

# Structural Report

Marine Buildings  
Penarth Marina  
Penarth



For

**Mr M. Martinez**  
**Skyasset Ltd**

VALE OF GLAMORGAN COUNCIL  
(PLANNING DIVISION)

22 NOV 2011

DATE OF REGISTRATION

RECEIVED

13 OCT 2011

ENVIRONMENTAL  
AND ECONOMIC  
REGENERATION

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HUBERT  
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& PARTNERS

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# Structural Report On

**Marine Buildings, Penarth Marina, Penarth**

## **1.0 TERMS OF REFERENCE**

Acting upon written instructions from Mr M. Martinez of Skyasset Limited, a visual inspection of the property was carried out during the period August to September 2011 in order to ascertain the structural condition of the building and to comment on any substantive defects noted in the main structure of the building.

## **2.0 SITE AND PROPOSAL**

It is the intention of the Owner to convert, restore, and refurbish the building into a four star hotel complex.

The building is located on the Penarth side of the Cardiff Bay Barrage overlooking the barrage and Cardiff Bay. The building is effectively detached with a large car park to the front and a steep shoreline cliff/slope behind. Generally the site of the building slopes gently from north to south towards the sea.

## **3.0 HISTORY**

The Marine building is a Grade 2 Listed building originally consisting of 6 No units. At some time in the past the end unit nearest the sea

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has been demolished. The building has been left derelict for a number of years.

## 4.0 GENERAL DESCRIPTION

### 4.1. Internal

The whole of the property has been disused for a considerable period of time. As a consequence the general condition of the property could be described as extremely poor with evidence of dampness throughout, fire damage and collapse of sections of the internal structures including roof, floors and walls.



It is understood the building has been altered and changed on numerous occasions throughout its life.



The building itself is approximately rectangular in shape and effectively consists of a terrace of five properties consisting of:

- A suspended ground floor over a large floor void
- Suspended timber floors at first and second floors
- Timber/slated roof over



Each unit contains a stone/timber staircase serving the floors above.

The floors and roof are supported off main masonry walls forming a cellular structure.

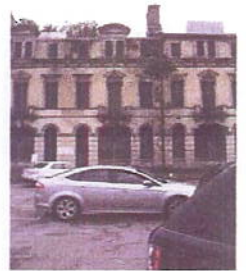
The general inspection of the building was restricted due to the inaccessibility of some sections of the building; areas of the structure which had collapsed and areas where it was self evident that floors had lost a substantial amount of their structural integrity.

## 4.2. External

The external façade of the building has not benefited from any regular maintenance or refurbishment for a considerable period of time.

The front facing façade and the north facing facade form a dramatic exterior, being constructed out of yellow facing brickwork with ornate dressed stone around windows and doorways with an entablature carried around the two elevations.

The rear west and south facing elevations are rendered and contain no significant features.



## 5.0 OBSERAVATIONS

### 5.1 Internal

#### 5.1.1. Unit 1

Access was limited to the ground floor only. The unit has suffered from extensive fire damage to the upper floors and the roof is missing. The fire damage and subsequent weather ingress has resulted the whole of the internal structure to have lost its structural integrity and this area to be classified as a "dangerous structure"



#### 5.1.2. Unit 2

The general condition of the unit is extremely poor there is evidence of damp ingress and damage throughout. Areas of the original lathe and plaster have deteriorated and fallen off. The floor construction is timber joists it was evident that many of the timbers have been affected by wet/dry rot or infestation.



All the floors have been effected by rot and should be classified as dangerous and no access should be allowed.



All external openings have timber lintels which appear to have been affected by wet/dry rot.



The whole of the area is infested with pigeons and there is a considerable build up of detrius which is a health hazard. The roof is missing and therefore this area was not inspected.

### 5.1.3. Unit 3

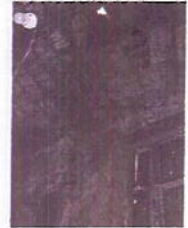
The general condition of the unit is extremely poor there is evidence of damp ingress and damage throughout. The timber floor construction has been affected severely by damp/dry rot and they have lost their structural integrity and should be classified as "dangerous".



