

Wynne Construction Proposal for



# Audit of Carbon Emissions and Decarbonisation Strategy to Achieve Net-Zero

Report January 2022



**DELIVERING COLLABORATIVE SUSTAINABLE SOLUTIONS**

**Wynne Construction** is a leading construction company operating throughout Wales and the North West of England.

They provide high quality innovative solutions on a partnering, design and build and traditional basis for projects in the public and private sector. An award-winning organisation, Wynne Construction works in partnership with consultants, designers and supply chain partners to deliver projects with zero defects, on time and to budget. Their history is testament to the pride, professionalism and unwavering commitment they offer every project, regardless of its size, financial and physical constraints or complexities.



**Go Green Experts** supports organisations in the measurement, and reduction of, their carbon footprint. We have a wealth of experience supporting companies and non-profits in their drive to reach a lower environmental impact. We ensure that our work is in line with the latest science and standards.

#### **Project Sponsor:**

**C.C. Wynne** - Managing Director (Wynne Construction)

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# Introduction

**Go Green experts** were engaged to carry out a carbon emissions audit and provide a carbon reduction plan to achieve net-zero by 2040 for Wynne Construction.



**Go Green Experts Ltd** have reviewed the following data sets submitted by Wynne Construction, including:

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## 2: Introduction

- 2.1: Context
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- 5.4: Wynne Carbon Reduction Detailed Action Plan

## 6: Wynne Progress Monitoring and reporting

**Go Green Experts** utilised data provided by Wynne, as well as information gathered during an on-site visit to calculate the carbon footprint of Wynne Construction operations.

### Calculations

The carbon emissions for each category of consumption were calculated using the methodology defined in the Greenhouse Gas Protocol and the Carbon Conversion Factors published annually by DEFRA on behalf of the UK government.

Based on Scope 1, 2 + significant scope 3 purchases, the carbon footprint for Wynne Construction was calculated to be:

<b>Total:</b>	<b>1,324 Tonnes CO<sub>2</sub>e</b>
<b>Excluding Purchases:</b>	<b>352 Tonnes CO<sub>2</sub>e</b>
<b>Purchases:</b>	<b>972 Tonnes CO<sub>2</sub>e</b>

This report provides detail of each category that contributes towards the overall footprint.



**Founded in 1934, Wynne Construction is a leading and multigenerational construction company situated in North Wales.** Our construction activities cover a wide variety of sectors including education, healthcare, commercial, residential and leisure. Our long-established values are:

- Total commitment to quality and reliability
- Clear understanding and appreciation of our client's requirements
- Effective communication between all parties concerned
- Good teamwork and cooperation

Through this steadfast philosophy, Wynne Construction is committed to supporting the Welsh Assembly and UK Government in delivering carbon net zero throughout its operations by putting sustainability and the environment at the forefront of what we do.

As one of Wales's leading contractors, it is our aim to play a critical role in the wider climate crisis by ensuring that all projects, from design, construction, operation, and decommissioning embed the principals of sustainable design and net-zero requirements.

As such we are proud to pledge our commitment to achieving net-zero carbon by 2040, and in doing so support the aims and objectives as laid out in the Well-being of Future Generations (Wales) Act 2015. Clearly this is a very challenging target that will be highly dependent on collaboration with others, the availability of funding, technological solutions and supply chain support. We understand that the path to decarbonisation is not fully clear at this stage and some of the answers may be very early in their development. However, we remain fully committed to being at the forefront of this agenda and doing as much as possible to be as close to net zero as possible by 2030 with surety of achieving this target by 2040.

The UK has already made good progress with emissions reductions but meeting future carbon budgets and net zero targets will be very challenging.

Over the next few years, we will work extensively with our clients, consultants, supply chain, and the wider community to provide net zero projects that offer truly sustainable buildings, whilst also ensuring that our business activities remain net zero.

*C. C. Wynne*

**Chris Wynne, Managing Director**

8.01.2022



# 1: Executive Summary

Wynne Construction is a leading construction company operating throughout Wales and the Northwest of England. Wynne provide high quality innovative solutions on a partnering, design and build and traditional basis for projects in the public and private sector.

As an award-winning organisation, Wynne Construction works in partnership with consultants, designers and supply chain partners to deliver projects with zero defects on time and to budget. Our history is testament to the pride, professionalism, and unwavering commitment we offer every project, regardless of its size, financial and physical constraints or complexities.

Wynne are committed to removing carbon from all operations and wider business activities consistently each year until we reach a net zero position by 2040. This target has been set using the Science Based Targets Initiative (SBTi) guidance.

This is an ambitious target for Wynne, however our current standing on all Welsh construction frameworks, places us as an organisation at the forefront to collaborate with a large number of stakeholders, including clients and supply chain partners, to initiate short-term low hanging fruit activity, in addition to more strategic longer-term initiatives.

Wynne is aiming to be a thought leader in the space with the local business community and industry sector, so helping the wider industry and community implement best practice to become low carbon.

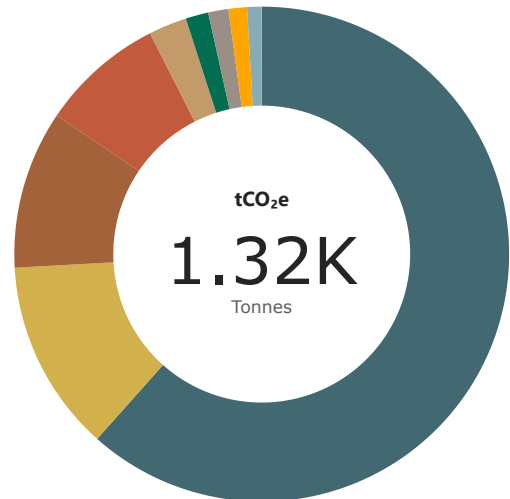
The first essential step for Wynne in creating our decarbonisation plan and strategy has been to measure our carbon footprint and set this as a baseline for the 2040 target of Net Zero. Wynne appointed Go Green Experts in October 2021 to measure the carbon footprint of Wynne's carbon emissions including direct and selected indirect emissions, i.e. scope 1, 2 and selected scope 3. This was undertaken for the period 1st November 2020 to 31st October 2021, which is consistent with Wynne's ISO14001 reporting period.

**A summary of the emissions is shown in figure 1 below.**

## Wynne Construction Total Emissions

**Figure 1:** Wynne's CO<sub>2</sub>e carbon footprint for the period 1st November 2020 to 31st October 2021.

Aspect	Tonnes CO <sub>2</sub> e	Scope
Company Vehicles	107.00	Scope 1 & 3
Gas	17.51	Scope 1 & 3
Electricity	15.95	Scope 2
Fuel Oil	166.00	Scope 2
Water & Sewerage	0.15	Scope 3
Commuting / Grey Fleet	33.00	Scope 3
Capital Goods	19.68	Scope 3
Subcontract	815.21	Scope 3
Materials	136.90	Scope 3
Waste	12.40	Scope 3

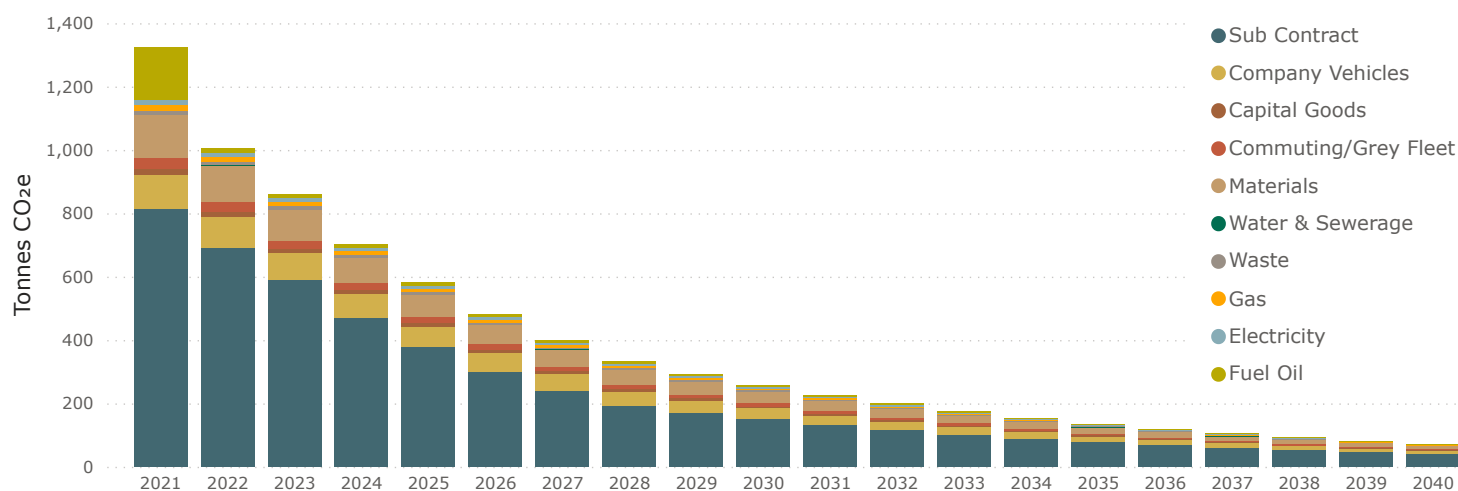


Based on analysis of the existing carbon footprint, future industry, and economy wide forecast trends, as well as Wynne’s carbon reduction strategy, a target to be Net Zero in relation to carbon emissions (CO<sub>2</sub>e) by 2040 has been set. The gap between current emissions and carbon zero can be closed, but in practice we will need to continually review and predict what is possible each year given the funding constraints and practically how much work can be completed in any one year

This includes reducing emissions to 5% of the baseline 2020/2021 period, which equates to 72 tonnes of CO<sub>2</sub>e residual emissions by 2040. The equivalent amount of emissions will be removed from the atmosphere using direct carbon capture technology, in line with the Science Based Target Initiative (SBTi) guidance, to enable Wynne to be a Net Zero organisation.

To achieve this Wynne has set out a number of activities to undertake in its carbon reduction plan, split into short-term, medium-term and long-term activities:

### Wynne Construction Carbon Reduction Plan



**Short-Term Initiatives:** Red diesel replacement, Subcontractor engagement, Review material purchases and move to low carbon alternatives, vehicle fleet management, facilities carbon management

**Medium-Term Initiatives:** Implement BREEAM waste strategies to all projects, Share the learning from Wynne Constructions fleet review with the supply chain, Design lifecycle considerations: review alternative technologies available for new build projects.

**Long-Term Initiatives:** Apply BREEAM principles to all projects where appropriate, Review options for phased replacement of the fleet with electric vehicles, Continually review the supply chain and consider competent suppliers offering the lowest CO<sub>2</sub> options.

Figure 2: Wynne’s carbon reduction plan summary: 2021 to 2040.

To enable a clear understanding of the carbon footprint that Wynne has control over, versus the element it has influence but not control, the carbon reduction plan has also been split into scope 1, scope 2 and scope 3 elements as shown in **table 2**. A large proportion of the planned carbon reduction relates to sub-contractors, given Wynne’s business model, which relates to scope 3 emissions. This highlights the importance of Wynne engaging with its wider business network to enable an effective and controlled reduction in the organisation’s overall carbon emissions.

