

# *Local Plan Evidence Base - Middlewick Ranges*

Prepared on behalf of Defence Infrastructure Organisation (DIO)

December 2020

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# 1. Introduction

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- 1.1. Middlewick Ranges has been identified for closure as part of the Defence Estate Optimisation (DEO) Portfolio – which is an ambitious 25-year Ministry of Defence (‘MOD’) portfolio of construction activity, unit and personnel moves, and site disposals that will deliver a better structured, more economical estate that more effectively supports military capability. The portfolio has several strategic objectives including to invest in modern facilities that enable military capability and consolidate expertise; reduce estate running costs; and by reducing its built estate release surplus sites in support of wider Government housing policy.
- 1.2. Middlewick Ranges (The Site) currently comprises a shooting range used by both the military and a sporting rifle club - the Middlewick Range Association. The firing range is fenced off and not accessible to the public at any time. The area outside of the fence is accessible to the public as amenity space, when the Range is not in use for live firing exercises or operations.
- 1.3. Middlewick Ranges has been identified for closure in 2022 when the military will move to a new facility at Fingringhoe. The ministerial statement from the 17th November 2020, attached as **Appendix 1** confirms that the disposal date has been extended by a year to 2022. This extension of time enables the disposal of the site to align with the provision of new facilities at the nearby Fingringhoe Ranges. This also provides the opportunity for this site to be progressed through the Local Plan Examination which has been delayed due to the length of time required for the Section 1 Examination.
- 1.4. Given the site will become surplus to requirements The Ministry of Defence is seeking the inclusion of the Site within Colchester Borough Council’s Emerging Local Plan 2017 -2033 for residential development. In this regard the Defence Infrastructure Organisation (DIO), who are part of the Ministry of Defence, instructed JLL to provide property and planning advice to support the allocation and the disposal of the site.
- 1.5. This report provides a summary to the technical work undertaken by Defence Infrastructure Organisation (DIO) to demonstrate the suitability, capability and deliverability of residential led mixed-use development at the Site, comprising the following;
  - 1,000 dwellings at a density that takes account of the adjacent settlement character;
  - Local centre;
  - A new primary school;
  - Community use and social facilities;
  - Open space and playing fields;
  - Sustainable transport connections to provide more permeable network, with new or enhanced bus services, and cycling and walking links; and
  - Delivery of a new road link across the site to ease movement in the area for existing and new traffic flows.
- 1.6. The allocated site area is approximately 84.31 hectares and is surrounded along its northern, western and eastern boundary by residential development. As such, it would provide a logical extension to the existing suburb of Colchester. Attached at **Appendix 2** is a plan of the site. The red line is the site allocation as

shown in the Draft Local Plan. The area within the blue line is also in MOD ownership. The MOD land ownership stretches further south, but we include the blue line area to illustrate the land we include for ecological mitigation, which is discussed later in this report.

- 1.7. Plan 2 attached in **Appendix 2** includes a shaded area, which extends from Birch Brook northwards to include the proposed allocation. This reflects the area of the site disposal. Subsequent to the area within the red line being put forward as surplus and therefore carried into the Draft Local Plan, the MOD have now confirmed that all of the land north of Birch Brook will be surplus to requirements and will form part of the site disposal. However, in terms of our evidence base we have assumed that all the Local Plan requirements will be met within the red line.
- 1.8. For ease of reference we include below the Middlewick Ranges Policy, as drafted in the Colchester Borough Local Plan 2017-2033:

**Policy SC2:** Middlewick Ranges The allocation shown on the Policies Map is expected to deliver approximately 1000 new dwellings. The final number of dwellings will only be confirmed when full details of constraints are known. In addition to the infrastructure and mitigation requirements identified in policy PP1, development will be supported on land within the area identified on the policies map which provides:

- (i) Up to 1000 new houses of a mix and type of housing to be compatible with surrounding development;
- (ii) Access and highway works on the local road network, including new junctions, to be agreed with The Highway Authority and delivered at the appropriate time commensurate with the development;
- (iii) Detailed ecological surveys and appropriate mitigation to enhance the ecology of the remaining areas of the Local Site including the provision of compensatory habitat to replace habitat lost to development;
- (iv) Strategic areas of public open space; (v) Delivery of enhancements to sustainable travel connectivity including public transport, cycling and walking infrastructure; (vi) Mitigation measures to address site contamination; and
- (v) Provision for retention or diversion of any existing public rights of way within the site.

A masterplan will be required to inform the detailed definition and mix of uses within the site.

- 1.9. We acknowledge that amendments to this Policy will be required which can be informed by the work we have undertaken. We envisage working with the Council to suggest amendments to this ahead of the Examination.

## 2. Consultation

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- 2.1. The consultant team was commissioned by the DIO in 2017 to produce an evidence base and development concept to support and underpin the allocation of the Site. To support this process, JLL appointed PRP as master planners and Stantec as principle environmental advisors. JLL have also engaged the services of Wessex Archaeology, to undertake a desk top appraisal and Camargue and more latterly GL Hearn , to help organise and run the stakeholder engagement.
- 2.2. Full details of all the consultation that has taken place are within the consultation report attached as Annexe 1.
- 2.3. Through this process, DIO, JLL and the principal consultant team have fully engaged with officers of Colchester Borough Council, Essex County Council (as highways authority) and other statutory consultees.
- 2.4. A number of meetings and workshops have taken place since January 2018, primarily with officers of Colchester Borough Council. Council officers have had a chance to input into the technical work undertaken and advise on key issues. The officers have seen drafts of all the technical work and reports have been amended subject to their comments.
- 2.5. Of particular importance has been the ecology work undertaken by Stantec. The Council instructed EEcos to assist them with this and the Stantec ecologists have been in constant liaison with EEcos to ensure they agree our approach and findings.
- 2.6. We also met early on in the process with Essex Wildlife Trust to inform them of our proposals and seek advice from them on the technical work required. Stantec have also sought specialist advice on a number of areas relating to ecology including Dr Ian Davidson-Watts in regard to the bat surveys required, and Dr Philip Putwain who is an acid grassland specialist.
- 2.7. We have also been in liaison with the military, particularly in regard to the ecological mitigation work and we have their agreement that works can be undertaken on land to the south of Birch Brook to offset any development to the north and to achieve a net gain in biodiversity. Their written agreement is included in the ecology report.
- 2.8. In addition to our meetings with council officers the project team has met and provided briefings to relevant members of Colchester Borough Council, including:
  - Leader and Deputy Leader of the Council;
  - Ward councillors for Old Heath and the Hythe; and
  - Ward councillors for Berechurch
- 2.9. The team has also provided briefings to Member of Parliament for Colchester (Will Quince MP) and for Harwich and North Essex (Sir Bernard Jenkin MP).

### Public Consultation events

- 2.10. Our public consultation events and the responses to them are set out in full in Annexe 8 -Consultation Report. To summarise; two consultation events were held by the DIO as part of an inclusive programme

of engagement to inform, explain and involve stakeholders and members of the community including local residents and businesses:

- Wednesday 10 July 2019 (2pm to 8pm), RCCG Stillwater Centre, Grange Way
- Saturday 13 July 2019 (10am to 3pm), Orchard Baptist Church, 23 Blackheath

- 2.11. Representatives from the DIO and its project team including specialist consultants staffed the exhibition at all times to answer queries and explain the proposals to the public. The initial concept plan was on display at the events together with supporting information on key topics including transport and ecology.
- 2.12. Both events were well-attended, demonstrating a strong level of engagement from the local community and the efficacy of the DIO's consultation publicity. Approximately 250 visitors attended the event on Wednesday 10 July and approximately 290 visitors attended the event on Saturday 13 July
- 2.13. As well as local residents, a number of local business, community groups, key stakeholders and elected representatives attended the events to find out more about the proposals.
- 2.14. Feedback received indicated that the main concerns were Transport, Ecology and the loss of Amenity Space. There was also comments regarding social infrastructure and housing needs.
- 2.15. Since undertaking the consultation, the project team has been working on further studies, surveys and assessment work in order to further develop the supporting evidence base for the Local Plan allocation. This has taken into consideration the comments and feedback received during 2019 consultation.
- 2.16. It had originally been the plan that a further round of consultation would have taken place during 2020 to provide an update to residents on the work undertaken by the team. However, the impacts of the COVID-19 pandemic have meant this is not feasible. Rather at the time of finalising this evidence base a community newsletter has been prepared and will be distributed to approximately 3000 local properties around the site. This newsletter will direct people to our evidence base and provide details on how their feedback has gone into the further development of the scheme.
- 2.17. The consultation process has greatly assisted the production of the technical assessments and the accompanying Vision Document outlining the vision for future development.

### 3. Technical Assessment

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3.1. The following assessments have been produced and form the evidence base: -

- Consultation Report (**Annexe No. 1**)
- Transport and Movement (**Annex No. 2**)
- Ecological Evidence Base (**Annex No. 3**)
- Flood Risk, Surface and Foul Water Drainage Scoping Report (**Annex No. 4**)
- Phase 1 Land Quality Assessment (**Annex No. 5**)
- Utility Appraisal Report (**Annex No. 6**)
- Archaeological Desk-top Assessment (**Annex No. 7**)
- Vision Document (**Annexe No.8**)

3.2. The principle conclusions to each technical assessment is set out briefly below in turn. In each case, the assessment has been produced in support of a mixed use residential led allocation within the emerging Part 2 Local Plan for up to 1,000 dwellings.