### 5.1.4. Unit 4 & 5

At the time of our inspection unit 4 and 5 were not accessible.

Photographic evidence shows that the whole of the suspended ground floor, first floor and second floor have completely collapsed and effectively this area of the building has been left as a "shell".



## 5.2. External

### 5.2.1. Front Elevation (East)

All of the windows have been blocked up.

There is evidence of delamination to the face of the brickwork throughout, particularly around the down pipe areas (refer to sketch MH/SK100).

The feature stonework is weathered and the following defects were noted.

- The high level entablature stonework has spalled in areas and there are several cracks in evidence.
- Sections of the stonework balcony have collapsed
- Support corbels to the balcony have cracked.



There are areas of plant growth at high level, adjacent to downpipes and along brickwork/stonework banding levels.



All of the pipework and guttering requires replacement.



### 5.2.2. Side Elevation (North)

All of the windows have been blocked up. There is evidence of delamination to the face of the brickwork throughout, particularly around the down pipe areas.

The feature stonework is weathered and the following defects were noted.

- The high level entablature stonework has spalled and in one area has cracked and moved outwards.
- The soffit section to the stonework balcony has collapsed
- Support corbels to the balcony have cracked



There is a settlement crack in the base stonework at approximate mid elevation.



There are areas of plant growth.

### 5.2.3. Rear Elevation

All of the windows have been boarded up. The complete elevation has been rendered over and there are numerous cracks and areas of spalling throughout (sketch SK/101). The general condition of the wall is very poor and there are cracks over the head of all windows/doors.

All of the pipework and guttering requires replacement.





#### **5.2.4. Side Elevation**

The complete elevation is rendered and there is evidence that this wall was a party wall to an adjoining property at some time in the past.



There are several areas of cracking and spalling.



#### **5.3. Drainage**

All of the internal and external above ground drainage requires replacement.

Below ground drainage was not inspected and it would be recommended that a specialist firm be engaged to undertake a full CCTV survey.

## 6.0 CONCLUSIONS/RECOMENDATIONS

Given the age, the lack of maintenance and general neglect of the building the actual fabric of the building can be considered to be extremely poor, and in some areas to be classified as a DANGEROUS structure.

There are areas of the building which have been affected by fire damage and ingress of water which has led to internal collapse of parts of the structure.

The main areas of concern from a structural standpoint are highlighted below:

1. **ROOF STRUCTURE** – A combination of fire damage, water ingress has affected all of the roof structure. Two areas of roof have collapsed or been destroyed by fire. The roof structure to unit 5 is inaccessible because all the floors below have collapsed. The remainder of the roof has lost its structural integrity.
  - *The roof structure has completely lost its structural integrity and can be classified as dangerous and complete removal is required.*
  
2. **FLOOR STRUCTURE** – In the end unit the complete floor structure has collapsed. All the timber floor construction in the remaining units has been affected by either fire or water damage. They have lost a degree of structural integrity and in many areas should be classified as dangerous.
  - *The complete floor structure has lost its structural integrity and can be classified as dangerous and complete removal is required.*

3. **EXTERNAL WALLS** – All of the external walls of the property forming the external envelope have suffered from degradation and consequential damage.

The brickwork/stone facades to the East and North elevations suffer from the following defects:

- *Spalling of brickwork*
- *Water penetration damage particularly around down pipes*
- *Movement and cracking to stonework at high level*
- *Areas of plant growth throughout*
- *Defective structural timber lintels to the inner face of the wall to all structural openings.*
- *The north elevation wall is bowed outwards*

The west and south rendered elevations have suffered from the following defects

- *Render/movement cracks throughout*
- *Areas of spalled render*
- *Areas of plant growth.*

All external walls require a considerable amount of remedial work to restore their structural integrity including replacement of all timber lintel and any timber work embedded in the walls.

The possibility and practicality of restoring the facing brickwork should be discussed with a specialist on these matters.

