

RESTORATION OF THE DELL, PLAS NEWYDD



ACCOMPANYING REPORT

by

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for



Asiantaeth Datblygu Gwledig
Rural Development Agency



Bryniau Clwyd a Dyffryn Dyfrdwy
Clwydian Range and Dee Valley

Ardal o Harddwch Naturiol Eithriadol
Area of Outstanding Natural Beauty



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This report accompanies the Appraisal and Concept Plan drawings

1.0 INTRODUCTION

Bronwen Thomas Landscape Architect was commissioned in August 2016 to carry out the design for the Restoration of the Dell project as part of the 'Our Picturesque Landscape' Heritage Lottery Fund Landscape Partnership Bid. Extracts from the design brief are given in appendix 1.

During the course of the project the brief has been developed to take account of client requirements and to make best use of limited resources in order to provide a useful package of material for the HLF bid.

The site survey was carried out in August and September 2016, with meetings with the client, Plas Newydd staff, and with other consultants and interested bodies.

The outputs for this project are:

Executive summary

Appraisal plan drawing at 1:500

Concepts plan drawing at 1:500

Series of project descriptions, giving historic references, appraisal and proposals, outline costs

Accompanying report providing additional information

2.0 OVERALL HISTORIC AND SITE APPRAISAL

2.1 The Picturesque style

The aesthetic ideal of the 'Picturesque' in art and landscape developed in the latter third of the eighteenth century, during the Regency period, as a response and appreciation of the natural landscapes and antiquities of Britain. This has variously been described as:

Picturesque = type of scenery that is suitable for painting - broken, irregular, varied, spectacular.

Picturesque = "roughness and sudden variation joined to irregularity of form, colour, lighting, and even sound." (Hussey)

'Picturesque is nature or art obeying the universal laws of perfect existence, rudely, violently, irregularly and displaying power'

In gardens = dramatic scenery, contrasts in texture and vegetation, contrasts in light and shade, sense of romantic wildness.

2.2 The Picturesque at the Dell, Plas Newydd during the Ladies' time

There was a gradual development of the grounds of Plas Newydd in the Picturesque style, on a small scale, between the 1780s and 1820s, by Lady Eleanor Butler and Miss Sarah Ponsonby known as the Ladies of Llangollen.

The Dell, as an integral and contrasting part of the grounds at Plas Newydd, became one of the 'must-see' places to visit for tourists of the time.

The following description gives an idea of the scene at the height of its development:

"The walks are pleasingly diversified and the hermitages, temples, grottos, seats etc. which occur, communicate ideas, the most sublime and tranquilizing. Some of these contain interesting selections of popular books. A tributary stream to the river Dee winds gracefully through the grounds, interrupted in places by rocky beds, producing that agreeable murmur which adds to the romantic inspiration of these solitudes."

S & G Nicholson, visiting artists, 1824

Overall, it appears that the Dell was a 'natural' landscape of grassland enclosures with scattered trees including groups of natives and exotics. Views to the surrounding hills and to the Cyflymen stream, plus several small romantic buildings and bridges provided opportunities for contemplation and drawing. These would have been linked by a circuit of informal paths and rustic bridges.

2.3 The main contemporary sources of reference to the Dell during the Picturesque period which have been used to inform the appraisal and concept design are:

- There are references in the Ladies letters and journals to plantings, work to river, summerhouse,
- A series of watercolours by Lady Leighton in 1820s show rustic and gothic timber bridges, views, open dell sides, a rustic seat, the font and a 'grotesque elm'.
- References in various travellers' and visitors' journals and letters.

2.4 Contemporary Picturesque features that remain in the Dell:

- The Wellhouse with the Valle Crucis font which is a Grade II Listed Building. Erected 1782 at the start of Picturesque development of the Dell. The walls on either side, with inset stone tablets, may have been added later by the Ladies as they do not appear in Lady Leighton's watercolour.
- The alignment of the dog-leg path down towards the Wellhouse from the main entrance to the Dell may be original. It is the only remaining path alignment which is similar to boundaries shown on the 1840 map.

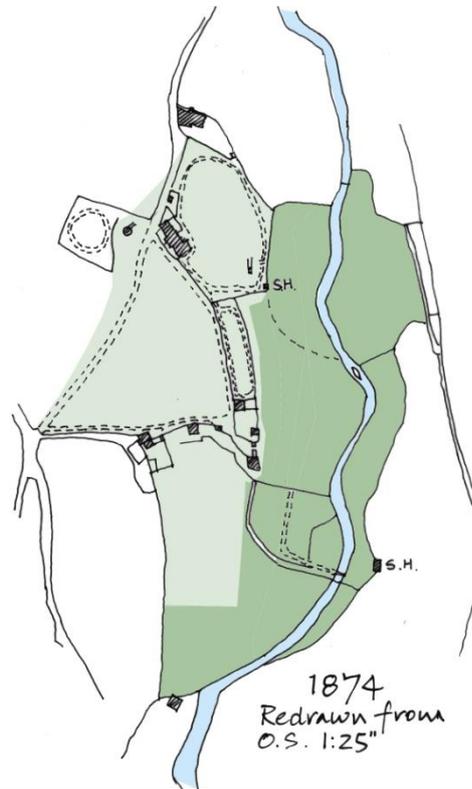
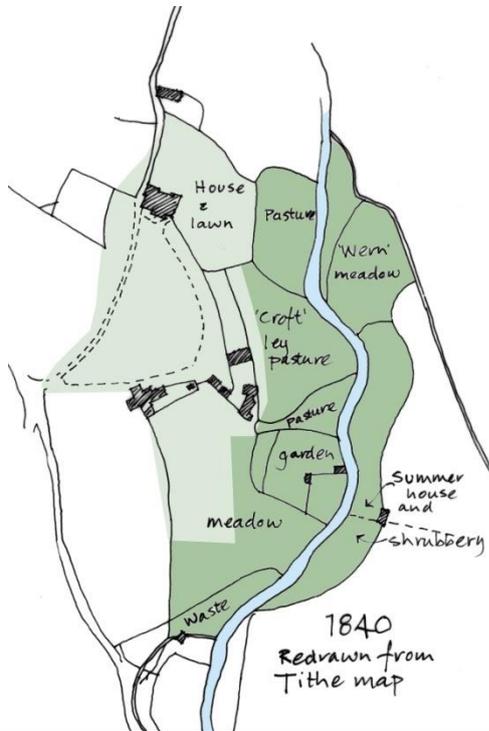
2.5 The Dell after the Ladies' time

