2 bed detached bungalow
35	MOUNTCASTLE STREET NEWBOLD MOOR CHESTERFIELD	S41 8TX	2 bed detached bungalow
37	MOUNTCASTLE STREET NEWBOLD MOOR CHESTERFIELD	S41 8TX	2 bed semi detached bungalow
38	MOUNTCASTLE STREET NEWBOLD MOOR CHESTERFIELD	S41 8TY	2 bed semi detached bungalow
39	MOUNTCASTLE STREET NEWBOLD MOOR CHESTERFIELD	S41 8TX	2 bed detached bungalow
40	MOUNTCASTLE STREET NEWBOLD MOOR CHESTERFIELD	S41 8TY	2 bed detached bungalow
42	MOUNTCASTLE STREET NEWBOLD MOOR CHESTERFIELD	S41 8TY	2 bed detached bungalow
44	MOUNTCASTLE STREET NEWBOLD MOOR CHESTERFIELD	S41 8TY	2 bed detached bungalow
67	RACECOURSE ROAD NEWBOLD MOOR CHESTERFIELD	S41 8TU	2 bed detached bungalow
69	RACECOURSE ROAD NEWBOLD MOOR CHESTERFIELD	S41 8TU	2 bed detached bungalow
4	WENSLEY WAY STAVELEY CHESTERFIELD	S43 3NP	2 bed semi detached bungalow
5	WENSLEY WAY STAVELEY CHESTERFIELD	S43 3NP	2 bed semi detached bungalow
7	WENSLEY WAY STAVELEY CHESTERFIELD	S43 3NP	2 bed detached bungalow

ADDRESS LIST - TRUSTEEL PROPERTIES

17	CHESTERFIELD ROAD STAVELEY CHESTERFIELD	S43 3QG	2 bed semi detached bungalow
19	CHESTERFIELD ROAD STAVELEY CHESTERFIELD	S43 3QG	2 bed semi detached bungalow
21	CHESTERFIELD ROAD STAVELEY CHESTERFIELD	S43 3QG	2 bed semi detached bungalow
23	CHESTERFIELD ROAD STAVELEY CHESTERFIELD	S43 3QG	2 bed semi detached bungalow
1	WENSLEY WAY STAVELEY CHESTERFIELD	S43 3NP	1 bed semi detached bungalow
3	WENSLEY WAY STAVELEY CHESTERFIELD	S43 3NP	1 bed semi detached bungalow
6	WENSLEY WAY STAVELEY CHESTERFIELD	S43 3NP	1 bed semi detached bungalow
8	WENSLEY WAY STAVELEY CHESTERFIELD	S43 3NP	1 bed semi detached bungalow
9	WENSLEY WAY STAVELEY CHESTERFIELD	S43 3NP	3 bed semi detached house
10	WENSLEY WAY STAVELEY CHESTERFIELD	S43 3NP	1 bed semi detached bungalow
11	WENSLEY WAY STAVELEY CHESTERFIELD	S43 3NP	1 bed semi detached bungalow
12	WENSLEY WAY STAVELEY CHESTERFIELD	S43 3NP	1 bed semi detached bungalow
13	WENSLEY WAY STAVELEY CHESTERFIELD	S43 3NP	1 bed semi detached bungalow
14	WENSLEY WAY STAVELEY CHESTERFIELD	S43 3NP	1 bed semi detached bungalow
15	WENSLEY WAY STAVELEY CHESTERFIELD	S43 3NP	1 bed semi detached bungalow
16	WENSLEY WAY STAVELEY CHESTERFIELD	S43 3NP	1 bed semi detached bungalow
17	WENSLEY WAY STAVELEY CHESTERFIELD	S43 3NP	1 bed semi detached bungalow
18	WENSLEY WAY STAVELEY CHESTERFIELD	S43 3NP	1 bed semi detached bungalow
20	WENSLEY WAY STAVELEY CHESTERFIELD	S43 3NP	1 bed semi detached bungalow
22	WENSLEY WAY STAVELEY CHESTERFIELD	S43 3NP	1 bed semi detached bungalow
24	WENSLEY WAY STAVELEY CHESTERFIELD	S43 3NP	1 bed semi detached bungalow
26	WENSLEY WAY STAVELEY CHESTERFIELD	S43 3NP	1 bed semi detached bungalow
28	WENSLEY WAY STAVELEY CHESTERFIELD	S43 3NP	1 bed semi detached bungalow
9A	WENSLEY WAY STAVELEY CHESTERFIELD	S43 3NP	1 bed semi detached bungalow

