

Item

Proposed New Build Passivhaus Pilot Package



To:

Councillor Richard Johnson, Executive Councillor for Housing

Report by: Jim Pollard, Senior Development Officer Housing Development Agency

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Wards affected:

Abbey, Arbury, East Chesterton, Kings Hedges

Key Decision

1. Executive Summary

- 1.1 On 24 September 2020 the Executive Counsellor approved a new housing programme following scrutiny in public at Housing Scrutiny Committee. The proposed programme includes a strong commitment to increased sustainability standards in support of the Council's commitment on climate change. The costs in the financial appraisal to support that decision were based on the introduction of Passivhaus principles in construction.
- 1.2 This commitment to enhanced sustainability standards for the new programme is outlined in the previous Housing Scrutiny Committee report (Item 13) at this meeting. Following the recommendations of Buro Happold, the first step towards Net Zero Carbon is to undertake a Passivhaus pilot scheme to learn and develop the approach to sustainability in the new programme.
- 1.3 This report brings forward proposals for 35 dwellings across five sites as a first step in delivering homes on Passivhaus principles. This is an

important pilot project to further the Council's understanding of Passivhaus development by bringing forward developments focussed on developing standard house types which have been informed from the outset by Passivhaus principles.

1.4 The sites included in the package are:

- Ditton Walk - infill site at gardens of 129-131 Ditton Fields – the homes will face Ditton Walk and this will be the short scheme title (Abbey Ward) - 6 houses.
- 71-73 Fen Road - replacing two existing buildings previously providing shared accommodation for people with learning disabilities) (East Chesterton Ward) - 12 houses including 2 larger wheelchair accessible houses.
- Aragon Close – garage and parking site (Kings Hedges Ward) - 7 houses.
- Sackville Close – garage and parking site (Kings Hedges Ward) - 7 houses.
- Borrowdale - garage and parking site (Arbury Ward) – 3 houses.

1.5 The schemes are indicative and subject to further review during pre-application planning consultation.

1.6 The total indicative works cost is currently estimated at £10,151,413 including pre- and post-planning statutory fees, professional consultant fees, survey and site investigation costs, demolition and construction costs, other associated costs and HDA fees. (Land assembly costs of £761,972 have already been incurred at 71-73 Fen Road and 129 -131 Ditton Fields.)

1.7 The breakdown of costs including land assembly across the sites is as follows:

HSC Budget	Fen Road	Ditton Walk	Aragon Close	Sackville Close	Borrowdale	TOTAL
Design & Works Costs	£3,657,449	£1,918,233	£1,850,494	£1,850,494	£874,742	£10,151,413
Land assembly	£596,350	£169,650	£0	£0	£0	£761,972.46
TOTAL	£4,253,799	£2,087,883	£1,850,494	£1,850,494	£874,742	£10,913,385

2. Recommendations

The Executive Councillor is recommended to:

- 2.1 To approve a new build housing scheme at Ditton Walk.
- 2.2 To approve a new build housing scheme at 71-73 Fen Road.
- 2.3 To approve a new build housing scheme at Aragon Close.
- 2.4 To approve a new build housing scheme at Sackville Close.
- 2.5 To approve a new build housing scheme at Borrowdale.
- 2.6 To approve the capital budget as set out in this report for the package of Passivhaus schemes noting that this will be reduced should any of the five sites not proceed.
- 2.7 Authorise the Strategic Director in consultation with the Executive Councillor for Housing to approve variations to the schemes, including the number of units and mix of property types and sizes outlined in this report.
- 2.8 Subject to Council approval of the budget, approve the development to be carried out through the Cambridge Investment Partnership (CIP) subject to a value for money assessment to be carried out on behalf of the Council.

3. Background

- 3.1 This Development opportunity addressed a number of the Council's key Corporate Objectives:
 - Tackling the City's housing crisis.
 - Delivering sustainable prosperity for Cambridge.
 - Protecting essential services and transforming council delivery.
 - Tackling climate change and making Cambridge cleaner and greener.

3.2 Local Housing Need

- 3.2.1 There is a recognised need for more affordable housing across the city. The table below demonstrates the number of households on the Housing Needs Register as of December 2020. There are currently 1,785 households on the Housing Register.