#### Transport and Movement

- 3.3. There were three strands to the way that the transport work was approached as part of this evidence base;
- 3.4. First, the criteria set for the indicative masterplan were established to prioritise sustainable modes of transport, by providing through links for bus services within the heart of the development, and generous walking and cycling provisions that were well connected and integrated with the surrounding facilities. The objective was to ensure that sustainable transport modes led the transport response at Middlewick, and, moreover, to not only make this provision for the development, but also with a view to enhancing the sustainable transport network across the local area.
- 3.5. Second, a strategic piece of work was commissioned to ensure that, notwithstanding the sustainable transport credentials of the scheme, any residual traffic effects could be accommodated on the wider highway network. This revolved around site specific runs of the strategic model prepared by Essex County Highways (using Jacobs as their modelling consultant) to assess the impacts of Local Plan proposals in this part of the County. DIO commissioned Jacobs to consider the wider area effects of traffic from development at Middlewick, and particularly to test different levels of housing numbers at the site.
- 3.6. These strategic level model runs for the development at Middlewick Ranges showed different ranges of effects on the wider network for increasing volumes of housing numbers at the site. The modelling identified junctions which would be most impacted by the development in each case, by considering the total volume of traffic against the capacity of the junction, and whether there was a likelihood that the impacts could be sensibly accommodated on the network. In the scenario where 1,000 dwellings were allocated to Middlewick Ranges the model showed that this level of traffic could be accommodated on the wider network without the need for significant mitigation interventions, although it was noted that network-wide effects consistent with Local Plan growth would occur overall, and so appropriate

mitigation measures would need to be considered to manage the network. Overall, the assessment demonstrated that the development of up to 1,000 homes at the Middlewick site did not give rise to any abnormal or unusual mitigation requirements.

- 3.7. The third strand of work followed the public consultation event held by DIO where local people suggested that further work should be undertaken in respect of understanding the local highway network and its operation. Hence, a more detailed assessment of the local highway network operation and access was commissioned – in particular to consider the levels of traffic using the network, congestion and delays at local junctions and the effects of the Middlewick proposal on them. This more detailed assessment does not detract from the prioritisation of sustainable transport as a fundamental criteria for the design of the development but is instead intended to provide additional comfort that the traffic effects of the development can be properly accommodated on the local roads. Middlewick has a strong sustainable transport narrative, but for the purposes of the allocation and it is also recognised that there should be a focus on the local highway issues to give confidence that, irrespective of the outcome of sustainable transport measures included in any future planning application, the effects of the proposal can be properly accommodated on the highway network.
- 3.8. This detailed assessment work considers the effects of the proposed allocation on the local highway network – especially Abbot’s Road, Mersea Road and Old Heath Road and the junctions between them, as well as the way that the accesses to the site and network within it could be configured to contribute to and integrate with the existing network by adding greater permeability to it.
- 3.9. In order to inform the work, data was collected on the local road network at the end of November and early December 2019. This comprised Automated Number Plate Recognition (ANPR) surveys, and Automatic Traffic Count (ATC) surveys.
- 3.10. The transport data collected confirmed both from observations on site and from feedback at the public consultation that there are significant levels of cross movement between the routes into the city centre, especially using Abbot’s Road, that runs along the northern boundary of the site. This road is perceived to accommodate an amount of “switching” between the north south routes into the City Centre from the south in both of the peak periods, and so provides both for local traffic access and movement, but also a locally strategic function to allow drivers to select their route towards the City itself. This makes the route busier than it might otherwise be, as there are no alternatives to this route.
- 3.11. Therefore, as an inherent part of the design of the Middlewick scheme, the opportunity can be taken to provide greater permeability to the local road network with a new link provided between Mersea Road and Abbot’s Road. This will provide an alternative route for some of this switching traffic and spread traffic loads across the network.
- 3.12. In order to inform the concept masterplan and to demonstrate one way in which this additional permeability might be delivered in practice the indicative masterplan shows site access junctions located as far to the south as practicable on Mersea Road, and as far to the east as practicable on Abbot’s Road, with a through-link across the site providing a new connection across the site that is available to all traffic. This shows a layout that provides the maximum potential alternative to using the current road network.



- 3.13. In addition, the indicative layout suggests that the way that the junctions could be configured into the site could seek to rebalance traffic movements, encourage the use of the new route and draw some traffic through the site and away from the western end of Abbot's Road and Mersea Road. This is achieved by changing the priority of Abbot's Road where it meets the site access, so that the eastern section of Abbot's Road turns into the site, as the through route, and becomes the site road. The remaining section of Abbot's Road then "tees" off this new route. At the other end, a new, small roundabout on Mersea Road allows each of the entry arms to have equal status and allows drivers to select either route.
- 3.14. Together, these junction configurations make it easier for traffic that wants to switch to use the new route through the site, rather than the existing section of Abbot's Road. It emphasises the new route and removes any difficult right turns to allow drivers to use the new route more easily than the current route.
- 3.15. Although the scheme provides useful additional permeability to the highway network, the easternmost section of Abbot's Road remains on its existing alignment. Therefore, over this section, a traffic management and calming scheme could be proposed. This would manage traffic speeds, whilst enhancing the environment – especially around the school. There is no formal pedestrian crossing on this section, and it may be appropriate to provide this as part of a more comprehensive scheme for the assistance of the school children accessing the primary school close to the junction with Old Heath Road.
- 3.16. In order to determine how the local highway network would cope with the effects of the development, the transport assessment also considers the performance of four key junctions in the forecast 2032 Local Plan completion year:
- Abbot's Road / Mersea Road mini roundabout
  - Abbot's Road / Old Heath Road mini roundabout
  - Abbot's Road site access junction (where priority is given to the site access and Abbot's Road east), and
  - Mersea Road site access roundabout.
- 3.17. The full details of these junction assessments can be found in Annexe 2 along with details of proposed mitigation works and details of how the two proposed access junctions could work to serve the development. However, it is still pertinent to note that the assessment showed that the level of traffic forecast to be generated by the development could be accommodated on the local highway network.
- 3.18. Three new pedestrian and cycle crossing points have been suggested as part of the mitigation for the development scheme, and to encourage the use of walking and cycling and improve access to public transport. These crossing points are located directly by the site accesses and connect to existing cycle routes and PROW's. They are also located strategically in proximity to local facilities and bus stops to further promote sustainable travel.
- 3.19. Overall, the three strands of transport work undertaken consider the opportunities for encouraging sustainable transport at the site and the impacts of residual traffic on the wider strategic network and the local highway network in the context of developing the site for 1000 dwellings. They conclude that at both the strategic and local levels the highway network can accommodate the traffic forecast to be generated by 1000 new dwellings, with some local mitigation and the implementation of wider measures related to Local Plan growth in the District. The solution put forward at this stage, to help inform the masterplan

and provide greater certainty to the allocation includes a local link road through the site that will support and encourage public transport, walking and cycling, as well as catering for wider traffic movements and those from the site, junctions improvements and new site accesses. As part of any planning application a full Transport Assessment will be required, and this may help inform different solutions for the site. However, at this stage we do not see any barriers to the development of this site on the basis of transport issues.

## Ecological Appraisal

- 3.20. From the outset we were aware that ecology was going to be a key consideration in the allocation of this site. We therefore instructed Stantec to:
- complete ecological surveys sufficient to robustly inform the developable area and quantum of development within the Allocation Boundary;
  - inform preparation of an ecologically considered masterplan;
  - consult with CBC's Ecological Officer in relation to the proposed allocation, emerging proposals and mitigation designs;
  - define the principles of ecological mitigation to enable legal and policy compliance for development defined by the site allocation;
  - demonstrate that a net gain to biodiversity can be achieved from the proposals;
- 3.21. The ecological surveys were completed over a three year period (2017–2020) and focused on a range of habitat types and species groups. Many surveys were extended beyond the Allocation Boundary into land immediately south, referred to as the 'Mitigation Land' to provide greater confidence in the efficacy of the mitigation and compensation that could be achieved.
- 3.22. The methods and results of the surveys can be found in full in the 'Middlewick Ranges Local Plan Housing Allocation: Ecological Evidence Base Report' (Stantec, 2020) included as **Annexe 3**. For ease of reference we set out in full below the surveys that have been undertaken. To note, due to the delays to the Local Plan timetable we did consider pursuing an outline application and some of the survey work reflects that change in approach. However, after consideration it was agreed to continue to pursue the site allocation through the Local Plan process and the survey work reflects this.

Table 1: Summary of Ecological Survey Types, Aims and Dates

Survey Title	Aim	Survey Date
<b>Desk Study Data</b>		
Desk Study (Freely Available Resources)	Understand designated site and notable habitat information within a 2km – 10km radius of the Allocation Boundary	May 2017 and March 2020
Essex Field Club	Understand existing site and species records for the Allocation Boundary and Mitigation Land (as far south as Weir Lane) and 2km radius	March 2017
Essex Wildlife Trust	Understand their objections and update them on our proposals and approach	May 2019

Survey Title	Aim	Survey Date
British Trust for Ornithology	Understand existing nightingale data in four tetrads relating to the Allocation Boundary and surrounding area	Received May 2019
<b>Habitat Surveys / Appraisals</b>		
Extended Phase 1 Habitat survey	To map habitats, present within the Allocation Boundary and Mitigation Land as far south as Weir Lane	May 2017
Botanical Survey	To better understand botanical value of grasslands within the Allocation Boundary and Mitigation Land as far south as Weir Lane	June 2018
Extended Phase 1 Habitat Survey	To confirm the mapped status of habitats from 2017 and 2018 surveys remains representative. The survey covered the Allocation Boundary and Mitigation Land (to its full extent, south of Weir Lane)	March 2020
<b>Species Surveys / Appraisals</b>		
Dormouse Nut Search	Search for evidence of foraging hazel dormice (within suitable habitat)	October 2018
Riparian Mammals Survey	Search for signs of otter (and other riparian mammals) along Birch Brook	October 2018
Habitat Appraisal: Suitability for Terrestrial Invertebrates	Appraisal of the relative value of the habitats within the Allocation Boundary and the remaining land within the Invertebrate Survey Area.	June 2019
Habitat Appraisal: Suitability for Breeding Birds	Gather information on the potential of the habitats present Allocation Boundary and Mitigation Land (as far south as Weir Land), to support breeding bird species, including species of conservation concern.	January 2019
Bat Activity Survey	Understand the species distribution, relative activity levels of foraging and commuting bats within the Allocation Boundary and Mitigation Land as far south as Birch Brook.	September – October 2018
Bat Hibernation Survey	Collect bat droppings for DNA analysis; record suitability for hibernating bats over the winter period; and complete automated static detector survey of the Marker's Gallery, to record any bat echolocation calls within the structure.	December 2018 – February 2019
Habitat Appraisal: Suitability for Bat Foraging and Roosting	Appraisal to gather information on the potential of the habitats present to support bat species, particularly the barbastelle bat <i>Barbastella barbastellus</i> ; a rare woodland species.	January 2019
Advanced Survey Techniques: Bat Trapping and Tracking	Investigate the status of barbastelle and other tree-roosting bats (e.g. <i>Myotis</i> and possibly <i>Nyctalus</i> ) in the zone of influence of the proposed housing scheme(s), with an emphasis on woodland habitat and treelines during the 2019 bat active period (May – September). Radio-track key individuals using the Allocation Boundary or Birch Brook to locate breeding colonies of barbastelle and	June, August and September 2019

