# Final Comments: Flood Risk

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Appeal by Foxan Ltd against Adur District Council's refusal of planning permission for a proposed end-of-terrace two storey house at 41 Overmead, Shoreham-by-sea, West Sussex, BN43 5NS.

Planning Application Reference: AWDM/0080/24

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# 1 Introduction

1.1 This document comprises my Final Comments relating to the Statement written by Katherine Waters of WSP, on behalf of Adur District Council, in relation to the Appeal by Foxan Ltd ("the Appellant") against the Council's refusal of planning permission for a proposed end-of-terrace two storey house at 41 Overmead, Shoreham-by-sea, West Sussex, BN43 5NS.

1.2 In providing these Final Comments, I have reviewed the above Statement and have provided below, clarification on, or rebuttal of, various statements made or points raised by Adur District Worthing Borough Council. In addition, I have provided commentary on the Government update to the Flood Risk and Coastal Change Planning Practice Guidance (PPG), which occurred on 17th September 2025, following the submission of my Written Statement on 6th August 2025. The revisions affect how applicants and local planning authorities (LPAs) must approach the Sequential Test, the definition of Search Areas, and the treatment of surface water flood risk. As such, my Final Comments are aimed at helping the Inspector to make an informed decision on the Appeal.

1.3 My comments are provided below in a sequential manner broadly consistent with the content of the Katherine Waters/Adur District Council Statement.

# 2 Comments on Katherine Waters/Adur District Council Statement

## 2.1. Sequential Test

2.1.1 On page 2 of the Katherine Waters/Adur District Council Statement, it is stated that "*The Written Statement* [referring to my Written Statement, dated 5th August 2025] *does not demonstrate that the development will be safe for its lifetime without increasing flood risk to others and therefore, the sequential test should be applied to demonstrate there are no other suitable sites at a lower risk of flooding*" and then on page 3 states that "*A Sequential Test has been completed for the site, and highlights that there are alternative sites at a lower risk of flooding available and therefore this site fails the sequential test in relation to flood risk*."

2.1.2 In Section 3.3 of my Written Statement, I state that a Sequential Test has now been conducted for the site, which is presented in the Hilson Moran Technical Guidance Note (TGN) presented in Appendix A of the Written Statement. The methodology follows that prescribed in the Adur District and Worthing Borough Council "*Methodology in support of Performing the Sequential Test*" document (July 2024), and used the whole of the Adur District as the Search Area.

2.1.3 After several phases of sifting, including excluding those developments where construction had already commenced, and exclusion of sites that cannot provide the same type of dwelling as the proposed 2-bedroom 41 Overmead scheme, a total of 5 sites remained as alternatives to the Appeal Site, with a combined capacity of 49 dwellings.

2.1.4 3 of the sites are small windfall sites that have already been granted planning permission and will provide a total of 7 new dwellings, whilst the two remaining sites have significant uncertainties associated with their deliverability within a 5-year timeframe.

2.1.5 Within my Written Statement I highlighted that even if the above schemes could be delivered within the next 5-years, the Sequential Test process, which has looked at all alternative sites for just a 1 x 2-bed dwelling, has demonstrated the acute shortage of reasonably available sites in the district, even for a 1-dwelling scheme.

2.1.6 I then went on to describe at para. 3.3.4 of my Written Statement, that unsurprisingly, given the dearth of suitable development sites in Adur District, Adur District Council have taken a pragmatic approach to the application and passing of the Sequential Test, and I presented a number of examples of schemes which are currently in Flood Zone 1, but susceptible to flooding in the future (as per the Appellant's scheme), which have been granted planning permission and not had to conduct a Sequential Test at all.

2.1.7 Please note that since writing my Written Statement, the scheme at 2 Brighton Road, Lancing, Planning Ref. AWDM/0095/25, which differs from the other examples in that it lies partially in current Flood Zone 3 (and wholly within the extent of future 1 in 200-year +CC tidal flooding), was subsequently required to submit a Sequential Test and the scheme was refused "*as the application fails to provide justification for the development of this site within Flood Zone 3 taking account of the availability of other sites elsewhere within the built-up area of Adur District with a lower risk of flooding*."

2.1.8 I also illustrated evidence of Adur District Council's pragmatic approach to the Sequential Test, in the form of an email written to the Appellant by Hannah Barker, Senior Planner for Adur and Worthing Councils, dated 2 April 2024 (and reproduced in Appendix E of the Hilson Moran TGN, presented as Appendix A to my Written Statement), which refers to the Appeal scheme and states that:

"*I can however offer comfort that if we come to the sequential test due to Adur not meeting housing delivery at this stage we would be able to meet the requirements of the sequential test*".

2.1.9 In addition, at para. 3.3.8 of my Written Statement, I highlighted the recent shift, nationally, where a number of planning decisions and appeals, have considered the Sequential Test within the context of residual risk remaining after the application of mitigation measures, and embraced an acceptance that passing the Sequential Test is not a determinative exercise, but just another material consideration in the planning balance. As such, I concluded that, in line with these decisions and judgements, when the Appellant's proposals are viewed within the context of the low residual risk to occupants (given the appropriate raising of the ground floor, and the location of sleeping accommodation/refuge area on the 1st floor well above predicted flood levels), a local dearth of suitable land for housing, together with a demonstrated compliance with the Exception Test, that the Appellant's proposed development at 41 Overmead should be granted permission.

