



07 October 2022

Our Ref: KC/20.211

David Innes
Arun District Council
Civic Officers
1 Maltravers Rd
Littlehampton
BN17 5LF

Dear Mr Innes

Bognor Regis Golf Club

Outline Planning application for the Construction of up to 480 new homes (C3), the formation of a new means of access onto Golf Links Road, the creation of new surface water drainage, new landscaping and habitat creation, ground works and other infrastructure. The retention and re-purposing of the retained club house (F2) – LPA Reference: FP/274/21/OUT
Hallam Land Management Limited

I am writing on behalf of my client, Hallam Land Management Limited (HLM), in respect of the above application and following our meeting on the 24th August 2022.

This letter responds to the matters raised in the latest consultation responses and during our meeting. The consultee responses were informed by the additional plans and material submitted on the 18th August 2022.

Green Infrastructure Framework

As raised in the meeting on the 24th August the Council would like to understand whether the Applicant has considered the potential to form a connection with the cross District active travel corridor shown on the Landscape & Green Infrastructure Framework connecting Bognor Regis to the South Downs National Park as set out in the Bognor Regis Green Infrastructure Framework (January 2020).

HLM's urban designer, Urban Wilderness, has indicated on the accompanying Movement and Connectivity Parameter Plan (Rev E), which is provided for illustrative purposes at Annex 1, how the scheme has the potential to connect to this route, which is to the west of the Rife and outside the application site. The proposed footpaths and cycle paths within the proposal have the potential to link to the proposed route. This plan is not intended for formal submission, it is however for your use to understand the capability of the scheme to connect to this route.

Environment Agency

The Environment Agency comments (dated 12th September 2022) requested a series of clarification points. These have been responded to in the accompanying Technical Note (dated October 2022). This has been submitted directly to the Environment Agency on the 6th October 2022 and are included at Annex 2.

Specifically, the Technical Note sets out the following:

- The model has been run for the additional AEP scenarios as requested by the Environment Agency and include the 30 year scenario in line with the updates made to the Flood Risk and Coastal Change PPG (August 2022).
- There are a couple of very small areas where the modelled flood extent coincides with the proposed developable area, but this can be addressed at the reserved matters stage through the detailed design, detailed interrogation of the ground condition, etc and secured by a suitably worded planning condition attached to any outline planning permission.
- A comparison has been undertaken against the LiDAR models, showing consistent levels between the two, clarifying the query raised.
- The ground models have been updated and demonstrate there are no detrimental impacts outside of the redline boundaries across the AEP scenarios.
- The latest version of the ICM was run and demonstrates no influence on the proposed development of impacts on third party land.
- The 10.25hr and 27.5hr storm duration events were run with the AEP scenarios and demonstrates no influence on the proposed development of impacts on third party land.
- The confirmation that there is no difference between the rainfall within the hydraulic model and the rainfall reported within the hydrology report.

This demonstrates that through the additional model results and the associated model/hydrology review spreadsheets the clarification points have been addressed and all outstanding issues and comments are considered resolved. Following the resolution of these comments the Applicant anticipates that the Flood Risk Assessment to be agreed with the Environment Agency and to receive final comments on the Water Voles matter.

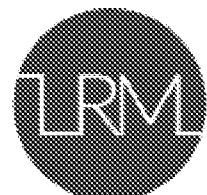
Drainage Officer

The Applicant has reviewed the latest Drainage Officer comments (dated 30 September) and will be providing a response in the form of a Technical Note shortly. The Drainage Officer is advised that the applicant is working closely with the Environment Agency to ensure the Flood Risk Assessment is agreed and submitted the latest response on the model on 6th October 2022. The Technical Note will provide further clarification on the surface water drainage proposals, approach to climate change allowance and run off rates. The Applicant has previously sought to meet with the drainage officer to discuss their comments, on both applications, and would still welcome this meeting once the Technical Note has been submitted.

Arboriculture

In the latest response of the 13th September 2022, the Arboricultural Officer outlines how the loss of T15 would not gain their support and would require overriding justification.

Below is an extract from the Tree Retention Plan (drawing reference 171-UW-P-A-010 Rev C), indicating the location of T15 as highlighted in yellow.





