Design and Access Statement.

Manchester YMCA.
Flood Resilience Works.



BDP.

Built Original.

Document control form

Project number	P3004812
Project title	Manchester YMCA
Document title	Design and Access Statement
Client	YMCA
Document status	P04
Date of issue	13/05/2026
Prepared by	SG
Checked by	AC

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Revision	Date	Description of change	Draw	Check
P01	05.05.2026	First Issue	GB	SG
P02	07.05.2026	Second Issue - Drawings updated ahead of planning application	GB	SG
P03	11.05.2026	Third Issue - Drawings and text updated ahead of planning application	SG	AC
P04	13.05.2026	Fourth Issue - Drawings updated ahead of planning application	GB	AC

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Introduction.

1.

1.1 Overview

Manchester YMCA are a very well-established presence within Castlefield, providing a hotel and a broad range of leisure and well-being facilities serving the neighbourhood. Built in the early 1990's, the original post-modern building takes architectural cues from the surrounding industrial context, and joins together the setting of the canal basin and events at the spectator bowl, with pedestrian entrances at the lower canal basin level, and Liverpool Road at the upper ground level, with vehicular access to a surface level car park from Potato Wharf to the west.

The building's location benefits from a rapidly changing city context, with a significant development of internationally significant attractions, including Aviva Studios – home of Factory International – and the evolution of the Science + Industry Museum's globally significant campus, alongside significant development of workplaces and new homes on both sides of the nearby River Irwell, the St John's neighbourhood, and beyond. During the course of the last 35 years, Manchester YMCA has successfully grown a sustained loyal audience of members and visiting guests.

On New Year's Eve 2024/25 their building was subjected to significant flooding when water from the canal basin rapidly elevated beyond the basin ground level, finding its way into the building's lower ground level through weaknesses within the building envelope, causing significant damage and disruption. The building had previously experienced flooding within recent years, despite both events being classified as 1 in 100 year flood events.

As a result of those events, the YMCA's management team sought assistance with developing plans to address the weaknesses within the building's external envelope to provide greater resilience to future flood events. In addition, the team also set out a vision for a broader framework of enhancements to the building to allow further progression of their offer and amenities to the local community, within a carefully phased and considered strategic development plan.

The proposals outlined within this Design & Access Statement form the first of these planned improvements, and in addition to tackling the primary functional requirement to enhance flood resilience of the building envelope, also take the opportunity to refresh and improve the outlook from the building, amenities for visitors, and the visual appearance of the building's canal-side elevation and wider setting.



1.2 Project Team

The proposals for YMCA Manchester have been developed through a collaborative multidisciplinary design process, bringing together expertise in architecture, conservation, engineering, sustainability, fire strategy, and cost management.

The team has worked closely with Manchester YMCA to develop proposals that sensitively respond to the building's operational requirements, heritage setting, and long-term resilience objectives within the Castlefield Conservation Area.

This team is summarised opposite:.

Client

YMCA Manchester

Architect

BDP

Civil & Structural Engineer

BDP

Environmental & Building Services Engineer

BDP

Town Planning

BDP

Quantity Surveyor

Warrington Martin

Fire Advisor

Firesec

Site Location & Context.

2.

2.1 Site Location

Location

The Manchester YMCA application site is located on Liverpool Road, and bounded by Potato Wharf to the west, the Bridgewater Canal and Castlefield Bowl to the east, and Orsdall Chord viaduct to the south. The site lies within the Castlefield area, and within the setting of the Castlefield Conservation Area.

Site & Building

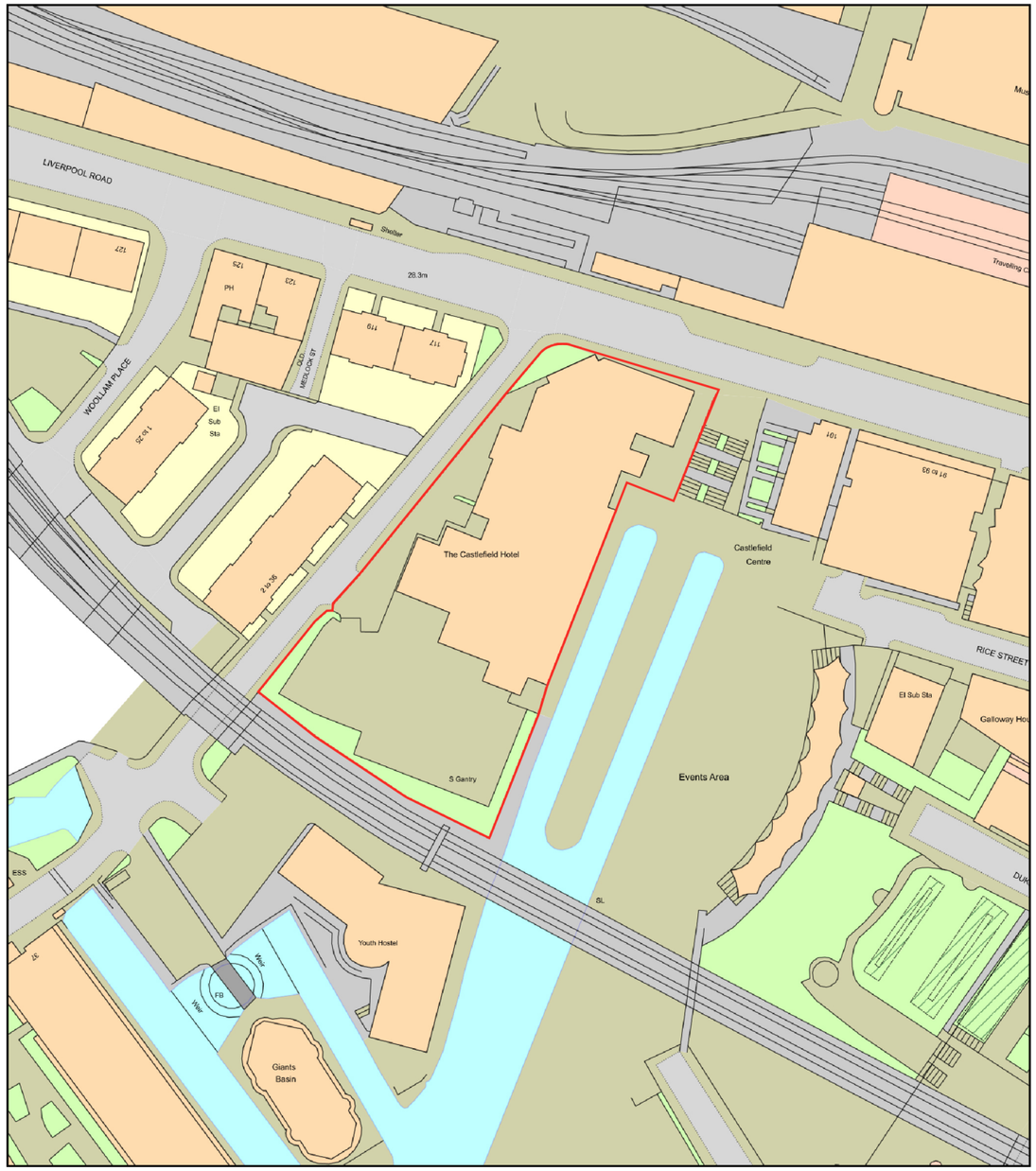
The application boundary is occupied by the Manchester YMCA building, which comprises the Castlefield Hotel, a 48 room 3-star hotel; the Y Club, Manchester's largest health club within the city centre; facilities for the organisation's alternative education provision; a bar and restaurant; offices; and conference facilities.

A dedicated car park to the southwest of the building provides parking for staff, Y Club visitors, and hotel guests, and is accessed directly from Potato Wharf.

Context

The surrounding context is predominantly mixed-use in character, comprising residential, leisure, cultural and commercial uses, including Castlefield Bowl - a major outdoor events venue located directly to the east of the site.

The Bridgewater Canal and associated towpaths form an important landscape and movement corridor nearby. The canal also poses a key risk to the resilience of the building and safety of occupants, demonstrated by the extreme storm event on 1 January 2025 that led to flooding of the building.



ReQuestaPlan

0 50
Metres

Location Plan Scale 1:1250 @ A4

N

2.2 Site Context



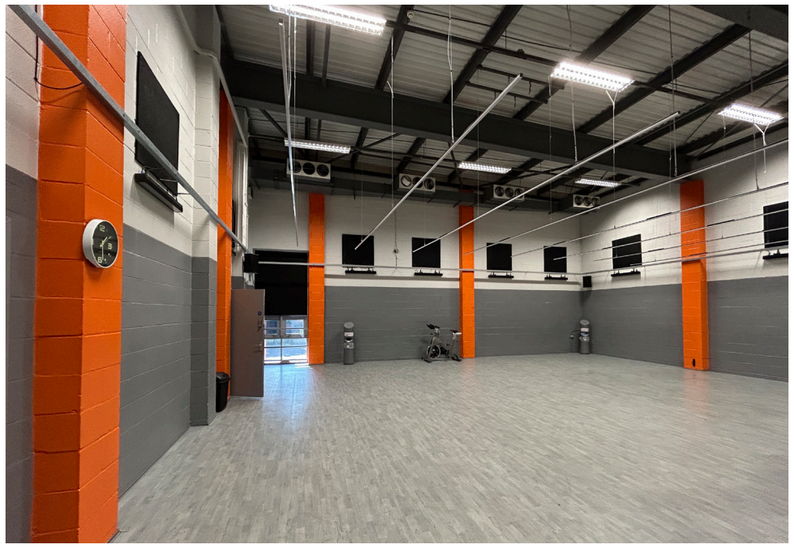
Google Earth aerial showing the YMCA building in its context within Manchester City Centre.

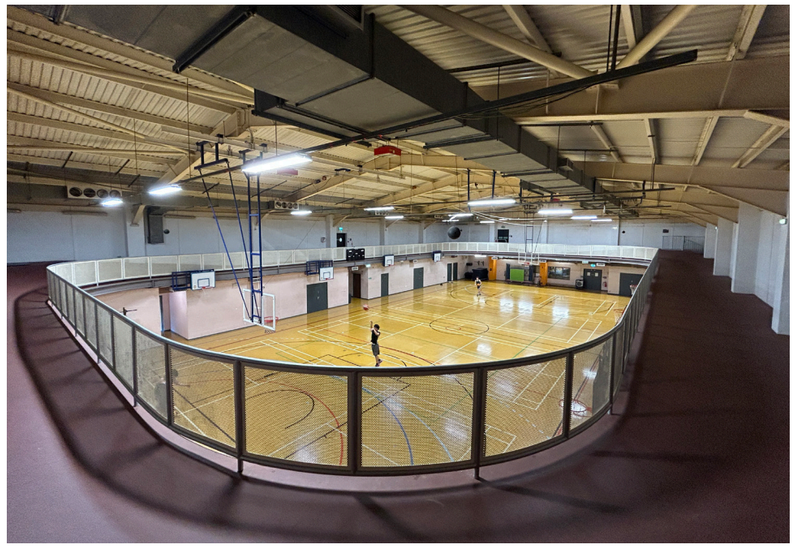
2.3 Site Photos



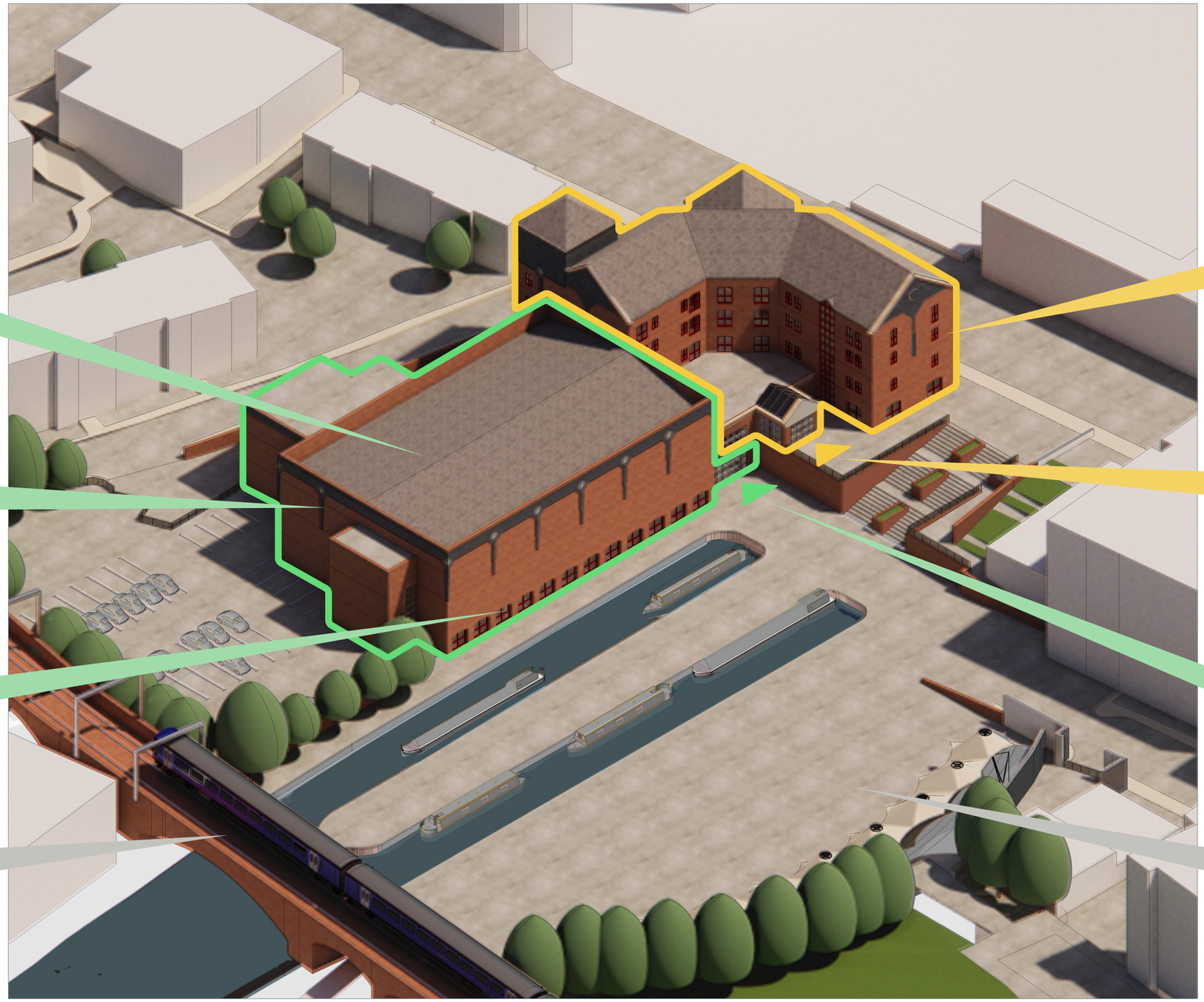








2.4 Manchester YMCA Building



On site renewable energy generation with large photovoltaic array on roof of sports hall.

Ground and upper floors accommodate sports hall, small sports hall, running track, and storage areas.

Lower ground floor at canal level accommodates gym, fives courts, changing rooms, swimming pool, and areas of plant.

Ordsall Chord Viaduct elevated railway line.

Four-storey hotel, with reception, bar and restaurant on the ground floor, and hotel rooms arranged across the three upper floors.

Entrance to hotel reception, bar and restaurant, and conference facilities, with off-street route through external seating space.

Entrance to Y Club via canal side landscape, an area which has proven to be a significant flood risk, and largely hidden from Liverpool Road.

Castlefield Bowl outdoor events pavilion and venue.

Urgent Flood Risk Context

3.

3.1 Flood Risk

The YMCA site lies within Flood Risk Zone 2, off the Bridgewater Canal. There is a risk of between 0.1% and 1% for fluvial flooding occurring in any year, from the River Medlock and the River Irwell (Manchester Ship Canal).

Whilst flooding remains rare, historic incidents led to floodwater leaking through the lower ground floor windows of the eastern elevation of the YMCA building, into the reception and pool areas.

New Years Day Flood 2025

The most significant recent event occurred on New Year's Eve 2024 and New Year's Day 2025, with heavy rainfall caused widespread flooding across Manchester.

The Environment Agency rainfall gauge recorded a total of 81.4mm of rainfall in this period. This took place between 2.30pm on 31 December 2024 and 8am on 1 January 2025.

This rain fell onto already saturated catchments, with rainfall totals above average for the UK throughout December. It resulted in exceptionally high river levels, and flooding of the YMCA building.

This event is further detailed over the next couple of pages.



3.2 Flood Risk

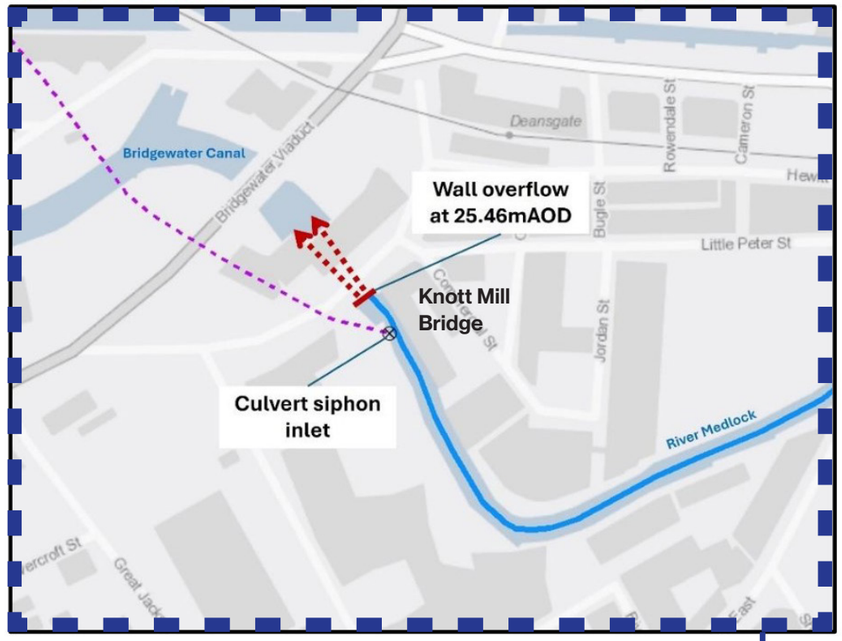
The RIver Medlock and Bridgewater Canal

The New Year's Day flooding at Castlefield Bowl was caused by increased fluvial levels of the River Medlock. The Medlock originates east of Oldham, flowing south and west towards Manchester. It is culverted under many parts of the city centre, emerging as an open channel upstream of the Princess Road bridge. The River Medlock passes under Oxford Road though a historic bridge, which acts as a restriction during extreme events, causing the river level to surcharge upstream.

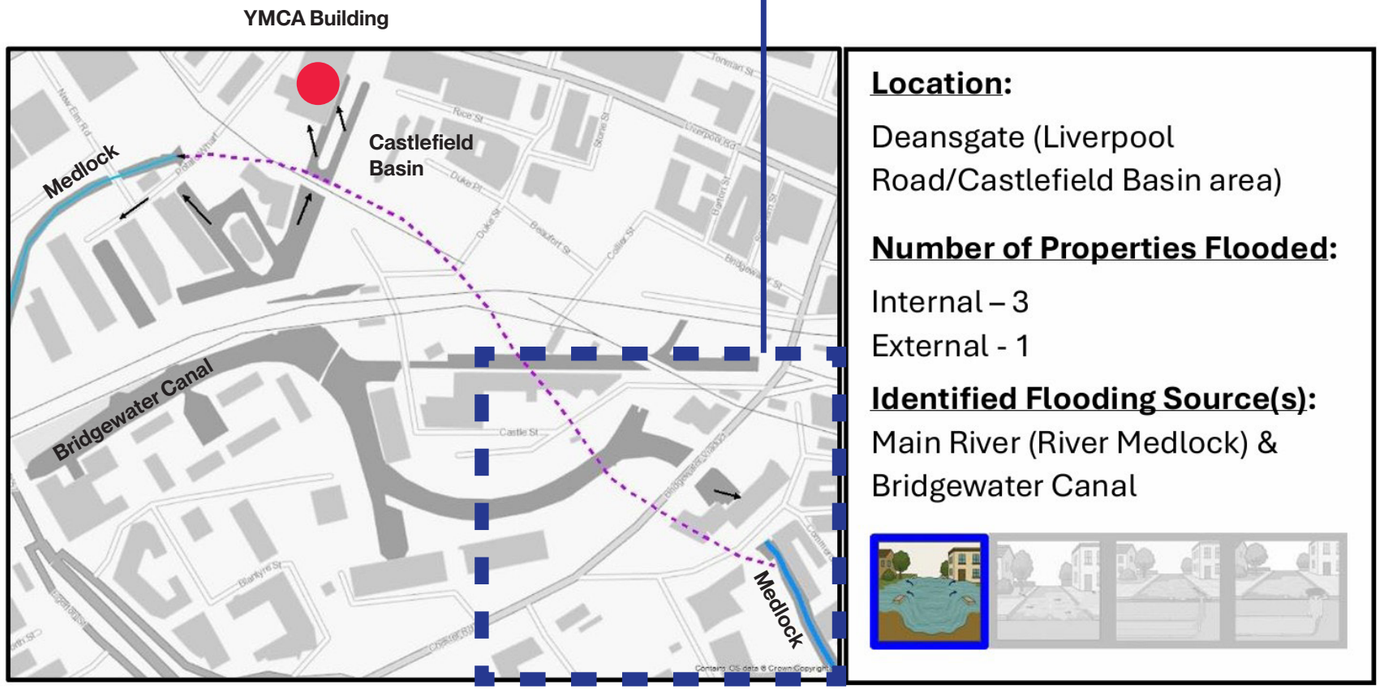
Just upstream of Deansgate and the A56, the River Medlock approaches the Bridgewater Canal. A wall spans the width of the opening beneath Knott Mill Bridge (beneath Deansgate) which separates the River Medlock from the Bridgewater Canal. The River Medlock now turns to the left and is carried under the Bridgewater Canal and Castlefield Basin via a culvert, before emerging at Potato Wharf and joining the Irwell.

The culvert beneath the Bridgewater Canal and Castlefield Basin is an inverted siphon and this was constructed in the late 18th Century. The culvert was therefore constructed at a time when Manchester was a smaller city, so it was not sized to account for future urban expansion and the onset of climate change. This culvert is therefore susceptible to blockage and may act as a restriction to flow.

During extreme rainfall events, when the culvert beneath Castlefield Basin reaches capacity and surcharges, levels in the upstream River Medlock rise. Upon reaching 25.46mAOD at Knott Mill Bridge, the River Medlock overtops the wall and discharges flows into the Bridgewater Canal. The canal system is not designed to manage these flows from the River Medlock and, once over-topping has occurred, there is limited potential for canal assets to manage these flows.



Information and images from: the Formal Flood Investigation Report into the New Year's Day Floods 2025, Manchester City Council



3.3 Flood Risk

New Years Day Flood 2025

The capacity of the River Medlock was exceeded on New Years Day 2025 along the section between Charles Street and Oxford Road.

The volume of flow from upstream likely overwhelmed the capacity of the bridge beneath Oxford Road, resulting in the level of the River Medlock rising further along this section.

The River Medlock exceeded its capacity upstream of the culvert beneath Castlefield Basin. This resulted in an overflow into the Bridgewater Canal at Castlefield Basin. The canal subsequently overflowed onto the towpath, with flood water then routing into the lower sections of nearby buildings.

Internal flooding was reported at the YMCA at Castlefield Basin, in addition to flooding along a private road and residential car park at Potato Wharf. A basement level of the hotel reportedly flooded to a depth of over 1.5m, while the entire ground floor of the gym/leisure club was flooded.

The Bridgewater Canal is maintained at a statutory water level (25.26mAOD) to provide navigation for boats. Dredging of the canal would therefore not reduce the water level within the canal, as the level is required to be maintained at this statutory level.

Other flooding Incidents

This is not the only time that the YMCA property has flooded. The Manchester Evening News also reported flooding of the property in 2019. Over five inches of water submerged areas inside the gym including the Rugby Fives courts and the swimming pool. The pool was forced to shut for several weeks after being contaminated with dirty brown water and wildlife.