## 2: Introduction

### 2.1: Context

Wynne's Decarbonisation Strategy 2021 - 2040 and accompanying carbon footprint has been calculated by Go Green Experts, to identify the scale and prioritisation of measures to reduce the overall environmental impact moving forward. This strategy sets out ambitious, but achievable decarbonisation targets to 2040 and beyond. It outlines what decarbonisation opportunities and interventions are suitable, how they could be implemented and what their impact would be over time.

Go Green Experts Ltd have reviewed data sets submitted by Wynne Construction which include:

- Energy consumption.
- Energy and Fuel oil used at individual sites.
- Water & sewerage.
- Company Vehicle data.
- Grey fleet data.
- Waste data.
- Significant purchases.
- Details of subcontractor spend.

Further, a site visit by Go Green Experts to Wynne's main office, Charles House, was carried out in December 2021. The data was used to calculate the carbon footprint of Wynne Construction Operations including scope 1, scope 2 and significant scope 3 emissions, as referred to in the WBCSD-WRI Greenhouse Gas Protocol emissions in carbon dioxide equivalent

Scopes 1 and 2 are calculated using the conversion factors listed in the 2020 BEIS Greenhouse Gas Conversion Factors.

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### 2.2: Wynne's Drivers for Decarbonisation

The Welsh Government have set out a commitment to achieve net zero emissions by 2050 but aspires to achieve this sooner. Wynne recognise this commitment, and with the increasingly urgent need to reduce GHG emissions, they must play their part towards a more sustainable, low carbon economy.

In addition to this, further drivers for Wynne to act on this issue are based around national legislation and regulations, all of which can be achieved through delivering robust action to reduce energy consumption and associated carbon emissions.



# 3: Carbon Footprint Calculations

As the key first step to setting the carbon reduction strategy, it is critical to set a baseline figure to start from to understand:

- What are the current carbon emission sources?
- How much carbon is currently emitted?
- Who is responsible for each source's reduction plan?

Go Green Experts were appointed by Wynne to calculate the carbon emissions for each category of consumption, using the methodology defined in the Greenhouse Gas Protocol and the Carbon Conversion Factors published annually by DEFRA on behalf of the UK government. This calculation forms the baseline for Wynne's future carbon strategy.

## 3.1: Footprint Baseline & Scope

The Greenhouse Gas Protocol defines direct and indirect emissions as follows:

- Direct GHG emissions are emissions from sources that are owned or controlled by the reporting entity.
- Indirect GHG emissions are emissions that are a consequence of the activities of the reporting entity but occur at sources owned or controlled by another entity.

The Greenhouse Gas Protocol further categorises these direct and indirect emissions into three scopes:

- **Scope 1:** Direct emissions from combustion of gas and other fuels.
- **Scope 2:** Indirect emissions resulting from the consumption of purchased electricity, heat or steam.
- **Scope 3:** Other indirect emissions, including those associated with leased assets, waste disposal, employee commuting, business travel, the extraction, production, transport and distribution of purchased materials, fuels and electricity.

**Table 1 below** details the emission sources included within Wynne's 2020/21 footprint used to calculate the baseline figure.

	Sources
Scope 1	<ul style="list-style-type: none"> <li>• Wynne operated properties (Head Office) gas consumption</li> <li>• Wynne vehicle fleet (vans, cars and 7.5t wagon)</li> </ul>
Scope 2	<ul style="list-style-type: none"> <li>• Wynne operated properties (Head Office) electricity consumption</li> <li>• Wynne operated construction sites</li> <li>• Wynne vehicle fuel oil</li> </ul>
Scope 3	<ul style="list-style-type: none"> <li>• Supply Chain partners</li> <li>• Wynne staff owned vehicles (grey fleet)</li> <li>• Waste generated in operations</li> </ul>

**Table 1:** Illustration of emission sources contributing to the baseline figure.

- Based on Scope 1, 2 + significant scope 3 purchases, the carbon footprint for Wynne Construction for the period 1st November 2020 to 31st October 2021 has been calculated and is **illustrated in table 2 below:**

Total Footprint	1,324	Tonnes CO <sub>2</sub> e
Excluding Purchases	352	Tonnes CO <sub>2</sub> e
Purchases	972	Tonnes CO <sub>2</sub> e
<b>Split by scope:</b>		
Scope 1	122	Tonnes CO <sub>2</sub> e
Scope 2	78	Tonnes CO <sub>2</sub> e
Scope 3	1,024	Tonnes CO <sub>2</sub> e

**Table 2:** Wynne's carbon footprint total and summary by scope: 1st November 2020 to 31st October 2021.



This carbon footprint represents the “Baseline” position for Wynne from which carbon reductions from 2021 to 2040 will be measured against.

### Comments

- The assumptions are based on the data submitted so far.
- Supply chain (Materials and subcontract) emissions contribute 72% of the total.
- Purchase of capital goods, vehicles, and computer equipment have been estimated using recommended retail prices.
- Some material data was stated in M3 only (e.g. carpets & flooring). Estimates have been made to calculate emissions in cases to achieve an approximation.
- Reducing emissions to Net-Zero means reducing emissions in 2040 to 5% of the baseline year. Baseline year has been set at 2021.
- Some scope 3 items have been excluded at this time due to small impact or lack of data. However, they will be examined as part of the ongoing action plan.

### Exclusions

Aspect	Reason for Exclusion
<b>Professional service contracts (legal, accounting)</b>	Details of this expenditure were not available at the time of the audit. It is estimated that emissions will be relatively small and it is intended that these will be measured during the next audit.
<b>Purchase of flooring materials.</b>	Available data was in metres cubed (M3) as required for BREEAM projects and emissions were difficult to determine accurately. It is estimated that emissions will be relatively small.
<b>Purchase of windows and doors</b>	Available data was in metres cubed (M3) as required for BREEAM projects and emissions were difficult to determine accurately. It is estimated that emissions will be relatively small.



Wynne Construction head office, Charles House

### 3.2: Key Findings from the Footprint Calculations

#### 3.2.1: CO<sub>2</sub>e Emissions - Total Carbon Footprint

The total Carbon Footprint for Wynne Construction was calculated using World Resources Institute (WRI) Greenhouse Gas (GHG) Protocol conversion factors.

**Figure 3 below** illustrates the total emissions by source for the period from **1st Nov 2020 to 31st Oct 2021**, the baseline financial year.

**Table 3 below** illustrates all sources of emission broken down by Scope (scope 1, scope 2 and significant scope 3 sources).

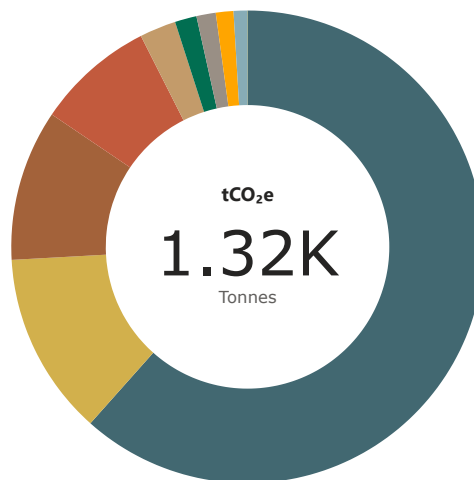
**Interpretation:** The table and charts clearly outline our largest source of Green Houses Gas emissions are generated by our supply chain partners (scope 3).

We note that gas and electricity are in scopes 1 & 3, where the scope 3 element covers upstream distribution losses.

#### Wynne Construction Total Emissions

Aspect	Tonnes CO <sub>2</sub> e	Scope
Company Vehicles	107.00	Scope 1 & 3
Gas	17.51	Scope 1 & 3
Electricity	15.95	Scope 2
Fuel Oil	166.00	Scope 2
Water & Sewerage	0.15	Scope 3
Commuting / Grey Fleet	33.00	Scope 3
Capital Goods	19.68	Scope 3
Subcontract	815.21	Scope 3
Materials	136.90	Scope 3
Waste	12.40	Scope 3

**Table 3:** Baseline emission sources for FY20-21, illustrated by scope.



**Figure 3:** Wynne's Total Carbon footprint by source in FY20-21.

#### 3.2.2: CO<sub>2</sub>e Emissions - Total Carbon Footprint Excluding Purchases

**Figure 4 below** illustrates a breakdown of the emissions excluding purchased materials and subcontractors.

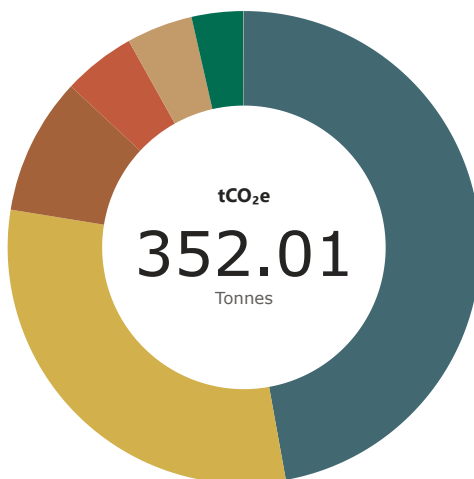
**Table 4 adjacent** illustrates the emissions excluding purchases broken down by Scope.

**Interpretation:** Fuel oil and company vehicles emit the most emissions. Note that gas and electricity are in scopes 1 & 3. The scope 3 element covers upstream distribution losses.

#### Wynne Construction Emissions Less Purchases

Aspect	Tonnes CO <sub>2</sub> e	Scope
Company Vehicles	107.00	Scope 1 & 3
Gas	17.51	Scope 1 & 3
Electricity	15.95	Scope 2
Fuel Oil	166.00	Scope 2
Water & Sewerage	0.15	Scope 3
Commuting/Grey Fleet	33.00	Scope 3
Waste	12.40	Scope 3

**Table 4:** Total Carbon Footprint Excluding Purchases, broken down by scope.



**Figure 4:** Wynne's Carbon footprint excluding purchases in FY20-21.

### 3.2.3: CO<sub>2</sub>e Emissions - Cars / Grey Fleet Breakdown

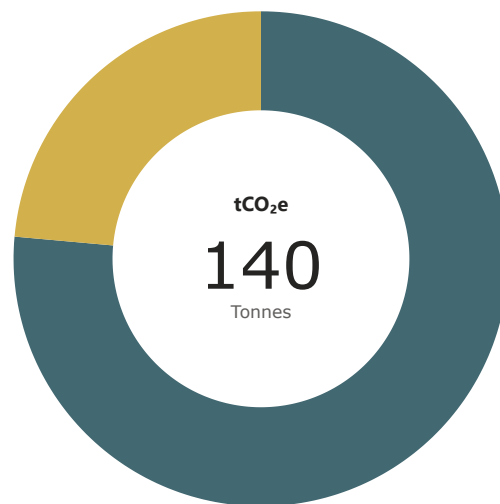
**Figure 5 below** illustrates a simple breakdown of vehicle use. Company vehicles include the use of company vans and HGVs. The grey fleet includes the use of private vehicles for business use.

**Table 5 below** illustrates the emissions excluding purchases broken down by scope.

**Interpretation:** Company Vehicles represent the majority of vehicle emissions. These are scope 1 emissions Wynne has more control over lowering these emissions than the grey fleet (which is scope 3), particularly in the near term.

