



United Kingdom | August 2023

Options Analysis

Cambridge City Council

Ekin Road

1 CONTENTS

2	Executive summary	4
2.1	Introduction and project background	4
2.2	The Case for Change	4
2.3	The Options Assessed.....	4
2.4	Options appraisal methodology	5
2.5	Evaluation outcomes	5
2.5.1	Strategic Alignment	5
2.5.2	Financial Performance	6
2.6	Economic Evaluation	6
2.7	Conclusion	6
3	Strategic Alignment	8
	Strategic context	8
3.1	8	
3.1.1	The property	8
3.1.2	The case for change.....	9
3.2	Options to be considered to address the case for change	14
3.3	Council Key Objectives.....	16
3.3.1	Cambridge's Vision.....	16
3.3.2	Cambridge's Core Requirements	16
3.3.3	Sustainability and social value	16
3.4	Planning	17
3.5	Engagement with stakeholders	17
3.6	Constraints.....	18
3.7	Critical success factors (CSF) and Evaluation Methodology.....	19
3.8	Environmental impact appraisal – carbon assessment	21
3.9	Appraisal of Options	29
3.9.1	Critical Success Factors appraisal	29
3.10	Conclusion	35
4	Financial Performance	39
4.1	Introduction	39
4.2	Financial Performance and Evaluation	39
4.2.1	Assumptions tables	39
4.3	Phase 2 Evaluation process	40

5	Economic Evaluation.....	42
5.1	Introduction	42
5.2	High-Level Benefits Cost Ratio Analysis	42
5.3	Conclusion	47
6	Conclusion	49
7	Appendix A – Carbon Model Tables	52
8	Appendix B – Source List	54
9	Appendix C - BPTW Design Options – Partial Redevelopment Feb 2023.....	56

2 EXECUTIVE SUMMARY

2.1 Introduction and project background

The Ekin Road Estate is situated within the area of East Barnwell in Cambridge where residential, retail, educational and industrial uses are all within proximity of the site. The site comprises of 122 existing homes in the form of flats, bungalows, maisonettes, and houses. In their current form, the estate is in a fair condition, benefitting from some essential maintenance works¹. However, the buildings do not meet the current standards that are applied to new developments with many of the units having ongoing maintenance issues and some having structural concerns.

In 2021, Cambridge City Council informed residents of a review into the condition of the Ekin Road Estate to understand the issues affecting leaseholders and tenants of which it was concluded Ekin Road was identified as an estate to be considered for redevelopment in a report presented at the City Council's Housing Scrutiny Committee in September 2021. Since then, the Council has been exploring potential options for the estate and in June 2022 began a resident engagement process.

2.2 The Case for Change

The 122 existing homes in their current form require improvements as the estate is currently classified as being in a fair condition but there are ongoing maintenance issues and aspects of noncompliance with new build regulations for sustainability, accessibility and health and safety. Therefore, there are a number of key factors which are driving the case for changes. These are outlined further in the report.

2.3 The Options Assessed

The following seven options have been considered for the site as part of this options appraisal:

- Option 1 – Do Nothing
- Option 2 – Retain the buildings in existing form and undertake essential repairs and retrofitting
- Option 3 – Partial Redevelopment involving the demolition of the flats only
- Option 4 – Partial Redevelopment involving the retention of all houses
- Option 5 – Partial Redevelopment involving the retention of most of the houses
- Option 6 – Partial Redevelopment involving retention of house to the south and east

¹ Potter Raper Options Appraisals Report (August 2020)

- Option 7 – Full Redevelopment

Please see Appendix C for BPTW's design development for the high-level design options.

2.4 Options appraisal methodology

Seven long-listed options were presented for appraisal and the following methodology has been used to evaluate these options to identify the short-listed options:

- **Strategic Alignment** sets out the key Council policies specifically related to residential properties and incorporates these into a set of Critical Success Factors ("CSF"). Also, upon examining the Council's Sustainable Housing Design Guide, an additional CSF has been added to assess the health and wellbeing improvement. The CSFs for each option have been qualitatively appraised and a rating of either Green (Good), Amber (Acceptable) or Red (Unacceptable) has been provided.
- **Financial Performance** outlines the key assumptions that will be used to deliver the Financial Evaluation as part of phase 2.
- **Economic Evaluation** evaluates the broader social and economic benefits of the options using a Benefits Cost Ratio.

This methodology is part of a two staged approach with the above being part of phase 1. In phase 2, a more detailed analysis will be performed from a strategic, economic, and financial perspective to establish the preferred option for the estate from the short list of options.

2.5 Evaluation outcomes

2.5.1 Strategic Alignment

Within the Strategic Alignment Assessment, the case for change and alignment of the project to the Council's strategic vision has been set out by creating Critical Success Factors ("CSF") against which each option has been evaluated. When analysing alignment to the CSFs, it is clear that the number of red flags was too high for Option 1 - Do Nothing to be considered viable so therefore Option 1 was excluded. Option 2 - Essential Repairs and Retrofitting became the new base case for comparison. However, this option was not viable given the 2 red flags and 8 amber flags which discounted the 1 green flag produced. Option 3 - Partial Redevelopment (demolition of the flats only) has 2 of the CSFs being classified as red flags and 7 amber flags. Each of the other partial redevelopment options (options 4-6) provide varying degrees of improvements with all having no red flags. The number of CSFs classified as green flags increases with the level of redevelopment. Therefore, Option 4 has minimal viability as it fails to provide satisfactory house gain, new useable outdoor space and placemaking. Options 5 and 6 both exhibit strong improvements with a high

number of green flags. Although, at this stage, it is clear Option 6 is more viable given the greater ability to alter the estate layout to provide stronger placemaking and increased development capacity. Option 7 – Full Redevelopment ticks the most boxes out of the CSF's compared to all other options with no potential red flags and only 1 amber flag.

2.5.2 Financial Performance

The Financial Performance appraisal incorporates a detailed set of financial models that align with a set of agreed assumptions. In phase 1, which results in the short listing of viable options, we have not performed detailed financial modelling, but rather document the high-level assumptions from which the detailed financial analysis is conducted as part of phase 2.

2.6 Economic Evaluation

The outcome of the Benefits Cost Ratio reflects there are three key themes of benefits:

- Economic,
- Environmental
- Social

Each of these benefit themes have beneficiaries of the all economy and public purse. It shows compared to the base case (Option 2), there is a positive outcome in terms of benefits from all examined options. However, the greater levels of benefits were provided from options containing higher levels of redevelopment as there is more opportunity to provision improvements on the estate. Therefore, at this stage, it appears Option 7 - Full Redevelopment should provide the most benefits.

2.7 Conclusion

Considering the options against the high-level Strategic Alignment, Financial Performance and Economic Evaluation, the recommendation is to proceed with further exploring options 6 and 7 for the estate, given their alignment with the CSFs and the strong levels of qualitative and quantitative benefits provided long-term. To include Option 1 would preserve the anti-social prone layout of the estate, maintain the condensation related mould inducing environments in units and provide no additional housing to the local market. Therefore, Option 1 – Do Nothing must be excluded, and Option 2 must become the revised base case. Option 2 is the minimum the Council should do on the estate to maintain the current standard of the buildings and improve energy performance, though this is still financially unviable and may require the need to decant residents.

Options 3-5 are not able to successfully maximise the opportunities for improved housing capacity, condition and quality of homes and estate layout given the constraints of infill development. There is the opportunity to provide significant positive transformations to the estate with Option 6. This option has been short-listed as it can positively transform the estate whilst preserving a small number of the houses meaning there is an

ability to provide improved placemaking from the change in the estate layout and house gain by maximizing the space and capacity. Option 7 has also been short-listed as through fully redeveloping all properties, significant living conditions improvements across all buildings on the estate can be guaranteed as well as larger house gains and strong operating carbon buildings. However, it must be noted options 6 and 7 will require decanting of the residents which may impact their health and wellbeing in terms of the stress and uncertainty associated with temporary relocation during the redevelopment. While this is an implication the Council tries to avoid if at all possible², in order to provide the desired long-term improvements across the whole estate, decanting to allow for redevelopment is required.

At this stage, it appears Option 7 has the strongest alignment to the CSFs and the highest number of benefits with options 6 also exhibiting a strong position. Option 2 remains under consideration as the revised base case. Therefore, Options 2, 6 and 7 are the short-listed options that require further exploration in phase 2.

² Cambridge City Council, Decant Policy

3 STRATEGIC ALIGNMENT

3.1 Strategic context

3.1.1 The property

The units are located in Cambridge, a major regional centre with good road and rail access into London, the Midlands and the North and is within proximity of Stansted Airport. Cambridge is best known for its university and colleges with approximately 25,000 students forming part of the 145,700 population. Cambridge is continuing to grow rapidly, and housing is in high demand.

The Ekin Road Estate is situated within the area of East Barnwell with residential, retail, educational and industrial uses all within proximity of the site. The existing estate comprises of six flat blocks each containing 12 flats as well as 32 semi-detached houses, 10 bungalows and 8 maisonettes. In total there are 122 units built in the typical 1950s-1970s style. The flat blocks located on Ekin Road are all purpose-built three-storey blocks with flats on each level, accessed either side of two access cores. The buildings are 'Easiform' non-traditional cavity wall construction made with either precast or insitu concrete panels. The 32 two-storey semi-detached houses and 10 single-storey bungalows, are both c.1950 construction with traditional cavity walls and fair faced brickwork. The maisonettes are two-storey purpose-built flat blocks constructed c.1970's with traditional cavity walls, fair faced brickwork and concrete floor slabs. Vehicle access to the estate is via a single road from the north (Keynes Road) which leads onto Ekin Road. Properties line either side of the loop road to form a square in the centre. The current estate configuration provides several designated parking areas and private gardens.



To the east of the estate is Ditton Road which consists of private houses that border the site to form the boundary. To the south there are commercial buildings and to the west is Wadloes Road which is lined with a wide grassed verge and public footpath with two-storey properties across the road.

The estate is located 2.9 miles away from the city centre. The area is a large neighbourhood to the northeast of the city. Key features of the area include the Cambridge United Football ground, Coldham's Common, Cambridge City Cemetery, the Abbey Leisure Complex, and various light industrial areas.

3.1.2 The case for change

The 122 units on the Ekin Road Estate in their current form and layout require improvements. There are several key factors that are driving the case for change. These are outlined below.

In August 2020, Cambridge City Council conducted an initial option appraisal regarding the future of the Ekin Road Estate whereby the current condition and suitable options regarding maintenance requirements were outlined. There was also a possibility for energy reducing measures and redevelopment of the estate.

As of August 2023, the tenure of the estate comprised of³:

Leasehold	Tenanted	Freehold
15	97	10

³ Cambridge City Council, Ekin Road Tenure Data

The Potter Raper Report identified all the building typologies on the estate are in a fair standard and have an anticipated remaining life of in excess of 30 years if maintained to their present standard⁴.

There will be a requirement to carry out day-to-day repairs and planned replacements of elements which have reached the end of their serviceable life. This will be a cost to the Council and leaseholders depending on the tenure but it is required in order to maintain the buildings at their current condition. However, structural issues to the rear of the flats as well as their poor thermal integrity and potential degradation of the structural frame from the effects of carbonation means the flat blocks require considerable investment to ensure a life span similar to those of the houses⁵. Any work areas must be checked for possible asbestos. All flat blocks have asbestos containing materials that are in good condition but some require encapsulation or removal of asbestos if affected by proposed works⁶.

3.1.2.1 Fire Safety Concerns

In addition to maintenance concerns, there are fire safety concerns in that the buildings on the estate have a tolerable risk. In the Fire Risk Assessments there are a total of five risk levels ranging from Trivial Risk to Intolerable Risk. Tolerable Risk ranks number two on the scale. Tolerable Risk is defined by the Fire Risk Assessments as requiring no major additional fire precautions required⁷. However, there might be a need for reasonably practicable improvements that involve minor or limited cost.

Fire Risk Assessments, conducted in November and December 2022, identified the following concerns⁸:

Assessed Properties	Risk Grading	Impacted Sections
1-4 & 5-8 Ekin Walk	Tolerable Risk	Housekeeping, Means of Escape and Measures to limit fire spread and development
5-7B & 9-11B Ekin Road	Tolerable Risk	Arson, Housekeeping, Means of Escape and Measures to limit fire spread and development.
18-20B & 22-24B Ekin Road	Tolerable Risk	Arson, Housekeeping, Means of Escape and Measures to limit fire spread and development.

⁴ Potter Raper Options Appraisals Report (August 2020)

⁵ Potter Raper Options Appraisals Report (August 2020)

⁶ ADF Environmental, Asbestos Refurbishment Survey (2019)

⁷ Cambridge City Council Housing Services, Regulatory Reform (Fire Safety) Order 2005 Fire Risk Assessment (conducted November and December 2022).

⁸ Cambridge City Council Housing Services, Regulatory Reform (Fire Safety) Order 2005 Fire Risk Assessment (conducted November and December 2022).

25-27B & 29-31B	Tolerable Risk	Arson, Housekeeping, Emergency Escape Lighting, Means of Escape and Measures to limit fire spread and development.
26-28B & 30-32B Ekin Road	Tolerable Risk	Arson, Housekeeping, Means of Escape and Measures to limit fire spread and development
61-63B & 65-67B Ekin Road	Tolerable Risk	Arson, Housekeeping, Emergency Escape Lighting, Means of Escape and Measures to limit fire spread and development.
89-91B & 93-95B Ekin Road	Tolerable Risk	Arson., Housekeeping, Emergency Escape Lighting, Means of Escape and Measures to limit fire spread and development

The Potter Raper Report, conducted in August 2020, also acknowledges issues with the compliance of Building Regulations Part B Emergency Egress⁹. The flat blocks and houses' bedroom window openings fail to comply due to the non-compliant openable areas. The windows on Ekin Walk are within the window replacement programme 2028 and 2029. Additionally, in a small number of flats, the kitchen door is missing or non-fire related and there was also an isolated occurrence of a missing smoke seal on the entrance door and non-fire related glazing. In terms of the maisonettes, the undersides of the stairs lacked suitable fire rated materials.

