BIDWELLS

JESUS COLLEGE – LAND TO THE NORTH OF STATION ROAD, CAMBRIDGE

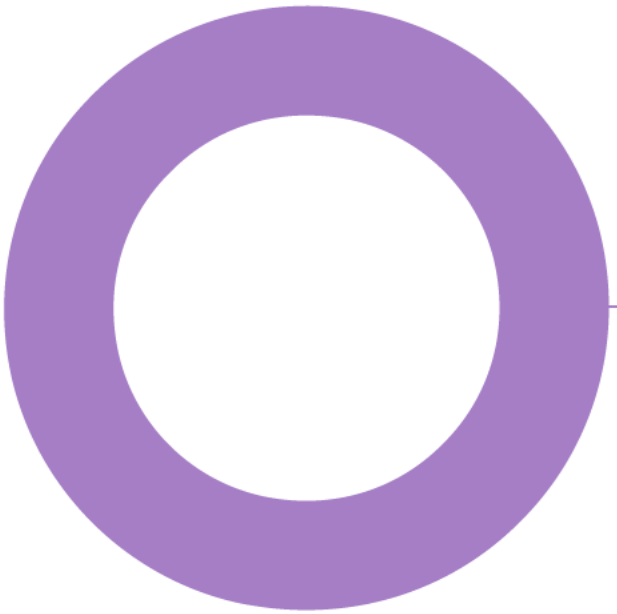
FIRST PROPOSALS CONSULTATION (REGULATION 18) – DEC 2021 PLANNING REPRESENTATIONS
APPENDIX 4 : NET ZERO REPORT AND SOCIAL VALUE REPORT

HOARE LEA

Station Road.
Cambridge.
Jesus College.

SUSTAINABILITY
NET ZERO - INITIAL PROPOSALS

REVISION 01 – 08 DECEMBER 2021



Audit sheet.

Rev.	Date	Description of change / purpose of issue	Prepared	Reviewed	Authorised
00	07/12/21	Draft for comment	KC	KC	JRF
01	08/12/2021	Submission version	KC	WN	JRF

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Contents.

1. Introduction.

The environmental performance of buildings is being scrutinised like never before; in more and more cases investment decisions for developers and owner occupiers must align with wider corporate goals relating to sustainability. Similarly, tenants leasing buildings now have greater expectations based on a clearer understanding of their impact and how the buildings they work in contribute to it.

Jesus College have clear targets in their Responsible Investment Policy which require Net Zero Carbon for their property investments by 2050. The land at Station Road represents a key opportunity to put into practice the principles of the policy and realise a development that not only supports the transition to Net Zero Carbon in the built environment, but also brings significant additional sustainability benefits. Through its excellent connectivity to public transport and proximity to the city centre, the proposals to replace car parking with high quality public realm, and the additional economic benefits of expanding the commercial space provision in the CB1 district, Station Road is envisioned as a major contributor to a sustainable Cambridge.

This design note explores some of the key proposals around the contribution Station Road can make to the Net Zero Carbon agenda in terms of both embodied and operational carbon emissions.

2. Net Zero Carbon.

The response to the climate emergency has manifested itself in the drive towards Net Zero Carbon (NZC) – the UK Government has a legally binding target to achieve NZC by 2050. The emerging Greater Cambridge Local Plan also includes a focus on NZC. Proposed policy CC/NZ majors on operational emissions (those occurring once from the day to day operation of the building) but also considers the carbon associated with the construction of the building itself.

Following the lead of the World Green Building Council, the UK Green Building Council has established their Net Zero Carbon Framework Definition which sets out what NZC is and, importantly, how to robustly achieve it based on broad expert engagement and consultation. The Framework, and industry consensus on how to tackle building related carbon emissions, defines two net zero pathways which make the distinction between two of the phases of a building lifecycle – construction and operation.

The principle of NZC requires that emissions are reduced to a given level with residual emissions 'netted' off to align with the Net Zero Carbon Framework and it is this approach that Jesus College wish to explore at Station Road. It is worth noting that, particularly for embodied carbon, this approach is somewhat in advance of proposed policy CC/NZ.

3. Net Zero in Construction.

If adopted, policy CC/NZ would require the project to calculate embodied emissions and demonstrate actions to reduce them. It does not currently include any specific level of performance or the offsetting of residual emissions to achieve net zero.

The calculation of WLC emissions is now relatively common among projects with strong aspirations for climate change mitigation and designers are increasingly experienced with reducing emissions through approaches to building structures, facades, finishes and so on.

The UKGBC approach goes further than this and requires that the up-front emissions are calculated (those associated with the extraction and processing of materials, as well as their transportation and installation – see Figure 1, below) and for those emissions to be offset at practical completion through offset products that meet specific criteria, published by UKGBC, to make sure they are robust in order to claim NZC status.

