



Cu @ Swansea: An industrious future from an industrial past

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A report summarising a vision for the heritage-led regeneration of the Hafod-Morfa copperworks site, an internationally-significant industrial landscape in the Lower Swansea Valley. July 2012

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Preamble

Since the early 1980s industrial heritage started to be considered as important as castles and country houses by listing and designation authorities, not least by UNESCO, the body responsible for bestowing the ultimate accolade of World Heritage Site status. As I write, a brand new set of inscriptions to the World Heritage List has been made, including two industrial landscapes, both based on historic coal industries, in Nord-Pas-de-Calais Mining Basin (France) and Major Mining Sites of Wallonia (Belgium).¹ With eight sites, the UK has the most industrial heritage recognised by UNESCO as being of outstanding universal value.

At the same meeting the World Heritage Committee voted to take steps to delete the City of Liverpool's inscription by placing it on the Danger List owing to the proposed major new high-rise development of Liverpool Waters.² This development, which would impact permanently on the sites and structures that document the industrial development of 'Liverpool Maritime Mercantile City' (inscribed 2004), could strip the city of the status that had led to much of its recent regeneration.³

Cautions were also raised by UNESCO for the planned redevelopment of Hayle Harbour in Cornwall, and the expansion of commercial mining at South Crofty.⁴ This should be a salutary warning to any organisation or partnership coveting or aiming for international recognition, particularly industrial heritage sites that are otherwise more vulnerable to 'brown belt' redevelopment than other landscapes which enjoy protection beyond their cultural heritage value.

In the UK the listing and scheduling of sites and monuments is undertaken by the relevant agency in each home country, Cadw, English Heritage, Historic Scotland and the Northern Ireland Environment Agency. In spite of recent efforts by industrial and economic historians to understand the Industrial Revolution in a British and global context this has not permeated yet into policies on industrial heritage which remain stubbornly regional and localised in scope. English Heritage's recent Industrial Heritage at Risk Report's gaping hole was its lack of reference to reconnecting sites in England with those in Wales, Scotland and beyond.⁵ Similarly Cadw's 'Wales: First Industrial Nation' interpretation policy limits the scope for Welsh industrial heritage to be viewed, studied and enjoyed in anything but a specific politico-cultural framework that some may deem anachronistic.⁶ The tendency for national and regionally-based interpretation to claim 'world firsts' in the history of industry, science and technology further skews public consciousness of the real basis for a site or landscape's international significance.

¹ UNESCO, 'World Heritage New Inscribed Properties - 2012', <http://whc.unesco.org/en/newproperties/> (accessed 2 July 2012).

² Rowan Moore, 'Liverpool Waters – review', *The Observer*, 6 May 2012, <http://www.guardian.co.uk/artanddesign/2012/may/06/liverpool-waters-review-rowan-moore> (accessed 2 July 2012).

³ UNESCO Press, 'World Heritage Committee places Liverpool on List of World Heritage in Danger', 26 June 2012, http://www.unesco.org/new/en/media-services/single-view/news/world_heritage_committee_places_liverpool_on_list_of_world_heritage_in_danger/ (accessed 2 July 2012.)

⁴ See for example, 'Anger over South Crofty Claims', *Pirate FM News*, 20 July 2012 <http://www.piratefm.co.uk/news/latest-news/723850/anger-over-south-crofty-claims/> (accessed 22 July 2012).

⁵ English Heritage, 'Industrial Heritage at Risk' <http://www.english-heritage.org.uk/caring/heritage-at-risk/industrial-heritage-at-risk/> (accessed 1 May 2012).

⁶ Cadw and Touchstone Heritage Management Consultants, 'Wales – the first industrial nation. Ysgogiad-Driving Forces: interpretation plan', October 2011 http://cadw.wales.gov.uk/docs/cadw/publications/First_Industrial_Nation.pdf (accessed 26 May 2012).

Preamble.....	2
About this report.....	4
1. Summary of scope and content of the project	5
1.1 <i>Boundaries of the site</i>	5
1.2 <i>Conservation, restoration and new building</i>	5
1.3 <i>Reuse of historic features and structures</i>	5
1.4 <i>Connectivity and infrastructure within the site</i>	5
1.5 <i>Relationship between the site and adjacent communities</i>	5
1.6 <i>The site as a visitor attraction</i>	5
1.7 <i>The site as a new community</i>	5
1.8 <i>Regeneration by committee</i>	5
1.9 <i>Communicating and involvement</i>	5
2. Core themes	6
2.1 <i>Industriousness</i>	6
2.2 <i>A working landscape</i>	6
2.3 <i>Historic pathways</i>	6
2.4 <i>Amenity and opportunity</i>	7
2.5 <i>Integrated heritage</i>	7
2.6 <i>Copper</i>	7
2.7 <i>Beyond Hafod</i>	7
3. Key assets and opportunities	9
3.1 <i>The idea</i>	9
3.2 <i>On site buildings</i>	10
3.3 <i>On site structures and features</i>	11
3.4 <i>Off site buildings, structures and features</i>	12
3.5 <i>Site connectivity and transport</i>	14
4. Comparative UK industrial heritage sites.....	16
4.1 <i>Types of industrial heritage site</i>	16
4.2 <i>Best practice</i>	17
4.3 <i>Comparative site: Heartlands, Cornwall</i>	18
5. The site in related contexts: Making connections.....	22
5.1 <i>In Swansea</i>	22
5.2 <i>In Wales</i>	22
5.3 <i>In Britain and Ireland</i>	22
5.4 <i>In Europe</i>	22
5.5 <i>In the Rest of the World</i>	23
6. Conclusion	24

About this report

This report highlights how the key features of the original marketing brief for the redevelopment of the Hafod-Morfa copperworks site relate to other important documentation relevant to their future, namely the proposals to deliver heritage-led regeneration for the site and its environs. It sets the context for a more detailed feasibility study prior to a schedule of conservation and building works, on and off-site interpretation and planning for new uses.

The main documents I have been asked to summarise are:

- Cambria Archaeology, 'Hafod Copperworks, Swansea'. Archaeological desk-based assessment, February 2008.
- City and County of Swansea, 'Former Hafod Copperworks, Landore, Swansea'. Marketing brief and development prospectus, 2010.
- Swansea University, 'Development of the former Hafod Copperworks, Landore, Swansea'. Initial expression of interest from Swansea University, 2011.
- Cu @ Swansea Partnership, 'Hafod-Morfa Copper Works Heritage Project Idea'. Heritage Tourism Project, Annex 4, 2011.
- Cu @ Swansea Partnership, 'Application form Second Stage Submission Cu @ Swansea-The Hafod and Morfa Copperworks Site'. Convergence Funding Heritage Tourism Project submitted to Cadw, Annex 5, 2011 (revision of above).
- Huw Bowen, 'Cu @ Swansea! Hafod and Morfa: the digital hub', January 2012.

