

9. LISTED BUILDING APPLICATION – TWO NEW HYDRO ELECTRIC STATIONS ON THE RIVER DERWENT AT CHATSWORTH; ONE ON THE UPPER AND ONE ON THE LOWER WEIRS AT CHATSWORTH HOUSE, (NP/DDD/0515/0433, P6181, 426029/370173, 11/05/2015/ALN)

APPLICANT: MR BEN GARSTANG, CHATSWORTH SETTLEMENT TRUST

Site and Surroundings

Chatsworth Estate is situated approximately 4 km north east of Bakewell in the south eastern region of the National Park. The house is a grand stately home that sits in a slightly elevated position on a raised terrace on the eastern side of the park, overlooking the River Derwent to the west. The River Derwent, which runs north-south, forms the centrepiece of the parkland to the front of the house and is a key element in the design of the landscaped park.

The park and gardens are included on the Historic England Register of Park and Gardens of Special Interest at Grade 1, which makes them of international importance. The area within the vicinity of the river contains nine listed buildings. The principal listed structures are Chatsworth House and James Paine's Three Arched Bridge, both listed grade 1. Queen Mary's Bower is grade II* listed as is One arch bridge at the southern end of the Park and 520m to the south of the lower weir. One arch bridge is also a Scheduled Monument. The West Garden Terraces, Paine's Mill, Beeley Lodge and a 19th century water trough are grade II listed. Just beyond the park boundary to the south lies the grade II listed Bridge House.

The application site consist of two areas of land on the eastern bank of the River Derwent adjacent to two weirs known as the 'Upper' and 'Lower' weirs. The upper weir is located approximately 450m to the south of the House and the lower weir, is further south, approximately 180m to the north of the remains of Paine's Mill. The lower weir is curtilage listed grade II in association with Paine's Mill. The upper weir is a non-designated heritage asset.

The two weirs were built as part of Lancelot Brown's modifications to the river, and were constructed in order to provide still bodies of water behind them; at the upper weir with the intention of giving the water a 'lake-like broad water' appearance below the House; and at the lower weir to provide a reflective surface for Paine's Mill as well as a head of water for the mill race. There are a number of public rights of way on the western bank of the river close to the weirs.

Proposals

Listed building consent is sought for works in association with the construction of a hydroelectric station on the lower weir, with Archimedes screws and associated sluice gates. As the upper weir is not listed, listed building consent is not required for the proposed works to this weir, which is covered in more detail in the parallel application for planning permission for the hydro scheme as a whole. In this respect, the focus of this application is solely the physical impact of the proposals on the lower weir, and the impact of the proposals on the significance of the lower weir and its setting.

At the lower weir, the stepped stone weir is 38m across with a drop of 2.1m across the weir, followed by a rocky section of river which falls a further 1m over the next 60m. The scheme at the lower weir seeks to take advantage of the maximum 3.1m fall by excavating a channel on the east side of the weir with an inflow approximately 15m upstream of the weir crest and the channel extending to 25m beyond the toe of the weir. An extended tail race would be created for 60m downstream of the weir, which would be a maximum of 6m wide and would be constructed in an area currently occupied by a silt bank. The Archimedes screw would have a 6.75m long helix.

The housing and principle components of both hydroelectric stations would be set into the east bank of the River Derwent with upstanding walls clad in natural stone blocks with dark graphite coloured grills to the sluice gate, fish gates and turbine housing. The housing structure would take the form of an elongated, stone structure with a curved 'bullnose' feature at the head of the screw and the upstanding walls would have flat stone copings.

The new station would have twin fish passes running along the river facing elevations of the new structure. This would provide for upstream passage of resident species of fish from both the turbine outfall and from the toe of the weir. At the off-take point from the river a screen would be installed to prevent large items of debris from entering the turbines. The screen would be 7.5m long by 2.5m deep and would be mostly submerged below the upstream water level.