Survey Title	Aim	Survey Date
	other tree-roosting bats and to determine activity patterns and habitat use.	
<b>Intrusive sampling</b>		
Soil Sampling	Determine basic soil chemistry of land within the Mitigation Land (extending south of Weir Lane) in comparison to the Firing Ranges.	January 2020

- 3.23. The ecological considerations for any future development have been categorised as ‘key’ or ‘non-key’ to the allocation. Key ecological considerations are those which could reasonably affect the developable area, masterplan designs, or the viability of the scheme when mitigation strategies are factored in. Non-key ecological considerations are those which will likely require survey and assessment at planning application stage.
- 3.24. Specifically, the ‘key’ ecological constraints to the development (for the allocation stage), are:
- The Internationally designated sites in the wider area (to include Abberton Reservoir Ramsar and Special Protection Area (SPA) Colne Estuary (Mid-Essex Coast Phase 2) Ramsar and SPA, Blackwater Estuary (Mid-Essex Coast Phase 4) Ramsar and SPA, and Essex Estuary Special Area of Conservation (SAC);
  - Nationally Designated sites - Roman River Site of Special Scientific Interest (SSSI);
  - Locally designated sites – Middlewick Ranges and Birch Brook Local Wildlife Sites (LWS)
  - Acid grassland;
  - Broadleaved semi-natural woodland;
  - Habitat suitable for roosting, foraging and commuting bats, including barbastelle (a rare bat species);
  - Terrestrial invertebrate habitat; and
  - Breeding bird habitat (including that suitable for nightingale).
- 3.25. As stated above the purpose, methods and results of the survey work are set out in full in the ecology evidence base, however the simplest way to help interpret these findings is through Figures 1 – 26 in Section 10 of the Ecology Evidence Base, which clearly illustrate both the key considerations and the survey findings.
- 3.26. The series of plans provide RAG ratings for each ecological consideration which has then helped to inform the decision as to where the developable area should sit within the site (if taking the approach of an ecologically led masterplan).
- 3.27. Importantly during the extensive survey work nothing was found which would prohibit the development of the site.
- 3.28. Following on from determining if the site could be developed and, if so, where the least ecologically sensitive area would be, a developable area was set so that the mitigation works could be explored, and the Biodiversity Metric could be undertaken. This is detailed in full in Section 7 of the ecology evidence base and discussed later in this report as part of the Vision for Development.

- 3.29. It should be noted that the measures outlined in Section 7 of Annexe 3, are suggestions for how legal and policy compliance can be achieved for the key ecological considerations, based on the current concept masterplan designs. This does not purport to be a 'fixed and final' strategy for avoidance, mitigation and compensation for ecological impacts, resulting in a net gain to biodiversity. It does however provide a means, but not necessarily the only means, by which legal and policy compliance can be achieved, resulting in an overall net gain to biodiversity.
- 3.30. Currently the mitigation and compensation measures shown allow the proposal to achieve a minimum of between 9% and 16% net gain to biodiversity. This is a precautionary worst case scenario, so at planning stage this value is likely to increase.
- 3.31. The habitat creation is intended at this stage to show an indication of how a net gain to biodiversity can be achieved at Middlewick Ranges, in a format compatible with the training estate, and which does not undermine the viability of the wider scheme. The habitat creation shown should not be considered the 'final, 'guaranteed' or otherwise 'decided' habitat enhancements; such measures would need to be agreed at the planning application stage. The habitat creation does however consider the habitat losses in the Allocation Boundary, habitat type, quality and connectivity requirements of varying species groups, the needs of the military, and the need to balance the losses of acid grassland. The Mitigation Land is in MOD ownership and is being retained and enhanced for military training and therefore is available to support the development of the allocation area.
- 3.32. Whilst further ecological survey and assessment work is required to inform a planning application, there is no reason from an ecological perspective why this site cannot be allocated in CBC's emerging local plan given development which is both legally and ecologically policy compliant is possible.

### **Flood Risk, Surface and Foul Water Drainage Report**

- 3.33. The scope of the report, sets out the existing hydrological context, assesses the baseline flood risk, and provides an outline surface water and foul water drainage strategy for the site.
- 3.34. The report is included as Annexe 4. It was written in 2018 but it has been recently reviewed and none of the conclusions or recommendations within it have changed. The report also includes an initial masterplan that was drawn up in 2018 to help inform the technical work. This plan has been superseded but again this does not affect the recommendations in the report.
- 3.35. Overall, the risk of flooding from all sources on site is low. The proposed development site would be located almost wholly within Flood Zone 1. The site is assessed as having a low probability of flooding with less than 1 in 1,000 annual probability of fluvial flooding.
- 3.36. There is a small section of the site at the southern boundary within Flood Zones 2 and 3. These areas of increased potential flood risk are confined to the watercourse corridor of the Birch Brook and does not impact the developable areas of the site.
- 3.37. The River Colne is influenced by the tide and can experience tidal flooding; however, flooding does not extend up the Birch Brook to impact the site. The Environment Agency Map for Flood Risk from Surface Water indicates the site is at very low risk of surface water flooding. There are isolated patches within the site, associated with localised topographic lows shown to be at low, medium and high risk of flooding although these areas are limited and isolated.

- 3.38. The northern part of the site is within a critical drainage area, however the surface water flow connected to this is primarily along a valley feature beyond the northern site boundary. There are preferred options for managing this surface water risk which could be investigated fully and incorporated into the final masterplan.
- 3.39. Overall, in regard to any potential sources of flooding the risk is low/negligible and in respect of ground water there is a medium risk which will require consideration but is not a constraint to development.
- 3.40. The report does look at a high level into some surface water drainage and foul water drainage options and does not find any undue constraints to solutions for this.
- 3.41. It is noted that a full Flood Risk Assessment will be needed to support any future planning application with further detailed assessment required, but at this stage flood risk, surface water management and foul water drainage is not considered a barrier to development at the site.

### Phase 1 Land Quality Assessment Study

- 3.42. The Ministry of Defence appointed Amec Foster Wheeler to carry out a Phase 1 Land Quality Assessment of the site in June 2018. The purpose of the report was to investigate the site for the potential sources of contamination and the overall land quality to ensure it is suitable for redevelopment.
- 3.43. A number of potential current and historical sources of contamination were identified at the site, namely, the firing ranges, the landfill located off-site by the eastern boundary, and the burial pits for burnt remains of animal carcasses and specified ancillary waste associated with Foot and Mouth Disease outbreak in 2001.
- 3.44. The assessment concluded that if the site is to be redeveloped for a residential end use, the potential risks from the site are assessed to be moderate. If the site is to be redeveloped for commercial end use, the potential risks would be considered moderate to low.
- 3.45. Although a number of potential pollutants were observed during this assessment, it is considered that none of these should preclude development of the Site because they can be successfully minimised or eliminated by the application of routine mitigation measures during design and construction work.

### Utility Appraisal Summary Report

- 3.46. Stantec, formerly Peter Brett Associates, prepared a Utility Appraisal Report for the DIO in October 2018. A subsequent update and summary report was issued in November 2020 which is included as Annexe 5. The original report investigated the current conditions and existing infrastructure within the area as well as the implications for development of the site. The later summary has confirmed the findings are still relevant.
- 3.47. **Electricity** UK Power Network has confirmed that there is possible spare capacity in their electricity network to provide a site at the Mersea Road Substation. UKPN has advised reinforcement will be required and propose to install a 175m cable from Mersea Road Substation to the existing network. This level of localised reinforcement is consistent with the scale and nature of the development and would be incorporated into a planning application and consent for the site in the usual way. It is not envisaged that the costs of this reinforcement would be excessive in the context of the scale of the site.

- 3.48. **Gas** The site is located within an area served by Cadent Gas Ltd. Cadent Gas Ltd has confirmed that the gas main connection point adjacent to the site has sufficient capacity to supply the site. The development masterplan is able to accommodate the existing gas main provision in the area, and so no adverse implications are expected. There may be a need to undertake localised protection or realignment works to accommodate the access junctions for the development, but this is in no way abnormal for a site of this nature and scale.
- 3.49. **Telecommunications** The site is located within an areas served by Openreach and Virgin Media. Openreach and Virgin Media have telecommunication network infrastructure around the site running along Mersea Road and Abbots Road to supply local residential estates. There is nothing unusual or abnormal about the telecommunications provision in the area, and it would be expected that the connections could be made at no cost, or very low cost, to the developer of the site.
- 3.50. **Water** The site is located within an area served by Anglian Water Services Ltd. Their assets records do not show any existing water main or private water network within the site, although there are two water mains running along Mersea Road. Anglian Water Services have confirmed that there is insufficient capacity in the current network, therefore, local reinforcements will be required to supply the proposed development. This would constitute an abnormal cost in respect of the development, but is not anticipated to render the site unviable, especially as the energy and telecommunications networks and foul water drainage are unlikely to incur any abnormal costs.
- 3.51. Anglian Water Services Ltd also own the sewer and surface Water infrastructure. There is a 914mm combined sewer running east to west through the site, with another 525mm diameter combined sewer which runs north to south along Mersea Road. There is significant infrastructure within close proximity of the site serving the local area. Anglian Water have confirmed capacity for flows from the development site.

