Industrie Cartarie Tronchetti

MAKING COMPLEX EASY

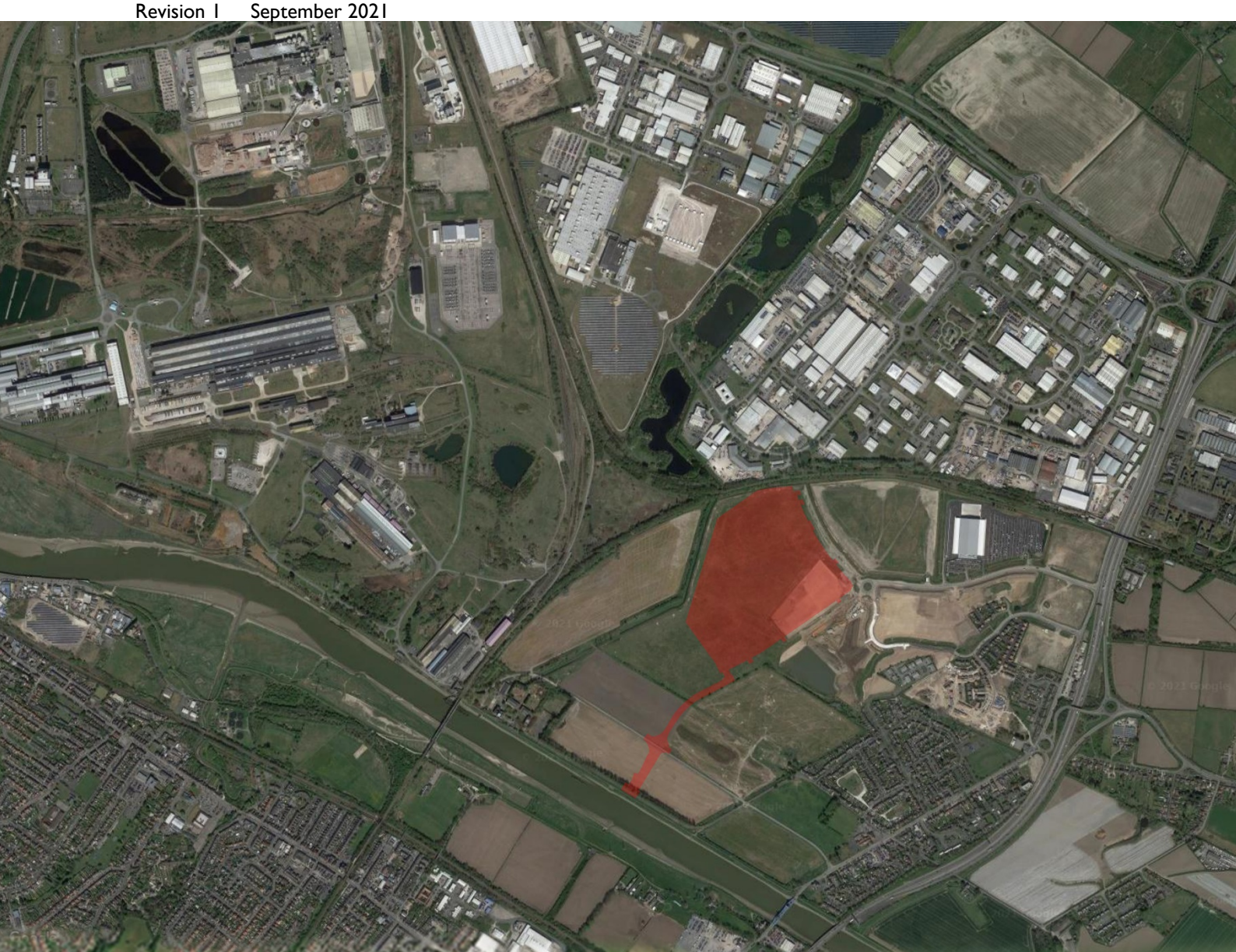
Industrie Cartarie Tronchetti (ICT) UK Ltd & Crag Hill Estates Ltd (CHEL)

Paper Mill Facility, Plot C Airfields, Northern Gateway

Environmental Statement

Part 2 – Waste Technical Paper 10

Revision 1 September 2021



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1. Introduction

1.1. This Technical Paper has been prepared by RPS on behalf of Industrie Cartarie Tronchetti UK Ltd (ICT) Group and the Crag Hill Estate Ltd (CHEL). The Paper forms part of the Environmental Statement (ES) which will accompany the application for full planning permission.

1.2. The Proposed Development comprises the construction and operation of a paper processing mill to produce and manufacture tissue paper. The facility will process wood pulp; no waste paper will be used in the process. Further details on the project description can be found in the ES Part 1 Report.

1.3. It considers the likely significant effects of waste generated during the construction and operation phases of the Proposed Development. The different waste streams generated during these phases will comprise a number of waste types and quantities. The estimates used in this assessment are based on the design information available at the Application stage.

2. Documents Consulted

Legislation

2.1. The legislative framework for the management of construction wastes comprises the following:

- Environmental Protection Act 1990;
- Environment Act 1995;
- Environmental Permitting (England and Wales) Regulations 2016 (as amended);
- Waste Management (England and Wales) Regulations 2006;
- Waste (England and Wales) Regulations 2011 (as amended); and
- The Hazardous Waste (Wales) Regulations 2005 (as amended);
- Environment (Wales) Act (Welsh Government, 2016);
- Well-being of Future Generations (Wales) Act (Welsh Government, 2015);
- The Waste (Wales) (Miscellaneous Amendments) Regulations 2020
- The Waste (Wales) Measure 2010.

Waste (England and Wales) Regulations 2011 (as amended)

2.2. The waste hierarchy is the key element of the Waste (England and Wales) Regulations. It comprises a five-point priority order which determines how waste should be treated:

- Waste prevention;
- Preparing for re-use;
- Recycling;
- Energy recovery; and

- Disposal.

2.3. Under the regulations, businesses (as a producer of waste) are required to take the waste hierarchy into account when managing their waste. The regulations put a greater emphasis on waste prevention. Businesses are required to take all reasonable measures to minimise waste, and then consider preparing waste for re-use and opportunities for recycling or energy recovery. Disposal of waste should be considered as the last option.

2.4. Waste transfer notes must include a declaration that the waste producer has applied the waste hierarchy principle and the waste described using the Standard Industry Classification (SIC) Codes. Businesses that transport their own waste are now required to register with the Environment Agency as a low-tier waste carrier.

The Hazardous Waste (Wales) Regulations 2005 (as amended)

2.5. The 2005 Regulations set out the requirements for controlling and tracking the movement of hazardous waste and bans the mixing of different types of waste in Wales. Under the regulations, hazardous waste is considered to be 'mixed' if it has been mixed with a different category of hazardous waste, a non-hazardous waste, or any other substance or material.

2.6. The Regulations make amendments to the Hazardous Waste (England and Wales) Regulations 2005 by introducing a new category (H13 Sensitizing) to the list of properties used to define waste as 'hazardous'. These changes mean that some non-hazardous wastes may be reclassified as hazardous wastes.

2.7. Recent amendments made by The Hazardous Waste (Wales) (Amendment) Regulations 2019 now implement Regulation (EU) 2019/1021 to prohibit, phase out, and restrict the manufacturing, placing on the market and use of Persistent Organic Pollutants.

The Environment (Wales) Act 2016

2.8. The Environment (Wales) Act 2016 seeks to promote the sustainable management of natural resources. The Act includes definitions of sustainable management of natural resources and sets out principles for how it should be delivered. Part 4 of the Act is concerned with the collection and disposal of waste and makes provision for requiring source segregation and separate collection of recycling (paper, glass, plastic and metal), banning the incineration of waste and banning the disposal of food waste to sewers from non-domestic premises. The

purpose of the provisions is to promote increased separation of different types of waste and prohibit certain forms of disposal of recoverable types of waste.

Waste (Wales) Measure 2010

2.9. The Waste Measure makes provision to reduce the amount of waste and litter in Wales and contributes to the development of more efficient waste management arrangement in Wales. The Waste Measure gives Welsh Ministers the ability to:

- ban or restrict certain wastes from landfill; and
- establish Site Waste Management Plans in relation to works involving construction and demolition in Wales and to make a provision for a fees and charging scheme in relation to Site Waste Management Plans.

Policy

National Policy

2.10. The following documents taken as a whole comprise the overall waste management plan for Wales

- Planning Policy Wales (Edition 11) (Welsh Government, 2021);
- Technical Advice Note 21, Waste (Welsh Government, 2014);
- Welsh Government (2013a) Towards Zero Waste. One Wales: One Planet. The Overarching Waste Strategy Document for Wales
- Industrial and Commercial Sector Plan;
- Welsh Government (2013b) Towards Zero Waste. One Wales: One Planet. The Waste Prevention Programme for Wales; and
- Flintshire County Council Unitary Development Plan 2000-2015 (Flintshire County Council, 2011)

Planning Policy Wales (Edition 11)

2.11. Planning Policy Wales Edition 11 puts particular emphasis on sustainability in terms of the resources used, the maintenance of the environment, the economic use of land and the consideration of society.

2.12. Waste is considered within each of the four policy topic areas and specifically addressed within Chapter 5: Productive and Enterprising Places. Chapter 5 outlines that plan strategies and development policies should draw on the principles of the circular economy to reduce unnecessary waste and encourage high quality manufacturing and better material choices in the built environment, including the use of durable materials in developments.

2.13. In making the best use of material resources and promoting the circular economy. The PPW Edition 11 acknowledges that the planning system facilitates materials recycling through advocating the use of secondary aggregates in construction. It goes onto state that circular economy principles should underpin all development and that development should seek to minimise the use of non-renewable resources and prevent the generation of waste.

Technical Advice Note 21: Waste

2.14. PPW is supported by Technical Advice Note 21, Waste (Welsh Government, 2014), which provides advice on how the land use planning system should contribute towards sustainable waste management and resource efficiency.

Towards Zero Waste.

2.15. The Welsh Government's general policy for waste management is contained in its overarching waste strategy document titled Towards Zero Waste and associated sector plans (Welsh Assembly Government, 2010). It sets out a long-term framework for resource efficiency and waste management in Wales up until 2050, taking into account social, economic and environmental outcomes. Achieving the aims in Towards Zero Waste relies on a suite of waste sector plans, which provide details on how the outcomes, targets and policies in Towards Zero Waste are to be implemented (see below).

Towards Zero Waste. Industrial and Commercial Sector Plan

2.16. The Industrial and Commercial Sector Plan seeks to address issues in four key areas:

Waste prevention:

- Reducing waste arisings produced by the sectors covered by the plan
- Greening supply chains
- Enabling ecodesign of products to become mainstream throughout Welsh Businesses

Preparing for reuse:

- Encouraging businesses to consider preparation for reuse before items are sent for recycling or disposal
- Encouraging businesses to store waste items correctly to enable preparation for reuse

Recycling:

- Encouraging businesses to source segregate priority materials that are currently arising in the mixed waste stream thus increasing their recycling rates.
- Providing a universal separate collection service for certain materials.
- Ensuring recyclate can be recycled closed loop or 'up-cycled', ideally in Wales.
- Ensuring food waste is sent to anaerobic digestion plants (where reuse, e.g. as animal feed, is not possible).
- Increasing the recyclability of products and packaging.
- Increasing the recycled content of products and packaging.
- Treatment and disposal.
- Delivering sustainable treatment and disposal of this commercial and industrial waste in a cost effective way, and work towards the targets set in Towards Zero Waste, including those that limit energy from waste and seek to reduce landfill to zero.

Towards Zero Waste. One Wales: One Planet. The Waste Prevention Programme for Wales

2.17. The Waste Prevention Programme (2013) supports Towards Zero Waste by describing the outcomes, policies, targets and work programmes to address waste prevention in Wales. A key objective of the programme is to break the link between waste generation and economic growth. The Waste Prevention Programme will ensure that businesses in Wales are able to reduce:

- The quantity of waste, including through the reuse if products or the extension of the life span of products;
- The adverse impacts of the generated waste on the environment and human health; and
- The content of harmful substances in materials and products.