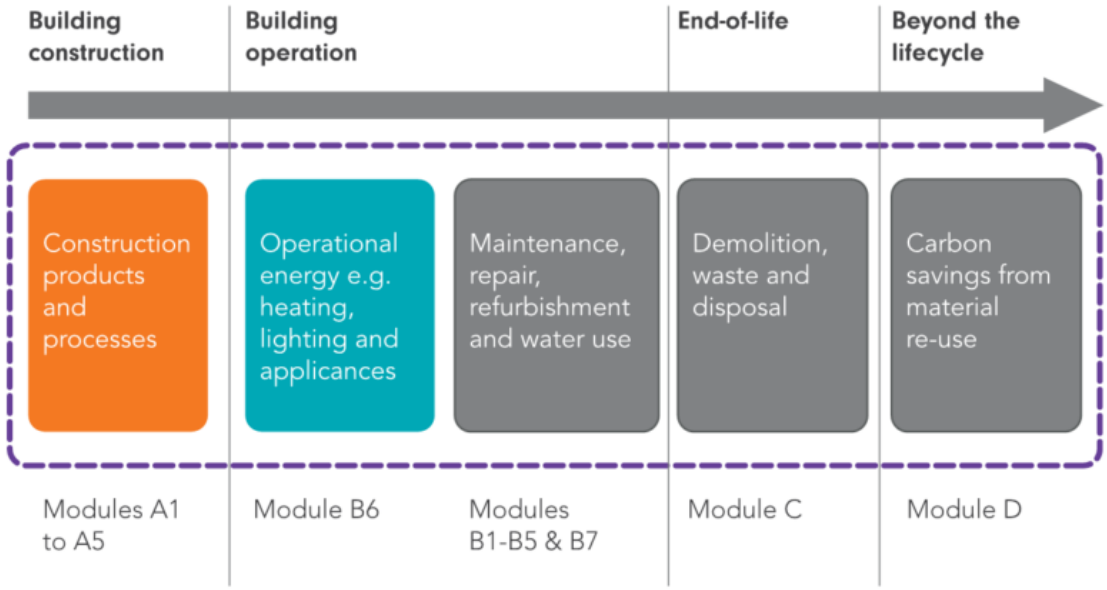

Figure 1: Life cycle carbon modules illustrating those included in the UKGBC Net Zero in Construction definition.

3.1 Embodied carbon targets.

Industry guidance for embodied carbon is limited with only two main sources providing target performance metrics (LETI Climate Emergency Design Guide and RIBA 2030 Challenge).

LETI have published a document[1] which sets out an embodied carbon rating system that can be used to track the performance improvements needed across four building typologies from now until 2030 – the table below is extracted from the document.

Upfront Carbon, A1-5 (exc. sequestration)

	Band	Office	Residential	Education	Retail
	A++	<100	<100	<100	<100
	A+	<225	<200	<200	<200
LETI 2030 Design Target	A	<350	<300	<300	<300
	B	<475	<400	<400	<425
LETI 2020 Design Target	C	<600	<500	<500	<550
	D	<775	<675	<625	<700
	E	<950	<850	<750	<850
	F	<1100	<1000	<875	<1000
	G	<1300	<1200	<1100	<1200

Figure 2: LETI up front embodied carbon targets (modules A1 – A5).

The table above indicates that an office building being designed now (the LETI targets relate to design year rather than delivery year) should aim for a figure <600 $kgCO_2e/m^2$, with a design occurring in 2030 would target <350 $kgCO_2e/m^2$.

[1] https://b80d7a04-1c28-45e2-b904-e0715cface93.filesusr.com/ugd/252d09_e5865d5fea9044899e5b70e7a88d4663.pdf

3.2 Approach for Station Road.

The current intention for the Station Road scheme is to achieve Net Zero in Construction by adopting the UKGBC Framework definition approach. This will bring significant WLC benefit over an approach which only considers operational emissions.

The vision document sets out two scenarios: the first being to retain the existing villas, which would be refurbished, and create additional office accommodation to the rear, taking appropriate account of the heritage impact of development. The second option would be to remove the existing villas and provide a full redevelopment of the site with all new office accommodation.

Considering the LETI targets above and potential timescales for development, initial embodied carbon budgets for the two scenarios are shown below[2]:

- Retain and extend option[3]: Approximately 4,000 to 5,300 tonnesCO_2e
- All new-build option: Approximately 7,000 to 9,500 tonnesCO_2e

The above ranges are based on a high target of 475 kgCO_2e/m^2 (LETI 2025) and a low target of 350 kgCO_2e/m^2 (LETI 2030).

In both cases, it is the intention that good quality offsets meeting the UKGBC guidance criteria would be purchased at practical completion to achieve NZC in Construction status in advance of proposed policy requirements. The budgets would be developed further and refined as design progresses.

4. Net Zero in Operation.

In summary, the UKGBC Framework definition of Net Zero in Operation says that energy demand must be minimised (with no fossil fuel use on site[4]), and the residual emissions offset at the end of each year of occupation, with emissions calculated based on measured energy consumption data. As a response to this, the Station Road development would be all-electric, utilising alternative technologies, such as heat pumps, to provide heat. Alongside reducing energy demand, emissions would be further reduced through the use of renewable energy generation[5] (e.g. photovoltaic cells, 'PVs').

The responsibility for achieving Net Zero in Operation can sit with different parties depending on the tenure of a given building, notwithstanding any landlord managed areas. This is because it is often difficult (or effectively impossible) for the investors, developers, designers, and constructors of buildings to directly control the equipment installed by the tenants / owners, or how they use it.

That notwithstanding it is the intention that the buildings provide the best possible opportunity for tenants to be able to achieve Net Zero in Operation by minimising the energy demand of the base building through the measures discussed above.

It is useful for Energy Use Intensity (EUI) targets to be set early in the design process to guide the design and ensure that any NZC claims made by future tenants are underpinned by a robust energy performance of the base building.

[2] Both of these apply a target performance of 475 kgCO_2e/m^2 GIA

[3] For the purposes of illustrating the aspirational target for the retain and extend scenario, embodied carbon for the retained area includes only that percentage of the LETI target relating to MEP, internal finishes and 50% of windows, as the embodied carbon of the substructure, superstructure, etc of the existing villas will be zero as they already exist.

[4] The provision of fossil-fuel fired back-up generators is deemed acceptable but they must not be used for any longer than required or for revenue generation.

