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## NORTHAW HOUSE, COOPERS LANE, POTTERS BAR EN6 4PS

## **RESTORATION PLAN**

Document Title	Condition Survey for Northaw House, Ballroom Wing and The Coach House
Document Reference	D122

This document to be read in conjunction with all other documents listed within the Restoration Plan's Contents page.

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## **Building Condition Report**

Northaw House, Coopers Lane, Northaw, EN6 4NG House, Ballroom, & Stable Block



Client:	LW Developments Ltd
Inspection Date:	25 <sup>th</sup> & 26 <sup>th</sup> January 2022
Weather:	Overcast and cold, but dry
Surveyor:	Stephen Boniface
Our Ref:	6717

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## **1.0 INTRODUCTION & SUMMARY**

We have pleasure in preparing this report following receipt of instructions from LW Developments Ltd (hereinafter referred to as "the client").

Our instruction was to undertake an inspection of Northaw House, Coopers Lane, Northaw, EN6 4NG (hereinafter referred to as "the property" or "the building"), to prepare and submit to the client a condition survey. This report is intended to satisfy the requirements of the Conditions attached to Planning Permission and Listed Building Consent obtained.

The instruction and limitations to the inspection and report are as set out in the letter of engagement, which is repeated within the Appendices.

For Definitions of Terms used in this report please see the Supplementary Technical Guide

This discussion document should be read in conjunction with the Appended documents that include plans and a document that provides more detailed notes on what is required to specific areas and elements of the buildings.

#### 1.01 OVERALL APPRAISAL

The building is in a generally dilapidated condition. At the time of inspection, it had a temporary roof over and main roof coverings had been removed.

There has clearly been an issue of water ingress through the building and dampness generally within. The dampness has become manifest by way of condensation mould in many areas.

In the basement I found evidence of brown rot fungus (dry rot), and this is affecting the ground floor above. There may be other local outbreaks of rot to areas that are presently concealed.

There are indications of past structural movement and evidence of past structural repair. Further input from an engineer will be necessary with regard to specific areas. This will be made clear in the following report.

There are signs of past movements of the building and indications that structural repairs and interventions have been carried out in the past. Whilst there is no specific evidence of any significant ongoing movement, there are areas that may need restraint and further structural repair as part of the refurbishment. Again, these are matters for the engineer to comment upon.

Within the building there are signs of rot affecting timbers particularly in the basement and further investigation of the extent of rot and need for treatment etc will be necessary. Some areas will need to be cut out and replaced as part of the repair.

Within the building there are signs of extensive dampness particularly causing condensation and this is affecting plasterwork, particularly the ceilings. Many of these will need to be removed. There is a concern that once the property is heated there could be further failure to laugh and plaster ceilings in particular.

It is quite clear that past works have included the covering of some of the surfaces. Therefore, I noted places where plasterboard has covered over panelling. It is assumed that present surfaces will be retained, leaving panelling and older surfaces concealed.

It is understood that the last programme of major work carried out this property was probably in the late 1990s, since which time the building has been gradually neglected and has been unoccupied for several years.

In preparing this report the view has been taken that there will be minimum intervention and avoidance of removing material unnecessarily. Therefore, where older surfaces may be covered by modern finishes these will be left covered. As the building is to be converted into a series of self-contained flats it is more likely that all the finishes and surfaces that may remain within the building will be left concealed and encapsulated as part of the works generally.

In preparing this report and the scheme of repairs it is noted that the past applications for planning and listed building consent have included other reports, heritage statement etc. These have been considered. Although

some information in this report is a repeat of what has gone before we have tried to avoid unnecessary repetition.

When considering the works required, in view of the condition of the property, due regard has been given to good conservation principles. It is considered that in most cases the self-evident condition dictates the extent of work that is required. Discussion about the application of conservation principles has only been provided where thought necessary.

#### **Primary Concerns**

Over the years we have found that there are a few primary concerns common to most clients and these are addressed below.

#### **Timber Infestation & Decay**

There is an outbreak of dry rot found in the basement affecting the south-east corner of the ground floor section of the building. It is suspected that rot may exist around the ground floor area in this corner of the building and perhaps slightly further up.

There are signs of past water ingress from above but no specific evidence of rot outbreaks elsewhere. Nonetheless, there are areas where significant leaks have occurred and during work there is a likelihood that some further rot outbreaks will be encountered and will need to be dealt with.

Although many of the beetle infestation flight holes are thought historic, the probability of active infestation being present is high. As part of the work, it is presumed that general treatment will be undertaken to timbers as they are exposed and where found necessary.

#### 'Damp'

The main problem to the upper areas of this building has been water ingress. This has been primarily through leaks from the roof and rainwater goods. The ground floor areas do not appear to have been affected by "rising damp". Although there is a need to ensure permeability to finishes to the building, there should be no need for specialist treatment at ground floor areas.

In the basement some standing water was found in voids under floors and because the basement is partly below ground the walls and floors exhibit some damp. However, the levels are not thought to be excessive. Where the basement is used for service rooms or storage it is thought unnecessary to undertake any specific damp treatment. However, where basement areas are to be formed into habitable spaces there will be a need for structural damp proofing, probably in the form of a membrane system.

#### **Structural Movement**

There are signs of structural movement to the building in the past. This has not affected the structural integrity of the main building. There are signs that repairs have been carried out together with some restraint. Nonetheless, further advice from an engineer should be sought because it is thought that some further restraint and local repair will be necessary. These areas will be mentioned later in this report.

#### Services

It is presumed that all services within the building will be completely renewed. This report will discuss services on the basis that renewal will be taking place.

#### Further Investigations

An engineer will be required to look at various structural matters. These will be identified later in this report but in general terms there are issues at roof level around the wall plates and heads of walls that need to be looked at. There is a question of movement around the rear semi-circular bay. There will be a need to look at the stable block generally. Whilst the engineers on site it would be sensible to have the engineer check all parts of the building.

The reason for the standing water in voids under the basement floor needs to be investigated. This seems to be some form of conduit and perhaps an old drainage system. If this is the case, it might be appropriate to check that it functions or at least that it is not blocked. It may be that it could be reused as part of the scheme.

The spread of rot etc will need to be investigated by a company specialising in such matters.