After the Ladies died, Plas Newydd passed through a series of owners who respected the 'Picturesque' grounds of Plas Newydd whilst developing their own ideas. Gradually and inevitably the small buildings and rustic bridges decayed and were lost (apart from the wellhouse). Paths and bridges changed and the Dell became much more wooded, with the views out being hidden.

2.6 The main sources of reference about later developments at the Dell which have been used to inform this appraisal are:

- 1840s tithe maps, OS maps 1877, 1900, 1912, 1932 sales map
- CADW's Register of Parks and Gardens Wales, ref. PGW 48
- Historical overview in the 1998 Plas Newydd management plan by Nicholas Pearson Associates

2.7 Comparison of historic maps showing the gradual development of the designed landscape and how it has changed since the Ladies' time:



Earliest map showing Plas Newydd and the Dell, some 10 years after the Ladies' time

Layout of the Dell is little changed in thirty-plus years.



Further developments by Colonel Yorke in late 1800s show two ponds in the Dell.

The path layout is similar to that which exists today, with the stone bridges in place, and a hydraulic ram replacing the two ponds

2.8 The Dell today

Plas Newydd has been in public ownership and open to visitor since the 1930s. Although the gardens around the house have been developed as a public park, the Dell remains primarily semi-natural woodland with an informal path network where the picturesque qualities remain. It is appreciated by local people for enjoying a quiet walk, but it is not always obvious (or promoted) to visitors.

Following the management plans of 1998 and 2012, the main developments in the Dell in 21st century have been the rebuilding of stone retains on either side of the stream following severe flooding, and the construction of the Summerhouse and Lady Eleanor's Bower.

Recent clearance, particularly of the overgrown laurel understorey, has revealed 'new' views and the potential for more, and has done much to alleviate its previous rather intimidating and neglected air.

2.9 Features that have been altered or added but are in the Picturesque style:

- Three stone bridges across the Cyflymen stream. The original bridges, as shown in pictures of the time, were rustic timber which have long vanished and there is no way of telling where they were located. The series of maps show various locations, with the current ones being place by 1912.
- The current Summerhouse was constructed in 2004 on the site of a previous summerhouse (marked SH on maps since 1874) but with a reduced footprint in order to be located entirely within Plas Newydd's perimeter fence.
- Lady Eleanor's Bower was re-constructed in 2004 on the site of a previous summerhouse overlooking the Dell.

2.10 Characteristics and qualities of Picturesque style that remain:

- The sequestered character of the Dell, hidden from view from all sides, including from the rest of the grounds of Plas Newydd.
- Steep paths, enhancing feeling of drama and contrast.
- Limited views and vistas within and into the Dell, with contrasts between open and closed spaces, tantalising glimpses of the stream, the follies and further hillsides, sequences of changing views
- The rapidly-flowing Cyflymen stream which forms the visual and auditory focus of the Dell.
- Sounds are 'trapped' within the Dell, with birdsong and flowing water being the main sounds. Sounds from beyond, such as traffic noise, mainly disappear within the Dell. The adjacent children's playground to the east, however, brings noise at odds with the Dell and gives the impression that the Dell is full of children playing.

2.11 Features and characteristics that detract from the Picturesque

- The pumping station with its black and white paintwork, is unnecessarily eye-catching at the lower end of the Dell.
- Along the eastern boundary the palisade security fence can be seen in places, prominent against a sun-lit backdrop, especially in the vicinity of the Summerhouse.
- Following severe flooding in 2002 parts of the stream have been canalised between high dry stone walls which prevents access and somewhat reduces appreciation of this most natural feature.
- There are now no clear views, even in winter, of the dramatic surrounding hills, especially to Castell Dinas Bran.
- Intrusive, uninviting and inaccurate signs and interpretation boards.

2.12 Appraisal plan

The Appraisal Plan has been produced at 1:500 scale at A2 size. It shows the key features and qualities of the Dell, giving a date that each first appeared on maps or descriptions, plus a brief analysis. The reduced version below gives an indication of its contents.



3.0 DESIGN THEMES AND OPPORTUNITIES FOR RESTORATION

3.1 The three overarching and inter-linked themes for restoration are:

- Enhancement of the Picturesque character;
- Improvement to access;
- Community engagement.

Opportunities for restoration in the Dell capitalise on the recent improvements on the ground, and develop the proposals in the 1998 and 2012 management plans (see Appendix 2 for management plan recommendations). These depend on enhancing the perception of the Picturesque character, rather than necessarily attempting to re-create historically correct features where locations and remains are in doubt.

3.2 **Restorable or re-creatable Picturesque features, characteristics and qualities:**

Vegetation:

- Range of tree species, from contemporary references
- Birch avenue, mentioned in journal
- Root-flares and distorted/'grotesque' trees such as the 'Grotesque elm'
- Woodland groundcover species mentioned in contemporary references

Visual and sensory

- Glades in contrast to wooded areas, to reclaim an more open character;
- Eye-catching planted and built features, worthy of pictures;
- Views to surrounding hills such as Castell Dinas Bran, the limestone scarp, Barber's Hill, Craig-y-Dduallt, and to close-by places including Plas Newydd and Weaver's Mill;
- Vistas within and into the Dell, with contrasts between open/enclosed areas, glimpses, sequences of changing views;
- Variety within the stream, with attention to sound and movement, such as waterfalls, pools and rocks.