[5] Most robustly through renewables installed on the building, near the building and hard-wired to it, or through specific arrangements with energy suppliers.

4.1 EUI targets.

The main sources of net zero targets (UKGBC, RIBA, LETI) each provide target EUIs for office buildings. Of these, both the UKGBC and RIBA present trajectories toward a Paris proof target performance ratcheting up performance over time and recognising that industry will take time to learn to deliver the exemplary performance necessary.

The most complete trajectory to the Paris proof target is offered by the recently published (November 2021) UKGBC Net Zero Whole Life Carbon Roadmap which provides the following trajectory. UKGBC suggest that new offices should aim to achieve the Paris proof targets as soon as possible although the trajectory recognises the challenge of doing so with current technology, construction sector expertise, and market expectation.

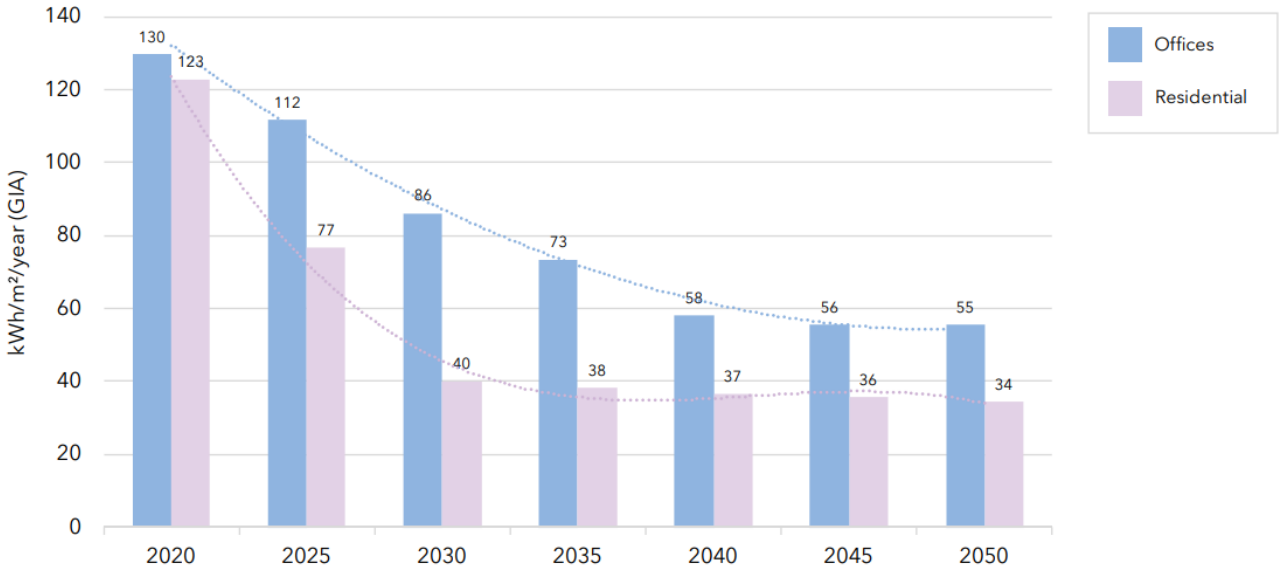

Figure 3: UKGBC Net Zero Whole Life Carbon Roadmap Energy Use Intensity trajectories.

The RIBA Climate Challenge targets are very similar to those from the UKGBC despite the trajectory to the Paris Proof target being slightly different. RIBA suggest that buildings in design today should adopt the 2025 target as a minimum and the 2030 target where possible.

RIBA Sustainable Outcome Metrics	Business as usual (new build, compliance approach)	2025 Targets	2030 Targets	Notes
Operational Energy kWh/m²/y	130 kWh/m²/y DEC D (90)	< 75 kWh/m²/y DEC B (50) and/or NABERS Base build 5	< 55 kWh/m²/y DEC B (40) and/or NABERS Base build 6	Targets based on GIA. Figures include regulated & unregulated energy consumption irrespective of source (grid/ renewables). 1. Use a 'Fabric First' approach 2. Minimise energy demand. Use efficient services and low carbon heat 3. Maximise onsite renewables

Figure 4: RIBA 2030 Climate Challenge V2 target metrics for new build offices.

LETI also proposes a target of 55 kWh/m²/year for office buildings and additionally suggests limiting space heating demand to 15 kWh/m²/year.

Policy CC/NZ in the emerging Greater Cambridge Local Plan also suggests an EUI of 55kWh/m²/year for offices but does not provide a trajectory to this Paris proof target. It further proposes a limit on the space heating demand of non-domestic buildings of 15 – 20 kWh/m²/year which equates to a very high level of thermal performance requiring measures approaching those needed to achieve the Passivhaus standard.

4.2 Approach for Station Road.

The approach for Station Road will be to aim for the EUI performance suggested by industry guidance at the time of development considering the various constraints of, and the market expectations for the site. This is likely to mean that we will seek to achieve an EUI between 86 kWh/m²/yr as an upper limit (the 2030 UKGBC performance figure) for any retained elements, and 55 kWh/m²/yr as a stretch target (the Paris proof performance of all current industry guidance) for new build elements.

This level of EUI would mean the very best performance from the building fabric and engineering systems. Achieving this level of energy consumption in practice is also likely to be highly dependent on the equipment, activities, and behaviours of future tenants for which assumptions would need to be made such as use of cloud computing.

Benchmarking of a range of well performing recent existing buildings is shown below. This highlights that the target suggested by the local plan and, by industry consensus, required to tackle climate change effectively is met by very few buildings currently. However, the performance of buildings is improving and drivers such as the proposed mandatory disclosure of building energy performance will continue to drive down consumption as industry better understands how to deliver such buildings and market demand increases.

