

FLOOD RISK ASSESSMENT

November 2018

Erection of four terraced residential dwellings, garden/cycle storage sheds and associated car parking, utilizing the existing access.

Former Hotel Tennis Courts adjacent to the
Royal Norfolk Hotel, West Street, Bognor Regis, Sussex, PO21 2LH

Arun District Council reference: BR/214/18/PL

Assessment and mitigation:

The proposed development site is located toward the southern end of West Street on its western side with its southern boundary approximately 96m from the promenade which makes up the sea defenses. In view of the close proximity to the sea, the assessment will focus on sea flooding rather than river flooding.

The site plan showing the areas of flood probability have been interpreted from the Environment Agency flood zone maps as accurately as possible given the scale of the map. For the purposes of this exercise the precise accuracy is not important.



The assessment applies the 'exception test' to demonstrate and help ensure that the potential flood risk to people and property will be managed satisfactorily to allow the development to go ahead. For the purposes of this assessment, the proposal is considered to represent a 'more vulnerable' form of development, comprising less than 1ha and split into three separate categories, namely:

1. The built development of garden sheds and car ports considered to be a minor development in flood risk terms;
2. Permeable areas such as car park, paths and soft landscaping; and
3. The built development of four terraced dwellings.

The denoted flood zones show a direct correlation between the distance from the sea front and the ground levels with:

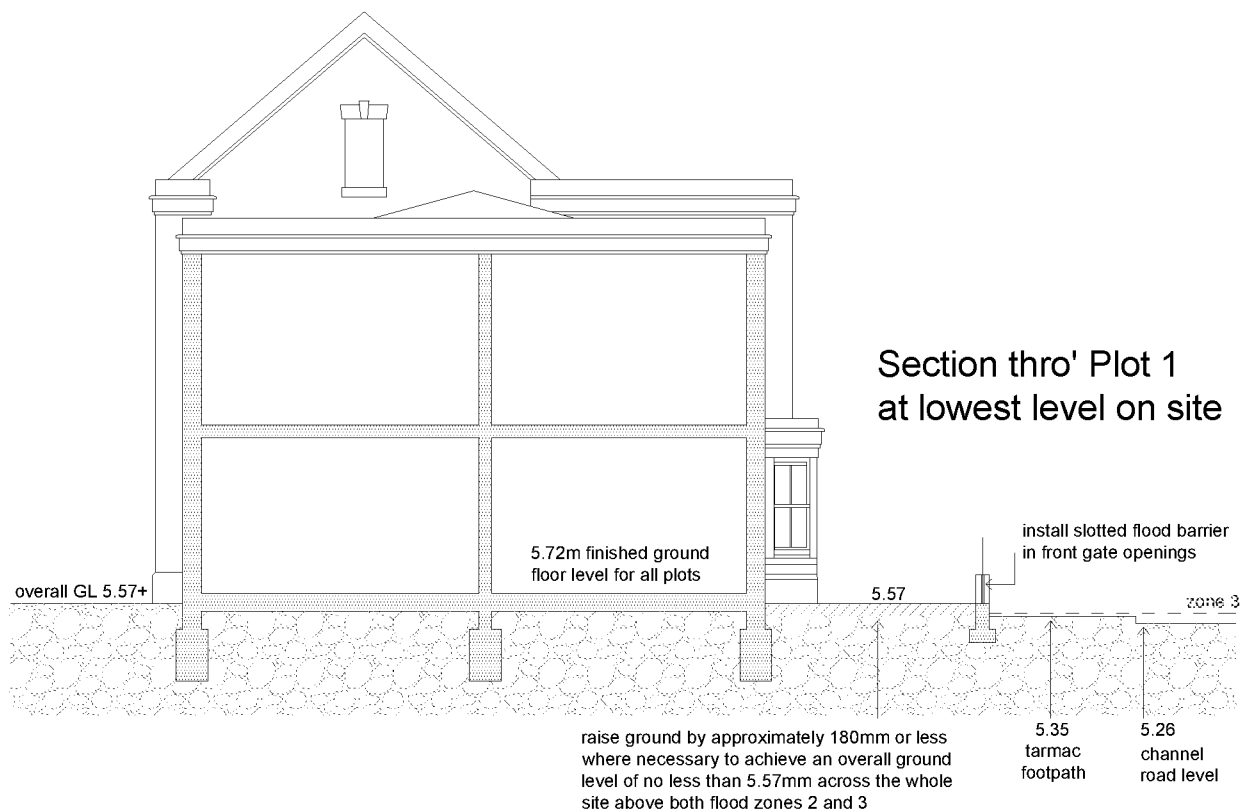
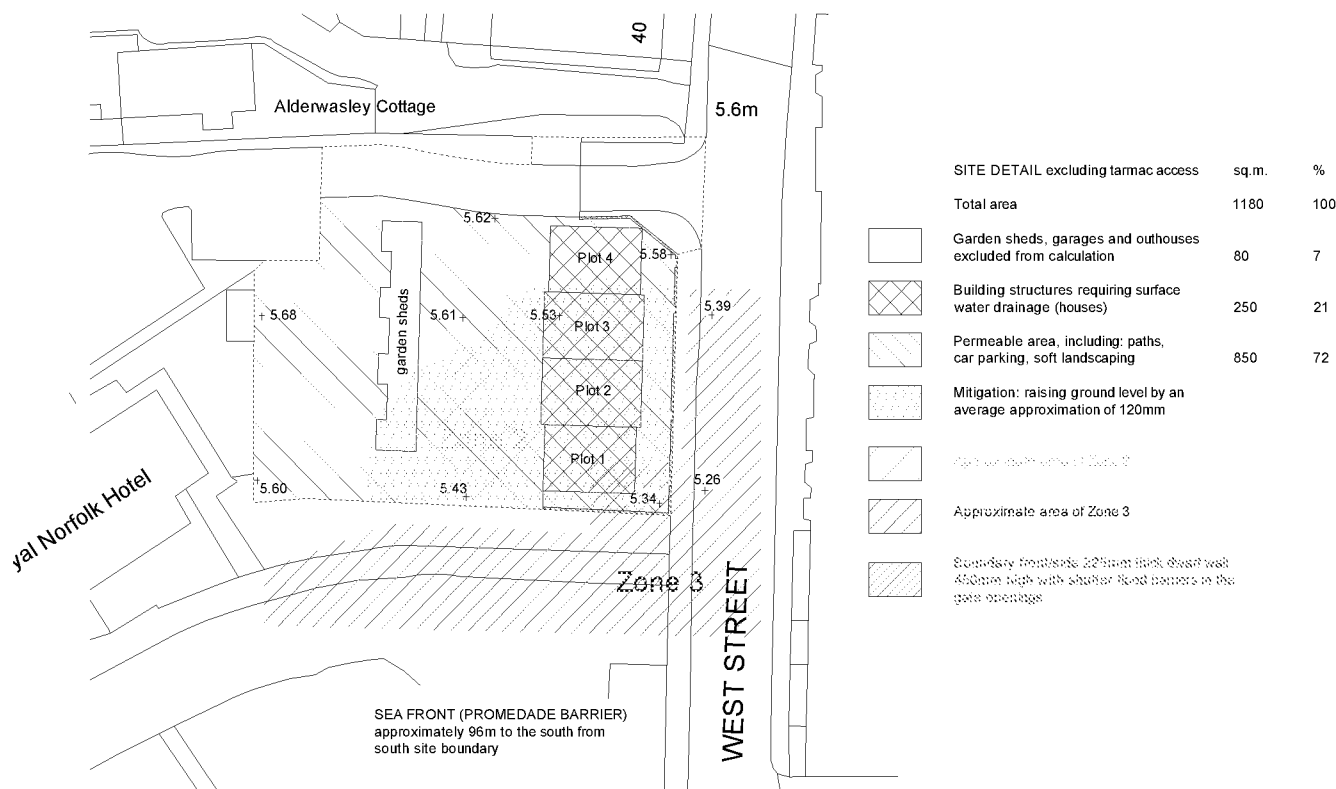
- | | |
|--------|--|
| Zone 1 | (low probability)
starting at a contour height of 5.5m and above where there is a 1 in 1000 annual probability of flooding. |
| Zone 2 | (medium probability - hatched light blue)
extending to a contour height below 5.5m where there is between 1 in 200 -1000 annual probability of flooding |
| Zone 3 | (high probability - hatched dark blue)
extending to a contour height of 5.4m where there is between 1 in 200 or greater probability of flooding |