Built features:

- Rustic paths, rails and retains.
- Rustic seat viewpoint, as shown in contemporary watercolour;
- Moss house, as shown in contemporary watercolour;
- Rustic bridges, as shown in contemporary watercolour (over wet areas, rather than the stream, for safety reasons)
- Circular base with remnants of stone wall at hydraulic ram site - more research needed to ascertain what this was.

3.3 **Other later features of historic interest which may be restored or recreated:**

- Water management, with water probably being taken from the upper (southern) weir to the pool in the midway hollow that shows on the 1900 map (but not in 1912) and from there to the pool in the lower hollow. More research needed to ascertain how this all worked and what pipes and other features remain.

- The hydraulic ram, marked on 1912 map (but not 1900). The hydraulic ram itself is at Plas Newydd (*pers.com.*).

3.5 Opportunities for improvement to access

Within the Dell:

- More inviting entrances to the Dell from the grounds of Plas Newydd;
- Clear route around the Dell for less-abled access, utilising the route that maintenance vehicles take;
- Improvements to steep path to make them safer to use, without compromising their character;
- Places for resting and appreciating the Dell at intervals;
- Improved access for the residential area to the east.

Beyond the Dell (and beyond direct scope of this restoration project):

- Directional signs to the Dell;
- Un-intrusive and informative interpretation, throughout Plas Newydd;
- Way-marked safer attractive walking route from town centre - see suggestions in 'beyond Plas Newydd';
- Trails and links to canal, beyond up valley, following the Ladies favourite walks;
- Promotion of Plas Newydd as free access to the grounds, including the Dell.

3.6 Opportunities for community engagement:

- 'Garlic extravaganza' in spring - garlic picking, clearances, chefs and local restaurants, medicinal uses;
- Music in the Dell - during International Eisteddfod, John Parry (local composer/player, contemporary with the Ladies), harping in Summerhouse and Lady Eleanor's Bower;
- 'Picturesque' sketching/painting/photographing places, with the use of "Claude glasses" (convex mirrors, smoked and silvered);
- Creating rustic furniture/seats, using wood from site, including laurel, and growing/training trees and shrubs into shapes;
- Stream features including damming/waterfalls/clearance, after spate and to reduce impact of flooding;
- Bog garden and summerhouse garden creation and establishment/maintenance.
- Bulb and wildflower planting.
- Moss house re-creation, youth scheme, using sustainable building techniques and materials from site;
- Natural play opportunities throughout;
- Links with other historic landscapes/gardens - Exchange of plants and expertise, Chirk, Erddig, Whitehurst.

4.0 PUBLIC CONSULTATION

The opportunity was taken to include some specific public consultation about the Dell in the Community Engagement and Consultation exercise for OPL which was carried out by Haygarthberry Associates/Celyn Consult in September 2016.

The flip chart sheet illustrated here was displayed at the public engagement event at Plas Newydd in September. The # and + symbols indicate public comment from two separate versions of the chart. Although this allowed only a small sample of the public to comment, it shows that keeping the Dell's secret wild character, and opening up views to the surrounding hills are considered most important, followed by improving the paths and entrances. This reinforces the outcomes of the analysis, and is reflected in the concept design.

OUR PICTURESQUE LANDSCAPE

Enhancement of the Dell here at Plas Newydd is being considered. (If you don't know the Dell - go and have a quick look!) Please indicate what you think of these ideas.

	very important	quite important	not sure	not important
Improving the paths and entrances	+ ###			
Keeping its secret, wild character	++###			
Opening up views to the surrounding hills	++###			
Encouraging more variety of vegetation	##			+
Re-creating some of the original Picturesque features such as the Moss House and rustic seats	#	+		
Making the Cyflymen stream more interesting and accessible		##	+	

(+ # added from consultation results)



5.0 BEYOND PLAS NEWYDD

During the course of the survey it became apparent that the Dell, and Plas Newydd generally, are not well-connected with the town or surrounding countryside. The following suggestions are included as possible enhancements relating to the wider landscape of the Vale of Llangollen.

5.1 Improved pedestrian links from the centre of Llangollen

Currently signs from the centre lead visitors, both in vehicles and on foot, up the steep, narrow, winding road to Plas Newydd, as shown in the following photographs.



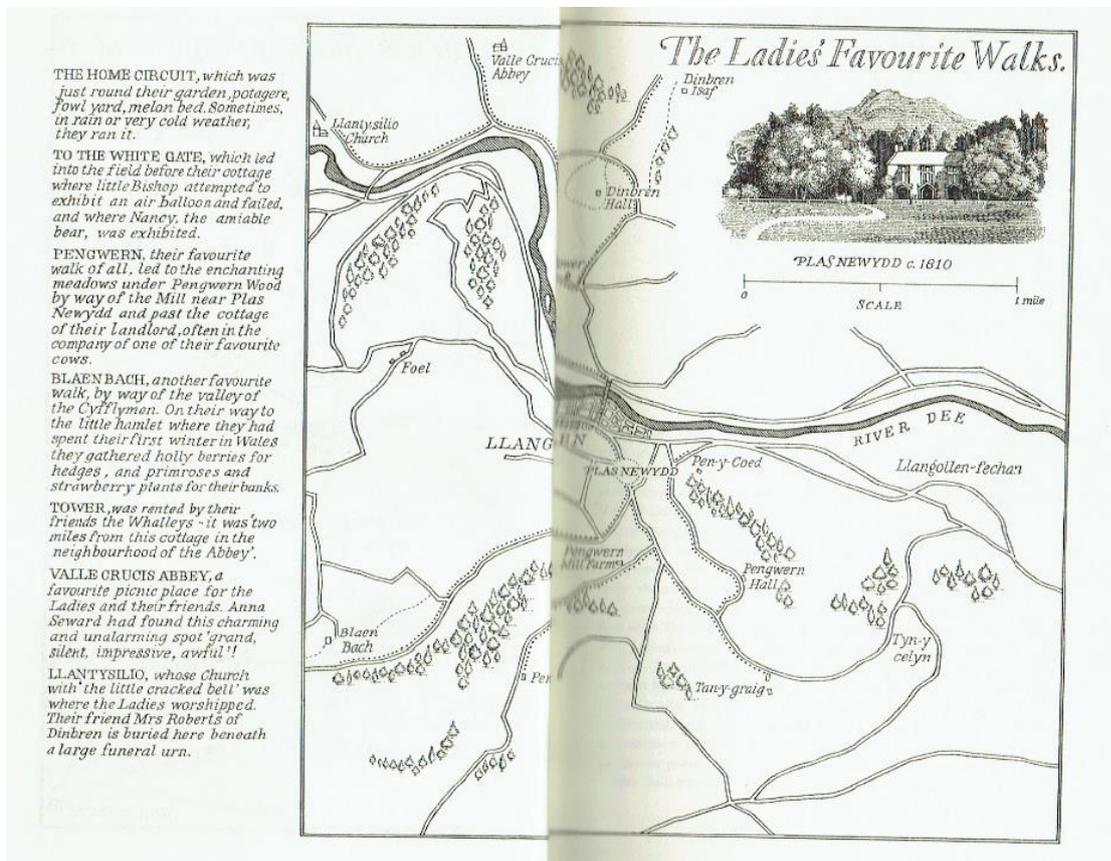
A much safer, more attractive and historically more interesting route is available for pedestrians, via Church Street (the former main road, prior to Telford's A5) and Butlers Hill. This shown in the following photographs, starting from the crossing point at the bottom of Butler's Hill, and on the aerial photograph.





