



MSc Sustainable Building Conservation	
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Executive Summary

The focus of this report is the Grade II Listed Buildings of the former Whitchurch Hospital located in Whitchurch Cardiff and owned by Cardiff and Vale University Health Board (UHB). The Hospital was known as Cardiff Lunatic Asylum when it officially opened on the 15th April 1908 and later became Cardiff City Mental Hospital (Historic Wales, no date). During World War 1, it was taken over by the military to be used to treat the injured and part of it was used again during World War 2 when it became the largest emergency services hospital in Wales (Carradice, 2011). The Hospital closed it's doors in 2016 and has since remained vacant and unprotected – vulnerable to vandals, thieves and exposed to the elements.



Figure 1: Whitchurch Hospital main entrance/administration building (County Asylums, no date)

Heritage sites whether they be large country houses, archaeological remains, landscapes or historic buildings which were constructed to fulfil a purpose such as a mill or a hospital contribute to our knowledge, as a visitor, we tend to discover something new when we visit them (Historic England, 2014). In excess of 87% of people when surveyed believed that Heritage sites can improve quality of life, make an area a better place and raise pride within the area (Historic England, 2014). A research review by the Heritage Lottery Fund in 2016 reported that across all age groups *'older buildings were more beautiful than newer ones and conveyed a sense of longevity and grandeur.'*

The future of the historic buildings of Whitchurch Hospital are now at a critical point, the condition is deteriorating rapidly due to vandalism and a lack of repair and maintenance from the owner. The UHB do have a viable plan in place for development of the entire site and in February 2020, applied for the renewal of the planning permission which was originally granted in 2001 (Darch, 2020). The site of the listed buildings shown in figures 1 and 2 has been granted permission for a mixed-use development (Darch, 2020). This report will therefore focus on this specific element of the overall proposal considering the options for use of the buildings and the costs associated.

Introduction

Although the site where the main hospital buildings are located is in the region of 7 hectares, the entire site extends to over 30 hectares (HLM, 2017) as can be seen in the plan in Appendix B and figure 2 below. Several applications for planning permission for the UHB's scheme were submitted in the 1990's and subsequently refused following a strong opposition campaign by the local residents of Whitchurch and Community groups who provided 30 letters of objection along with two petitions of objection (City of Cardiff, 1996), however, in 1996, the decision was taken to appeal and following a public inquiry, planning permission was finally granted for the proposed development in 2001 (Darch, 2020).



Figure 2: Aerial view of Whitchurch Hospital listed buildings (Coflein, 2007)

Figure 3: Proposed land use – extent of site. Listed buildings shown shaded purple (Gordon Lewis Associates, 1996)

From what can be determined, a suitable developer for any of the proposed developments for the site has not yet been found. The extent of the buildings that are listed is vast – see figure 2. Certain factors may have deterred experienced, suitable developer's coming forward earlier to register their interest such as the sheer scale of the buildings, the perceived greater risk that heritage developments can present along with the financial challenges to ensure the development is commercially viable (Geddes, 2015).

However, the delay in finding a developer could be the entire fault of the UHB. Early and careful planning when vacating a heritage asset is essential (Pickles, 2011) and although planning permission was forthcoming in 2001, nearly 20 years later, no development has commenced. Construction of the Velindre Cancer Centre is Phase 1 within the development was given outline planning permission in 2018 (Darch, 2020) and was forecast to be delivered in 2022 (HLM, 2017) with disposal of the historic Whitchurch Hospital buildings not planned until Phase 4 (HLM, 2017). Unfortunately, the procurement and construction process has

been stalled for the Centre due to the Covid-19 outbreak, Cardiff County Council stopping all processing to planning applications for new infrastructure to serve the hospital (Owen, 2020). These timings will no doubt have a severe detrimental effect on the historic buildings especially if Cardiff and Vale and University Health Board do not undertake some urgent and necessary repair in order to provide greater protection for the buildings.

'The standard trajectory of the big mental hospital was phased decanting followed by phased dereliction followed by development of the grounds leaving the historic building as a wreck, surrounded by a fence in the middle' (Geddes, 2015, p.62). This is the fate that has been bestowed upon both Severalls Mental Health Hospital which closed in 1997 (County Asylums, no date) and Brentwood Mental Hospital (formerly Warley Hospital) which closed in 2001 but has since been converted into residential apartments (County Asylums, no date), however, this statement is also awfully close to the truth for the predicament of Whitchurch Hospital.

Scope of Business Case

Due to the complex process of gaining planning permission and the fact that it has been extended several times with an application already submitted for further consideration justifying the original scheme, it would be a practical approach to propose that the development for the listed buildings should be mixed-use in line with the current permission so this report will focus on those heritage buildings (shaded in purple in figure 2) and the business case associated with the approved model. The scope of this plan is therefore based upon the following statements.

- Cardiff and Vale University Health Board (UHB) have allocated the land as shown in appendix B (parcels 1, 2 and 6) to the south east, south west and north west of the site for residential development. This equates to 211 residential units across 6.5 ha (HLM, 2017). On brownfield sites within the local development plan, 20% of this development will be required to be allocated to affordable housing (Cardiff, 2016). According to the websites of the main local land agents such as Savills, Knight Frank, Cooke and Arkwright and some of the online portals such as OnTheMarket and Rightmove, there is very little residential development land or plots with outline residential planning permission currently for sale within either the Whitchurch or wider Cardiff area.
- A residential building plot for the construction of a 4-bedroom dwelling house for sale approximately 3.3 miles north of the Whitchurch Hospital site is advertised with Rightmove at £350,000.00. This may provide some indication on what the potential lucrative worth is for a development site consisting of 211 houses, although a range of housing is required according to the Whitchurch Green Masterplan incorporating 2, 3, 4 and 5 bedroom houses, *'Cardiff has a significant need for new homes, affordable homes, together with catering for the whole range of needs.'* (Cardiff, 2016, p.5) Savills, Knight Frank and Cooke and Arkwright were contacted directly by phone and

email for their view on development land prices in Whitchurch in May 2020, however perhaps due to the situation with Covid 19, none of the agents responded. There was a lack of comparable evidence (that included price and land area) to value the residential development site, however an estimation has been attempted in table 1. This values the residential development land at almost £20million. However, it should be noted that a valuation will be affected by location, characteristics of the site and complexity of the site etc which could steer the valuation in an upwards or downwards direction.

Table 1: Valuation of the Residential Development Land.



	Type	Value	Cost per acre
Comparable 1	Residential planning for three properties, east of Cardiff. 0.59 acres. (Savills, 2020)	£725,000.00	£1,228,813.00
Comparable 2	Residential planning for one property in Thornhill, Cardiff. 0.29 acres. (Rightmove, 2020)	£350,000.00	£1,206,896.55
Whitchurch Hospital	Residential planning for 211 properties in Whitchurch. 16 acres.	£19,485,676.40	£1,217,854.78

- Once the residential site has been disposed of and any Section 106 agreements negotiated, the UHB would then utilise the proceeds of the sale to progress the mixed-use development incorporating the Grade II listed buildings of the former Whitchurch Hospital. Evidence does suggest that residential developments within historic assets can attain higher market prices than their new build equivalent and also effect an uplift on surrounding property prices both new and existing (Geddes, 2015).
- The National Lottery Heritage Fund (NLHF) can provide grants of up to £5million but in order to qualify, the project must be led by a not-for-profit organisation such as the UHB or a community group (NLHF, 2019), often when refurbishing historic assets, there is a need to *'raise a cocktail of funds including grants'* (Geddes, 2015, p.6). The mixed-use development also incorporates 180 apartments, of which, a minimum of 20% will need to be affordable housing (Cardiff, 2019). Stakeholders within the NLHF will support *'inclusion of small scale community led housing schemes and social housing within mixed use schemes'* (NLHF, 2019, p.43).
- Community Heritage is a key focus for a major funder such as the National Lottery Heritage Fund (NLHF, 2019). Key community assets have already been factored into the overall development of the site including a 200 bed Hospital south of the site, a

community health facility, other community uses extending to 3000m² and leisure facilities via the retained public playing fields and Grade II listed Chapel (Darch, 2020). Due to the opposition facing the development site from the community, it may prove viable for the UHB to develop the site themselves engaging an experienced team of consultants, a commercial partner but also importantly the local community.

Whitchurch Hospital – A summary

Table 2: Whitchurch Hospital – Plans of the building, location, history and significance, construction and current condition.

	Description
<p>Existing Plans of Whitchurch Hospital</p>	<p>As stated above, the former Whitchurch Hospital site is a complex layout. As can be seen on figure 4 and 5 below, buildings have been added throughout the decades, several of which have been added since 1960 (Hayes, 2020).</p>  <p>Figure 4: Later building located in amongst key listed buildings (Google, 2016)</p>  <p>Figure 5: Morphology of Whitchurch Hospital site (Hayes, 2020)</p>

The range of historic buildings consist of single, two and three storey buildings with double height space in the multipurpose hall, store rooms and old boiler room as can be seen on figure 6.

According to Autocad plans for the site provided by Hayes, the following areas are as follows (these areas have been measured in Autocad but are approximate):

- One Storey – Total area of 5661m²
- Two Storey – Total area of 18,178m²
- Three Storey – 1,871m²
- Double Height
 - Multipurpose Hall – 628m²
 - Stores – 472m²
 - Old Boiler room – 598m²

Total available floorspace for refurbishment and development 27,408m² (as calculated in Table 1, Section: Plans for Whitchurch Hospital).



Figure 6: Range of Buildings at Whitchurch Hospital (Hayes, 2020)

As seen in appendix A, the buildings at Whitchurch Hospital have been classified as ‘listed buildings’ and ‘key listed buildings’. A certain amount of selective demolishing may need to take place in order to accommodate the planned mixed-use development in order to provide practical access to the residential and community areas (HLM, 2017).

In 2020, due to the current restricted nature of the site, Hayes provided a set of architectural plans based on some measurements, estimation with regards the construction of the buildings, photography and digital mapping, as can be seen in figures 7 and 8 below.