The topographical existing ground levels show the lowest level is located in the southeast corner at 5.34 rising gradually to approximately 5.6m in the southwest and northeast corners and 5.7m in the opposite corner. Interpreting the levels into flood zones, demonstrates that the most probable small area is located in the southwest corner (zone 3) diminishing to zone 2 in an outward projection until approximately half the site projection where the probability diminishes to zone 1.

The plan demonstrates that plot 1 in the southeast corner is the only plot effected by zones 2 and 3, and a small section of plot 2 partially falls within zone 2. Plots 3 and 4 fall within zone 1. The plans show that it is intended to construct the terrace on the same higher level falling outside zones 2 and 3 where the predominant ground level is 5.6m. Building Regulations standards requires the finished ground floor level must be no less than 150mm above ground level. In practice, this will mean ensuring that the paths, patios and gravel area finished levels are approximately 100-150mm above the existing lower ground levels in the southeast corner (plot1).

Constructing the terrace of houses at the predominantly higher level will mitigate the potential impact of flooding to zone 1 where the annual probability is 0.001%. While this may mitigate the probability within the site, consideration has also been given to the zone 3 area immediately adjacent to the site beyond the southeast corner. To mitigate any potential impact of flooding from this area, in particular plot 1, the inclusion of the dwarf brick east and part south boundary walls are designed to be of a flood

resilient and resistant construction to act as a potential flood barrier together with the installation of a frame to facilitate sliding shutter flood barriers in the gaps providing pedestrian gate entrance.



The previous use (brownfield) of the whole site related to tennis courts serving the adjacent Royal Norfolk Hotel. The construction comprised 1180sq.m of impervious tarmac surface enclosed with concrete kerb edgings, compared with the proposed development limiting the impervious built area to 330sq.m (including houses and outhouses) representing a net reduction in surface water run off area of 850sq.m or 72%. The remaining 850sq.m will comprise:

- Car parking area permeable brick paviers
- Paths unjointed paving slabs
- Hard landscaping loose gravel with plants
- Garden grass and earth flower beds

Conclusion:

The proposed development will require minimal changes to the existing topography, which practically amounts to nothing more than general site preparation and levelling, that will result in an overall level exceeding the zone 1 contour level. In addition, mitigating measures relating to the boundary walls and sliding shutter barriers will ensure that no flooding impact will occur as a result of flooding beyond the site boundaries resulting in a flood free and safe zone for the occupants and the dwellings.

In the event that planning permission is granted, to safeguard the suggested mitigating measures designed to ensure the lowest risk of flooding, we suggested imposing the following conditions (subject to the Council's wording), namely:

1. The whole site will be constructed to a finished ground level of 5.57m or above with an associated finished ground floor level of all plots to a height of 5.72m or above.
2. Prior to occupation, a 225mm thick brick wall shall be constructed to a minimum height of 450mm with framework to accommodate sliding flood barrier shuttering in the gaps providing gated pedestrian access.
3. All hard and soft landscaping shall be constructed in a manner that allows surface water to permeate into natural drainage.

Should the Council require any additional information, please do not hesitate to contact the agents.