	Band A	Band B	Band C	Band D	Total
1 bedroom	61	131	589	254	1035
2 bedroom	15	163	125	147	450
3 bedroom	15	159	17	63	254
4 bedroom +	7	29	3	7	46
Total	98	482	734	471	1785

New programme Target mix	
1 bedroom	50%
2 bedroom	25%
3 bedroom	20%
4 bedroom +	5%

3.2.2 Proposed Dwelling mix:

The developments will deliver 35 new properties, two of which will be wheelchair accessible or adaptable larger family homes. All 35 units will be Council-rented.

- Ditton Walk - infill site at gardens of 129-131 Ditton Fields (Abbey Ward) - 6 houses.
- 71-73 Fen Road - replacing two existing buildings previously providing shared accommodation for people with learning disabilities) (East Chesterton Ward) - 12 houses including 2 larger wheelchair accessible houses.
- Aragon Close – garage and parking site (Kings Hedges Ward) - 7 houses.
- Sackville Close – garage and parking site (Kings Hedges Ward) - 7 houses.
- Borrowdale - garage and parking site (Arbury Ward) – 3 houses.

Scheme	129-131 Ditton Walk	71-73 Fen Road	Aragon Close	Sackville Close	Borrow- dale	TOTAL
2B4P House	2	8	7	7	3	27
3B5P House	4	2				6
3B5P Wheelchair House		1				1
4B7P Wheelchair House		1				1
Total	6	12	7	7	3	35

3.2.3 After reviewing the proposed tenure mix, it is recommended that the development is delivered as Council rented housing. The indicative mix of the proposed schemes will provide 35 Council rented homes. These will all represent a net gain to the Council's stock. (The two units at fen road were owned by a Housing Association). Alternatives available include a proportion of units being shared ownership, intermediate rent or private rented sector homes managed by a vehicle at arms-length from the Council. Given the small number of units to be developed in each scheme priority has been given to meeting the need for Council rented housing. In this case there is also the uncertainty of cost recovery in the sale of Passivhaus homes and the importance of retaining learning on the development management and maintenance of these type of properties.

3.2.4 Homes will be owned and managed by Cambridge City Council and let on Cambridge City Council tenancies. The properties will be let in accordance with the Council rent policy (where rent and service charges together do not exceed Local Housing Allowance levels). The policy is under review and this review will include consideration of what account should be taken of the reduced fuel bills that can be expected in Passivhaus developments. Currently an inflated version of the January 2020/21LHA (Pre-COVID) rate will be adopted for new schemes:

Pre COVID LHA rents 2021		2020/21 LHA rate inflated by 1.5%
1 bedroom	£135.99	£138.03
2 bedroom	£156.40	£158.75
3 bedroom	£181.75	£184.48
4 bedroom +	£242.43	£246.07

3.2.5 This package of schemes will deliver a mix of 2-, 3- and 4-bedroom homes. Other schemes focussed on apartment developments will deliver a higher proportion of small units to balance the mix.

4. Site Details

Note that the schemes shown in the appendices are indicative schemes and subject to Planning Permission and further design development.

Ditton Walk

4.1 The site is in Abbey Ward at Ditton Walk and is formed by garden land from 129 - 131 Ditton Fields. A location plan of the site is attached as Appendix 1.

- The site is made up of parts of the gardens of two properties which are owned by the council.
- Following a report to Housing Scrutiny Committee 20 June 2017 it was agreed to add 131 Ditton Fields to the Rolling Programme. The report noted that the house was currently let as Temporary Accommodation to facilitate investigation of development potential. This remains the case.
- The property at 129 Ditton Fields was previously sold under the Right to Buy. The property was re-purchased by the Council in September 2020. The house has been used for Temporary Accommodation since the purchase. The owner had secured planning permission for a dwelling on the garden land with access from Ditton Walk.
- The site has been hoarded and fenced.

4.2 The site is approx. 0.1ha in size.

4.3 Planning: Early advice was sought from planning consultants and pre-application meetings have been held with planning and urban officers and the Highway authority. Following the meetings, a scheme has been developed that provides for two terraces of three dwellings each which respond to the alignment of the properties on either side on Ditton Walk. To improve the frontage, enable it to be greener, and to reduce the impact on the highway there will be a single parking court for the six houses.

Consideration has been given to locating cycle stores in easily accessible locations.