The height of the stone housing structure above the adjoining bankside ground level would be a maximum of 2.3m on the lower weir. The sluice gate would appear at 3.2m above bankside ground level when in the open position.

A tail race is required on the lower weir to transfer the lower downstream water level back up to the turbine outfall, so that the turbine can 'see' the full available head of 3.1m. The tail race would be 6m wide and would require excavation of the river bed within it to a depth of 1m. As such it would be necessary to install a low wall to provide a barrier between the main watercourse and the tailrace channel. The tail race wall would be approximately 600mm above river bed level and would be constructed with small boulders and local stone of the type found along this stretch of the river.

RECOMMENDATION

That the application be APPROVED subject to the following conditions:

- 1. Statutory 3 year time limit**
- 2. Adopt submitted and additional plans.**
- 3. Programme of archaeological work including a Written Scheme of Investigation to be submitted to and approved by the Authority in writing before development commences.**
- 4. No parts of the retaining walls other than those shaded red on plan no. PL-008-Rev A shall be removed unless otherwise agreed in writing by the National Park Authority.**
- 5. Sample panel of new walling, including pointing to be agreed.**
- 6. Details of coping stones to be submitted and agreed.**
- 7. Minor Design Details**

Key Issues

1. Whether the proposals would cause harm to the special historic or architectural qualities of the listed weir structure and its setting.
2. Whether the public benefits of the scheme outweigh any harm identified.

History

There is detailed and extensive planning history for development on the Estate but there is no planning history related to the two specific application sites other than extensive pre-application discussions on these proposals took place prior to the submission of this application.

Consultations

External Consultees

Parish Meeting – no response

Historic England – Historic England consider the landscape park at Chatsworth comprises a fine Picturesque composition of landscape elements along, and including, the river corridor considered herein; there is a designed relationship between the re-aligned river channel, the weirs, Chatsworth House and gardens and the two bridges - Three Arch Bridge to the north and One Arch Bridge to the south. Lancelot '*Capability*' Brown and James Paine, both eminent designers, composed views between each of these elements in a variety of combinations and many of these are set out in the River Management Plan, 2014. When these landscape elements were introduced by Brown and Paine many of the older, working, elements of the estate - including the medieval mill and riverside planting - were removed to de-clutter the centre ground in these Picturesque scenes and they remain largely unaltered today, albeit in need of some further management works to remove extraneous vegetation

Historic England understand that following initial consultations with stakeholders in January 2015, including Historic England, the designs of the proposed Archimedes screws and their housings were revised and that the scale and massing now proposed is consequently the smallest structure that it is possible to engineer for this site whilst making the scheme financially viable. Notwithstanding the efforts that have been made to reduce the impact of the proposed structures Historic England believe that there would be harm caused by the development to the significance of the Grade I Registered Park and Garden, through the introduction of industrial infrastructure. The new structures will change, and to some extent, unbalance Brown and Paine's careful compositions and the relationship between each heritage asset. Consequently, the development would cause harm to the setting of each of the designated and undesignated assets

Historic England have concerns regarding the scale and mass of the proposed structures in these sensitive locations, which are both key designed elements of the landscape park; these proposals will introduce industrial structures and materials, like the black metal gauze, that are over two metres in height above the riverbank level to a landscape scheme designed to be simple and free of such structures. With the completion of the proposed works in the River Management Plan, which include the removal of extraneous vegetation, the river corridor should play a more significant role within the landscape, as intended by Brown, and so the visual harm would increase; any harm arising from noise might also increase with less planting around the development, detracting from the tranquillity associated with the Picturesque. The intended primary role of the river corridor in a number of designed views from circulation routes, such as the entrance drive from Edensor demonstrates how critical it is to be able to read these compositions in the round rather than from simply fixed locations - making the relationship and spaces between the assets as important as the assets themselves.