#### Wynne Construction Vehicles / Grey Fleet Emissions

Aspect	Tonnes CO <sub>2</sub> e	Scope
Company Vehicles	107.00	Scope 1 & 3
Commuting / Grey Fleet	33.00	Scope 3



**Table 5:** Carbon Footprint emissions from vehicles, broken down by scope.

**Figure 5:** Wynne's Carbon footprint emissions from Vehicles.

### 3.2.4: CO<sub>2</sub>e Emissions - Breakdown of Purchases

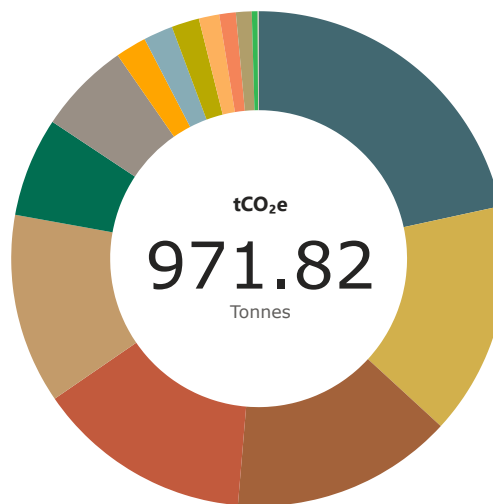
**Figure 6 below** breaks down the total purchases made by Wynne Construction for the period FY20-21. The chart includes materials, capital goods, vehicles and equipment purchased by Wynne and categories of services provided by subcontractors.

**Table 6 below** illustrates all emissions from purchases, broken down by scope.

**Interpretation:** At 972 tonnes CO<sub>2</sub>e purchases represents a large proportion of the overall Wynne footprint. The largest categories, and therefore where the main long-term focus for carbon reduction will be Structural insulated panels (SIPS), Cladding, Groundworks, Materials and Mechanical & Electrical purchases.

#### Wynne Construction Emissions Less Purchases

Aspect	Tonnes CO <sub>2</sub> e	Scope
Cladding	120.67	Scope 3
Capital Goods (Wynne)	19.68	Scope 3
Computers (Wynne)	0.58	Scope 3
Flooring	17.60	Scope 3
Groundworks	141.00	Scope 3
Internal Doors	10.48	Scope 3
Materials (Wynne)	136.90	Scope 3
Mechanical & Electrical	148.00	Scope 3
Painting	3.72	Scope 3
Scaffolding	13.00	Scope 3
SIPS	209.90	Scope 3
Steel Frame	10.00	Scope 3
Vehicles	18.72	Scope 3
Walls & Ceilings	58.58	Scope 3
Windows & Doors	63.00	Scope 3



**Table 6:** Carbon Footprint emissions from purchases, broken down by scope.

**Figure 6:** Wynne's Carbon footprint emissions from purchases.



### 3.2.5: CO<sub>2</sub>e Emissions - Breakdown from Energy use by Individual Wynne Sites

**Figure 7 below** illustrates the energy used by Wynne on all current construction sites (and the Head Office - Charles House). The majority of energy consumed is fuel for each site's generator, which is supplemented by electricity at Ysgol Y Faenol Bangor, Bron-Y-Nant Mochdre and Cardigan School.

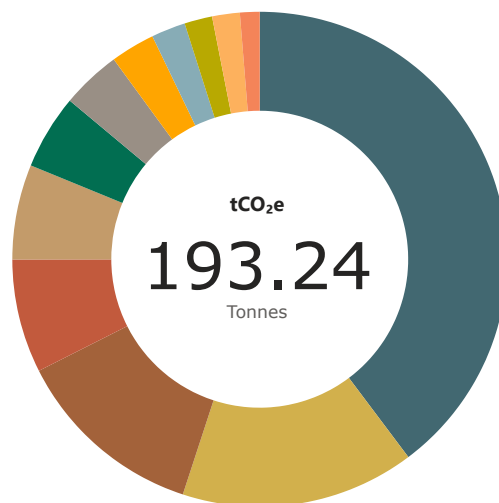
All site emissions are classified as scope 2 and are illustrated in **table 7 below**.

**Interpretation:** The three most significant sites for Wynne's own energy use are Adra Bangor, Ysgol Glanrafon and Charles House. It is understood that emissions from Charles House will be targeted as a priority, whilst the Adra and Glanrafon sites are nearing completion. A wider strategy is required for all sites to minimise emissions.

#### Wynne Construction Emissions from Energy Used at Sites

Aspect	Tonnes CO <sub>2</sub> e	Scope
Charles House	24.20	Scope 2
Llangefni School	9.43	Scope 2
Ysgol Y Faenol	7.51	Scope 2
Adra Development	76.80	Scope 2
Bron-Y-Nant, Mochdre	3.49	Scope 2
Ysgol Maes-Y-Felin	5.60	Scope 2
Brynford School	11.99	Scope 2
Ysgol Glanrafon, Mold	29.54	Scope 2
Westwood School	4.32	Scope 2
Ysgol Derwen	0.00	Scope 2
Cardigan School	3.51	Scope 2
Welshpool School	14.35	Scope 2
Aston Family Centre	2.48	Scope 2

**Table 7:** Carbon Footprint emissions from individual Wynne sites, broken down by scope.



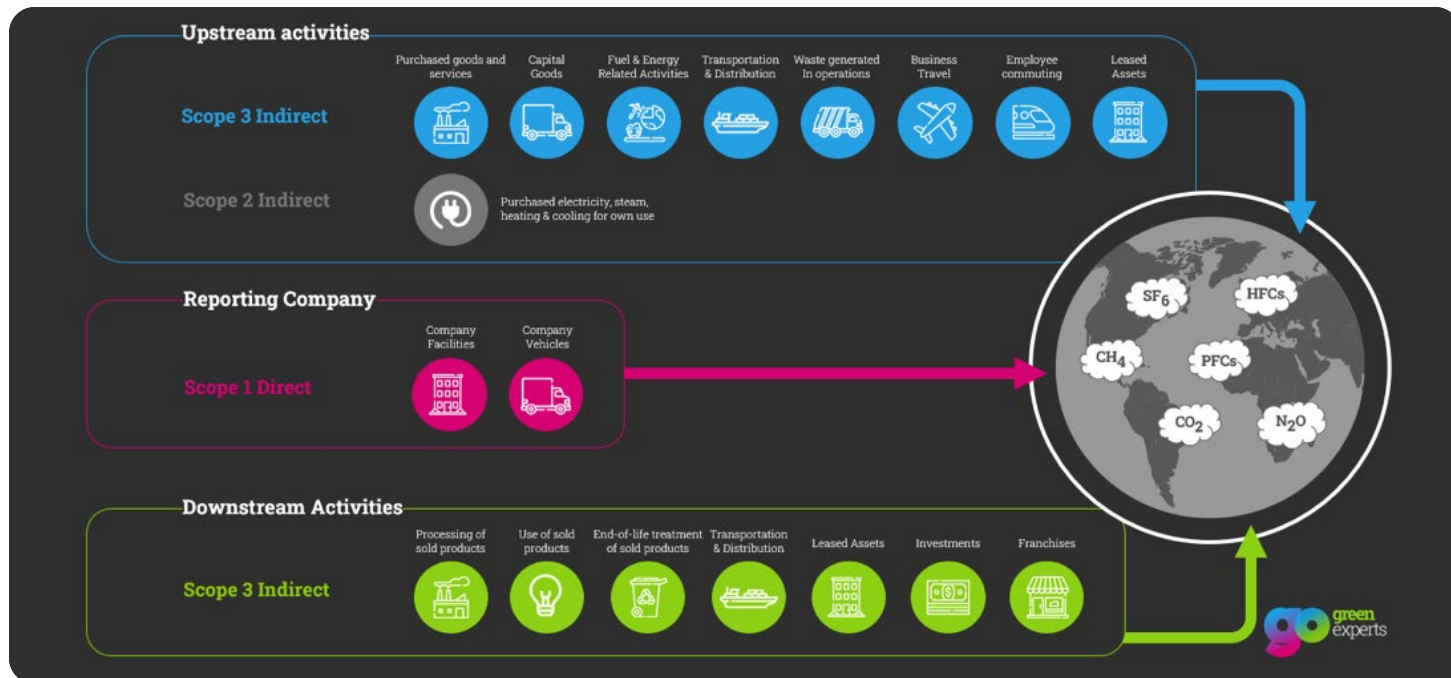
**Figure 7:** Wynne's Carbon footprint emissions CO<sub>2</sub>e Emissions - Breakdown from Energy use by Individual Wynne Sites.



### 3.3: CO<sub>2</sub>e Emissions - Breakdown of Wynne Energy use by Scopes 1, 2 and 3

Emission scopes are defined by the internationally accepted Greenhouse Gas Protocol. The protocol has been developed over many years' in cooperation with The World Resources Institute (WRI) and the World Business Council for Sustainable Development (WBCSD). They are based on an assessment of which emissions from our operations we can directly control versus those which we can merely influence.

The diagram in **figure 8** and description in **section 3.1** of this report, summarises the categories of emissions that are classified into each scope.



**Figure 8:** Depiction of Scope 1, Scope 2 and Scope 3 emission categories.

The following sections illustrate Wynne’s emissions by each scope.

#### 3.3.1: CO<sub>2</sub>e Emissions - Scope 1 emissions

12% of emissions fell under scope 1, which is directly attributed to burning of fossil fuels for heating and hot water in Wynne’s head office, and Wynne’s owned transport fleet which burn diesel.

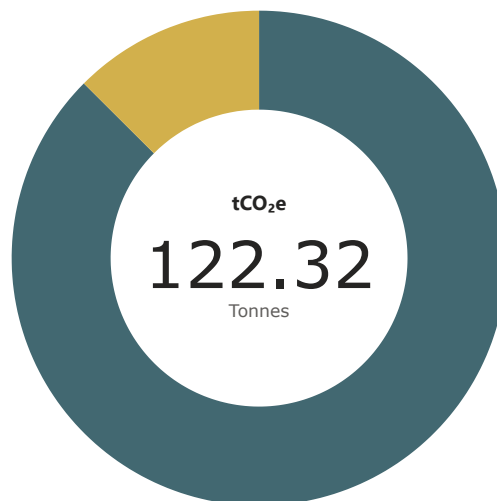
**Figure 9 below** indicates the vast majority of scope 1 emissions arose from company owned vehicles which contributed 107.0tCO<sub>2</sub>e.

Emissions from fossil fuels used for hot water and heating at the head office contributed 15.3tCO<sub>2</sub>e.

#### Scope 1 Emissions - Tonnes CO<sub>2</sub>

Aspect	Tonnes CO <sub>2</sub> e
Company Vehicles	107.00
Gas	15.32

**Figure 9:** Wynne’s Carbon footprint Scope 1 emissions.



### 3.3.2: CO<sub>2</sub>e Emissions - Scope 2 emissions

13.5% of total emissions fell under scope 2, which is attributed to purchased electricity and primarily purchase of fuel oil for use in company machinery.