2.1.10 Since writing my Written Statement, there has been a significant update to the Flood Risk and Coastal Change PPG, on 17th September 2025. The revisions are of particular relevance to this Appeal, as they affect how applicants and LPAs must approach the Sequential Test, the definition of Search Areas, and the treatment of surface water flood risk. The revisions affect four key paragraphs — 23, 27, 27a and 28, and are summarised below:

2.1.11 Paragraph 23 has been revised to reinforce that the sequential, risk-based approach must be applied consistently across all sources of flood risk, not just fluvial or tidal *i.e.*:

"*A sequential, risk-based approach to the location of development should be applied at all stages of the planning process so as to avoid, where possible, flood risk to people and property. The aim should be to steer new development to Flood Zone 1 (areas with the lowest risk of flooding from rivers or the sea)…..The sequential approach should also take account of the risk of flooding from surface water and other sources, as well as current and future impacts of climate change, so that development is located in areas of lowest risk from all sources*."

2.1.12 Paragraph 27 has been entirely replaced, and now provides the following:

"*The sequential test should be applied to 'Major' and 'Non-major' development proposed in areas at risk of flooding, as set out in paragraphs 173 to 174 of the National Planning Policy Framework. Paragraphs 175, 176 and 180 set out exemptions from the sequential test.*

*In applying paragraph 175 a proportionate approach should be taken. Where a site-specific flood risk assessment demonstrates clearly that the proposed layout, design, and mitigation measures would ensure that occupiers and users would remain safe from current and future surface water flood risk for the lifetime of the development (therefore addressing the risks identified e.g. by Environment Agency flood risk mapping), without increasing flood risk elsewhere, then the sequential test need not be applied.*

*The absence of a 5-year housing land supply is not a relevant consideration in applying the sequential test for individual applications. However, housing considerations, including housing land supply, may be relevant in the planning balance, alongside the outcome of the sequential test*."

2.1.13 Paragraph 27a is entirely new and includes the following, relevant to this Appeal:

"*For individual planning applications subject to the sequential test, the area to which the test needs to be applied will be governed by local circumstances relating to the catchment area for the type of development proposed and the needs it is proposing to address. The catchment area should always be appropriate to the nature and scale of the proposal and the settlement it is proposed for. For some developments this may be clear, for example, the catchment area for a school. For a non-major housing development, it would not usually be appropriate for the area of search to extend beyond the specific area of a town or city in which the proposal is located, or beyond an individual village and its immediate neighbouring settlements.*

*A pragmatic approach needs to be taken where proposals involve comparatively small extensions to existing premises (relative to their existing size), where it may be impractical to accommodate the additional space in an alternative location. Equally, where there are large areas in Flood Zones 2 and 3 (e.g. coastal towns and settlements on major rivers) and development is needed in those areas to sustain the existing community, sites outside them are unlikely to provide reasonable alternatives.*

*The sequential test should be applied proportionately, focusing on realistic alternatives in areas of lower flood risk that could meet the same development need*."

2.1.14 The following amendments were introduced to Paragraph 28:

***"What is a "reasonably available" site?***

*~~'Reasonably available sites' are those in a suitable~~ Sites should be considered 'reasonably available' for the purposes of the sequential test if their location is suitable for the type of development*

*~~with~~ proposed, they are able to meet the same development needs and they have a reasonable prospect ~~that the site is available to be~~ of being developed at the ~~point in~~ same time-~~envisaged for~~ as the ~~development~~ proposal.*

*~~These~~ In considering whether alternative lower-risk sites (which could ~~include~~, where relevant, be a series of two or more smaller sites ~~and/or part of a larger site if these~~) would be capable of accommodating the proposed development~~. Such lower-risk,~~ such alternative sites do not need to be owned by the applicant to be considered 'reasonably available'.*

2.1.15 With regard to the Appeal scheme, these changes to PPG have the following impacts:

i. The removal of the sentence in paragraph 23 and the new wording of paragraph 27 make it clear that the Sequential Test is no longer required if a site-specific Flood Risk Assessment (FRA) has been prepared and it demonstrates that the "*proposed layout, design, and mitigation measures" contained within a development are sufficient to "ensure that occupiers and users would remain safe from current and future surface water flood risk for the lifetime of the development* […] *without increasing flood risk elsewhere*." Although mitigation measures presented in the GTA Civils & Transport Ltd FRA submitted with the planning application, and described in my Written Statement and below, demonstrate "*that occupiers and users would remain safe from current and future surface water flood risk for the lifetime of the development* […] *without increasing flood risk elsewhere*", a Sequential Test would still be required, due to the Environment Agency's (EA) "NaFRA2" update to the Flood Map for Planning (described in my Written Statement) showing that the Site is subject to flooding in 2125 during the tidal 1 in 200-year event (with defences in place, only western parts of the Site are predicted to be inundated in 2125).

ii. Paragraph 27a provides much-needed clarity on the "*area of search*". For non-major housing developments that still need to carry out a Sequential Test (*i.e.* as per the Appeal Site), the updated paragraph 27a provides that an appropriate Search Area should be limited to "*the specific area of a town or city in which the proposal is located, or beyond an individual village and its immediate neighbouring settlements*". The Search Area for the previous Sequential Test (presented in the Hilson Moran TGN presented in Appendix A of the Written Statement), was informed by previous correspondence with the LPA and comprised the whole of Adur District.

The Site is located in St Nicolas Ward of Shoreham-by-Sea. Shoreham-by-Sea (often referred to as just "Shoreham") is a coastal town and port in the Adur district. The town is bordered to its north by the South Downs, to its west by the Adur Valley, to its east by the urban area of Southwick and Brighton & Hove beyond, and to its south the English Channel. Shoreham covers an area of 980 ha and was recorded as having a population of 20,547 in the 2011 census. Old Shoreham dates back to pre-Roman times. The name of the town has an Old English origin, whilst the town and port of New Shoreham were established by the Norman conquerors towards the end of the 11th century.