### Summary

- 3.52. The site lies within an established urban area, and consequently the utility networks in the area are comprehensive and easily accessible on all boundaries of the site. Connection points can be easily defined for all of the different utilities, with most having the option of multiple points of connection.
- 3.53. The only utility that requires any substantive off-site reinforcement work based on preliminary enquires is potable water, where a new main needs to be laid to the works some 1.7km away. The other supplies, for energy, telecommunications and foul water have all confirmed that their networks have sufficient capacity and only localised connection upgrades or changes to establish new points of connection for the site would be required.
- 3.54. Although the costs of providing a new potable water main could be considered as “abnormal” costs, they are well within the range of costs that could be expected for a site of this scale and nature. In addition, the fact that this is the only utility where there may be an off-site cost to achieve a supply is relatively unusual in sites such as this, where upgraded utility provision is often required across most or all of the providers.

### Archaeological Desk-top Assessment

- 3.55. The archaeological desk-top assessment was produced by Wessex Archaeology which assessed the known and potential archaeological resources within the site and the surrounding area. The study has assessed the likely impacts of the redevelopment of the site for residential development.



- 3.56. The report identifies number of heritage assets within the Site comprising earthworks relating to a possible civil war redoubt or siege fort, two WWII pillboxes, WWII anti-tank ditch, two WWII spigot mortars and a post-medieval boundary stone. In addition to this a number of possible cropmarks have been identified relating to a possible trackway, linear features and ring ditches within the south eastern part of the site. Consultation with LiDAR survey data has also revealed possible archaeological features and possible former field boundaries across the Site.
- 3.57. The developable area, as shown on the concept masterplan, is within the north eastern part of the Site and avoids the known heritage assets outlined above such as the redoubt, pillboxes, spigot mortars and the cropmarks identified in the southern part of the Site. The WWII anti-tank ditch lies within the developable area and as such is likely to be physically affected by development in this area. However, this has been incorporated into the concept masterplan as a new route through the site linking the pill boxes and there is the potential to create a heritage trail along this route.
- 3.58. The report identifies that currently details of groundworks associated with the ecological mitigation area currently unknown and should below ground works be required this would have the potential to damage or remove archaeological remains within the footprint of these works.
- 3.59. We recognise that that additional archaeological investigations will be required as part of the submission for any future planning application, and in line with recommendations in the archaeology report it is possible that a future management plan for the redoubt may be required as part of the planning permission. However currently the concept masterplan is able to accommodate the development proposed whilst incorporating the known above ground features and avoiding the areas shown as having the greatest potential for below ground remains.



## 4. Land Use and Market Considerations

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- 4.1. JLL have undertaken a development appraisal based on the concept masterplan.
- 4.2. In the first instance the appraisal identifies that Colchester is a popular location with local residents and commuters to London due to its proximity to major stations and road networks, whilst still being in close proximity of good local amenities and attractive open countryside.
- 4.3. The town centre has recently been redeveloped improving the local offering. As such, there is demand for all types of housing. It is clear that there are a number of housing developments available in the borough, but demand continues to be strong.
- 4.4. The appraisal considers build costs, against sales values and takes into account the abnormal costs that are likely to be associated with the ecological mitigation and makes an allowance for a higher than average infrastructure cost since the site is currently completely clear and will need substantial road access and services improvements. The appraisal also allows for a policy compliant scheme of 30% affordable housing.
- 4.5. Given the fluctuations in costs seen in the construction industry at the moment and the market uncertainty as a result of the Covid-19 pandemic, the development appraisal has included a sensitivity analysis that demonstrates the impact that a change in residential build cost or residential sales values has on the land value.
- 4.6. For the purposes of the appraisal the development of the site is broken into 10 parcels and for the purposes of the appraisal we have adopted a phasing programme of four phases, each of approximately 250 units, which incorporate the 10 parcels identified by the masterplan.
- 4.7. We have assumed that the construction period for each phase will be completed at an average rate of approximately 150 units per year. For example, the construction period for Phase 1 equates to approximately 18 months for 229 dwellings. This is in line with conversations JLL have had with local agents regarding comparable schemes nearby.
- 4.8. Typically, a house builder will adopt a 'build to sell' approach and seek to sell units immediately upon completion; this means that their sales programme will mirror the construction period. Therefore, where we have adopted a construction period of 18 months, we have also assumed a build period of 18 months. We are assuming that the sales period begins 12 months into the start of construction and sales revenue is received on a monthly, flat-line basis throughout.
- 4.9. The affordable housing element would likely be sold off to a Registered Provider who would forward fund its construction on a 'Golden Brick payment' structure. We have reflected this in the appraisal by assuming that 30% of the affordable housing revenue is received 6 months into construction, with the remainder s-curved across the total construction period.
- 4.10. Overall, the development appraisal resulted in a positive residual land value indicating that the sale and development of the site is viable.
- 4.11. We envisage that survey work to support an application will commence in 2021 with an application submitted in 2022. This will enable work to commence on site in 2023. This would allow for a 10 year build out period to achieve the 1000 homes in the Local Plan period. As outlined above we do consider there is

scope for this to be accelerated, with potential build out rates of 150 a year, but 100 new homes a year is a robust assumption.

## 5. Vision for Development

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- 5.1. PRP has produced a Vision for Development – a development concept for the Site. It provides added certainty that the site is capable of accommodating 1000 dwellings and associated infrastructure. This document forms **Annex No. 8**.
- 5.2. The production of this document has been an iterative process. It has considered preliminary advice on both market and technical considerations referred to in the previous sections and then refined the Vision for Development as more detailed and prescriptive advice in the Site's constraints and potential mitigation measures have been received from the technical team. The report has also evolved in response to comments received through the consultation process both with the council officers and members and the public.
- 5.3. The Vision for Development provides a site and context analysis as its basis. This considers the following:
- Area connectivity
  - Local designations
  - Site history
  - Built heritage and designations
  - Area character
  - Current contextual urban grain
  - Local land uses
  - Built form and height
  - Landscape and biodiversity
  - Trees
  - Open spaces
  - Topography
  - Hydrology
  - Utilities
  - Pedestrian and cycle movement
  - Public transport
  - Vehicular access.
- 5.4. It then assesses the principle site constraints and wider and site opportunities. For ease of reference we have included both these plans as **Appendices 3 and 4** respectively.
- 5.5. Section 4 onwards of the vision document outlines how the site could be developed when considering all the site constraints and opportunities identified through the technical work to date. It provides one option for development of the site based on an approach that seeks to minimise the impact on ecology.

- 5.6. To this extent we attach at **Appendix 5** a copy of the masterplan which details how the developable area has been set in respect to the findings from the ecology work and we outline the key points from this below;
- Siting the development footprint in the habitats of least ecological value, and which are of least value to a range of species. This approach places the developable area in the north of the site as it seeks to retain habitat in the south of the allocated area and provide a sufficiently large buffer from the valuable habitat in the south.
  - Balancing the approach to locate the development in the north against the conflicting needs of the local residents and council members who wish to see a green offset from Abbot's Road.
  - Retention of Birch Brook LWS in its entirety, with at least a 50 m buffer from development for its entirety (the very northerly tip of Birch Brook woodland is the closest part, and the developable area is c. 70 m from the woodland).
  - Retention of 30 hectares of the Middlewick Ranges LWS boundary, prioritising the areas of a acid grassland (over the less ecologically valuable grassland), the habitat mosaic at the base of the ranges, and prioritising the location of LWS retention such that the remnant areas remain ecologically connected to adjacent high value habitat and are not isolated by development proposals. Such retention and connectivity is considered to be of importance for both the continued ecological functionality of the LWS, but also the species it supports, such as the invertebrate assemblage.
  - Retention of sufficient habitat to enable continued use of Birch Brook and the immediately adjacent habitats by foraging and commuting bats, roosting bats, and a range of bird species. This includes sufficient buffers from built development such that issues associated with light spill on retained woodland should not adversely affect the use of the woodland by such species.
  - Provision of substantial green corridors throughout the built footprint of the development to facilitate landscape scale connectivity for bats, birds and other species. This includes retention of the two existing and high value remnant hedgerows in the north, as well as extended north – south and east west habitat linkages, and the retention (and bolstering) of hedgerows along the existing frontage of Abbot's Road.
  - A stepped built form in both density and typology, to minimise ecological impacts associated with a 'hard' development edge. Examples include siting the lower density housing on the southern boundary of the footprint, siting the higher density and building types which are associated with greater footfall and disturbance (such as the local centre) in the centre of the footprint.
  - Provision for 2 km, 3 km and 6 km walking routes within the development footprint, and then in Mitigation Land to the south. These seek to provide a targeted walking route for recreation and dog walking use, but with specific routes devised to minimise impact on retained habitat.
  - Development of a built footprint which delivers the required housing numbers, infrastructure and associated uses, in the smallest form possible (without compromising densities, green corridors or other open space commitments).