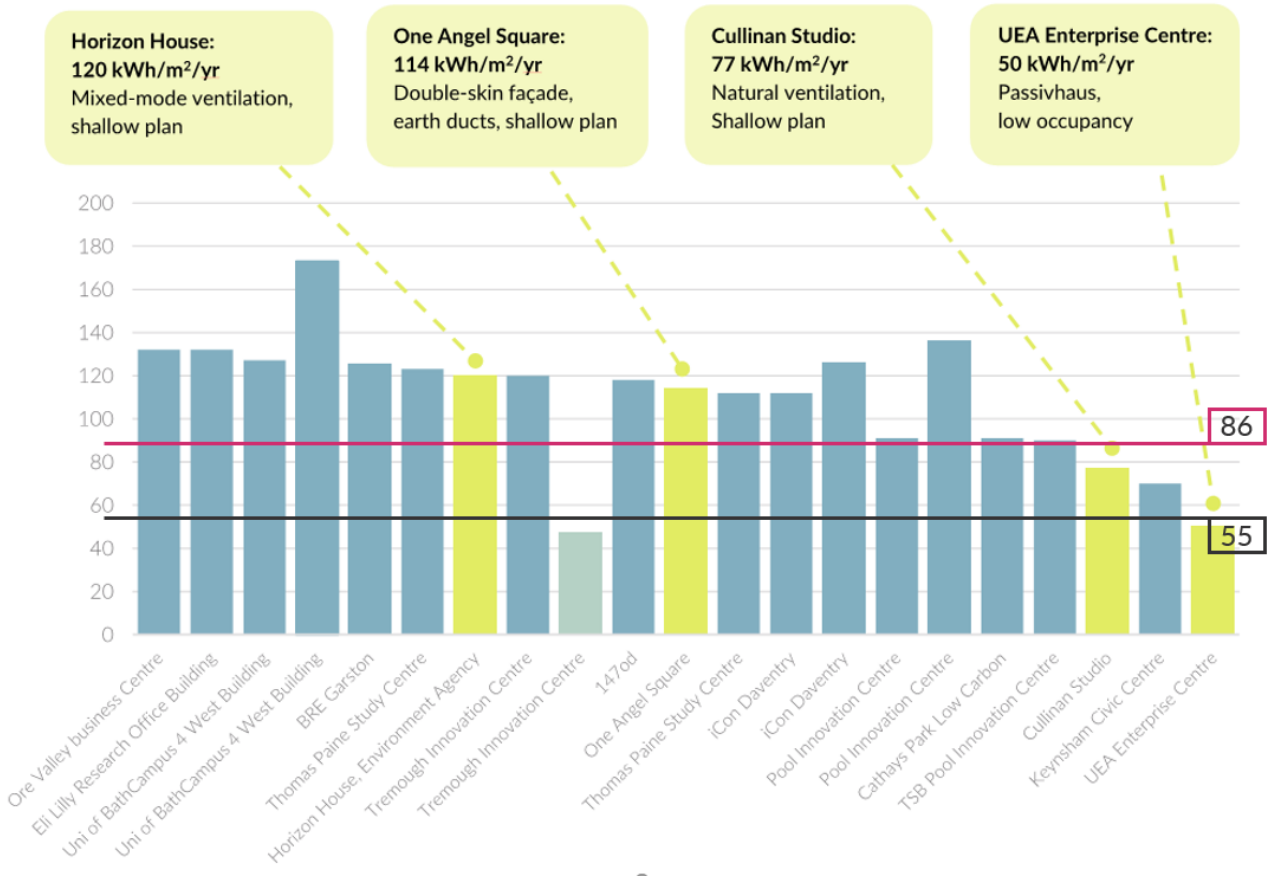

Figure 5: Comparison of some recent existing real world office building performance and initial EUI considerations.

Adopting these EUIs allows for some initial estimations of performance metrics for the two development options as described below.

Table 1: Initial operational performance metrics

Metric	Retain and extend	All new-build
Total energy demand (kWh/yr)	855,000	1,100,000
EUI (kWh/m^2/yr)	63	55
PV generation (kWh/yr)	104,000	143,000
Annual operational emissions (tonnesCO_2e/yr)	159	203
Emissions / person (tonnesCO_2e/FTE/yr)	0.16	0.15

In producing the above metrics, the following assumptions have been made:

- EUI for the retain and extend option is a weighted average considering the area of retained and new-build space.
- PV generation assumes 25% of roof space will be taken by plant, lift overruns etc, and that 50% of remaining area will be PV with an output of 130kWh/m^2/yr.
- Emissions calculated based on the 2021 UK grid emissions factor for company reporting published by BEIS
- FTE metric based on 1 person per 10m^2 NIA

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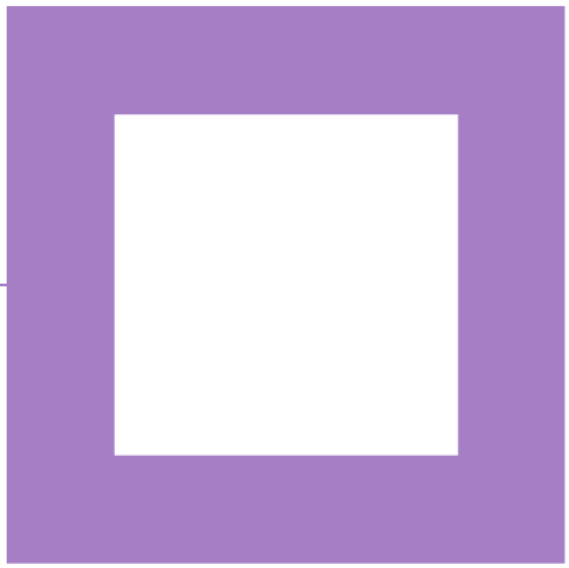

