FLOOD RISK ASSESSMENT FOR RESIDENTIAL DEVELOPMENT AT 12 QUAYSIDE, WELLS-NEXT-THE SEA, NORFOLK

FINAL REPORT

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GCB/RM PARTNERSHIP

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1.0 INTRODUCTION

1.1 A full planning application is to be submitted by RM Partnership on behalf of Plattens for residential development at 12 Quayside,Wells-next-the-Sea, Norfolk.

1.2 Planning approval requires a Flood Risk Assessment to be submitted to the Environment Agency as the site is shown as situated in tidal Flood Zone 3 benefitting from defences of both the Environment Agency's and North Norfolk District Council Strategic Flood Risk Assessment Flood Zone Maps. The Assessment is required to meet the requirements and general principles contained in the Planning Practice Guidance to the National Planning Policy Framework (NPPF).

The latest Agency Maps have been created as a tool to raise awareness of flood risk with the public sector and partner organisations such as Local Authorities, Emergency Services and Drainage Authorities. The Maps take into account existing flood defences and the site is shown as benefitting from defences.

1.3 Geoff Beel Consultancy was appointed on 5th January 2023 to undertake a Flood Risk Assessment.

2.0 LOCATION

2.1 The development is located at 12 Quayside, Wells-next-the-Sea with existing road level generally at 4.40m aOD. The National Grid Reference of the site is TF 91614379

2.2 The position and extent of the site are shown on Fig 1 – Location Plan as shown at the end of the assessment.

2.3 The site is shown within tidal Flood Zone 3, benefitting from defences as detailed on both the Environment Agency Flood Map for Planning and North Norfolk Strategic Flood Risk Assessment Maps.

3.0 THE SITE AND SEQUENTIAL TEST

3.1 The site is currently Seasons Restaurant and Plattens Fish and Chip shop.

3.2 The total area of development is some 380 sq. metres with direct access to the Quayside

3.3 The proposed site layout consists the conversion of the second floor to an apartment with an extended staircase from the first floor.

3.4 The site is located at 12 Quayside. As the proposed development is for conversion of existing premises to residential use at second floor level the Sequential Test and Exception Test may be considered as being met.

4.0 EXISTING FLOOD ALLEVIATION MEASURES

4.1 Wells-next-the-Sea is defended by two sea walls, an East and a West bank. The West bank generally runs northerly towards the sea whereas the East bank runs in an easterly direction along the coastline. The East Bank defence has a standard of protection of between 1 in 80-100 years at present whereas the West Bank provides defence to a 1 in 100 year standard. The East and West banks have crest levels of 6.5m aOD whilst the Wells Quay frontage which is constructed of stone blocks is increased during the winter months to a level of 6.0m aOD with damboards placed on top of the Quay.

When a flood warning is received residents should take any preventative measures to their own premises. The present day 1 in 200 year tidal event is estimated at 4.97m aOD. Existing Quayside carriageway level is generally at 4.40m aOD.

In the floods of 1953, the low lying area and St. Nicholas Church were flooded. However, most of the town is above the level reached by the 1953 and 1978 floods. A major area of Wells is protected directly by the improved defences of 1953 and 1978. It is imperative that the flood defence embankments be maintained in good condition to prevent further inundation of any land now protected. The more recent tidal surge event of 5th December 2013 reached a level of 5.16m aOD and parts of the town were affected by floodwaters overtopping the improved defences.

4.2 The Environment Agency are responsible for the East and West bank defences and have a regular programme of beach and defences monitoring to ensure that their assets are inspected and maintained.

4.3 The Quay frontage is a public highway and the responsibility of Norfolk County Council, North Norfolk District Council and Wells Town Council.

5.0 POTENTIAL SOURCES OF FLOODING

5.1 Two potential sources of flooding have been identified as a result of this assessment:

a) overtopping of The Quay with no temporary damboard defence
b) overtopping of The Quay and temporary damboard defence

5.2 The probability of flooding from a) is low as the mean high water spring tide is 2.75m aOD whereas Quayside road level is at 4.40m aOD. However if a surge tide of greater than 1.66 metres occurred outside of the high risk winter months water would flood the Quayside and adjoining properties.

The probability of flooding from source b) is relatively low when the Environment Agency defences are placed in sufficient time and to a level of 6.00m aOD. However this is only a defence during winter months when predicted surge tide events are common place and flood warnings are normally issued.