As set out on the Movement and Connectivity Parameter Plan (drawing reference 171-UW-P-A-009 Rev C) and the Tree Retention Plan (drawing reference 171-UW-P-A-010 Rev C) the main access into the Application Site is from Golf Links Road.

The primary road leading from the site access bends around into this part of the site to provide access to the remaining land including the residential parcels to the north, west and south. The layout and geometry of this road has been informed by a range of considerations including highway and drainage requirements, potential alternative arboricultural effects and urban design and place making.

To ensure good placemaking principles are followed, the scheme layout has removed this tree to create places that respond to the existing landscape features whilst creating good design and delivering much needed new homes.

There is insufficient space between G12/T14 (Category A) to the south, G8 (Category A) to the east and G14 (Category A) to the north, to utilise the fairway space between these trees for development that positively responds to the open space. It would deliver single fronted development with gardens backing onto the green infrastructure. This is not considered good design and would not be responding well to the existing landscape and green infrastructure features on the Application Site.

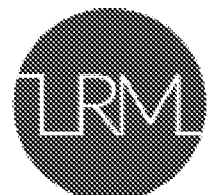
Removal of G13 (Category B) and T15 (Category A) provides the necessary space to deliver dual fronted development, which positively responds to the open space settings and the remaining and new trees/groups in these locations. The alternative of retaining T15 would require the scheme to be amended with the likelihood of impacts on a series of other category A trees in the surrounding area including G14, G8, and T22. It is considered more suitable to remove T15 and ensure the retention of the other category A trees as part of this scheme.

To follow good placemaking principles this loss is unavoidable, however, the proposed development includes a gain of circa 165 trees and 4.4ha of woodland and tree groupings.

It is considered as a whole the proposed development retains all trees where possible, and delivers a substantial net gain for trees, hedgerows and woodland.

Ecology

There have been no further comments received from the Ecological Officer following the submission of the ecology surveys on the 18th August 2022, however, should these be submitted, HLM would welcome the opportunity to review these and comment where necessary.



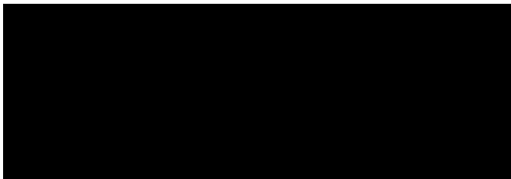
Conclusion

This letter, and the previous correspondence, demonstrates that significant progress has been made in respect of the two planning applications for the relocation and redevelopment of Bognor Regis Golf Course.

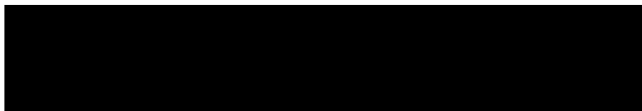
It is considered that the outstanding matters for this outline planning application are capable of being resolved in the coming weeks and we would welcome the opportunity of discussing the target determination date accordingly.

I hope this letter is of assistance, however, should you require any further information or clarification please let me know.