After summarising the scope and content of the project, the report identifies core themes that characterise and unify the site. It then presents a range of options for reactivating key features of the site, especially its historic buildings.

I then offer some comparative material to highlight the range of heritage-led approaches to regenerating a post-industrial site.

The report ends with a section that places the new Hafod-Morfa copperworks site into a broader context, both within Wales and internationally.

1. Summary of scope and content of the project

Nine threads comprise the principal themes expressed in the planning documents.

1.1 Boundaries of the site

The project involves an area beyond the scope of the Hafod-Morfa site. All reports recognise the massive potential of adding subterranean archaeology to the heritage value of the site.

1.2 Conservation, restoration and new building

The project currently treats areas of conservation and restoration in isolation from potential new build and landscaping. There is a lack of a holistic 'town-planning' style approach.

1.3 Reuse of historic features and structures

Historic features are perceived as design elements to be 'incorporated positively'. It is unclear how historic functions and new activities will relate e.g. education, training, research, retail, leisure, small business.

1.4 Connectivity and infrastructure within the site

The reports emphasise access *to* the site but movement within it using historic lines of communication is less well addressed, with the exception of the Swansea Canal pathway.

1.5 Relationship between the site and adjacent communities

The project has prioritised community involvement, particularly in the heritage aspects of the site. There is little indication that local residents and businesses will be involved in key decision-making.

1.6 The site as a visitor attraction

The heritage-led approach to regenerating the site recognises the need to conserve historic features before they decay beyond use. The project does not as yet address the need to promote the stories of the site beyond its boundaries.

1.7 The site as a new community

The documents all agree that mixed-uses of the site lie at the heart of regeneration. The project should reflect on whether the site would also work as a new community in its own right.

1.8 Regeneration by committee

The project's executive committee is heavily influenced by governmental and institutional agendas, and attendant funding has been dependent on this. Future users and service providers will need different reassurances to gain confidence in the project.

1.9 Communicating and involvement

The project currently has a very low profile beyond the involvement of those in connected projects. Online communication of developments is non-existent and none of the documents address methods of ongoing external communication.

2. Core themes

2.1 Industriousness

Human activity in the Lower Swansea Valley has been characterised by industriousness, by intense and varied activity and by inter-dependent occupations. The period of its precocious industrial development and the greening stage of the Lower Swansea Valley Project have defined the area in recent history.

To ensure the historic fabric of the site does not end up as a backdrop, the project should at the outset identify the full range of new activity that could take place, e.g. education, training, research, retail, leisure, small business space and aim to match these to appropriate spaces and buildings (see section 3). Retaining 'industriousness' as the zeitgeist of the site will help regenerate the site in a way that does not feel artificial or that has simply used its history as scene setting.

2.2 A working landscape

Industry and conservation sum up the working landscape of the Lower Swansea Valley in whose centre lies the Hafod-Morfa site. The reclamation work of the Lower Swansea Valley Project in itself is an essential part of the site's heritage identity. The site's landscape has been shaped by the continuum of industrialisation, deindustrialisation, reclamation and regeneration.

The site's new identity as a visitor attraction and a new community should emphasise the continuation of work and activity, rather than a place to be passively consumed. The development of the project partners' specialisms in learning, experimentation and research, social and recreational provision, archaeology, conservation and interpretation should be exploited at the site itself beyond the life of the project. There are very few opportunities in the UK to experience regeneration work directly, rather than just view the results when that phase has ended.

2.3 Historic pathways

Cadw's pioneering work in urban landscape characterisation has proven the importance of reviving historic routes of communication to regenerate the distinctiveness of a place. Planning with the grain of the site and its environs, rather than against it, or in isolation from the surrounding areas, will help ensure that the site's historic characteristics are more naturally brought to the fore. The Hafod urban characterisation study should inform historic pathways planning.

The importance of restoring the Swansea Canal as a central reference point is of paramount importance. Planning infrastructure and connectivity within the site is just as important as planning multiple points of access to the site. The impact of a bridge over to White Rock to emulate the White Rock ferry route must be carefully considered. The opportunity to work with Swansea Community Boat Trust to create a landing stage for the boat should be enthusiastically sought, in addition to adopting the Tawe River Navigation Trail as a format for heritage trails.

2.4 Amenity and opportunity

Institutional and governmental agendas are often couched in terms that seem abstract or ambiguous, particularly regarding the benefits regeneration can bring to the local economy and community engagement. In simple terms the project to regenerate the site aims to result in a prominent derelict area being converted into one that local people and visitors want to come to, use its facilities, enjoy its surroundings and tell other people good things about.

The project should think and communicate in practical terms of how and which new amenities and opportunities the site could provide to attract and retain the interest of individuals, businesses and organisations. The unique partnership that is driving this project has all the imaginative impetus to provide creative learning opportunities for all ages, a place for research and experimentation especially in digital technologies, new indoor and outdoor recreational and leisure areas, and to prospect for appropriate commercial and social enterprises.

2.5 Integrated heritage

The project recognises that in spite of the high footfall in the surrounding area owing to retail and sporting events there is next to no opportunity for people to find out more about the valley's heritage. Integrated heritage is suggested as a core theme to encourage the project to make heritage interpretation and engagement one of the key *innovations* of the project, that offers something more than well-conserved edifices and bland exhibition space.

New methods, including meaningful and creative uses of new technologies (central to the digital heritage aspect of the site's regeneration), practical demonstrations and workshops, community archaeology, strong connections with STEM learning and research, well-integrated into activity that visitors and local people cannot find elsewhere, would be a major draw to the site and ensure it becomes a beacon heritage-led regeneration project.⁷

2.6 Copper

Faced with immediate decisions about conservation, restoration and finding new uses for the Hafod-Morfa site, its identity as the heart of the world's historic copper industry might be easy to forget. The story of the very thing that made the Hafod-Morfa site and the valley what it is today needs to take some precedence over other heritage in the area. Copper allows the site to stand out from other industrial heritage areas, and make strong and clear links with related sites such as Copper Kingdom in Amlwch.

The ESRC Copper Project successfully proved that the story of copper and the human relationship with it has as much currency in the modern world as it does in historical terms. This can be exploited in interpretation and in activity designated at the site.