- 5.7. It is important to note that in order for the ecology work to be finalised and a net gain in biodiversity calculated we had to set a developable area. Hence, we show in this document one concept masterplan rather than different options. We would anticipate as part of any planning application more options could be explored and consulted upon.
- 5.8. The vision for the sites' development is set out below:
- “We envisage the new community at Middlewick Ranges as a strong, cohesive and inclusive community. Recognising the green, ecological and naturalistic surrounds, this community will have very close ties to the landscape and neighbouring destinations, maximising the quality of life offered to new residents – it is about building upon strengths, creating a unique identity and bringing added value.”*
- 5.9. The Vision Document refers to a number of development concepts to deliver this vision. These are: -
- Reflect on existing settlement patterns within the wider area
  - Retain and enhance existing woodlands, trees and hedgerows and watercourses
  - Protect existing historical routes and public rights of ways
  - Connect with the surrounding footpaths and Colchester Orbital promoting health and well-being and access to the countryside.
  - Create a central movement corridor through the site connecting Mersea Road and Abbots Road.
  - Draw the landscape into the site creating functional green space and high-quality recreational facilities
  - Protect the existing ecology of the site and enhance and protect areas from public access where required whilst bringing nature into the development, opening up a currently restricted site and forming a connection between the surrounding communities and new green spaces.
- 5.10. The proposed Concept Masterplan has been provided in **Appendix 6**. This illustrates how the following uses can be accommodated on the site whilst still allowing for a substantial area – 63% of the site allocation, as open space.
- **Residential:** the development will provide approximately 1,000 new homes including a mix of housing typologies, tenures and affordability.
  - **Education:** a new primary school is proposed at the heart of the community, within walking distance of the new neighbourhood and the local centre.
  - **Local Centre:** the local centre will be a central hub for new residents to meet and will provide day-to-day facilities with the potential for retail, leisure and community amenities.
  - **Employment:** through provision of the local centre and primary school, delivery and maintenance of the development a range of job and business opportunities will be provided within Middlewick Ranges.

- **Green Community uses:** the new development can provide a range of outdoor spaces, including allotments, play spaces, sports pitches, amenity green spaces and natural and semi-natural open spaces. In addition, there are opportunities for integration of green community uses within the allocation site and ecological mitigation land. These could include, a BMX track, farm school, woodland cemetery, community orchard among others

- 5.11. In response to the concerns raised over access to amenity space it is also pertinent to note that our approach to the masterplan allows for approximately 53ha of the allocated area to remain as open space. This will result in there being more publicly accessible open space than there currently is on the site. The developable area shown on the concept masterplan reflects around only 78% of the currently fenced in area on the firing ranges (the current fenced in area delineating the firing ranges is not publicly accessible).
- 5.12. A range of densities have been identified across the developable area of the site in order to create a varied character. These range from very low density of approximately 25 dwellings per hectare in the southern area of the site, to a high density around the local centre of approximately 60 dwellings per hectare. The northern residential areas have been identified as medium and medium to high densities of approximately 35 and 45 dwellings per hectare respectively. These densities are considered to reflect the surrounding area and equate to an average density of 37 dph in the developed area.
- 5.13. In conclusion the concept masterplan has been prepared to demonstrate that the site can be allocated for 1000 new homes. It supports the ecological mitigation work demonstrating that a net gain in biodiversity can be achieved, it provides confidence on site deliverability, and includes solutions for local infrastructure.
- 5.14. We anticipate the principles within the vision document can be included within adopted Policy to ensure the future development of Middlewick Ranges has a holistic and integrated design approach which can continue the transformation of the Colchester area and surrounding settlements, promoting benefits for existing and new communities as well as the surrounding landscape.

## 6. Conclusion

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- 6.1 The evidence base has demonstrated that the site can accommodate 1000 new homes and the associated infrastructure, whilst allowing for a substantial area of open space to remain. The development can be compensated for and mitigated against through a series of ecological enhancements which achieve a net gain in biodiversity. A development appraisal has been undertaken based on the findings of the technical work and the concept masterplan and concludes that the site is deliverable and viable within the Local Plan timeframe.

## Appendix 1 – Ministerial Statement

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## Defence Estate Optimisation Update

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**17 November 2020**

Volume 684

### **The Minister for Defence Procurement (Jeremy Quin)**

The Ministry of Defence (MOD) continues to deliver on its 25-year strategy to modernise its estate.

As part of this work we wish to confirm programme changes to individual sites: The disposal of DSG Colchester can be brought forward one year to 2021; the disposal of Middlewick Ranges also in Colchester will however be delayed by one year to 2022; the disposal of Fort Blockhouse 1 in Gosport will be delayed by at least three years to not before 2023; and the disposal of the remainder of the Southwick Park site in Fareham will be delayed to 2031. These delays are to meet military requirements.

We are also exchanging two parcels of land as part of the Forthside Stirling disposal to create a more sensible proposition for future development and will be enclaving Napier Lines at Woolwich Barracks as the long-term home for the King's Troop Royal Horse Artillery. The disposal of the remainder of both sites will continued as planned.

There is the potential for adjustment to other site disposal dates as we continue to evaluate the movement of personnel and refine the portfolio timeline to meet military capability requirements. Any changes will be reflected in updates to the

defence disposal database on the [www.gov.uk](http://www.gov.uk) website. This maintains a complete list of all MOD disposals including those that are part of defence estate optimisation. It is routinely updated throughout the year to provide the most accurate and current information as the Department continues to rationalise and enhance its estate.

The MOD remains committed to making the right decisions to support defence capabilities and offer best value for money for the taxpayer, balanced with our commitment to working with communities over the future use of sites released for disposal as part of the portfolio.

[HCWS582]

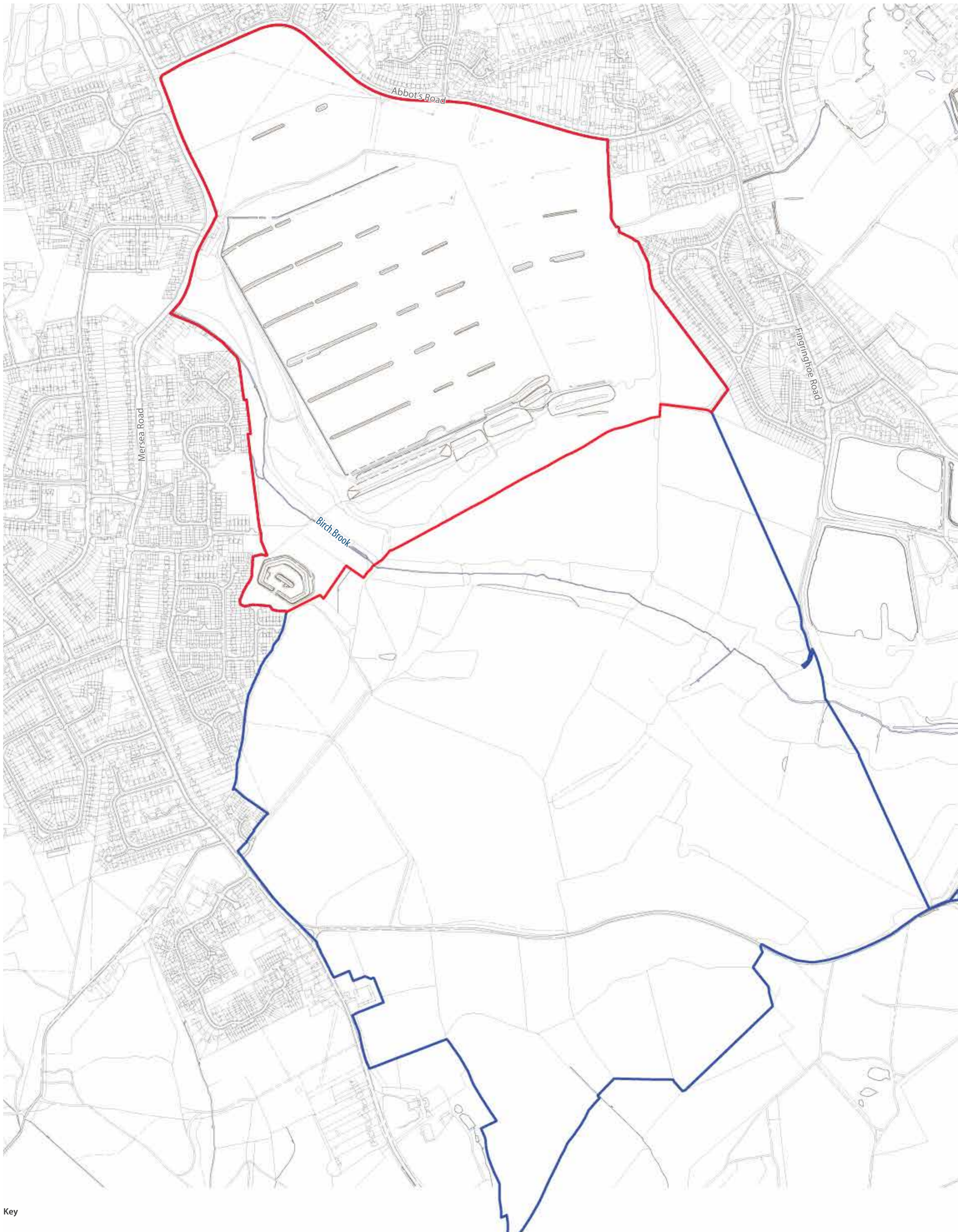
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## Appendix 2 – Site Area Plans

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Key

- Allocated land
- Ecological mitigation



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Rev	Date	Description
1	02/12/20	First issue