5.2 Links to the countryside

The following extract from 'Life with the Ladies of Llangollen' by Elizabeth Mavor, showing routes mainly on public rights of way and minor roads which could readily link up to other trails such as Dee Valley Way.



6.0 DESIGN CONCEPT

The concept proposals take into account the current practicalities and concerns of:

- health & safety - see table 1: risk assessment
- access for all (within the limits of the steep dell)
- tourism/visitors
- day-to-day management
- sustainable design principles
- funding and other resources
- community engagement
- climate change and flooding risk
- statutory requirements

The concept proposals are shown at 1:500 on the overall A1 size Concept Plan, a reduced version of which is shown below.



TREE VEGETATION MANAGEMENT AND PLANTING: Proposed planting and plant lists for all vegetation management.

Aims:

- Continue developing and managing mixed age/species woodland with variety of glades and areas of feature plantings to enhance historic features in the Pictorial style, and improve biodiversity.
- In new plantings, use plants that would have been available to the Ladies, with no addition of later introductions or varieties.
- Work for community engagement with development of feature plantings, nurseries, and lists of plants and vegetation/soilbank.

- Tree and understorey management:**
- T1 Glades
 - T2a Prune to keep views clear
 - T2b Conceal/reveal at entrance
 - T3 Security fence screen
 - T4 New Grosvenor Elm
 - T5 Root flares to keep clear
- Tree (feature) planting proposals:**
- P1 Birch avenue
 - P2 Conifer groups
 - P3 Southern woodland edge trees
 - P4 Dogwood around former pond
 - P5 Ornamental:
 - PSa Main entrance
 - PSb WellsHouse/Summerhouse surrounds
 - PSc Hydraulic ram bog garden
 - PSd Streamside
 - P6 Security fence screen planting
- Ground floor management:**
- G1 Gullies
 - G2 Introduction of variety of wildflowers

PATHS AND ASSOCIATED CONSTRUCTION: Continuing improvements and maintenance of all existing routes, and new sections of path.

Aims:

- Retain all current path alignments;
- Maintain an informal, rustic character for paths throughout the Dell, whilst ensuring that all paths are robust and fit-for-use;
- Improve permeability (without alignment) for access, use and character;
- narrow rocky romantic paths;
- 'heavy' routes for less-ambulant use and maintenance;
- not-to-difficult paths.

- Provide new links to viewpoints.
- New and re-surfaced paths
- Historical replacement and new walls
- Steep path improvements - surface/stone/retaining/edges
- Stepping stones

SEATS AND VIEWPOINTS: Provision of site-specific seats throughout the Dell, relating to views and seating places.

Aims:

- Create bespoke seats based on contemporary illustrations and descriptions relating to the Pictorial at the Newydd, making use of local materials and skills and giving opportunities for community involvement;
- Provide seats at intervals throughout the Dell, at places to linger and rest; relating to the path network;
- Make the most of existing and potential views and of specific places within the Dell by opening up and maintain views from seat locations to surrounding landscape, and to features within the Dell.

- Bespoke seats:**
- S1 Tree seat
 - S2 Rustic seat
 - S3 Hydraulic ram seat
 - S4 Set set into stone retain
- Simple seats:**
- S5 Simple seats

Our Picturesque Landscape
RESTORATION OF THE DELL,
PLAS NEWYDD
CONCEPT PLAN
 scale: 1:500 @ A1 Date: February 2017



To be read in conjunction with project descriptions

HYDRAULIC RAM BOG GARDEN: Creation of a garden incorporating the former hydraulic ram and pond.

Aims:

- Create an interesting, appropriate, 'Pictorial' feature to focus point for lower part of the Dell
- Use local materials and skills, and give opportunities for community engagement in historic research and site investigation, re-construction of 'rustic' Pictorial features, and creation of wetland garden.

MOSS HOUSE: Re-creation of a Pictorial folly resembling the Moss House shown in the contemporary watercolour.

Aims:

- Recreate a rustic Pictorial building, with local materials and vernacular building methods contemporary with the Ladies,
- Use local materials and skills, and give opportunities for community engagement in historic research and site investigation, re-construction of 'rustic' Pictorial features, and creation of wetland garden.
- Provide opportunities for local engagement, youth involvement, developing building and teamwork skills, and historic research.