The benefits of the development are set out in the Design and Access Statement provided with this application, though there is no assessment of the impact of the development on the significance of the heritage assets. It is understood that the turbines will, using the design proposed, provide 23.6% of the house and visitor attraction's combined current energy consumption, however, it is not clear to Historic England whether other sustainable energy solutions have been considered and discounted in an informed way before exploring hydropower in this location, as part of an estate wide review of energy needs. Historic England remain unconvinced that adequate justification has been made for the proposed development, in terms

of public benefit, given the degree of harm involved where there are potentially alternative sites and energy sources available. Subsequently, Historic England consider this Authority will want to be satisfied that all other options have been explored before being confident that there is adequate information to make a proper assessment of the justification currently provided for the development.

The proposed development will also result in harm to the evidential significance of the existing weir structures. The applications clearly set out that considerable fabric would need to be removed to build the two screws and that this would be reused as part of the tail chase south of each screw. As previously set out, the existing revetments and by-pass culverts are clearly both practical and ornamental in design and so part removal will have a detrimental impact on the character and significance of the structures themselves, which are undesignated heritage assets, and the wider registered parkland. This fabric forms an element of the Picturesque long views designed by Brown and should be considered holistically as part of the landscape rather than isolated unlisted structures.

Historic England go on to say the National Planning Policy Framework states that the significance of heritage assets can be harmed or lost through development within its setting and that any harm should require clear and convincing justification (para 132). It is not the case that less than substantial harm equates to acceptable harm, and this has been clearly established through a number of recent appeal decisions. Paragraph 134 of the NPPF goes on to state that where a development would lead to less than substantial harm to the significance the harm should be weighed against the public benefits of the proposal. Paragraph 007 of the Planning Guidance on Renewable and Low Carbon Energy states that great care should be taken to ensure heritage assets are conserved in a manner appropriate to their significance, including the impact of proposals on views important to their setting. In this case, the harm is to the Grade I designated Registered Park and Garden and its structures, both listed and unlisted. Grade I Registered Parks and Gardens make up less than 9% of the designed landscapes on the register and Chatsworth is one of the great treasure houses of England so its significance should be given the greatest possible weight when assessing planning applications - as advised by para 132 of the NPPF.

Therefore, Historic England recommend that the Authority weighs the harm to the heritage assets caused by the current proposal against the proposed public benefits for the scheme. The Authority must be satisfied that there is clear and convincing justification for the harm to the significance of the Grade I Registered Park and Garden and both the listed and unlisted structures within it. Where that justification is not clear Historic England recommend that the Authority request further evidence of the benefits set out by the applicants so an informed decision can be made. Critically, this Authority should be satisfied that all alternative energy generation methods and locations across the estate have been fully assessed, including sites outside of the Registered Parks and Garden, where there would potentially be far less harm whilst delivering equal to or greater public benefit.

Garden History Society – no response

Internal Consultees

Authority's Landscape Architect - Chatsworth Parkland is a designed landscape that has been altered over the years by various owners, although there will be some visual impact feels that the two turbine housings are just a stage in the history of the Parkland. They are just a modern interpretation of the old mill leat and waterwheel in the old water mill and therefore no landscape objections to the proposals.

Authority's Built Environment Team – The design is as good as we can get in terms of materials and reducing the over-ground bulk of the new enclosures. Much will depend however on the detailing (relating it to such things as the copings and block/coursing size etc on the

existing walls) and how well built they are. Recommend conditions with regard to the submission of details of the copings; a sample panel to show the block/coursing size to the stone walls, finish to the stonework and pointing; details of any of the riverside walls/features that will need to be adjusted or dismantled and rebuilt on a like-for-like basis, before any works take place.

Authority's Archaeologist – expresses deep concerns about these schemes, based on the loss of historic fabric of water management features, the 'industrial' appearance of the proposed turbines, and the possible physical impact on the weirs during the construction of the turbines.

Amongst other things, the Authority's archaeologist is concerned about the significant loss of, and disturbance to, historic fabric which is related to both upper and lower weirs. The engineering works, and significant excavations, involved in the construction of these structures will have a high impact on the surviving river bank revetment walling, associated culvert features and any other below ground archaeological features which might survive in these areas of the park.