5.3 In order to satisfy the requirements of NPPF any new development has to be protected to a standard of 1 in 200 years for the lifetime of the development (100 years for residential development). The estimated 1 in 200 year flood level, associated with direct tidal flooding from the coast inclusive of climate change could rise to 6.04m aOD.

5.4 This would just exceed the defences to the Quayside which are put in place by the Environment Agency between October and April during each winter tidal season.

5.5 Flood resistant measures are already incorporated into the existing premises at ground floor level to further mitigate against any risk of flooding. Damboards are erected to the ground floor openings up to 1.80m in height (approx) 6.24 m aOD with all other openings such as airbricks or water inlet protected by covers and one way valves respectively.

5.6 The development is located at second floor level of the existing premises and well above the current 1 in 200 year return period tide level. Waterproofing measures and flood resistant construction are already incorporated within the development at ground floor level with safe access and egress during any tidal surge event still remains available via the rear pedestrian entrances to Malthouse Place.

6.0 EXTENT OF KNOWN FLOODING

6.1 During the preparation of this assessment, evidence was discovered of the Quayside being flooded.

6.2 It is acknowledged that flooding of the site did occur during the 1953 sand 1978 surge tidal events but since that time flood resistant construction has been incorporated into the premises at ground floor level. The Environment Agency also put in place temporary damboard defences to The Quay during the winter months.

7.0 PROBABILITIES AND TRENDS OF FLOODING

7.1 The probability of this development flooding from localised drainage systems is very low.

7.2 The probability of the site flooding with water from the North Sea is less than 0.5%. If the trend of climate change anticipated to occur continues over the next 100 years, there is a risk of overtopping at the 1 in 200 year return period event to the Quayside damboard defence erected by the Environment Agency each winter.

7.3 If under very extreme events, levels of floodwater from the North Sea rose to such an extent that the site was affected, the situation would not be sudden. It is very probable that sufficient time would be available to take precautionary actions to limit the extent and potential impact of flooding.

8.0 IMPACTS OF FLOODING

8.1 No significant impacts of flooding are anticipated due to the development incorporating flood resistant measures as well as the existing standards of sea defence during winter months.

8.2 The developer will ensure that the occupiers are sufficiently aware of the risk of flooding, and the standard of the existing defences. The Environment Agency provides a Flood Warning Service which includes Flood Warning Codes and uses direct warning methods where the risks and impacts of flooding are high. The site is contained within the Agencys Flood Warning Area DV2A. Indirect warnings are provided to all flood risk areas, even those at low risk of flooding. The main method is media broadcasts via local radio and also by television. In addition to direct and indirect flood warnings, the Environment Agency operates a 24 hour a day Floodline Service providing advice and information on flooding, contact tel no: 0345 988 1188.

The occupiers of the premises will be reminded of the need to register with the Floodline Direct Warning Service to receive any future flood warnings.

9.0 RESIDUAL RISK – EXTREME EVENTS

9.1 The residual risk from extreme fluvial events is low on this site, because of the proposed development incorporating flood defence measures to the appropriate standard.

9.2 The site is within tidal Flood Zone 3, benefitting from existing defences according to NPPF classification, with a low risk of flooding due to the proposed residential development being above the 1 in 200 year predicted tide level. The Environment Agency Flood Map for Planning has been produced irrespective of existing flood defences and standards of protection.

9.3 In the very extreme event of the winter damboard defences being overtopped, there is little risk of flooding to the development positioned at a minimum of 4.40m aOD with flood resistant measures in place at ground floor level.

10.0 CONCLUSIONS AND RECOMMENDATIONS

10.1 As a result of the assessment, the following conclusions have been reached:-

- The site is in tidal Flood Zone 3, benefitting from existing defences with the actual risk of the development flooding from the sea is low (less than 0.5%)

- The existing premises have incorporated necessary protections to provide safe refuge at first floor level. The ground floor positioned at a minimum level of 4.40m aOD has flood resistant construction up to 6.24m aOD to ensure the safety of the occupants.

- Flood Warning and Evacuation procedures are already in place and site users will be safe as they will have unaided movement at second floor level. The occupants of the premises should register with the Floodline Direct Warnings Service. A Flood Warning Plan is already in place to the satisfaction of the Council's Civil Contingencies Manager.

- Safe refuge is available at first floor level of the premises with flood resistant measures incorporated at ground floor level.