2.7 Beyond Hafod

Thinking about project objectives in three wider contexts is crucial if the site is not to develop in isolation. It has already been recognised that the Hafod-Morfa site enjoys a great advantage in its location at the heart of the city and in close proximity to other facilities and amenities. The first context is physical access to the site and making logical connections between it and other areas that the project addresses such as surrounding communities (including Trevivian but also new Copper Quarter residents) and interconnected sites such as White Rock. This can only be achieved if the project places emphasis on ease of access and movement to the site by

⁷ See also section 7 of my report, *Digital Projects and Heritage in Wales*, April 2012.

foot, public transport, boat, and road and parking from key related areas (e.g. Waterfront, Kilvey Hill, Landore, Morriston, Pentrechwyth, Singleton).

Secondly, the project can revolutionise intellectual access to the site and what it represents. In addition to the hoped-for educational outcomes of a multi-dimensional visitor centre, trails, explanatory signage and other interpretive methods, there is a huge opportunity for the site to be home to a centre of excellence in alternative non-classroom/seminar room education for all ages. There are several schools and learning organisations in Wales that might be craving an opportunity for a physical base or venue for their work.

The third context is communicating accurate information and messages beyond the site itself. In addition to better communication of the project's progress, particularly online, the concept of the site as a place for the new industries of Wales (e.g. digital, historical, educational, cultural) needs shaping. Attention also needs to be paid to how the site's identity is portrayed. In fact most of the site's key built assets belonged to the Morfa Works, not to Hafod, yet Hafod's story dominates public perceptions. The international dimensions of the site's heritage should be at the fore but also balanced with its place in a British context. Providing information in a variety of languages to promote the site abroad should be considered an essential part of providing access.

3. Key assets and opportunities

3.1 The idea

The mixed-use approach to regenerating the Hafod-Morfa site has not been defined in any great detail. To approach the site holistically a town-planning approach should be adopted that addresses the cause and effect of every type of activity that would take place at the site including educational and business. The site could develop out of a designated centre, or as a series of quarters. Imagine an outdoor museum such as Ironbridge Gorge or Beamish meeting a high-tech business park and university/school campus with support and allied trades such as food outlets, market place, recreation area, social/drop-in centre.

The site has high green transport potential, more so than the pedestrian and cycling-unfriendly Morfa Retail Park, and could act as a conduit to ferry football supporters from the city centre to the stadium and reduce congestion on the roads on match days. Creative promotion of the health benefits of walking or cycling to the site to city dwellers in particular could be enhanced with fun sports events centred at the site.

There is massive potential to support and work with Swansea Community Boat Trust as a mode of transport for visitors and as a floating classroom, particularly the inclusion of a landing stage. Kilvey Hill needs to be integrated into plans, to offer trails and hikes as well as to highlight viewpoints of the valley and coast. There are important buildings and structures beyond the site that also require reconnection, such as the Morfa Lifting Bridge, Upper Bank Smelting Hall and possibly the Fox Hole Coal Tipping Stages, currently inaccessible.

3.1.2. Planning

The suggestions made below are informed principally by the ideals and aims expressed in the project documents. They are also informed by background research into other heritage-led regenerated sites, although this is not intended to be a survey of those and have not been referenced closely (discussed in section 4).⁸

The original Marketing Brief very much saw Hafod as a collection of structures rather than an industrial palimpsest whose internal infrastructure could usefully be reused. The plans put forward since then are aiming towards a more enthusiastic embrace of the site's cultural and natural heritage. The following suggestions are intended to outline precise relationships between different activities, functions and structures/buildings and aims to help the discussions on realising the site's full potential.

3.1.3 Signposting

Consistent signposting to the site from all entry points is essential. As outlined in the comparative example in section 4, signposting should be a first principle consideration when planning a new site. As a minimum standard, restored and conserved structures and buildings will require consistently designed plaques, and where appropriate, explanation boards to interpret their original function. Ruins which are well-conserved but, due to purist ideals about presentation omit any form of interpretation, can become quickly neglected in local folk memory and add to visitor frustrations and misunderstandings of the site or structure's

⁸ While regeneration and planning expertise has already been consulted by the project team, a useful trade resource on this subject is *Regeneration and Renewal*, <http://www.regen.net/>. The site also lists and updates the Top 100 UK regeneration projects.

identity.

3.2. On site buildings

1. Swansea Museum Collections Centre. Morfa Rolling Mills

The Collections Centre holds items that have been, and are, deeply popular with local communities but access to them is severely limited. With collections of the previous Maritime and Industrial Museum, the collections centre could become the museum which specifically focuses on the industrial and maritime heritage of the Lower Swansea Valley, its artefacts complementing and populating the stories told by the buildings and features of the site and adjacent areas. It would be a complement to the pan-Wales remit of the National Waterfront Museum and allow a general industrial and maritime heritage focus on Swansea to give context to a more copper-focused visitor centre in the Morfa Powerhouse/Canteen Building. No up to date information has been found regarding plans to revamp the centre to make it more publicly accessible. There is a danger that if progress here does not match that of the regeneration of other buildings, the site's integrity will be compromised.

2. Morfa Canteen. Formerly Morfa Powerhouse

The Powerhouse has already been earmarked as a gateway centre for site-specific trails, displays, exhibitions and events. The interior space is ideal for site orientation, copper heritage displays that place the Swansea and Welsh historic industry in a broader context—much interpretation already produced for the ESRC Copper Project could be easily updated and repurposed. Such a prime site building needs to have a constant public footfall and it is suggested that a proportion of it is designated a flexible space could be used as a community centre/village hall (or hired out for non-corporate events and meetings) with an additional area for occasional displays and temporary exhibitions. The Council should retain control of the building to ensure it remains as an amenity for local communities. A café facility would also be welcome here.

3. Morfa Laboratory Building

The original suggestion in the Marketing Brief that this building could be repurposed as a residential development would severely damage the integrity of the site. As one of only three buildings salvageable for permanent activity at any of the Swansea copperworks sites, the only additional one over the river at Upper Bank Smelting Hall having now been approved for apartments, the Laboratory must be retained as a flagship heritage building as well as used to fulfil the project's other aims.

It is recommended that the Morfa Laboratory is designated as the digital hub for the site, as a permanent centre for the innovation, experimentation and research into digital technologies, echoing the building's original function. The Laboratory would be best served if given over to Swansea University as an *ex officio* campus building. Parts of the building could also be used for practical demonstrations and workshops aimed at local schools and youth groups that would benefit in particular from hands-on learning. Learning activity could be developed in partnership with Swansea Community Boat Trust which has already made plans as a floating classroom. The adult education agency NIACE Cy may also be a useful partner.⁹

⁹ NIACE Dysgy Cymru, <http://www.niacedc.org.uk/> (accessed: 20 August 2012).

