# SURVEY REPORT

MGM
Specialist Construction Services

MGM Ltd, Unit 333 Dukesway,
Team Valley Trading Estate, Gateshead,
Tyne & Wear, NE11 0BH

Tel: (0191) 482 2100
Fax: (0191) 487 0056
Email: info@mgm.ltd.uk
Web: www.mgm.ltd.uk

CLIENT: Byrony Roff
Spence and Dower
25 Main Street
Ponteland
Newcastle upon Tyne
NE20 9NH

PROPERTY: Embleton Tower
Embleton

REF: 9170929/RM/JB

DATE SURVEY: 20th September 2017 & 26th April 2018

SURVEYED BY: R McQueen

PROPERTY DESCRIPTION: Stone built detached
WEATHER CONDITIONS: At the time of our inspection it was a warm clear day with external temperatures of 12°C
OCCUPIED STATUS: The property was occupied and fully furnished at the time of our inspection.
ORIENTATION: As if facing front of property from road

HISTORY: Embleton Tower is a peel tower and Grade I listed building in the village of Embleton in Northumberland, England. Tradition states that in 1395, the tower was built to protect the minister and church goers of Embleton's Church of the Holy Trinity after the village suffered from a raid by the Scots.[1][2] It was provided for the vicar of Embleton by Merton College, Oxford, who held the patronage of the parish, in 1332.

Upon your instructions, an inspection of the accessible timbers was carried out at the above property was made confined to the areas scheduled below. Our observations and recommendations follow.

**a) Suspended ground floor timbers**

**Ground Floor Dining Room**

GENERAL OBSEERVATIONS:
The inspection was severely restricted by furniture, however, a limited torchlight inspection revealed the following:

Floorboards were lifted in areas as indicated and a partial sub-floor inspection was carried out with the aid of a torch and mirror.

Floorboards, joists, architraves, decorative paneling, skirting boards,box windows and window shutters and were noted to be distorted and corrugated due to the attack of Dry Rot (Serpula Lacrymans) and severe breakdown is occurring in places.

Dry Rot Sporophores were noted to various areas, more noticeably to flooring in the bay window area

Dry Rot spore dust was visible to window panels and the floorboards in the dining room area

Although we could not fully inspect within the sub-site due to a lime based sound deadening between joists, we noted that the floor is of suspended construction, comprising of 225mm x 75mm joists, and we suspect they are spanning front to back over stone built sleeper walls.

Rainwater penetration due to defective lime pointing, defective flashings and past defective rainwater goods has raised the moisture content of timbers to above 20%, these conditions have resulted in the germination sphores from the wood destroying fungus (Serpula lacrymans), which has travelled in a downward direction, bringing about the breakdown of the following timbers:

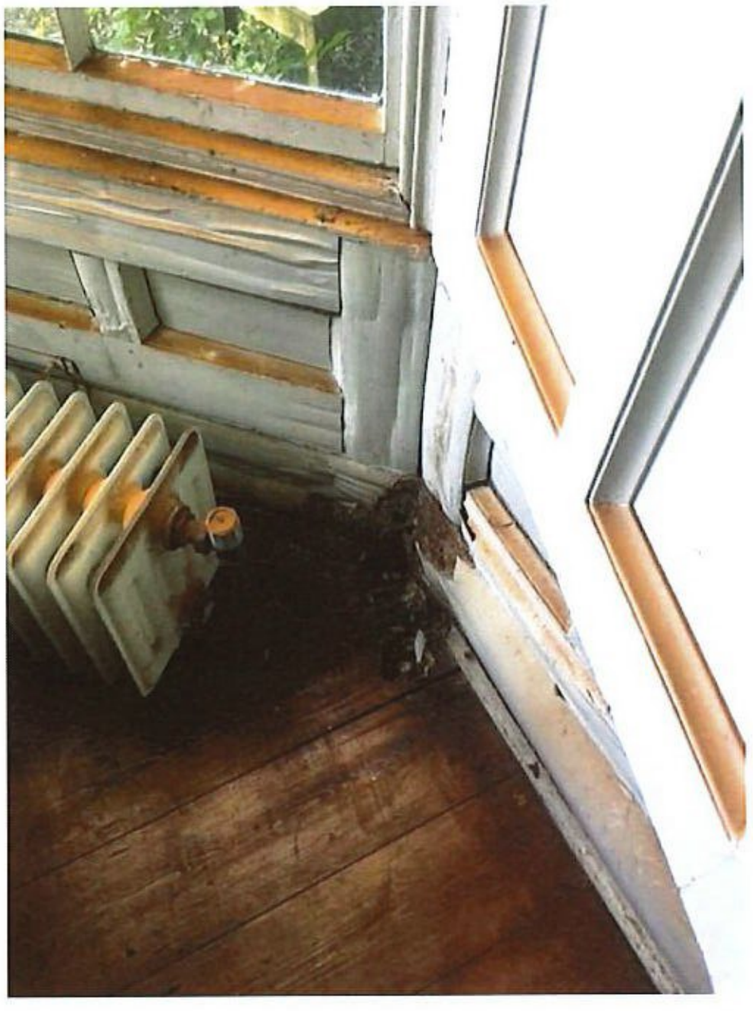
Decorative ceiling plaster, decorative cornice, architraves, window linings, box window frame, window shutters, skirting boards, floor joists, square edged floorboards sound deadening material and wallplates causing breakdown in places.