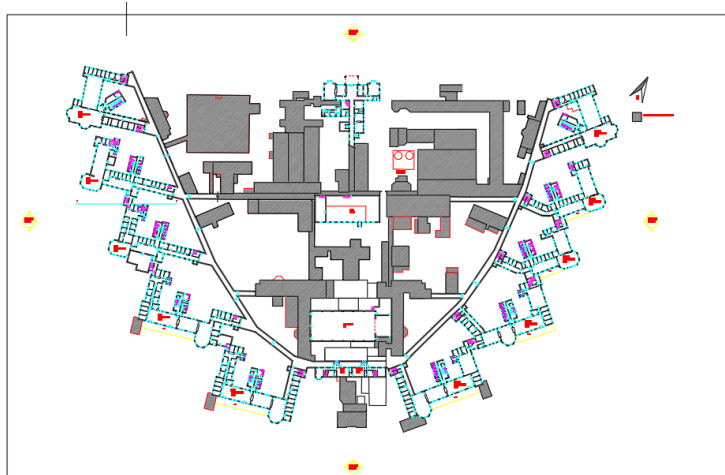


Figure 7: Ground floor layout (Hayes, 2020)

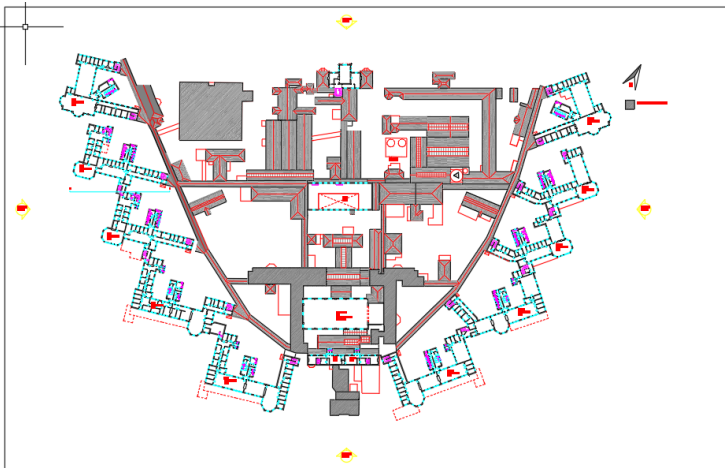


Figure 8: 1st Floor layout (Hayes, 2020)

The original architectural papers of 1904 of Cardiff Asylum, Whitchurch, created by Oatley and Skinner and held within a special collection located at the University of Bristol (University of Bristol, no date) as can be seen in figure 9.

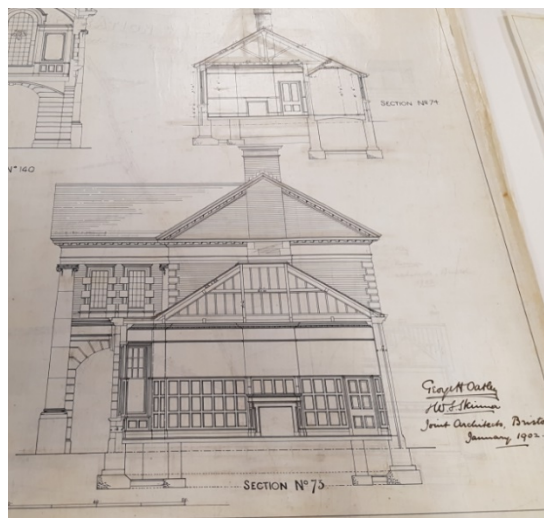
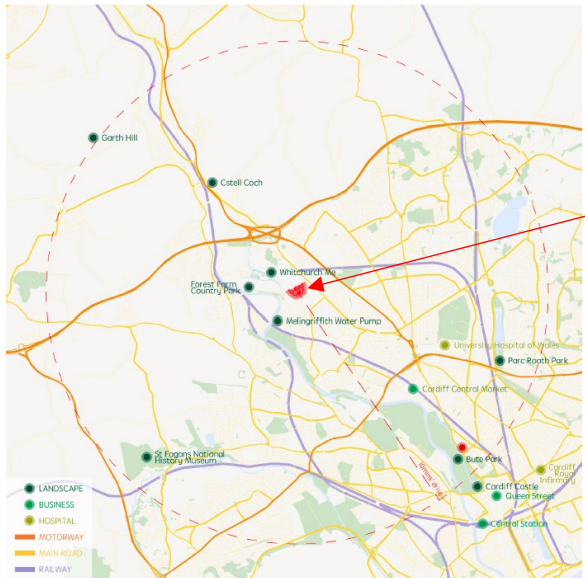


Figure 9: Signed section by Oatley (Kempton, 2020)

For further information regarding the morphology of the buildings and also details on up historical and up to date plans, refer to:

- Hayes P, ART 504: Case Studies and Regional Work: Whitchurch Mental Hospital, Cardiff and South Wales.
- Hayes P, 'Mastermap-topo_3196298_0: Autocad plan of the Whitchurch Hospital site
- University of Bristol Special Collections. DM1812/Chest4/Drawer1

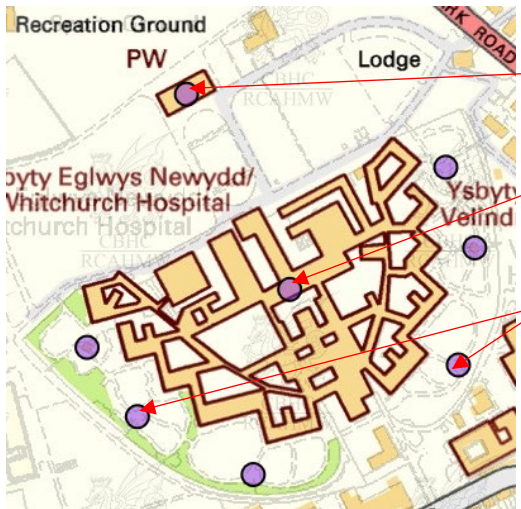
Location and transport links Whitchurch Hospital is well located within the District centre of Cardiff. It is adjacent to the Glamorgan Canal and Long Wood Site of Specific Interest (SSSI) (Cochrane, 1999).



Location of Whitchurch Hospital within district centre of Whitchurch

Figure 10: Location of Whitchurch Hospital (Zhang, 2020)

The park and playing fields to the north of the building are now protected under Cadw’s Register of Landscapes, Parks and Gardens of Special Historic Interest in Wales, reference PGW (Gm) 66 (CDF) (Parks & Gardens, no date). The gardens that immediately surround the buildings also contain a Chapel and 6 octagonal shelters, all of which are also Grade II listed as can be seen in figure 11 and 12. Also refer to appendix C for listing descriptions.



Location of Grade II Chapel

Whitchurch Hospital

6 Octagonal shelters within the grounds of the hospital

Refer to Appendix X for listing information.

Figure 11: Location of listed buildings at Whitchurch Hospital (Historic Wales, 2020)



Figure 12: Grade II Octagonal shelter within the grounds of the hospital (Adams, 2019)

Within the district centre located within close proximity to the former hospital is a good range of shops and services. The site is well located for the city centre but also for South Wales as it's just a few minutes away from the M4.

- Schools – there are 4 primary schools and 5 secondary schools within the area.
- Amenities – Whitchurch and the immediately surrounding area provide leisure facilities such as Whitchurch Rugby, Football and Social Club, Cardiff Cricket Club and Whitchurch Golf Club.
- Transport – the M4 motorway is approx. 1.5 miles north of the site. Cardiff City Centre is approx. 4.9 miles away. There are 4 bus stops on Velindre Road and a further 3 bus stops on Park Road with a duration of 30 minutes to the City centre. Whitchurch and Coryton train stations are located close-by with a journey time to the City of 20 minutes. The pedestrian and cycle 'Taff Trail' is located just to the west of the site which leads south to the city and north to Castle Coch, Brecon and North Wales.

For further information regarding location and context. Refer to:

- Zhang Y. Whitchurch Hospital, Fabric 1: Site plans, photographs and Survey.

History and significance

Due to an increase in population in Cardiff and proportional increase in the amount of lunatics within the county of Glamorgan during the 19th Century, it was decided to close the asylum then located in Bridgend and construct the new Cardiff Asylum which opened in 1908 (County Asylum, no date)



Figure 13: Whitchurch Hospital during World War 1 (Whitchurch Hospital, 2014)

	<p>Dr Edwin Goodall was appointed as the first superintendent of the hospital in 1906 and retired in 1929 gaining a CBE for his work with shell shocked soldiers at the hospital during WW1 as can be seen in figure 13 (Whitchurch Hospital, 2011).</p> <p>The hospital was designed by a collaboration between Bristol based architect George Herbert Oatley and William Swinton Skinner (Gnoinska & Hughes, 2020). Oatley was a well-regarded Architect, knighted in 1925, he designed some landmark buildings such as The Wills Memorial Building and Bristol Baptist College (University of Bristol, 2013) as well as other hospitals such as Winwick Hospital and Warlingham park Hospital, both of which have been demolished (Gnoinska & Hughes, 2020).</p> <p>The Hospital was designated due to it being the <i>'the best example of a large mental hospital using echelon plan form and for its special architectural interest of Oatley and Skinner'</i> (Historic Wales, no date).</p> <p>For further information on the history and significance of Whitchurch Hospital, refer to:</p> <ul style="list-style-type: none"> Gnoinska and Hughes. 2020. ART 504: Case Studies & Regional Work, Whitchurch Hospital: Significance – Site History, both tangible and intangible.
<p>Construction</p>	<p>It took 10 years to build Whitchurch Hospital and cost nearly £350,000.00 (Carradice, 2011) which equates to a staggering £41.3million in today's money (Britton, 2020). The buildings covered 5 acres and was built to accommodate 750 patients (Carradice, 2011). Five two storey blocks which can be seen in figure 6 were constructed each side of the main reception/administration building (Historic Wales, no date).</p> <p>The main construction methods were traditional in approach with load bearing masonry walls and timber cut roof structures, however, the architects also used a range of more contemporary materials such as concrete which was used in the foundations and in the arched ceilings for fire proofing and steel which was used as roof trusses in areas such as the recreation hall and the records store (Britton, 2020). The hospital was built using extensive amounts of red brick with yellow bands, welsh slate roofs and Portland Stone and Bath Stone dressings (Branford, 2020). As shown in figure 14 below, the buildings substructure consists of mass concrete foundations with brick footings up to floor level (Britton, 2020).</p> <div data-bbox="427 1509 951 1986" data-label="Image"> </div> <div data-bbox="970 1621 1337 1800" data-label="Caption"> <p>Figure 14: Typical Foundation; Oatley and Skinner Architects (Bristol University, 2020) Britton 2020</p> </div>

The ground floors within the buildings are a mixture of both solid and suspended floors and the 1st floors are suspended timber floors (Branford, 2020). Internally, the buildings have suffered via unauthorised entry, vandals smashing windows and doors from their frames, however according to Historic Wales, the main recreation hall still retains its original interior as can be seen in figure 15.