Borrowdale

4.4 The site is in Arbury Ward at Borrowdale. A location plan of the site is attached as Appendix 4.

- The site is currently occupied by 8 garages and 8 parking bays. To the south of the site is a parking court with a further 8 spaces. To the west of the site is the flank wall of a two-storey block of flats. The other two sides abut rear gardens of two storey properties.

4.5 Planning: The proposed scheme will create a terrace of houses facing the parking court to the south. Some re-planning and improvement of this area will be considered to improve the scheme and the estate environment. The layout of the scheme may be amended following public consultation and discussions with Planning which could affect unit numbers and will also determine the level of parking provided.

4.6 The site is approx. 0.05 ha in size

71-73 Fen Road

4.7 The site is in East Chesterton Ward. at 71 – 73 Fen Road. A location plan of the site is attached as Appendix 2.

- The City Council sold a long lease on the site to Granta Housing Society in 1992 (through a series of Housing Association mergers the lease transferred to Metropolitan Thames Valley). The site is currently occupied by 2 single-storey buildings which comprised group accommodation for residents with learning disabilities. The use of the site as a care home ended around 2 years ago. It has been unoccupied since then and the properties are currently uninhabitable. The City Council has bought back the long lease. The decision to end the previous use was not linked to the redevelopment of the site now put forward by the City Council.
- Following discussions with both City Council and County Council officers it is proposed to the opportunity of the redevelopment to provide within

the scheme two large wheelchair homes. There is an acute need for these homes; while schemes do provide smaller wheelchair units as a result of Planning Policy it is rare to secure 3- and 4-bedroom wheelchair homes. The County Council is currently reviewing needs for people with Learning Disabilities and liaison on the needs of this group will continue.

4.8 Planning: The site is surrounded by existing dwellings on two sides and the Five Trees protected open green space to the north. The proposed development has been designed looks to improve access to the Five Trees by providing pedestrian and cycle access through the site to replace the existing intimidating alleyway to the side of the site and to improve the overall visual appearance and safety of the site.

4.9 The site is approx. 0.31 ha in size.

Aragon Close

4.10 The site is in Kings Hedges Ward at Aragon Close. A location plan of the site is attached as Appendix 3.

- The site is currently occupied by 10 garages and 22 car parking bays
- The site is bounded by an open space to the west. The other side of the open space is Aragon Court which is an extended four-story block of Council flats. There is an electricity sub-station on the edge of the open space. On three sides the site is bounded by adopted highway which serves the houses which are turned away from the highway and face pedestrian access courts on the other side of the properties. There is a small area of open space.
- The effect of the existing planning of the estate is to create an environment which is not over-looked as residents have rear fences facing the highway with gates to allow access from vehicles. There are also two garages.

4.11 The site is approx. 0.10 ha in size.

4.12 Planning: The proposed scheme will create a terrace of houses facing Aragon Close which will improve over-looking and security in the area. It is intended to re-provide some of the parking spaces within the site in

addition to parking for the new dwellings. The layout of the scheme may be amended following public consultation and discussions with Planning which could affect unit numbers and will also determine the level of parking provided.

Sackville Close

4.13 The site is at Sackville Close and in the Kings Hedges ward. A location plan of the site is attached as Appendix 3.

- The site is currently occupied by 10 garages and 21 car parking bays within the area under consideration.
- The site is bounded by an open space to the west. The other side of the open space is Sackville Court which is an extended four-story block of Council flats. On three sides the site is bounded by adopted highway which serves the houses which are turned away from the highway and face pedestrian access courts on the other side of the properties. There is a small area of open space.
- The effect of the planning of the estate is to create an environment which is not over-looked as residents have rear fences facing the highway with gates to allow access from vehicles. There are also two garages.

4.14 The site is approx. 0.10 ha in size.

4.15 Planning: The proposed scheme will create a terrace of houses facing Aragon Close which will improve over-looking and security in the area. It is intended to re-provide some of the parking spaces within the site in addition to parking for the new dwellings. The layout of the scheme may be amended following public consultation and discussions with Planning which could affect unit numbers and will also determine the level of parking provided.

Surveys and Investigations

4.16 The following surveys and investigations have been undertaken or are programmed as part of the feasibility work for investigating the viability of the site for development:

- Arboriculture Impact Assessment
- Flood Risk / Drainage Assessment

- Ecology Survey
- Topographical Survey
- Utility Mapping
- Asbestos Survey
- Daylight / Sunlight Assessment
- Energy Assessment
- Overheating Assessment

4.17 There will be a need for further invasive ground and soil investigations. Following early identification of the issues there are strategies in place to manage and mitigate any impact on timescales and costs.