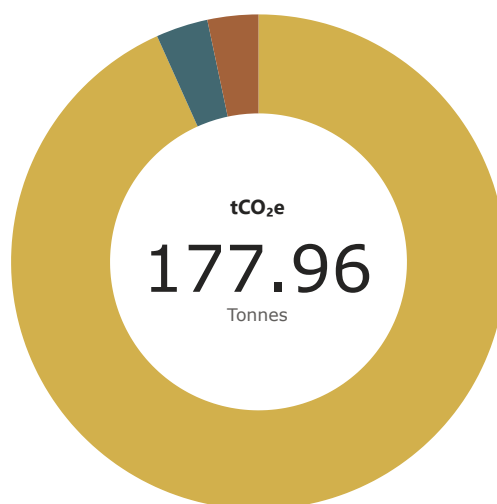
**Figure 10 below** indicates the vast majority of scope 2 emissions arose from the purchase fuel oil for use in site machinery which contributed 166.0tCO<sub>2</sub>e.

The remaining emissions totalling 12.0tCO<sub>2</sub>e arose from purchased electricity at both Charles House and for specific sites.

#### Scope 2 Emissions - Tonnes CO<sub>2</sub>

Aspect	Tonnes CO <sub>2</sub> e
Charles House Electricity	6.05
Fuel Oil	166.00
Site Electricity	5.91

Figure 10: Wynne's Carbon footprint Scope 2 emissions.



### 3.3.3: CO<sub>2</sub>e Emissions - Scope 3 emissions

74.5% of total emissions fell under scope 3, which is attributed primarily to our supply chain purchases as well as water, sewerage, and waste.

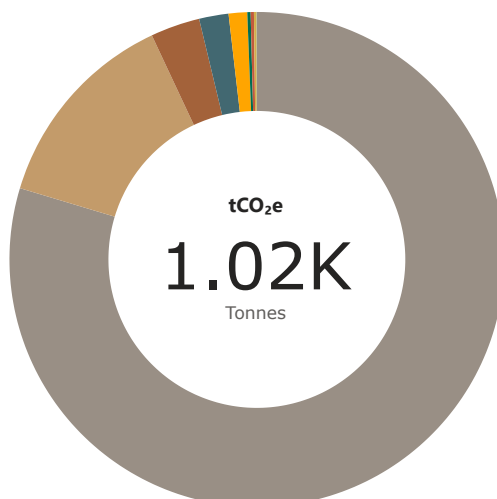
**Figure 11 below** indicates the vast majority of scope 3 emissions arose from our supply chain, totalling 815.2tCO<sub>2</sub>e, 62% of our overall greenhouse gas emissions. This clearly indicates that Wynne will need to liaise with their supply chain to educate them, ensuring a year on year reduction in scope 3 emissions is prioritised.

Scope 3 emissions also include an element of distribution losses for electricity and gas.

#### Scope 3 Emissions - Tonnes CO<sub>2</sub>

Aspect	Tonnes CO <sub>2</sub> e
Sub Contract	815.21
Materials	136.90
Commuting / Grey Fleet	33.00
Capital Goods	19.68
Waste	12.40
Site Electricity	2.20
Gas	2.19
Charles House Electricity	1.79
Water & Sewerage	0.15

Figure 11: Wynne's Carbon footprint Scope 3 emissions.



# 4: Wynne Carbon Reduction Target

Following the measurement of Wynne’s carbon footprint, a detailed analysis has been undertaken to ascertain where achievable carbon reduction targets can be achieved over a certain period of time. The time frame has been set ensuring the company ambition to become ‘Net Zero’ carbon by 2040. Whilst Wynne recognise the Welsh Government aspirations of net zero by 2030, Wynne feel 2040 is more realistic for their business model but have not lost site of the 2030 aspiration. Wynne have therefore targeted a reduction in carbon against the 2020/21 baseline figure of 80% by 2030.

The carbon reduction strategy identifies short, medium, and long-term targets. This then formed the basis of Wynne’s ambitious net zero 2040 target. A summary of the annual carbon reduction forecast by category to achieve this target are shown in **figure 12 and table 8 below**.

It is recognised that decarbonisation of the grid will proactively achieve a natural reduction in carbon emissions and Wynne have taken this into consideration when aligning our year on year strategy. We have included a reduction in emissions of 5% of the baseline 2020/21 period, which equates to 72 tonnes of CO<sub>2</sub>e residual emissions by 2040. The equivalent amount of emissions will be removed from the atmosphere using direct carbon capture technology, in line with the Science Based Target Initiative (SBTi) guidance, to enable Wynne to be a Net Zero organisation.

## Wynne Construction Carbon Reduction Plan

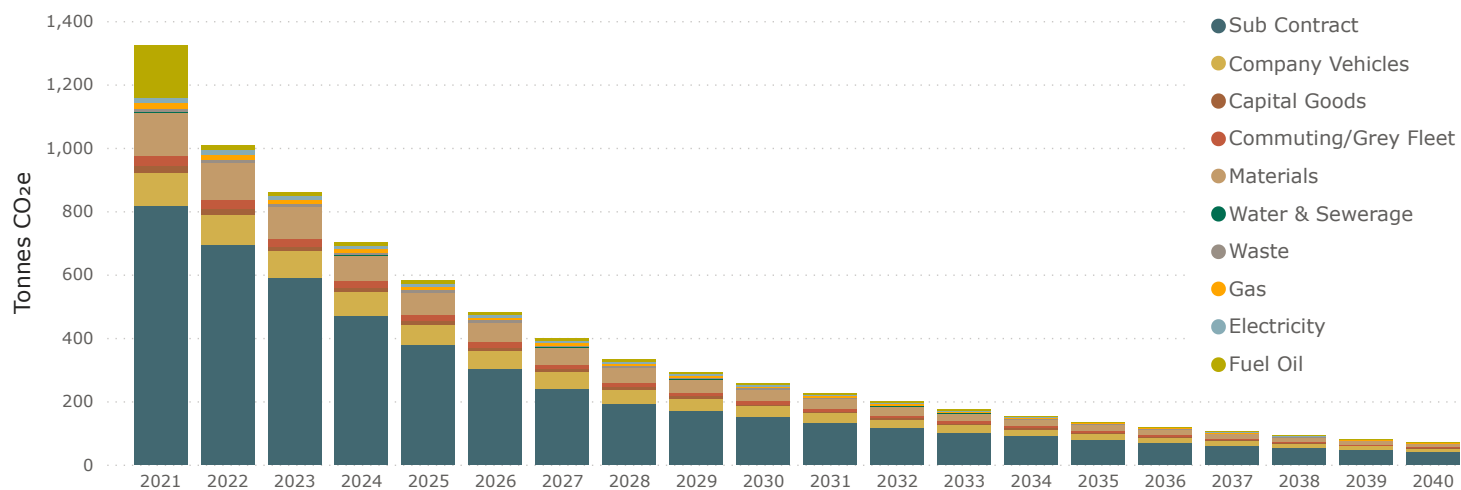


Figure 12: Wynne’s Carbon reduction target, 2021-2040.

	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040
Company Vehicles	107	96	85	75	66	58	51	45	39	35	30	27	24	21	18	16	14	12	11	10
Gas	18	15	14	12	11	9	8	7	6	6	5	4	4	3	3	3	2	2	2	2
Electricity	16	14	12	11	10	8	7	7	6	5	4	4	3	3	3	2	2	2	2	1
Fuel Oil	166	14	12	11	10	8	7	7	6	5	4	4	3	3	3	2	2	2	2	1
Water & Sewerage	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Commuting/Grey Fleet	33	29	26	22	20	17	15	13	12	10	9	8	7	6	6	5	4	4	3	3
Capital Goods	20	17	15	13	12	10	9	8	7	6	5	5	4	4	3	3	3	2	2	2
Sub Contract	815	693	589	471	377	302	241	193	170	149	132	116	102	90	79	69	61	54	47	42
Materials	137	116	99	79	70	61	54	47	42	37	32	28	25	22	19	17	15	13	12	10
Waste	12	11	10	8	7	7	6	5	4	4	3	3	3	2	2	2	2	1	1	1
<b>Target</b>	<b>1,324</b>	<b>1,006</b>	<b>861</b>	<b>703</b>	<b>581</b>	<b>481</b>	<b>399</b>	<b>332</b>	<b>292</b>	<b>257</b>	<b>226</b>	<b>199</b>	<b>175</b>	<b>154</b>	<b>136</b>	<b>119</b>	<b>105</b>	<b>92</b>	<b>81</b>	<b>72</b>
<b>Actual</b>	<b>1,324</b>																			
<b>% of Base Year</b>	<b>100%</b>	<b>76%</b>	<b>65%</b>	<b>53%</b>	<b>44%</b>	<b>36%</b>	<b>30%</b>	<b>25%</b>	<b>22%</b>	<b>19%</b>	<b>17%</b>	<b>15%</b>	<b>13%</b>	<b>12%</b>	<b>10%</b>	<b>9%</b>	<b>8%</b>	<b>7%</b>	<b>6%</b>	<b>5%</b>

Table 8: Carbon Footprint target emission year on year to 2040 by category.

### 4.1: Wynne Carbon Reduction Target - By Scope

The Carbon reduction strategy can also be split by Scope (1,2 and 3) to provide a sense of how much of the reduction Wynne has control over versus influence over.

**Figure 13 and table 9 below** demonstrates that the majority of reduction in emissions is required in scope 3. The implication of this is that Wynne will engage with their suppliers, in particular their supply chain partners in the short, medium and long-term, to enable the carbon reductions necessary, to be met by 2040 in order to achieve the target date of 2040.

#### Wynne Construction Carbon Reduction Plan (Scope Breakdown)

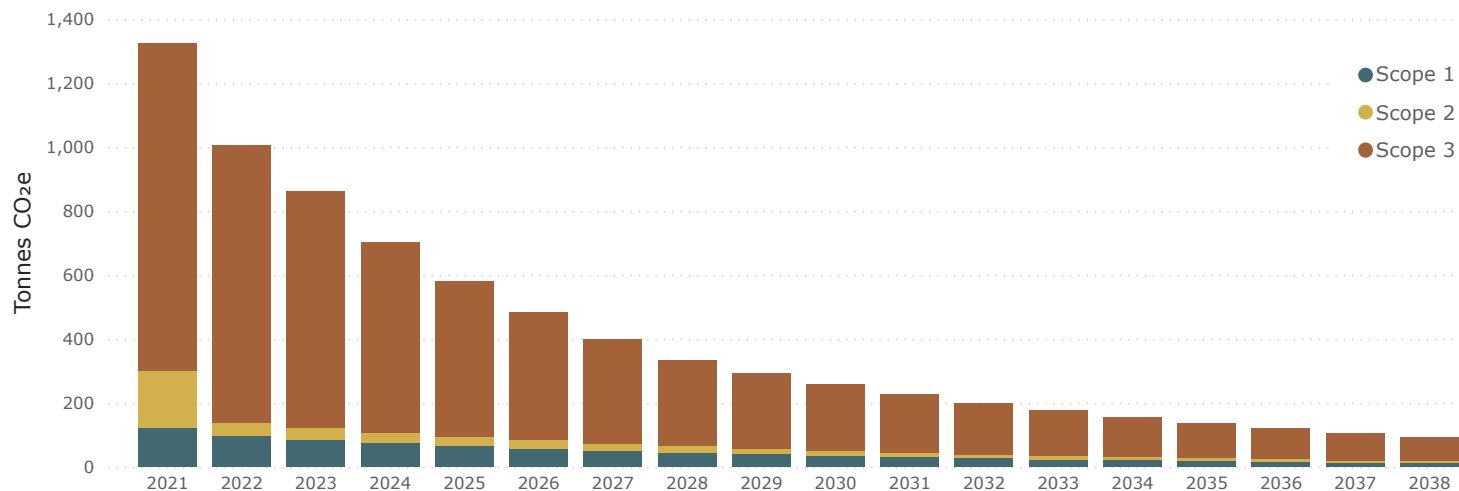


Figure 13: Wynne's Carbon reduction target by scope,2021-2040.