We also suspect the dry-lining to walls is severely affected with attacks of dry rot, however, this could not be inspected without damage occurring.

**Floorboards and joists**

**Box window shutters**

Architrave



Decorative panels

**b) First floor timbers**

**2no Bathrooms**

GENERAL OBSERVATIONS:
The inspection was severely restricted due to the risk of floor collapse, however, a limited torchlight inspection revealed the following:

Floorboards were lifted in areas as indicated and a partial sub-floor inspection was carried out with the aid of a torch and mirror.

Floorboards, architraves, skirting boards, and decorative paneling, and were noted to be distorted and corrugated due to the attack of Dry Rot (Serpula Lacrymans) and severe breakdown is occurring in places.

Dry Rot Sporophores were noted to various areas, more noticeably to the floor joists and flooring, visible from the underside

Dry rot spore dust was noted to the whole floor area in the bathroom, and white sanitary items has a fine layer of dust over

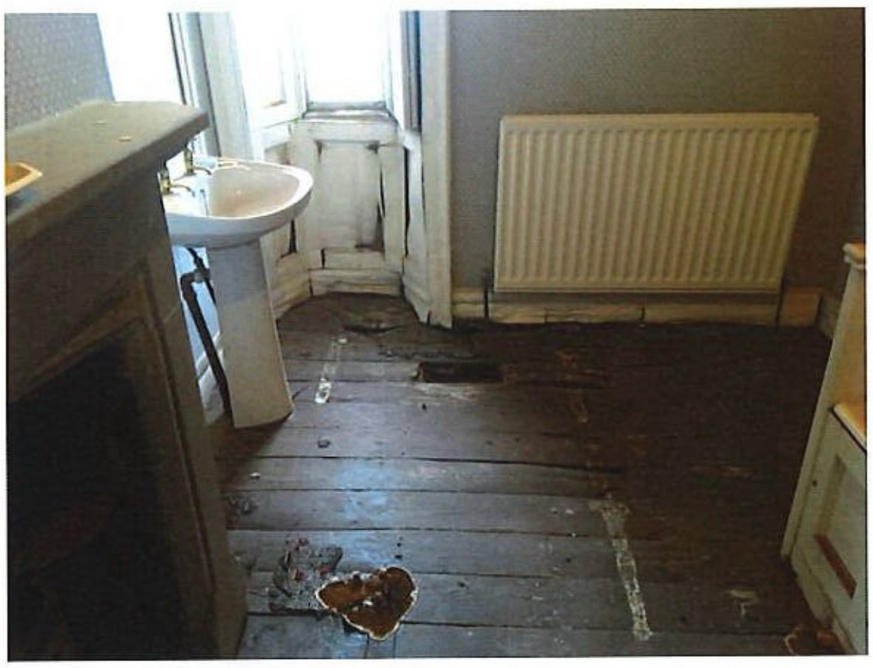
Although we could not fully inspect floor joists due to a lime based sound deadening between joists, we noted that the floor is of suspended construction, comprising of 225mm x 75mm joists.

Joists have been overlaid with a softwood square edged board.

Rainwater penetration due to defective lime pointing, defective flashings and past defective rainwater goods has raised the moisture content of timbers to above 20%, these conditions have resulted in the germination sphores from the wood destroying fungus (Serpula lacrymans), bringing about the breakdown of the following timbers:

Dry-lining to walling, architraves, window linings, box window frame, skirting boards, floor joists, square edged floorboards sound deadening material and wallplates causing breakdown in places.
Please note that decay has resulted in joists breaking down severely, and we suspect joists are decayed up to 3.2m back into the room, which may have to be renewed in their entirety back to the solid spine wall

Please note that we strongly suspect Dry Rot is affecting floor joists to the en suite area, however, at this stage we have made no allowance to renew any floor timber in this area, due to the cornice being so decorative to the floor below.



