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Langstone Lodge
1 Langstone High Street
Langstone
PO9 1RY

Langstone Lodge is constructed in loadbearing masonry supporting timber floors and a timber cut roof finished with slates.

Accommodation is available on three floors of the building.

There is clear evidence of many phases of alteration and addition to the structure, all in a rather arbitrary manner with multiple changes in floor level, materials, and form.

A significant amount of the previous work being exposed is of poor quality and detrimental to the structural integrity of the building.

Condition.



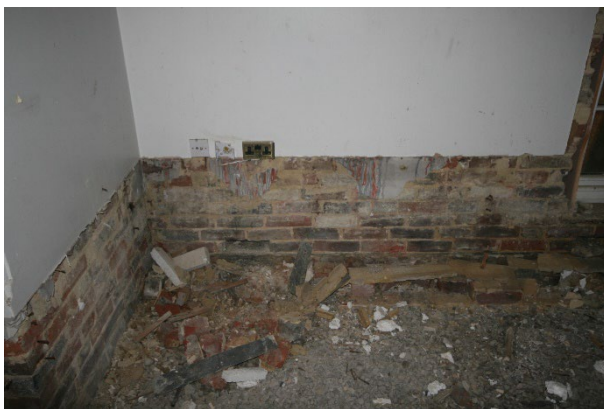
The front elevation has had a significant number of structural repairs including stitching to masonry and render consolidation and replacement.



The rear elevation exhibits a significant number of interventions to the masonry with cracking, discontinuity and bulging clearly evident. Bonding is poor and erratic, and the inserted steelwork is poorly supported and restrained. Large elements of the masonry are loose and can be freely moved.



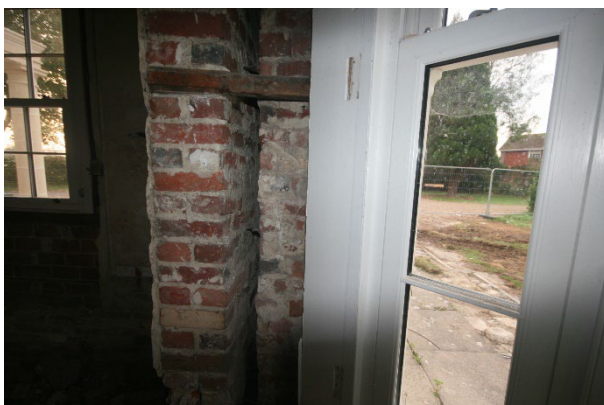
Bulging to the masonry is clearly evident externally and is mirrored internally. Bonding is poor with open joints and variations in brick size. Cracking is clearly evident in a number of locations and the masonry can easily be moved by hand.



Brick bonding is poor throughout structure and varies from course to course. Mortars are erratic and vary from cementitious to lime based in an apparently random manner. Bricks are mixed with blocks showing the various phases of intervention.



A number of random voids have been discovered within the building leaving elements poorly supported and lacking coherent restraint.



Some external walls have been discovered to be two skins of 9" masonry with a cavity and minimal ties. The ties are in poor condition and insufficient to properly restrain the masonry skin to skin.



A significant number of timber elements have been found to be decayed and defective with corroded and poor connections. Timber elements supporting masonry above are decayed with wet rot.



A number of existing joists to the first and second floor have been severely notched in various locations, assumed to be facilitate service installation routes resulting in excessive loss of section and now require strengthening or replacement.

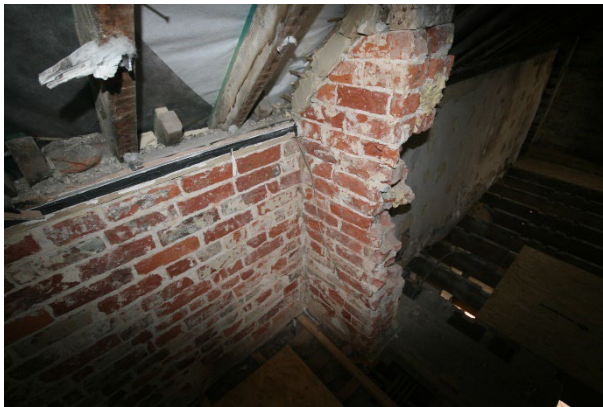


The dwarf walls supporting the roof are poorly bonded, distorted and leaning as a result of the lateral forces exerted by the unrestrained roof structure. These walls are not capable of providing the lateral restraint required for the roof in its current condition.



The roof structure has been previously stripped of all viable support and is now entirely reliant on the stability of the dwarf walls for lateral and vertical support. The form of the roof, with its high collar and long sarking, results in high, unresolved, horizontal loads at rafter bearing level. The

dwarf walls supporting the plates do not have sufficient lateral resistance to contain these forces and are deforming as a result. Also, the roof is constructed from minimal timber sizes with little capacity to resist these forces.



The dwarf walls supporting the roof are poorly bonded and distorted and previous openings have been poorly formed with all previous lateral restraint effectively removed leaving the walls as free-standing cantilevers with insufficient form, mass and strength to resist the overturning moments resulting from the lateral forces exerted by the roof structure. These walls require substantial reconstruction and strengthening to ensure their effectiveness or for the lateral forces to be resolved elsewhere, such as the insertion of a substantial steelwork structure to competently and fully support the roof.

Discussion.

The structure has been compromised by many and various previous interventions which have been poorly designed and executed. The alterations appear to have been carried out with little consideration for the structure as a whole and its overall stability.