It is presumed that there is an asbestos survey, but one will be needed prior to any work within this building.

#### Scaffolding & Access

At present there is a scaffolding system around the building primarily to support the temporary roof. However, this scaffold system can be maintained and adapted to provide access around the building generally.

However, eventually the scaffolding will need to be extended to the Edwardian wing, around the ballroom and around the stable block. Therefore, additional scaffolding will be required for the works.

#### **Contingency Sums**

Generally, when dealing with any property, it is prudent to allow a contingency sum for unforeseen and unexpected works being uncovered. In any given project one would normally allow a contingency sum of 8%-10% of the contract sum. This would normally form part of the contract.

## 2.0 GENERAL INTRODUCTION & DESCRIPTION

## 2.01 SOIL TYPE

We have conducted no excavations to expose the footings/ foundations or the sub-soils beneath. Therefore, we cannot comment on the below-ground nature or conditions. The British Geological Survey states that the sub-soil is a layer of pebbly gravel over London Clay. An accurate assessment cannot be made without sub-soil testing, but it is reasonable to presume a clay content. There are no underground workings nearby as far as we are aware.

Following research by the British Geological Society there is concern that climate change may result in an increased risk of ground movement affecting building and this could become an issue within the next decade. Therefore, as it is impossible to predict precisely what might happen, it is necessary to ensure that you have sufficient cover for structural movement (subsidence, heave, and landslip).



#### 2.06 GENERAL DESCRIPTION & HISTORICAL DEVELOPMENT

The front of the building is taken to be north facing for the purpose of this report. Externally references to "left" and "right" will be as if facing the elevations from the road or gardens/ grounds. Internally such references will be as if facing the wall/ element looking out from the centre of the room.

The list description suggests that building was constructed in the late 17th century whereas the Victoria County history indicates that earlier building was demolished, and the present building put up in the last quarter of the 18th century. Looking at the features of the present building on site, I believe the Victoria County history is probably more accurate. It is my belief that this building generally dates from the late 18th century.

Looking at the ordnance survey extracts from the mid-19th-century it seems that the building retained the same basic footprint through to the turn of the 20th century. The main changes thereafter were to what is now called the Edwardian wing and ballroom. It seems that what previously existed was probably demolished and the Edwardian wing and ballroom were then constructed afresh. The features and nature of construction seen on site would tend to correspond with this assessment.

By the time the building was listed in 1972 it was already used as offices, and it is likely that the conversion took place in the mid 20th century. Some of the works seen within the building are typical of that period. However, it is understood that there may have been a major programme of work in the late 1990s.

I understand that the building was last occupied in or about 2016 and then only the ground floor areas were in use.

From Victoria County History – Hertford: Vol 2

In the north-west is Nyn Park, the manor estate, and The Woodlands, the residence of Mr. Charles Armitage. The old house of Nyn Park was pulled down in 1774, and its materials used in building Northaw House.





#### 2.07 ACCOMMODATION

The floor plans appended are provided to identify rooms, areas, doors, windows, etc., where mentioned in this report. Where extracts may be used in the appended document the plans are not to scale.

#### 2.10 PLANNING STATUS

The property is located within the district of Welwyn Hatfield. The building is not located within a Conservation Area. The building is listed Grade II as being of architectural or historical interest and below is the information contained in the National Heritage List for this property.

Heritage Category: Listed Building

Grade: II

List Entry Number: 1100970

Date first listed: 22-Aug-1972

Statutory Address 1: NORTHAW HOUSE, COOPER'S LANE

Details:

Northaw TL 20 SE NORTHAW AND COOPER'S LANE CUFFLEY (east side)

12/227 Northaw House

22.8.72

GV II

House, built in 1698, now office. Painted plaster on red brick. Slate mansard roof. 2 storeys and attics over sunken basement. 7-window elevation stepping forward in 3 shallow projections, the centre 2 projections and the angles with chamfered quoins. Continuous moulded eaves cornice with square modillions. 1st floor band. Pedimented to 3-window centre with bullseye window. C1800 semicircular porch with 2 Doric columns and pilaster responds fluted at the necks. Flush panel door in moulded frame. 6 stone steps and plain iron railings, similar railings fronting ditch. Recessed 1st floor sash windows. Ground floor french windows. Box dormers. Flanking quadrant red brick walls. Stone flag entrance hall with groin vaulting and reeded door surrounds each side. C19 replica staircase. Original service staircase with barley twist balusters on right centre.

Plainer 2-3 storey service blocks on W join with late C18/early C19 former stable block in painted brick, the slate roof with central ventilator. 1:4:1 windows, the outer bays recessed and with 2-storey relieving arches. (Pevsner (1977)).

Listing NGR: TL2745802412

#### AND

Heritage Category: Listed Building

Grade: II

List Entry Number: 1100971

Date first listed: 22-Aug-1972

Statutory Address 1: STABLE BLOCK AT NORTHAW HOUSE, COOPER'S LANE

Details

Northaw TL 20 SE NORTHAW AND COOPER'S LANE CUFFLEY (east side)

12/228 Stable block at Northaw House 22.8.72

GV II

Stables. Mid-late C18. Red brick. Hipped slate roof with central clock turret. 2 storeys. Bands at sill level and to eaves. 1st floor segmental-headed blocked windows. Plain pilasters each side of central door. N elevation has 2 dummy windows. 7 similar windows on E side. Turret has square base, open arched belfry with moulded cornice. Ogee leaded dome with ball finial and weathervane.

Listing NGR: TL2748902407



## 3.0 BUILDING ELEMENTS – NORTHAW HOUSE

## 3.01 ROOF & RAINWATER DISPOSAL

#### **Roof Coverings**

Over the main part of the building the roof coverings have been stripped and set aside. Over the Edwardian wing and ballroom, the roof coverings remain as well as roof coverings to some of the lower areas of the building.

Whilst it cannot be confirmed when roof coverings were last stripped and recovered, it is unlikely that any of the roof coverings are original. It is most likely that work was undertaken in the 1970s or thereabouts, probably when the building was converted to offices. It is quite likely that further extensive roof work was undertaken in the 1990s.

My recommendation is that all roof coverings should be stripped and where possible the material should be salvaged and set aside for possible use.