	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040
Scope 1	122	96	85	75	66	58	51	45	39	35	30	27	24	21	18	16	14	12	11	10
Scope 2	178	43	38	34	30	26	23	20	18	16	14	12	11	9	8	7	6	6	5	4
Scope 3	1,024	867	738	595	486	397	325	267	235	207	182	160	141	124	109	96	85	74	65	58
Target	1,324	1,006	861	703	581	481	399	332	292	257	226	199	175	154	136	119	105	92	81	72
Actual	1,324																			
% of Base Year	100%	76%	65%	53%	44%	36%	30%	25%	22%	19%	17%	15%	13%	12%	10%	9%	8%	7%	6%	5%

Table 9: Carbon Footprint target emissions by scope, year on year to 2040 by category.



# 5: Wynne Carbon Reduction Plan

Wynne have committed to being Net Zero Carbon by 2040. In order to achieve this ambition, a mixture of measures is available to gradually reduce Wynne's carbon emissions over time. In section 4 of this report, the necessary annual carbon reductions were highlighted by category and scope. This section 5, aims at illustrating all targeted opportunities in the short, medium, and long-term. The options are presented using a hierarchy of consumption avoidance and usage optimisation followed by decarbonising energy consumption by moving away from fossil fuels. Any remaining carbon emissions will then be off-set in accordance with GHGR.

As the timing of the plan is starting from the baselined carbon footprint period, then particular focus has been on the short-term initiatives which represent the 'low hanging fruit' for Wynne.

## Wynne Construction Carbon Reduction Plan

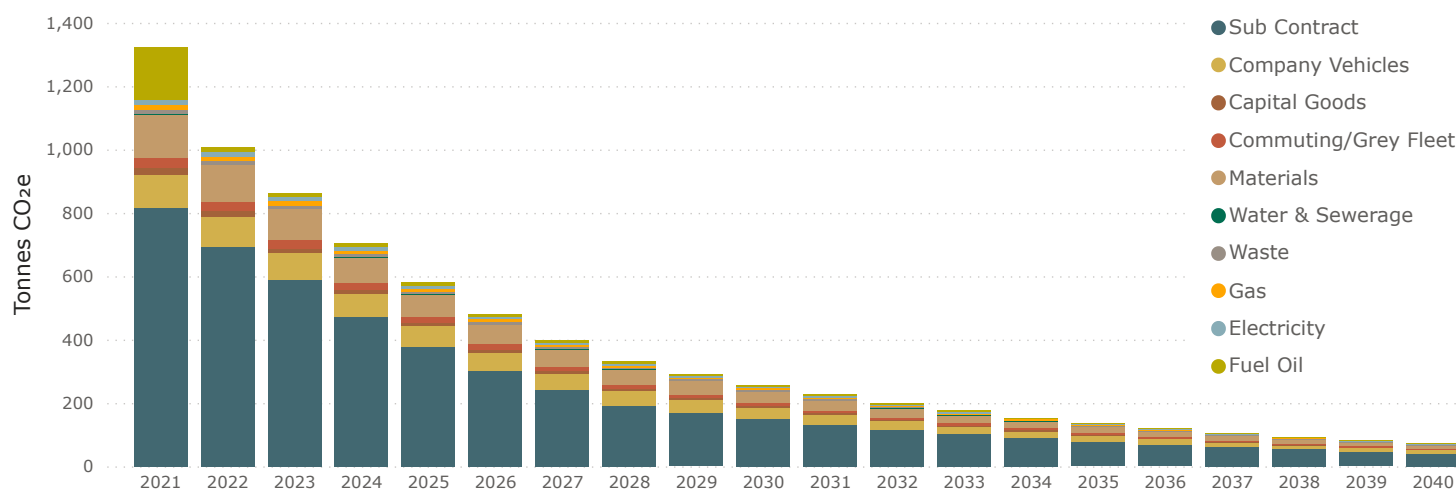


Figure 14: Wynne's carbon reduction plan summary: 2021 to 2040.

## Decarbonisation actions can be broken down into:

**Short-Term Initiatives:** Red diesel replacement, Subcontractor engagement, Review material purchases and move to low carbon alternatives, vehicle fleet management, facilities carbon management.

**Short-term actions** are considered as easy to implement, proven technologies or simple changes without large investment needs and planning requirements such as such as a change in fuel oil to biofuels for all site machinery (**about 10% of carbon reduction by 2022/23**).

**Medium-Term Initiatives:** Implement BREEAM waste strategies to all projects, Share the learning from Wynne Constructions fleet review with the supply chain, Design lifecycle considerations: review alternative technologies available for new build projects.

**Medium-term actions** are considered as measures which need a certain amount of planning and preparation and come with a larger investment but still provide a reasonable payback such as on-site renewables to the head office and fleet upgrades (**about 10% of carbon reduction by 2030**).

**Long-Term Initiatives:** Apply BREEAM principles to all projects where appropriate, Review options for phased replacement of the fleet with electric vehicles, Continually review the supply chain and consider competent suppliers offering the lowest CO<sub>2</sub> options.

**Long-term actions** are considered as difficult to implement and or/financed and will need a considerable amount of time to be established such as educating, assisting and influencing supply chain partners on their own decarbonisation journeys (**about 62% of our total carbon reduction by 2040**).

## 5.1: Decarbonisation Opportunities

There is a variety of opportunities available which lead to a reduction of carbon emissions. To target Wynne's activities and maximise impact, it is important to differentiate between areas where Wynne are the owner and operator, i.e., the head office and corporate fleet areas where Wynne has limited operational control i.e., Supply Chain partners activities.

### 5.1.1: Corporate buildings and sites

Wynne's own head office and sites are the easiest to be tackled as they have full control, with overall emissions totalling 15% of the baseline figure, which results in a medium impact. Opportunities to reduce emissions in this area include:

- Energy efficiency and demand reduction in the offices and on sites. Initial targets to reduce demand are re-roofing with additional insulation to improve fabric U-Values and reduce heat loss.
- Decarbonising the heat source in the head office and on sites. As natural gas is a fossil fuel, no significant decarbonisation of the national gas-grid is expected. There are some scenarios which predict an uptake of blending biogas and/or hydrogen into the grid but this is yet to come to fruition in an impactful way. Both scenarios are only possible to a certain extent which ultimately limits the achievable reduction for natural gas related carbon emissions without changing the given infrastructure (such as gas pipework, boilers, and appliances to hydrogen combustion).

Moving away from natural gas is a challenge for Wynne, both in financial and organisational terms since alternative technologies are more expensive, less familiar, and potentially more labour intensive to operate. Possible change over from natural gas to heat pumps in the future will be looked at but is considered a longer term action.

It is apparent that changes to the fuel source on sites is possible in the short-term, replacing fuel oils (diesel) with biofuels in all site generators.

- Introduction of renewable electricity with possible battery storage. To assess the viability of on-site renewables to the head office and sites, such as PV systems, Wynne will should engage with other organisations such as site cabin suppliers which could support the case for decarbonising all site village arrangements.

### 5.1.2: Company Fleet

Wynne's fleet emissions are the highest source of work-related emissions coming from owned and managed assets. The amount of carbon emissions caused by Wynne's white fleet equated to 76% of total emissions of that category. Currently, the makeup of Wynne's fleet is primarily diesel, EURO6 standard. Driver behaviour on top of this has been encouraged along with the pursuit of enabling a telematics system to encourage fuel saving whilst driving. While this is optimal for efficiency of a diesel fleet, Wynne are aware that bigger saving potentials will lie in aiming to transition the fleet to fully electric.

Regarding the development of an EV fleet, Wynne have discussed the importance of the infrastructure to support this being made available. The current set up of vans going home with drivers would not incentives employees, however, it may be possible to create charging points at offices and at employees' homes to meet the charging demand. Wynne's favoured approach is to utilise the current fleet recently purchased for a minimum of five years and re-assess the availability and feasibility of incorporating an electric fleet.

### 5.1.3: Private Vehicles

Business travel is considered in the current carbon footprint (scope 3 staff owned vehicle mileage emissions) accounting for mileage from the employee's place of residence and the head office along with claimed mileage for business travel where staff are using their own vehicles. A travel hierarchy could be introduced to reduce and ideally avoid the usage of staff owned vehicles and promote alternatives such as pool or hire cars if travel is unavoidable. This may take the following form. Can you:

- Work from home
- Walk or cycle to work (active Travel)
- Utilise Public Transport
- Utilise electric pool car fleet

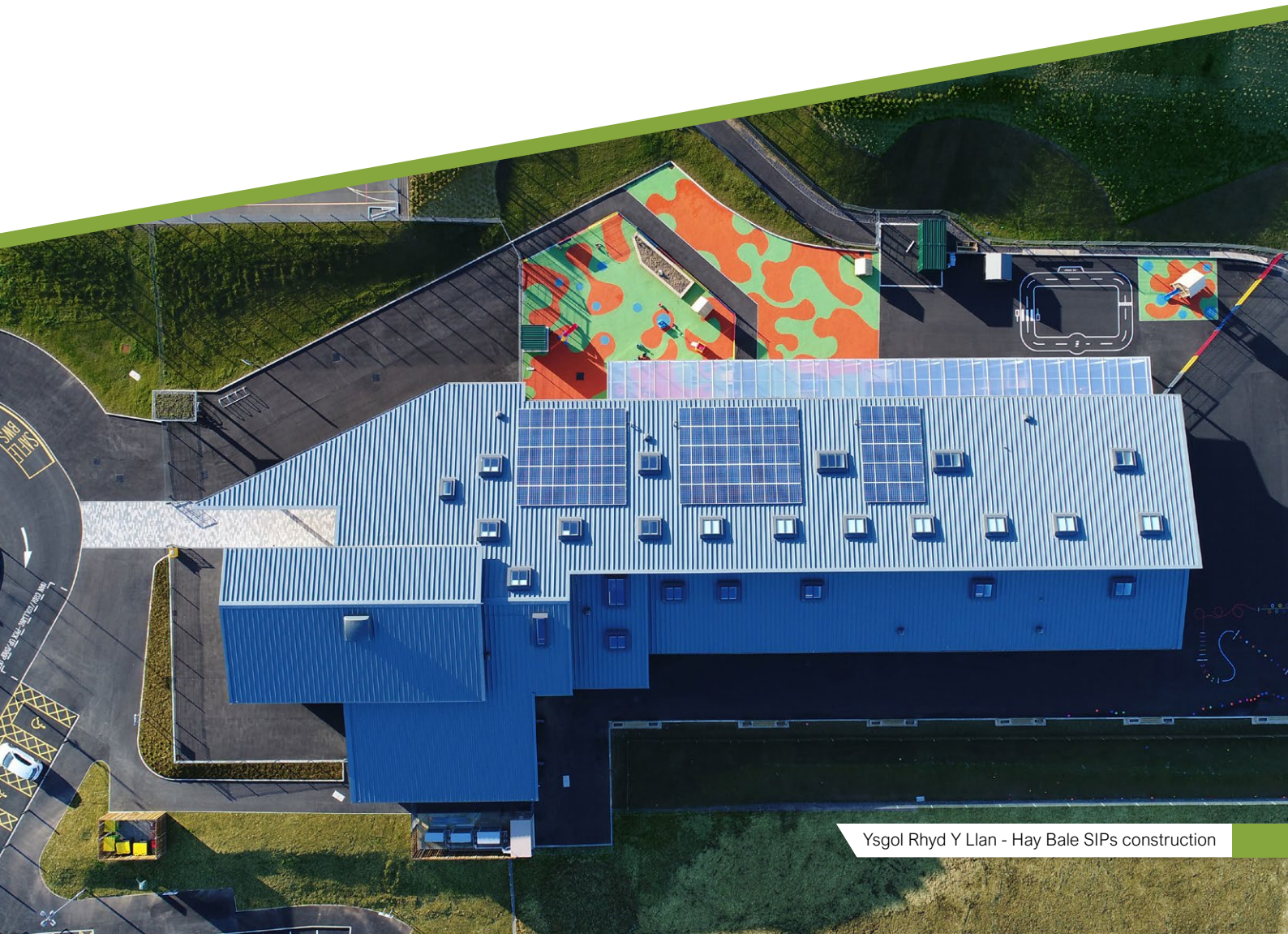
All the above will be considered in the short-term except for an electric pool car fleet, which will be a medium-term target.

