

# 533 - Marble Hill

House Lift Appraisal

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Revision C

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# Marbe Hill House - Lift Appraisal

## 1. Introduction

### This Report

English Heritage has commissioned van Heyningen and Haward Architects to review the feasibility of accommodating a lift to provide unstepped public access to the upper floors of Marble Hill House.

This is in the context of the proposed representation of the House and the surrounding park to give a much better visitor experience, increase visits and improve the financial performance of the entire site. Part of the funding is likely to be from the Heritage Lottery Fund.

The EH project proposal includes the following objectives:

- Changing the operational basis of opening the house to replicate the Kenwood model. This would entail opening the house 5 days a week on a free-flow basis, using volunteers to enable EH to comply with security and government indemnity requirements.
- Representation of the house, including the conversion of the room which is currently used as a shop and admissions point to provide a space for an introductory exhibition

Currently there is no un-stepped access to the upper levels of the house, which is a major challenge to making the building accessible to the widest possible public.

### Contributors

The study has been done with Martin Thomas Associates who have contributed their technical knowledge of the M&E systems within the existing building and potential lifts.

Agnieszka Sadraei, the Properties Curator from English Heritage responsible for the property, has contributed her expert knowledge of the significance of the house and park to contribute to the heritage impact assessment of the potential lift options.

## 2. Brief

### Brief

Ideally a public building would have a lift able to serve every potential visitor, providing universal access by being sufficiently large and quick to provide access to any type of wheel chair or powered buggy and with assistants. This would imply at least a 12 person lift capacity and a lift with a structural shaft and full pit.

In the context of a small Grade 1 listed domestic building, it was recognised that the degree of intervention and loss of historic fabric and/or impact of the significance of the building that would be required to accommodate this requirement was unsustainable.

It is also worth noting that the relatively narrow door openings and high quality and fragility of the wall and joinery finishes would suggest that use of powered wheelchairs in the house would present serious problems for conservation of the fabric and for safe access and circulation, even if it were possible to provide a lift sufficiently large.

Therefore it was agreed that the brief for this study was to provide lift access to the upper floors for a person using a normal wheelchair. This was considered sufficient due to the need for EH to always have stewards within the building and thus to assist those requiring the lift.

### Management Issues

In setting this brief EH recognises that there are several management implications:

- Visitors using large powered wheelchairs or buggies will need to transfer to a normal wheelchair, outside the house
- These visitors may require assistance from stewards or volunteers
- If a lightweight (platform) lift is installed it will have limited capacity as it will be slow. EH would therefore need to manage demand so that only those who have no option may use it.
- The fire escape management plan will need to allow for evacuation of those unable to use the stairs from the upper floors. This might be possible with evac chairs, and this is being tested by EH. If not, and the lift is required for evacuation, it will require either two separate power supplies or a uninterruptible power supply (UPS) unit. The former will be prohibitively expensive due to the distance between the house and nearby substations, and so a UPS will be required if evac chairs prove unsuitable
- Whether means of escape for disabled people from upper floors is provided by evac chairs or by the lift with a UPS, it will limit the numbers of such people on the upper floors at any time so they can be safely evacuated by the duty staff.

## 3. Summary of Significance

### House

Marble Hill house was built for the remarkable Henrietta Howard, mistress of King George II when he was Prince of Wales, and friend and confidante of some of the cleverest men in England. The house and gardens were intended as an Arcadian retreat from crowded 18th-century London, and provided a setting for the intellectual and social circle that gathered around Henrietta Howard. It exemplifies the villas which formerly lined this stretch of the Thames, and owes its survival to the public campaign to protect the view from Richmond Hill, which adds another layer of value.

Built 1724-29 to the designs of Lord Herbert and Roger Morris for Henrietta Howard, the house is significant in that it largely retains its original layout and form, with wonderful interiors, following restoration by the GLC in 1965-66. It is listed Grade 1.

The staircase hall and downstairs rooms are complemented by a magnificent set of reception rooms on the first floor, culminating in a double height reception room at the centre of the plan looking towards the river. The domestic spaces at the second floor show how the house functioned, even without their furnishings, and provide good space for exhibition and interpretation of the building and its social history. As EH's guide puts it *'There can be few places in England which better recall the atmosphere of fashionable Georgian life'*.

### Landscape

Marble Hill is significant not just for the house itself, but for its setting in its original park. Its carefully calculated location on a slight rise within the park overlooking the Thames is an almost unique survivor from the numerous villas that were built in this period along both banks of the Thames.

The landscape around the house is somewhat degraded, and a major objective of the representation project is to restore the structure and planting of the surrounding avenues, gardens and paths to provide an appropriate and evocative setting, so that park and house are understood and appreciated properly as a holistic conception.

Note: This summary of significance is very brief, but further details are provided in the assessments of impact of each proposal on the following pages.

## 4. Current Circulation and Accessibility

### Landscape and Entrances

The original entrance doors, at each end of the ground floor entrance hall, open from the surrounding paved terraces, in turn part of the network of hard surfaced paths that cover the site. Currently the south door (river side) provides un-stepped access and the north door (lawn side) has two shallow steps. Both original entrance doors are sufficiently wide for a wheelchair.

It is anticipated that nearly all house visitors will enter from the north, and it is a long way round to get to the south door to avoid the steps. Subject to careful consideration of weatherproofing and damp ingress, as well as Listed Building consent, it would be possible to modify the north paving to remove the steps to the front door as part of the landscape works. An alternative with less impact on the fabric and less cost would be to provide a portable ramp for this door, but this would increase the management burden on the house staff and require storage.

The alternative would be to adapt the current entrance route. At present this has two closely-spaced doors on a short right angled route and two steps leading to a small shop and then into the service corridor. The doors and turns and the steps each make it impassable with a wheelchair. The original door in the screen wall is very low, which means that the external level cannot be raised in this location.

Using the original entrance doors has poor environmental and security implications, as each opens directly into the entrance hall. However, given the limited area of space available in the eastern annexe, it doesn't seem sensible to use this space for a ramp within the building.

It is clear that access to the ground floor can be obtained for a wheelchair user, either by using the main south door, or by using the main north door with adapted external levels or a portable ramp, or by modifying the visitor entrance sequence within the annexe. The chosen approach will be determined by the interpretative strategy and desired visitor flow, balanced with the heritage impacts of each and its consequent access works, and is not part of this report.

It is clear that the ground floor can be made accessible without the use of a lift.

### House

From the entrance hall, at present there is no un-stepped access to the upper floors or the attic. There are two staircases within the building.

The principal stair rises from the entrance hall from just inside the north door, to the first floor. It is made of mahogany with a fine patina and very finely carved balustrade. It is an essential and visually dominant element in the entrance hall, and an essential part of the sequence of 'public' rooms within the house.