3.1.2.2 Health and Wellbeing Concerns

The structural report undertaken by Millward Consultants on behalf of the City of Cambridge Council in 2019 indicated numerous issues with the main drains and storm drains to the rear of the flat blocks due to root ingress¹⁰. This can directly impact the safety and enjoyment of the buildings by its residents and their visitors by potentially increasing the probability of floods, damp and associated health risks with poor drainage. Furthermore, it was noted the Easiform Type 2 have the common defect of Pre-Cast Reinforced (PRC) structures whereby the carbonation of concrete may cause structural issues that could impact the health and safety of flat residents¹¹.

In addition, due to the level of concern regarding the condensation related issues on the estate, a specialised team has been created by the Council to handle cases. The Damp, Mould, Condensation (DMC) team have reported 17 reports of condensation related mould on the estate since 9th December 2022¹². Residents have said the condensation related mould is impacting their health in a resident survey. Additionally, the responsive repairs team at the Council have had reports of leaks in almost every flat on the estate which has sometimes

⁹ Potter Raper Options Appraisals Report (August 2020)

¹⁰ Millward, Structural Inspections for Cambridge City Council (September-November 2019).

¹¹ Potter Raper Options Appraisals Report (August 2020)

¹² Damp, Mould, Condensation Team, DMC Reports

caused further damage and mould in the properties. This issue requires addressing due to the scale of the problem and its impact on residents' health and wellbeing.

Within the flats there is an issue of noncompliance with the current Building Regulations Part K and Housing Health and Safety Rating Systems in relation to the height of the balustrades on the internal staircases, landings, and external balconies¹³. The stair balustrades of the maisonettes were also identified as non-compliant. It was also noted none of the flats, houses and bungalows inspected contained carbon monoxide detection which poses a health and safety concern to residents.

The current site has poor amenities with only small areas of grass in the centre of the site that is surrounded by parking and to the west of the estate, adjacent to Wadloes Road. Residents have indicated in a resident survey that they would like to see more green space to provide areas for their children to play. The current configuration of the estate limits the ability to create larger amenity spaces for residents, locals and those moving through the site to use and enjoy.

3.1.2.3 Anti-social behaviour

The current layout of the estate means there are a number of alleyways and circulation routes with low visibility on the site. These are areas prone to anti-social behaviour which directly impacts the safety and enjoyment of the residents and their visitors. This does not meet Secured by Design Gold Standard that would be applied to a new development. BPTW have identified the legibility of the site as a pedestrian is poor because of the number of dead ends and poor visibility in alleyways due to the lack of lightning¹⁴. This is a security concern and instances of anti-social behaviour in these areas has been noted by residents and the Council.

In a two-year period, there have been numerous incidents reported to the local police detailed in the table below¹⁵:

Abbey Ward	Ward	Ekin Road	Ekin Walk
Total Crime:	2465		
Criminal Damage	262	2	3
Robbery	30	2	0
Theft from person	17	1	0

¹³ Potter Raper Options Appraisals Report (August 2020)

¹⁴ BPTW, Pre-App 4 Presentation (June 2022)

¹⁵ Cambridge Police

Bicycle Theft	136	0	0
Theft other (including shoplifting)	169	2	1
Theft from a vehicle	113	1	0
Theft of a vehicle	71	0	0
Public Order	271	0	1
Burglary Business	42	1	0
Burglary Dwelling	75	2	0
Possession of drugs	39	2	0
Trafficking of drugs	37	0	0
Possession of weapons	27	1	0
Violence	611	8	0
Arson	8	1	0
Total Incidents	5,420		
Rowdy Nuisance	354	1	1
Vehicle Nuisance	114	1	0

It is important to note that Ekin Road / Ekin Walk are within a busy area in terms of crime and anti-social behaviour so it is possible additional incidents reported to the Council may have not been reported to the police so are therefore not reflected in the figures above.

There is also a known issue of fly tipping on the estate with the Estate Champion detailing that more than 5 tonnes of waste were cleared on the 6th July 2023 during a recent community day¹⁶. The waste collected consisted of household waste that was predominately fly tipped. This is a regular occurrence on the estate and has been mentioned frequently in the FRA.

¹⁶ Estate Champion

3.1.2.4 Sustainability Concerns

The current buildings were developed in the 1950s-1970s and are not aligned with the City Council's vision of being a net zero carbon council by 2030 and delivering sustainable housing solutions.

An audit of the EPC ratings of the current units concluded the EPC rating of band C for all maisonettes and bungalows. Houses and flats were a mix of band C and D EPC ratings. Band C is a good score for the properties constructed during the 1950s-1970s. However, Cambridge City Council have proposed to potentially improve EPC ratings of existing properties to band B¹⁷. Additionally, in Cambridge City Council's Climate Change Strategy Action Plan 2021-2026, it has been targeted to reach a minimum of EPC C (B where possible) in at least 140 Council Properties that are currently EPC D or below¹⁸. The EPC ratings of the buildings on the estate are below the desired standard and this is impacting the operating carbon of the buildings and the energy costs that are being incurred by the residents.

3.1.2.5 Accessibility

The maisonettes and flat blocks are not currently accessible to Part M4 Category 2 or above¹⁹. The flats are currently only accessible by communal staircases. The staircases are narrow and there is no lift option in the flat blocks. The Potter Raper Report also identified existing paths and hardstanding to the communal entrances and garden areas throughout the estate are uneven, containing potential trip hazards²⁰. While the circulation paths around the estate are County Highway owned, the paths leading to the flats are the responsibility of the city and will be replaced in the programme if the flats remain. The current accessibility of these buildings is below the desired standard and this is impacting the accessibility and movement of a wide range of people around the buildings.

Accessibility around the estate is also poor with BPTW identifying a lack of legibility²¹. This is due to the current routes having dead ends, bad visibility, and poor connections through the site because of a lack of clearly defined routes and site lines. The frontage along Wadloes Road was also identified as indistinct meaning it could be allowing motorcyclists to use Ekin Road as a cut through from Wadloes Road. The current layout of the estate is therefore limiting legibility and wayfinding within the site making accessibility for both residents and their visitors poor.

3.2 Options to be considered to address the case for change

Seven options are being considered:

¹⁷ Potter Raper Options Appraisals Report (August 2020)

¹⁸ Cambridge City Council Climate Change Strategy Action Plan 2021-2026

¹⁹ HM Government, The Building Regulations 2010: Access and use of buildings

²⁰ Potter Raper Options Appraisals Report (August 2020)

²¹ BPTW, Pre-App 4 Presentation (June 2022)

- Option 1 – Do Nothing

Under this option, there will be no additional capital work done to the buildings to address concerns, however there will be a continuation with standard ongoing maintenance and repairs (under decent homes).

- Option 2 – Retain the buildings in existing form and undertake essential repairs and retrofitting

The repairs include structural, fire related works, ventilation, rainwater pipe diversion, pipe maintenance, asbestos removal and lifetime maintenance costs to all buildings. Net Zero retrofitting will address the energy performance, sustainability standards and include cavity wall insulation, EWI, PV panels, and accessibility in the buildings.

- Option 3- Partial Redevelopment involving the demolition of the flats only

Under this option, the flats will be demolished and redeveloped through the Cambridge Investment Partnership to replace the flats with new high-quality homes consisting of houses and stacked maisonettes.

- Option 4 – Partial Redevelopment involving the retention of all houses

Under this option, the existing flats, bungalows, and maisonettes will be demolished to provide new high-quality homes consisting of low to midrise houses and maisonettes as well as potentially some midrise flat blocks to the west. A new pedestrian route to the southwest should address anti-social behaviour concerns.

- Option 5- Partial Redevelopment involving the retention of most of the houses

Under this option, only the houses to the south, north and some to the east will be retained. The existing flats, bungalows, maisonettes, and central houses will be demolished to provide new low to midrise blocks as well as potentially some midrise flat blocks to the east. A new central green amenity will be provided.

- Option 6 – Partial Redevelopment involving retention of house to the south and east

Under this option, all buildings apart from the houses to the south and east of the site will be demolished to provide new high-quality homes consisting of houses and stacked maisonettes. This option will also provide new additional parking and amenities as well as a central green space with areas of play.

- Option 7 – Full Redevelopment

This option will involve demolishing all buildings on the estate to provide new buildings of various heights including houses and flats. The roads will be realigned to provide new green routes as well as a potential central green space and area for play, enhancing the amenities.

3.3 Council Key Objectives

3.3.1 Cambridge's Vision

The Cambridge Council has a clear vision to lead a united city, 'One Cambridge – Fair for All', in which economic dynamism and prosperity are combined with social justice and equality.

In line with this vision, the Council has developed its Corporate Plan for 2022-2027 which sets out 4 key priorities over the next 5 years. These four key priorities for 2022 to 2027 are:

- Leading Cambridge's response to the climate and biodiversity emergencies and creating a net zero council by 2030
- Tackling poverty and inequality and helping people in the greatest need
- Building a new generation of council and affordable homes and reducing homelessness
- Modernising the council to lead a greener city that is fair for all

3.3.2 Cambridge's Core Requirements

The Greater Cambridge Housing Strategy identifies the following strategic objectives related to housing:

- Increasing the delivery of homes, and in particular affordable housing, including Council homes, to meet housing need
- Diversifying the housing market and accelerating housing delivery
- Achieving a high standard of design and quality of new homes and communities
- Improving housing conditions and making best use of existing homes
- Preventing and Tackling Homelessness and Rough Sleeping
- Working with key partners to innovate and maximise available resources

When assessing the options for the Ekin Road Estate, consideration must be given to ensuring that these strategic objectives are met.

3.3.3 Sustainability and social value

Cambridge City Council has a clear vision to create a Cambridge that cares for the planet. This vision statement states they will take robust action to tackle the local and global threat of climate change, both internally and in partnership with local organisations and residents, and to minimise its environmental impact by cutting carbon, waste, and pollution.

3.4 Planning

The site is located within a part of Cambridge that is characterised by low rise residential developments. The three storey flat blocks that exist on the current site are some of the few examples of taller residential buildings located in the area. The scale of the majority houses in the area are two storeys. Therefore, the scale and massing of the estate will be important in both the context of character, housing provision and residential amenity. If the entire estate is developed, there will be greater opportunities to accommodate taller buildings especially to the south of the site. A partial redevelopment option will likely cause limitations in terms of where buildings can be located and how tall they can be. There must also be a consideration of potential overlooking of properties and private gardens.

There are a number of existing trees in various qualities and conditions on the site. There are no Category A trees and all Category B trees will be preserved²². Consideration is needed for the other existing trees on the estate. The Green Corridor running along the west side of the estate must also be retained and improved. The provision of additional greenspace within the development will be key.

The site has buildings adjacent to its southern, eastern, and northern boundaries. Residential developments exist to the north and east so the relationship the estate will share with the existing developments will be a constraint. Vehicle access to the residential buildings on Ekin Close will need to be maintained so this is also a key consideration. To the south, commercial buildings are present so the relationship between the commercial buildings and the residential homes on the estate will need to be assessed. Although, there is already existing residential buildings on the estate neighbouring this boundary.

There are many significant opportunities presented from the redevelopment of the site. The existing buildings do not make a positive contribution to improving the green corridors, biodiversity and connectivity across the estate given their current position and layout. The existing buildings also have issues in terms of quality of accommodation and accessibility inside the buildings.

3.5 Engagement with stakeholders

There has been resident communication throughout the process to allow for consultation so the residents can voice their thoughts on the proposed redevelopment. The Council continue to engage with residents through the following methods:

- Letters to all households approximately every 3 to 4 months
- Regular Liaison Group meetings
- Drop in events
- Regular website updates

²² BPTW, Pre-App 4 Presentation (June 2022)

- Events such as participating in community events
- Printed material to be held in the local library

The Liaison Groups meet regularly where the Council conducts resident engagement to ensure resident voices are heard throughout the process. These sessions are not decision-making groups but rather opportunities for the Council to report on progress and for residents to feedback from the information provided.

As part of the consultation process, the Council engaged with residents of the estate in June 2022 to conduct a resident survey. The initial public consultation event was held on the 8th June 2022. This resulted in 112 people attended in person, 11 webinar attendees, 2771 website views and 63 survey responses.

Key findings from the survey consultation included²³:

- 46.2% believe their current home meets their requirements.
- 58.1% strongly agree Ekin Road is in need of redevelopment.
- 35.8% of respondents want new public spaces and other including better insulation, accessibility and building condition.
- 33.9% of respondents would leave and return to the Estate after redevelopment.
- Residents like the lack of traffic on the Estate, the GP surgery and connectivity.
- Residents dislike the security, parking, accessibility, damp/mould, energy inefficiency in the buildings.

Following the survey, a group of residents who are opposed to the development formed a group called the “Save Ekin Road” Community Group. The group considered the survey “inadequate”, “problematic”, and “extremely leading”. However, it is not known as to the extent of the membership of the “Save Ekin Road” Community Group on the estate.

3.6 Constraints

- Economic context

In Cambridge, housing affordability is an issue, with many households experiencing difficulty in finding affordable homes in the area. As a result, there is a risk in the ability to not only house local people but to attract and retain workforce within Cambridge. This could have a knock-on effect on the city’s economic growth.