National Consultations

2.18. In September 2019, the Welsh Government launched a consultation setting out proposals to bring forward statutory instruments to increase recycling from non-domestic premises such as businesses and the public sector in Wales.

2.19. The statutory instruments will:

- Require the occupiers of non-domestic properties to present specified recyclable materials for collection separately from each other and from residual waste;
- Require those that collect the materials to collect them by means of separate collection and to keep them separate;
- Ban certain separately collected recyclable materials from incineration and landfill; and
- Commence a ban on disposal of food waste to sewer from business premises.

2.20. Keeping recyclable materials separate from other wastes at source produces higher quality and higher value recyclates, which are more likely to be used in manufacturing. Recycling of

high-quality materials also helps address the growing concern over the increasing global demand for resources and supports Wales' progress towards a circular economy.

2.21. The consultation ended in December 2019. Responses were compiled in March 2021 and the will be used to inform the development of the legislation. It is expected that the regulations will be brought before the Senedd later in 2021 and take effect from October 2021. Guidance will also be prepared for those who will be affected by the changes.

Beyond Recycling 2021- A strategy to make the circular economy in Wales a reality

2.22. The strategy sets out the Government's commitment to accelerate the transition to a circular, low carbon economy. To achieve this goal, the strategy sets out eight headline actions:

- Support businesses to reduce their carbon footprint by becoming more resource efficient.
- Provide tools to enable community action.
- Phase out necessary single-use items, especially plastic.
- Eradicate avoidable food waste.
- Prioritise the procurement of goods and products made from remanufactured, refurbished and recycled materials or come from low carbon and sustainable materials like wood.
- Strive to achieve the highest rates of recycling in the world.
- Reduce the environmental impact of waste collection from homes and businesses.
- Take full responsibility for our waste by reducing the amount of waste produced and effectively managing the waste that is generated.

Local Planning Policy

Flintshire County Council Unitary Development Plan 2000-2015

2.23. The Flintshire Unitary Development Plan includes policies which focus on waste Policy EWP6: Areas of Search for New Waste Management Facilities and Policy EWP10: Reusing Development Waste. Policy EWP10 is most relevant to the proposed development:

"*This policy seeks to reduce the waste generation on major development sites which involve the creation of 2,500 square metres (gross) of industrial or commercial floor-space; the change of use or the carrying out of operational development on more than one hectare of land; or planning application sites in excess of one hectare. All such proposals will be the subject of a waste arisings assessment to: a) establish the nature and amount of wastes likely to be produced at all stages of the development from site preparation through site operation to, where appropriate, site restoration;*

b) ensure that those wastes can be managed in accordance with the principles of sustainability throughout the lifetime of the development; and

c) where appropriate, ensure that a development incorporates elements of onsite building wastes, for example the use of stone, concrete and brick wastes in building foundations, car parks and footpaths."

Flintshire County Council Waste Management Strategy 2009-2025

2.24. Flintshire County Council's Waste Management Strategy was adopted in January 2010. It focuses on municipal waste and the waste management infrastructure in place to manage this waste stream.

Flintshire County Council Local Development Plan Deposit Draft September 2019

2.25. Flintshire County Council is currently preparing a Local Development Plan, which focuses on delivering sustainable development in the county from 2015 to 2030. The Deposit Local Development Plan was submitted for examination on 30 October 2020 to Welsh Government and Planning Inspectorate; the examination is currently underway.

2.26. The following policies are within the Deposit LDP (Flintshire County Council, 2019a):

Policy 15 STR15: Waste Management – "*The LDP will facilitate the sustainable management of waste by:*

- *"Securing opportunities to minimise the production of waste in all development and ensuring the sustainable management of waste once it has been produced;*

- *Supporting proposals for waste management which move the management of waste up the waste hierarchy;*
- *Supporting proposals which reduce the impacts of existing waste management on communities and the environment;*
- *Directing new waste management facilities towards existing and allocated industrial sites which are suitable for waste management facilities;*
- *Recognising that some types of waste facility may need to be located outside development boundaries*".

2.27. Policy 20 PC4 Sustainability and Resilience of New Development - relates to sustainability and resilience of new development. It lists a number of factors that new development should take into account including making "*efficient use of resources through sustainable construction techniques and materials, including….waste reduction*".

2.28. Policy 74 EN19 Managing Waste Sustainably states that "*Proposals for new development should a) demonstrate how the production of waste will be minimized during all stages of the development and how wastes which do arise would be managed in a sustainable way, in accordance with the waste hierarchy.*

b) demonstrate, where relevant, that adequate facilities and space for collection, composting and recycling of waste materials has been made".

3. Consultations

3.1. A detailed Screening or Scoping Opinion request was not made to Flintshire County Council for this application. On this basis, Spawforths has sought to confirm with the Council by letter the information to be provided in the ES, in accordance with Part 4 (13) of the Town and Country Planning (Environmental Impact Assessment) Regulations, 2017 (as amended), to ensure the scope of the technical chapters and methodology for assessing the significance of effects is robust. To enable the Council to consider this, Spawforths submitted the following plans and information:

- A location plan to identify "The Land";
- A description of the nature and purpose of the development including a Character Area Plan;
- Topic/Technical Chapters of the ES based on the issues to be assessed;
- Methodology for the assessment of significant effects in accordance with the EIA Regulations 2017 (as amended); and
- The cumulative impacts to be considered.

3.2. Flintshire County Council subsequently confirmed that they accepted this approach and methodology, including the range of environmental issues against which the proposals should be assessed as part of the Environmental Impact Assessment process; a copy of the Council letter confirming this is attached at Appendix 14 of the Part 1 report of this ES.

3.3. Whilst a Scoping Opinion was not requested, Table 10.1 below sets out the consultation that has been undertaken in preparation of this Technical Paper and how the comments have been incorporated.

Theme / Issue	Date	Consultee	Method	Summary of Discussion	Outcome / Output
Update of the Waste Local Strategy	29-10-2019	Flintshire County Council – Waste Officer	Email and telephone call	The existing waste management infrastructure in North Wales and Cheshire that could be used to manage the key wastes from the manufacturing process (e.g. paper sludge material). Confirmation of the information required in the Waste Technical Paper to comply with Flintshire County Council's policies on waste management.	The types of wastes that would be generated and potential management options are presented in the Outline Site Waste Management Plan and the Operational Waste Management Strategy.
Environmental permitting	17-09-2019	Natural Resources Wales	Meeting	The types and quantities of waste that would be generated during the operation of the Proposed Development were explained to NRW. It is proposed that the waste would be stored in a covered area in the north east of the Site	The proposed waste storage area is shown on the design plans for the Proposed Development.

Table 10.1: Summary of Consultations and Discussions

4. Methodology and Approach

4.1. There is no industry guidance or published criteria for assessing potentially significant environmental effects of waste generation from proposed developments. The assessment methodology used in this Technical Paper has been developed with regard to national and local waste planning policy and strategies and previous experience of undertaking similar assessments.

Receptors

4.2. For the assessment of waste effects, the main receptors comprise the management infrastructure (existing or planned) to manage waste currently being generated in the area. The other receptors are national waste management legislation, waste policy and targets.

Designation	Receptors
Very High (International)	None
High (National)	National; waste policy and targets Waste management legislation
Medium (Regional/County)	Parc Adfer Energy from Waste facility Biogen Anaerobic Digestion facility (Waen) Flintshire County Council waste management facilities Industry guidance
Low (Local)	None
Negligible	None

Table 10.2 Waste Receptors

Environmental Impacts

4.3. The environmental impacts relate to the increase in waste being generated (during construction and operation of the Proposed Development) on the capacity of the existing and proposed waste management infrastructure. The types and the likely volumes of waste to be generated will also impact how these wastes would be managed in terms of the waste hierarchy.

Magnitude	Environmental Impact
Major	≥ 25% of the waste generated by the Proposed Development is hazardous. Waste from Proposed Development is between 5% and 10% of the total CDE or C&I waste generated in the North Wales region per year. Waste is transported outside of region for treatment or disposal. A shortfall in the capacity of existing waste management facilities is predicted early in the Waste Local Plan period and no new sites have been allocated.
Moderate	≥ 15% of the waste generated by the Proposed Development is hazardous. Waste from Proposed Development is between 1% and 5% of the total CDE or C&I waste generated in the North Wales region per year. Waste can be managed within the region using methods lower down the waste hierarchy. A shortfall in the capacity of existing waste management facilities is predicted later in the Waste local Plan period and several potential sites have been allocated.
Minor	≥ 10% of the waste generated by the Proposed Development is hazardous. Waste from the Proposed Development is ≤1% of the total CDE or C&I waste generated in the North Wales region per year. Waste can be managed within the region using methods higher up the waste hierarchy. National targets for landfill diversion are not met but a site-specific waste management plan is in place which follows national policy. . No shortfall in capacity of existing and proposed waste management facilities.
Negligible	5% of the waste generated by the Proposed Development is hazardous. Waste is managed in accordance with national policy and meets national targets to divert waste from landfill. Inert and non-hazardous waste generated can be re-used on the site. Evidence that waste has been minimised in the design of the Proposed Development
Neutral	The construction and operational phases of the Proposed Development implement a zero waste to landfill policy.

Table 10.3: Environmental Impacts

Significance of Effects

4.4. The significance of effect is determined using the significance matrix in Section 6 of the Environmental Statement Part 1 Report. This identifies the receptor level across the top of the matrix and the magnitude of environmental impact down the side and where they meet within the matrix identifies the significance of the effect.

Impact Prediction Confidence

4.5. It is also of value to attribute a level of confidence by which the predicted impact has been assessed. The criteria for these definitions are set out below:

4.6. With regards to waste, effects of moderate or above are considered significant in EIA terms.

Confidence Level	Description
High	The predicted impact is either certain i.e. a direct impact, or believed to be very likely to occur, based on reliable information or previous experience.
Low	The predicted impact and its levels are best estimates, generally derived from first principles of relevant theory and experience of the assessor. More information may be needed to improve confidence levels.

Table 10.4: Confidence Levels

5. Baseline Information

5.1. The baseline conditions for waste are established from the volumes of waste currently generated within the local area and the existing (and proposed) waste management infrastructure. The baseline information is taken from publicly available sources including:

- Defra (2019) UK statistics on waste;
- Construction and Demolition Waste Survey (Natural Resources Wales, 2014a);
- Industrial and Commercial Waste Survey (Natural Resources Wales, 2014b);
- Wales waste data information 2013 (Natural Resources Wales, 2013);
- Documents published by Flintshire County Council, Cheshire West and Chester Unitary Authority, Wrexham County Borough Council, and Wirral Metropolitan Borough Council.

Waste Data

UK Statistics on Waste

5.2. Defra and the Governmental Statistical Service published estimates of UK waste generation and recycling figures in July 2021. All statistics in the document were based on the most recent available information, with reference periods ranging from 2010 up to 2019. It is estimated that the UK generated the following:

- 222.2 million tonnes of total waste in 2018;
- 137.8 million tonnes of construction, demolition and excavation (CD&E) in 2018;
- 43.9 million tonnes of commercial and industrial (C&I) waste in 2018 of which 37.2 million tonnes was generated in England .
- 67.2% of UK packaging waste was either recovered or recycled in 2019.

5.3. The largest waste material categories generated in the UK in 2018 were 'mineral wastes' (80.4 million tonnes) (typically construction wastes such as bricks, stone and road planings) and 'Soils' (58.5 million tonnes) and together the make up almost 63% of total UK waste.

5.4. 'Recycling and other recovery' was the most common final waste treatment type in the UK, accounting for 108.4 million tonnes (50.4%) in 2018. More than half (55%) of waste recorded as 'recycling and other recovery' is 'mineral wastes', while a further 12% is 'soils'.

Welsh Statistics

5.5. Wales Waste Information (Natural Resources Wales, 2013) provides a summary of the types and quantities of waste handled by permitted waste management facilities in Wales in 2013. The data is derived from returns submitted (quarterly or annually) by permitted waste management facilities in Wales detailing the amounts and types of materials handled, treated or disposed of.