NORTH ENTRANCE: Improvements to surfaces and signage, and creation of sitting/viewing areas to make a more welcoming and attractive entrance.

Aims:

- Create a more enticing and attractive entrance.
- Improve permeability for access, use and character down into it.
- Retain the sequestered feeling of the Dell at the entrance, with only glimpses in, on the Pictorial 'conceal and reveal' principle.

MAIN ENTRANCE: Improvements to surfaces and drainage, signage and planting to make the entrance more enticing and 'readable'.

Aims:

- Improve permeability for access, use and character down into it.
- Improve seating, attractive, accessible and 'readable' entrances, drawing the eye away from the compost area and towards the routes into the Dell.
- Retain the sequestered feeling of the Dell at the entrance, on the Pictorial 'conceal and reveal' principle.

WELLSHOUSES AND SUMMERHOUSE SURROUNDS: Creation of woodland garden on slopes to complement the buildings.

Aims:

- Provide a rustic, 'Pictorial' feature to complement the built features, designed to be appreciated from the woodland paths and from the Summerhouse
- Create new (restricted) pedestrian access point from residential area to east, whilst screening the play area.

UPPER MERE: Creation of a sitting area overlooking the stream.

Aims:

- Create a relaxing place for the appreciation of the sound and movement of the stream, as a 'Pictorial' feature.
- Improve permeability for access, use and character down into it.
- Identify purpose and condition of stone and water supply.

CYLLWEN STREAM: Creation of series of features using stone from stream bed and banks.

Aims:

- Use local materials and skills, and give opportunities for community involvement;
- Increase opportunities to access and appreciate the water
- Increase marginal vegetation and wildlife potential
- Consider mitigation against future flooding.

- C1 Lower weir enhancement
- C2 Ford for occasional vehicular access
- C3 Stepping stones
- C4 Future wall reduction/path re-alignment

7.0 SPECIFIC PROJECTS WITHIN THE DELL

The concept proposals are presented as a series of more detailed stand-alone projects. This is to allow for selection of specific enhancements to be carried forward for HLF or other funding, within the overall framework of restoration.

7.1 Format:

- Brief project description,
- Historic references,
- Appraisal, with photographs
- Aims of project,
- Proposals - annotated plan/illustration,
- Outline costs.

7.2 Key area improvement projects:

Main entrance: Improvements to surfaces and drainage, signage and planting to make the entrance more enticing and 'readable'

North entrance: Improvements to surfaces and signage, and creation of sitting/viewing area to make a more welcoming and accessible entrance area.

Wellhouse and Summerhouse surrounds: Creation of woodland garden on slopes to complement the buildings.

Cyflymen stream: Creation of a series of features using stone from stream bed and banks.

7.3 New/recreated feature projects:

Moss house: Re-creation of a Picturesque folly resembling the Moss House shown in the contemporary watercolour

Hydraulic ram bog garden: Creation of a garden incorporating the former hydraulic ram and pond.

Upper weir: Creation of a sitting area overlooking the stream.

7.4 Site-wide enhancement projects:

Seats and viewpoints: provision of site-specific seats throughout the Dell, relating to views and resting places.

Paths and associated construction: Continuing enhancement and maintenance of all existing routes and new links

Tree/vegetation management and planting: Management of all vegetation, comprehensive tree survey, proposed planting and plant lists.

8.0 HEALTH AND SAFETY DESIGN ISSUES Table 1: Risk assessment

	HAZARDS	AVOIDANCE	PROJECTS
Restricted access	Vehicle access restricted to dumper-sized vehicles.	Re-use of materials from site. No major excavation or other works requiring large-scale machines	All
	Storage of materials and machinery	No necessity to store within the Dell. Use of Plas Newydd existing storage facilities	All
	Deliveries within public access area	Ensure safe access, unloading, storage	All
Adverse working conditions	Working on steep slopes, and in vicinity of mature trees	Avoidance of necessity to work on steep slopes. Hand-dig as necessary	Paths Wellhouse/summerhouse Trees/vegetation
	Unstable ground, retaining walls, water seepage	Limited excavation and construction	Paths Wellhouse/summerhouse
	Work in stream, fast-flowing water, crossing the stream.	Summer working where possible. Provision of ford for occasional vehicle access. Use of pedestrian bridges for most delivery of materials etc.	Upper weir Cyflumen stream Moss House Wellhouse/Summerhouse
	Manual handling	Limited use of large/heavy materials, etc.	Moss house Paths
Fragile constructions, sensitive sites and permissions	Narrow stone bridges	Limit weight for access	Moss House Wellhouse/summerhouse
	NRW for work effecting Cyflymen stream	No works restricting flow or exacerbating future blockages.	Upper weir Cyflymen stream
	Cadw for listed buildings	No disturbance to ground within 3m of Wellhouse	Wellhouse/summerhouse
	Welsh Water for lower weir, pumping station	No disturbance to or exposure of pipe	Lower weir Hydraulic ram bog garden
Existing services	Underground services/pipes relating to pumping station.	Regular access to pumping station maintained	Lower weir Hydraulic ram bog garden painting
	Overhead cables from main entrance to play area opposite	No high vehicles required. Care with tree work and avoidance of o/h lines	Main entrance Tree/vegetation
	Possible former water supply pipes.	Research into possible alignments required	Upper weir Hydraulic ram bog garden
Public protection	Public access restrictions	Programming of works	All

9.0 OUTLINE COSTS, PRIORITIES AND PROGRAMMING

9.1 Outline costs

The outline costs given below are also shown in the specific project sheets.

