

Mostyn, Stephen

From: McLaughlin, Anne-marie <Anne-Marie.McLaughlin@environment-agency.gov.uk>
Sent: 02 March 2023 17:34
To: Mostyn, Stephen; john.sherrington@spclimited.co.uk
Cc: Chambers, Julia; Davies, Andy; Ruckledge, John; Hilary Brett-Parr; Jon Suckley; Brimblecombe, Jack; Outterside, James; Standring, Ian; a.english@maccreeanorlavington.com; Blazej Czuba
Subject: ENVPAC/1/GMC/00443 - EA Review of Flood Risk Mitigation Strategy (Email dated 14th February 2023)
Attachments: ENVPAC.1.GMC.00443 - EA Review of Flood Risk Mitigation Strategy.pdf
Filed: -1
Filed Location: \\uk.wspgroup.com\central data\Projects\70079xxx\70079268 - Redbank & Dantzic Street Masterplan\01 Comms\1A Emails\DI Internal\230302 173416 - McLaughlin, Anne-marie - ENVPAC 1 GMC 00443 - EA Review of Flood Risk Mitig....msg
Filed Location Folder: \\uk.wspgroup.com\central data\Projects\70079xxx\70079268 - Redbank & Dantzic Street Masterplan\01 Comms\1A Emails\DI Internal

Hi Stephen,

Please find attached our preliminary commentary of the overview provided of the 'Application 4' and 'Application 5' Flood Risk Mitigation Strategy as outlined in your email dated 14th February 2023.

As previously highlighted, this review is subject to the approval of the EA's acceptance of the 'Application 4' and 'Application 5' flood models, where we understand further flood models are intended to be issued to us by Monday (6th March), and confirmation of detailed plans intended to be submitted for each planning submission.

We advise at this time that if it is the intention to produce one FRA / Flood Risk Mitigation Strategy report, a clear distinction is made on the assessment and intended mitigation measures for each individual application. This is to ensure determination of the suitability and acceptability of the assessment / mitigation proposals for each individual planning application is clearly identified / recognised.

Further to the above, our commentary includes advice for your consideration on the forthcoming FRA / Flood Risk Mitigation Strategy where we would welcome discussions and / or further technical review of the full FRA / Flood Risk Mitigation Strategy once the above matters have been addressed.

Should you have any queries and wish to discuss the contents of our response, then please feel free to contact me.

Many thanks,

Anne-Marie

Anne-Marie McLaughlin

Planning Advisor, Green Growth Team & Sustainable Places Team | Greater Manchester, Merseyside, Cheshire

Environment Agency | Richard Fairclough House, Knutsford Road, Latchford, Warrington WA4 1HT

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Mostyn, Stephen

From: Davies, Andy <Andy.Davies1@environment-agency.gov.uk>
Sent: 27 March 2023 11:10
To: Mostyn, Stephen; Ruckledge, John; McLaughlin, Anne-marie
Cc: Hilary Brett-Parr; Jon Suckley; Brimblecombe, Jack; Outterside, James; Standring, Ian; a.english@maccreanorlavington.com; Blazej Czuba; Ken Thompson; john.sherrington@spclimited.co.uk; Sara Gallego; Holly Wilkinson; Prebble, Nick; Timea Nacsá; Chambers, Julia; James Thomson
Subject: RE: ENVPAC/1/GMC/00443 - EA Review of Flood Risk Mitigation Strategy (Email dated 14th February 2023)

Hi Stephen,

Many thanks for circulating the summary.

See [few amendments in chain below](#) to fully capture EA perspective. However, nothing I believe which alters the 'status-quo' from conversations held last week.

Happy to discuss further if required.

Kind regards,
Andy

Andy Davies

Project Manager, Green Growth Team & Sustainable Places Team | Greater Manchester, Merseyside, Cheshire
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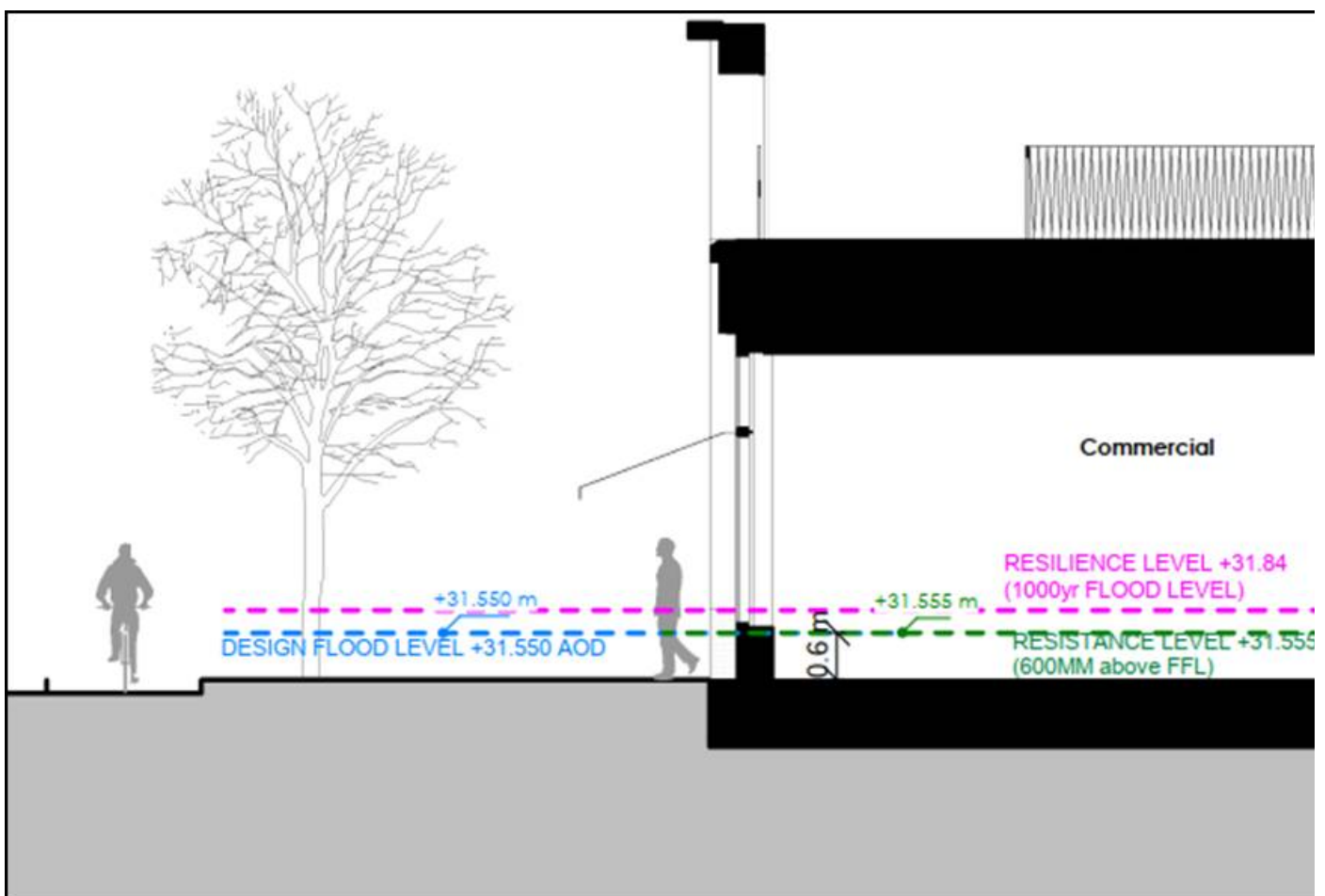


From: Mostyn, Stephen <Stephen.Mostyn@wsp.com>
Sent: 24 March 2023 13:05
To: Davies, Andy <Andy.Davies1@environment-agency.gov.uk>; Ruckledge, John <john.ruckledge@environment-agency.gov.uk>; McLaughlin, Anne-marie <Anne-Marie.McLaughlin@environment-agency.gov.uk>
Cc: Hilary Brett-Parr <hilary.brett@fecil.uk>; Jon Suckley <Jon.Suckley@asteerplanning.com>; Brimblecombe, Jack <Jack.Brimblecombe@wsp.com>; Outterside, James <James.Outterside@wsp.com>; Standring, Ian <Ian.Standring@wsp.com>; a.english@maccreanorlavington.com; Blazej Czuba <b.czuba@maccreanorlavington.com>; Ken Thompson <k.thompson@maccreanorlavington.com>; john.sherrington@spclimited.co.uk; Sara Gallego <s.gallego@maccreanorlavington.com>; Holly Wilkinson <hollywilkinson@hawkinsbrown.com>; Prebble, Nick <Nick.Prebble@environment-agency.gov.uk>; Timea Nacsá <timea.nacsá@fecil.uk>; Chambers, Julia <julia.chambers@wsp.com>; James Thomson <JamesThomson@hawkinsbrown.com>
Subject: RE: ENVPAC/1/GMC/00443 - EA Review of Flood Risk Mitigation Strategy (Email dated 14th February 2023)

Andy,

Following on from yesterday's call, here is a record of main points discussed and agreed with respect to flood risk assessment.

- **Omission of freeboard:** The EA have reviewed the justification provided by masterplan architect and are comfortable with the approach taken to the omission of freeboard where necessary given the constraints. The EA advises that the architectural design detail/justification for this approach will need to be provided as part of the associated FRA (evidence base/narrative). However, the EA would also advocate/welcome, where possible, potential at the detailed design stage for consideration to be given as to whether FFLs can be raised further i.e. above the 'design flood event'.
- **Flood Resistance / Resilience:** The EA confirmed that flood resistance / resilience measures are required up to 600mm above the design flood level but indicated that the FRA *should* leave a degree of flexibility for the level at which resistance should be included up to and the level which resilience should be included up to, *reflective of the fact that detail design of the development/plots currently remains undetermined/unknown to the EA*. This can then be agreed on a plot by plot basis as each plot is brought forward for development taking into account the 1000-year flood level.
- **Emergency Plan:** The FRA will include details on flood levels, flood mitigation measures and safe access and egress routes including flood hazard mapping and recommends that the end user of the site subscribes to the EA Automated Flood Warning System and that a detailed Emergency Plan is produced. The FRA will set out the parameters / requirements for a detailed Emergency Plan but the key information listed above is included in the FRA. We understand that the EA accept this approach for planning.
- **Application 5 (NT04):** See section below. The FFL of commercial units along Dantzic Street will be set below the design flood level. Flood resistance will be provided to 600mm above FFL. Flood resilience will be provided up to the 1000-year flood level. Demountable flood barriers or similar will be provided at door thresholds. Safe egress will be provided to land above the design flood level. We understand that this approach is acceptable to the EA. – *In association with this, it understood that 'dry' safe/access can be provided from all development plots.*
- **Application 5 (NT03):** Commercial unit in NT03 with FFL of 31.72m AOD should have flood resilience measures up to a minimum of the 1000-year flood level which is 31.84m AOD



Please let us know if you have any comments on the summary above or would like to discuss any of the items in further detail.

Kind Regards,



Stephen Mostyn

Associate

Development Infrastructure

From: Mostyn, Stephen

Sent: 23 March 2023 10:01

To: Davies, Andy <Andy.Davies1@environment-agency.gov.uk>; McLaughlin, Anne-marie <Anne-Marie.McLaughlin@environment-agency.gov.uk>; Chambers, Julia <julia.chambers@wsp.com>

Cc: Ruckledge, John <john.ruckledge@environment-agency.gov.uk>; Hilary Brett-Parr <hilary.brett@fecil.uk>; Jon Suckley <Jon.Suckley@asteerplanning.com>; Brimblecombe, Jack <Jack.Brimblecombe@wsp.com>; Outterside, James <James.Outterside@wsp.com>; Standring, Ian <Ian.Standring@wsp.com>; a.english@maccleanorlavington.com; Blazej Czuba <b.czuba@maccleanorlavington.com>; Ken Thompson <k.thompson@maccleanorlavington.com>; john.sherrington@spclimited.co.uk; Sara Gallego <s.gallego@maccleanorlavington.com>; Holly Wilkinson <hollywilkinson@hawkinsbrown.com>; Prebble, Nick <nick.prebble@environment-agency.gov.uk>

Subject: RE: ENVPAC/1/GMC/00443 - EA Review of Flood Risk Mitigation Strategy (Email dated 14th February 2023)

Hi Andy,

Apologies I've not been able to send the below earlier but here are the key agenda items for today's meeting from a Flood Risk Assessment perspective:

'we advise that further explanation is needed as to why the minimum 300mm freeboard is not appropriate / needed. We understand all residential accommodation will be from the 1st floor level and above but 'less vulnerable' uses at ground floor level should still be afforded some freeboard allowance.'

Please see below justification provided by the masterplan architect for your review and consideration:

General approach

The project aims to deliver a rich mix of commercial and community uses, particularly so around RB06, Rb07, RB10, RB16 and RB17, as these plots directly adjoin the River Irk and are the nearest to Central Manchester. Most of these plots were identified in the Victoria North Strategic Regeneration Framework (SRF) as mixed-use. The plots are envisaged to sit among high-quality public realm and it is critical to the success of the project that the uses within the buildings have a direct relationship with the surrounding public realm. They ground floor uses will be required to be accessible and active, therefore should be at a similar level to those of the adjoining public realm.

RB06 and RB07

The existing levels around these two plots along the River edge and Roger Street are approximately +30.0 AOD. The Union Waterfront needs to remain at +30.0 AOD to provide sufficient flood storage. The design flood level on both the plots is +31.2, therefore approximately 1.2 metres above the existing public realm. Setting FFL at flood level would lead to a 1.2 metre difference between public realm and building ground floor, which careful design could incorporate without detrimental impact on active ground floors. A 300mm freeboard would lead to a 1.5 metre difference in levels, which would have detrimental impact on the quality of the scheme.

RB10

The existing levels around the plots are approximately +29.0 AOD. The public realm around the plot cannot be raised above the flood level as it provides flood storage as well as access to existing Network Rail and other arch uses. The flood level is approximately +30.35, therefore approximately 1.35 metres above the public realm. The illustrative masterplan suggests an outdoor covered market use and residential ancillary use such as bin storage or cycle storage sitting underneath an elevated building. Only the residential lobby and the residential core of the building are proposed to be raised above the flood level. A 1.35 metre difference between public

realm and the FFL would at least maintain visual connectivity between the two. A 300mm freeboard would lead to an approximate 1.65 metre difference in levels, which would substantially affect the design quality and legibility of a building entrance and prevent visual surveyance from the building to the public realm.

RB16/17

Dantzie Street is seen as a new high street destination for the Masterplan, with a generous provision of ground and potentially first floor commercial and community uses. Active frontage is not sought to Travis Island Wetlands as substantial level difference will be required to maximise flood storage within them. The existing levels around these two plots along Dantzie Street are approximately +31.0 to +31.5 AOD. The flood level is approximately +31.36 AOD and +31.66 with a 300mm freeboard. As such, there may be instances where freeboard may be achieved for some or the majority of the plots, subject to detailed public realm and building design. However, we would seek flexibility at this stage to ensure that quality active frontages can be achieved along this key high street location.

NT02 – NT04 General approach

The project aims to deliver a rich mix of commercial and community uses, with a focus on the frontages of NT02-04 on Dantzie Street. Most of these plots were identified in the Victoria North Strategic Regeneration Framework (SRF) as mixed-use. The plots are envisaged to sit among high-quality public realm, and it is critical to the success of the project that the uses within the buildings have a direct relationship with the surrounding public realm. They ground floor uses will be required to be accessible and active, therefore should be at a similar level to those of the adjoining public realm.

NT04

Dantzie Street is seen as a new high street destination for the Masterplan, with a generous provision of ground floor commercial and community uses. NT04 completes this high street at the eastern end. The existing levels to the frontage onto Dantzie Street are approximately 30.5m+ AOD to 31.0m+ AOD. It is proposed to adjust the levels in the public realm at the back of pavement to the proposed FFL level of the commercial units at 30.955m+AOD consistently along the frontage to facilitate level access.

The design flood level for NT04 is 31.55+ AOD, which is 595mm above the proposed FFL. It is proposed to provide flood resistance measures to the façade up to 600mm above the proposed FFL (i.e. up to 31.555m+ AOD) in order to mitigate any potential flooding whilst maintaining level access into the active uses.

'We welcome the inclusion of flood resistance (water exclusion) / resilience (water ingress) measures to be provided at a minimum 600mm above 'flood levels'. We advise such measures are designed to consider the 0.1% AEP to ensure mitigation for residual flood risk is implemented.'

Agreement of the level that flood resistance should be provided up to and agreement of the level that flood resilience should be provided up to.

'The FRA must show how users of the development will remain safe. Therefore, safe access / egress routes must be identified and linked to flood warning and evacuation plans where necessary.'

The FRA will recommend emergency evacuation plans are put in place and the requirement for flood warnings. Confirmation required that the provision of emergency evacuation plans will be conditioned as a pre occupation requirement.

Apart from the above, the outstanding items to discuss were the approach being taken for Application 5, and in particular plot NT04. FFL is below design flood level - what level should flood resistant construction be provided. Current approach is aligned with that of Victoria Riverside (flood resistance to 600mm above FFL).

NT03 lowest FFL is actually 31.72m AOD (commercial). Where FFL's of NT03 are not 300mm above design flood level should same approach be taken as agreed for Application 4 ?

From: Davies, Andy <Andy.Davies1@environment-agency.gov.uk>

Sent: 13 March 2023 13:50

To: Mostyn, Stephen <Stephen.Mostyn@wsp.com>; McLaughlin, Anne-marie <Anne-

Marie.McLaughlin@environment-agency.gov.uk>; Chambers, Julia <julia.chambers@wsp.com>

Cc: Ruckledge, John <john.ruckledge@environment-agency.gov.uk>; Hilary Brett-Parr <hilary.brett@fecil.uk>; Jon Suckley <Jon.Suckley@asteerplanning.com>; Brimblecombe, Jack <Jack.Brimblecombe@wsp.com>; Outterside, James <James.Outterside@wsp.com>; Standring, Ian <Ian.Standring@wsp.com>; a.english@maccreanorlavington.com; Blazej Czuba <b.czuba@maccreanorlavington.com>; Ken Thompson <k.thompson@maccreanorlavington.com>; john.sherrington@spclimited.co.uk; Sara Gallego <s.gallego@maccreanorlavington.com>; Holly Wilkinson <hollywilkinson@hawkinsbrown.com>; Prebble, Nick <nick.prebble@environment-agency.gov.uk>

Subject: RE: ENVPAC/1/GMC/00443 - EA Review of Flood Risk Mitigation Strategy (Email dated 14th February 2023)

Afternoon Stephen,

Many thanks for your email below – I’ve just tried to give you a call to discuss this. However, both my calls to your mob and office phone went through to voicemail.

More than happy to discuss matters over the phone if easier. However, cognisant to current internal resource pressures please would it be possible for you / WSP would like to achieve via a meeting this week? I.e. the key agenda items.

As context to this ask...

Noting your email in chain primarily to matters associated with Application 5, please see attached email which advises the wider FEC/VN project team that we (the EA) are still awaiting the submission of an updated iteration of ‘Application 5’ flood model and in association with this detailed plans (*preferentially those which will be sought for planning approval*) enabling confirmation/confidence that the flood model submitted to the EA is an accurate representation of the intended development and, in turn, any assessment of development flood risk derived from this is appropriate.

As per our recent written correspondence / letter (SO/2023/122923/01-L01) relating primarily to assessment of flood intervention principles for ‘Application 4’, until we are able to gain confirmation that flood modelling presented is an accurate/representation of intended end-development design, in turn, we will be unable to confidently conclude/advise as to whether planned flood resistance/resilience proposals are appropriate due to the potential for variations to flood risk and it’s management to still occur e.g. an uplift in design flood level as a result of intervention on Dantzic Street. However, that said, echoing our recent correspondence/letter, the general principles intended to employed for determining how development plot fluvial flood risk is to managed as part of ‘Application 5’ appear to be sound from our current understanding of the likely level of risk /fluvial flood impact the ‘Application 5’ development could experience within an 1:100 + CC% /Design Flood event. My only additional remark to this would be that whereby FFL are to be below the 1:1000 year event (*potentially only Plot NT04 based on the node data you present*), consideration/narrative is provided (within the forthcoming FRA) as to how this residual risk can be appropriately managed.

@Chambers, Julia – I note from Stephen’s email below the reference to an impermeable concrete upstand offering protection to the NT04 development plot which I would presume based on prior reviewed modelling outputs / understanding of general fluvial flood risk for the area is situated on/in immediate proximity to Dantzic Street . Design elements such as, with the potential to alter local floodwater levels /floodwater distribution are the type of details we are seeking to understand further as part of efforts to determine flood model appropriateness. Please can it be ensured that details on the impermeable concrete upstand are provided as part of forthcoming updated ‘Application 5’ / flood model review submissions.

Happy to discuss any of the above further as required.

Kind regards
Andy

From: Mostyn, Stephen <Stephen.Mostyn@wsp.com>

Sent: 10 March 2023 19:23

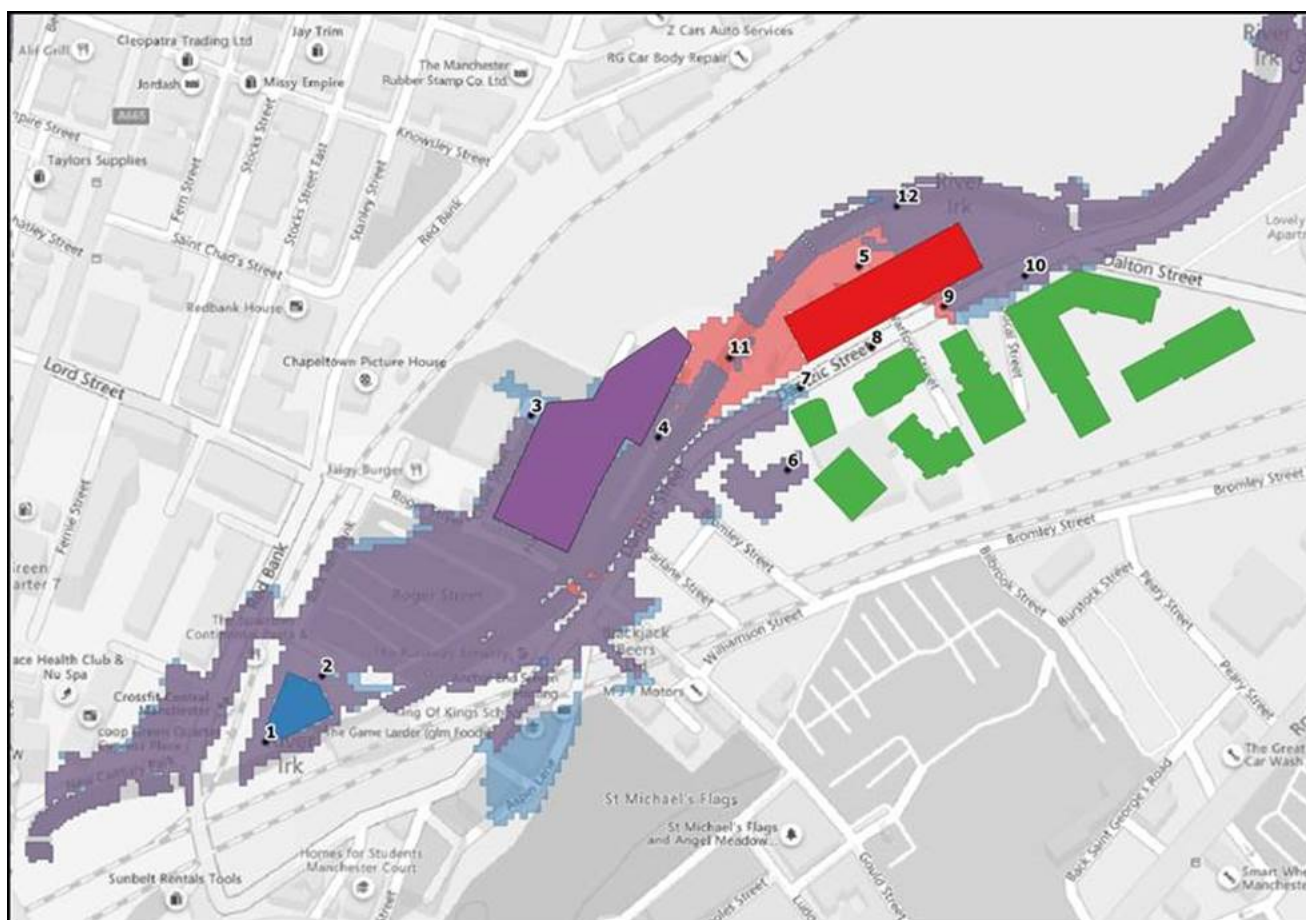
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<hollywilkinson@hawkinsbrown.com>

Subject: RE: ENVPAC/1/GMC/00443 - EA Review of Flood Risk Mitigation Strategy (Email dated 14th February 2023)

Hi Anne-Marie,

Thank you for sending through the attached initial comments on outline flood strategy that was put forward. Please see below an update related to the Application 5 flood strategy. This



The standard that we are seeking to achieve for setting of FFL's is for them to be at or above the design flood level plus 300mm of freeboard. We can confirm that there will be no 'more vulnerable' uses below the design flood level plus 300mm. All more vulnerable uses will be at first floor level or above. Safe routes of access are provided to all residential areas. See above flood level Nodes map and attached spreadsheet to show flood level info taken from the WSP modelling and below updated strategy for Application 5 only:

NT02:

- The FFL for plot NT02 is set above the design flood level.
- NT02 design Flood Level is 30.88m (Node 7). The finished floor level (FFL) of NT02 is 31.55m AOD which is more than 300mm above the design flood level and is also above the 1000 yr flood level which is 31.31m AOD. This is in line with previous discussions.
- Flood resistance or resilience measures are therefore not considered to be required for NT02.

NT03:

- The FFL for plot NT03 is set above the design flood level.
- The FFL of NT03 is 32.00m and the design flood Levels for Nodes 7 and 10 are 30.88m and 31.51m respectively- for the purpose of this exercise the worst case flood level at Node 10 has been used. The FFL of NT03 is therefore 490mm above the worst case design flood level and is also above the 1000yr flood level for Node 10 which is 31.84m.
- Flood resistance or resilience measures are therefore not considered to be required for NT03.

NT04:

- The lowest FFL for plot NT04 is shown to be 30.955m – this is associated with the less vulnerable commercial usages along Dantzic Street. The design flood level at Node 10 is 31.51m – this is 555mm above the FFL
- With respect to mitigation for NT04, the proposals are that flood resistance in the form of an impermeable concrete upstand will be provided to 600mm above FFL which is 31.555m, and that resilience measures up to 300mm above this level which is 31.855m. Flood doors or retractable flood barriers will be provided at door thresholds. This is aligned with the approach taken for the neighbouring consented Victoria Riverside development. Please can the EA confirm whether this approach is acceptable for ground floor commercial usages at plot NT04? Note that residential access lobbies are set above the design flood level.
- It will be recommended as a mitigation measure in the FRA that the end user of plot NT04 is to sign up to the EA Automate Flood Warning system and an Emergency Evacuation Plan (EEP) is put in place so that users know the procedure to follow in the event of a flood warning and so that they can evacuate before the onset of a flood or escape to a safe refuge above the flood level if required.
- Safe access and egress for the commercial plots will be provided via a ramped corridor to the rear of the units which emerges along Dalton Street at a level of approximately 31.70m so roughly 200mm above design flood level. A plan to show this route and levels will be provided.

Please note that the flood strategy that I provided you with for your initial review still applies fully to Application 4 but the above is the position for Application 5 and this is consistent with the pre-app discussions between the EA and the wider FEC team. We note your request for a clear distinction in the FRA report between the flood strategies applied to Application 4 and 5 and we will make sure that this is clear in the report but for the avoidance of doubt, the strategy for Application 5 is as set out above (plots NT02 to NT04) and the original strategy submitted and which you have commented on applies to Application 4.

We will forward further information and drawings to illustrate the above approach with greater clarity but think it would be useful to have a Teams call to discuss your initial flood strategy comments in more detail during w/c commencing 13th March. Can you confirm your availability please?

Kind Regards,



Stephen Mostyn

Associate

Development Infrastructure

From: McLaughlin, Anne-marie <Anne-Marie.McLaughlin@environment-agency.gov.uk>

Sent: 02 March 2023 17:34

To: Mostyn, Stephen <Stephen.Mostyn@wsp.com>; john.sherrington@spclimited.co.uk

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Further to the above, our commentary includes advice for your consideration on the forthcoming FRA / Flood Risk Mitigation Strategy where we would welcome discussions and / or further technical review of the full FRA / Flood Risk Mitigation Strategy once the above matters have been addressed.

Should you have any queries and wish to discuss the contents of our response, then please feel free to contact me.

Many thanks,

Anne-Marie

Anne-Marie McLaughlin

Planning Advisor, Green Growth Team & Sustainable Places Team | Greater Manchester, Merseyside, Cheshire

Environment Agency | Richard Fairclough House, Knutsford Road, Latchford, Warrington WA4 1HT

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Brimblecombe, Jack

To: Mostyn, Stephen
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Hi Stephen,

Many thanks for circulating the summary.

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Happy to discuss further if required.

Kind regards,
Andy

Andy Davies

Project Manager, Green Growth Team & Sustainable Places Team | Greater Manchester, Merseyside, Cheshire
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Mobile: **0739 379 8325**
Pronouns: he/him/his



From: Mostyn, Stephen <Stephen.Mostyn@wsp.com>
Sent: 24 March 2023 13:05
To: Davies, Andy <Andy.Davies1@environment-agency.gov.uk>; Ruckledge, John <john.ruckledge@environment-agency.gov.uk>; McLaughlin, Anne-marie <Anne-Marie.McLaughlin@environment-agency.gov.uk>
Cc: Hilary Brett-Parr <hilary.brett@fecil.uk>; Jon Suckley <Jon.Suckley@asteerplanning.com>; Brimblecombe, Jack <Jack.Brimblecombe@wsp.com>; Outterside, James <James.Outterside@wsp.com>; Standing, Ian <Ian.Standing@wsp.com>; a.english@maccreanorlavington.com; Blazej Czuba <b.czuba@maccreanorlavington.com>; Ken Thompson <k.thompson@maccreanorlavington.com>; john.sherrington@spclimited.co.uk; Sara Gallego <s.gallego@maccreanorlavington.com>; Holly Wilkinson

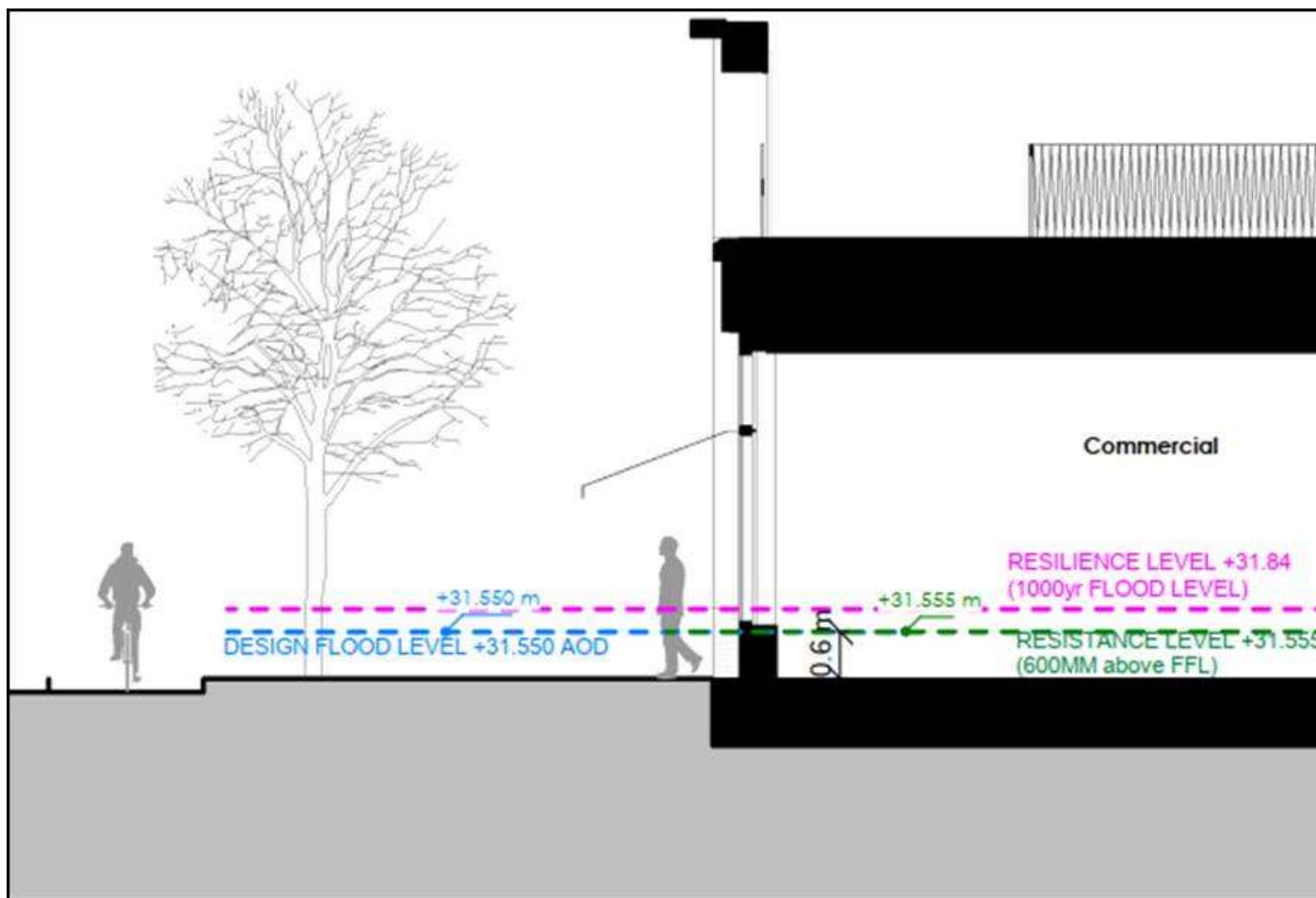
<hollywilkinson@hawkinsbrown.com>; Prebble, Nick <Nick.Prebble@environment-agency.gov.uk>; Timea Nacsa <timea.nacsa@fecil.uk>; Chambers, Julia <julia.chambers@wsp.com>; James Thomson <JamesThomson@hawkinsbrown.com>

Subject: RE: ENVPAC/1/GMC/00443 - EA Review of Flood Risk Mitigation Strategy (Email dated 14th February 2023)

Andy,

Following on from yesterday's call, here is a record of main points discussed and agreed with respect to flood risk assessment.

- **Omission of freeboard:** The EA have reviewed the justification provided by masterplan architect and are comfortable with the approach taken to the omission of freeboard where necessary given the constraints. The EA advises that the architectural design detail/justification for this approach will need to be provided as part of the associated FRA (evidence base/narrative). However, the EA would also advocate/welcome, where possible, potential at the detailed design stage for consideration to be given as to whether FFLS can be raised further i.e. above the 'design flood event'.
- **Flood Resistance / Resilience:** The EA confirmed that flood resistance / resilience measures are required up to 600mm above the design flood level but indicated that the FRA should leave a degree of flexibility for the level at which resistance should be included up to and the level which resilience should be included up to, reflective of the fact that detail design of the development/plots currently remains undetermined/unknown to the EA. This can then be agreed on a plot by plot basis as each plot is brought forward for development taking into account the 1000-year flood level.
- **Emergency Plan:** The FRA will include details on flood levels, flood mitigation measures and safe access and egress routes including flood hazard mapping and recommends that the end user of the site subscribes to the EA Automated Flood Warning System and that a detailed Emergency Plan is produced. The FRA will set out the parameters / requirements for a detailed Emergency Plan but the key information listed above is included in the FRA. We understand that the EA accept this approach for planning.
- **Application 5 (NT04):** See section below. The FFL of commercial units along Dantzic Street will be set below the design flood level. Flood resistance will be provided to 600mm above FFL. Flood resilience will be provided up to the 1000-year flood level. Demountable flood barriers or similar will be provided at door thresholds. Safe egress will be provided to land above the design flood level. We understand that this approach is acceptable to the EA. – In association with this, it understood that 'dry' safe/access can be provided from all development plots.
- **Application 5 (NT03):** Commercial unit in NT03 with FFL of 31.72m AOD should have flood resilience measures up to a minimum of the 1000-year flood level which is 31.84m AOD



Please let us know if you have any comments on the summary above or would like to discuss any of the items in further detail.

Kind Regards,



Stephen Mostyn
Associate
Development Infrastructure

From: Mostyn, Stephen

Sent: 23 March 2023 10:01

To: Davies, Andy <Andy.Davies1@environment-agency.gov.uk>; McLaughlin, Anne-marie <Anne-Marie.McLaughlin@environment-agency.gov.uk>; Chambers, Julia <julia.chambers@wsp.com>

Cc: Ruckledge, John <john.ruckledge@environment-agency.gov.uk>; Hilary Brett-Parr <hilary.brett@fecil.uk>; Jon Suckley <Jon.Suckley@asteerplanning.com>; Brimblecombe, Jack <Jack.Brimblecombe@wsp.com>; Outterside, James <James.Outterside@wsp.com>; Standring, Ian <Ian.Standring@wsp.com>; a.english@maccreanorlavington.com; Blazej Czuba <b.czuba@maccreanorlavington.com>; Ken Thompson <k.thompson@maccreanorlavington.com>; john.sherrington@spclimited.co.uk; Sara Gallego <s.gallego@maccreanorlavington.com>; Holly Wilkinson <hollywilkinson@hawkinsbrown.com>; Prebble, Nick <nick.prebble@environment-agency.gov.uk>

Subject: RE: ENVPAC/1/GMC/00443 - EA Review of Flood Risk Mitigation Strategy (Email dated 14th February 2023)

Hi Andy,

Apologies I've not been able to send the below earlier but here are the key agenda items for today's meeting from a Flood Risk Assessment perspective:

'we advise that further explanation is needed as to why the minimum 300mm freeboard is not appropriate / needed. We understand all residential accommodation will be from the 1st floor level and above but 'less vulnerable' uses at ground floor level should still be afforded some freeboard allowance.'

Please see below justification provided by the masterplan architect for your review and consideration:

General approach

The project aims to deliver a rich mix of commercial and community uses, particularly so around RB06, Rb07, RB10, RB16 and RB17, as these plots directly adjoin the River Irk and are the nearest to Central Manchester. Most of these plots were identified in the Victoria North Strategic Regeneration Framework (SRF) as mixed-use. The plots are envisaged to sit among high-quality public realm and it is critical to the success of the project that the uses within the buildings have a direct relationship with the surrounding public realm. They ground floor uses will be required to be accessible and active, therefore should be at a similar level to those of the adjoining public realm.

RB06 and RB07

The existing levels around these two plots along the River edge and Roger Street are approximately +30.0 AOD. The Union Waterfront needs to remain at +30.0 AOD to provide sufficient flood storage. The design flood level on both the plots is +31.2, therefore approximately 1.2 metres above the existing public realm. Setting FFL at flood level would lead to a 1.2 metre difference between public realm and building ground floor, which careful design could incorporate without detrimental impact on active ground floors. A 300mm freeboard would lead to a 1.5 metre difference in levels, which would have detrimental impact on the quality of the scheme.

RB10

The existing levels around the plots are approximately +29.0 AOD. The public realm around the plot cannot be raised above the flood level as it provides flood storage as well as access to existing Network Rail and other arch uses. The flood level is approximately +30.35, therefore approximately 1.35 metres above the public realm. The illustrative masterplan suggests an outdoor covered market use and residential ancillary use such as bin storage or cycle storage sitting underneath an elevated building. Only the residential lobby and the residential core of the building are proposed to be raised above the flood level. A 1.35 metre difference between public realm and the FFL would at least maintain visual connectivity between the two. A 300mm freeboard would lead to an approximate 1.65 metre difference in levels, which would substantially affect the design quality and legibility of a building entrance and prevent visual surveyance from the building to the public realm.

RB16/17

Dantzic Street is seen as a new high street destination for the Masterplan, with a generous provision of ground and potentially first floor commercial and community uses. Active frontage is not sought to Travis Island Wetlands as substantial level difference will be required to maximise flood storage within them. The existing levels around these two plots along Dantzic Street are approximately +31.0 to +31.5 AOD. The flood level is approximately +31.36 AOD and +31.66 with a 300mm freeboard. As such, there may be instances where freeboard may be achieved for some or the majority of the plots, subject to detailed public realm and building design. However, we would seek flexibility at this stage to ensure that quality active frontages can be achieved along this key high street location.

NT02 – NT04 General approach

The project aims to deliver a rich mix of commercial and community uses, with a focus on the frontages of NT02-04 on Dantzic Street. Most of these plots were identified in the Victoria North Strategic Regeneration Framework (SRF) as mixed-use. The plots are envisaged to sit among high-quality public realm, and it is critical to the success of the project that the uses within the buildings have a direct relationship with the surrounding public realm. They ground floor uses will be required to be accessible and active, therefore should be at a similar level to those of the adjoining public realm.

NT04

Dantzic Street is seen as a new high street destination for the Masterplan, with a generous provision of ground floor commercial and community uses. NT04 completes this high street at the eastern end. The existing levels to the frontage onto Dantzic Street are approximately 30.5m+ AOD to 31.0m+ AOD. It is proposed to adjust the levels in the public realm at the back of pavement to the proposed FFL level of the commercial units at 30.955m+AOD consistently along the frontage to facilitate level access.

The design flood level for NT04 is 31.55+ AOD, which is 595mm above the proposed FFL. It is proposed to

provide flood resistance measures to the façade up to 600mm above the proposed FFL (i.e. up to 31.555m+ AOD) in order to mitigate any potential flooding whilst maintaining level access into the active uses.

'We welcome the inclusion of flood resistance (water exclusion) / resilience (water ingress) measures to be provided at a minimum 600mm above 'flood levels'. We advise such measures are designed to consider the 0.1% AEP to ensure mitigation for residual flood risk is implemented.'

Agreement of the level that flood resistance should be provided up to and agreement of the level that flood resilience should be provided up to.

'The FRA must show how users of the development will remain safe. Therefore, safe access / egress routes must be identified and linked to flood warning and evacuation plans where necessary.'

The FRA will recommend emergency evacuation plans are put in place and the requirement for flood warnings. Confirmation required that the provision of emergency evacuation plans will be conditioned as a pre occupation requirement.

Apart from the above, the outstanding items to discuss were the approach being taken for Application 5, and in particular plot NT04. FFL is below design flood level - what level should flood resistant construction be provided. Current approach is aligned with that of Victoria Riverside (flood resistance to 600mm above FFL).

NT03 lowest FFL is actually 31.72m AOD (commercial). Where FFL's of NT03 are not 300mm above design flood level should same approach be taken as agreed for Application 4 ?

From: Davies, Andy <Andy.Davies1@environment-agency.gov.uk>

Sent: 13 March 2023 13:50

To: Mostyn, Stephen <Stephen.Mostyn@wsp.com>; McLaughlin, Anne-marie <Anne-Marie.McLaughlin@environment-agency.gov.uk>; Chambers, Julia <julia.chambers@wsp.com>

Cc: Ruckledge, John <john.ruckledge@environment-agency.gov.uk>; Hilary Brett-Parr <hilary.brett@fecil.uk>; Jon Suckley <Jon.Suckley@asteerplanning.com>; Brimblecombe, Jack <Jack.Brimblecombe@wsp.com>; Outterside, James <James.Outterside@wsp.com>; Standring, Ian <Ian.Standring@wsp.com>; a.english@maccreanorlavington.com; Blazej Czuba <b.czuba@maccreanorlavington.com>; Ken Thompson <k.thompson@maccreanorlavington.com>; john.sherrington@spclimited.co.uk; Sara Gallego <s.gallego@maccreanorlavington.com>; Holly Wilkinson <hollywilkinson@hawkinsbrown.com>; Prebble, Nick <nick.prebble@environment-agency.gov.uk>

Subject: RE: ENVPAC/1/GMC/00443 - EA Review of Flood Risk Mitigation Strategy (Email dated 14th February 2023)

Afternoon Stephen,

Many thanks for your email below – I've just tried to give you a call to discuss this. However, both my calls to your mob and office phone went through to voicemail.

More than happy to discuss matters over the phone if easier. However, cognisant to current internal resource pressures please would it be possible for you to outline exactly you / WSP would like to achieve via a meeting this week? I.e. the key agenda items.

As context to this ask...

Noting your email in chain primarily to matters associated with Application 5, please see attached email which advises the wider FEC/VN project team that we (the EA) are still awaiting the submission of an updated iteration of 'Application 5' flood model and in association with this detailed plans (*preferentially those which will be sought for planning approval*) enabling confirmation/confidence that the flood model submitted to the EA is an accurate representation of the intended development and, in turn, any assessment of development flood risk derived from this is appropriate.

As per our recent written correspondence / letter (SO/2023/122923/01-L01) relating primarily to assessment of flood intervention principles for 'Application 4', until we are able to gain confirmation that flood modelling presented is an accurate/representation of intended end-development design, in turn, we will be unable to confidently conclude/advise as to whether planned flood resistance/resilience proposals are appropriate due to the potential for variations to flood risk and it's management to still occur e.g. an uplift in design flood level as a result of intervention on Dantzic Street. However, that said, echoing our recent correspondence/letter, the general principles intended to be employed for determining how development plot fluvial flood risk is to be managed as part of 'Application 5' appear to be sound from our current understanding of the likely level of risk /fluvial flood impact the 'Application 5' development could experience within an 1:100 + CC% /Design Flood event. My only additional remark to this would be that whereby FFL are to be below the 1:1000 year event (*potentially only Plot NT04 based on the node data you present*), consideration/narrative is provided (within the forthcoming FRA) as to how this residual risk can be appropriately managed.

@Chambers, Julia – I note from Stephen's email below the reference to an impermeable concrete upstand offering protection to the NT04 development plot which I would presume based on prior reviewed modelling outputs / understanding of general fluvial flood risk for the area is situated on/in immediate proximity to Dantzic Street . Design elements such as, with the potential to alter local floodwater levels /floodwater distribution are the type of details we are seeking to understand further as part of efforts to determine flood model appropriateness. Please can it be ensured that details on the impermeable concrete upstand are provided as part of forthcoming updated 'Application 5' / flood model review submissions.

Happy to discuss any of the above further as required.

Kind regards
Andy

From: Mostyn, Stephen <Stephen.Mostyn@wsp.com>

Sent: 10 March 2023 19:23

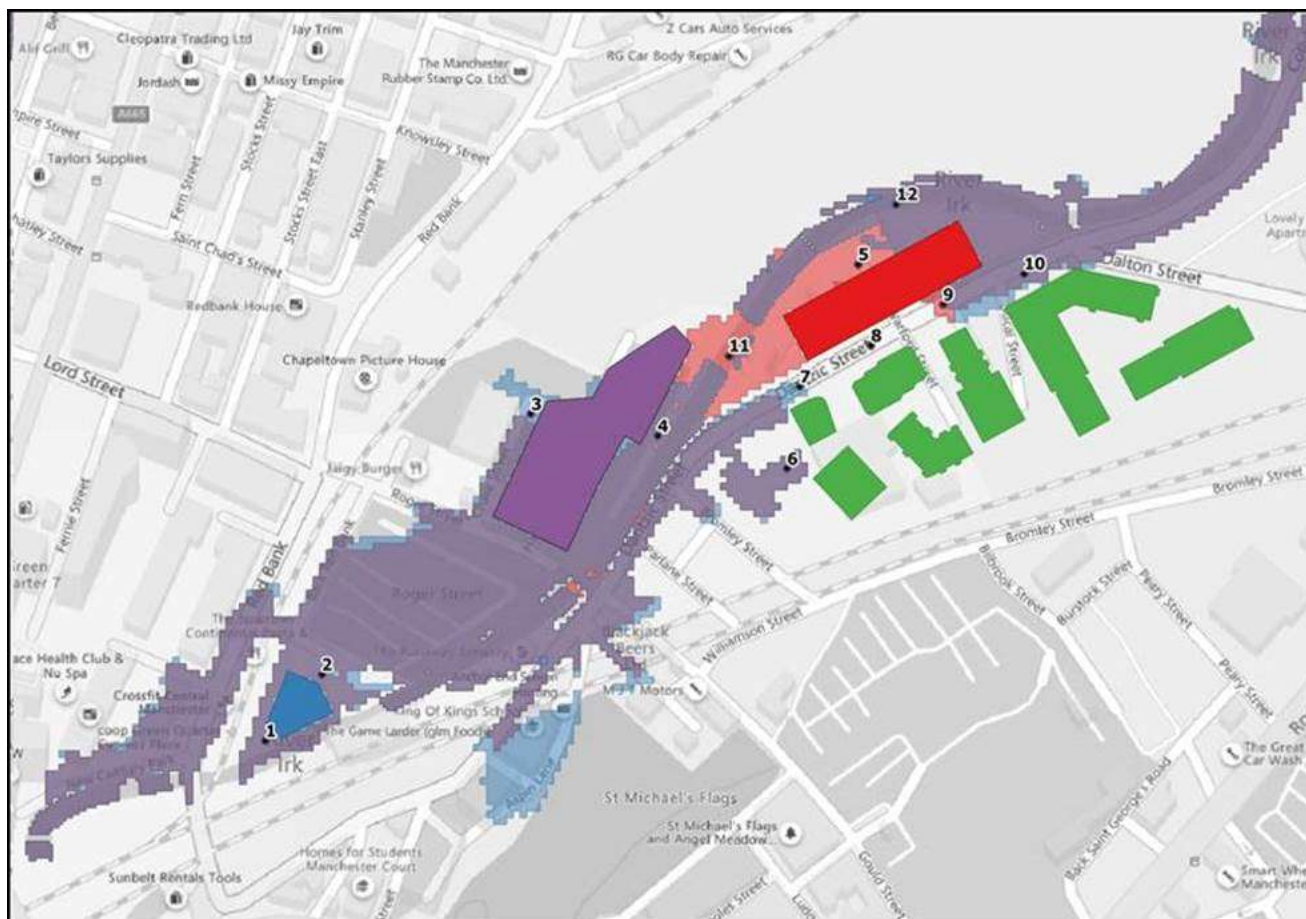
To: McLaughlin, Anne-marie <Anne-Marie.McLaughlin@environment-agency.gov.uk>;
john.sherrington@spclimited.co.uk

Cc: Chambers, Julia <julia.chambers@wsp.com>; Davies, Andy <Andy.Davies1@environment-agency.gov.uk>;
Ruckledge, John <john.ruckledge@environment-agency.gov.uk>; Hilary Brett-Parr <hilary.brett@fecil.uk>; Jon
Suckley <Jon.Suckley@asteerplanning.com>; Brimblecombe, Jack <Jack.Brimblecombe@wsp.com>; Outterside,
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<k.thompson@maccreanorlavington.com>; Sara Gallego <s.gallego@maccreanorlavington.com>; Holly Wilkinson
<hollywilkinson@hawkinsbrown.com>

Subject: RE: ENVPAC/1/GMC/00443 - EA Review of Flood Risk Mitigation Strategy (Email dated 14th February 2023)

Hi Anne-Marie,

Thank you for sending through the attached initial comments on outline flood strategy that was put forward. Please see below an update related to the Application 5 flood strategy. This



The standard that we are seeking to achieve for setting of FFL's is for them to be at or above the design flood level plus 300mm of freeboard. We can confirm that there will be no 'more vulnerable' uses below the design flood level plus 300mm. All more vulnerable uses will be at first floor level or above. Safe routes of access are provided to all residential areas. See above flood level Nodes map and attached spreadsheet to show flood level info taken from the WSP modelling and below updated strategy for Application 5 only:

NT02:

- The FFL for plot NT02 is set above the design flood level.
- NT02 design Flood Level is 30.88m (Node 7). The finished floor level (FFL) of NT02 is 31.55m AOD which is more than 300mm above the design flood level and is also above the 1000 yr flood level which is 31.31m AOD. This is in line with previous discussions.
- Flood resistance or resilience measures are therefore not considered to be required for NT02.

NT03:

- The FFL for plot NT03 is set above the design flood level.
- The FFL of NT03 is 32.00m and the design flood Levels for Nodes 7 and 10 are 30.88m and 31.51m respectively- for the purpose of this exercise the worst case flood level at Node 10 has been used. The FFL of NT03 is therefore 490mm above the worst case design flood level and is also above the 1000yr flood level for Node 10 which is 31.84m.
- Flood resistance or resilience measures are therefore not considered to be required for NT03.

NT04:

- The lowest FFL for plot NT04 is shown to be 30.955m – this is associated with the less vulnerable commercial usages along Dantzic Street. The design flood level at Node 10 is 31.51m – this is 555mm above the FFL

- With respect to mitigation for NT04, the proposals are that flood resistance in the form of an impermeable concrete upstand will be provided to 600mm above FFL which is 31.555m, and that resilience measures up to 300mm above this level which is 31.855m. Flood doors or retractable flood barriers will be provided at door thresholds. This is aligned with the approach taken for the neighbouring consented Victoria Riverside development. Please can the EA confirm whether this approach is acceptable for ground floor commercial usages at plot NT04? Note that residential access lobbies are set above the design flood level.
- It will be recommended as a mitigation measure in the FRA that the end user of plot NT04 is to sign up to the EA Automate Flood Warning system and an Emergency Evacuation Plan (EEP) is put in place so that users know the procedure to follow in the event of a flood warning and so that they can evacuate before the onset of a flood or escape to a safe refuge above the flood level if required.
- Safe access and egress for the commercial plots will be provided via a ramped corridor to the rear of the units which emerges along Dalton Street at a level of approximately 31.70m so roughly 200mm above design flood level. A plan to show this route and levels will be provided.

Please note that the flood strategy that I provided you with for your initial review still applies fully to Application 4 but the above is the position for Application 5 and this is consistent with the pre-app discussions between the EA and the wider FEC team. We note your request for a clear distinction in the FRA report between the flood strategies applied to Application 4 and 5 and we will make sure that this is clear in the report but for the avoidance of doubt, the strategy for Application 5 is as set out above (plots NT02 to NT04) and the original strategy submitted and which you have commented on applies to Application 4.

We will forward further information and drawings to illustrate the above approach with greater clarity but think it would be useful to have a Teams call to discuss your initial flood strategy comments in more detail during w/c commencing 13th March. Can you confirm your availability please?

Kind Regards,



Stephen Mostyn

Associate
Development Infrastructure

From: McLaughlin, Anne-marie <Anne-Marie.McLaughlin@environment-agency.gov.uk>

Sent: 02 March 2023 17:34

To: Mostyn, Stephen <Stephen.Mostyn@wsp.com>; john.sherrington@spclimited.co.uk

Cc: Chambers, Julia <julia.chambers@wsp.com>; Davies, Andy <andy.davies1@environment-agency.gov.uk>;

Ruckledge, John <john.ruckledge@environment-agency.gov.uk>; Hilary Brett-Parr <hilary.brett@fecil.uk>; Jon

Suckley <Jon.Suckley@asteerplanning.com>; Brimblecombe, Jack <Jack.Brimblecombe@wsp.com>; Outterside,

James <James.Outterside@wsp.com>; Standring, Ian <Ian.Standring@wsp.com>;

a.english@maccleanorlavington.com; Blazej Czuba <b.czuba@maccleanorlavington.com>

Subject: ENVPAC/1/GMC/00443 - EA Review of Flood Risk Mitigation Strategy (Email dated 14th February 2023)

Hi Stephen,

Please find attached our preliminary commentary of the overview provided of the 'Application 4' and 'Application 5' Flood Risk Mitigation Strategy as outlined in your email dated 14th February 2023.

As previously highlighted, this review is subject to the approval of the EA's acceptance of the 'Application 4' and 'Application 5' flood models, where we understand further flood models are intended to be issued to us by Monday (6th March), and confirmation of detailed plans intended to be submitted for each planning submission.

We advise at this time that if it is the intention to produce one FRA / Flood Risk Mitigation Strategy report, a clear distinction is made on the assessment and intended mitigation measures for each individual application. This is to ensure determination of the suitability and acceptability of the assessment / mitigation proposals for each individual planning application is clearly identified / recognised.

Further to the above, our commentary includes advice for your consideration on the forthcoming FRA / Flood Risk Mitigation Strategy where we would welcome discussions and / or further technical review of the full FRA / Flood Risk Mitigation Strategy once the above matters have been addressed.

Should you have any queries and wish to discuss the contents of our response, then please feel free to contact me.

Many thanks,

Anne-Marie

Anne-Marie McLaughlin

Planning Advisor, Green Growth Team & Sustainable Places Team | Greater Manchester, Merseyside, Cheshire
Environment Agency | Richard Fairclough House, Knutsford Road, Latchford, Warrington WA4 1HT

SP Team Email: SPPlanning.RFH@environment-agency.gov.uk

Mobile: **07717344174**

Pronouns: she/her



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From: GMMC Info Requests <InfoRequests.GMMC@environment-agency.gov.uk>
Sent: 02 July 2021 11:18
To: Mostyn, Stephen
Subject: GMMC223640SW Response attached from the Environment Agency
Attachments: GMMC223640SW - RFO.pdf; GMMC223960SW - Table.pdf; GMMC223640SW - DFM.pdf

Categories: Red Category

Dear Stephen,

Thank you for your enquiry which was received on 28/06/21.

We respond to requests under the Freedom of Information Act 2000 and Environmental Information Regulations 2004.

Please find the data attached and my colleagues supporting comments below;

There are no flood defences in the vicinity of the site.

Please be aware you can check your risk of flooding on our external website <https://flood-warning-information.service.gov.uk/long-term-flood-risk/>

Here are some useful links below:

<https://www.gov.uk/guidance/flood-risk-assessment-local-planning-authorities>

<https://www.gov.uk/guidance/flood-risk-assessments-climate-change-allowances>

Please refer to the [Open Government Licence](#) which explains the permitted use of this information.

Please get in touch if you have any further queries or contact us within two months if you'd like us to review the information we have sent.

Kind regards,

Sarah

Sarah Walters | Customer and Engagement Officer
Greater Manchester, Merseyside and Cheshire

Direct email: InfoRequests.GMMC@environment-agency.gov.uk

Office address: Richard Fairclough House, Knutsford Road, Latchford, Warrington, WA4 1HT



From: Mostyn, Stephen [<mailto:Stephen.Mostyn@wsp.com>]

Sent: 28 June 2021 12:59

To: Enquiries, Unit <enquiries@environment-agency.gov.uk>

Cc: Outterside, James <James.Outterside@wsp.com>

Subject: 210629/JPF12 70079268_Redbank & Dantzic Street

Dear Sirs,

We are presently preparing a flood risk assessment and drainage strategy report for the proposed private plot developments associated with the proposed regeneration of the Redbank and Dantzic Street area to the north of Victoria Station in Manchester City Centre – see attached extract from EA flood map that shows that large parts of the site are currently in Flood Zones 2 & 3.

This is a significant development and a separate infrastructure project is currently taking place as part of which potential options for alterations to the River Irk are being discussed and this may result in alterations to the current flood zones.

However, in order for us to gain an understanding of the current flood risk to the site prior to any development, can the EA provide us with detailed flood level information (product 4) for the River Irk in the area shown with the redline boundary on the attached.

Also, can the EA confirm if they hold any records of historical flood events at or in close proximity to the site or are aware of flood risk from any other source which may impact the site?

Kind Regards,



Stephen Mostyn

Associate
Development Infrastructure

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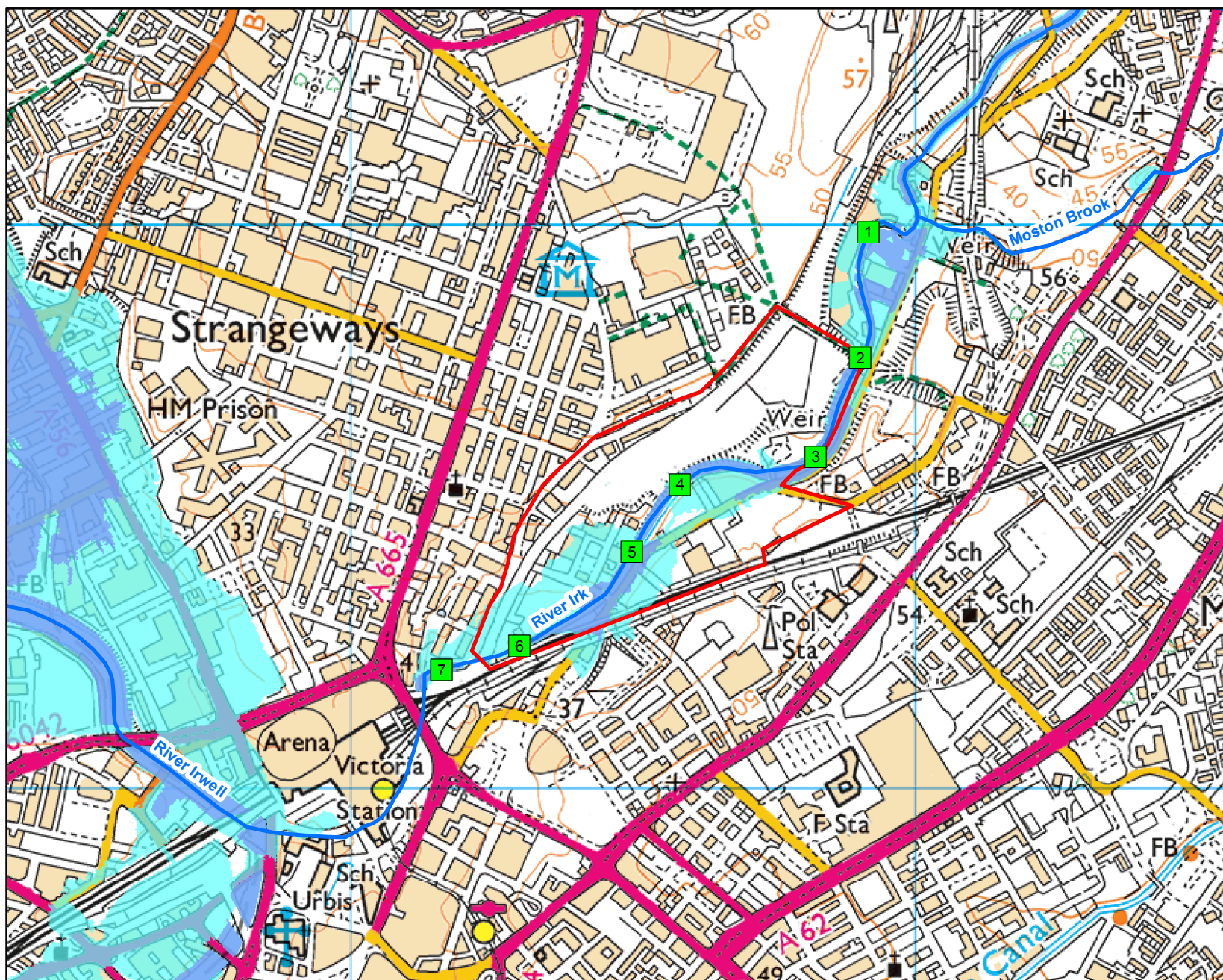
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Detailed Flood Map centred on Honey Street, Manchester, M8 8RG. Created on 01/07/2021 [GMMC223640SW]



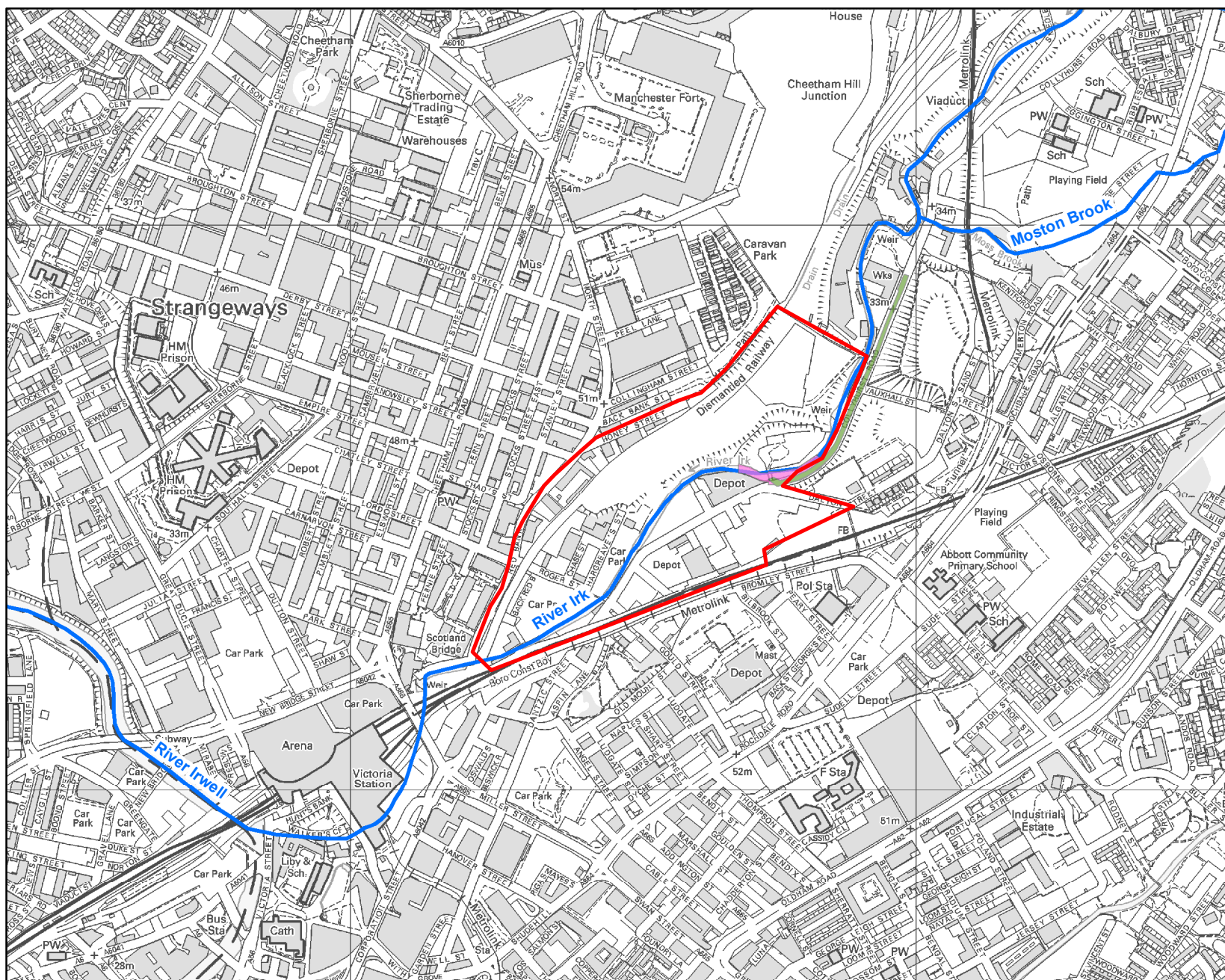
1:10,001



Legend

-  Site Location
-  Model Measurements
-  Main River
-  Flood Zone 3
-  Flood Zone 2

Recorded Flood Outline Map centred on Honey Street, Manchester, M8 8RG. Created on 01/07/2021 [GMMC223640SW]



1:10,001



Legend

Site Location

Main River

Recorded Flood Outline

Start Date

16/03/2019

26/12/2015

					Undefended			
Map Reference	Model Node Reference	Easting	Northing	Data	4 % AEP (1 in 25 year)	1 % AEP (1 in 100 year)	1 % AEP (1 in 100 year) + 20% Increase in Flow*	0.1 % AEP (1 in 1000 year)
1	ea013_Model_Irk_00019	384919	399987	Modelled Water Level (m aodN)	31.88	32.21	32.77	33.96
				Modelled Flow (cumecs)	47.36	56.85	58.55	53.09
2	ea013_Model_Irk_00048	384905	399764	Modelled Water Level (m aodN)	31.01	31.32	31.49	32.07
				Modelled Flow (cumecs)	55.44	65.31	74.50	109.69
3	ea013_Model_Irk_00026	384826	399588	Modelled Water Level (m aodN)	30.56	31.04	31.31	31.97
				Modelled Flow (cumecs)	52.80	58.33	63.72	86.87
4	ea013_Model_Irk_00029	384585	399539	Modelled Water Level (m aodN)	30.01	30.40	30.57	31.35
				Modelled Flow (cumecs)	55.70	65.63	74.43	112.48
5	ea013_Model_Irk_00030	384500	399420	Modelled Water Level (m aodN)	29.80	30.21	30.37	30.93
				Modelled Flow (cumecs)	55.51	63.66	70.92	134.74
6	ea013_Model_Irk_00034	384301	399252	Modelled Water Level (m aodN)	28.67	28.98	29.21	30.21
				Modelled Flow (cumecs)	55.63	65.43	72.38	95.01
7	ea013_Model_Irk_00037	384163	399210	Modelled Water Level (m aodN)	28.10	28.34	28.50	29.36
				Modelled Flow (cumecs)	55.92	65.83	72.66	94.66

Model data taken from River Irk SFRA2011 Study

AEP - Annual Exceedence Probability

m aodN - metres above ordnance datum Newlyn

cumecs - cubic metres per second

Notes:

*Climate Change Scenario - We only hold climate change measurements based on the previous climate change guidance (20% increase in flow). The new climate change guidance is available at <https://www.gov.uk/guidance/flood-risk-assessments-climate-change-allowances>. The location of the site and the type (vulnerability) of development determine the climate change allowances to consider in any flood risk assessment.

Recorded Flood Outlines

Flood Event Code	Name	Start Date	End Date	Source of Flooding	Cause of Flooding
4079698	Cheetham Hill	26/12/2015	26/12/2015	Main River	Unknown
4086010	Collyhust Road	16/03/2019	16/03/2019		Channel capacity exceeded (no raised defences)