## 5.2: Short-Term Plan Summary

**Figure 15 below** illustrates the proposed short-term initiatives which represent quick wins for reducing Wynne's carbon footprint and should be read alongside the detailed action plan in section 5.4. The estimated year one savings totals circa 239 tonnes CO<sub>2</sub>e.

Action Plan No	Scope	CO <sub>2</sub> Aspect (Electricity, gas, water, fleet, procurement etc.)	Opportunities	Estimated Benefit CO <sub>2</sub> e savings Year 1 (Tonnes CO <sub>2</sub> e)	Ongoing Annual Saving (from previous year)
5.1	2	Red diesel replacement	Review feasibility of changing plant and generator fuel to biofuels	149	10%
1.7	3	Subcontractor engagement and awareness	Assume 5% saving annually (from previous year)	43	5.25%
7.10	3	Review material purchases and low CO <sub>2</sub> alternatives	Assume 20% saving annually (from previous year)	28	20%
4.3	1 & 3	Vehicles and logistics Fleet management short-term and long-term review	Complete a fleet review for both company-owned vehicles and grey fleet. Short-term - driver training and route planning (CO <sub>2</sub> estimated)	14	12%
1.2, 6.1, 6.2, 6.23	1, 2, 3	Facilities (office and sites)	PV, insulation, equipment controls, staff awareness, embed CO <sub>2</sub> management in the EMS process	5 - 10	12%

**Figure 15:** Wynne's carbon reduction plan summary: 2021 to 2040.





### 5.3: Wynne Carbon Reduction Plan by Business Area: Summary

The Wynne carbon reduction plan has been categorised by business area, to enable Wynne to allocate the plan clearly to business units. A summary of the full plan is shown in **figure 16 below**:

No	Business Area	Quantify	Control and/or Influence	Implement
1	<b>Energy Management System (EMS)</b>	<ul style="list-style-type: none"> <li>Integrate carbon footprint consideration into the EMS</li> <li>Raise awareness and consult with employees and other interested parties regarding CO<sub>2</sub> emissions to establish current awareness levels</li> </ul>	<ul style="list-style-type: none"> <li>Review subcontractor competence and their ability to implement and install new technologies</li> <li>Include a review of all subcontractors' carbon intensity</li> </ul>	<ul style="list-style-type: none"> <li>Plan a program to deliver the short-term, medium-term and long-term objectives in line with the ISO 14001 processes</li> <li>Plan and implement relevant training and awareness</li> </ul>
2	<b>Financial and commercial</b>	<ul style="list-style-type: none"> <li>Review the commercial service supply chain</li> </ul>	<ul style="list-style-type: none"> <li>Review the carbon intensity of banks, insurance and accountancy services, websites, cloud hosting, training providers, software subscriptions, legal services, and other relevant suppliers</li> </ul>	<ul style="list-style-type: none"> <li>Change to suppliers with a lower carbon intensity where appropriate</li> <li>Share learning outcomes and support smaller suppliers</li> </ul>
3	<b>Design and estimating</b>	<ul style="list-style-type: none"> <li>Establish the level of awareness within the design and estimating teams</li> <li>Review Continual Professional Development (CPD) and ongoing training.</li> <li>Establish the level of awareness within the supply chain</li> </ul>	<ul style="list-style-type: none"> <li>Consider design for low carbon materials and building whole life use - material examples include low carbon concrete and Cross Laminated Timber</li> </ul>	<ul style="list-style-type: none"> <li>Complete an action plan and implement ongoing improvements</li> <li>Embed carbon footprint reporting into all design and estimating processes</li> <li>Raise awareness with the design and estimating teams</li> </ul>
4	<b>Vehicles and logistics</b>	<ul style="list-style-type: none"> <li>Review the current fleet performance, open discussions with an independent fleet management specialist</li> <li>Review the option for 95% funding for driver training available for qualifying companies</li> </ul>	<ul style="list-style-type: none"> <li>Review supply chain logistics emissions</li> </ul>	<ul style="list-style-type: none"> <li>Implement recommendations from the full fleet review</li> <li>Implement continual improvement program and continually review new technology</li> <li>Share learning outcomes and support smaller suppliers</li> </ul>
5	<b>Plant and Equipment</b>	<ul style="list-style-type: none"> <li>Review the equipment owned by the company to determine the emissions from use</li> <li>Review the performance of hired equipment</li> <li>Review the performance of equipment used by the supply chain</li> </ul>	<ul style="list-style-type: none"> <li>Review the opportunity to change to biofuels</li> <li>Purchase or hire the most efficient equipment available</li> <li>Ensure supplier and sub-contractors are aware of efficiency requirements</li> </ul>	<ul style="list-style-type: none"> <li>Implement a low carbon procurement plan</li> <li>Introduce 'toolbox talks' in order to raise awareness of CO<sub>2</sub> emissions from plant operation</li> <li>Monitor new technologies</li> </ul>
6	<b>Facilities (office and site)</b>	<ul style="list-style-type: none"> <li>Complete a full energy review for head office</li> <li>Review the potential for generating renewable energy at head office</li> <li>Complete a detailed review of site energy consumption</li> </ul>	<ul style="list-style-type: none"> <li>Raise awareness of energy efficiency</li> <li>Review operating controls</li> <li>Raise awareness with subcontractors and suppliers</li> </ul>	<ul style="list-style-type: none"> <li>Implement energy efficiency training</li> </ul>
7	<b>Procurement</b>	<ul style="list-style-type: none"> <li>Determine the full extent of Scope 3 emissions.</li> </ul>	<ul style="list-style-type: none"> <li>Raise awareness with procurement employees</li> <li>Raise awareness with subcontractors and suppliers</li> </ul>	<ul style="list-style-type: none"> <li>Implement a low carbon procurement plan</li> <li>Implement continual improvement program and continually review new technology</li> </ul>
8	<b>Resource efficiency</b>	<ul style="list-style-type: none"> <li>Review the waste strategy and consider implementing BREAM waste strategies into all projects</li> <li>Review all resources not covered elsewhere</li> <li>Review the opportunities for maximising the benefits from land use</li> </ul>	<ul style="list-style-type: none"> <li>Raise awareness with all employees</li> <li>Raise awareness with subcontractors and suppliers</li> </ul>	<ul style="list-style-type: none"> <li>Continually review the opportunities to improve resource efficiency</li> </ul>

Figure 16: Wynne's carbon reduction plan summary: 2021 to 2040.



## 5.4: Wynne Carbon Reduction Detailed Action Plan

Wynne's detailed carbon reduction action plan provides clear initiatives to undertake over time, with short-term initiatives being tackled first. In the longer term as new technology is developed and Government policy changes, then the plan is flexible to accommodate these changes. **Figure 17 below** illustrates Wynne's full detailed carbon action plan by categories.

**Figure 17:** Wynne's carbon reduction detailed action plan summary 2021 to 2040. Version control: v0.3 last edited 27-2-22 by Richard Bromley.

### 1. Environmental and Carbon Footprint - Targets And Objectives

Environmental Aspect	Short / Medium / Long-Term	Observation / Actions	Responsible person	Start date	Target date
Carbon footprint and EMS ongoing management, review and target setting.	Short-term	<p><b>Control</b></p> <p>1.1 The ISO 14001:2015 system has controls in place for annual internal audits. Consider integrating carbon footprint consideration into the EMS - Plan- Do- Check- Act-Cycle.</p> <p>1.2 Raise awareness and consult with staff and other interested parties regarding CO<sub>2</sub> emissions, energy consumption, and other environmental aspects.</p> <p>1.3 Embed aggressive CO<sub>2</sub> reduction target setting into all processes within the business in order to continually improve performance.</p> <p>1.4 Appoint green champions/ ambassadors to assist with energy and resource management on a day-to-day basis.</p> <p>1.5 Discuss ideas with senior staff to secure manager and other key staff engagement. Develop and implement CO<sub>2</sub>-related Toolbox talks for all staff and subcontractors at all sites.</p> <p>1.6 Develop a structured training and CO<sub>2</sub> awareness plan for staff.</p> <p>1.7 Ensure staff are aware of sustainability objectives, train procurement staff, and raise awareness with sub-contractors and suppliers.</p> <p><b>Influence</b></p> <p>1.8 Review subcontractor competence and their ability to implement and install new technologies.</p> <p>1.9 Include a review of all subcontractors' carbon intensity.</p> <p><b>Ongoing</b></p> <p>1.10 Continually review the EMS and include carbon footprint considerations.</p> <p>1.11 Continually identify relevant training and implement a training plan throughout the organisation.</p>			
	Short-term				
	Long-term				
	Short-term				
	Short-term				
	Short-term				
	Short-term				
	Short-term				
	Short-term				
	Short-term				
Short-term					
Medium-term					
Long-term					
Long-term					

### 2. Financial and Commercial

Environmental Aspect	Short / Medium / Long-Term	Observation / Actions	Responsible person	Start date	Target date
Financial and commercial	Short-term	<p><b>Control</b></p> <p>2.1 Review commercial service supply chain, banks, insurance accountancy website, cloud hosting, training providers, software subscriptions, legal services, and other relevant suppliers.</p>			
	Short-term	<p><b>Influence</b></p> <p>2.2 Raise awareness with procurement staff when reviewing or renewing contracts.</p>			
	Long-term	<p><b>Ongoing</b></p> <p>2.3 Continually review of the supply chain and consider competent suppliers offering the lowest CO<sub>2</sub> options.</p>			

