Broadland District Council Carbon Footprint report for 2024/25

Highlights:

Our Carbon Footprint methodology was independently verified by Groundwork East in 2025. Recommendations of changes to the methodology have been adopted and retrospectively applied to all previous reporting years.

Frettenham Depot has continued to use HVO fuel in our refuse collection fleet instead of diesel, helping to keep emissions low.

In February 2024, the gas heating system at the Council's main office (Horizon Centre) changed to air source heat pumps (ASHPs). The emissions savings from this change can be seen in this footprint report.

Most of the electricity contracts the Council has purchased are 100* REGO (Renewable Energy Guarantees of Origin) backed renewable energy. Emissions associated with this purchased electricity is included in the report (gross emissions) but does not form part of the footprint total (net emissions).

Broadland District Council's 2024/25 carbon footprint is 425.58tCO_2e.

*Renewable Energy Guarantees of Origin (REGO) certificates allow electricity suppliers to show customers how much electricity has been generated from renewable sources each year.

Contents

Background to this Report

This report calculates the greenhouse gas emissions arising from the council's own activities. This annual Greenhouse Gas Report follows HM Government Environmental Reporting Guidelines with emissions broken down into three scopes and reported in Carbon Dioxide Equivalent (CO_2e), calculated using the UK Government's 2024 carbon conversion factors.

Broadland District Council
Horizon Centre, Broadland Business Park, Peachman Way, Norwich, NR7 0WF
1st April 2024 to 31st March 2025

In September 2022 Broadland Council purchased the Horizon Centre with South Norfolk Council as the new office base for both councils. All staff moved to the Horizon Centre in June 2023. However, Thorpe Lodge is still currently owned and maintained by Broadland District Council, so any energy use associated with the building still falls within the 2024/25 carbon footprint, even if the building is not used as the Council's main office anymore.

Scopes and Inclusions

Scope	Fuel/Activity	Location	Data Source
Scope 1	Mains gas	Temporary Accommodation	Bills
	Heating oil	Frettenham Depot	Meter reads
	Diesel in owned vehicles	Energy van Handyperson van	Estimated annual mileage
	Biomass wood chip	Frettenham Depot	
	HVO	Frettenham Depot	Litres used
Scope 2	Electricity	Thorpe Lodge	meter reads
	Electricity	Horizon Centre	Meter reads
	Electricity	Carrowbreck House	Bills
	Electricity	Frettenham Depot	Meter reads
	Electricity	Streetlights	Bills
	Electricity	Toilets	Bills
	Electricity	Temporary Accommodation	Bills
Scope 3	Mileage	Staff and councillor business travel	Mileage claims
	HVO	Waste Fleet (Veolia operated)	Litres fuel recorded
	Waste disposal in council buildings	Thorpe Lodge	Waste notices and estimates of volume and frequency of bin emptying
	Waste disposal in council buildings	Carrowbreck House	Waste notices and estimates of volume and frequency of bin emptying
	Water use in council buildings	Thorpe Lodge Carrowbreck House	Estimated
	Gas and electricity emissions	Temporary Accommodation	From EPC data (where residents pay their own bills)

Scope 1: These are Direct Emissions which arise from the activities of an organisation and include fuel combustion on site such as gas boilers and fleet vehicles.

Scope 2: These are Indirect Emissions from electricity purchased and used by the organisation. Emissions are created during the production of the energy which is eventually used by the organisation.

Some of the grid electricity purchased by the council is 100% renewable backed with REGO (Renewable Energy Guarantees of Origin) certificates. The emissions associated with this purchased electricity will not be recorded in the net total and overall carbon footprint total. The emissions associated with the purchased renewable electricity are still recorded within the gross footprint, as it is important to track the electricity use. If the electricity tariffs change to a non-renewable tariff, the emissions associated with this purchased electricity would return to the net footprint.

Scope 3: These are all other Indirect Emissions from activities of the organisation, occurring from sources that they do not own or control. In this GHG report, these cover emissions associated with business travel by employees. We also include emissions associated with transmission and distribution losses for grid electricity and the well to tank emissions for all fuels.

Scope 3 can include a wide range of indirect emission sources such as supply and demand chains and staff commuting emissions although at present the data is not available for this.

For Broadland the waste fleet is operated by Veolia, so the emissions associated with this fall into scope 3. Water use and waste disposal from owned buildings is also included in scope 3.

Outside of Scopes*

The waste vehicles operated by Veolia previously used diesel, but since April 2022 they have instead used HVO fuel. The in-scope emissions for HVO, do not include any of the carbon dioxide from the vehicle's tailpipe associated with combustion, because the carbon dioxide emissions are accounted for by being absorbed when the crop was grown. This is based on conversion factors produced by Government. It is required to report the carbon emissions associated with the use of HVO fuel in an outside of scopes section which does not count towards the footprint total.