Dwn	Ckd	Drawn	SG
SG	ST	Checked	ST
		Date	02/12/2020
		Scale @ A2	1:5000

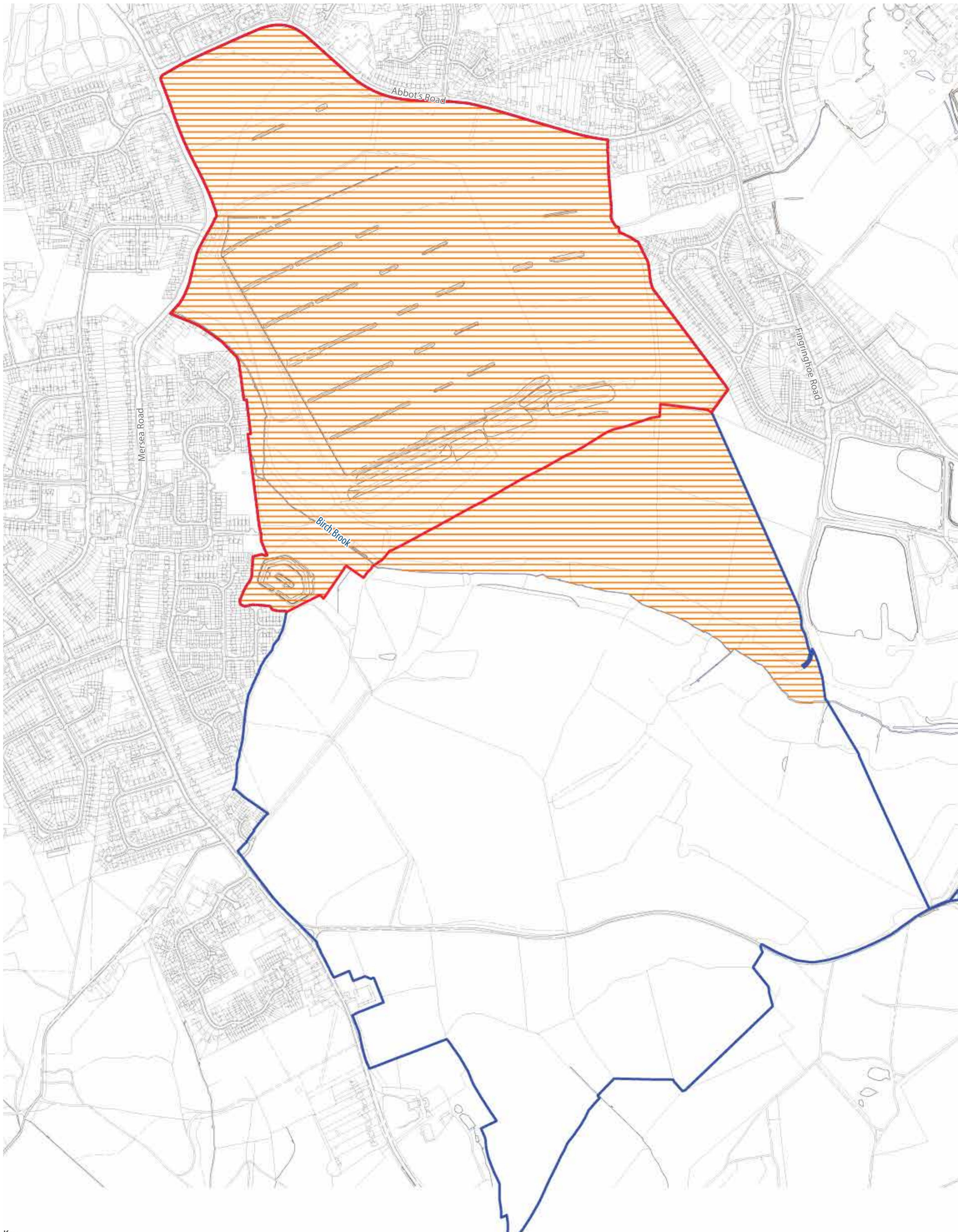
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**MIDDLEWICK**  
**REV-**  
**SITE BOUNDARIES**

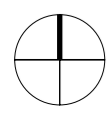
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**FOR INFORMATION**

**PRP**





- Key**
- Allocated land
  - Ecological mitigation
  - ▨ Land surplus to requirements



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Rev	Date	Description
1	02/12/20	First issue

Dwn	Ckd	Drawn	SG
SG	ST	Checked	ST
		Date	02/12/2020
		Scale @ A2	1:5000

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**MIDDLEWICK**  
**REV-**  
**LAND SURPLUS**

**AA6742 1033**  
**FOR INFORMATION**

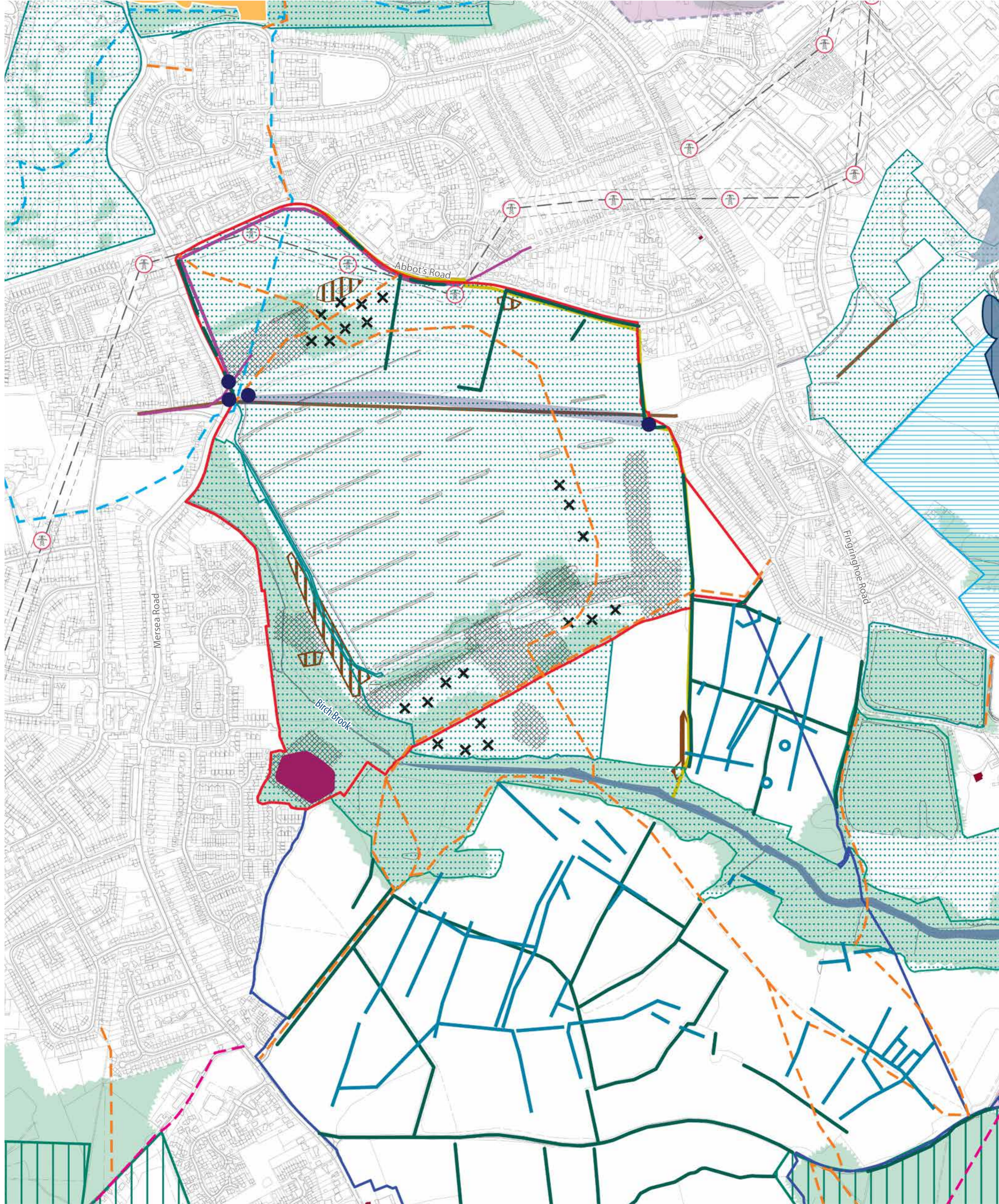
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## Appendix 3 – Site Constraints

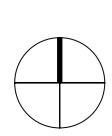
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**Key**

<b>Site boundaries</b>	<b>Access &amp; Movement</b>	<b>Heritage</b>	<b>Utilities</b>	<b>Flooding</b>	<b>Landscape &amp; Ecology</b>
<ul style="list-style-type: none"> <li>— CBC boundary of draft housing allocation</li> <li>— Site ownership boundary</li> </ul>	<ul style="list-style-type: none"> <li>— Public Right of Way (PRoW)</li> <li>— Historic PRoW</li> <li>— Indicative Colchester Orbital route</li> </ul>	<ul style="list-style-type: none"> <li>■ Listed building</li> <li>■ Scheduled monument</li> <li>■ Conservation area</li> <li>■ World War II Historic tank line</li> <li>● WWII pill boxes</li> <li>■ Redoubt</li> <li>■ NMP Cropmark polygons</li> </ul>	<ul style="list-style-type: none"> <li>⊕ Pylons and overhead power line and 20m offset</li> <li>— Proposed abandon MP</li> <li>— M/P gas main</li> <li>— Combined sewer</li> <li>— Surface sewer</li> <li>— Potable water</li> </ul>	<ul style="list-style-type: none"> <li>■ River</li> <li>■ Flood zone 2</li> <li>■ Flood zone 3</li> </ul>	<ul style="list-style-type: none"> <li>■ Local Wildlife Site (Colchester)</li> <li>■ Site of Special Scientific Interest (SSSI)</li> <li>■ Woodland</li> <li>■ Protected Hedgerows</li> <li>× Scattered shrub</li> <li>■ Tall ruderal</li> <li>■ Dense/continuous shrub</li> </ul>



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Rev	Date	Description
A	19/11/19	First issue
B	22/11/19	Amendment to graphics
C	06/01/20	Addition of Local Wildlife Site
D	04/05/20	Additional elements updated
E	08/12/20	Additional elements updated