## **7.0 HEALTH AND SAFETY ISSUES**

In the course of undertaking the pre-survey risk assessment and carrying out the survey numerous Health and Safety issues have been identified:

- Refer to Appendix D - Health and Safety Hazard Identification and Risk Assessment

## 8.0 SUMMARY

To be read in conjunction with the main body of the report: -

- *All of the timber suspended floors and remaining roof structures have lost their structural integrity and are classified as dangerous and should be removed.*
- *It is understood that the intention is to retain the north and east building façade and to construct new works behind as support. At present these façades can be described as in poor structural condition and if continually left exposed to prevailing weather conditions will deteriorate rapidly and collapse. At present these facades are probably capable of being restored provided a temporary works scheme is installed to provide them with lateral support and restoration of the brickwork proves feasible. All embedded timber work should be replaced and all defective stonework and balconies refurbished/removed.*
- *All above ground drainage will require replacing.*
- *Several Health and Safety issues need to be addressed to enable the building to be accessed safely.*
  - (a) *Temporary structural scaffolding should be installed on the main facades that are to be retained.*
  - (b) *No access should be allowed to the building until a specialist has removed all the defective floors, roofs and walls and effectively made the building SAFE.*
  - (c) *Removal of vermin and detritus is required by a specialist.*

- (d) Isolation and make safe all electrical systems.*
- (e) Temporary making safe areas around existing staircase until demolition works are complete.*
- (f) Further inspections by specialists are required to identify the possible presence of Asbestos or other contaminants.*
- (g) The sequence and control of the demolition works should be discussed and agreed with a specialist Demolition Contractor.*

## 9.0 LIMITATIONS

In the preparation and carrying out of this report the following limitations should be noted.

Only areas of the building that were easily accessible were inspected, and due to lighting restrictions only limited detailed observations could be carried out.

No effort has been made to identify the presence of wet rot, dry rot, wood boring beetle, asbestos or other contaminants. The advice of a specialist on these matters would be recommended.

This report should not be considered as a full dilapidation report and it is recommended that advice of a specialist be sought on these matters

No structural calculations have been undertaken to determine the load carrying capacity of any part of the structure.

The views expressed in this report have been based on good building practice and recommendations given in Codes of Practice, British Standards and BRE digests. It would be strongly recommended that the advice of a solicitor be sought on any matters of a legal nature.

Underground drainage was not inspected.

Electrical and plumbing installations were not inspected and the advice of a specialist should be sought on these matters.

This report shall be for the confidential use of our client and shall not be reproduced in whole or part, or relied upon by a third party without the express written Authority of Hubert Jenkins and Partners.

Date .....

Signature .....