ADDRESS LIST - UNITY PROPERTIES

101	CALOW LANE HASLAND CHESTERFIELD	S41 0BA	3 bed semi detached house
103	CALOW LANE HASLAND CHESTERFIELD	S41 0BA	3 bed semi detached house
105	CALOW LANE HASLAND CHESTERFIELD	S41 0BA	3 bed semi detached house
107	CALOW LANE HASLAND CHESTERFIELD	S41 0BA	3 bed semi detached house
109	CALOW LANE HASLAND CHESTERFIELD	S41 0BA	3 bed semi detached house
113	CALOW LANE HASLAND CHESTERFIELD	S41 0BA	3 bed semi detached house
115	CALOW LANE HASLAND CHESTERFIELD	S41 0BA	3 bed semi detached house
119	CALOW LANE HASLAND CHESTERFIELD	S41 0BA	3 bed semi detached house
50	ENNERDALE CRESCENT NEWBOLD CHESTERFIELD	S41 8HL	3 bed semi detached house
54	ENNERDALE CRESCENT NEWBOLD CHESTERFIELD	S41 8HL	3 bed semi detached house
56	ENNERDALE CRESCENT NEWBOLD CHESTERFIELD	S41 8HL	3 bed semi detached house
58	ENNERDALE CRESCENT NEWBOLD CHESTERFIELD	S41 8HL	2 bed semi detached house
60	ENNERDALE CRESCENT NEWBOLD CHESTERFIELD	S41 8HL	2 bed semi detached house
2	HEATHCOTE DRIVE HASLAND CHESTERFIELD	S41 0BB	3 bed semi detached house
4	HEATHCOTE DRIVE HASLAND CHESTERFIELD	S41 0BB	3 bed semi detached house
8	HEATHCOTE DRIVE HASLAND CHESTERFIELD	S41 0BB	2 bed semi detached house
9	HEATHCOTE DRIVE HASLAND CHESTERFIELD	S41 0BB	2 bed semi detached house
11	HEATHCOTE DRIVE HASLAND CHESTERFIELD	S41 0BB	2 bed semi detached house
12	HEATHCOTE DRIVE HASLAND CHESTERFIELD	S41 0BB	2 bed semi detached house
13	HEATHCOTE DRIVE HASLAND CHESTERFIELD	S41 0BB	2 bed semi detached house
14	HEATHCOTE DRIVE HASLAND CHESTERFIELD	S41 0BB	3 bed semi detached house
16	HEATHCOTE DRIVE HASLAND CHESTERFIELD	S41 0BB	3 bed semi detached house
19	HEATHCOTE DRIVE HASLAND CHESTERFIELD	S41 0BB	3 bed semi detached house
20	HEATHCOTE DRIVE HASLAND CHESTERFIELD	S41 0BB	3 bed semi detached house
22	HEATHCOTE DRIVE HASLAND CHESTERFIELD	S41 0BB	3 bed semi detached house
23	HEATHCOTE DRIVE HASLAND CHESTERFIELD	S41 0BB	2 bed semi detached house
25	HEATHCOTE DRIVE HASLAND CHESTERFIELD	S41 0BB	2 bed semi detached house
27	HEATHCOTE DRIVE HASLAND CHESTERFIELD	S41 0BB	2 bed semi detached house
31	HEATHCOTE DRIVE HASLAND CHESTERFIELD	S41 0BB	3 bed semi detached house
33	HEATHCOTE DRIVE HASLAND CHESTERFIELD	S41 0BB	3 bed semi detached house
35	HEATHCOTE DRIVE HASLAND CHESTERFIELD	S41 0BB	3 bed semi detached house
37	HEATHCOTE DRIVE HASLAND CHESTERFIELD	S41 0BB	2 bed semi detached house
38	HEATHCOTE DRIVE HASLAND CHESTERFIELD	S41 0BB	3 bed semi detached house
39	HEATHCOTE DRIVE HASLAND CHESTERFIELD	S41 0BB	2 bed semi detached house
40	HEATHCOTE DRIVE HASLAND CHESTERFIELD	S41 0BB	3 bed semi detached house
41	HEATHCOTE DRIVE HASLAND CHESTERFIELD	S41 0BB	3 bed semi detached house