More broadly, the ongoing conflict in Ukraine continues to disrupt global markets, resulting in a destabilised economic environment driven primarily by higher energy costs and supply chain

²³ Ekin Road Resident Questionnaire, Final Report (14th September 2022).

issues. This has directly affected the UK as higher inflation and increasing interest rates are impacting the affordability of goods and services for households, leaving many households with lower disposable incomes.

The assessment of the viability and affordability will account for this economic context.

- Viability

A key component of this paper is to determine the viable options in terms of delivery, achievability and financial returns in line with the critical success factors.

- Affordability

The affordability component is focused on determining if the costs related to the different options are affordable to the Council in terms of capital outflows and operating costs.

- Funding

Aligned to Affordability, this constraint looks at the sources of public and private funding that the Council may access to fund any development.

3.7 Critical success factors (CSF) and Evaluation Methodology

The critical success factors are the key elements that need to be achieved in order for the project to be considered a success in light of the key issues driving the case for change at the estate, and the wider strategic objectives of the Council. The methodology taken for each CSF has been outlined in the table below.

The critical success factors for this project are tied to the broader Cambridge vision, namely:

#	Critical Success Factors	Evaluation Methodology	Source
1	Increasing the number of homes	Determine the volume change in the delivery of homes per option by examining the capacity, layout, and height of the buildings for each option.	Greater Cambridge Housing Strategy
2	Diversify the housing market and accelerate delivery	Determine the ratio of council and market homes delivered to the housing market per option by aligning with the Cambridge housing demand.	Greater Cambridge Housing Strategy
3	High standard of design and quality for the homes and communities	By using the recommended high standard of design, determine which option provides the ability to meet the required standard and the cost associated with each to assess the viability.	Greater Cambridge Housing Strategy

#	Critical Success Factors	Evaluation Methodology	Source
4	Improve housing condition	The current condition of the buildings on the Estate will be used as a baseline to compare each option's proposed new building condition to determine the level of improvement.	Greater Cambridge Housing Strategy
5	Innovate and maximise available resources	Determine which option will make the best use of the resources on the land in a sustainable way to enhance biodiversity, reduce water consumption and improve air quality.	Greater Cambridge Housing Strategy
6	Meet energy efficiency criteria to align with Net Zero Carbon ambitions	Determine which option best achieves the Council's Net Zero Carbon ambitions and the standards outlined in the Sustainable Housing Design Guide through making improvements in energy efficiency, design and Net Zero retrofit.	Cambridge Housing requirement
7	Reduce planned and preventative maintenance costs	Compare the current and predicted future maintenance costs produced from each option alongside any costs to achieve the reduction.	Cambridge Housing requirement
8	Provide an accessible, safe, and secure environment	Compare each option's layout and design of the Estate and its buildings to determine their ability to secure Secured by Design Gold Standard Certification and provide an accessible, safe, and secure environment for the residents and community.	Cambridge Housing requirement
9	Comply with current fire safety standards	Determine each option's ability to comply with the latest fire safety requirements through examining the proposed buildings' design, safety features and accessibility.	Cambridge Housing requirement
10	Improve resident amenities and community benefits	Compare each option's placemaking strategy and ability to improve the amenities on the Estate and the accessibility for the residents and community both in the buildings and around the Estate.	Cambridge Housing requirement
11	Improve the health and wellbeing of residents	Assess each option's ability to improve the health and wellbeing of the residents, through providing open green spaces, accessibility, and healthy living environments, whilst also examining the impacts on the community.	JLL Team

From June 2023 to September 2023, the evaluation matrix has been used to identify the shortlist of options for the Ekin Road Estate, taking into account Cambridge's vision and core requirements. A detailed timeline of the next steps to showcase the process for identifying the preferred option and implementation will be devised to support Cambridge City Council with the next steps for phase 2.

3.8 Environmental impact appraisal – carbon assessment

CSF 6 relates to delivering energy efficiency criteria, new zero housing stock and reducing energy usage. This section provides a deeper dive into how the different options are able to deliver on this CSF.

When assessing the environmental impact of the different options, an analysis was prepared using JLL’s Carbon Twin Track methodology which considers all aspects of embodied carbon and operational carbon and attaches a financial number to this carbon to indicate not only the absolute carbon impact, but also the financial impact.

When examining the delivery of environmental value and its impacts for the different options, the Sustainable Housing Design Guide and Checklist as the recommended standard that outlines the requirements for a sustainable development. The opportunities and constraints of providing a sustainable development has been examined from a practical and financial perspective.

All seven options have been modelled and appraised for absolute carbon emissions, carbon emissions per housing unit and carbon cost.

3.8.1.1 Assumptions

The below table documents the key assumptions that were used in preparing the carbon analysis:

Scenario	Option 1	Option 2	Option 3	Option 4	Option 5	Option 6	Option 7	Source
Units	122	122	137	185	209	217	239	Breakdown by unit type available in Appendix A
Area (sqm)	7,633	7,633	7,929	11,128	12,408	13,212	15,042	Floor area proportional to number of units
Energy Intensity (kWh/m²) – High Scenario	187**	177**	158**	150**	149**	148**	146*	*RIBA 2030 Climate Challenge – Ofgem Benchmark **Combined with EPC data for retained units and 2kV PV installation for each refurbished house/bungalow unit

Scenario	Option 1	Option 2	Option 3	Option 4	Option 5	Option 6	Option 7	Source
Energy Intensity (kWh/m²) – Medium Scenario	187**	177**	134**	118**	114**	113**	105*	*RIBA 2030 Climate Challenge – New Development 2025 **Combined with EPC data for retained units and 2kV PV installation for each refurbished house/bungalow unit
Energy Intensity (kWh/m²) – Low Scenario	187**	177**	114**	91**	84**	82**	70*	*RIBA 2030 Climate Challenge – New Development 2030 **Combined with EPC data for retained units and 2kW PV installation for each refurbished house/bungalow unit
Area Refurbished (sqm)	0	7,633	3,313	2,496	1,872	1,716	0	Assumed that all retained buildings were refurbished
Embodied Carbon (kgCO₂e/m²) Refurbishment	300							Assumed light-touch refurbishment as per Potter Raper report. RIBA 2030 Climate Challenge
Area Developed (sqm)	0	0	4,616	8,632	10,536	11,496	15,042	Floor area for all new buildings
Embodied Carbon (kgCO₂e/m²) Development	1000							RIBA 2030 Climate Challenge

Scenario	Option 1	Option 2	Option 3	Option 4	Option 5	Option 6	Option 7	Source
Electricity Price (p/kWh)				34				Average UK Electricity (34p) and Gas Price (10p) Electricity rate has been used for analysis
Carbon Price Low (£/tonne)				95				GLA London Plan
Carbon Price High (£/tonne)				121				HM Treasury Green Book

Number of units calculated based on BPTW Capacity Study Options February/March 2023 report. Floor areas and energy intensity for existing units calculated based on sampled representative EPCs:

- Flats: 11 Ekin Road (178 kWh/m²)
- Houses: 57 Ekin Road (186 kWh/m²)
- Bungalows: 75 Ekin Road (258 kWh/m²)
- Maisonettes: average of 1, 3, 6, 7, 7B, and 8 Ekin Walk (215 kWh/m²)

Assumed that new Flats, Maisonettes and Houses will maintain the same average floor areas per unit as existing units.




Refurbished bungalows and houses assumed to have 2 kW of PV capacity installed for each unit, generating energy savings of 1,800 kWh per unit per year. No energy savings assumed for refurbished Flats and Maisonettes in Option 2.

For each option, the combination of old, refurbished and new units was appraised to determine the average energy intensity for the option (see Appendix A). Three scenarios were analysed in order to demonstrate the effects of different levels of energy efficiency on each option:

- High Scenario: using RIBA 2030 Climate Challenge – Ofgem benchmark (148 kWh/m²)
- Medium Scenario: using RIBA 2030 Climate Challenge – New Development 2025 benchmark (105 kWh/m²)
- Low Scenario: using RIBA 2030 Climate Challenge – New Development 2030 benchmark (70 kWh/m²)

Embodied carbon assumed to be 300 kgCO₂e/m² for refurbishments (aligned with RIBA 2030 Climate Challenge – New Development 2030 benchmark, and 1000 kgCO₂e/m² for new developments (aligned with RIBA 2030 Climate Challenge – M4i benchmark). The benchmark for new developments is conservative in line with the assumption that most *in situ* materials will leave the site boundaries and building materials and methodologies will be standard.

RIBA 2030 Climate Challenge target metrics for domestic buildings

RIBA Sustainable Outcome Metrics	Current Benchmarks	2020 Targets	2025 Targets	2030 Targets	Notes
Operational Energy kWh/m ² /y 	146 kWh/m ² /y (Ofgem benchmark)	< 105 kWh/m ² /y	< 70 kWh/m ² /y	< 0 to 35 kWh/m ² /y	UKGBC Net Zero Framework 1. Fabric First 2. Efficient services, and low-carbon heat 3. Maximise onsite renewables 4. Minimum offsetting using UK schemes (CCC)
Embodied Carbon kgCO ₂ e/m ² 	1000 kgCO ₂ e/m ² (M4i benchmark)	< 600 kgCO ₂ e/m ²	< 450 kgCO ₂ e/m ²	< 300 kgCO ₂ e/m ²	RICS Whole Life Carbon (A-C) 1. Whole Life Carbon Analysis 2. Using circular economy Strategies 3. Minimum offsetting using UK schemes (CCC)
Potable Water Use Litres/person/day 	125 l/p/day (Building Regulations England and Wales)	< 110 l/p/day	< 95 l/p/day	< 75 l/p/day	CIBSE Guide G

3.8.1.2 Environmental analysis

When calculating the cost of carbon, we could not find published data on what the Council’s cost of carbon is, so we used two comparative rates. The first is the Greater London Authority rate of £95/ tonne and the second is the HM Treasury Green Book rate of £121/tonne.

Embodied Carbon was assumed to be zero for Option 1, relatively low for Option 2 and in-line with RIBA standards for each of the development options. Keeping embodied carbon low during the development phase is difficult and all of this carbon would need to be offset for a Net Zero construction. In contrast, operational carbon can be eliminated by using exclusively renewable sources of electricity.

Operational energy over the 30-year period is also included in the below analysis and shows similar trends in the level of decrease across the different scenarios.

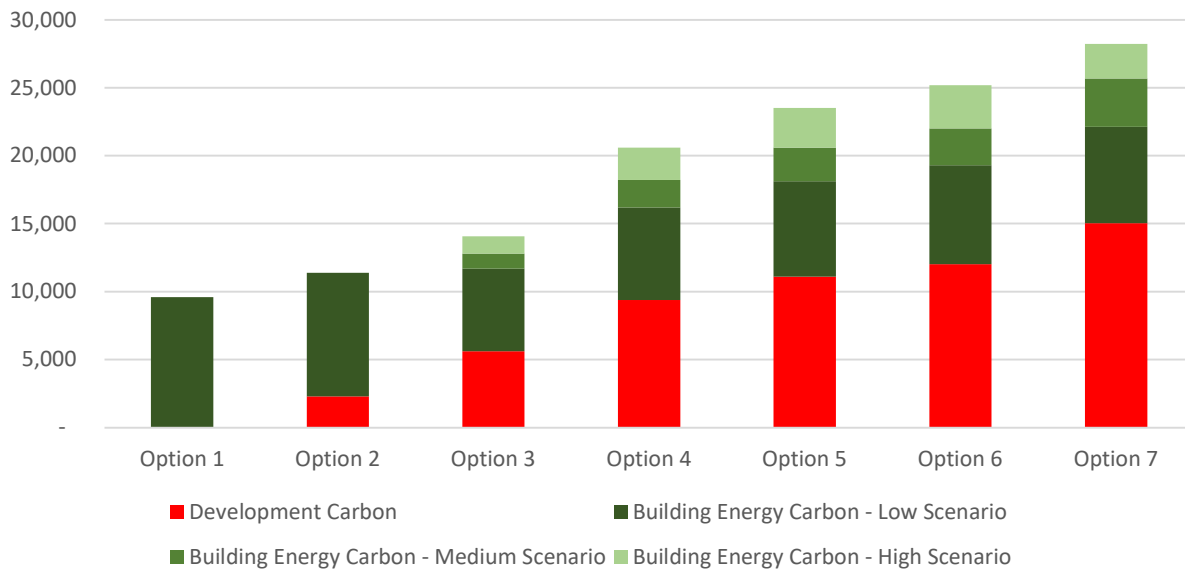
3.8.1.3 30-year model

Absolute Carbon (tCO ₂ e)	Option 1	Option 2	Option 3	Option 4	Option 5	Option 6	Option 7
Building Energy Carbon – High Scenario	9,597	9,088	8,448	11,216	12,403	13,176	13,176