To the main roof pitches, it is recommended that salvaged slates and replacements might be used for recovering. Replacement slate should be properly sourced to match the original as far as possible.

The precise build-up of the covering is to be determined by the architect. This is because some areas might need to incorporate insulation as a warm roof structure.

Where there are flat roofs, these will need recovering. Traditionally there would have been lead coverings. Consideration should be given as to whether lead could be reused bearing in mind the risk of theft. Alternatives might be considered provided they are good quality and provide a long lasting surface considered to be appropriate for the nature of the building and the quality of the conversion works.

Where there are parapet gutters, valleys, flashing abutments, etc, these should be formed in lead, as appropriate.

The roof over area G-7 is glazed and this will need to be taken off and a new glazed roof installed.

Over the main entrance the canopy roof will need to be removed. However, it is quite apparent that the present canopy covers an earlier structure. A decision needs to be made as to whether to reveal this earlier structure as part of the work. Nonetheless, the roof covering needs renewal.

#### **Roof Structures**

Many of the roof structures were not accessible for inspection.

Where the main roof was accessible there are a couple of areas where past water ingress has caused damage and weakening. These isolated areas will need careful repair, but such work can be undertaken as part of the recovering of the roof.

At second floor level some of the wall plate areas have rotted in the past. This does not appear to be recent, but there are clearly areas of weakness and the need for some repair and replacement of wall plate sections together with re-forming of the rafter's wall plate junctions and securing wall plates to the structure. Advice from an engineer will be necessary to ensure that the work is undertaken in a manner that will not cause damage and will prevent future issues of movements of the roof structure generally.

Where there is no access to roof spaces a provision should be made for the possibility of local repair and some strengthening. That said, there were no external signs of a failure to roof structures.

There are some areas to the Edwardian wing where water penetration has occurred and where there could be some damage to the roof at eaves areas. Allowance should be made for repairing these parts of the roof frame.

#### Rainwater Goods & Rainwater Disposal

As part of the work to this building it is recommended that all existing goods be dismantled and removed.

Whilst some of the older cast-iron goods could be salvageable, the risk of a future problem and leaks would follow. Therefore, in view of the works being undertaken and the conversion to flats, it is recommended that new rainwater goods be installed throughout. The architect should include for new goods throughout.

When designing the goods, the system needs to be adequate to cope with the water. Where there are hoppers there should be provision to prevent blockage and/or some overflow facility to the hopper area.

It is vital that the routes of rainwater disposal should be checked and designed in such a way that it ensures rapid removal of rainwater from the building with minimal risk of water ingress to the building itself.

#### 3.02 CHIMNEYS, FIREPLACES & FLUES

#### Chimney Stacks (External)

The chimney stacks are unlikely to be used as chimney flues. Therefore, the flues should be capped in an appropriate manner. It is recommended that they be capped with appropriate cowlings to prevent rainwater penetration but allowing some ventilation of the flue void. The purpose of this is to help reduce the risk of condensation within the void itself.

It may be that some flues will be used for ducting, for example extractor fan ducts. The architect will need to design these into the scheme.

The flaunching's around pots will need to be checked. Some appear to be cracked and will need repair.

The chimneys have been repointed and repaired using cement mortar in the past. This is not causing a widespread problem. Therefore, sound, and secure cement mortar should be left in place to avoid unnecessary damage to brickwork. However, where mortar is loose and deteriorating it should be carefully raked out and repointing undertaken using a lime mortar.

To visible faces of chimneys there were some areas where local brick replacement and repair will be needed. These are shown in photographs appended. Allowance should be made for further brick repair to those areas that could not be seen but will be accessible during the works at high level.

Based on this inspection none of the chimneys appear to require rebuilding.

#### **Chimney Breasts Fireplaces & Flues**

Much of the plasterwork to chimneys has been damaged by water ingress and dampness generally as well as by condensation. Replastering should be carried out, as discussed later in this report, and shown in photograph within the appended document.

It is noted that some fireplaces once existed but are no longer in use. It is presumed that these will remain unused.

#### 3.03 WALLS & LOADBEARING STRUCTURE

#### Foundations & Ground Movement

Whilst the main part of the building exhibits no sign of any significant structural movement historically there are indications of past movement to the rear bay. It is apparent that repairs have been undertaken in the past what is unclear from visual inspection is whether there are any hidden works, such as underpinning. An engineer should be asked to comment, and it may be necessary to undertake some local excavation by way of trial hole to investigate ground conditions on what may or may not have been undertaken in the past. The engineer can then make an assessment as to what further works may be required, if any.

Bearing in mind that these flats will probably be subject to mortgages in future, and it will often be necessary to provide a statement of structural adequacy. Therefore, it would be advisable to have an engineer involved from an early point and one that can provide a suitable statement on completion of the work that would satisfy mortgage companies.

Although the area has a predominantly clay subsoil and could be vulnerable to subsidence in certain situations, there are no other signs of any significant problem. It is thought that the mass of the various

structures has compacted the soil and it is likely that the footings are sufficiently deep to ensure that the building has a low vulnerability to subsidence. The exception being the bay because this probably has a shallower less sufficient foundation and it is a structure of far less mass.

#### General Structure - External & Internal

At the heads of walls, it is noted that some of the parapet areas and brickwork to the pediments, under some of the wall plates, etc needs local rebuilding in places. This is a part of what the engineer should look at when considering the roof structure and its bearing onto the heads of walls.

The main parts of the building there are no signs of any significant lateral movement. It is not thought necessary to provide any additional lateral restraint, based on what could be seen.

In the ballroom the upper floor has been removed. Therefore, some lateral restraint has been taken away within this structure. There are no signs of movements, but the conversion works within this building should look to provide adequate lateral restraint through the internal structure.

The heads of windows and doors show no signs of failure. Whilst there are indications of historic settlement there did not appear to be any appreciable ongoing or active movements of these areas.

Once render and other surfaces have been removed as part of the renovation and conversion work it might reveal some weaknesses to brick arches etc. Allowance should be made for the possibility of some local repair and strengthening. However, there were no superficial signs that any of these may rebuilding.