3.3 On site structures and features

1. Morfa Silverworks Stack

Although there is nothing much that can be repurposed of the stack itself, the fact it was such a prominent landmark until the 1960s should be celebrated again. A flag-pole erected to the height of the original chimney could be a symbolic addition to the site and a visual beacon of the site's regeneration, seen from miles around.

2. Swansea Canal group

This central historical pathway is intended to be reconstituted. Three listed features should be incorporated into the route's restoration as each complements the line of the former canal. Each feature should be labeled with a prominent plaque explaining its significance:

- **Pier** to former waste tip.
- **Copper Slag Abutment** (Hafod).
- **Boundary wall of the Hafod works.**
- **Morfa Works Entrance Canal Bridge** (partial remains, currently unlisted). Retain as landmark for historical pathway. Balances Hafod Works Entrance (see below).

The Canal itself is central to the particular story of the siting and development of the Hafod copperworks, and later the Morfa copperworks. It is important that landscaping of the route is sympathetic to its place and conjours something of a canal environment. The restoration of the route has great potential to include the involvement of volunteers, local groups and schools in clearing, choosing vegetation and planting, echoing the much-admired tree-planting schemes of the Lower Swansea Valley Project.

3. Tawe River Navigation group

The Tawe River Navigation has received little attention in the project documents, save for its presentation value for a riverside development. The section running to the east of the site should be considered as an alternative 'mini' site gateway for those arriving by foot or bicycle from the Waterfront and Marina.

To arrive at the site by river will give visitors an absolute unique experience of exactly what it was like for the ships and boats that conveyed copper and other goods to the works. No other industrial heritage site has a similar facility. Swansea Community Boat Trust already owns an appropriate boat and runs trips but they lack a suitable landing stage at the Hafod-Morfa site. The Trust has already proposed this development and it should be considered as part of a package to improve access to the site by river, suggested below:

- **Hafod Copperworks River Quay.** Landing stage for Swansea Community Boat and other rowing boats.
- **Vivian and Sons Locomotive Shed.** Pursue current plan to convert into boathouse, providing landing stage priority is given to Swansea Community Boat. Part of the shed could usefully be given over to indoor space linked with floating classroom activities run by SCBT and as an alternative gateway for outdoor tours and trails.
- **Hafod Works Canal Bridge and paved works entrance road** (partial remains, unlisted). Retain as landmark for historical pathway. Balances Morfa Works Entrance.

4. Lime Kiln

The significance of this structure is that it is the last remaining material connection with the coal mines of the Upper Swansea Valley. Its location on the bus route lends itself as a complementary mini gateway landmark for visitors arriving and departing by bus. There is opportunity here for an explanation board and orientation for the site, while also explaining its own function and significance.

5. Hafod group

The icons of all the Swansea copperworks are the remaining engine houses of the Hafod works together with the last remaining free-standing chimney. They are the only structures that evoke the density and scale of smelting activity in the valley. As such, the proposal to somehow link both structures would severely compromise and diminish their value as heritage monuments of world significance. Any loss of either of these would irreparably damage the integrity of the site and first priority for conservation and clearance should be given to these structures. The group is comprised of:

- **1910 Musgrave Engine House** with remains of Musgrave Uniflow Engine inside and rolling mills outside.
- **1860 V&S Engine House.**
- **V&S Chimney** (next to Vivian Engine House).

The greatest challenge in restoring this group is the Musgrave Engine House. Within the area of this Scheduled Ancient Monument are the remains of rolling mills, in addition to a rare Uniflow Engine inside. Without compromising its scheduled status the only option would be surveying the machinery to assess whether it can be restored, or replicated in some other way. To have one structure that actually demonstrates industrial machinery would enhance the visitor experience of the site as a working industrial landscape. The project could seek the assistance of a group of steam enthusiasts to get the engine going again. If complete clearance of the machinery is the only option, replication should be strongly considered. It is hard to see this structure housing any other kind of activity.

The V&S Engine House has the greatest potential to be repurposed to accommodate site activity. The project should consider the feasibility of inserting a floor level (compare similar plans for the wind-powered engine house at Mynydd Parys, Amlwch). The building may then be brought into use as additional interpretive space, as a performance or filmshowing centre or as restaurant/bar space, dependent on how the plans for other site activity are developed.

The chimney is the chief icon of the Hafod works. Simple treatment to clear space to enable visitors to contemplate it should be all that is required. Care should be taken not to make its setting too clinically clean (e.g. with a vast area of paving) so it sticks out in splendid isolation. It is currently the most visible of the copperworks landmarks from train entry/exit to and from Swansea rail station.

3.4 Off site buildings, structures and features

1. White Rock

The project already recognises the importance of connecting the Hafod-Morfa site both physically and intellectually with White Rock Industrial Heritage Park. Its two key features are the reconstructed and landscaped tip and the extensive wall of the Great Workhouse smelting hall, cleared recently during the Time Team excavations (June 2011). These features should be treated similarly to the Swansea Canal group and the area in between designated as an open

recreation area, enhanced with the addition of pathways based on those reconstructed from the site's late nineteenth-century footprint.

2. Morfa Lifting Bridge and Morfa Quay

Unsafe due to a lack of maintenance, the bridge has the potential to be a great asset to the site, connecting it to the eastern bank of the Tawe without the need for a new footbridge to White Rock (as proposed in the project documents). Morfa Quay could also usefully be made good, particularly if boating becomes a more popular activity on the river.

3. Subterranean archaeological park

There is little tradition of archaeological parks in the UK because of a presumption in favour of 'preservation in situ'. The excavations at Upper Bank in 2008 (unpublished to date) revealed the potential for the preservation of intact remains of earlier phases of industrial development in the Lower Swansea Valley. The trial areas investigated by Time Team also suggested that unique remains of several copper and other metalliferous processes remain hidden. The desk-based assessment of the site by Cambria Archaeology (2008) is emphatic in its conclusion that the archaeological potential for all seven areas comprising the site is high.¹⁰

In consultation with archaeological expertise from GGAT, RCAHMW and industrial archaeologists the area with the greatest potential to reveal remains that would best enhance linkages between the standing remains should be fully excavated and at least partially retained as an open and visible area of the site.

Areas 3, 4 and 5 incorporate significant zones either side of Swansea Canal, including the site of the inclined tramway, and the spaces between the Hafod engine houses. These need revealing as part of clearance works associated with improving access to those features and would be ideal projects as community digs.

Area 7 offers the most intriguing prospect for a small archaeological park owing to the three smelting halls and ore yards concealed underneath, widely acknowledged as the most highly developed area of the Hafod copperworks. If excavation reveals extensive features strong arguments should be put forward for consolidating them and keeping the features exposed.