Shoreham is made up of 5 wards:

- St Nicolas Ward;
- St Mary's Ward;
- Marine Ward;
- Southlands Ward;
- Buckingham Ward.

Consequently, with reference to the updated PPG, as the Apellant's scheme is a non-major housing development an appropriate Search Area would be "*the specific area of a town or city in which the proposal is located*", namely the town of Shoreham, defined by the boundaries of the above wards.

As such, if the Sequential Test was to be repeated, only considering alternative sites within the wards of Shoreham, then the number of relevant comparator sites would be reduced significantly. That aside, when the remaining 5 sites identified from the Sequential Test as alternatives to the Appeal Site, are considered, none are located within any of the wards of Shoreham, being located in:

- AWDM/1623/24 – St Peter's Place, Western Rd BN15 8SB, Peverel Ward, Sompting;
- AWDM/1433/24 – Land between 8 & 9 Holmbush Close BN43 6TT, Hillside Ward, Southwick;
- AWDM/0207/24 – 80 Southview Rd BN42 4TT, Southwick Green Ward, Southwick;
- ADC/082/13 – Gochers Laundry, Alma Street BN15 8AX, Widewater Ward, Lancing;

- ADC/136/13 – The Pilot, Station Road BN42 4AE, Eastbrook Ward, Southwick & Fishersgate.

Consequently, taking the most recent PPG advice into consideration, there are no other reasonably available sites in Shoreham, and the Sequential Test is passed. With reference to the Hilson Moran TGN presented in Appendix A of my Written Statement, both Tests A & B of the Exception Test are also passed, and thus the proposed scheme is deemed appropriate for the Site.

iii Although not important to the Appeal Site, as the Sequential Test is now passed, the revised paragraph 27 of PPG confirms that although the absence of a 5-year housing land supply is not a relevant consideration in applying the Sequential Test for individual applications, housing considerations, including housing land supply, may be relevant in the planning balance, alongside the outcome of the Sequential Test *i.e.* as tested in recent planning decisions and appeals, failing the Sequential Test is not a determinative exercise, but just another material consideration in the planning balance. In addition, paragraph 28 of PPG defines "*reasonably available*" more precisely, in that a site must be suitable for the type of development proposed, capable of meeting the same need, and have a reasonable prospect of coming forward within a similar timeframe.

## 2.2. Flood Risk/Depths

2.2.1 On page 3 of the Katherine Waters/Adur District Council Statement, it is stated that: "*We agree with the Written statement that it is general practice to use the current day 1 in 1000 (0.1%) extent as the proxy for the 1 in 100 (1%) plus climate change extent as the design event for surface water flooding as stated in paragraph 002 of the PPG*."

2.2.2 At para. 2.2.3 I actually stated that "*In the absence of climate change (CC) allowances for surface water flooding on the RoFSW map at the time, the 1 in 1000-year event flood depth was taken as a proxy for the 1 in 100-year +CC event*." An extract from the NaFRA2 update to the RoFSW map for the 1 in 1000-year event is presented as Figure 5 in my Written Statement and this clearly shows that the entire development site is free from surface water flooding during this event. Adopting this as a suitable proxy for the 1 in 100 (1%) plus climate change extent, therefore demonstrates that even without mitigation, the proposed scheme would be resilient to surface water flooding for its operational lifetime. Furthermore, at para. 3.1.2.1 (iii) I highlight that, with reference to the NaFRA2 RoFSW Map, all of the flooding adjacent to the Site is predicted to be shallow, with

flooding up to 20 cm only predicted during the 1 in 1000-year event on Overmead, close to 35 Overmead, *circa* 35 m south west from the Site. As such, safe access and egress from and to the Site is maintained onto Overmead and northwards along Mill Lane during all events (also refer to Sections 2.3 & 2.4 below).

2.2.3 On page 3 of the Katherine Waters/Adur District Council Statement, it is stated that: "*the data provided in the Adur and Worthing SFRA is more detailed than the NaFRA2 data*." This is not the case. As demonstrated in Appendix B: LLFA Email, 16/06/25 of my Written Statement, in which Hannah Barker states that "*We have received the following from WSP*" and then presents an extract from the SFRA mapping for the 100-year + 25% and 45% climate change events, it can be seen from the extract that the resolution of the SFRA mapping is much lower than the EA's NaFRA2 update RoFSW Map. This is further demonstrated by comparing the two maps in Figure 13 of my Written Statement (apologies but the caption should read "*Comparison between the JBA CC SFRA surface water modelling and the NaFRA2 output from the RoFSW Map for the 2040 to 2060 epoch*"). In addition, my comments in Section 3.1 of my Written Statement are still valid *i.e.*:

i. The Adur SFRA (July 2024) states that: "*Mapping of surface water flood risk in the Local Plan areas has been taken from the Risk of Flooding from Surface Water (RoFSW) dataset, published online by the Environment Agency*" (*i.e.* the Adur SFRA surface water modelling is based on the old version of the RoFSW available at the time of preparing the July 2024 SFRA, which predates the EA NaFRA2 updates to the RoFSW, Flood Map for Planning and Long-term Flood Risk Maps, which were rolled out in January and March 2025).

ii. The Adur SFRA also states that "*It is important to recognise that Level 1 SFRAs are high level strategic documents and, as such, do not go into detail on an individual site-specific basis*" (*i.e*. the degree of confidence associated with the SFRA modelling is no more than the EA NaFRA2 modelling, and can be assumed to be significantly less, taking into consideration the improvements on the old EA mapping (on which the SFRA modelling was based, see point (i) above), described in para. 3.1.2.6 of my Written Statement, including:

a) The EA NaFRA2 modelling uses both existing detailed local information and improved national data, and includes the potential impact of climate change on flood risk, based on UK Climate Projections (UKCP18);

b) It shows potential flood depths (which the SFRA data does not);

c) It provides much higher resolution maps that make it easier to see where there is risk;

d) The process combines new and existing data to improve national flood risk maps, including outputs from detailed local flood risk models and a new state-of-the-art national flood risk model which is "*a significant improvement on our* [the EA's] *existing national modelling*". The new process has resulted in a range of improvements to the national flood risk mapping, including greater consistency between local and national flood risk information; additional risk information, including flood depth, and finer spatial resolution for flood risk from rivers and sea.