The Authority's archaeologist notes that the footprint of the excavations for both schemes will be extensive and the depth of excavations between 2.5 – 3 m, thus the archaeological impact of the developments will be substantial. The Jessop Consultancy Heritage Assessment recognises that, in addition to loss of the fabric of the retaining walls, *the impact of works will largely relate to the excavation of foundations and the removal of sections of the existing sub-surface by-pass culverts. The condition and extent of these is currently unknown (page 1)*. Subsequently, however, there has been no archaeological field evaluation, i.e. trial trenching or geophysical survey, to attempt to assess the survival of below ground remains in these areas.

In the absence of an understanding of the nature and survival of these below ground remains, the Authority's archaeologist considers it is not appropriate to assess at this stage that simply monitoring the excavations for the development is an appropriate level of archaeological input as mitigation. The Authority's archaeologist would also argue that, in the absence of field evaluation, an assessment that 'preservation by record' of below ground features and historic fabric is not an appropriate approach in this context. The Historic England landscape adviser, Stuart Taylor, echoes these concerns regarding harm to the evidential significance of the existing weir structures.

The Authority's archaeologist also advises that the river bank excavations involved with these proposals are substantial and no structural engineer's assessment of the physical impact of the works on the weirs has been submitted. Not only do these structures have intrinsic historic significance, but they are also crucial to the maintenance of the reflective sheets of water which were created to enhance views of Chatsworth House and Paine's Mill. Their failure would impact on the delivery of the restoration of the Brownian parkland design features which are intended outcomes of the, Natural England lead, Parkland Management Plan, process.

The Authority's archaeologist also remains concerned that the amended plan, which depicts the historic fabric in the retaining walls which is to be left untouched, has the caveat 'Existing riverbank wall to be retained - some elements will need to be adjusted to allow inlet gate to be installed and Hydro Plant to be constructed'. The Authority's archaeologist would suggest that that approach is unacceptably open ended, and that all the historic fabric which is likely to be affected by these developments should be depicted here.

The Authority's archaeologist otherwise notes that the HLM Ltd Heritage statement makes much of the fact that the two turbines use local materials in their construction, and suggests that this is a mitigating factor in reducing landscape impact. However, on the basis of the most recent visualisations, both the new structures are still strongly physically at odds with existing landscape components in the immediate area – e.g. the running water, and the 'soft' edges and weathered stone of the old weirs and their revetments.

In the HLM Ltd Heritage statement, most of the suggested mitigation for the visual impact that the new developments will have, relates to protecting longer views to the turbine locations. This is by means of tree planting and management, however it is recognised that the views that will be most affected are those enjoyed close to the river. One of the most popular paths at Chatsworth is that along the river from the garden centre car park to the House. The Authority's archaeologist suggests that the new developments would have a negative impact on the current amenity value of this part of the parkland.

The Authority's archaeologist goes on to say in section 3.3.2 of the Heritage statement is stated that 'The River Derwent, as changed and modified by Lancelot Brown for the 4th Duke, forms the centrepiece of the valley and is a key element in the design of the landscape park', yet the HIA document generally concludes that introduction of these two modern structures to this key element will largely have a 'less than substantial impact'. The Authority's archaeologist would argue that the Heritage statement does not convincingly justify the developments in the light of the observation made by the Historic England Landscape Architect that 'The new structures will change, and to some extent, unbalance Brown and Paine's careful compositions and the relationship between each heritage asset'.

In conclusion, the Authority's archaeologist says the upper and lower weirs on the Derwent, whilst being non-designated heritage assets, are a key component of the historic landscape of Chatsworth Park, having been built to maintain reflective sheets of water which were created to enhance views of Chatsworth House and Paine's Mill. The physical impact of the current proposals on these historic water management features will be substantial. In comparison to the scale of ground disturbance which will be involved in these schemes there has not been adequate pre- application archaeological assessment, or any assessment of the structural impact of the development of adjacent land on the surviving weirs. Significant concerns about the impact on the historic landscape of these proposals have been raised by the regional Historic England Landscape adviser (June 19th 2015), Natural England (10th June 2015) and in- house PDNPA specialists.