4. Landore Social Club. Hafod Works Offices

Although there are few physical remains of the nineteenth-century offices, it is important to highlight the administrative and business side of the copper industry and some form of link to this building as part of a trail should be included, in addition to an interpretive plaque in keeping with the rest of the site.

5. New builds

New builds have not specifically been incorporated into the project brief, with the exception of a suggestion to merge the two engine houses with a connecting building (not recommended). However following the safeguarding of historical structures and features, activities that require new building may present themselves. Apart from the requirement that new builds should be absolutely in keeping in terms of scale and building material with historical structures, their siting needs to be carefully considered.

¹⁰ See Section 4.4., pp. 10-17.

There are ample historical plans and maps of the valley that would suggest appropriate sites, shape and scale. The new build need not be a 'reconstruction' but keeping to the historical footprint of the site would ensure that it is a welcome addition rather than jar against the historical landscape. Should preservation of subterranean archaeological features not be considered viable, using the footprint of subterranean remains could also be a creative option.

6. Kilvey Hill

Kilvey Hill is a natural and spectacular viewpoint where visitors can take in the entirety of the scale and location of the historic industries and maritime trade of the Lower Swansea Valley. This great icon is largely ignored by local people and visitors alike. The planting and greening of the hill as a result of the conservation work of the Lower Swansea Valley Project have created a peaceful oasis here. Good signposting from the site and other adjacent areas, ease of crossing the road to reach it and including it in some of the trails, particularly those with a botanical theme would refigure Kilvey Hill in the story of the Lower Swansea Valley. It was from here that much of the literature and art based on the industries in the valley were appreciated.

3.5 Site connectivity and transport

3.5.1 Access to the site

As with the site as a whole, each method of accessing the site should be developed according to an integrated plan. Early discussions with local bus operators could result in an excellent opportunity for both parties to champion the site as a green destination. Arrival by bus, boat, bike or foot should be incentivised, heavily promoted and plenty of information should be provided so visitors considering a car free day out will feel confident about doing so. Particular consideration should be given to beginning and end points. Often cycle routes, for example, start in obscure places, are poorly signposted, and end without notice.

In addition to green credentials, arrival by foot or bike could be promoted for their health benefits. Tell people how many calories they would burn walking to the site from the Marina, for example.

3.5.2. Interpreting the journey

If plans to create a landing stage for Swansea Community Boat are successful, it will become the premier mode of arrival to the site. There will be no more historically apt way to arrive at the copperworks than by boat. Screen and audio interpretation planned for the boat will already orientate boat users.

Elegant signposting along the pedestrian/cycle route from the Marina to the site could also incorporate elements of historical interpretation such as what can be seen, or what once was, sited at the docks and along the riverbanks, such as those featured on the 1879 25" Ordnance Survey map of the valley.

1. River and Swansea Community Boat

Potential for the use of the river as an access route has been outlined above. The project documents have acknowledged the role of the river as a N-S and E-W connector. In addition to the huge potential of consolidating a Tawe River Navigation transportation plan with Swansea Community Boat Trust there is also scope for possible future use of river taxis (identified by the Marketing Brief).

2. Hafod-Morfa to White Rock link

Any plans to develop pedestrian access via a footbridge between these sites should not adversely affect the use of the Hafod River Quay. Bringing the Morfa Lifting Bridge back into use would be a strongly recommended alternative. In season, there could be the possibility of 'White Rock ferry' boat rides taking visitors along the river's east-west axis.

3. Cycle paths

There are significant problems with the National Cycle Routes such as poorly signposted start points, often interrupted with obstructions or an abrupt gap in the route. It is essential that the continuous riverside pedestrian/cycle path from the Marina to the site along the eastern boundary of the Hafod works is successfully realised and the National Cycle Route 43 is not considered a reasonable substitute.

4. Foot paths

The Marina-Hafod continuous route will become the main walking route to the site from the Waterfront. However pedestrian signposting from other areas of the city, and onwards to Kilvey Hill need also to be provided, particularly the latter, in addition to appropriate crossings on busy roads that now engulf the site.

5. Road

The revised route for a Morfa Distributor Route bypassing the site is well-advised. However there must be plenty of opportunity for pedestrian access across this road to avoid it being a barrier to access. Thought should also be given to the impact of heavy traffic very near the site as it can have a degrading effect on people's enjoyment of it.

Signposting on all major routes into Swansea will be essential to orientate those arriving by car well before they reach the area.

4. Comparative UK industrial heritage sites

4.1 Types of industrial heritage site

Industrial heritage sites in the UK tend to follow these models, or a combination:

1. The open-air museum.
2. The working museum/site which retains traditional processes and products.
3. Industrial park with visitor centre or museum as central focus.
4. An industrial building or complex converted exclusively to heritage activity.
5. Brownfield site regeneration which retains heritage features and offers some interpretation but primarily functions with unrelated businesses and activities.
6. Conserved structures retained in the landscape with no designated centre and minimal interpretation.

Examples have been chosen to be representative of the full range of industrial heritage site or landscape present in the UK and are not intended to be geographically inclusive. In addition there are great numbers of projects that have regenerated post-industrial buildings but could not be considered 'heritage-led'.

4.1.1 Examples

1. Amberley Museum and Heritage Centre

Situated in the former Amberley Chalk Pits, now dedicated to the industrial heritage of the whole of South East England featuring narrow gauge railway and historic bus service, traditional craft demonstrations and a regular series of events and festivals.¹¹

2. Whitchurch Silk Mill

Working early nineteenth-century silk mill in Hampshire, still producing traditionally-woven silk for interior design. Visitors can see the internal workings of the mill and silk weavers at looms (now powered by electricity, not mill wheel).¹²

3. Wheal Martyn China Clay Museum and Country Park

Set in spent china clay pits which have been largely given over to park and woodland with museum containing displays and artefacts from the industry, access to viewing point to see a commercially working neighbouring pit, and access to Clay Trails cycle route.¹³

4. STEAM. Museum of the Great Western Railway

Situated in the restored former Swindon Grade II-listed railway works. The entire works complex has been integrated into a single museum building. The displays incorporate artefacts, static locomotives, archives, film and audio footage of the railway and dioramas. The museum runs themed and non-heritage events programme.¹⁴

5. Heartlands

Set in the derelict area around Robinson's Shaft, previously part of South Crofty tin mines, in Pool, Cornwall, the complex is now billed as a 'cultural playground' with 'state of the art' exhibition space containing displays related to Cornish mining, an adventure playground

¹¹ Amberley Museum and Heritage Centre, <http://www.amberleymuseum.co.uk/>

¹² Whitchurch Silk Mill, <http://whitchurchsilkmill.org.uk/>

¹³ Wheal Martyn, <http://www.wheal-martyn.com/>

¹⁴ STEAM, <http://www.steam-museum.org.uk/>

themed on Cornish mythology, landscaped gardens with flora and features related to Cornish migration abroad, craft studios and offices, and soon to be extended to a new housing estate. One of the site's principal attractions is its rolling series of events, markets and activities for visiting schools.