5.6. Key findings relevant to the Proposed Development:

- During 2013, facilities in Wales managed a total of 7.9 million tonnes of waste;
- Waste sent to landfill in Wales has decreased: it reduced by 1% (24,450 tonnes) between 2012 and 2013 and by 52% since 2001;
- 933,875 tonnes of construction and demolition waste was landfilled during 2013;
- In 2013, 310,407 tonnes of hazardous waste was deposited at facilities in Wales, which is a decrease of 4% since 2012. Of this waste, 196,929 tonnes arose from outside Wales and were imported from England, Scotland and Northern Ireland;
- From 2012 to 2013 treatment of hazardous was in Wales increased by 15% (7,063 tonnes) and recovery of hazardous waste in Wales increased by 22% (30,149 tonnes);
- In 2013, 42,784 tonnes of hazardous waste was exported from North Wales to England, and 41,532 tonnes were imported from England into North Wales;
- Over 5.5. million tonnes of waste was handled through permitted transfer, treatment and metal recycling facilities in Wales during 2013. In North Wales, waste was predominantly handled in physical and material recovery facilities;
- In 2013, the quantity of waste going to physical treatment site increased by 10% (147,000 tonnes) compared to 2012 data.

North Wales

Construction and Demolition Waste Survey

5.7. Natural Resources Wales (2014a) collected data from 457 business sites of differing sectors and sizes throughout Wales between July 2013 and January 2014. Key findings of the survey include:

- Welsh construction and demolition sectors generated an estimated 3.4 million tonnes of waste (including approximately 38,000 tonnes of hazardous waste);
- Of the construction and demolition waste generated an estimated 745,000 tonnes of construction and demolition waste was generated in North Wales;
- The preparation for re-use, recycling and other material recovery rate of non-hazardous construction and demolition waste excluding naturally occurring substances (EWC 17 05 04) generated in Wales was 87% in 2012; and
- The quantity of construction and demolition waste landfilled in 2012 in Wales was approximately 639,000 tonnes.

Commercial and Industrial Waste Survey

5.8. Natural Resources Wales (2014b) collected data from 1,540 business sites of differing sectors and sizes throughout Wales between July 2013 and December 2013. Key findings of the survey include:

- Welsh industrial and commercial sectors generated an estimated 3.7 million tonnes of waste split 55%:45% between industrial and commercial businesses;
- Of the industrial and commercial waste generated an estimated 481,000 tonnes of industrial waste and 434,000 tonnes of commercial waste were generated in North Wales;
- The preparation for re-use, recycling & composting rate for the industrial waste in North Wales was 50% and the land disposal rate was 27%;
- The preparation for re-use, recycling & composting rate for the commercial waste in North Wales was 68% and the land disposal rate was 26%;

- The preparation for re-use, recycling & composting rate for the combined total of all industrial and commercial waste in North Wales was 58% and the land disposal rate was 26%; and
- An estimated 239,000 tonnes of hazardous waste was generated by industry and commerce in 2012; this equates to 7% of the total waste generation of 3.6 million tonnes. The estimated split was 159,000 tonnes industrial waste (67%) and 80,000 tonnes commercial waste (33%).

Waste from the Site

5.9. The Site currently comprises open land, most of which is used for agriculture. On this basis, the waste currently generated from the site is minimal.

Waste Management Facilities

5.10. A search of Natural Resources Wales and Environment Agency records has identified a number of waste management facilities in the area surrounding the Site. These facilities are shown on the receptor plan (at Appendix 10.1) and summarised in Table 10.5 below.

Site Name	Operator	Permit Number	Type of Facility	Distance from Site (km)
Welsh Sites				
Paperback Collection & Recycling Ltd	Paperback Collection & Recycling Limited	JB3932RM	Household, Commercial and Industrial Transfer Stations (including treatment); further materials processing for recycling	0.09
Materials Recycling And Recovery Facility	Orchid Shotton Ltd	FP3198SG	Household, Commercial and Industrial Transfer Stations (including treatment)	1.06
C T Skip Hire	Carl Thompson	DB3332RH	Household, Commercial and Industrial Transfer Stations (including treatment)	0.581
Queensferry Depot	S P Manweb Plc	FP3194FH	Household, Commercial and Industrial Transfer Stations (including treatment)	1.394

Site Name	Operator	Permit Number	Type of Facility	Distance from Site (km)
Glasfryn Yard	Gary Catton Haulage Ltd	UB3697TL	Use/treatment of inert waste for land reclamation or construction	1.287
Chadwicks Metal Processing Facility	Susan Joan Chadwick & Frances Susan Crump	WP3194FL	Metal Recycling Site	1.528
Trident Commercial Holdings Limited Trading As Trident Metals	Trident Commercial Holdings Limited	GP3894FB	Metal Recycling Site	1.590
Parry and Evans Ltd	Parry And Evans Limited	CB3593HF	I&C MRF	0.847
Alan's Skip Hire Ltd	Alan's Skip Hire Ltd	KB3433RY	Use/treatment of inert waste for land reclamation or construction	5.880
Sea View Farm 2	D Morgan Plc	SP3394FL	Non-Hazardous Landfill Site	2.479
Sea View Farm 1	D Morgan Plc	BP3894FD	Non-Hazardous Landfill Site	2.441
J Chadwicks Scrapyard	S J Chadwick	GP3494FW	Metal Recycling Site	2.547
Standard Landfill Site	Flintshire County Council	BP3390VA	Hazardous Waste Landfill Site	4.768
Standard Road Transfer Station	Flintshire County Council	YP3894FR	Household, Commercial and Industrial Transfer Stations (including treatment)	4.926
Ewloe Waste Transfer Station	Thorncliffe Building Supplies Ltd	BP3797SZ	Household, Commercial and Industrial Transfer Stations (including treatment)	4.810
Parrys Quarry Waste Transfer & Reprocessing Centre	Mold Investments Limited	TB3590HJ	C&D MRF	5.060
Spencer Ind Est Scrapyard	Spencer Industrial (North Wales) Ltd	CP3494FZ	Metal Recycling Site	5.041
Brookhill Transfer Station	Flintshire County Council	BP3391EL	Household, Commercial and Industrial Transfer Stations (including treatment)	5.130
A S H Bretton Recycling Centre	Alan's Skip Hire Limited	VP3794FN	Household, Commercial and Industrial Transfer Stations (including treatment)	5.880
Safetykleen Broughton	Safety Kleen U K Ltd	WP3694FZ	Hazardous Waste Transfer Stations (including treatment)	6.020
P Dobbins Chester Ltd	P Dobbins Chester Limited	EP3694FR	Metal Recycling Site	6.482
Cambrian Concrete	Lloyd Holdings (North West) Ltd	FB3735AT	Use/treatment of inert waste for	10.400

Site Name	Operator	Permit Number	Type of Facility	Distance from Site (km)
			land reclamation or construction	
Cefn Mawr Quarry Landfill	Castle Cement Padeswood Ltd	LP3394FD	Inert Landfill Site	12.361
Cambrian Quarry	Ash Resource Management (Cambrian Quarry) Ltd	JB3034RN	Use/treatment of inert waste for land reclamation or construction	12.281
Maes Y Grug Landfill	B Griffiths	SP3894FZ	Non-Hazardous Landfill Site	6.288
Alltami Depot	Flintshire County Council	WB3493HU	Household, Commercial and Industrial Transfer Stations (including treatment)	5.264
Alltami Soil & Aggregate Recycling Facility	Brock Plc	MB3733RU	Use/treatment of inert waste for land reclamation or construction	5.125
S P A Davies & Sons	S P A & J L Davies	WP3594FF	Metal Recycling Site	11.21
Old Bridge Inn	Michael Rolando Scarfo	AP3694FE	Household, Commercial and Industrial Transfer Stations (including treatment)	7.940
A Skip 2 U Ltd	A Skip 2 U Ltd	DP3493LA	Household, Commercial and Industrial Transfer Stations	7.880
Waen Farm	Edward Stephens	TP3894FN	Inert Landfill Site	10.440
Bagillt Landfill Site	Onyx Leigh Environmental Ltd	HP3394FV	Inert Landfill Site	10.442
Roadrunner Waste Ltd	G. T Roberts & Son Limited	TB3397TD	Household, Commercial and Industrial Transfer Stations (including treatment)	11.94
Flintshire Commercial Dismantlers	Sarah Reid	HP3594FD	Metal Recycling Site	14.540
S J Chadwicks Greenfield	S J Chadwick	GP3294FZ	Metal Recycling Site	14.569
Astbury (Rossett) Landfill	W R G Environmental Ltd	FP3894FP	Non-Hazardous Landfill Site	12.293
Ballswood Quary	Inertia Recycling Limited	JB3237WU	Use/treatment of inert waste for land reclamation or construction	13.136
W H Chaloner & Son Ltd	W H Chaloner & Son Limited	ZP3594FN	Metal Recycling Site	12.654
Miner's Road Depot	Wrexham Borough Council	RP3994FN	Inert Waste Transfer Stations (including treatment)	12.761
Llay Depot	Roadway Civil Engineering & Surfacing Ltd	NB3293HV	Inert Waste Transfer Stations	12.815

Site Name	Operator	Permit Number	Type of Facility	Distance from Site (km)
			(including treatment)	
P M Dromgoole & Sons Agricultural Ltd	P M Dromgoole & Sons Agricultural Ltd	FB3734RP	Use/treatment of inert waste for land reclamation or construction	5.940
English Sites				
Ash Metal Recycling Limited	Ash Metal Recycling Limited	AP3690SD/V003	A11; Household, Commercial & Industrial Waste T Stn	6.234
Cheshire Waste Skip Hire Limited	Cheshire Waste Skip Hire Limited	YP3494FF/V002	A11; Household, Commercial & Industrial Waste T Stn	7.427
Guilden Sutton Depot	Ringway Infrastructure Services Ltd	LB3236AG/T001	A11; Household, Commercial & Industrial Waste T Stn	11.433
North West Construction U K Limited	North West Construction U K Limited	EP3391EX/V003	A11; Household, Commercial & Industrial Waste T Stn	14.933
C W & C Canalside Operations Hub	Kier Integrated Services Limited	CB3408UQ/V003	A11; Household, Commercial & Industrial Waste T Stn	11.025
Manisty Wharf	Recresco Ltd	BP3790SQ/V003	A15; Material Recycling Treatment Facility	10.865
Greif U K Ltd	Greif U K Limited	GP3235WS/V003	A15; Material Recycling Treatment Facility	11.140
W Maher & Sons	W Maher & Sons Ltd	EP3294CK/A001	A16; Physical Treatment Facility	13.806
Mulrock Aggregates	Mulrock Ltd	FB3707FE/A001	A16; Physical Treatment Facility	13.585
Big Atom Recycling Plant	Big Atom Limited	GB3601GL/V002	A16; Physical Treatment Facility	11.034
Ash Aggregates Ltd	Ash Aggregates Limited	GB3808GY/A001	A16; Physical Treatment Facility	11.254
K J Bell Scrapmetal Merchants	Mr Keith Bell	YP3995EJ/A001	A20; Metal Recycling Site (mixed MRS's)	10.405
Gowy Landfill Site Composting Facility	3 C Waste Ltd	ZP3698CY/A001	A22; Composting Facility	12.363
Hooton Brickworks Landfill Site	Brock Plc	HP3596CY/A001	A5; Landfill taking Non-Biodegradeable Wastes	8.690
Wharf Street Landfill Site	Unilever U K Ltd	UP3392CJ/V006	A7; Industrial Waste Landfill (Factory curtilage)	14.243
Eastham Site	Inter Terminals Eastham Limited	SP3496CX/V006	A9; Special Waste Transfer Station	10.965
Cheshire Waste Management Centre	Tradebe (North West) Ltd	EP3933XF/V004	A9; Special Waste Transfer Station	10.930

Site Name	Operator	Permit Number	Type of Facility	Distance from Site (km)
Unit 2, Thornton Park	Jacobi Carbons Limited	DB3909UC/A001	A9; Special Waste Transfer Station	10.752
Dock Road South Transfer Station	Bagnall & Morris (Waste Services) Ltd	QP3398CX/V002	S0803 No 3: 75kte HCI Waste TS + treatment	13.850
Chapterhouse Transfer Station	FCC Recycling (UK) Ltd	AB3804MZ/V004	S0803 No 3: 75kte HCI Waste TS + treatment	10.875
Wirral Metals Ltd Waste Transfer Site	Wirral Metals Limited	RP3593VD/A001	S0821 No 21: 75kte Metal Recycling Site	13.956

Table 10.2: Waste Management Facilities within 15km of the Site

Waste Capacity

North Wales Region

5.11. Flintshire County Council is a member of the North Wales Regional Waste group, with other members comprising the local authorities of Montgomeryshire, Denbighshire, Wrexham, Conwy, Gwynedd, Anglesey and Snowdonia National Park. The North Wales Regional Waste group prepared a regional waste plan (as required by Technical Advice Note (TAN) 21) and the plan was adopted in 2003. It establishes a sustainable land use planning framework for waste management in the region for the period up to 2013. This plan is now out of date and TAN 21 was revised in 2014 which removed the requirement to produce regional waste plans.