ADDRESS LIST - UNITY PROPERTIES

42	HEATHCOTE DRIVE HASLAND CHESTERFIELD	S41 0BB	3 bed semi detached house
43	HEATHCOTE DRIVE HASLAND CHESTERFIELD	S41 0BB	3 bed semi detached house
44	HEATHCOTE DRIVE HASLAND CHESTERFIELD	S41 0BB	3 bed semi detached house
45	HEATHCOTE DRIVE HASLAND CHESTERFIELD	S41 0BB	2 bed semi detached house
46	HEATHCOTE DRIVE HASLAND CHESTERFIELD	S41 0BB	2 bed semi detached house
47	HEATHCOTE DRIVE HASLAND CHESTERFIELD	S41 0BB	2 bed semi detached house
48	HEATHCOTE DRIVE HASLAND CHESTERFIELD	S41 0BB	2 bed semi detached house
49	HEATHCOTE DRIVE HASLAND CHESTERFIELD	S41 0BB	3 bed semi detached house
50	HEATHCOTE DRIVE HASLAND CHESTERFIELD	S41 0BB	2 bed semi detached house
51	HEATHCOTE DRIVE HASLAND CHESTERFIELD	S41 0BB	3 bed semi detached house
52	HEATHCOTE DRIVE HASLAND CHESTERFIELD	S41 0BB	2 bed semi detached house
53	HEATHCOTE DRIVE HASLAND CHESTERFIELD	S41 0BB	3 bed semi detached house
55	HEATHCOTE DRIVE HASLAND CHESTERFIELD	S41 0BB	3 bed semi detached house
58	HEATHCOTE DRIVE HASLAND CHESTERFIELD	S41 0BB	3 bed semi detached house
59	HEATHCOTE DRIVE HASLAND CHESTERFIELD	S41 0BB	3 bed semi detached house
60	HEATHCOTE DRIVE HASLAND CHESTERFIELD	S41 0BB	3 bed semi detached house
61	HEATHCOTE DRIVE HASLAND CHESTERFIELD	S41 0BB	3 bed semi detached house
69	KESWICK DRIVE NEWBOLD CHESTERFIELD	S41 8HJ	3 bed semi detached house
70	KESWICK DRIVE NEWBOLD CHESTERFIELD	S41 8HN	2 bed semi detached house
71	KESWICK DRIVE NEWBOLD CHESTERFIELD	S41 8HJ	3 bed semi detached house
72	KESWICK DRIVE NEWBOLD CHESTERFIELD	S41 8HN	2 bed semi detached house
73	KESWICK DRIVE NEWBOLD CHESTERFIELD	S41 8HJ	3 bed semi detached house
74	KESWICK DRIVE NEWBOLD CHESTERFIELD	S41 8HN	2 bed semi detached house
75	KESWICK DRIVE NEWBOLD CHESTERFIELD	S41 8HJ	3 bed semi detached house
76	KESWICK DRIVE NEWBOLD CHESTERFIELD	S41 8HN	3 bed semi detached house
77	KESWICK DRIVE NEWBOLD CHESTERFIELD	S41 8HJ	3 bed semi detached house
78	KESWICK DRIVE NEWBOLD CHESTERFIELD	S41 8HN	3 bed semi detached house
79	KESWICK DRIVE NEWBOLD CHESTERFIELD	S41 8HJ	3 bed semi detached house
80	KESWICK DRIVE NEWBOLD CHESTERFIELD	S41 8HN	2 bed semi detached house
81	KESWICK DRIVE NEWBOLD CHESTERFIELD	S41 8HJ	3 bed semi detached house
82	KESWICK DRIVE NEWBOLD CHESTERFIELD	S41 8HN	2 bed semi detached house
84	KESWICK DRIVE NEWBOLD CHESTERFIELD	S41 8HN	2 bed semi detached house
85	KESWICK DRIVE NEWBOLD CHESTERFIELD	S41 8HJ	3 bed semi detached house
86	KESWICK DRIVE NEWBOLD CHESTERFIELD	S41 8HN	2 bed semi detached house
89	KESWICK DRIVE NEWBOLD CHESTERFIELD	S41 8HJ	3 bed semi detached house
91	KESWICK DRIVE NEWBOLD CHESTERFIELD	S41 8HJ	3 bed semi detached house