**M. Boucher** Bsc.C.Eng.,M.I.C.E. M.I.Struct.E

<b>Hubert Jenkins and Partners Consulting Engineers 3 Radnor Court 256 Cowbridge Road East CARDIFF CF5 1GZ</b>
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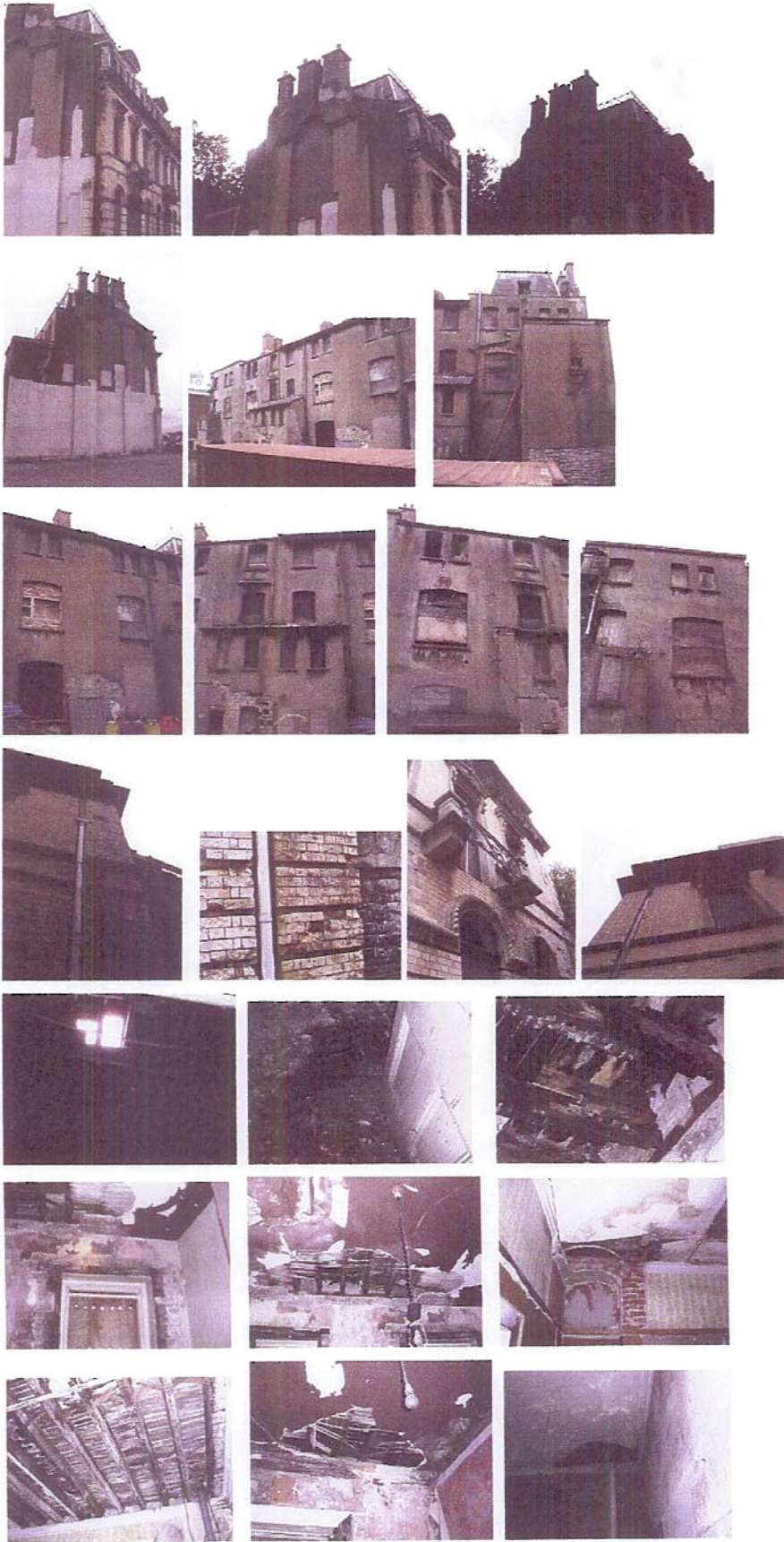
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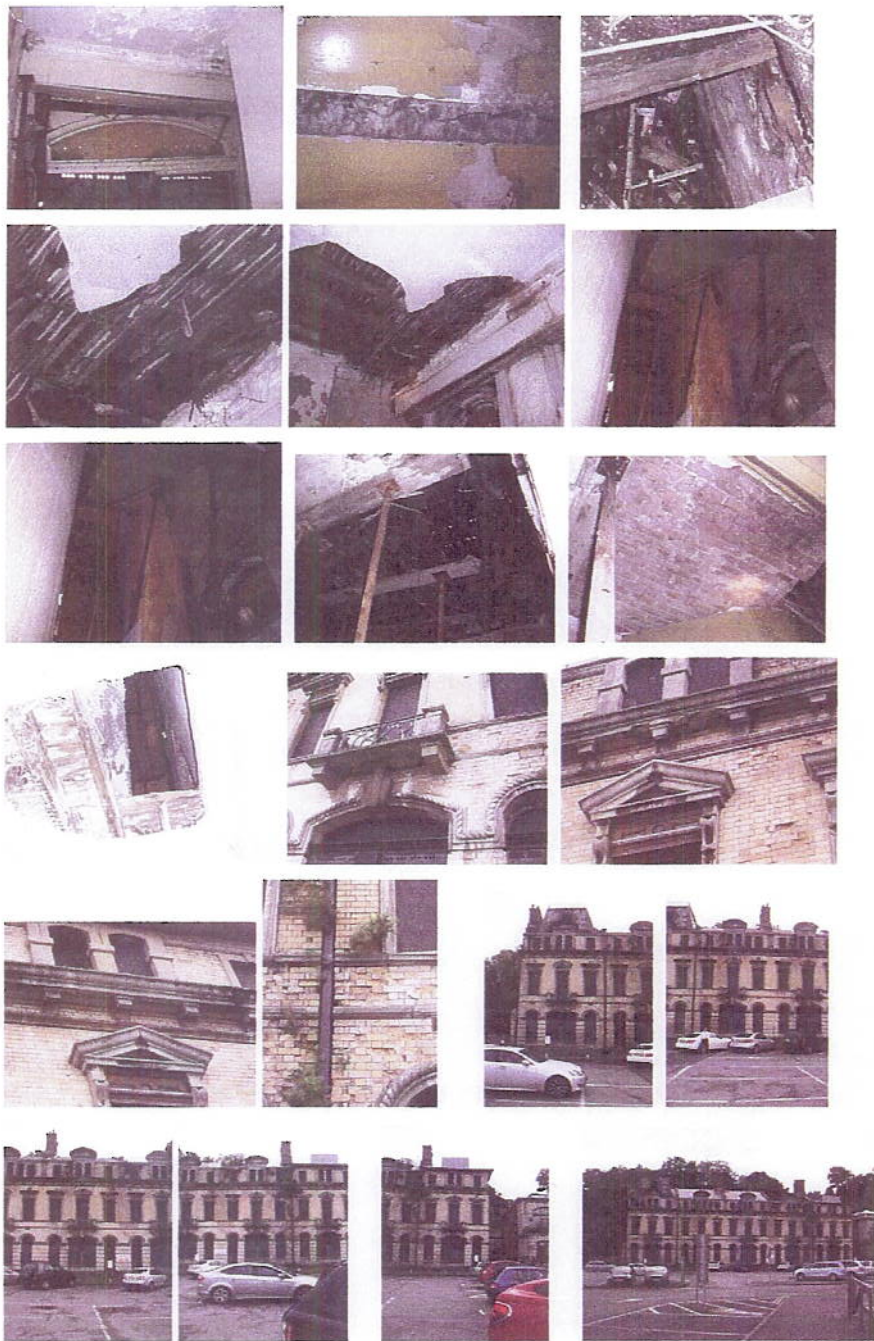
**APPENDIX A**