Dwn	Ckd	Drawn	GM
GM	ST	Checked	ST
GM	ST	Date	19/11/2019
DW	ST	Scale @ A2	1:5000
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MIDDLEWICK  
CONSTRAINTS PLAN

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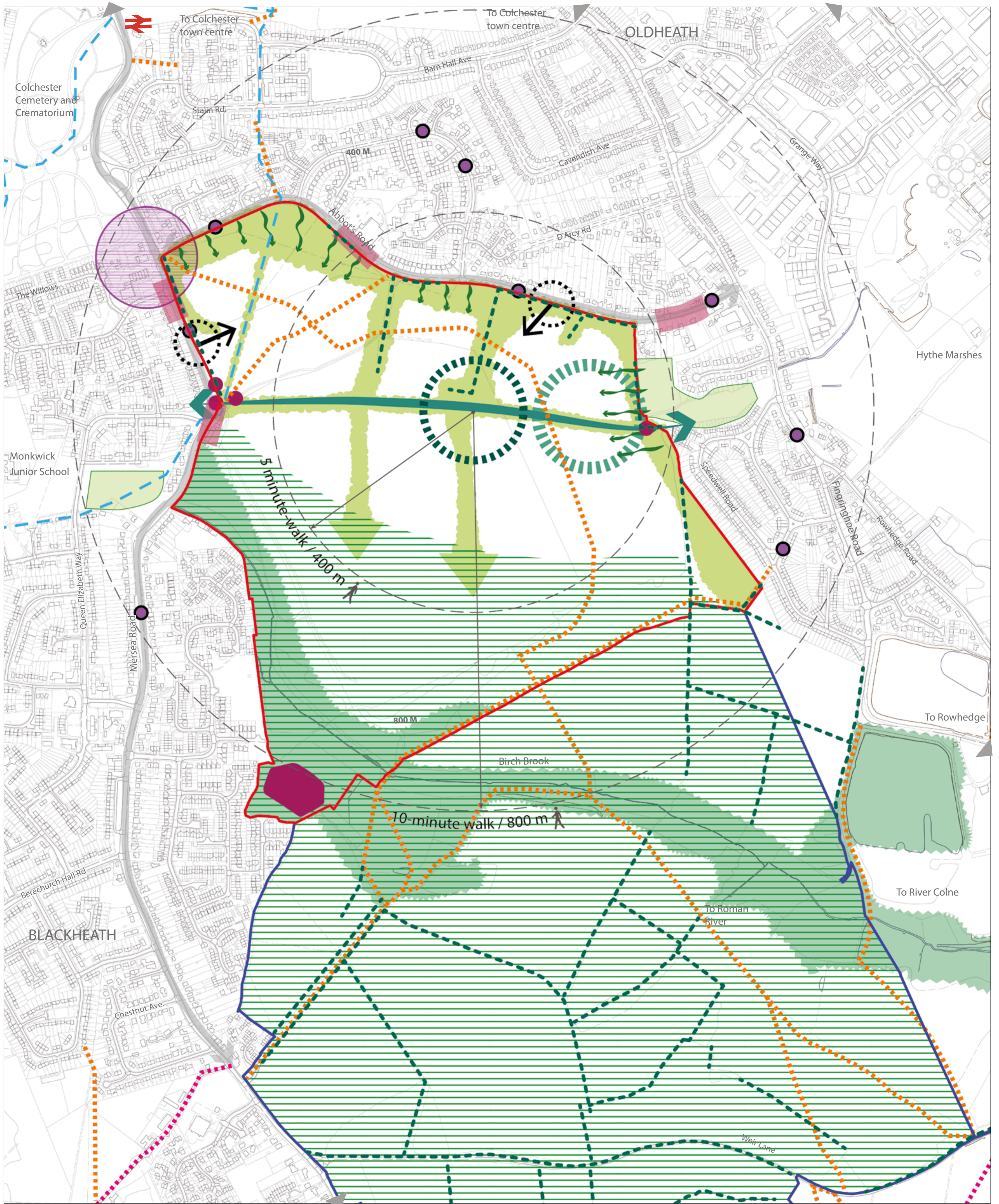
PRP



## Appendix 4 – Site Opportunities

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- KEY**
- Site Boundaries**
    - Site Boundary
    - Ecological mitigation land within MOD land ownership
  - Land Uses**
    - Community heart including village green, local centre, community square and potential bus stops
  - Heritage**
    - WWII pill boxes
    - Redoubt
  - Access & Movement**
    - Public Right of Way (footpath)
    - Public Right of Way (bridleway)
    - Indicative orbital route
    - Main roads
    - Potential primary road
    - Green walk with retained tank line
  - Access & Movement**
    - Potential pedestrian crossing points
    - Proposed entrance gateway
    - Existing bus stops in proximity
    - Enhancement of existing junction and facilities
  - Landscape & Ecology**
    - Retained and enhanced hedgerows
    - Green corridors
    - Ecological mitigation and enhancement area
    - Proposed sports pitches
    - Surrounding green spaces



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Rev	Date	Description
A	14/11/19	First issue
B	22/11/19	Amended vehicular access points
C	06/01/20	Amended vehicular access points
D	10/01/20	Amended plan
	08/12/20	Amended plan

Dwn	Ckd	Drawn	GM
GM	ST	Checked	ST
GM	ST	Date	10/01/2019
DW	ST	Scale @ A2	1:5000
SG	ST		

**MIDDLEWICK**  
OPPORTUNITIES PLAN

**AA6742 1010**  
**REV D**  
FOR INFORMATION

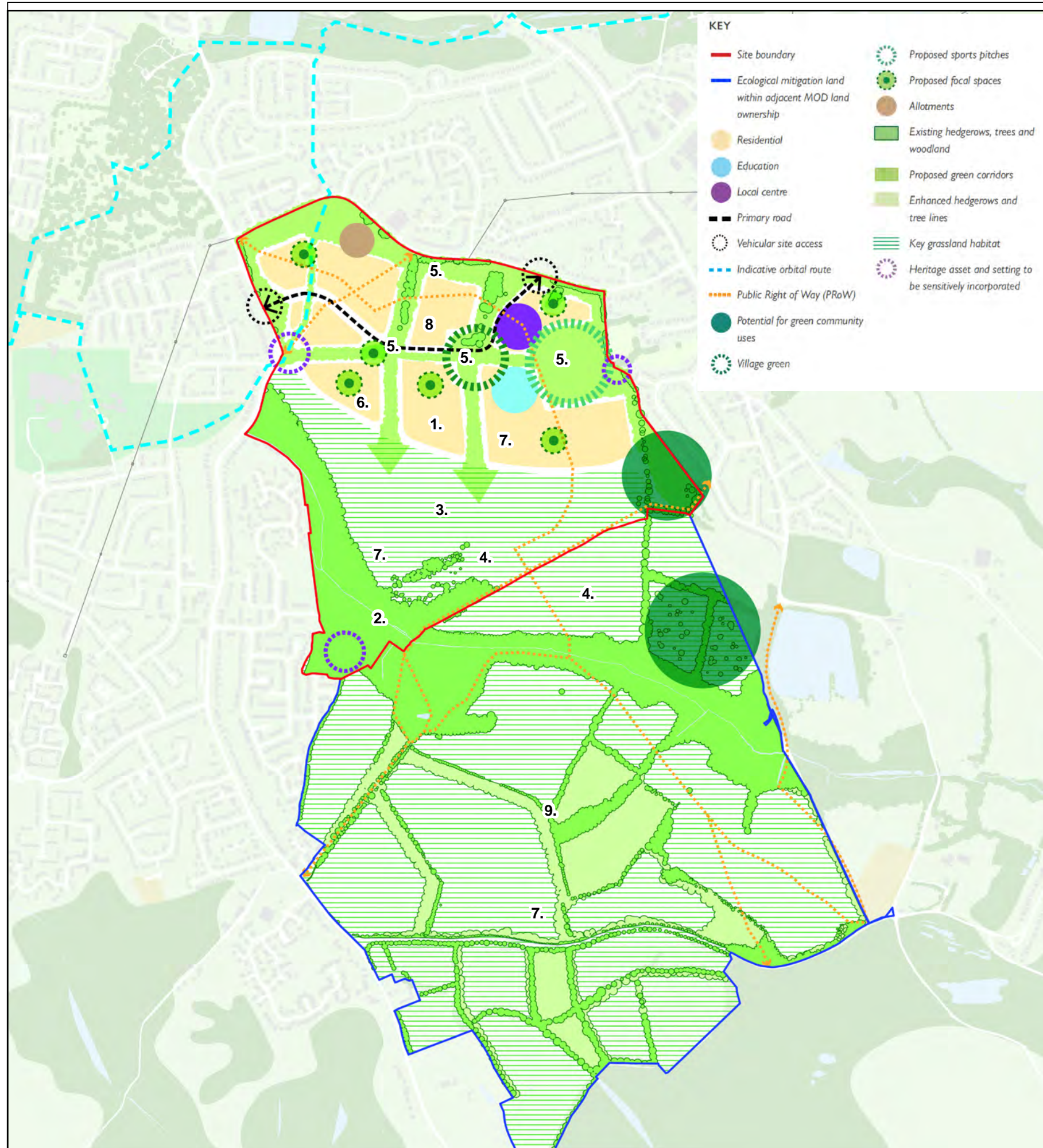
**PRP**

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## Appendix 5 – Ecology Considerations

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**1. Development Location**  
Siting the development footprint overall in the habitats of least ecological value, and which are of least value to a range of species. This includes consideration of the conflicting needs, such as the need for a green offset from Abbot's Road (effectively pushing development proposals south) whilst balancing ecological need (which is to retain habitat in the south, and provide a sufficiently large buffer from valuable habitat in the south, essentially pushing development proposals north).

**2. Retention of Birch Brook**  
Retention of Birch Brook LWS in its entirety, with at least a 50 m buffer from development for its entirety (the very northerly tip of Birch Brook woodland is the closest part, and the developable area is c. 70 m from the woodland).