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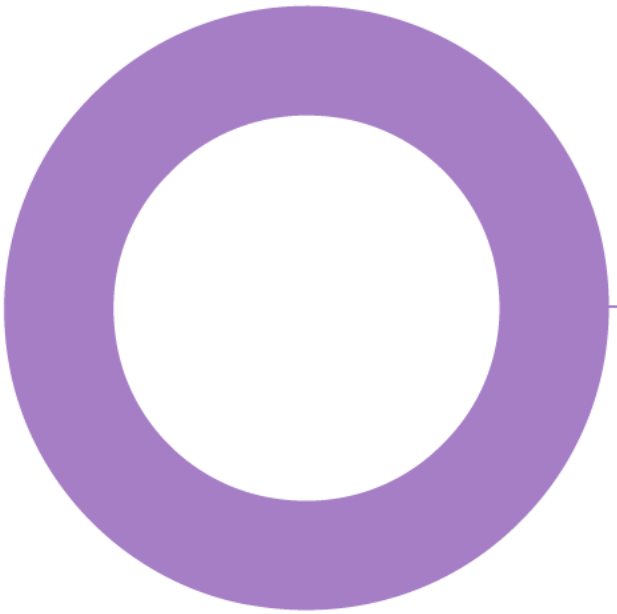
SUSTAINABILITY

SOCIAL VALUE BASELINE DEMOGRAPHICS REPORT

REVISION 00 – 07 DECEMBER 2021



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00	07/12/2021	Submission issue	RW	KC	JRF

Project number: 23/23533A
Document reference: REP-2323533A-KC-20211207-SV Demographics Report-Rev00.docx

Contents.

Introduction

Hoare Lea work closely with our partners, CHY to evaluate and deliver social value outcomes on many of our projects. CHY Consultancy is a leading enterprise that has been measuring, delivering and generating social value in the built environment since 2006. They work alongside construction businesses, their supply chains, their clients and their communities to create real, tangible long-term outcomes.

Together, we define social value as:

"Social value is meeting the current needs of the industry and the communities in which we work; improving the quality of life for generations to come."

Through radical collaborations with partners from in and outside our industry such as Construction Innovation Hub, BRE, Construction Leadership Council, Institute of Economic Development, Landmrk, the Open Data Institute, Constructing Excellence, Social Value UK, Social Value International, and Greater London Authority (GLA) we seek to provide innovative, practical solutions to challenge the way people, organisations and companies design, deliver and measure social value.

Objectives

The objectives of this Social Value Baseline Demographics Report is to provide evidence-based research to highlight the current demographics, challenges and future economic, socioeconomic and educational trends of the local area.

The site is situated at the north side of Station Road in the City of Cambridge, in the southern side of the Petersfield ward/electoral division. The report will focus on Petersfield and the wider Cambridge City area and wards.

This has included research, using ONS data, Indices of Deprivation (IoD) and academic research papers. At this stage, we have not consulted any external key stakeholders.

Demographics

Cambridge is comprised of 14 wards, with the Petersfield Ward situated centrally directly surrounded by 6 other wards. Petersfield has an approximate population of 8450 as of 2020[1] and the total estimated population of the whole of Cambridge reported as 859,830 as of 2020[2].

Economy

There are 86, 300 residents of working age (between 16/64) in Cambridge:

- 80.7 are economically active which is higher than the national UK average of 78.9%. (June 2021)[3].
- The median age group of Cambridge residents is 25-29 years.
- 79.6% (71,900) of Cambridge residents are in employment. This is higher than the British average of 74.4%. (June 2021)[4]
- 3.8% are unemployed which is lower than the national average of 4.3%[5].
- 3% are claiming benefits* which is lower than the national average of 4.8% (June 2021)
- 18.7% are students

In the Petersfield ward data shows:

[1] https://cambridgeshireinsight.org.uk/population/report/view/37fc7a6386584eda9362740c1641e44d/E05002711/

[2] https://cambridgeshireinsight.org.uk/population/

[3] https://www.nomisweb.co.uk/reports/lmp/gor/2092957699/report.aspx?town=England#tabrespop

[4] https://www.nomisweb.co.uk/reports/lmp/la/1946157205/report.aspx#tabrespop

[5] https://www.nomisweb.co.uk/reports/lmp/gor/2092957699/report.aspx

- Total population estimate 8450[6]
- Median age group 25-29 years.
- 69% of Petersfield residents are economically active (residents aged 16-74) (2011)[7]
- 56.9% are in employment (residents aged 16-74). (2011)[8]
- 2.3% are unemployed.
- There is insufficient data to illustrate benefit claimants.

**Out Of Work Benefits- Under Universal Credit a broader span of claimants are required to look for work than under Jobseeker's Allowance. As Universal Credit Full Service is rolled out in particular areas, the number of people recorded as being on the Claimant Count is therefore likely to rise. The Claimant Count is a measure of the number of people claiming benefits principally for the reason of being unemployed. The Claimant Count does not attempt to measure unemployment, which is a concept defined by the International Labour Organisation (ILO) as all those who are out of work, actively seeking work and available to start work."*

Cambridge's employment rate has increased over the last 10 years by 2.1% although it has seen a slight decline since the middle of the COVID-19 pandemic. This is less of an increase than the rest of Great Britain which has seen increases of 5.%. However, the number of people who are considered economically active remains higher than the national UK average.