**Bathroom**

**En Suite**

**Ceiling below En Suite**

**c) First floor timbers**

**Bedroom**

GENERAL OBSERVATIONS:
The inspection was severely restricted by furniture, however, a limited torchlight inspection revealed the following:

Floorboards were lifted in areas as indicated and a partial sub-floor inspection was carried out with the aid of a torch and mirror.

Floorboards, architraves, skirting boards, box window frame, decorative panelling and square edged floorboards were noted to be distorted and corrugated due to the attack of Dry Rot (Serpula Lacrymans) and severe breakdown is occurring in places.

Although we could not fully inspect floor joists due to a lime based sound deadening between joists, we noted that the floor is of suspended construction, comprising of 225mm x 75mm joists.

Joists have been overlaid with a softwood square edged board

Dry Rot Sporophores were noted to various areas, more noticeably to the box window panels

Dry rot spore dust was noted to cobwebs to the box window panelling

Rainwater penetration due to defective lime pointing, defective flashings and past defective rainwater goods has raised the moisture content of timbers to above 20%, these conditions

have resulted in the germination sphores from the wood destroying fungus (Serpula lacrymans) bringing about the breakdown of the following timbers:

Dry-lining to walling, architraves, window linings, box window frame, skirting boards, floor joists, square edged floorboards sound deadening material and wallplates causing breakdown in places.

Due to heavy Dry Rot Mycellium to joist ends, we strongly suspect the bressumer beam over the bay window is affected with Dry Rot

**Floorboards decayed**

**Decorative panelling**

**d) External**

GENERAL OBSERVATIONS:
Lime pointing was noted to have perished at high level, and due to faulty rainwater goods has resulted in rainwater penetrating the building structure.

Vegetation was note to have been removed from the bay window area, however, vegetation was clearly visible through the top sash of the ground floor bay window, which again has resulted in rainwater ingress.

We noted that a cast rainwater pipe has been renewed recently, which we suspect was due to faults with the previous section.

Vegetation was noted at high level around the chimney stack, which we suggest is addressed by our Client.

We suggest all leadwork to the bay roofs are inspected and repaired as necessary.

**Vegetation to chimney Stack**

**Vegetation growing through sashes and renewed rainwater pipe**

**Summary and Recommendations**

We appreciate that decorative and structural items should be retained where possible, due to the listing of the property, however, due to the severity of the Dry Rot attack, we must stress to our Client that it is our opinion that the floor to the bathroom and corner of en-suite, is in a dangerous condition, and requires immediate propping, to prevent further collapse.
Please note that we suspect the Dry Rot attack has also affected the dry-lining to main walls, however, this could not be inspected at time of survey due to the risk of cosmetic damage.
Due to the severity of the Dry Rot attack in the bathroom, we must stress that the adjoining en-suite floor will be affected, however, as stated previously, we have made no allowance to carry out any remedial works to the en-suite, due to the extremely ornate ceiling and cornice in the room below.

Please note that drying out appears to be occurring throughout the rooms affected with Dry Rot, and we noted no evidence of rainwater ingress at time of second survey

As requested we enclose our quotation for the following structural works:

- Protect floor area of dining room only, with Corex or hardboard sheets
- Remove 2no light fittings and store
- Remove all radiators in areas and rooms designated for treatment
- Install fixed access scaffold to dining room, under ceiling to create crashdeck for Health and Safety purposes. (build around acrow props)
- Remove sanitaryware to bathroom and set aside in bedroom (no allowance to refit)
- Remove sound deadening between joists and dispose of (please note this will create extreme amounts of dust)
- Remove floorboards and dispose of (we will retain floorboards which are not affected with Dry Rot, and we will leave on site for our Client)
- Remove decorative cornice to areas as indicated and dispose of
- Remove decorative plaster ceiling moulding and dispose of
- Remove dry rot affected joists only, to bathroom and bedroom (not ensuite)
- Bolt section alongside original using 12mm bolts and plate washers. (Please note that full length joists may be required, laid to the solid spine wall, however, we suggest a structural Engineer is employed by our Client, to confirm that this is acceptable.
- Supply and fit softwood close boards over floor joists
- Hack off wallplaster to the inside of the dining room shutters to allow drying out
- Splice repair 1no cill to the bathroom window (Temporary measure only, to prevent rainwater ingress)
- Fit fixed scaffolding to bay area only outside and internally
- Remove sections of stonework above bay
- Insert pins through walling, if required
- Prop and install steel pins above bay window wall to support structural ceiling timbers
- Remove bay window floor joists at ground level
- Remove bay window roof timbers
- Remove bressumer beam
- Install replacement timber bressumer beam
- Install timber to timber joist hangers to bressumer beam to support floor joists and bay flat roof timbers
- Install bay window roofing timbers and decking
- Remove steel pins
- Clients own stone mason to make good stonework as required
- No allowance to fit lead roof coverings
- Remove all scaffolding and clean site

Client to instruct specialist cleaning company to clean rooms.