The secondary stair is set in a servant space within the plan, and serves all levels including the attic. It is also finely made, of 'cantilevered' limestone steps and elegant wrought iron balustrading, as befits its use by everyone who used the house. However, it is steep, and very narrow, with particularly steep winding treads and a low (by modern standards) balustrade. Its central well is lit from the attic dormer window above.

There are records suggesting that there may have been a third stair in the house originally, allowing Henrietta Howard to go directly from her bedroom on the first floor to the breakfast room below. However, there is no evidence for this within the existing arrangement of ground and first floor rooms or in the drawings we have seen.

## 5. Lift Strategic Options

The following options look at the potential lift positions and their advantages and disadvantages. This includes an appraisal of their heritage impacts.

### 5.1. Option A - External to the House

#### Proposal

The interiors of the house are tightly planned and significant, so we investigated the option of locating a lift in an external shaft, beside the volume of the house itself.

This would be to the east or west of the house, and use adapted window openings to access each floor - by removing the windows and lowering the cills. In order to minimise its visual impact the shaft might be steel and glass rather than a solid construction, and separated slightly from the external wall of the house itself.

In order to work with the visitor arrival point, the lift would be best situated rising from the annexe, on the east side of the house. However, its impact on the upper floors principal interiors would be lessened if it were on the western side.

#### Pros and Cons

Pros:

- This would allow a standard 12 person lift to be accommodated, serving all levels except the attic (as the house has a hipped roof the connection at this level would be very intrusive)
- This would have limited physical impact of historic fabric of the house; the loss of two windows and the wall below, and creation of a link at ground floor level.

Cons:

- This would have a major negative impact on the perception of the house in its setting
- The layout of the rooms means the new shaft would best be on the west of the house, which would require total rearrangement of the current entrance arrangements
- It would not be readily reversible
- The access points at each floor for those needing the lift is very different from those using the stair, which could be problematic in term of visitor flow and management
- It would not serve the attic
- A full scale lift with a bespoke shaft design would be extremely expensive
- An intervention of this magnitude would be unlikely to receive Listed Building or Planning Consent if an alternative strategy was possible

#### Historic Building Impact Assessment

Marble Hill House is a unique survival of a suburban villa illustrating the architectural ideas of the English 18th-century Neo-Palladian School and demonstrating many of the features of the small villas designed by Andrea Palladio himself. Externally these ideas were expressed by a compact plan, carefully balanced proportions and perfect symmetry of the main elevations. The architectural interest of the building relies to a great extent on the preservation of the original composition and articulation of the elevations with the centre 3 bays projecting, crowned with a pediment and flanked by side bays.

Historically, no visual precedent for a structure of any height so close to the building exists as the double storey 18th-century servants' wing sat in a pit to the east and was not visible beyond the ground floor level of the house.

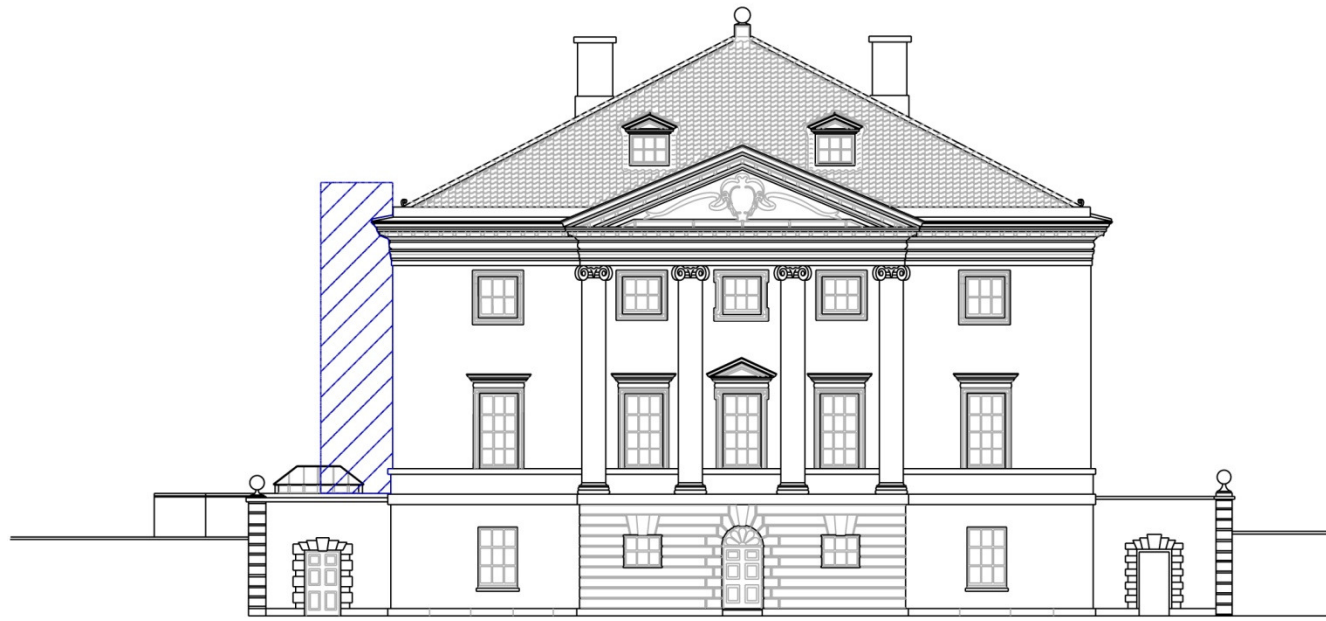
As high quality of the building's architectural merit relies on the carefully orchestrated interplay of individual elements, an addition of a modern lift shaft, both on the east and west side, will cause substantial harm to its design value.

Moreover, the installation of an external lift will required considerable intervention into the fabric. In order to provide access to the house, two windows will have to be removed and the openings enlarged. Internally, as the lift would communicate with rooms of principal historic significance, the perception of the 18th-century layout, circulation and use of spaces would have been distorted considerably. Access to the attic level could not have been provided without substantial re-design of the roof form.

