Intermodal Logistics Park North Ltd

INTERMODAL LOGISTICS PARK NORTH (ILPN)

Intermodal Logistics Park North (ILPN) Strategic Rail Freight Interchange (SRFI)

Project reference TR510001

APPENDIX 17.4: RIBA STAGE 1 EMBODIED CARBON REPORT

October 2025

Planning Act 2008

This document forms a part of a Preliminary Environmental Information Report (PEIR) for the Intermodal Logistics Park North (ILPN) project.

A PEIR presents environmental information to assist consultees to form an informed view of the likely significant environmental effects of a proposed development and provide feedback.

This PEIR has been prepared by the project promoter, Intermodal Logistics Park North Ltd. The Proposed Development is described in Chapter 3 of the PEIR and is the subject of a public consultation.

Details of how to respond to the public consultation are provided at the end of Chapter 1 of the PEIR and on the project website:

https://www.tritaxbigbox.co.uk/our-spaces/intermodal-logistics-park-north/

This feedback will be taken into account by Intermodal Logistics Park North Ltd in the preparation of its application for a Development Consent Order for the project.

Appendix 17.4 ◆ RIBA Stage 1 Embodied Carbon Report

EXECUTIVE SUMMARY

1.1 Ridge & Partners LLP has been appointed by Intermodal Logistics Park North Ltd to undertake an upfront embodied carbon assessment of the proposed new Intermodal Logistics Park North Rail Freight Interchange development. The modelling results are based on the outline planning information provided over the course of RIBA Stage 1.

1.2 The Life Cycle Assessment (LCA) modelling has been carried out in accordance with the RICS guidance associated with *Whole Life Carbon Assessment (WLCA) for the Built Environment (2nd Edition)*. The modelling has focused on impacts associated with carbon modules A1-A5 (i.e. Upfront Embodied Carbon).

1.3 The data utilised for the industrial and logistics (I&L) units is derived from a wider portfolio of embodied carbon modelling undertaken for the applicant as standard on all new developments brought forward across their national development sites. The project-based modelling is supported by specification-level modelling undertaken against the applicant's 'Blueprint specification,' which is the specification of design, products and materials that will be used for all I&L units in the Proposed Development. As a result of this work and background data, it is possible to extrapolate accurate estimations of the expected impact of each building, which provides more robust results when compared with a typical I&L unit with only RIBA Stage 1 developed information available.

1.4 The data used for site infrastructure, rail infrastructure and ancillary buildings has been developed using information such as design drawings and indicative cost plans, which estimate quantities and specifications for most key elements of the Proposed Development.

1.5 Some assumptions and exclusions have been necessary given the outline nature of the scheme at this stage. These are set out clearly in full in the Appendix.

1.6 The information will be further developed by the team during the upcoming detailed design and construction stages. The headline RIBA Stage 1 results are reported below:

Table 1 Estimated Upfront Carbon Emissions (Modules A1- A5), RIBA Stage 1

tCO_2e	I&L Units& Ancillary Buildings	Site Infrastructure	Rail Infrastructure
Upfront Embodied Carbon	291,729	10,766	51,527

INTRODUCTION

1.7 Ridge & Partners LLP has been appointed by Intermodal Logistics Park North Ltd to undertake an upfront embodied carbon assessment of the proposed new Intermodal Logistics Park North Rail Freight Interchange development. The purpose of the assessment is to quantify the upfront embodied carbon associated with the Proposed Development, including key elements such as the I&L units, the site infrastructure, the rail terminal and associated infrastructure. The output results will advise on the impact on the Global Climate for reporting within the wider Environmental Statement.

1.8 Due to the similarity in the applicant's base-build product and underlying 'Blueprint specification', this report and study builds on design and construction stage studies on other I&L units which have utilised this specification. In addition, RIBA Stage 1 information has been provided by the project team to allow an early-stage estimate of the upfront embodied carbon expected within the development.

1.9 Further modelling will be carried out as standard on all I&L buildings during the future design development and construction phases to update the estimates above. The process will culminate in post-construction (RIBA Stage 6) as-built verification of the upfront embodied carbon for the units, and the totals reported will form the basis of the applicant's Net Zero Carbon 'In Construction' reporting, which will be aligned to the principles set out by the UKGBC in their *Net Zero Carbon Buildings Framework*.

