

Our ref: PCS/156279
Your ref: 17/02948/DC

If telephoning ask for:
Simon Watt

31 January 2018

David Russell
Glasgow City Council
Development & Regeneration Services
229 George Street
Glasgow
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By email only to: DC.Consultations@drs.glasgow.gov.uk

Dear Sir

Town and Country Planning (Scotland) Acts

Planning application: 17/02948/DC

Govan Graving Docks, 18 Clydebrae Street, Glasgow

Erection of mixed use development, in principle, including residential use, museum/heritage centre (class 10), restaurant (class 3), retail (class 1), office (classes 2 & 4) and hotel (class 7) uses with associated public realm improvements & engineering works including access, flood prevention, engineering, landscaping & other works (Environmental Impact Assessment)

Thank you for your consultation email which SEPA received on 24 November 2017.

We have given due consideration to the proposals and note that, based on the current SEPA Flood Map and 2005 River Clyde Flood Management Strategy, the vast majority of the site is located within the functional flood plain of the River Clyde. Significant parts of the site are also located within the 'high probability' flood extent (i.e. 1 in 10 year return period). In line with the flood risk framework of Scottish Planning Policy (SPP) these locations are generally not suitable for development.

We have reviewed the proposed flood risk management measures set out within the Environmental Statement (ES) and Flood Risk Assessment (FRA), comprising of raised Finished Floor Levels (FFLs) (set above basement car parking), use of flood resilient materials and an emergency evacuation plan, and can advise we do not consider these measures to be sustainable.

SEPA therefore have significant concerns regarding the flood risks to users on site. As this will include 700 – 750 residential properties this will put a large number of people at risk to the effects of flooding. We are also concerned about the potential increased flood risk to surrounding people and properties as a consequence of introducing buildings into the flood plain. We therefore **object in principle** to the planning application on the grounds that the proposals may place buildings and persons at flood risk contrary to SPP and our position is unlikely to change.

We have a shared duty with Scottish Ministers and other responsible authorities under the Flood Risk Management (Scotland) Act 2009 to reduce overall flood risk and promote sustainable flood risk management. The cornerstone of sustainable flood risk management is the avoidance of flood risk in the first instance. We recommend that alternative locations be considered.

In the event that the planning authority proposes to grant planning permission contrary to this advice on flood risk, the Town and Country Planning (Notification of Applications) (Scotland) Direction 2009 provides criteria for the referral to the Scottish Ministers of such cases. You may therefore wish to consider if this proposal falls within the scope of this Direction.

Notwithstanding our position we have included our review of the information supplied. Given the nature of our response we have only provided flood risk advice. Provision of this review does not imply that we consider there to be a technical solution to manage flood risk at this site which meets SPP.

Advice for the planning authority

1. Flood Risk

- 1.1 Paragraph 255 of Scottish Planning Policy (SPP) states that *“the planning system should promote flood avoidance by safeguarding flood storage and conveying capacity, and locating development away from functional flood plains and medium to high risk areas.”* It further defines (glossary) that *“For planning purposes the functional flood plain will generally have a greater than 0.5% (1:200) probability of flooding in any year”*. Built development should not therefore take place on the functional flood plain.
- 1.2 We understand that the site is currently allocated for housing (H015) within the Glasgow City Development Plan (CDP) (dated 29 March 2017). It is not apparent that we offered comment on this proposal through the CDP consultation process. However, we have previously offered pre-application advice on the proposals (letters dated 28 June 2016 under PCS/147459 and 01 March 2017 under PCS/151639). At that time we indicated that we would object on the grounds that it may place buildings and persons at flood risk contrary to SPP and requested clarification on several points to address this when formally consulted.
- 1.3 Review of the SEPA Flood Maps indicates that the area is potentially at medium-high flood risk and the vast majority of the site is shown to be in the functional floodplain of the River Clyde. Significant parts of the site are also within the ‘high probability’ flood extent (i.e. 1 in 10 year return period). This is supported by the 2005 River Clyde Flood Management Strategy (RCFMS). A Flood Risk Assessment (FRA) (dated June 2017) has therefore been prepared in support of the planning application to characterise the nature of flood risk to the site and set out a flood risk mitigation strategy.
- 1.4 The FRA has derived appropriate flood levels from the RCFMS. This indicates a 200 year flood level of 4.99mAOD (or 5.3mAOD plus climate change). The topographic information supplied within Appendix A of the FRA indicates that site levels are variable however they are generally between 3 to 4mAOD around the berthing docks and around 4mAOD around the tidal basin, which is significantly lower than the design flood level available from the RCFMS. This data supports our view that this area is at medium to high flood risk.

- 1.5 However, we now consider the outputs of the RCFMS to be outdated and may not accurately represent flood risk. The hydrology of the RCFMS will require to be updated given the significant duration of time that has lapsed since the study and underpinning model inputs were provided (at least 13 years). Additionally, over the intervening period there have been a number of flood events and Clydeside developments in addition to software developments. Our understanding of climate change is currently under review (in line with UKCP guidance), however we would consider it likely that in the future a higher flow uplift value than that which was considered as part of the RCFMS may apply. The coastal flood boundary dataset is also due to be updated this year. The FRA relies heavily on the RCFMS to inform levels, access/egress routes and flood storage however given the points above, we consider that this may not accurately represent flood risk and would therefore view these levels with uncertainty.
- 1.6 Furthermore, we are aware from recently acquired bathymetric data that there has been significant siltation in parts of the Clyde. The impact of this siltation on channel conveyance capacity and flood risk has not yet been evaluated and this therefore increases uncertainty in the existing RCFMS outputs. The recent multi-beam bathymetry survey has acquired elevation data which shows significant siltation levels in some reaches of the River Clyde. The bathymetry data underpinning the RCFMS was completed in 2003.
- 1.7 Additionally, it is our view that this stretch of the River Clyde is hydraulically akin to fluvial conveyance (i.e. river corridor as opposed to open coastline) with tidal influences. Therefore, the placement of buildings within the flood plain could have a detrimental impact on the capacity of the River Clyde to store and convey water in a flood event which could lead to impacts to people and property in surrounding areas. It would therefore be our expectation that appropriate flood compensatory storage be provided to ensure there is no increase of flood risk to the site or elsewhere and to avoid piecemeal reduction of the functional floodplain as highlighted in Paragraph 256 of SPP. However, as the site is below the flood level reported in the RCFMS the delivery of appropriate compensatory storage (e.g. direct or indirect flood compensation) may be unfeasible.
- 1.8 To address the risk of flooding the applicant has prepared flood risk mitigation comprising of raised Finished Floor Levels (FFLs), use of flood resilient materials and the adoption of an emergency evacuation plan with safe access and egress routes. To achieve the FFLs, as shown on the Site Sections and Elevations as Proposed drawing (Drawing No. AL(0)200) and the illustration on p.14 of the Design Report, it is apparent that the plans will include 'floodable' undercroft car parking. This method may have also been proposed as a means to overcome the loss of floodplain storage.
- 1.9 It is our view that undercroft parking of this nature shares many similarities with 'stilted developments' which we do not support in line with Paragraph 263 of SPP. This states "*elevated buildings on structures such as stilts are unlikely to be acceptable*". These structures may be prone to erosion of building foundations, subsidence, potential blockage and also climate change may increase flood flows and levels. Furthermore, this would likely rely on 'overpumping' and maintenance measures as a means to remove flood waters and blockages. This would not allow for the free flow of floodwaters as once the undercroft parking is inundated this flood plain capacity is no longer available for any subsequent floodwater storage until it has been pumped out.

- 1.10 Whilst we acknowledge that flood mitigation measures such as raised walkways and podiums have been proposed to overcome the challenges of ground levels being lower than the functional floodplain we do not view floodable undercroft parking as a sustainable flood management measure and this would put receptors (e.g. cars and property) directly at flood risk. Additionally, as discussed above, there remains uncertainty regarding the flood levels on site which may mean that the current design levels are inappropriate. We are therefore not satisfied that the floodable undercroft parking or the other flood mitigation measures are sustainable or appropriate.
- 1.11 SPP states that the planning system should promote a precautionary approach to flood risk from all sources and flood avoidance. This is underpinned by the flood risk framework set out in Paragraph 263 of SPP. These principles are reflected within Policy 8 Water Environment of the CDP which states that '*development proposed in a functional flood plain is unlikely to be acceptable*' and that '*piecemeal reduction of the functional floodplain should be avoided given the cumulative effect of reducing storage capacity*'. Since our pre application advice we have also published Development Management Guidance on Flood Risk and supporting Flood Risk and Land Use Vulnerability Guidance.
- 1.12 We recognise that the site was previously developed however in line with our guidance we consider this to have been a water compatible land use (i.e. ship repair facilities, docks). The proposed development comprises of a mixture of land uses which are viewed to be highly vulnerable (residential and hotel) and least vulnerable (museum/heritage centre, restaurant, retail, office) in relation to their relative susceptibility and resilience to flooding. The development would therefore involve an increase in land use vulnerability within the functional flood plain of the River Clyde. As the proposals also largely comprise of residential properties (700 – 750 units with 130 affordable dwellings) this would introduce a significant number of people and properties into the floodplain and therefore at risk to the effects of flooding.
- 1.13 On this basis it is our view that this proposal does not align with our guidance, is contrary to SPP and to Policy CDP 8. Additionally, as our understanding of the potential flood risk has developed in this area we consider there to be uncertainty regarding flood levels and therefore are of the view that the risks to people and properties on and offsite may be underestimated within the ES and associated FRA. This may, in addition to our concerns with the nature of the proposed flood risk management measures, mean that the current design levels are inappropriate. Under the Flood Risk Management Act (Scotland) 2009 SEPA has a general duty to reduce overall flood risk and promote sustainable flood risk management. It is our view that this proposal would not represent a sustainable approach to flood risk management and therefore **object in principle** to the planning application on flood risk grounds.
- 1.14 The advice contained in this letter is supplied to you by SEPA in terms of Section 72 (1) of the Flood Risk Management (Scotland) Act 2009 on the basis of information held by SEPA as at the date hereof. It is intended as advice solely to Glasgow City Council as Planning Authority in terms of the said Section 72 (1). Our briefing note entitled: "Flood Risk Management (Scotland) Act 2009: Flood risk advice to planning authorities" outlines the transitional changes to the basis of our advice in line with the phases of this legislation and can be downloaded from <http://www.sepa.org.uk/environment/land/planning/guidance-and-advice-notes/>.

Detailed advice for the applicant

You will note that we have objected in principle to this planning application on the grounds of flood risk and in this respect recommend that you take due account of the comments provided above.

2. Flood Risk

- 2.1 The SEPA Flood Maps have been produced following a consistent, nationally-applied methodology for catchment areas equal to or greater than 3km² using a Digital Terrain Model (DTM) to define river corridors and low-lying coastal land. The maps are indicative and designed to be used as a strategic tool to assess, flood risk at the community level and to support planning policy and flood risk management in Scotland. For further information please visit <http://www.sepa.org.uk/environment/water/flooding/flood-maps/>.
- 2.2 We refer the applicant to the document entitled: "Technical Flood Risk Guidance for Stakeholders". This document provides generic requirements for undertaking Flood Risk Assessments and can be downloaded from <http://www.sepa.org.uk/media/162602/ss-nfr-p-002-technical-flood-risk-guidance-for-stakeholders.pdf>. Please note that this document should be read in conjunction with Policy 41 (Part 2).
- 2.3 Please note that we are reliant on the accuracy and completeness of any information supplied by the applicant in undertaking our review, and can take no responsibility for incorrect data or interpretation made by the authors.

If you have any queries relating to this letter, please contact me by telephone on 01698 839 000 or e-mail at planning.sw@sepa.org.uk.

Yours faithfully

Simon Watt
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Planning Service

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Disclaimer

This advice is given without prejudice to any decision made on elements of the proposal regulated by us, as such a decision may take into account factors not considered at this time. We prefer all the technical information required for any SEPA consents to be submitted at the same time as the planning or similar application. However, we consider it to be at the applicant's commercial risk if any significant changes required during the regulatory stage necessitate a further planning application or similar application and/or neighbour notification or advertising. We have relied on the accuracy and completeness of the information supplied to us in providing the above advice and can take no responsibility for incorrect data or interpretation, or omissions, in such information. If we have not referred to a particular issue in our response, it should not be assumed that there is no impact associated with that issue. For planning applications, if you did not specifically request advice on flood risk, then advice will not have been provided on this issue. Further information on our consultation arrangements generally can be found on our [website planning pages](#).