5. Design and Sustainability

5.1 The plan is for the new homes to be built to Passivhaus certified standard (subject to further detail), a highly sought-after accolade and one that has been proven to result in lower energy bills and lower operational energy consumption. This is the first development that is following the proposed updated Sustainable Housing Design Guide (SHDG) which is also for approval at this committee meeting. The updated SHDG has a roadmap to Net Zero Carbon with targets for energy, carbon, water, biodiversity, electric vehicle charging and car parking. The updated SHDG requires each new development to complete a matrix setting out the sustainability performance of the scheme against the key new targets providing clarity on how the targets will be met. This development is the first one to use the matrix which is set out below.

5.2 This development is the first Passivhaus scheme for the council and the Cambridge Investment Partnership and it is important as a pilot from which the Partnership can learn for future schemes.

SHDG Range of Targets					This Development targets					
	Local Plan	Local Plan Plus	Passivhaus Certification	Net Zero Carbon	Fen Road	Ditton Walk	Aragon Close	Sackville Close	Borrowdale	Combined Total
Units					12	6	7	7	3	35
PHPP kWh/m ²	65	45	28	15	28	28	28	28	28	28
Water l/d	110	90	90	80	90	90	90	90	90	90
Biodiversity Net gain	n/a	10%	20%	20%	+20%	n/a	n/a	n/a	+20%	10%
Car Parking ratios across schemes	0.7-0.9	0.5-0.6	0.5	<0.5	1	1	1	1	1	1
Are there technical constraints?	PHPP: This is a pilot scheme to deliver Passivhaus homes. These principles have been incorporated from the outset and there is confidence that Certification can be achieved									
	Water: The target is 90lppd but the detailed design to deliver this has not yet been developed. The measures required and their impact on residents will be assessed as part of this pilot.									
	Biodiversity: The opportunities for improvement vary substantially across the sites. The target will be exceeded at Fen Road and Borrowdale but there will be a negative impact at Aragon Close, Sackville Close and Ditton Walk. The current overall assessment is a 7% improvement. The target has been set to improve the outcome to 10% overall. It is likely that the three sites which are currently negative will remain so but consideration will be given to further steps across all the sites to achieve a better outcome. It should be noted that there is a conflict with car parking and with gardens									
	Car Parking: The target is across schemes; these are larger family dwellings and parking has been provided 1:1; other sites will have to provide less than 1:1 if the overall target is to be achieved. It should be noted that in three of the locations the proposals involve a reduction in existing car parking.									
Are there financial constraints	Estimated costs for the programme have included a cost allowance for Passivhaus. This pilot project will inform a review of that for this type of dwelling. Water and bio-diversity costs will also be assessed within the pilot. Allowance will be made for the costs of delivering two large wheelchair accessible units at Fen Road									
Recommended Sustainability Target	Passivhaus Certification									
Additional measures included to meet Net Zero Carbon in the future	<p>Future proofing - Measures in future are likely to include: Solar PV, battery storage and air source heat pumps. Detailed design to facilitate later introduction to be developed. An additional capital costs of c. £20,000 for ASHP, battery storage and additional solar PV. This does not include prelim costs or OHP.</p> <p>Yearly maintenance costs will rise from c. £1000 p/a to c. £1900 p/a</p> <p>Note that these are estimates based on today's costs. Future costs may change.</p>									

6. Programme

- 6.1 The overall indicative programme for the development is set out below but it should be noted that a Planning Application will be submitted for each site when the preparation work is completed and this will vary from site to site:

Submission of Planning Application: March 2021

Planning Permission Granted: July 2021

Start on Site: November 2021

Completion: May 2023

7. Financial Implications

- 7.1 The total indicative works cost is currently estimated at £10,151,413 including pre and post statutory planning fees, professional consultant fees, survey and site investigation costs, demolition and construction costs, other associated costs and HDA fees. (Land assembly costs of £761,972 have already been incurred at 71-73 Fen Road and 129 -131 Ditton Fields.)