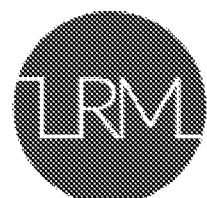
Your sincerely,



Kate Coventry
Senior Planner
LRM Planning Ltd

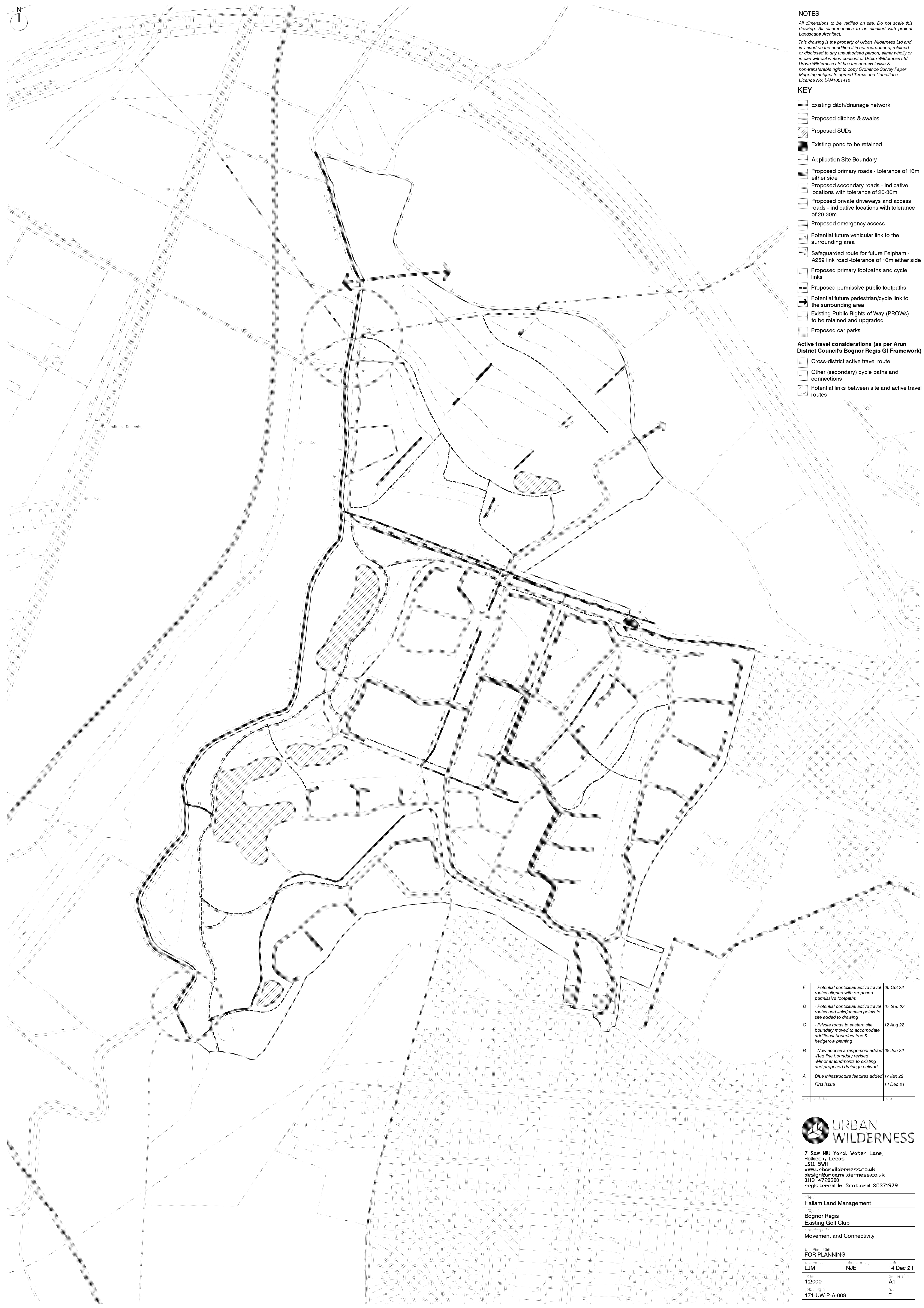


Annex 1 – Movement and Connectivity Parameter Plan (drawing number: 171-UW-P-A-009-Rev E)
Annex 2 – Technical Note and Spreadsheets submitted to the Environment Agency (dated 6th October)



Annex 1 – Movement and Connectivity Parameter Plan (drawing number: 171-UW-P-A-009-Rev E)





- NOTES**

All dimensions to be verified on site. Do not scale this drawing. All discrepancies to be clarified with project Landscape Architect.

This drawing is the property of Urban Wilderness Ltd and is issued on the condition it is not reproduced, retained or disclosed to any unauthorised person, either wholly or in part without written consent of Urban Wilderness Ltd. Urban Wilderness Ltd has the non-exclusive & non-transferable right to copy Ordnance Survey Paper Mapping subject to agreed Terms and Conditions. Licence No: LAN1001412
- KEY**
 - Existing ditch/drainage network
 - Proposed ditches & swales
 - Proposed SUDs
 - Existing pond to be retained
 - Application Site Boundary
 - Proposed primary roads - tolerance of 10m either side
 - Proposed secondary roads - indicative locations with tolerance of 20-30m
 - Proposed private driveways and access roads - indicative locations with tolerance of 20-30m
 - Proposed emergency access
 - Potential future vehicular link to the surrounding area
 - Safeguarded route for future Felpham - A259 link road - tolerance of 10m either side
 - Proposed primary footpaths and cycle links
 - Proposed permissive public footpaths
 - Potential future pedestrian/cycle link to the surrounding area
 - Existing Public Rights of Way (PROWs) to be retained and upgraded
 - Proposed car parks