### 3. Design and Estimating

Environmental Aspect	Short / Medium / Long-Term	Observation / Actions	Responsible person	Start date	Target date
Design and estimating	Short-term	<b>Control</b>			
	Short-term	3.1 Raise awareness with the design and estimating teams.			
	Short-term	3.2 Review Continual Professional Development (CPD) and ongoing training.			
	Short-term	3.3 Embed carbon footprint reporting into all design and estimating processes.			
	Short-term	3.4 Embed carbon footprint reporting into site managers' procedures.			
	Medium-term	<b>Influence</b>			
	Medium-term	3.5 Consider design for low carbon materials and building whole life use.			
	Medium-term	3.6 Implement BREEM waste strategies to all projects. <a href="https://www.bresmartsite.com/products/smartwaste/?cn-reloaded=1">https://www.bresmartsite.com/products/smartwaste/?cn-reloaded=1</a>			
	Medium-term	3.7 Consider material volumes to reduce waste during the design process.			
	Medium-term	<b>Ongoing</b>			
	Long-term	3.8 Implement BREEM waste management principles across all sites.			
	Long-term	3.9 Monitor the BREEM database, particularly the approved innovations.			
	Long-term	3.10 Proactively work with the supply chain in order to identify opportunities going forward. <a href="https://kb.breem.com/section/approved-innovations/">https://kb.breem.com/section/approved-innovations/</a>			
	Long-term	3.11 Apply BREEM principles to all projects where appropriate.			
	Long-term	3.12 Review and monitor the progress of Government strategy. <a href="https://www.gov.uk/government/publications/heat-and-buildings-strategy">https://www.gov.uk/government/publications/heat-and-buildings-strategy</a>			
Long-term	3.13 Review and monitor the progress of independent organisations. As an example, the team at LETI London have produced a library of innovative guides. <a href="https://www.leti.london/publications">https://www.leti.london/publications</a>				
Long-term	Guides include LETI Climate Emergency Design Guide, Client Guide for Net Zero Carbon Buildings, Net Zero Operational Carbon, Ten key requirements for new buildings.				
Long-term	3.14 Continually review the guidance from organisations including, The Royal Institute of British Architects (RIBA), The Chartered Institute of Building Services Engineers (CIBSE), The Centre for Information Technology and Architecture, The Chartered Institute of Building (CIOB), The Centre for Alternative Technology (CAT), The Building Research Establishment (BRE).				
Long-term	3.15 Review current competencies and review ongoing training requirements to ensure staff and subcontractors have the skills required to deliver projects to the required standards.				

### 4. Vehicles and Logistics

Environmental Aspect	Short / Medium / Long-Term	Observation / Actions	Responsible person	Start date	Target date
Fleet	Short-term	<b>Control</b>			
	Short-term	4.1 Year 1 - Review the current fleet performance, open discussions with an independent fleet management specialist.			
	Short-term	<b>Company-owned vehicles:</b> Estimated annual saving of 10.7 tonnes of CO <sub>2</sub> . <b>Grey Fleet:</b> Estimated annual saving of 3 tonnes of CO <sub>2</sub> .			
	Short-term	4.2 Our partners, the Fleet Department, have many years' experience reviewing vehicle fleets and implementing strategic carbon reduction strategies. Obtain quotations for a fleet review.			
	Short-term	4.3 95% funding for driver training is available for qualifying companies. Review the options while funding is available.			
	Short-term	By implementing driver training and fleet management strategies, our experience shows that savings of at least 10% can be achieved.			
	Long-term	4.4 Review the performance of the vehicle tracking in place.			
	Long-term	4.5 Review options for phased replacement of the fleet with more efficient and electric vehicles where practical.			
	Medium-term	<b>Influence</b>			
	Medium-term	4.6 Determine the carbon intensity of subcontractors' vehicle fleet movements.			
	Medium-term	4.7 Determine the carbon intensity of the key logistics suppliers.			
	Medium-term	4.8 Share the learning from Wynne Constructions fleet review with the supply chain.			
Long-term	<b>Ongoing</b>				
Long-term	4.9 Continually review fleet management for the company vehicles.				
Long-term	4.10 Continually review of the grey fleet.				
Long-term	4.11 Continually engage with the supply chain.				
Long-term	4.12 Implement a strategy for the gradual replacement of all vehicles and driver training.				

## 5. Plant And Equipment

Environmental Aspect	Short / Medium / Long-Term	Observation / Actions	Responsible person	Start date	Target date
Plant and equipment	Short-term	<p><b>Control</b></p> <p>5.1 From the 1st of April 2022, new regulations will affect the use of Red Diesel on construction sites. Consider bio ethylene as a replacement fuel (ensure any fuel purchased meets the correct environmental standards).</p> <p>HVO fuel suppliers claim to reduce CO<sub>2</sub> emissions by up to 90%.</p>			
		<p>Review the options for supply. Changing to alternative fuels for plant, equipment and generators is less challenging than changing a vehicle fleet as the fuel is delivered in bulk to the existing infrastructure.</p> <p>Review the current plant fuel consumption performance.</p> <p>Estimated annual saving of 149 tonnes of CO<sub>2</sub>.</p>			
		<p>5.2 Complete plant consumption review.</p> <p>5.4 Ensure staff are trained in efficient driving techniques.</p>			
	<p><b>Influence</b></p> <p>5.4 Consider efficiency as part of the procurement/ hire process.</p> <p>5.5 Review fuel consumption and plant efficiency with key subcontractors where appropriate. Work with subcontractors to establish a baseline.</p> <p>5.6 Share learning with the supply chain.</p> <p>5.7 Review the efficiency of plant hired by the company and the supply chain.</p>				
	<p><b>Ongoing</b></p> <p>5.8 Implement a strategy for the gradual replacement of all plant owned by the company.</p> <p>5.9 Continually review the efficiency of plant hired by the company and the supply chain.</p> <p>5.10 Continually review new innovations and trends.</p> <p>JCB are working on alternative propulsion methods such as hydrogen.</p>				
	Short-term				
	Long-term				
	Medium-term				
	Short-term				
	Long-term				

## 6. Facilities and Office

Environmental Aspect	Short / Medium / Long-Term	Observation / Actions	Responsible person	Start date	Target date
Facilities Office and site	Short-term	<p><b>Air conditioning</b></p> <p><b>Control</b></p> <p>6.1 The system at head office consists of 6 units, the maintenance reports do not show any recharge.</p>			
		<p>Review the air conditioning Report number 9374-5005-0581-0600-4701 Valid until 3 May 2023.  <a href="https://find-energy-certificate.service.gov.uk/energy-certificate/9374-5005-0581-0600-4701">https://find-energy-certificate.service.gov.uk/energy-certificate/9374-5005-0581-0600-4701</a></p>			
	<p><b>Report recommendations</b></p> <p>6.1 Implement and maintain the recommendation within the report, monitor and measure results.</p> <p>It is recommended that seasonal set points are introduced on this system to minimise energy waste.</p> <p>It is recommended that notices are placed adjacent to the system controller which advise occupants of the recommended temperature set points and as a reminder to switch off the systems before leaving an area unoccupied.</p> <p>The timers on the system were not being utilised.</p> <p>Ensure where possible the controller displays the correct time and timers are set to coincide with occupancy hours. The client should investigate the possibility of setting up 'off' only timers on the system controller to prevent the system from operating outside of occupancy hours but will not activate until required by occupants.</p> <p>The system controller is installed with a fully programmable 7-day timer.</p>				
	Short-term				
	Short-term				

### 6. Facilities and Office

Environmental Aspect	Short / Medium / Long-Term	Observation / Actions	Responsible person	Start date	Target date
Facilities Office and site	Short-term	<p><b>Onsite and new build considerations</b></p> <p>6.2 Review all refrigerant systems in line with the Green House Gas Protocol guidance.</p> <p>Air-con 33 kW system, we have estimated that the system will consume 20% of electricity.</p> <p>Estimated annual saving of 3.18 tonnes of CO<sub>2</sub>.  <a href="https://ghgprotocol.org/sites/default/files/hfc-pfc_0.xls">https://ghgprotocol.org/sites/default/files/hfc-pfc_0.xls</a></p>			
	Short-term	6.2 As a minimum regularly complete checklists for all installations.			
	Short-term	Check if the systems are left on at evenings, weekends, or times when offices are not occupied.			
		Head office: Conduct a staff survey to establish if the system is delivering the required temperatures.			
		<p><b>Influence</b></p> <p>6.3 Establish the number of AC units used at each of the construction sites if any.</p>			
	Medium-term	6.4 Review options for reducing AC units in new building design.			
	Medium-term	6.5 Design lifecycle considerations, review alternative technologies available for new build projects.			
	Medium-term	6.6 Consider specification of systems in the design process, review new technologies for feasibility.			
		These could include, passive cooling systems, adiabatic cooling systems.			
		<p><b>Ongoing</b></p> <p>6.7 Consider low energy technologies for new designs.</p>			
	Long-term	6.8 Consider alternative cooling for site welfare facilities.			
		<p><b>Office equipment</b></p> <p><b>Control</b></p>			
	Short-term	6.9 Ensure computers and copiers are set to optimum efficiency.			
	Short-term	Review the energy consumption of the server.			
	Short-term	6.10 Review the office equipment energy consumption.			
Short-term	6.11 Review the copier's energy consumption/ consider what printing is required. Review the ISO 14001 objective to reduce paper consumption.				
Medium-term	6.12 Review energy consumption and embodied CO <sub>2</sub> as a criterion for future purchases.				
Medium-term	6.13 Review the final destination of office equipment when it is disposed of. Consider recycling and re-use options (ensure any data is wiped).				
	<p><b>Influence</b></p> <p>6.14 Review consumption of subcontractors on site.</p>				
Medium-term	6.15 Consider energy efficiency in the design process.				
	<p><b>Ongoing</b></p> <p>6.16 Consider IT lifecycle for future projects.</p>				
	<p><b>Workshop heating</b></p> <p><b>Control</b></p>				
Medium-term	6.17 Review workshop heating controls and settings.				
Medium-term	6.18 Consider stratification units to improve air circulation (H & S risk assessment would need to be completed).				
Medium-term	6.19 Consider localised workstation heating, wireless infrared heating zones can be created in order to reduce the requirement to heat the whole space. A review of the financial and CO <sub>2</sub> return on investment would be required.				
	<p><b>Influence</b></p> <p>6.20 Review supply chain workshop facilities.</p>				
Medium-term	6.21 Work with supply chain to share learning and best practice.				
	<p><b>Ongoing</b></p> <p>6.22 Implement workshop energy improvements.</p>				