- 7.2 The breakdown of costs including land assembly across the sites is as follows:

HSC Budget	Fen Road	Ditton Walk	Aragon Close	Sackville Close	Borrowdale	TOTAL
Design & Works Costs	£3,657,449	£1,918,233	£1,850,494	£1,850,494	£874,742	£10,151,413
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TOTAL	£4,253,799	£2,087,883	£1,850,494	£1,850,494	£874,742	£10,913,385

- 7.3 It is proposed that the Design and Works cost investment will be met from a combination of Homes England grant and HRA resources / borrowing subject to successful bids to Homes England. If the Council is unsuccessful in securing grant Right to Buy receipts will be applied as an alternative funding source subject to availability.

- 7.4 This will result in the following mix of funding:

Right to Buy receipts:	£	0
Homes England Grant:	£	2,450,000

HRA resources / borrowing:	£ 7,701,413
Total:	£10,151,413

7.5 The indicative capital budget proposed in this report is £10,151,413

7.6 Funding costs are based on the loss of potential interest on Council resources at 1%.

8. Implications

(a) Staffing Implications

The development scheme will be managed by the Housing Development Agency which will also provide the Council's staffing contribution to the development of the scheme. The scheme will be developed by the Cambridge Investment Partnership (CIP) which is a 50-50 partnership.

(b) Equality and Poverty Implications

A scheme specific EQIA accompanies this report as Appendix 5.

(c) Environmental Implications

See Para 5.

(d) Procurement Implications

The package of schemes will be delivered by the Cambridge Investment Partnership (CIP). The report on the New Programme being presented to this meeting of the Housing Scrutiny Committee sets out the proposed approach to delivery of the programme. These schemes will be the first Passivhaus homes the Council will deliver. The Council will both draw on the experience which Hill can bring to CIP of delivering Passivhaus projects and will ensure that the learning is captured. The project will be subject to an independent Value for Money assessment by the Employers Agent for the Council.

(e) Community Safety Implications

The scheme will be built in accordance to Secure by Design guidelines as set out within the City Councils Design Brief.

7. Consultation and communication considerations

- 7.1 Following the decisions to purchase land at Fen Road and Ditton Walk schemes were developed and public consultation on the projects at Fen Road and Ditton Walk took place in December 2020.
- 7.2 Residents of Aragon Close, Sackville Close and Borrowdale will be notified of the publication of this report. If the scheme is approved there will be public consultation on all three schemes prior to a Planning Application being submitted.
- 7.2 There has been consultation with Ward Councillors about the proposals. The Ward Councillors were supportive of the proposed developments coming forward.
- 7.5 There will be formal consultation through the planning process.

8. Risks

- 8.1 Below is a table setting out key risks associated with the project:

Description of risk	Likelihood	Impact	Mitigation
Passivhaus – challenging to achieve the accreditation, very stringent requirements	High – Achieving the levels of insulation required is demanding on all elements of the supply chain. Errors can have significant cost and delay implications.	High Reputational risk if not achieved. Higher energy costs for tenants.	Training, draw on Hill experience of Passivhaus development, employ specialist consultant (WARM), site visits to Passivhaus developments, Will need to be carefully managed throughout every stage of the design and build to ensure we achieve this.
Cost: Indicative costs have been set out in the report; this is an occupied site and further work including intrusive site investigations remains to be carried out and is limited by existing occupation of the site. Market conditions in the construction industry can also	Med- further investigations could uncover unknown issues. Costs could arise in relation to achieving Passivhaus certification.	Med Delays to start on site and contract negotiations leading to the potential increase in costs.	CIP are required to ensure all site surveys are accurate. CIP have a survey tracker. The HDA will engage an Employers Agent to scrutinise costs. CIP will be tasked in providing information on impact on life-cycle costs.

impact on estimated costs.			
Planning: The planning application will be subject to the observations of consultees, the assessment of planning officers, and ultimately the decision of the Planning Committee.	Medium Current scheme has been through a Pre-Application discussions with Planning. There is a need to balance planning policy and views of the local people and ward members.	Medium Potential change in unit mix and reduction in numbers.	CIP will continue to be developed in response to the comments received from the pre-application discussions with the LPA which have been carried out. Further discussions and consultation will be carried out.