ADDRESS LIST - UNITY PROPERTIES

93	KESWICK DRIVE NEWBOLD CHESTERFIELD	S41 8HJ	3 bed semi detached house
95	KESWICK DRIVE NEWBOLD CHESTERFIELD	S41 8HJ	3 bed semi detached house
99	KESWICK DRIVE NEWBOLD CHESTERFIELD	S41 8HJ	3 bed semi detached house
139	KESWICK DRIVE NEWBOLD CHESTERFIELD	S41 8HJ	3 bed semi detached house
141	KESWICK DRIVE NEWBOLD CHESTERFIELD	S41 8HJ	3 bed semi detached house
143	KESWICK DRIVE NEWBOLD CHESTERFIELD	S41 8HJ	3 bed semi detached house
145	KESWICK DRIVE NEWBOLD CHESTERFIELD	S41 8HJ	3 bed semi detached house
147	KESWICK DRIVE NEWBOLD CHESTERFIELD	S41 8HJ	3 bed semi detached house
149	KESWICK DRIVE NEWBOLD CHESTERFIELD	S41 8HJ	3 bed semi detached house
152	KESWICK DRIVE NEWBOLD CHESTERFIELD	S41 8HH	2 bed semi detached house
154	KESWICK DRIVE NEWBOLD CHESTERFIELD	S41 8HH	2 bed semi detached house
96	KIRKSTONE ROAD DUNSTON CHESTERFIELD	S41 8HE	2 bed semi detached house
100	KIRKSTONE ROAD DUNSTON CHESTERFIELD	S41 8HE	2 bed semi detached house
104	KIRKSTONE ROAD DUNSTON CHESTERFIELD	S41 8HE	3 bed semi detached house
106	KIRKSTONE ROAD DUNSTON CHESTERFIELD	S41 8HE	3 bed semi detached house
108	KIRKSTONE ROAD DUNSTON CHESTERFIELD	S41 8HE	2 bed semi detached house
112	KIRKSTONE ROAD DUNSTON CHESTERFIELD	S41 8HE	2 bed semi detached house
114	KIRKSTONE ROAD DUNSTON CHESTERFIELD	S41 8HE	2 bed semi detached house
3	SEDBERGH CRESCENT NEWBOLD CHESTERFIELD	S41 8DY	3 bed semi detached house
5	SEDBERGH CRESCENT NEWBOLD CHESTERFIELD	S41 8DY	3 bed semi detached house
7	SEDBERGH CRESCENT NEWBOLD CHESTERFIELD	S41 8DY	3 bed semi detached house
8	SEDBERGH CRESCENT NEWBOLD CHESTERFIELD	S41 8DY	3 bed semi detached house
30	SEDBERGH CRESCENT NEWBOLD CHESTERFIELD	S41 8DY	3 bed semi detached house
52	THIRLMERE ROAD NEWBOLD CHESTERFIELD	S41 8EL	2 bed semi detached house
56	THIRLMERE ROAD NEWBOLD CHESTERFIELD	S41 8EL	2 bed semi detached house
60	THIRLMERE ROAD NEWBOLD CHESTERFIELD	S41 8EL	2 bed semi detached house
82	THIRLMERE ROAD NEWBOLD CHESTERFIELD	S41 8EL	3 bed semi detached house
84	THIRLMERE ROAD NEWBOLD CHESTERFIELD	S41 8EL	3 bed semi detached house
86	THIRLMERE ROAD NEWBOLD CHESTERFIELD	S41 8EL	3 bed semi detached house
88	THIRLMERE ROAD NEWBOLD CHESTERFIELD	S41 8EL	3 bed semi detached house
90	THIRLMERE ROAD NEWBOLD CHESTERFIELD	S41 8EL	3 bed semi detached house
92	THIRLMERE ROAD NEWBOLD CHESTERFIELD	S41 8EL	3 bed semi detached house
98	THIRLMERE ROAD NEWBOLD CHESTERFIELD	S41 8EL	3 bed semi detached house
29	WYTHBURN ROAD NEWBOLD CHESTERFIELD	S41 8DP	3 bed semi detached house
31	WYTHBURN ROAD NEWBOLD CHESTERFIELD	S41 8DP	3 bed semi detached house
35	WYTHBURN ROAD NEWBOLD CHESTERFIELD	S41 8DP	3 bed semi detached house
37	WYTHBURN ROAD NEWBOLD CHESTERFIELD	S41 8DP	3 bed semi detached house
39	WYTHBURN ROAD NEWBOLD CHESTERFIELD	S41 8DP	3 bed semi detached house