6. Derwent Valley Mills

World Heritage Site since 2001, designated as the 'birthplace of the factory system' for textile production, it comprises a series of conserved water mills along a 15-mile stretch of the River Derwent from Matlock Bath to Derby. The Derwent Valley Heritage Way has been instituted as a series of walks which lead visitors through the landscape's historical and natural environments.¹⁵

4.2 Best practice

Achieving World Heritage Site status has been considered the pinnacle of achievement in regard to employing best practice at a heritage site or landscape. However the designation of 'outstanding universal value' has become complex and, as mentioned in the Preamble of this report, is no guarantee of favourable reception either by heritage authorities or stakeholders, and designation can also lead to future constraints.

4.2.1 International guidelines on industrial heritage

There are currently eight industrial UNESCO World Heritage Sites in the UK.¹⁶ A further three are on the now vastly reduced Tentative List.¹⁷ The growth in world heritage site designation for industrial sites across the world has occurred since the publication in 2001 of a UNESCO report into the under-representation of industrial heritage on the World Heritage List.¹⁸

Specific best practice emanates from ICOMOS, the International Council on Monuments and Sites, which in July 2003 established the Nizhny Tagil Charter for the Industrial Heritage.¹⁹ The charter was composed by specialists of TICCIH, the International Committee for the Conservation of the Industrial Heritage, which is the official advisory body on matters of industrial heritage to ICOMOS. ICOMOS in turn is UNESCO's formal advisor on heritage conservation of cultural monuments, sites and landscapes.

The Nizhny Tagil Charter is relatively short and only outlines basic principles of the value of conserving industrial heritage for its historical and social value. The sections of most interest to this project are:

(Section 5.V) *"Continuing to adapt and use industrial buildings avoids wasting energy and contributes to sustainable development. Industrial heritage can have an important role in the economic regeneration of decayed or declining areas. The continuity that re-use implies may*

¹⁵ Derwent Valley Mills, <http://www.derwentvalleymills.org/>

¹⁶ World Heritage Site designation in chronological order: 1986 Ironbridge Gorge, 2000 Blaenavon Industrial Landscape, 2001 New Lanark, 2001 Saltaire Village, 2001 Derwent Valley Mills, 2004 Liverpool-Mercantile Maritime City, 2006 Cornwall and West Devon Mining Landscape, 2009 Pontcysyllte Aqueduct and Canal.

¹⁷ The UK Tentative List was reformed in 2011 to reduce the competition for future nominations from over thirty to eleven. The following industrial sites are included: The Historic Dockyard, Chatham, Slate Industry of North Wales and the Forth Rail Bridge.

¹⁸ Michael Falser and Minja Yang, 'Is industrial heritage under-represented on the World Heritage List?', Global Strategy Studies, Industrial Heritage Analysis (2001), <http://whc.unesco.org/archive/ind-study01.pdf> (accessed: 22 June 2012).

¹⁹ The Nizhny Tagil Charter for the Industrial Heritage, July 2003, <http://international.icomos.org/18thapril/2006/nizhny-tagil-charter-e.pdf> (accessed: 22 July 2012).

provide psychological stability for communities facing the sudden end a long-standing sources of employment."

(Section 7.1) *"Public interest and affection for the industrial heritage and appreciation of its values are the surest ways to conserve it. Public authorities should actively explain the meaning and value of industrial sites through publications, exhibitions, television, the Internet and other media, by providing sustainable access to important sites and by promoting tourism in industrial areas."*

4.2.2 UK guidelines on industrial heritage

As with the UK's other heritage, best practice and guidance for the care and interpretation of its assets are split between the various government agencies of the home nations. This report will not rehearse the situation in Wales as this is well-known to project stakeholders and no specific comment will be made on the report commissioned by Cadw outlining the scope for interpreting Wales as 'First Industrial Nation'.²⁰

Of interest to this project, albeit lacking any Welsh comparison, is the research undertaken by English Heritage on Industrial Heritage at Risk in 2011. It outlined how industrial heritage is high on the agenda of the surveyed public while its assets remain some of the most vulnerable. However the educational potential of industrial heritage did not form part of the study and, with the exception of some school programmes, remains the least addressed dimension of heritage regeneration projects in general.²¹

Considering the educational and research element of the Hafod-Morfa regeneration project, the potential for the site to become a centre for learning in industrial heritage in general is high, from the perspective of its physical remains, associated museum and archive collections and post-industrial regeneration.

4.3 Comparative site: Heartlands, Cornwall

Heartlands has been chosen as a comparative site as it was in a similar state of dereliction to the Hafod-Morfa site prior to its regeneration. It is also of approximately comparable size and situated in a similar a socio-economic area.

Heartlands is a newly contrived name given to a once derelict site in Pool, a village lining the route of the A3047 between Camborne and Redruth. The nineteen-acre site formed part of the tin mining complex of South Crofty and its industrial remains comprise Robinson's Shaft engine house and winding gear which is the totem for the site. Other industrial heritage remains have been put to use as café, exhibition space and studios.

The site is situated off a busy road and amongst a large-scale retail park and industrial estate and recently refurbished and expanded Cornwall College.

²⁰ Touchstone, 'Wales – the first industrial nation. Pan-Wales heritage interpretation plan', http://cadw.wales.gov.uk/docs/cadw/publications/First_Industrial_Nation.pdf (accessed: 1 June 2012).

²¹ For a review of the Industrial Heritage at Risk research and an article on the educational potential of industrial heritage, see: Tehmina Goskar, 'Industrial heritage education at risk?', *IfA Buildings Archaeology Group Newsletter*, 34 (Summer 2012), pp. 6-12, or at <http://tehminka.goskar.com/2012/05/01/industrial-heritage-education-at-risk/> (accessed: 1 May 2012).

Heartlands markets itself as 'Cornwall's Free Cultural Playground' (and the UK's first). It aims to cater for visitors from every background, including local communities, particularly younger users of the site and families with young children:

"Heartlands is a free visitor attraction, community hub and World Heritage Site. Covering 19 acres the space includes event areas, business space, community facilities, play spaces, artworks and cafe." (Heartlands owner description, Google Plus).

