Engineer's Report

Our Reference	**IFS-EIG-SUB-12-0039018**
Claim Reference	**000266699**
Prepared for	**Ecclesiastical**

Claim Details:

Report Date	**21 September 2012**
Policyholder	**27 Arkwright Road RTM Co Ltd**
Address	**27 Arkwright Road, London, NW3 6BJ**

SITE PLAN NOT TO SCALE

This plan is diagrammatic only and has been prepared to illustrate the general position of the property and its relationship to nearby drains and trees etc. The boundaries are not accurate, and do not infer or confer any rights of ownership or right-of-way. OS images provided by Marishal Thompson Group.

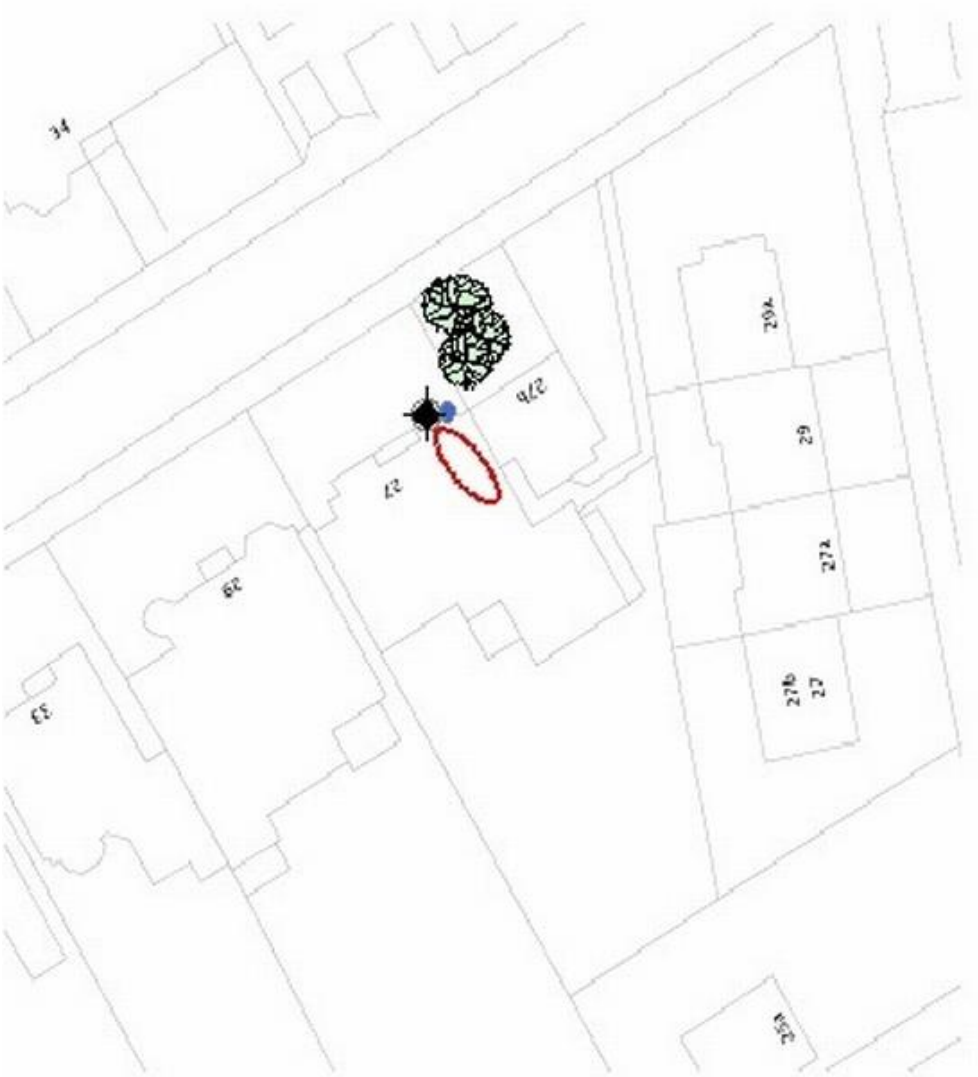

FIGURE 1 Site Plan

INTRODUCTION

We have been asked by your building Insurers to comment on suspected subsidence damage to the above property. Our report briefly describes the damage, identifies the cause and gives recommendations on the required remedial measures.