ADDRESS LIST - UNITY FLATS

46	WIKELEY WAY	BRIMINGTON	S43 1AQ	2 bed first floor flat	UNTY
48	WIKELEY WAY	BRIMINGTON	S43 1AQ	2 bed ground floor flat	UNTY
50	WIKELEY WAY	BRIMINGTON	S43 1AQ	2 bed ground floor flat	UNTY
52	WIKELEY WAY	BRIMINGTON	S43 1AQ	2 bed first floor flat	UNTY
54	WIKELEY WAY	BRIMINGTON	S43 1AQ	2 bed first floor flat	UNTY
56	WIKELEY WAY	BRIMINGTON	S43 1AQ	2 bed ground floor flat	UNTY
58	WIKELEY WAY	BRIMINGTON	S43 1AQ	2 bed ground floor flat	UNTY
60	WIKELEY WAY	BRIMINGTON	S43 1AQ	2 bed first floor flat	UNTY
74	WIKELEY WAY	BRIMINGTON	S43 1AQ	2 bed first floor flat	UNTY
76	WIKELEY WAY	BRIMINGTON	S43 1AQ	2 bed ground floor flat	UNTY
78	WIKELEY WAY	BRIMINGTON	S43 1AQ	2 bed ground floor flat	UNTY
80	WIKELEY WAY	BRIMINGTON	S43 1AQ	2 bed first floor flat	UNTY



Appendix B . CMT Test Results (Chloride Content & Sulphate Content)



The obvious choice

kiwa


Partner for progress

Kiwa CMT Testing
 Unit 5 Prime Park Way
 Prime Enterprise Park
 Derby DE1 3QB
Client:
 Curtins Consulting
 56 The Ropewalk
 Nottingham
 NG1 5DW

 Tel +44 (0)1332 383333
 Fax +44 (0)1332 602607
 cmtenquiries@kiwa.co.uk
 www.kiwa.co.uk

Date: 18th March 2014 **Originator:** John M Healey
Order Ref: NO 1033/JMH/EJC **Our Ref:** 45765/CH

Site: Chesterfield Non Traditional Properties

Samples: 99No. samples of concrete dust, identified by the client's sample references, were delivered by courier to Kiwa CMT Testing on the 12th March 2014.