5.12. There remains a requirement under TAN 21 to undertake waste monitoring to enable the Welsh Government and local planning authorities to take a strategic overview of waste issues in the waste sector to help inform local development plans and decisions on planning applications for waste. The Interim Progress Report: Waste Planning Monitoring North Wales (Flintshire County Council, 2016) was prepared to meet the requirements of Technical Advice Note (TAN) 21. It requires that progress towards establishing a network of facilities for the recovery of waste is monitored to confirm whether sufficient landfill capacity and treatment capacity are being maintained. In turn, the monitoring identifies whether the spatial pattern of waste management provision is appropriate to meet the needs and if any further action is required by local planning authorities to address unforeseen issues.

"*A number of sites have very limited void and are nearing closure. However, substantial remaining operational void of just over 1.7 million cubic metres remained at the end of 2013 which is considered sufficient to manage inert wastes for a period in excess of 13 years at 2013 deposition rates.*"

5.13. The Interim Progress Report (Flintshire County Council, 2016) also notes that there are a number of sites which have recently been given planning permission and will therefore, improve the waste management capacity in the region e.g. 111, 000m^3 inert disposal at the Former Titanium Works, Weighbridge Road

5.14. Further to the above, the report outlines how the North Wales Residual Waste Treatment Partnership (which includes Flintshire and Denbighshire councils) to procure residual waste (i.e. waste that cannot be re-used or recycled) management capacity. The project known as Parc Adfer is a 200,000 tpa Energy from Waste facility was granted permission on 9 June 2015.

5.15. The report concludes that there "*is no further need for landfill capacity within the North Wales region*".

5.16. Flintshire County Council Deposit Draft LDP (Flintshire County Council, 2019a) and the supporting Background Paper 5: Waste (Flintshire County Council, 2019b) confirm the conclusions of the findings of the Interim Progress Report: Waste Planning Monitoring North Wales (Flintshire County Council, 2016). The paper reiterates that "*no identified need for further recovery or disposal infrastructure within the County given the progress which has been made in terms of Parc Adfer which will manage residual waste from across North Wales Partner Authorities*".

5.17. The Deposit Draft LDP (Flintshire County Council, 2019a) states that "*the majority of wastes in Flintshire are now recycled or recovered in some way*". The recent planning consents for a number of merchant waste management facilities would move the management of waste up the waste hierarchy. "*In 2015, Flintshire had more permitted waste facilities than any other authority in North Wales and makes a significant contribution to the sustainable management of waste*".

5.18. Wrexham County Borough Council (n.d.) are also in the process of producing a new Local Development Plan. The explanatory text of Policy SP18 Sustainable Waste Management highlights how "*The Waste Planning Monitoring Report (2016) confirms that there is no current need for additional disposal capacity within the region and that any proposals for further residual waste treatment should be carefully assessed to ensure that the facility would not result in overprovision.*"

Cheshire West and Chester Unitary Authority

5.19. The Waste Needs Assessment (Cheshire West and Chester Unitary Authority, 2016) concludes that residual wastes (which include residual waste from C&I waste streams) are catered for within the planned operational capacities until 2030.

5.20. Approximately half of the recorded construction and demolition waste which is disposed to landfill, is disposed of at landfill sites within the authority Cheshire West and Chester Unitary boundary. Other construction and demolition wastes are transferred to facilities in other waste management authorities, primarily Cheshire East. The Waste Needs Assessment notes that "*[b]ecause the data on this waste stream is poor, the approach from organisations such as WRAP (the Government's Waste and Resources Action Programme) is to look at ways of reducing waste arisings from this source*" and there is a need to ensure that there is a broad distribution of appropriate sites to support the proper management of CD&E waste.

5.21. In terms of hazardous waste, there are two existing sites, one incinerator and the other a landfill, both of which can accept up to 100,000 tonnes per year. Both these facilities are expected to remain operational throughout the period until 2030.

Wirral Metropolitan Borough Council

5.22. Wirral Metropolitan Borough is one of the boroughs making up Merseyside. The Merseyside and Halton sub region is the third largest producer of waste in the North West region behind Lancashire and Greater Manchester. Wirral Metropolitan Borough Council have adopted the Joint Waste Local Plan for Merseyside and Halton (Halton Council *et al.*, 2013).

5.23. The Joint Merseyside and Halton Waste Local Plan (Halton Council, Knowsley Council, Liverpool City Council, St Helens Council, Sefton Council, St Helen's Council and Wirral Council, 2013) identifies a capacity gap in terms of available landfill space for inert-waste. The Waste Local Plan states that it will "*need to continue to rely on neighbouring authorities for landfill provision of non-inert waste*". The Plan goes onto to state that discussions with the waste management industry (including landfill operators across the region) have been positive "*with strong indications that the capacity requirements of Merseyside and Halton can be easily met within the region*" [subject to planning applications to extend timescales for landfilling operations].

5.24. The Implementation and Monitoring Report 2017-2018 (Halton Council, Knowsley Council, Liverpool City Council, St Helens Council, Sefton Council, St Helen's Council and Wirral

Council, 2019) reports on recently consented waste management facilities and the increase in the region's capacity. It identifies that 80,000 tonnes per annum (tpa) of new waste management capacity was consented in 2017-18 comprising four sites. In 2016-17, a further 70,600 tpa new capacity was consented and in 2015-16 the new capacity was 434,712 tpa consented (including a new site in the borough of Wirral.

Waste Targets

UK Targets

5.25. The key driver for waste management legislation in the UK is the Waste (England and Wales) Regulations 2011 (as amended) which sets a number of key requirements:

- Development of waste prevention programmes, which introduce the concept of whole life-cycle of products and materials, and reducing the key environmental impacts of waste generation and management;
- Set targets for preparing for re-use and recycling of waste to encourage the recovery of waste, and the use of recovered materials should be encouraged; and
- Separate collections of waste if technically, environmentally and economically practicable before undergoing recovery.

5.26. Article 3 of the Directive also clarifies the definition of the waste hierarchy stages. These are as follows:

"*Prevention' means measures taken before a substance, material or product has become waste that reduce:*

- *the quantity of waste, including through re-use of products of the extension of the life span of products;*
- *the adverse impacts of the generated waste on the environment and human health; or*
- *the content of harmful substances in materials and products;*

're-use' means any operation by which products or components that are not waste are used again for the same purpose for which they were conceived;

'preparing for re-use' means checking, cleaning or repairing recovery operations, by which products or components of products that have become waste are prepared so that they can be re-used without any other re-processing;

'recycling' means any operation by which waste materials are reprocessed into products, materials or substances whether for the original or other purposes. It includes the reprocessing of organic material but does not include energy recovery and the reprocessing into materials;

'recovery' means any operation the principal result of which is waste serving a useful purpose by replacing other materials which would otherwise have been used to fulfil a particular function, or waste being prepared to fulfil that function, in the plant or in the wider economy."

5.27. The Waste (England and Wales) Regulations 2011 (as amended) sets a target for Member States to reuse, recycle or recover 70% of non-hazardous construction and demolition waste by 2020. Other targets set at a national level for construction and demolition wastes (i.e. England's Waste Strategy (2007)) have been superseded as the target date has since passed.

Welsh Targets

5.28. The Towards Zero Waste Industrial and Commercial Waste sector plan sets the following targets:

- For industrial waste a reduction of 1.4% per annum until 2050 based on 2006/07 baseline;
- For commercial waste a reduction of 1.2% per annum until 2050 based on 2006/07 baseline;
- 70% of I&C waste to be recycled by 2025; and
- Zero waste to landfill by 2025.

5.29. The Construction and Demolition sector plan sets the following targets:

- Reduce the waste created by 1.4% per annum until 2050 based on 2006/07 baseline;
- A minimum of 90% of waste shall be prepared for reuse, recycled or recovered by 2019/20; and
- 75% reduction in construction and demolition waste going to landfill by 2019/20 (compared with the 2007 baseline).

5.30. The sector plan focuses on a number of priority materials which are either mentioned in the Waste Framework Directive or have the highest ecological footprint associated with them. The following five material groups make up 75% of the ecological footprint of construction and demolition waste:

- Wood;
- Plastic;
- Insultation and gypsum products;
- Hazardous waste; and
- Metals.

Industry Guidance

5.31. BREEAM was first launched in 1990 and is the most widely used environmental assessment method for buildings. BREEAM New Construction Manual (2018) is a performance-based assessment method and certification scheme for new buildings. Its primary aim is to mitigate the life cycle impacts of new buildings on the environment in a robust and cost-effective manner. This is achieved through measuring and evaluating the performance of a building against best practice using a number of criteria across a range of environmental issues. Performance is quantified using a credit system according to the measures implemented, which is ultimately expressed as a single certified BREEAM rating.

5.32. In terms of operational waste, the BREEAM Manual lists a number of criteria relating to the provision of dedicated storage facilities for operational-related recyclable waste streams to achieve good practice. These criteria are:

- There is a dedicated space(s) to cater for the segregation and storage of operational recyclable waste volumes;
- The dedicated space(s) must be:
    - Clearly labelled, to assist with segregation, storage and collection of the recyclable waste streams;

- Accessible to building occupants/facilities operators for the deposit of materials and collections by waste management contractors;
- Of a capacity appropriate to the building type, size, number of units (if relevant) and predicted volumes of waste that will arise from daily/weekly operational activities.

- Where the consistent generation in volume of the appropriate operational waste stream is likely to exist, (e.g. large amounts of packaging waste), the following facilities are provided as part of its waste management strategy:
  - Static waste compactor(s) or baler(s) situated in a service area of dedicated waste management space.

6. Alternatives Considered

6.1. The alternatives considered with regard to waste are primarily design decisions. At this design stage, the key consideration has been the management of spoil material generated by bulk earthwork activities to level the Site and to create development platforms for the buildings. The options were to remove spoil from the Site and use only imported fill materials to create the necessary Site levels and development platforms. The alternative option was to maximize the re-use of the spoil within the design of the Site and to minimise the volume of imported fill material. The cut and fill model that has been selected maximises the re-use of all material on Site with the importation of additional material to create the development platforms for the buildings.

6.2. As the detailed design of the buildings progresses, options of building materials and construction methodologies will be identified. These alternatives cannot be considered at this stage, however the approach of minimizing waste through design will continue to be applied.

7. Potential Environmental Effects

7.1. The assessment focuses on the impacts of the quantities and types of waste generated during the construction and operation of the Proposed Development on the existing and proposed waste management infrastructure in the region, in particular the available facilities and capacity and if the waste can be managed to meet national waste targets and policies. The potential significant effects of waste water discharges from the Site are assessed in the Water Environment Technical Paper 3 of the ES.

Construction Phase

7.2. The Site is predominantly grassland and therefore, there will be no arisings from the demolition of existing buildings. Arisings will occur from the cut and fill earthworks model to facilitate the development platforms. This work will include raising of land levels and a development platform, construction of internal road infrastructure.

7.3. The existing site topography is flat with little variance across the Site. The Proposed Development involves raising the level of the Site and the creation of the development platform to achieve a finished floor levels of 5.25m AOD for all of the main process buildings; with all external works set at a level ranging between 4.90m and 5.50m AOD. The proposed offices to the eastern boundary will be set at 6.15m AOD and associated car parking will be 5.50m AOD. This will be achieved by cut and fill.