e) The SFRA states that "*When using the SFRA to prepare FRAs it is important to check that the most up to date information is used, as is described in amendments to the flood mapping prepared and issued by the Environment Agency at regular intervals….The Environment Agency regularly reviews their flood risk mapping, and it is important that they are approached to determine whether updated information is available prior to commencing a detailed Flood Risk Assessment*."

2.2.4 On page 3 of the Katherine Waters/Adur District Council Statement, it is stated that:

"*The levels along Mill Lane are shown to be between 6.14m AOD and 6.29m AOD, it would therefore be prudent to assume flood depths along Mill Lane will be greater than 6.29m AOD as this area is shown to flood. The site levels contained within the topographic survey are between 6.17m AOD and 5.30m AOD. Therefore, although the updated online map does not show the site to be impacted this is more likely due to Lidar levels wrongly picking up ridge heights or tree levels rather than the flood water not being able to flow downhill. Therefore the entire site would still be impacted by surface water flooding as the site levels are lower than the surrounding land that is shown to flood. This highlights the SFRA data being more accurate than the online maps and therefore without site specific surface water modelling must be used to assess the risk at the site*."

2.2.5 This statement is erroneous for a number of reasons which I address below:

i. "*Therefore, although the updated online map does not show the site to be impacted this is more likely due to Lidar levels wrongly picking up ridge heights or tree levels rather than the flood water not being able to flow downhill*."

In order to check that the EA LiDAR data that has been used for their modelling is representative of ground-truth topographical survey levels and is not "*wrongly picking up ridge heights or tree levels*" we have compared the two datasets, using the Open Access LiDAR data (2022 LiDAR Composite DTM, 1 m resolution) available from the Defra Survey Data Download website at https://environment.data.gov.uk/survey. In order to demonstrate the accuracy and suitability of the EA's LiDAR data, we have presented the georeferenced data as a contoured plot (refer to Figure 1) and also a comparative table (Table 1), which compares LiDAR derived ground levels to a series of selected spot levels on the topographical survey, identified in Figure 2 below.

With regard to the contour plot (Figure 2) it can be seen that levels are generally in agreement with the topographical survey and there is no evidence that features such as ridge heights or tree levels have been erroneously transposed into the data as ground levels.

With regard to the selected spot levels illustrated in Figure 2, these are presented in Table 1 and generally demonstrate a good agreement. There is no evidence of any feature such as a tree or dwelling ridgeline being erroneously transposed into the data as ground levels. The maximum difference in levels occurs at Spot Level No. 2 "*Cemetery access to rear of 41 Overmead*" where the EA LiDAR level is +0.85 m higher than the ground-truth topographical survey level, and it is possible that the LiDAR data has picked up the nearby boundary wall at this location, however, the modelling does not predict flooding to flow down the Cemetery access from Mill Lane, so this one outlier is not of any significance. All other levels are within 240 mm of each other, with 72 % of the points being within +/-0.10 m (100 mm).

As such, the inference within the Katherine Waters/Adur District Council Statement that the EA LiDAR data has wrongly picked up dwelling ridge heights or tree levels, and thus does not show a realistic flood extent, is not founded on any evidence.