**PHOTOGRAPHS**

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**APPENDIX B**

**HISTORICAL MAPS**

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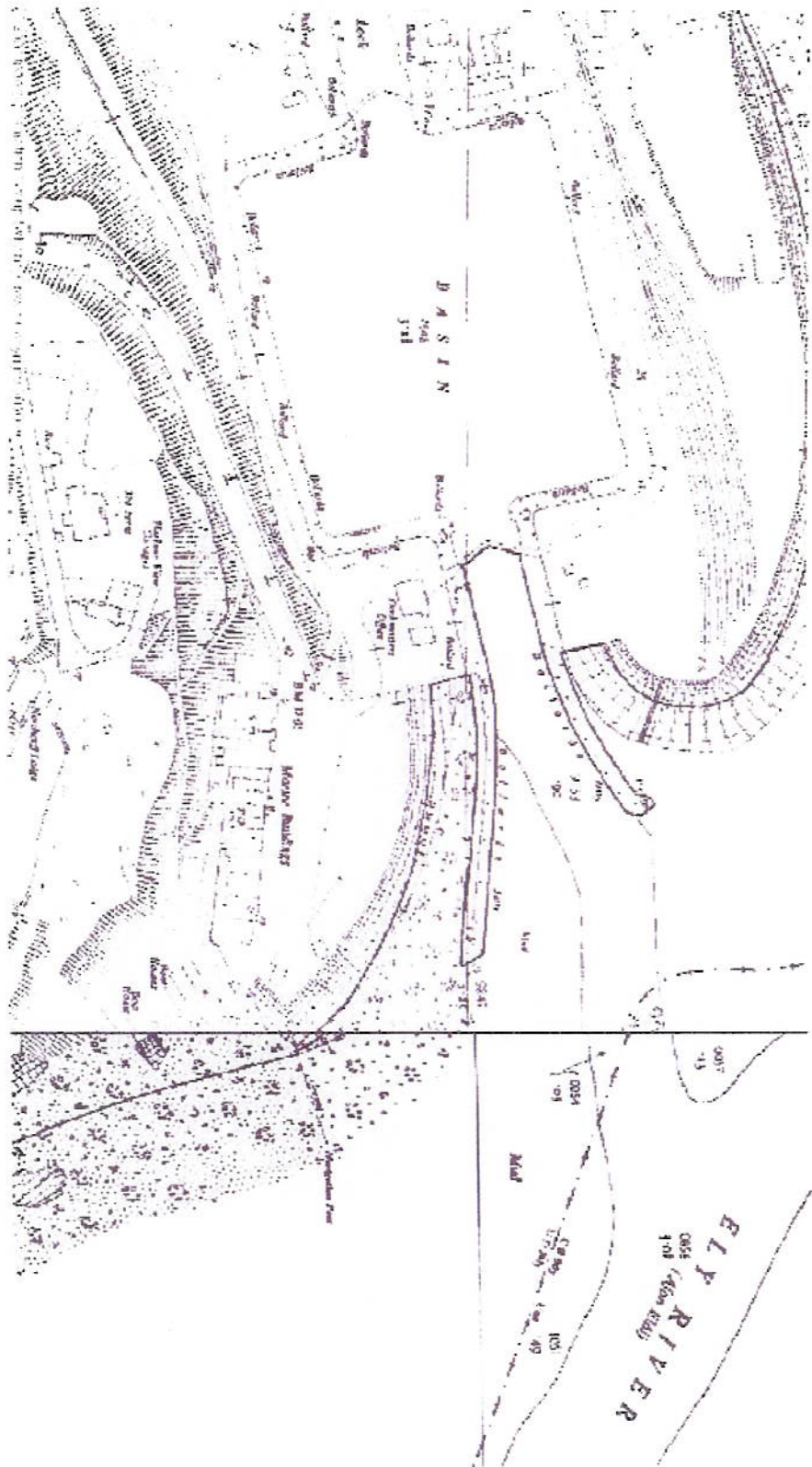


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



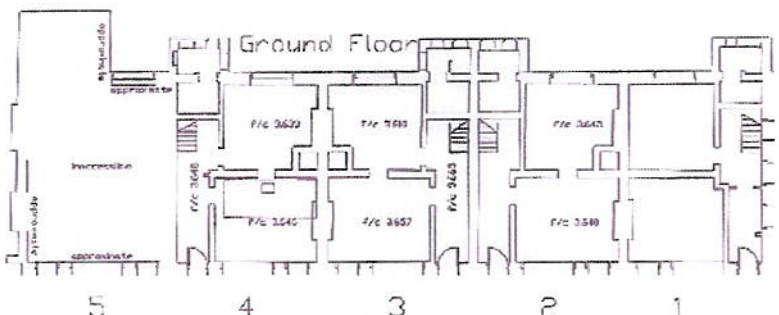
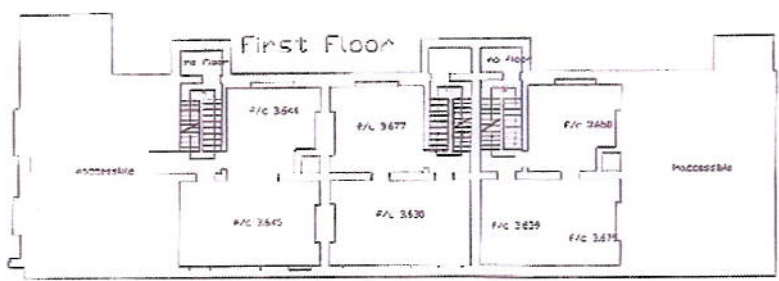
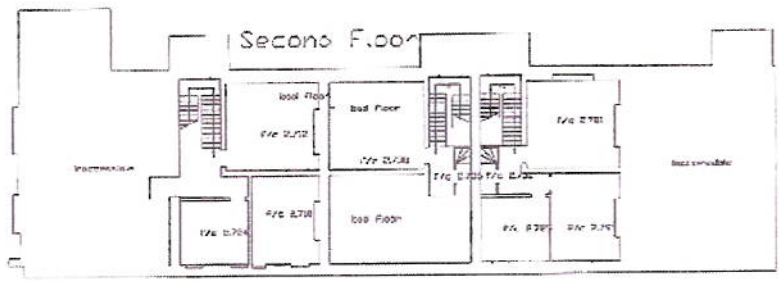
**APPENDIX C**