Figure 15: The Recreation Hall (BCD-Urbex, 2018)

For further information regards it's exterior and interior, refer to the listing description within the appendix.

For further information on the construction and materials used, refer to.

- Britton L. 2020. ART 504: Tools of Interpretation

Current Condition

Whitchurch Hospital closed its doors in 2016 as a new purpose-built hospital was constructed on the same site as Llandough Hospital (Cardiff and Vale University Health Board, 2019). It is apparent following a visit to the former hospital in October 2019, that between 2016 and the present, the Grade II listed buildings have suffered both at the hands of vandals who have gained unauthorised entry but also by the UHB who have not maintained the 5-acre site of buildings.

- Roofs – the slate roof coverings are damaged in many areas across the buildings, slate has slipped and has been broken, holes have formed in the roof surface so one could expect timber roof structures below are suffering from water penetration. Lead is missing possibly due to lead theft by vandals. Some roof surfaces have totally failed and are therefore covered with plastic sheeting as can be seen in figure 16.



Figure 16: Failed roof surface covered with plastic sheet (Branford P, 2020)

- Rainwater goods – Sections of downpipe and guttering across all the buildings inspected were missing, damaged or cracked, some were overflowing with vegetation.
- Windows and Doors – A great number of timber box framed sliding sash windows have been damaged, the glass is smashed allowing the external elements to penetrate causing rot to the frames and to the building causing damp. Due to no maintenance, vegetation is becoming out of control and growing through window and door openings. Steel security grids cover windows and doors on the external periphery of the buildings, however doors have been smashed from their frames within the internal areas.
- Internal areas – Have been damaged with vandalism causing damage to the historic fabric. Some ceilings have collapsed entirely and paint on ceilings and walls is flaking away due to the moisture levels.

Some security measures have been implemented including steel grids to some of the ground floor windows on the external periphery of the buildings, steel fencing around the periphery of the site and 24-hour security guards who regularly patrol the site.

The buildings are evidently exposed to the elements of wind and rain especially where vandals have taken lead and where slates have been displaced allowing water to penetrate and continue to degrade the condition which in turn has a significant effect on performance. *‘the thermal efficiency of the building fabric can be enhanced both by carrying out repairs promptly and through regular maintenance’* (McCaig et al, 2018, p.4).

A photographic summary of condition can be found within appendix C. For further information regarding the current condition of the buildings, refer to:

- Branford P. 2020. Condition appraisal of Whitchurch Hospital formerly Cardiff City Asylum.

For further information regarding the Energy Use at Whitchurch Hospital, refer to:

- Fussell C. 2020. Section 1: Energy Use at Whitchurch Hospital.

Conservation and Development

'Conservation and development are not mutually exclusive objectives; they should and can be part of a single planning process' (Kerr, 2013, p.6)

Development of a heritage asset such as Whitchurch Hospital can be controversial as there are usually high amounts of interest from the wider community (Geddes, 2015). It is essential with projects as large and complex as Whitchurch Hospital to ensure a Conservation Plan is in place *'a Conservation plan is a document which explains why a site is significant and how that significance will be retained in any future use, alteration, development or repair'* (Clark, 2000).

This plan should fully document a thorough investigation of the buildings, the current risk to the buildings, history, significance, construction, condition and a plan as to how development of the buildings might be implemented (Heritage Fund, no date). It is a challenging balance to *'maintain the integrity of the heritage asset against making interventions that are needed to make the development financially viable.'* (Geddes, 2015).

Typically, there are unforeseen complications when developing a heritage asset which will cost time and money (Geddes, 2015). Careful consideration should be given to the setting of the asset to ensure that any development or changes are suitable in scale and form complimenting the environment (Kerr, 2013). New design and refurbishment should be *'designed by professionals with the necessary skills and carried out by people with appropriate skills using suitable materials'* (Heritage Fund, no date, p.7).

The vision for 'Whitchurch Park' is one where the majority of the historic buildings are saved and subsequently developed into sustainable and beneficial use for the local market across all demographic groups. Residential conversion of the historic building will be carried out sensitively and creatively, providing interesting, yet comfortable, quality dwellings. New development sits harmoniously within the wider environment and provides external green spaces and activities that improve health and wellbeing. Due to the intense development of the rest of the site (hospital, residential development etc), *'the public should have a certain level of access for their sacrifice and a restored historic building is normally better for a community's welfare than a building that is poorly maintained and/or derelict'* (Geddes, 2015, p.60). Consequently, the heritage development will proactively connect and engage with the community providing a host of amenities incorporating a community entertainment venue, a museum, fitness/health facilities, places to work and to eat, shops and community growing.

As 'Whitchurch Park' is within close proximity to good public transport links and cycle paths, this will be promoted as part of the sustainable development promoting a reduction in the use of vehicles across the site. It will be an accessible and inclusive environment but will ensure the safety and security of it's residents.

The Project – planned/proposed use of buildings at Whitchurch Hospital

Detailed planning permission has not yet been submitted to Cardiff Local Planning Authority. As seen in appendix A, the buildings at Whitchurch Hospital have been classified as ‘listed buildings’ and ‘key listed buildings’ which perhaps indicates that a certain amount of selective demolishing may need to take place in order to accommodate the planned mixed-use development (HLM, 2017). A mixed development is also one that is favoured by Planning Policy Wales (PPW) where it places emphasis on the ‘*promotion of accessible mixed-use development, comprising appropriate combinations of housing, employment, retailing, community, cultural and recreation opportunities.*’ (Welsh Government, 2018, p.44). PPW also supports the re-use of brownfield sites and developments that facilitate easy access to public services (HLM, 2017).

This proposal also supports sustainable development and the requirements of the The Well-being of Future Generations (Wales) Act in several ways including providing green space in the form of gardens, parks and playing fields, access to SSSI, pedestrian and cycle paths. It is an inclusive environment for all ages providing facilities for those with disabilities encouraging a reduction in carbon by ‘live, work and play’ within the development. The scheme addresses an extensive, almost derelict building preventing further decay which has had an impact on the Whitchurch Community and public safety. The proposal will create opportunities and provide an attractive, safe and a well-connected community.

According to Savills, ‘*there is a growing trend for mixed use developments particularly in our town and city centres.*’ In order for a development within a heritage asset to be successful, it should incorporate reduced vehicular movement and traffic speeds, provide a mix of uses with a selection of spaces and a variety of sizes, have interesting architectural and design elements and be well maintained and safe for its users (Deloitte et al, 2013).

On consideration of the overall plan for the entire site, the importance of the existing buildings, approved planning permission, potential funding streams available and the engagement and interest from the local community, the following developments are to be incorporated into the overall plan.

Residential Development

Figures from the 2011 Census states that there are 14,267 usual residents in the parish of Whitchurch, 97.8% of whom live in households, almost half of the population are living as couples and over 7000 residents report to be in good health. People in Whitchurch expressed higher levels of life satisfaction, happiness, a greater sense of wellbeing and lower levels of anxiety than compared to over 17 other wards across Cardiff (Cardiff, 2018). Cardiff residents also have amongst the ‘*highest gross disposable income of all areas of Wales and of the major British cities*’ (Wales, 2018, p.14) which would suggest that this location is a good choice for residential development.

The residential piece of the mixed development is sizeable with 14,400m² allocated. Permission is granted for 180 apartments (Darch, 2020). As stated above, it's development on a brownfield site so Cardiff Local Authority require a minimum of 20% of the units will be allocated for affordable housing. A further 20% of the residential development will be allocated for private retirement housing. The location of the residential units are ideally situated within the 2 storey blocks as shown in figure 6.

Cardiff has a population of 357,200 people (Cardiff Partnership, no date), a population which will increase by 20% by 2035 resulting in the highest population in Wales by a mile (Property Investments, 2020). The economy of the capital is performing well, *'projected to be the fastest growing city over the next 20 years'* (Invest in Cardiff, no date). Forecasts state that household projections for Cardiff will increase significantly by over 35% between 2011 and 2031 (Holman, 2015) and also seen in figure 17 with the development of property not being delivered quickly enough to cope with the demand (Savills, 2020). This also includes the provision of affordable housing, according to Savills, between 2017 and 2018, 464 affordable units were delivered, missing the Cardiff Local development plan target of 2071 units. The Cardiff Housing Strategy covering the period 2016 -2021 published by Cardiff Local Authority also states that demand for affordable units across all wards of Cardiff is high and that Whitchurch is in high need of affordable housing, 36 units of affordable housing will be incorporated into this scheme.

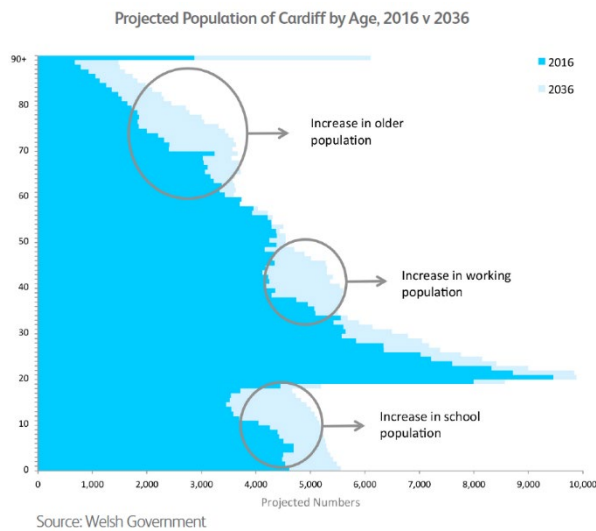


Figure 17: Projected population of Cardiff by age (Cardiff in 2018, 2018, p.5)

House prices have increased dramatically over the past 20 years in the region of 240% resulting in some of the most expensive property prices in Wales (Property Investments, 2020). The average property prices related to the CN14 postcode are reported to be in the region of £299,639 (Property Investments, 2020).

According to the 'Cardiff Older persons Housing Strategy 2019- 2023', Cardiff Local Authority and their housing partners have recognised that provision for housing in this sector to the north and west of the City is limited. 105,100 people are aged 50+ and above in Cardiff

(Cardiff, 2014), and as a national population we are living longer so services and facilities within a local community need to reflect this (Cardiff, no date).