PROJECT SCOPE

1.10 The development involves the delivery of a new Strategic Rail Freight Interchange (SRFI) and associated development. Broadly, this scope includes provision of a new rail terminal and rail turn-back facility, provision of a new logistics park comprising up to c.767,000 square metres m^2) gross internal area (GIA) of warehousing and ancillary buildings, and provision of supporting infrastructure.

Figure 1 Site Master Plan

1.11 The project information used included:

- Tritax Big Box Developments (TBBD) Blueprint Embodied Carbon Assessment (V1.2 July 25)
- Ridge & Partners / Tritax Big Box Developments Embodied Carbon Tracker – all developments
- BWB drawings for the rail head and rail port (see drawing list in App A)
- AJA Architect Drawings for the logistics park (see drawing list in App A)
- Main Site – Cost Plan 6.02

1.12 Additional information for typical rail head and rail port details was provided by papers published online as listed in Appendix A.

BACKGROUND – EMBODIED CARBON

1.13 Carbon dioxide (CO_2) and other Greenhouse Gas (GHG) emissions play a pivotal role in anthropogenic climate change. The release of these gases through human activity has been

directly attributed to increases in global mean temperatures and more extreme fluctuation in climate across the planet. The built environment forms a substantial part of the UK's annual carbon emissions, so identifying and reducing the GHG emissions associated with this sector will form a key part of the UK's decarbonisation drive. As greenhouse gases vary in terms of their impact on climate change, we use a measure known as carbon dioxide equivalent (CO_2eq) to standardise the climate impact of different greenhouse gases. Throughout this report, the term 'carbon emissions' refers to GHG emissions measured in terms of CO_2eq.

1.14 The carbon emissions associated with the Proposed Development can be split into two different types: **operational carbon** and **embodied carbon**.

1.15 Operational carbon includes the energy and water usage of buildings in use, together with transport associated emissions once the Proposed Development is operational. Operational energy related carbon emissions have been the focus of legislation for a number of years as an attempt to quantify and reduce the impact (e.g., reduction in allowable emissions in the Approved Building Regulations Document Part L). Operational energy estimations have developed further in recent years, with more accurate TM54 Operational Energy studies carried out to a higher level of rigour than Part L, with the intention of closing the 'Performance Gap' and more closely reflected the actual performance of schemes in operation.

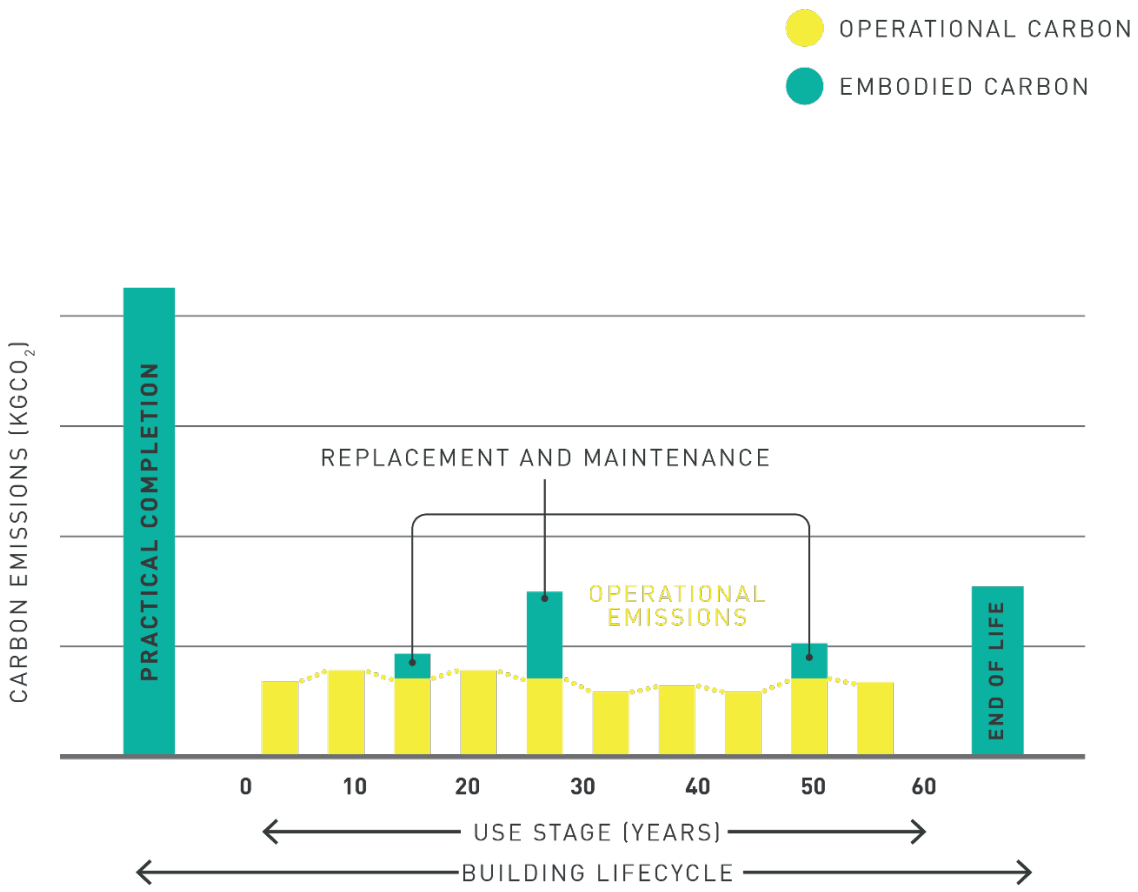
1.16 Embodied carbon encompasses the emissions associated with the manufacture and transportation of materials and the construction of a development. It also covers the maintenance, replacement and end of life impacts over the development's lifetime. Upfront Carbon focuses purely on the emissions up to practical completion of a scheme.