Other greenhouse gases associated with HVO use must be reported within the in-scope emissions of the footprint, and therefore any emissions associated with HVO seen in this report refers to greenhouse gases other than carbon dioxide.

<u>Inclusions</u>

Buildings that are owned and operated by the councils have been included.

Example calculation method:
Electricity use (kWh) x conversion factor associated with grid electricity = emissions $kgCO_2e$

GHG Emissions Statement

Broadland District Council's Carbon Footprint for 2024/25 has been calculated as 425.58 tCO_2e, the breakdown is shown in Table 1.

	2024/35	tCO_2e
Scope 1	Natural Gas	24.56
	Heating Oil	0.50
	Biomass	0
	Authority owned vehicles	6.24
Scope 2	Electricity	83.58 (of which 62.27 renewable supply)
Scope 3	Staff business travel	35.58
	scope 3 electricity	28.82
	Waste Disposal	0.06
	Water Use & treatment	0.84
	Grounds maintenance	7.32
	HVO fuel	16.67
	Well-to-tank (all liquid/gas fuels)	278.94
TOTAL		425.58 (without renewable supply)

Intensity Measurement

In 2021 the population of Broadland was 131,700. This can be used to calculate an intensity measurement of $kgCO_2e$ per resident.
This then allows for comparison with other councils. It should be noted though that not all councils offer the same services or report on the same activities.

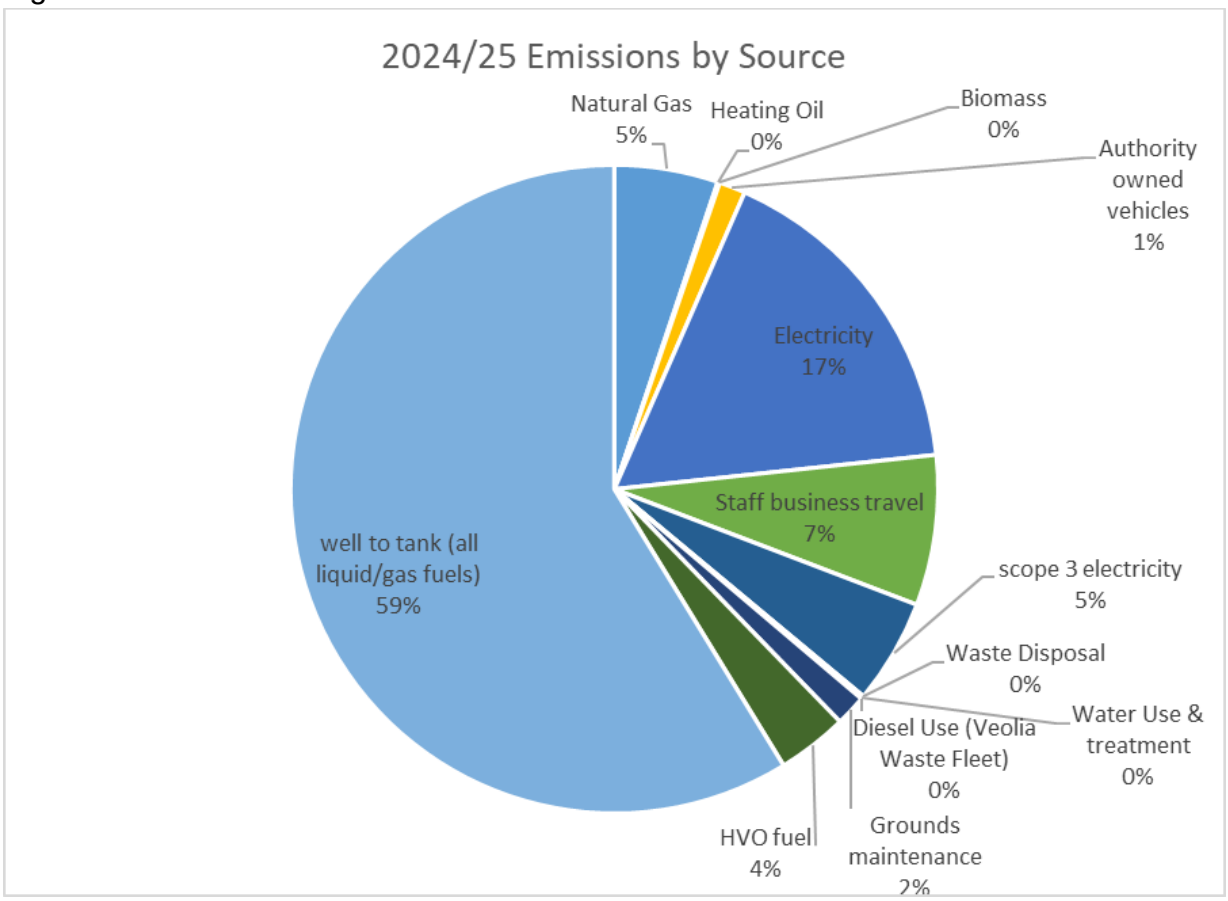
Table 2 shows a comparison with other councils in Norfolk