Our report should not be used in the same way as a pre-purchase survey. It has been prepared specifically in connection with the present insurance claim and should not be relied on as a statement of structural adequacy. It does not deal with the general condition of the building, decorations, services, timber rot or infestation etc.

Investigations have been carried out in accordance with the guidance issued by The Institution of Structural Engineers. All directions are given relative to an observer facing the front of the property. We have not commented on any part of the building that is covered or inaccessible.

CIRCUMSTANCES

Following an incident involving a small masonry fragment dislodging from the front elevation, discussions amongst the residents revealed recent crack damage in some of the flats. Insurers were then contacted in September 2012.

PROPERTY

The property is a two storey large converted detached house of traditional construction with solid brickwork walls surmounted by a ridged tile covered roof.

The property has 2 bedrooms. The property comprises 7no leasehold flats with a common entrance. There is also a loft conversion. The building is insured under the one policy.

FIGURE 2 Front Elevation

HISTORY

Date of Construction	1901
Purchased	1985
Policy Inception Date	16 June 2011
Damage First Noticed	22 August 2012
Claim Notified To Insurer	11 September 2012
Date of our Inspection	18 September 2012

ADEQUACY OF BUILDING SUM INSURED

The current building sum insured is considered adequate

TOPOGRAPHY
The site is level with no adverse features.

GEOLOGY
Reference to the 1:50,000 scale British Geological Survey Map (Drift Edition) suggests the drift geology of the site is No drift geology recorded overlying a solid geology of London Clay.

VEGETATION
The following vegetation was recorded as being within potential influencing distance of the property:-

Type	Height	Distance	Owner
Broadleaf	8m	4m	Neighbour
Broadleaf	8m	8m	Neighbour

DAMAGE RELATING TO THE CLAIM
The following is a summary of the damage relating to the Insurance claim, including any unrelated damage in the same vicinity, with supporting photographs where appropriate.

INTERNALLY
Internally, damage has been recorded within flat no 2, (Ground Floor), flat no 5 (1st Floor) and flat no 8 (loft). The affected flats are all to the left side of the building when viewed from the front.

Within flat 2, the damage relates to minor cracking mainly along the left flank wall within the living room and also extending down the stairs. The stairs lead to a small basement over the middle/rear of the property.

Within flat 5, the damage relates to moderate cracking also in the flank wall of both the front lounge and also rear kitchen areas. The diagonal cracks are much wider at this level consistent with foundation movement. There are also associated ceiling cracks and damage to skirting boards along the flank wall in the lounge. There is also some binding of the windows in the lounge.

Within flat 8, due to the configuration of the layout within the loft space, the crack damage and distortion does not follow regular patterns. The front bedroom ceiling in particular has moderate damage. Temporary filling should be undertaken to minimise the nuisance of dust. There has also been minor crack damage recorded in the rear living room and adjacent hall areas.

Finally, minor crack damage to walls and ceiling has also been recorded in the ground floor hall area.

EXTERNALLY
Crack damage to the left side of the front elevation comprises cracked bricks in locations under the ground floor bay window as well as above the window, where the lintel bears onto the left side brick pier. There is also some distortion to the entrance arch.

Other crack damage and distortion externally to the left boundary wall, bin store and paved drive are due to age and general wear and tear.