1.17 Currently embodied carbon is not controlled by UK / EU legislation, but it is steadily becoming clear that reductions in embodied carbon will become increasingly important to reducing the carbon emissions associated with new developments.

1.18 Figure 2 below highlights the overlap between embodied and operational energy impacts, demonstrating the front-loaded nature of the embodied carbon impacts up to practical completion (i.e. upfront carbon). Operational carbon emissions are released on an annual basis, which allows for intervention during the project use stage to improve performance. Conversely, embodied carbon emissions are largely incurred during the construction stage, so must be influenced during the project's design and construction stage ensure a lower carbon total for the scheme overall.

1.19 Figure 2 shows that there are typically lower impact peaks in embodied carbon over the use stage and end of life. These peaks still depend upon design and specification considerations, as these impacts are heavily influenced by product lifetimes (i.e. rate of replacement and maintenance) and the potential for disassembly over demolition (i.e. to reduce the rate of disposal associated with end of life).

Figure 2 Operational and Embodied carbon emissions over a development lifetime

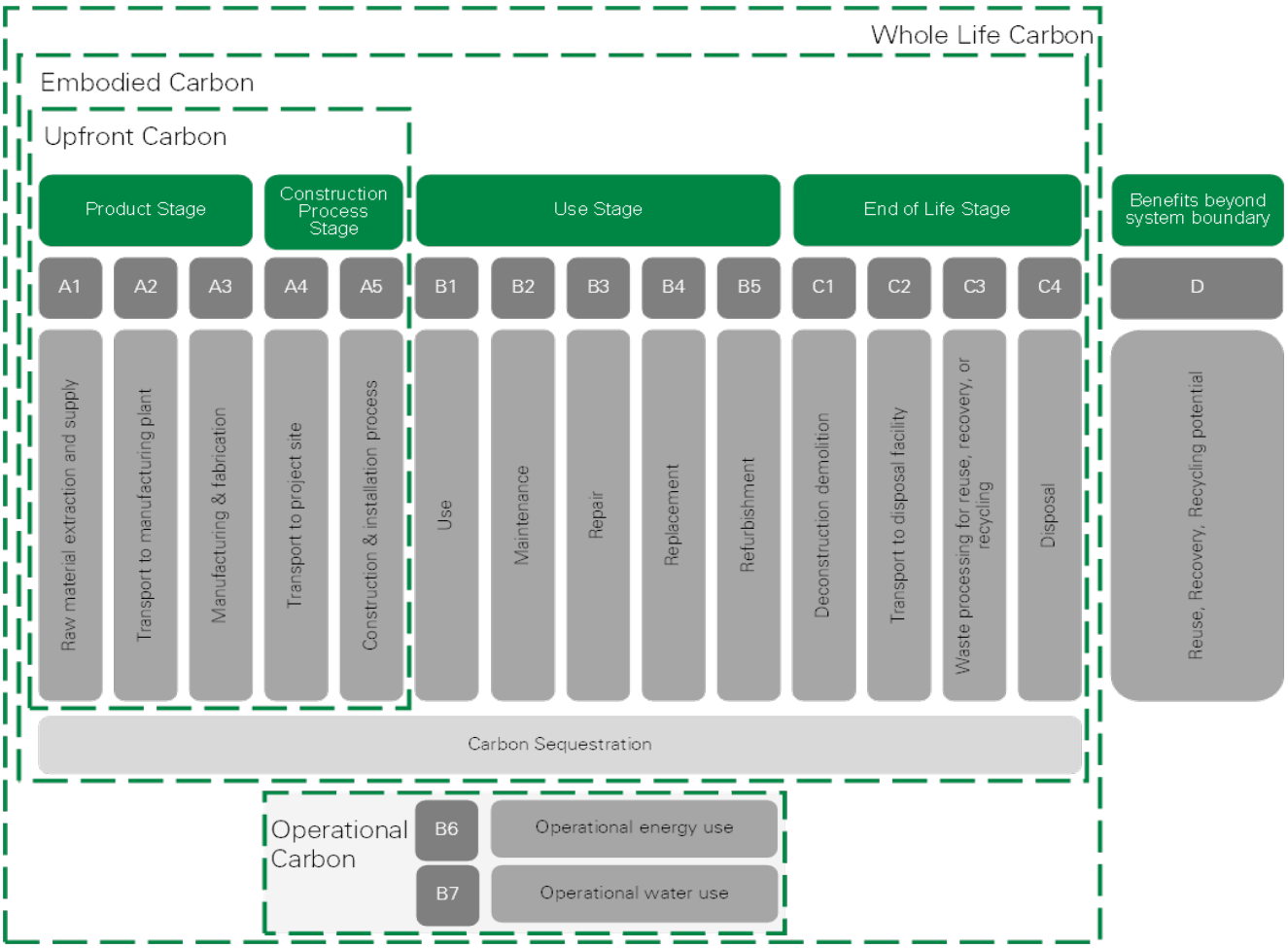


EMBODIED CARBON

1.20 The quantification of carbon emissions associated with construction developments is achieved through the application of Life Cycle Assessment (LCA) software. LCA covers a wide range of environmental indicators for materials, including principally, Global Warming Potential or GWP ($kgCO_2eq$). GWP provides the value of an element's various greenhouse gas emissions (e.g., methane, refrigerants), which have varying GWP intensities. To provide a single value, the impacts are scaled in comparison to CO_2 via the use of CO_2 equivalent (CO_2eq).

1.21 Figure 3 is taken from RICS Whole life carbon assessment for the built environment 2nd edition (Sep 2023) and shows life cycle stages and information modules associated with all buildings and infrastructure developments.

Figure 3 Life cycle stages and modules as per EN 15804