Cambridge's unemployment rate of 3.8% (2800) has steadily decreased over the last 10 years from 5.4% (3800) in line with Great Britain statistics. The number of unemployed residents increased slightly mid pandemic, but this number is decreasing once again in line with the figures across Great Britain.

Since March 2019, claimant figures in Cambridge have increased 161% from 1000 claimants to 2615 in October 2021. These figures peaked at 3695 claimants in August 2020. This is significantly higher than the national UK average of 30% increase in claimants.[9]

Claimants are defined as the number of people claiming Jobseeker's Allowance and the number of Universal Credit claimants placed in the 'Searching for Work' conditionality group.

There is insufficient data to calculate the number of workless households in Cambridge.

At neighbourhood level, the site falls within LSOA Cambridge 008A.

The last census in 2011 showed that only 69% of residents in this LSOA were economically active. This puts this neighbourhood in contrast with the surrounding LSOA's where the percentage of economically active residents is higher, with an average of 75.5%.

None of the LSOA's that surround the site fall within the 20% most deprived neighbourhoods in England.

Education

- 5.6% of Petersfield residents have no qualifications which is lower than the Great Britain average of 6.4% (Dec 2020). There is insufficient data to measure across Cambridge City. Education, Training and Skills is the highest-ranking domain in Cambridge City, closely followed by Employment and Income. (2019)
- 1083 (14.8%) and 4424 (60.6%) of Petersfield residents and 64200 (75.3%) and 52100 (61.1%) of Cambridge have gained a Level 3 and Level 4 qualifications respectively. This is broadly in line with the UK figures of 16.8% (Level 3) and above the UK data of 43% for Level 4. (Dec 2020)
- 2520 (55.6%) of Petersfield residents and 60,800 (84.7%) of Cambridge residents are in Managerial and Professional occupations, which is significantly higher than the UK average of 38.8%. (Dec 2020)

[6] Office for National Statistics Population Estimates

[7] https:-/-/www.nomisweb.co.uk-/census-/2011-/KS601UK.pdf

[8] https:-/-/www.nomisweb.co.uk-/census-/2011-/KS601UK.pdf

https://www.nomisweb.co.uk/reports/lmp/la/1946157205/subreports/ea_time_series/report.aspx?

[9] https://www.nomisweb.co.uk/reports/lmp/gor/2092957699/subreports/gor_usac_time_series/report.aspx?

- 1750 (1.4%) of Cambridge residents work in the Construction Industry which is lower than the UK average of 6.6% (June 2021).
- 1,500 (1.2%) of Cambridges employed residents work in the manufacturing sector, significantly lower than the Great Britain average of 7.9%. (June 2021).
- In January 2019 12.8% of Primary School Children and 10.1% of Secondary School children were known to be eligible and claiming Free School Meals in Cambridgeshire. The data post-pandemic has not yet been published on a regional basis, however the number of pupils eligible for free school meals has increased during 2020. In October 2020, 1.63 million pupils were eligible for free school meals, 19.7% of all pupils. This is an increase of nearly 200,000 pupils since January 2020, when 1.44 million (17.3%) pupils were eligible for free school meals. It is likely therefore that the local figures have risen.

Ethnicity

ONS data from Census 2011 shows the ethnic makeup of Cambridge, Cambridgeshire & England:

Table 1: ONS Census 2011 Data

	Cambridge	Cambridge	Cambridge shire	Cambridge shire	England	England
	Count	%	Count	%	Count	%
Asian/Asian British: Bangladeshi	1,849	1.5	2,562	0.4	436,514	0.8
Asian/Asian British: Chinese	4,454	3.6	6,723	1.1	379,503	0.7
Asian/Asian British: Indian	3,413	2.8	7,430	1.2	1,395,702	2.6
Asian/Asian British: Other Asian	3,160	2.6	6,550	1.1	819,402	1.5
Asian/Asian British: Pakistani	742	0.6	2,373	0.4	1,112,282	2.1
Black/African/Caribbean/Black British: African	1,300	1	3,426	0.6	977,741	1.8
Black/African/Caribbean/Black British: Caribbean	598	0.5	1,647	0.3	591,016	1.1
Black/African/Caribbean/Black British: Other Black	199	0.2	937	0.2	277,857	0.5
Mixed/multiple ethnic groups: White and Asian	1,501	1.2	3,895	0.6	332,708	0.6
Mixed/multiple ethnic groups: White and Black African	470	0.4	1,385	0.2	161,550	0.3
Mixed/multiple ethnic groups: White and Black Caribbean	728	0.6	2,510	0.4	415,616	0.8
Mixed/multiple ethnic groups: Other Mixed	1,245	1	3,291	0.5	283,005	0.5
Other ethnic group: Arab	908	0.7	1,370	0.2	220,985	0.4

Other ethnic group: Any other ethnic group	1,095	0.9	2,124	0.3	327,433	0.6
White: English/Welsh/Scottish/Northern Irish/British	81,742	66	524,617	84.5	42,279,236	79.8
White: Gypsy or Irish Traveller	109	0.1	1,508	0.2	54,895	0.1
White: Irish	1,767	1.4	4,908	0.8	517,001	1
White: Other White	18,587	15	43,954	7.1	2,430,010	4.6

The ONS 2011 data shows that 34% of residents are from an ethnic group other than White British. The proportion is larger than the average across England (20.2%).

Crime

Of the 6 areas that comprise Cambridgeshire (Cambridge City, East Cambridgeshire, Fenland, Huntingdonshire, South Cambridgeshire and Peterborough), Cambridge City has the second highest crime rate of 12,068 equating to 97 crimes per 1000 people (Oct 20- Sept 2021) higher than the average in England of 72.1 per 1,000.