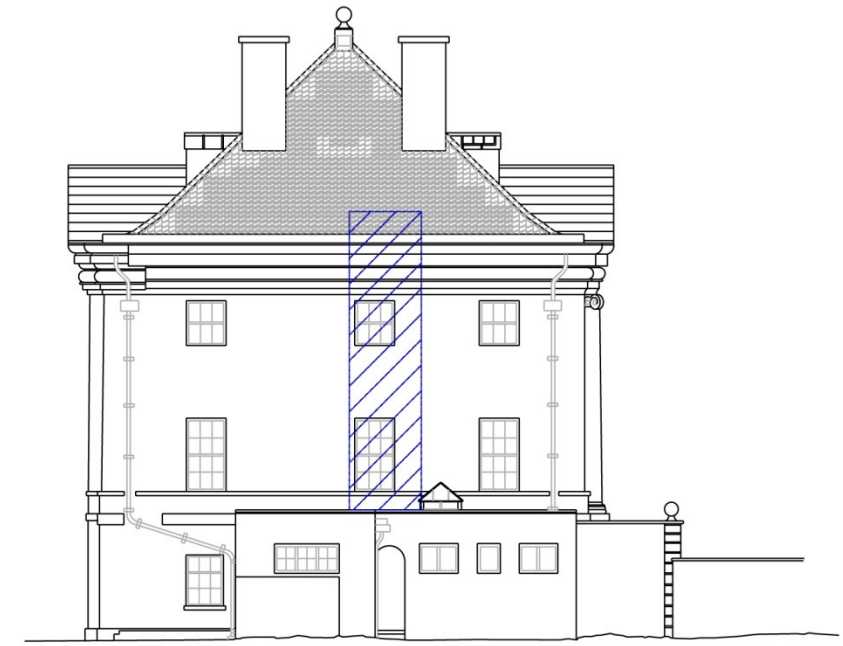
Taking all the above into account, the installation of an external lift will cause substantial harm to the significance of Marble Hill House as a heritage asset, its visual, architectural and evidential qualities. There are no factors which would outweigh the harm caused to the building especially as the lift would not provide access to the attic level and thus the public benefits of such an installation are limited.

#### Conclusion

The negative impact of the perception of the house in its setting, given its symmetrical Palladian form at the centre of a carefully planned landscape setting, and the difficulties this option would lead to in terms of visitor flow, would be so great that this is not a viable option, even if it were judged affordable.



North Elevation



East Elevation



South Elevation



West Elevation

Location of external lift shown in blue

## 5.2. Option B - Within the principal staircase

### Proposal

A lift could be accommodated within the current stair hall.

Given the importance of this interior, and the quality of the original mahogany staircase, this would have to be a stair-climber type device rather than a proper lift.

The stair-climber would be fixed to the principal staircase treads at the wall side and potentially secured back to the wall.

### Pros and Cons

Pros:

- It would provide unstepped access to the first floor
- It would be relatively cheap
- It would involve minor loss of historic fabric, and be readily reversible
- It would be at least partly consistent with the overall visitor flow

Cons:

- It would have a major negative impact on the perception and visual aesthetic of the principal stair and the entrance hall
- It would not provide access to floors other than the first floor
- It would impede, and possibly prevent, use of the principal stair as a means of escape
- The layout of the hall means the rails would run across the hall North window, and clash with the architrave to the Great Room door
- It would create a high management burden for EH staff, as there would need to be wheelchairs on both floors and the main visitor flow will be impeded when transferring to and from the stair-climber

### Historic Building Impact Assessment

The mahogany staircase is a decorative feature of great beauty and of major importance to the understanding of the design and use of the house. Sitting in the entrance hall of its own it was designed not only for essential utility but also forming an important aspect of Georgian hospitality and display - its high aesthetic quality, as the most striking display of joinery in the house, reflected on the taste, means and esteem of the owner. The staircase belongs to a type of 'pedestal staircases' developed by the English Neo-Palladian school and was favoured particularly by Roger Morris who built similar staircases in his other houses such as No 30 Old Burlington Street, London. It is contemporary with the great mahogany staircase created for the first British Prime Minister, Sir Robert Walpole at Houghton Hall, Norfolk.

In its use of mahogany it makes a link not only to Henrietta's royal connections, as the mahogany was gifted to her by George II but also to the Transatlantic Slave trade as mahogany plantations were worked by enslaved Africans. In the view of this the staircase and the entrance hall are of exceptional significance holding a wealth of historical, architectural and evidential values. Creating access for the lift in this position would cause substantial harm to this significance.

The fixing of the stair climber would be similarly damaging, not only to the fabric but also to the aesthetic qualities of the staircase and the entrance hall.

There are no factors which would outweigh the harm caused to the building by these installations especially as the lift would not provide access to the attic level and thus the public benefits of such an installation are limited.

### Conclusion

The solution would only partially satisfy the brief (only serving the first floor). It would be a major negative visual intrusion into one of the key spaces within the house, and cause ongoing management issues.





## 5.3. Option C - Within the secondary staircase

### Proposal

It would not be possible to accommodate a stair-climber device on the secondary stair. Whilst this is the theoretically the only option that could provide un-stepped access to each floor, in fact it doesn't work as the rails would need to cross every door opening into this staircase, rendering it useless. The narrowness and structure of the stair would preclude mounting it on the inner edge of the stair, and any stair climber on the secondary stair would prevent its use as a means of escape.

A small lift could be accommodated within the well of the current secondary stair. This well is only 1100 x 1200mm and further reduced by the curving balustrade uprights which project into the well.

Given the dimensions of the well, this would have to be a bespoke platform lift, and would be considerably smaller than any recommended lift car for disabled users. The landing is uncomfortably tight too.

### Pros and Cons

Pros:

- It would provide un-stepped access to the first floor and second floor
- It would be at least partly consistent with the overall visitor flow

Cons:

- The limited size of the car and the narrowness of the available stair landings and doors would make it impossible for normal/typical wheelchair users to use
- It would not provide access to the attic (the stair steps in plan and the upper level would require major reconfiguration which would change the house roof slopes)
- It would be relatively expensive as a non-standard product.
- Whilst getting in and out of the car the stair would be completely blocked to other visitors
- It would involve considerable loss of historic fabric, including all the elegant iron balustrading to the stairs two lower flights
- It would impede use of the secondary stair as a means of escape
- It would have a major negative impact on the perception of the secondary stair
- It would create a high management burden for EH staff, as there would need to be staffing on the stair to manage visitor flows whenever the lift was used
- It would create serious problems for means of escape. To use the lift for evacuation would block the stair, and there is no refuge space available to mitigate this conflict.
- Fire escape strategy for this option may not be possible, given the narrowness of the landings.

### Historic Building Impact Assessment

The secondary staircase is of good quality design with finely curved iron balustrade. The design of such balustrades in 18th-century architecture was inspired by its use by Inigo Jones in the Greenwich royal palace. Enclosed within a compact well the staircase provides access to all floors as typically for an 18th-century house the great stair would not reach further than the first floor. The upper levels would have been reserved for family and restricted circle of visiting friends and in a house as small as Marble Hill it would have been used by those guests as well as the servants (although Henrietta Howard herself would have probably used a small staircase once positioned in the corner of her Bedchamber and now lost). Because of this function, the staircase has significant evidential value, giving an insight into the circulation within the house and use of the individual floors.

Installation of a lift in this position would involve significant intrusion in the fabric and loss of evidential values while obstructing standard pedestrian access to the upper floors. Therefore the harm to the significance cannot be mitigated by the public benefits of the installation.