DRY ROT (SERPULA LACRYMANS)

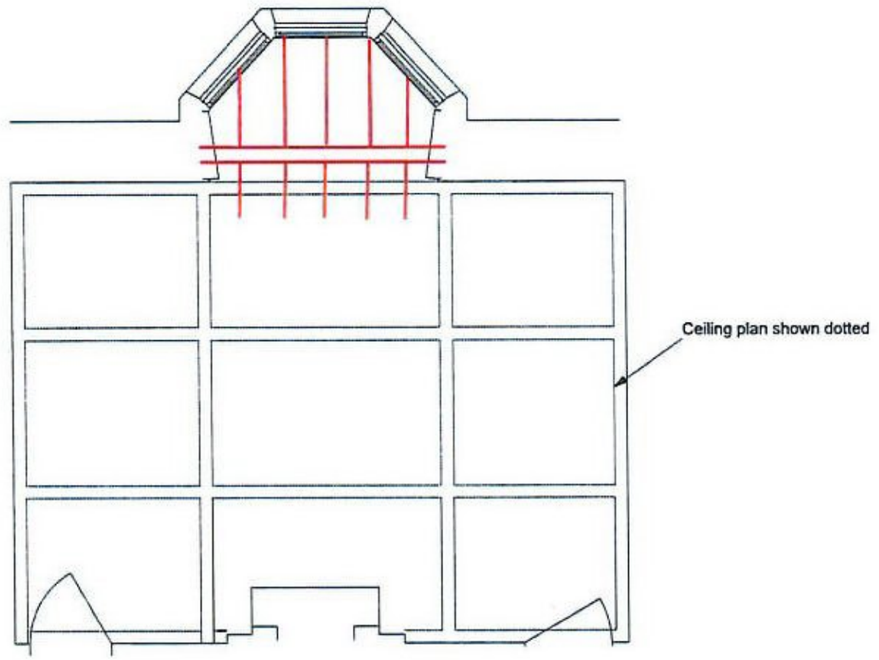
This is the major malignant fungal decay of buildings often causing extensive damage. It is able to grow through bricks, mortar and plaster with its strands being able to spread the fungus to dry timbers.

Dry Rot spores will germinate and grow in timber with a moisture content of between 20 and 30 per cent. The fine fungal thread (hypha) digests the cellulose and hemi cellulose fractions of the wood, but is unable to attack the structural lignin. These remain as a brittle matrix which cracks into cubes under differential stresses. Cuboidal cracking is also a characteristic of many wet rots and does not automatically indicate the presence of dry rot. Fungal hyphae may clump together into a variety of structures known as mycelia which takes various forms depending on the surrounding conditions. They may fill a humid cavity as a cotton wool-like mass, or grow across the surface of the timber, as grey-white skin. Active dry rot has a fresh white or greyish appearance. Some hyphae group together to form conduction strands. Their main function is the conduction of nutrients, through inert non-nutrient materials (brickwork etc) to permit eventual colonisation of other timbers. Their relatively impervious outer layer, together with an unusual alkaline tolerance, allows them to survive in the mortar layers within masonry and walls and an infested area may be full of dry rot strands. The dry rot fungus may tolerate relatively lower moisture contents and, through this, and other quirks in its biology, is potentially capable of considerable destruction.

Yours faithfully

[redacted]

R McQueen **C.S.R.T**
**MGM LTD**




Bressumer repair to first floor area-

All dimensions should be checked on site.
Do not scale from this drawing



Please note that due to access limitations there have had to be some assumptions made on thickness of external walls etc