Active travel considerations (as per Arun District Council's Bognor Regis GI Framework)
 - Cross-district active travel route
 - Other (secondary) cycle paths and connections
 - Potential links between site and active travel routes

E	- Potential contextual active travel routes aligned with proposed permissive footpaths	06 Oct 22
D	- Potential contextual active travel routes and links/access points to site added to drawing	07 Sep 22
C	- Private roads to eastern site boundary moved to accommodate additional boundary tree & hedgerow planting	12 Aug 22
B	- New access arrangement added - Red line boundary revised - Minor amendments to existing and proposed drainage network	08 Jun 22
A	- Blue infrastructure features added - First Issue	17 Jan 22 14 Dec 21

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Client

Hallam Land Management

Project

Bognor Regis
Existing Golf Club

Drawing title

Movement and Connectivity

FOR PLANNING

Prepared by	Checked by	Date
LJM	NJE	14 Dec 21
Scale	Symbol size	
1:2000	A1	
Produced by	Rev	
171-UW-P-A-009	E	

Annex 2 – Technical Note and Spreadsheets submitted to the Environment Agency (dated 6th October)





TECHNICAL NOTE

DATE:	06 October 2022	CONFIDENTIALITY:	Public
SUBJECT:	WSP Response to EA Comments		
PROJECT:	Bognor Golf Course Hydraulic Model	AUTHOR:	Andy Smith

INTRODUCTION

This Technical Note has been produced to provide a detailed response to the Environment Agency's comments on the hydraulic model which was developed to support the Hallam Land Management Ltd planning application for the redevelopment and relocation of the existing Golf Course (HA/2022/124003/01 and HA/2022/124004/01).

The Environment Agency provided comments on 7th September 2022 via email, with further context within the model review spreadsheets (NRT_2nd_follow_on_Bognor_Regis_Golf_Club_070929 and Bognor_Regis_Hydrology_Follow_On_080929), this note should be read in conjunction with the responses provided in the model review spreadsheets.

The comments from the Environment Agency are in italics below.

HYDRAULIC MODEL KEY COMMENTS

This section should be read in conjunction with the attached hydraulic model review workbook (NRT_2nd_follow_on_Bognor_Regis_Golf_Club_061029).

- Only the design event (100+25%CC AEP) has been included in the Infoworks Transferable database. Results for other AEP scenarios are not included within the supplied model. Site A contains residential land use (more vulnerable development) and Site B contains water compatible development (golf course). The central uplift allowance for the 2080s epoch (+25%) is the correct uplift to use based on the site vulnerability classification. Would it not be sensible to also test a 20 year scenario to check that the proposed development (particularly Site A) does not sit within functional floodplain?*

The model has been run for additional AEP scenarios, these are now provided within the ICMT. The AEP scenarios which are now provided are the 30yr+25%CC AEP, 50+25%CC AEP, 75+25%CC AEP and the 100+25%CC AEP. In line with the updates made to the Flood Risk and Coastal Change PPG in August 2022, we have not run the 20 year scenario, but the 30 year scenario. The appended flood maps demonstrate that the proposed developments are outside of the functional and design (1 in 100 year plus climate change) floodplains. With regard to the design floodplain there are minor areas where the modelled floodplain clips a couple of the proposed units, the reasons for this are two fold (dependent upon the location):

- ✱ this is considered to be an inherent part of the modelling, where the ground model is approximated into triangles to represent the ground surface
- ✱ The ground model / layout for the proposed development is subject to detailed design and modifications will be made during detailed design / RMA stage

In light of these points it is considered that these minor overlaps are addressed as part of the detailed design, once the final layout / platform locations / size is confirmed and are then tested in the hydraulic model for approval by the Environment Agency, this can be secured by an appropriately worded condition.