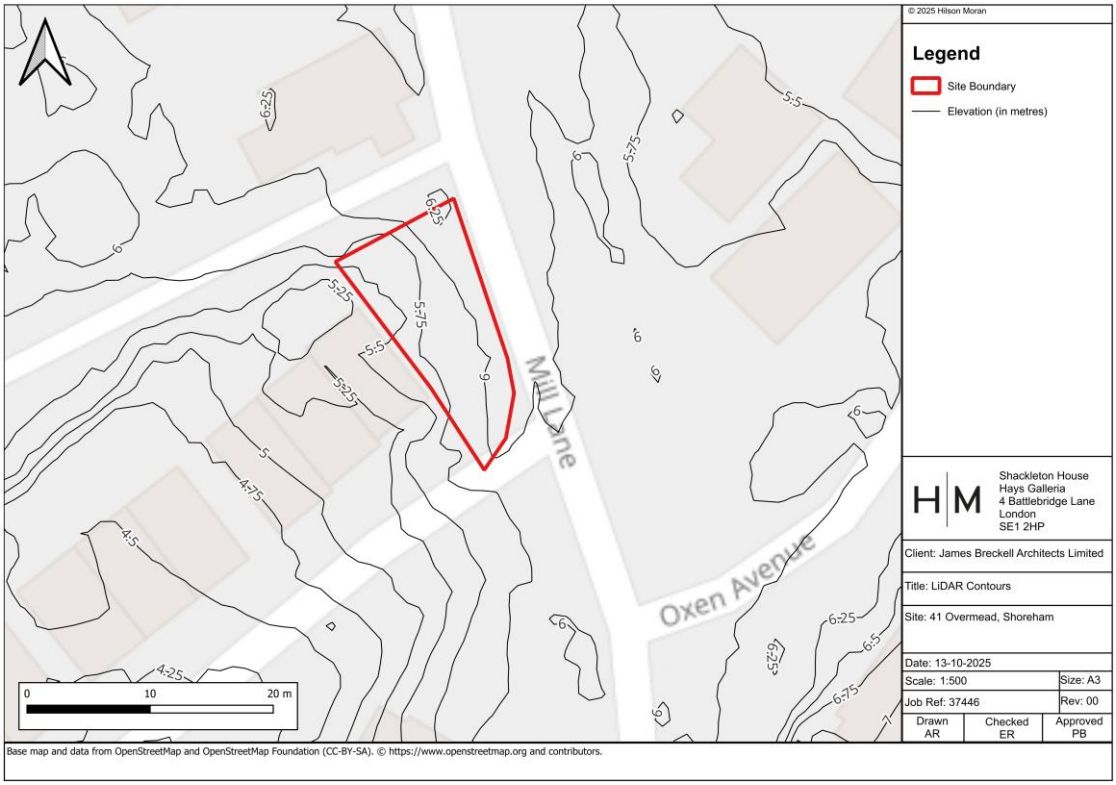


*Figure 1: Contour plot of 41 Overmead and locale derived from EA LiDAR Data*

*Table 1: Comparison between selected topographical survey spot levels and EA LiDAR data*

| Spot Level | Location | Topo Level (mAOD) | EA LiDAR Level (mAOD) | Difference (m) |
|---|---|---|---|---|
| 1 | Rear garden 41 Overmead | 5.25 | 5.21 | -0.040 |
| 2 | Cemetery access to rear of 41 Overmead | 5.8 | 6.65 | 0.850 |
| 3 | Rear part of development plot | 5.63 | 5.78 | 0.150 |
| 4 | Cemetery access to rear of 41 Overmead | 6.08 | 6.16 | 0.080 |
| 5 | Fenceline/top of pavement, Mill Lane | 6.27 | 6.17 | -0.100 |
| 6 | Kerb channel, Mill Lane | 6.16 | 6.13 | -0.030 |
| 7 | Fenceline/top of pavement, Mill Lane | 6.29 | 6.12 | -0.170 |
| 8 | Central part of development plot | 5.45 | 5.69 | 0.240 |
| 9 | Kerb channel, Mill Lane | 6.08 | 6.10 | 0.020 |
| 10 | Fenceline/top of pavement, Mill Lane | 6.23 | 6.07 | -0.160 |
| 11 | Central part of development plot | 5.84 | 5.84 | 0.000 |
| 12 | Kerb channel, Mill Lane | 6.05 | 6.04 | -0.010 |
| 13 | Fenceline/top of pavement, corner of Mill Lane & Overmead | 6.13 | 6.07 | -0.060 |
| 14 | Front part of development plot | 5.28 | 5.34 | 0.060 |
| 15 | Kerb channel, corner of Mill Lane & Overmead | 5.89 | 5.90 | 0.010 |

| Spot Level | Location | Topo Level (mAOD) | EA LiDAR Level (mAOD) | Difference (m) |
|---|---|---|---|---|
| 16 | Kerb channel, corner of Mill Lane & Overmead | 5.77 | 5.84 | 0.070 |
| 17 | Fenceline/top of pavement, corner of Mill Lane & Overmead | 5.91 | 5.83 | -0.080 |
| 18 | Close to fenceline/top of pavement, corner of Mill Lane & Overmead | 5.51 | 5.56 | 0.050 |

