



Proposed Estates Yard & Exhibition Centre, Ramsbury Manor, Wiltshire

Surface Water Drainage Strategy
June 2026

Project No. 2080

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Revision History

Rev	Date	Purpose/Status	Comments
-	August 2025	Information	First Issue
A	November 2025	Information	Updated to suit comments
B	June 2026	Information	Updated to suit comments

INTRODUCTION

- 1.1. AFA Consulting Engineers Ltd have been commissioned by The Ramsbury Manor Foundation to prepare a Surface Water Drainage Strategy report for the proposed Estates Yard and Exhibition Centre at Ramsbury Manor, Wiltshire.
- 1.2. This report will provide detailed layout and details for disposal of surface water from the development.
- 1.3. This report has been prepared for the use of The Ramsbury Manor Foundation. No other third party may rely upon or reproduce the contents of this report without the written approval of AFA Consulting Engineers Ltd. If any unauthorised third party comes into the possession of this report, they rely on it entirely at their own risk and AFA do not owe them any Duty of Care or Skill.

2. EXISTING SITE

- 2.1. The site is located 850m west of Ramsbury within Marlborough, SN8 2RG. It has an approximate grid reference of SU 25983 71390 with an approximate area of 1.7 hectares. The site was accessed via White's Hill Road from the southeast.
- 2.2. The River Kennet runs east to west and has formed a small natural lake approximately 280m to the south of the site. The Site Plan is presented within Figure 1 and Appendix A.

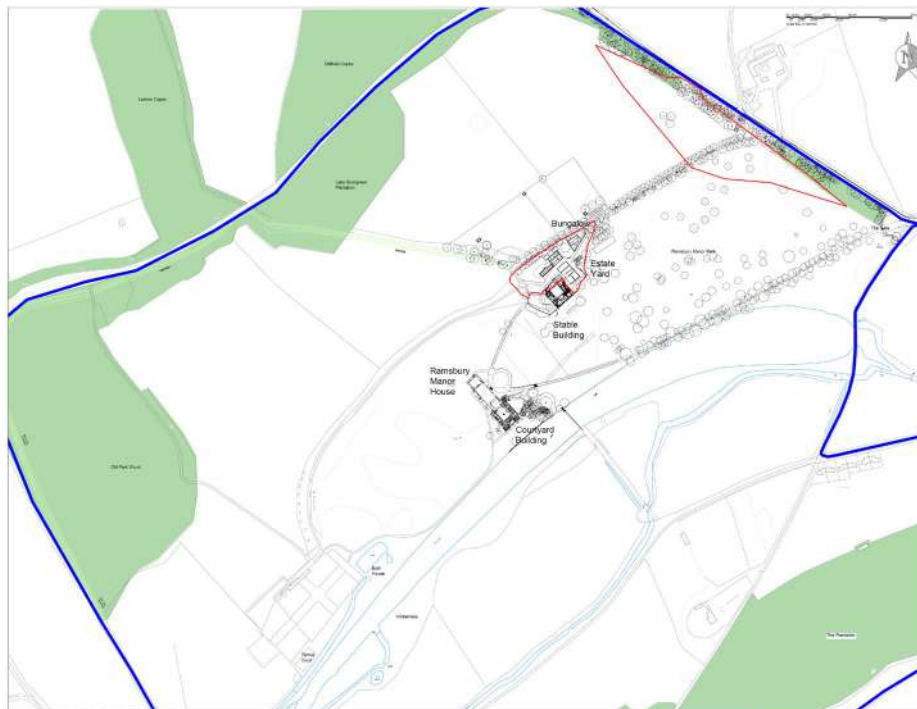


Figure 1 – Site Plan

- 2.3. The proposed Estate yard is to be located in the North East of the site adjacent Whites Hill Road.
- 2.4. The site area occupies the southeast corner of an approximately rhombus-shaped grass covered field. The site slopes south-eastward from approximately 134m AOD to 123m AOD resulting in a gradient of approximately 4.5 degrees.
- 2.5. The majority of the site is covered by grass except for a private drive passing east to southwest within the nearside of the southern boundary, the road comprises blacktop and is bordered by a row of trees along both sides along its length. The trees noted are of mature deciduous nature, but the species were unknown
- 2.6. The Exhibition Centre replaces the existing Estates Yard and is located North of the retained Stables Building. The existing stables building is drained via soakaways as indicated on the layout in Appendix G.

3. SURFACE WATER DRAINAGE STRATEGY

3.1. The proposed development is for the construction of an Estates Yard and Exhibition Centre. Refer to Appendix A for the proposed site plans.

3.2. SUDS mimic the natural drainage system and provide a method of surface water drainage which can decrease the quantity of water discharged, and hence reduce the risk of flooding. In addition to reducing flood risk, these features can improve water quality and provide biodiversity and amenity benefits.

3.3. The SUDS management train incorporates a hierarchy of techniques and considers all three SUDS criteria of flood reduction, pollution reduction, and landscape and wildlife benefit. In decreasing order of preference, the preferred means of disposal of surface water runoff is:

- Discharge to ground / infiltration
- Discharge to a surface water body.
- Discharge to a surface water sewer.
- Discharge to a combined sewer.

3.4. The philosophy of SUDS is to replicate as closely as possible the natural drainage from a site predevelopment and to treat runoff to remove pollutants, resulting in a reduced impact on the receiving watercourses. The benefits of this approach are as follows:

- Reducing runoff rates, thus reducing the flood risk downstream.
- Reducing pollutant concentrations, thus protecting the quality of the receiving water body.
- Groundwater recharge.
- Contributing to the enhanced amenity and aesthetic value of development areas.
- Providing habitats for wildlife in developed areas, and opportunity for biodiversity enhancement.

Estates Yard

- 3.5. An intrusive site investigation was undertaken to the new Estates Yard area in November 2024 by Constructive Evaluation. A copy of the report is contained within Appendix B. Groundwater was not recorded during the investigation. Given the gradient of the site it is likely that groundwater will be at depth
- 3.6. Soil infiltration testing to BRE365 was completed in the chalk found within TP1 and TP2 between 1.1mbgl and 2.0mbgl. Of the two positions tested, the lowest infiltration rates recorded were 1.48E-05 and 1.51E-05 m/s. A copy of the results is contained within the report in Appendix B
- 3.7. The ground water monitoring recorded within the Site investigation confirms a 1m freeboard below proposed soakaways can be maintained.
- 3.8. Soakaways have been designed in line with Wiltshire Council's Surface Water Soakaway Developers Guide Note and the SuDS Manual.
- 3.9. The proposed Estates Yard development comprises the following drained areas. These are identified on the drawings within Appendix F.

Main Access and disabled Car Parking	1327m ²
Courtyard	891 m ²
Workshops and Stores	70+734+145 = 949m ²
Office Building	60m ²
Access Road Widening	141m ²
Main Car Park	987m ²
TOTAL	4355m²

- 3.10. The access road to the Estates Yard has been designed to discharge via a soakaway as the site gradients are too steep to practically manage via permeable surfaces.
- 3.11. Soakaways have been designed to manage run off from the buildings and hardstanding areas.
- 3.12. For the new car park area adjacent the Estates Yard this area largely follows the profile of the existing site and so formation is not likely to be within the chalk strata. This area has therefore been designed to discharge via a series of infiltration trenches to accommodate the gradient. The car parking bays and road are designed to be grasscrete permeable surfaces with attenuation storage provided within the subbase.

- 3.13. The full drainage network has been designed to accommodate rainfall events up to 1 in 100 years with 40% climate change allowance within the drainage network with no surface flooding. Supporting calculations are attached for 1 in 2, 1 in 30 and 1 in 100 year events within Appendix E.

Exhibition Centre

- 3.14. An intrusive site investigation was undertaken to the new Exhibition Centre in May 2026 by Subsurface. A copy of the report is contained within Appendix H. Groundwater was not recorded during the investigation. Given the gradient of the site it is likely that groundwater will be at depth. The ground water monitoring recorded within the Site investigation confirms a 1m freeboard below proposed soakaways can be maintained.
- 3.15. Infiltration testing has been complete as shown in Appendix H. Two locations were testing under the proposed soakaways and at a similar depth. The testing recorded: SA1 was between 1.30×10^{-4} and 7.29×10^{-4} m/s, SA2 was between 1.70×10^{-5} and 2.41×10^{-5} m/s.
- 3.16. It is proposed to utilise the worst recorded rate of 1.7×10^{-5} m/s across the Exhibition Centre.
- 3.17. Soakaways have been designed in line with Wiltshire Council's Surface Water Soakaway Developers Guide Note and the SuDS Manual.
- 3.18. The proposed Estates Yard development comprises the following drained areas. These are identified on the drawings within Appendix F.
- 3.19. The proposed Exhibition Centre development comprises the following drainage areas. These are identified on the drawings within Appendix F.

Staff Building	271m ²
East Access Road and Car Parking	$576+65 = 641 \text{ m}^2$
West Access Road and Car Parking	742m ²
Exhibition Centre	$2232+56 = 2288\text{m}^2$
TOTAL	3942m²

- 3.20. Soakaways have been designed to manage run off from the Exhibition Centre and Staff buildings. The access road and car parking areas to the Exhibition Centre have been designed as permeable surfaces with infiltration to the ground.

- 3.21. The full drainage network has been designed to accommodate rainfall events up to 1 in 100 years with 40% climate change allowance within the drainage network with no surface flooding. Supporting calculations are attached for 1 in 2, 1 in 30 and 1 in 100 year events within Appendix E.
- 3.22. None of the proposed drainage network including SuDS features will be adopted and the will be managed and maintained by the owner and operator of Ramsbury Manor. The operator will ensure maintenance of all drainage systems in line with the requirements in Ciria C753 the SuDS Manual.
- 3.23. A copy of the detailed Maintenance Management Plan is shown in Appendix D. This will ensure that over the lifetime of the proposed development the drainage system will be properly maintained to ensure proper functionality. A summary schedule of proposed maintenance is shown below:

Maintenance Schedule					
Item	Visual Inspection	Cleanse / De-sludge	CCTV Survey	Responsibility	Comments
Surface Water Drainage System (pipework, chambers etc.)	1 years	10 years	10 years	Building Owner	Cleansing to be carried as necessary
Gullies / Channels / Rainwater Stacks	Monthly	1 years	N/A	Building Owner	Cleansing to be carried as necessary
Soakaway	Yearly	As Required	5 years	Building Owner	Cleansing to be carried as necessary in line with manufacturers recommendations
Catch Pit / Interceptors	Monthly	As Required	N/A	Building Owner	Cleansing to be carried as necessary
Permeable surfaces	1 years	N/A	N/A	Building Owner	Jet wash surface as required to ensure surface not being silted
Permeable Block Paving	1 years	Swept' clean of debris every 2 years	N/A	Building Owner	Lift blocks and removed sand bedding and replace and re-bed paving- refer to individual manufacturers recommendations.

Table 3.2 – Maintenance Schedule

4. SUDS TREATMENT STAGES

- 4.1. To improve the quality of surface water discharging off site, all surface water runoff will receive an element of surface water treatment before discharging to ground via soakaways. Rainwater pipes and gullies will be trapped, and catch pits will be incorporated into the below ground system, all of which are good at removing silts and urban pollutants.
- 4.2. The pollution hazard level from this development is medium, the most likely area of pollution will be from the parking areas, new roads, car display areas, petrol/diesel stores.
- 4.3. Adequate treatment must be delivered to the water runoff to remove pollutants through SuDS devices, which are able to provide pollution mitigation. Pollution Hazards and the SuDS Mitigation have been indexed in the specialized literature CIRIA 753 'The SuDS Manual'. This is determined by the following restriction:

$$\text{Total SuDS Mitigation Index} \geq \text{Pollution Hazard Index}$$

- 4.4. The Pollution Hazard Indices are summarized in Table 2 – Summary of Pollution Hazard Indices for different Land Use below:

POLLUTION HAZARD INDICES FOR DIFFERENT LAND USE CLASSIFICATIONS				
LAND USE	Pollution Hazard Level	Total suspended Solids (TSS)	Metals	Hydrocarbons
Other Roofs	Low	0.3	0.2	0.05
Commercial yard and delivery areas, non-residential car parking with frequent change	Medium	0.7	0.6	0.7

Table 2 – Summary of Pollution Hazard Indices for different Land Use

- 4.5. Due to the site gradients the use of permeable surface to the Estates Yard access road is not feasible but is feasible to the Exhibition access road and car parking areas.
- 4.6. All surface water has been designed to be suitably treated utilising permeable surfaces, grasscrete or an Aquatreat separator.
- 4.7. The Mitigation Indices of the proposed SuDS techniques are summarized in the Table 3 below. The tables demonstrates that the proposed Pollution Mitigation Measures exceeds the Pollution Hazard Index, which as a consequence satisfies the level of treatment recommended within The SuDS Manual.

Indices	Total Suspended Solids	Metals	Hydro-carbons
Roofs			
Maximum hazard index	0.2	0.2	0.05
Proprietary treatment system – Aqua Treat	0.8	0.6	0.9
<i>Check</i>	<i>Criteria Met</i>	<i>Criteria Met</i>	<i>Criteria Met</i>
Commercial yard and delivery areas, non-residential car parking with frequent change			
Maximum hazard index	0.7	0.6	0.7
Proprietary treatment system – Aqua Treat	0.8	0.6	0.9
<i>Check</i>	<i>Criteria Met</i>	<i>Criteria Met</i>	<i>Criteria Met</i>
Commercial yard and delivery areas, non-residential car parking with frequent change			
Maximum hazard index	0.7	0.6	0.7
Grasscrete	0.7	0.6	0.7
<i>Check</i>	<i>Criteria Met</i>	<i>Criteria Met</i>	<i>Criteria Met</i>
Commercial yard and delivery areas, non-residential car parking with frequent change			
Maximum hazard index	0.7	0.6	0.7
Permeable Tarmac/Paving	0.7	0.6	0.7
<i>Check</i>	<i>Criteria Met</i>	<i>Criteria Met</i>	<i>Criteria Met</i>

Table 3 – Summary of Pollution Hazard Indices vs Pollution Mitigation Indices

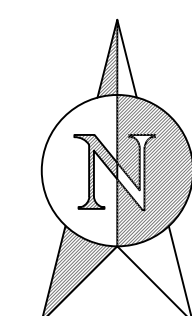
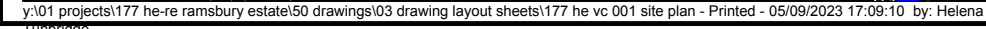
5. EFFECTS OF DEVELOPMENT ON OTHER SITES

5.1. The system has been designed to ensure that there is no risk of flooding over a range of storm durations for up to 1 in 100 years plus a 40% allowance for climate change. This will ensure that the risk of flooding to adjacent sites will not be increased.

6. CONCLUSIONS AND RECOMMENDATIONS

- 6.1. The development includes two areas an Estates Yard to the East of the site and Exhibition Centre North of the Stables building in the location of the existing Estates Yard.
- 6.2. An intrusive site investigation was undertaken in November 2024 to the Estates Yard Area. A copy of the report is contained within Appendix B. Groundwater was not recorded during the investigation and infiltration testing verify that soakaways would be feasible.
- 6.3. Drainage of the existing retained stables building has been recorded as being via soakaways to the South. A copy of the existing drainage is shown in Appendix G.
- 6.4. Soakaways have been designed to manage run off from the buildings.
- 6.5. Due to the site gradients the new access road to the Estates yard has been designed to discharge via a soakaway.
- 6.6. For the new car park area adjacent the Estates Yard this area largely follows the profile of the existing site and so formation is not likely to be within the chalk strata. This area has therefore been designed to discharge via a series of infiltration trenches to accommodate the gradient. The car parking bays and road are designed to be grasscrete permeable surfaces with attenuation storage provided within the subbase.
- 6.7. An intrusive site investigation was undertaken in May 2026 to the Exhibition Centre Area. A copy of the report is contained within Appendix H. Groundwater was not recorded during the investigation and infiltration testing verify that soakaways would be feasible.
- 6.8. For the access road and car parking areas to the Exhibition Centre these have been designed as permeable surfaces with infiltration to the ground.
- 6.9. The full drainage network has been designed to accommodate rainfall events up to 1 in 100 years with 40% climate change allowance within the drainage network with no surface flooding.
- 6.10. A copy of the proposed surface water drainage layout is shown in Appendix F.
- 6.11. The proposed surface drainage solution should be approved by the local authority prior to commencing any drainage works on site.
- 6.12. None of the proposed drainage network including SuDS features will be adopted and the will be managed and maintained by the owner and operator of Ramsbury Manor. The operator will ensure maintenance of all drainage systems in line with the requirements in Ciria C753 the SuDS Manual.

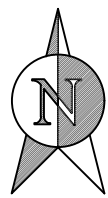
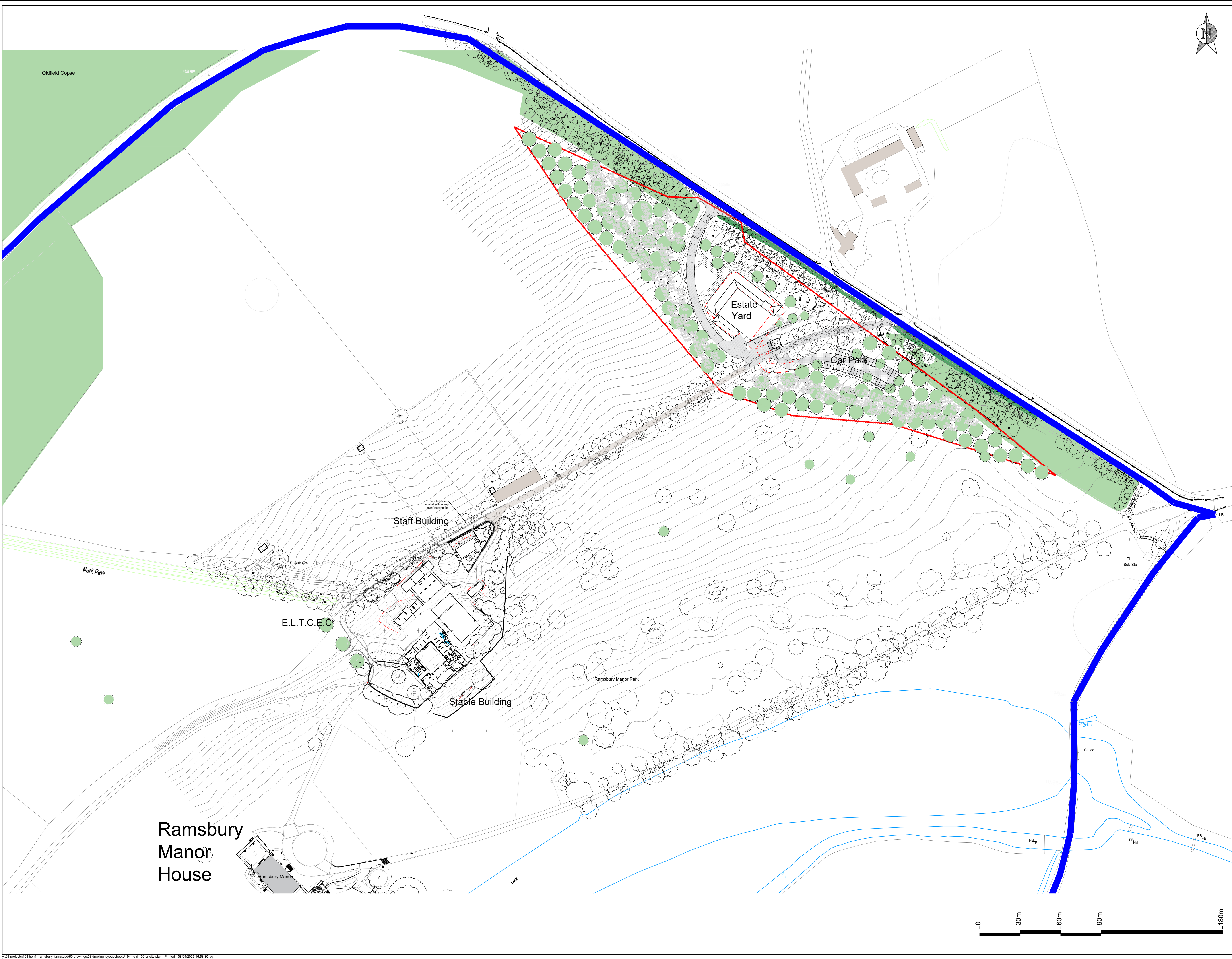
APPENDIX A
EXISTING AND PROPOSED SITE PLAN



REVISIONS			
A	05/09/23	-Site boundary corrected	PC
rev	date	notes	chk

 Estate Boundary

Status:	FOR PLANNING						
Project:	Exhibition Centre 177 HE VC						
Title:	AS EXISTING Location Plan						
Scale(s)(A1):	1:2000	Scale(s)(A3):	1:4000	Drawn:	HT	Checked:	PC
Project Ref:	177 HE VC 001			Revision:	A	Created:	01/03/22
 PEREGRINE BRYANT ARCHITECTURE & BUILDING CONSERVATION The Courtyard, Fulham Palace, Bishop's Avenue, London SW6 6EA T: 020 7384 2111 F: 020 7384 2112 E: info@peregrine-bryant.co.uk							



NOTES

Scale this drawing for Planning purposes only. Do not scale for working drawings.
Verify relevant dimensions on site before commencing work or preparing shop drawings.
The architect is to be notified of any discrepancies.
This drawing is copyright.

DRAWING STATUS

S Survey
O Outline: For proposals, budgets etc.
D Development: For approvals, billing, etc.
P Planning, Listed Building or Local Authority consent
C Construction issued under instruction
T Tender
B Building Control

REVISIONS

A	05/09/23	-Site boundary corrected	PC
B	21/03/25	- Updated Estate Yard layout	PC

rev	date	notes	chk
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- Estate Boundary
- Site Boundary
- Outline of Planning Approved Scheme

- Existing Tree
- Proposed New Tree

Status: FOR PLANNING

Project: Estate Yard
194 HE RF

Title: AS PROPOSED
Estate Yard Site Plan

Scale@A1: 1:1250	Scale@A2: 1:2500	Drawn: HT	Checked: PC
Project Ref: 194 HE RF 100	Dwg no: B	Revision: B	Created: 01/03/22

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