Council	GHG emissions (tCO2e)	Reporting year	Population	Intensity ratio ($kgCO_2e$ per resident)
Broadland	425.58	2024/25	130,700	3.25
South Norfolk	1,886.52	2023/24	141,900	13.29
Norwich	3,218	2023/24	144,000	22.34
Breckland	7,371	2023/24	141,500	52.09
Kings Lynn and West Norfolk	2,537	2023/24	154,300	16.44
North Norfolk	4,765	2023/24	103,000	46.26
Great Yarmouth	7,834	2019/20	99,800	78.49

It is important to note that there are differences amongst the different local authorities in Norfolk that can greatly influence a Council's carbon footprint. For example, South Norfolk Council operates leisure centres that contribute towards their carbon footprint, whereas Broadland District Council owns and operates fewer assets that would contribute towards our carbon footprint.

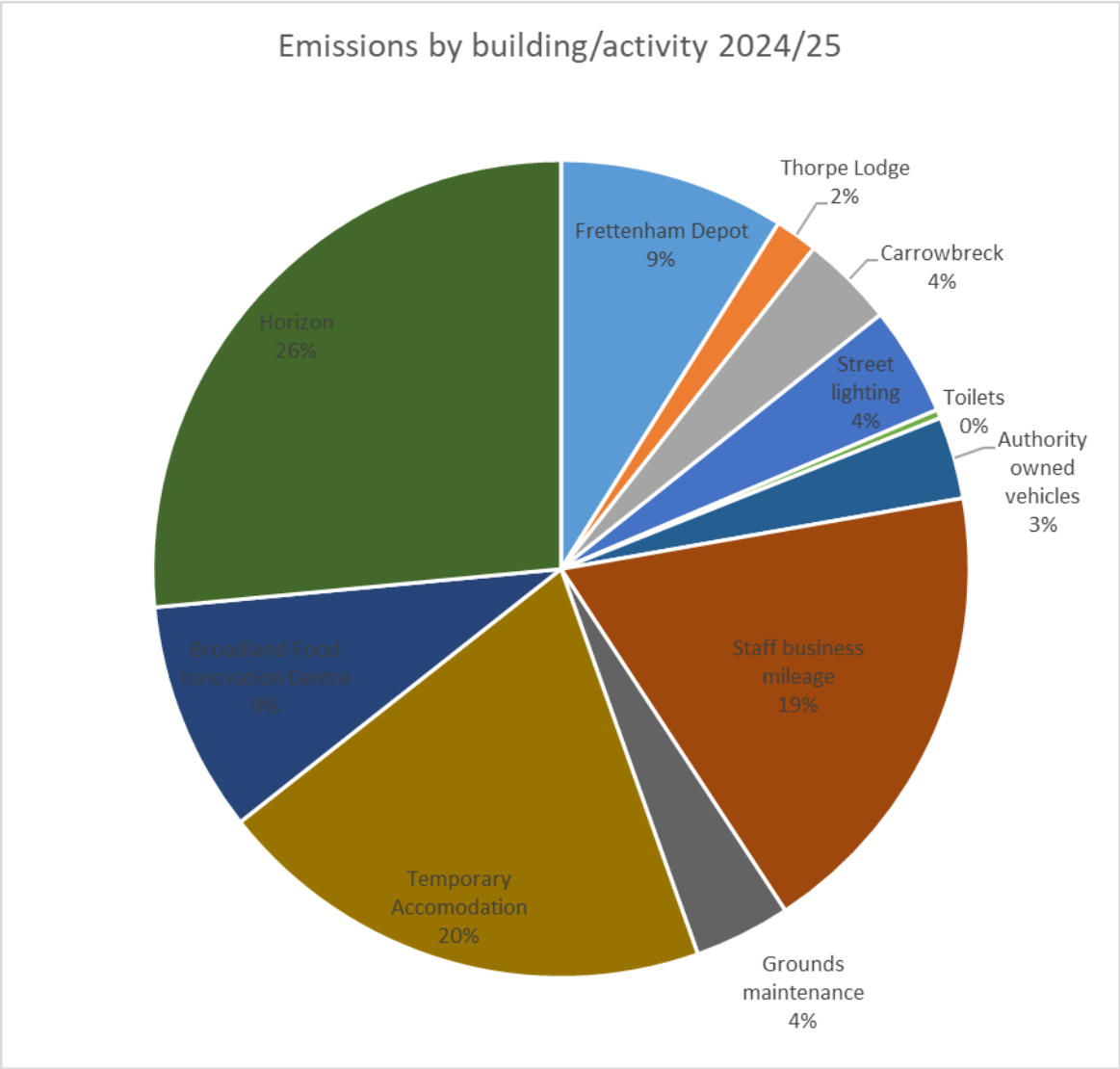
Breakdown of Emissions

Figure 1: Pie chart of emissions from source



The highest proportion of Broadland District Council's emissions is attributed to the well to tank emissions from all liquid or gas fuels. This is defined as all the greenhouse gas emissions from the production, transportation, transformation and distribution of the fuel to power the vehicle/building. The second biggest proportion is from electricity, followed by staff business travel and natural gas.