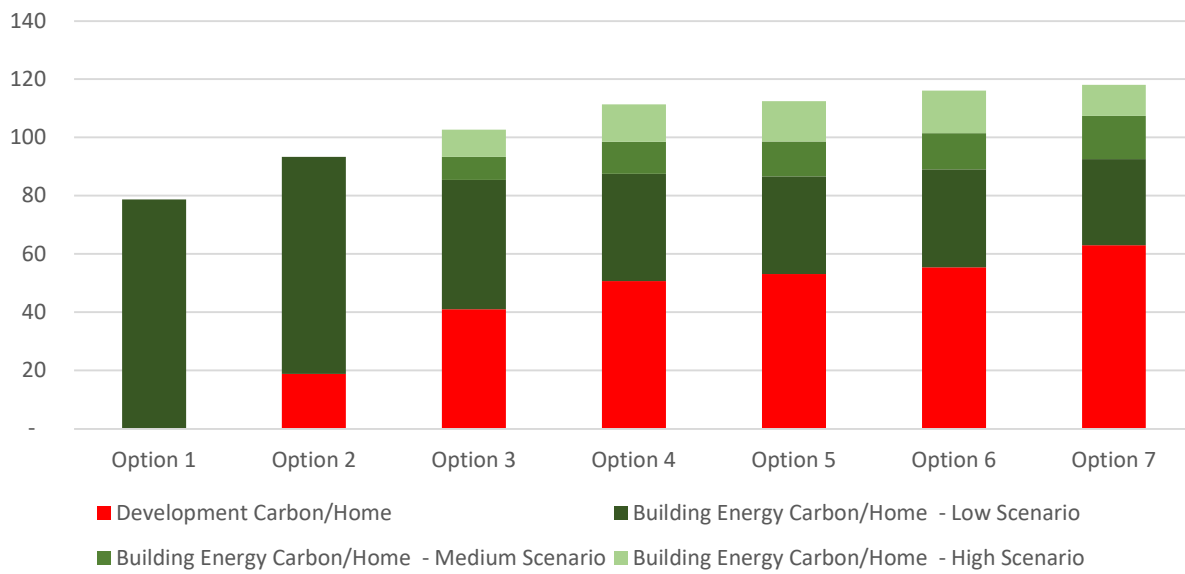
Absolute Carbon (tCO₂e)	Option 1	Option 2	Option 3	Option 4	Option 5	Option 6	Option 7
Building Energy Carbon – Medium Scenario	9,597	9,088	7,175	8,835	9,496	10,004	10,628
Building Energy Carbon – Low Scenario	9,597	9,088	6,088	6,802	7,015	7,296	7,085
Development Embodied Carbon	0	2,290	5,610	9,380	11,098	12,011	15,042
Total Carbon (tCO₂e)	9,597	11,378	11,698 - 14,058	16,183 - 20,597	18,113 - 23,501	19,308 - 25,187	22,127 - 28,218

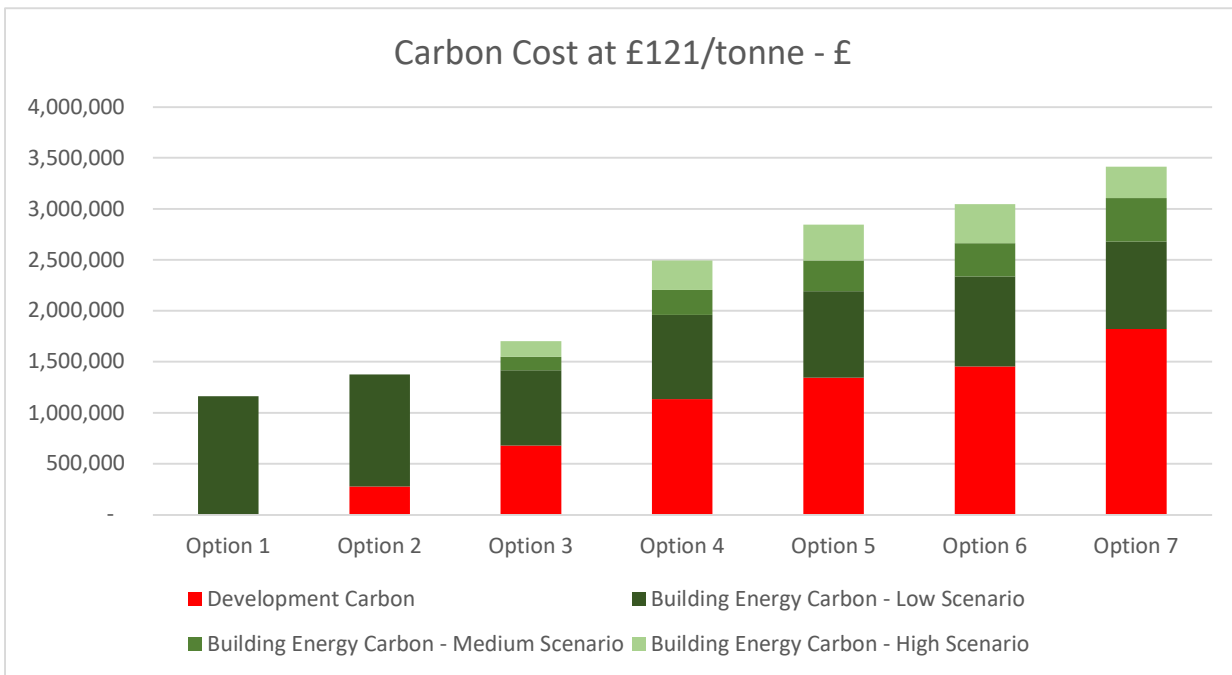
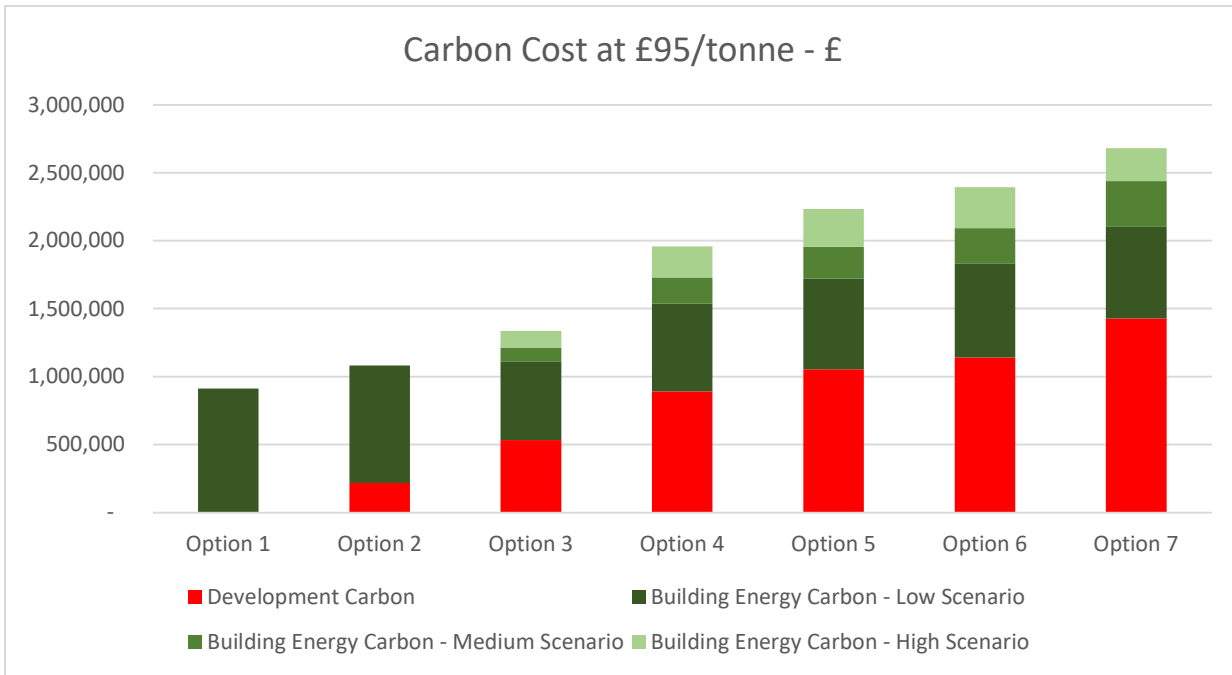
Carbon/Unit (tCO₂e)	Option 1	Option 2	Option 3	Option 4	Option 5	Option 6	Option 7
Building Energy Carbon – High Scenario	79	74	62	61	59	61	55
Building Energy Carbon – Medium Scenario	79	74	52	48	45	46	44
Building Energy Carbon – Low Scenario	79	74	44	37	34	34	30
Development Embodied Carbon	0	19	41	51	53	55	63
Total Carbon (tCO₂e)	79	93	85 - 103	87 - 111	87 - 112	89 - 116	93 - 118

Absolute Carbon (30 Years Lifecycle) - tCO₂e



Carbon/Unit (30 Years Lifecycle) - tCO₂e





Energy Cost (£)	Option 1 (£'000)	Option 2 (£'000)	Option 3 (£'000)	Option 4 (£'000)	Option 5 (£'000)	Option 6 (£'000)	Option 7 (£'000)
Operational Energy – High Scenario	14,547	13,776	12,806	12,115	12,015	11,986	11,986
Operational Energy – Medium Scenario	14,547	13,776	10,876	9,543	9,199	9,101	8,492

Energy Cost (£)	Option 1 £'000	Option 2 £'000	Option 3 £'000	Option 4 £'000	Option 5 £'000	Option 6 £'000	Option 7 £'000
Operational Energy – Low Scenario	14,547	13,776	9,228	7,347	6,795	6,638	5,662
Savings over Base Cost – High Scenario	0	771	1,740	2,431	2,532	2,561	2,561
Savings over Base Cost – Medium Scenario	0	771	3,671	5,004	5,348	5,446	6,054
Savings over Base Cost – Low Scenario	0	771	5,319	7,199	7,751	7,909	8,885

3.8.1.4 Carbon Impact Summary

Option 1: The lowest carbon option due to no embodied carbon. While this option has the worst energy efficiency, it is a relatively well-performing estate and the long-term operational efficiencies of all other options do not offset the embodied carbon required to achieve it under the current assumptions. It is also important to note that options 3 to 7 will have a significant increase in the number of units, therefore it is important to take carbon per unit into account as a measurement.

Option 2: Similar to option 1, the relatively low embodied carbon footprint makes this option the second lowest in absolute carbon terms, however it is performing similarly to the Medium Scenario and worse than the Low Scenario when looking at carbon per unit. This suggests that provided that redevelopments (Options 3 to 7) are performed to a sufficiently high energy efficiency standard, they will achieve better carbon efficiency per unit over a 30-year lifecycle.

Option 3: The best performing redevelopment due to the relatively like-for-like replacement in terms of the number of units (12% increase) – all other redevelopment options result in 52% to 96% more units making a less efficient use of embodied carbon.

Options 4 to 7: These options vary in the number of houses redeveloped with Option 7 redeveloping the entire site. Each option offers a significantly higher number of units, resulting in a higher absolute carbon footprint. This analysis is based on standard carbon assumptions but it is understood that the Council will improve on these scenarios in line with the Sustainable Housing Design Guide, which targets higher specifications. The per unit carbon performance is relatively similar across all four options with Option 7 demonstrating the best operational carbon performance (every unit built to a high energy efficiency standard)

but the worst embodied carbon performance (every unit developed from ground up with no structure retained).

Overall Carbon Impact Assessment: It is our understanding that from an embodied carbon standpoint, this will be a standard development, therefore resulting in a high embodied carbon footprint as the scale of the redevelopment increases in number of units. Any measures that significantly reduce the embodied carbon intensity of the redevelopment will sway the carbon business case towards Options 4 to 7. If embodied carbon becomes a lesser factor, the higher number of energy efficient units developed in Option 7 will have a positive effect due to increasing the number of carbon-efficient housing units within the Council. As stated above, the higher operational carbon standards will have a further positive impact on Options 4 to 7. Overall, redeveloping the houses will have a relatively low per unit carbon improvement due to the low number of houses on-site but redeveloping the other unit types will have a more pronounced positive effect on operational efficiency and cost reductions.

3.9 Appraisal of Options

Each of the options has been assessed against the above CSFs using a qualitative assessment on a RAG basis:

- R = Red – Indicates that under this scenario, the CSF will not be met and that it falls materially short of meeting this requirement
- A = Amber – Indicates that the CSF meets, or falls just below the requirement, but that it does not materially impact the overall decision
- G = Green – Indicates that the CSF requirement has been met or exceeded.

The individual CSFs have not been weighted, with the number of flags being used as the primary assessment of whether the option meets the required standard.

3.9.1 Critical Success Factors appraisal

3.9.1.1 Option 1 - Do Nothing

#	Critical Success Factor	Options Response
1	The buildings should positively contribute to increasing the delivery of homes, and in particular affordable housing	The “do nothing” option maintains the status quo, so does not positively or negatively contribute to this CSF.
2	The buildings should contribute to diversifying the housing market and accelerating housing delivery	The “do nothing” option maintains the status quo, so does not positively or negatively contribute to this CSF.
3	The buildings should achieve a high standard of design and quality of new homes and communities	The current buildings do not deliver a high standard of design and quality, so does not positively contribute to this CSF.

#	Critical Success Factor	Options Response
4	The buildings should improve housing conditions and making best use of existing facility	The current buildings are not aligned with the expected level of housing condition.
5	Working with key partners to innovate and maximise available resources	There is no innovation or maximising of resources through the do nothing option.
6	The buildings should meet the required energy efficiency criteria that aligns with Cambridge's ambition to have net zero carbon housing stock by 2030 and reduce energy usage for residents	The current buildings do not meet the required energy efficiency criteria and energy costs for residents are high due to poor insulation.
7	The buildings should result in a reduction of planned and preventative maintenance costs compared to the current level	The ongoing maintenance costs of the current buildings are above benchmark, and these are likely to escalate due to the age and condition of the buildings.
8	The buildings should provide a safe and secure environment for all residents and visitors	The current ongoing anti-social behaviour on site will remain under this option as the layout is conducive to providing spaces where this type of behaviour prevails.
9	The building should be bought up to standard in terms of fire safety compliance	The fire safety issues with the building need to be addressed to ensure the continued safety of residents.
10	The buildings should provide improved resident amenities and wider community benefits	The current amenities are limited in the benefits they provide to residents and the wider community.
11	Improve the health and wellbeing of residents	The current buildings do not currently meet the health and wellbeing standards required.