### Conclusion

This proposal would be a major negative visual intrusion into one of the key spaces within the house, result in fabric loss and cause major management issues, especially means of escape. It would still not satisfy the brief as the car would be too small and the access over landing to the lift is too tight.



## 5.4. Option D - Platform lift within the closet rooms

### Proposal

A lift could be accommodated with the spaces formed by the series of small closet rooms - on the east of the main entrance hall and vertically above.

A lightweight platform lift could be accommodated within the space, with a car size which is appropriate for the brief. However, the lightweight platform lift is not compliant with fire safety regulations and could not be used as a means of escape in an emergency situation. Consequently evacuation in case of fire would be via an evac chair.

Evaluation and testing of the viability of an evac chair, to be used for emergency escape, revealed the following:

- The secondary stair is not suitable for an evac chair, - two types of chairs were tested.
- The Main stair is suitable for the use of an evac chair.

As these results illustrate, an evac chair can only be used on the main stair which serves the first floor only. Consequently a platform lift within the closet would provide access to the first floor only.

### Pros and Cons

Pros:

- It would provide good un-stepped access to the first floor, with an adequate car size
- It would be at least partly consistent with the overall visitor flow
- It does not affect the stairs or means of escape
- It has negligible visual impact on the key interiors and none on the exterior
- It would create a low management burden to EH staff
- It maintains both stairs as unimpeded means of escape

Cons:

- It would not provide access to the second floor - The secondary stair is not suitable for an evac chair
- It would not provide access to attic - To access the attic would require major reconfiguration which would change the house roof slopes and have a strongly negative impact on the attic stair flights)
- The geometry of the spaces and doors would make it impossible to use a standard car size, and requires a through car
- It would involve loss of historic fabric to the ceiling of the ground floor (the current control room and the floor of the 'bathrooms') Modification of the existing doors may be required to these two rooms.
- This location is currently used for the control panels for intruder alarm, fire alarm and electrical intake and main DB board. All would require relocation.
- This location removes the possibility of a visitor circulation loop which allows one-way flow in the service corridor
- A disabled refuge will need to be provided within a fire protected lobby. This may require the modification of existing doors to suit the fire strategy

### Historic Building Impact Assessment

The small closet rooms served as ancillary spaces to main bedrooms and the Plaid room. They were used by the family for storage of clothing and probably bathing as well as housing some sanitary facilities.

The installation of the lift in this position will entail the loss of the 18th-century decorative, plaster ceiling at one floor and the intervention to the fine mahogany doors and their architraves as the doors may have to be re-hung. The architectural features can be recorded and recreated in the future but the authentic 18th-century fabric will be irretrievable. In addition, these spaces will be taken out of the visitors' route thus having a detrimental effect on the understanding of the life in a small 18th-century aristocratic house, the circulation within the house and daily use of

individual rooms. It will therefore result in the substantial loss of historic and evidential value with some impact on the architectural merit of the building. This would be, to a certain extent, offset by the benefit of providing physical access to the principal rooms on the first floor.

It is essential that the structural implications of tying a lift platform to the building are carefully considered to assess long-term effect on its integrity and stability. It is also important to assess the effect of the lift vibrations on the building's construction.

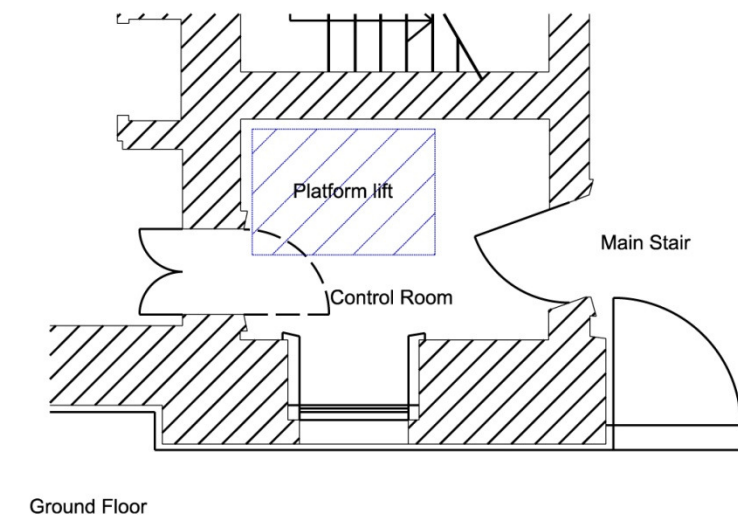
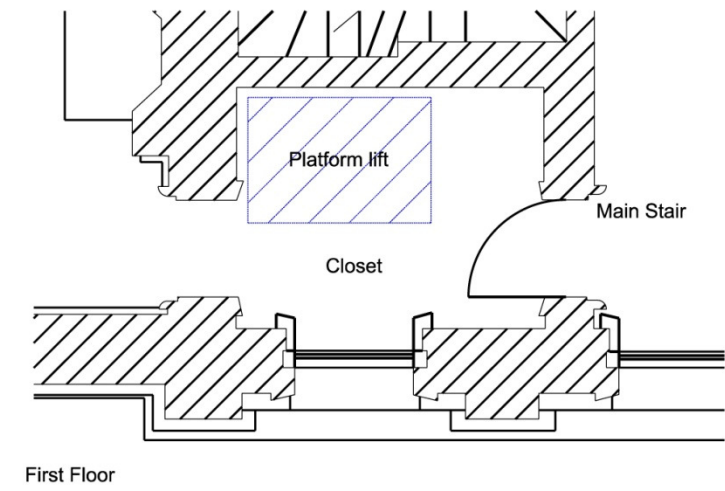
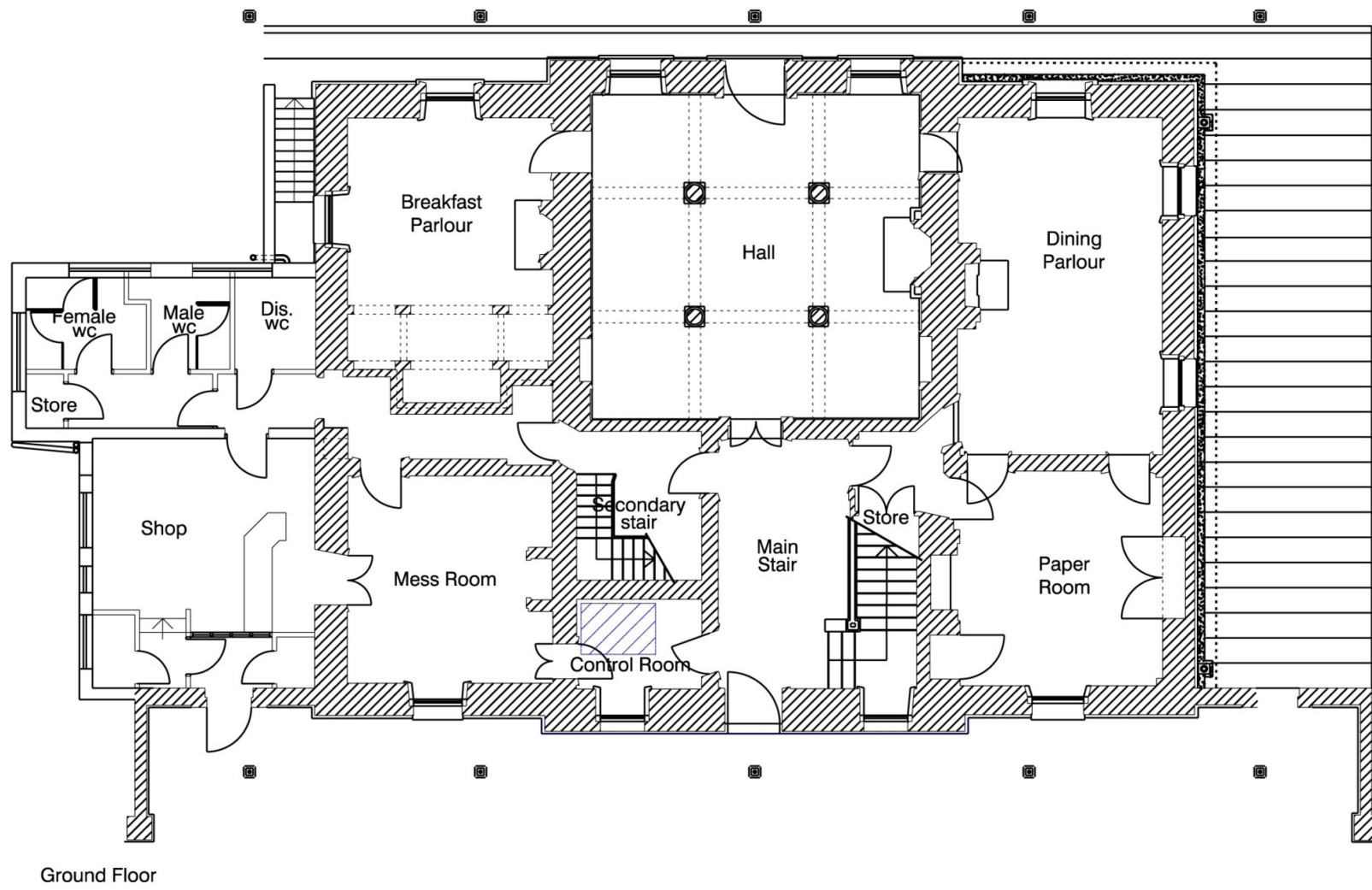
The installation of the lift will cause considerable harm to the significance of the building and will not provide access to the attic level but this will be outweighed to a certain extent by the public benefit of the scheme, namely the provision of disabled access to the first and second floors of the building and inclusion of wider audiences. However, this is the least intrusive of all the options considered.