7.4. A Geoenvironmental Ground Investigation of Plots B and C of the Airfields site was undertaken by JPG Group in December 2018 on behalf of CHEL. Prior to that a Geoenvironmental Desk Top Study was carried out in 2014. A further Desk Top study has been undertaken in 2021 by SGI Consultants and this is appended to the Geology and Ground Conditions ES Technical Paper 1.

7.5. The Ground Investigation confirms that Plot C comprises undeveloped grassland with well-maintained low-lying vegetation.

7.6. The Investigation confirms the ground conditions and states that made ground topsoil, typically less than 0.20m thick, was encountered in all exploratory holes. The topsoil generally comprised dark brown silty sand with rootlets. The topsoil was found to be underlain by natural sand (Tidal Flat Deposits), which was locally silty or clayey. The base of the sand was

not proven. The density of the sand deposits was found to increase with depth, from medium dense at shallow depths (up to 5m bgl) and becoming dense (generally below 5m bgl).

7.7. Groundwater seepages were noted within trial pits at depths of between 1.80m and 3.10m bgl. All trial pits terminated due to instability, often due to water ingress. Groundwater strikes were encountered in all boreholes at depths of between 2.00m and 2.50m bgl, rising to a maximum of 1.80 m bgl. Standing groundwater levels of between approximately 1.40m and 1.83m bgl have been recorded during post-investigation monitoring.

7.8. The Desk Study Report indicated that the Site is in an area unlikely to be affected by mine workings. Based on this and the investigative works carried out to date, the risk to the Site from instability due to shallow mine workings is considered to be low.

7.9. The Proposed Development would be constructed over three phases as specified in the Projection Description contained in the ES Part 1 Report. The earthworks (i.e. the land raising and creation of development platforms) will be completed in Phase 1.

7.10. The types of waste that would be generated from the enabling works, earthworks/infrastructure and the construction of the paper mill buildings are listed below (the list is not exhaustive and may be refined during detailed design):

- Soils (spoil from preparing foundations, installation of drainage and infrastructure);
- Glass;
- Concrete/cement;
- Tarmac, asphalt, bitumen;
- Oils (lubricating oil);
- Metals (cables, wires, bars, relict structures);
- Timber (softwood and board products such as plywood, chipboard), pallets;
- Packaging (paint pots, pallets, cardboard, cable drums, wrapping bands, polythene sheets);

- Plastics (pipes, cladding, frames, non-packaging);
- Green waste (grass, branches etc);
- Paints and solvents;
- Insulation (glass fibre, mineral wool or foamed plastic); and
- Plasterboard.

Impact of waste generated on the capacity of existing/proposed waste management infrastructure

7.11. Earthworks modelling has identified there would be a net fill/importation of 3,781m³ to achieve balanced earthworks scheme. This is based on the following quantities of material required to create the development platform:

- A cut volume of 9,168.18 m^3;
- A fill volume of 47,949.57 m^3;
- Net fill/import of 38,781.39 m^3; and
- 35,000 m^3 site won materials from excavation of foundations and drainage.

7.12. On this basis, subject to confirming suitability of the underlying material, no excavated spoil associated with the Site levelling, creation of the development platforms and from the construction of the Proposed Development will be exported from the Site.

7.13. The construction of the infrastructure, buildings and building fit out will generate other wastes many of which are listed in paragraph 7.6. BRE benchmark data (2012) has been used to estimate the likely tonnage of wastes that would be generated from the construction of the buildings. The estimated tonnage of waste from all three Phases is approximately 15,667 tonnes based on the total proposed floor area of the buildings (i.e. 124,343m^2) as set out in the Project Description contained in the ES Part 1 Report. This figure is only for the buildings and does not include waste generated from the construction of infrastructure and landscaping.

7.14. According to the Interim Progress Report (Flintshire County Council, 2016) the North Wales region generated 744,820 tonnes of construction and demolition waste in 2012. The estimated

waste arisings from the construction of all three phases of the Proposed Development represent approximately 2.10% of the county's construction and demolition waste arisings (based on 2012 figures). The assessment assumes that in the absence of mitigation that this waste would be disposed to landfill.

7.15. The Proposed Development would be constructed over three phases and therefore, the generation of construction waste would be spread out over a longer period. The completion of Phases 2 and the commencement of Phase 3 could be separated by over five years. However, to represent the maximum design scenario the assessment assumes that construction and demolition waste would be generated within Phase 1.

7.16. The position of the Interim Progress Report (Flintshire County Council, 2016) is that "*there is no further need for landfill capacity within the North Wales region*", as their assessment indicates that landfill projections "*significantly overestimated the rate at which landfill void within the region would be used up*". It goes onto say that on-going monitoring is needed to ensure that sufficient landfill void remains available.

7.17. The search of existing waste management facilities within 15km also identifies that there are several facilities within a relatively short distance that would provide capacity.

7.18. In the absence of mitigation, the impact on the county waste management facilities (medium sensitivity) is predicted to be moderate negative as it has been assumed that all construction and demolition waste would be disposed to landfill. On this basis, the significance of effect is **moderate adverse**.

Treatability of the waste generated

7.19. Hazardous materials are used in the construction process (e.g. paints, heavy metals etc) and in the absence of mitigation, opportunities to use less-hazardous materials are not investigated. In the absence of mitigation, the management of hazardous wastes does not comply with legislation: it is mixed with other types of wastes and as a result the amount of hazardous waste increases to over 25% of the total waste generated during the construction of the Proposed Development.

7.20. In the absence of mitigation, the assessment assumes that the hazardous waste is not pre-treated and has to be transported out of the county or region for disposal.

7.21. The impact on the region and county facilities (medium sensitivity) is predicted to be moderate negative and the significance of effect is **high/moderate adverse**, which is considered to be significant.

Conformity with national targets and policy

7.22. The cut and fill model demonstrates that no spoil from the enabling works and construction activities will be exported from the Site and on that basis, waste has been avoided. With regards to other wastes, it has been assumed that in the absence of mitigation, waste generated from the construction of the Proposed Development is not managed in accordance with the principles of the waste hierarchy and is all disposed to landfill. National targets to divert waste are not met and there is no Site-specific waste management strategy to manage the waste. No records are kept of the amount of waste generated or how it is managed.

7.23. The impact on national targets (high sensitivity) is minor negative, and on this basis the significance of effect is **minor/moderate adverse**, which is considered to be significant.

Nature of Impact	Receptor	Environmental Impact	Significance of Effect	Confidence Level
Impact of waste generated on the capacity of existing/proposed waste management infrastructure	Medium (County)	Moderate Negative	Moderate Adverse	Low
Treatability of the waste generated	Medium (County)	Moderate Negative	High/Moderate Adverse	Low
Conformity with waste targets	High (National)	Minor Negative	Minor/Moderate Adverse	High

Table 10.3: Significance of Effect - Construction Phase

Operational Phase

7.24. The proposed buildings will be used as a paper processing mill to produce and manufacture tissue paper (B2, B8 use class) with ancillary B1 office space and associated servicing and infrastructure.

7.25. A dedicated waste storage area will be located in the north east of the Site and it will be surfaced with an impermeable base and separate sub areas for hazardous waste.

7.26. The types of wastes that will be generated from this process are listed below:

- Metallic wires from cellulose pulp bales;
- Sludges from paper mill effluent treatment;
- Empty containers (e.g. 1,000l IBC tanks, barrels, can) from raw/auxiliary liquid material (-some containing residues);
- Jumbo roll cores;
- Packaging from converting rolls (cardboard and plastic);
- Pallets, crates;
- Aqueous liquids containing ink and/or sealants or adhesives from washing converter machine equipment;
- Replaced paper machine felts and/or webs;
- Oils;
- Oily rags/wiping cloths, filter materials;
- Discarded metals from carpentry activities;
- Dust from air dust removal system.

7.27. Waste will also be generated from the office and welfare areas and will include:

- Paper;
- Cardboard;
- Packaging;

- Plastic;
- Metals;
- Food waste (e.g. canteen/kitchen waste);
- Fluorescent light tubes; and
- Printer and toner cartridges.

7.28. Paper sludge material will be treated in the effluent treatment plant and is then dewatered. The dewatered sludge will then be discharged into a sludge container located in the waste storage area prior to removal from the Site.

Impact of waste generated on the capacity of existing/proposed waste management infrastructure

7.29. An inventory was provided by the ICT Group setting out the quantities of the main types of process wastes that would be generated each year. This equated to approximately 4,7120 tonnes per year for all three phases of the Proposed Development (however this quantity of waste would not be generated until the completion of all three phases). Acknowledging that this figure excluded waste generated from the office and welfare facilities as well as minor process wastes, the British Standard BSI 5906 Waste Management in Buildings - Code of Practice (BSI, 2005) was also used to estimate operational waste arisings using the 'industrial building' criteria and the total proposed floor area for all three phases of the Proposed Development (124,343m^2). The estimated arisings would be approximately 10,978 tonnes of waste per year. The waste estimation using the BSI method was clearly different to the waste quantities from the inventory and was considered to be overly conservative. However, to capture the wastes not included on the inventory, a figure of 7,845 tonnes of operational waste per year on completion of Phase 3 of the Proposed Development is considered to be a reasonable estimate. This represents less than 1% of the total commercial and industrial waste generated in North Wales in 2012.

7.30. In the absence of mitigation, it is assumed that all waste is disposed to landfill. The Interim Report (Flintshire County Council, 2016) and the Deposit Draft LDP (Flintshire County Council 2019a) confirm that there is no requirement for further landfill capacity within the North Wales region.

7.31. The impact on the county waste management facilities would be moderate negative and the significance of the effect is **moderate adverse**, which is considered to be significant.

Treatability of the waste generated

7.32. A number of hazardous wastes will be generated from the process of manufacturing tissue and from maintenance of machinery and equipment.

7.33. In the absence of mitigation, it is assumed that due to poor waste management practices (i.e. mixing of hazardous wastes with non-hazardous wastes) and procurement policies (i.e. no requirement in place to prioritise the use of non-hazardous materials), at least a quarter of the operational waste generated by the Proposed Development is hazardous.

7.34. In the absence of mitigation, the assessment assumes that the hazardous waste is not pre-treated and has to be transported out of the county or region for disposal.

7.35. The impact on the region/county facilities is predicted to be high negative and the significance of effect is **moderate adverse**, which is considered to be significant.

Conformity with national targets and policy

7.36. In the absence of mitigation, it is assumed that none of the operational wastes will be recycled and therefore, will not conform with the national targets and policy as set out in the Towards Zero Waste Industrial and Commercial Sector Plan.

7.37. No records of waste arisings are kept and the waste is not managed in accordance with the waste hierarchy.

7.38. The magnitude of impact is predicted to be moderate negative and the significance of the effect for national policy is of **moderate/high adverse** significance.

Nature of Impact	Receptor	Environmental Impact	Significance of Effect	Confidence Level
Impact of waste generated on the capacity of existing/proposed waste management infrastructure	Medium (County)	Moderate Negative	Moderate Adverse	Low
Treatability of the waste generated	Medium (County)	Moderate Negative	Moderate Adverse	Low
Conformity with waste targets	High (National)	Moderate Negative	Moderate/High Adverse	High

Table 10.4: Significance of Effect - Operation Phase

8. Proposed Mitigation

Key Obligations

8.1. The management of waste during construction and operation would be in accordance with the following obligations:

Pre-treatment

8.2. Since 2007 all non-hazardous waste has to be treated before being disposed to landfill. The purpose of this requirement is to reduce the impact of waste that has to be landfilled and to increase the amount of waste that is recycled. Under the EU Landfill Directive "treatment" will be deemed to be carried out when waste has been through the following three point test. Treatment must:

- Be a physical, thermal, chemical or biological process – which can include sorting;
- Change the characteristics of the waste;
- And do so in order to;
    - Reduce its volume (interpreted as "weight" by the enforcement agencies in England); or
    - Reduce its hazardous nature; or
    - Facilitate its handling; or
    - Enhance recovery.

8.3. All three points must be satisfied and the requirement applies to each separate waste stream generated on the Site (with waste stream defined by the EWC code that is provided on the transfer note). Non-hazardous waste generated by the Proposed Development will be managed in accordance with these requirements.