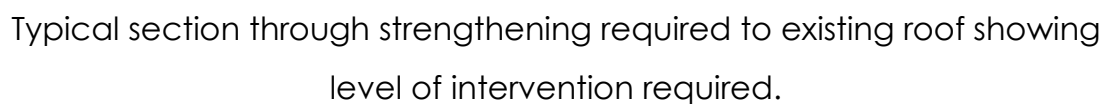
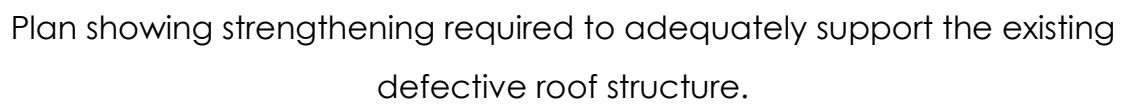
The reordering of the roof with the removal of all vertical support except for the rafter bearings on the wall plate have left it very vulnerable too wind and snow loads and marginal to its self-weight alone.

Some of the interventions, particularly the manner in which the load bearing masonry has been altered, adjusted and modified has left the building vulnerable, particularly given its relatively exposed location.

Significant areas of masonry, particularly on the second floor, will need to be dismantled and rebuilt in a properly bonded and fully restrained manner in order to provide competent structural support to the floors and roof.

The roof is a particular concern in its current form with the minimally sized rafters and high collar resulting in significant horizontal forces at plate level, poorly resisted by the deformed masonry.

The roof structure and the supporting masonry needs to be fully reordered and strengthened to provide a competent structural solution with lateral loads fully accommodated and to negate the horizontal element as much as possible.



Whilst all of the defects, if they were singular deficiencies, are in themselves individually repairable, taken as a whole, they will require some significant interventions, including the dismantling and reconstruction of large sections of defective masonry, the replacement of floor structure and the complete reordering of most of the roof. These interventions will need to be combined with other structural strengthening measures to ensure that the building is sound, fully restrained, and competent.

These works, if carried out to the extant structure, will require significant and complex temporary support if the existing building is to be repaired and reordered in-situ. Work of this nature is of necessity complex and hazardous with a very clear methodology required and the work to be carried out in and around significant temporary structure to ensure that it remains a safe working environment.

The structure will be very vulnerable whilst this work is attempted, and we feel it may be an effort that will not prove to be successful given the nature of the defects.

Given the current condition of the building and the amount of structure that will need to be replaced we feel that this is unnecessarily hazardous to install complex temporary structure and attempt a competent repair. The building will be very vulnerable during these works and particularly at risk as the support is transferred from the existing structural system, such as it is, to the temporary support.

We feel that the careful recording, dismantling, reconstruction and reordering of the building will provide a safer and more satisfactory

structural and architectural solution with load paths clearly defined
and supported with appropriate materials.

It will allow the works to be carried out in a well organised manner and
in safety.

Hockley & Dawson

October 2023

Shown below are a number of current or recent historic and conservation projects.

The Tower of London

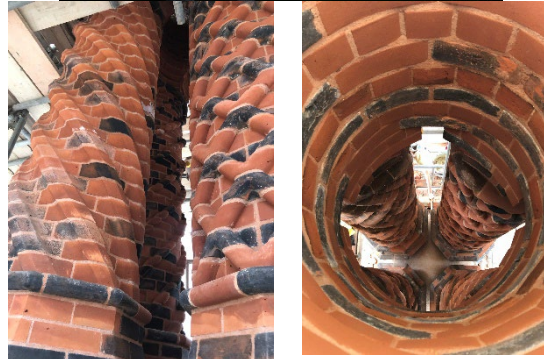
Hockley and Dawson are currently working on a number of projects at HM Tower of London, Hampton Court Palace and Kensington Palace for Historic Royal Palaces.

The picture shows the recently completed White Tower Stairs.



Chimneys

Hockley & Dawson have recently been working on the repair, replacement, and stabilisation of various flues of the 241 decorative chimneys at Hampton Court. This included the dismantling and replacement of Apartment 23 quadrupole flues which involved a lot of recording and re-rubbing of the decorative bricks to form the various patterns so that the masonry could be replaced as original formed



The Masters House. Ledbury

The repairs presented a number of interesting technical difficulties in carrying out appropriate conservation and strengthening to the existing frame without significant interventions.

One solution was to install a cartridge over roof fabricated on the ground in timber cassettes filled with natural insulation and placed over the existing hall roof.

This allowed the historic roof to be presented in its original form with minimum intervention to the original fabric.



Kew Pagoda

Built in 1762 by William Chambers the original dragons did not last very long. The recently completed project has reinstated the dragons to every level and included general repairs and conservation of this unusual structure.



Recent Awards

2023 Georgian Group – Sheerness Dockyard Church
 2023 Georgian Group – Commended - Handel & Hendrix
 2022 Georgian Group – Bledlow Manor
 2021 Derbyshire Historic Houses – Radbourne Hall – new stair
 2021 Georgian Group – Radbourne Hall
 2021 Civic Trust – Hope Mausoleum
 2019 Georgian Group – Kew Pagoda
 2019 Constructing Excellence – Kew Pagoda
 2018 Richmond Society Award – Kew Pagoda
 2018 RICS Building Conservation – 14 Fournier Street
 2018 RIBA London Conservation Award Turner's House
 2018 RICS East – Conservation – Apple Tree Farmhouse
 2018 UK Heritage Awards – Best Loos – Hampton Court Palace
 2018 Civic Trust Conservation Commendation – Holy Sepulchre, Warminghurst
 2017 RIBA East Award - St Albans Abbey
 2017 RIBA National Award - St Albans Abbey
 2017 RIBA East Conservation Award - St Albans Abbey
 2017 Georgian Group - Restoration of a Country House – Highly Commended – Turners House