1.22 Whole Life Carbon (WLC) refers to the total amount of greenhouse gas emissions associated with a building or infrastructure project throughout its entire lifespan, from the extraction of raw materials to its eventual disposal, covering all life cycle modules A-C shown in the figure above.

1.23 To understand the immediate 'construction' carbon impacts of a scheme, studies tend to prioritise focus on **Modules A1 – A5**.

1.24 **Modules A1-A3** are product stage impacts, associated with raw material extraction and supply (e.g., mining of minerals, or quarrying of materials), the transport of these raw materials to the place of manufacture, and the emissions associated with this manufacture process.

1.25 **Module A4** reflects the transport of the completed product or material to the construction site.

1.26 **Module A5** covers the impact of the actual construction process itself (e.g., plant use, site fuel

use, site waste production).

1.27 It is considered good practice however to also quantify and review the emissions associated with the wider Embodied Carbon scope (in-use, repair, replacement i.e. **B1-B4**, and eventual end-of-life processes i.e. **C1-C4**). In the case of this study, the study has focused on modules A1-A5, to ensure consistency of approach between the buildings and rail infrastructure.

1.28 This study has used the 'OneClick' LCA tool, which is a modelling software which ensures alignment with a variety of industry accepted standards and requirements, and includes a database of environmental impacts which is continuously updated. This database relies upon Environmental Product Declarations (EPDs), which are a mechanism for manufacturers to audit and declare the environmental burden of their products. EPDs are subject to detailed industry standards (e.g., ISO14025 standard), 3rd party verified and are only valid for a period of time before a re-evaluation is required.

1.29 The underlying principles of calculating WLC emissions is based on the Royal Institution of Chartered Surveyors (RICS) Whole Life Carbon guidance (Ref: Whole life carbon assessment for the built environment 2nd edition, September 2023).