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2. *2 DTMS included within the model network; Updated GM 01022022.asc and Baseline GM.asc. The reporting mentions that the model used the most recent Lidar at the time of the model build. Comparisons were undertaken with EA composite 2020 Lidar DTM data. There are differences although these are generally not significant. There are differences between the Baseline Ground Model (Baseline GM.asc) and the Updated Ground model (Updated GM 01022022.asc) which extend outside of the proposed redevelopment areas (see worksheet Updated_GM_Minus_Baseline_GM within the attached workbook). It would be expected that ground levels should be consistent outside of the areas to be redeveloped? Please ensure ground models (and hence the resultant meshes) are consistent in areas where no changes are proposed.*

The model was developed using the 2020 Environment Agency LiDAR, which was the latest available at the time of the model build. However, the differences observed by the reviewer are a result of the processing of the LiDAR to convert it into a format suitable for use in ICM. This led to a marginally different co-efficient being used in the export, hence the differences observed. Whilst these differences were not sufficient to impact the findings of the flood model, they have been addressed. The comparison of the DTM now shows consistent levels outside of the areas to be redeveloped. Please see the appended figure.

3. *Some of the differences between the baseline and proposed model results could be driven by the difference between the baseline ground model and the updated ground model as noted in item 7.3 (worksheet 2D Model Build) of this model review. Please investigate this. It would also be prudent to assess detriment across a wider range of AEP scenarios and present the results in the reporting.*

In line with the comments provided for point 2, the ground models have been updated, this now demonstrates that there are no detrimental impacts outside of the red line boundaries, across the range of AEP scenarios. Please see the appended maps.

4. *A check run was undertaken as part of this follow on review using Infoworks ICM version 2021.9 for the 100 year +25% baseline scenario (100yr 10.25mm/hr +25%CC). This results in slightly more extensive flooding when considering the submitted results (see worksheet Model_Run_Sensitivity_Test within the attached workbook). Please check these differences. Are they likely to have any influence on the proposed development? Please find the following 2d results:*

The model was originally run in the same version of ICM as it was provided by the Environment Agency for consistency, however, in light of the comment, it has now been re-run in the latest version (2023.1), as detailed in the responses above this does not have any influence on the proposed development or impacts on third party land.

5. *The reporting mentions that the 27.5hr storm duration was also tested. This is referenced in the reporting but it is not clear whether this is referring to the JBA original modelling (2014) or this modelling? Please make this clear as results for the 27.5hr storm duration test have not been provided within the ICMT and are not shown in the modelling report. The reporting suggests that both the 27.5hr and 10.25hr storm durations have been used.*

To aid the reviewer, the 10.25hr and 27.5hr storm duration events have been run for a range of AEPs, with the results provided within the ICMT. As detailed in previous sections, they do not have any influence on the proposed development or impacts on third party land. Although it is recognised



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that in the 27.5hr event, some of the flood depths do increase, although these are limited to areas which are already wet in the 10.25hr event.

HYDROLOGY REPORT KEY COMMENTS

This section should be read in conjunction with the attached hydrology model review workbook (Bognor_Regis_Hydrology_Follow_On_061022).

- 1. The reporting mentions a 10.25 hour storm duration but then goes on to say 27.5hrs was selected. It is clear that the model uses a 10.25hr storm duration so what is the reference to a 27.5 hour storm duration in the reporting? Please make this clear in the reporting as it currently implies that both 27.5hr and 10.25hrs are the preferred storm duration.*

As detailed in the response to point 5 on the hydraulic model key comments section, the model has been run for both the 10.25hr and 27.5hr duration events, 10.25hr is considered to be the design event, with the 27.5 hr event run for sensitivity purposes. However, the model demonstrates that the proposed development is not influenced by or results in impacts on third party land by either storm duration. Although it is recognised that in the 27.5hr event, some of the flood depths do increase, although these are limited to areas which are already wet in the 10.25hr event.

- 2. An example rainfall hyetograph has been included in the hydrology report (figure 4). In addition, a table is presented in table 4 which presents the revised rainfall depths. The rainfall hyetographs and depths presented in the hydrology report were compared against the rainfall data for the 100 year 10.25 hr mm/hr+25%CC scenario included within the Infoworks Model. There appear to be differences between the rainfall applied within the hydraulic model and the rainfall rate/depths reported within the hydrology report. Please clarify why there are differences.*

There are no differences between the rainfall within the hydraulic model and the rainfall reported within the hydrology report. The difference observed by the reviewer was caused by the data within the report being the current day scenario (i.e. no climate change allowance) and that within the model being for the future scenario (i.e. with climate change) for ease of approval the table has been updated below and the extract from the model provided by the Environment Agency reviewer is also below, noting that in the image the rainfall depths are presented in the reverse order than those in the table.