The World Health Organisation has published ‘8 domains’ which strive to cater for an age friendly environment which include outdoor spaces and buildings, transportation, housing, social participation, respect and social inclusion, civic participation and employment, communication and information, community support and health services and an age friendly community (Centre for Ageing Better, no date). This development will seek to incorporate all of these domains for the proportion of housing allocated for ‘retirement living’ and will therefore promote;

- Over 55 years to qualify for a unit
- 36 units for retirement living – good quality finish featuring additional security measures such as a security entrance system and some units containing adaptations to support physical health which include all four accessibility features including level access to the entrance, a flush threshold, wider doorways and circulation and a toilet at entrance level (Adams & Hodges, no date)
- An independent lifestyle for the over 55’s but also incorporating domestic and personal assistance should it be required.
- Health care and support will be available via the on-site Health Care facility.
- Homeowners lounge/guest suite for over 55’s.
- Access to all amenities and may include volunteering to help with museum and entertainment venue, fitness, gardening, working in the shop or restaurant – encouraging social participation.
- The apartment service charge will need to reflect additional requirements such as personal assistance.

	2011	2016	2021	2026	2031
One person households	402	428	456	485	510
One adult, one or more children	88	91	96	100	103
Two adults, no children	405	419	432	440	446
Three or more adults, no children	131	136	137	136	138
Two or more adults, one or more children	278	275	274	274	272
All households	1,304	1,349	1,394	1,435	1,467

Figure 18: Household Projections for Wales, Household Summary Report (2014) (Holman, 2015)

As can be seen in Figure 18 above, the highest proportion of households both now and in the future consist of either a one or two-person household (Holman), so the development will mainly consist of 1-2 bedroom units with small percentage of 3 bedroom apartments. The majority of the remaining units will be sold to the market with 10% retained for private rental.

The market for private renting in Cardiff is increasing and owner occupier is decreasing (Cardiff, no date).



Figure 19: 1 & 2 bedroom flats for sale ½ mile from Whitchurch on Rightmove (Rightmove, 2020)

As stated above, there is evidence to suggest that residential developments in heritage assets do command a greater market price than a new build and these developments can also have an effect on the values of the neighbouring properties (Deloitte, 2013). *‘Thoughtful refurbishment and a pragmatic approach to conversion of historic properties can command rental and capital values that make development worthwhile’* (Deloitte et al, 2013, p.13). However, developing the former buildings of Whitchurch Hospital does carry some risk with regards to viability. Table 3 provides an overview of a selection apartments and flats that were available within the parish of Whitchurch in May 2020.

Table 3: Sample of apartments/flats for Sale on Rightmove, 8th May, 2020

Type of Property advertised within the area in figure 18	M2	Price	Cost per m2
1 bedroom – maisonette, 1st floor, terrace, car parking space	74.8m2	£199,950	£2,673.13
1 bedroom – ground floor, luxury, woodland location, parking,	61.96m2	£165,000	£2,663.01
2 bedroom – 1st floor, exclusive gated development, garden, garden room, garage	80m2	£310,000	£3,875.00
2 bedroom – ground floor, retirement home (over 60 years), refurbished, communal gardens, car park, emergency system, close proximity to a range of shops/services.	53.57m2	£189,950	£3,545.83
2 bedroom – ground floor, close proximity to a range of shops/services.	55.42m2	£189,950	£3,427.46
2 bedroom – ground floor, front and rear gardens, short walk to amenities	56.96m2	£165,000	£2,896.77
2 bedroom – 1st floor, new flat, close proximity to amenities	45.15m2	£165,000	£3,654.49
2 bedroom – ground floor, retirement home (over 55 years), communal parking, gardens, lounge and laundry room	57.19m2	£160,000	£2,797.69
2 bedroom – 1 st floor, refurbished, allocated parking, close proximity to amenities,	59.47m2	£158,500	£2,665.21

Most of the pricing books available i.e. SPON's Architects and Builders Price Book 2020 do not provide a cost per m2 for the refurbishment of a historic property as it is difficult to collate and present as each property is very different in architectural design, feature, character, location and scale etc. According to James Drew, Senior Building Surveyor for the National Trust, conversion costs per m2 could be in the region of £3200.00 (not including fees). Within a report produced by Geddes in 2015, a residential development of a Grade II listed property in London, 2014, cost £2318.00 per m2. If an average Construction Inflation of 5.5% (Construction Analytics, 2020) is applied to this figure, the equivalent m2 rate for 2020 would be in the region of £3196.14 which is very close to the figure provided by Drew. However, this was a development based in London, location is a factor, so can apply a location factor 0.85 for Wales (SPON's, 2020) in order to adjust the m2 rate for Cardiff. See Table 4 for both costs.

Table 4: Approximate Costs and profit for residential conversion

	Higher per m2 Rate	Lower per m2 rate
Refurbishment rate per m2	£3200m2	£2620.83 Location factor of 0.85 for Wales x £3196.14 (SPON's, 2020)
14,400m2 of residential development – Total development cost of 180 units.	£46,080,000.00	£37,739,952.00
Preliminaries are included	n/a	n/a
Professional fees – estimated at 10% (Reed & Sims, 2015)	£4,608,000.00	£3,779,395.20
VAT @ 5% – renovation of derelict dwellings for residential purposes that are empty for 2 or more years from the date of construction (SPON's, 2020)	£2,534,400.00	£2,075,967.36
Total cost of development	£53,222,400.00	£43,595,314.56
Cost per property @ 180 properties	£295,680.00	£242,196.19
Sale Price of Property – factored on 80m2 per property, quality development with much amenity, heritage asset etc and figures in table 3	£300,000.00	£300,000.00
Total SALES x 144 properties	£43,200,000.00	£43,200,000.00
Shortfall on overall development	-£10,022,400.00	-£395,315.00
<i>Profit per apartment</i>	<i>£4320.00</i>	<i>£57,803.81</i>
<i>Total profit for 144 units</i>	<i>£622,080.00</i>	<i>£8,323,748.64</i>

**Typically a ground rent/service charge would be payable on leasehold apartments which could be in the region of £3500.00 per property (Rightmove, 202). This would cover the maintenance of the buildings/gardens etc.*

**A contingency sum to address the risk should also be factored of between 10-15%. (English Heritage, 1999)*

As can be seen from table 4, whether the cost per m2 to refurbish the buildings is £3200.00 or £2620.83, there is a shortfall in funds or 'conservation deficit' to cover the residential part of the development. However, several options could be considered in this scenario;

- New Build construction of the 36 affordable units. The construction of Low-rise apartment blocks cost between £1175.00 and £1525.00per m2 (SPON's, 2020) which is significantly less than the conversion of a historic building as demonstrated in table 4. However, this would need discussion with the local planners and may also require historic buildings to be demolished perhaps extending into some of the green areas which might be controversial and unacceptable. New build construction of the affordable housing would enable a greater return on the historic development with the majority of apartments available for sale. If for example the UHB decided to dispose of all 180 apartments within the historic part of the development, they could realise a profit in the region of £10,800,000 based on the conversion costs of £2680.83 per m2 and would break even (or thereabouts) if the cost per m2 was £3200.00.
- The £19million realised from the sale of the residential property might be required for other parts of the development such as the Health Care Facility. However, a large proportion of this money will be used to commence the residential development in stages so property can be released to the market. Some of this money could also be used to plug the conservation deficit.
- Funding from the Heritage Fund (see funding) or from Welsh Government could be sought on the affordable part of the scheme.

Considering there will be in the region of 400 new homes across the entire site, *'growth will bring challenges, putting pressure on the City's physical infrastructure, community cohesion, it's natural environment and public services'* (Cardiff, 2018, p.21). Savills reported that journey time increases by 50% within the City during both the am and pm rush hours, so it is therefore essential to note that traffic and movement of vehicles will need further consideration.

Community Provision at Whitchurch Park

Early engagement with the community and community groups is vital, this will *'build support for the project, help to avoid opposition later and may uncover unexpected resources'* (Deloitte et al, 2013, p. 21). Once support is established, this community will then hopefully become the audience, the participants and volunteers to help with the on-site community assets. Also, according to the Heritage Lottery Fund, a mandatory outcome for funding is that *'a wider range of people will be involved in heritage'* and to achieve this the project will *'need to include audience development work and community consultation in your planning'* (Heritage Fund, no date). A small group of individuals have already formed an association - 'The Whitchurch Hospital Historical Society' and they are very interested in the both the history of the hospital but also in ensuring a viable future.

Permission is granted to allocate the community in the region of 3000m2 of floorspace. It is proposed that the following will be incorporated into the plan for community use;

- **Recreation/Multi-purpose hall**

The recreation hall/multipurpose hall is a grand original space double height with original features intact and approx. 628m2 in size – see figure 15. This hall will be used as an entertainment venue hosting live music, performance art, films, local school performances such as musicals and pantomimes etc. A fire risk assessment of the space would be required to assess capacity, however, with the correct number of fire-exits and taking into seating into consideration, the overall capacity would be in the region of 400 people per event – approx. 1.5m2 per person (Young Southampton, no date). This venue will be supported by a bar and brasserie for before, during and after performances, serving food and beverages and be approx. 500m2 in size including the commercial kitchen. The performances will also require ancillary accommodation and space to store equipment, for changing rooms etc of 300m2.

As stated above, Whitchurch is a fairly affluent area and according to Zoopla, residential property prices are some of the highest in Cardiff. According to the first ‘Well-being plan’ provided by Cardiff Council and Cardiff and Vale University Health Board, *‘attendance rates in Cardiff at arts events, historic places and in particular museums are amongst the highest in Wales’* however those from a less deprived area are less likely to attend than those in the least deprived areas as can be seen in figure 20.

These statistics create some comfort that if community events and historical/art exhibitions are available at Whitchurch, then the residents and the wider community of Whitchurch and beyond will support the activities. They will be inclusive and accessible to all regardless of status.