Management of Hazardous Waste

8.4. Hazardous waste will not be mixed with:

- Non-hazardous waste/materials;
- Different types (categories) of hazardous waste; or

- Waste oils with different characteristics.

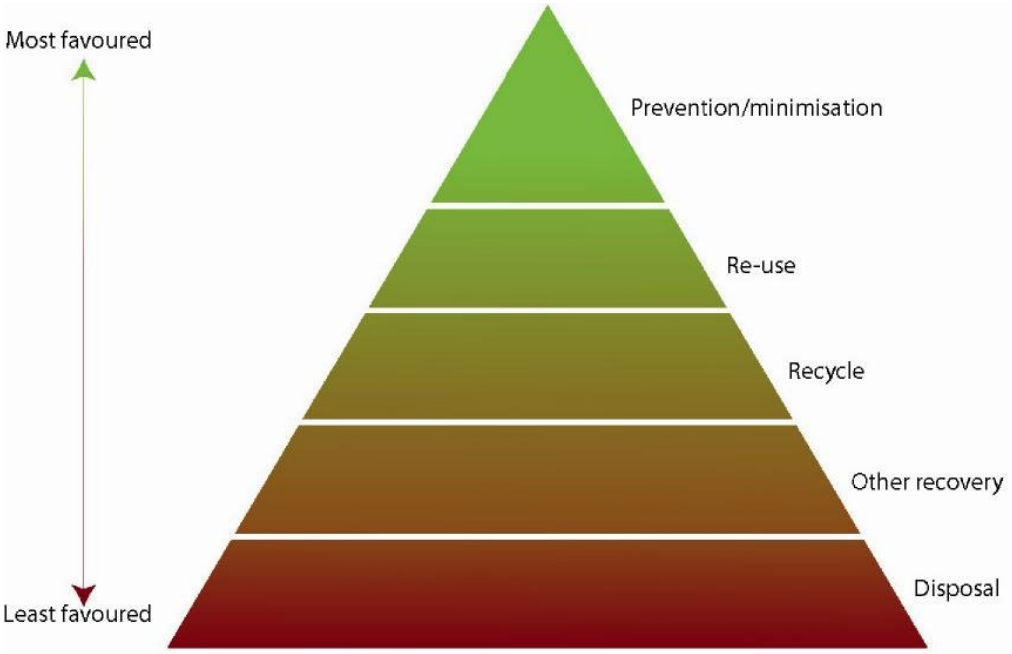
8.5. Procedures will be implemented to ensure that reliable segregation procedures are in place to stop mixed waste being produced. Appropriate and secure storage will also be provided to prevent the ingress of rainwater and the dilution of hazardous waste. These measures would avoid the quantity of hazardous waste being unnecessarily increased.

8.6. To minimise the procurement of hazardous materials (and therefore, reduce the quantity of hazardous waste being generated) consideration will be given to the use of less hazardous alternatives. Opportunities to substitute hazardous materials will be investigated and reported, with justification provided where hazardous materials are used.

Waste Hierarchy

8.7. The waste hierarchy is a key element of sustainable waste management and is a legal requirement of the revised EU Waste Framework Directive and the Waste (England and Wales) Regulations 2011. The waste hierarchy ranks waste management options according to what is best for the environment. It gives top place to waste prevention. When waste has been generated, priority is given to preparing it for re-use, then recycling, then recovery, and last of all disposal (for example, landfill).

8.8. Defra has published guidance on how the waste hierarchy should be applied to a range of common wastes (Defra, 2011). It summarises the findings of current scientific research on the environmental impacts of various waste management options for a range of materials and products. The guidance states that for most materials the waste hierarchy ranking applies. However, the evidence suggests that for some materials, the preferred waste management option (i.e. with the lowest environmental impact) does not follow the waste hierarchy order. This is true for lower grades of wood, where energy recovery options are more suitable than recycling.



8.9. Waste generated from the Proposed Development will be managed according to the principles of the waste hierarchy. The following paragraphs set out a framework of measures that will be implemented during the construction and operation phases. The measures will be refined during the detailed design stage to take into account site-specific conditions and discussions with local waste management operators. The measures will be documented in a Site Waste Management Plan (SWMP), an outline of which is provided in Appendix 11.2. The SWMP will also set out targets to divert different waste streams from landfill in accordance with the national targets and policies.

Construction Phase

8.10. The measures below will be refined during the detailed design stage to take into account site-specific conditions and discussions with local waste management operators. The measures will be documented in a Site Waste Management Plan (SWMP), an outline of which is provided in Appendix 11.2. The SWMP will also set out targets to divert key waste streams from landfill in accordance with the national targets and policies.

Minimisation

8.11. Waste can be minimised during the detailed design stage and during construction. The following design measures would be implemented:

- Using pre-fabricated materials for on-site assembly;
- Buildings/structures designed to standard dimensions of blocks or frames to avoid off-cuts;
- The cut and fill model for the Proposed Development will use spoil from earthworks to create the necessary Site levels and development platforms, thereby avoiding the spoil from becoming a waste;
- Suppliers will be requested to minimise packaging; and
- Internal materials and fittings would be pre-cut to reduce the need for site cutting.

8.12. Waste would also be minimised by improving wastage rates when ordering materials. Waste allowances are generally included within material orders to take into account design waste and construction process waste. These waste allowances are often generic and not project specific and therefore, run the risk of being inaccurate. This can lead to a surplus of materials, which typically ends up being discarded (i.e. waste). A system would be put in place to enable the accurate estimates of material requirements (and waste allowances) at the detailed design stage.

8.13. On appointment of the Construction Team and Contractor, the Buyer would discuss the purchasing requirements with the Site Manager to identify priorities and review the quotations received. Materials would be checked against the material specifications as part of the quality control system. Where possible, hazardous materials would be substituted for less hazardous alternatives.

8.14. Waste minimisation measures would be implemented by the Principal Contractor and Site Manager during construction in order to achieve the waste allowance targets. These measures include:

- A logistic system which allows 'just-in-time' deliveries to minimise the length of time materials are stored on Site and co-ordinate with other trades;
- Providing suitable and secure storage for materials where 'just-in-time' deliveries cannot be set up;

- Mechanical systems and machinery would be considered for moving materials to reduce the risk of damage; and
- Programming and monitoring construction activities to avoid overlap of incompatible trades working in the same area and to reduce the potential for waste to be generated from replacing damaged work.

Preparing for Re-use

8.15. Spoil excavated as part of the reprofiling of the Site will be spread on land to the north of the proposed ICT Paper Mill Facility and the south of Phase 1 and 2 prior to construction works on Phase 3. Prior to excavation, the soil will be tested for contaminants.

8.16. Where possible, surplus materials will be re-used onsite during the construction of the proposed development through the following methods:

- Collection off cuts to be used first instead of new materials;
- Co-ordination of trades so left-over materials from one trade can be used by another;
- Dismantling of temporary materials (e.g. timber hoarding) so they can be reused;
- Use returnable packaging; and
- Unused and salvaged materials will be returned, sold or donated.

Recycling

8.17. Wastes generated during the construction process would be segregated into waste types to facilitate off-site recycling (for example, metals, wood, plastic). Layout of the construction Site would be designed to allow sufficient space for separate containers of key waste materials to be stored. These containers would be clearly labelled and construction staff would be given training on waste segregation.

8.18. Green waste generated during site preparation works would be composted off-site. Opportunities would be investigated to retain woody material on site for landscaping and ecological planting.

8.19. The Principal Contractor would investigate the opportunities to use recycled materials where possible, subject to cost and availability (for example, recycled aggregate and secondary aggregates for use in concrete, or granular fill).

Disposal

8.20. All waste that cannot be reused, recycled or recovered would be collected by the licensed waste management contractor and disposed of at a permitted site suitable for the type of waste. Burning of surplus material or material arising from the Site construction will not be permitted.

Storage of Waste

8.21. Waste storage areas would be provided at the construction Site. Each skip/container would be clearly marked to indicate the intended contents and would be suitable for the storage of the specified contents. All skips/containers would be covered to prevent the escape of waste by windblow or vandalism. If liquid waste is being stored, an appropriate bund and drip pans would be in place.

8.22. Any hazardous waste would be stored safely in a designated area away from non-hazardous and inert wastes and labelled accordingly.

Registered Carriers

8.23. To meet the requirements of Section 34 of the Environmental Protection Act 1990, waste materials arising from the construction of the proposed development would only be transported by waste carriers and hazardous waste carriers holding a valid registration with the Environment Agency. Each consignment of waste removed from the construction Site would be accompanied by a waste transfer note (or hazardous waste consignment note as appropriate), which correctly describes the waste using the European Waste Catalogue code, identifies the waste carrier and where the waste would be transported to. Requirements for transferring waste and registered waste carriers are set out in Part 8 and 9 of the Waste (England and Wales) Regulations 2011. The waste would only be transferred to facilities that have the benefit of a registered waste exemption, or an environmental permit. Periodic audits would be undertaken of these facilities.

Waste Records

8.24. The movements of waste transported from the Site during construction will be recorded in the SWMP (see Appendix 11.2).

Operational Phase

8.25. The framework of measures below will be refined during the detailed design stage (where appropriate) to take into account site-specific conditions and discussions with local waste management operators. The measures will be documented in an Operational Waste Management Plan (OWMP), which will be prepared post consent. The OWMP will also set out targets to divert key waste streams from landfill in accordance with the national targets and policies.

Minimisation

- Ensure that paper goods leaving the Proposed Development are packaged using material that is fit for purpose (e.g. correct material and sizing) to minimise waste from damaged goods;
- Avoid overproduction/over-ordering as excess stock could remain unsold for longer periods of time (which could lead to deterioration of materials);
- Issue information to customers in electronic form;
- Operate electronic check-in system for deliveries;
- Provide adequate storage for equipment and any materials to reduce damage; and
- Where possible, substitute hazardous materials for less hazardous alternatives.

Preparing for Reuse

- Select suppliers with take-back packaging;
- Re-use pallets;
- Purchase office furniture through reuse organisations;
- Return printer and toner cartridges for re-filling rather than replacement; and

- Provide re-useable cups and glasses in the refreshment areas.

Recycling

- The potential opportunities to recycle/recover paper sludge material are influenced by the chemical and physical characteristics of the material. Appropriate dewatering techniques will be used to remove as much water as practicable from the paper sludge material. Other opportunities to increase the potential recycling/recovery possibilities of the sludge material (by modifying the process/input materials/treatment process) will be investigated.
- Use packaging with recycled content;
- Segregate and recycle packaging;
- Use compactor and shredder;
- Identify with the waste management contractor opportunities to maximise the types of materials that can be recycled (paper, glass and plastic as a minimum).
- Use split bins to encourage segregation of recyclables (e.g. plastics) from general waste;
- Locate paper-recycling bin near photocopier/printer;
- Provide colour coded recycling bins in the warehouses and refreshment and office areas;
- Provide a separate collection for food waste within the refreshment areas;
- Recycle light bulbs, batteries, mobile phones through specialist companies and charities;
- Where practicable, purchase materials with a recycled material content.

Waste Storage and Collection

8.26. The design of the Proposed Development will make provision for appropriate waste storage and recycling collection facilities. Dedicated storage areas will be provided within the design

to allow for the segregation and storage of recyclable waste. Storage areas will be clearly labelled to assist with segregation of recyclable waste streams; accessible to building occupants and facilities to allow the deposit of materials and the collections by waste contractors; and be of appropriate size for the unit and the predicted volumes that will arise from daily activities.

8.27. The waste storage areas will provide secure storage for waste and recyclables and will provide protection from windblown and vandalism. The waste and recyclables will be collected regularly at a frequency agreed with the waste management contractor.

9. Potential Residual Effects

Potential Residual Effects – Construction Phase

9.1. The assessment of residual effects takes into account the implementation of the proposed mitigation measures set out in section 8.