NET ZERO CARBON (NZC)

1.30 Industry scrutiny of embodied carbon has progressed beyond simple quantification and minimisation and now incorporates principles to deliver a 'Net Zero' balance of emissions associated with development and operations. This approach and its underlying definition have historically varied considerably across different sectors, organisations and timeframes.

1.31 The UK Green Building Council (UKGBC) developed a standard for defining buildings as Net Zero Carbon, both in Construction (upfront carbon, modules A1-A5) and in Operation (operational carbon, module B6). The definition was released in April 2019, and since that point has been the principal method of demonstrating a Net Zero approach to development and construction, particularly for commercial developments such as industrial and logistics units. The UKGBC route applies the principles of the RICS methodology for calculating whole life carbon.

Figure 4 UKGBC, Net Zero Carbon Buildings: A Framework Definition (April 2019).

1.32 The applicant is a Keystone member of UKGBC and have a longstanding commitment to deliver all units to UKGBC's Net Zero Carbon 'In Construction' framework

1.33 The intention of the UKGBC framework was to instil principles that would improve transparency in carbon accounting, to create robust requirements and encourage action in the industry. The guidance was intended as a stepping stone to a more robust, industry accepted definition of NZC in the built environment.

1.34 The UK Net Zero Carbon Buildings Standard (UK NZCBS) was released in late September 2024 in Pilot format. The standard has been developed by the UKGBC, alongside a variety of other industry organisations (such as Building Research Establishment (BRE), Chartered Institue of Building Services Engineers (CIBSE), Institute of Structural Engineers (IStructE), Royal Institue of British Architects (RIBA), Low Energy Transformation Initiative (LETI) and RICS).

Figure 5 UK Net Zero Carbon Buildings Standard – Pilot Version

1.35 In its current form, the standard cannot be complied with until 1 year following full occupation and also needs to be continually complied with on an annual basis, however upfront carbon limits have been provided for new build industrial developments from 2025 through to 2050 against which compliance would need to be demonstrated.

1.36 It should be noted these upfront carbon limits are based on a full fit-out scope and do not make allowances for speculative or delineated developments delivered to a Shell / Shell & Core. The standard will also require achievement of similar embodied carbon limits covering the full life cycle of the building, however these limits are not currently specified in the standard's current Pilot format.

1.37 Likewise there are other limits and benchmarks within the pilot standard which would also need to be complied with, covering operational energy use intensities (EUI), refrigerant Global Warming Potential (GWP) limits, renewable energy generation targets and specific limits on renewable systems embodied carbon (to discourage exclusion of renewables to meet a building-wide upfront / embodied carbon limit) for full compliance.

1.38 Due to the currently incompatible nature of the UK NZCB standard with speculative developments, and the Pilot nature of the scheme currently, the UKGBC have advised that their original Net Zero Carbon Buildings framework definition is still live and supported, so this can be used to demonstrated NZC principles have been followed for buildings.

RESULTS AND DISCUSSION

Industrial & Logistics Units

1.39 The table below demonstrates the calculated upfront embodied carbon emissions which are

expected for the proposed buildings on site.

1.40 The masterplan has been used to assess upfront embodied carbon performance rather than the parameters plan as the masterplan provides a greater clarity on building sizes and configurations, which is critical to estimating the upfront embodied carbon performance of each unit. It should be noted however that the masterplan is only illustrative at this stage.

Table 2 Estimated Upfront Carbon Emissions of the I&L units

Element	GIA	Approach Taken	Modelled Upfront Embodied Carbon*	
			tCO_2e	$kgCO_2/m^2$
Unit 1	12774	Blueprint design prediction, single sided unit	5760	451
Unit 2	30072		12632	420
Unit 3	22176		9559	431
Unit 4	10870		4965	457
Unit 5	36343		15018	413
Unit 6	16095		7123	443
Unit 7	7804		3657	469
Unit 8	120095	Blueprint design prediction, cross docked unit equivalent	51406	428
Unit 9	86836	Blueprint design prediction, single sided unit	33159	382
Unit 10	13285		5972	449
Unit 11	13657		6125	449
Unit 12	68514	Blueprint design prediction, cross docked unit	30941	452
Unit 13	83027	Blueprint design prediction, single sided unit	31838	383
Unit 14	23616		10126	429
Unit 15	13285		5972	449
Unit 16	25892		11016	425
Unit 17	16095		7123	443
11.2A Bond Store	417	Modelled from Cost Plan	182	435
1.2B Engineers Store / VMU	837		361	429
11.2C RFT Office	1171		742	632
Total			**253,677**	