Figure 2: Pie chart of emissions from building/activity



This chart shows the emissions associated with each building or activity.

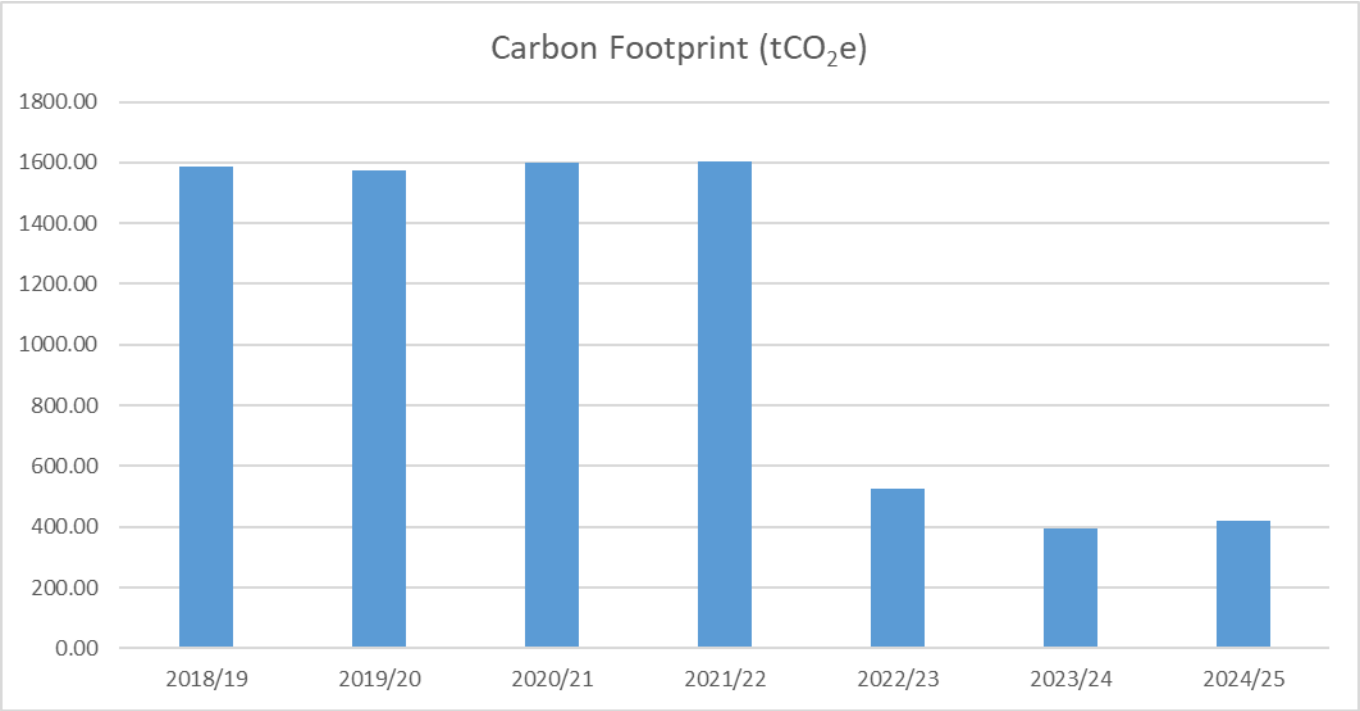
The Horizon Centre is responsible for the biggest proportion followed by emissions associated with our temporary accommodation and staff business mileage.

Emissions Trends

Table 3 shows the changes in emissions over time.

	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25
Scope 1	66.88	68.01	64.92	91.87	109.85	55.44	31.32
Scope 2	163.57	147.76	121.04	106.63	115.79	99.22	83.58
Scope 3	1356.66	1359.70	1411.55	1404.67	299.94	270.53	372.96
Total gross emissions	157.11	1575.48	1597.51	1603.17	529.59	425.19	482.23
Renewable electricity generated					24,496 kWh generated saving 5.17 tCO2e avoided from grid electricity	1,978,005.00 (kWh) generated saving 409.59tCO2e from avoided grid electricity	256,835.09 (kWh) generated saving 53.17tCO2e from avoided grid electricity
Offsets	0	0	0	0	0	0	0
Green tariff	0	0	0	0	0	29.82	62.28
Total annual net emissions	**157.11**	**1575.48**	**1597.51**	**1603.17**	**529.59**	**395.37**	**425.58**
Outside of scopes					1148.214	1118.791	1138.71