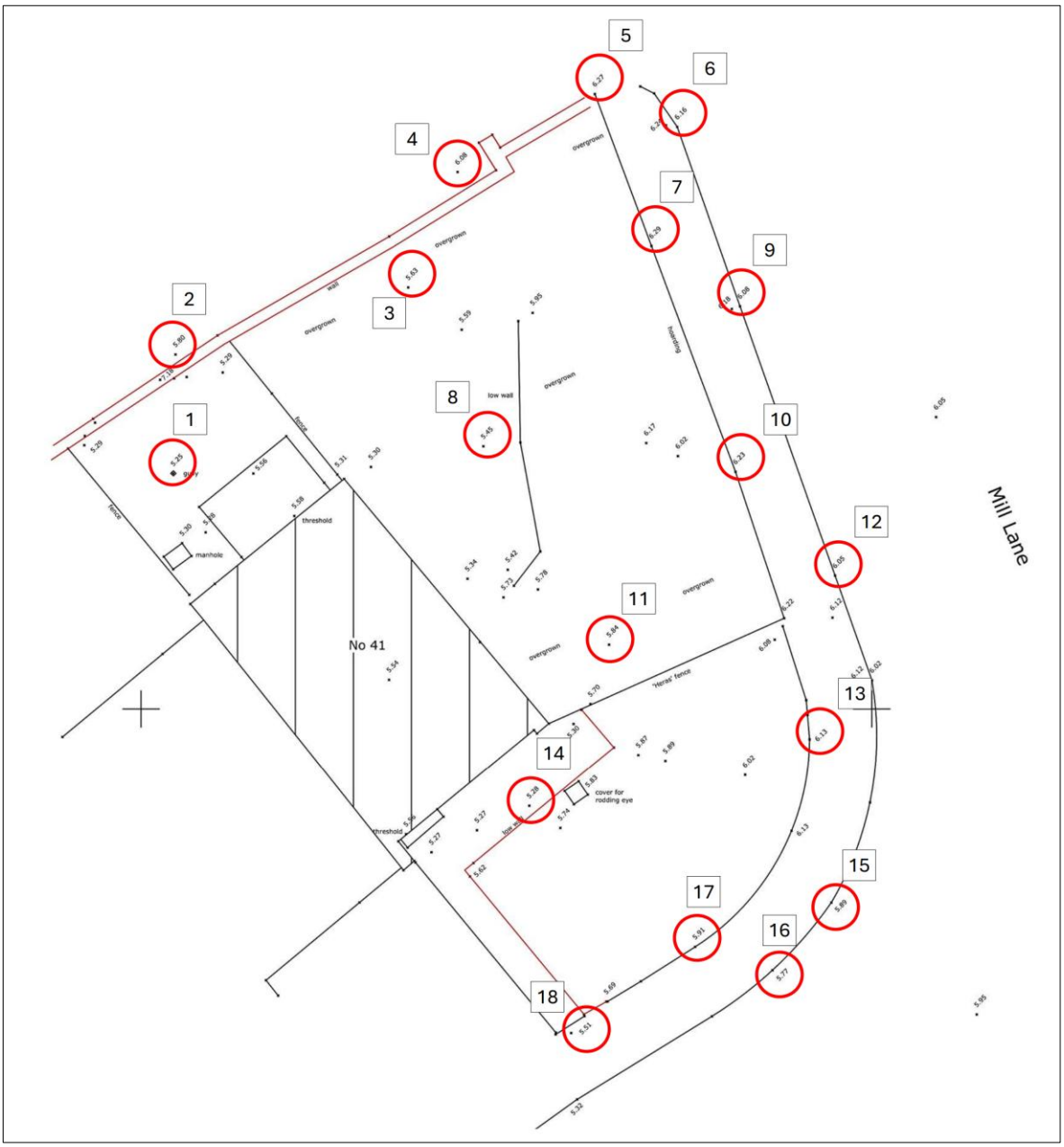


*Figure 2: Topographical spot levels for comparison with EA LiDAR data*

ii. "*The levels along Mill Lane are shown to be between 6.14m AOD and 6.29m AOD, it would therefore be prudent to assume flood depths along Mill Lane will be greater than 6.29m AOD as this area is shown to flood*"

As illustrated in Figure 2 above, which shows the topographical survey levels of the site (originally presented in Appendix C of the GTA Civils & Transport Ltd FRA submitted with the planning application), the 6.29 mAOD identified above is the highest point on the survey and is located on the fenceline (red line boundary) of the plot at the top of the pavement (with reference to the data discussed in (i) above, the EA LiDAR data considers this spot to be at 6.12 mAOD). With reference to the 1 in 1000-year surface water flood extent from the EA's updated Flood Map for Planning, presented as Figure 5 of my Written statement, the flood extent on Mill Lane is shown to approach the red line boundary, but not enter the site. With reference to the flood depth plots taken from the NaFRa2 RoFSW Map, presented as Figure 6 of my Written Statement, any flooding during the 1 in 1000-year event on Mill Lane is predicted to be less than 200 mm and appears to be largely confined to the eastern side of the highway.

Using the EA LiDAR data discussed in (i) above, which has been demonstrated to be a good representation of the ground-truth topographical survey data, it can therefore be assumed that:

a) The kerb and pavement heights on the western side of Mill Lane, adjacent to the red line boundary, are sufficiently high to keep any flooding within the highway and prevent it from entering the site.

b) Fenceline LiDAR levels along Mill Lane range from 6.07 mAOD near the junction with Overmead to the maximum of 6.17 mAOD at the north east corner of the site.

c) As such, it can be concluded that not only do flood levels remain below 200 mm on Mill Lane, but that they do not overtop ground levels ranging from 6.07 to 6.17 mAOD.

d) Mill Lane slopes southwards.

f) In the vicinity of the 6.17 mAOD LiDAR level at the fenceline (Spot Level No. 5), the highway LiDAR level at the kerb channel is *circa* 6.13 mAOD (Spot

Level No. 6). It can, therefore, be assumed that the flood depth in the highway at this point will be less than 6.17 - 6.13 = <0.05 m (*i.e*. <50 mm).

g) In the vicinity of the 6.12 mAOD LiDAR level (Spot Level No. 7) at the fenceline, the highway LiDAR level at the kerb channel will be approximately halfway between the 6.13 mAOD (Spot Level No. 6) and 6.10 mAOD (Spot Level No. 9) LiDAR levels *i.e. circa* 6.115 mAOD. It can, therefore, be assumed that the flood depth in the highway at this point will less than 6.12 - 6.115 = <0.005 m (*i.e*. <5 mm).

h) In the vicinity of the 6.07 mAOD LiDAR level (Spot Level No. 10) at the fenceline, the highway level at the kerb channel will be approximately halfway between the 6.10 mAOD (Spot Level No. 9) and 6.04 mAOD (Spot Level No. 12) LiDAR levels *i.e. circa* 6.07 mAOD. It can, therefore, be assumed that the flood depth in the highway at this point will be zero (*i.e.* 6.07 - 6.07 mAOD).

i) Consequently, these results agree with the updated RoFSW Map in that any flooding on Mill Lane is largely confined to the eastern side of the highway and does not reach a level sufficient to enter the site.

j) When the EA LiDAR levels are compared with the ground-truth topographical survey levels, it can be seen that all of the points along the eastern fenceline of the scheme are actually 60 to 170 mm higher than modelled, providing an even higher barrier to the inundation of the Site in reality than that assumed in the model. As such, the EA modelling can be considered conservative and, therefore, robust.

iii. "*Therefore the entire site would still be impacted by surface water flooding as the site levels are lower than the surrounding land that is shown to flood*."

This is not supported by the evidence, which predicts that any flooding during the 1 in 1000-year event would be confined to the highway, with the low depths of flooding and general topography, including raised pavements, preventing any entry of floodwaters into the Site.

iv. "*This highlights the SFRA data being more accurate than the online maps and therefore without site specific surface water modelling must be used to assess the risk at the site*."

On the contrary, for the reasons highlighted in para. 2.2.3 above the EA's NaFRA2 updated data should be considered superior to the SFRA modelling in its accuracy and, as shown above, demonstrates that the Site would not be susceptible to surface water flooding during the 1 in 1000-year event.