No sampling certificate was provided.

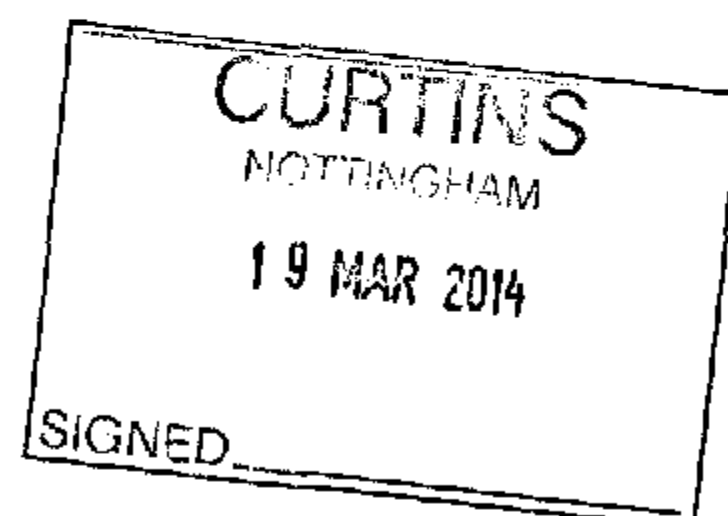
Requirements: Analyse the samples to determine the chloride ion content in accordance with **BS 1881 : Part 124 : 1988**.

Results: The analytical results can be found on pages 2 - 4 of this report and relate solely to the sample(s) tested.

Kiwa CMT Testing

Signed: B Fairweather
 Environmental Technician

Approved: M Barham
 Chief Chemist





DETAILED ANALYTICAL RESULTS - CHLORIDES

Client	Curtins Consulting	Job No.	45765
Contact	John Healey	Site	Chesterfield Non Traditional Properties
Order Ref	NO1033/JMH/EJC	Date Received	12/03/2014
Date Analysed	14/03/2014	Date Reported	18/03/2014
Sample Description	Concrete Dust		
Test Methods	BS 1881 : Part 124 : 1988		