Figure 3 – Trends in annual emissions

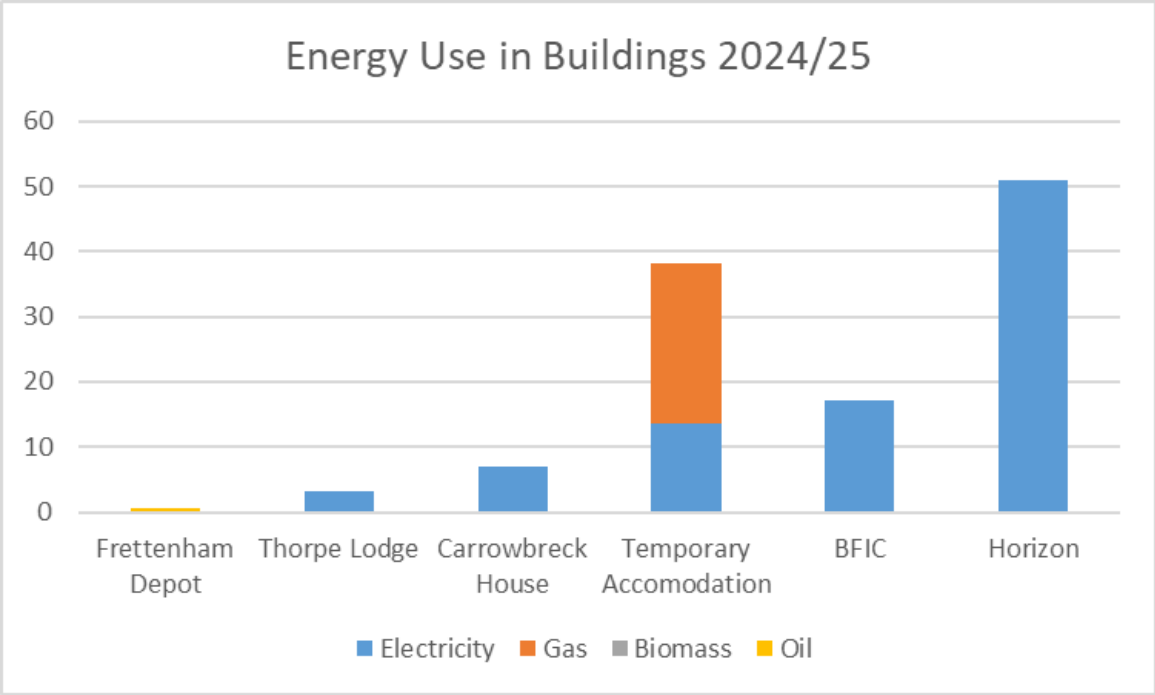


Annual emissions from 2024/45 show an increase of approximately 24 tCO_2e compared to the previous carbon footprint (2023/24). Despite a decrease in Scope 1 and 2 emissions compared to the previous reporting year, Scope 3 emissions have increased as a result in a doubling of the conversion factor used to calculate emissions associated with HVO fuel consumption, by DESNZ.

Energy Use in Buildings

Electricity and gas usage has been provided from meter readings.

Figure 4 – Energy use by buildings



The bar chart shows the energy use from the different buildings that the council operates. The Horizon, the main office base, has the highest emissions, followed by Thorpe Lodge.

Thorpe Lodge

Thorpe Lodge is unoccupied; however, Broadland District Council still own the building so are still responsible for any energy consumption attributed to the building.