The site opened in April 2012 after six years of regeneration work costing approximately £36 million. Capital funding came from Cornwall Council, EU Convergence Fund, Homes and Communities Agency and the Big Lottery Fund (£22.3 million).²² The Heartlands Trust was set up to operate the site as a social enterprise in February 2012 and is expected to generate its own income through studio rental, attracting sponsorship, venue hire, retail and other forms of fundraising.²³

Since its much-vaunted opening, more than 100,000 visitors have come to the site,²⁴ principally to one of the many events held there, including outdoor theatre performances, ongoing farmers' markets, garden tours, talks, workshops and craft fairs. The most favourably reviewed and received parts of the site are the adventure playground and the Diaspora Gardens.

4.3.1 Industrial heritage at Heartlands

1. Designated WHS gateway

Heartlands is one of the designated gateways to the West Devon and Cornwall Mining World Heritage Site (comprising ten areas), the others being Geevor Tin Mine and Hard Rock Museum near Pendeen, for west Cornwall and Morwellham Quay, near Tavistock in west Devon.

The headline USP for the Robinson's Shaft site was it the last working tin mine in Cornwall, continuing production until the early 1990s. However mining activities have since restarted in the neighbouring area of South Crofty and other mines, now run by Western United Mines.

2. Related sites

Pool is almost equidistant of Camborne and Redruth, the two major Cornish mining towns now jointly designated the World Heritage Site's 'Capital of Cornish Mining' with Portreath as the connected port.²⁵ Heartlands lies at the centre of this designated area. Cut off from the site by the main road, neighbouring East Pool Mine, one of Cornwall's most productive copper mines, is run as a more traditional mining heritage attraction by the National Trust.²⁶ The landscape setting is dominated by the broad and tall hill, Carn Brea.

3. Getting there

Currently, signage to the site from the road and from public transport entry points is very poor and several complaints have been received about this. If the visitor is not aware of a short cut,

²² Heartlands, 'Our core funders', <http://www.heartlandscornwall.com/about-us/our-funders.php>, (accessed: 30 July 2012).

²³ Cornwall Council, 'Heartlands', <http://www.cornwall.gov.uk/default.aspx?page=26876> (accessed: 3 August 2012).

²⁴ The visitor numbers include those at its high-profile, music festival launch and were given a great boost shortly after its opening when the Olympic Torch Relay went through the site.

²⁵ Cornish Mining WHS, 'Camborne and Redruth with Portreath', <http://www.cornish-mining.org.uk/areas-places-activities/camborne-redruth-portreath> (accessed: 13 August 2012).

²⁶ National Trust, 'East Pool Mine', <http://www.nationaltrust.org.uk/east-pool-mine/> (accessed: 13 August 2012). East Pool Mine was until recently called 'Cornish Mines and Engines'.

they are compelled to follow the main road, navigate past huge industrial estate depots and finally reach the site having walked three sides of a long rectangle to the entrance. Information for visitors arriving by bus, foot or bicycle from Camborne or Redruth is also poor although an interesting project is currently underway to make cycling to the site and the area easier and much more attractive. Cornwall Council runs the car park which costs £2.90 all day. This has led to a spate of illegal parking by those who are put off by the charge.

It therefore has the sense of an isolated site, amplified by its situation next to a busy road and industrial estate with little provision for pedestrian access.

4. The role of the site's heritage in attracting funding

The World Heritage Site designation of this Cornish Mining area, without doubt, enabled the significant capital investment required to kickstart its regeneration. It also enabled the regeneration project to shape a completely unique future for the site, else it would have almost certainly fallen in line with the out-of-scale retail park nearby, or perhaps an expansion of the industrial estate or a site for housing (although part of the site is being developed for 138 new homes, one-quarter 'affordable').

5. Industrial heritage interpretation at the site

The heritage-led regeneration of the site is thematically, rather than content driven. The 'state of the art' World Heritage Site exhibition is severely lacking in high-quality content and structure. It comprises a piece-meal exhibition space of traditional graphic-panel boards, digital screens, audio playback, projections and a small number of artefacts.

There is no chronological progress and its thematic development is difficult to understand with very little delineation between information specific to the site and general information about the history of Cornish mining. Overall it does not give the feel or impact of a place at the heart of Cornish mining, neither does it prominently place the other areas of the World Heritage Site in any context or connect it to the places with which it had an historical relationship such as neighbouring East Pool Mine, or even the towns of Camborne and Redruth.

Almost completely absent is mention of any relationship between Cornwall and other parts of Britain and Ireland. Fewer are the connections between Cornish mining, the materials extracted and the network they historically occupied with Wales or beyond through maritime trade. The working of copper and tin are at times conflated. Some of the factual information is inaccurate and in places, wrong (e.g. section on Smelting).

There are daily tours of its central feature, the engine house of Robinson's Shaft, but these are not obvious and the structure's own interpretation is currently lacking.

The Diaspora Gardens whose plantings tell the story of Cornish migration abroad is the most original form of interpretation at the site.

6. Why is Heartlands special?

These general remarks are not intended to be a detailed review but to highlight how easy it is for such a complex heritage-led regeneration project to neglect, or put aside, what lies at its core. The Heartlands complex could, in theory, have been created anywhere in Cornwall for only a cursory nod, in comparative terms, is given to the specific and contextual history and archaeology of the site itself. Dressed in the generalities of Cornish heritage, it makes for a very compelling enterprise with facilities (such as the gardens and adventure playground) that are not found elsewhere. But the reason for it being *there* is almost wholly overlooked. Why is it special?

The industrial heritage of the site has been the reason for the great public investment in it but it almost completely lacks the sense of connection with the past one gets at other premier heritage sites. Conversely, while it is too early to judge the success of this regeneration project, the balance of uses instituted at the site and the range of people it has attracted demonstrates it has huge potential to change public perceptions of the wider area it occupies. There is now a good reason to visit Pool.

5. The site in related contexts: Making connections

5.1 In Swansea

The project documents already recognise the potential of making the Hafod-Morfa site Swansea's premier heritage attraction and to use it as a focal point to attract visitors to the city and region's other historical sites, such as Oystermouth Castle, Swansea Castle and even Singleton Park and Morriston.

Using interpretation at the site to signpost other aspects of historic Swansea as 'Intelligent Town' would no doubt help place the site's own story in the context of the parallel developments in other areas such as science, learning and culture.

5.2 In Wales

Several industrial heritage sites in Wales already enjoy a high profile and making cogent connections with these is an essential part of raising the profile of the Hafod-Morfa site, principally, Copper Kingdom and Geomôn in Amlwch, Anglesey, Sygun Copper Mine in Snowdonia, the North Wales Slate Industry area (with strong connections to the Vivians of Swansea), Blaenavon, and the large number of central, western and northern copper mine sites that were important contributors to the Swansea industry's supply chain.