Crime in Cambridge's Neighbourhoods

Central & West Cambridge is the most dangerous neighbourhood in Cambridge, followed by Petersfield in second place, and East Barnwell & Abbey as the third most dangerous area. Cambridge's safest neighbourhoods are, in order, Addenbrooke's & Queen Edith's, Cherry Hinton, and Romsey.

Neighbourhood	Crime Count	Crime Rate	Danger Rank
Addenbrooke's & Queen Edith's	694	76	11th
Arbury	667	78	Eighth
Central & West Cambridge	2,735	181	First
Cherry Hinton	528	66	12th
Coleridge	687	77	Ninth
East Barnwell & Abbey	1,123	125	Third
East Chesterton	982	111	Fifth
Kings Hedges	993	120	Fourth
Petersfield	1,195	142	Second
Romsey	644	76	Tenth
Trumpington	1,541	108	Sixth
West Chesterton	722	91	Seventh

Figure 1: Crime rates in Cambridge neighbourhoods December 2020. [10]

[10] https://crimerate.co.uk/cambridgeshire/cambridge

Summary of Crimes in Cambridge This Year

	Cambridge		Cambridgeshire		
Crime	**Count**	**Rate**	**Count**	**Rate**	**Rate Difference**
Anti-Social Behaviour	3,369	22.63	15,574	18.21	20% more dangerous
Bicycle Theft	1,911	12.84	3,077	3.60	72% more dangerous
Burglary	625	4.20	3,817	4.46	6% safer
Criminal Damage and Arson	1,259	8.46	6,970	8.15	3.7% more dangerous
Drugs	458	3.08	2,021	2.36	23% more dangerous
Other Crime	239	1.61	1,414	1.65	2.5% safer
Other Theft	957	6.43	4,815	5.63	12% more dangerous
Possession of Weapons	138	0.93	615	0.72	23% more dangerous
Public Order	1,447	9.72	6,032	7.05	27% more dangerous
Robbery	135	0.91	541	0.63	31% more dangerous
Shoplifting	681	4.57	2,652	3.10	32% more dangerous
Theft From the Person	192	1.29	524	0.61	53% more dangerous
Vehicle Crime	792	5.32	4,244	4.96	7% more dangerous
Violence and Sexual Offences	4,532	30.44	24,340	28.45	7% more dangerous

Figure 2: Summary of crimes in Cambridge this year.

The majority of crimes reported are Violence and Sexual Offence, Anti-Social Behaviour and Bicycle Theft.

Indices of Deprivation

Deprivation Domains for Station Road Lower Layer Super Output Area (LSOA)

Local Authority Code: Cambridge 008A

LSOA Code: E01017987

The individual domain rankings present an absolute value for the lowest ranked and highest ranked domains in the district. The ranks are based on comparisons between all the local authority nationally. There are 317 local authorities.

The table below shows the deprivation domains for Cambridge City by rank (out of 317 nationally) where the lower the rank the more deprived the domain (1 is the most deprived) is compared to other local authorities nationally:

Domain		National Local Authority Rank / 317
Income		245
Employment		270
Education, Skills and Training		284
Health Deprivation and Disability		202
Living Environment		51
Crime		95
Barriers to Housing and Services		96
Income Sub-domains	IDACI (Income Deprivation affecting children)	200
	IDAOPI (Income Deprivation affecting Older People)	172

Figure 3: Deprivation domains for Cambridge City by rank.

It is apparent that in Cambridge City, Living Environment ranks significantly lower than the other domains, showing it is the most deprived domain by rank. Education, Training and Skills is the highest-ranking domain in Cambridge City, closely followed by Employment and Income.

Comparison of surrounding wards.

The below table shows the average ward decile rank both locally and nationally. Please note that LSOA and Wards are not coterminous, and therefore a best fit look up has been used.

Ward	Index of Multiple Deprivation (IMD) Decile (where 1 is most deprived 10% of LSOAs)	Local Index of Multiple Deprivation (IMD) Decile (where 1 is most deprived 10% of LSOAs)
Abbey	4	2
Arbury	6	4
Castle	9	8
Cherry Hinton	7	6
Coleridge	7	6
East Chesterton	5	4
King's Hedges	4	3
Market	7	7
Newnham	9	9
Petersfield	7	6
Queen Edith's	9	8
Romsey	7	6
Trumpington	7	5
West Chesterton	8	7

Figure 4: Table of wards in Cambridge City by Local and National IMD.[11]

Cambridge City is ranked 210/317 of all local authorities nationally, based on local authority score, where 1 is most deprived (meaning Cambridge City is the 107th least deprived of the 317 English Local Authorities). This

[11] https://cambridgeshireinsight.org.uk/wp-content/uploads/2019/12/Cambridge-City_1.1.pdf

compares to South Cambridgeshire which is 301 (16th least deprived), East Cambridgeshire which is 272/317 (45thleast deprived), and Fenland and Peterborough that rank 80th and 51st respectively (237 and 266 out of 317). Cambridge City has become relatively less deprived since the IMD 2015 as it previously ranked at 221/317 (the 96th least deprived of the English Local Authorities).

There are 9 LSOAs in the lowest 3 deciles (1-3) and 28 LSOAs in the highest 3 deciles (8-10). It is clear therefore that Cambridge City has more LSOA's in the higher deciles, than the lower deciles. The most deprived deciles are in the north-east of the district.

The tables show the most deprived and least deprived LSOA's in Cambridge City.