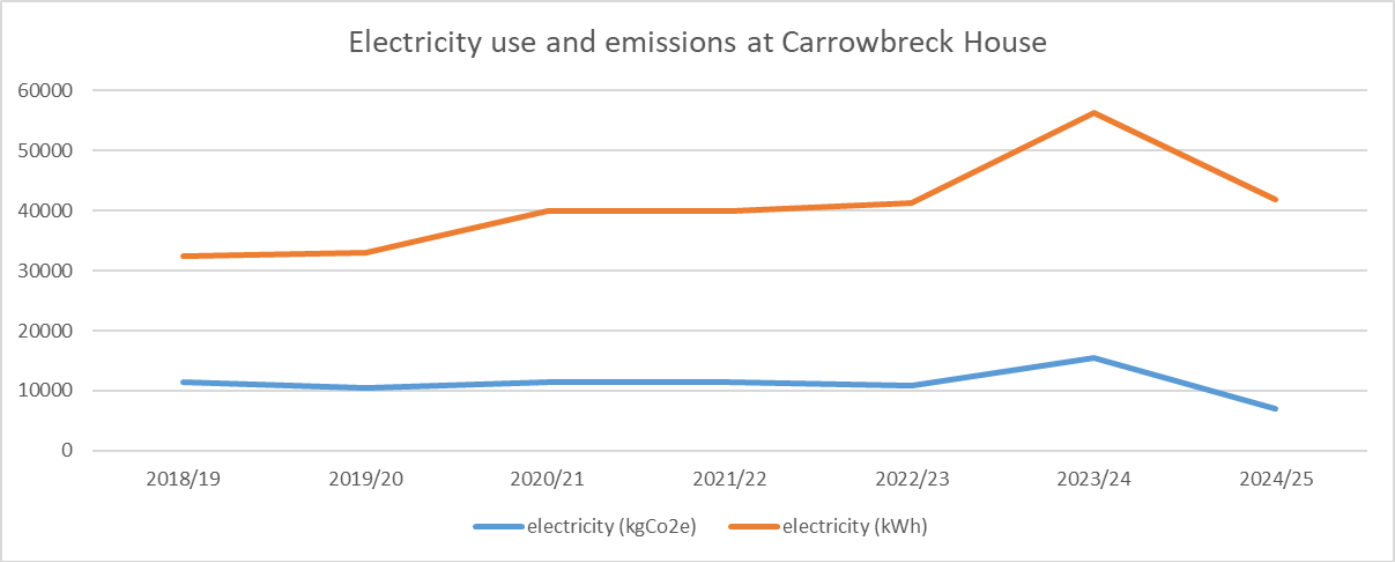
Carrowbreck House

Carrowbreck House is our training centre, it has solar panels and a ground source heat pump. During 2024/25, Carrowbreck House was moved on to a 100% renewable energy tariff. Emissions associated with electricity consumption at Carrowbreck House included within the net carbon footprint therefore only capture emissions from before the tariff was changed.

Table 5 – Carrowbreck House trends in emissions

	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25
Electricity	9.16	8.46	9.31	8.57	7.99	11.65	4.21
Scope 3 electricity	2.25	2.00	2.20	3.19	2.82	3.81	2.84

Figure 6 – chart to show trends in electricity use (kWh) and emissions (kgCO2e)



Horizon Centre

The Horizon Centre is the office building for South Norfolk and Broadland Councils. The emissions are split between the two councils. The Horizon Centre has a considerable roof mounted solar array and solar carports. Initially there was a gas boiler system installed, this was removed and replaced with heat pumps in February 2024. The emissions savings from this are now reflected in the carbon footprint reports.

Table 6 – emission sources for Horizon Centre

	2024/25 (tCO_2e)
Grid Electricity	38.3
Scope 3 electricity	12.5
Electricity generated from PV	*53.17 (256,835 kWh)*
Electricity exported to grid	*25.54 (123,306 kWh)*
Gas	0
Water and treatment	0.17
Waste – general	0.36
Waste – recycling	0.02
Waste – food	0.005
Waste – Waste from Electrical and Electronic Equipment (WEEE)	0.00

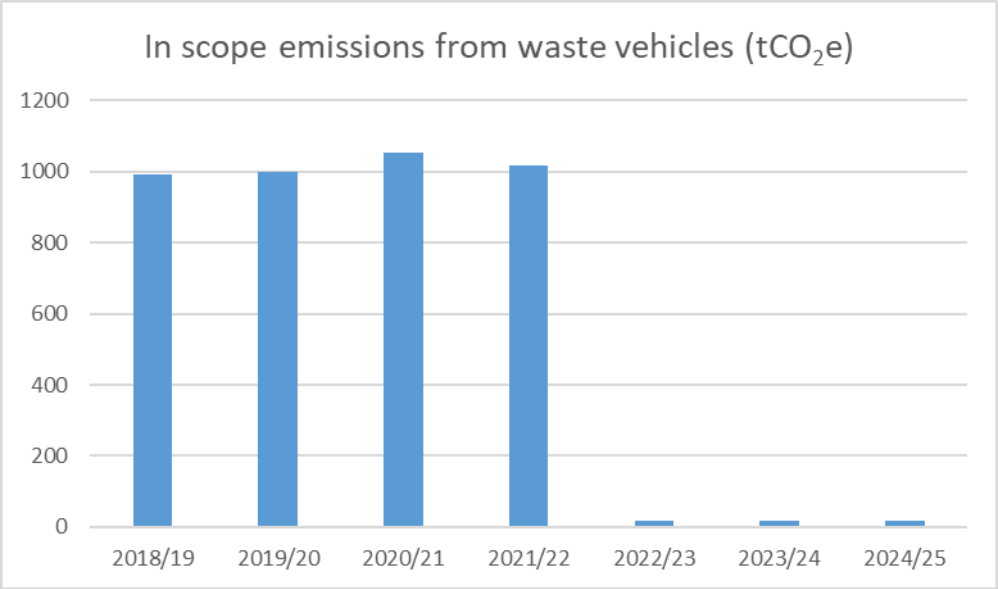
The table shows the emissions associated with each energy use at the Horizon Centre. The electricity grid tariff is 100% renewable, so this is not counted towards the total footprint. The electricity generated and exported is expressed in kWh and then tonnes of emissions for grid electricity that are saved, this is for information only and does not form part of the overall footprint.