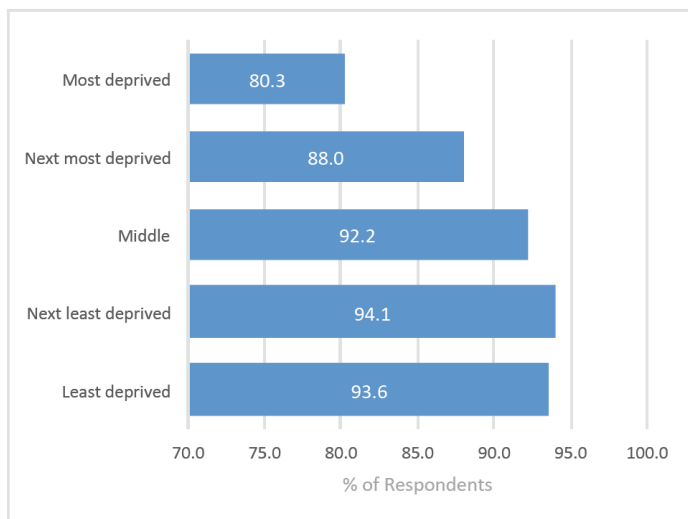


Figure 20: Percentage of respondents attending at least one cultural activity in the last 12 months (Cardiff, 2018, p.18)

There are a number of entertainment venues across Cardiff, most of which are located close to the City Centre or in the area of Cardiff Bay. Although this entertainment venue at Whitchurch Park will be operated as a registered charity, partnerships could be formed with Wales Millennium Centre, the Royal Welsh College of Music and Drama or Cardiff Local Authority. The partnership (s) may be an extension for productions or events or could even assist with more community-based arts objectives for the local authority.

The income for the hall will be raised through the hall hire and box office along with sales from the cafe and bar, fundraising will of course play a part along with corporate sponsorship. According to Chapter, a multi-artform venue in Cardiff, 70% of their income is raised through these channels. Volunteers will be encouraged to help with the operational tasks for the venue, however, salaried positions will be required for the ongoing management/organisation and administration.

The location of the hall is south of the main entrance and administration building, however, it is within close proximity to the residential blocks, careful refurbishment would be required to ensure noise is minimised and performances for example to not extend past 10pm in the evening. A three-storey block adjoins the hall as seen in figure 21, this extends to approx. 1871m² of floor area across the three floors so would contain the brasserie/restaurant which supports the venue with access to the gardens to the north of the block also shown in figure 21 and all of the ancillary accommodation required to support the venue (Storage, changing rooms, toilets etc).



Figure 21: 3d image of the hall and adjacent 3 storey block (Google earth)

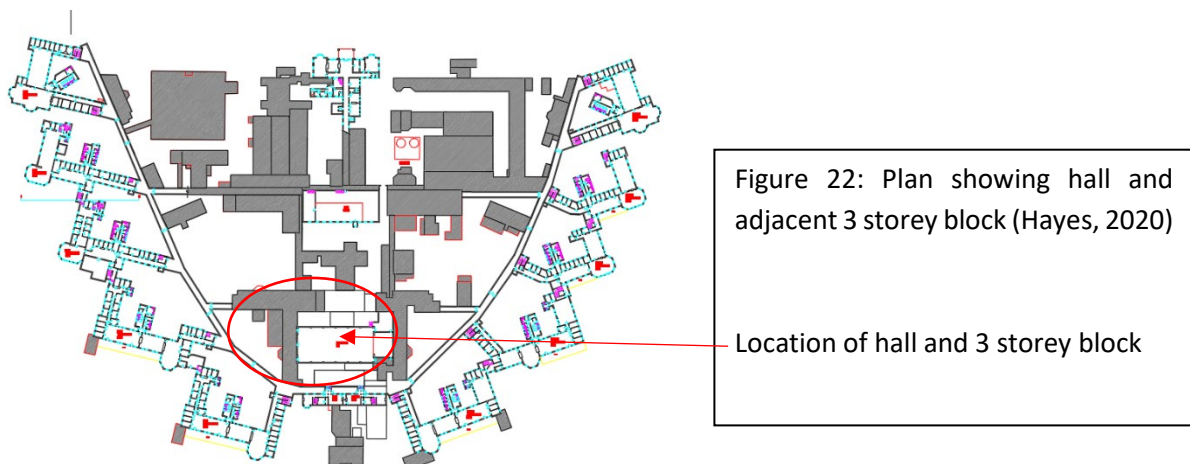


Figure 22: Plan showing hall and adjacent 3 storey block (Hayes, 2020)

The other community facility in Whitchurch is Whitchurch Community Hall. According to the Centre's website, the main hall has a capacity of 90 people but can be subdivided for smaller groups and events such as camera clubs and small exercise clubs. It is therefore a lot smaller in size than the hall and venue proposed for Whitchurch. This centre may not directly compete with the venue proposed at Whitchurch Park, however there could be some competition with smaller fitness studios within the development proposal.

The Wales Millennium Centre located in Cardiff Bay was a substantial project for Cardiff and cost £106 million taking 2.5 years to complete (WMC, no date). The financing of the building came from the National Lottery Millennium funding who provided £31.7 million, The National Assembly for Wales who provided a further £37million and £10.4million which was donated by the Arts Council of Wales, the remaining finance was from a private investor and commercial loan from HSBC (Wikipedia, 2020). The project at Whitchurch is a fraction of the size, however, funding might be sought from a combination of these organisations.

- **Museum/Exhibition Space**

A museum/exhibition space will be incorporated into the community space to interpret and the story of the buildings over the 20th Century exhibiting the origins of the hospital, charting it's history, how treatment evolved through the decades, perhaps some exhibits of equipment and the narration and interpretation of former asylum patients experiences (Science Museum, no date). This will also be accommodated within the three-storey block as shown in figure 21 and 22 along with an exhibition space for local arts/historic presentation.

'One thing museum's need to do to survive and thrive is challenge the preconceptions of their audience' (Cook, 2015). One of the finalists for the Museum of the Year in 2015 was Dunham Massey (Parkinson, 2015), an elegant country house based in Cheshire owned by the National Trust. Part of the house was converted to appear as it did during its time in World War One when it became a military hospital – see figure 23 below (Parkinson, 2015). This could be incorporated into the museum at Whitchurch as it also became a hospital in both World War I and World War II.



Figure 23: Dunham Massey – converted into World War One Hospital (Parkinson, 2015)

- **Grade II Listed Chapel**

Also located on site to the north is the Grade II Listed Chapel of 789m², originally able to seat all patients and staff of Whitchurch Hospital – approx. 900 people (Whitchurch Hospital, 2011). The Chapel is well positioned to the north of the former hospital and central to the main green spaces, it is suggested that this Grade II listed building would accommodate a café serving light lunches, coffee and cake with external seating and also a changing facility for recreational facilities on the green.

As can be seen in figure 24, the chapel is surrounded by open green spaces including the cricket field and lawn bowls, this service could provide a welcome break in recreational activities. The closest cafes are located in the centre of Whitchurch Village and consequently it would benefit from customers from the new hospital, the recreational users of the playing fields, residents within the development of Whitchurch Park and the local community.



Figure 24: The Chapel at Whitchurch surrounded by open green spaces (Google Earth, 2020)

- **Leisure/Fitness Facility**

A Leisure/Fitness facility of approx. 150m² is also planned to be incorporated within the development. Although there are large areas externally for football, cricket etc, the studio will be for residents and the wider community to enjoy fitness/nutrition classes etc. Wales has a strategy to prevent and reduce obesity in Wales – ‘Healthy Weight: Healthy Wales’. From an engagement report produced in 2019, one of the key themes that constantly re-occurred throughout the process was ‘*Embrace the Community....there needs to be the investment in local community facilities*’ (Welsh Government, 2019) in order to improve our food choices and fitness levels.

- **Community shop/Growing**

External areas will be set aside externally for community gardens and growing where children, adults, and those perhaps with disabilities can benefit from ‘*education, healthy initiatives, environmental schemes, social enterprises and horticultural therapy groups*’ (Social Farms

and Gardens, no date). In addition to the commercial retail units, a small community shop of approx. 75m2 will be opened to sell produces, goods and services provided by the community.

Table 5: Costs for refurbishment of Community facilities

Refurbishment of existing historic buildings	Size	Cost per m2	Total cost for each facility
Recreation Hall	628m2	£3196.14 *	£2,007,175.92
Restaurant/Brasserie/Bar/Seating areas	500m2	(see note below)	£1,598,070.00
Toilets – Male/female/disabled/space required for lift installation	80m2		£255,691.20
Ancillary accommodation – Changing rooms/storage etc	300m2		£958,842.00
Museum and Exhibition Space	600m2		£1,917,684.00
Whitchurch Chapel	789m2		£2,521,754.46
Leisure/Fitness suite	150m2		£479,421.00
A community shop approx. 75m2	75m2		£239,710.50
Preliminaries are included	n/a		
Refurbishment Costs (with location factor of 0.85 applied – SPON’s 2020)	£9,978,349.08 X 0.85 £8,481,596.72		
Professional fees – estimated at 10% (Reed & Sims, 2015)	£848,159.67		
VAT @ 5% (SPON’s, 2020)	£466,487.82		
Total Cost	£9,796,244.21		

**Approx. measurements taken from Hayes topo plan and Google Earth*

**A contingency should be factored in at 10-15% for conversion work and 2.5-10% for new building work*

** Price for m2 refurbishment of existing buildings is assumed as the same rate as refurbishment of a residential dwelling due to the lack of data for this scenario. Further cost may be incurred with specialist installations such as the floor within the leisure/fitness suite, sound proof materials for the recreation hall.*

Funding for Community Provision

The National Lottery Heritage Fund (NLHF) claims to *‘the largest dedicated funder of Heritage in the UK’* (Heritage Fund, no date). According to the Heritage Fund, money for Heritage Enterprise projects can be used *‘to repair and adapt empty derelict buildings and sites, so that they are financially viable and commercially viable if appropriate.’* (Heritage fund, no date).

To apply for a grant with the Heritage Enterprise Fund, the applicant would be required to either be a not-for-profit organisation or a partnership led by a not-for-profit organisation and contribute ‘partnership funding’ of at least 10% (NLHF, 2019). This plan is proposing that the UHB lead the project with a commercial and community partner, so in principal, the project would qualify for a grant between £500,000 - £5million, decisions for which are taken at local (Wales) level by the Heritage Fund.

The costs outlined in table 6 are in excess of £5million and the Heritage Funds’ Heritage Horizon Award provide grants for £5million plus and have the same application process as the Heritage Enterprise Fund. These grants are awarded to projects where *‘heritage is at risk’* and where it can be demonstrates that the project will be *‘transformative, innovative and collaborative’* (Heritage Fund, 2020) however, the Horizon decisions are made at board level within the Heritage Fund and applications are now closed until 2022. Other organisations would be approached such as The Art Council for Wales and Welsh Government to seek funding on certain elements of the projects i.e. the recreation hall.

Demonstrating project outcomes are vital for a successful application to the Heritage Fund and this project as can be seen in Table 7.

Table 6: Outcomes for Whitchurch Park Community Development

Outcomes (Heritage fund, no date)	How the Whitchurch Park Development meets the outcome
<i>Mandatory - A wider range of people will be involved in heritage.</i>	The mixed-use development is allocating residential units for affordable housing, retirement living and the general market. It has a unique proposition to bring the community of Whitchurch Park and the wider community together engaging in entertainment, fitness, recreational events and horticulture.
<i>Heritage will be in better condition</i>	A large proportion of the development is for residential which will address all of the dilapidated key listed 2 storey buildings. This will be a commercial development with a profitable return. The monies awarded through the heritage fund will ensure the future of these historic buildings for future generations.
<i>Heritage will be identified and better explained</i>	It is planned that through the community provision, a museum will be incorporated within the development to tell the story of the former Victorian Asylum/Hospital. The story will be told with both visual and audio aids. A ‘Community passage’ will also be made available charting the actual new development of the hospital site.

<i>People will have developed skills.</i>	This project will ensure that the professional team and construction staff will be skilled and experienced in the refurbishment of historic assets and traditional buildings. Due to the lack of skills within heritage, people will be encouraged to participate and develop skills throughout the project.
<i>People will have learnt about heritage leading to change in ideas and actions.</i>	This is vast site and an ambitious project, it seeks to incorporate a mix of use into heritage buildings which is complex. Community engagement and participation is essential for its success, the project will seek to share the process with schools, colleges but also businesses and other professionals.
<i>People will have greater wellbeing</i>	This project aims to connect residents and the public with the green open spaces but also to the wider community of Whitchurch. Opportunities will be available to volunteer for the community assets integrated into the project and there will be a range of activities for participation.
<i>The funded organisation will be more resilient</i>	This organisation to lead this project is yet to be defined, but there will need to be leadership, clearly defined roles for those involved, fresh and exciting ideas, the freedom to challenge and methods to attract new sources of expertise and advice.
<i>The local areas will be a better place to live, work or visit</i>	At present, the site is dilapidated with a tall steep fence surrounding the perimeter, although there will be a long period of change, the refurbishment of these buildings will significantly improve the appearance of the site and provide a vastly improved visitor experience.
<i>The local economy will be boosted</i>	With over 400 homes due to be delivered across the entire site, this will certainly increase business levels within the area. New people and tourists will be encouraged to visit Whitchurch Park to utilise the facilities and employment and businesses will also thrive as part of the Whitchurch Park offering.

Welsh Government recently set aside a sum of £3.7million for their ‘Community Facility programme’ which aims to improve or transform buildings into community assets such as community centres or spaces for art and sport (UK Construction online, 2020). It is a capital grant scheme and grants are available from £25,000 to £250,000 but applications should be ‘community led’ (Welsh Government, 2017)

Other organisations could be approached such as Cadw and the AHF who can help with small grants with regards to project viability and development appraisal.

Retail Units – permission is granted for 1500m² of retail space, maximum of 500m² for each unit (Darch, 2020). These units will be required to serve the new inhabitants of the former hospital buildings but also the wider community.

- **Community Health Facility**

Outline planning permission has been granted for a 3000m² facility to provide services to the local community (Darch, 2020). These facilities will deliver an ‘*extensive range of services*’ (NHS Confederation, 2015) providing the community with access to nurses, doctors and therapists. Community Health Provision will be situated in the building shown in figure 20. This building is a contemporary addition and does not sit comfortably (see figure 4) in amongst the much more attractive listed buildings. However, although visually it’s not appealing, it is assumed that the building is well constructed and stable in its condition.

In order for it to provide in the region of 3000m² of floorspace, it would require a complete additional 1st floor and use of the grade II listed buildings to the east and south as can be seen in figures 19 and 20 (scheduled for removal according to Whitchurch Green Masterplan), a new mechanical and electrical installation, an internal refit and some improvements to the external façade.

Table 6: Costs for Health Facility

	Size	Cost per m2	Total Cost for each element of building
Refurbishment of existing buildings	1480.15m ²	£1425.00 (SPON’s, 2020)	£2,109,213.75
New Construction of 1 st floor	569.83m ²	£1875.00 (SPON’s, 2020)	£1,068,431.25
Refurbishment of Grade II listed Buildings	879.42m ²	£3196.14 * (see note below)	£2,810,749.44
Total Size (in the region of 3000m ²)	2929.40m ²		
Preliminaries are included	n/a		
Building Costs (with location factor of 0.85 applied – SPON’s 2020)	£5,988,394.44 X 0.85 £5,090,135.28		
Professional fees – estimated at 10% (Reed & Sims, 2015)	£509,013.53		
VAT @ 5% (SPON’s, 2020)	£279,957.44		
Total Cost	£5,879,106.00		

*Approx. measurements taken from Hayes topo plan and Google Earth

*A contingency should be factored in at 10-15% for conversion work and 2.5-10% for new building work

* Price for m2 refurbishment of existing buildings is assumed as the same rate as refurbishment of a residential dwelling due to the lack of data for this scenario.

* This facility will be funded by Cardiff and Vale University Health Board and Welsh Government due to the nature of the centre, however, it may result in some consolidation of services locally.

Location of the Community Health facility within the development, would re-use listed building to the east and south as seen in figure 25 and 26 and the 1st floor would be extended to cover the entire ground floor – refer to figure 26.

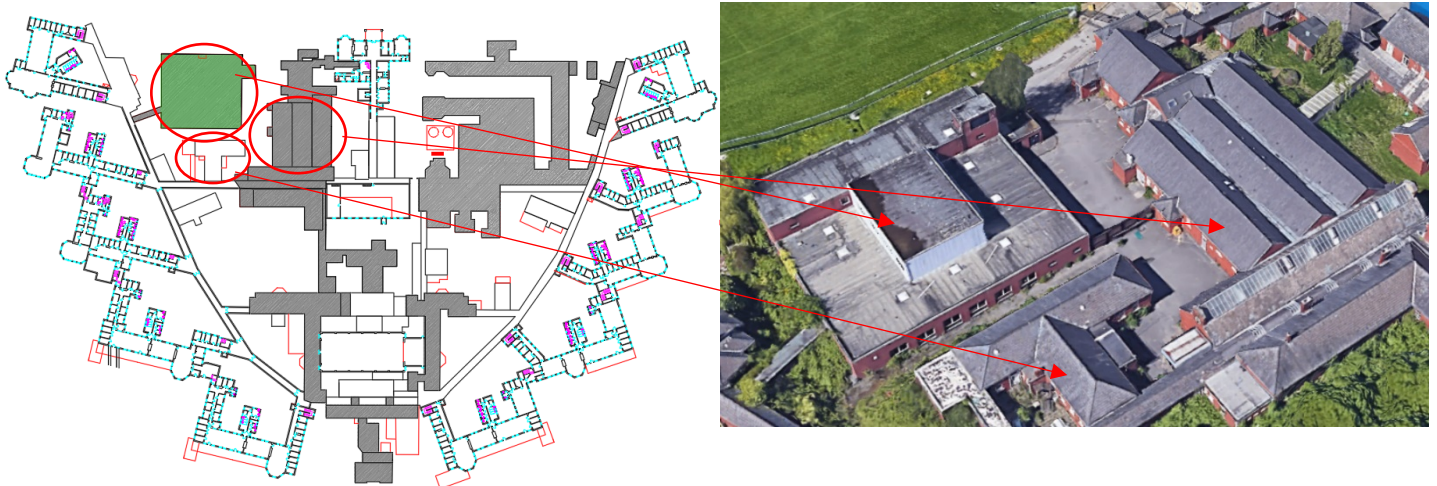


Figure 25: (Top left) Location of Community Health Facility (Hayes, 2020)

Figure 26: (Top right) 3D image of building to be extended/refurbished (Google Earth, 2020)

o **Commercial Units**

Outline planning permission is granted for 2600m2 of office space within the buildings (Darch, 2020). According to the Cardiff Local Development plan provision of small offices, creative spaces, workshops and starter units in the north west of Cardiff *'will be essential to ensure the continued provision of local employment opportunities to address the geographical employment disparities across the County.'* A Public House and restaurant of approx. 1000m2 will also be incorporated into the scheme. It would be practical if all of the community facilities are accessible via the main entrance

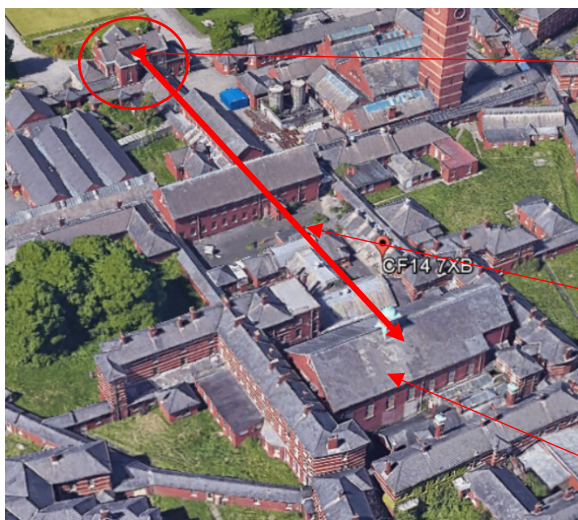


Figure 27: Public access (Google earth, 2020)
Main entrance to building where restaurant, shops would be located so they are accessible to the public but not perhaps interfere with residential apartments.
New Construction and perhaps some demolishing of non-key structures would be required to form a passageway from the main entrance through to the recreation hall/museum/brasserie etc.
Recreation Hall/Entertainment Venue

Conclusion

The Whitchurch Hospital site is currently a complex problem. The historic buildings are at risk and continue to deteriorate in condition. It is evident that Cardiff and Vale University Health Board have other priorities to address in the short-term future such as the new National Cancer Centre located north of the site which is understandable.

The planning permission that has been secured for a mixed-use development does make sense as it makes good beneficial use of the historic buildings and the land associated with the site, it also offers quite a unique proposition to the community of Whitchurch. However, the financials are concerning. The project outlined in this report is based on The University Health Board leading the development so fundamentally there is no 'cost' associated with the purchase of the site, however, in reality, the UHB would not wish to lead such a project as development of property is not their expertise. It is likely, they will package up parcels of land and attempt to dispose of them to commercial property developers. However, if a developer has to pay for the 7ha site, then the residential development of the historic buildings which is the largest proportion of the scheme becomes less viable based on the amount of risk associated with the project and cost of refurbishment. If the cost of refurbishment is in fact closer to £3200.00 per m² and the Developer is required to pay for the site, then unfortunately this situation would render the development unviable. The University Health Board are obliged to dispose of their assets at full market value unless a Community Asset Transfer can be negotiated. However, this process may work for a small Chapel or old Library, but for a site of this size, it would be difficult for any community group to demonstrate the ability and capacity to develop and manage a project associated with the buildings.

Typically, developments involving historic assets such as the buildings at Whitchurch Hospital would be less attractive to major developers as there is more risk, they may have to engage in protracted discussions with the local authority and with Cadw with regards to interventions or demolishing certain parts of the buildings. They may uncover unfamiliar defects which presents them with delay and unexpected costs. Due to the nature of the site – close to an SSSI, there could be multiple species of Bat present, so increased costs with regards to mitigation measures might be required.

In order to derive a greater return of investment, the developer might decide to make the apartments 'luxurious' to command a higher price point for each apartment, however, the occupiers/residents of these apartments then have certain expectations and might not want to share their spaces with the public, so the community part of the scheme which is so important might become diluted.

Although in order to provide some hope, conversion of a Victorian Asylum might be a difficult and complicated project to undertake, refurbishment has been done many times before. There are Asylums and Hospitals from the 19th and 20th Century across the United Kingdom including The London County Asylum, Claybury and The Three Counties Asylum in Stotfold,

Bedford (The Time Chamber, 2017) that have been converted successfully with various uses including residential and leisure.

This report was a little tricky and does not really fulfil the original brief of a 'detailed business plan'. During the Covid-19 lockdown, although it was attempted to contact estate agents and contractors and venues to obtain a greater idea of costs associated with land, construction works etc, very few people replied as businesses were closed. A minimum 4000-word business plan would be required for each of the projects that has been outlined in this report and so in certain areas, not enough detail has been provided on certain elements of the plan.

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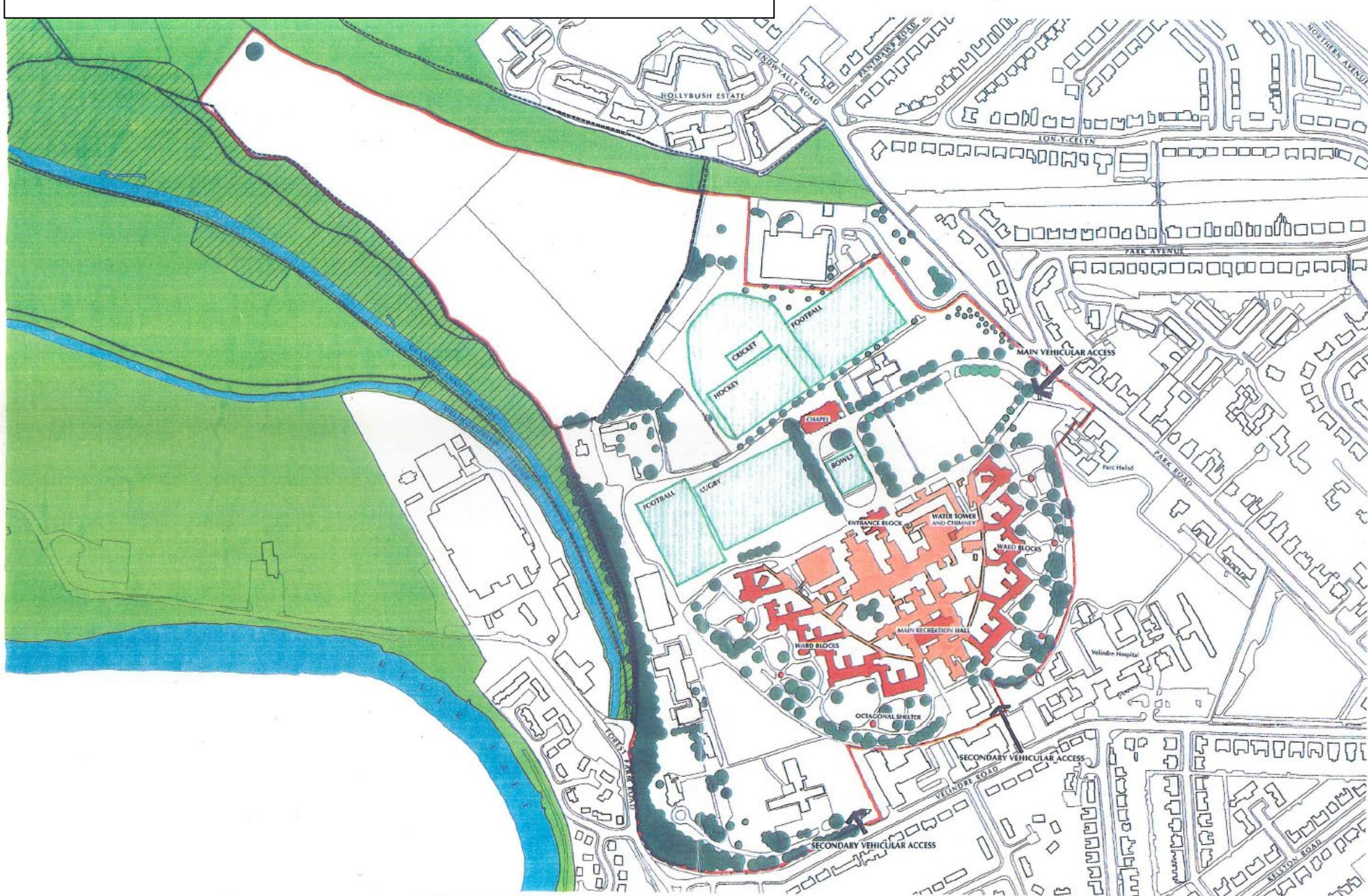
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Appendix A: Whitchurch Green – Existing Context (Gordon Lewis Associates, 1996)



- KEY:
- COUNTRY PARK
 - SITE OF SPECIAL SCIENTIFIC INTEREST
 - LISTED BUILDINGS
 - KEY LISTED BUILDINGS
 - MATURE TREES
 - PUBLIC FOOTPATH
 - SITE BOUNDARY
 - PLAYING FIELDS

N

Scale
0 10 20 30 40 50 100 150 200m

ALL MATURE TREES ARE NOW COVERED BY TREE PRESERVATION ORDER

JORDON LEWIS ASSOCIATES
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Drawing no: 7050/0102 Rev. A Date: January 1996

EXISTING CONTEXT

WHITCHURCH GREEN
Cardiff Community Healthcare NHS Trust

Appendix B: Whitchurch Green Masterplan (HLM, 2017)

WHITCHURCH GREEN MASTERPLAN

KEY | Illustrative Masterplan

- Mixed Use Zone
- Residential Zone
- Health Campus
- George Thomas Hospice
- Green Space
- Former Whitchurch Hospital Buildings
- Former Whitchurch Hospital Buildings (Key Historic Buildings)
- Access Roads (Health Campus)
- Health Campus Access Road
- A - All traffic
- B - Emergency Access Only



Appendix C: Listing Descriptions from Cadw (Historic Wales, no date)

Full Report for Listed Buildings



Summary Description of a Listed Buildings

Reference Number	Building Number	Grade	Status	Date of Designation	Date of Amendment
11715		II	Designated	15/04/1994	31/05/2002

Name of Property	Address
Whitchurch Hospital	

Location

Unitary Authority	Community	Town	Locality	Easting	Northing
Cardiff	Whitchurch	Cardiff	Whitchurch	314607	180517

Street Side	Location
	On large site between Park Road and Velindre Road in the north of Whitchurch Community.

Description

Broad Class	Period
Health and Welfare	

History

Built 1902 to 1908; official opening 15 April 1908; originally known as 'Cardiff Lunatic Asylum' and later as 'Cardiff City Mental Hospital'. Architects Messrs Oatley and Skinner of Bristol. Building amongst most modern of its period, having provision for latest treatment methods, and also a large recreation hall, bakery, kitchen, boiler house, own fire station. Taken over by military 1914 - 1919 as 'Welsh Metropolitan War

Hospital' (refurbished following war), and again during Second World War as 'Whitchurch Emergency Hospital'. Taken over by Ministry of Health in July 1948.

Exterior

The hospital is built of red brick with yellow brick banding, Welsh slate roofs; the entrance block main elevation has ground floor and dressings of Bath stone. Developed form of 'broad arrow' or echelon plan widely used for large mental hospitals from later C19. Spine of administration and service blocks has, to each side, five two-storey ward blocks (roughly L-shaped) stepped back in echelon, and connected by curved corridor to rear, and cross corridors. Convex (south) side faces out to give sun and light to ward blocks; concave corridor thus encloses service blocks with entrance block facing north. Entrance block in Renaissance style. Two storeys, three bays with advanced gabled central bay with open porch below. Slate roof with weathered red brick end chimneys, and two smaller chimneys to ridge. First floor in brick with deep eaves band course (dentil cornice) and dressings in Bath stone; ground floor in horizontally channelled Bath stone. The windows are horned sashes with small panes to upper sash and single large pane below. Single first floor window to each outer bay has architrave with keystone and rusticated surround. Two ground floor windows to each outer bay. Advanced central bay has a broken pediment, end paired Ionic pilasters, large round-headed first floor window with keystone and rusticated surround, on ground floor open segmental arch to porch; returns have two windows to first floor (rusticated surrounds) with ground floor arches similar to front. Gable ends treated as pediments with projecting central stack. To each side of two-storey section, attached single storey pavilions, hipped roofs, banded Bath stone, semi-hexagonal bays to front, two windows to returns. Rear of entrance block in red brick and connects with body of hospital via corridor flanked by one- and two-storey office blocks. To east (left) of entrance, yard formed by L-shaped works and laundry blocks (mortuary block to north) has boiler houses (with prominent ridge ventilators) and 2-storey attached range. To rear of boiler houses is combined water tower and chimney. Top stage consists of copper dome with small lantern over open loggia (3 bays to each side), brick pillars with stone capitals and cornice. Freestone cornice and bandcourse, roundels, yellow brick bands. Attached chimney follows water tower up to cornice then becomes cylindrical chimney in brick. To west (right) of entrance, area between corridors has attached service buildings in matching materials. Disposed to either side of entrance are ten roughly L-shaped 2-storey ward blocks in red brick with yellow brick banding; red brick chimneys, slate roofs, small-pane horned sash glazing. Blocks connected to each other and/or to rear corridor to enclose small courtyards; to rear, each ward block has attached two-storey sanitary block and ventilation cupola in red brick with wooden louvres surmounted by small dome and pinnacle. Ward blocks are disposed almost symmetrically, and are numbered 1 to 5 East and West respectively. Wards 1 (East and West) have two-storey splayed bays near inner angles. Ward 2 (West) has bay in same position, but block 2 (East) has bay near centre of elevation. Wards 3 and 4 to each side have polygonal corner bays. Wards 5 to each side have two splayed bays to outer corners. Some ward blocks have, on south facing walls, modern single-storey shallow extensions in yellow brick with corrugated roofing materials; some 2-storey extensions in red brick. Between Wards 1 (East and West), is 2-storey staff house connected by corridor to body of hospital, six windows with recessed central bay, and ground floor splayed bay-windows to outer bays. To rear of house, 2-storey physiotherapy and pharmacy departments. Behind these, other blocks include main recreation hall, largely obscured by adjacent buildings but with prominent louvre, and kitchens. A network of corridors forms courtyards with buildings attached to corridors for office, medical, and service uses.