6. Facilities and Office

Environmental Aspect	Short / Medium / Long-Term	Observation / Actions	Responsible person	Start date	Target date
Facilities Office and site	Short-term	<p><b>Gas</b></p> <p><b>Control</b></p> <p>6.23 Insulate the valves and exposed pipe ends in the boiler room with valve wraps.</p> <p>During the visit, we counted 12 unwrapped valves and 2 pipe endplates.</p> <p>As an example, a 2-inch valve has an approximate surface area of 0.192 square meters.</p> <p>Estimated annual saving of 1.5 tonnes CO<sub>2</sub>.</p>			
	Short-term	Review the efficiency of the building, draughts, insulation levels, boiler efficiency/ running times.			
	Short-term	6.24 Ensure rooms are at the required temperature.			
	Short-term	6.25 Ensure drafts are kept to a minimum.			
	Short-term	6.26 Consider fitting reflective panels behind the radiators to reflect the heat back into the room.			
	Short-term	6.27 Flushing the system to ensure that there are no blockages. Check radiators with a thermal camera to test efficiency.			
	Short-term	6.28 Ensure radiators are correctly balanced.			
	Short-term	6.29 Aim for a minimum saving of 10% in gas consumed.			
	Medium-term	<p><b>Ongoing</b></p> <p>6.30 Consider energy efficiency in design in all new buildings.</p>			
	Medium-term	6.31 Consider alternative systems in the design process.			
	Medium-term	6.32 Consider alternative energy options in the future.			
	Short-term	<p><b>Energy suppliers</b></p> <p><b>Control</b></p> <p>6.33 Green energy tariffs could be reviewed at all sites, consider a package for all sites.</p> <p>Review utility suppliers if practical and consider renewable supplies.</p> <p>By purchasing electricity from reputable renewable suppliers, the company will be contributing to the reduction of fossil fuel supplied to the grid.</p> <p>Under the current arrangements for Green House Reporting, renewable energy purchased from the grid cannot be counted against CO<sub>2</sub> reductions. This is currently being reviewed and the progress of any changes should be monitored.</p>			
	Short-term	<p><b>Influence</b></p> <p>6.34 Review onsite energy suppliers.</p>			
	Short-term	6.35 Review supply chain energy supply contracts.			
	Medium-term	<p><b>Ongoing</b></p> <p>6.36 Continually review the head office and onsite energy procurement.</p>			
	Medium-term	6.37 Continually review the market to ensure that renewable energy claims are valid.			
Medium-term	<p><b>IT</b></p> <p><b>Control</b></p> <p>6.38 Consider the volume of Emails and cloud working / v teams chats.</p> <p>Depending on the length of the e-mail and the number of recipients, a single e-mail can contribute 17g of CO<sub>2</sub>.</p> <p>Review the CO<sub>2</sub> status of the website, review the options for a lower carbon alternative.</p>				
Medium-term	<p><b>Influence</b></p> <p>6.39 Review IT systems for all sites.</p>				
Medium-term	<p><b>Ongoing</b></p> <p>6.40 Generic count on e-mail, review the requirement for a large number of e-mails.</p>				
Medium-term	6.41 Create an IT asset list in order to determine the current levels of equipment.				
Medium-term	6.42 Review the list and plan to purchase low-energy alternatives in the future.				

6. Facilities and Office

Environmental Aspect	Short / Medium / Long-Term	Observation / Actions	Responsible person	Start date	Target date
Facilities Office and site	Short-term	<p><b>Server energy consumption</b></p> <p><b>Control</b></p> <p>6.43 Server energy consumption is not measured. Conduct a review of the consumption and consider alternatives.</p>			
	Medium-term	<p><b>Influence</b></p> <p>6.44 Review IT service providers including web designers to establish their footprint.</p>			
	Medium-term	<p><b>Ongoing</b></p> <p>6.45 Review the energy consumption of the server, consider sub-metering and obtaining consumption data from the supplier or maintenance team.</p>			
	Medium-term	<p><b>Possible PV system</b></p> <p><b>Control</b></p> <p>6.46 Obtain quotes and generation estimates/savings estimates for installing a PV and battery system at the head office.</p> <p>As an illustration, we have modelled 2 system option outputs using Retscreen software. The calculation does not include the savings that could be made using battery storage. (The climate data table for the site is shown in the appendix).</p> <p>10 kW system = 8,804 kWh per year saving 2.5 tonnes saving.</p> <p>20 kW system = 17,068 kWh per year saving 4.9 tonnes saving.</p>			
	Medium-term	<p><b>Influence</b></p> <p>6.47 Review PV options for newbuilds.</p>			
	Medium-term	<p>6.48 Review temporary renewable options.</p>			
	Medium-term	<p><b>Ongoing</b></p> <p>6.49 Review the options for installing a PV and battery storage to feed overnight consumption.</p>			
	Long-term	<p><b>Workshop machinery</b></p> <p><b>Control</b></p> <p>6.50 The workshop is used for a limited amount of time.</p>			
	Long-term	<p>6.51 The Energy consumption could be measured to establish a baseline.</p>			
	Long-term	<p>6.51 Measure the consumption of machinery. Review any power savings modes, programmable machine controls cycle time reduction, power monitoring and energy-efficient components.</p>			
	Medium-term	<p><b>Electricity</b></p> <p><b>Control</b></p> <p>6.52 Consider PV for the head office roof, obtain a quote for installation and the potential energy and CO<sub>2</sub> savings.</p>			
	Short-term	<p>6.53 Review the meter readings to establish patterns and establish if there are any unusual patterns.</p> <p>Estimated annual saving of 1.6 tonnes of CO<sub>2</sub>.</p>			
	Medium-term	<p><b>Influence</b></p> <p>6.54 Review the options for low energy and renewable energy at site offices and welfare units.</p>			
	Medium-term	<p>6.55 Aim for a minimum saving of 10% for electricity consumed.</p>			
	Medium-term	<p><b>Ongoing</b></p> <p>6.55 Energy consumption could be reviewed to ensure wastage is reduced to a minimum.</p>			
Medium-term	<p>6.56 Review option for low energy welfare facilities.</p>				
Medium-term	<p>6.57 Review the market for suitable products.</p> <p>See the example below.</p> <p><a href="https://garic.co.uk/product/combi-cabin-eco-series">https://garic.co.uk/product/combi-cabin-eco-series</a></p>				

### 7. Procurement

Environmental Aspect	Short / Medium / Long-Term	Observation / Actions	Responsible person	Start date	Target date
Scope 3 purchases for operations		Scope 3: Determine the % of supply chain/ Scope 3 emissions, in the UK supply chain constitutes 80% of the sector's emissions.			
		<b>Control</b>			
	Short-term	7.1 Review the Copy of Go Green Experts - Data Required for Carbon Calculation Template Wynne Construction spreadsheet.			
	Short-term	7.2 Review the accounting software to obtain information about the biggest supplier spend.			
	Medium-term	7.3 There is a lack of availability of low carbon products at the moment, however, this will change over the years.			
	Medium-term	7.4 Monitor new innovations. The link to the Cemex website below shows some potential options. <a href="https://www.cemex.co.uk/low-carbon-solutions-for-construction?utm_source=google&amp;utm_medium=cpc&amp;utm_campaign=low-carbon-concrete_buil_awa_uk&amp;gclid=Cj0KCQIAt8W0BhDbARIsANQLp97Xq2pFEcTvquLCjEUVQNh7rAbeovUHipfzQBzyuRwu4AABJaFlcaAsmGEALw_wcB">https://www.cemex.co.uk/low-carbon-solutions-for-construction?utm_source=google&amp;utm_medium=cpc&amp;utm_campaign=low-carbon-concrete_buil_awa_uk&amp;gclid=Cj0KCQIAt8W0BhDbARIsANQLp97Xq2pFEcTvquLCjEUVQNh7rAbeovUHipfzQBzyuRwu4AABJaFlcaAsmGEALw_wcB</a>			
	Medium-term	7.5 Complete a full CO <sub>2</sub> lifecycle assessment of selected pilot projects. 1) Non BREEAM project. 2) BREEAM project.			
		<b>Influence</b>			
	Medium-term	7.6 Complete a supply chains survey to determine the current status of their carbon awareness.			
	Medium-term	7.7 Support supply chain in order to help them manage footprint.			
	Medium-term	7.9 Monitor the progress of new products such as wooden or composite materials to replace steel.			
	Medium-term	7.10 Consider the lowest carbon intensity materials where practical.			
		<b>Ongoing</b>			
	Long-term	7.11 Measure and implement a plan in line with science-based targets.			
	Long-term	7.12 Develop a consistent approach to data gathering throughout the supply chain.			
	Medium-term	7.13 Gather data from, tender summary documents, material procurement registers, survey documents, estimate and tendering docs, material schedules etc.			
	Medium-term	7.14 Implementing the BREEAM management process for all projects in order to improve resource efficiency.			
	Medium-term	7.15 Review new innovations and technology in order to establish whether they will meet client and H&S requirements and reduce the environmental impacts.			
Medium-term	7.16 Review the options to raise client awareness.				
Medium-term	7.17 Cost is a big factor at the moment, work with suppliers in order to help reduce or stabilise costs.				
Long-term	7.18 Continually review best practice.				

### 8. Resource Efficiency

Environmental Aspect	Short / Medium / Long-Term	Observation / Actions	Responsible person	Start date	Target date
Resource efficiency		<b>Control</b>			
	Medium-term	8.1 Check that the skips are full when they are removed.			
	Medium-term	8.2 Complete a waste audit for the biggest waste volume - mixed construction waste.			
	Medium-term	8.3 Review the waste reports from waste contractors.			
	Medium-term	8.4 Consider alternative routes to reuse for some waste streams.			
	Medium-term	8.5 Aim for 10 % reduction in waste. Estimated annual saving of 1.24 tonnes of CO <sub>2</sub> .			
		<b>Influence</b>			
	Long-term	8.6 Implement BREEAM waste strategies to all projects. <a href="https://www.bresmartsite.com/products/smartwaste/?cn-reloaded=1">https://www.bresmartsite.com/products/smartwaste/?cn-reloaded=1</a>			
		<b>Ongoing</b>			
	Long-term	8.7 Implement BREEAM waste management principles across all sites.			
Medium-term	8.8 Review the waste management supply chain to determine their recycling rates and the final destination of the individual waste streams.				

### 9. Historic Action Taken

Environmental Aspect	Short / Medium / Long-Term	Observation / Actions	Responsible person	Start date	Target date
Installation of a new efficient boiler		Reducing scope 2 footprint.			
LED lighting		Installation of LED lighting and lighting controls.			
Use of telematics and vehicle management tools		Systems are used to monitor some.			
Discussions with plant and equipment suppliers		Consultation has taken place with JCB regarding the use of biofuels.			



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## 6: Wynne Progress Monitoring and reporting

This section describes actions Wynne should take to improve the quality of carbon emissions data, and how progress should be reported.

The progress of the Decarbonisation Strategy should be discussed and reviewed by the Board of Directors. Progress should be monitored against the targets set within this plan and the KPI's set out in **figure 18 below**:

### Wynne Key Performance Indicators

- All fuel and electrical data should be monitored and shared on a monthly basis for each vehicle and asset
- Updates to the decarbonisation strategy report year on year to illustrate % increase / decrease in carbon emissions
- Number of decarbonisation projects / targets completed
- Number of projects discussed by the directors for approval and progressing as a target year on year.

**Figure 18:** Wynne reporting KPI's.

For each meeting of the Directors, the progress of the Decarbonisation Strategy as a whole, as well as individual projects / targets, should be discussed against these KPIs. It is important that Wynne adopt a way of identifying the project / targets that are perhaps stalling or not progressing as expected. Wynne could do this by using the Red, Amber & Green (RAG) risk register format.

An annual report of progress towards the Wynne's decarbonisation target should be produced and presented to the Directors. This report should provide an update on progress against the KPIs above and embed actions included in this strategy.



Managing Director Chris Wynne at our £21.0m Yale Campus Redevelopment