**3. Retention of Middlewick Ranges**  
Retention of 30 hectares of the Middlewick Ranges LWS boundary, prioritising the areas of acid grassland (over the less ecologically valuable grassland), the habitat mosaic at the base of the ranges, and prioritising the location of LWS retention such that the remnant areas remain ecologically connected to adjacent high value habitat and are not isolated by development proposals. Such retention and connectivity is considered to be of importance for both the continued ecological functionality of the LWS, but also the species it supports, such as the invertebrate assemblage.

**4. Habitat Retention**  
Retention of sufficient habitat to enable continued use of Birch Brook and the immediately adjacent habitats by foraging and commuting bats, roosting bats, and a range of bird species. This includes sufficient buffers from built development such that issues associated with light spill on retained woodland should not adversely affect the use of the woodland by such species.

**5. Habitat Provision**  
Provision of substantial green corridors throughout the built footprint of the development to facilitate landscape scale connectivity for bats, birds and other species. This includes retention of the two existing and high value remnant hedgerows in the north, as well as extended north – south and east west habitat linkages, and the retention (and bolstering) of hedgerows along the existing frontage of Abbot's Road.

**6. Stepped Built Form**  
A stepped built form in both density and typology, to minimise ecological impacts associated with a 'hard' development edge. Examples include siting the lower density housing on the southern boundary of the footprint, siting the higher density and building types which are associated with greater footfall and disturbance (such as the local centre) in the centre of the footprint.

**7. Walking Routes**  
Provision for 2 km, 3 km and 6 km walking routes within the development footprint, and then in Mitigation Land to the south. These seek to provide a targeted walking route for recreation and dog walking use, but with specific routes devised to minimise impact on retained habitat.

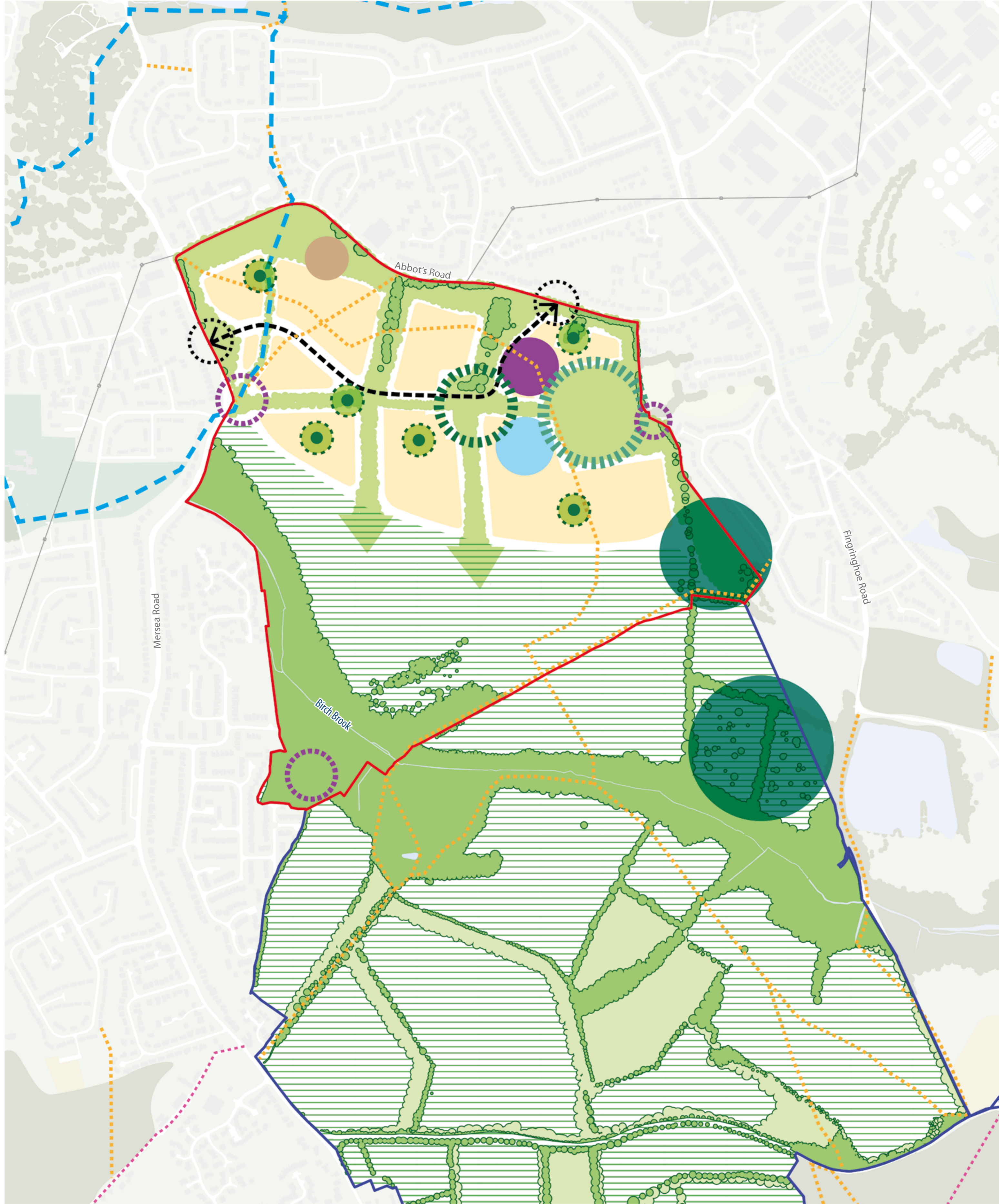
**8. Scheme Delivery**  
Development of a built footprint which delivers the required housing numbers, infrastructure and associated uses, in the smallest form possible (without compromising densities, green corridors or other open space commitments).

**9. Biodiversity Net Gain**  
Delivery of significant ecological enhancements in the Mitigation Land which delivers benefits to a range of species as well as achieves a Biodiversity Net Gain. These enhancements include bolstered hedgerows and tree lines connecting Birch Brook with Roman River SSSI, as well as provision of new woodland, scrub and acid grassland to offset losses in the north as a result of the development proposals.

## Appendix 6 – Concept Masterplan

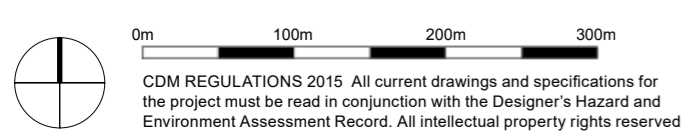
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Key

<p><b>Site boundaries</b></p> <ul style="list-style-type: none"> <li><span style="color: red;">—</span> Site boundary</li> <li><span style="color: blue;">—</span> Ecological mitigation land within MOD land ownership</li> </ul>	<p><b>Land Use</b></p> <ul style="list-style-type: none"> <li><span style="background-color: yellow; border-radius: 50%; width: 15px; height: 15px; display: inline-block;"></span> Residential</li> <li><span style="background-color: lightblue; border-radius: 50%; width: 15px; height: 15px; display: inline-block;"></span> Education</li> <li><span style="background-color: purple; border-radius: 50%; width: 15px; height: 15px; display: inline-block;"></span> Local centre</li> </ul>	<p><b>Access &amp; Movement</b></p> <ul style="list-style-type: none"> <li><span style="border-bottom: 2px dashed black; width: 20px; display: inline-block;"></span> Primary road</li> <li><span style="border: 1px dashed black; border-radius: 50%; width: 15px; height: 15px; display: inline-block;"></span> Vehicular site access</li> <li><span style="border-bottom: 2px dashed blue; width: 20px; display: inline-block;"></span> Indicative orbital route</li> <li><span style="border-bottom: 2px dotted orange; width: 20px; display: inline-block;"></span> Public Right of Way (footpath)</li> <li><span style="border-bottom: 2px dotted pink; width: 20px; display: inline-block;"></span> Public Right of Way (bridleway)</li> </ul>	<p><b>Landscape</b></p> <ul style="list-style-type: none"> <li><span style="background-color: darkgreen; border-radius: 50%; width: 15px; height: 15px; display: inline-block;"></span> Potential for green community uses</li> <li><span style="border: 2px dashed green; border-radius: 50%; width: 15px; height: 15px; display: inline-block;"></span> Village Green</li> <li><span style="border: 2px dashed green; border-radius: 50%; width: 15px; height: 15px; display: inline-block;"></span> Proposed sports pitches</li> <li><span style="border: 2px dashed green; border-radius: 50%; width: 15px; height: 15px; display: inline-block;"></span> Proposed focal spaces</li> <li><span style="background-color: brown; border-radius: 50%; width: 15px; height: 15px; display: inline-block;"></span> Allotments</li> <li><span style="background-color: lightgreen; border-radius: 50%; width: 15px; height: 15px; display: inline-block;"></span> Existing hedgerows, trees and woodland</li> </ul>	<ul style="list-style-type: none"> <li><span style="background-color: lightgreen; border: 1px solid green; width: 20px; height: 10px; display: inline-block;"></span> Enhanced hedgerows and tree lines</li> <li><span style="border-bottom: 2px solid green; width: 20px; display: inline-block;"></span> Key grassland habitat</li> <li><span style="border: 2px dashed purple; border-radius: 50%; width: 15px; height: 15px; display: inline-block;"></span> Heritage asset and setting to be sensitively incorporated</li> <li><span style="background-color: lightgreen; border: 1px solid green; width: 20px; height: 10px; display: inline-block;"></span> Proposed green corridors</li> </ul>
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Rev	Date	Description	Dwn	Ckd	Drawn	GM
-	14/04/20	First issue	GM	ST	Checked	ST
A	20/04/20	Minor graphic amendments	GM	ST	Date	14/04/2020
B	08/12/20	Graphic changes			Scale @ A2	1:5000





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