### Conclusion

This proposal would result in fabric loss and require major works to the electrical and control systems of the House. However, many of these are already required, as the systems are judged to require renewal in the current project. They could be relocated to the current staff room (to the east) without major difficulties.

The proposal would be relatively expensive, given the need to insert a bespoke shaft within the historic fabric and to relocate services. Use of a platform lift (ie with no pits and a lightweight steel structure) would minimise structural requirements and maximise reversibility.

It is the most feasible way of providing reasonable access to the principal floors for wheelchair users without unacceptable visual impacts to the exterior or principal interior spaces, or which would cause major management issues.



## 5.5. Option E - Full lift within the closet rooms

### Proposal

A lift could be accommodated with the spaces formed by the series of small closet rooms - on the east of the main entrance hall and vertically above.

The strategy is to provide a full 8 person lift which is suitable for evacuation in case of emergency.

At this early design stage the feasibility of this option carries high risk both from a structural and financial standpoint. More certainty will only be possible once a detailed structural survey of the house is carried out and a detailed design is reviewed with a lift specialist.

### Pros and Cons

Pros:

- It would provide good un-stepped access to the first floor and second floor,
- It would be at least partly consistent with the overall visitor flow
- It does not affect the stairs or means of escape
- It has negligible visual impact on the key interiors
- It would create a low management burden to EH staff
- It maintains both stairs as unimpeded means of escape

Cons:

- It would not provide access to attic - To access the attic would require major reconfiguration which would change the house roof slopes and have a strongly negative impact on the attic stair flights)
- The geometry of the spaces and doors means that the landings are not DDA compliant
- It would involve loss of historic fabric to closet room ceilings on all floors. Modification of the existing doors may be required.
- This location is currently used for the control panels for intruder alarm, fire alarm and electrical intake and main DB board. All would require relocation.
- This location removes the possibility of a visitor circulation loop which allows one-way flow in the service corridor
- The height of the overrun (notionally 3.6m above second floor landing level) is not confirmed and would require detailed design and a structural survey. There is a risk that the overrun could penetrate the roof structure.
- The depth of the pit (notionally 1.4m , with additional new foundations) is not confirmed and would require detailed design and a structural survey
- An additional power supply is required, which have a significant cost implication
- A bespoke lift could have a cost uplift of more than £100, 000.
- A disabled refuge will need to be provided within a fire protected lobby. This may require the modification of existing doors to suit the fire strategy

### Historic Building Impact Assessment

The installation of the lift in this location will have a major impact on the significance of the House for a number of reasons.

The small closet rooms served as ancillary spaces to main bedrooms and the Plaid room. They were used for storage of clothing and probably bathing as well as housing some sanitary facilities. The installation of the lift will entail the loss of the 18th-century decorative, plaster ceilings at two floors and it will be difficult to avoid intervention in the fine mahogany doors and their architraves as the doors may have to be re-hung. The architectural features can be recorded and recreated in the future but the authentic 18th-century fabric will be irretrievable. In addition, these spaces will be taken out of the visitors' route thus having a detrimental effect on the understanding of the life in a

small 18th-century aristocratic house, the circulation within the house and daily use of individual rooms. It will therefore result in the substantial loss of historic and evidential value with some impact on the design and aesthetic values of the building.

It is also likely that for such a substantial lift it will not be possible to construct a top over-run without intervening in the roof structure, impacting on the north dormer and appearance of the pediment. This would disrupt the carefully balanced proportions and architectural composition of the north elevation and cause unacceptable damage to the architectural and aesthetic values of the building.

