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Mayfield, Phase 1

EIA Statement of Conformity

June 2023

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Summary

This Environmental Impact Assessment (EIA) Statement of Conformity (the "Statement") has been prepared to support planning applications submitted under the Town and Country Planning Act 1990. The applications seek deign amendments to Phase 1 of the Mayfield development (herein referred to as the "Proposed Development").

Three applications are being submitted to the Local Planning Authority on different plots within the Mayfield Strategic Regeneration Framework (SRF), as follows:

1. Multi-storey car park (MSCP): Application for a variation of condition under Section 73 of the Town and Country Planning Act 1990 to amend Planning Permission Ref. 132255/JO/2021. The revised proposals introduce a cycle hub, commercial space and reduce the car parking spaces within the multi storey car park to 488.

2. The Poulton: Application for Full Planning Permission for 9 storey (plus basement) 12,095 sq. m (GEA) office building with ground and basement floor flexible commercial space. This supersedes development currently approved as Phase E under Planning Permission Ref. 132255/JO/2021.

3. The Republic: Application for a variation of condition under Section 73 of the Town and Country Planning Act 1990 to amend Planning Permission Ref. 125248/FO/2019 (as amended by 134907/NMC/2022 and 135956/NMC/2023) for a 13 storey 32,989 sq. m. (GEA) office building, with ground floor commercial spaces.

Together, these applications comprise the EIA Development. Other elements of the development approved under 132255/JO/2021, comprising park and highways works, remain unchanged.

These revisions to each of the building plots requires the approved documents, including the EIA, to be reviewed and updated to reflect the current design in revised documentation as necessary. Planning applications for all three buildings were assessed as part of the same Environmental Statement ('ES') approved under the original, alongside the remediation of the Site, delivery of the new park and works to the River Medlock.

In summary, the changes are sought to the designs of each of the buildings, primarily in relation to external appearance, massing, and ground floor alterations and are set out in detail within Section 1 of this Statement, supporting additional technical appendices, Planning Statement Addendums, Design and Access Statements and updated drawings. No changes are proposed to Mayfield Park, which was completed in September 2022.

This Environmental Statement of Conformity has been prepared and submitted with these Applications to clarify that there are no significant changes from the approved ES because of the design amendments proposed

This Statement supplements, updates, and should be read in conjunction with the following planning documents:

- Mayfield (Phase 1) EIA Volume 1, dated December 2019
- Mayfield (Phase 1) EIA Addendum Volume 1, dated January 2020
- Mayfield (Phase 1) EIA Addendum Volume 1, dated November 2021
- Mayfield (Phase 1) EIA Volume 2 (Technical Appendices), dated December 2019
- Mayfield (Phase 1) EIA Addendum Volume 2 (Technical Appendices), dated January 2020
- Mayfield (Phase 1) EIA Addendum Volume 2 (Technical Appendices), dated November 2021

Copies of all these documents have been re-submitted (electronically) along with this planning application and forms the basis of the "Approved EIA".

The updated EIA work, summarised in this EIA Statement of Conformity, has considered the scheme amendments in the context of any changes in legislation and planning policy since the 2021 ES Addendum. A review of the previously identified environmental effects for each technical discipline assessed to date has been undertaken in relation to baseline conditions, residual effects for the construction and operational phases and the cumulative effects.

It should be noted that this Statement utilises the same baseline information that was established in the Original EIA dated September 2019, which is considered to be robust. The structure of this Statement is set out as follows:

- Executive Summary - introductory section briefly setting out the purpose and structure of the EIA Statement of Conformity and previous environmental reporting undertaken, the EIA Regulatory context,
- EIA Statement of Conformity comprising:
    - Planning history;
    - Proposed amendments;
    - Review of national, regional, and local planning policy;
    - A technical review of baseline conditions, and previously predicted residual demolition/construction, operational effects, and cumulative effects because of the proposed amendments; and
    - Conclusions.
- EIA Statement of Conformity Appendices
    - Drainage Strategies and FRA Statement of Conformity

This EIA Statement of Conformity has been prepared to ensure that the LPA has sufficient environmental information before them, for the purposes of The Town and Country Planning (Environmental Impact Assessment) Regulations 2017 (as amended) (hereafter referred to as the "2017 EIA Regulations"), when determining the planning applications.

The 2017 EIA Regulations deal with subsequent applications ("subsequent applications where environmental information previously provided") under Regulation 9, which states:

Subsequent applications where environmental information previously provided

9.—(1) This regulation applies where it appears to the relevant planning authority that—

(a) an application which is before them for determination—

(i) is a subsequent application in relation to Schedule 1 or Schedule 2 development;

(ii) has not itself been the subject of a screening opinion or screening direction; and

(iii) is not accompanied by a statement referred to by the applicant as an environmental statement for the purposes of these Regulations; and

(b) either—

(i) the application for planning permission to which the subsequent application relates was accompanied by a statement referred to by the applicant as an environmental statement for the purposes of these Regulations; or

(ii) the application is for the approval of a matter where the approval is required by or under a condition to which planning permission deemed by section 10(1) of the Crossrail Act 2008(a) (Planning) or section 20(1) or 50(5)(a) of the High Speed Rail (London - West Midlands) Act 2017(b) (Deemed planning permission) and (Enforcement of environmental covenants) is subject.

(2) Where it appears to the relevant planning authority that the environmental information already before them is adequate to assess the significant effects of the development on the environment, they must take that information into consideration in their decision for subsequent consent.

(3) Where it appears to the relevant planning authority that the environmental information already before them is not adequate to assess the significant effects of the development on the environment, they must serve a notice seeking further information in accordance with regulation 25.

Consistent with Regulation 9(1bi), the applications are accompanied by this Statement for the purposes of the 2017 EIA Regulations. The Statement is submitted to Manchester City Council as Local Planning Authority and comprises the 2019 ES and subsequent ES Addendums as previously listed.

1. EIA Statement of Conformity

Introduction

1.1. This Statement briefly describes the proposed amendments and confirms that the conclusions of the original EIA remain unchanged because of the proposed amendments. It should be read together with the approved planning documents and the addendum to the Planning Statement and the technical information, which further explains the rationale for the proposed amendments and assesses them against key planning considerations. Discussions with the LPA have confirmed in principle support for the revised proposals.

Planning Background

1.2. Mayfield is a regeneration area within Manchester City Centre that seeks to act as a catalyst for increased economic activity in this part of the city centre and provide a significant outdoor public amenity space in the form of a new park.

1.3. The Original Environmental Impact Assessment (EIA) accompanied two applications for Full Planning Permission, submitted to Manchester City Council (MCC), in respect of land within the Mayfield Strategic Regeneration Framework (SRF) area.

1.4. Permission was approved in February 2020 under planning permission references 124972/FO/2019 (Application 1) and 125248/FO/2019 (Application 2), which have since been partially delivered, as amended (via approval of LPA Ref.: 132255/JO/2021). The first Application was approved on 14 February 2020 and comprised the following:

- Enabling works: Phased demolition and site clearance, earthworks including re-profiling and construction of retaining walls for the land bounded by the Mancunian Way to the south, Mayfield Depot to the north, Baring Street to the west and Hoyle Street to the east.
- Mayfield Park: provision of circa 2.4 ha (6 acres) of public park, including hard and soft landscaping to be delivered in phases with new bridges across the River Medlock;
- Baring Street Office 1 (Poulton): 9 storey office development including ground, mezzanine and plant level comprising 11,142 sq. m. (GEA) including active ground floor uses (A1, A2, A3, A4 or B1), public realm and a riverside walkway;
- Baring Street Multi-Storey Car Park (MSCP): 10 storey MSCP including ground for 581 car parking spaces; and
- Highways and Infrastructure Works: creation of a new junction from London Road with required access to the multi-storey car park, works to Baring Street, and Traffic Regulation Orders to Buxton Street, Berry Street and Travis Street, which will be delivered and implemented prior to the MSCP becoming operational.

1.5. The second Application (Ref.: 125248/FO/2019) was approved on 14 February 2020 and encompassed a 13-storey office development including ground and mezzanine floors comprising 29,315 sq. m. (GIA) (circa 31,887 sq. m. (GEA)) with active ground floor uses, highways and associated access and public realm. This was amended (LPA Reference: 135956/NMC/2023) to

revise condition wording and alter the timing of submission of information relating to the development.

1.6. Construction commenced on site for both permissions in March 2021, comprising the enabling works for the development comprising the removal of onsite structures, reprofiling of the site, works to the River Medlock, infrastructure delivery and remediation works. This commencement of development on site followed the submission and subsequent discharge of conditions that provided the detail of the site investigation works, remediation strategy details, river channel works and methodology and management of construction activities on site.

1.7. The Mayfield Park was completed in September 2022 and design changes, driven by further investigatory and modelling works, were incorporated as part of 132255/JO/2021 (a variation of condition for 124972/FO/2019). That permission confirmed the amendments the final design's profile, river strategy, ecological planting, design and approach to drainage and other civil engineering elements. This helped to significantly improve the sustainability of the design through reuse of materials and construction approach, which in turn added authenticity to the delivery scheme.

1.8. The revised proposals will continue to capitalise on the substantial progress made since the formation of the Mayfield Partnership, and the introduction of Landsec to the Partnership, as set out above. The opening of the park, of which the details are described in this Statement, represented a landmark moment for the city through the creation of a new verdant greenspace that sits at the heart of the emerging neighbourhood.

Proposed Amendments

1.9. The primary driver for amending the extant permissions relates to sustainability credentials for the development as a whole and the component parts, as well as reflecting the new regulatory environment and more stringent accreditations building designs.

1.10. Overall, the occupier market has matured since 2019, partially due to COVID-19 health crisis and the needs of modern offices, which has also driven design changes. There are greater opportunities for ecological and landscaping improvements now that Mayfield Park has been delivered, and commercial drivers within the Mayfield Partnership. Updates to Planning Permissions Ref.: 125248/FO/2019 (as amended) and 132255/JO/2021 are required because amendments are sought to the applications approved.

1.11. The design changes from the Planning Permissions granted, as set out in the updated and enclosed planning drawings, Planning Statement Addendums, Design and Access Statements and supporting technical appendices, are summarised against each building as follows:

The Poulton (revision of Plot O / Phase E identified on 132255/JO/2021):

- Height and massing: increase in the overall height and massing of the building through alteration to the approved terrace area, additional terrace on level 08, removal of the cantilever, and new outdoor terrace and integrated rooftop pavilion on level 09. Floor to floor heights have also been adjusted alongside the rooftop plant enclosure. This improves the amenity space for tenants, the quality of the internal workspace and helps to reduce embodied carbon whilst resulting in an uplift from 11,142 sq. m. to 12,095 sq. m. (GEA) (953 sq. m. (GEA), or ~10%, increase).

- External appearance: in addition to the formation of roof terraces across several levels of the building, there is a change to the external materials that are proposed at ground and first floor level to deliver a new "datum" level, which will be consistent with The Republic and multi-storey car park adjacent.

- Internal reconfiguration: revised floorplans now align with the new massing and structural layout, including revised lift core and riser design.

The MSCP (Plot N identified on 132255/JO/2021):

- Activation of ground floor and basement: increase in the basement area to provide a full basement comprising circa 450 cycle parking spaces, lockers, shower facilities, and active commercial uses that are physically linked to new ground floor areas. The ground floor now comprises additional commercial space and active frontage comprising 1,295 sq. m., as well as dedicated entrances for different uses within the building.

- Car parking alterations: redistribution of car parking and reduction in overall spaces (reducing from 581 spaces to 487 spaces in total) to reflect the inclusion of new active uses within the ground and basement levels. The provision of EV spaces has also increased, with 10% active provision and 10% passive provision on day 1 of opening, with a further 30% (50% in total) to be available for retrofit in the future in line with demand.

- External appearance: revised façade treatments are proposed to facilitate the inclusion of active ground floor uses, align with the emerging 'Mayfield datum' on adjacent buildings with a complementary brick palette, and better reflect history of the Mayfield area at the upper levels of the building by referencing patterns from the Calico Dye Works that formerly occupied the Site.

- Structural changes: alterations to the approved structural grid to simplify the method of construction and allow for demountable modular car park, which sits above a concrete two-storey plinth forming the basement and ground floors. This allows the plot's foundations to be reused and adapted in the future and could allow for a new building and use to established if the car park reached the end of its life, representing a potential future significant carbon saving.

- Plant, back of house and servicing: the building now has a full PV array at roof level to assist with EV charging, as well as including plant space for powering, heating, cooling, and ventilating the building's new commercial areas at roof level. This application also proposed revised locations for the security room, storage areas, servicing areas and back of house facilities..

The Republic (Plot M identified on 125248/FO/2019 (as amended):

- Massing: alterations to the southern elevation of the building and adjustments to the terrace areas to improve the southern aspect from a design perspective and occupier amenity, which results in an uplift in floorspace from 31,887 sq. m. to 32,989 sq. m. (GEA; 1,108 sq. m. or 3.5% increase). The new terraces align with the new structural grid solution to eliminate the need for structural transfer loads and minimising the embodied carbon.

- External appearance and materiality: alterations to the façade appearance which optimise the balance of solid and glazed elements to control solar gain to minimise operational carbon whilst maintaining occupier amenity. In addition, the choice of façade materials has been refined to minimise embodied carbon associated with the construction of the building.

- Internal layout and entrances: the internal layout of the building has been adjusted to create appropriately sized lobby areas to the office floors as well as more flexible retail and commercial space at ground floor, better able to respond to a range of potential high quality occupier requirements, and therefore better capable of supporting the placemaking objectives for the scheme. The core and entrance locations to the building at ground level have been repositioned to suit this revised internal layout.

1.12. The Site description and 5 ha site area, and the now completed Mayfield Park, as set out in the Approved EIA all remain consistent with the previously approved development and are therefore unchanged.

Phasing

1.13. Phase A (enabling works) and Phases F, G, H, and I (Mayfield Park) identified in the previously prepared Environmental Statements and Addendums have been completed as of September 2022. The remaining phases for the development are as follows:

- Phase B - London Road junction & temporary access road.
- Phase C – MSCP, public realm and associated works.
- Phase E - Baring Street Office 1, public realm, and associated works.
- Plot M – Baring Street Office 2, public realm, and associated works
- Phase D - Baring Street and associated highways and public realm.
- Phase X – temporary retention of Freight Island that is to be replaced at a later date.

1.14. Please refer to drawings 0343-SEW-ZZ-ZZ-DR-Z-001000 and MAY101-WSL-EXT-GIL-DR-7060-0129-S4-01 submitted with this Application, in addition to the phasing strategy and programme submitted and approved against Condition 3 (LPA Ref.: 132255/JO/2021), which highlights the phases of development.

Changes to Planning Policy

1.15. In July 2021, the National Planning Policy Framework (NPPF) was updated, representing a change to the policy context following submission of the Planning Application in October 2019 and approval in February 2020. At the heart of the 2021 revised NPPF lies the 'presumption' in favour of sustainable development, which supports proposals that are in accordance with policies in an up-to-date Development Plan. Sustainable development is about growth – making economic, environmental, and social progress for this and future generations.

1.16. There have been no changes to planning policy at the local level since the approval of the ES Addendum. The 2012 Manchester City Council Local Plan remains valid and unchanged. There have been no other updates to adopted planning policy and national guidance since the planning permission was granted that would change the conclusions of the ES work to date.

Alternatives to design

1.17. The alternatives and design evolution described in the ES work to date continues to have contributed to the proposed development. The amendments to the proposed development described in this Statement, which have occurred due to design refinement, provide a further update on the design evolution of the proposed development. The potential environmental effects of the amendments to the proposed development, and how these differ from the effects identified in the Approved ES and as updated in the subsequent ES updates, are reported in this document.

Review of cumulative schemes

1.18. Cumulative schemes for assessment were identified based on their proximity to the site, nature, and/or scale, and overall consent status. In line with good practice, major developments coming forward within 1km of the proposed development were identified as cumulative developments.

1.19. Since the submission of updates to the ES, there have been two new planning applications submitted in the local area and some schemes previously identified have now been completed as reflected in the updated cumulative scheme list included in Appendix A. It is considered that the cumulative schemes are broadly in line with the Approved development.

Characteristics of the Potential Effect of the Proposed Amendments

1.20. The EIA Technical Team confirms within this EIA Addendum that the proposed amendments would not result in any significant effects on the environment beyond the extent identified in the conclusions of the approved EIA.

1.21. Although the conclusions of the originally approved EIA remain broadly unchanged, this EIA Addendum is submitted in order to clarify the changes to the overall proposed development and the set out revised mitigation measures needed in order to reduce any potentially significant effects.

Introductory Chapters

1.22. The chapters that comprise the non-technical chapters of the original EIA are 1) Introduction; 2) EIA Methodology; 3) Site and Development Description; and 4) Consideration of Alternatives. This Statement reflects the changes as described above.

Construction Management and Phasing

1.23. In relation to the construction methodology set out in the approved ES and ES Addendums, there is no change to either Chapter 5 or supporting Technical Appendices 5.1, 5.1A, 5.2, 5.2A, as the broad construction methodology remains the same.

1.24. This information and construction methodology for the building plots will be refined through the condition discharge process, adding details regarding site-specific mitigation measures required to control the impact of the Proposed Development, as set out in Chapter 5, and cross-referenced in Chapters 6-15 as relevant.

Noise and Vibration

1.25. Buro Happold, the authors of the approved ES chapter, have reviewed the package of information relating to the proposed amendments to the design of the multi-storey car park (Plot N), Poulton office building (Plot O) and Republic office building (Plot M), including the proposed mitigation measures, and have confirmed that the conclusions of the original EIA will not change in relation to Noise and Vibration as a result. The baseline data included in the approved ES chapter is considered to remain valid and has been referred to as required during the review.

Construction Noise and Vibration

1.26. Regarding construction noise and vibration, the demolition and earthworks phases as previously assessed have now been completed which included all works associated with Mayfield Park. However, the proposed amendments indicate that, while the construction programme has been extended until the end of 2026, changes in phasing may lead to some activities overlapping that weren't originally considered; on this basis, a reassessment has been undertaken.

1.27. The primary consideration is noise from the on-site construction works. These remain largely unchanged from the approved ES chapter, consisting of piling, concreting and main build activities. While the main earthworks have been completed, it is understood that excavation works will be required in relation the basement floors of the buildings; on this basis, earthworks has also been included in the list of activities to account for these excavation works. In general, these will be undertaken sequentially on each of the three plots in turn; however, it is understood that the following overlapping works may be possible:

- Concreting on Plots N and O (MSCP and Poulton), and on Plots M and O (Republic and Poulton); and
- Main build on Plots N and O (MSCP and Poulton), and on Plots M and O (Republic and Poulton).

1.28. The assumptions previously used in the prediction of noise from these activities has been reviewed and revised where necessary. Noise from the four construction activities has been predicted at the nearest noise sensitive receptor, i.e., the student residences at Mill Point to the west of the Mayfield site. Where the overlaps as detailed above are considered, a correction has been applied to account for the associated plant being split across both plots.

1.29. A summary of the results can be found in Table 1 along with the worst-case effect significance for each type of works calculated using the same method as in the approved ES chapter, which remains current, as well as the corresponding effect significances from the approved ES chapter. Full calculations are provided in Appendix 6.1A. Note that the predictions take no account of any mitigation.

Table 1: Results of revised construction noise predictions and effect significance, pre-mitigation

Works	Predicted construction noise levels for works location (dB $L_{Aeq,T}$ façade)					Worst-case significance (pre-mitigation)	Worst-case significance from approved ES (pre-mitigation)
	Plot M (Republic)	Plot N (MSCP)	Plot O (MSCP)	Plots M+O	Plots N+O		
Earthworks	62	67	67	N/A	N/A	Minor adverse	Moderate adverse
Piling	59	64	64	N/A	N/A	Negligible	Negligible
Concreting	69	74	74	72	74	Moderate adverse	Moderate adverse
Main build	70	74	74	73	74	Moderate adverse	Moderate adverse

1.30. From Table 1, the pre-mitigation effect significance categories for the predictions associated with the proposed amendments are equal to or less than those included in the approved ES chapter.

1.31. As in the approved ES chapter, the use of Best Practicable Means (BPM) to control construction noise will be implemented to mitigate the potential effects, including site boundary fencing, the selection of quieter plant and equipment and localised screening/enclosures. Use of these measures is expected to reduce construction noise levels by a minimum of 5 dB. On this basis, the post-mitigation effect significance categories are presented in Table 2 below, along with the equivalent categories from the approved ES chapter.

Table 2: Results of revised construction noise predictions and effect significance, post-mitigation (minimum 5 dB reduction expected)

Works	Predicted construction noise levels for works location (dB $L_{Aeq,T}$ façade)					Worst-case significance (post-mitigation)	Worst-case significance from approved ES (post-mitigation)
	Plot M (Republic)	Plot N (MSCP)	Plot O (MSCP)	Plots M+O	Plots N+O		
Earthworks	57	62	62	N/A	N/A	Negligible	Minor adverse
Piling	54	59	59	N/A	N/A	Negligible	Negligible
Concreting	64	69	69	67	69	Minor adverse	Minor adverse
Main build	65	69	69	68	69	Minor adverse	Minor adverse

1.32. From Table 2, the post-mitigation effect significance categories for the predictions associated with the proposed amendments are equal to or less than those included the approved ES chapter, and therefore no significant effects are predicted from construction noise.

1.33. In terms of construction traffic, it is understood that due to the works that have already been completed, the typical number of construction vehicle arrivals per month for the future peak quarter in 2025 is 62% lower than the peak quarter for the programme included in the previously approved scheme. On this basis, construction traffic noise will be lower than is already consented and subsequently no significant effects are expected from this source.

1.34. Regarding construction vibration, the changes in phasing are not expected to change the results of the predictions or assessment included in the approved ES chapter. The original assessment stated that the only phase that may have the potential to result in significant vibration effects was the construction of Mayfield Park. As this has already been completed, no significant effects from construction vibration are expected for the remaining works.

Operational Noise and Vibration

1.35. As stated in the EIA Screening and Scoping Request submitted prior to this addendum, with respect to operational noise and vibration, none of the proposed design changes are expected to alter the conclusions of the original assessment, which concluded that no significant effects were expected from operation of the Proposed Development. Vehicle trip generation is anticipated to reduce due to the proposed amendments and therefore the original assessment of road traffic noise is considered robust. The likely worst-case noise levels from commercial units as assessed are not expected to be materially altered due to the changes to the scheme. The target noise levels for plant noise egress as defined remain valid in terms of the effective control of noise from this source. Therefore, the reassessment of operational noise and vibration has been scoped out of this addendum. A summary of the residual noise and vibration effects is presented in Table 3 below.

Table 3 Summary of residual effects relating to noise and vibration

Effect	Approved 2019 ES chapter (and subsequent ES addendum)	2023 amendments ES addendum residual effects	
	Effect significance (after mitigation)	Further supplementary mitigation	Effect significance
Demolition and construction			
Construction noise at nearest sensitive receptor – earthworks (worst-case individual plots)	Minor adverse, temporary	None required	Negligible
Construction noise at nearest sensitive receptor – piling (worst-case individual plot)	Negligible	None required	Negligible
Construction noise at nearest sensitive receptor – concreting (worst-case overlapping plots)	Minor adverse, temporary	None required	Minor adverse, temporary
Construction noise at nearest sensitive receptor – main build (worst-case overlapping plots)	Minor adverse, temporary	None required	Minor adverse, temporary
Construction vibration at nearest sensitive receptor –	Minor adverse, temporary	None required	Minor adverse, temporary

Effect	Approved 2019 ES chapter (and subsequent ES addendum)	2023 amendments ES addendum residual effects	
	Effect significance (after mitigation)	Further supplementary mitigation	Effect significance
earthworks (building preparation)			
Construction vibration at nearest sensitive receptor – piling	Negligible	None required	Negligible
Construction vibration at nearest sensitive receptor – concreting	Negligible	None required	Negligible
Construction vibration at nearest sensitive receptor – main build	Negligible	None required	Negligible
Operation			
Noise ingress	Negligible	None required	Negligible
Commercial noise egress	Negligible	None required	Negligible
Plant noise emissions	Negligible	None required	Negligible
Operational traffic noise	Negligible	None required	Negligible

Traffic and Transport

1.36. There are no significant changes in transport terms to the existing baseline conditions described in the original (2019) ES chapter. The future baseline set out in the 2019 ES assumed that the consented Phase 1 development would be complete in its entirety by 2023.

1.37. Phase 1 includes Mayfield Park, three buildings (Plots M, N and O) and associated highway works. Mayfield Park is now complete, and the three buildings have been constructed to the point of site remediation, installation of drainage infrastructure and undertaking initial piling works.

1.38. However, given the on-going design development of the three buildings and proposed changes to the scale and massing of these buildings, the construction phasing programme has been extended to allow for these buildings to be delivered. The anticipated opening year for these buildings is 2027.

1.39. It is considered that 2027 future baseline flows would not be significantly different to 2023, considering the following:

- No additional cumulative schemes have been identified

- There are aspirations / policies in place to reduce vehicle trips in Manchester city centre with the Manchester Active Travel Strategy aiming to reduce the city centre car mode share from 21% in 2019, to 18% in 2025 and 10% in 2040.

- A reduction of 94 spaces is proposed in the multi-storey car park, which would significantly reduce Phase 1 vehicle trips from that assessed as part of the 2019 ES.

1.40. The future baseline traffic conditions assessed in the 2019 ES are therefore considered to remain valid and is in the process of being discussed with TfGM and formalised through this EIA Scoping process.

Construction Effects

1.41. The construction phasing assessed previously in the 2019 ES assumed that the entire Phase 1 development would be constructed at the same time, with completion in previously anticipated in 2023. Mayfield Park is now complete and operational, and the three buildings have been constructed to the point of site remediation, installation of drainage infrastructure and undertaking initial piling works.

1.42. Given the on-going design development of the three buildings and proposed changes to the scale and massing of these buildings, the construction phasing programme has been extended to suit and the anticipated opening year for these buildings is 2027.

1.43. The revised construction vehicle forecast shows that the peak construction year (2021) remains unchanged from than assessed previously in the 2021 ES Addendum, but the peak construction vehicle forecast is around 55% less given that the demolition, earthworks, and site remediation works have already been completed.

1.44. Table 4 shows the revised forecast number of construction vehicles based on this change in construction phasing.

Table 4 Change in Provisional Forecast of Construction Vehicles

Period		2021 ES Addendum		2023 ES		Change	
		Typical Vehicle Arrivals Per Month	Per Hour	Typical Vehicle Arrivals Per Month	Per Hour	Typical Vehicle Arrivals Per Month	Per Hour
2020	Q1	0	0	0	0	0	0
	Q2	0	0	0	0	0	0
	Q3	102	0	48	0	-54	0
	Q4	646	2	342	1	-304	-1
2021	Q1	1143	4	481	2	-663	-2
	Q2	1053	4	484	2	-569	-2
	Q3	732	2	351	1	-381	-1
	Q4	496	2	270	1	-227	-1

Period		2021 ES Addendum		2023 ES		Change	
		Typical Vehicle Arrivals Per Month	Per Hour	Typical Vehicle Arrivals Per Month	Per Hour	Typical Vehicle Arrivals Per Month	Per Hour
2022	Q1	309	1	94	0	-215	-1
	Q2	287	1	0	0	-287	-1
	Q3	298	1	0	0	-298	-1
	Q4	158	1	0	0	-158	-1
2023	Q1	-	-	0	0	0	0
	Q2	-	-	0	0	0	0
	Q3	-	-	0	0	0	0
	Q4	-	-	0	0	0	0
2024	Q1	-	-	33	0	33	0
	Q2	-	-	37	0	37	0
	Q3	-	-	123	0	123	0
	Q4	-	-	107	0	107	0
2025	Q1	-	-	232	1	232	1
	Q2	-	-	430	1	430	1
	Q3	-	-	419	1	419	1
	Q4	-	-	266	1	266	1
2026	Q1	-	-	189	1	189	1
	Q2	-	-	108	0	108	0
	Q3	-	-	76	0	76	0
	Q4	-	-	11	0	11	0

1.45. Therefore, the assessment of construction effects set out in the 2019 ES is robust and the conclusions remain valid.

Operational Effects

1.46. The resultant net change in trip generation by mode, because of the changes described in this Statement, is set out in Tables 5 and 6.

Table 5 Net Change in Trip Generation by Mode

Mode	AM Peak (08:00-09:00)			PM Peak (17:00-18:00)			Daily		
	In	Out	Total	In	Out	Total	In	Out	Total
Car	-39	-4	-43	-3	-37	-40	-198	-197	-395
Car Passenger	4	0	4	0	4	4	19	19	38
Taxi	1	0	1	0	1	1	3	3	6
Bus	30	5	35	7	32	39	191	190	380
Tram	28	6	34	9	30	39	191	190	382
Rail	9	2	11	3	10	13	64	64	127
Pedestrians	45	31	76	49	63	111	567	566	1,133
Cycle	4	1	5	1	4	5	25	25	51
Motorbike	1	0	1	0	1	1	6	6	13
Total	83	41	123	66	107	173	868	866	1,734

Table 6 Net Change in Vehicle Trips by Mode

Mode	AM Peak (08:00-09:00)			PM Peak (17:00-18:00)			Daily		
	In	Out	Total	In	Out	Total	In	Out	Total
Trip Gen	-37	-4	-41	-3	-35	-38	-189	-188	-377
Servicing	2	2	3	0	0	0	18	18	35
Total	-36	-2	-38	-3	-35	-37	-171	-170	-342

1.47. Given the reduction in vehicle trip generation, the assessment of the operational effects set out in the 2019 ES are robust and the conclusions remain valid.

Air Quality

Policy Context

1.48. A review of the policy context has shown that the following national and regional policy guidance documents have been updated since the original 2019 ES chapter and 2021 ES Addendum.

The Environmental Targets (Fine Particulate Matter) Regulations 2023 (HM Government, 2023)

1.49. The Environmental Targets (Fine Particulate Matter) Regulations 2023 sets out a new $PM_{2.5}$ concentration target, fulfilling the legally binding duty outlined in the Environment Act (Part 1). The new target aims to achieve a maximum annual average $PM_{2.5}$ concentration of 10µg/m^3 across England by 2040.

Manchester Air Quality & Planning Technical Guidance (Manchester City Council, 2022)

1.50. The Air Quality & Planning Technical Guidance aims to provide help and advice about air quality in a planning context to encourage good practice and mitigate potential impacts. The guidance outlines what is expected in relation to the current guidance and policy with the aspiration that new developments achieve the highest possible standards without compromising the health and well-being of people that live and work within the City of Manchester. The approach set out within this document is based on guidance provided by Environmental Protection UK and the Institute of Air Quality Management.

Greater Manchester Clean Air Plan (GMCA, 2022)

1.51. The ten Greater Manchester (GM) local authorities have been instructed by the government to bring NO_2 pollution levels within legal limits through a Clean Air Plan (CAP), featuring a GM-wide category C charging Clean Air Zone (CAZ). Despite the CAZ not being approved in the first phase, a new CAP without charging CAZ has been submitted and is due to undergo consultation in early 2023.

1.52. Since 2018, GM has carried out a separate air quality monitoring survey for the launch of the CAP, consisting of 222 non-automatic monitoring sites. Together with LAQM monitoring (20 automatic and 446 non-automatic monitors), the two monitoring schemes provide a more thorough picture of the air quality condition across GM.

Baseline Conditions

1.53. An overview of baseline conditions was presented in the 2019 ES chapter, this included monitoring data up to 2018. Since then, MCC have deployed additional air quality monitoring stations, to inform both the Local Air Quality Management (LAQM) process and the CAZ scheme. Updated monitoring site locations (see **Figure 1**) have therefore been reviewed and most recently published results are presented in and **Table** 7.

1.54. 2019 is the most relevant year for establishing baseline conditions as this is the most recent year with fully ratified data that has not been impacted by the COVID-19 pandemic. The restrictions imposed in response to the COVID-19 pandemic, in addition to the changes in travel patterns and industrial processes, significantly impacted pollutant concentrations making monitoring results from 2020 and 2021 atypical from previous years. Therefore, the baseline assessment assumes 2019 to be the most representative year of typical baseline conditions.

1.55. Five monitoring sites are within 10m of the proposed site boundary; hence data collected by these sites could better represent the onsite air quality condition. Apart from site MAN-J6, which has not been operating since 2020, the annual average NO_2 concentration at all remaining monitoring sites in immediate proximity to the proposed development exceeded the national Air Quality Objective (AQO) level (40µg/m^3), which suggests that the onsite NO_2 level is likely to exceed this air quality objective at roadside locations.

1.56. Despite the considerable decrease in NO_2 annual average concentrations in 2020 due to the impacts of the COVID-19 pandemic detailed above, most monitoring sites witnessed increases in NO_2 concentrations in 2021, owing to the lifting of COVID-19 restrictions.

1.57. Compared to the data from monitoring sites along major roads (A635 Mancunian Way and A6 Downing Street/Ardwick Green South), lower NO_2 concentrations are collected by the three monitoring sites located in residential areas that are away from major roads (MA72NO, MANJ4, and MAN-J3). This highlights the correlation between distance from major roads and pollution concentrations.

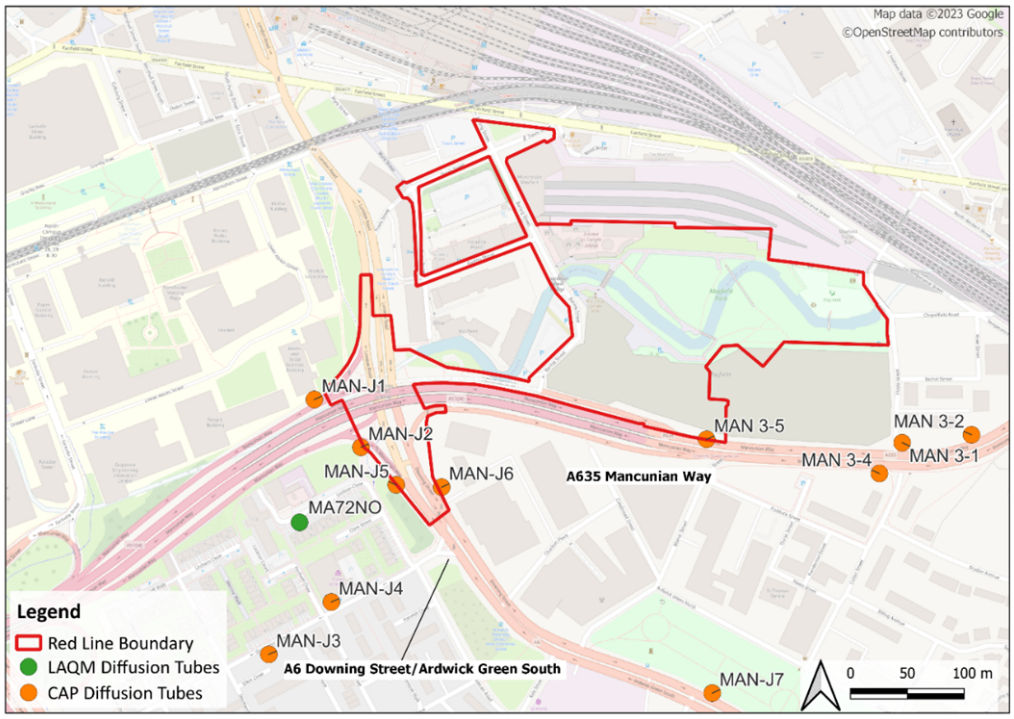


Figure 1 Local authority monitoring sites in proximity to the proposed development

Table 7 2017-2019 monitoring results from local authority monitoring sites in proximity to the proposed development

Site ID	Distance from the site (m)	Site classification	Annual average NO_2 concentration ($\mu g/m^3$)				
			2017	2018	2019	2020	2021
MAN 3-5	0	Roadside	-	**45.3**	**41.6**	31.3	37.8
MAN-J5	1	Roadside	-	-	**46.9**	28.4	31.2
MAN-J2	2	Roadside	-	-	**49.5**	32.9	32.7
MAN-J6	3	Roadside	-	-	-	32.2	33.8
MAN-J1	10	Roadside	-	-	**42.7**	26.9	29.9
MAN 3-1	86	Roadside	-	**41.3**	39.2	29.0	31.7
MA72NO	89	Urban Background	34.6	33.4	32.8	24.5	27.5
MAN 3-4	113	Roadside	-	**50.1**	**43.9**	33.5	37.3

Site ID	Distance from the site (m)	Site classification	Annual average NO_2 concentration ($\mu g/m^3$)				
			2017	2018	2019	2020	2021
MAN 3-2	107	Roadside	-	37.1	36.2	27.1	29.3
MAN-J4	109	Roadside	-	-	-	22.1	25.6
MAN-J3	181	Roadside	-	-	-	21.7	24.8
MAN-J7	282	Roadside	-	-	**51.6**	29.8	33.7

Notes: Exceedances of the NO_2 annual mean AQO of 40 $\mu g/m^3$ are shown in **bold**. NO_2 annual means more than 60 $\mu g/m^3$, indicating a potential exceedance of the NO_2 hourly mean AQO are shown in **bold and underlined**

1.58. There are two automatic monitoring sites within 1km of the site, as presented in **Figure 2**. Similar to the monitoring results collected by diffusion tubes, NO_2 concentrations at both automatic sites reached their lowest level in 2020, primarily due to the traffic flow reduction as a result of the COVID-19 pandemic, followed by slight NO_2 concentration increases in 2021, owing to the lifting of virus containment restrictions. For both sites, the number of short-term AQO exceedances is well below the maximum 18 instances, and continued to reduce or remain at 0 since 2017. Therefore, the hourly average NO_2 level is unlikely to exceed the short-term AQO.

1.59. The annual average PM_{10} concentrations at the two automatic monitoring sites have been within the AQO level (40$\mu g/m^3$) in the last five years (**Table 9**). No short-term PM_{10} exceedance has been recorded at the two sites, apart from one instance at MAN 3 in 2017. The annual average $PM_{2.5}$ levels at both sites over the recent five years are well below the relevant AQO of 20$\mu g/m^3$ (**Table**). Therefore, no further concerns result from baseline levels of PM_{10} and $PM_{2.5}$.

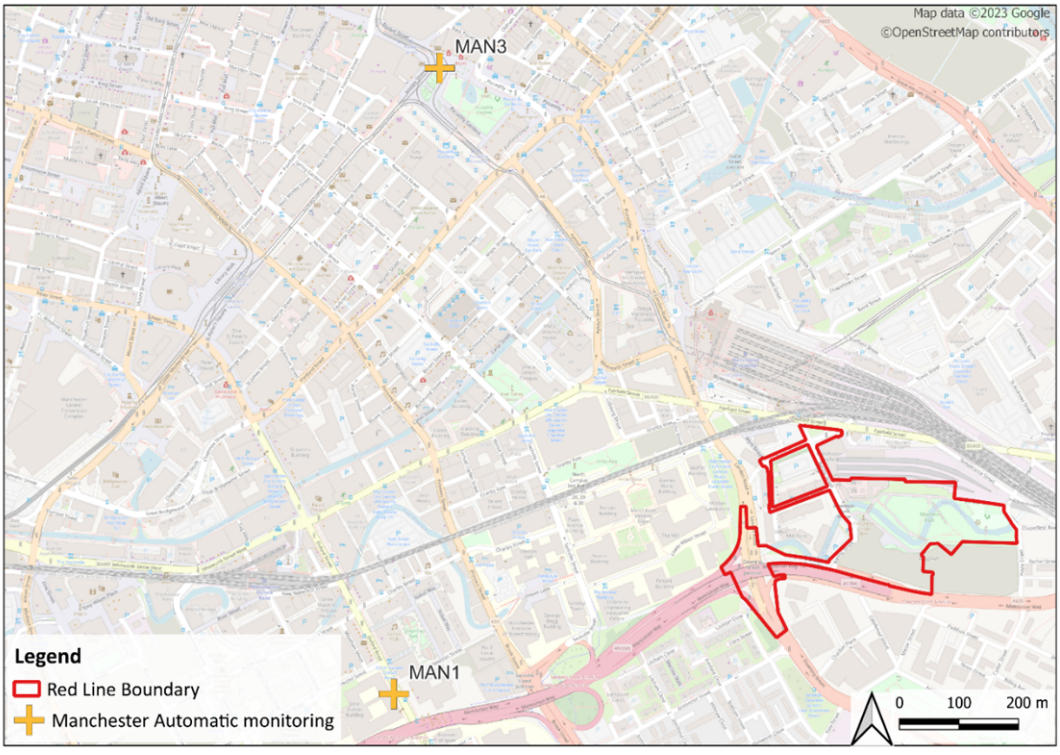


Figure 2 Location of automatic monitoring sites in proximity to the proposed development

Table 8 Annual average NO_2 concentrations and the number of 1-hour mean NO_2 exceedance at the two automatic monitoring sites in proximity to the proposed development

Monitoring sites	Distance from the site (m)	Annual mean NO_2 concentration (µg/m3)					Number of 1-hour mean NO_2 exceedances >200 µg/m3 (18 allowable)				
		2017	2018	2019	2020	2021	2017	2018	2019	2020	2021
MAN 1	590	**65**	**62**	59	36	44	6	2	1	0	0
MAN 3	853	36	35	36	27	30	1	0	0	0	0

Notes: Exceedances of the NO_2 annual mean AQO of 40 µg/m^3 are shown in **bold**. NO_2 annual means in excess of 60 µg/m^3, indicating a potential exceedance of the NO_2 hourly mean AQO are shown in **bold and underlined**

Table 9 Annual average PM_{10} concentrations and the number of 24-hour mean PM_{10} exceedances at the two automatic monitoring sites in proximity to the proposed development

Monitoring sites	Annual mean PM_{10} concentration (µg/m^3)					Number of 24-hour mean PM_{10} exceedances >50 µg/m^3 (35 allowable)				
	2017	2018	2019	2020	2021	2017	2018	2019	2020	2021
MAN 1	20	21	20	15	15	0	0	0	0	0
MAN 3	13.4	14.2	14.2	11.9	12	1	0	0	0	0

Table 10 Annual average $PM_{2.5}$ concentrations at the two automatic monitoring sites in proximity to the proposed development

Monitoring sites	Annual mean $PM_{2.5}$ concentration (µg/m^3)				
	2017	2018	2019	2020	2021
MAN 1	7.6	8.1	-	-	6.3
MAN 3	8	11	12	8	9

Defra-modelled background concentrations of the OS grids at which the proposed development is located are presented in

1.60. Table . For the new baseline year (2019), the modelled background air pollution concentrations are below relevant AQOs. They are lower than the previously adopted 2017 background concentrations, due to the effects of air quality-focused policies and regulations, as well as the change in national fleet composition.

Table 11 Defra mapped 2019 background concentrations of NO_2, PM_{10}, and $PM_{2.5}$.

Pollutant	2019 Annual mean background concentrations (µg/m^3)	
	OS grid centred at (384500, 397500)	OS grid centred at (385500, 397500)
NO_2	28.2	24.6
PM_{10}	14.4	13.1
$PM_{2.5}$	9.1	8.6

Construction Effects

1.61. The construction dust assessment carried out in the original air quality ES chapter identified that the site represents a high risk in terms of potential dust soiling impact. Mitigation measures were subsequently recommended for implementation to minimise construction dust and emissions to ensure that any residual impact would be not significant. The proposed scheme changes would not materially affect this construction dust assessment; therefore, the construction dust assessment and associated mitigation measures remain fit for purpose and no further assessment is required.

1.62. Owing to a lack of construction traffic data, the impact from construction traffic was not assessed quantitatively for the original ES chapter. Construction traffic data was produced to inform the subsequent 2021 addendum, which indicated a maximum increase in annual average daily traffic of 23 heavy duty vehicles (HDVs) per day, below the IAQM screening threshold for proceeding to a detailed assessment of 25 HDVs per day.

1.63. In accordance with the transport assessment, the revised construction traffic indicates that there will be a reduction in construction traffic of around 55%. given that the demolition, earthworks and site remediation works have already been completed. The impact from construction traffic can therefore be screened out as not significant.

Operational Effects

1.64. The original air quality ES chapter included a detailed modelling study to assess the impact from operational traffic generated by the proposed development. The study predicted that there would be a slight adverse impact at nine considered receptor locations, and a slight beneficial impact at six receptor locations, concluding that overall the impact from traffic generated would be not significant. In accordance with the transport, as there is likely to be a reduction in vehicle trip

generation as a result of the proposed amendments, it is considered that the conclusions of the original air quality ES chapter remain valid, and assessment of operational traffic emissions is to be scoped out of the ES addendum.

1.65. Owing to the lack of sensitive use proposed on site, the original ES chapter did not consider onsite exposure to poor air quality. Nonetheless in order to comply with current best practice, and owing to the high roadside pollution levels identified in the updated baseline review, it is recommended that a detailed study of the exposure to future site users to poor air quality and any recommended mitigation measures should be considered at the detailed design stage.

Bibliography:

GMCA, 2022. Greater Manchester Clean Air Plan. https://cleanairgm.com/clean-air-plan/

HM Government, 2023. The Environmental Targets (Fine Particulate Matter) (England) Regulations 2023. https://www.legislation.gov.uk/uksi/2023/96/contents/made

Manchester City Council, 2022. Manchester Air Quality & Planning Technical Guidance. https://www.manchester.gov.uk/download/downloads/id/28690/air_quality_and_planning_guidance.pdf

Ecology

1.66. Buro Happold, the authors of the original ecology chapter contained in the December 2019 ES and subsequent 2021 ES addendum, has reviewed the previous conclusions in light of the proposed changes set out in paragraph 1.15 and supporting information in order to quantify the effect of the proposals.

1.67. The approved ES chapter concluded that two positive residual effects were identified: the creation of the Mayfield Park and the improvements to the River Medlock corridor, both of which will provide habitats to support a number of local and UK biodiversity priority species including bat, bird and invertebrate species. The following 2021 ES Addendum concluded that there was no material change to the 2019 ES residual effects as a result to the amendments of the Park design, and so the positive residual effects were still considered likely.

1.68. The proposed amendments to be assessed as part of this ES Addendum include updates to the proposed buildings that form the Plot N and O areas of the Phase 1 Application 1 and the Plots M, N and O that are included in the Application 2 area of the site. Areas of proposed landscaping have been included within plots and the associated public realm, as well as consideration of further biodiversity enhancements that the plots may be able to deliver.

Assessment approach

1.69. The methodology for the assessment remains unchanged from that used and set out in the original 2019 EIA. There have been no changes to the assessment limitations since the original 2019 EIA. The baseline data used for this assessment remains consistent with the original EIA.

1.70. The Phase 1 area now comprises a site that is partially complete with the Park built out and fully operational. The areas of the plots associated with Phase 1, and wider across the area to the south of the Park, have been cleared and remediated as required. The area was used as a compound and site office area whilst the Park was under construction, but they are now largely vacant as a site prepared for future construction. This has resulted in the removal of vegetation across the Phase 1 site from the 2019 baseline, but also the installation of the vegetation associated with the new Park, alongside the provision of further habitat features such as bird and bat boxes.

1.71. Despite these recent changes to the site, the assessment baseline (2017) referred to in the original 2019 EIA remains the baseline for this EIA addendum as it represents the baseline ecological conditions prior to any development intervention on the site associated with the Mayfield

proposals and is directly relevant for the continuation of the Phase 1 assessment in the context of the 2019 ES. The inclusion of the Park, as a 'future baseline' consideration was not assessed in such a way to account for a completed Park during plot construction in the 2019 ES as the phasing has since been amended to allow for the Park to be delivered in a single phase. Therefore, the potential for construction impacts to the now established Park will be reassessed here to update the future baseline assessment presented in 2019.

Legislation and Policy

1.72. As part of this ES addendum, a review of Manchester local plans and policies has been undertaken to identify any additional policies that have been implemented since the 2019 ES and the 2021 ES addendum. Those found to be relevant to ecology, biodiversity and/or green infrastructure are summarised below and considered within the context of this addendum.

Biodiversity Strategy 2022-2030[1]

1.73. An updated 10-year biodiversity strategy has been developed by Manchester City Council with the support of the Lancashire Wildlife Trust. The over-riding ambition is to improve places for nature across Manchester. The strategy lays out objectives and priorities as well as key priority actions.

Objective 1 -Managing and understanding biodiversity

1.74. Key Priorities:

- A Nature Recovery Network Strategy, which is contextualised for the urban character of Manchester, must be developed for Greater Manchester. This should guide the focus of all future habitat management work.
- All priority wildlife sites must be in active management by 2030.
- Key indicator species must be identified and action plans for each key indicator species written. These action plans should sit alongside the Nature Recovery Network Strategy to guide any habitat management work across the Recovery Network. Key indicator species will also need to be recorded regularly to measure our impact.

Objective 2 - Involving people

1.75. Key Priorities:

- Find creative ways to connect and involve new audiences with nature and the natural environment in Manchester.
- The Manchester Biodiversity Action Group (MBAG) must support and empower local communities to take meaningful action for nature in the city.
- Land managers and practitioners in the city must be provided with the necessary knowledge and skills to protect and recover biodiversity.

Objective 3 – Planning, policy and partnerships

1.76. Key Priorities:

- Biodiversity should be embedded into Manchester City Council's policies to help protect and enhance nature.

[1] https://democracy.manchester.gov.uk/documents/s35928/Appendix%201%20Biodiversity%20Strategy.pdf

- Strong working relationships must be established with partners delivering against climate change, health and wellbeing, and air quality to ensure new and effective collaboration in the city.

- Long-term funding opportunities for the recovery of nature in Manchester must be identified, particularly through the planning and development process.

Likely Significant Effects

Demolition and Construction Effects

1.77. It was considered in the original EIA that the proposals had the potential to result in a number of significant adverse effects on habitats within or close to the site and the species which utilise the site for breeding, resting and/or foraging. The identified effects included:

- Habitat loss to the River Medlock and of higher value habitats on site, including semi-improved neutral grassland;

- Damage and disturbance from noise/ vibration, lighting, dust, and run-off during demolition and construction to retained habitats including the broadleaved woodland and River Medlock;

- Potential spread of Schedule 9 listed (WCA) invasive non-native species;

- Destruction of bat roosts and the potential for killing and injury of bats;

- Loss of foraging habitat for bats and indirect impacts to retained roosts and foraging areas from noise/ vibration, light, dust and run-off during demolition and construction; and

- Severance of commuting routes from retained bat roosts elsewhere on site due to habitat loss and/ or night-time construction lighting.

1.78. The original EIA also identified intermediate year construction effects due to the phased programme of works to deliver the Park and development plots associated with Application 1 and Application 2. Whilst the phasing of the development has changed to deliver the Park in a single phase, the previously highlighted intermediate year construction effects are now relevant in terms of the potential for impacts from plot construction on the completed Park, rather than on a completed phase of the Park or considering concurrent construction of both.

1.79. Habitats associated with the development plots have already been removed as part of the remediation works of the site and utilising the plot area for compounds. Therefore, further habitat loss is not considered likely. Potential construction impacts associated with the plot development include specifically, by receptor:

- Completed Mayfield Park and improved River Medlock corridor - Damage and disturbance from noise/vibration, lighting, dust and run-off during construction.

- Retained and new bat roosting and bird nesting features - Damage and disturbance from noise/vibration, lighting, dust and run-off during construction.

1.80. The amendments to the proposed development are not considered to result in a material change in the assessment of the significant effects of the demolition and construction phases of the proposed development. Therefore, the effects outlined in the 2019 EIA and 2021 addendum remain accurate.

Operational Effects

1.81. The most significant operational effects from both the 2019 EIA and 2021 addendum were moderate beneficial impacts to the River Medlock as a result of the naturalisation of the river corridor and the beneficial impacts of the new Park soft landscaping on local fauna including bats, birds and invertebrates.

1.82. No likely adverse significant effects were considered as a result of the operation of the Park, including the operation of the plots once they are in use. Whilst the plots will increase human presence on the site and will have associated public realm lighting, the already highly urban nature of the site and Park means that species occurring within the Park and wider area are likely to be already urban adapted and more resilience to associated disturbance.

1.83. The Park is also designed to maintain space between the network of footpaths and native habitats, including the river, reducing disturbance area where fauna species are more likely to be utilising the habitats in the Park.

1.84. The development plots are set back from the Park, and none immediately border the edge of the Park, with public realm, including planting, creating a space between the Park edge and built development. This supports the reduction in potential impacts from the buildings such as noise associated with plant, cars using the MSCP and potential light spill from the public realm as well as out of the buildings themselves. Detailed lighting designs for the public realm area will be produced, and the design will incorporate consideration of maintaining the existing lighting conditions within the Park to protect ecological features.

Biodiversity net gain

1.85. The original EIA was supported by biodiversity net gain (BNG) calculations using version 2.0 of the Biodiversity Metric, which was the most up to date version of the metric available at the time of the design process supporting the original planning submission. Updated BNG calculations have been undertaken to support the 2021 and this EIA addendum and to provide an updated assessment of habitat value change as a result of the Park and incorporating landscaping design into the plots and associated public realm area.

1.86. Detailed calculations are provided in an Updated Ecology Strategy, which is included within Appendix 9.1A.

1.87. As with the original EIA, two sets of calculations have been undertaken for the amended proposed development design. The first demonstrates how the Park and plots deliver BNG for Phase 1 in isolation, comparing the pre- and post-development habitats and subsequent BNG delivered by this application alone in the advent that future phases of the Mayfield SRF do not come forward. The second calculation supports the delivery of BNG across the wider Mayfield site and the core development area within the Mayfield Strategic Development Framework, working on the assumption that the majority of the recorded habitats in 2017 will be lost.

1.88. The updated calculations identify that the Park and plot design continues to provide a substantial BNG for Phase 1 in isolation. The calculations also identify that the Park and Phase 1 plots do not deliver a net gain for the wider SRF by itself, and so the future plots across the SRF area, and areas proposed for hard and soft landscaping will need to consider habitat contributions to support BNG across the wider site. It is considered that given the areas of the future phases and plots that this should be achievable whilst making use of built landscaping techniques including green roofs and green walls.

1.89. There are currently no detailed designs available to support the production of BNG calculations for these future development plots and work will continue to identify ways in which these can support biodiversity improvements as proposals are brought forward. A summary of the pre and post development BNG scores are presented in Table 12.

Table 12 Summary of the pre and post development BNG scores

Application	Calculation area	Post-Development Biodiversity Units		Pre-Development Biodiversity Units	Change in Biodiversity Units	Change in Biodiversity Units
Update EIA Addendum Park design (2021)	Wider Mayfield site	11.89	minus	13.25	=	-1.36
	Phase 1 site	11.60		5.90	=	+5.70

Mitigation Measures

Demolition and Construction Mitigation

1.90. The mitigation measures set out in the 2019 EIA remain valid to mitigate the potential impacts summarised previously, and no further supplementary mitigation measures for the demolition and construction activities relating to the amended proposed development are required. The proposed mitigation measures are summarised in the Updated Residual Effects and Conclusions section below.

Operational Mitigation

1.91. The amendments to the proposed development are not considered to result in a material change in the assessment of the significant effects of the operational phase of the proposed development. The potential for impacts from the plots on the Mayfield Park was previously assessed and it is considered that the previous conclusions made in the 2019 EIA remain valid.

1.92. The Park, in combination with the landscaping associated with the plots, will deliver a 97% net gain in biodiversity value for Phase 1 when considering both Application 1 and Application 2, for which the original EIA was undertaken. Therefore, the effects following the application of mitigation outlined in the original EIA remain accurate.

1.93. In addition, habitat features have been included within the detailed design of the Park, which mitigated for removal of features for species as part of the works, such as crevices for roosting bats, as well as to provide additional enhancements to support the Park in providing improved ecological resource for species in Manchester. The plots represent the first built development in Mayfield and the opportunity to provide further enhancement features for species that are typically associated with features in buildings. Therefore, across the three buildings of the Phase 1 plots, up to 30 swift nesting boxes will also be provided on the north and northeast elevations which face the Park.

1.94. It is considered therefore that the development also continues to provide a moderate beneficial effect for local species including bats, birds, and invertebrates. Details of the habitat features included within the Park, design are provided within the Updated Ecology Strategy in Appendix 9.1A. Details of the swift nesting boxes will follow further detailed design to ensure the correct type of box is selected and positioned in the correct place in relation to each building and its construction and façade type. This detail should be secured through a planning condition.

Residual Effects

1.95. A summary of the residual effects anticipated as a result of the amendments to the proposed development design is provided in Table .

1.96. It should be noted that the residual impacts for the Application 1 and Application 2 development are not considered to have materially changed as a result of the amendments to the Park design. However, due to potential impacts to the wider SRF, the design of future development plots across the SRF should seek to retain and protect more valuable habitats, in line with the mitigation hierarchy where possible, and create habitats of value for biodiversity to contribute to biodiversity net gain for the SRF as a whole.

1.97. Additional habitat provision within the developed plots included within this assessment has not been included at this stage due to the absence of detailed designs. As these details are developed, they should be added to the biodiversity metric calculations, as provided within the Updated Ecology Strategy, to contribute to the net gain delivered by Phase 1 and to further support BNG delivery across the wider SRF.

Table 13 Summary of residual effects relating to ecology

Ecological feature	Description of effect	Approved 2019 ES chapter (and subsequent ES addendum)	2021 park amendments ES addendum residual effects	
		Effect significance (after mitigation)	Further supplementary mitigation	Effect significance
Demolition and construction				
The River Medlock	Habitat loss in Application 1	Moderate beneficial	None required	Moderate beneficial
	Damage and disturbance from noise/vibration, lighting, dust and run-off during demolition and construction of Application 1 and Application 2	Negligible	None required	Negligible
	Potential spread of Schedule 9 (WCA) INNS in Application 1	Negligible	None required	Negligible
Broadleaved woodland	Damage and disturbance from noise/vibration, lighting, dust and run-off during demolition and construction of Application 1 and Application 2	Negligible	None required	Negligible
Semi-improved neutral grassland	Loss of habitat in Application 1	Negligible	None required	Negligible
Roosting, and foraging and commuting bats	Loss of roosts in Application 1. Destruction and potential for killing or injury of bats	Negligible	None required	Negligible

Ecological feature	Description of effect	Approved 2019 ES chapter (and subsequent ES addendum)	2021 park amendments ES addendum residual effects	
		Effect significance (after mitigation)	Further supplementary mitigation	Effect significance
	Indirect impacts from noise/vibration, light, dust and run-off during demolition and construction in Application 1 and Application 2.	Negligible	None required	Negligible
	Loss of foraging and commuting habitat across the site in Application 1	Negligible	None required	Negligible
Breeding birds	Possible killing and injury of birds, by the destruction of active nests in Application 1	Negligible	None required	Negligible
Completed phase of Mayfield Park and improved River Medlock corridor (future receptor)	Damage and disturbance from noise/vibration, lighting, dust and run-off during demolition and construction in Application 1 and Application 2	Negligible	None required	Negligible
Operational				
River Medlock, Mayfield Park and habitats used by fauna of conservation value	Impacts from noise, human disturbance and lighting from Application 1 and Application 2	Negligible	None required	Negligible
Roosting, and foraging and commuting bats	Impacts from noise, human disturbance and lighting from Application 1 and Application 2	Negligible	None required	Negligible
	Biodiversity enhancements in Application 1	Moderate beneficial	None required	Moderate beneficial
Local fauna including black redstart, generalist birds and invertebrates	Impacts from noise, human disturbance and lighting from Application 1 and Application 2	Negligible	None required	Negligible

Ecological feature	Description of effect	Approved 2019 ES chapter (and subsequent ES addendum)	2021 park amendments ES addendum residual effects	
		Effect significance (after mitigation)	Further supplementary mitigation	Effect significance
	Biodiversity enhancements in Application 1	Moderate beneficial	None required	Moderate beneficial

Ground Conditions

1.98. The approved (2019) ES chapter and subsequent ES Addendums conclude that the residual impact of the Proposed Development during both the construction and operational phases will not be significant provided that:

- Appropriate hazard identification and risk assessment of potential contamination and ground gas are undertaken as part of the site works to confirm baseline conditions;
- Mitigation measures are reviewed and adopted based on site observations during the works; and
- Good practice procedures are adhered to in both construction and health and safety during remediation and site development.

1.99. Based on the 2023 baseline conditions, which are now more widely understood through extensive ground investigations, the required mitigation measures have been reviewed and set out in detailed Site Investigation results and Remediation Strategies for the site. Good practice measures are also set out in a Construction Management Plan, relating to the enabling/construction phase of the works to protect against the risk of contaminant pathways.

1.100. Information from the 2021/2022 ground investigations has not identified any significant ground constraints that might render the site unsuitable for the proposed development. The presence of Made Ground presents minor potential impacts on the construction phase but an overall improvement for the operational phase of the proposed development due to clean cover (hardstanding and soft landscaping build ups).

1.101. The risks during construction can be adequately managed (through industry recognised standards and best practice measures), and so the redevelopment of the site is unlikely to generate any significant ground conditions (including groundwater) related environmental effects. The risks can also be adequately managed so as not to cause unacceptable harm to human health, the built environment, ecology, or controlled waters. As such, it is considered that the risks and resultant effects are sufficiently well understood and that based on the information currently available, it is likely that the residual effects associated with ground conditions and groundwater would be negligible.

1.102. It is therefore considered that the proposed changes to the development will not change the assessment of the baseline conditions, receptors or significant impacts during the construction or operation of the plots within the site boundary.

1.103. As such, the additional work undertaken since planning permission was granted ensures that, with all mitigation measures in place, no significant impacts to human health or environmental receptors are expected to arise from the ground conditions at the site. Based on this information, given that the baseline position of the site has not substantially changed since 2019 and that significant effects are unlikely, it is considered that ground conditions can be scoped out of this ES Addendum.

Water Resources and Flood Risk

1.104. The proposed amendments include proposed alterations to Plots O (Office 1 – 'The Poulton'), Plot N (multistorey car park) and Plot M (Office 2 – 'The Republic'), located on the south side of the River Medlock in the southwest of the site. Changes include alterations primarily related to building massing and materials. No changes are proposed to building finished floor levels.

1.105. This Statement of Conformity considers the impact of the proposed amendments on flood risk, including commentary on any updates to planning policy, guidance, or baseline data, and should be read in conjunction with the original Flood Risk Assessment (FRA) for the development, dated September 2019 and prepared by Buro Happold, hereafter referred to as the '2019 FRA'.

1.106. Since the submission of the 2019 FRA, Buro Happold has also carried out detailed hydraulic modelling of the proposed development to support the discharge of Condition 22 of planning application ref. 124972/FO/2019. This Statement of Conformity should therefore also be read in conjunction with the following Buro Happold hydraulic modelling reports, which have been approved by the Environment Agency (EA):

- Hydraulic Modelling – Mayfield Park Enabling Works (Rev. 01, dated 05/02/2021) – Assesses the impact of the Mayfield Park development during the construction phase; and
- Hydraulic Modelling – Mayfield Park Full Build Out (Rev. 02, dated 20/04/2021) – Assesses the impact of the Mayfield Park development in the case where all landscaping works are complete, referred to as the Full Build Out model.
- Hydraulic Modelling – Mayfield Park Design Changes (Rev. 02, dated 11/02/2022) – Assesses the impact of amendments to the Mayfield Park development, proposed since consent was granted under planning application ref. 124972/FO/2019, referred to as the Design Changes model.
- Hydraulic Modelling – Mayfield Park As-Built Model Update (Rev. 00, dated 06/05/2022) – Assesses the impact of as-built amendments to the landscape design in the Mayfield Park development that differed to the proposals given consent under planning application ref. 124972/FO/2019, referred to as the As-Built model.

1.107. Further commentary on the hydraulic modelling is included in this Section.

Planning Context

1.108. There have been no changes to the National Planning Policy Framework (NPPF) since the S73 application in July 2021. However, the Flood Risk and Coastal Change Planning Practice Guidance was updated in August 2022. The main changes are summarised as follows:

- The guidance on Sequential and Exception Tests have been updated;
- The definition of the design flood (for fluvial, tidal and surface water flooding), including the impact of climate change and the definition of development lifetime have been updated;

- Guidance on change of use, flood mitigation, off-site impacts and safe access and egress has been updated;
- The definition of a functional floodplain (Flood Zone 3b) and residual risks has been updated;
- Clearer requirements for Sustainable Drainage Systems (SuDS); and
- Increased promotion of Natural Flood Management (NFM) in new developments.

1.109. The EA's guidance of climate change was last updated in May 2022. Since the 2019 FRA was written, updates have included changes to peak river flow allowances and peak rainfall allowances. The updates reflect the UKCP19 projections and focus on management of catchments instead of at a national scale (for England). Table 2.1 and Table 2.2 illustrate the 2019 FRA guidance compared to the EA 2022 updates. The values shown in bold indicate those relevant for the proposed uses at Plots O, N and M.

Table 14 Comparison of peak river flow allowances between the 2019 FRA and subsequent updates in the EA guidance for the 2080 epoch for the different categories.

Category	Central	Higher	Upper
2019 North West River Basin	30%	35%	70%
2022 Irwell Management Catchment	35%	46%	75%

Table 15 Comparison of peak rainfall allowances between 2061 to 2125, for the 1% annual exceedance rainfall event.

Category	Central allowance	Upper end allowance
2019 National	20%	40%
2022 Irwell Management Catchment	30%	45%

1.110. The implication of these updates to the revisions of the plots is discussed further under the "Changes to Flood Risk" heading. There have been no changes or revisions to any of the other planning documents referred to in the 2019 FRA.

Flood risk assessment

1.111. Several stages of detailed hydraulic modelling of Mayfield Park have been carried out over the course of the project. This included work to discharge Condition 22 of planning application ref. 124972/FO/2019, and updates to reflect amendments to the development layout and landscape design. The latest hydraulic modelling was approved by the EA in July 2022.

1.112. The proposed amendments were included in the layout of the proposed development used in the hydraulic modelling approved by the EA. No further updates to the hydraulic modelling are therefore required for this ES Addendum. The modelling report results are in line with the conclusions reported in the 2019 FRA and demonstrate that the completed Mayfield Park development does not cause an adverse impact on flood levels or extent, either upstream or downstream of the site.

1.113. Although the proposed basement footprint has increased as part of the alterations to the MSCP, the 2019 FRA concluded that there was no information to indicate that the site was at risk from groundwater flooding. This Statement of Conformity concludes that the flood risk from fluvial,

surface and ground waters, as well as artificial sources, remains unchanged from that presented in the 2019 FRA.

Drainage strategy

1.114. The surface water drainage strategy has been refined to reflect the proposed amendments. The strategy has been assessed against the latest increase in climate change allowance, whereby peak rainfall intensities are based on the River Irwell Management Catchment and a 1% annual exceedance rainfall event. An upper end allowance of 45% was included for climate change. The analysis confirms that the proposed surface water drainage strategy has capacity for the 45% increase in rainfall intensity due to climate change.

1.115. The proposed peak discharge rates for surface water run off remain the same as presented in the 2021 Drainage Strategy, as agreed with the LLFA. The flow from the Poulton, Republic and MSCP catchments will also remain as presented in the 2021 Drainage Strategy.

1.116. The Drainage Strategy Addendum now proposes a minor element of infiltration for part of the site. However, most of the site drainage will continue to discharge to watercourse.

Updated potential effects and mitigation measures

1.117. A review of the proposed amendments and report updates against the conclusions of the 2019 ES and 2021 ES Addendum has been undertaken to determine any changes to the identified residual effects. It should be noted that the 2021 ES Addendum did not conclude any changes to the residual effects as identified in the 2019 ES, therefore this ES Addendum will review potential updates against the findings of the original 2019 ES.

Construction phase

1.118. The 2019 ES concluded no significant residual effects for the construction phase in regard to water resources and flood risk. The updates to the FRA and Drainage Strategy do not require any changes to the construction assessment or proposed supplementary construction mitigation. Therefore, the construction effects relating to water resources and flood risk remain unchanged.

1.119. No further supplementary mitigation is required for the construction phase.

Operation phase

1.120. As outlined in the FRA Statement of Conformity, the proposed amendments do not alter the conclusions of the 2019 FRA in relation to flood risk from all sources. Therefore, the significance of effects relating to flood risk during the operational phase of development remains unchanged since the 2019 ES.

1.121. The overarching principles of the surface water drainage strategy remain unchanged from that most recently assessed in the 2021 ES Addendum, with the exception of a minor part of the site now including infiltration as opposed to discharge to watercourse. The 2021 ES Addendum and planning application 132255/JO/2021 proposed an updated drainage strategy that superseded the 2019 proposals. The surface water drainage strategy has capacity for the 45% climate change event, and peak discharge rates and restricted flow rates are maintained to the levels presented in 2021. Therefore, it is considered that the potential effects to downstream flood risk and capacity in the surface water infrastructure network remain unchanged.

1.122. The 2021 Drainage Strategy proposed a below ground drainage network to convey water directly to outfalls into the River Medlock. Surface water would also be conveyed into the designed wildscape, to then discharge overland into the river This has potential implications for water quality effects if pollutants were to be conveyed directly into the River Medlock.

1.123. The Drainage Strategy Addendum now proposes a minor element of infiltration for part of the site. Whilst this reduces slightly the direct discharge of surface water into the River Medlock, the predicted effect remains the same. It is considered that the residual effects upon water quality remain unchanged compared to the 2021 ES Addendum.

1.124. There are no proposed changes to the design and principles of the foul water strategy. The minor increase in floor space will alter discharge volumes, however this change is negligible when compared to the foul drainage strategy assessed in 2019. The operational effects relating to foul water services predicted in the 2019 ES will remain unchanged, with the significance of effects being negligible.

1.125. The proposed amendments are not considered to change the residual effects related to potable water demand.

1.126. No further supplementary mitigation is required for the operational phase.

Cumulative effects

1.127. No new cumulative schemes have been identified since the last assessment for the 2021 ES Addendum. The 2021 ES Addendum concluded no significant changes (from 2019) to the cumulative impact because of the then-proposed amendments.

1.128. Considering that there are no changes to the predicted residual effects of the proposed development because of the proposed amendments, it is considered that the conclusions regarding cumulative water resources and flood risk effects remain as previously reported in the 2019 ES.

Summary

1.129. Table 16 summarises the residual construction and operational phase effects, compared to assessments in 2019 and 2021. There are no changes to the residual effects identified in the 2019 ES and 2021 ES Addendum because of the proposed amendments.

Table 16 Summary of residual effects relating to water resources and flood risk

Receptor	Description of effect	Residual, post-mitigation significance in 2019 ES (and 2021 ES Addendum)	Further supplementary mitigation	Residual, post-mitigation significance for this ES Addendum
Demolition and construction				
River Medlock	Increased sediment loads	Minor adverse (temporary)	None required	Minor adverse (temporary)
	Accidental release of hydrocarbons	Minor adverse (temporary)	None required	Minor adverse (temporary)
	Accidental release of hazardous materials	Minor adverse (temporary)	None required	Minor adverse (temporary)
	Leak or breakage of temporary sewerage system	Minor adverse (temporary)	None required	Minor adverse (temporary)

Receptor	Description of effect	Residual, post-mitigation significance in 2019 ES (and 2021 ES Addendum)	Further supplementary mitigation	Residual, post-mitigation significance for this ES Addendum
	Dust and debris	Minor adverse (temporary)	None required	Minor adverse (temporary)
	Direct pollution and / or disturbance from in river works	Minor adverse (temporary)	None required	Minor adverse (temporary)
Water services infrastructure (supply)	Increased water demand during construction period	Negligible	None required	Negligible
Water services infrastructure (surface water)	Increased sediment loads	Negligible	None required	Negligible
	Sediment clogging and pollution from dewatering of excavations	Minor adverse (temporary)	None required	Minor adverse (temporary)
Site users	Flood risk to site workers (from groundwater, surface water, and fluvial flooding from the river Medlock)	Negligible	None required	Negligible
Operational				
River Medlock	Pollutants contained in surface water	Negligible	None required	Negligible
	River naturalisation	Minor beneficial to moderate beneficial	None required	Minor beneficial to moderate beneficial
	Increased flood risk	Negligible	None required	Negligible
Water services infrastructure (surface water)	Flood risk and changes to run off rates	Negligible	None required	Negligible

Receptor	Description of effect	Residual, post-mitigation significance in 2019 ES (and 2021 ES Addendum)	Further supplementary mitigation	Residual, post-mitigation significance for this ES Addendum
Water services infrastructure (foul water capacity)	Increased foul water demand	Negligible	None required	Negligible
Water services infrastructure (supply)	Increased potable water demand	Negligible	None required	Negligible
Site users	Flood risk to site users	Negligible	None required	Negligible

Wind Microclimate

1.130. This section considers the wind studies carried out during 2019 and 2021 and the likely environmental effects of the Proposed Development with respect to wind microclimate. The section also describes the methods used to assess the effects; the baseline conditions currently existing at the site and surrounding area; the mitigation measures required to prevent, reduce or offset any significant adverse effects; and the likely residual effects after these measures have been adopted.

1.131. A quantitative assessment has been undertaken to predict and analyse the wind environment at the site and to support appropriate mitigation.

1.132. The site, for the mitigated case, has been modelled with the landscape within the red lines of each plot (and within Mayfield Park adjacent to the plots) in place, assuming a conservative scenario. The chapter concludes with a summary of residual effects, considering the results of the modelling and influence of proposed mitigation in the form of landscaping treatment. Cumulative effects associated with wind microclimate have additionally been considered within the ES and can be found below.

Planning Context

1.133. There have been no changes to the National Planning Policy Framework (NPPF), local policy nor national codes of practice or legislative policies relating to the assessment of environmental wind flows in the built environment. since the S73 application in July 2021. The 2021 ES Addendum dated therefore remains valid.

Assessment Methodology

1.134. The wind study includes a direct comparison between the baseline conditions and those created by the Proposed Development for 12 wind directions. In line with the amended plots(site boundaries shown in Figure 3 below), the same four scenarios have been tested compared to that in the approved ES as follows:

- Current Baseline scenario 1: Current baseline scenario (2019);
- Proposed scenario 2: Phase 1a (Plot N (MSCP), M (Republic) and O (Poulton)) in existing surroundings.
- Cumulative scenario 3: Phase 1a (Plot N (MSCP), M (Republic) and O (Poulton)) with future committed developments; and

- Cumulative scenario 4: Phase 1a (Plot N (MSCP), M (Republic) and O (Poulton)) with future committed developments plus the SRF.



Figure 3 - Phase 1a Site Plans

1.135. In line with the approved ES, the Lawson assessment has included a direct comparison between the baseline conditions (existing) and the Proposed Development. A quantitative assessment of the likely wind environment has been carried out, with any areas of potential concern identified. The methodology is therefore consistent with the approved ES.

1.136. As set out within the 2019 ES chapter, the prevailing wind across Manchester is from the south and southwest, with some lesser contribution from all other directions. During the spring and winter there are some contributions from the northeast.

1.137. Wind speeds are generally highest in the winter with the seasonal pattern showing a very similar range of wind directions for winter, spring, and autumn. Summer has southerly and westerly prevailing winds with the highest speeds from the south and southwest.

Identification and Evaluation of Likely Significant Effects

Construction

1.138. During construction of plots N, O and M, localised wind effects are likely that will result in a gradual transition to the new conditions. These effects will be negated at ground level through the provision of hoarding (causing negligible effects).

Operation

1.139. A detailed safety map is shown on Figure 6. This shows a small area located adjacent to the northwest corner of Plot O (the Poulton) of approximately 1m by 1m that exceeds the safety criteria. This is considered as a major adverse effect. However, the exceedance at this location is 2.5 hours (1.9 hour threshold) and can be considered marginal. Therefore, no mitigation is recommended for this exceedance.

1.140. The southeast corner of Plot M (the Republic) shows a small area around 2m by 2m that exceeds safety criteria by 8 hours and therefore requires mitigation. The exact type and location of mitigation will need to be determined in conjunction with the project architects One mitigation option could be a form of ground level screening around the entrance door to resolve the issue.

1.141. As in the approved ES and planning permissions, the final wind mitigation will be submitted as part of a planning condition, which will ensure effects are mitigated so they are not significant, and the entrance is comfortable to use. On the basis that the wind mitigation is conditioned, further testing will be carried out as part of discharge of this planning condition, ahead of construction and occupation of Plot M, to verify that the measures are successful. No further safety exceedances are shown in the surrounding areas to the Phase 1a Application.

1.142. A summary of the potential effects identified during operation, with the absence of any mitigation, can be found in Table 17.

1.143. Regarding comfort, the results of the 2019 ES presented similar areas of wind acceleration conditions across the masterplan suitable for walking, standing, and sitting. However, compared with the 2019 ES, the new massing presents a setback and a new entrance on the southeast corner of block M. This location shows wind accelerations, and the area is currently unsuitable as an entrance, therefore mitigation is required.

1.144. Regarding safety, the 2019 ES showed three areas of wind acceleration to the northwest of Plot O, in between Plot N and Plot M, and southeast of Plot M. The 2023 ES addendum shows two areas (to the northwest of Plot O and at the southeast corner of plot M). The magnitude of these safety exceedances have been discussed above (northwest of plot O is marginal and no mitigation is required, while southeast of Plot M will require mitigation).

Table 17 - Summary of effects during operation of Phase 1a Application.

Receptor	Sensitivity	Description of effect	Magnitude of change/impact	Effect significance
Entrances of Plots M, N and O	Moderate	Localised wind acceleration	Negligible after mitigation	Negligible after mitigation
Sitting Areas North of Plots O and M	High	Localised wind acceleration	Negligible	Negligible
Thoroughfares	Low	Localised wind acceleration	Negligible after mitigation	Negligible after mitigation
Thoroughfare localized small area at southeast corner of Plot M	Low	Localised wind acceleration	Minor adverse	Minor adverse
Roads and Carparks	Low - Negligible	Localised wind acceleration	Negligible	Negligible
Terrace at Plot O	Moderate - High	Localised wind acceleration conditions	Negligible	Negligible
Parking roof level	Moderate - High	Localised wind acceleration	Minor adverse	Minor adverse
Wind Safety	High	Localised safety issue identified at northwest corner of Plot O,	Major adverse	Major adverse (no mitigation required as this is a marginal exceedance).
Wind Safety	High	Plot M southeast corner mitigation in the form of a screens or similar.	Negligible after mitigation	Negligible after mitigation

Receptor	Sensitivity	Description of effect	Magnitude of change/impact	Effect significance
		Details of final wind mitigation to be committed to via a planning condition.		

Mitigation Measures

1.145. Due to a localised wind acceleration issue at the south east corner of Plot M (the Republic), a safety screen or similar will be delivered following testing of a range of mitigation options to determine the type of mitigation and optimum location. Details of the final wind mitigation will be submitted as part of a planning condition for the Republic, to be discharged ahead of construction and operation of the plot.

Residual Effects

1.146. Based on the suggested mitigation measures, it is considered that the Proposed Development will have no significant residual impacts in relation to wind. Other than the two occurrences above mentioned, no safety exceedances are found within the site boundary and outside the site boundary for Phase 1a applications.

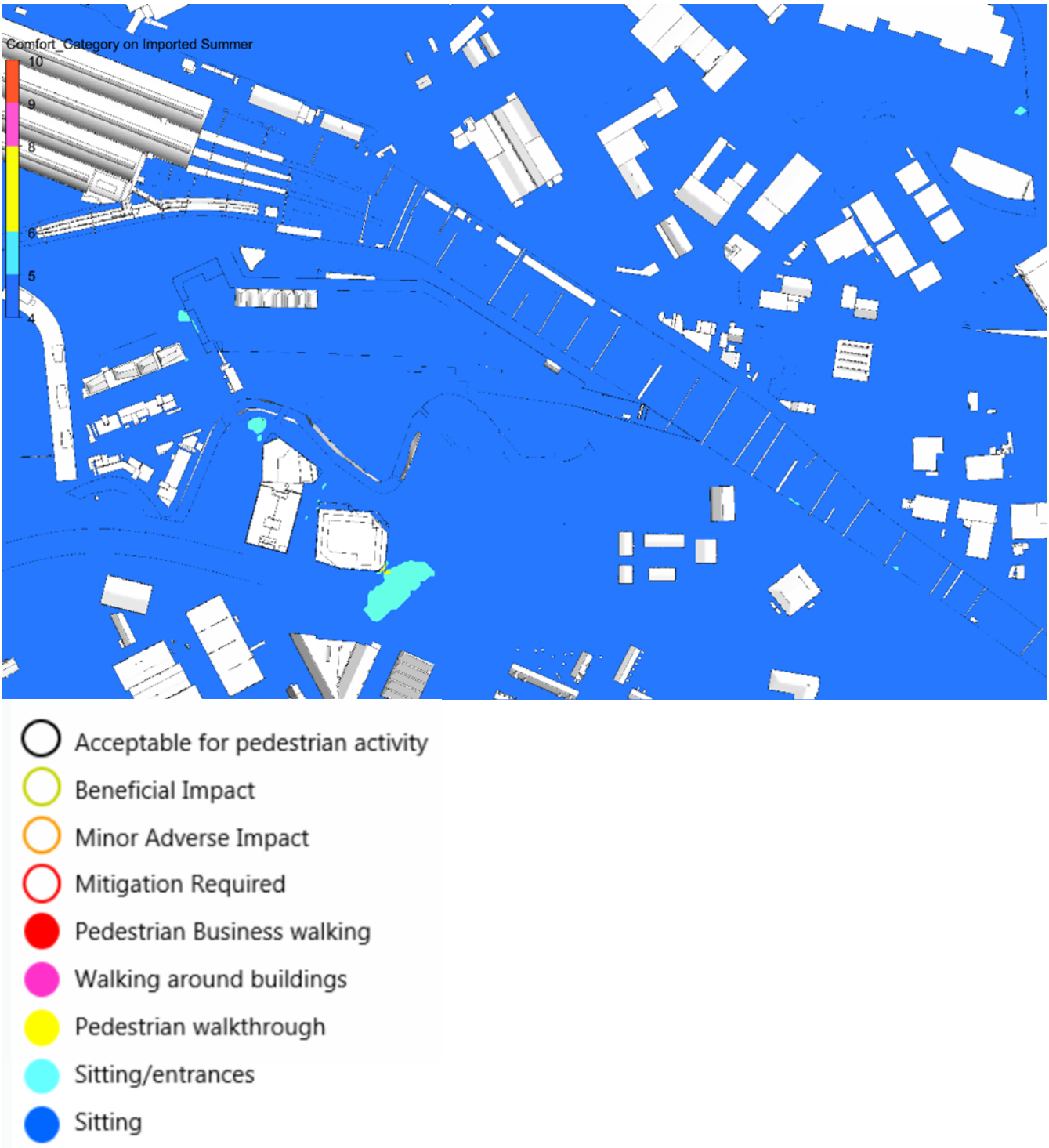


Figure 4 - Proposed scenario 3 Phase 1a Application in future surroundings - summer composite comfort map.

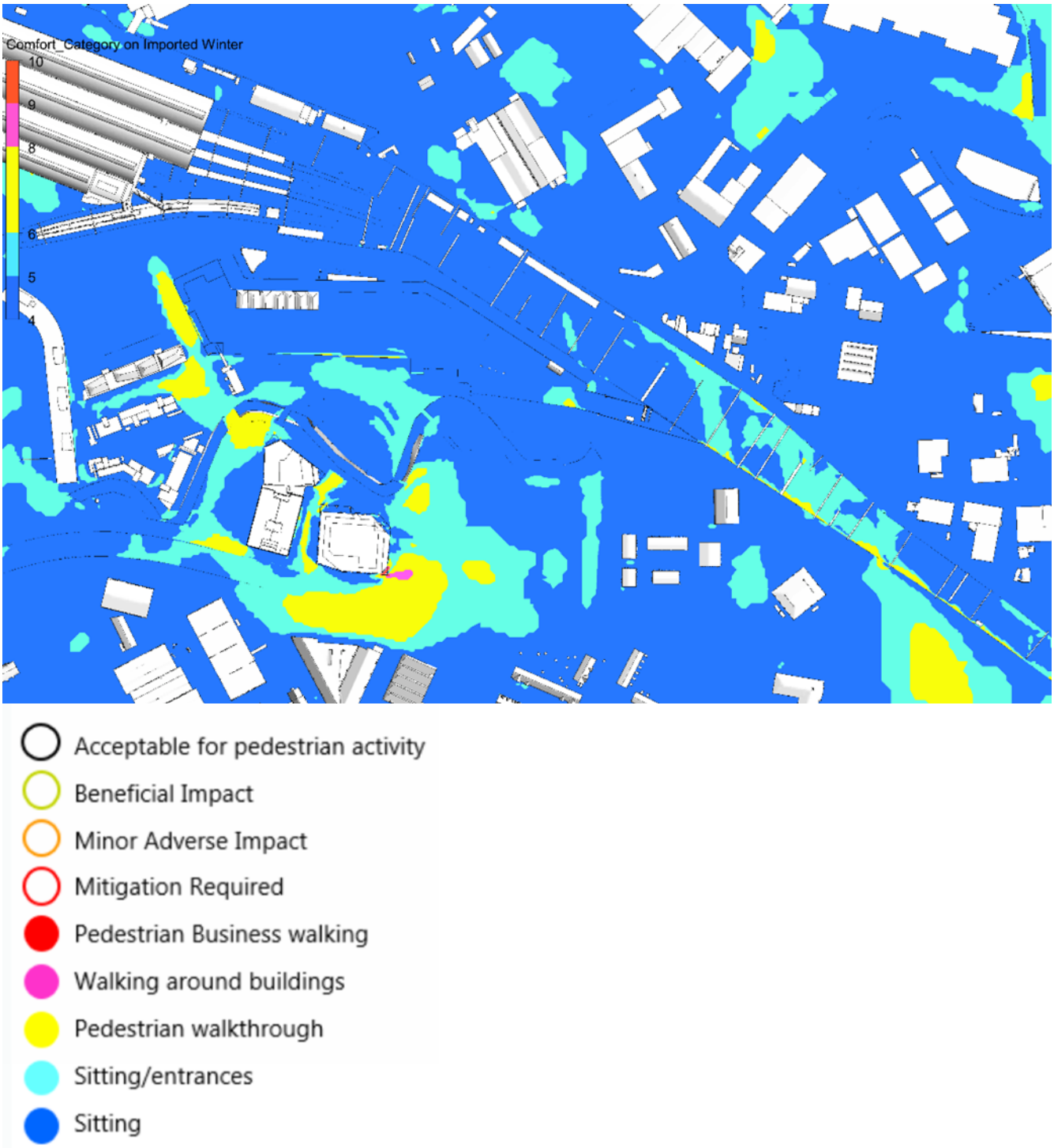


Figure 5 Proposed scenario 3 Phase 1a Application in future surroundings - winter composite comfort map.

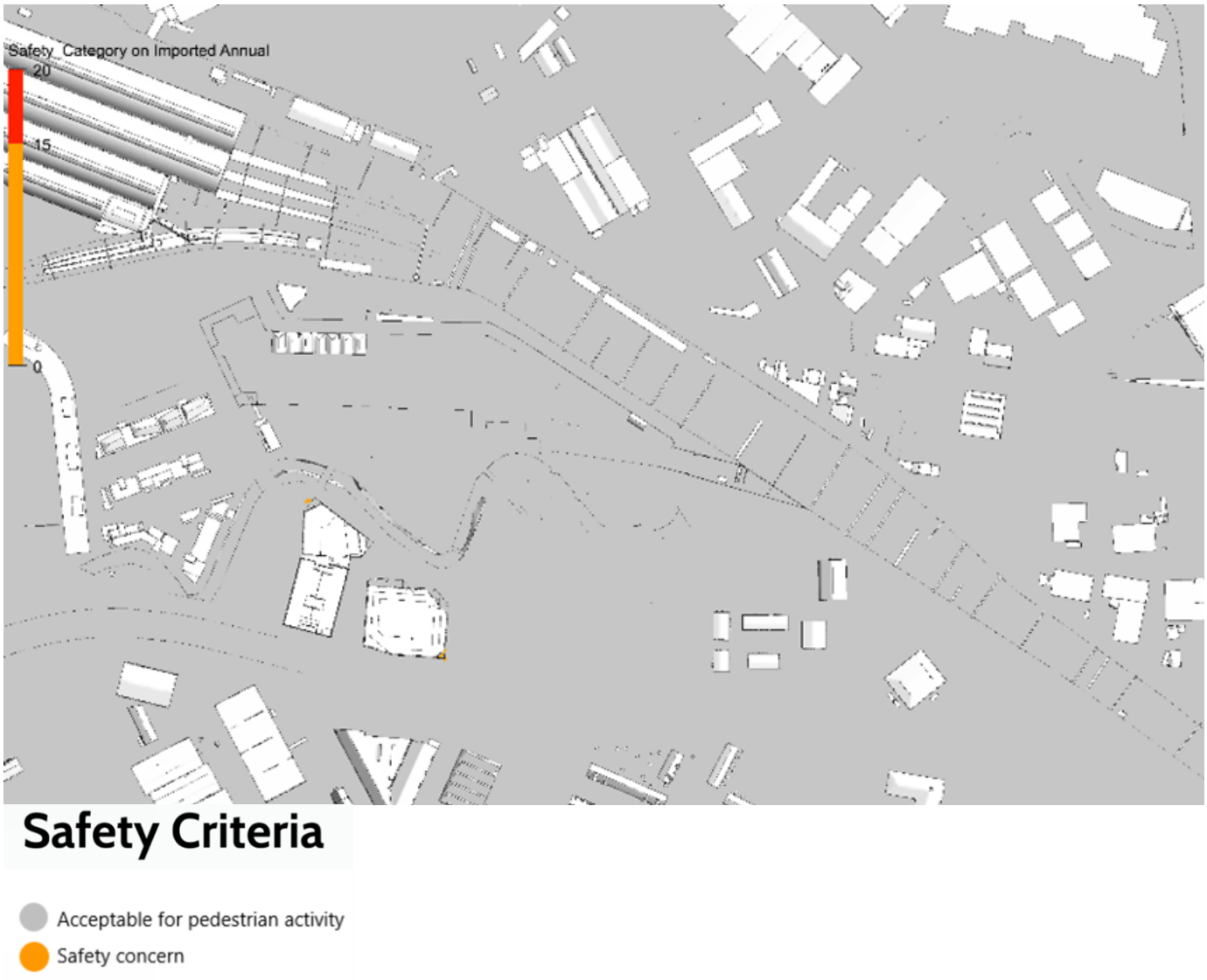


Figure 6 Proposed Scenario 3 Phase 1 in future surroundings – annual composite safety map.

Cumulative Effects

1.147. The wider cumulative scenario for the Proposed Development, which provides an analysis of the full SRF build out, is as per the approved ES and therefore remains unchanged.

Daylight, Sunlight, and Overshadowing

1.148. The approved ES chapter and subsequent ES addendum concludes that Mayfield Park is likely to be suitable as a proposed amenity space, particularly following relocation of park areas having a particular requirement for sunlight exposure, by achieving the sunlight hours on a sufficient portion of the park such that it meets BR209 guidance.

1.149. However, the proposed increase in massing of Plot O (Poulton) and Plot M (Republic) introduces the potential for overshadowing of sunlight on sensitive park areas and adjacent amenity space.

Likely Significant Effects

1.150. The proximity of the proposed amendments to Mayfield Park and the adjacent Mill Point amenity space may result in an increase in adverse effect on levels of sunlight experienced in these areas.

1.151. The effect of the amended massing has, therefore, been assessed against the guidance of the BRE Report BR209, Site layout planning for daylight and sunlight, 2022, considering the full build out of Plots M, N and O in conjunction with the other Mayfield development buildings and the remaining SRF buildings. As a worst case, only the park area having a high priority for sunlight has been assessed. BR209 guidance for the provision of adequate sunlight on open spaces throughout the year is that:

- At least half of the area should receive at least two hours of sunlight on the 21st of March, or
- If as a result of a new development an existing open space does not meet the above, the area that can receive two hours of sunlight on the 21st of March is lo less than 0.8 times its former value.

1.152. Note that the approved ES chapter and subsequent ES addendum assessed the impact of the Proposed Development on daylight and sunlight access at the adjacent Logik development on the basis that it may have included residential elements within the scheme. The consented Logic scheme is entirely commercial in nature and is, therefore, not considered a sensitive receptor.

1.153. The results of the assessment are illustrated in Figure 6 to Figure 7, which show:

- Negligible difference between the impacts of the 2019 approved (and subsequent addendum) Phase 1 massing and the proposed amended Phase 1 massing. All parts of the Mayfield Park high sunlight priority area meet BRE criteria and the area of the Mill Point amenity space not meeting BRE criteria increased from 10.4% to 10.7%, well below the 50% threshold for adequate sunlight, and
- A larger impact on the Mill Point amenity space from the remaining SRF buildings. With these buildings included in the assessment, all parts of the Mayfield Park high sunlight priority area continued to meet BRE criteria and the area of the Mill Point amenity space not meeting BRE criteria was 38.7%, still below the 50% threshold for adequate sunlight.

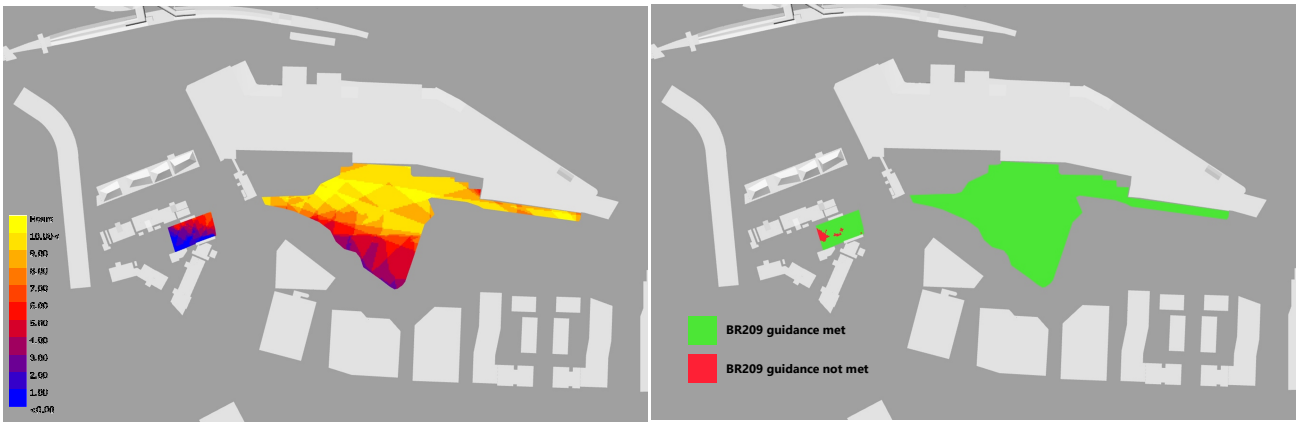


Figure 7 Sunlight distribution and BRE pass/fail on March equinox – approved Phase 1 and Mayfield masterplan buildings

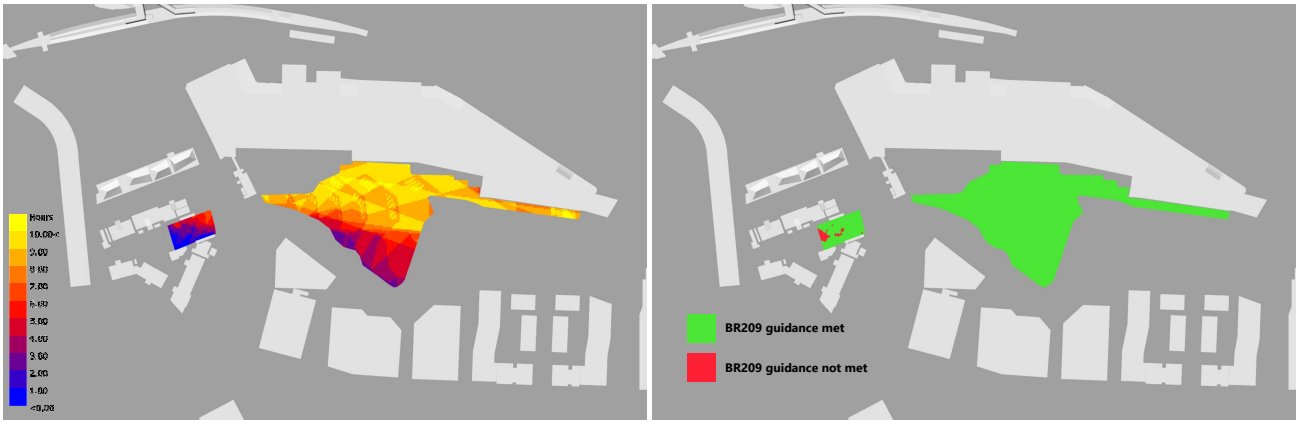


Figure 8 Sunlight distribution and BRE pass/fail on March equinox – amended Phase 1 and Mayfield masterplan buildings

Mitigation and Residual Impacts

1.154. Based on the assessment results, it is considered that the proposed amendments to Phase 1 will not change the conclusions of the 2019 ES assessment because:

- The negligible impact on Mayfield Park and Mill Point amenity space will remain negligible as BR209 criteria for sunlight exposure are met for both spaces.

1.155. As set out above, the conclusions of Chapter 13 (Daylight and Sunlight) ES Volume 1, Mayfield of the 2019 ES and its associated technical appendices remain valid.

1.156. On this basis, the mitigation measures, cumulative impacts and residual impacts are consistent with those set out in Chapter 13 (Daylight and Sunlight) of that ES and its associated technical appendices.

Townscape and Visual Impact

1.157. The author of the TVIA has reviewed the proposed design changes and has confirmed that there will be no change to the conclusions of the TVIA chapter in the EIA because of the proposed amendments to the Phase 1 Mayfield Application. Whilst the building massing has changed, the development proposals will continue to deliver high quality office-led development within the Mayfield masterplan.

1.158. A series of updated viewpoints have been provided as part of each application that forms the basis of this conclusion. There will be no change to the conclusions of Chapter 14 in terms of cumulative or residual impact.

Socio-economic Impact

1.159. The scheme changes to the park have been reviewed by ekosgen to provide an update on how the changes, described in this EIA Addendum, impact the previous socio-economic impact assessment in the Environmental Statement for Mayfield Phase 1.

1.160. It is considered that due to the buildings increasing in scale (an uplift of 10% GEA compared to that approved), the proposed amendments would not result in a beneficial but non-significant cumulative impact when considered alongside other committed development and / or proposed development close to the site in relation to socio-economic impact. The conclusions of the original ES remain valid.

Conclusion

1.161. In view of the information set out in this EIA Addendum Statement, it can be concluded that there will be no significant effects on the environment, on or close to the Site, beyond those already identified and mitigated for within the EIA dated December 2019 and the ES Addendum dated November 2021 (the Approved EIA), as a result of the proposed amendments.

1.162. As such, there are no changes required to the Non-Technical Summary of the EIA and the Technical Appendices (Volume 2) remain the same unless included in the Appendices to this Statement.

Resubmission Documentation

1.163. This Statement should be read together with the planning application documentation approved as part of 132255/JO/2021 and 125248/FO/2019 (as amended), with explicit reference to the Planning Statement Addendum submitted concurrently and the original EIA (Volume 1 and 2 and NTS) dated December 2019, ES Addendum dated January 2020 and the ES Addendum dated November 2021.

1.164. This EIA Statement of Conformity considers and assesses the proposed amendments in the context of the EIA chapters, impacts and conclusions presented within the original planning permissions. The proposed amendments have been reviewed by the relevant EIA Consultants (BuroHappold) to assess their potential environmental effects as compared to the conclusions presented within the approved EIA.

1.165. All other submission documents that were originally approved as part of Planning Permission reference 132255/JO/2021 and 125248/FO/2019 (as amended) are to remain as part of the revised Planning Permission that would be issued subject to approval. Planning Statement Addendums and Design and Access Statements setting out the revised schemes in detail have also been submitted alongside this ES Statement of Conformity.

Appendix A – Cumulative Schemes

Application Reference	Proposal	Date Approved	Map No.	Status - June 2023
Baseline				
116450/FO/2017	Erection of part 17, part 36 storey building to comprise 411 residential apartments (Class C3) (14 studios, 136 x 1 bed, 228 x 2 bed and 33 x 3 bed) with mid and top roof level private dining / media room / gardens, ground and mezzanine floor residential amenity uses and lower ground, ground and mezzanine level commercial uses (Class A1 (shop), A2 (Financial and Professional Services), A3 (Restaurant and Cafe), A4 (Drinking Establishment), B1 (Offices), D1 (Non-residential Institutions Creche only) and D2 (Assembly and Leisure - Gym only)) and associated junction improvements to Oxford Road / Charles Street, access, servicing, and landscaping)	Approved – 12 September 2017.	1	Now complete
114863/FO/2016	Erection of 18 storey serviced apartment building (384 units) with ancillary retail (A1, A2, A3, A4), residents' hub and associated access and landscaping.	Approved – 09 March 2017.	2	Now complete
111027/FO/2016	Erection of 17 storey building to comprise 266 residential apartments (Class C3) (14 studios, 56 x 1 bed, 168 x 2 bed and 28 x 3 bed) with top roof level private dining / media room / gardens, ground and mezzanine floor residential amenity uses including a gym and home working lounge, plus ground and mezzanine level commercial uses (Class A1 (shop), A2 (Financial and Professional Services), A3 (Restaurant and Cafe), A4 (Drinking Establishment), B1 (Offices), D1 (Non-residential Institutions - creche only) and D2 (Assembly and Leisure - gym only)) and associated access, servicing, and landscaping.	Approved – 01 July 2016.	3	Now complete
111025/FO/2016	Erection of two buildings (18 and 14 storeys (Blocks 2 and 4)) comprising offices (Class B1) with ground and mezzanine floor commercial	Approved – June 2016.	4	Now complete

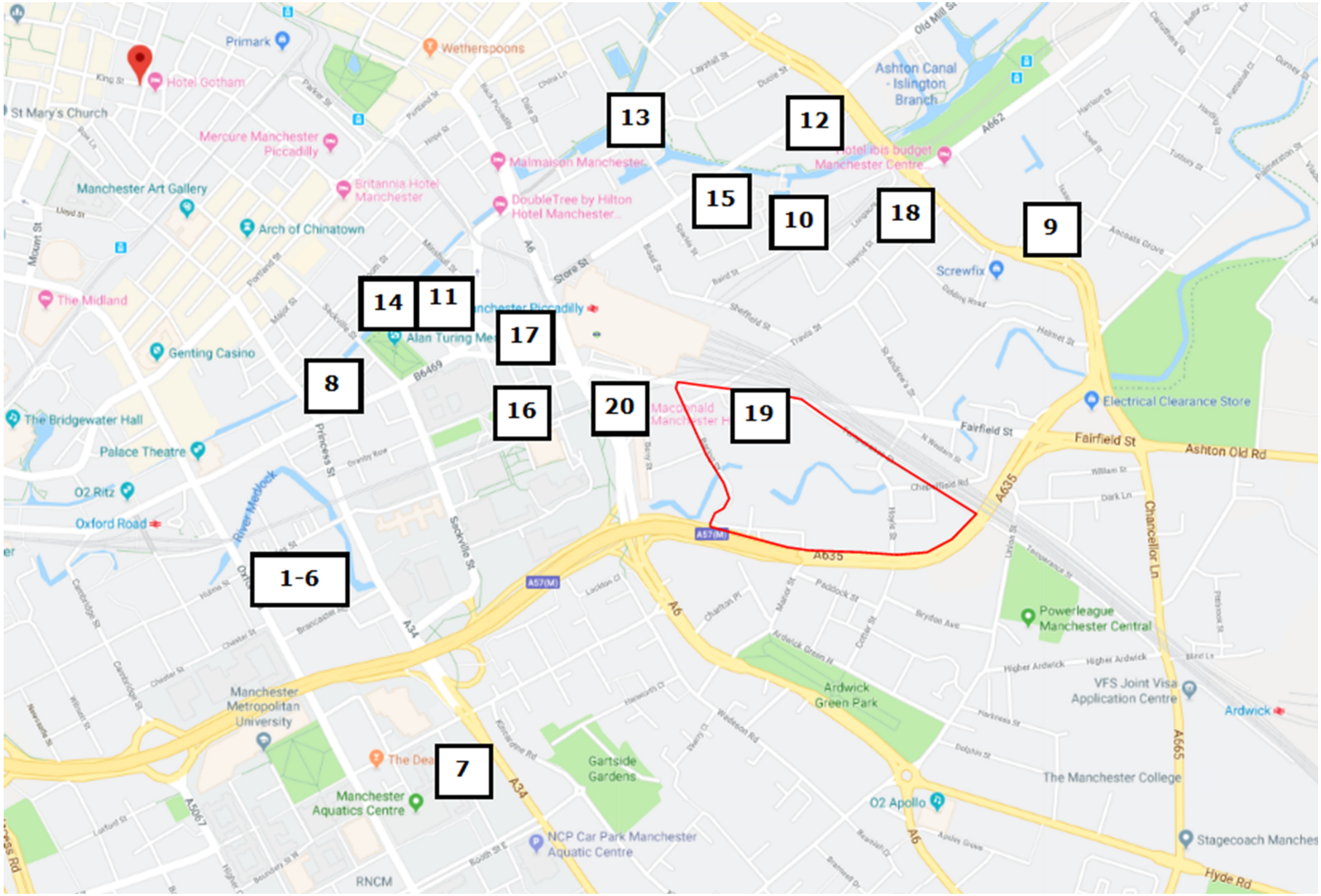
Application Reference	Proposal	Date Approved	Map No.	Status - June 2023
	uses (Class A1 (shop), A2 (Financial and Professional Services), A3 (Restaurant and Cafe), A4 (Drinking Establishment), B1 (Offices), D1(Non-residential Institutions - Creche only) and D2 (Assembly and Leisure - Gym only)) and rooftop restaurant (Class A3) with associated external terrace (Block 4), creation of public green space with pavilion building (Block 3) for events space / uses within Classes A1, A3, A4, D1 (Exhibition Hall / Public Hall only), D2(Concert Hall / Music Hall only)(Sui Generis) accessed from ground level within basement level below alongside creation of areas of public realm including tree planting and all associated access and servicing.			
111028/FO/2016	Demolition of any existing structures and erection of multi-storey car park (1028 spaces including 50 disabled) in 10 storey building, with ground and mezzanine commercial uses (Class A1 (shop), A2 (Financial and Professional Services), A3 (Restaurant and Cafe), A4 (Drinking Establishment), B1 (Offices), D1 (Non-residential Institutions Creche only) and D2 (Assembly and Leisure Gym only)) and associated access, servicing, landscaping and cycle parking facilities.	Approved – June 2016.	5	Now complete
111758/FO/2016	Construction of a new engineering campus (MEC Hall) to provide facilities for higher education purposes including laboratory spaces, teaching space, lecture theatres and workshop space (Use Class D1). New extension to Oddfellow Hall to provide meet and teach rooms (Use Class D1) and partial change of use to include a new cafe / restaurant (Use Class A3) in Oddfellow Hall. New bridge link from the existing James Chadwick Building to the proposed MEC Hall and cafes / restaurants (Use Class A1 and or A3), public realm and landscaping works, cycle and disabled parking facilities, gas bottle storage areas, new servicing arrangements and associated highway and engineering works.	Approved – 22 June 2016.	7	Now complete
114585/FO/2016	Erection of three residential buildings (Building 1 comprising 15 storeys plus plant space, Building 2 comprising 11 storeys plus plant space and Building 3 comprising 14 storeys plus plant space) to provide 351 residential units (Use Class C3) 117 x 1 bed,	Approved – 09 March 2017.	8	Now complete

Application Reference	Proposal	Date Approved	Map No.	Status - June 2023
	218 x 2 bed and 16 x 3 bed) al with ground floor commercial uses (Class A1 (Shop), A3 (Restaurant and Cafe) and D1 (Non Residential Institution Use- Art Gallery) and new public space with related access, servicing, landscaping and associated works with parking for 254 vehicles, 224 cycles within 4 levels of existing basement car park.			
109948/FO/2015	Erection of a part 10, part 8, part 7, part 6 and part 5 storey building to form 201 residential apartments (C3a) with ancillary ground floor gym area for residents with pedestrian access from Great Ancoats Street and vehicular access from Advent Way and Isaac Way along with associated hard and soft landscaping, car parking, boundary treatment and other associated works	Approved - 11 Dec 2015.	9	Now complete
113363/FO/2016	Conversion of former Crusader Works to create 126 apartments (Use Class C3) and associated elevational alterations; the erection of a 10 storey building containing 75 apartments (Class C3) following the demolition of Block 4; the creation of a new landscaped courtyard following the demolition of existing buildings within a shared yard space; and, the provision of 201 cycle parking spaces, lighting and other associated works	Approved - 21 Oct 2016.	10	Now complete
112034/FO/2016	Creation of approximately 478 residential units (160 x 1 bed and 318 x 2 bed) and commercial space comprising: (a) Conversion and extension of existing 12 storey building to 15 storeys (The Tower) comprising residential accommodation (Class C3 - 123 units) above ground and first floor (Class A1 (Shop), A2 (Financial and Professional Services), A3 (Restaurants and Cafe), A4 (Drinking Establishment), B1 (Office), D1 (Non-residential institutions - crèche, nursery, clinic and health centre, art gallery only) and D2 (Assembly and Leisure - Gymnasium, indoor sport and recreation only), (b) Erection of 2 x 14-16 storey buildings (Block C and F comprising residential accommodation (Class C3 - 136 units (C) and 209 units (F)) above ground and first floor (Class A1 (Shop), A2 (Financial and Professional Services), A3 (Restaurants and Cafe), A4 (Drinking Establishment), B1 (Office),D1 (Non-residential institutions - crèche, nursery, clinic	Approved 28 Sep 2016.	11	Now complete

Application Reference	Proposal	Date Approved	Map No.	Status - June 2023
	and health centre, art gallery only) and D2 (Assembly and Leisure - Gymnasium, indoor sport and recreation only), Building F and Tower to be linked by podium; and (c) change of use of existing 1 storey building on stilts (The Bungalow) to Class A1 (Shop), A2 (Financial and Professional Services), A3 (Restaurants and Cafe), A4 (Drinking Establishment), B1 (Office), D1 (Non-residential institutions - crèche, nursery, clinic and health centre, art gallery only) and D2 (Assembly and Leisure - Gymnasium, indoor sport and recreation only) and hard and soft landscaping comprising central public square, commercial and retail terraces, private residents terrace and public/private roof top gardens with car parking for 69 vehicles located at ground and first floor levels and associated works to facilitate servicing and access following demolition to existing teaching and library buildings.			
110276/FO/2015	Demolition of existing buildings and erection of 12 townhouses and 345 (109 x one bed and 236 x 2 bed) apartments, ground floor commercial unit (243sq. m, Use Classes A1, A2, B1 and D1 (excluding places of worship, church halls, public halls and non- residential education and training centres) within a part 31, part 15, part 9 storey building, 77 basement and 20 surface parking spaces, 180 cycle parking spaces, ancillary tenant amenity facilities including outdoor communal amenity space at roof level above the 9 and 15 storey elements , associated hard and soft landscaping and other associated works including servicing access and 9 off site parking spaces.	Approved - 04 Mar 2016.	12	Now complete
114818/FO/2016	Erection of 9 storey building to provide 137 hotel bedrooms (Use Class C1) with associated ancillary hotel operated restaurant (Class A3) and bar (Class A4) uses to include 14 cycle parking spaces, an external seating area, public realm, landscaping and highways works.	Approved - 07 Apr 2017.	13	Now complete
115570/FO/2017	Conversion of buildings to provided 58 residential apartments (Class C3) (26 x 1 bed and 32 x 2 bed) (41 units in Minshull House and 18 units in Minto Turner Building) above lower ground and ground floor Class A1 (shop), A2 (Financial and Professional	Approved - 06 Jun 2017. Currently on site.	14	Now complete

Application Reference	Proposal	Date Approved	Map No.	Status - June 2023
	Services), A3 (Restaurant and Cafe), A4 (Drinking Establishment), B1 (Offices), D1(Non-residential Institutions creche, nursery, clinic and health centre, art gallery only) and D2 (Assembly and Leisure - Gymnasium, indoor sport and recreation only), ground floor extension to Minshull House to provide additional commercial space (uses as specified above), creation of 59 secure cycle parking spaces and works to provide hard and soft landscaping including new public square in front of Minshull House and pedestrian route along Little David Street to the Kampus Courtyard, servicing and access.			
Cumulative				
107245/FO/2014	Erection of 13 storey building comprising 34 apartments (3 x 1 bed, 28 x 2 bed and 3 x 3 bed duplex) with ground floor D2 (Assembly and Leisure) Use with associated landscaping, highways, engineering and other associated works following removal of section of retaining wall.	Approved – 04 March 2016	15	Replaced by 132626/FO/2022
118267/FO/2017	Full planning permission for the demolition of existing buildings on site and their replacement with a mixed use (sui generis) development comprising 3 towers ranging in height (from 14, 20 and to 25 storeys (including lower ground floor level) and intermediary link buildings and providing: 403 units of Co-Living residential accommodation with associated shared amenity spaces; 94 units of purpose built student accommodation with associated shared amenity spaces; ground floor commercial floor space and children's day nursery together with cycle parking,recycling and refuse bin storage, associated plant and public realm enhancements to Granby Row, Echo Street, Cobourg Street and Back Acton Street New development description: Erection of 3 interlinked towers ranging from 27, 21 and 16 storeys together with intermediary link buildings (15 and 11 storeys) to form Purpose Built Student Accommodation (Sui Generis) with associated	Approved – 01 June 2018	16	Superseded by 136874/FO/2023. Awaiting approval.

Application Reference	Proposal	Date Approved	Map No.	Status - June 2023
	amenity space and external landscaping and other associated works			
116099/FO/2017	Refurbishment, restoration, reconfiguration and extension of former London Road Fire Station site to create a mixed use development comprising of hotel (Use Class C1), workspace/office (Use Class B1), commercial floorspace for shop and food and drink uses (Use Classes A1, A3 and A4), residential apartments (Use Class C3) and cinema and spa (Use Class D2), together with creation of new basement area, access and highways works, servicing, rooftop plant, landscaping and associated works	Approved - 31 Jul 2017	17	To be completed in 2023
122599/FO/2019	Demolition of existing building and erection of a 13 / part 14 (plant level) storey building to create a 275-bedroom hotel (Class C1) use	Approved – 23 September 2019	18	Now complete - baseline
123728/FO/2019	Temporary change of use for a 5 year period for the Mayfield Depot from Use Class B8 to Sui Generis Use Class, comprising theatre, music, dance, performance-related activities (Sui Generis), cinema and conferencing (Use Class D2), food and drink festivals including external food and drink operators (Use Class A3 and A4), art exhibitions and markets (Use Class A1/D2), marketing suites and offices (Use Class B1), with associated demolition, external alterations, landscaping, servicing and access.	Approved – 02 August 2019	19	Implemented and operational until August 2024
123095/FO/2019	Construction of a full height extension to house 2no. passenger lifts, a two storey ground floor extension to create a dedicated executive entrance and lounge with internal remodelling.	Approved – 09 August 2019	20	


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Primark
Wetherspoons
Hotel Gotham
St Mary's Church
Mercure Manchester Piccadilly
Malmaison Manchester
Britannia Hotel Manchester
DoubleTree by Hilton Hotel Manchester...
Ashton Canal - Islington Branch
Hotel ibis budget Manchester Centre
Manchester Art Gallery
Arch of Chinatown
Screwfix
The Midland
Genting Casino
Alan Turing Me
The Bridgewater Hall
Palace Theatre
O2 Ritz
Oxford Road
Electrical Clearance Store
Fairfield St
Ashton Old Rd
Powerleague Manchester Central
Ardwick Green Park
VFS Joint Visa Application Centre
Ardwick
Manchester Metropolitan University
Manchester Aquatics Centre
Gartside Gardens
NCP Car Park Manchester Aquatic Centre
The Manchester College
O2 Apollo
Stagecoach Manches
RNCM
A635
A57(M)
A6
A34
A5067
A665
A662
B6469
Hyde Rd
Ashton Old Rd
River Medlock
Princess St
Sackville St
Store St
Mount St
Portland St
Major St
Parker St
Piccadilly
Fairfield St
Charlton Pl
Paddock St
Brydon Ave
Higher Ardwick
Kingsgate Rd
Chancellor Ln

Appendix B – Drainage Strategies and Drainage Technical Note

BURO HAPPOLD

Mayfield EIA Addendum – Drainage Strategy

Introduction

This addendum relates to the updated design for proposed plots O (The Poulton), M (The Republic) and N (MSCP).

Policy Context

Peak rainfall intensities are now based on the specific Management Catchment, with the Mayfield development falling under the River Irwell Management Catchment. Based on the 1% annual exceedance rainfall event an upper end allowance of 45% will be taken for climate change.

Baseline Conditions

The 2021 Mayfield Park Drainage Strategy (rev 07) outlines the existing surface water features on site and details the proposed runoff rates from the development as agreed with the LLFA. This addendum uses the same rates as previously agreed and as outlined in Table 7-1 and 7-2 from the 2021 planning report (included below). Figure 7-3 from the 2021 planning report (included below) indicates the locations of each catchment.

Table 7-1 Existing vs Proposed Peak Discharge Requirement (* = Flow Control on this catchment, see Table 7-3)

Outfall	Associated Catchments	Brownfield Peak Discharge (l/s)	Proposed Peak Discharge (l/s)
1a & 1b	C15 C16 B3 B4 B5	C15 = 171.00 C16 = 146.11 B3 = 49.80 B4 = 193.35 B5 = 163.03 **Total = 750.33**	C15 = 83.94* C16= 71.92* B3 = 17.52* B4 = 63.43* B5 = 57.12* **Total = 293.92**
2	C1 C2 C3 Phase 4	C1 = 66.16 C2 = 18.49 C3 = 79.38 Phase 4 = 315.63 **Total = 479.66**	C1 = 34.72 C2 = 17.17 C3 = 62.94 Phase 4 = 151.49* **Total = 266.32**
3	C5 C10 C12 C13 C14 B1a B1b B2	C5 = 9.39 C10 = 17.23 C12 = 59.20 C13 = 12.59 C14 = 7.73 B1a = 34.01 B1b = 47.21 B2 = 64.40 **Total = 479.66**	C5 = 8.63 C10 = 15.11 C12 = 54.16 C13 = 10.57 C14 = 9.05 B1a = 7.5* B1b = 10.7* B2 = 22.96* **Total = 138.68**
Overland Flow to River	C4 C6 C7 C8 C9 C11	C4 = 1.82 C6 = 40.40 C7 = 96.50 C8 = 89.12 C9 = 46.56 C11 = 27.04 **Total = 274.40**	C4 = 1.38 C6 = 23.81 C7 = 41.20 C8 = 58.05 C9 = 21.71 C11 = 17.79 **Total = 163.94**
Total	C1, C2, C3, C4, C5, C6, C7, C8, C9, C10, C11, C12, C13, C14, C15, C16, B1a, B1b, B2, B3, B4, B5, Phase 4	**Total = 1756.13**	**Total = 862.87**

Table 7-2 Summary of peak flow at the outfall from MicroDrainage

Outfall	Peak Flow from MicroDrainage	Flow Controls?
Outfall 1a & 1b	285.3 l/s	Yes, upstream control and attenuation of the future buildings and public realm areas outside of phase 1.
Outfall 2	251.4 l/s	Yes, upstream controls are present within the upgraded Depot building (Phase 4). Furthermore, the outfall pipe has been intentionally downsized to a 375mm pipe to restrict the flow into the river.
Outfall 3	135.5 l/s	Yes, upstream controls and attenuation are present within the future buildings in this area.
Overland Flow to River	163.94 l/s	No.
Total	**836.14 l/s**	Note – Total calculated in MicroDrainage is below the discharge requirement of 50% Brownfield – 2l/s/ha.

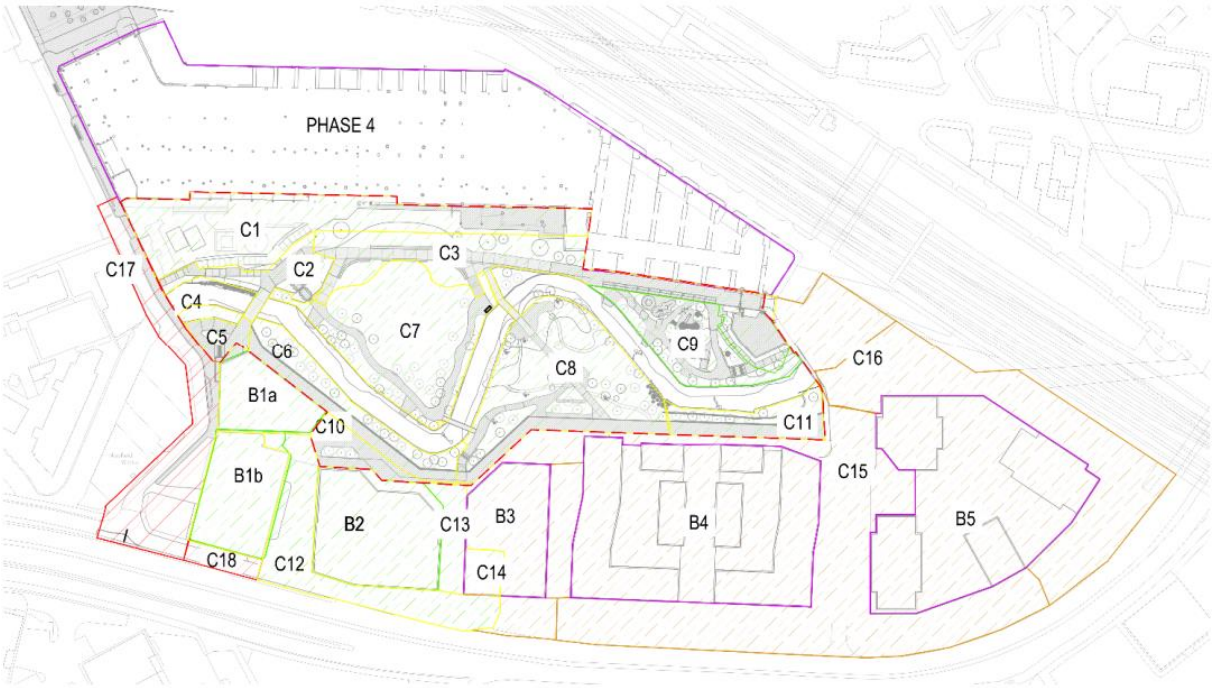


Figure 7-3 Catchment Areas Plan (park boundary shown in red dashed)

Proposed Network

The areas included within this addendum fall under the following catchments as outlined in the 2021 planning report:

- The Poulton – catchment B1a
- MSCP – catchment B1b
- The Republic – catchment B2
- Public realm associated with the plots – catchments C5, C10, C12 and C13

As per the 2021 planning report, all of these catchments discharge to Outfall 3. Flow from catchments B1a, B1b and B2 are no longer restricted at plot level, as the attenuation features are now combined for all plots. The overall discharge from these areas remains at 135.5l/s, as outlined in Table 7-2 from the 2021 planning report.

Appended to this document are the detailed calculations and design drawings for proposed plots O, N and M.

Civic Engineers

Job Title

Mayfield, Manchester – Plot O

Report Type

Drainage Statement

Prepared for

Mayfield Poulton Limited

Date

2 June 2023

Contents

1. Introduction 1
2. Development Details 2
2.1 Existing Site Details 2
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3. Surface Water Drainage 4
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3.2 Surface Water Attenuation Volumes & Network Simulation 5
4. Foul Water Drainage Strategy 6

Appendices

Appendix A – Proposed Surface Water Drainage Strategy
Appendix B – Conceptual Surface Water Drainage Model – Simulation Results

Drainage Statement

Prepared by	**Harry Morton**
Reviewed by	Chris Kendrick / Paul Morris
Report Ref.	1076-33-CIV-XX-XX-R-C-1001
Issued	02/06/2023
Revised	09/06/2023 – V2 – Revised client

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1. Introduction

Civic Engineers are appointed to the Client, Mayfield Poulton Limited, to provide civil engineering consultancy for Mayfield Phase 1, which comprises the Mayfield Park development, three buildings: Baring St. Office No. 1 (Plot O/Poulton), Baring St. Office No. 2 (Plot M/Republic) and Baring St. MSCP (Plot N); alongside associated public realm. This drainage statement has been prepared to accompany the full planning application for Plot O.

The purpose of this statement is to:

- provide information on the existing site's topography and drainage,
- reaffirm the pre-development peak 1 in 1-year surface water run-off rate(s) agreed as part of previous planning applications, and
- summarise the proposed drainage strategy for the site.

This statement is based on currently available information held by Civic Engineers. Proposals contained or forming part of this statement represent the design intent and may be subject to alteration or adjustment in completing the detailed design for this project.

2. Development Details

2.1 Existing Site Details

Plot O encompasses 0.239ha and occupies the southwest corner of the Mayfield Development Site, with Baring Street adjacent the west boundary and the proposed Plot N to the south. The plot is centred around an approximate National Grid Reference of SJ850975.

The existing site has a history of industrial use during the 18th and 19th century and was previously occupied by terraced housing for workers as well as the Mayfield Baths, which formed a focal point for the community. Within the latter half of the 20th century, there was a general reduction in the scale of industrial development of the site, which included the demolition of the workers' accommodation and the Bath House.

Several industrial units that remained on the site were demolished in Summer 2019, paving the way for enabling works for Phase 1 of the Mayfield development to commence, since which the site has remained largely unchanged.

2.1.1 Existing Topography

A topographical survey was undertaken by Malcolm Hughes Surveyors in September 2017 and indicated that, prior to the commencement of enabling works, the plot generally sloped from the southeast to the north, with approximate levels of 35.79mAOD and 35.15mAOD in these areas of the site, respectively. The majority of the plot saw use as a tarmacked car park, which had localised falls towards a central road gully. The eastern side of the plot was occupied by a building and a small section of grass and trees (31m^2) occupied the southeast plot boundary.

Demolition and clearance works have cleared the site of the above features, and the site is currently a live construction site comprising rubble and re-engineered soils in preparation for the commencement of main works.

2.1.2 Existing Drainage

No above ground watercourses have been identified within the proposed plot boundary. As part of the Mayfield Park development, the River Medlock was de-culverted and the section of this river running from the West Coast Main Line to the A6 is now fully exposed.

Public sewer records from United Utilities indicate there are no adopted sewers within the proposed plot boundary.

The following public sewer infrastructure has been identified within the vicinity of the plot:

- A varying large diameter combined water sewer runs within the Mancunian Way approximately 90m south of the proposed plot.
- A 225mm diameter combined water sewer runs within Baring St. The sewer is believed to run the length of Baring St., however the United Utilities Asset Map only displays a short section.

It is anticipated that all existing drainage within the site boundary has been grubbed up or abandoned as part of the enabling works for the development.

2.2 Proposed Development Details

Plot O comprises an 8-storey office development including ground, mezzanine and plant level comprising 9, 987 sq.m. (GEA) including active ground floor uses (A1, A3, A4 or B1), public realm and riverside walkway. The proposed hard and soft landscaping forming the public realm strategy is to integrate with a sustainable drainage system for the development, in which attenuation and treatment of run-off and improved amenity and biodiversity is to be achieved via raingardens, SuDS tree planting, permeable paving and an attenuation storage tank.

3. Surface Water Drainage

The proposed surface water drainage strategy for the development forms part of the wider Mayfield Phase 1 drainage strategy prepared by BuroHappold Engineering and aligns and coordinates with the principles outlined in the referenced document. The present document considers only the proposed drainage strategy at a plot level, and the Phase 1 drainage strategy should be consulted for further information on the impacts of the development and associated drainage proposals on the wider area.

The proposed surface water network for Plot O is part of a wider network that additionally serves Plot M and N and associated public realm, which has a single proposed outfall to the River Medlock.

Within the current proposed layout, runoff from Plot O will be conveyed through above ground drainage to a below ground system of pipes and manholes which will convey flows through a 2m x 28m x 1.2m (W x L x D) underground attenuation tank providing an attenuation storage volume of 67m^3. The tank additionally attenuates overflow run-off from a raingarden to the northwest, which has been installed as part of the enabling works for the site.

A drawing detailing this network is presented in Appendix A. An overview of the surface water drainage that serves the area encompassed by the application boundary for Plot O is provided in Figure 1.

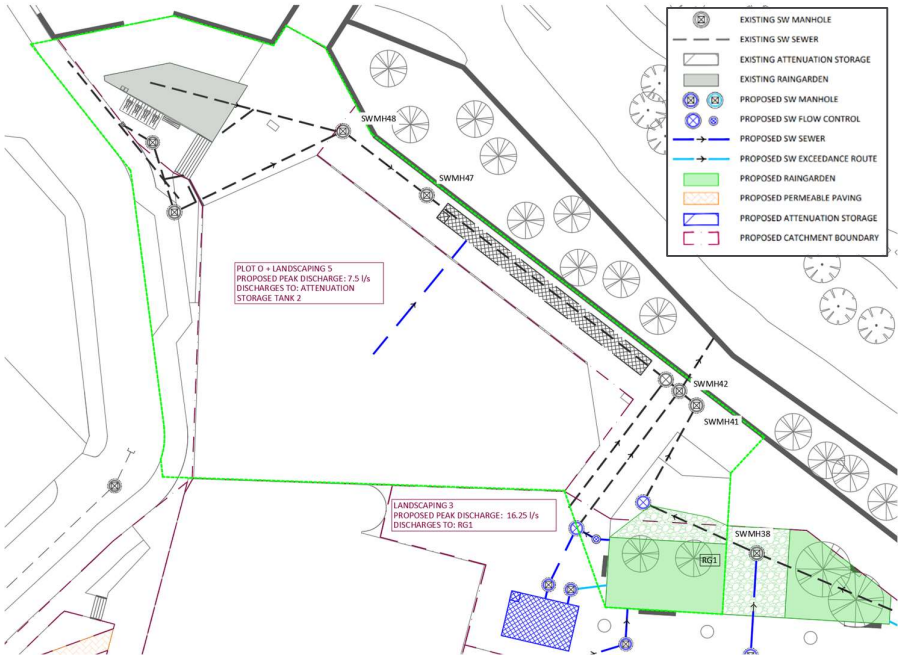


Figure 1. Excerpt of drawing 1076-27-CIV-XX-XX-D-C-30001 centred on the Section 73 application boundary for Plot O (highlighted in green).

As the drainage serving Plot O forms part of a larger network, it is noted that the proposed catchments within the drainage strategy do not strictly align with the application boundary and while features such as Raingarden 1 (RG1) and Attenuation Storage Tank 1 are positioned within the application boundary, these do not currently attenuate flows from Plot O.

A flow control chamber, also installed as part of the enabling works, restricts discharge from the network to a proposed rate of 7.5 l/s, as discussed in Section 0.

3.1 Existing and Proposed Run-off Rates

As part of the Phase 1 drainage strategy, it has been agreed that proposed discharge rate from the entire Phase 1 development is to be restricted to 50% of the existing brownfield run-off rate minus an additional 2 l/s/ha.

A previous drainage statement for Plot O, submitted on 19th December 2019 and approved on 14th February 2020 as part of planning application 124972/FO/2019, proposed a discharge rate of 7.5 l/s from Plot O and associated public realm, which is maintained as part of this planning application.

3.2 Surface Water Attenuation Volumes & Network Simulation

The proposed attenuation tank is assumed to have a storage volume equal to the tank's volume, i.e. any volume loss within the tank structure is not accounted for.

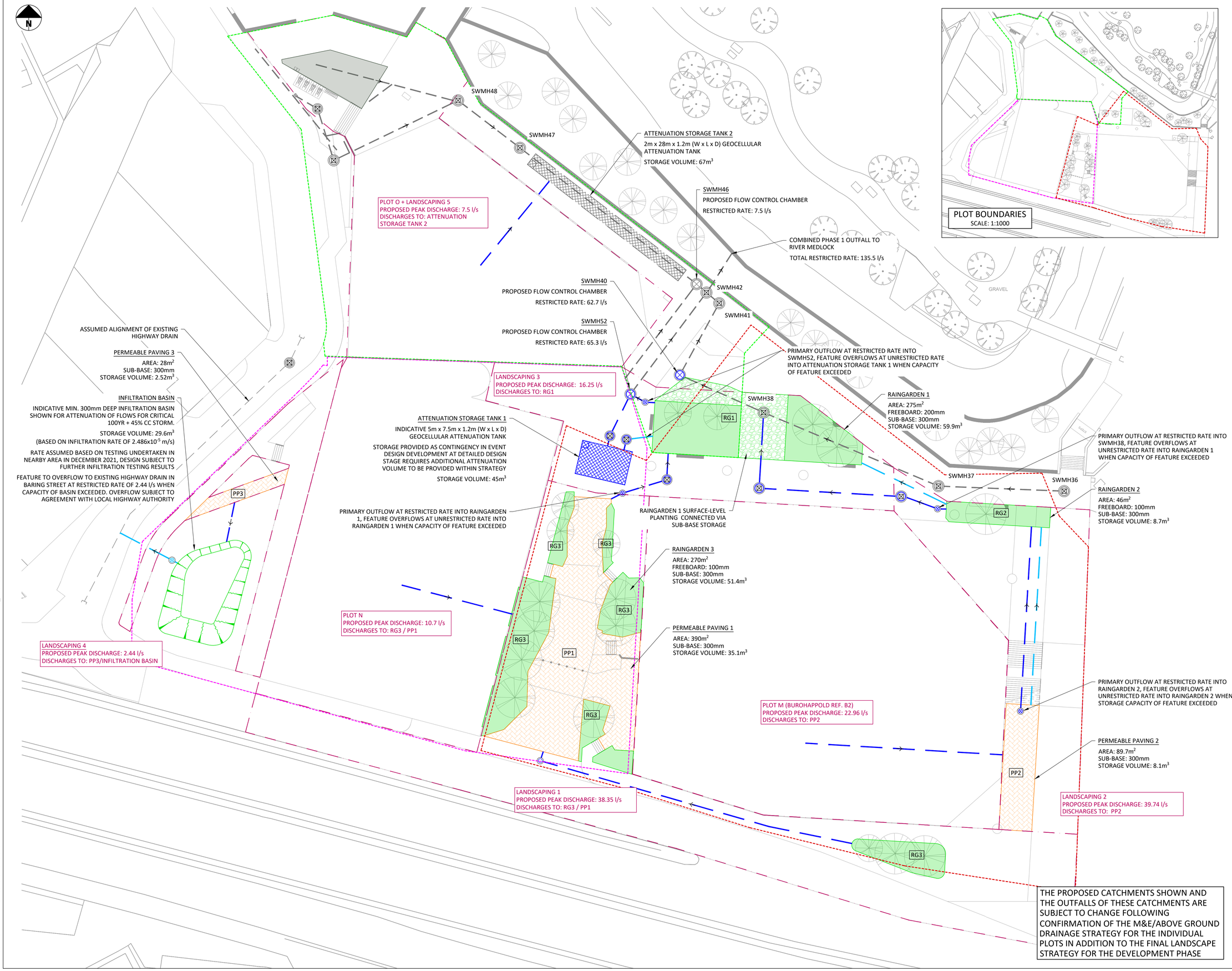
A conceptual drainage model has been produced in Causeway Flow which incorporates the above storage. Simulation results for this model have been provided in Appendix B which demonstrates the network serving Plot O has sufficient attenuation volume for surface water run-off up to the critical 100-year storm (including a 45% allowance for climate change).

4. Foul Water Drainage Strategy

The Phase 1 drainage strategy, prepared by BuroHappold, proposes that the foul water discharge from each plot be collected within a main sewer run and then outfall to the existing public combined water sewer within the Mancunian Way.

Within current proposals, foul drainage is to be collected via piped gravity network and discharge to the proposed BuroHappold foul water sewer at an unrestricted rate. The design of lateral drains from the plot to the main foul sewer is currently subject to confirmation of the above-ground drainage design for the plot including the proposed locations of any air admittance valves, stub stacks, vent pipes, floor gullies etc.

Appendix A – Proposed Surface Water Drainage Strategy



STANDARD NOTES

1. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT ARCHITECT'S AND ENGINEER'S DRAWINGS AND THE SPECIFICATIONS.
2. THIS DRAWING SHOULD NOT BE SCALED.
3. ALL DIMENSIONS ARE TO BE VERIFIED BY THE CONTRACTOR ON SITE.
4. ALL DISCREPANCIES SHOULD BE REPORTED TO C.A./E.A. PRIOR TO THE COMMENCEMENT OF WORKS.

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NOTES

1. LANDSCAPE PLAN BY STUDIO EGRET WEST, RECEIVED 31.05.2023.
2. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH 'MAYFIELD PARK DRAINAGE STRATEGY' (REPORT 0042912) AND DRAWING 0042912-BHE-XX-XX-DR-C-7060-3120 PREPARED BY BUROHAPPOLD ENGINEERING.

KEY

- PLOT O PLANNING BOUNDARY
- PLOT N SECTION 73 BOUNDARY
- PLOT M SECTION 73 BOUNDARY
- EXISTING SW MANHOLE
- EXISTING SW SEWER
- EXISTING ATTENUATION STORAGE
- EXISTING RAINGARDEN
- PROPOSED SW MANHOLE
- PROPOSED SW FLOW CONTROL
- PROPOSED SW SEWER
- PROPOSED SW EXCEEDANCE ROUTE
- PROPOSED RAINGARDEN
- SUB-BASE STORAGE TO RAINGARDEN
- PROPOSED PERMEABLE PAVING
- PROPOSED ATTENUATION STORAGE
- PROPOSED CATCHMENT BOUNDARY

DATE	REV	DESCRIPTION	DRAWN	CHKD
09.06.23	P02	REVISED COORD. WITH PARK DRAINAGE	HCM	PM
02.06.23	P01	ISSUED FOR PLANNING APPLICATIONS	HCM	CK

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PROJECT

MAYFIELD PHASE 1

TITLE

PROPOSED SURFACE WATER DRAINAGE OUTLINE STRATEGY

DRAWING STATUS	STATUS CODE
PRELIMINARY	-

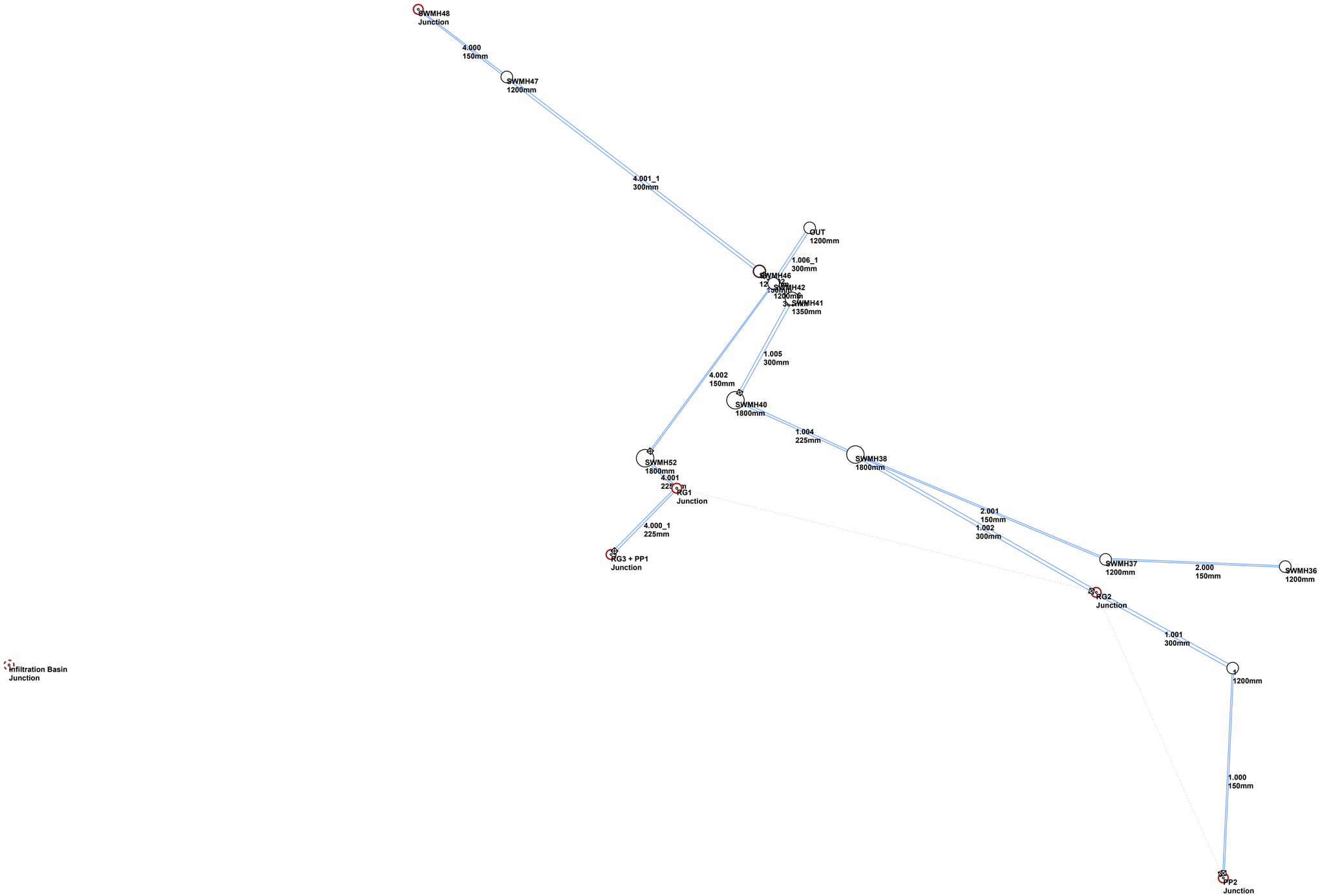
CE PROJECT No.	SCALE @ A1	DATE CREATED	DRAWN	CHECKED
1076-27	1:250	JUN 23	HCM	CK

DRAWING No.: 1076-27-CIV-XX-XX-D-C-30001 | REV: P02

FILE LOCATION PATH: P:\PROJECTS HOT\1076-27 MAYFIELD, MANCHESTER - PLOT M\004 BIM\CIVILS\CIVIL 2D\1076-27-CIV-XX-XX-M-C_PROPOSED SW DRAINAGE.DWG

Appendix B – Conceptual Surface Water Drainage Model – Simulation Results

Civic Engineers	Civic Engineers Ltd 77 Dale St Manchester M1 2HG	File: 23.06.12 - SW Outline Drainage.pfd Network: 1076-27 - Proposed SW Designer: HCM Checked: CK 12/06/2023	Page 1 Proposed SW Drainage Outline Strategy Simulation Results



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Design Settings

Rainfall Methodology	FSR	Maximum Time of Concentration (mins)	30.00
Return Period (years)	30	Maximum Rainfall (mm/hr)	50.0
Additional Flow (%)	0	Minimum Velocity (m/s)	1.00
FSR Region	England and Wales	Connection Type	Level Soffits
M5-60 (mm)	17.000	Minimum Backdrop Height (m)	0.200
Ratio-R	0.400	Preferred Cover Depth (m)	1.200
CV	1.000	Include Intermediate Ground	✓
Time of Entry (mins)	5.00	Enforce best practice design rules	x

Nodes

Name	Area (ha)	T of E (mins)	Cover Level (m)	Diameter (mm)	Easting (m)	Northing (m)	Depth (m)
PP2	0.249	5.00	39.500		385112.113	397490.973	0.420
1			36.080	1200	385113.079	397512.610	0.314
RG2	0.053	5.00	36.080		385099.043	397520.418	0.380
SWMH36		5.00	36.040	1200	385118.481	397523.074	1.363
SWMH37			36.080	1200	385100.007	397523.819	1.571
SWMH38			36.080	1800	385074.269	397534.635	1.902
Infiltration Basin	0.033		34.010		384987.217	397512.924	0.300
SWMH40			36.089	1800	385061.935	397540.230	2.164
SWMH41			36.071	1350	385067.732	397550.712	3.747
SWMH48	0.037	5.00	36.093		385029.308	397580.540	2.493
SWMH47	0.157	5.00	36.076	1200	385038.416	397573.569	2.541
SWMH46			36.076	1200	385064.402	397553.529	2.626
RG3 + PP1	0.372	5.00	36.150		385049.139	397524.322	0.435
RG1	0.083	5.00	36.000		385055.898	397531.155	0.580
SWMH52			36.150	1800	385052.643	397534.252	2.114
SWMH42			36.078	1200	385065.853	397552.284	4.078
OUT			36.078	1200	385069.567	397558.012	4.177

Links (Input)

Name	US Node	DS Node	Length (m)	ks (mm) / n	US IL (m)	DS IL (m)	Fall (m)	Slope (1:X)	Dia (mm)	T of C (mins)	Rain (mm/hr)
1.000	PP2	1	21.659	0.600	39.080	35.916	3.164	6.8	150	5.09	50.0
1.001	1	RG2	16.062	0.600	35.766	35.700	0.066	243.4	300	5.36	50.0
1.002	RG2	SWMH38	25.410	0.600	35.700	34.476	1.224	20.8	300	5.48	50.0
2.000	SWMH36	SWMH37	18.489	0.600	34.677	34.509	0.168	110.1	150	5.32	50.0
2.001	SWMH37	SWMH38	27.918	0.600	34.509	34.253	0.256	109.1	150	5.81	50.0
1.004	SWMH38	SWMH40	13.517	0.600	34.178	34.000	0.178	75.9	225	5.96	50.0
1.005	SWMH40	SWMH41	12.034	0.600	33.925	32.324	1.601	7.5	300	5.99	50.0
1.006	SWMH41	SWMH42	2.450	0.600	32.324	32.000	0.324	7.6	300	6.00	50.0
4.000	SWMH48	SWMH47	11.470	0.600	33.600	33.535	0.065	176.5	150	5.25	50.0
4.001_1	SWMH47	SWMH46	32.816	0.600	33.535	33.450	0.085	386.1	300	5.94	50.0
3.002	SWMH46	SWMH42	1.912	0.600	33.450	33.370	0.080	23.9	150	5.96	50.0
4.000_1	RG3 + PP1	RG1	9.611	0.600	35.715	35.420	0.295	32.6	225	5.07	50.0
4.001	RG1	SWMH52	4.493	0.600	35.420	34.725	0.695	6.5	225	5.08	50.0
4.002	SWMH52	SWMH42	22.353	0.600	34.036	33.370	0.666	33.6	150	5.30	50.0
1.006_1	SWMH42	OUT	6.827	0.600	32.000	31.901	0.099	69.0	300	6.06	50.0

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Simulation Settings

Rainfall Methodology	FSR	Analysis Speed	Detailed
FSR Region	England and Wales	Skip Steady State	x
M5-60 (mm)	17.000	Drain Down Time (mins)	240
Ratio-R	0.400	Additional Storage (m³/ha)	20.0
Summer CV	1.000	Check Discharge Rate(s)	x
Winter CV	1.000	Check Discharge Volume	x

Storm Durations

15	30	60	120	180	240	360	480	600	720	960	1440

Return Period (years)	Climate Change (CC %)	Additional Area (A %)	Additional Flow (Q %)
1	0	0	0
30	40	0	0
100	45	0	0

Node SWMH52 Online Orifice Control

Flap Valve	x	Design Depth (m)	1.800	Discharge Coefficient	0.600
Replaces Downstream Link	✓	Design Flow (l/s)	65.3		
Invert Level (m)	34.036	Diameter (m)	0.153		

Node SWMH46 Online Hydro-Brake® Control

Flap Valve	x	Objective	(HE) Minimise upstream storage
Replaces Downstream Link	✓	Sump Available	✓
Invert Level (m)	33.450	Product Number	CTL-SHE-0125-7500-1200-7500
Design Depth (m)	1.200	Min Outlet Diameter (m)	0.150
Design Flow (l/s)	7.5	Min Node Diameter (mm)	1200

Node SWMH40 Online ACO Q-Brake Control

Flap Valve	x	Design Depth (m)	1.900	Min Node Diameter (mm)	1500
Replaces Downstream Link	✓	Design Flow (l/s)	62.7	Orifice Diameter (mm)	0.283
Invert Level (m)	33.925	Min Outlet Diameter (m)	0.295		

Node PP2 Offline Weir Control

Flap Valve	x	Invert Level (m)	39.400	Discharge Coefficient	0.590
Loop to Node	RG2	Width (m)	4.000		

Node RG2 Offline Weir Control

Flap Valve	x	Invert Level (m)	35.980	Discharge Coefficient	0.590
Loop to Node	RG1	Width (m)	4.000		

Node RG3 + PP1 Offline Weir Control

Flap Valve	x	Invert Level (m)	36.050	Discharge Coefficient	0.590
Loop to Node	RG1	Width (m)	2.250		

Node RG3 + PP1 Online Orifice Control

Flap Valve	x	Invert Level (m)	35.715	Discharge Coefficient	0.600
Replaces Downstream Link	✓	Diameter (m)	0.075		

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Node PP2 Online Orifice Control

Flap Valve	x	Invert Level (m)	39.080	Discharge Coefficient	0.600
Replaces Downstream Link	✓	Diameter (m)	0.075		

Node RG1 Depth/Area Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Safety Factor	2.0	Invert Level (m)	35.420
Side Inf Coefficient (m/hr)	0.00000	Porosity	0.50	Time to half empty (mins)	28

Depth (m)	Area (m²)	Inf Area (m²)
0.000	205.0	0.0

Node RG2 Depth/Area Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Safety Factor	2.0	Invert Level (m)	35.700
Side Inf Coefficient (m/hr)	0.00000	Porosity	0.50	Time to half empty (mins)	10

Depth (m)	Area (m²)	Inf Area (m²)
0.000	45.8	0.0

Node PP2 Depth/Area Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Safety Factor	2.0	Invert Level (m)	39.080
Side Inf Coefficient (m/hr)	0.00000	Porosity	0.30	Time to half empty (mins)	53

Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)
0.000	89.7	0.0	0.300	89.7	0.0	0.301	0.0	0.0

Node RG3 + PP1 Depth/Area Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Safety Factor	2.0	Invert Level (m)	35.715
Side Inf Coefficient (m/hr)	0.00000	Porosity	0.30	Time to half empty (mins)	262

Depth (m)	Area (m²)	Inf Area (m²)
0.000	660.6	0.0

Node SWMH46 Depth/Area Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Safety Factor	2.0	Invert Level (m)	33.450
Side Inf Coefficient (m/hr)	0.00000	Porosity	1.00	Time to half empty (mins)	102

Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)
0.000	56.0	0.0	1.200	56.0	0.0	1.201	0.0	0.0

Node Infiltration Basin Depth/Area Storage Structure

Base Inf Coefficient (m/hr)	0.08950	Safety Factor	2.0	Invert Level (m)	33.710
Side Inf Coefficient (m/hr)	0.00000	Porosity	1.00	Time to half empty (mins)	

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Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)
0.000	48.0	48.0	0.300	150.0	48.0

Node SWMH48 Depth/Area Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Safety Factor	2.0	Invert Level (m)	33.600
Side Inf Coefficient (m/hr)	0.00000	Porosity	0.30	Time to half empty (mins)	123

Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)
0.000	54.2	0.0	0.300	54.2	0.0	0.301	0.0	0.0

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Results for 1 year Critical Storm Duration. Lowest mass balance: 99.93%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
30 minute summer	PP2	20	39.419	0.339	33.5	12.1084	0.0000	FLOOD RISK
60 minute summer	1	36	35.827	0.061	6.4	0.0694	0.0000	OK
30 minute summer	RG2	21	35.765	0.065	30.3	1.6611	0.0000	OK
15 minute summer	SWMH36	1	34.677	0.000	0.0	0.0000	0.0000	OK
15 minute summer	SWMH37	1	34.509	0.000	0.0	0.0000	0.0000	OK
30 minute summer	SWMH38	21	34.286	0.108	24.6	0.2757	0.0000	OK
120 minute summer	Infiltration Basin	80	33.756	0.046	2.2	2.6894	0.0000	OK
30 minute summer	SWMH40	21	33.996	0.071	24.5	0.1799	0.0000	OK
30 minute summer	SWMH41	21	32.376	0.052	23.4	0.0743	0.0000	OK
15 minute summer	SWMH48	11	33.686	0.086	6.7	1.4176	0.0000	OK
15 minute summer	SWMH47	11	33.679	0.144	27.2	0.3410	0.0000	OK
60 minute summer	SWMH46	41	33.624	0.174	18.7	9.9530	0.0000	SURCHARGED
240 minute summer	RG3 + PP1	160	35.882	0.167	15.8	35.8511	0.0000	OK
30 minute summer	RG1	21	35.454	0.034	13.5	3.6307	0.0000	OK
30 minute summer	SWMH52	21	34.158	0.122	9.7	0.3110	0.0000	OK
30 minute summer	SWMH42	21	32.128	0.128	39.4	0.1448	0.0000	OK
30 minute summer	OUT	22	32.012	0.111	39.6	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
30 minute summer	PP2	Orifice	1	6.4				
30 minute summer	PP2	Weir	RG2	18.7				2.7
60 minute summer	1	1.001	RG2	6.4	0.848	0.090	0.1675	
30 minute summer	RG2	1.002	SWMH38	24.6	2.231	0.100	0.2802	
30 minute summer	RG2	Weir	RG1	0.0				0.0
15 minute summer	SWMH36	2.000	SWMH37	0.0	0.000	0.000	0.0000	
15 minute summer	SWMH37	2.001	SWMH38	0.0	0.000	0.000	0.0039	
30 minute summer	SWMH38	1.004	SWMH40	24.5	1.366	0.410	0.2422	
120 minute summer	Infiltration Basin	Infiltration		0.6				
30 minute summer	SWMH40	ACO Q-Brake	SWMH41	23.4				
30 minute summer	SWMH41	1.006	SWMH42	23.2	1.308	0.057	0.0451	
15 minute summer	SWMH48	4.000	SWMH47	6.3	0.506	0.475	0.1592	
15 minute summer	SWMH47	4.001_1	SWMH46	27.2	1.190	0.484	0.9151	
60 minute summer	SWMH46	Hydro-Brake®	SWMH42	6.9				
240 minute summer	RG3 + PP1	Orifice	RG1	4.2				
240 minute summer	RG3 + PP1	Weir	RG1	0.0				0.0
30 minute summer	RG1	4.001	SWMH52	9.7	2.599	0.047	0.0167	
30 minute summer	SWMH52	Orifice	SWMH42	9.6				
30 minute summer	SWMH42	1.006_1	OUT	39.6	1.518	0.296	0.1784	73.7

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Results for 30 year +40% CC Critical Storm Duration. Lowest mass balance: 99.93%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	PP2	10	39.465	0.385	129.0	12.6573	0.0000	FLOOD RISK
30 minute summer	1	20	36.005	0.239	6.9	0.2703	0.0000	OK
30 minute summer	RG2	20	36.010	0.310	138.0	7.9669	0.0000	FLOOD RISK
30 minute summer	SWMH36	21	35.928	1.251	14.2	1.4154	0.0000	FLOOD RISK
30 minute summer	SWMH37	21	35.928	1.419	17.4	1.6052	0.0000	FLOOD RISK
30 minute summer	SWMH38	21	35.926	1.748	120.2	4.4482	0.0000	FLOOD RISK
180 minute winter	Infiltration Basin	172	33.862	0.152	3.8	11.5824	0.0000	OK
30 minute summer	SWMH40	21	35.676	1.751	78.8	4.4574	0.0000	SURCHARGED
30 minute summer	SWMH41	31	32.435	0.111	62.4	0.1590	0.0000	OK
60 minute summer	SWMH48	60	34.205	0.605	17.2	5.0654	0.0000	SURCHARGED
60 minute summer	SWMH47	60	34.205	0.670	66.5	1.5853	0.0000	SURCHARGED
60 minute summer	SWMH46	60	34.203	0.753	61.2	43.0407	0.0000	SURCHARGED
60 minute summer	RG3 + PP1	38	36.111	0.396	128.2	85.2019	0.0000	FLOOD RISK
60 minute summer	RG1	42	35.565	0.145	84.9	15.2833	0.0000	OK
60 minute summer	SWMH52	42	35.459	1.423	61.4	3.6209	0.0000	SURCHARGED
60 minute winter	SWMH42	42	32.306	0.306	124.9	0.3465	0.0000	SURCHARGED
60 minute winter	OUT	42	32.127	0.226	124.9	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	PP2	Orifice	1	6.9				
15 minute summer	PP2	Weir	RG2	121.7				39.2
30 minute summer	1	1.001	RG2	8.8	0.858	0.124	1.0489	
30 minute summer	RG2	1.002	SWMH38	120.2	3.082	0.491	1.7894	
30 minute summer	RG2	Weir	RG1	38.7				4.1
30 minute summer	SWMH36	2.000	SWMH37	-14.2	-0.833	-0.842	0.3255	
30 minute summer	SWMH37	2.001	SWMH38	-17.4	-0.991	-1.027	0.4915	
30 minute summer	SWMH38	1.004	SWMH40	78.8	1.983	1.320	0.5376	
180 minute winter	Infiltration Basin	Infiltration		0.6				
30 minute summer	SWMH40	ACO Q-Brake	SWMH41	62.4				
30 minute summer	SWMH41	1.006	SWMH42	62.3	1.627	0.153	0.1127	
60 minute summer	SWMH48	4.000	SWMH47	12.5	0.713	0.943	0.2019	
60 minute summer	SWMH47	4.001_1	SWMH46	61.2	0.955	1.091	2.3109	
60 minute summer	SWMH46	Hydro-Brake®	SWMH42	7.5				
60 minute summer	RG3 + PP1	Orifice	RG1	7.0				
60 minute summer	RG3 + PP1	Weir	RG1	62.2				45.5
60 minute summer	RG1	4.001	SWMH52	61.4	3.892	0.298	0.1501	
60 minute summer	SWMH52	Orifice	SWMH42	56.7				
60 minute winter	SWMH42	1.006_1	OUT	124.9	1.923	0.933	0.4344	330.5

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Results for 100 year +45% CC Critical Storm Duration. Lowest mass balance: 99.93%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	PP2	10	39.479	0.399	172.4	12.8298	0.0000	FLOOD RISK
30 minute summer	1	18	36.060	0.294	7.6	0.3327	0.0000	OK
15 minute summer	RG2	11	36.043	0.343	208.6	8.8035	0.0000	FLOOD RISK
30 minute summer	SWMH36	19	35.977	1.300	13.3	1.4703	0.0000	FLOOD RISK
30 minute summer	SWMH37	19	35.969	1.460	19.4	1.6510	0.0000	FLOOD RISK
30 minute summer	SWMH38	20	35.950	1.772	129.6	4.5098	0.0000	FLOOD RISK
180 minute winter	Infiltration Basin	176	33.911	0.201	5.1	17.0016	0.0000	OK
30 minute summer	SWMH40	20	35.702	1.777	81.0	4.5217	0.0000	SURCHARGED
120 minute summer	SWMH41	62	32.432	0.108	62.1	0.1542	0.0000	OK
30 minute summer	SWMH48	19	34.614	1.014	28.7	5.1861	0.0000	SURCHARGED
120 minute winter	SWMH47	104	34.609	1.074	39.9	2.5432	0.0000	SURCHARGED
120 minute winter	SWMH46	102	34.608	1.158	38.6	66.1440	0.0000	SURCHARGED
60 minute summer	RG3 + PP1	36	36.148	0.433	174.0	93.3178	0.0000	FLOOD RISK
60 minute summer	RG1	40	36.000	0.580	232.4	61.1076	2.2543	FLOOD
60 minute summer	SWMH52	41	35.892	1.856	84.0	4.7228	0.0000	FLOOD RISK
60 minute summer	SWMH42	52	32.376	0.376	133.1	0.4253	0.0000	SURCHARGED
30 minute winter	OUT	34	32.174	0.273	133.3	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	PP2	Orifice	1	7.1				
15 minute summer	PP2	Weir	RG2	164.8				56.3
30 minute summer	1	1.001	RG2	9.0	0.856	0.127	1.1284	
15 minute summer	RG2	1.002	SWMH38	157.8	3.180	0.644	1.7894	
15 minute summer	RG2	Weir	RG1	116.1				19.8
30 minute summer	SWMH36	2.000	SWMH37	-13.3	-0.753	-0.784	0.3255	
30 minute summer	SWMH37	2.001	SWMH38	-19.4	-1.099	-1.139	0.4915	
30 minute summer	SWMH38	1.004	SWMH40	81.0	2.036	1.356	0.5376	
180 minute winter	Infiltration Basin	Infiltration		0.6				
30 minute summer	SWMH40	ACO Q-Brake	SWMH41	62.4				
120 minute summer	SWMH41	1.006	SWMH42	62.1	1.574	0.153	0.1126	
30 minute summer	SWMH48	4.000	SWMH47	20.9	1.189	1.572	0.2019	
120 minute winter	SWMH47	4.001_1	SWMH46	38.6	0.865	0.689	2.3109	
120 minute winter	SWMH46	Hydro-Brake®	SWMH42	7.5				
60 minute summer	RG3 + PP1	Orifice	RG1	7.4				
60 minute summer	RG3 + PP1	Weir	RG1	128.4				94.8
60 minute summer	RG1	4.001	SWMH52	84.0	3.887	0.408	0.1787	
60 minute summer	SWMH52	Orifice	SWMH42	65.2				
60 minute summer	SWMH42	1.006_1	OUT	133.1	1.915	0.994	0.4701	452.6

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Job Title

Mayfield, Manchester – Plot N

Report Type

Drainage Statement

Prepared for

Mayfield Medlock Limited

Date

9 June 2023

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Appendices

Appendix A – Proposed Surface Water Drainage Strategy
Appendix B – Conceptual Surface Water Drainage Model – Simulation Results
Appendix C – Infiltration Testing Results

Drainage Statement

Prepared by	**Harry Morton**
Reviewed by	Chris Kendrick / Paul Morris
Report Ref.	1076-34-CIV-XX-XX-R-C-1001
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1. Introduction

Civic Engineers are appointed to the Client, Mayfield Medlock Limited, to provide civil engineering consultancy for Mayfield Phase 1, which comprises the Mayfield Park development, three buildings: Baring St. Office No. 1 (Plot O/Poulton), Baring St. Office No. 2 (Plot M/Republic) and Baring St. MSCP (Plot N); alongside associated public realm. This drainage statement has been prepared to accompany the Section 73 application for Plot N.

The purpose of this statement is to:

- provide information on the existing site's topography and drainage,
- reaffirm the pre-development peak 1 in 1-year surface water run-off rate(s) for plots agreed as part of previous planning applications and establish the pre-development peak 1 in 1-year surface water run-off rates for proposed landscaping, and
- summarise the proposed drainage strategy for the site.

This statement is based on currently available information held by Civic Engineers. Proposals contained or forming part of this statement represent the design intent and may be subject to alteration or adjustment in completing the detailed design for this project.

2. Development Details

Plot N occupies 0.355ha and is located in the southwest corner of the Mayfield Development Site. It is bounded by Baring Street to the west, the proposed Plot O to the north, and the Mancunian Way to the south. The plot is centred around an approximate National Grid Reference of SJ850975.

The existing site has a history of industrial use during the 18th and 19th century and was previously occupied by terraced housing for workers as well as the Mayfield Baths, which formed a focal point for the community. Within the latter half of the 20th century, there was a general reduction in the scale of industrial development of the site, which included the demolition of the workers' accommodation and the Bath House.

Several industrial units that remained on the site were demolished in Summer 2019, paving the way for enabling works for Phase 1 of the Mayfield development to commence, since which the site has remained largely unchanged.

2.1.1 Existing Topography

A topographical survey was undertaken by Malcolm Hughes Surveyors in September 2017 and indicated that, prior to the commencement of enabling works, the plot generally sloped from the southeast to the north, with approximate levels of 36.75mAOD and 35.20mAOD in these areas of the site, respectively. The majority of the plot was occupied by industrial units with a small section of grass and trees (46m^2) present adjacent the northern plot boundary.

Demolition and clearance works have removed the above features from the site, and the area is currently a live construction site comprising rubble and re-engineered soils in preparation for the commencement of main works.

2.1.2 Existing Drainage

No above ground watercourses have been identified within the proposed plot boundary. As part of the Mayfield Park development, the River Medlock was de-culverted and the section of this river running from the West Coast Main Line to the A6 is now fully exposed.

Public sewer records from United Utilities indicate there are no adopted sewers within the proposed plot boundary.

The following public sewer infrastructure has been identified within the vicinity of the plot:

- A varying large diameter combined water sewer runs within the Mancunian Way approximately 90m south of the proposed plot.
- A 225mm diameter combined water sewer runs within Baring St. The sewer is believed to run the length of Baring St., however the United Utilities Asset Map only displays a short section.

It is anticipated that all existing drainage within the site boundary has been grubbed up or abandoned as part of the enabling works for the development.

2.2 Proposed Development Details

The proposed development is a 10-storey building with a basement level, containing a multi-storey car park, cycle hub and retail units. Areas of public realm are proposed within the surrounding area. The proposed hard and soft landscaping forming the public realm strategy is to integrate with a sustainable drainage system for the development, in which attenuation and treatment of run-off and improved amenity and biodiversity is to be achieved via SuDS features including raingardens, bioretention tree planting and permeable paving.

An attenuation storage tank has been provided in the current design as additional contingency storage in the event that further detailed design within Phase 1 or later phases in the Mayfield Park development necessitates additional attenuation volume, such as an adjustment to site levels increasing the area positively drained by the proposed drainage network.

3. Surface Water Drainage Strategy

The proposed surface water drainage strategy for the development forms part of the wider Mayfield Phase 1 drainage strategy prepared by BuroHappold Engineering and aligns and coordinates with the principles outlined in the referenced document. The present document considers only the proposed drainage strategy at a plot level, and the Phase 1 drainage strategy should be consulted for further information on the impacts of the development and associated drainage proposals on the wider area.

Much of the surface water network serving Plot N is part of a wider network that additionally serves Plot M and O and associated public realm, which has a single proposed outfall to the River Medlock.

A drawing detailing the wider surface water strategy for Plots N, M and O is presented in Appendix A. An overview of the surface water drainage that serves the area encompassed by the Section 73 boundary for Plot N is provided in Figure 1.

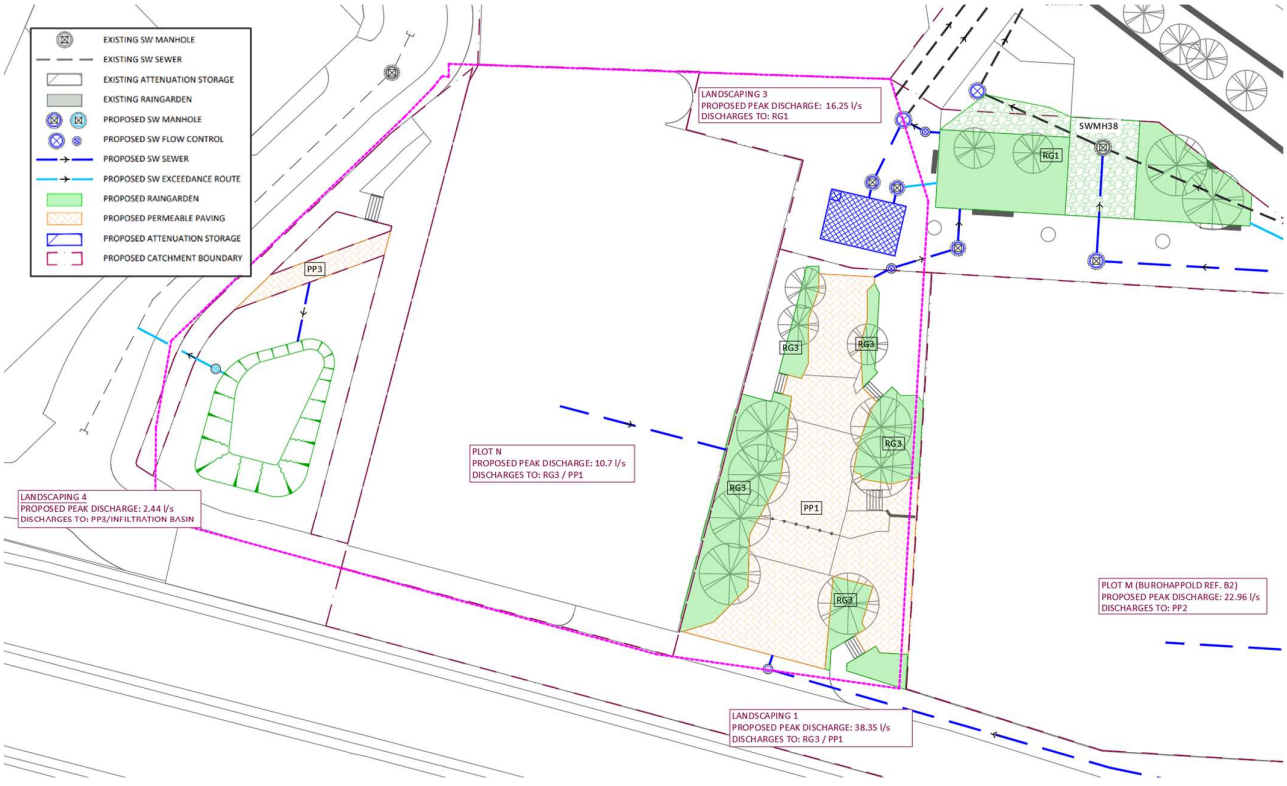


Figure 1. Excerpt of drawing 1076-CIV-XX-XX-D-C-30001 centred on the Section 73 application boundary for Plot N (highlighted in pink).

As the drainage serving Plot N forms part of a larger network, it is noted that the proposed catchments within the drainage strategy do not strictly align with the application boundary and that several proposed catchments discharging into the sub-network serving Plot N extend beyond the boundary area.

Within the current proposed layout, runoff from Plot N and landscaping to the east is to discharge to raingardens and permeable paving located between plots N and M, which in turn flow to a larger raingarden to the north. The outflow of each feature is to be restricted to attenuate surface water run-off for storms with lower return periods, however a high-level overflow is to be provided to allow unrestricted discharge into the next feature once the preceding feature's attenuation capacity is exceeded in more severe rainfall events.

An additional network is also proposed to the west of Plot N. The proposed landscaping in this area is positioned on lower-lying ground, from which an outfall to the River Medlock is not deemed feasible via the existing Mayfield Park outfalls. As part of current proposals for this area, surface water is to discharge to an infiltration basin, which will attenuate flows as they infiltrate into the below ground strata. This catchment is believed to have an existing connection to the highway drainage system within Baring Street and it is proposed that this is reutilised as an overflow connection from the infiltration basin should its capacity be exceeded. This proposal is subject to results of infiltration testing and agreement with the Local Highway Authority.

An attenuation storage tank, whilst not necessary to satisfy the present attenuation requirements for the site, has been provided in the current strategy as additional contingency storage should further detailed design within Phase 1 or later phases in the Mayfield Park development necessitate additional attenuation volume. In storm events with higher return periods, surface water will overflow from the northern raingarden into the attenuation tank.

3.1 Existing and Proposed Run-off Rates

As part of the Phase 1 drainage strategy, it has been agreed that the proposed discharge rate from the entire Phase 1 development is to be restricted to 50% of the existing brownfield run-off rate minus an additional 2 l/s/ha.

A previous drainage statement for Plot N, submitted on 19th December 2019 and approved on 14th February 2020 as part of planning application 124972/FO/2019, outlined an existing discharge rate of 22.2 l/s for the area occupied by the proposed building. A proposed discharge rate of 10.7l/s was therefore adopted for the building only, which is maintained as part of this Section 73 application.

Areas of proposed public realm encompassed by the application boundary are also positively drained by the drainage network serving Plot N. These form sub-catchments within the wider catchment strategy proposed in the Phase 1 drainage strategy, for which rates have already been determined and agreed. These rates have been distributed amongst the sub-catchments proportionately to their area and are detailed below:

Landscaping 1 Post-development 1 in 1-year rate = 38.35 l/s

Landscaping 3 Post-development 1 in 1-year rate = 16.25 l/s

Landscaping 4 Post-development 1 in 1-year rate = 2,44 l/s *(overflow restriction when infiltration capacity exceeded)*

The restricted rate from the sub-network serving Plot N and associated landscaping is therefore:

Post-development SW Run-off rate = 67.74 l/s

As discussed previously, the above rate is split between two flow control features, with Landscaping 1, Landscaping 3 and Plot N discharging to the River Medlock at a maximum rate of 65.3 l/s and Landscaping 4 overflowing into the existing highway drain in Baring St. at a maximum rate of 2,44 l./s (when the infiltration basin is unable to fully discharge its attenuated volume via infiltration).

3.2 Surface Water Attenuation Volumes & Network Simulation

The surface water attenuation volumes for the proposed permeable paving and raingardens have been approximated using the following formulas:

> ***Raingarden storage volume*** *= area of raingarden × (depth of freeboard + sub-base void ratio × depth of sub-base)*
>
> ***Permeable paving volume*** *= area of permeable paving × sub-base void ratio × depth of sub-base*

The depths of sub-bases and freeboards adopted for each feature are highlighted on drawing 1076-27-CIV-XX-XX-D-C-30001, and constant void ratio of 0.3 has been assumed for all features.

The proposed attenuation tank is assumed to have a storage volume equal to the tank's volume, i.e. any volume loss within the tank structure is not accounted for.

Causeway Flow has been used to size the infiltration basin assuming an infiltration rate of 2.486×10^{-5} m/s. This infiltration rate is based on the results of infiltration testing to BRE 365 which was undertaken in November-December 2020, with the rate measured at the test pit nearest to the location of the proposed infiltration basin used (test pit SA3). These results have been provided in Appendix C.

A conceptual drainage model has been produced within Causeway Flow, which incorporates the above estimates of storage volume. Simulation results for this model have been provided in Appendix B which demonstrates the network serving Plot N has sufficient attenuation volume for surface water run-off up to the critical 100-year storm (including a 45% allowance for climate change).

4. Foul Water Drainage Strategy

The Phase 1 drainage strategy, prepared by BuroHappold, proposes that the foul water discharge from each plot be collected within a main sewer run and then outfall to the existing public combined water sewer within the Mancunian Way.

Within current proposals, foul drainage is to be collected via piped gravity network and discharge to the proposed BuroHappold foul water sewer at an unrestricted rate. The design of lateral drains from the plot to the main foul sewer is currently subject to confirmation of the above-ground drainage design for the plot including the proposed locations of any air admittance valves, stub stacks, vent pipes, floor gullies etc.

Appendix C – Infiltration Testing Results

AS/P2/SOAK/mh 041220

Mr Mike Harrison
U+I
Mayfield,
The Gatehouse,
11 Baring St,
Manchester
M1 2PY

4th December 2020

To Mr Harrison,

Re: Soakaway Testing Report

Mayfield Park

Further to discussions with the flood risk and drainage design consultants Buro Happold, RoC Consulting completed a program of Soakaway testing within the proposed park in order to establish soil infiltration rates. A total of 3 test pits were completed at (or as close as site constraints would allow) to the proposed locations of soakaway pits indicated on Buro Happold drainage layout plan ref: 0042912-BHE-XX-XX-DR-C-3120.

Test pit locations and other relevant information are as follows,

Test Pit ID	Location	Easting	Northing	Current Surface Level	Proposed Invert Level	Strata at invert level
SA1	Rain Garden 1	385055.3	397609.3	34.35mAOD	33.13mAOD	Made ground (Demolition type fill material held in Sand and Gravel matrix with frequent semi intact brick inclusions)
SA2	Rain Garden 2	385127.0	397612.14	34.49mAOD	32.54mAOD	
SA3*	Rain Garden 3	385081.3	397527.17	33.18mAOD	34.06mAOD	Sandstone bedrock

* Proposed invert level for SA3 is above that of existing ground level, test taken at base of existing concrete floor slab within Sandstone bedrock

Test pit locations are indicated RoC Consulting sketch 4153 SOAK101 provided as an inclusion to this note.

Test Method & Results

Tests pits were excavated by contractors PP O'Connor's between the 25th and 26th November 2020 in accordance with the BRE 365. Pits were excavated to indicated to indicated invert levels and filled with water from a bowser 3 times with observations made on resting water levels.

Measurements of pit dimensions was taken prior to commencement of each test with water levels recorded at the start of each test, and at regular intervals throughout. A copy of the results from these measurements (including pit dimensions) has been provided as an inclusion to this note.

Contamination Analysis

Soil samples were obtained at the base of each test pit for leachate analysis at a UKAS accredited chemical testing facility against a range of determinands synonymous with previous site operations (namely Heavy Metals, Total Petroleum Hydrocarbons and Poly Aromatic Hydrocarbons). The purpose of this testing was to establish the risks of increased contaminant mobility as a result of rainwater infiltration into soils in and around proposed soakaway locations.

At the time of writing the results from this testing are still outstanding and this briefing note will be updated to reflect accordingly. However, based on the results from chemical analysis of soils across the wider Mayfield Park development we feel it is likely these soils will contain elevated levels of the abovementioned contaminants and could pose a risk to controlled waters.

In order to mitigate these risks, we would recommend consideration is given excavating and replacing soils at the base of soakaway pits until clean natural strata is encountered, and then backfilling pits to desired level with suitable permeable clean inert strata. The use of a liner system would also be prudent to seal the pit sites and prevent lateral mobilisation of contaminants the surrounding soils. Records from nearby exploratory borehole / trial pit locations indicate deeper ground conditions in the area of proposed rain gardens is as follows

Rain Garden 1: Made ground overlying Sandstone bedrock at depth circa 1.5 to 2.0m (c32.97mAOD), based on nearby borehole “WS314”

Rain Garden 2: Made ground overlying clayey silty fine to coarse sand at depth circa 1.5m (c32.92mAOD), based on nearby borehole “WS306”

In the area of Rain Garden 3 weathered Sandstone bedrock was reported at the base of the existing concrete floor slab and the need to adopt remedial measures in the construction of this pit is not considered justified, although any demolition type made ground materials encountered during the formation of the pit should be removed.

We trust the enclosed is self-explanatory and would welcome your comments on the points raised. Should any aspect require clarification please do not hesitate to get in touch.

Yours Sincerely



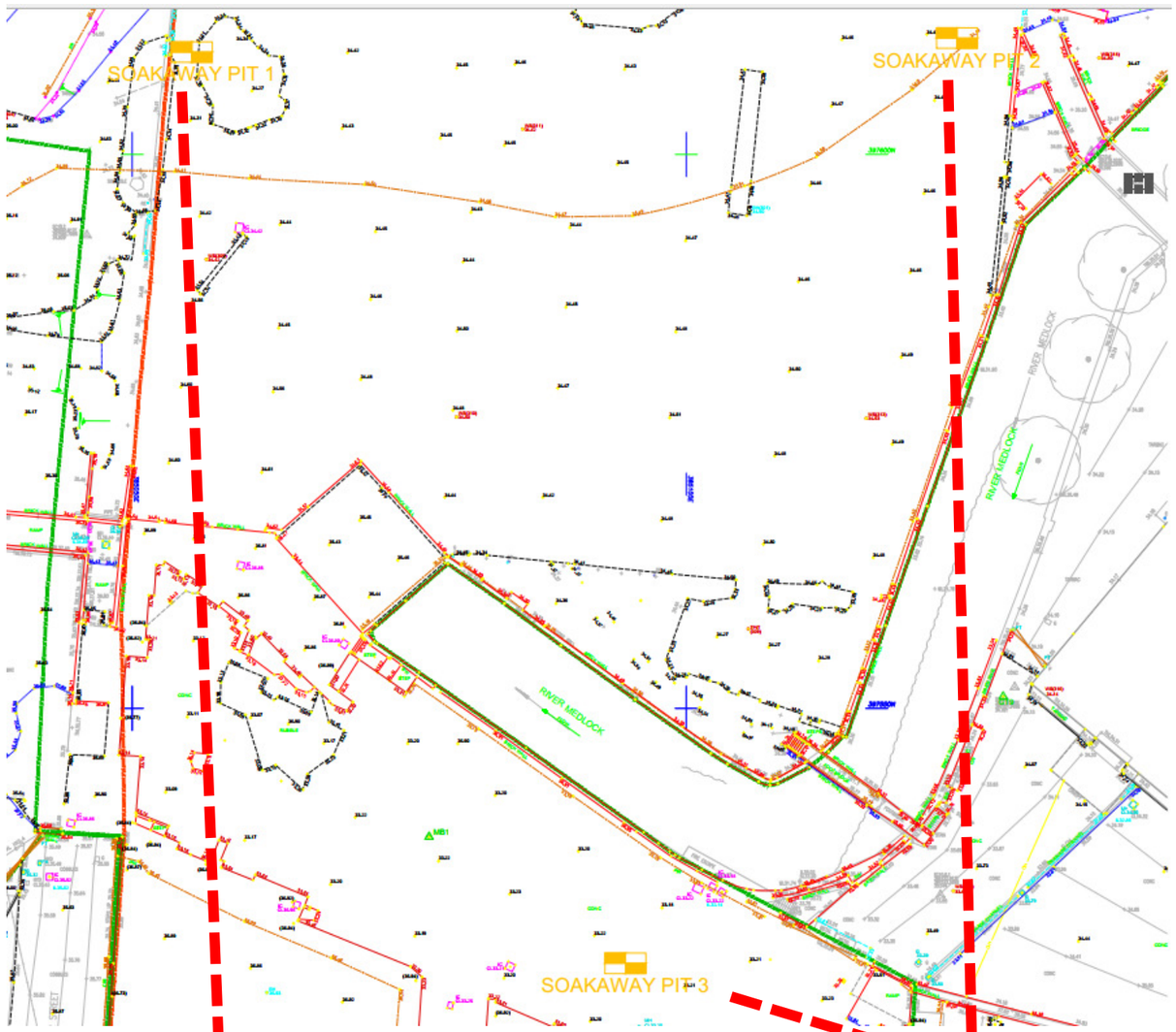
Alex Smiles

Earth Sciences Director

Enc: Drawing 4153 SOAK101 Soakaway test location plan

Soakaway test pit results & photographs

AS/P2/SOAK/mh 041220

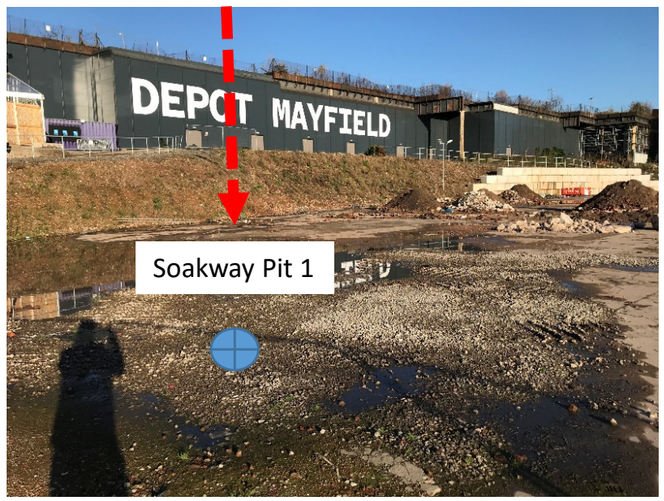


Sketch Notes

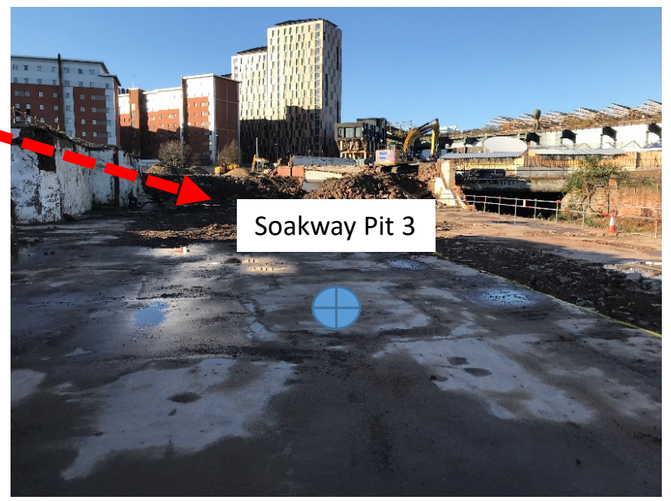
1) Soakaway pits to be completed in accordance with BRE 365 guidance document.

2) Soil samples for leachate testing to be completed from two locations in each pit and tested for a range of determinands including Heavy Metals, PAH and TPHCWG.

3) Soakaway pit to be formed to anticipated invert level of proposed rain gardens. Any below ground structures encountered to be grubbed up and broken out and backfilled as appropriate.







JOB NO	4153	SKETCH NO	SOAK101	DRAWN BY AS 19 11 2020
PROJECT TITLE	Mayfield Park, Manchester	SKETCH TITLE	Proposed Soakway Test Locations	

Mayfield Park Soakaway Test Results

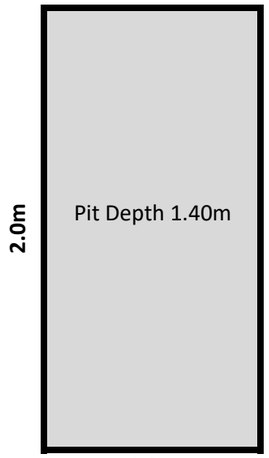
Collated by : RMG
Reviewed by : AS
04/12/2020

Soakaway Test Pit 1 (SA1)

Resting Water Level (mbgl)

SA1	Test 1	Test 2	Test 3
Start	0.55	0.52	0.56
5 sec	0.63	0.59	0.57
10 sec	0.71	0.66	0.61
15 sec	0.8	0.74	0.66
20 sec	0.88	0.83	0.69
30 sec	0.95	0.91	0.72
1 min	1.08	1.03	0.81
2 min	1.15	1.11	0.86
3 min	1.18	1.17	0.93
4 min	1.2		0.98
5 min	END	1.22	1.04
10 min			1.16
15 min			1.22
30 min			END

Pit Dimensions



Photograph of Test Pit



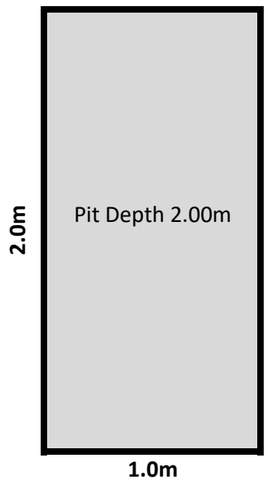
Soil sample obtained for leachate analysis in pit at depth of 1.25m

Soakaway Test Pit 2 (SA2)

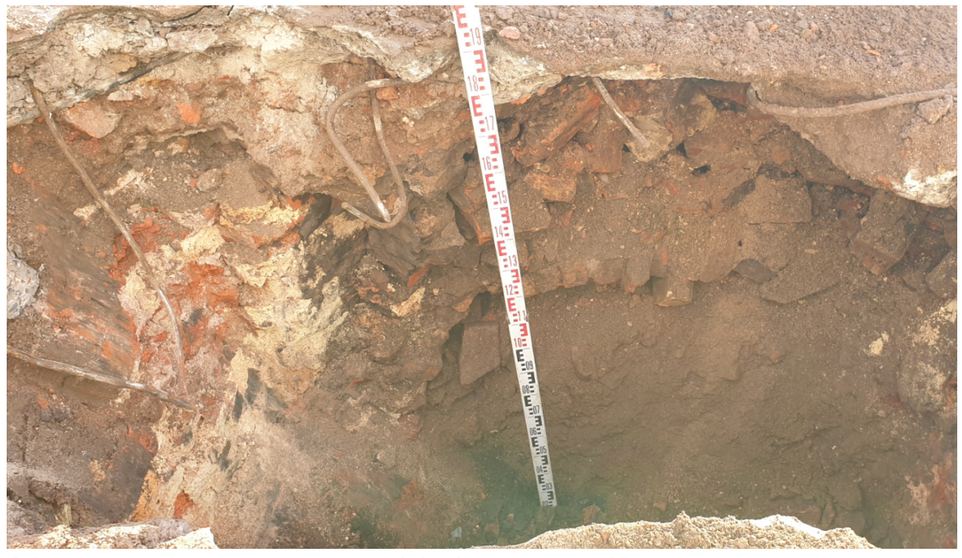
Resting Water Level (mbgl)

SA2	Test 1	Test 2	Test 3
Start	0.9	0.95	0.9
5 sec	1	1.02	0.95
10 sec	1.08	1.09	0.99
15 sec	1.16	1.13	1.04
20 sec	1.25	1.2	1.098
30 sec	1.3	1.26	1.11
1 min	1.65	1.6	1.15
2 min	1.79	1.71	1.2
3 min	1.9	1.8	1.37
4 min		1.88	1.52
5 min	1.94	END	1.6
10 min			1.7
15 min			1.79
20 min			1.85
30 min			1.9

Pit Dimensions



Photograph of Test Pit



Soil sample obtained for leachate analysis in pit at depth of 1.95m

Mayfield Park Soakaway Test Results

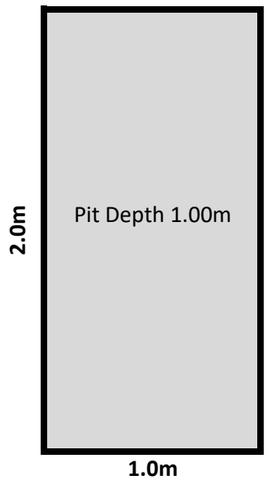
Collated by : RMG
Reviewed by : AS
04/12/2020

Soakaway Test Pit 3 (SA3)

Resting Water Level (mbgl)

SA3	Test 1	Test 2	Test 3
Start	0.1	0.12	0.1
5 sec	0.12	0.14	0.11
10 sec	0.13	0.15	0.12
15 sec	0.14	0.15	0.13
20 sec	0.15	0.16	0.14
30 sec	0.16	0.17	0.15
1 min	0.19	0.18	0.19
2 min	0.26	0.24	0.25
3 min	0.31	0.28	0.29
4 min	0.33	0.32	0.31
5 min	0.35	0.34	0.33
10 min	0.42	0.4	0.39
15 min	0.44	0.43	0.42
20 min	0.48	0.46	0.46
30 min	0.57	0.54	0.55
40 min	0.62	0.58	0.57
50 min	0.71	0.66	0.63
60 min	0.76	0.72	0.7
90 min	0.89	0.87	0.85

Pit Dimensions



Photograph of Test Pit



Soil sample obtained for leachate analysis in pit at depth of 1.00m

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Civic Engineers

Job Title

Mayfield, Manchester – Plot M

Report Type

Drainage Statement

Prepared for

Mayfield Republic Limited

Date

9 June 2023

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2. Development Details 2
2.2 Proposed Development Details 3
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Appendices

Appendix A – Proposed Surface Water Drainage Strategy
Appendix B – Conceptual Surface Water Drainage Model – Simulation Results

Drainage Statement

Prepared by	**Harry Morton**
Reviewed by	Chris Kendrick / Paul Morris
Report Ref.	1076-27-CIV-XX-XX-R-C-1001
Issued	02/06/2023
Revised	09/06/2023 – V2 – Revised coordination with BuroHappold drainage strategy

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1. Introduction

Civic Engineers are appointed to the Client, Mayfield Republic Limited, to provide civil engineering consultancy for Mayfield Phase 1, which comprises the Mayfield Park development, three buildings: Baring St. Office No. 1 (Plot O/Poulton), Baring St. Office No. 2 (Plot M/Republic) and Baring St. MSCP (Plot N); alongside associated public realm. This drainage statement has been prepared to accompany the Section 73 application for Plot M.

The purpose of this statement is to:

- provide information on the existing site's topography and drainage,
- reaffirm the pre-development peak 1 in 1-year surface water run-off rate(s) for plots agreed as part of previous planning applications and establish the pre-development peak 1 in 1-year surface water run-off rates for proposed landscaping, and
- summarise the proposed drainage strategy for the site.

This statement is based on currently available information held by Civic Engineers. Proposals contained or forming part of this statement represent the design intent and may be subject to alteration or adjustment in completing the detailed design for this project.

2. Development Details

Plot M occupies 0.493ha and is located in the southwest corner of the Mayfield Development Site. It is bounded by Plot O and Plot N to the west, the River Medlock to the north, and the Mancunian Way to the south. The plot is centred around an approximate National Grid Reference of SJ850975.

The existing site has a history of industrial use during the 18th and 19th century and was previously occupied by terraced housing for workers as well as the Mayfield Baths, which formed a focal point for the community. Within the latter half of the 20th century, there was a general reduction in the scale of industrial development of the site, which included the demolition of the workers' accommodation and the Bath House.

Several industrial units that remained on the site were demolished in Summer 2019, paving the way for enabling works for Phase 1 of the Mayfield development to commence, since which the site has remained largely unchanged.

2.1.1 Existing Topography

A topographical survey was undertaken by Malcolm Hughes Surveyors in September 2017 and indicated that, prior to the commencement of enabling works, the plot generally sloped from the southeast to the north, with approximate levels of 36.75mAOD and 35.20mAOD in these areas of the site, respectively. The majority of the plot was occupied by industrial units.

Demolition and clearance works have removed the above features from the site, and the area is currently a live construction site comprising rubble and re-engineered soils in preparation for the commencement of main works.

2.1.2 Existing Drainage

No above ground watercourses have been identified within the proposed plot boundary. As part of the Mayfield Park development, the River Medlock was de-culverted and the section of this river running from the West Coast Main Line to the A6 is now fully exposed.

Public sewer records from United Utilities indicate there are no adopted sewers within the proposed plot boundary.

The following public sewer infrastructure has been identified within the vicinity of the plot:

- A varying large diameter combined water sewer runs within the Mancunian Way approximately 90m south of the proposed plot.
- A 225mm diameter combined water sewer runs within Baring St. The sewer is believed to run the length of Baring St., however the United Utilities Asset Map only displays a short section.

It is anticipated that all existing drainage within the site boundary has been grubbed up or abandoned as part of the enabling works for the development.

2.2 Proposed Development Details

The proposed development is a 12-storey building with a basement level, containing office space with external terrace access at upper levels, as well as back of house plant and a public area at ground floor level. Areas of public realm are proposed within the surrounding area. The proposed hard and soft landscaping forming the public realm strategy is to integrate with a sustainable drainage system for the development, in which attenuation and treatment of run-off and improved amenity and biodiversity is to be achieved via SuDS features including raingardens, bioretention tree planting and permeable paving.

An attenuation storage tank has been provided in the current design as additional contingency storage in the event that further detailed design within Phase 1 or later phases in the Mayfield Park development necessitates additional attenuation volume, such as an adjustment to site levels increasing the area positively drained by the proposed drainage network.

3. Surface Water Drainage Strategy

The proposed surface water drainage strategy for the development forms part of the wider Mayfield Phase 1 drainage strategy prepared by BuroHappold Engineering and aligns and coordinates with the principles outlined in the referenced document. The present document considers only the proposed drainage strategy at a plot level, and the Phase 1 drainage strategy should be consulted for further information on the impacts of the development and associated drainage proposals on the wider area.

The proposed surface water network for Plot M is part of a wider network that additionally serves Plot N and O and associated public realm, which has a single proposed outfall to the River Medlock.

A drawing detailing the wider surface water strategy for Plots N, M and O is presented in Appendix A. An overview of the surface water drainage that serves the area encompassed by the planning boundary for Plot M is provided in Figure 1.

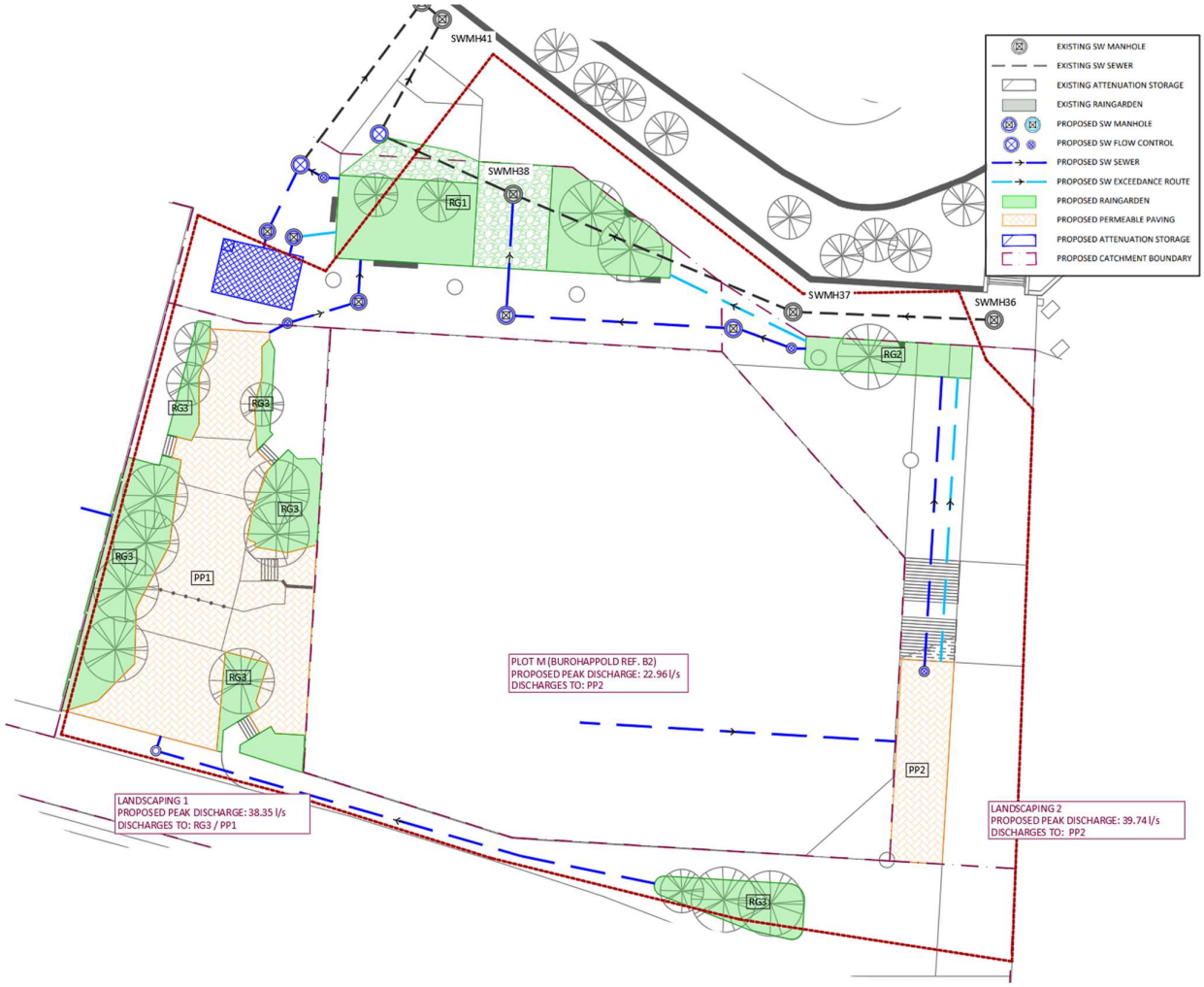


Figure 1. Excerpt of drawing 1076-CIV-XX-XX-D-C-30001 centred on the Section 73 application boundary for Plot M (highlighted in red).

As the drainage serving Plot M forms part of a larger network, it is noted that the proposed catchments and within the drainage strategy do not strictly align with the application boundary and while features such as Raingarden 3 (RG3) and Permeable Paving 1 (PP1) and are positioned within the application boundary, these do not currently attenuate flows from Plot M.

Within the current proposed layout, runoff from Plot M and landscaping to the east is to discharge to permeable paving adjacent the eastern edge of the plot, which flows to Raingarden 2 (RG2) to the north. This raingarden receives additional inflows from its adjacent landscaping and discharges into nearby manhole SWMH38. The outflow of each feature is to be restricted to attenuate surface water run-off for storms with lower return periods, however a high-level overflow is to be provided to allow unrestricted discharge into the next feature once the preceding feature's attenuation capacity is exceeded in more severe rainfall events.

Some attenuation storage from the network serving Plot N will be utilised within the Plot M drainage strategy in the form of an overflow from Raingarden 2 to Raingarden 1 (RG1), the larger raingarden within the plot boundary. This overflow is used in the 1 in 100 year + 45%CC rainfall event to satisfy the site-wide attenuation requirement.

3.1 Existing and Proposed Run-off Rates

As part of the Phase 1 drainage strategy, it has been agreed that the proposed discharge rate from the entire Phase 1 development is to be restricted to 50% of the existing brownfield run-off rate minus an additional 2 l/s/ha.

The Phase 1 drainage strategy outlines an existing brownfield rate of 64.40 l/s for the area occupied by the proposed building. A proposed discharge rate of 22.96 l/s was therefore adopted for the building only, which is maintained as part of this planning application.

Areas of proposed public realm encompassed by the application boundary are also positively drained by the drainage network serving Plot N. The area denoted 'Landscaping 2' in 1076-CIV-XX-XX-D-C-30001 forms a sub-catchment within the wider catchment strategy proposed in the Phase 1 drainage strategy, for which rates have already been determined and agreed. The sub-catchment rate has been determined as 39.74 l/s by proportioning the agreed rate based on the area of Landscaping 2

The restricted rate from the sub-network serving Plot M and associated landscaping is therefore:

Post-development SW Run-off rate = 62.7 l/s

Alongside the flow controls for each SuDS feature, this restricted rate is to be achieved via a vortex flow control installed within manhole SWMH40.

3.2 Surface Water Attenuation Volumes & Network Simulation

The surface water attenuation volumes for the proposed permeable paving and raingardens have been approximated using the following formulas:

> ***Raingarden storage volume*** *= area of raingarden × (depth of freeboard + sub-base void ratio × depth of sub-base)*
>
> ***Permeable paving volume*** *= area of permeable paving × sub-base void ratio × depth of sub-base*

The depths of sub-bases and freeboards adopted for each feature are highlighted on drawing 1076-27-CIV-XX-XX-D-C-30001, and constant void ratio of 0.3 has been assumed for all features.

A conceptual drainage model has been produced within Causeway Flow which incorporates the above estimates of storage volume. Simulation results for this model have been provided in Appendix B which demonstrates the network serving Plot M has sufficient attenuation volume for surface water run-off up to the critical 100-year storm (including a 45% allowance for climate change).

4. Foul Water Drainage Strategy

The Phase 1 drainage strategy, prepared by BuroHappold, proposes that the foul water discharge from each plot be collected within a main sewer run and then outfall to the existing public combined water sewer within the Mancunian Way.

Within current proposals, foul drainage is to be collected via piped gravity network and discharge to the proposed BuroHappold foul water sewer at an unrestricted rate. The design of lateral drains from the plot to the main foul sewer is currently subject to confirmation of the above-ground drainage design for the plot including the proposed locations of any air admittance valves, stub stacks, vent pipes, floor gullies etc.

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