The other concern with these openings is that traditionally there would be concealed timber lintels behind the brick arches and of course it is impossible to state whether these are affected by rot or infestation. On the basis that there is no superficial evidence of a problem it is thought unlikely. The exceptions will be where water penetration has clearly occurred. To those parts of the building, it will be necessary to open up and investigate because it is thought likely that some of these lintels will need to be replaced.

As these will be concealed elements it will be for the engineer to advise on the most appropriate replacement, but it is likely that concrete or steel lintels will need to be used for such replacements rather than timber. The problem with inserting an oak lintel into these areas is that it would need to be green oak and there is a high risk of movement causing cracking ongoing problems for several years after completion of works. This will create a maintenance issue long after the properties are occupied as individual flats.

As the works of conversion and alteration are designed consideration will need to be given as to where openings are to be created, if indeed new openings are formed.

Once again, an engineer should be involved and advice with regard to any alterations to openings within the structure.

#### Single-storey toilet block

This structure is thought to date from the 1970s or thereabouts it is a structure typical of that period only outer walls are cavity brickwork. The roof is a flat felt covered roof. The condition internally is very poor with signs of leakage, condensation, etc.

The work that would be required to bring these up to modern day standards will be significant. These are not high quality structures and have no historic merit. Indeed, they could be considered detrimental to the building. Therefore, my recommendation as part of these works, these single-storey areas should be demolished and any replacement structure carefully designed to not only work better with the aesthetics of the main building but also to provide modern insulation standards, etc.

#### **Elevations & External Finishes**

Generally, the elevations are rendered and painted or paint onto brickwork.

To the render areas there are a number of surface cracks and defects that will need to be filled and repaired as part of the preparation and redecoration.

During the works to elevations careful hammer testing of render should be undertaken to establish whether it might have lost key and might need to be removed and patch repairs. For the most part however, it seems likely that render will need to be filled rather than replaced. Where replacement is needed a like for like approach should be undertaken to match the original as closely as possible.

Around the bases of the walls, it is important that render should not be in contact with the ground that the capillary break should be formed so that moisture cannot track back up behind render at ground floor level.

It is likely that more extensive repair perhaps re-rendering will be required around the heads of walls, to the pediments and high-level areas where there has been greater degree of water ingress from failed rainwater goods etc in past years.

Where elevations are painted some of the paint has deteriorated and in many areas the brickwork is becoming visible. Before any attempt at recreating the surfaces has made the paint should be carefully cleaned down to remove all loose and friable material this should also aim to remove all impermeable modern paint finishes.

Once paint has been removed it may reveal some spalled brickwork where individual brick replacement will be necessary. However, until the paint is removed it would be difficult to ascertain the full extent of the work that might be necessary in this regard.

There will be a need to carefully remove vegetation growing out of brickwork and this is particularly evident to the North elevation on the Edwardian wing at high level. Joints should be raked out and repointing carried out in lime mortar. A suitable biocide should be applied to these areas to ensure that if there are any remaining seeds these do not germinate.

Once elevations have been repointed and repaired generally a decision has to be made as to how to finish these areas. If the brickwork is to receive a paint finish it is recommended that a traditional lime wash or modified lime wash should be used for such work. However, it may be considered appropriate to apply an external insulation and render system. The architect will need to design the elevation finishes as appropriate.

Where there have been areas of water ingress there will be a need for more extensive repointing of repair.

#### **Internal Surfaces & Finishes**

In the past the original finishes have been covered by what seems to be plasterboard. There are some areas where it is apparent that all the panelling remains behind them plasterboard has been placed over the top.

In those few areas where the panelling could be seen it has been extensively damaged. It is suspected that this was during the works of the 1970s when it is believed that most of these internal finishes were applied.

Removal of these internal modern finishes could reveal the older surfaces, but this does not mean that those services will be appropriate for leaving exposed. It is suspected that many areas of panelling etc that have been covered up will be in poor and damaged condition. Furthermore, conversions of flats means that there will be a need to ensure compartmentalisation in terms of fire the result of this is is that the surfaces will need to be covered anyway to achieve appropriate fire rating.

It is considered appropriate to leave existing surfaces in place wherever possible and to simply make good where necessary. It is not recommended to expose older surfaces and panelling. It is thought best to leave these undisturbed in place. Of course, where it is exposed, a record could be made of it for future reference.

Existing surfaces have been affected by condensation mould and deep cleaning and removal of mould will be needed throughout.

Where there are areas of panelling remaining, such as staircases, this will need to be cleaned down and repaired where necessary. In order to comply with fire safety, it is thought most appropriate that an intumescent finish would be applied but it will be for the architect to design the scheme.

#### 3.04 FLOORS

At basement level there are sections of the floor surface that have been lifted and in places missing. This reveals what seems to be some form of culverts or conduit for water under the floors. Whether this is part of the original rainwater system is unclear. One area in particular will, where the surface is largely removed, the voids are filled with water. The reason for this is unclear. This does need further investigation.

If it is found that there is a system of drainage under this building and if found to be blocked it needs to be cleared so that it functions. There needs to be a series of access points installed so that it can be regularly checked and cleared.

However, if some of this is simply due to a past problem and the areas need pumping clear then this should be undertaken.

Before designing the scheme for the basement areas, it is important that the passage of water and what is happening under these floors is properly understood. This will help to eliminate the risk of future damp problems arising.

Of course, where these floors have already been taken up, they will need to be made good upon completion of the works. However, there may be other areas that will need to be taken up to undertake the investigations suggested above.

Where the basement is to be used for services and general storage, I see no need to undertake any major work. The floors are presently sound and despite what has been discussed above about some standing water under part of the floor, there were no superficial signs of a major damp problem. The course, it should be noted that these floors must not be covered with impermeable materials that could trap moisture in future and it is important that these areas be left permeable such that any moisture that does occur can freely escape before causing any particular problem.

In the basement areas where habitable accommodation is to be created, it will be necessary to create surfaces that will remain dry. It is important that the passage of moisture behind the surfaces is not inhibited. Therefore, some form of membrane system would probably be most appropriate. The reason for this is that it does not usually inhibit the passage of moisture but does result in dry internal surfaces.