3.9.1.2 Option 2 - Retain the buildings in existing form and undertake essential repairs and retrofitting

#	Critical Success Factor	Options Response
1	The buildings should positively contribute to increasing the delivery of homes, and in particular affordable housing	The refurbishment option maintains the status quo, so does not positively or negatively contribute to this CSF.
2	The buildings should contribute to diversifying the housing market and accelerating housing delivery	The refurbishment option maintains the status quo, so does not positively or negatively contribute to this CSF.
3	The buildings should achieve a high standard of design and quality of new homes and communities	The refurbishment option can contribute some improvement to the buildings quality but structurally little can be improved. Lifts are also not viable.
4	The buildings should improve housing conditions and making best use of existing facility	There will be an improvement in the condition through essential maintenance work and net zero improvements, but this is unable to address the issues posed by the ageing non-traditional building.
5	Working with key partners to innovate and maximise available resources	There will be limited innovation through the refurbishments and resources will not fully be maximised, but there will certainly be an uplift.
6	The buildings should meet the required energy efficiency criteria that aligns with Cambridge's ambition to have net zero carbon housing stock by 2030 and reduce energy usage for residents	The energy efficiency of the buildings should improve through essential works and low carbon refurbishment and all houses and bungalows can have PV panels installed.

#	Critical Success Factor	Options Response
7	The buildings should result in a reduction of planned and preventative maintenance costs compared to the current level	The full refurbishment should result in a reduction in ongoing maintenance costs, but leaseholders will be liable to pay for certain refurbishment costs.
8	The buildings should provide a safe and secure environment for all residents and visitors	The current ongoing anti-social behaviour on site will remain under this option as the layout is conducive to providing spaces where this type of behaviour prevails.
9	The building should be bought up to standard in terms of fire safety compliance	The fire safety issues with the building will be addressed as part of the essential works.
10	The buildings should provide improved resident amenities and wider community benefits	The current amenities such as parking and the lack of open green space do not meet expectations for the residents and do not provide wider community benefits.
11	Improve the health and wellbeing of residents	A full refurbishment should improve some of the health and wellbeing issues on the estate such as living conditions but there is limited ability to improve the green spaces and accessibility. Decant could also be involved.

3.9.1.3 Option 3 - Partial Redevelopment involving the demolition of the flats only

#	Critical Success Factor	Options Response
1	The buildings should positively contribute to increasing the delivery of homes, and in particular affordable housing	There is a minimal improvement in the number of units provided with the units increasing from 122 to 137 so house gain will be limited.
2	The buildings should contribute to diversifying the housing market and accelerating housing delivery	There will be little diversification in the housing market due to the removal of flats.
3	The buildings should achieve a high standard of design and quality of new homes and communities	The flats will benefit from design and quality improvements, but the remainder of the Estate will remain untouched.
4	The buildings should improve housing conditions and making best use of existing facility	The flat blocks will have significant condition improvements from their current poor condition while the undeveloped buildings may experience small improvements through essential works.
5	Working with key partners to innovate and maximise available resources	There will be some opportunities to innovate and maximise available resources in the redeveloped flats only.
6	The buildings should meet the required energy efficiency criteria that aligns with Cambridge's ambition to have net zero carbon housing stock by 2030 and reduce energy usage for residents	The flats will be built at a standard that align with Cambridge's low carbon ambitions which will improve the energy efficiency of the buildings.
7	The buildings should result in a reduction of planned and preventative maintenance costs compared to the current level	The new buildings will require less ongoing maintenance costs while refurbishment will cover the day-to-day maintenance concerns of the other buildings.
8	The buildings should provide a safe and secure environment for all residents and visitors	The current layout of the Estate will have little changed so will be conducive to providing spaces where anti-social behaviour prevails.
9	The building should be bought up to standard in terms of fire safety compliance	The fire safety compliance of all buildings will be addressed through both redevelopment and essential works.

#	Critical Success Factor	Options Response
10	The buildings should provide improved resident amenities and wider community benefits	There will be some opportunity to incorporate some feedback to provide better parking and amenities behind the new buildings, but no new green space can be included and placemaking will be limited.
11	Improve the health and wellbeing of residents	There will be an improvement in the accessibility and living conditions for residents of the flats while the undeveloped buildings will remain the same. Decanting will be required which will impact resident wellbeing.

3.9.1.4 Option 4 - Partial Redevelopment involving the retention of all houses

#	Critical Success Factor	Options Response
1	The buildings should positively contribute to increasing the delivery of homes, and in particular affordable housing	There is a good improvement in the number of units provided by this option. The total will increase from 122 to 185 units so house gain will be limited.
2	The buildings should contribute to diversifying the housing market and accelerating housing delivery	The newly developed homes will provide new stock to the housing market, but this will be replacement with some diversification and acceleration.
3	The buildings should achieve a high standard of design and quality of new homes and communities	The new buildings will be of a high standard while the retained houses will maintain their original design and quality.
4	The buildings should improve housing conditions and making best use of existing facility	Redevelopment of all buildings except the houses will improve the condition of a large proportion of the Estate.
5	Working with key partners to innovate and maximise available resources	There should be the opportunity to innovate and maximise resources in the redeveloped buildings.
6	The buildings should meet the required energy efficiency criteria that aligns with Cambridge's ambition to have net zero carbon housing stock by 2030 and reduce energy usage for residents	All buildings except the houses will be built at a standard that aligns with Cambridge's low carbon ambition, but the houses can incorporate PV panels.
7	The buildings should result in a reduction of planned and preventative maintenance costs compared to the current level	The new buildings will require less ongoing maintenance costs while refurbishment will cover day-to-day maintenance concerns of the other buildings.
8	The buildings should provide a safe and secure environment for all residents and visitors	The new layout of the Estate improves the levels of surveillance with new open access routes but some of the anti-social prone areas are preserved.
9	The building should be bought up to standard in terms of fire safety compliance	The fire safety compliance of all buildings will be addressed through both redevelopment and essential works.
10	The buildings should provide improved resident amenities and wider community benefits	By only retaining the houses, new amenities can also be incorporated behind the new buildings but there is an inability to provide green space and placemaking.
11	Improve the health and wellbeing of residents	The redeveloped part of the estate will have improved accessibility and living conditions for residents while the undeveloped buildings will

#	Critical Success Factor	Options Response
		remain the same. Decanting will be required which will impact resident wellbeing.

3.9.1.1 Option 5 - Partial Redevelopment involving the retention of most of the houses

#	Critical Success Factor	Options Response
1	The buildings should positively contribute to increasing the delivery of homes, and in particular affordable housing	There is a considerable improvement in the number of units provided by this option. The total will increase from 122 to 209 units.
2	The buildings should contribute to diversifying the housing market and accelerating housing delivery	There is an acceleration of delivery of homes but only some diversification as there is a low increase in the number of flats.
3	The buildings should achieve a high standard of design and quality of new homes and communities	The new buildings will be of a high standard and fewer houses will be retained to their original design and quality meaning there is a positive transformation.
4	The buildings should improve housing conditions and making best use of existing facility	This option leads to a greater improvement in overall housing conditions as more buildings are affected.
5	Working with key partners to innovate and maximise available resources	There should be the opportunity to innovate and maximise resources in the redeveloped buildings, but the retained houses will reduce the opportunity significantly.
6	The buildings should meet the required energy efficiency criteria that aligns with Cambridge's ambition to have net zero carbon housing stock by 2030 and reduce energy usage for residents	The redeveloped buildings will be built to a standard that align with Cambridge's low carbon ambitions. All undeveloped buildings will fail to do so should incorporate PV panels.
7	The buildings should result in a reduction of planned and preventative maintenance costs compared to the current level	The new buildings will require less ongoing maintenance costs while refurbishment will cover day-to-day maintenance concerns of the other buildings.
8	The buildings should provide a safe and secure environment for all residents and visitors	The new layout of the estate improves the levels of surveillance with new open access routes but some of the anti-social prone areas are maintained.
9	The building should be brought up to standard in terms of fire safety compliance	The fire safety compliance of all buildings will be addressed through both redevelopment and essential works.
10	The buildings should provide improved resident amenities and wider community benefits	New amenities can be incorporated behind the new buildings and a new central green space can be created.
11	Improve the health and wellbeing of residents	This option will provide improved accessibility, usable outdoor space, and biodiversity across the Estate and in the redeveloped buildings there will be an improvement in living conditions. Decanting will be required though which will impact resident wellbeing.

3.9.1.1 Option 6 - Partial Redevelopment involving the retention of houses to the south and east

#	Critical Success Factor	Options Response
1	The buildings should positively contribute to increasing the delivery of homes, and in particular affordable housing	There is a considerable improvement in the number of units provided by this option. The total will increase from 122 to 217 units.
2	The buildings should contribute to diversifying the housing market and accelerating housing delivery	This option will provide new stock, accelerating the housing market with diversification that will open the Estate to a wider occupier group.
3	The buildings should achieve a high standard of design and quality of new homes and communities	The new buildings will be of a high standard and there will be fewer houses retained to their original design and quality meaning there is a positive transformation.
4	The buildings should improve housing conditions and making best use of existing facility	There will be an improvement in the condition of the majority of the buildings on the Estate meaning there is a positive transformation.
5	Working with key partners to innovate and maximise available resources	There should be the opportunity to innovate and maximise resources in the redeveloped buildings, but the retention of houses will reduce the opportunity significantly.
6	The buildings should meet the required energy efficiency criteria that aligns with Cambridge's ambition to have net zero carbon housing stock by 2030 and reduce energy usage for residents	The redeveloped buildings will be built to a standard that align with Cambridge's low carbon ambitions. All undeveloped buildings should incorporate PV panels.
7	The buildings should result in a reduction of planned and preventative maintenance costs compared to the current level	The new buildings will require less ongoing maintenance costs while refurbishment will cover day-to-day maintenance concerns of the other buildings.
8	The buildings should provide a safe and secure environment for all residents and visitors	The new central green is easily visible, but some pedestrian routes have low visibility, thus preserving some of the anti-social prone areas on the Estate.
9	The building should be brought up to standard in terms of fire safety compliance	The fire safety compliance of all buildings will be addressed through both redevelopment and essential works.
10	The buildings should provide improved resident amenities and wider community benefits	By retaining the south and east houses, new amenities, and a new central green space.
11	Improve the health and wellbeing of residents	This option provides improved living conditions to the majority of buildings on the Estate and there is improved accessibility, useable outdoor space and biodiversity. Although decanting will be required, there is significant long-term improvements in terms of health and wellbeing.

3.9.1.1 Option 7 - Full Redevelopment

#	Critical Success Factor	Options Response
1	The buildings should positively contribute to increasing the delivery of homes, and in particular affordable housing	The number of homes will increase from 122 units to 239 units.
2	The buildings should contribute to diversifying the housing market and accelerating housing delivery	This option will provide new stock, accelerating the housing market with replacement and

#	Critical Success Factor	Options Response
		diversification, particularly in the number of flats and maisonettes.
3	The buildings should achieve a high standard of design and quality of new homes and communities	As a new build it is likely that these will be of a high standard of design and quality although there will be higher financial and carbon costs.
4	The buildings should improve housing conditions and making best use of existing facility	Redevelopment of the whole Estate will improve housing conditions.
5	Working with key partners to innovate and maximise available resources	A new development will provide opportunities for innovation, but resources will not be fully re-used meaning some resources will leave the site.
6	The buildings should meet the required energy efficiency criteria that aligns with Cambridge's ambition to have net zero carbon housing stock by 2030 and reduce energy usage for residents	The full Estate will be low carbon design and improved EPC ratings so there should be a reduction in energy usage across all building types.
7	The buildings should result in a reduction of planned and preventative maintenance costs compared to the current level	A new build will require less ongoing preventative and planned maintenance costs.
8	The buildings should provide a safe and secure environment for all residents and visitors	All pedestrian routes have greater visibility meaning the areas prone to anti-social behaviour should be reduced.
9	The building should be brought up to standard in terms of fire safety compliance	The new development will be built in alignment with the latest fire safety regulations.
10	The buildings should provide improved resident amenities and wider community benefits	A full new development will provide amenities and community benefits such as a large central green, play area and green walk.
11	Improve the health and wellbeing of residents	There is an ability to provide healthy living conditions across all units and improve amenities by providing large green spaces with clear wayfinding for improved accessibility. Decanting will be required but the improvements will enhance long-term health and wellbeing.

3.10 Conclusion

The Strategic Case sets out the case for change and the strategic objectives for the Council. It identified 11 Critical Success Factors aligned to these strategic objectives and each of the seven options were assessed on a qualitative basis against these CSFs. The summary of the overall RAG for all seven options is summarised in the table below.

#	Critical Success Factor	Option 1:	Option 2:	Option 3:	Option 4:	Option 5:	Option 6:	Option 7:
1	The buildings should positively contribute to increasing the delivery of homes, and in particular affordable housing							

#	Critical Success Factor	Option 1:	Option 2:	Option 3:	Option 4:	Option 5:	Option 6:	Option 7:
2	The buildings should contribute to diversifying the housing market and accelerating housing delivery	Yellow	Yellow	Red	Yellow	Yellow	Green	Green
3	The buildings should achieve a high standard of design and quality of new homes and communities	Red	Yellow	Yellow	Yellow	Green	Green	Green
4	The buildings should improve housing conditions and making best use of existing facility	Red	Yellow	Yellow	Green	Green	Green	Green
5	Working with key partners to innovate and maximise available resources	Red	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
6	The buildings should meet the required energy efficiency criteria that aligns with Cambridge's ambition to have net zero carbon housing stock by 2030 and reduce energy usage for residents	Red	Yellow	Yellow	Green	Green	Green	Green
7	The buildings should result in a reduction of planned and preventative maintenance costs compared to the current level	Red	Yellow	Green	Green	Green	Green	Green
8	The buildings should provide a safe and secure environment for all residents and visitors	Red	Red	Red	Yellow	Yellow	Yellow	Green
9	The building should be bought up to standard in terms of fire safety compliance	Red	Green	Green	Green	Green	Green	Green
10	The buildings should provide improved resident amenities and wider community benefits	Red	Red	Yellow	Yellow	Green	Green	Green

#	Critical Success Factor	Option 1:	Option 2:	Option 3:	Option 4:	Option 5:	Option 6:	Option 7:
11	Improve the health and wellbeing of residents							

Option	Red Flags	Amber Flags	Green Flags	Status
Option 1	9	2	0	Not Viable
Option 2	2	8	1	Base Case
Option 3	2	7	2	Not Viable
Option 4	0	7	4	Not Viable
Option 5	0	3	8	Not Viable
Option 6	0	2	9	Viable
Option 7	0	1	10	Viable

Based on the strategic analysis of each option against the CSFs', it is clear Option 1 – Do Nothing is not viable due to the high number of red flags associated with 9 CSFs meaning it must be excluded. Therefore, Option 2 will be used as the base case for comparison as this is the minimum actions required by the Council to provide a level of improvement in relation to ongoing maintenance issues, building condition and energy performance. However, this option provides 1 green flag meaning there would be no significant improvements, so Option 2 comprises the opportunities on the estate. Instead, it will be used as the revised baseline for comparison.