Taking the above into account, the Authority's archaeologist would recommend refusal of this application as the proposals are not in line with Peak District National Park Local Development Core strategy policy L3 (Cultural Heritage).

Representations

One letter of support has been received and stating that it is important the proposals maintain Chatsworth Park's appearance and that local, sympathetic materials are used.

Main Policies

Relevant Core Strategy policies include: GSP1, GSP2, GSP3, DS1 & L3.

Relevant Local Plan policies include: LC4 and LC6.

In the National Park, the development plan comprises the Authority's Core Strategy 2011 and saved policies in the Peak District National Park Local Plan 2001. It is considered that in this case, the above policies in the Development Plan provide a clear starting point consistent with the National Park's statutory purposes for the determination of this application. It is also considered that in this case there is no significant conflict between prevailing policies in the Development Plan and more recent Government guidance in the Framework with regard to the key issues in the determination of the current application.

The key issues in the determination of the current application include the impacts of the proposed turbines on the fabric and setting of the listed weir. Paragraph 115 of the Framework states that great weight should be given to conserving landscape and scenic beauty in National

Parks along with the conservation of wildlife and cultural heritage, which is consistent with the aims and objectives of policies GSP1, GSP2, L1 and L3 of the Core Strategy.

Paragraphs 132 and 134 of the Framework are also highly relevant and state that when considering the impact of a proposed development on the significance of a designated heritage asset, great weight should be given to the asset's conservation. The more important the asset, the greater the weight should be. Where a development proposal will lead to less than substantial harm to the significance of a designated heritage asset, this harm should be weighed against the public benefits of the proposal, including securing its optimum viable use. This approach is consistent with the aims and objectives of policies GSP1, GSP2, GSP3 and L3 of the Core Strategy and LC6 of the Local Plan. It should be noted that all of the policies in the Framework apply to applications for listed building consent as well as for planning permission.

Planning Policies and Legislation

Section 16 (2) of the Planning (Listed Building and Conservation Areas) Act 1990 provides that in considering whether to grant listed building consent the local planning authority 'shall have special regard to the desirability of preserving the building or its setting or any features of special architectural or historic interest which it possesses'.

Section 66 (1) of the Planning (Listed Building and Conservation Areas) Act 1990 states the local planning authority 'shall have special regard to the desirability of preserving the building or its setting or any features of special architectural or historic interest which it possesses' in the exercise of the Council's planning functions and in considering whether or not to grant planning permission for development that affects a listed building or its setting. It is important to note that section 66 does not allow a local planning authority to treat this duty as a mere material consideration; it is a statutory duty to which special regard must be had and considerable importance and weight should be given to the desirability of preserving a listed building or its setting when balancing a proposal against other material considerations.

Assessment

Issue 1: Whether the proposals would cause harm to the special historic or architectural qualities of the listed weir structure and its setting

The lower weir makes a positive contribution to the character and appearance of the parkland setting and surrounding heritage assets and it would be physically altered by the proposed works. Therefore, in the determination of this application, the highest regard must be paid to the potential impacts of the proposals on the special historic and architectural qualities of the weir and its setting.

Impact on Setting

Historic England's 'Good Practice Advice in Planning – The Setting of Heritage Assets' states that decisions should be based on the nature, extent and level of a heritage asset's significance and recommends a broad approach to assessment in the form a series of 5 steps. This report aims to broadly follow this approach for each of the heritage assets.

In the original submission, a Heritage Appraisal of the upper and lower weirs was submitted with the application but following comments from Historic England, a more comprehensive Heritage Statement has been submitted by a firm of Historic Landscape Consultants, which takes into account Historic England's Guidance and looks across all of the heritage assets that could be affected by the proposals. A detailed landscape analysis carried out in support of the River Management Plan (by the same consultants) has also been submitted.