*Note – the upfront embodied carbon figures include all elements associated with a typical, speculative industrial and logistics building and associated external areas. This includes photovoltaic panels

1.41 Below sets out the results of the upfront embodied carbon modelling for the rail infrastructure.

Table 3 Estimated Upfront Carbon Emissions of the rail and site infrastructure

Element	Modelled Upfront Embodied Carbon (tCO_2e)
3 Access Works & 5 Drainage	1,109
4 On Site Highways	2,390
6 Landscaping Works, 7 Abnormals & 10 Off Site Highways	3,903
11 On Site RFT Works, 11.1 Lorry Park & Access Road to RFT & 12 Off Site RFT Works	5,546
3.1 Parkside Road Works	1,027
3.2 Newton Park Farm Access Road Works	745
3.3 New Roundabout Works	187
11.3 RFT Works	29,287
11.4 Private Rail Works	3,272
11.5 Rail Connected Building – Unit 13	1,617
11.6 Rail Connected Building – Units 8 & 9	3,189
12.1 – 12.5 Main Line Rail Works Off Site	1,895

SUMMARY

1.42 The table below demonstrates the calculated upfront embodied carbon emissions which are expected for the proposed scheme overall, combining the above 2no sets of results.

1.43 The modelling results are based on the outline planning information with the I&L units based on comparisons with historic data from equivalent developments delivered by the applicant, with information for the site and rail infrastructure taken from the project cost plan, drawings and other sources of information. The results are shown below.

Table 4 Estimated Upfront Carbon Emissions (Modules A1- A5), RIBA Stage 1

tCO_2e	I&L Units& Ancillary Buildings	Site Infrastructure	Rail Infrastructure
Upfront Embodied Carbon	291,729	10,766	51,527

1.44 The results demonstrate that the I&L units are expected to comprise over 80% of the total schemes upfront embodied carbon emissions.

1.45 The applicant has committed to delivering the I&L units to the UKGBC Net Zero Carbon in Construction framework.

1.46 It is recommended that the modelling is further developed by the team during the upcoming detailed design and construction stages.

APPENDIX – INPUT SOURCES

1.47 Detail of the data used to demonstrate results for the I&L units - taken from Tritax Big Box Developments (TBBD) Blueprint Embodied Carbon Assessment (V1.2 July 25).

Figure 6 Tritax Blueprint specification expected upfront carbon emissions

GIFA		Blueprint Expected Result	
m^2	ft^2	tCO_2eq	$kgCO_2eq/m^2$
5,000	53,820	2,424	485
10,000	107,639	4,597	460
15,000	161,459	6,677	445
20,000	215,278	8,695	435
25,000	269,098	10,668	427
30,000	322,917	12,604	420
35,000	376,737	14,511	415
35,000	376,737	16,793	480
40,000	430,556	16,391	410
40,000	430,556	18,968	474
45,000	484,376	18,249	406
45,000	484,376	21,116	469
50,000	538,195	20,087	402
50,000	538,195	23,241	465
55,000	592,015	25,345	461
60,000	645,834	27,430	457
65,000	699,654	29,498	454
70,000	753,473	31,549	451
75,000	807,293	33,585	448
80,000	861,112	35,608	445
85,000	914,932	37,617	443
90,000	968,751	39,614	440
95,000	1,022,571	41,599	438
100,000	1,076,390	43,573	436

1.48 Details of any supporting drawings used

- 7275 – 095 V2 Illustrative Masterplan.pdf
- 7275 - 031 Illustrative Bonded Store.pdf
- 7275 - 032 Illustrative Engineers Store and Vehicle Maintenance Store.pdf
- 7275 - 040 Railport Offices - Plans and Elevatons.pdf
- 7275 - 028 Rev D Railport Phase 1.pdf