The main building at the Horizon Centre no longer uses gas as of February 2024, as the gas boilers have been replaced by air source heat pumps. The heat pumps run on electricity, so due to the solar PV and renewable energy tariff, there are no associated emissions in Scope 1 and 2 associated with the Horizon Centre.

Transport related emissions

Waste and Street scene fleet

Emissions associated with the waste fleet remain very low at approximately 16tCO_2e because of the use of HVO fuel instead of diesel.



Staff travel

The emissions associated with staff and member business travel are 35tCO_2e. This is a decrease of approximately 16tCO_2e compared to last year.

Independent Verification

As our baseline report was back completed in 2018/19, we have had the carbon footprint report for the previous reporting year (2023/24) independently verified by Groundwork East, to ensure that we continue to align with the GHG Protocol and best practice.

Since 2018/19 we have been producing our reports in house based on the methodology in our baseline report, which was also produced by Groundwork East. Through the verification, Groundwork East recommended that we make a few changes to how we are reporting our scope 3 emissions. Although we have been following the correct methodology, best practice for reporting scope 3 emissions has been updated since our baseline report was conducted.

The first recommendation relates to sessions associated with water treatment. Groundwork East have recommended that where data isn't available for all sites using water bills, we estimate that 90% of the water used goes to water treatment.

The second relates to additional emissions factors associated with scope 3 electricity. Our existing methodology included reporting emissions associated with electricity transmission and distribution losses (includes the energy loss that occurs in the transmission of electricity between the generator/powerplant to the organisations that purchase it). Groundwork East recommended that we also include well to tank emissions associated with both electricity consumption and electricity transmission. This covers the emissions associated with the extraction, refining and transportation of primary fuels before their use in the generation of electricity.

The third is the well to tank emissions associated with all liquid and gas fuels. This accounts for the upstream emissions associated with the extraction, refining and transportation of the raw fuel sources to where the fuel is used, prior to its combustion.

Appendix

Data tables

Scope 1		**2018/19**	**2019/20**	**2020/21**	**2021/22**	**2022/23**	**2023/24**	**2024/25**
Building/Activity	**fuel**	**emissions**	**emissions**	**emissions**	**emissions**	**emissions**	**emissions**	**emissions**
Thorpe Lodge	gas	57.59	60.87	54.29	69.33	66.9396	11.609262	0
Owned vehicles	Diesel	1.94	1.81	2.14	2.43	2.938536	6.4865237	6.244731
Frettenham Depot	heating oil	6.09	4.82	7.62	6.18	6.177596	0.762045	0.50803
Frettenham Depot	Biomass	1.27	0.51	0.87	1.31	0.303328	0.9591033	0
Horizon Centre	gas					19.19597	18.56512	0
Temporary Accommodation	gas				12.62	14.29	17.06	24.56
TOTAL		**66.88**	**68.01**	**64.92**	**91.87**	**109.85**	**55.44**	31.32

Scope 2		**2018/19**	**2019/20**	**2020/21**	**2021/22**	**2022/23**	**2023/24**	**2024/25**
Building/Activity	**fuel**	**emissions**	**emissions**	**emissions**	**emissions**	**emissions**	**emissions**	**emissions**
Thorpe Lodge	electricity	104.30	94.89	72.80	63.20	65.57477	27.706333	2.438945
Carrowbreck	electricity	9.16	8.46	9.31	8.57	7.99	11.65	4.21
Frettenham Depot	electricity	12.06	11.80	10.92	11.34	11.22358	10.539667	4.23
Streetlights	electricity	35.39	30.32	26.68	20.48	11.14178	6.2710792	6.264298
Ranworth toilets	electricity	0.29	0.11	0.03	0.03	0.36	0.29	0.24
Reedham toilets	electricity	0.06	0.08	0.04	0.04	0.12	0.15	0.17
TSA Toilets	electricity	0.42	0.38	0.00	no longer managed by BDC			
Coltishall toilets	electricity	0.34	0.30	0.22	0.23	0.22	0.00	0.23
South Walsham toilets	electricity	1.54	1.41	1.04	0.77	0.00	0.00	0.00
Horizon Centre	electricity					0.010856	26.346994	38.29566
Salhouse toilets	electricity	0.02	0.01	0.01	0.01	0.00	0.00	0.00
BFIC	electricity					17.02421	12.786485	12.85466
Cobbs Lodge								8.004035
Temporary Accommodation	electricity				1.97	2.14	3.48	6.64
TOTAL		**163.57**	**147.76**	**121.04**	**106.63**	**115.79**	**99.22**	83.58
Total excluding renewable tariffs								21.30