Table 2: Breakdown of outline costs

Main entrance improvements:	11,500
Resin-bound gravel surface, over existing/patched tarmac	3000
stone edges, rumble strip, cobbles and steps	3000
drainage improvements	1000
planting on banks	2500
Directional signs, bollards	2000
Wellhouse and Summerhouse garden/surrounds:	8700
Tree clearance,	500
drainage	500
**planting on slopes,	5000
Path/railing improvements	700
Boundary fence/gate	2000
Moss House:	10,000
**Stone base, rough timber frame, brushwood-hung walls, thatched roof, softwood panel interior + seats	
Paths and associated construction:	8750
Steep paths: re-grade, repair stone retains, edges and steps	3000
Replace/new handrails	4250
Stepping stone paths	500
General improvements to edgings, surfaces, etc	1000
Seats and viewpoints:	10300
**Rustic seat viewpoint, including path/platform, view clearance, rustic seat, planting	3650
Weavers Mill seat/path	1150
seats around trees (2no.)	3000
simple timber (5no.)	2500
Planting generally:	7600
Birch avenue	2000
Other tree groups	2000
Boundary screen reinforcement	500
Dogwood	600
**garlic clearance	500
Herbaceous/ground cover native woodland bulbs/herbaceous, woodland/glade grass establishment.	2000
Hydraulic ram bog garden:	8850
Seat feature,	1500
stepping stone path and boulders	550
pond	1000
bridge	1800

**planting	4000
Cyflymen stream:	8300 (+ 26500)
**Stepping stones	500
Ford	800
**lower weir	500
Gabions (nominal length 25m)	6500
(long-term - Lowering and re-aligning sections of high retains	26,500)
North entrance improvements:	7400 (+600)
Re-grade/build-up seating platform,	800
Stone retain	1200
Bound gravel surface	500
(alternative resin-bound gravel surface, including DBM base	1100)
Stone steps	4000
Rails, sign, seat	900
Upper weir	3000
Platform	2000
Seat	500
Rails	500

Notes:

- All costs are indicative outline estimates, subject to revision.
- All costs relate to contract work, volunteer work not included
- Design costs are NOT included (various).
- Preliminaries and contingencies are NOT included (plus 20%)
- Tree survey NOT included
- Items marked ** are considered suitable for volunteer/local engagement participation.
- Further research (beyond scope of this project) required for:
 - water management - take-off from upper weir/former ponds/hydraulic ram/water tower.
 - circular base/stonework at hydraulic ram

9.2 Priorities

It is proposed that the first phase of restoration considers works that cover elements of all the overarching interlinked themes of:

- Enhancement of the Picturesque character;
- Improvement to access;
- Community engagement.

Priority should also be given to works that improve safety, halt deterioration, and preparatory works that are required in advance of further works. The client has indicated that some projects are considered priority in order to have an impact and to fit in with funding programmes. Therefore **Table 3** overleaf shows a suggested programme for the client to consider.

Table 3: outline programme and associated costs

Project	Phase 1		Phase 2		Long-term	
	Works:	Outline costs:	Works:	Outline costs:	Works:	Outline costs:
Main entrance	All works	11,500				
Wellhouse/Summerhouse surrounds	All works	8,700				
Moss House	All works	10,000				
Paths and associated construction	Garlic clearance:	500	Other general improvements:	500	On-going maintenance - annual inspection and minor repairs	-
	Steep paths work:	3,000				
	Handrails:	4,250				
	Stepping stone path:	500				
Seats and viewpoints	Rustic seat/path/platform/clearances:	3,650	Tree seats:	3,000	On-going maintenance - annual inspection and minor repairs	-
	Simple seats:	2,500	Weaver's Mill seat/path:	1,150		
Tree/vegetation management and planting	Comprehensive tree survey	Not included in this project	Screen planting	500	On-going treeworks, laurel/view clearance.	-
	Tree works including grotesque elm, root flares	500	Dogwood	600		
	Birch avenue and tree groups	4,000	Glade establishment	1,000		
	View clearances	500	Garlic clearance	500		
Hydraulic ram bog garden	Garlic clearance	500	All other works	8,350	On-going garlic control and use	-
Cyflymen stream	Ford	800	Lower weir	500	Wall reduction	26,500
	Stepping stones	500	Gabion protection	6,500		
North entrance			All works	7,400		
Upper weir			All works	3,000		
TOTALS		51,400		32,500		26,500

APPENDIX 1: Extracts from the Brief

The **objectives and outcomes** described in the project brief were:

- To design / plan and fully cost an enhancement plan for the area of the grounds of Plas Newydd known as the Dell.
- To produce a fully costed design to RIBA stage C Level.
- To produce a range of materials for consultation on the scheme including appropriate illustrations
- To produce a full site survey, identifying services and topographical plan and any other additional relevant information
- The design should take into account all regulations including CDM
- The plan should identify volunteering opportunities which could be provided during delivery.
- To produce the work in a suitable format for inclusion in the Heritage Lottery Fund's Landscape Conservation Action Plan. Please refer to the Heritage Lottery Fund's Website for further guidance relating to Landscape Conservation Action Plans.
- As part of this work it is expected you will undertake meetings with the project partners and the steering group.
- Meet as required with the project team
- Liaise with landowners to gain access as and when required.

Deliverables:

- Commissioning meeting with all partners
- Attendance at progress meetings with the steering group;
- All consultations and meetings with partners and external organisations, and to report on findings to steering group
- Consultation and outline agreement reached with bodies charged with protecting the area
- Provision of detail drawings and sections in 2 or 3D visualisation, AutoCAD and PDF format, suitable for consultation and other purposes;
- Provision of all relevant Appendices and Specifications;
- Agree materials specifications;
- Outline phasing and cost plan;
- Health and Safety Plan in accordance with CDM Regulations
- An impact assessment on the wider area of Plas Newydd

APPENDIX 2: Recommendations from 1998 and 2012 Management Plans

THE DELL, PLAS NEWYDD: EXTRACTS FROM RECOMMENDATIONS IN 1998 AND 2012 MANAGEMENT PLAN REPORTS - QUERIES AND REPLIES

Queries by Bronwen Thomas Landscape Architect

Replies from Neil Rowlands - Plas Newydd Gardener

WOODLAND - 1998

Maintain mature historic trees to maximum safe biological lifespan. Annual inspection. extensive surgery or pollarding to retain/enhance romantic character of tree.