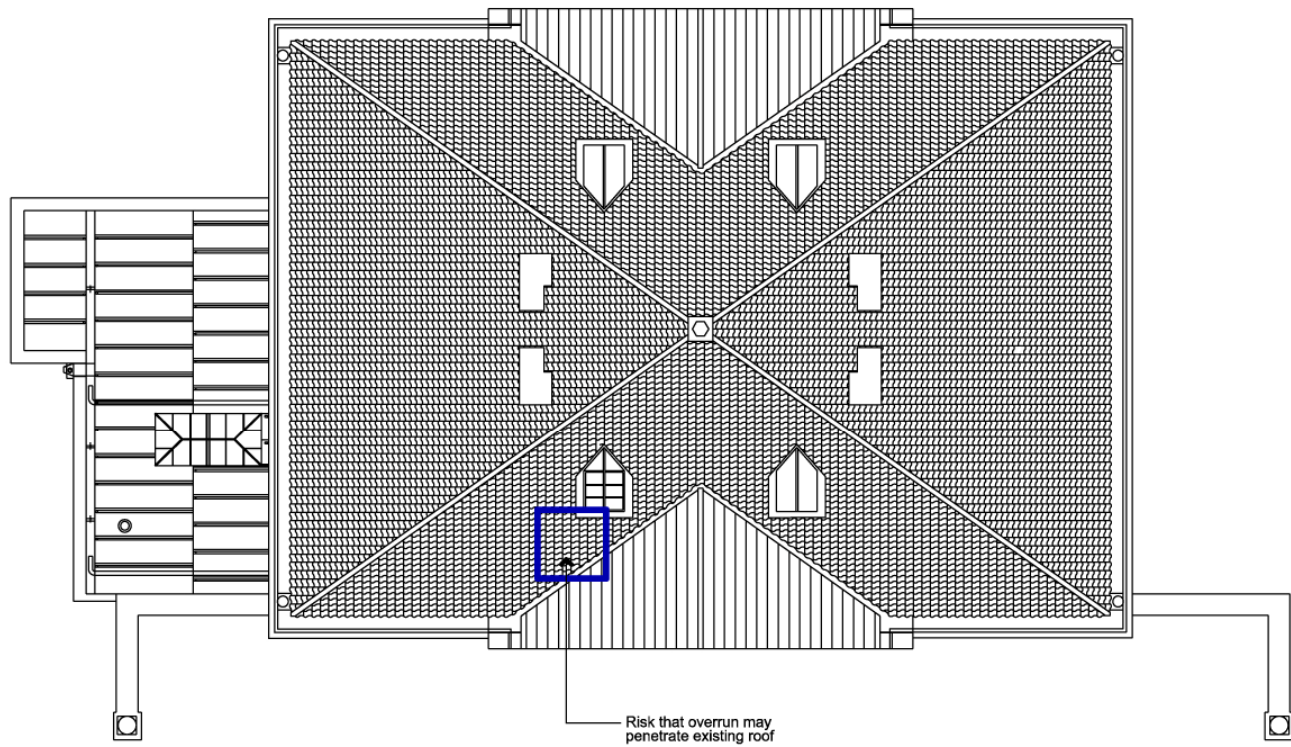
In addition, it is essential that the implications of constructing a full scale lift shaft are carefully considered. Such a shaft will have to be constructed from heavy, industrial materials which will move at different rate to the original building and the differential movement may have a long-term effect on the structural integrity and stability of the building. Similarly, vibrations associated with the installation of a heavy lift and its future operation may have a detrimental structural effect.

To sum up, the installation of the full lift will cause substantial harm to the significance of the building: apart from the impact on the fabric and loss of features it may undermine its structural integrity and affect its evidential values as well as having serious impact on its architectural interest. It is difficult to see how such serious loss of significance can be offset by public benefits considering that the full lift will not provide access to the attic level. This is the most intrusive of all the options considered.

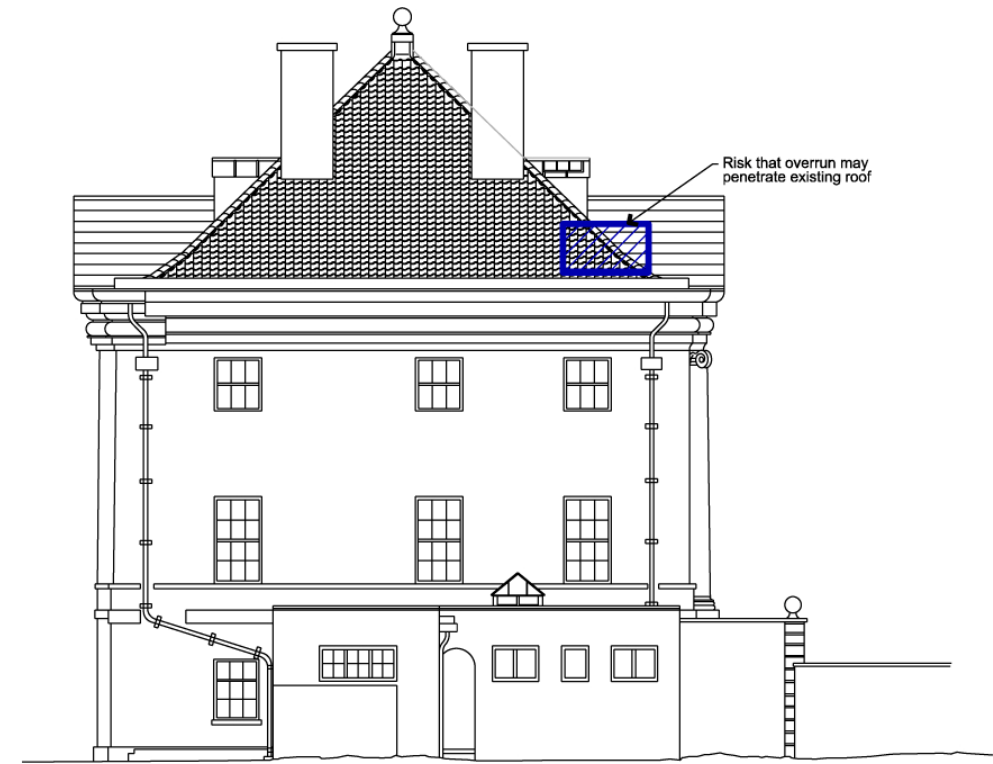
### Conclusion

Whilst this option provides the most extensive access to the house, it is also the most expensive. This proposal would result in irreversible fabric loss and require major structural and electrical work to the House.