- 7275 - 030 Rev B Railport Finished State.pdf
- ILPN-BWB-RGN-XX-DP-RC-0001-S2-P01 General Arrangement Sheet 1.pdf
- ILPN-BWB-RGN-XX-DP-RC-0003-S2-P01 General Arrangement Sheet 3.pdf
- ILPN-BWB-RGN-XX-DP-RC-0004-S2-P01 General Arrangement Sheet 4.pdf
- ILPN-BWB-RGN-XX-DP-RC-0006-S2-P01 General Arrangement Sheet 6.pdf
- ILPN-BWB-RGN-XX-DP-RC-0008-S2-P01 General Arrangement Sheet 8.pdf
- ILPN-BWB-RC-XX-DD-C-0001-S2-P01 Proposed Typical Detail Cess Walkway.pdf
- ILPN-BWB-RC-XX-DD-C-0002-S2-P01 Proposed Typical Detail Pedestrian Crossing Walkway.pdf
- ILPN-BWB-RGN-XX-DD-RC-0003-S2-P01 Proposed 3 Track UTX.pdf
- ILPN-BWB-RGN-XX-DP-RC-0001-S2-P01 General Arrangement Sheet 1.pdf
- ILPN-BWB-RGN-XX-DP-RC-0002-S2-P01 General Arrangement Sheet 2.pdf
- ILPN-BWB-RGN-XX-DP-RC-0003-S2-P01 General Arrangement Sheet 3.pdf
- ILPN-BWB-RGN-XX-DP-RC-0004-S2-P01 General Arrangement Sheet 4.pdf
- ILPN-BWB-RGN-XX-DP-RC-0005-S2-P01 General Arrangement Sheet 5.pdf
- ILPN-BWB-RGN-XX-DP-RC-0006-S2-P01 General Arrangement Sheet 6.pdf
- ILPN-BWB-RGN-XX-DP-RC-0007-S2-P01 General Arrangement Sheet 7.pdf
- ILPN-BWB-RGN-XX-DP-RC-0008-S2-P01 General Arrangement Sheet 8.pdf
- ILPN-BWB-RGN-XX-DP-RC-0009-S2-P01 General Arrangement Sheet 9.pdf
- ILPN-BWB-RGN-XX-DP-RC-0010-S2-P01 General Arrangement Sheet 10.pdf
- ILPN-BWB-RGN-XX-DP-RC-0011-S2-P01 General Arrangement Sheet 11.pdf
- ILPN-BWB-RGN-XX-DP-RC-0012-S2-P01 General Arrangement Sheet 12.pdf
- ILPN-BWB-RGN-XX-DR-CH-1101-S0-P01_Intermodal Terminal Kerbs & Surface Finishes Sheet 1 of 4.pdf
- ILPN-BWB-RGN-XX-DR-CH-1102-S0-P01_Intermodal Terminal Kerbs & Surface Finishes Sheet 2 of 4.pdf
- ILPN-BWB-RGN-XX-DR-CH-1103-S0-P01_Intermodal Terminal Kerbs & Surface Finishes

Sheet 3 of 4.pdf

- ILPN-BWB-RGN-XX-DR-CH-1104-S0-P01_Intermodal Terminal Kerbs & Surface Finishes Sheet 4 of 4.pdf
- ILPN-BWB-WAT-XX-DR-C-0001_Concept Drainage Strategy_S0_P01.03 MPB.pdf
- Main Site – Cost Plan 6.02 (Phased)

1.49 Assumptions for 'plain line NR Type 1' railway track per meter length are:

- 2no steel rails (combined weight 56.3kg/m);
- concrete sleepers (275 kg/m equivalent, based on 650mm spacing);
- steel fastenings (5 kg/m equivalent, including 2no baseplates, clips and pads per sleeper); and
- ballast (1,189 kg/m equivalent, estimated for standard railway profile).
- These assumptions are based on the Catalogue of Network Rail Standards Issue 110 and NR/L2/TRK001 Module 11 Track geometry – inspections and minimum actions.

1.50 Backfill to all service trenches and drainage pipework is assumed at an average of 0.05m3 per linear meter.

1.51 Details for site specific drainage infrastructure, such as manholes, inspection pits and foul pumping stations have been assumed based on similar details from other Tritax developments. Cellular attenuation storage is assumed at 45 kg/m3 of plastic crates, based on product specifications for typical products used.

APPENDIX – EXCLUSIONS

1.52 The statements and table below highlights key assumptions and exclusions.

Construction Stage Carbon Emissions

1.53 To further supplement the information provided by the design team, certain assumptions have been made. These are based on reasonable industry standards and on experience with similar building projects. These assumptions were verified with the design team / client team, and are outlined below.

1.54 The building values include full upfront embodied carbon scope (A1-A5), with the approach taken being either direct modelling based on the cost plan information provided (for the rail port ancillary buildings) or prediction based on gross internal area using the applicant's blueprint specification (for the units).

1.55 The infrastructure values have been modelled directly based on the cost plan information provided, covering Modules A1-A3 based on representative EPDs for the materials indicated, and Modules A4 and A5.3 (waste management) in line with RICS WLC guidance 2nd edition default allowances.