Ample regeneration for replacement trees. Young planting to be heavily thinned to ensure deep crowns, reduce competition with pollards, encourage herbaceous ground cover, re-open historic views, enable some specimens to be trained into picturesque forms. Current tall straight trees is significant deviation from historic character. **How much pollarding/coppicing has been done?** No specific pollarding/coppicing been done. Concentration on laurel clearance

Control laurel, cutting, herbicide in central part of Dell. Where retained, prune to height and spread to screen surrounds.

Grey squirrel control. **Is this still a problem?** Not really, a few squirrels but don't do much tree damage (eat young birds from boxes though)

All tree works by lightweight machinery because of difficult access. Chipping, composting, fuelwood, small stacks for habitats or local residents' use. **Is this done?** Yes. Logs taken by locals. Can get chipper down into woodland. Log piles for habitat tend to be in prominent places and rather unsightly. Need to re-think sites.

Mixed evergreens - holly, laurel etc. -retained around perimeter, pruned to continue screening residential areas, and reopening views to hills at higher level.

PLANTING - 2012

New tree survey/strategy required, record historic value, condition, biodiversity. Number of 18/19th century trees felled in recent years. **Has a comprehensive tree survey been done?** 2012 arbor survey concentrating on treework. Could do with a more comprehensive survey, species, identifying suitable trees for training/coppicing/pollarding

Use historic plant lists for re-designing and re-planting. Could be supplemented with contemporary plant lists (Erddig, Chirk, Woodstock), catalogues, garden books from Ladies library. Planting to follow 1998 objectives. Collections of cultivated native species.

FURNITURE - 2012

Uniform softwood benches work well - maintain/renew. Log benches deteriorated - remove/replace.

PATHS/HARD SURFACES - 1998

Concrete steps & ramps replaced with rustic stone risers and bound gravel treads.

Woodland paths cleaned off, scarified, cambered, resurfaced with self-binding local gravel. Steeper paths with flush stone cross strips to reduce erosion. No edging. re-point stone retains with lime mortar. **Path restoration done in 2002? Not sufficient. Yes done. Gravel/dust may have been blown away with leaf-blowers. Some paths have spread so unnecessarily wide.**

Handrails replaced with same dimensions, rustic woodwork fencing from local oak branchwood.

Increased annual maintenance will be required.

Keep 1900 extended path as best disabled/maintenance access. Not to standard but would significantly damage character if 'upgraded'. **Which path? One alongside maintenance/compost area and diagonally down? Yes. best suited for wheelchairs.**

PATHS - 2012

Programme of replenishment using same material as 2002 restoration (unless inadequate). Maintenance and renewal to be discussed with Cadw. **Some paths too steep for this to work. See above.**

STREAM - 1998

Re-open views to stream by removal of laurel and tree thinning to encourage herbaceous and coppice.

Retaining walls to decay in situ except where control erosion, flank bridges, form path edge where no scope for re-alignment. Reinststate to more naturalistic boulder edge, or steps.

Bridges retained unaltered.

Existing weirs dismantled and rebuilt as natural rapids or waterfalls or stepped stonework.

All in partnership with NRW.

STREAM - 2012

Weekly clearance of debris build-up.

Annual maintenance checks of banks.

VIEWS - 2012

Maintain/restore lost historic views. Prune in June. **Are there any existing views to Castell Dinas Bran from the Dell? Some from top, in winter. From Lady Eleanor's Bower, but needs a few main branches removed in Dell - check in winter.**

GLEN - area 5

1998	2012	
Clear all laurel from lower slopes and valley bottom, thin young trees, reseed to native wood pasture grasses and replant bulbs and wildflowers recorded - primroses, white and blue violets, lily-of-the-valley, snowdrops	Establish foxgloves in large groups on banks of stream adjacent to bridges. Concentate small plants such as primroses at path edges.	Was this done? Does much survive, or is it swamped by garlic (can't tell at this time of year) Probably didn't work. Near bridges the garlic is not too bad so potential for planting there. Also, clearance of garlic

		alongside paths and plant with woodland herbaceous.
Restore paths, railings and streamside as in general proposals	Replace fencing to paths - rustic wooden fencing	
Negotiate with WW to replace part of security fence with stone wall at pumping station.		Still security fence there. Is there a reason? Not known
Fill in dry pond (central) using adjacent tipped soil	Build stumpery on northern bank of dry pond	Neither seem a good idea Stumpery would be difficult to achieve anyway
Clear overhanging vegetation from silted pond (northern), clean out, replant with marginal plants. Consolidate circular stone remains of hydraulic ram.		Is the hydraulic ram base still there? King cups there, any other marginals? Too much garlic? Ram base and ruined building still there, with water issuing. Iron remains of pump in office. No other marginals.
	Plant limited number of shade tolerant, 18th/19th century shrubs to introduce colour and texture. Cultivated natives and few exotics - Daphne laeueola, Sambucus nigra 'Aurea', Cornus sanguinea, hydrangea arborescens, H. quercifolia, Cornus alba, Ptelea trifoliata., Native honeysuckle. In association with NT, WHGT.	Has there been any planting of these? Didn't notice any. Not done
	Possibly Re-introduce birch avenue	Not clear where this was, or where would be suitable. Maybe alongside compost path to replace dying cherries (top of Dell)
	Remove 'story-telling logs'	Where? Not there
	Train selected young trees as picturesque specimens, plant new specimens on mounds to produce root flare	Has this been done at all? Didn't notice any. Not done
	Identify site of grotesque elm and replant with suitable species.	Not possible to identify where this bridge was (but not near font) May have been near possible stepping stones area - remains of large stump on east side.
	Regular checks/report/repair of stream banks	

WERN - AREA 6

1998	2012	
Thin young understorey trees as	Assess possibility of a further	Some thinning done, but won't

in 'woodland' above	attempt to return from regenerating woodland to wood pasture. Thin, retaining mature trees. Sow appropriate grass species.	be 'wood pasture'. Not done, not suitable these days
Negotiate with owner in brook Street to secure boundary		Is this an issue? No
Thin trees around veteran pollard oak (garage corner)	Confirm loss of pollard oak. replant for future pollarding	Didn't see this. is it still there? Not a priority.
Clean out litter and debris from brook channel		Seems OK to me. Some regular clearing done
Retain Norway maple, holly and Douglas fir for mid-level screening, plant 2 Tsuga canadensis	Plant 2 Tsuga canadensis and manage to maintain open aspect	Tsugas planted? Didn't see them. No
Recreate boundary fence using historic detail		Not a priority Don't know what meant.