Scope 3		2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25
Building/Activity	**fuel**	**emissions**	**emissions**	**emissions**	**emissions**	**emissions**	**emissions**	**emissions**
Staff & member business travel	mileage	46.95	49.75	44.40	55.47	61.80736	51.293875	35.58
Thorpe Lodge	Scope 3 electricity	25.68	22.42	17.17	23.50	23.11631	9.069580	0.798475
Carrowbreck	Scope 3 electricity	2.25	2.00	2.20	3.19	2.82	3.81	2.84
Frettenham Depot	Scope 3 electricity	2.97	2.79	2.58	4.22	3.956519	3.450126	1.38
Streetlights	Scope 3 electricity	8.71	7.16	6.29	7.62	3.927683	2.052817	2.050839
Ranworth toilets	Scope 3 electricity	0.07	0.03	0.01	0.01	0.13	0.10	0.08
Reedham toilets	Scope 3 electricity	0.01	0.02	0.01	0.02	0.04	0.05	0.06
TSA Toilets	Scope 3 electricity	0.10	0.09	0.00	no longer managed by BDC			
Coltishall toilets	Scope 3 electricity	0.08	0.07	0.05	0.09	0.08	0.00	0.07
South Walsham toilets	Scope 3 electricity	0.38	0.33	0.24	0.29	0.00	0.00	0.00
Salhouse toilets	Scope 3 electricity	0.00	0.00	0.00	0.00	No longer managed by BDC		
Horizon Centre	Scope 3 electricity					0.003827	8.624604	12.53743
BFIC	Scope 3 electricity					6.001346	4.185615	4.208425
Frettenham Depot	HVO					16.53986	16.381317	16.67293
Frettenham Depot	diesel	993.26	997.57	1051.26	1016.24	0	0	0
Grounds maintenance (SNC depot)	diesel	8.66	8.05	8.04	8.05	8.04639	7.327364	7.327364
Thorpe Lodge	waste - residual efw	5.39	5.38	1.88	2.68	3.592948		
Thorpe Lodge	waste dry recycling	0.02	0.02	0.02	0.01	0.011984		
Thorpe Lodge	waste food waste compost	0.47	0.47	0.08	0.23	0.311584		
Thorpe Lodge	electrical waste	0.00	0.00	0.00	0.00	0.000913		

Thorpe Lodge	sanitary waste	0.00	0.00	0.00	0.00	0.001923		
Carrowbreck	waste - residual efw	0.61	0.61	0.21	0.30	0.408027	0	0
Horizon Centre	waste - residual efw					0	0.1220627	0.03677
Horizon Centre	waste dry recycling					0	0.0655215	0.019738
Horizon Centre	waste food waste compost					0	0.0195358	0.005885
Horizon Centre	electrical waste					0	0.0006493	0.000196
Horizon Centre	sanitary waste					0	0	0
Horizon Centre	water					0.011682	0.1100674	0.084214
Horizon Centre	sewage					0.019194	0.1128719	0.091945
BFIC	water						0.0964698	0.221902
Ranworth toilets	water	0.21	0.21	0.19	0.08	0.06	0.10	0.06
Reedham toilets	water	0.00	0.00	0.02	0.01	0.02	0.01	0.01
TSA Toilets	water	0.01	0.01	0.00	no longer managed by BDC			
Coltishall toilets	water	0.01	0.01	0.04	0.02	0.03	0.05	0.02
South Walsham toilets	water	0.00	0.00	0.00	0.00	0	0.00	0.00
Salhouse toilets	water	0.13	0.13	0.04	0.03	0.03	0.00	0.00
BFIC	sewage						0.0989278	0.242274
Ranworth toilets	sewage	0.38	0.38	0.35	0.13	0.15	0.10	0.07
Reedham toilets	sewage	0.00	0.00	0.29	0.11	0.02	0.01	0.01
TSA Toilets	sewage	0.03	0.03	0.00	0.00	no longer managed by BDC		
Coltishall toilets	sewage	0.02	0.02	0.07	0.03	0.08	0.04	0.03
South Walsham toilets	sewage	0.00	0.00	0.00	0.00	0	0	0
Salhouse toilets	sewage	0.19	0.19	0.07	0.05	0.04	- -	-
Temporary Accomodation	Scope 3 electricity				0.73	0.75	1.14	2.172255

Temporary Accomodation	From EPCs						6.10	4.7
Cobbs Lodge								2.620403
Well to Tank	All fuels (except electricity)	260.03	261.97	276.05	281.57	167.94	156.01	278.9449
TOTAL		**1356.66**	**1359.70**	**1411.55**	**1404.67**	**299.94**	**270.53**	**372.96**

Outside of Scopes		**2018/19**	**2019/20**	**2020/21**	**2021/22**	**2022/23**	**2023/24**	**2024/25**
Frettenham Depot	HVO					1148.214	1118.7914	1138.70
1,2,3	**TOTAL**	**1587.11**	**1575.48**	**1597.51**	**1603.17**	**525.59**	**425.19**	**487.85**
Green electricity tarriff							29.82	62.28
Total net emissions							**395.37**	**425.58**