5.3 In Britain and Ireland

As with Cornish mining, the exotic attraction of making global connections, whether based on trade or migration, has skewed the interpretation of the historic copper industry away from its place in 'domestic' networks.

In England there are few prominent copper industry sites that are readily accessible to the public but in Cornwall several remain, the most important of which is East Pool Mine, a significant contributor of ore to Welsh smelting and refining. It is highly recommended that an early relationship is formed directly with the National Trust operators of the site (rather than through the World Heritage Site management team).

In Ireland there are two copper mine sites that have been successfully converted to heritage attractions and a 'twinning' arrangement should be enthusiastically sought. The first is Allihies Copper Mine Museum in West Cork comprising a museum, signposted trails along the mines, a classroom for study, café and art gallery.²⁷ The second is the Copper Coast European Geopark in County Waterford, connected with mining sites in west and north Wales through the Atlanterra project.²⁸ The particular interest in making links with these sites is that it was in Swansea that the vast majority of output from Irish copper mines was bought and sold and so it would revitalise an historic relationship between each region.

5.4 In Europe

The project has already mentioned the possibility of instituting the site as a key point on ERIH, the European Route of Industrial Heritage. The information provided by ERIH is available in the main European languages which has obvious benefits for proliferating information about the site to foreign tourists. It works on a principle of presenting themed or regional routes,

²⁷ Allihies Copper Mine Museum, <http://www.new.acmm.ie/> (accessed: 20 August 2012).

²⁸ Copper Coast Geopark, <http://www.coppercoastgeopark.com/> (accessed: 20 August 2012).

punctuated by anchor points. Currently Swansea's anchor point is the National Waterfront Museum.

It is not known what impact the information provided by ERIH has on improving the profile of a site or attracting potential visitors to it. However the potential of being included amongst other prominent industrial heritage sites in Europe should be assessed in more detail. There is already a themed route based on Iron and Steel sites. There is certainly potential for a Copper themed route to be instituted. This would inevitably lead to closer connections being made between Swansea and other European copper sites, and for indirect promotion of Swansea copper heritage in the rest of Europe.

5.5. In the Rest of the World

There are several copper industry heritage sites beyond Europe, some with a direct connection to the historic Welsh industry. Of these, four have been designated with World Heritage Site status.²⁹ While historical connections have been made between Wales, Australia, Chile, South Africa and India through their shared experience of the global copper industry, connections between industrial heritage sites, or potential heritage sites, have not.

Principally amongst these are: Burra Heritage Trail in South Australia,³⁰ and the Namaqualand Copper Mining Landscape in South Africa, currently on the World Heritage Site Tentative List and including significant smelting heritage.³¹ There are several related mine, smelter, settlement, burial and maritime sites in Chile, particularly in the regions of Santiago, Coquimbo and Guayacán, that do not enjoy any statutory protection but the steady increase in interest in preserving industrial heritage in a country which still draws significant wealth from its copper reserves will gradually change this outlook. There are no significant sites in India preserved or marked for their involvement in the historic copper industry, the remains of which are largely intangible and based more on the products that were manufactured and sold in this part of the world from copper and brass imported from Wales.

The positive impact this regeneration project could have on sites abroad, particularly in Chile, should not be underestimated. Partnerships currently being built between Welsh and Chilean scholars through the Leverhulme World of Copper Network could lead to important long-standing relationships with heritage bodies and groups. Making information available online in the home languages of countries with cognate copper industry sites would begin to build these important bridges and lead to a unique global heritage collaboration, however loose, that does not have to be mediated through official and remote bodies such as UNESCO and ICOMOS.

²⁹ Copper-related World Heritage Sites in chronological order: 1980, Røros, Norway, seventeenth-century copper mining and smelting, primarily conserved for distinctive urban housing; 2001, Mining Area of the Great Copper Mountain in Falun, Sweden, landscape exploited for copper since the thirteenth century; 2006, Sewell Mining Town, early twentieth-century copper township, built by the Braden Copper Company, for the workers of the El Teniente mines, Chile; 2006, Cornwall and West Devon Mining Landscape, pioneering hard rock mining technology developed in the region and exported worldwide.

³⁰ Burra Heritage Trail, <http://www.burrahistory.info/BurraHeritageTrail.htm> (accessed 20 August 2012).

³¹ UNESCO World Heritage Centre, 'The Namaqualand Copper Mining Landscape', <http://whc.unesco.org/en/tentativelists/5460/> (accessed 20 August 2012).

6. Conclusion

The vision presented in this report, and that of the project documents with which it has been concerned, is intended to propel forwards a totally original heritage-led regeneration campaign. However we should remember that the site in question is currently derelict, with no formal access, and whose twelve main heritage assets lie in an extremely vulnerable state.

The short-term priorities for the site must now begin as a matter of urgency with three recommended actions.

1. To safeguard the physical fabric of the site's key features, particularly the two engine houses, the Morfa Powerhouse and the Morfa Laboratory, to undertake the clearance of vegetation, make good safe access to each area and erect temporary interpretive signs at each feature.
2. The project must improve its external communications. The success of the project in the long term will largely depend on the trust and interest that is built up gradually and openly, rather via secretive developments that culminate in a 'grand reveal' at the end.
3. To formalise a partnership with Swansea Community Boat Trust to ensure that a suitable landing stage is integrated into building and conservation plans at the earliest opportunity.

This regeneration project can be seen as the sequel to the original Lower Swansea Valley Project whose success to rid Swansea of its 'moonscape' only came about through a vision that many thought impossible to achieve. The project originally neglected the valley's heritage in its regeneration schemes but since then public opinion on the importance of industrial heritage has changed. It is therefore important to retain a vision of a lively, bustling and industrious valley that is worthy of being at Swansea's heart.

I end this report with a short letter from Bronwen Holden, the daughter of Robin Huws Jones, sent to the Copper Day website in February 2011:

It was my father, Robin Huws Jones, who came home one day in 1960 from one of many train journeys back to Swansea through the terrible industrial wasteland of the Valley and asked why no-one had tried to improve it, and whether something could be done. I was 14 years old and well remember the excitement of his ideas- and the feeling that maybe it was an impossible task. Everyone until then seemed to accept that this moonscape of devastation and pollution was Swansea's inevitable long-term legacy from the vanished copper industry.

My father, who was then a lecturer at Swansea University, wasn't easily put off by apathy and scepticism. He got together an informal working group of people from the University, the Council and the Welsh Office- and in 1961 things started to happen with start of the Swansea Valley Project. He knew it would take many years to make the Valley beautiful and useful again. But he would be so pleased to know of the huge progress that has been made and of this anniversary event. He died aged 91 in 2001.
Bronwen Holden.

/ENDS