9. Background papers

20/35/HSC Approval of New Council Housing Programme

10. Appendices

Appendix 1 - Ditton Walk location plan and Proposed scheme Layout

Appendix 2 - Fen Road location plan and Proposed scheme Layout

Appendix 3 - Aragon Close and Sackville Close location plan and Proposed scheme Layout

Appendix 4 - Borrowdale location plan and Proposed scheme Layout

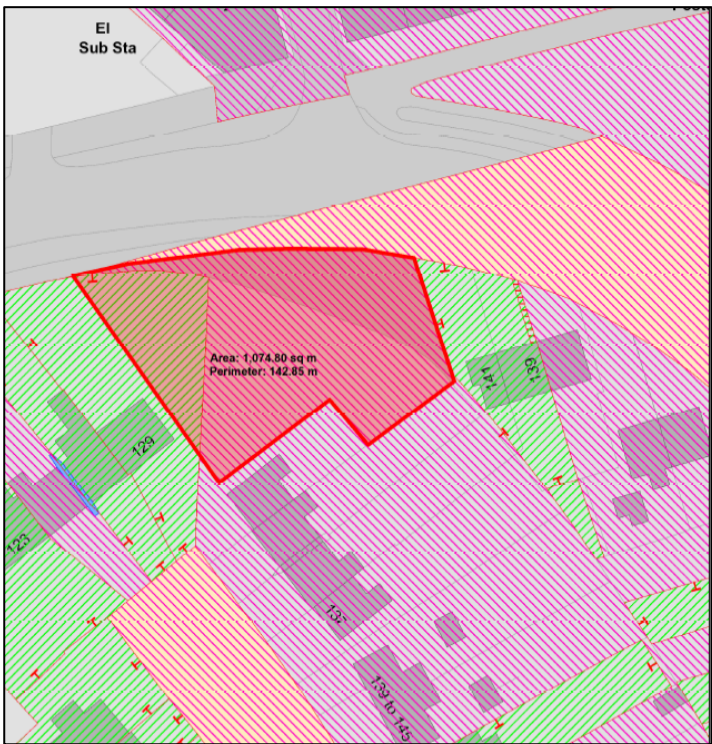
Appendix 5 - Equality Impact Assessment – Passivhaus Package

11. Inspection of papers

To inspect the background papers or if you have a query on the report please contact Daniel Roberts, Housing Development Agency, tel: 01223 457944, email: daniel.roberts@cambridge.gov.uk.