9.2. The overall impact of the proposal in terms of waste issues during the construction phase is highlighted in the table below:

Nature of Impact	Receptor	Environmental Impact	Significance of Effect	Confidence Level	Mitigation	Residual Significance of Effect
Impact of waste generated on the capacity of existing/proposed waste infrastructure	Medium (County)	Moderate Negative	Moderate Adverse	Low	Minimise waste through design and construction techniques. Prepare Materials Management Plan for reuse of site won materials. Divert waste from landfill by reusing/ recycling materials on site or transfer waste to appropriate waste management facility.	Minor Adverse
Treatability of the waste generated	Medium (County)	Moderate Negative	Moderate Adverse	Low	Use less-hazardous alternatives, no mixing of hazardous waste; pre-treat non-hazardous waste.	Minor Adverse

Nature of Impact	Receptor	Environmental Impact	Significance of Effect	Confidence Level	Mitigation	Residual Significance of Effect
Conformity with national targets and policy	High (National)	Moderate Negative	Moderate/ High Adverse	High	Agree landfill diversion targets for key waste types. Set out management measures in SWMP (outline version in Appendix 11.2). Record waste movements	Negligible

Table 10.5: Residual Significance of Effect - Construction Phase

9.3. The residual significance of effect on the existing proposed waste infrastructure assumes that CDE waste would be generated from all three phases at the same time. However, in reality waste generation from the construction phase would be spread out over a longer period.

Potential Residual Effects – Operational Phase

9.4. Mitigation measures for the operation phase are set out in section 8 and follow the waste hierarchy principle.

9.5. The overall impact of the proposal in terms of waste issues during the operational phase is highlighted in the table below:

Nature of Impact	Receptor	Environmental Impact	Significance of Effect	Confidence Level	Mitigation	Residual Significance of Effect
Impact of waste generated on the capacity of existing/proposed waste infrastructure	Medium (County)	Moderate Negative	Moderate Adverse	Low	Minimise waste and identify re-use and recycling opportunities set out in the OWMP. Appoint a waste champion.	Minor Adverse
Treatability of the waste generated	Medium (County)	Moderate Negative	Moderate Adverse	Low	Use less-hazardous alternatives, no mixing of hazardous waste; pre-treat non-hazardous waste.	Minor Adverse
Conformity with national targets and policy	High (National)	Moderate Negative	Moderate/ High Adverse	High	Agree landfill diversion targets for key waste types. Set out management measures in OWMP.	Negligible

Table 10.6: Residual Significance of Effect - Operation Phase

10. Additive Impacts (Cumulative Impacts and their Effects)

10.1. For the purposes of this ES we define the additive cumulative effects as:

'***Those that result from additive impacts (cumulative) caused by other existing and/or approved projects together with the project itself***' .

10.2. The developments that are likely to have a cumulative impact when considered with the proposed development have been agreed with the Local Authority during the preparation of this ES (a full list is included within Section 9 of the ES Part 1 Report). The following table includes the agreed list of cumulative developments that have been assessed in respect of waste. These are also shown geographically on the plan included at **Appendix 13** of the ES Part 1 Report.

	Cumulative Development and Status	Details	Status	Justification for inclusion Cumulative Assessment
1	Airfields (former RAF Sealand) Site (Northern Gateway) LPA ref: 049320 and last varied S73 application LPA ref: 061125. Applicant: Crag Hill Estates Ltd.	Outline application for the redevelopment of a strategic brownfield site for an employment led mixed use development with new accesses and associated infrastructure including flood defences and landscaping. The Net Cumulative Development associated with the Airfields site after deducting the floor space (118,766m²) taken up by the Proposed ICT Paper Mill Facility (B2, B8, ancillary B1a) and operational Amazon development (ref: 060222) is as follows: Development comprises: Residential (C3): 406 units Retail (A1): 4,646m² Office (B1a): 6,533m² B2 /B8 Employment: 88,848m² Car Dealership (Sui generis): 7,779m² **Total floorspace: 689 units / 235,772m²**	LPA ref: 049320 Planning permission granted by Flintshire County Council in January 2013. The last varied S73 application was granted on the 26 April 2021 (ref: 061125) to remove conditions 26, 28, 30, 34 and 44 and vary condition 13. Development expected to come forward over the next 0-5 years.	Potential relationship during construction as similar waste streams may be generated therefore require similar waste management facilities.

	Cumulative Development and Status	Details	Status	Justification for inclusion Cumulative Assessment
2	Former Corus Garden City Site (Northern Gateway) Applicant: PGNGL Outline (LPA ref: 054758) / S73 application (LPA ref: 059635)	Employment-led mixed-use development, incorporating Logistics and Technology Park (B1, B2, B8) with residential (C3), local retail centre (A1), hotel (C1), training and skills centre (C2, D1), new parkland; conversion of buildings, demolition of barns; and associated infrastructure comprising construction of accesses, roads, footpaths / cycle paths, earthworks and flood mitigation / drainage works at Northern Gateway, Land off Welsh Road, Deeside. Development comprises: Residential (C3): 770 units Retail (A1): 2500m² Office (B1a): 3300m² Light industrial uses (B1b, B1c): 7400m² Hotel Uses (C1): 3000m² Training and skills centre (C2, D1): 4000m² Logistics Park (B2, B8, ancillary B1a): 120000m² **Total floorspace: 770 units / 140,200m²**	Outline planning permission granted by Flintshire County Council in May 2014. The last permission to be granted under a S73 application was approved in June 2020 (ref: 059635) was for removal of conditions 6, 8, 11 and 32 and variation of conditions 7, 31, 36 and 44. Development expected to come forward over the next 0-10 years.	Potential relationship during construction as similar waste streams may be generated therefore require similar waste management facilities.

Table 10.7: Cumulative Development

Short Term

10.3. The generation of Construction, Demolition and Excavation (CDE) waste by the Proposed Development would be temporary in nature and as such, the existing waste management infrastructure would be able to accommodate the construction of new developments as they arise. A cumulative effect on this waste stream may arise if a number of developments come forward at the same time, thereby putting pressure on existing infrastructure. When assessing all three phases of the Proposed Development, there would be a moderate adverse cumulative effect with the other developments, however when the phases are assessed separately the cumulative impacts would be minor adverse.

Medium and Long Term

10.4. Measures would be implemented during the operation of the Proposed Development to maximize the diversion of waste from landfill in accordance with the waste hierarchy and national waste policy. The Interim Report (Flintshire County Council, 2016) and Deposit Draft LDP (Flintshire County Council, 2019a) confirm that there is adequate waste treatment capacity within the county and the cumulative impact would be minor adverse.

11. Conclusion

11.1. The construction and operation of the Proposed Development would generate various types of waste. The raising of land levels and the creation of development platforms would also lead to a net import of fill material.

11.2. The management of the other waste streams generated during construction and operation would follow the mitigation measures set out in this Technical Paper and achieve the national waste diversion targets. The mitigation measures include:

- Minimising waste generation through design and construction techniques (e.g. the use of pre-fabricated materials/structures, just in time deliveries) and reducing the risk of damaged goods (e.g. provide appropriate packaging) and avoiding over ordering of stock;
- Preparation of a Materials Management Plan to facilitate the re-use of site won materials;
- Divert waste from landfill (where practicable) by either reusing or recycling materials on Site (during construction) or by transferring the waste to an appropriate waste management facility for re-use, recycling/composting or recovery.
- Improve the likelihood of materials to be reused or recycled by selecting durable and recyclable materials and by implementing a source segregation system to minimise contamination.
- Pre-treat non-hazardous waste and ensure no mixing of hazardous wastes;
- Procure non-hazardous materials rather than hazardous materials where practicable;
- Agree landfill diversion targets for the key types of wastes in line with the national targets. Set out the measures that would be implemented to achieve these targets within a Site Waste Management Plan (for the construction phase) and an Operational Waste Management Plan (for the operational phase). An Outline SWMP is provided at Appendix 10.2.

11.3. With the implementation of the mitigation measures outlined above, the overall effect of the Proposed Development with regards to waste is considered to be minor adverse to negligible.

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APPENDIX 10.2: OUTLINE SITE WASTE MANAGEMENT PLAN

Paper Mill Facility, Plot C Airfields, Northern Gateway

12223
Paper Mill Facility, Northern Gateway
Version 1
August 2021

Industrie Cartarie Tronchetti

Document Status					
Version	**Purpose of document**	**Authored by**	**Reviewed by**	**Approved by**	**Review date**
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Approval for issue	
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1 INTRODUCTION

Background

1.1 This Outline Site Waste Management Plan (SWMP) has been prepared on behalf of Industrie Cartarie Tronchetti UK Ltd (ICT) and Crag Hill Estates Ltd (CHEL) to support their planning application to develop land on the western side of Garden City (hereafter referred to as the Site) into a tissue paper processing and production facility.

1.2 The purpose of the Outline SWMP is to provide information on the types and quantities of waste that would be generated during the construction of the Proposed Development. It includes an overall target to divert construction waste generated by the Proposed Development from landfill.

1.3 During the detailed design stage, landfill diversion targets would be agreed for key types of waste.

2 IDENTIFICATION OF WASTE ARISINGS

Waste Types

2.1 At a strategic level, the waste streams generated from the construction of the Proposed Development can be classified as:

- INERT: wastes that will not cause adverse effects to the environment when disposed of, or do not decompose and they have no potentially hazardous content when placed in a landfill. Examples of inert wastes are rocks, concrete, mortar, glass, uncontaminated soils and aggregates;
- NON-HAZARDOUS: wastes that will decompose when buried resulting in the production of methane and carbon dioxide. Examples of non-hazardous waste include timber, paper and cardboard; and
- HAZARDOUS: wastes that are harmful to human health or the environment (for example, pollution of watercourses) if they are incorrectly contained, treated or disposed of. Hazardous wastes may have one or more of the following properties: explosive, corrosive, flammable, highly flammable, infectious, oxidising or sensitising.

2.2 Table 2.1 contains the general List of Waste Categories (also known as waste classification codes) for construction wastes. The waste codes for each waste type will be provided on each waste transfer note that will accompany every movement of waste from the Site.

Table 2.1: List of Waste Categories for Construction Wastes

17 Construction and demolition wastes (including excavated soil from contaminated sites – it should be noted that waste types generated will not be restricted to this list)
17 01 Concrete, bricks, tiles and ceramics
17 01 01 Concrete
17 01 02 Bricks
17 01 03 Tiles and ceramics
17 01 06* Mixtures of, or separate fractions of concrete, bricks, tiles and ceramics containing dangerous substances
17 01 07 Mixtures of concrete, bricks, tiles and ceramics other than those mentioned in 17 01 06
17 02 Wood, glass and plastic
17 02 01 Wood
17 02 02 Glass
17 02 03 Plastic
17 02 04* Glass, plastic and wood containing or contaminated with dangerous substances
17 03 Bituminous mixtures, coal tar and tarred products
17 03 01* Bituminous mixtures containing coal tar
17 03 02 Bituminous mixtures other than those mentioned in 17 03 01
17 03 03* Coal tar and tarred products
17 04 Metals (including their alloys)
17 04 01 Copper, bronze, brass

17 Construction and demolition wastes (including excavated soil from contaminated sites – it should be noted that waste types generated will not be restricted to this list)
17 04 02 Aluminium
17 04 03 Lead
17 04 04 Zinc
17 04 05 Iron and steel
17 04 06 Tin
17 04 07 Mixed metals
17 04 09* Metal waste contaminated with dangerous substances
17 04 10* Cables containing oil, coal tar and other dangerous substances
17 04 11 Cables other than those mentioned in 17 04 10
17 05 Soil (including excavated soil from contaminated sites), stones and dredging spoil
17 05 03* Soil and stones containing dangerous substances
17 05 04 Soil and stones other than those mentioned in 17 05 03
17 05 05* Dredging spoil containing dangerous substances
17 05 06 Dredging spoil other than those mentioned in 17 05 05
17 05 07* Track ballast containing dangerous substances
17 05 08 Track ballast other than those mentioned in 17 05 07
17 06 Insulation materials and asbestos–containing construction materials
17 06 01* Insulation materials containing asbestos
17 06 03* Other insulation materials consisting of or containing dangerous substances
17 06 04 Insulation materials other than those mentioned in 17 06 01 and 17 06 03
17 06 05* Construction materials containing asbestos
17 08 Gypsum – based construction material
17 08 01* Gypsum–based construction materials contaminated with dangerous substances
17 08 02 Gypsum–based construction materials other than those mentioned in 17 08 01
17 09 Other construction and demolition wastes
17 09 01* Construction and demolition wastes containing mercury
17 09 02* Construction and demolition wastes containing PCB (for example PCB–containing sealants, PCB–containing resin–based floorings, PCB–containing sealed glazing units, PCB–containing capacitors)
17 09 03* Other construction and demolition wastes (including mixed wastes) containing dangerous substances
17 09 04 Mixed construction and demolition wastes other than those mentioned in 17 09 01, 17 09 02 and 17 09 03

Waste Volumes

2.3 Information relating to the precise volumes of waste materials that are likely to be generated is not currently available. This would be provided during the detailed design stage.