## 2.3. Increase in Flood Risk

2.3.1 On page 4 of the Katherine Waters/Adur District Council Statement, it is stated that: "*Water displacement as a result of the development will increase flood risk to the site and elsewhere, which is not in accordance with NPPF, the PPG or Local Policy. The applicant is required to demonstrate that the proposed development will not increase flood risk to the site and elsewhere. The proposed development is substantially raising ground levels across the site as demonstrate in Appendix A of the Written statement by Paul Christopher Bond. The ground raising will displace the surface water flow path that impacts the site however no mitigation has been proposed to demonstrate that the displacement of surface water from the overland flow route will not increase flood risk to others. Therefore the application is not in accordance with NPPF, the PPG or local planning policy 36 'Flood Risk and Sustainable Drainage'.*

2.3.2 This statement is incorrect in that:

i. Within my Written Statement and further in Section 2.2 above, it has been demonstrated that the Appeal Site does not lie within the local surface water flow path, with the updated EA modelling showing that the flow path is contained largely within the local highway infrastructure in the vicinity of the Site.

ii. In Section 8.3 of the 2024 SFRA it states that:

"*There should normally be no interruption to flood flows or loss of flood storage as a result of any proposed development. Flood storage compensation may be appropriate for sites on the edge of the existing floodplain or within a flood cell. However this would need to be provided level for level. Resilience rather than resistance measures should be used if flood plain compensation is not being provided…..*

*The minimum acceptable standard of protection against flooding for new residential property within flood risk areas is the 1% AEP event plus climate change for fluvial flooding, 0.5% AEP plus climate change event for tidal flooding, and 1% AEP plus climate change storm for surface water flooding*" [note that the 0.5% AEP equates to the 1 in 200-year event and the 1% AEP equates to the 1 in 100-year event].

*iii* Paragraph 005 of the PPG states that when determining "*What to consider when determining whether a proposed development will be safe for its lifetime?*" that the following should be considered "*the safety of people within a building if it floods and also the safety of people around a building and in adjacent areas, including people who are less mobile or who have a physical impairment. This includes the ability of residents and users to safely access and exit a building during a design flood and to evacuate before an extreme flood (0.1% annual probability of flooding with allowance for climate change)*".

iv Paragraph 002 of the PPG states under the heading "*What is meant by a "design flood"?*" that:

"*This is a flood event of a given annual flood probability, which is generally taken as:*

- *river flooding likely to occur with a 1% annual probability (a 1 in 100 chance each year); or*
- *tidal flooding with a 0.5% annual probability (1 in 200 chance each year); or*
- *surface water flooding likely to occur with a 1% annual probability (a 1 in 100 chance each year),*

*plus an appropriate allowance for climate change*."

v UK Government Guidance "*Flood risk assessment: Flood Zones 1, 2, 3 and 3b*" (refer to https://www.gov.uk/guidance/flood-risk-assessment-flood-zones-1-2-3-and-3b) states that:

"*The assessment should consider whether the development may increase flood risk elsewhere through:*

- *loss of flood storage*
- *the deflection or constriction of flood flow routes*
- *inadequate management of surface water*"

vi Paragraph 049 of the PPG states that:

"*The loss of floodplain storage is less likely to be a concern in areas benefitting from appropriate flood risk management infrastructure or where the source of flood risk is solely tidal*."

vii Summarising the above local and national policy, with relevance to the Appeal Site:

a) There should normally be no interruption to flood flows or loss of flood storage as a result of the proposals;

b) The proposals will need to be protected from the 1 in 100-year + climate change (CC) surface water flood;

c) The proposals will need to be protected from the 1 in 200 year + CC tidal flood;

d) The users of the scheme should be able to safely access and exit the building during 1 in 100-year + CC surface water flood event and a 1 in 200-year + CC tidal event; and

e) The users of the scheme should be able to evacuate before an extreme flood event (*e.g.* a 1 in 1000-year +CC surface water or tidal event).

viii With regard to point (a) above, it has been demonstrated that the Appeal Site does not lie within the local surface water flow path, and thus there are no interruptions to flood flows. With regard to other forms of flooding, my Written Statement highlights that the scheme is shown wholly within the recently available NaFRA2 modelled undefended tidal 1 in 200-year + CC event and partially within the defended tidal 1 in 200-year + CC event. The source of the flooding is tidal and the scheme is protected by flood defences, comprising the Shoreham Adur Tidal Walls Scheme and flood defences in the form of a sand and shingle beach, and timber groynes maintained by the Local Authority. As such, no floodplain compensation is required for these future tidal events.

ix With regard to point (b) above, it has been demonstrated in my Written Statement and above that the proposals are not inundated by the 1 in 100-year + CC flood event.

x With regard to point (c) above, within para. 3.1.2.1 of my Written Statement it is demonstrated that with a minimum ground level of 5.30 mAOD within the footprint of the

Site, flood depths are predicted to reach a maximum of 60 mm during the 1 in 200-year +CC design (Higher Central) tidal flood event over the operational lifetime of the scheme. The ground floor finished floor level (FFL) will be set to 6.29 mAOD, which will be 930 mm above the design 1 in 200-year +CC (Higher Central) undefended tidal flood level, and thus the scheme will be suitably protected from this event.