Based on the RAG, it is clear as the level of redevelopment increases, so does the associated improvements and thus green flags. Options 3 and 4 are able to address the issues of the flat blocks while retaining the houses which are in a fair condition. However, the wider associated green flags from these options are limited due to the constraints deriving from the number of properties undeveloped and the unchanged estate layout. As a result, there is an inability to provide the following improvements meaning these options are not viable at this stage:

- Significant house gain
- Improved placemaking
- Housing condition/quality improvements on the estate

While Option 5 has 8 green flags, it still has limitations as the exclusion of some of the low-density buildings and the inability to alter the estate's layout means the housing capacity of the estate cannot be maximised.

There will be limited house gains and usable outdoor space – the outcome would still not be viable based on this analysis.

There is, however, an overall stronger positive transformation of the estate by Option 6 as most of the low-density buildings will be redeveloped and the new realignment of Ekin Road will better maximise the opportunities for increasing housing capacity on the estate and in turn provide stronger placemaking and improved living conditions and usable outdoor space. Although, the undeveloped houses compromise the overall quality of environment that could be delivered across the whole estate.

From a strategic perspective, while clearly opposed by some residents who feel strongly that they want to remain in their current houses, Option 7 best meets the Critical Success Factors, drawn from the Council's strategic objectives. This option can successfully provide the maximum development capacity on the estate due to the relationship with neighbouring properties allowing for taller residential buildings. It is also expected to achieve the greatest improvements in terms of the overall standard of living conditions, building quality, estate layout and useable outdoor space (for example, play areas, seating, and picnic areas) on the estate. To exclude either of these options in favour of options that retain a large proportion of the buildings would hinder the opportunities for maximum improvement on the estate.

4 FINANCIAL PERFORMANCE

4.1 Introduction

The Financial Performance appraisal incorporates a detailed set of financial models that align with a set of agreed assumptions.

The Strategic Alignment Assessment examined the seven options and determined that Option 1 – Do Nothing is not considered a viable option, so this option has not been included in the analysis. Instead, Option 2 – Retain the buildings in existing form and undertake essential repairs and retrofitting is seen as the true base case for comparative purposes.

In phase 1, which results in the short listing of viable options, we do not perform detailed financial modelling, but rather document the high-level assumptions from which the detailed financial analysis is conducted as part of phase 2.

4.2 Financial Performance and Evaluation

The assumptions included in this section are correct as at the date of this report. When performing the detailed financial evaluation as part of the assessment of the short-listed options, these assumptions will be tested and amended as required to ensure the most up to date, market related assumptions are used in the calculations.

4.2.1 Assumptions tables

4.2.1.1 Unit values, size and build cost assumptions

Unit Type	Leasehold value (£)	Market value (£)	Size (sq ft)	Build Cost (£)	Source
1 bed flat	220,000	325,000	500	125,000	JLL Market Report
2 bed flat	280,000	400,000	700	175,000	
3 bed flat	335,000	475,000	850	215,000	
1 bed maisonette	220,000	325,000	500	125,000	
2 bed maisonette	280,000	400,000	700	175,000	
3 bed maisonette	335,000	475,000	850	215,000	
3 bed house	350,000	530,000	1200	300,000	
4 bed house	420,000	600,000	1600	400,000	

As we have not had the opportunity to inspect individual units yet, these values are Cambridge residential wide values that are reflective of the area.

Disclaimer:

1. The above views on price are not intended as a formal valuation and should not be relied upon as such.
2. No liability is extended to any third party and the figures suggested are given purely as guidance.
3. The prices are quoted subject to contract.
4. The prices quoted are based upon the information provided and may be subject to amendment if the information proves other than as stated or shown.
5. The prices quoted are based on the assumption that the units are to be finished to a standard commensurate with the target market.
6. The prices quoted are based on the assumption that all units will be sold on 999-year leases.

4.2.1.2 Operating cost assumptions

Rent and Service Charge growth (p.a.)	3%
Social rent 1 bed (per week)	£80
Social rent 2 bed (per week)	£95
Social rent 3 bed (per week)	£115
New development social housing allowance	40%
Service charge for flats (per month)	£20
Service charge for houses (per month)	£10
Maintenance costs - as is units	£1180
Maintenance costs – new units	£800

4.2.1.3 Financial and professional fee assumptions

Finances and fees	
Discount rate	3.50%
Finance costs	6%
Selling and agents fees	1.50%
Marketing Costs	(1% of GDV)
Legal/Conveyancing fees	£1,000 per private unit
Professional fees (of construction costs)	10%
Contingency	5%

4.3 Phase 2 Evaluation process

In order to determine the financial performance for each of the short-listed options, a detailed financial analysis will be performed. This will include the following steps:

- Estimate conceptual design development costs and timings
- Calculate decant costs for the affected units
- Assume tenure of completed units

- Determine expected value and timings of sales proceeds
- Forecast expected rental and service charge income and operating costs

Once this has been determined, a 30-year discounted cash flow model will be produced for each option which will deliver a Net Present Value for each option to determine the expected financial impact. It must be stressed, that at this conceptual stage, the modelling will be largely assumptions based and it is only when a fully costed scheme is presented, that we can determine the true financial performance.

5 ECONOMIC EVALUATION

5.1 Introduction

The purpose of the Economic Evaluation is to assess the wider benefits arising from each option. This includes exploring the quantitative social and economic benefits on the basis of "additionality" as well as the broader sustainability impact.

All options except Option 1 – Do Nothing have been examined. Option 1 has been excluded at this stage as this option will provide no quantitative or qualitative benefits. Option 2 will act as the base case for comparison.

5.2 High-Level Benefits Cost Ratio Analysis

A Benefits Cost Ratio is a tool that has been adopted from HM Treasury's appraisal guidance and looks at the public sector and broader local economy benefits. In phase 1, we have only identified the high-level benefits and their associated beneficiaries. These benefits will be quantified in the detailed second phase.

To summarise, three benefit themes were identified that relate to:

- Social – health and wellbeing and anti-social behaviour improvements
- Economic – job creation, land receipts, infrastructure uplift, and energy costs
- Environmental – biodiversity, operating carbon, and energy efficiency improvements

Within the three benefit themes, there are both quantifiable and quantitative benefits for the all economy and public pursue.

We have selected themes that are aligned to a redevelopment including social housing. When developing the high-level BCR we looked at additionality over what is currently being provided in the base case which in this instance is Option 2 – Essential Repairs and Retrofitting.

When determining the BCR, we have concluded the options for partial redevelopment will have similar benefits with the level of benefits increasing as more of the estate is redeveloped. Therefore, options 3-6 have been grouped together in this assessment.

Quantitative Benefits

Option 2: Essential Repairs and Retrofitting

Benefit Theme	Benefits	Methodology	Benefit Type
Environmental	Reduction in total carbon	The essential repairs and retrofit will improve the buildings efficiency and operating carbon of the houses and bungalows through the installation of PV panels.	All Economy
Economic	Reduction in resident energy consumption	Refurbishment will improve energy efficiency ratings which in turn will decrease residents' energy bills.	All Economy
Economic	Reduction in decanting costs	Non-intrusive refurbishment will require no decanting of residents meaning there will be no decanting costs.	Public Purse

Option 3, 4, 5 and 6: Partial Redevelopments

Benefit Theme	Benefits	Methodology	Benefit Type
Environmental	Reduction in total carbon	The new units will be developed to latest standards, improving the buildings efficiency and operating carbon.	All Economy
Economic	Reduction in resident energy consumption	Varying degrees of redevelopment will improve energy efficiency ratings which in turn will decrease residents' energy bills.	All Economy
Economic	Increase in Council Tax receipts	The increase in the number of units will result in additional units having to pay Council Tax.	Public Purse
Economic	Contractor Job Creation	Jobs will be created for the construction of the redeveloped buildings. Additionally, the increase in the number of units will result in population growth that in turn increases the number of working people. This will result in	All Economy & Public Purse

Benefit Theme	Benefits	Methodology	Benefit Type
		salaries being spent locally and increasing income tax and NI Contributions.	
Economic	Proceeds on the disposal of sale units	The sale of units to private owners will result in economic value for the Council through Stamp Duty receipts.	Public Purse
Economic	Infrastructure and Transport Uplift	The increased number of residents from the new units may increase the reliance and expenditure on local transport.	All Economy
Social	Reduce anti-social behaviour	Reduction in cleaning and maintenance costs for the Council in the options where the layout of the estate is altered in option 6 only to remove / address anti-social hot-spot areas.	Public Purse
Social	Resident health improvements	Improvements in the housing condition may reduce the number of residents experiencing illnesses related to issues. As a result, there will be less pressure and financial burden on the NHS.	Public Purse
Economic	Asset value and land receipt uplift	The improvement in the quality, design and condition of some of the units may increase asset value and produce higher disposal receipts. There may also be an additional uplift in the house values in the surrounding area as a result of the estate improvements.	Public Purse

Option 7: Full Redevelopment

Benefit Theme	Benefits	Methodology	Benefit Type
Environmental	Reduction in total carbon	Having all new units developed to latest standards on the estate will improve the	All Economy

Benefit Theme	Benefits	Methodology	Benefit Type
		estate's overall energy efficiency and operating carbon.	
Economic	Reduction in resident energy consumption	Full redevelopment will improve energy efficiency ratings across all buildings which in turn will decrease resident energy bills.	All Economy
Economic	Increase in Council Tax receipts	The significant increase in the number of units will result in additional units having to pay Council Tax.	Public Purse
Economic	Contractor and Local Job Creation	Jobs will be created for the construction of all the redeveloped buildings. Additionally, the increase in the number of units will result in population growth that in turn increases the number of working people. This will result in salaries being spent locally and increasing income tax and NI Contributions.	All Economy & Public Purse
Economic	Proceeds on the disposal of sale units	The sale of units to private owners will result in economic value for the Council through Stamp Duty receipts.	Public Purse
Economic	Infrastructure and Transport Uplift	The significant increase in the number of residents from the new units may increase the reliance and expenditure on local transport.	All Economy
Social	Reduce anti-social behaviour	Reduction in cleaning and maintenance costs for the Council in the options as the layout of the estate is altered to remove/ address anti-social hot-spot areas.	Public Purse
Social	Resident health improvements	Improvements in the housing condition in all buildings may reduce the number of residents experiencing illnesses related to issues. As a result, there will be less pressure and financial burden on the NHS.	Public Purse

Benefit Theme	Benefits	Methodology	Benefit Type
Economic	Asset value and land receipt uplift	The improvement in the quality, design and condition of all units may increase asset value and produce higher disposal receipts. There may also be an additional uplift in the house values in the surrounding area as a result of the estate improvements.	Public Purse

Additional Qualitative Benefits:

Alongside the quantitative benefits identified above, some options provide additional qualitative benefits for the residents and wider community.

Benefit Theme	Benefits	Methodology	Benefit Type
Social	Local Population Growth	The increase in the number of houses for options 3-7 will have a direct impact on the local population levels as more residents move in. This will likely have a knock-on effect on local economic growth, local spending, local infrastructure, and amenity improvements. The level of population growth will increase as the level of redevelopment increases per option because there will be higher net additional homes.	All Economy
Social	Resident wellbeing improvements	Option 3-7 will cause a creation of new jobs, useable outdoor space and high-quality homes will improve the physical and mental wellbeing of the residents. Physical wellbeing will be achieved through improved activity and the creation of new usable outdoor space. Mental health will be improved from the better living conditions. The extent of this benefit will increase as the level of redevelopment increases per option.	Local Community

Benefit Theme	Benefits	Methodology	Benefit Type
Social	Temporary preservation of residents' wellbeing	Option 2 which could involve no decanting will preserve residents' wellbeing as there will be little disruption from relocation as a result of the need to decant. However, this is only a short-term improvement because the condition of the buildings means there will be a future need for decanting as significant works will be needed.	Local Community
Environmental	Improvements in biodiversity and air quality	Options 5-7 provide new green space of varying sizes and trees on the estate that supports an improvement to the biodiversity on the estate. This will improve the air quality in the surrounding area by the increase in the number of trees.	Local Community
Environmental	Indirect carbon benefits or carbon benefits outside the site boundary	<p>Improved site accessibility and local amenities (e.g. green space) may reduce the driving needs for the residents.</p> <p>Creation of additional homes in the redevelopment options will provide opportunities for residents outside of the site boundary to move into more efficient homes reducing carbon impact in the broader community.</p> <p>Health and wellbeing improvements can reduce the number of lost workdays as well as the number of hospital visits – both having a positive effect</p>	Local Community

5.3 Conclusion

Although, the BCR was only a high-level, indicative assessment, it shows a positive outcome in terms of benefits from all options compared to the base case. It is evident the greater the level of redevelopment, the higher the degree of benefits that can be created as a result despite the presence of decanting. Options 3-7 have varying degrees of benefits that increase as the levels of redevelopment across the estate increases.

