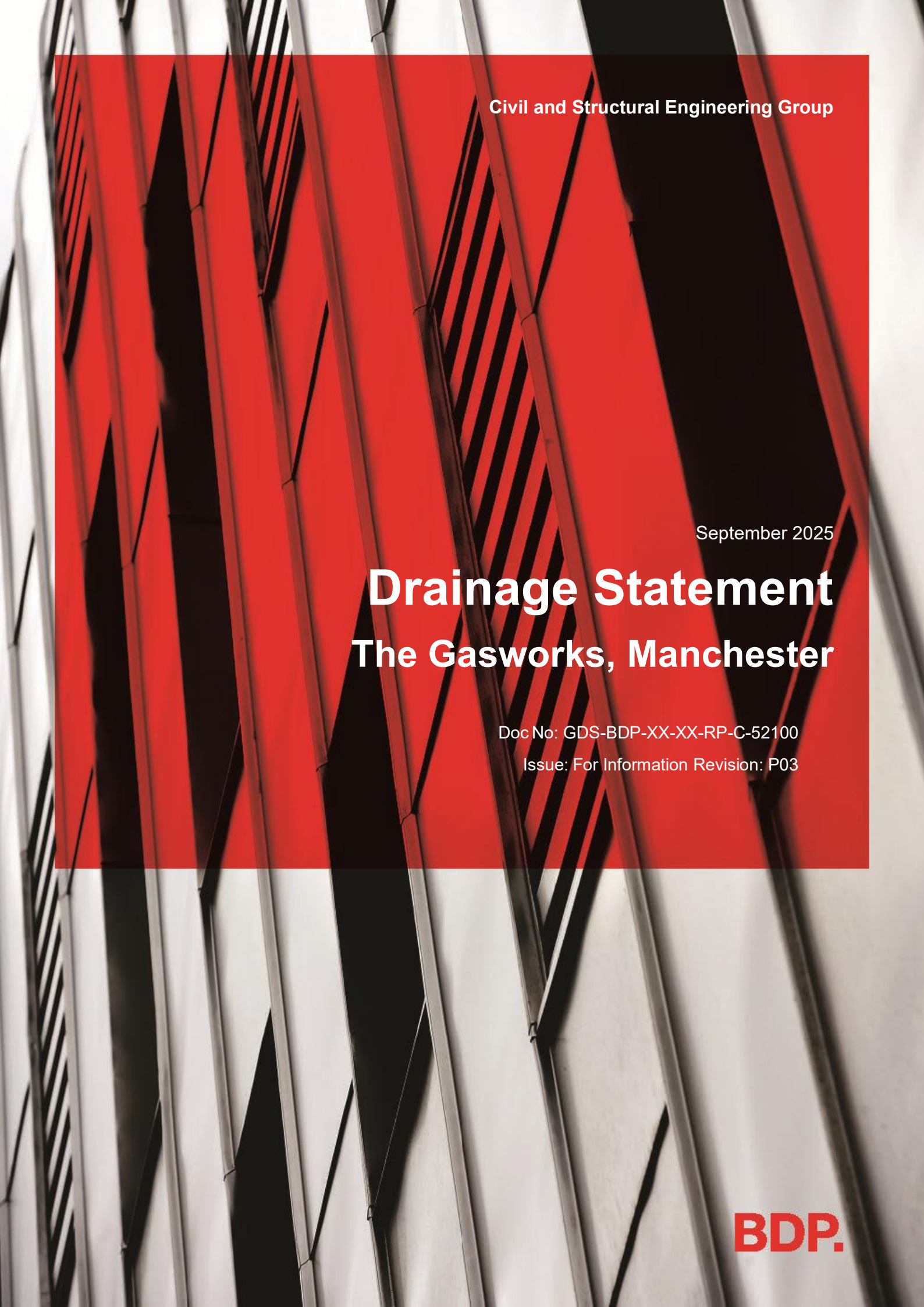


Civil and Structural Engineering Group

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Drainage Statement

The Gasworks, Manchester

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BDP.

Document Control

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Contents

1.0 Introduction 3
1.1 Limitations 3
2.0 Outline Drainage Strategy 5
2.1 Existing Drainage Infrastructure 5
2.3 Surface Water Drainage Strategy 5
2.4 Gould Street Compound 6
2.5 Bilbrook Street Compound 6
Appendices 8
Appendix A – Site Location Plan 9
Appendix B – Proposed Masterplan 10
Appendix C – United Utilities Sewer Records 11
Appendix D – GPR Survey and CCTV Survey 12
Appendix E – Drainage Layouts 13
Appendix F – Hydraulic Calculations 14

1.0 Introduction

Building Design Partnership (BDP) have been commissioned by MCR Property Group to produce an Outline Drainage Strategy in support of the proposed gas diversion works and associated compounds development of land to the east of Gould Street and land to the south of Bilbrook Street, Manchester M4 4TF relating to the sustainable surface water drainage scheme. This diversion work is an enabling scheme to support the wider redevelopment of the site

The site is located to the north east of Manchester City Centre with approximate postcode M4 4TF. The approximate coordinates for the site are 383600, 399210. A site location plan is included in Appendix A.

The proposed development includes the installation of 2 no. pressure reduction stations with associated boundary treatment and associated works, known as the Gould Street Compound and the Bilbrook Street Compound. The purpose of the development is to replace an existing pressure reduction station on a wider site to allow for future development proposals to be brought forward. The wider site development proposals are subject to a separate planning application, referenced 128248/FO/2020. A copy of the proposed masterplan can be found in Appendix B.

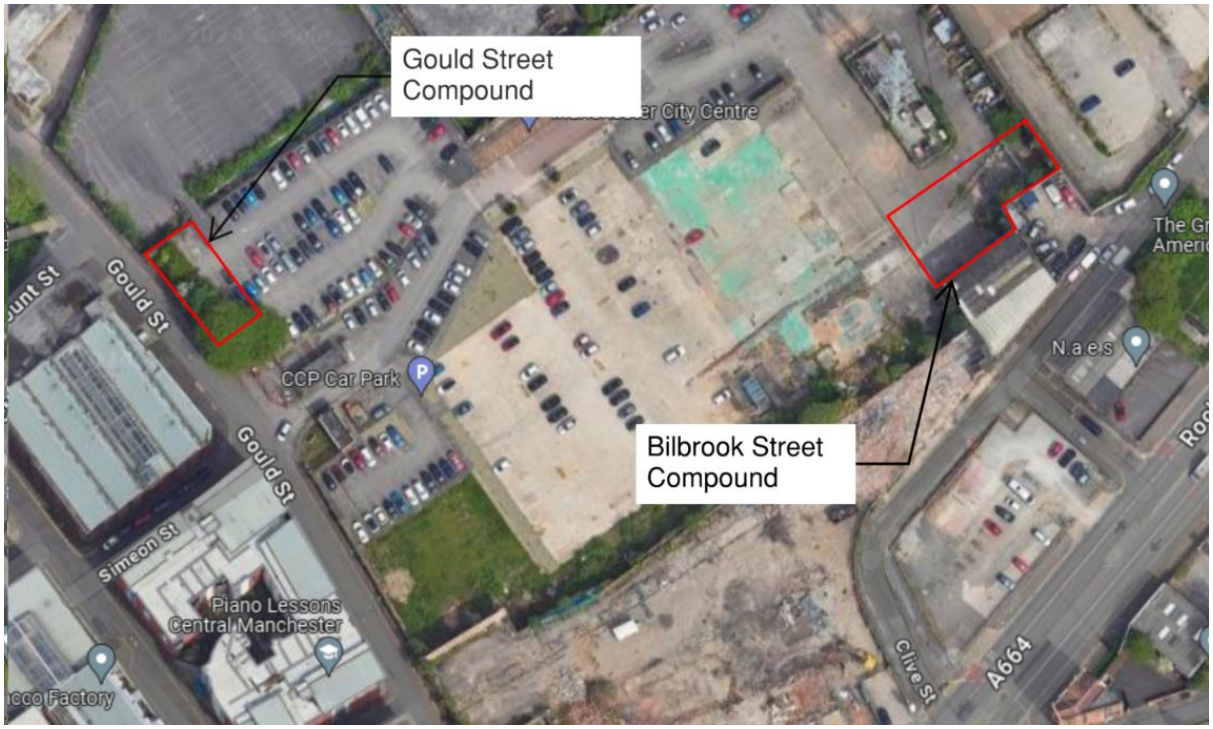


Figure 1: Aerial image of the site (Google.co.uk/maps)

This Drainage Statement has been prepared in accordance with the National Planning Policy Framework (NPPF) and British Standards.

1.1 Limitations

This report has been prepared for exclusive use by our client MCR Property Group for the purpose of assisting them in evaluating the existing/proposed drainage infrastructure for the proposed development. Building Design Partnership (BDP) accepts no liability for any use of this document other than by its client and only for the purposes, stated in the document, for which it was prepared and provided. No person other than the client may copy (in whole or in part) use or rely on the contents of

this document, without the prior written permission of BDP. Any advice, opinions or recommendations within this document should be read and relied upon only in the context of the document as a whole.

BDP has endeavoured to assess all information provided to them during this appraisal. The report summarises from a number of external sources and cannot offer any guarantees or warranties for the completeness or accuracy of information relied upon.

This report has been undertaken with the assumption that the site will be developed in accordance with the above proposals without significant change. The conclusions resulting from this study are not necessarily indicative of future conditions or operating practices at or adjacent to the site.

2.0 Outline Drainage Strategy

2.1 Existing Drainage Infrastructure

The Gould Street Compound is currently occupied by car parking with an area of shrubs and trees to the western boundary of the site and the Bilbrook Street Compound is occupied by an area of hardstanding.

United Utilities sewer records indicate that there are existing sewers within Gould Street. A 480x720 combined sewer, increasing to 650x1050, then reducing to 600x820 at the junction with Williamson Street which runs in a north westerly direction along Gould Street. A 550x750 combined sewer is also located to the north of Gould Street. Both sewers run in a northwest direction and discharge to a 1550 BR combined sewer within Dantzic Street. It is not clear if the two sewers within Gould Street combine prior to Dantzic Street. A 525mm combined sewer reducing to 300mm runs along Bilbrook Street in a northwesterly direction.

A CCTV survey of the wider site was undertaken by General Utilities Northwest (2020_05_18) and was commissioned to establish/confirm outfall points, invert levels, alignment, system type, route and condition of any existing drainage within the site boundary and the surrounding area, including Highways.

A GPR survey of the wider site was undertaken by Capita Utilities and Industrial (30/04/2015).

The above surveys indicate existing on site drainage systems which appear to be separate foul, surface water and combined systems prior to their outfall to the surrounding combined sewer network. Surface water from the area of the Gould Street Compound drains to the combined water public sewer in Gould Street whilst surface water from the area of the Bilbrook Street Compound drains to the combined sewer in Bilbrook Street.

A copy of the sewer records is included in Appendix C and a copy of the GPR and CCTV surveys is included in Appendix D.

2.3 Surface Water Drainage Strategy

The drainage strategy for the whole site has been developed in accordance with the FRA and Outline Drainage Strategy for the wider site (document reference P3001012-2277-BDP-RPT-C-001), which has been agreed with Manchester City Council.

In accordance with Building Regulations and the NPPF Drainage Hierarchy the management and discharge of surface water from a development should be applied in order of priority as follows:

1) Disposal to ground via infiltration, and where this is not practicable;

2) Disposal to a watercourse, and where this is not practicable;

3) Disposal to a surface water sewer or highway drain, and where this is not practicable;

4) Disposal to a combined sewer.

Based on a review of the historic ground investigation reports, which indicate previous workings and made ground, the ground conditions are considered to be unsuitable for infiltration.

The nearest watercourse is the River Irk, located circa 165m to the northwest of the site. Due to the distance from the site and the need to cross third party land this option has not been considered further.

There are no surface water sewers or highway drains in the vicinity of the site, therefore it is proposed to discharge surface water into the combined water public sewer network.

In line with the Manchester, Trafford and Salford Strategic Flood Risk Assessment requirement to reduce surface water runoff rates to 50% for brownfield sites, the proposed discharge rate the wider site is 46.29l/s as stated in the FRA and Outline Drainage Strategy, which has been agreed with Manchester City Council as part of the planning application reference 128248/FO/2020. This discharge rate will be distributed across the phases of the development on a pro-rata basis, determined by the impermeable area of each phase indicated on the current site wide masterplan.

2.4 Gould Street Compound

The Gould Street Compound is included in Phase 1 of the wider development and based on the above, the total discharge rate for Phase 1 will be restricted to 12.9l/s with a restriction of 5l/s being allocated to the new gasworks site, to reduce the risk of blockages and 7.9l/s being allocated to the remainder of Phase 1.It is proposed that surface water will discharge at this restricted rate into the combined public sewer in Gould Street.

The size and layout of the proposed site limits the opportunity for the use of green SuDS, therefore attenuation will be provided by the use of storage within pipes. A vortex flow control will be used to restrict the discharge rate.

The drainage network has been designed so that no flooding occurs for events up to the 1 in 100 year plus climate change events. A climate change allowance of 40% has been applied. Detailed hydraulic calculations have been carried out and are included in Appendix F.

The development levels have been designed to fall away from buildings so that exceedance flows will fall aways from buildings, for drainage layouts refer to Appendix E.

The restriction of runoff from the site to 5l/s will reduce the risk of flooding as a result of the development, especially when considered as part of Phase 1 of the wider development.

It is not anticipated that the surface water network will be offered for adoption by United Utilities and as a consequence it will remain privately owned by MCR Property (South Valley Estates) and the land will be transferred to Cadent once constructed. The owner for maintenance purposes following construction will be Cadent.

The proposed drainage strategy GDS-BDP-ZZ-XX-DR-C-520011 included in Appendix E, defines the drainage strategy for the Gould Street Compound.

2.5 Bilbrook Street Compound

The Bilbrook Street Compound will be included in the Phase 2 development allowance, once constructed. In the temporary state, drainage of the access ramps and parking area is required. A temporary surface water connection for these areas and a foul water connection to serve the site compound is proposed.

For the temporary arrangement, surface water discharge will be limited to 5 l/s into the existing United Utilities combined sewer network at Manhole MHC8, which subsequently discharges to REF7306. While the outfall is proposed on a temporary basis, the system has been designed to provide resilience should the arrangement remain in place for an extended or permanent period. Hydraulic modelling has therefore been undertaken for the 1 in 100 year return period storm event, with an additional 40%

allowance for climate change. The results indicate a minor exceedance volume of approximately 3.7m³, which will be managed and retained within the site boundary, with no off-site flooding anticipated.

The runoff rate for this network will be considered as part of the wider strategy at Phase 2 whereby it will be restricted in accordance with the associated FRA and Outline Drainage Strategy.

It is not anticipated that the surface water network will be offered for adoption by United Utilities and as a consequence it will remain privately owned by Cadent who will be responsible for its maintenance.

The proposed drainage strategy GDS-BDP-ZZ-XX-DR-C-520012 included in Appendix E, defines the drainage strategy for the Bilbrook Street Compound.

Appendices

Appendix A – Site Location Plan

Appendix B – Proposed Masterplan

Appendix C – United Utilities Sewer Records

Appendix D – GPR Survey and CCTV Survey

Appendix E – Drainage Layouts

Appendix F – Hydraulic Calculations