Appendix 1

Ditton Walk Site Location plan



Ditton Walk proposed scheme layout

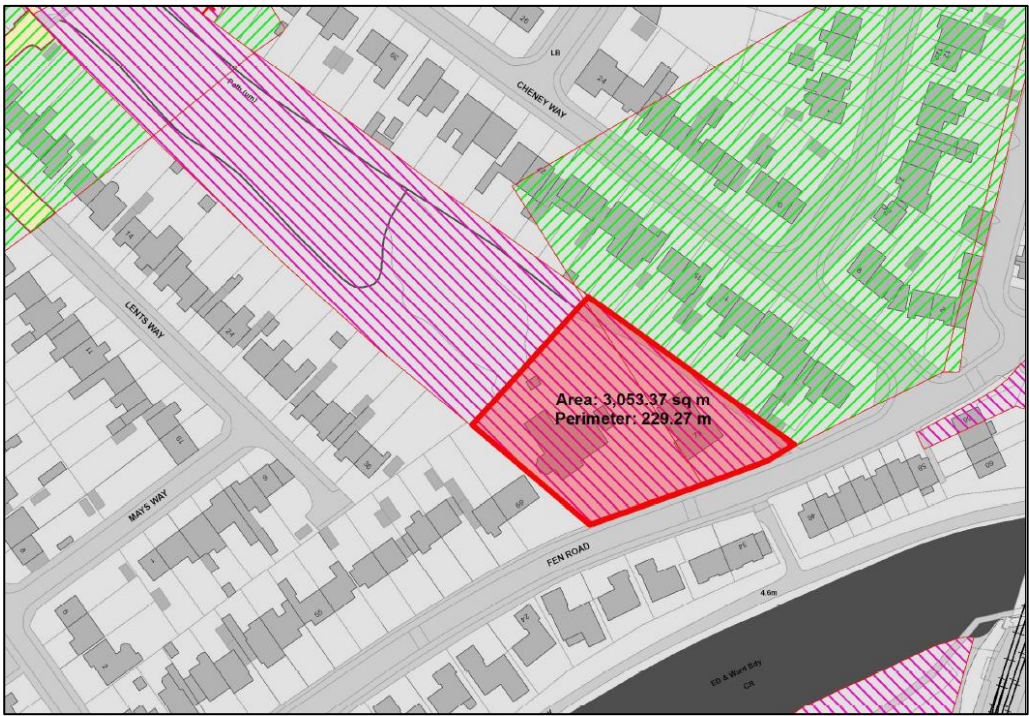


Ditton Walk Street view of proposed scheme



Appendix 2 – Fen Road

Site Location plan



Fen Road – Site constraints



Fen Road - Proposed scheme layout

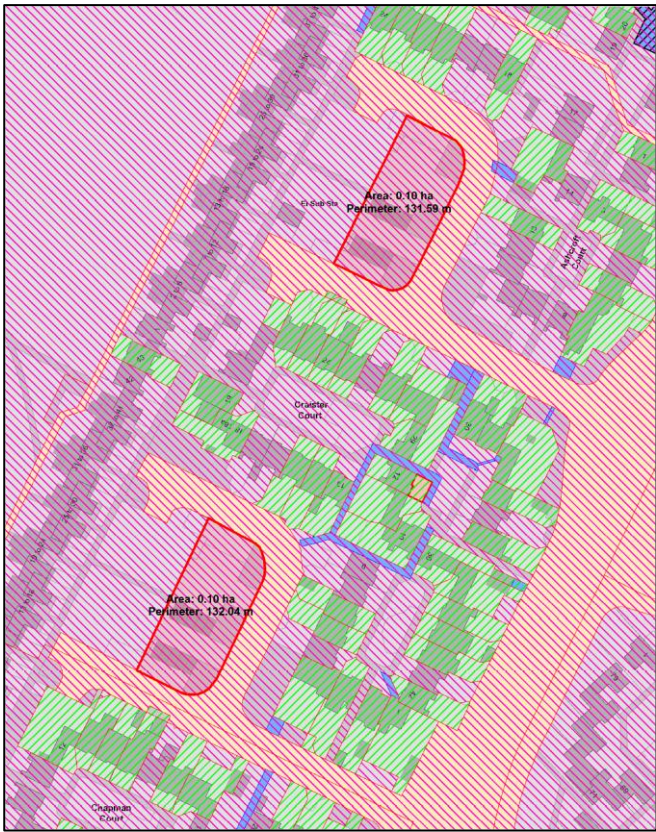


Fen Road – Street view of shared surface access through the scheme

Note that this is an indicative scheme and subject to Planning Permission and further design development.



Appendix 3 - Aragon Close and Sackville Close

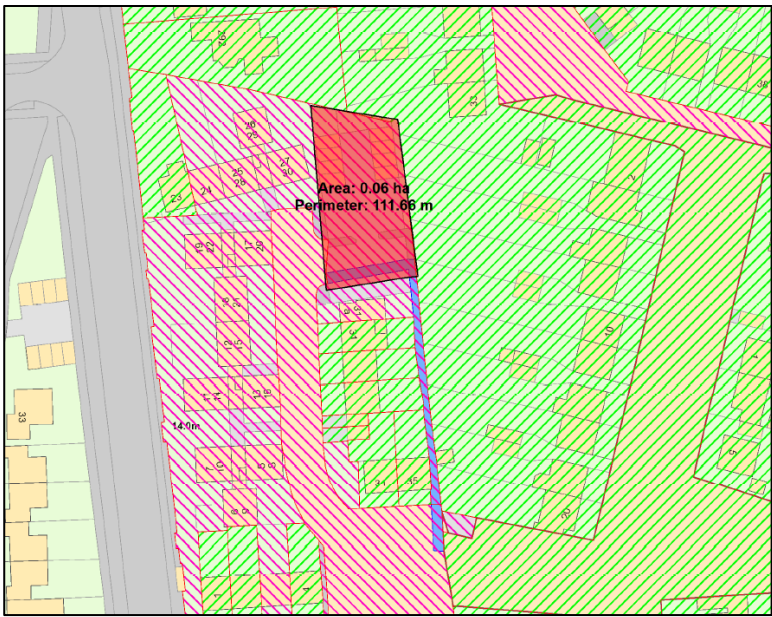


Aragon Close proposed scheme layout - Sackville Close to follow the same layout



Appendix 4 - Borrowdale

Borrowdale location plan



Borrowdale proposed scheme layout