Over the basement some of the floor areas are suspended timber constructions. Because of ceilings within the basement the beam ends, joist ends etc could not be seen but there were no specific signs of a major problem. As part of the work, it would be sensible to undertake some local opening up to check these ends in case there is a need to undertake strengthening or re-support widespread exposure of these floors is not thought necessary.

Some of the basement ceilings are formed by vaulted areas and the floors above are formed on these and are therefore a form of solid floor structure. These appear sound and there is no evidence of failure to the vaulted areas.

Towards the south east corner there is an area where dry rot is affecting the ground floor timbers. This needs to be opened up further to establish the full extent of the rot outbreak. The rot needs to be removed so that the extent of physical damage can be ascertained, and then appropriate repairs carried out to this section of the building. Of course, it is vital that the source of damp is dealt with as part of the work.

At the south-east corner beyond the area where there is dry rot, there is a section of ground floor with substantial void beneath that was not safely accessible. There are a series of brick columns supporting the floor structure but within this there are areas of collapsed brick etc.

The floor above does not appear to be suffering unduly, but this subfloor area (accessed from the basement) should be cleared and made safe for access. It will then be necessary to check the support structure and the joists above as it is likely that some repair and strengthening might be necessary to this area.

To the south side of the building there are gaps or voids between the main rear walls at basement level and the ground externally where there seems to be some form of retaining wall. There are services run within these gaps and it seems that they provide some ventilation and perhaps drainage at the rear of the building. These areas could not be fully accessed but needs further investigation. This is especially important when designing habitable areas that might be at the rear of the building. It will be important to maintain a gap between the wall structure of the building and the surrounding ground to help relieve any direct moisture transference from the ground into the building at basement level.

Walking around the ground floor is generally, the floors appeared sound. Even where there are signs of dry rot there are no superficial indications of a major problem, and the floor is not excessively springy at present. Nonetheless, the floors affected by dry rot will need opening up and repair with some replacement timber etc as part of the scheme. Until the full extent of damage is known it is difficult to specify the precise repair methods etc.

But the rear, the flooring around the bay area exhibits signs of dampness and what this is above where the dry rot was found. Despite the fact that the floor shows no sign of any particular weakness there will clearly be a need to open up and repair this area.

Other ground floor areas appear sound.

To the front of the building a couple of floorboards have been lifted to reveal old tugging within the floor voids. The scheme of works to provide appropriate separation in the floors should avoid having to lift these areas wherever possible. There are a number of reasons for this. Firstly, there is the practical reason of not wanting to have to remove such material from a conservation point of view it would be preferable to try to retain the material provided it is not problematic in terms of the future structure.

Without lifting rather ground floor boarding it is difficult to say how far this material might extend elsewhere in the property.

Whilst it is not possible to state for certain that the ground floors will not need major work, apart from where there has been a dry rot outbreak there is nothing to indicate the need for extensive repair.

In the south-west corner at basement level there are the vaulted rooms and above this is a tiled floor. This floor has been painted and coated. The paint and coating surfaces should be removed. The architects need to decide how to finish this floor, but it is recommended that the existing floor be left in place.

Elsewhere to ground floor areas where there are solid floors, it is generally recommended that these be left in place rather than lifted. There are areas, particularly to the western section, where dampness is affecting the floors but not to a significant degree. It is likely that to these floors a membrane system will have to be laid over the top. Of course, this may depend on the precise use me with regard to these floors.

A large part of the ground floor in the Edwardian wing could not be seen from the areas that were visible there were no signs of major problems to the floor. It is presumed that this whole area has probably had a modern floor laid during past works, perhaps when converted to offices. Based on what could be seen it seems unlikely that any major work will be needed to these floors and certainly no lifting and replacement of the floors is thought necessary.

Within the Ballroom wing there is parquet flooring in places that remains. There is no evidence of any particular damp problems through these floors and where appropriate the parquet flooring should be made good. Whether it is kept as part of a feature within the converted building is for architects to consider. The alternative is simply that it be covered over.

The upper floors within the building are generally sound. They are of suspended timber building construction throughout most of the property. There are areas where boards are loose and will need to be re-secured.

Bearing in mind that the conversion will probably require upgrading in terms of sound and fireproofing it is likely that many of these floors will have to be exposed to facilitate such work, or at least some of it. During that work some local repair might be needed. In particular, any old notches etc should be infilled with folding wedges.

There are areas where dampness has affected the floor and whilst no outbreak of dry rot was visible, I cannot exclude the possibility that rot may have started to affect the structure beneath. These areas identified below. These areas will need to be opened up for further investigation and to establish whether there is rot and, if so what further repair etc will be needed.

In the ballroom wing the upper floor will need to be completed and as part of the work an engineer will need to advise on structural issues relating to the insertion of the floor.

But the rear, where the bay adjoins the building, there are areas of plaster repair and inserted steel structure. Whilst this appears to be generally sound there are areas of past repairs the questionable. An engineer should be asked to look at these as part of the inspection of the structure generally.

#### 3.05 CEILINGS

There are a number of ceilings that are still lath and plaster. However, over the years some repairs, and replacements have occurred. Furthermore, dampness has caused much damage.

This building was last occupied a few years ago (at least 6 to my knowledge). It has had some awful modernisation in the past and many features have been lost or are covered.

The building has had a lot of water ingress and general damp issues with most rooms showing varying degrees of condensation damage, in some rooms very heavy mould is prevalent.

Room G2 is the only one with a decorative plastered element to the ceiling and much of it is damaged with large sections already missing (collapsed). It is a lath and plaster ceiling, and the plaster is quite thick. Even

to areas still apparently intact there are bulges and it seems likely that the key has been lost. The mould is very dense in places, and it will take a lot to remove it, some of this will involve yet more moisture and application of some pressure.

The visible mould is extensive and the likelihood of it being in voids is high. As this building is to be converted to high-class flats, we need to consider issues such as fire separation, acoustic isolation, and general health issues for future occupants. Two particular health matters are the mould (that visible and that hidden in voids) and (as someone mentioned) the risk of anthrax.

Lath and plaster ceilings usually fail when the nibs of plaster between the laths crack/fail, and the plaster loses its key. Initially this does not usually lead to collapse, but as the loss of key spreads to a larger area the weight of the plaster can result in sudden collapse. The cause of such problems is usually some form of damp causing distortion to the laths. This, in turn, leads to cracking of the plaster nibs, etc.