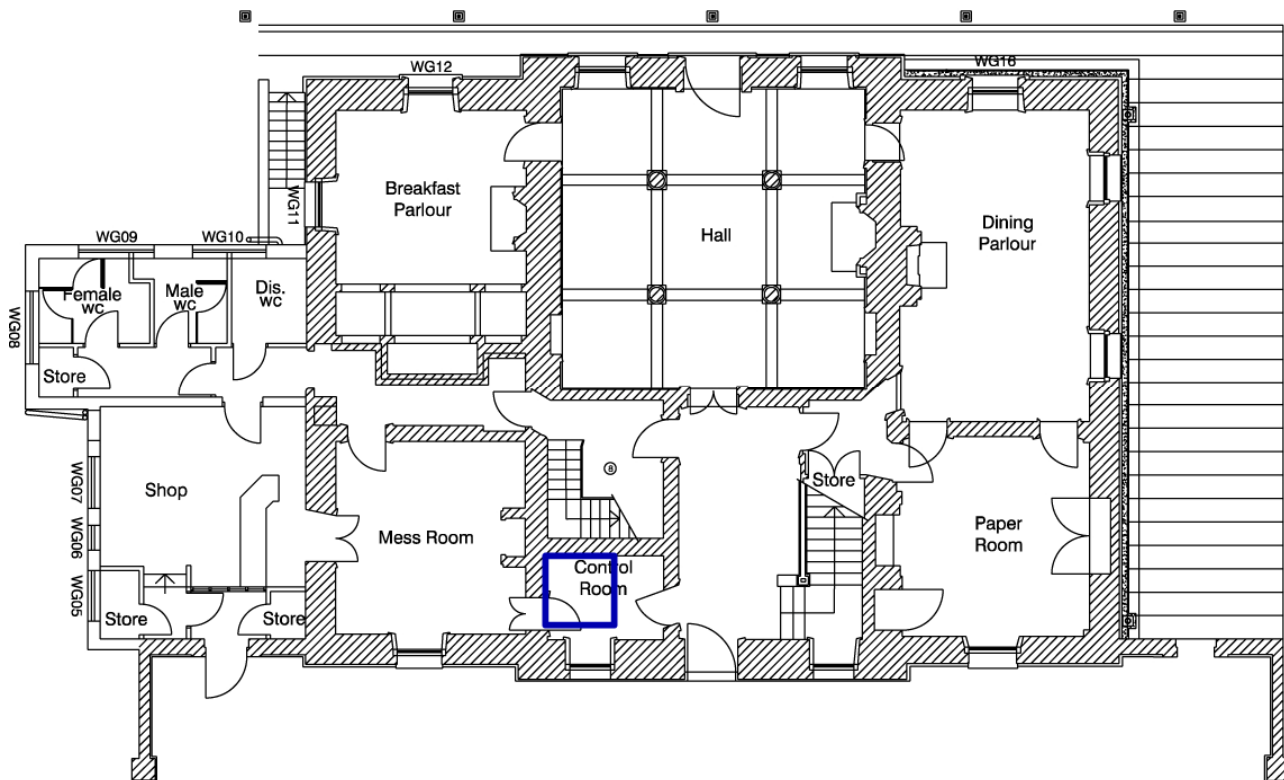
The cost of the proposal could be very expensive, given the need for an additional power supply, pit excavation, new foundations and a bespoke shaft to fit within the historic fabric. At this early design stage, this option has unknown risks regarding impact of historic fabric and finance. We would not advise on this high risk option as it could jeopardise the aspirations of other aspects of the project and cause substantial harm to the significance of the building as a heritage asset.



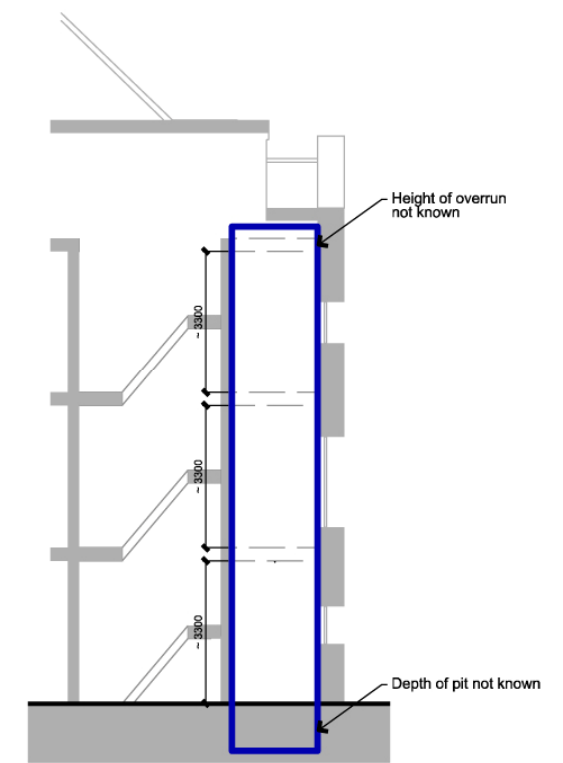
Roof Plan



East elevation



Ground Floor Plan



Section

## 5.6. Option F - No lift

### Proposal

On reflection of Options A-E it was decided that an option to have no lift needs to be considered. As demonstrated; all options have an impact on the visual and historic fabric of the house and a fully accessible solution that provides access to all floors, including the attic, is not viable.

By not providing full access to the upper floors the visitor experience would need to be focused on the ground floor. For this option the exhibition and representation of the house would be adjusted to portray the full story of the house without having to visit the upper floors.

### Pros and Cons

Pros:

- The house would be maintained in its original form
- It would involve no loss of historic fabric
- It would involve no negative visual impact
- This option has no cost

Cons:

- Access is limited to ground floor for wheel chair users.

### Historic Building Impact Assessment

This option has the advantage of fully preserving the significance of the House, its architectural interest as well as evidential and historic values. The project will deliver a wealth of public benefits in carrying out conservation and repairs to the fabric of the house and landscape, enhancing the understanding and appreciation of the site's importance through new research and interpretation. The wider community engagement, educational and activity programme as well as apprenticeships and diversification of the existing audiences will provide further public benefits. This option should be considered together with the provision of digital and virtual resources which will compensate to a degree for the lack of physical access to the upper floors.

### Conclusion

This option needs to be considered alongside the benefits / disadvantages of the other options. All other options have significant cost implication as well as a loss of historic fabric and negative visual impact.

This option should only be considered if the provision of access is out weighted by the cost (financial and historic) of making an intervention.

## 5.7. Preferred Option : Option D

### Detailed Considerations

Option D is recommended as it provides a solution that largely meets the brief. It also does not have the associated structural and financial risks as highlighted in Option E (Full lift in closet). It avoids unacceptable losses of historic fabric and/or negative impacts on the perception of the house and its principal spaces.

The lift location in the series of closet rooms allows the person using the lift to enter it of the main entrance hall at ground and first floor, closely following the route defined by the principal stair

Although this is best location for a lift, there remain some negative implications for the listed buildings and a number of more detailed considerations that apply to this strategy.

These are summarised in this section:

### Interpretative Strategy and visitor circulation implications

In preparing this report, vHH have not been party to developing the interpretative strategy for the house, but have seen the draft proposals, which have been considered in the development of this report.