<u>Sample Reference</u>	<u>%Chloride by mass of sample</u>	<u>%Chloride by mass of cement</u>	<u>Assumed % Cement Content</u>
REEMA			
221 Boythorpe Rd - Front	0.035	0.25	14
221 Boythorpe Rd - Front	0.035	0.25	14
221 Boythorpe Rd - Rear	0.028	0.20	14
221 Boythorpe Rd - Rear	0.035	0.25	14
221 Boythorpe Rd - Gable End	0.035	0.25	14
221 Boythorpe Rd - Gable End	0.035	0.25	14
223 Boythorpe Rd - Front	0.035	0.25	14
223 Boythorpe Rd - Front	0.035	0.25	14
223 Boythorpe Rd - Rear	0.070	0.50	14
223 Boythorpe Rd - Rear	0.070	0.50	14
223 Boythorpe Rd - Gable End	0.085	0.61	14
223 Boythorpe Rd - Gable End	0.156	1.11	14
265 Boythorpe Rd - Front	0.084	0.60	14
265 Boythorpe Rd - Front	0.056	0.40	14
265 Boythorpe Rd - Rear	0.106	0.76	14
265 Boythorpe Rd - Rear	0.057	0.40	14
265 Boythorpe Rd - Gable End	0.134	0.95	14
265 Boythorpe Rd - Gable End	0.035	0.25	14
11 Calver Cres - Front (Porch)	0.113	0.81	14
11 Calver Cres - Rear	0.092	0.66	14
11 Calver Cres - Rear	0.021	0.15	14
11 Calver Cres - Gable End	0.070	0.50	14
11 Calver Cres - Gable End	0.176	1.26	14
12 Calver Cres - Front (Porch)	0.078	0.55	14
12 Calver Cres - Rear	0.071	0.50	14
12 Calver Cres - Rear	0.148	1.06	14
12 Calver Cres - Gable End	0.056	0.40	14
12 Calver Cres - Gable End	0.077	0.55	14
14 Calver Cres - Front (Porch)	0.078	0.55	14
14 Calver Cres - Rear	0.064	0.45	14
14 Calver Cres - Rear	0.078	0.56	14
14 Calver Cres - Gable End	0.043	0.30	14
14 Calver Cres - Gable End	0.184	1.31	14
18 Calver Cres - Front (Porch)	0.098	0.70	14
18 Calver Cres - Rear	0.077	0.55	14
18 Calver Cres - Rear	0.070	0.50	14
18 Calver Cres - Gable End	0.042	0.30	14
18 Calver Cres - Gable End	<0.003	<0.02	14
23 Calver Cres - Front (Porch)	0.127	0.91	14
23 Calver Cres - Rear	0.070	0.50	14
23 Calver Cres - Rear	0.078	0.56	14
23 Calver Cres - Gable End	0.078	0.55	14
23 Calver Cres - Gable End	0.106	0.75	14
42 Calver Cres - Front (Porch)	0.154	1.10	14
42 Calver Cres - Rear	0.056	0.40	14



DETAILED ANALYTICAL RESULTS - CHLORIDES

Client	Curtins Consulting	Job No.	45765
Contact	John Healey	Site	Chesterfield Non Traditional Properties
Order Ref	NO1033/JMH/EJC	Date Received	12/03/2014
Date Analysed	14/03/2014	Date Reported	18/03/2014
Sample Description	Concrete Dust		
Test Methods	BS 1881 : Part 124 : 1988		

Sample Reference	%Chloride by mass of sample	%Chloride by mass of cement	Assumed % Cement Content
42 Calver Cres - Rear	0.043	0.30	14
42 Calver Cres - Gable End	0.028	0.20	14
42 Calver Cres - Gable End	0.092	0.66	14
8 Wardlow Close - Front	0.035	0.25	14
8 Wardlow Close - Front	0.028	0.20	14
8 Wardlow Close - Rear	0.028	0.20	14
8 Wardlow Close - Rear	0.007	0.05	14
8 Wardlow Close - Gable End	0.077	0.55	14
8 Wardlow Close - Gable End	0.063	0.45	14
37 Wardlow Close - Front	0.014	0.10	14
37 Wardlow Close - Front	0.021	0.15	14
37 Wardlow Close - Rear	0.056	0.40	14
37 Wardlow Close - Rear	0.063	0.45	14
37 Wardlow Close - Gable End	0.078	0.55	14
37 Wardlow Close - Gable End	0.077	0.55	14
UNITY			
103 Calow La - Front - 1st - Bedroom	0.269	1.92	14
103 Calow La - Rear - Grd - Kitchen	0.310	2.21	14
103 Calow La - RHS - 1st - Landing	0.297	2.12	14
119 Calow La - Front - Lounge	0.268	1.91	14
119 Calow La - Rear - Kitchen	0.420	3.00	14
119 Calow La - RHS - Landing	0.281	2.01	14
20 Heathcote Dr - Front - Grd - Lounge	<0.003	<0.02	14
20 Heathcote Dr - Rear - 1st - Bedroom	0.106	0.76	14
20 Heathcote Dr - RHS - 1st - Landing	0.269	1.92	14
23 Heathcote Dr - Front - 1st - Bedroom	0.225	1.60	14
23 Heathcote Dr - Rear - Lounge	0.014	0.10	14
23 Heathcote Dr - LHS - Grd - Coalshed	0.303	2.16	14
33 Heathcote Dr - Front - Lounge	0.021	0.15	14
33 Heathcote Dr - Rear - Kitchen	0.014	0.10	14
33 Heathcote Dr - RHS - 1st - Toilet	0.141	1.01	14
39 Heathcote Dr - Front - Kitchen	0.035	0.25	14
39 Heathcote Dr - Rear - Lounge	<0.003	<0.02	14
39 Heathcote Dr - LHS - Coalshed	<0.003	<0.02	14
41 Heathcote Dr - Front - 1st - Bedroom	0.318	2.27	14
41 Heathcote Dr - Rear - Grd - Kitchen	0.021	0.15	14
41 Heathcote Dr - RHS - 1st - Landing	0.361	2.58	14
73 Keswick Dr - Front - Grd - Lounge	0.007	0.05	14
73 Keswick Dr - Rear - Grd - Diner	<0.003	<0.02	14
73 Keswick Dr - RHS - 1st - Landing	0.247	1.76	14
74 Keswick Dr - Front - Grd - Kitchen	<0.003	<0.02	14
74 Keswick Dr - Rear - Grd - Lounge	<0.003	<0.02	14
74 Keswick Dr - RHS - Grd - Shed	<0.003	<0.02	14