If caught early enough it is possible to secure the plaster back and rescue a ceiling. Sometimes quite large areas can be re-secured back by screwing through the plaster (suing screws and wide washers) into the joists above. There are some methods that can re-form nibs from above, but these are more complex.

Here the damp problems are obvious, and I have no doubt the laths have warped, etc., and that this is the main cause of failure. I think it reasonable to presume that most of the ceiling has 'failed' in this way – it just has not yet come down. When the building is heated (when occupied) and when upper floors are in use (causing vibration), I have no doubt the rest of the ceiling will come down.

In my opinion it is not salvageable as it is. I think it is too far gone to re-secure. I am also concerned about the extent of mould and other potential damage (i.e., rot) to concealed timbers above this ceiling. Therefore, reluctantly, I feel it has to be taken down. I think if it were left in place and hidden behind a new ceiling, there is a risk it could later come down and the problems of dealing with it would be compounded by the new ceiling.

Before anything happens however, I recommend careful and full recording.

Consideration has to be given to the need to achieve fire and acoustic separation; there will be work needed to the separating floor/ceiling structure. The Architects will need to consider this and design the separation and insulation accordingly.

There are the following approaches needed to the present ceilings:

- 1 Clean down, patch repair, fill any cracks and leave in place.
- 2 Remove loose and damaged areas, clean down, make good and re-form, as appropriate, leave in place.
- 3 Remove main flat ceiling areas but retain perimeter cornices (cleaned as necessary). Re-form flat ceilings.
- 4 Install completely new ceilings.

The above ignores whether the existing ceilings will be upgraded, or whether new suspended ceilings will be installed. The advantage from a long-term conservation viewpoint of installing new suspended ceilings is that the original ceilings can be left in place (removing only loose areas likely to fall anyway). It means less intervention regarding the existing ceilings, apart from general clean down of condensation.

#### 3.06 JOINERY

#### **External Joinery**

There are windows from each phase of past work to the building. There are some sash windows from the earliest building, and these have lambs-tongue beadings. There are later sashes from the early and mid C19th, with wider beadings, but no horns. There are also some post 1850s sashes with horns, some of these probably from the Edwardian works. There are some Crittall windows from the 1930s-1950s period and then later windows from the 1970s, or thereabouts.

There are some windows that are already removed due to poor condition, some are in need of extensive work, and some simply require overhaul, easing and adjustment.

The later windows (C20th) are of no or little aesthetic or historic merit.

The same can be said for doors.

Regarding windows, there will be a need to upgrade in terms of thermal performance/energy conservation. Where windows are replaced consideration to be given to the installation of suitable windows with double glazed panes. However, where existing single-glazed windows are retained, there will probably be a need to install good quality bespoke draught-proofing and secondary glazing.

There are the following approaches needed to the windows:

- 1 Overhaul, ease, adjust, install draught-proofing and secondary glazing.
- 2 Repairs, overhaul, ease, adjust, install draught-proofing and secondary glazing.
- 3 Replace with window to match original. Consider whether to be single or double glazed the former with secondary glazing.
- 4 Replace window with new unit design and nature of glazing to be decided.

External doors are generally capable of overhaul and general making good to leave in sound working condition. However, there are some modern doors that could be replaced from an aesthetic viewpoint.

#### **Stairs**

All stairs capable of overhaul with no need for complete replacement.

Undersides of all should be upgraded to provide appropriate fire separation and acoustic insulation, as necessary.

Where handrails are less than 900mm above floor level Architect to design appropriate heightening.

#### **Internal Joinery**

There are various original/older doors that have been 'upgraded' for fire purposes int eh past. There are a number of replacement modern doors.

- 1 Where doors have been replaced with modern fire doors in the past it is recommended that these be removed and replaced with suitably designed fire doors.
- 2 Where original/older doors have been upgraded in the past (with boarding to faces, etc), these will need to have the boarding removed, the doors overhauled and then appropriate upgrading with intumescent finishes, strips, etc.

There are some areas where panelling is still in place and exposed. This will need to be carefully stripped back, repaired, and repainted. Where necessary intumescent finishes to be used to provide appropriate fire protection.

There are no internal cupboards, kitchens, fitted units, etc., of any merit. It is presumed that other internal joinery will be fitted out as appropriate to the converted units.

#### 3.07 DECORATIONS

Extensive cleaning down of condensation mould will be necessary throughout. This will need to be carefully undertaken to ensure complete removal.

Older/original joinery may contain lead paint in undercoats. Have testing undertaken to establish whether this is the case and, if so, where.

Joinery to be stripped back and rubbed down to smooth and appropriate surfaces (not necessarily to bare wood). However, where there has been an unnecessary and inappropriate build-up of paint this should be removed. Filling and local repairs to be undertaken as necessary. Redecoration to be undertaken in accordance with Architect design.

#### 3.08 CONSERVATORY

The conservatory is in a very poor and dangerous condition. What remains should be carefully dismantled. If any ironwork can be salvaged for re-use, then this should be set aside.

Only once the area is cleared will it be possible to ascertain the extent of work needed to floors, low level walls, etc.

Consideration must be given as to how the conservatory will be used in the new scheme.

## 4.0 BUILDING ELEMENTS – STABLE BLOCK

## 4.01 ROOF & RAINWATER DISPOSAL

Much of the roof has been removed together with the cupola to the roof apex. Where the roof covering remains, it is in poor condition. The roof over the single-storey area is also in poor condition.

All roof slopes should be stripped of existing slate and that slate set-aside where it might be salvageable for reuse.

The rafters appear to be in poor condition. In particular, over the single-storey area it is anticipated that the rafters will need to be replaced. Over the main building it may be possible to salvage a proportion of the rafters or specific lengths. It seems that the upper parts down to the Perlin are in better condition with most of the damage being to the lower areas and the wall plate. Once the roof covering and building has been stripped it will be possible to assess rafters in more detail. The purpose of this report it should be anticipated that perhaps between 25% and 50% of the rafters will need replacement or major repair over the main building.

The principal king post trusses appear to be sound but there might be a need for local repair at the eaves areas.