The Historic England guidance explains that the setting of a heritage asset is the surroundings in which a heritage asset is experienced. The contribution of setting to the significance of a heritage asset is often expressed by reference to views, including a variety of views of, across, or including that asset and views of the surroundings from or through the asset, and may intersect with, and incorporate the setting of numerous heritage assets. Extensive heritage assets, such as a parkland, can include many heritage assets and their nested and overlapping settings as well as having a setting of their own.

Steps 1 and 2 - decision makers should identify which heritage assets are affected and assess whether, how and to what degree these settings make a contribution to the significance of the heritage asset:

This listed building application relates only to the impact of the current proposals on the lower weir and its setting.

The setting of the lower weir comprises open parkland with a small number of trees on the west and east bank. It sits within views of Paine's Mill, to which it is also physically linked. The setting contributes to its significance in that the weir was intended to form a head of water to power Paine's Mill and the physical relationship between the upstream water; the culverts and the mill are all part of the setting. The lower weir forms an ornamental element in the landscape and creates contrasting sound and movement in the water.

Step 3 - the decision maker should assess the effects of the proposed development, whether beneficial or harmful on that significance:

GSP1 and GSP2 of the Core Strategy, policy L3 and Local Plan policy LC6 requires that development must conserve and where appropriate enhance or reveal the significance of archaeological, architectural, artistic or historic assets and their settings and say development will not be permitted where it is likely to cause harm to the significance of a listed building

With regard to Paine's Mill, at 188m away, the lower weir turbine would be closer to this asset than any of the other heritage assets and is considered to be within the curtilage of Paine's Mill. The proposed development would be a permanent structure and it would be clearly visible from the public right of way that runs close to Paine's Mill and the weir. The proposed turbine would therefore have an impact on the setting of the weir due to its form and appearance and on the association between the mill and the lower weir. Whilst the function of the weir would be unaffected there would be an impact in that the turbine would alter the relationship between the weir and its surroundings and thus the character and experience created by the setting would be affected.

Step 4 - exploring ways to maximise enhancement and avoid or minimise harm

The main way in the which the applicant is seeking to mitigate the harm identified above is by means of the retention of existing tree planting in certain areas and, as informed by the Heritage Statement, providing some new tree cover in discreet locations.

With regard to the lower weir, new parkland planting would be carried out on the west bank, within the existing parkland trees and already forms part of the Parkland Management Plan. A group of 3 oaks would be planted on the east bank, based on historic tree positions.

Officers had some concerns in that the Parkland Management Plan indicates that self set Alders along the river banks between the lower weir and One Arch Bridge would be removed to open up views between Paine's Mill and the bridge. This would result in the hydro stations becoming more prominent in views from the bridge. Further information has again been received to confirm that the number of trees to be removed in this area has reduced significantly, mainly for ecological reasons outside of this application and in consultation with the Authority's ecologists.

Step 5: Making and documenting the decision and monitoring outcomes:

From this assessment, it is considered that the proposed development would have a significant visual impact on the lower weir and its parkland setting but this impact would result in some harm but not substantial harm its setting. These preliminary conclusions are partly based on the proposed mitigation, which would serve to minimise the visual impact of the proposals on the wider Estate and surrounding landscape. It is also considered that the turbines would reflect the historic use of the River Derwent to power the nearby Paine's Mill and would be a contemporary addition to the Estate that would represent a sensitive and well-designed evolution in the way in which the Derwent has been used to provide power for the Estate.

Notwithstanding these conclusions, it is acknowledged that the proposals will have a relatively substantial form and massing and change the character and appearance of the parkland within a visually prominent location that is appreciated by a large number of visitors for its scenic beauty and its historic interest. Equally, strong concerns have been raised about the direct impacts of the proposals on the weir as well as the impacts of the development proposals on its setting.