DETAILED ANALYTICAL RESULTS - CHLORIDES

Client	Curtins Consulting	Job No.	45765
Contact	John Healey	Site	Chesterfield Non Traditional Properties
Order Ref	NO1033/JMH/EJC	Date Received	12/03/2014
Date Analysed	14/03/2014	Date Reported	18/03/2014
Sample Description	Concrete Dust		
Test Methods	BS 1881 : Part 124 : 1988		

Sample Reference	%Chloride by mass of sample	%Chloride by mass of cement	Assumed % Cement Content
52 Thirlmere Rd - Front - Kitchen	0.077	0.55	14
52 Thirlmere Rd - Rear - Bedroom	0.226	1.61	14
52 Thirlmere Rd - RHS - Shed	<0.003	<0.02	14
92 Thirlmere Rd - Front - Grd - Lounge	0.099	0.71	14
92 Thirlmere Rd - Rear - Grd - Diner	0.211	1.51	14
92 Thirlmere Rd - LHS - 1st - Landing	0.275	1.97	14
CORNISH			
157 Hady La - Front	<0.003	<0.02	14
157 Hady La - Front (Above Kitchen)	<0.003	<0.02	14
157 Hady La - Rear	<0.003	<0.02	14
157 Hady La - Rear (Above Centre Window)	0.007	0.05	14
157 Hady La - Side Wall in Passageway	0.021	0.15	14
157 Hady La - Side Wall in Passageway	0.063	0.45	14

Signed :

B Fairweather
Environmental Technician

Approved :

M. Barham
Chief Chemist



Appendix C . Photographs

BISF



Rear Elevation



Side Elevation



Debonded Render



Cracked Render



Roof Construction

BL8



Rear Elevation



Side Elevation



Decay at Fascia



Damage to Cladding



Roof Construction

Cornish



Rear Elevation



Passageway



Poor Bearing for Purlin



Roof Construction

Reema



Rear Elevation



Side Elevation



Cracked Panel



Open Joint



Rusting Reinforcement to party wall in roof



Cracked & Spalled Concrete

Timber



Front & Side Elevation



Existing Stenni Panel



Existing Sole Plate



Existing Cladding Obstructing Ventilation



Roof Construction

Trusteel



Rear Elevation



Damaged Canopy



Column in Cavity



Roof Construction



Column in Cavity



Roof Construction

Unity



Rear Elevation



Cracked & Open Joints



Chimney Leaning



Exposed Reinforcement over Doorway



Cracked Panels



Roof Construction

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