In order to reinstate a new wall plate around the building the heads of walls will need repair and some rebuilding will also be required. The wall plates need to be tied down to the structure.

It is likely that an engineer will need to provide input with regard to some of the repairs and lateral restraint.

As part of the reinstatement work the cupola needs to be repaired, recovered, and reinstated in place.

The slopes should be re-boarded and covered. The architect will no doubt design a scheme that is likely to incorporate a warm roof structure.

With regard to the single-storey area it is considered that the roof needs to be completely reconstructed.

To the south east corner of the stable block there are walls of a structure that once existed. If this is to be brought back into use it will need a roof covering to it.

The few remaining rainwater goods are corroded and in generally poor condition. However, most areas have no gutters etc. Therefore, a new rainwater system needs to be installed comprising gutters, downpipes, and gullies etc.

#### 4.02 CHIMNEYS, FIREPLACES & FLUES

There is evidence that the building once had a chimney at the north end and there is evidence of what seems to have been a hearth at first floor level to the north end. This has been taken away in the past and it is presumed that it will not be reinstated.

## 4.03 WALLS & LOADBEARING STRUCTURE

#### Foundations & Ground Movement

There are signs of movement to the building. This does not appear to be recent, but it will be necessary for an engineer to inspect and advise further. It will be important for the engineer to be able to issue a certificate of structural adequacy. This will be necessary if the buildings are to be mortgaged in future.

Whilst it seems unlikely that underpinning or major structural repair of this nature will be needed, the engineer should advise further.

#### **General Structure**

There are areas of cracking around the building and some careful re-stitching and repair will be needed. However, this should be undertaken following input from the engineer. At the heads of the walls there are several areas where local rebuilding will be necessary. This was particularly evident about mid-way along the East elevation. However, as the roof is stripped off the heads of the walls will be properly exposed at which time further repair and rebuilding may be identified.

Although there is no evidence of any significant lateral movement to the building at present, a large part of the interior has been removed in the past thus removing any lateral restraint that might have once existed by way of the internal structure. The engineer should advise further as to how the upper floor should be inserted and used to provide lateral restraint etc in future.

To the west wall of the single story section on the west side of the building there is some cracking indicating movement but again this does not appear to be particularly recent. There is however a possibility that this single story structure might need more extensive repair and cannot completely exclude the possibility of this needing underpinning.

The arches overheads of windows are generally sound with no specific sign of failure. Internally many of these windows have timber lintels over the openings. These will need to be inspected at close quarters. It is anticipated that some might need to be replaced particularly the upper lintel over the main opening to the mid East side.

However, at present there is no specific evidence of failure to these, and it may be found that they are in better condition than at first would appear and can be left undisturbed.

#### **Elevations & External Finishes**

There are areas where extensive repair and repointing will be necessary, but also areas where the brickwork is reasonably sound and there are no major defects pointing.

On the west side of the building there is vegetation growing out of the projecting string line at first floor level and this needs to be removed and a biocide applied. The whole of this string line needs repointing and some local repair particularly where there has been the vegetation. The top of this string line should be protected with a lead.

It would be sensible to continue the lead cap around the whole of the projecting string line. Along the north area there is some repointing to be carried out to the string line. Along the East elevation again there are areas of repointing and repair needed. In particular, towards the southern end of the East elevation there is vegetation climbing up and over the building that needs to be removed. It is anticipated that some repair behind this will be required once it has been taken away.

To the elevations generally there are a number of bricks that have spalled faces. There are also quite a number of patch repairs using cement. It will be necessary to undertake some careful repair to the brickwork. Where cement patches have been used these need to be carefully removed and it is anticipated that the bricks behind will need to be replaced. Where extensive spalling has occurred, the bricks will need to be carefully cut out and replaced with suitable matching brickwork. I would not recommend attempting to turn around any of the existing bricks.

The west side of the building there is only a limited amount of spalling, and this is at high level towards the southern end. To the north elevation there is spalling to the ground floor areas but less so to the upper parts and I would anticipate perhaps no more than 20% of brickwork needing attention. However, to the east elevation there is extensive damage and spalling and perhaps 30% of the brickwork will need attention.

Where the brickwork and pointing in sound there is no need for any work even to these areas it would be sensible to allow for perhaps 20% of these areas needing some repointing.

All repointing and mortar work should be carried out using a traditional lime mortar.

#### Internal Surfaces & Finishes

At present the upper parts have no finishes as such and presumably the interiors will need to be finished to provide appropriate thermal insulation and energy conservation, probably meaning a form of internal lining. The architect will need to design this into the scheme.

At ground floor level there are remnants of the stable stalls remaining. It is thought that at least one, perhaps two could be renovated and retained as features to the ground floor internal areas as part of the internal wall finishes as this would be an acknowledgement of the original use of the building.

There are areas of internal brickwork that will need to be repaired. For example, by the door into the southern section there are areas of brickwork to the door reveals that need rebuilding and some low level areas of brickwork that appear to be missing and need to be rebuilt along the East wall. Once the existing stabling, troughs etc have been removed it is possible that further damage to brickwork will be exposed internally such that other brick repairs and partial rebuilding might be necessary.

#### 4.04 FLOORS

The present ground floors are the original stable blocks. These are uneven and worn. However, they are part of the historic fabric. The architect will need to consider how to deal with these areas, but it is suggested that these floors be left in place and a membrane system and floated floor be installed above.

The upper floor at the north end remains in part. However, it is supported by Acrow props.

It would appear that end bearings for the beams may have failed and these will need to be cut away and new bearings reinstated. Likewise, floor joists bearing into external walls. In addition, I suspect that a steel support will need to be incorporated. However, it is anticipated that the floor joists could probably be left for the structure of the floor. However, an engineer should advise further and of course it depends on the design of the separating floor.

At the southern end the floor is largely missing with only a couple of principal beams remaining. These are propped. An engineer could assess whether these are capable of being reused as part of the scheme, but it is presumed, for the purpose of this report, that the whole of the upper floor to the southern end will need to be constructed anew.

#### 4.05 CEILINGS

There are no ceilings in the building at present. New ceilings will be needed throughout.