Lowest scoring LSOAs (more deprived):

Table 2: Most deprived LSOAs in Cambridge City

2011 LSOA Name	2018 Ward Name	IMD 2019: National Decile Rank (where 1 is most deprived)	IMD 2019: Local Decile Rank (where 1 is most deprived)
Cambridge 006D	Abbey	2	1
Cambridge 006F	Abbey	2	1
Cambridge 001C	Kings Hedges	2	2

Table 3: Least deprived LSOAs in Cambridge City

2011 LSOA Name	2018 Ward Name	IMD 2019: National Decile Rank (where 1 is most deprived)	IMD 2019: Local Decile Rank (where 1 is most deprived)
Cambridge 005A	Castle	10	10
Cambridge 011A	Cherry Hinton	10	10
Cambridge 011F	Cherry Hinton	10	10
Cambridge 013D	Queen Ediths	10	10
Cambridge 013F	Queen Ediths	10	10

There are 9 LSOAs in the lowest 3 deciles (1-3) and 28 LSOAs in the highest 3 deciles (8-10). It is clear therefore that Cambridge City has more LSOA's in the higher deciles, than the lower deciles. The most deprived deciles are in the north-east of the district.

Lowest scoring LSOAs (more deprived):

In general, the north-east of the district is the most deprived. LSOAs Cambridge 006D and 006F (Abbey), and Cambridge 001C (King's Hedges) have the most deprivation present in the district on the local IMD deciles (1 & 2).

Highest scoring LSOAs (least deprived):

In comparison, Cambridge 005A (Castle), Cambridge 0011A & 011F (Cherry Hinton), and Cambridge 013D & 013E (Queen Edith's) rank the highest on the local IMD deciles (10).

LSOA Changes in rank from IMD 2015
Cambridgeshire as a whole has more LSOAs in the less deprived deciles (6-10) than in 2015.

Lowest scoring Wards (more deprived):
Abbey is the most deprived wards in the district, particularly on the local IMD which compares across the rest of Cambridgeshire, being in the 4th decile (where 1 is the most deprived).

Highest scoring Wards (least deprived):
Newnham, is the least deprived ward (9th on both local and national IMD decile)

Analysis of Income Deprivation Affecting Children Index (IDACI) and Income Deprivation Affecting Older People Index (IDAOPI) sub-domains across Cambridge City

The below table shows national IDACI and IDAOPI deciles in Cambridge City. IDACI and IDAOPI are supplementary indices in the Income domain, addressing the income deprivation affecting children (IDACI) and the Income Deprivation Affecting Older People (IDAOPI).

Table 4: National average decile (where 1 is the most deprived)

Domain	Average Decile
IDACI	7
IDAOPI	6

Income Deprivation Affecting Children Index (IDACI)
There are 2 LSOAs that are particularly deprived in the IDACI domain:

The two most deprived LSOAs for IDACI are Cambridge 001A (King Hedges) and Cambridge 006F (Abbey). This suggests that the hotspots of income deprivation are located in the most built-up areas of the district.

20/68 of the LSOAs in Cambridge City are in the 3 most deprived deciles (1-3).

29/68 of the LSOAs in Cambridge City are in the 3 least deprived deciles (8-10)

Income Deprivation Affecting Older People Index (IDAOPI)
The LSOAs that are most deprived in IDAOPI are 001E and 001C (King's Hedges). These are different from the most deprived IDACI LSOAs.

11/68 of the Cambridge City LSOAs are in the 3 most deprived deciles (1- 3).

22/68 of the Cambridge City LSOAs are in the 3 least deprived deciles (8-10)

Summary and Recommendations

The data indicates that:
- The site sits within LSOA 08A but borders LSOA 012F which both experiences low levels of deprivation compared to the north- east of the city.
- Areas that do experience high levels of deprivation are located to the Northeast of the site.
- Cambridge is the most unequal city in Britain and has small pockets of very high deprivation not illustrated in broader statistics.
- Cambridge has a low number of workless households.
- Cambridge's workforce is better educated than the national average, with higher percentages of people having some form of qualification and level 3 and 4 qualifications.
- The Cambridge workforce is largely based around Managerial and Professional occupations, with very low levels of people working in the Construction and Manufacturing industries.

- Based on 2019 Indices of Multiple Deprivation, Cambridge City is ranked 210/317 of all local authorities nationally, where 1 is the most deprived.
- Cambridge City is ranked as the third most deprived district of the five districts across Cambridgeshire for overall Indices of Multiple Deprivation (IMD Score)
- Living Environment domain ranks the lowest (most deprived) out of the domain in Cambridge City when ranked against all other local authorities nationally (51/317).
- The Education, Skills & Training domain ranks the highest (least deprived) compared to all the local authorities (284/317), closely followed by Employment (270/317).
- Ethnically, Cambridge is one of the most ethnically diverse cities outside of London.
- Crime rates in Cambridge City are some of the highest in Cambridgeshire, and the highest proportion of these crimes are happening in the areas (Petersfield & Central) immediately surrounding the Station Road development.

Recommendations:

- Improving the Living Environment, which focusses on the quality of housing, air quality and road traffic accidents, should be a key focus for the project.
- Employment and Skills Opportunities generated through the construction and operational phases of the project should be targeted at the deprived wards northeast of the site and include entry-level employment, training and qualifications, improving accessibility for local residents living in poverty.
- To reduce inequality in the city all direct and indirect staff through the construction and operational phases of the project should be paid a minimum of the Real Living Wage.
- The project should collaborate with Cambridge 2030 to ensure they maximise the potential social value of their interventions; such as community engagement, volunteering, educational engagement, employment and skills.

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