This means options 3 and 4 provide less benefits due to the limitations of infill development. Options 5 and 6 have the greater levels of redevelopment that allow for more associated benefits including economic benefits from increasing the number of houses as well as the social benefits from enhancing living conditions. Option 6 is differentiated from Option 5 by its ability to alter the estate layout to remove anti-social behaviour prone areas and provide large usable outdoor space. Though, it is clear Option 7 is able to produce the greatest levels of benefits for both the public purse and all economy as a result of the full redevelopment of the estate.

6 CONCLUSION

This report has explored the Strategic Alignment and Economic Evaluation for the seven options identified for the Ekin Road Estate in Cambridge. It also outlines the key assumptions that will be used to deliver the Financial Evaluation as part of phase 2.

The Strategic Alignment Assessment unpacked the current state of the buildings and the estate. It outlined Cambridge City Council's strategic objectives for the city and in particular the provision of housing. When analysing each of the options against the 11 Critical Success Factors, it is clear that Option 1 was not a viable option as it is not feasible to maintain the estates current condition. Option 2 will therefore be used as the revised base case for comparison as this is the minimum actions required by the Council to provide a level of improvement in relation to ongoing maintenance issues, condition, and energy performance of the buildings. This option also should not require decanting meaning there will be minimal impact on resident health and wellbeing. Though the lack of redevelopment in this option means the structural, anti-social behaviour and quality concerns cannot be addressed meaning it is not a viable option but rather a base case for comparison.

When assessing each of the remaining options against the CSFs, it is clear that as the level of redevelopment increases, the number of green flags associated with the CSFs increases accordingly.

While options 3 and 4 address the standard of the flat blocks and bungalows in relation to quality, condition and sustainability and requires less decanting, these options are constrained by infill development. By preserving the majority of the buildings and redeveloping areas already characterised by higher density buildings, this option will provide the lowest number of net additional homes. There is also a compromise in terms of the opportunity for the following improvements:

- The overall housing quality
- The relationship with the neighboring buildings
- The usable public outdoor space on the estate

Therefore, options 3 and 4 are not viable as to include these options would not maximise the associated benefits in return for the financial investment in the estate.

Option 5 will enhance housing quality and energy performance in most of the buildings on the estate while providing a positive impact to the wider areas in terms of provisioning a usable outdoor space. This option will also allow significant house gain for the local housing market through utilising the space. However, the preservation of most of the houses poses a constraint on the opportunity to fully maximise the development density on the estate as the layout cannot be altered and the retained houses are all lower density housing. Significant decanting will also be required and given the limitations due to the retained houses, it is not justifiable to include this option and decant when the opportunity on the estate cannot be maximized. The

decanting would impact the residents in terms of the stress and uncertainty of temporary relocation which will ultimately affect their health and wellbeing.

Option 6 and 7 are options that provide an overall positive transformation of the estate. While considerable decanting will be required for both which will impact the health and wellbeing of residents, there will be significant, long-term, positive impacts on the community through the provisioning of improved housing conditions, strong placemaking and large usable outdoor space. Additionally, through redeveloping either the majority or all of the estate, there is an overall improvement in the quality of homes and a significant increase in the number of homes delivered and as such meets the CSF for an acceleration and diversification of Cambridge's local housing market. While Option 7 has increased political risk from opposing residents, this option provides the maximum level of improvements available across all CSFs. To exclude either of these options would hinder the opportunities on the estate to achieve significant overall estate improvements for the local community and wider benefits for Cambridge.

The indicative BCR analysis in the Economic Evaluation Assessment further developed on this analysis by looking at the broader economic benefits that could stem from a redevelopment on site. It is clear there can be both quantitative and qualitative benefits that could provide significant improvements to the all economy, public purse and the local community.

All assessed options could provide positive outcomes in terms of benefits, with options 3-6 producing similar all economy and public purse benefits as a result of partial redevelopment. As seen in the Strategic Alignment Assessment, it is clear, as the level of redevelopment increases so do the associated benefits meaning options 3, 4 and 5 have limited scope for a significant positive transformation of the estate.

Therefore, based on the high-level BCR analysis, option 6 and 7 are able to provide both local community benefits from the creation of new pedestrian routes, usable open space and community amenities as well as Cambridge wide benefits from the provisioning of new homes for local people to ease Cambridge's housing pressures. However, at this stage Option 7 – Full Redevelopment is seen as being in a more favourable position to produce more of the desired positive benefits from a social, economic, and environmental perspective. Therefore, the BCR ultimately reinforces the conclusion that options 6 and 7 are the viable options that require further assessment in the detailed phase 2 alongside option 2 as the base case for comparison.

We understand all partial and full redevelopment options will require a level of decanting which will impact resident health and wellbeing short-term in terms of the negative associated wellbeing impacts from temporary relocation. However, the long-term improvements across the whole estate from the short-listed options should significantly improve the general health and wellbeing of all residents long-term. Only options that both secure the longevity of the estate through providing improvements and wide-reaching benefits and in turn justify decanting have been selected.

Taking into account all three of the above assessment, the following options are short-listed for further exploration in phase 2:

- Option 2 - Retain the buildings in existing form and undertake essential repairs and retrofitting (base case)
- Option 6 – Partial Redevelopment involving retention of house to the south and east
- Option 7 – Full Redevelopment

7 APPENDIX A – CARBON MODEL TABLES

Building Types (Option 1)	Number	Floor Area/Unit sqm	Total Floor Area sqm
Flats	72	60	4,320
Houses	32	78	2,496
Bungalows	10	40	400
Maisonette	8	52	417
Total/Average:	122		7,633

Refurbished (Option 2)	Number	Floor Area/Unit sqm	Total Floor Area sqm
Flats	72	60	4,320
Houses	32	78	2,496
Bungalows	10	40	400
Maisonette	8	52	417
Total/Average:	122		7,633

Refurbished (Option 2)	Number	Floor Area/Unit sqm	Total Floor Area sqm
Flats	72	60	4,320
Houses	32	78	2,496
Bungalows	10	40	400
Maisonette	8	52	417
Total/Average:	122		7,633

Option 4	Number	Floor Area/Unit sqm	Total Floor Area- sqm
Flats	0	60	0
Houses	32	78	2,496
Bungalows	0	40	0
Maisonette	0	52	0
New Maisonettes	70	52	3,652
New Houses	0	78	0
New Flats	83	60	4,980
Total/Average:	185		11,128

Option 5	Number	Floor Area/Unit sqm	Total Floor Area sqm
Flats	0	60	0
Houses	24	78	1,872
Bungalows	0	40	0

Maisonette	0	52	0
New Maisonettes	72	52	3,756
New Houses	0	78	0
New Flats	113	60	6,780
Total/Average:	209		12,408

Option 6	Number	Floor Area/Unit sqm	Total Floor Area sqm
Flats	0	60	0
Houses	22	78	1,716
Bungalows	0	40	0
Maisonette	0	52	0
New Maisonettes	26	52	1,356
New Houses	0	78	0
New Flats	169	60	10,140
Total/Average:	217		13,212

Option 7 - Full Redevelopment	Number	Floor Area/Unit sqm	Total Floor Area sqm
Flats	0	60	0
Houses	0	78	0
Bungalows	0	40	0
Maisonette	0	52	0
New Flats	200	60	12,000
New Houses	39	78	3042
Total/Average:	239		15,042

8 APPENDIX B – SOURCE LIST

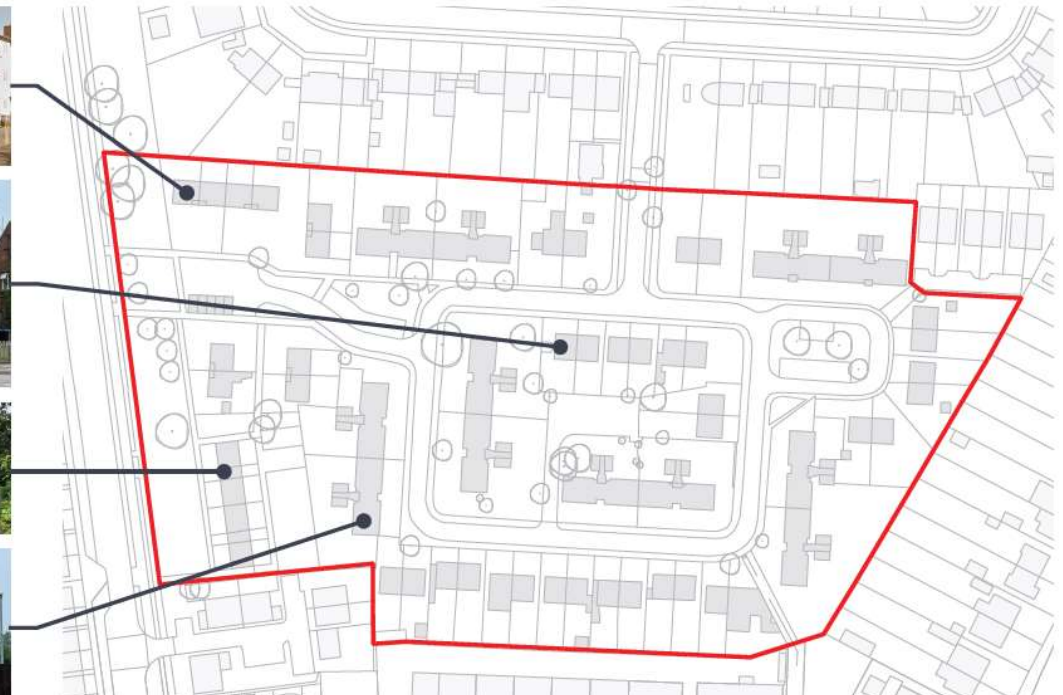
Section	Document
Executive Summary	
Estate Condition	Potter Raper Options Appraisals Report (August 2020)
Decanting	Cambridge City Council Decant Policy
Strategic Alignment	
Building Standards	Potter Raper Options Appraisals Report (August 2020)
Asbestos	ADF Environmental, Asbestos Refurbishment Surveys (2019)
Fire Safety	Cambridge City Council Housing Services, Regulatory Reform (Fire Safety) Order 2005 Fire Risk Assessment (November/December 2022) Potter Raper Options Appraisals Report (August 2020)
Drain Issues	Millward, Structural Inspections for Cambridge City Council (September-November 2019)
Health and Safety	Potter Raper Options Appraisal Report (August 2020)
Damp, Mould and Condensation Incidents	Damp, Mould, Condensation Team, DMC Reports
Legibility	BPTW, Pre-App 4 Presentation (June 2022)
Anti-social behaviour	Cambridge Police Estate Champion
EPC Target	Cambridge City Council Climate Change Strategy Action Plan 2021-2026
Accessibility	HM Government, The Building Regulations 2010: Access and use of buildings Potter Raper Options Appraisals Report (August 2020)
Tree Strategy	BPTW, Pre-App 4 Presentation (June 2022)
Consultation Process	Ekin Road Resident Questionnaire Final Report (14 th September 2022)
Critical Success Factors	Greater Cambridge Housing Strategy JLL Team
Carbon Assessment	RIBA 2023 Potter Raper Options Appraisal Report GLA London Plan HM Treasury Green Book
Economic Performance	
Unit value, size and build cost	JLL Market Report
Decant and homeless tenant	Cambridge City Council Decant Calculations
Construction costs	Potter Raper Cost Planning Feasibility Estimate

Repairs and Maintenance Cost	Average maintenance cost of a residential unit for the Cambridge Council HRA Business Plan
------------------------------	--

9 APPENDIX C - BPTW DESIGN OPTIONS – PARTIAL REDEVELOPMENT FEB 2023

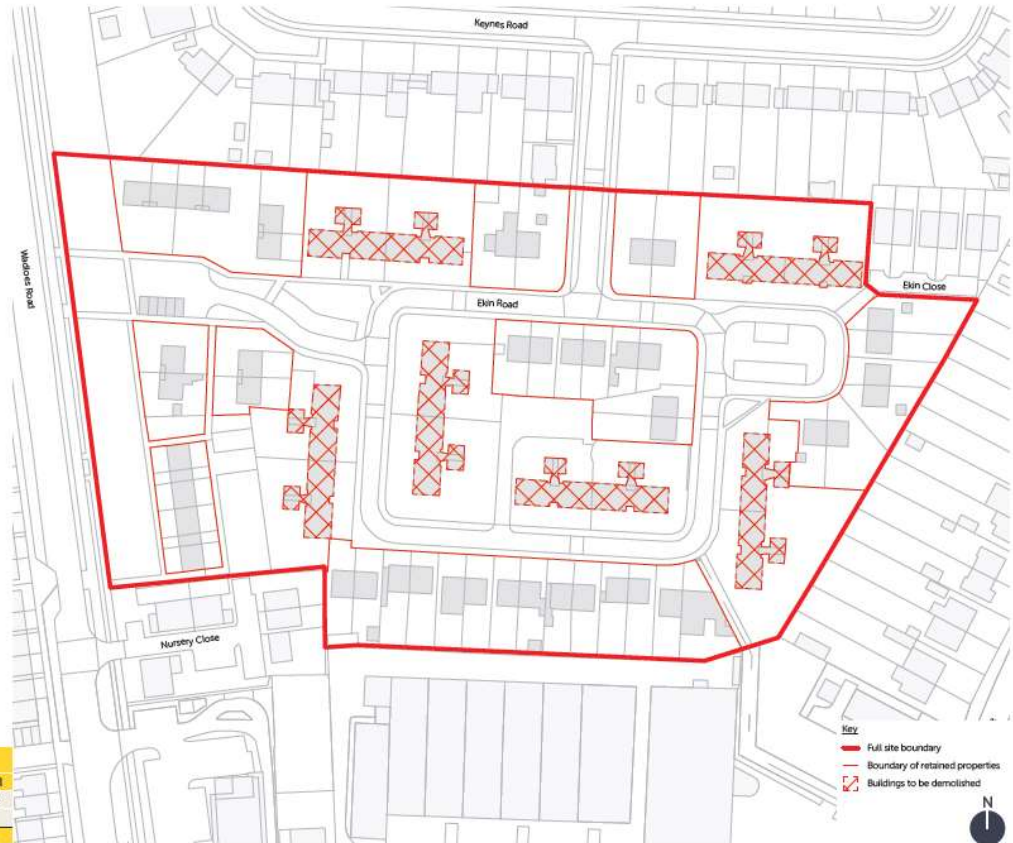
Existing Site

Site Plan



Option A

Demolition of flats only (retention of all houses, bungalows and maisonettes)