**SKETCHES**

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- 
**FACE OF BRICKWORK DELAMINATED**
- 
**B PLANT GROWTH**
- 
**S SPALLING**
- 
**C CRACK**

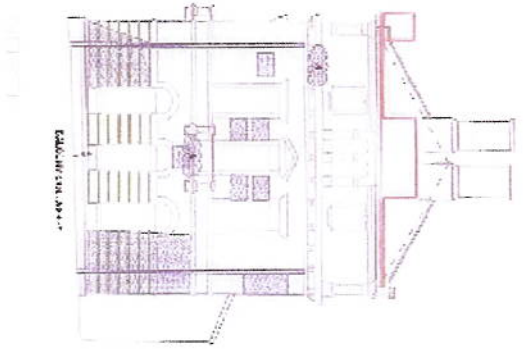
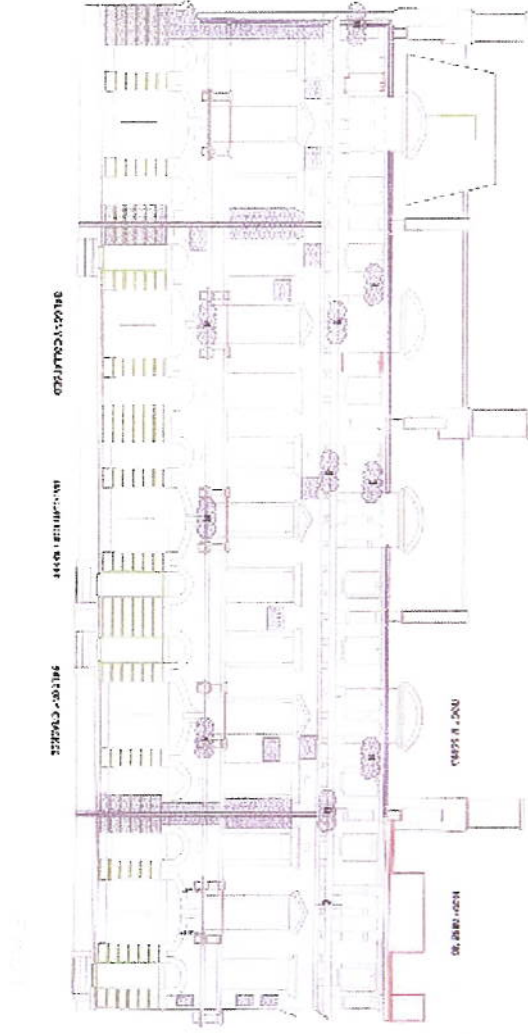