#### 4.06 JOINERY

#### **External Joinery**

Although some of the subframes remain much of the external joinery is missing or in very poor condition. It is anticipated that new external joinery will be needed throughout. Where existing windows remain in part the pattern and style of these could be copied for the replacement windows. Likewise, the doors are in poor condition and replacement matching doors should be installed.

#### **Stairs**

The stair is presently unsafe for use. It is an original stair but typical of its period and for this type of property would not comply with modern building regulations for a principal stairway.

In view of the proposed conversion of this building it is still necessary to install a new stairway. Whether the existing could be reused as part of the scheme is for the architect to consider but it is thought unlikely to be sufficient as a principal stair within the building once converted.

#### **Internal Joinery**

There is no internal joinery as such at present. I have already commented on the possible retention of some of the stable stalls as a 'decorative' feature.

## 5.0 TIMBER & DAMP

### 5.01 MOISTURE AT LOW LEVEL

No information about past work has been provided and it is not clear whether this building has had damp treatment in the past. To some areas there is the possibility that some form of treatment may have been carried out in the 1970s, or thereabouts. At the time of conversion to offices such treatment might have been undertaken. If information about past works comes to light the situation should be reviewed in case past works impacts what may be appropriate.

Although the main house was probably constructed without a damp proof course, the Edwardian wing and Ballroom were constructed at a time when physical DPCs were usually incorporated at the bases of walls. There is no obvious reason why any DPC would have failed and the main problem in these areas would usually be bridging the DPC or compromising it in some way. However, no major problems are apparent.

Within the main building, Edwardian wing, and Ballroom there were no signs of a damp problem that would necessarily require specialist treatment in terms of chemical works. As part of the work a membrane system will be used in various areas including to the basement. I presume that this will also be incorporated in the works to the stable. Likewise, I presume that a membrane system will be used for converting the basement areas to habitable spaces.

The advantage of a membrane system is that it does not change the way moisture is moving through the building/structure. However, it does create a dry internal surface. The disadvantage is that it takes up space and can impact floor heights, etc. It also usually requires a sump and pump to remove whatever moisture does run under/behind the membrane. Nonetheless, it is ultimately reversible and is often the most effective method.

Chemical injection, etc., is irreversible and should only be considered as a last resort. In this instance the dampness levels are not significant, and the situation is not at the point of 'last resort'.

As part of the works ground levels should be checked and lowered where high against the buildings. Where there are voids and gaps between the main structure and surrounding ground (as is evident behind the main part of the house), this should be cleared, and the drainage checked to ensure that this area acts as a ventilation and drainage area to protect the main house from ground moisture.

#### 5.02 MOISTURE ELSEWHERE [PENETRATING, LEAKS, ETC.]

The building has had various leaks from roofs and rainwater goods, through wall heads, through defective pointing and due to vegetation growing in walls. The works generally required to this building will resolve such matters.

#### 5.03 CONDENSATION

There is extensive condensation mould throughout the building, particularly the main house and to the ground floor areas. This is due to past leaks, the way the building was occupied and the fact it has stood unoccupied and unheated for some years.

The building will require a deep clean throughout to remove mould.

The works should be designed in such a way that the risk of condensation is removed (or at least minimised). This will probably include appropriate use of extractor fans and perhaps a mechanical ventilation and heat recovery system (MVHR). Any ducting for extractor fans, or such systems, should be rigid and not flexible; in order to avoid the risk of condensation occurring in the ducting. It may be appropriate to consider using the chimney flues as routes for ducting.

#### 4.04 FUNGAL DECAY ('ROT')

There is brown rot fungus in the basement (south east corner) and this has been discussed. There could be smaller outbreaks elsewhere, within concealed areas, due to past leaks. Allowance to be made for targeted work and treatment as the conversion works progress and concealed areas are opened up.

This is usually due to neglect of paintwork, etc., and is where the timber is beginning to deteriorate, but no obvious fungal growth is present. Nonetheless, the possibility of other white and/or brown rot outbreaks is considered to be medium to high risk in this property.

#### 5.05 WOOD-BORING BEETLES

In view of the dampness that has occurred in this property there is a medium to high risk that there are areas of active beetle infestation. Allowance should be made for local treatment and repair during the works.

## 6.0 SERVICES

It is presumed that all services will be renewed. A Mechanical & Services Engineer and an Electrical Engineer should advise further.

It will be necessary to consider whether alternative energy provision might be appropriate.

## 7.0 MISCELLANEOUS MATTERS

This section does not represent a formal assessment of statutory health and safety risks. This section will identify risks where readily apparent or it may reasonably be expected that the risk can be identified within the scope of this visual inspection. The risk will be explained, and guidance given on how the client may resolve or reduce the risk.

### 7.01 HAZARDS

#### Asbestos Containing Materials (ACMs)

It is presumed that there is a recent Asbestos survey, and this should be considered when designing works, in order to assess whether any ACM should be encapsulated and kept in place or removed.

#### Wildlife

No specific issue was noted regarding wildlife, but it is presumed that there is a biodiversity report.

#### Fire Precautions, Protection & Escape

The design of the conversion should be carefully considered to incorporate appropriate but sensitive measures to provide adequate fire proofing, compartmentalisation, early detection/warning, etc. A whole building fire system should be designed.

#### **Carbon Monoxide**

Appropriate CO detection should be included where there is a risk of CO occurring.

#### Lead

It is suspected that there might be lead paint in undercoats to older woodwork. Prior to extensive cleaning down, stripping, etc., the paint should be tested.

#### Glass (at low level)

There are likely to be glazed areas at low level, within doors and some windows. Where there is older glass that should not be removed, a suitable safety film should be applied. Otherwise, appropriate safety glass should be incorporated into the design of the works.

## 7.02 GARDEN WALLS

There are some garden walls close by the building and in some areas adjoining various parts. These walls need extensive repair and some partial rebuilding. Heads of walls ned particular attention.

#### 7.03 GROUNDS

The grounds immediately surrounding these buildings are clear of significant trees, etc., and no invasive species were noted. However, as part of the landscaping these areas will need to be cleared (weeds, etc.) and no doubt appropriate paving, and landscaping will take place.

There are railings to the front of the house and steps up to the entrance. The railings need repair and resetting with missing sections replaced. Some of the stonework in which these are set will need replacement. The steps need some local repair by a stonemason.