

05 October 2020

Mr M Forrest
Planning & Environment
North Lanarkshire Council

By email to [REDACTED]

Our Ref: 428.09985.00001

Your Ref: 20/00170/FUL

Dear Sir,

**RE: PLANNING APPLICATION 20/00170/FUL
PROPOSED GLASSHOUSE
GAVEL ROAD, KILSYTH
[CRAIGMARLOCH NURSERY EXTENSION]**

Introduction

SLR Consulting Ltd was commissioned by Craigmarloch Nurseries Limited to carry out a Flood Risk Assessment (FRA) for the above-mentioned proposed development. The FRA (v1) was submitted to North Lanarkshire Council (NLC) on 15 July 2020.

SEPA responded to consultation by NLC by letter reference PCS/172213 on 04 August 2020, maintaining an objection to the development on the grounds of their assessment of a lack of information on flood risk.

In response to points raised by SEPA at that point, SLR updated the FRA with further survey and modelling, and a subsequent version of the FRA (v2) was issued on 31 August 2020. The FRA was accompanied by a letter from SLR to NLC of the same date, which advised how each point raised by SEPA had been addressed in the v2 FRA.

SEPA has now responded to this submission in letter reference PCS/172864 dated 22 September 2020.

SLR has reviewed SEPA's latest response. If required, we can provide further technical information on the FRA and the modelling that supports it. However, at this time, we have been asked by our client to review and address the key point of this objection – namely that the development in SEPA's view lies within the functional floodplain. Other points made by SEPA relating to floodplain storage and conveyance, and land raising, are contingent on this primary aspect.

This is expressed in paragraph 1.13 of SEPA's letter, as follows:-

1.13 For the 200-year flood extents (Figure 7-3), there is a clear flow path through the middle of

the site. The FRA argues that this is not functional floodplain as the site is not adjacent to the watercourse and that the flows are surface water in nature. However, the flood waters originate from a fluvial source and are therefore considered to represent the functional floodplain, in line with SPP.

Review of the origin of flows towards the Development Site

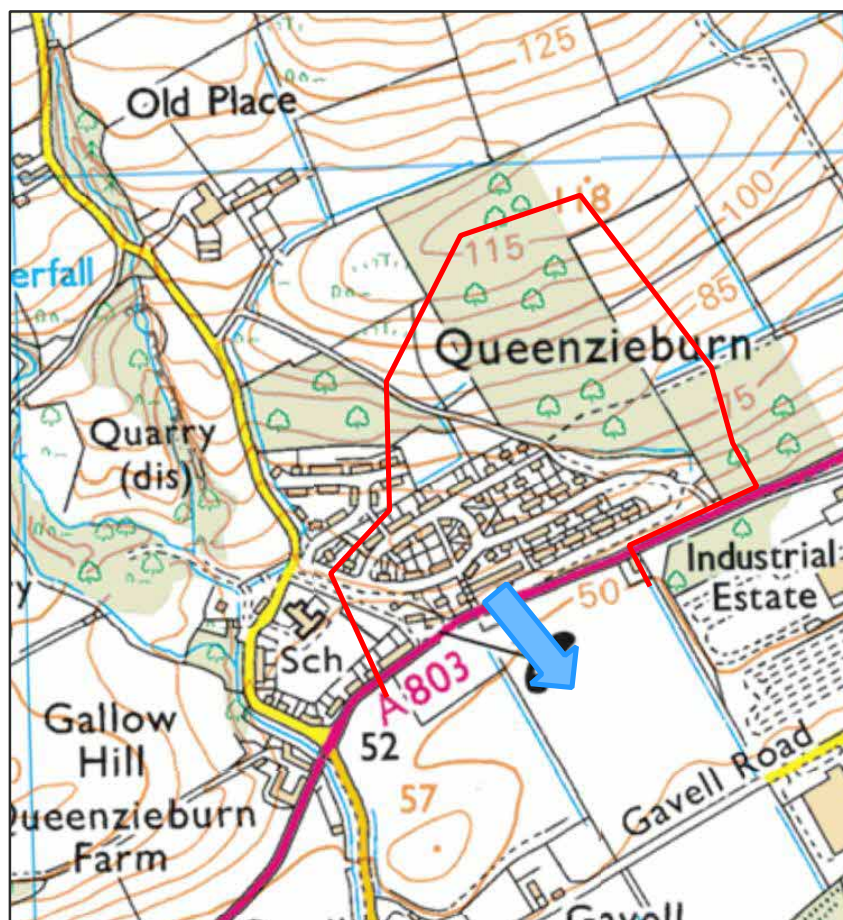
In addressing this issue, we have noted and re-visited what SEPA have noted in paragraph 1.8 of their latest letter:-

- 1.8 Based on the 200-year outputs (shown in Figure 7-3), it is evident that the site is at risk from flooding from the Queenzie Burn and also from flow from Meadowside Road catchment. As a result of the revised assessment, the model inflows highlighted within Figure 5-3 are more refined, where it is clear they are two separate inflows in the model. It was previously assumed that the Meadowside Inflow discharged into the Queenzie Burn. It is not clear why the Meadowside flow is discharged onto a playing field from the roadside. Further information should be provided on this outcome.

The FRA had advised that this is a small local catchment within the residential area of Queenzieburn village (around Meadowside Road) that drains towards the A803 and then potentially towards the site. The FRA notes that the catchment area is some 0.2km² (20ha), compared to 3.2km² for Queenzie Burn and 35.5km² for the River Kelvin. This catchment is some 6% of the size of the Queenzie Burn catchment.

The upper half of this catchment consists of fields, from where overland flow moves down-slope towards the lower (urbanised) half of the catchment, which is serviced by a piped drainage system. In extreme flood events such as the 1:200 AEP event, piped drainage systems would be unlikely to accommodate the runoff, and surface flow would occur. The shape of this catchment means that any such flow would be directed onto the A803, as shown in Figure 1 below.

Figure 1 : Meadowside Catchment



There is a dip in the A803 between the east and western boundaries of this catchment, which means that flow would not move west (towards the Queenzie Burn) or east (towards the Industrial Estate), but rather be directed across the A803 and spill onto the fields.

That is the reason why this was modelled as a separate inflow point to the model. As a conservative position, it was assumed that there would be no loss of surface flow into piped systems, but rather that all the flow from this catchment is directed as surface flow into the study area.

We have carried out two further model runs at the present day 1:200 AEP level, which illustrate the relative contributions to the flows occurring at and around the subject site. One run (see Figure 2) has inflow from Queenzie Burn (along with the River Kelvin) but no inflow from Meadowside catchment. The second run (Figure 3) has inflow from Meadowside Catchment (along with River Kelvin) but not from Queenzie Burn.

The results are as follows:-

Figure 2 : Present Day 1:200 Event – Run 50 - Inflow From Queenzie Burn Catchment

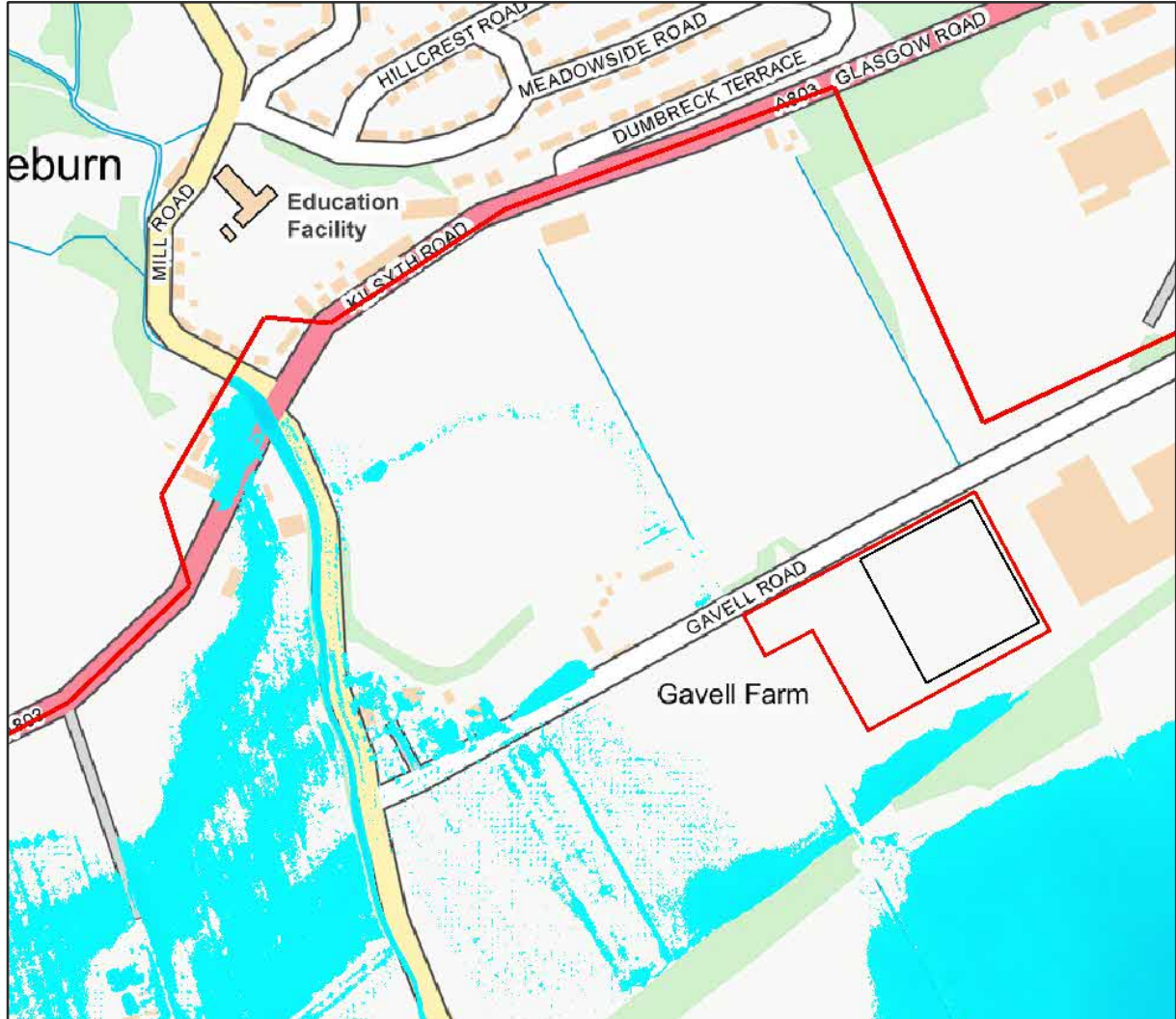
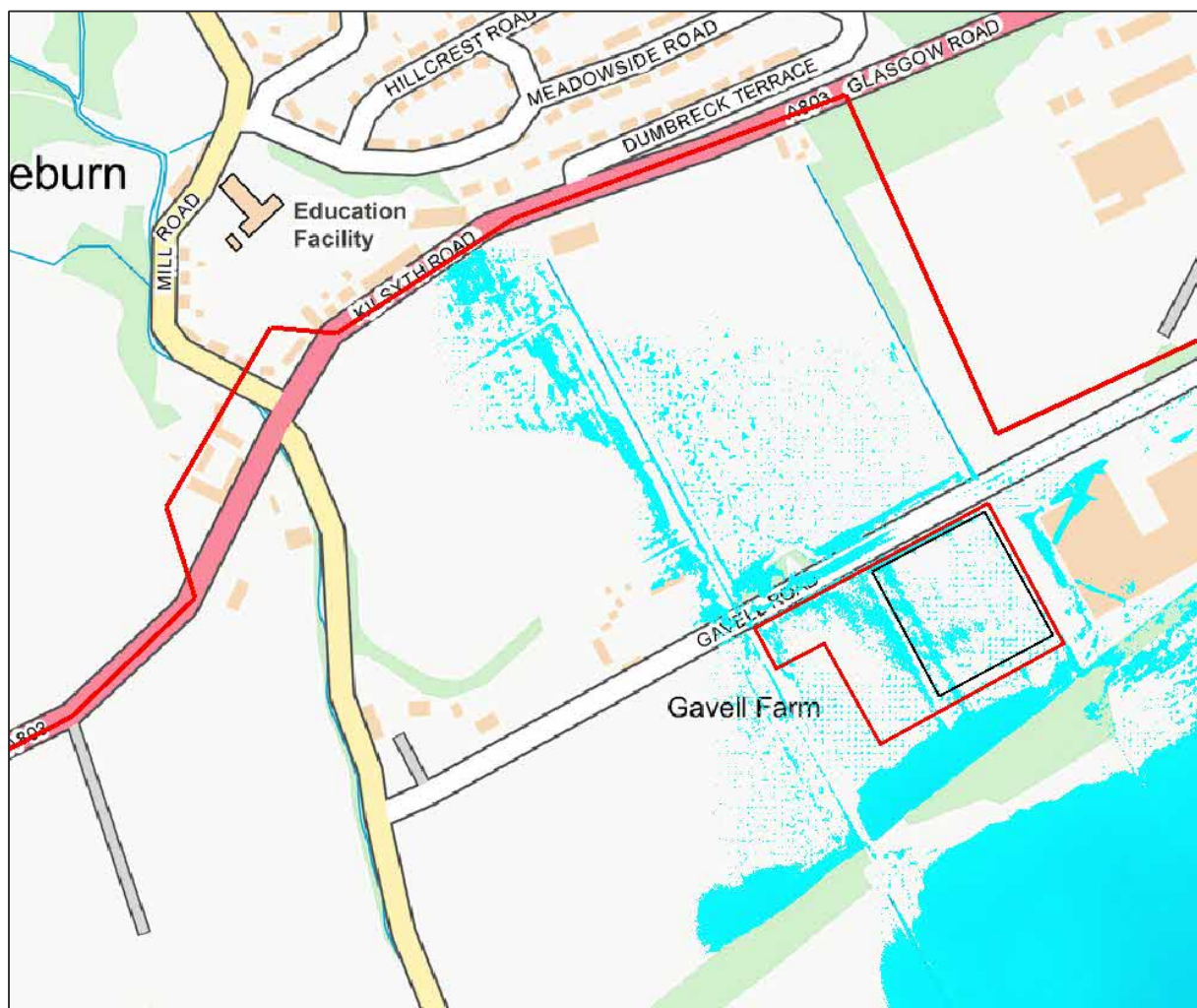


Figure 3 : Present Day 1:200 Event – Run 51 - Inflow From Meadowside Catchment



It is clear from Figure 2 that flows originating from Queenzie Burn do not impact on the application site itself or the proposed glasshouse building. The flow patterns that have been presented in the FRA are seen to be solely due to the contribution from surface water flows from the Meadowside Catchment.

Planning Implications

Therefore, addressing the point made by SEPA in their paragraph 1.13 (the flood waters originate from a fluvial source and are therefore considered to represent the functional floodplain), the flows reaching this development site are seen not to be fluvial in origin; they are surface water flows.

On that basis, the site is not within the functional floodplain, and therefore there is no basis for an objection from SEPA.

The development is also therefore not “land raising within the functional floodplain”, nor would it require any compensatory storage.

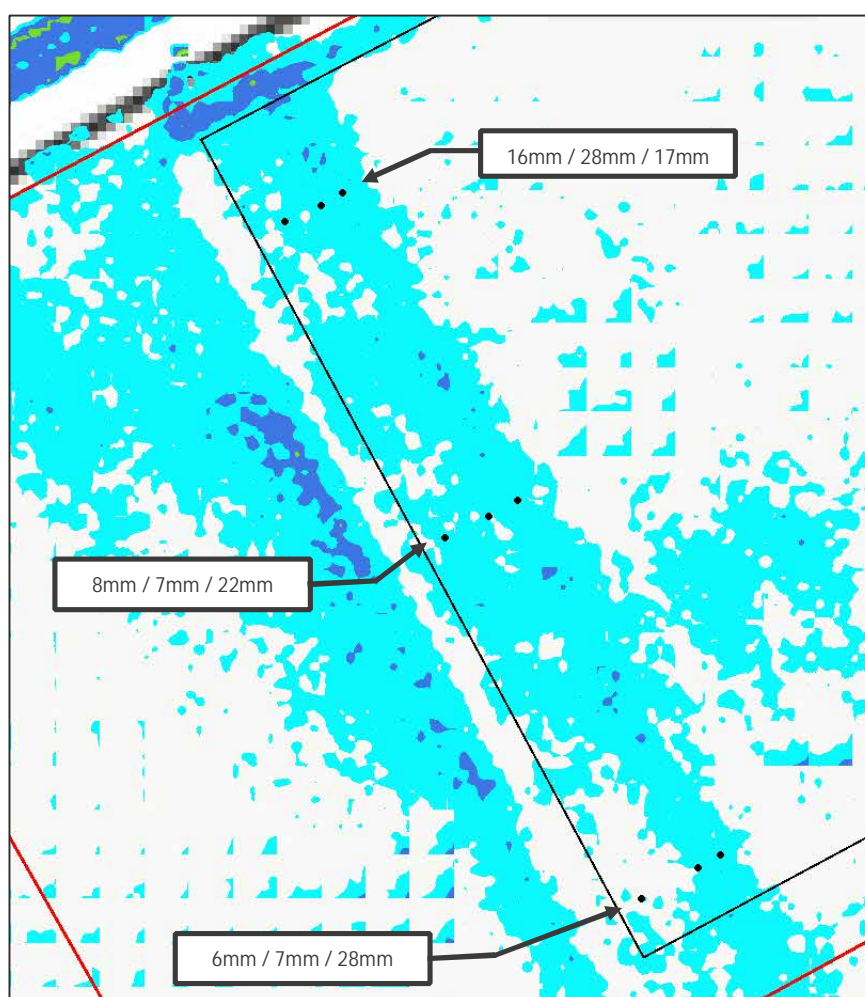
The management of this surface water flow within the development proposals is a matter for the local authority to consider. The Flood Risk Assessment and the design of the development includes measures to ensure (in accordance with SPP para 263) that the infrastructure and the building will be free from surface water flooding in the design 1:200 AEP event. The Flood Risk Assessment has also demonstrated that the proposed drainage measures will not result adverse effects.

Review of the scale of the flows across the Site

Section 7.1.2 and Figure 7-6 of the v2 FRA showed that the surface water flows across the Site that may occur in an extreme 1:200 AEP (with Climate Change) event would be limited in extent and would be very shallow (less than 50mm depth) and slow moving (less than 0.3 m/s).

To illustrate the very minor scale of the surface flows, below in Figure 4 is an expansion of the graphic from Figure 7-6 of the FRA, and representative water depths are shown.

Figure 4 : 1:200 + Climate Change Flow Extents with Sample Maximum Depths



It can be seen that these water depths are less than, or similar to, the height of mown grass, as the overland flow propagates from north to south across the site.

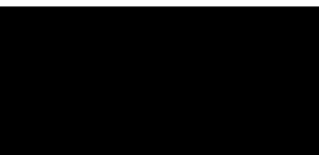
Irrespective of the policy designation of this flow path, as noted above and discussed at Section 8.2 of the v2 FRA, the drainage measures will have no adverse impact on the flood risk elsewhere.

Summary

- SEPA's latest response to the Flood Risk Assessment is founded on a view that the flow that may reach this site in an extreme storm event is **fluvial**, and that therefore the development lies within the functional floodplain of the Queenzie Burn. On that basis, SEPA maintain an objection that the development would be contrary to Scottish Planning Policy.
- However, SEPA had recognised that the flow model had inflows from both fluvial sources (Queenzie Burn) and surface water sources (residential development at Queenzieburn).
- SLR has carried out further hydraulic analyses that confirm that in the key storm event (present day 1:200 AEP), the flow through the site is **surface water**, not fluvial flow.
- On that basis, Scottish Planning Policy and SEPA guidelines for its interpretation would conclude that the site does not lie within the functional floodplain.
- Therefore, the basis for objection from SEPA cannot be maintained.
- Since the development has been shown not to lie within the functional floodplain, the development is not "land raising within the functional floodplain", nor will it require compensatory storage.
- Since the flows impinging on the site are surface water, North Lanarkshire Council should review and conclude on the management of this surface water.
- In considering the surface water risks, it should be noted that the Flood Risk Assessment and the design of the development includes measures to ensure (in accordance with SPP para 263) that the infrastructure and the building will be free from surface water flooding in the design 1:200 AEP event.
- The Flood Risk Assessment has also demonstrated that the proposed drainage measures will not result adverse effects.

On that basis, we conclude that the development is in accord with Scottish Planning Policy in respect of Managing Flood Risk and Drainage.

Yours sincerely
SLR Consulting Limited



David Wright BEng CEng MICE MCIWEM
Technical Director