Our understanding is that the entrance to the house will continue to be from the current east side door, through a space in the annexe which provides an interpretative introduction to the house and its history. vHH understand that regular use of the main entrance doors straight into the hall is precluded by security and environmental considerations.

As explained above, issues with the current entrance mean it cannot be used by a wheelchair-using visitor. Providing un-stepped access requires consideration of the entrance sequence and available space so the two steps are removed and replaced with a ramp. This is currently proposed in the draft interpretative plan.

If this proves not to be feasible, wheelchair-using people would need to use either the north or south entrance hall doors, which are (or could be made to be) un-stepped, and from which they can enter the lift. This will have a management implication, and could have a significant influence on the interpretative strategy and visitor flow as it would affect the environmental criteria maintainable within the hall spaces.

A further consideration is the narrowness of the service corridor and balancing the desirability of a visitor circuit loop with the circulation blockages that will occur at this point. A wheelchair will occupy the whole width of the corridor and the lift location will preclude an alternative route using the current mess room.

Given the fundamental objective of increasing visitor numbers and improving the quality of their experience, creating or managing an efficient visitor route is essential. Environmental and/or heritage issues are raised by either using one of the hall doors as entrance or exit, or creating an alternative return circulation to the eastern annexe via the Breakfast parlour and a new opening. It is therefore likely that special management policies to manage visitor flow in the service corridor needs to be made during peak times.

Lift access cannot be provided to the second floor and attic, and this needs to be recognised in the interpretative strategy. Resulting in a focus of activity and interpretation on the ground and first floor of the House.

### Technical Considerations

The proposed location of the lift clashes with the current incoming services and system control panels for the house. The obvious location for their relocation is in the existing mess room.

The use of a lightweight platform lift means that a builders-work shaft, lift overrun and lift pit are not required. However, the steel shaft will still need a base, with foundations that do not place any additional load on the current house foundations.

The platform lift structure is likely to require bracing from the existing structure of the house. The floor structure of the first floor will need to be modified to create a suitable opening and this will require new joists and framing. Particular attention needs to be provided when designing the framing and specifying the lift to avoid excessive loads or vibration being transmitted to the historic fabric.

A platform lift will have a low power requirement, and it is not anticipated that upgrading the house power supply will be required for the lift.

At present we are not aware of the fire compartmentation of the house, and so which walls and floors are compartment or fire resisting structures. Unlike a lift with a builders-work shaft, the platform lift will not provide a fire resisting construction to prevent fire spread between floors.

In the light of the value of the house and its contents, and even if not required for compliance with the life safety measures of the Building Regulations, we suggest that the historic walls and ceilings enclosing the lift are treated as fire-rated separating construction. This will require detailed consideration of the doors to these spaces and upgrading them to make sure they maintain the fire-rating of the structure.

The lift shall not be used for evacuation in case of fire, in accordance with BS EN 81-1 & 81-2. An evac chair shall be used on the main stair in case of fire. A fire protected lobby with a wheel chair refuge is required. The detail design of the management and implementation of the evacuation strategy and fire protection to structure will be developed at the next stage of the project.

The lift will be provided with an integral alarm system and two way communication system to allow users to communicate with staff members etc adjacent to the shaft and will require a dedicated analogue telephone line to enable users to communicate with staff or control room externally to the building in case of an emergency situation.

The Platform itself could be provided by any number of manufacturers the primary limiting factor being available space for the shaft. As an example, the Stannah Midi Lift XL plus requires a shaft of 1510(w) x 1600(d).

In general the speed achieved by platform lifts is 0.15m/s meaning that the duration of travel from ground floor to first floor will be in the region of 25 seconds.

Whether a nut and screw or electric traction type drive is used, the electrical power supply requirements are generally relatively small and, whether single or three phase could be accommodated by the existing electrical system to the house is to be confirmed.

### Heritage Impacts - Detailed Considerations

These are noted at 5.4, Option D above. The location of the lift in the position shown avoids fabric loss to the principal rooms but will necessitate the almost complete loss of the floor and ceilings in these small spaces. These can be recorded and some materials potentially salvaged, but the losses of original fabric will not be reversible.

Very detailed consideration will need to be given to the position of the lift in the space to maximise its ease of use (normally a larger space would be required immediately in front of the lift) and minimise fabric loss. On detailed consideration of the lift sizing it may become apparent that it is necessary to reverse the swing of the rooms' doors, as well as improve their fire performance. The treatment of the windows in these rooms also needs to be decided, as the lift will be visible through them. One straightforward option would be to fix the shutters closed, but backing them with a new panel may also be considered.

The details of all these decisions will need to be reviewed in detail when the design and specification is undertaken to ensure a reasonable balance is established between the usability of the lift and the impact on peoples understanding of the house and loss of fabric.

## 6. Conclusions

### Lift Appraisal

The Pros and Cons of the options can be summarised as follows:

(Red = worse, amber = medium, green = better)

	Heritage Impact on external significance – the house in its landscape setting	Heritage Impact on internal significance – the principal interiors	Heritage Impact on internal significance – servant spaces	Loss of Historic Fabric	Access for wheelchair to all levels including attic	Access for wheelchair to first and second floor	Access to first floor only	Lift Capacity	Order of cost
Option A External Passenger Lift	Red	Red	Green	Amber	Red	Green	Green	Green	Red
Option B Stairclimber in principal staircase	Green	Red	Green	Green	Red	Red	Amber	Red	Green
Option C Platform Lift in service staircase	Green	Red	Red	Amber	Red	Red	Red	Amber	Amber
Option D Platform Lift in closet spaces	Green	Green	Amber	Amber	Red	Red	Green	Amber	Amber
Option E Passenger Lift in closet spaces	Amber	Green	Amber	Amber	Red	Green	Green	Green	Red
Option F Do nothing	Green	Green	Green	Green	Red	Red	Red	Red	Green

Our conclusions are that:

- It is feasible to install a lift within Marble Hill House, to serve the ground and first floor
- Use of a platform lift will give limited but adequate capacity for the visiting public (and/or EH staff) if use is strictly restricted by staff to those who need it
- The most suitable location is as documented in Option D & E, rising from the current control room through the closet spaces above, as this has the best balance between functionality - better access - and negative heritage impacts
- The lift position has consequences in terms of entrance levels, diversion of services, means of escape and fire strategy, visitor routes and management procedures, location of equipment controlling electrics and environmental and fire safety sensors, all of which need to be taken into account in the planning, and capital and revenue costing, of the representation project
- In accordance with current building regulations a platform lift is not suitable for use for fire evacuation. With this said it is possible to modify a platform lift so that it can be used for evacuation, however the cost implications of this bespoke design are significant
- The design and specification of the lift and the related builders-work need to be carefully reviewed to achieve the best balance between functionality and heritage impacts