**EMBLETON TOWER**
**EMBLETON**
**ALNWICK**

**PLAN OF DINING ROOM SHOWING AREAS OF DRY ROT**

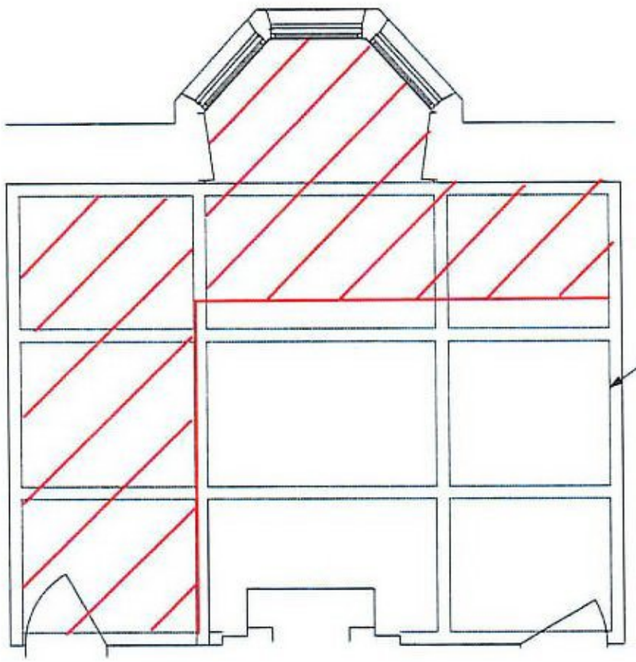
Scales 1:50

Date Sept 2017 BR

Spence and Dower LLP,
Chartered Architects
25 Main Street
Ponteland
Newcastle upon Tyne NE20 9NH
Tel: (01661) 820071
Fax: (01661) 823788
architects@spenceanddower.co.uk

M631 / 01

Rev.




Dry Rot repairs at first floor level-

All dimensions should be checked on site.
Do not scale from this drawing



Please note that due to access limitations there have had to be some assumptions made on thickness of external walls etc

**EMBLETON TOWER**
**EMBLETON**
**ALNWICK**

**PLAN OF DINING ROOM SHOWING AREAS OF DRY ROT**

Scales 1:50

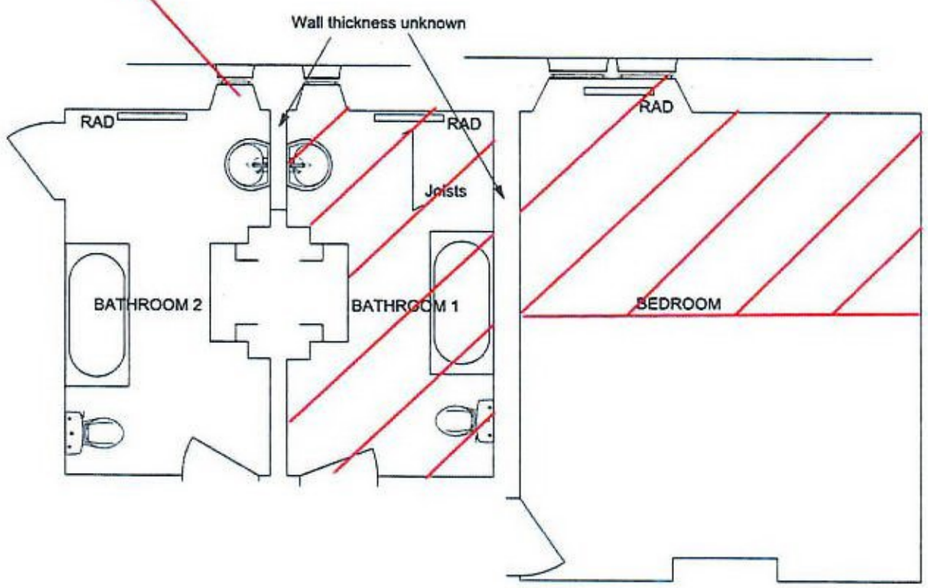
Date Sept 2017 BR

Spence and Dower LLP,
Chartered Architects
25 Main Street
Ponteland
Newcastle upon Tyne NE20 9NH
Tel: (01661) 820071
Fax: (01661) 823788
architects@spenceanddower.co.uk

M631 / 01

Rev.

Apply Probor to accessible timbers




Approximate area of floorboards and joist renewal- / /

All dimensions should be checked on site.
Do not scale from this drawing



Please note that due to access limitations there have had to be some assumptions made on thickness of external walls etc

**EMBLETON TOWER**
**EMBLETON**
**ALNWICK**

**PLAN OF SOUTH WEST BEDROOM AND ADJACENT BEDROOMS**

Scales 1:50

Date Sept 2017 BR

Spence and Dower LLP,
Chartered Architects
25 Main Street
Ponteland
Newcastle upon Tyne NE20 9NH
Tel: (01661) 820071
Fax: (01661) 823788
architects@spenceanddower.co.uk

M631 / 02

Rev.