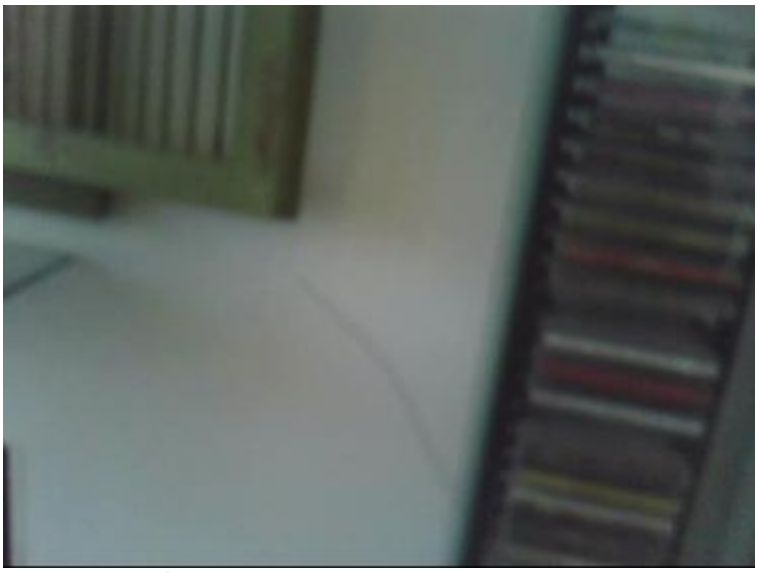

FIGURE 03 Flat 2

FIGURE 04 Flat 5

FIGURE 05 External left side bay

FIGURE 06 Flat 5

DAMAGE CATEGORY

It is common practice to categorise the structural significance of the damage in accordance with the classification given in Table 1 of Digest 251 produced by the Building Research Establishment. In this instance, the damage falls into Category 3 (Moderate).

Category 0	Negligible	<0.1 mm
Category 1	Very Slight	0.1 - 2mm
Category 2	Slight	>2 but < 5mm
Category 3	Moderate	>5 but < 15mm
Category 4	Severe	>15 but < 25mm
Category 5	Very Severe	>25mm

Extract from Table *1.* B.R.E Digest 251
Classification of damage based on crack widths

INVESTIGATIONS

SITE EXCAVATIONS

Site investigations will shortly be undertaken by a specialist contractor.

DRAINS

Drainage investigations in the vicinity of damage will shortly be undertaken by a specialist contractor.

DISCUSSION

The diagonal aspect of the cracks, together with the fact that they increase in width with height is indicative of subsidence as a result of shrinkage of the clay subsoil due to the moisture extracting influence of nearby vegetation.

The proximity of the trees in the neighbours front garden suggests these are the most likely moisture extracting influence.

It is likely that the subsoil will rehydrate during the coming winter/spring period and therefore once the soil testing results are to hand, these are likely to confirm that following removal of the

vegetation, the property can be repaired.

It may therefore not be necessary to monitor the property in these circumstances. We will be able to advise further on receipt of the soil testing results.

REQUIREMENTS

In order to stabilise the property and prevent further damage occurring in the future, the cause of the movement needs to be addressed, with vegetation management being required.

The soils investigations will be reviewed and the necessary vegetation management confirmed. We will also advise whether monitoring is required.

Following completion of tree management works, the property is likely to stabilise.

Under the circumstances, no foundation stabilisation works are considered necessary, with structural repairs of the superstructure being required only, together with internal redecoration of the damaged rooms.

Generally cracks 1mm wide or less will be filled (internal) or re-pointed (external). Internally, where the cracks are wider than 1mm, but less than 5mm the underlying brickwork or blockwork will be exposed and prior to making good the plaster finishes the cracking will be covered with expanded metal lathe. Where cracks are 5mm across or wider, some form of bed joint reinforcement should be introduced.

Typically this will involve disc cutting a chase, 25 to 35mm deep into the bed joint across the crack. An epoxy resin mortar is then pressure grouted into the open joint, and a 6mm diameter stainless steel Helical steel bar set into place, the bar extending a minimum of 500mm either side of the crack. Bars should be installed every 4-6 brick courses.

Cyril Nazareth
Engineer
Subsidence Management Services