5 4 3 2 1

Distance Floor 2 to Floor 1 = 4.28m  
Floor 1 to ground floor = 4.02m

Distance Floor 2 to Floor 1 = 4.28m  
Floor 1 to ground floor = 4.02m

Distance Floor 2 to Floor 1 = 4.28m  
Floor 1 to ground floor = 4.02m



-  FACE OF BRICKWORK
-  DELAMINATED
-  PLANT GROWTH
-  SPALLING
-  CRACK

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**APPENDIX D**

**HEALTH AND SAFETY IDENTIFICATION AND RISK  
ASSESSMENT**

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**HAZARD IDENTIFICATION AND RISK ASSESSMENT SHEET**

**PROJECT: MARINE BUILDINGS PENARTH      JOB NO. 11/1697**

**SHEET NO: 1 OF 2 STAGE: PRE-TENDER      DATE: 6/10/2011**

**HEALTH AND SAFETY**

**In the course of undertaking the pre-survey risk assessment and carrying out the survey the following Health and Safety issues have been identified.**

Ref	Activity/Description	Hazard	Persons in danger	Risk Analysis			Risk Control
				Sev (a)	Lik. (b)	(a)x(b)	
A1	<b>LIGHTING</b> <i>There is no natural light in the building generally all windows and openings have been boarded up.</i>	TRIPS OR FALLS	SURVEYORS	3	2	6	PROVIDE ADEQUATE TEMPORARY OR PERMANENT LIGHTING
A2	<b>ELECTRICAL</b> <i>It is unknwn if there are live connections throughout the building.</i>	ELECTRICAL SHOCKS	SURVEYORS	3	3	9	AVOID CONTACT WITH ANY ELECTRICAL WIRING OR APPLIANCE. ELECTRICIAN REQUIRED TO MAKE SAFE
A3	<b>PIGEONS AND RATS</b> <i>Areas of the building are infested with vermin.</i>	HEALTH RISK	SURVEYORS	3	3	9	USE PROTECTIVE CLOTHING, GLOVES AND MASKS. DO NOT DISTURB OR TOUCH DETRITUS. REMOVAL REQUIRED BY SPECIALIST
A4	<b>STAIRCASES AND BALUSTRADING</b> <i>Sections of staircases and balustrading are missing.</i>	TRIPS OR FALLS	SURVEYORS	3	2	6	DO NOT ACCESS VULNERABLE AREAS – SAFETY WORKS REQUIRED

HAZARD IDENTIFICATION AND RISK ASSESSMENT SHEET : DATE: 06<sup>TH</sup> OCTOBER 2011

PROJECT: MARINE BUILDINGS PENARTH

JOB NO: 111/1697

SHEET NO: 2 OF 2 REVISION

STAGE: PRE-TENDER

**HEALTH AND SAFETY**

Ref	Activity/Description	Hazard	Persons in danger	Risk Analysis			Hazard
				Sev. (a)	Lik. (b)	(a)x(b)	
A5	<b>TIMBER FLOORS</b> <i>Timbers affected by water ingress are structurally inadequate.</i>	FALLS COLLAPSE	SURVEYORS	3	3	9	DO NOT ACCESS VULNERABLE AREAS UNTILL STRENGTHENING WORKS OR REMOVAL ARE UNDERTAKEN.
A6	<b>FLOOR BALCONIES</b> <i>Area of balcony have collapsed.</i>	FALLS	SURVEYORS	3	3	9	AVOID ACCESS UNTIL STRENGTHENING WORKS ARE CARRIED OUT
A7	<b>ASBESTOS &amp; CONTAMINANTS</b> <i>Possible presence of asbestos or other contaminant</i>	HEALTH RISK	SURVEYORS	3	3	9	ANY SUSPECT MATERIALS TO REMAIN INTACT, NO INVASIVE INSPECTIONS TO BE CARRIED OUT UNTIL FULL SURVEY IS UNDERTAKEN BY SPECIALIST

Severity

Likelihood/ probability

Classification of risk – severity x likelihood

3	Major – death or major injury	3	High – certain or near certain harm will occur	1 or 2	Low risk, no action required
2	Serious – injury or illness causing	2	Medium – harm will occur frequently	3 or 4	May require remedial measures
1	Slight – other injury or illness	1	Low – harm will seldom occur	6	Reduce risk, prevention or protection required
				9	High risk, avoid by redesign/ eliminate

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