SWMP Plan and Data Sheets

2.4 The initial estimate of construction waste types generated by the Proposed Development is identified in Annex A. The SWMP is a useful planning tool to record the types of waste and

estimate the volumes that will be generated from all stages of the work programme. Targets can then be set for different material types based on the predictions of the Plan. At the time of writing, a detailed construction programme had not been prepared and therefore, the list of waste types is not exhaustive. The SWMP should be updated as detailed design information becomes available.

2.5 The figures from the SWMP will be entered into a Waste Estimates Data Sheet, an example of which is shown in Annex B. This identifies how the waste types will be managed during the project (i.e. re-used on site, recycled off site etc).

2.6 Once construction is underway, the Principal Contractor will complete the Waste Management Data Sheet (see Annex C). These Sheets will be updated every time waste is removed from the site and will record:

- the types and quantities of waste produced;
- the types and quantities of waste that have been re-used/recycled/recovered/landfilled or otherwise disposed of on or off site;
- the identity of the person removing the waste,
- the registration number of the waste carrier,
- a copy or reference to the written description of the waste, and
- details of the site where the waste is taken to and whether it holds a permit or is exempt.

2.7 These details will form part of a review of this SWMP to be undertaken every six months (as a minimum) by the Principal Contractor and the developer. Where necessary a further plan will be produced to accommodate any changes in order to reflect the progress of the project and of meeting the SWMP targets.

3 WASTE MANAGEMENT TARGETS AND MEASURES

Waste Targets

3.1 A target has been set to reuse, recycle or recover 90% of the overall construction waste generated by the construction of the Proposed Development. The target is in line with the Towards Zero Waste Construction and Demolition Sector Plan (Welsh Assembly Government, 2010) and guidance provided in the Building Research Establishment Environmental Assessment Methodology BREEAM New Construction Manual (BRE Global Let, 2018).

3.2 Further targets will be set to reuse, recycle or recover key waste materials (e.g. the priority materials set out in the sector plan). Preliminary material targets are included in Annex A. These targets will be re-visited, and further targets will be added as the detailed design and construction philosophy progresses, typically post consent. The setting of targets allows the performance of the SWMP to be monitored and evaluated at the end of the construction period.

3.3 A target benchmark for resource efficiency will be set for the construction of the buildings at the paper Mill Facility. This would follow the construction resource efficiency benchmark set in the BREEAM New Construction Manual (BRE Global Ltd, 2018) which is13.3m^3 (or 11.1 tonnes) of non-hazardous construction waste generated per 100m^2 (gross internal floor area).

3.4 The targets will be incorporated into the contract specifications with the Principal Contractor post-consent.

Waste Measures

3.5 Construction waste generated by the Proposed Development will be managed according to the principles of the waste hierarchy, which is a key guide to sustainable waste management and is a legal requirement of the revised EU Waste Framework Directive and the Waste (England and Wales) Regulations 2011. The waste hierarchy ranks waste management options according to the least impact on the environment (see below):

- Prevention/minimisation;
- Re-use;
- Recycle;
- Other recovery;
- Disposal.

3.6 The targets to reuse, recycle or recover wastes will be achieved by implementing a series of waste management measures. The measures would be based on the framework of measures set out in the Waste Technical Paper, which would be refined during the detailed design stage.

4 IMPLEMENTATION OF THE SWMP

Roles and Responsibilities

4.1 Although the construction team has not been appointed at the time of writing this plan, the key roles and associated responsibilities with regard to this SWMP are outlined below. The Construction (Design and Management) Regulations 2015 also identify the legal duties, responsibilities and obligations of all the major roles within the construction team.

Developer

4.2 The Undertaker will be responsible for the following:

- Appointing onshore principal contractors for the purpose of the SWMP Regulations;
- Ensuring that this SWMP is implemented effectively;
- Giving necessary direction to contractors (for example, setting contractual obligations); and
- Reviewing, revising and refining this SWMP (where necessary) in conjunction with the principal contractor.

Principal Contractor

4.3 The Principal Contractor is generally appointed by the Undertaker and has the overall responsibility for:

- Updating and delivering this SWMP on behalf of the Undertaker;
- Ensuring all procedures in this SWMP are followed;
- Ensuring all contractors are suitably qualified and experienced in implementing the measures within this SWMP. These measures will be contained within the terms of contracts to ensure understanding and accountability;
- Ensuring that all legal and contractual requirements relating to this SWMP are met by ensuring adequate plans/procedures, licences and certificates are in place, and that they can be achieved;
- As a requirement of the SWMP the Principal Contractor will regularly (not less than every six months) review this SMWP to ensure that it accurately reflects the progress of the project and update where necessary;
- Establish procedures for the regular review and recording of the quality of the works as part of its Quality Management System;
- Maintain records relevant to this SWMP; and
- Within three months of work being completed, the Principal Contractor must confirm that this SWMP has been monitored (and updated) on a regular basis throughout the project; compare the actual waste quantities against the estimated quantities of each waste type;

and provide an explanation of any deviation from this plan. This information will be provided within a Close Out report.

Contractors/Sub Contractors

4.4 Contractors and sub-contractors will be responsible for carrying out the waste management tasks in this SWMP.

Training

4.5 A training regime will be implemented to ensure that all members of the construction team, including sub-contractor's personnel receive focused SWMP training to ensure their competence in carrying out their duties on the project.

4.6 Any SWMP training will be additional to the mandatory Health and Safety training.

Environmental Induction

4.7 The general site induction will be developed to introduce all site personnel to the environmental issues connected with the SWMP, the project, important environmental controls associated with the day to day operation of the project and effective delivery of the SWMP e.g. waste storage arrangements, appropriate waste segregation. A full register of induction attendance will be maintained onsite.

Toolbox Talks and Method Statement Briefings

4.8 Toolbox talks and method statement briefings will be given as the work proceeds and will cover the types of wastes produced at each key build stage and the SWMP controls related to specific activities undertaken during the works for example recycling of aggregates etc. A full register of toolbox talk and method statement briefing attendance will be maintained onsite.

Training Records

4.9 All training records will be maintained and filed onsite. The records will include the content of the courses (induction and toolbox training), record of attendance and schedule of review.

5 AUDIT, MONITOR AND REVIEW

Site Inspection

5.1 Regular inspections of the works will be undertaken by the Principal Contractor (or an appropriately trained nominated member of the site staff) to ensure the continued compliance of site operations with the provisions of this SWMP (e.g. segregation of waste types, waste storage requirements). Any non-conformities and actions arising from these inspections will be raised within routine Construction Team meetings.

5.2 Performance of the SWMP will be reported back to the Supervising Engineer. Performance will be assessed in terms of progress towards meeting the targets for re-use, recycling and disposal. The monitoring results will be reported.

5.3 If a non-conformance is discovered an Environmental Non Conformance Report Form (ENCR) will be completed and corrective actions will be devised. The recommended corrective actions will be recorded in the Corrective Actions Log together with progress for implementing these actions.

5.4 Corrective actions should be ranked commensurate to the risk. On occasions where legal compliance is an issue or environmental pollution is imminent then the corrective actions should be implemented as soon as possible.

Monitoring and Reporting

5.5 Appropriate Duty of Care paper work for the movements of waste will be retained on site. Volumes of waste (m^3 or tonnes) and wastes types will be recorded for all wastes sent for reprocessing, recycling, or disposal. Records will also be kept of waste reused/recycled on the site.

5.6 The Principal Contractor will complete the Waste Management Data Sheet as the project progresses. Waste data may also be recorded using BRE's online SMARTWaste tool.

5.7 A separate SWMP Close Out report will be compiled by the Principal Contractor at the end of the construction process that summarises performance of the project against the targets set in the SWMP. The report will identify any deviations from the SWMP and discuss lessons learnt. This will be signed by the Principal Contractor and the developer.

Industrie Cartarie Tronchetti

MAKING COMPLEX EASY

ANNEXES

Annex A

Initial Waste Forecasts

Construction Element	Material	Type of Waste	EWC Code	Estimated Quantity[1]	Target for re-use/recycle %
Earthworks	Soil and stones	Non-hazardous	17 05 04		100%
Construction	Concrete	Non-hazardous	17 01 01		90%
	Bricks		17 01 02		100%
	Tiles and ceramics		17 01 03		90%
	Wood		17 02 01		90%
	Glass		17 02 02		100%
	Plastic		17 02 03		90%
	Copper, bronze, brass		17 04 01		100%
	Mixed metals		17 04 02		100%
	Insulation materials		17 06 04		90%
	Gypsum-based construction materials		17 08 02		90%
	Gypsum-based construction materials	Hazardous	17 08 01*		50%
	Other construction wastes (including mixed wastes) containing dangerous substances	Hazardous	17 09 03*		50%
	Mixed construction wastes other than those mentioned in 17 09 01, 17 09 02 and 17 09 03	Non-hazardous	17 09 04		70%

Construction Element	Material	Type of Waste	EWC Code	Estimated Quantity[1]	Target for re-use/recycle %
	Waste paint and varnish containing organic solvents or other hazardous substances	Hazardous	08 01 11*		
	Waste paint and varnish other than those mentioned in 08 01 11	Non hazardous	08 01 12		
	Waste hydraulic oils	Hazardous	13 01*		
Landscaping	Biodegradable waste	Non-hazardous	20 02 01		100%
Road works	Bituminous mixtures containing coal tar	Hazardous	17 03 01*		50%
	Bituminous mixtures other than those mentioned in 17 03 01	Non-hazardous	17 03 02		90%

[1] The estimated quantity of waste types will be confirmed during detailed design.

Annex B

Indicative Waste Estimates Data Sheet Template (To be completed pre-construction)

Waste Category & Type	EWC Code	Source of waste	Re-used on site	Re-used off site	Recycled on site	Recycled off-site	Recovered on site - use off site	Sent to a Permit exempt site	Sent to landfill site for disposal
			(m^3)	(m^3)	(m^3)	(m^3)	(m^3)	(m^3)	(m^3)
INERT									
Sub TOTAL			0.00	0.00	0.00	0.00	0.00	0.00	0.00
NON-HAZARDOUS									

Waste Category & Type	EWC Code	Source of waste	Re-used on site	Re-used off site	Recycled on site	Recycled off-site	Recovered on site - use off site	Sent to a Permit exempt site	Sent to landfill site for disposal
			(m^3)	(m^3)	(m^3)	(m^3)	(m^3)	(m^3)	(m^3)
Sub TOTAL			0.00	0.00	0.00	0.00	0.00	0.00	0.00
HAZARDOUS									
Sub TOTAL			0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL VOLUMES			0.00	0.00	0.00	0.00	0.00	0.00	0.00

Annex C

Indicative Waste Estimates Data Sheet Template (To be completed each time waste is removed off site/re-used on site)

Waste Category & Type	EWC Code	Date	Waste Transfer Note Y/N	Name of person collecting waste	Waste carrier registration number	Name & location of waste site	Permitted or exempt site	Permit number	Re used on site (tonnes)	Re used off site (tonnes)	Recycled on site (tonnes)	Recycled off-site (tonnes)	Recovered on site - use off site (tonnes)	Landfill (tonnes)
INERT														
Sub TOTAL									0.00	0.00	0.00	0.00	0.00	0.00
NON-HAZARDOUS														
Sub TOTAL									0.00	0.00	0.00	0.00	0.00	0.00
HAZARDOUS														
Sub TOTAL									0.00	0.00	0.00	0.00	0.00	0.00
TOTAL VOLUMES									0.00	0.00	0.00	0.00	0.00	0.00

Total Waste Landfilled	Weight (tonnes)
Inert	
Non-Hazardous	
Hazardous	
Total	0.00