Impact on Fabric

A heritage appraisal, which examines the impact of the proposals on the structure and archaeology of the weirs, has been submitted from a firm of archaeologists. This appraisal clarifies that the principle elements of the weirs, i.e. the stepped structures would not be affected by the proposals, as would the walling and culverts along the west bank of the river. However the proposals do involve the removal of parts of the retaining walls along the east sides. A 5m wide section of wall would be removed to make way for the inlet channel. The wall would be replaced by an inlet gate with a small section of wall rebuilt above the head of the gate.

A 20m stretch of wall would be removed below the weir, although this would be re-built further back to form the new bank wall to the hydro station. The submitted report states that this can be considered as having a high impact upon the extant historic fabric of the weir, although careful dismantling would allow the stone to be re-instated on the new walls.

The report also states that with regard to impact on subsurface remains, the construction of the turbine would require the excavation of a large hole on the adjacent section of riverbank to a depth of approx. 3m below existing ground level, to allow for foundations. This excavation would remove any subsurface features within the footprint of the new structures, the impact of which can be regarded as high. However the report states that no known pre-18th century features would be affected by the works.

The report recommends that an archaeological watching brief is undertaken during excavations to record the construction of the weir and associated culverts. A key consideration however is that the response from the Authority's Archaeologist disagrees with these recommendations. This response expresses deep concerns about the impact of the proposals on the revetment walling, associated culvert features and any other archaeological features that might survive and instead recommends field evaluation prior to determination, rather than 'preservation by record'.

On balance, given that the main bodies of the weir will be unaffected, and the majority of the retaining walls to be demolished would be re-built in a different position, planning officers consider that there would not be significant harm to the above ground fabric of the weir. With regard to subsurface remains, a condition requiring a Written Scheme of Investigation is considered, on balance, to be a reasonable approach in this case. Subject to such a condition it is considered that the scheme can be seen to be compliant with policies in the Development Plan and the Framework, which seek to conserve and enhance weir.

The Authority's Archaeologist has also commented that no engineer's assessment of the physical impact of the works on the weirs has been submitted and expresses concerns that the

failure of the weirs would impact on the delivery of the restoration of the historic parkland design. The applicant has responded by stating that all site works would be overseen by a qualified engineer.

Heritage Impact Assessment

In conclusion, the submitted Heritage Statement and officers have determined that there would be harm to the existing settings of the weir, primarily by virtue of the massing and design of the proposed hydro-stations. The proposed planting would mitigate that harm to some extent but would not eliminate it.

Following detailed pre-application discussion with officers and the Authority's Historic Buildings Architect the design of the turbine structures has been paired down to the minimum size required operationally, however the structures would remain as sizeable features in the landscape and they would have a significant visual presence especially when viewed from closer quarters. With regard to impact on fabric, subject to conditions it is considered that the harm would not be substantial. Moreover, the proposed development can also be seen as a well-design contemporary feature in the landscape that represents the evolving way in which the Estate harnesses power from the River Derwent.

Therefore, whilst harm has been identified, officers are satisfied that on the basis of the information submitted and with reference to the Framework, it would not be 'substantial'. It should be noted that Historic England's response also did not identify the harm as being substantial but does recommend that the Authority be satisfied that the public benefits of the scheme outweigh identified harm before granting planning permission for the current application.

Issue 2 - Whether the public benefits of the scheme outweigh any harm identified.

The Framework states that where a proposal will lead to less than substantial harm to the significance of a designated heritage asset, this harm should be weighed against the public benefits of the proposal. The Historic England response also urges the Authority to adopt this approach in this particular case. In these respects Historic England requested evidence of the benefits of the scheme be submitted and recommends that the Authority needs to be satisfied that alternative energy generation methods and locations across the estate have been fully assessed.

Following these comments the applicant has submitted a statement with regard to the benefits of the scheme. It explains that Chatsworth has a history of utilising power from the moors that lie directly to the east above it and which power an existing head turbine and provide the natural head to play the water features in the gardens. However, despite the existing turbine, the House and its tourist attractions have, at peak times, an additional load of 550kw, all of which comes from fossil fuelled power stations.