WOODLAND ON EAST BANK - area 11

1998	2012	
Woodland management - open up floor but retain trees/shrubs at higher level to screen beyond. Selective pruning of trees to create view to Castell Dinas Bran from summerhouse.		Unlikely to see Castell Dinas Bran from summerhouse. Unless total clearance of woodland!
Plant holly hedge outside security fence to soften and retain security		Some shrubs on east side of fence, but not only holly. Any planted? Not known, unlikely
Re-build summerhouse	New access adjacent to summerhouse to prevent damage to roof.	Maybe Set fence back from summerhouse
	Roses around summerhouse and handrail - R. arvensis or R. rubiginosa. Ruscus aculeatus in deeper shade. Deciduous and evergreen native ferns - Brunnera macrophylla, daphne mezereum, foxgloves, Lychnis coronaria, Lonicera periclymenum 'Serontia' etc.	Any planting done? 2 roses, but died. Not suitable along handrail. Pearsons did detailed planting plan for area - still mainly suitable. Will be available.
Reconnect springs to flow through font	Fernery of native species, evergreens as structural planting, spring-flowering perennials - cowslip, Chrysosplenium oppositifolium, Fragaria vesca, Convallaria majalis, Carex hirta, Campanula patula, C. glomerata, etc.	Any planting done? See above Springs too variable 3 French drains put in but new springs emerged this year. Live with. plant appropriately.
Paths resurfaced retain locations		

SOUTHERN WOODLAND area 13

1998	2012	
Manage as woodland with evergreen understorey to screen low/mid level views of houses	Plant occasional specimens of 1820s/cultivated varieties of native species - Aruncus dioicus, Inula helenium, Digitalis purpurea 'Alba', Sambucus nigra 'Lacineat', etc.	Any planting done? No
Prune/trim to give access to viewpoint at southern end.	Maintain views from viewpoint	Now overgrown Not much to look at
Create well-defined level hardstanding for garden maintenance use. Screen with oak pallisade 1.8m high, plant with climbing roses, evergreen honeysuckle, ivy.		Looks as if it could do with enlarging to contain piles of trimmings etc. Piles awaiting chipping

APPENDIX 3: Consultations and references

Consultations:

Lisa Fiddes, Historic Parks & Gardens Officer (Cadw): Listed Buildings and Register of Historic Parks and Gardens

David Clough (Haygarthberry Associates/Celyn Consult): preparation of the Community Engagement and Consultation exercise for OPL.

Glynis Shaw (WHGT/Whitehurst Garden): local knowledge and information about historic parks and gardens.

Staff at Plas Newydd: Kevin Pennington - Site Manager; Neil Rowlands - Plas Newydd Gardener; Janice and Gail at Plas Newydd House

Client contacts: Sarah Jones, Cadwyn Clywd; Sarah Jeffries, Landscape Partnership Development Officer; Fiona Gale, County Archaeologist, Denbighshire.

References:

1998 Plas Newydd Restoration and Management Plan by Nicholas Pearson Associates

2012 Plas Newydd Management Plan by Stephen Smith

'Life with the Ladies of Llangollen' by Elizabeth Mavor

List of references to the gardens from 'Ladies of Llangollen'

NPA clearance plan 2002;

NPA Summerhouse planting plan 2002;

NPA Riverbank repair plan 2002;

NPA Path restoration works 2002;

NPA Tree seat sketch 2002

Caroe & Partners New services routes plan 2006

Stephen Cutmore arboricultural report 2010

APPENDIX 4: Range of materials

Resin-bound and resin-bonded surfaces: Alternatives to patchy tarmac and loose gravel at entrances:



Current situation

Resin Bound is the system which sees the aggregate blended within the resin prior to application and is trowelled to a smooth level finish. This method relies on the aggregate and the resin being agitated together in mixer, and then spread over the prepared base with hand floats, screeding bars and trowels. The resin sets relatively quickly in most cases within 60 minutes.

Essentially decorative or coloured aggregates are bound within clear or coloured resin then it is applied over the existing surface providing it is solid and unbroken. The resin binds with the original surface effectively gluing the new surface finish in place. This creates a hard-wearing surface that is suitable for both internal and external applications. Being relatively low maintenance and if applied correctly, resistant to weeds. The better quality resin systems are also resistant to petrol or oil spills and will not fade or discolour as they are UV resistant.



Resin Bonding is the process of scattering loose dried aggregates onto a coating of resin after the resin has been applied to the surface. It is often referred to as a scattercoat, broadcast or coat system. This method involves applying the resin over a suitable base using a squeegee, and then 'scattering' the chosen gravel or aggregate over the tacky resin before it sets. Some systems use pre-coated aggregates, while others rely on applying a resin over the scattered stone to seal the system.

Naturally coloured and dust-free aggregates are bonded onto a coating of resin that is applied to concrete or tarmac, fixing in place the material whilst leaving a layer of loose chippings to give the effect of gravel but without the hassle of the gravel moving about creating lines or traveling away from the site.



There are many suppliers of resin-bound and resin-bonded gravel surfaces. These extracts and examples are from Derbyshire Specialists Aggregates Ltd.

Steel mesh fence: Alternatives to palisade security fence.



Current situation

Examples of lighter, less obtrusive and hostile security fences from Zaun:

