



CHAPTER 5 – EXISTING ENVIRONMENT

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List of Acronyms

AONB Area of Outstanding Natural Beauty

BGS British Geological Survey

Development All activities within the red line planning boundary (see Drawing ECL-BQ-001 in

Technical Appendix TA1-1)

Development Site The physical site on which the Development is to be located as defined by the

red line planning boundary (see Drawing ECL-BQ-001 in Technical Appendix

TA1-1)

EIA Environmental Impact Assessment

ERF Energy Recovery Facility





List of Acronyms

ES **Environmental Statement** GCN **Great Crested Newt** LNR **Local Nature Reserve** National Grid Reference NGR NNR National Nature Reserve NRW **Natural Resources Wales** OMH Open Mosaic Habitat OS **Ordnance Survey** PCC **Powys County Council** PHE Public Health England

Ramsar Convention on Wetlands of International Importance

RQG River Quality Grade

SAC Special Area of Conservation
SPA Special Protection Area
SPZ Source Protection Zone

SSSI Site of Special Scientific Interest





5. THE EXISTING ENVIRONMENT

5.1. Introduction

5.1.1. This chapter provides the historical context of the Development and includes information relating to the location and character of the Development Site and its surroundings, its planning history and historical land use. It also identifies consents, licences issued on land within or adjacent to the Development Site, geological, hydrogeological and hydrogeological data, as well as access and infrastructure information.

5.2. Development Site Location and Setting

- 5.2.1. The Development will be located in Buttington Quarry, Buttington, Welshpool, Powys, SY21 8SZ. The Site is centred on the approximate Ordinance Survey ("OS") National Grid Reference ("NGR") 326826 310149 and will occupy an area of approximately 18 Ha.
- 5.2.2. The indicative location of the Development is provided in Figure 1-1 in Chapter 1.
- 5.2.3. The quarry itself occupies a total land area of 24 hectares and is bounded by the A458 to the northwest, Sale Lane to the east and Heldre Lane to the south (both being unclassified roads). The Welshpool-Shrewsbury railway line runs immediately northwest of the A458, towards the northernmost point of the quarry crossing under the A458 and for a short section runs between the A458 and the Development Site boundary. The quarry is accessed from the A458 and is located within the landownership of the quarry.
- 5.2.4. The quarry is surrounded by open countryside with the village of Buttington located approximately 2km to the south-west and Trewern approximately 1.5km to the north-east. Directly to the north-east of the Site is an outlying area of Trewern known as Cefn. This comprises an additional area of sporadic isolated houses and a larger area of residential development, including a school (Buttington Trewern County Primary School).
- 5.2.5. The quarry operated from the late 19th Century and included a brickworks. The quarry now operates in accordance with the requirements of planning permission granted in 2010. Buttington Quarry is a working clay pit which previously supplied clay to the adjoining Buttington Brickworks. However, since the closure of the brickworks in 1990, the Quarry has continued to produce clay for low grade construction purposes. The former brickworks buildings are now occupied and used for third party commercial uses including storage and distribution.
- 5.2.6. Six hectares of the Quarry, including the existing quarry void and the former brickworks Development Site, has been allocated for B1, B2 and B8 employment development under 'Policy E1 Employment Proposals on Allocated Employment Application Sites' in the recently adopted Powys Local Development Plan 2011-2026.
- 5.2.7. The planning boundary for Development is shown on the Planning Boundary drawing (Reference ECL.BQ.000) which is contained in Technical Appendix 1-1 of this Environmental Statement ("ES").





5.2.8. The general Development area character is displayed in Figure 5-1 below.



Figure 5-1: Development Site Character

5.3. Sources of Desk Study Information

5.3.1. The information used in this study was accessed from public sources. These sources of information are summarised in Table 5-1.





Table 5-1: Sources of Desk Study Information

Document/Resource	Information Obtained	
Historical OS Maps	 Historical land use of the Development Site; and 	
	 Historical land use of the surrounding area. 	
	 Authorisations, Incidents and Registers; 	
	 Landfill and Other Waste Sites; 	
	 Current Land Uses; 	
	Geology;	
Envirocheck Report ⁽¹⁾	 Hydrogeology and Hydrology; 	
Livil ocheck Report	Flooding;	
	 Designated Environmentally Sensitive 	
	Sites;	
	 Natural Hazards; and 	
	Mining.	
British Geological Survey ("BGS")	 Geological Map Extracts. 	
Natural Resources Wales ("NRW") –	 Flood Risk Data; and 	
Lle Geo-Portal Web Application Site	 Groundwater Source Protection Zones ("SPZ"). 	
Public Health England	 Radon Affected Areas for the UK. 	
Powys County Council	Planning Portal.	
NI-A-A-T-I-I-		

Note to Table:

5.4. Historical Land Use

5.4.1. A review of the historical OS maps from 1884 to 2019 has been undertaken for the Development and the surrounding area, the findings of which are presented in Table 5-2.

⁽¹⁾ Provides information within a 1km radius of the Development Site. Can be found in Technical Appendix 13-1 Geotechnical and Environmental Site Investigation Report.





Table 5-2: Historical Review

Date	Scale	The Development	Surrounding Area
			The majority of the surrounding area is farmland and open space.
			A Malt House can be observed adjacent to the south east boundary of the Development Site.
			A quarry is located approximately 655m south of the Development Site.
1884-		Open fields/farmland can be observed, as well as woodland	The Cambrian Railway is present from north to south running parallel to the western boundary of the Development Site.
1886	1:10,560	to the north west. Within this area, a "quarry" is denoted as well as an "old quarry".	The Cambrian Railway also diverges travelling east above the Development Site at Buttington Junction.
			Buttington Hall is located approximately 600m south west.
			The village of Buttington can be observed approximately 1.47km south east.
			An old factory can be observed 1km north east of the Development Site.
		The Quarry is now marked as "Old Quarry".	
1903	1:10,560	A Brick Works has been established in the south west of the Development Site comprising of several buildings and a tramway.	The River Severn can be observed 1km to the west of the Development Site at its nearest point.
1954	1:10,000	Quarrying is observed to the west migrating further into the east.	No significant change.
1972 1:2,50	1:2,500	The Brick Works consists of none buildings, two with chimney stacks. Tanks are also noted within the Development Site.	The village of Cefn is located above the railway line approximately 170m from the Development Site.
		The tramway has been dismantled.	A Filling Station is identified within the village.
1976- 1978	1:10,000	Clay pit observed.	The railway line leading north has been dismantled.
	1:10,000 &	Clay pit is marked as disused.	No significant change.
2000 A	Aerial Photograph	A trackway also leads to an area to the south of the Development Site.	Aerial photograph clearly shows the surrounding area to be predominately farmland/open fields.





Table 5-2: Historical Review (Cont.)

Date	Scale	The Development	Surrounding Area
2006	1:10,000	No significant change.	Cefn village has expanded with additional residential housing being observed to the north east of the Development Site.
2019	1:10,000	Workings can be observed throughout the Development Site. No other significant changes.	Sewage Pumping Station can be observed on the outskirts of Buttington approximately 950m south west of the Development Site.

5.4.2. Anecdotal evidence from Border Hardcore Company Limited who currently operate a small quarry for the supply of stone products on the Development Site suggests that the Brick Works closed in 1990. Additionally, the former Brick Works buildings are used for commercial uses, such as storage and distribution. Quarrying activities are on-going, particularly in the area to the south of the Development area, where the new site access is proposed.

5.5. Environmental Consents, Licences, Authorisations, Permits and Designations for the Development Site and Surrounding Areas

5.5.1. The Envirocheck Reportⁱ for the Development was reviewed to ascertain the environmental consents, licenses, authorisations and Environmental Permits which have been issued within a 1km radius of the Development. Table 3 details the records found on Development Site and within 1km of the Development.

Table 5-3: Consents, Licences and Permits Issued Within 1km of the Development

Finding	Distance from Development (m)	Direction	Comments
Discharge Consent	172 NE ^(A)	NE	Operator: Mr Pryce Property Type: Not Specified Location: The Development of Sale Lane, Trewern Discharge Type: Sewage Effluent
	289 NE ^(A)	NE	Operator: Ms Ritchie Property Type: Domestic Property (Single) Location: Plas-Y-Don, Trewern Discharge Type: Sewage Discharges – Final/Treated Effluent, Not Water Company
	492 NW ^(B)	NE	Operator- Powys County Council Property Type – Not Specified Location - Trewern School Discharge Type - Sewage Treatment Works – Final Effluent





Table 5-3: Consents, Licences and Permits Issued Within 1km of the Development (Cont.)

Finding	Distance from Development (m)	Direction	Comments
Discharge	499 NW ^(B)	NE	Operator - Powys County Council – Property Type – Sewage Disposal Works Location- Buttington Trewern County, Primary School Discharge Type - Sewage Treatment Works – Final Effluent
Consent (Cont.	742 ^(B)	N	Operator: Mr Mallows Property Type - Domestic Property (Single) Location – Ty Ger Y Nant, Heldre Lane, Trewern Discharge Type – Sewage Discharges – Final/Treated Effluent, Not Water Company
Local Authority Part B Environmental Permit – General Mineral Process		-	Operator: Border Hardcore Location – Trewern, Welshpool Permit Reference – PPC 47
Water Abstraction	786 ^(A)	S	Operator: Mr and Mrs Tutton Location: Buttington New Hall – Surface Spring Abstraction: Private Water Undertaking: General Farming and Domestic Licence Number – 18/54/01/0421
	O ^(A)		Location: Buttington Quarry, Welshpool Type: Opencast – Common Clay and Shale Status: Active
	O ^(A)		Location: Buttington Station Type: Opencast – Common Clay and Shale Status: Ceased
BGS Recorded Mineral Development Site	2 ^(A)	NW	Location: Buttington Junction Type: Opencast – Common Clay and Shale Status: Ceased
	801 ^(A)	SE	Location: Gelli Type: Opencast – Sandstone Status: Ceased
	917 ^(A)	S	Location: Gelli Type: Opencast – Sandstone Status: Ceased

Notes to Table:

(A) – Envirocheck Report NGR 326380 309950, Slice A

(B) - Envirocheck Report NGR 327660, 310170, Slice B





Table 5-4: Pollution Incidents to Controlled Waters within 1km of the Development

Туре	Distance from Development (m)	Date	Comments
Construction	29m SW ^(A)	12/04/1997	Accidental Spillage of Oils (Diesel including agricultural) Category 3 – Minor Incident
Beef Cattle	137m E ^(A)	15/06/1997	Organic Wastes: Cattle Manure (Solid) Category 3 – Minor Incident
Water Company Sewage: Pumping Station	397m NW ^(B)	12/02/1996	Crude Sewage Category 3 – Minor Incident
Private Sewage (Non PLC): Pumping Station	431m NW ^(B)	19/12/1995	Crude Sewage Category 3 – Minor Incident

Notes to Table:

5.6. Geological, Hydrogeological and Hydrological Data

- 5.6.1. According to the BGS Geology of Britain Viewerⁱⁱ, Glaciofluvial Fan Deposits (sand and gravel) are present in the southern and eastern areas of the Development Site extending to land to the south and south east. Devensian Till deposits are present in the south western area of the Development and Head deposits (clay, slit, sand and gravel) are present to the north east and extend just into the eastern area of the Development.
- 5.6.2. The permeability of the superficial deposits is described as very low (Till) to very high (Fan deposits) with flows within the higher permeability deposits being intergranular.
- 5.6.3. Buttington Quarry is excavated within the Cefn Formation, comprising sandstones and mudstones of the Silurian Period and Stone House Shale Formation of the Ordivician Period. Strata are steeply dipping towards the southeast within the quarry, resulting in a narrow band of high-quality brick making material being exposed at surface.
- 5.6.4. Buttington Quarry was originally operated to produce mudstone and clay for use at the neighbouring brickworks. Since closure of the brickworks, the Development Site has been worked to produce medium quality general aggregate from more competent slate/shale horizons on the northern flank of the Development site.
- 5.6.5. The permeability of the mudstone deposits is described as low.
- 5.6.6. There is no indication of mining activity at the Development. However, rare and localised small-scale non-coal (mineral veins) mining may have occurred within 1km of the Development.

⁽A) - Envirocheck Report NGR 326380 309950, Slice A

⁽B) - Envirocheck Report NGR 327660, 310170, Slice B





- 5.6.7. According to the Radon Affected Area mapping tool for the whole of the UK produced by Public Health England ("PHE") $^{\rm iii}$, the Development is located in an area of elevated radon potential with 5 10% of properties above the action level.
- 5.6.8. The glaciofluvial superficial deposits found beneath the Development have been categorised as an undifferentiated layered secondary aquifer with intergranular flow. A lower permeability Secondary (B) Aquifer sits below these deposits.
- 5.6.9. The Lle Geo-Portal for Wales indicates that the Development is not within a Groundwater Source Protection Zone ("SPZ")^{iv}.
- 5.6.10. The closest primary river is the River Severn located approximately 1.2 km to the west of the Development Site. The River Severn stretches approximately 354km in length and flows from the Cambrian Mountains in mid Wales to the Bristol Channel via Shropshire, Worcestershire and Gloucestershire. According to the Envirocheck Report, the River Severn has a River Quality Grade ("RQG") of A ('Very Good') with a flow of less than 40 cumecs.
- 5.6.11. The NRW Development Advice Map^v indicates that the Development Site is located within Zone A which is defined as an area which is considered to be at little or no risk of fluvial or coastal/tidal flooding.
- 5.6.12. NRW Long Term Flood Risk Maps^{vi} indicate that designated areas which are at high to medium risk of flooding from rivers and seas are located approximately 0.14km north-west of the Development Site. This flooding risk is associated with the River Severn and does not encroach across the railway line or A458 adjacent to the site and is constrained within the natural low-lying floodplain.
- 5.6.13. High risk means that each year, the chance of flooding is greater than 1 in 30 (3.3%) whilst medium risk means that each year, the chance of flooding is between 1 in 100 (1%) and 1 in 30 (3.3%).
- 5.6.14. The Development Site is not at risk of flooding from reservoirs. Areas designated as being at risk of flooding from reservoirs are located approximately 80m north at the nearest point.
- 5.6.15. Within the Development Site, areas within the south-west region are designated as high risk from surface water and small water courses associated with the minor tributary watercourse running through the Development Site.
- 5.6.16. There are also a number of isolated areas within the central area of the Development Site which the majority are shown as low risk with some at medium risk of flooding from surface water. Low risk is defined as areas having 1 in 1000 (0.1%) and 1 in 100 (1%) chance of flooding. There is also a small isolated area to the south of the Development Site which is designated as high extent.
- 5.6.17. The Flood Risk Maps from rivers and seas, reservoir flood risk and high surface water flood risk are provided in Figure 5-2, 5-3 and 5-4 respectively.





Coppice
Holding Coppice
East Farm

CovernHeldre

Keepers
Cottage

Allt Wood

Cath

Middle Heldre

Franch

The Mos

Gelli

Heldre Hill

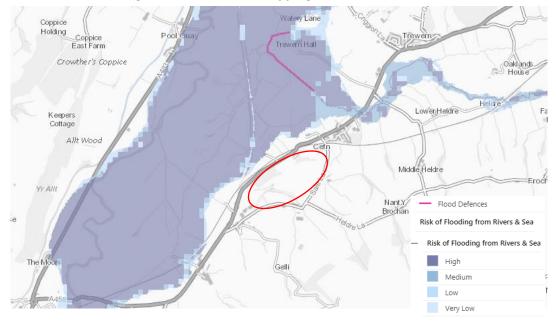
Heldre Hill

Heldre Hill

Middle Heldre

Figure 5-2: Flood Risk Mapping – Development Advice Map^v









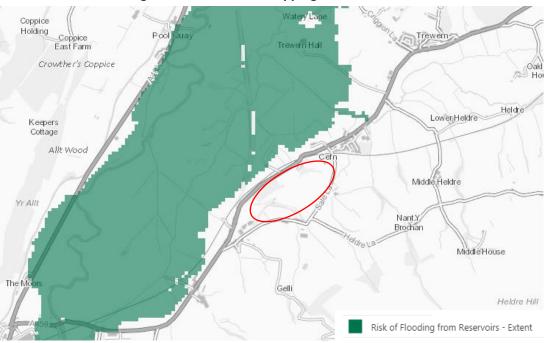
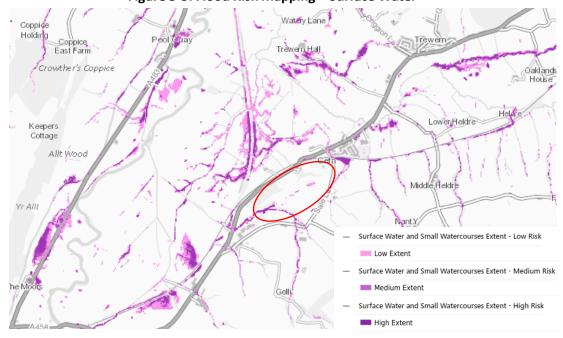


Figure 5-4: Flood Risk Mapping – Reservoirsviii





5.7. Ecological Conditions

- 5.7.1. The ecological baseline conditions at the Development Site have been assessed and discussed in Chapter 10 of this EIA.
- 5.7.2. In summary, most of the area on which the Buttington ERF is to be constructed is of negligible ecological value with extremely limited scope to support protected species. This





comprises the existing quarry void, access tracks and laydown areas which are dominated by compacted bare or sparsely vegetated ground, along with recently felled woodland at the proposed new access off the A458.

5.7.3. The remainder includes ephemeral/short perennial and tall ruderal vegetation, scattered scrub and areas of semi-improved neutral grassland which together meet the criteria for Open Mosaic Habitat on previously developed land ("OMH"), a Section 7 priority habitat. Two existing settlement lagoons also represent priority habitat (ponds) due to the presence of a small population of great crested newt ("GCN").

5.8. Access and Infrastructure

- 5.8.1. There is an existing access road to Buttington Quarry from the A458 which is used for the existing quarrying activities and for the businesses which occupy the wider quarry area.
- 5.8.2. Access and highway improvements will be made to the A458 to facilitate access to the Development approximately 170m to the north of the existing access. During the construction phase, the existing quarry access would be used until the new site access is constructed. The new access proposal includes a dedicated right turn ghost island facility and increased junction visibility (see Chapter 8 Highways and Traffic for further information). The existing access would then be closed off, allowing access to the property known as Brookside only.
- 5.8.3. The Planning Boundary for the Development extends approximately 18 ha. The ERF will be located within the existing quarry grounds and will be accessed via the A458 from a new access road. At the time of writing, there is planning consent for this access which is subject to a Section 73 application for an extension of time which was approved in September 2020. However, for the purposes of this DNS application, the new site access and impact has been considered as part of the Development and assessed within this ES as it is unknown when the access will be constructed by the Landowner. The Development will also benefit from an internal road network.

5.9. Surrounding Land Use

- 5.9.1. A review of the area using the Lle Geo-Portal for Wales^x was undertaken to identify any sensitive ecological designations in the surrounding area.
- 5.9.2. The Development Site is not located within 10km of a Site Protection Areas ("SPA"). Midland Meres and Mosses Phase 1 a Ramsar Convention on Wetlands of International Importance ("Ramsar") site is located within 8km of the Development Site.
- 5.9.3. However, the Development Site is located within 10km of two Special Area of Conservation ("SAC") sites;
 - Granllyn located approximately 4.5km north west; and
 - Montgomery Canal located approximately 1.39km to the west of the Development.





- 5.9.4. Additionally, a search of Sites of Special Scientific Interest ("SSSI") within 2km of the Development Site was undertaken. Buttington Brickworks is designated as a SSSI for its geological interest and is located within the north east region of the Development Site, but is excluded from the planning boundary.
- 5.9.5. Additionally, Montgomery Canal described above is also designated as a SSSI and Moel Y Golfa SSSI is located approximately 1.88km north east of the Development Site.
- 5.9.6. The Development Site is not located within 2km of any National Nature Reserves ("NNR") or Local Nature Reserves ("LNR").
- 5.9.7. Ancient woodland is located within the north west region of the Development Site within the planning boundary and is categorised as; ancient woodland of unknown category, restored ancient woodland and plantation on ancient woodland site. There are a number of ancient woodland sites which are located within 2km of the Development and are shown in Figure 10.2 in Technical Appendix 10.2 in Chapter 10 Ecology.
- 5.9.8. Sensitive land uses within 1km of the Development Site were also considered. A review of the area using the Lle Geo-Portal for Wales indicates that none of the following sensitive land uses are located within a 1km radius of the site:
 - Areas of Outstanding Natural Beauty ("AONB");
 - environmentally sensitive areas;
 - marine nature reserves;
 - national parks; and
 - nitrate sensitive areas.

5.10. Planning History

5.10.1. The planning history for the whole of wider Buttington Quarry area has been obtained from Powys County Council ("PCC") Planning Portal^{xi} and is outlined in Table 5-5.

Table 5-5: Planning History for the wider Buttington Quarry Area

Decision	Application Number	Development
24/09/2020 Approved	20/0575/REM	s73 – Variation Condition 1 of planning permission P/2015/0439 – extension of time
23/07/2020 Approved	P/0858/5087 (20/0445/REM)	s73 – Variation Condition 1 of planning permission P/2014/1318 - extend time limit for extraction of material to 31st May 2025
09/04/2020 Approved	20/0045/FUL	Erection of a building for use as storage and distribution centre
06/08/2015 Approved	P/2014/1318	s73 – Variation Condition 1 of planning permission P/2011/0549 - extend time limit for extraction of material to 31st May 2020





Table5-5: Planning History for the wider Buttington Quarry Area (cont.)

Decision	Application Number	Development
18/06/2015 Approved (not implemented)	P/2015/0439	s73 – Variation Condition 1 of planning permission P/2010/0400 - extension of time to commence development namely construction of vehicular access and alteration of existing access to residential access at Buttington Quarry
06/10/2014 Approved	P/2014/0833	Erection of extension to existing single storey loading bay (at Buttington Quarry)
09/10/2013 Approved	P/2013/0740	Removal of existing canopy and erection of a loading bay (at Buttington Quarry)
07/10/2013 Approved	P/2013/0713	Erection of a general-purpose storage building (at Buttington Quarry)
05/11/2012 Approved	P/2012/0815	Certificate of Lawful Use or Development for existing uses namely A1, B1, B2 and B8
11/09/2012 Approved	P/2012/1445	Certificate of Lawful Use or Development for an existing use namely use of land for overflow storage area to the decorative stone business
28/06/2011 Approved	P/2011/0549	s73 – Variation of planning permission <u>P/2008/0519</u> - extend time limit for extraction of material for a period of 4 years from 31 st May 2011
19/04/2011 Approved	P/2020/0165	s73 - Variation Condition 7 of planning permission M1997 0088 - hours of working
07/12/2010 Approved (not implemented)	P/2010/0400	s73 – Variation Condition 1 of planning permission M2005 0162 (construction of vehicular access to quarry and alteration of existing access to residential access) – extension to time limit
16/03/2010 Refused	P/2009/1301	Certificate of Lawfulness for an existing use namely class B8 – storage and distribution (for area of land on west of A458)
07/01/2009 Approved	P/2008/0519	s73 – Variation Condition 1 of planning permission M2004 0439 - extension of time limit
06/05/2005 Approved	M/2005/0162	Renewal of planning permission for the construction of vehicular access to quarry and alteration of existing access to residential access (renewal of permission M/1999/1032)
27/07/2004 Approved	M/2004/0439	s73 - Variation condition 17 attached to planning permission M/96/088 to request an extension of time limit
05/01/2001 Approved (not implemented)	M/1999/1032	Construction of vehicular access to quarry and alteration of existing access to residential access
14/04/1997	M/1997/0088	'A Mineral Review' which came into force as part of The Environment Act 1995 aimed at keeping planning conditions from older mineral permissions up to date.





Table5-5: Planning History for the wider Buttington Quarry Area (cont)

Decision Application Number		Development	
14/04/1997	M/1997/0088 (M96088)	Quarry Extension Area	
06/06/1994 Approved	M/24402	Access improvement works onto the A458 trunk road to meet the standard as required by the Welsh Office Transport and Highways Directorate	
04/07/1961 Approved	P/P 4928	Large extension to the quarry area	
02/08/1948 Approved	P/P 379	First formal permission for a small area of the quarry and the industrial area	
Late 1800s	Unknown	Brickworks and associated Quarrying began at Buttington Quarry, Buttington, Welshpool	
Note to Table:			
Certifi	cate of Lawfulness	Mineral Extraction (Extension)	
Miner	al Extraction	Access	
Industrial (Storage & Distribution)			

5.11. References

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https://www.ukradon.org/information/ukmaps, accessed February 2020.

https://maps.cyfoethnaturiolcymru.gov.uk/Html5Viewer/Index.html?configBase=https://maps.cyfoethnaturiolcymru.gov.uk/Geocortex/Essentials/REST/sites/Flood_Risk/viewers/Flood_Risk/virtualdirectory/Resources/Config/Default&layerTheme=2, accessed July 2020.

- vi Long Term Flood Risk mapping tool, Natural Resources Wales, available online at: https://naturalresources.wales/evidence-and-data/maps/long-term-flood-risk/?lang=en, accessed July 2020.
- vii Long Term Flood Risk mapping tool Rivers and Seas, Natural Resources Wales, available online at: https://naturalresources.wales/evidence-and-data/maps/long-term-flood-risk/?lang=en, accessed July 2020.
- viii Long Term Flood Risk mapping tool Reservoirs, Natural Resources Wales, available online at: https://naturalresources.wales/evidence-and-data/maps/long-term-flood-risk/?lang=en, accessed July 2020.
- ^{ix} Long Term Flood Risk mapping tool Surface Water, Natural Resources Wales, available online at: https://naturalresources.wales/evidence-and-data/maps/long-term-flood-risk/?lang=en, accessed July 2020.
- ^x Lle Geo-Portal for Wales, Natural Resources Wales, available at: http://lle.gov.wales/home, accessed February 2020.

xiPlanning Portal, Powys County Council, available at:

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ECL Ref: ECL.001.01.02/ES Date: February 2021 ISSUE: 1

¹ Envirocheck Report, Landmark Information Group, Dated March 2019 – See Technical Appendix 13-1.

ii Geology of Britain Viewer, British Geological Survey, available online at:

iii Radon Affected Areas mapping tool, Public Health England, available online at:

iv Lle-Portal for Wales, 'Source Protection Zone' mapping tool, Natural Resources Wales, available online at: https://lle.gov.wales/catalogue/item/SourceProtectionZonesSPZMerged/?lang=en, accessed February 2020.

^v Flood Risk Development Advice Map, Natural Resources Wales, available online at: