

**TRANSPORT AND WORKS ACT 1992**  
**TRANSPORT AND WORKS (INQUIRIES PROCEDURES) RULES 2004**

**NETWORK RAIL (CAMBRIDGE SOUTH INFRASTRUCTURE ENHANCEMENTS) ORDER**

**SUMMARY PROOF OF EVIDENCE**  
**ON MATTERS OF DRAINAGE**  
**PAUL JENKIN**  
**ON BEHALF OF THE UNIVERSITY OF CAMBRIDGE**

<b>Inquiry Document Reference</b>	<b>[TBC]/ OBJ 8</b>
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## **1 QUALIFICATION AND EXPERIENCE**

- 1.1 My name is Paul Jenkin BEng (Hons), MSc, CEng, FCIWEM, C.WEM. My primary professional experience is in the field of flood risk and environmental assessment and in particular the assessment of flood risk as it relates to development and infrastructure. I have 27 years of experience in the field. I have been responsible for the production of a large number of Flood Risk Assessments and drainage strategies. I have acted as expert witness for many planning inquiries and also in legal disputes.

## **2 CONTEXT AND SCOPE OF EVIDENCE**

- 2.1 The University of Cambridge have interests in and around the Cambridge Biomedical Campus (“**CBC**”) which could be affected by the Scheme proposed by Network Rail. I have dealt with those matters relating to flood risk and drainage.
- 2.2 The part of the proposals most likely to impact on the University’s interests is the proposal to introduce a temporary haul road between the existing railway and the AMB/Plot 9.

## **3 THE UNIVERSITY’S CONCERNS**

- 3.1 Since submission of the University’s Statement of Case, drainage workshops have been held with Network Rail and it has become clearer though those workshops how the proposed Scheme could affect the Anne McClaren Building (“**AMB**”) and Plot 9. I have described what I understand the current drainage proposals for the Scheme to be, but I remain concerned with the adequacy of information and potential impacts and mitigation in respect of the proposed haul road; drainage connectivity, flood storage and water quality. Until further information and suitable mitigation is provided by Network Rail, in my view there are sufficient concerns with the Scheme to justify the University maintaining its objection to the Order.
- 3.2 Critically the proposed Scheme would remove a significant part of the existing swale that serves the AMB and also the area proposed for the swale to serve Plot 9. Without suitable mitigation Network Rail’s proposals would increase flood risk to the existing facilities and/or increase flood risk downstream.
- 3.3 These impacts would result from severing the existing surface water drainage connectivity and reducing the available flood storage currently available. The University’s drainage system is designed to maintain an agreed peak discharge rate

as set out in the original planning application and subsequent planning consent. Additionally, there is an obligation to maintain the quality of runoff into the receiving watercourse.

#### **4 THE ENVIRONMENTAL STATEMENT**

- 4.1 The Flood Risk Assessment (“**FRA**”)<sup>1</sup> of the Environmental Statement (“**ES**”) deals with Surface Water Management (in section 6). The section identifies the potential for impacts on the existing drainage of the CBC but provides no specific assessment of how the CBC might be affected or what mitigation might be provided. In particular, there is no mention of the haul road and the potential removal of the swales to the west of AMB and Plot 9.
- 4.2 If this existing infrastructure is altered without acceptable mitigation, then it would increase flood risk to the AMB and Plot 9 and also prejudice the ability for the University to meet its obligations in respect of managing flood risk upstream and downstream towards Hobson’s Conduit.
- 4.3 Surface water drainage is dealt with in Chapter 18 of the ES which is supported by the FRA. In paragraph 18.4.14 (page 18-20) it is clearly the intention that the issues of surface water drainage relating to the proposals are to be dealt with in a sustainable and sensitive manner. However, from the information provided in the ES and the FRA it is not possible to determine how the efficacy of the existing drainage system will be maintained or whether any mitigation is proposed to offset any impacts. The FRA is principally concerned with the direct runoff from the proposed development and the mitigation of any increase by the use of SuDS. As far as I can see there is no consideration of what might happen if the proposals interfere with existing infrastructure that drains existing development.

#### **5 FURTHER INFORMATION FROM NETWORK RAIL**

- 5.1 Prior to the drainage workshops with Network Rail, the University had not known what Scheme works were proposed within the AMB and Plot 9 and so could not assess the potential impacts. From the presentations at the workshops with Network Rail, it was clear that the proposed haul road would occupy the area currently occupied by the western swale in the AMB and the proposed swale in plot 9. This creates a number of potential impacts which are summarised below alongside what I understand the

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<sup>1</sup> in Appendix 18.2

current Network Rail strategy for mitigation to be. More information was promised from Network Rail following the workshops but, at the time of writing this proof, so such information has been forthcoming. Network Rail's revised drainage proposals have been made subsequent to the submission of the ES and I have seen no addendum to the ES or the FRA which makes any assessment of the revised proposals for the Scheme.

- 5.2 In relation to drainage connectivity, currently the surface water drainage from AMB discharges directly into the swale and a similar strategy is envisaged for Plot 9. With the swale infilled this would not be possible, and the sites could not drain effectively. Network Rail propose that a pipe or filter drain is installed beneath the haul road and that the existing drainage be connected to this. Whilst potentially feasible, no detailed information has been provided to demonstrate the efficacy of these proposals.
- 5.3 In relation to flood storage, the swale also provides flood storage which allows the University's site to discharge at the prescribed rate without flooding the site and buildings. If this storage is removed, then flood risk would increase and/or the rate of discharge may increase through over topping. Network Rail propose that the new pipe (above) is connected to the new trackside drainage and ultimately routed to the western side of the tracks where it would be attenuated prior to discharge into the watercourse. Whilst in principle this seems possible, it relies on there being sufficient capacity within the system and that the trackside drainage and new storage are in place before the haul road is constructed. Some detailed analysis would be required before I could be confident that this approach would be effective. Similarly, to avoid sterilising Plot 9 (if development is envisaged before the removal of the haul road), then the system would need to accommodate the proposed run off from Plot 9. Whilst potentially feasible, no detailed information has been provided to demonstrate the efficacy of these proposals.
- 5.4 In relation to water quality, the swale provides a water quality benefit which cannot be replicated within a piped system, and it will be necessary for any scheme to ensure no deterioration in water quality. Whilst potentially feasible no detailed information has been provided to demonstrate the efficacy of these proposals.
- 5.5 It remains my view that whilst a scheme to replicate the existing drainage system may be feasible there is insufficient evidence or assessment to demonstrate how this could be achieved and what any residual impacts might be. As the ES has not assessed these particular proposals it is premature to accept the conclusion that there would be

no significant adverse impacts or that the University's position would be no worse than it is now. I have set out how this could be demonstrated through further survey and modelling.

## **6 CONCLUSIONS**

- 6.1 The proposed Scheme and in particular the proposed haul road have the potential to adversely impact AMB and Plot 9 in respect of flood risk and drainage.
- 6.2 This aspect of the Scheme works has not been adequately assessed in the ES in my view.
- 6.3 The impacts of the haul road do not seem to have been addressed in the ES chapter covering surface water.
- 6.4 In particular, the proposals to remove extensive drainage infrastructure without a detailed assessment of the impacts or mitigation give no confidence to the University that they will not be adversely impacted.
- 6.5 As a concept the scheme of mitigation suggested by Network Rail could be feasible but it is complex, relies on a number of interconnected parts and the timing of construction activities.
- 6.6 In my opinion it is premature to conclude that there will be no adverse impacts until more detailed survey and modelling has been undertaken to demonstrate that the concept scheme can be delivered in practice.

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**Stantec**