xi With regard to point (d), with reference to Figure 6 of my Witness Statement, the access and egress onto Overmead and northwards along Mill Lane remains clear during the 1 in 100-year + CC surface water flood event. With reference to Figure 12 of my Written Statement, the access and egress onto Overmead and northwards along Mill Lane remains clear during the defended 1 in 200-year + CC tidal flood event. In the very unlikely event that all flood defences protecting the site should simultaneously fail, para. 3.1.2.1 of my Written Statement demonstrates that flood levels are predicted to reach a maximum of 5.73 m AOD for the undefended Upper End 1 in 200-year +CC event. The topographical survey shown in Figure 2 shows that in the area of the proposed access onto Mill Lane, the pavement level is *circa* 6.13 mAOD, with levels on the pavement increasing northwards. Consequently, dry access and egress will be maintained during this event.

xii With regard to point (e), with reference to Figures 7 & 8, the western pavement to Mill Lane remains clear during the 1 in 1000-year + CC surface water flood event. With reference to para. 3.1.2.1 of my Written Statement, flood levels are predicted to reach a maximum of 5.57 m AOD for the undefended Higher Central 1 in 1000-year + CC event and 5.94 m AOD for the undefended Upper End 1 in 1000-year event. The topographical survey shown in Figure 2 shows that in the area of the proposed access onto Mill Lane, the pavement level is *circa* 6.13 mAOD, with levels on the pavement increasing northwards. Consequently, dry access and egress will be maintained during these events.

2.3.3 Consequently, the proposals are entirely compliant with national and local policy and guidance, and the proposed scheme and associated mitigation measures are demonstrated to be robust.

## 2.4. Safe Access and Egress

2.4.1 On page 5 of the Katherine Waters/Adur District Council Statement, it is stated that: "*The Written Statement demonstrates safe access and egress based on the NaFRA2 data but given the explanation provided in the point II above, we would consider the site to remain at surface water flood risk. Therefore, safe access and egress has not been demonstrated as flood depths on the*

*adjacent road as shown within the SFRA may be between 600mm to 900mm deep which would not be considered safe in relation to paragraph 005 of the NPPF PPG*."

2.4.2 As demonstrated above, the conclusion by Katherine Waters that flood depths on the adjacent road may be between 600 mm and 900 mm deep is a significant overestimation and is not supported by the evidence presented above, which demonstrates that:

i. Surface water flood depths during the 1in 1000-year + CC event are predicted to reach a maximum of 200 mm on the eastern side of Mill Lane, with flood depths on the western side of the highway ranging from 0 to 50 mm.

ii. The maximum undefended 1 in 1000-year flood level for the 1 on 1,000-year event + CC, has been calculated as 5.94 m AOD (Upper End). From the topographical survey, the minimum recorded level on Mill Lane is 6.02 mAOD in the kerb channel adjacent to the proposed access from the dwelling to the highway. Consequently, the pavement will stay dry and access and egress maintained even in this extreme event.

2.4.3 Consequently, dry access and egress has been demonstrated to and from the Site, even during extreme events with the inclusion of CC allowances. As such, the proposals have been demonstrated to be robust.

## 2.5. Drainage

2.5.1 On page 5 of Katherine Waters/Adur District Council Statement, it is stated that: "*The proposed drainage strategy has not followed the hierarchy of preference as infiltration has not been considered. Furthermore, the submitted calculations use FSR data (which is known to underestimate rainfall by 20%), not FEH data, and do not use a CV value of 1 (therefore assumes not all the impermeable area drains into the proposed surface water system) therefore the volume of storage required is underestimated. We note from the Written Statement that a surface water drainage scheme will be developed at detailed design stage and this will include infiltration testing, it should be noted infiltration must be 5m away from any building and the proposed development footprint due to its size my exclude this method of surface water disposal. If infiltration is not viable at the site, then runoff will be restricted to 1 l/s. This is acceptable in principle and the details could be covered by a condition.*"

2.5.2 These comments refer to the Drainage Strategy presented in the GTA Civils & Transport Ltd FRA submitted with the planning application, and described in my Written Statement. The comments

are accepted and, as suggested by Katherine Waters, the details of the drainage design, including BRE365-compliant infiltration testing can be secured by an appropriate planning condition. Such a condition, used by Adur District Council for other similar 1-dwelling schemes comprises:

"*Construction shall not begin until a detailed surface water drainage scheme for the site has been submitted to and approved in writing by the Local Planning Authority. The surface water drainage scheme must prioritise the use of source control Sustainable Drainage Systems (SuDS) and follow the hierarchy of preference in consideration of the Non-Statutory Technical Standards for SuDS and demonstrate no increase in flood risk as a result of the Proposed development with sufficient supporting evidence provided to support its viability including supporting calculations for the 100% AEP (1 in 1 year), 3.33% AEP (1 in 30 year), 3.33% AEP (1 in 30 year) plus climate change, the 1% AEP (1 in 100 year) and the 1% AEP (1 in 100) plus climate change critical storms. Winter groundwater monitoring to establish highest annual ground water levels and winter infiltration testing to BRE DG365, or similar approved, will be required to support the design of any infiltration drainage. The scheme shall subsequently be implemented in accordance with the approved details before the development is completed*."

2.5.3 It should be borne in mind that due to Building Regulations not permitting infiltration within 5 m of a building's foundations, infiltration can only be located beneath the front lawn of the new proposals, where there is a *circa* 8 m distance between the façade of the new dwelling and the Overmead pavement. Consequently, if infiltration is proven to be unfeasible within the 3 m closest to the pavement, then a non-infiltrating approach to surface water management will be required for the scheme and winter groundwater monitoring will not be required.

# 3 Conclusion

3.1 Taking the above into consideration, the Katherine Waters/Adur District Council Statement does not alter my stance on the appropriateness of the Appeal scheme and, on behalf of the Appellant, I respectfully request that the Appeal be granted and planning permission for the 1-dwelling scheme at 41 Overmead, Shoreham-by-sea be permitted.



17.10.2025

Paul Bond,

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