The proposed hydro-electric stations would produce 445,000 kwh of renewable electricity saving the equivalent of 350T of carbon emissions and in doing so would offset 23.6% of the House's electrical consumption. The document explains that the savings generated would allow the Trust to re-invest in sustaining the House, Gardens and Park. The generation of jobs from plant construction and ongoing maintenance are also highlighted. With regard to social benefits the report states that the hydro-electric scheme would promote public awareness of the benefits of renewable energy supply and would demonstrate that renewable energy generation is possible in even the most challenging environment, encouraging others with less challenging environments to consider how they could implement such projects.

A full investigation of other sites and other energy generation methods has not been provided. However the applicants have emphasised that the proposed sites are the only feasible and viable sites for a hydro scheme as the head of water provided by the weirs is required to power the

turbines effectively. Also the stations must be in relatively close proximity to the House to avoid losses in transmission. The submitted information also highlights that to produce an equivalent amount of power by wind energy, would require two 24-37m high turbines with 24m blade diameters and the equivalent solar pv scheme would cover an area of approximately one hectare of the parkland.

In conclusion, the considerations with regard to conservation of the historic environment are finely balanced in the absence of viable alternatives to the current proposals and the desirability of promoting and encouraging sustainable developments that would help to maintain the viability and vitality of the Chatsworth Estate. In this case, harm to significance has been identified, which could bring the proposals into conflict with Core Strategy policies CC2 and L3 and Local Plan policy LC6 but the harm is less than substantial and would be mitigated by the proposed tree planting to some extent.

As noted above, officers also consider that the proposed hydro stations are generally well designed. Their elongated, curved shape would give a distinctive appearance which would not be entirely at odds with their surroundings and despite their size, the use of local, natural materials would help to anchor them into the surrounding landscape. Equally, as also noted above, officers consider that the development of these schemes would mark another stage in the production of energy from the weirs, which, in the case of the lower weir has been used historically in relation to the working of Paine's Mill. This conclusion is reached also in the light of the fact that the Authority's Landscape Architect has raised no objections to the proposals (in that the scheme is a modern interpretation of the old mill leat and waterwheel at Paine's Mill) and the Authority's Historic Buildings Architect, also raised no concerns in principle.

If Members are minded to approve the current applications, they should do so only on the basis of the advice in paragraphs 134 and 140 of the National Planning Policy Framework, which state that *"Where a proposed development will lead to less than substantial harm to the significance of a designated heritage asset, this harm should be weighed against the public benefits of the proposal, including securing its optimum viable use"*. Significant weight must be given to the Authority's statutory duties under sections 16 and 66 of Planning (Listed Building and Conservation Areas) Act 1990 to have special regard to the listed building. Recent case law makes it clear that the statutory duty cannot be outweighed by other matters, such as the need for renewable energy.

The fact that there are no other suitable sites, that other renewable technologies are likely to be harmful and the public benefits achieved in that the electricity produced would provide a significant amount of renewable energy for the Estate, is a factor to take into account but it cannot outweigh any harm to the heritage asset. As set out above, officers consider that the scheme is acceptable in its own right, although it would clearly have an impact on and would change the historic landscape setting

Conclusion

It is therefore concluded that the proposed development is compatible with the relevant Development Plan policies and policies in the National Planning Policy Framework taken as a whole.

Although the issues are finely balanced in this case, a recommendation of conditional approval rests primarily on a conclusion that the identified harm to heritage assets would be less than substantial and would be outweighed by the benefits of the scheme, which would produce a source of renewable energy that would significantly reduce Chatsworth House's reliance on fossil fuels. Furthermore, the applicant has adequately demonstrated that there are no other suitable sites and that other equivalent renewable energy technologies are unlikely to be less harmful. .

Accordingly, the current application is recommended for conditional approval.

Human Rights

Any human rights issues have been considered and addressed in the preparation of this report.