Interior

Most interiors remodelled and modernised (these were not available for inspection at resurvey January 2002 except for the entrance hall). Entrance block retains square hall, plain ceiling with cornice. Three bays to each side with Roman Doric engaged columns or pilasters. Panelled wood dado; to right, fireplace, to left, door to enquiry office. Entrance to hospital through screen wall with columns. Transverse corridor with classical detailing. To right, staircase hall to former boardroom area with wooden stair in style of circa 1700 six-panelled doors etc, offices modernised. Main recreation hall (approximately 15m by 30m) retains original interior. Segmentally vaulted ceiling with cross-ribs. Seven bays to sides, each with round-headed window; piers between windows have dentil cornice with cartouche and floral pendants. West end wall has triple blind window, taller central window flanked by lower windows treated as walls; dentil cornice continues from side window-piers; to each side round window with pediment and square architrave; three doorways with double-leaf doors. East end has stage with large segmental pedimented proscenium arch, to each side, cartouche with female head and swags; window to each side; below each window, square-headed doorway with double-leaf doors. Doors each lead to lobby with wooden staircase to rear stage area.

Reason for designation

Included as the best example in Wales of a large mental hospital using echelon plan form, and for its special architectural interest as the work of Oatley and Skinner.

Full Report for Listed Buildings



Summary Description of a Listed Buildings

Reference Number	Building Number	Grade	Status	Date of Designation	Date of Amendment
11714		II	Designated	15/04/1994	31/05/2002

Name of Property	Address
Chapel at Whitchurch Hospital	

Location

Unitary Authority	Community	Town	Locality	Easting	Northing
Cardiff	Whitchurch	Cardiff	Whitchurch	314525	180672

Street Side	Location
	Opposite and to the north of the main entrance of Whitchurch Hospital.

Description

Broad Class	Period
Health and Welfare	

History

Built 1902 to 1908 as chapel for City of Cardiff Lunatic Asylum. Architects Messrs Oatley and Skinner of Bristol. Designed to accommodate all 750 patients and 150 staff of asylum.

Exterior

Large lancet-style chapel in red brick with Bath stone dressings, Welsh slate roofs. Aisled nave with chancel. Elevation (south) facing hospital has two pairs of gabled clerestorey dormers each dormer with 3-light Gothic window; roof sweeps down over aisle (but it is hipped to left); six bays articulated by thin stepped buttresses; two lancets to each bay except right bay which has single window and shallow porch with Gothic doorway. South elevation of chancel has small transept with two lancets, shallow buttresses, and gothic doorway; diagonal buttress to south-west angle, two lancets to east. East end has three lancets. West end has broad single-storey porch with hipped roof, central gabled bay set forward with Gothic doorway; to each side, two 2-light windows separated by buttresses; simple Gothic doorway to returns. Large 3-light window in gable above and bell-cote to apex. North elevation as south, but north-east angle between transept and chancel has narrow castellated chimney-tower with 2-light louvred window to each side, and vestry with window of three camber-headed lights.

Interior

Red brick with Bath stone dressings; used as a store room with most furnishings removed. Open arch-braced roof; nave arcade of six bays, round stone piers. Aisle windows have stained glass with simple art-nouveau design to heads, much is broken, particularly on the north side. Steps up to chancel (organ to left), lancets have glass with figures of Faith, Hope and Charity. West porch subdivided with separate doors to aisles and nave. Pulpit still in position.

Reason for designation

Listed for group value with main Whitchurch Hospital building.

Full Report for Listed Buildings



Summary Description of a Listed Buildings

Reference Number	Building Number	Grade	Status	Date of Designation	Date of Amendment
11713		II	Designated	15/04/1994	31/05/2002

Name of Property	Address
Octagonal Shelter in Grounds to east of Whitchurch Hospital	

Location

Unitary Authority	Community	Town	Locality	Easting	Northing
Cardiff	Whitchurch	Cardiff	Whitchurch	314731	180614

Street Side	Location
	Between angle of Ward Block East 5 and garden railings at Whitchurch Hospital.

Description

Broad Class	Period
Health and Welfare	

History

These shelters are probably contemporary with the hospital main building, thus c1908-10. Fresh air was considered an important part of treatment for mental patients.

Exterior

An octagonal timber garden shelter with a broadly corrugated roof; shaped and pierced valance, boarded ceiling. Roof carried on pillars, the top halves of which are in the form of turned balusters.

Interior

The interior has four bays formed by screens with glazing bars; these have planked benches and splayed sides midway between the main pillars.

Reason for designation

Included for group value with Whitchurch Hospital and associated listed items.

Appendix D – Photographic summary of condition/elements at risk (Adams, 2020)

Images	Description
 <p>Figure 7: Vandals marking the walls and smashing windows (Adams, 2019)</p>	<p>Buildings become more at risk when they are rendered redundant and continue to be at risk when a potential use/development/purchaser for the buildings and the site has not been identified (Cadw, 2017).</p> <ul style="list-style-type: none"> Electrical light fittings smashed and broken Vegetation is growing through many of the smashed windows from the internal courtyards. Graffiti was present on walls internally
 <p>Figure 8: Smashed windows (Adams, 2019)</p>	<p>Whilst the buildings were unprotected in the months following closure of the hospital, they became an easy target for vandals and thieves. The intruders have smashed many of the windows and ripped doors from their frames both internally and externally.</p> <ul style="list-style-type: none"> Peeling paint from painted brick walls. Smashed Windows with vegetation growing through Radiators ripped from walls
 <p>Figure 9: Vegetation growth through windows. (Adams, 2019)</p>	<p>On inspection of the buildings, it could not be determined whether any intruders had attempted to ignite a fire, <i>'arson is a major cause of fire in disused buildings'</i> (Pickles, 2018, p.29). Fire can cause extensive damage and major loss to heritage buildings and their architectural elements.</p> <p>Architectural features and some elements within the buildings have been significantly damaged. Applying suitable measures earlier could have avoided such loss of the historic fabric.</p> <ul style="list-style-type: none"> Vegetation growth through another window



Figure 10: Old Pathology Department (Zhang, 2019)

Smashed windows have caused pigeons to enter the building in multiple areas/rooms and this has caused extensive amounts of mess in rooms such as the Old Pathology Department which is a health hazard and problematic to remove. (Abouzeid et al, 2007).

Pigeon droppings



Figure 11: Fallen plaster work & exposed lath (Adams, 2019)

Plaster has fallen away from ceilings in rooms and corridors where there has been water penetration.

'Water ingress is one of the major causes of damage in historic buildings.' (Pickles, 2011, p.16)

Exposed lath



Figure 12: Parquet Flooring (Branford & Kempton, 2019)

Parquet flooring is lifting perhaps due to extensive water damage as water staining was evident on the Oak pieces.

Walls have been damaged, most likely by intruders as also shown in figure

Lifting oak parquet flooring



Figure 13: Damp corridors (Zhang, 2019)

Corridors between wings were extensively damaged, some doors had been removed entirely or severely damaged, many windows were smashed and there were signs of damp on walls, ceilings and floors.

Signs of damp on walls and ceilings



Figure 14: Damaged walls (Zhang, 2019)

Some internal dividing walls have been severely damaged as can be seen in figure 14. It appears the actions of intruders may have caused this damage.

Large holes in dividing walls



Figure 15: Steel grids at ground floor. (Adams, 2019)

The ground floor windows are protected on the external periphery by Security screens as shown in figure 15. However, these have not been installed on the 1st floor, 2nd floor or at ground floor level within the internal courtyard areas etc.

Smashed windows at 1st floor. Windows are decaying and require repair/protection.

Steel security screens

Excessive vegetation allowed to penetrate the external masonry and grow through the windows.

Steel security screens are costly which may have been a factor in not installing on all openings as there is such a vast number of doors/windows across the buildings. Steel screens are a more appropriate safeguard than plywood panels at ground level (Pickles, 2018), however, although



Figure 16: Adams, 2019

plywood has been used on some windows, not all openings have been protected.

Externally, lead has been removed in some areas and slates have slipped exposing the internal roof structure.

Smashed windows
Removed lead flashings

Slipped slates and exposed roof structure

Vegetation growth in gutters, climbing walls and penetrating windows/openings.



Figure 17: Octagonal Structure (Branford & Kempton, 2019)

One of 6 the octagonal structures located within the grounds of the redundant hospital. Due to a lack of maintenance, paint is peeling away from all elements.

Paint is peeling

Holes in internal partitions



Figure 18: Vegetation covering the external fabric (Zhang, 2019)

Pieces of the bathstone detailing are missing, ridge tiles are missing, vegetation/trees are damaging the fabric and severely compromising water drainage by blocking gutters and downpipes.

Bathstone missing

Trees growing from guttering

Cracked, broken and displaced guttering