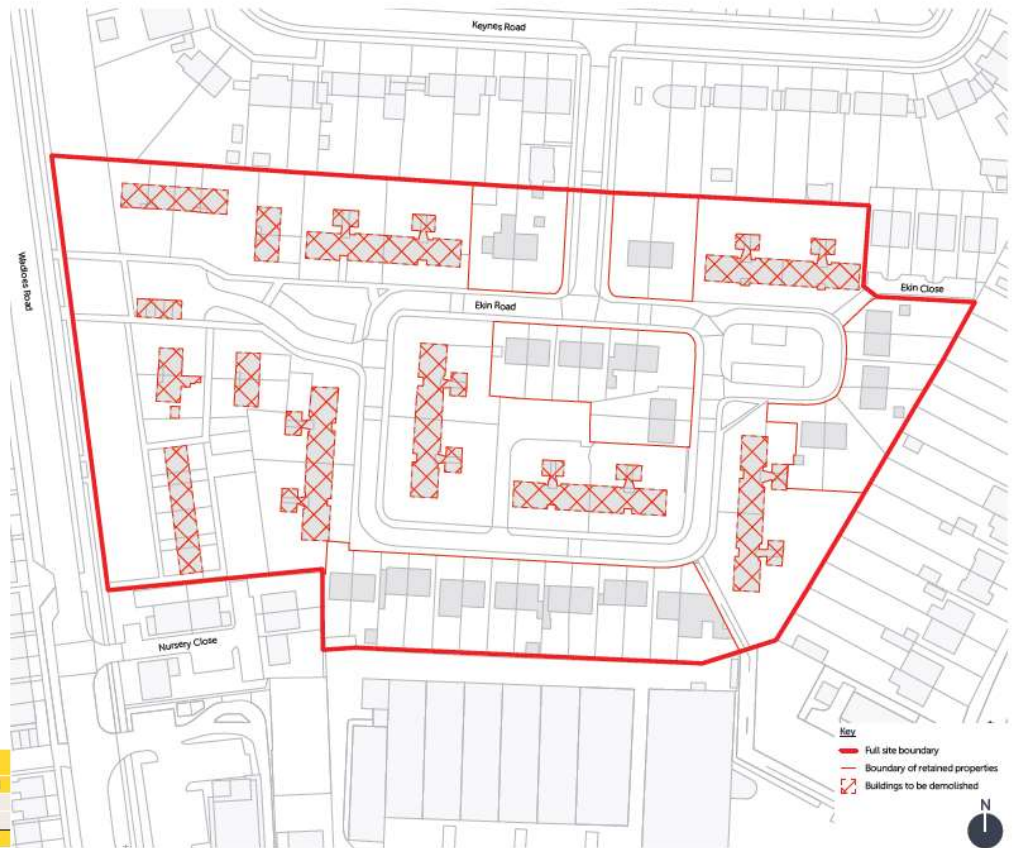
Option A					
	Flats	Bungalows	Maisonettes	Houses	Total
Existing	72	10	8	32	122
Demolished	72	0	0	0	72
Retained	0	10	8	32	50

Option B

Retention of all houses



Option B					
	Flats	Bungalows	Maisonettes	Houses	Total
Existing	72	10	8	32	122
Demolished	72	10	8	0	90
Retained	0	0	0	32	32



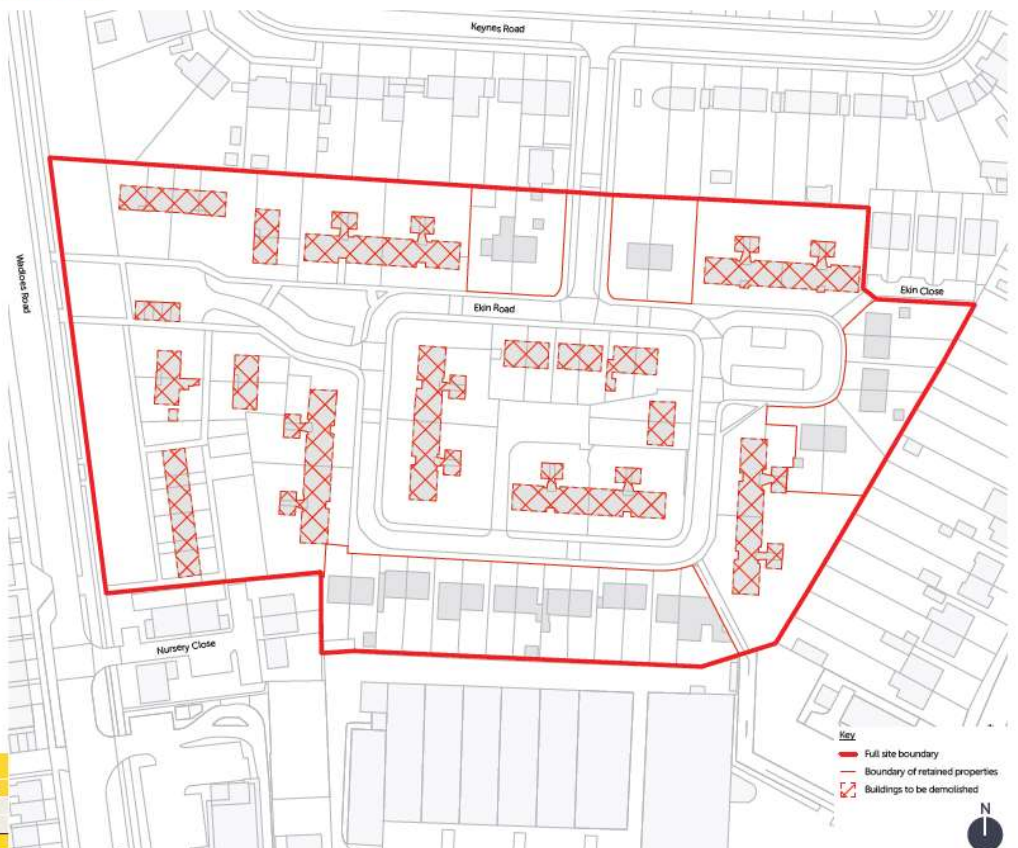
6 // BPTW // Elin Road Design Development

Option C

Retention of most houses (except central houses)



Option C					
	Flats	Bungalows	Maisonettes	Houses	Total
Existing	72	10	8	32	122
Demolished	72	10	8	8	98
Retained	0	0	0	24	24



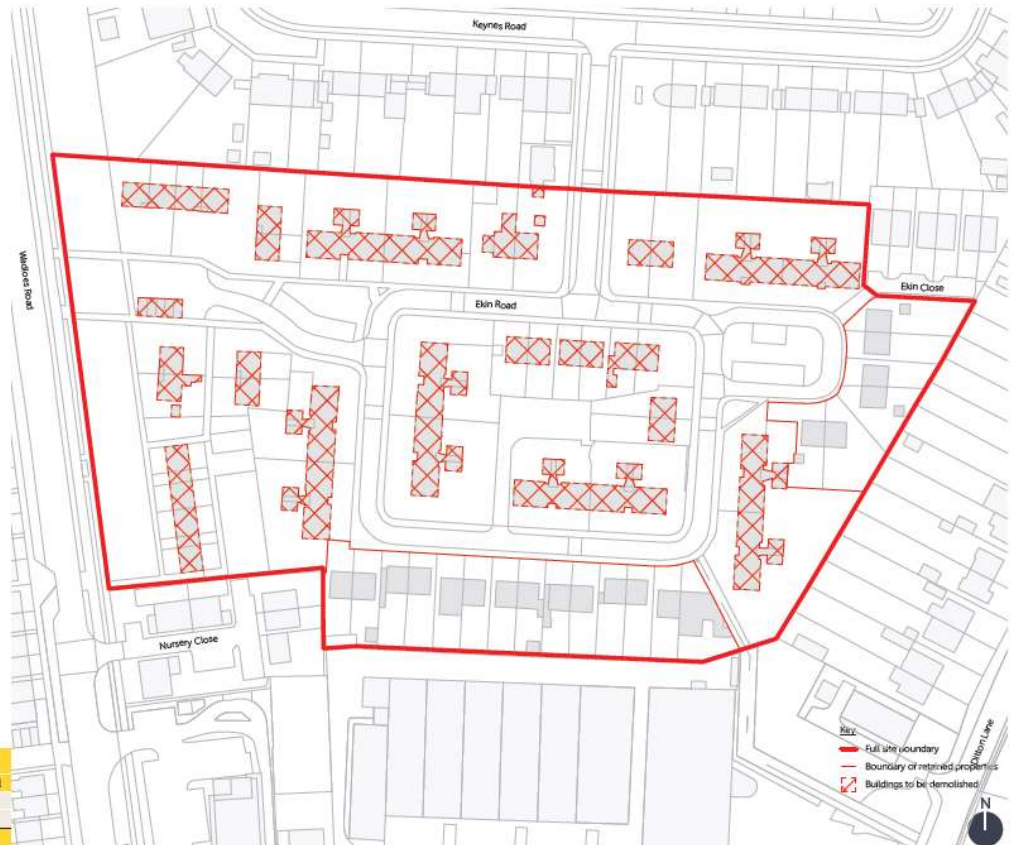
9 // BPTW // Elin Road Design Development

Option D

Retention of houses to the south and east only



Option D					
	Flats	Bungalows	Maisonettes	Houses	Total
Existing	72	10	8	32	122
Demolished	72	10	8	12	102
Retained	0	0	0	20	20



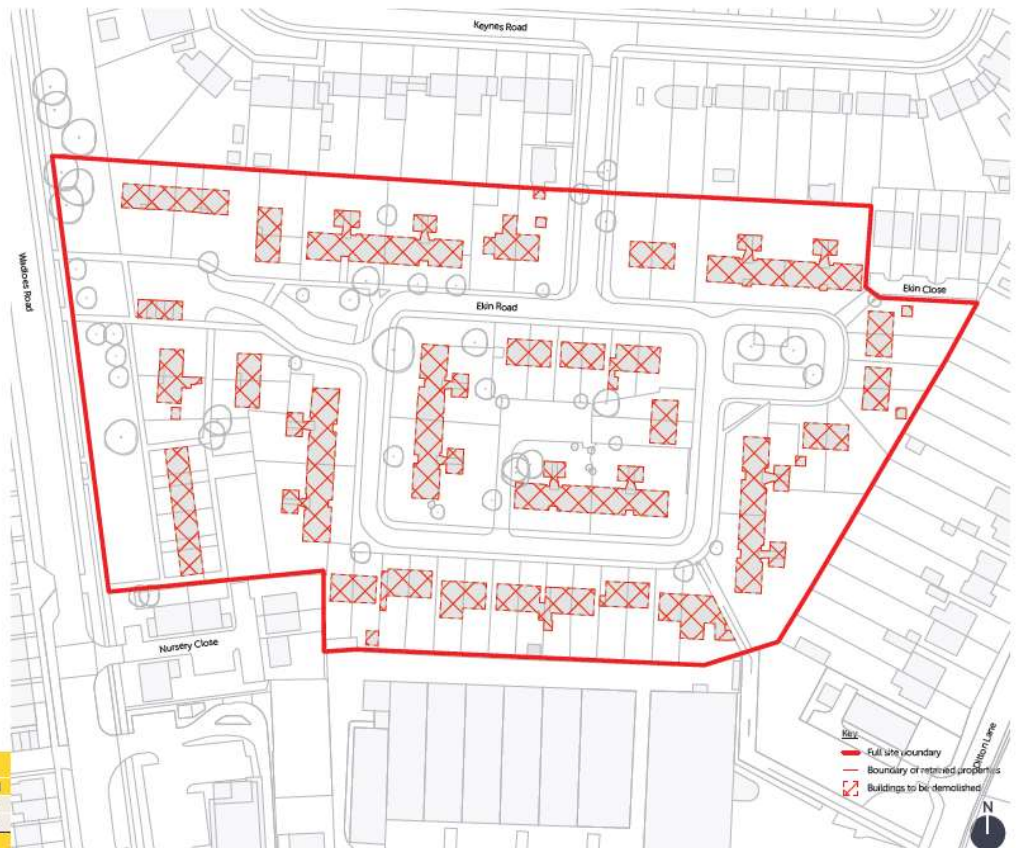
12 // BPTW // Ekin Road Design Development

Option E

Total redevelopment



Option E					
	Flats	Bungalows	Maisonettes	Houses	Total
Existing	72	10	8	32	122
Demolished	72	10	8	32	122
Retained	0	0	0	0	0



15 // BPTW // Ekin Road Design Development