1.56 Transport impacts (Module A4) for have been included in line with the RICS Whole Life Carbon guidance 2nd edition. No specific product transport details have been included, as procurement has not been defined at this early stage.

1.57 Construction impacts (Module A5) for the buildings have been included in line with assumed fuel usage and waste production values across the full construction period of the project as follows:

- Site Waste: 3.2t per 100m2 gross internal area based on BRE good practice site waste guidance.
- Site Energy Use: 4.1l diesel per m2 of development footprint with an additional 10% contingency, based on the as built records from developments completed by the Applicant.

1.58 For all non-building elements, an allowance for Module A5.2 (construction activities) has not been made, as no default allowances for infrastructure schemes are provided in RICS WLC guidance 2nd edition, though it is noted this could be a significant uplift and is referenced in the 'exclusions' below.

1.59 In the case of the Proposed Development, these units are likely to be developed speculatively, so occupier fit-out was not included in the modelling. Additionally, given the wide array of possible future occupiers and subsequent fit out levels for a scheme of this nature, it is not feasible to estimate (as it would be in a speculative office, where the occupier fit out scope is more consistent). A consistent theme across the built environment is that the core building structure (substructure, superstructure, façade) forms the principal source of upfront carbon emissions for all scheme types, and all of these elements are included in the scope of this study. As such, future occupier fit out is not expected to form a significant proportion of the schemes total upfront carbon emissions.

1.60 A 15% early design stage contingency has been applied to all results in line with RICS WLC guidance 2nd edition

1.61 At this early stage, in absence of a detailed site investigation the possible need for specialist groundworks is unknown. This element has therefore not been included at this stage.

1.62 At this stage, high level allowances for mechanical and electrical installations have been made based on information provided by the design team, using a 'typical' office fit out in the main office / hub office spaces. These assumptions have been qualified with MEP input, to reflect the best estimate at this early design stage.

1.63 Where no EPD information or specific product references have been provided, generic UK EPDs have been selected matching the closest description to the materials detailed on the documents provided, with assumed recycled contents aligning with RICS Whole Life Carbon

Guidance.

1.64 Modules associated with the operation of the assets (B1-B7 and C1-C4) are excluded from this scope of assessment to ensure consistency of approach between the buildings and site infrastructure.

Table 5 Key modelling exclusions

ELEMENT	EXCLUSIONS
Units 1 - 17	Assumes no abnormals (e.g. specialist groundworks), attenuation tanks excluded but included in Infrastructure items below
11.2A Bond Store	None
1.2B Engineers Store / VMU	
11.2C RFT Office	
1 Enabling Works & 2 Site Wide Works	Construction impacts (fuel, electricity etc.)
3 Access Works & 5 Drainage	Construction impacts (fuel, electricity etc.) Break out / reinstatement of existing roads
4 On Site Highways	Construction impacts (fuel, electricity etc.)
6 Landscaping Works, 7 Abnormals & 10 Off Site Highways	Construction impacts (fuel, electricity etc.) Allowance for footpaths and ranch fencing Remote junctions and works to gantries, active travel schemes
8 Archaeology & 9 Services	Construction impacts (fuel, electricity etc.) Substations, cabling and utilities connections
11 On Site RFT Works, 11.1 Lorry Park & Access Road to RFT & 12 Off Site RFT	Construction impacts (fuel, electricity etc.) Cranes, vehicle washdown area, HGV refuelling

ELEMENT	EXCLUSIONS
Works	tank
3.1 Parkside Road Works	Construction impacts (fuel, electricity etc.)
3.2 Newton Park Farm Access Road Works	Construction impacts (fuel, electricity etc.)
3.3 New Roundabout Works	Construction impacts (fuel, electricity etc.)
11.3 RFT Works	Construction impacts (fuel, electricity etc.) Gabions for pond level changes Surface water drainage to rail tracks Flow control chambers and foul pump stations Overhead line electrification
11.4 Private Rail Works	Construction impacts (fuel, electricity etc.)
11.5 Rail Connected Building – Unit 13	Construction impacts (fuel, electricity etc.)
11.6 Rail Connected Building – Units 8 & 9	Construction impacts (fuel, electricity etc.)
12.1 – 12.5 Main Line Rail Works Off Site	Construction impacts (fuel, electricity etc.) Single track cantilever structures Drainage to mainline track Steel trusses to bridges and piled foundations / matts