TECHNICAL NOTE

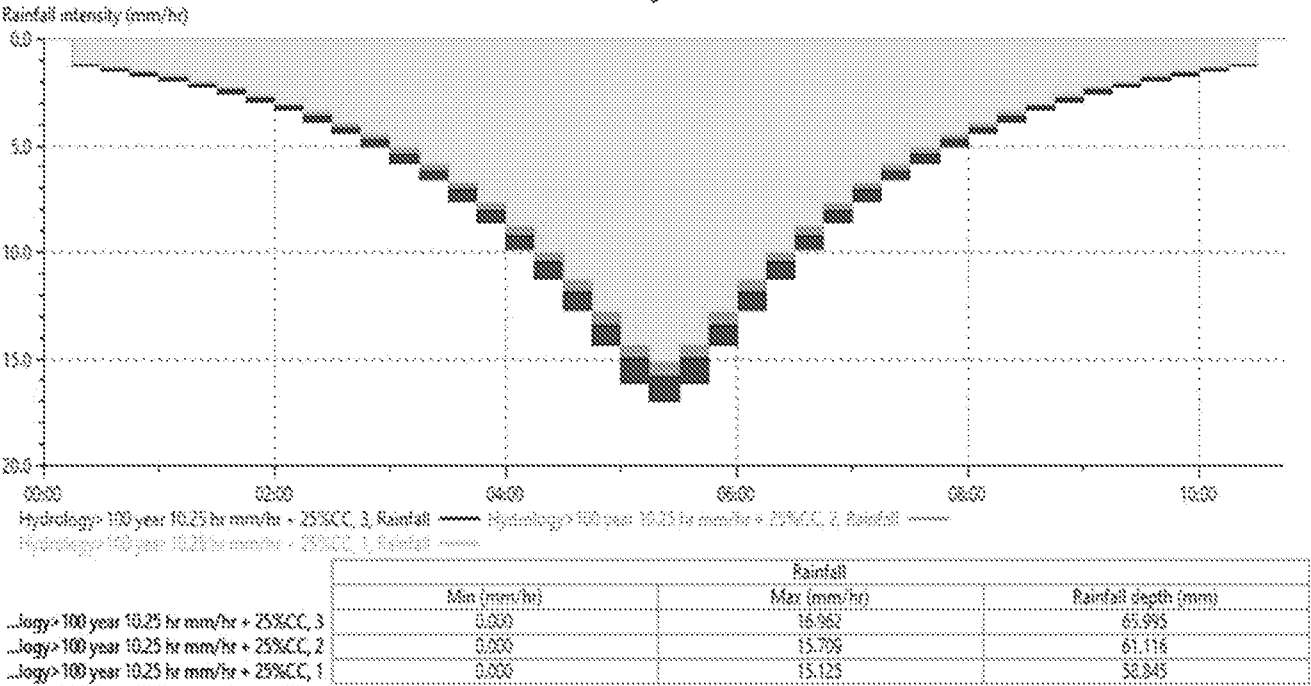
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Table 1: 10.25hr 100yr Design Rainfall Depths

Hyetograph Area	Seasonal Correction Factor	100yr 10.25hr storm event – total rainfall depth (mm)		100yr 10.25hr storm event plus 25% climate change – total rainfall depth (mm)
		Existing model hydrology	Revised Hydrology	Revised Hydrology
Low	0.713	56.40	47.08	58.85
Medium	0.727	59.74	48.89	61.11
High	0.759	65.67	52.80	66.00

Flexible Report Produced by Admin (06/09/2022 17:05:30) Page 1 of 1
Rainfall event: >WSP 2022 - For EA>Hydrology>100 year 10.25 hr mm/hr + 25%CC (19/11/2021 16:05:03)

Page 1





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CONCLUSION

The additional model results and clarifications provided to the Environment Agency within this Technical Note and the associated model / hydrology review spreadsheets are considered to address all the outstanding issues / comments and thus the model and hydrology is suitable for approval to support the FRA and associated planning applications (FP/274/21/OUT and M/16/22/PL).