



Richard Jackson
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Flood Risk Policy and Surface Water Drainage Review

Marketfield Way Development, Redhill

Reigate & Banstead Borough Council

September 2018

Project 45110

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1. QUALIFICATIONS

- 1.1. My name is Mark Geddes and I am a Director of Richard Jackson Limited. I am an Incorporated Engineer and a Member of the Institution of Civil Engineers.
- 1.2. I began my career at Suffolk County Council Highway Authority in their Internal Design Consultancy after my training. During this period I designed a wide range of schemes including safety improvements, highway maintenance schemes and new highways. I joined Richard Jackson Limited 21 years ago and was promoted to Director responsible for pre planning engineering services in 2006. Since joining Richard Jackson Limited I have advised developers and Local Government clients on transport, highways, drainage and flood risk aspects of development proposals of varying scales. I have given evidence at Public Inquiries in relation to both transport and flood risk issues.
- 1.3. My work in relation to this development includes the preparation of the Flood Risk Assessment for the planning application (CD24).
- 1.4. I am familiar with the site, the wider Redhill Town Centre and the details of the proposed scheme. I have visited the Marketfield Way site and the Town Centre.
- 1.5. The evidence contained within this Review constitutes my true professional opinion.
- 1.6. My evidence concludes that the development can be constructed without increasing the risk of flooding and that there will be a reduction in flood risk off-site.

2. EXECUTIVE SUMMARY

- 2.1. The redevelopment of Marketfield Way, Redhill, forms a part of the Reigate & Banstead Borough Council Regeneration of Redhill Town Centre. The proposals were assessed as part of Redhill Town Centre Flood Risk Assessment in 2011 (CD52) and are contained in the Council's Core Strategy (CS) (CD38).
- 2.2. The CS confirms the proposals pass the Sequential Test and Part a) of the Exception Test as defined by the National Planning Policy Framework, but that Part b) of the Exception Test would need to be considered by the developer at planning application stage.
- 2.3. The planning application was supported by a Site Specific Flood Risk Assessment prepared by Richard Jackson Limited (CD24). This assessment found certain flood risks at the site which apply to all of Redhill Town Centre but confirmed that the Exception Test part b) was satisfied. It further found that the proposed development of the site did not result in any increased flood risk, but rather improved the situation through the mitigation proposals.

- 2.4. The proposed development includes retail and commercial uses on the ground floor with residential uses above which responds to the flood risk at the site. Flood mitigation in the form of self-raising barriers at ground level entrances and a Complex Management Plan to control occupation of the site are proposed.
- 2.5. These proposals were approved by the Lead Local Flood Authority and the Environment Agency, with planning conditions attached to planning permission (CD35) to ensure their implementation.

3. FLOOD RISK POLICY OVERVIEW

- 3.1. Flood risk policy in relation to development activity and locality is set out in a number of documents. These include:-
- National Planning Policy Framework, July 2018 (NPPF) (CD56)
 - National Planning Guidance (NPG)
 - Reigate & Banstead Local Plan, 2005 (LP) (CD39)
 - Redhill Town Centre Area Action Plan Flood Risk Assessment, September 2011 (RTCFRA) (CD52)
 - Redhill Town Centre Action Plan, Jan 2012 (RTCAP) (CD14)
 - Reigate & Banstead Strategic Flood Risk Assessment, May 2012 (SFRA)
 - Reigate & Banstead Core Strategy Examination Sequential Test for Flood Risk Addendum for Redhill Town Centre, December 2012 (ST) (CD53)
 - Reigate & Banstead Local Plan: Core Strategy, July 2014 (CS) (CD38)
 - Reigate & Banstead Development Management Plan, May 2018-2027 (DMP) (CD55)
- 3.2. The NPPF was most recently revised in July 2018. Section 14 deals with policy in respect of flood risk. The requirements remain very similar to those of the previous revision of the NPPF and includes the Sequential and Exception Tests. Paragraph 158 states "*the aim of the sequential test is to steer development to areas with the lowest risk of flooding.*" The tool identified for the application of the sequential test is the SFRA. Paragraph 158 also states "*the sequential approach should be used in areas known to be at risk now or in the future for any flood.*"
- 3.3. Paragraph 159 of the NPPF requires that the exception test be applied to development proposals in flood risk zones if the site's vulnerability to flood risk and the development proposals are in line with the flood risk vulnerability classification set out in the NPG. Paragraph 160 of the NPPF defines the exception test as follows:-

- " a) *the development would provide wider sustainability benefits to the community that outweigh the flood risk, and*
- b) *the development will be safe for its lifetime taking account of the vulnerability of its users, without increasing flood risk elsewhere, and, where possible, will reduce flood risk overall."*

3.4. The redevelopment proposals were assessed in the RTCFRA prepared in 2011. They were also assessed in the district wide SFRA in 2012. These documents were both used to inform the CS in 2014 which identified the regeneration of Redhill Town Centre as a strategic priority. The planning application itself was supported by a Site Specific Flood Risk Assessment which is summarised in section 4 of this document.

3.5. The proposals to redevelop the Marketfield Way site were considered in the SFRA. At paragraph 6.12 the SFRA confirms that development proposals contained in the RTCAP have been subjected to the Sequential Test.

3.6. Paragraph 6.14 of the SFRA recommends a number of planning policies to manage flood risk as set out below:-

- " - *Ensure that development does not have an adverse effect on flooding, either on the site or elsewhere;*
- *Include a requirement that new developments aim to achieve greenfield run-off rates;*
- *Require the use of SuDS appropriate to local ground conditions be used in all new developments;*
- *Require an appropriate allowance for climate change to be designed into new developments;*
- *Protect the areas of the functional floodplain that are currently undeveloped for flood storage purposes and restrict future development within these areas to water compatible uses and essential infrastructure as defined by the Technical Guidance to the NPPF;*
- *Restrict all development, including extensions and outbuildings in Zone 3b functional flood plain in order to reduce loss of flood storage;*
- *Secure the management and reduction of flood risk in Redhill Town Centre and enable the implementation of appropriate flood storage measures within the Town Centre;*
- *Steer development away from the areas in the immediate vicinity of the Borough's reservoirs in order to reduce the risk of life and damage to property in the event of dam failure."*

3.7. The RTCAP contains the policy for the redevelopment of the Marketfield Way site. The policy is RTC1-A Marketfield Way on page 9. Item vii) of the policy requires that the redevelopment "*provide on site storage of surface and flood water alongside incorporating resistant/resilient design features given the*

risk of localised flooding on this site". The plan also requires a Flood Risk Assessment in line with RTCAP Appendix C to support the proposals.

- 3.8. Policy RTC2-12 addresses flooding and requires that development proposals respond to the CS policy CS10 sustainable construction and the SFRA and RTCFRA.
- 3.9. The RTCAP also includes policy requirements for implementing green infrastructure into development proposals. Table C on page XIII of Appendix A Urban Design identifies that *"green roofs, walls with rainwater storage is a potential design feature to be incorporated into the proposals"*.
- 3.10. The RTCAP Appendix C sets out requirements for Flood Risk Assessments supporting development in the plan area. These requirements largely echo the guidance provided in the NPG for flood risk assessments.
- 3.11. The RTCFRA reviews the potential sources of flooding and its extents in the town centre. This document does not contain any specific policy requirements as this is set out in the RTCAP.
- 3.12. In December 2012 a further document was issued in response to queries raised by the Inspector of the CS in respect of flood risk sequential testing carried out for the CS (see CD53). Redhill Town Centre being a regeneration proposal was located as a separate part of the overall sequential testing. The assessment concluded that the mixed use of proposals for Marketfield Way passed the sequential testing and that the exception test will need to be satisfied as part of any application for permission for a particular development. The ST paragraph 3.23 also considers that Part a) of the exception test has been passed by Marketfield Way, leaving Part b) to be considered by the developer.
- 3.13. The CS paragraph 7.1.9 confirms that the sequential test has been passed for the Marketfield Way site as it forms part of the Redhill Town Centre regeneration area listed in paragraph 6.2.2 of the CS.
- 3.14. Paragraph 7.1.10 of the CS also confirms that Part a) of the Exception Test as defined by the NPPF has been passed.
- 3.15. CS Policy C10 Sustainable Development item 9 requires that development will *"reflect the need to adapt to the impacts of climate change (for example increased flooding)"*.
- 3.16. The Consultation Draft of the DMP includes in section 4 policy CSF2 – Flood risk. This policy reiterates national policy regarding the Sequential Test and the requirement for proposals to be supported by a Flood Risk Assessment, not to increase flood risk elsewhere and to reduce surface water runoff rates by using Sustainable Urban Drainage Systems (SuDS).

Policy Summary

The Planning Policy for flood risk at Marketfield Way confirms that both the Sequential and Exception Test Part a) have been passed. Development proposals are required

to respond to the Exception Test Part b) and to be accompanied by a Flood Risk Assessment

4. FLOOD RISK ASSESSMENT SUMMARY

- 4.1. The planning application for the redevelopment of Marketfield Way was supported by a Site Specific Flood Risk Assessment (FRA), revision D, dated August 2016 (CD24). The FRA responded to the NPG checklist requirements.
- 4.2. The FRA recognises that the redevelopment site is at risk of flooding from fluvial flooding from the Redhill Brook, surface water flooding, reservoir failure flooding and infrastructure failure, as is much of Redhill Town Centre. However, it concluded that the proposed re-development of the site would not result in any deterioration to the existing position but would decrease the risk of flooding.

Proposed Surface Water Drainage

- 4.3. The existing site is almost 100% impermeable in its current form. The local surface water drainage systems receive these flows directly without any attenuation at a number of outfall points. The FRA estimated the flow rate to be 83 l/s for an impermeable area of 0.6 Ha based on a rainfall rate of 50 mm/hr. There is no below ground storage of water at the site. The proposed drainage system includes significant volumes of below ground water storage in crate style stores (see Appendix B of the FRA). The rate at which water is released from this system to the surface water sewer system will be reduced by 50% to 41.5 l/s. This reduction will reduce the demand on the receiving sewers and together with the proposed water storage will decrease flood risk both on and off site.
- 4.4. The development will also be provided with brown roofs which will reduce water flow in smaller rainfall events. Water quality will also be improved by the vegetation before it enters the receiving sewer system.

Flood Risk Management

- 4.5. The development proposals are for commercial uses on the ground and first floors with residential uses on the upper floors. The NPG defines commercial use as being Less Vulnerable to flood risk and residential use More Vulnerable. By placing the more vulnerable uses on the upper floors the development has applied the sequential approach as required by the RTCAP policy.
- 4.6. There is also a basement for parking and plant use. The entrances on the ground floor are all potential entry points for water in a flood event. In order to address this risk, self-raising barriers are proposed to prevent water entering the building. Flood resilient construction techniques will be used on the ground floor and basement to facilitate reoccupation after any flood event.
- 4.7. The occupants and residents of the buildings will be encouraged to sign up for the Environment Agency Flood Warnings. This will allow the management of the buildings to control occupation of the commercial spaces with the

assistance of the Complex Management Plan which is appended to the FRA (Appendix G) in draft form.

- 4.8. The residential occupiers are considered to be safe if they take refuge in their accommodation at high level in the development for short duration flooding such as could be expected from a summer thunderstorm resulting in surface water flooding. For extreme fluvial events that could cause longer term flooding warnings are likely to be given and evacuation of residents will be possible.
- 4.9. The FRA demonstrates that the redevelopment proposals for Marketfield Way respond to the requirements of the Exception Test Part b) by protecting the building with self-raising barriers and managing occupation of commercial spaces should a flood event be predicted. Refuge on the upper floors of the buildings will also be possible if a flood event occurs with no warning.
- 4.10. As the planning application progressed the key flood and drainage consultees responded to the proposals. These were the Lead Local Flood Authority (LLFA) Surrey County Council, the Environment Agency (EA) and Reigate & Banstead Borough Council's own Drainage Officer (DO).
- 4.11. The LLFA response to the application is dated 07/06/2016 and is in Appendix K of revision D of the FRA. The LLFA confirmed that they were satisfied regarding the proposed drainage strategy subject to the imposition of a number of planning conditions. Those conditions were imposed on the permission.
- 4.12. The DO responded to the application in June 2016 requesting a meeting with the applicant team and the EA. This meeting was held on 4th August 2016. The FRA was reviewed to include updated flood mapping from the EA. The revised FRA revision D was issued in August 2016.
- 4.13. The EA responded to revision D of the FRA and provided updated flood information to the applicant's consultant in October 2016. This additional information reduced the water levels at Marketfield Way site in fluvial flood scenarios from those quoted in the FRA. Richard Jackson Ltd responded with a letter dated 14th October 2016 which confirmed the FRA conclusions in respect of fluvial flood risk were robust and that the site is not at risk in the 1 in 100 year flood event even when 20% climate change is considered. No further correspondence from the LLFA, DO or EA was received. The Committee report confirms that there was no objection from the EA and recommended approval of the development.
- 4.14. Planning consent with conditions was issued in January 2017. The conditions relating to flood risk and drainage are summarised as follows:-
 - 17 Prior to construction details of drainage including SuDS and finished floor levels to be approved.
 - 18 Prior to construction details of the maintenance of the SuDS elements to be approved.

- 19 Prior to occupation a verification report by a qualified drainage engineer be submitted to demonstrate that the SuDS have been constructed as per the agreed scheme.
- 26 The development shall be carried out in accordance with the flood risk management measures set out in the FRA dated August 2016.

5. OBJECTION RESPONSE

- 5.1. There is only one flood based objection. This is from Mr Lau of Station Road. Mr Lau suggests that the new service access at the northern end of the site will raise levels so that surface water drains on to his property.
- 5.2. The proposals for this area (No. 20 on the order map at CD2) are to construct an access road. The area in question is currently an access serving the rear of the properties fronting Station Road. The use of this area will therefore be much the same as it is at the present time
- 5.3. The detail design stage of the project will set the final levels of this access, however given the constraint of the existing Station Road properties to the north, the proposed levels are likely to remain very similar to those which currently exist. The redevelopment will include new surface water drainage for this area (see Appendix B of the FRA and planning condition 26) which will collect surface water from this access and direct it to the attenuation tanks proposed. The likelihood of flood from Plot 20 will therefore be reduced.
- 5.4. The Station Road properties adjacent to the redevelopment site are currently at risk of flooding from fluvial, surface water, infrastructure failure and reservoir failure in common with the majority of Redhill town centre as found by the RTCFRA and SFRA. The redevelopment will reduce this risk of flooding by providing water storage below ground.



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