

SGN Gas Holder I Reading

Gas Holder Document

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1. Executive Summary

As a part of the design review process, the team has undertaken a thorough review of the existing gasholder on this site to reach a fully informed decision as to whether it could be retained or not, and the effect this might have for the redevelopment of the site. In order to fully explore this question this report considers the following determining issues:

- Historical merit and significance
- Engineering matters
- The economics of retention and/or re use
- Design consequences of retention
- Design opportunities of removal

To reach a summary position, each of the above issues has been carefully considered within this document. This has formed the basis for the design development that is now moving on a journey toward a detailed planning application.

2. Historical Assessment

Montagu Evans have been instructed to undertake an historical assessment of the gas holder structure, specifically as a result of their work with National Grid and Heritage England in which they were commissioned to undertake a nationwide review of gas holders to determine the extent of those gasholders of historical merit. Their full report will form a part of the planning application submission within a 'heritage, townscape and visual impact study'.

This site forms a residual part of a once much larger gas works site. The first gas holder at Kenavon Drive was erected in 1880 with the remaining structure on our site erected in 1916. The existing gasholder was decommissioned in 2008 and the site now functions as a depot. The first gas holders were designed in 1782 and the first commercial gas holders developed in the early 19th century. The example on this site was constructed by C&W Walker, and is of a modern frame guided construction with 18 lattice columns and a nominal 2 million cubic feet capacity. It is known as a 'Type 37' gasholder which became very popular in the 20th century. Good examples of this can be found elsewhere (the earliest is in Manchester) and whilst some Type 37's had rolled sections to give the gas holder a neater appearance, this is not included in Reading where the design is wholly utilitarian.

Historic England, having undertaken a nation-wide survey, identified approximately 150 sites of historical or architectural interest related to the gas industry. The gas holder at Kenavon Drive was not identified as having any special interest as part of that review.

The gas holder is not statutorily listed nor is it included within a Conservation Area. It is not identified as a locally Listed Building by the Council. Whilst the gas holder does hold some local interest as the remaining identifiable feature of a once much larger gasworks, it has lost its original context through demolition and removal, and now sits isolated within a new residential setting to which it makes no positive contribution. This gasholder is not technically innovative and does not exhibit the kind of decorative detail that is otherwise associated with the majority of listed examples such as those at Kings Cross or Bromley by Bow.



Historical aerial view, 1932

3. Engineering Matters

Capita and WSP have been engaged to consider the sub structure and super structure design and implications for working on a former gas site. The Capita team were responsible for the redevelopment of the adjacent site and so are well versed in the ground conditions and risks associated with working on former industrial sites that have enjoyed a gas production use. The engineering advice has covered both new buildings, and challenges, were the gas holders to be retained and re-utilised for anything requiring load (parking, development etc).

If the gas holder structure was to be re-used and incorporated into the new development in its original form and location, then it would need to be dismantled, removed, cleaned, and then re assembled and strengthened with additional structure in order that it can support new building. If it was to be left untouched, it would require repair and upkeep as mentioned above, but importantly would prejudice the redevelopment of the site. Notwithstanding the design implications which are discussed later in this report, the remaining land would be too small to accommodate the development necessary to afford to regenerate the land in what is already a very constrained site. The site would as a result also remain classified as a depot.

The further advice received from the

engineering team relates to the potential redevelopment opportunities for the site. Their advice is that the loading of any new building sitting within the footprint of the gas holder site needs to be limited to 4 storeys. The reasoning for this is that greater height in combination with the ground conditions (the ground within the footprint of the gas holders is largely made ground and contaminated ground) would require piled foundation solution, which in turn would breach the clay layer and potentially allow contamination to reach the water course. At 4 storeys, a different foundation design is possible that avoids this design solution.

The summary in engineering terms therefore is that any redevelopment on the location of the gas holder is limited in scale, and that the retention for re-inclusion would be prohibitively expensive as the costs wouldn't be offset by inherent values attainable in this location.

4. The Economics of Retention and/or Re-use

As a result of the engineering advice, the work required to incorporate the gas holder has been explored. The other side of the equation is value to see if this cost can be supported.

The limitations on the scale of any redevelopment on the gas holder site are a key constraint on value as only 4 floors of accommodation is possible within the footprint of the existing structure. In discussion with the client, we are also advised that in order to make redevelopment viable on this site, a certain quantum of development is required. This assumes some contribution toward the infrastructure serving the site, affordable housing, and also to deal with the engineering costs and remediation associated with redeveloping a former gas site.

We have looked at examples where gas holders have been successfully re used (usually as a result of their Listed status, as opposed to a commercial preference) and Kings Cross is one such example. The significant difference between our site and the Kings Cross site however, aside from our limit on scale, is the value profile of the finished project.

At Kings Cross 1B apartments of 559sqft are priced at £950k, 2B apartments at between £1.35m and £1.9m, and 3B apartments at £2.775m. The construction cost alone for Kings Cross, by way of illustration, exceeds the forecast resale values anticipated at Kenavon Drive.

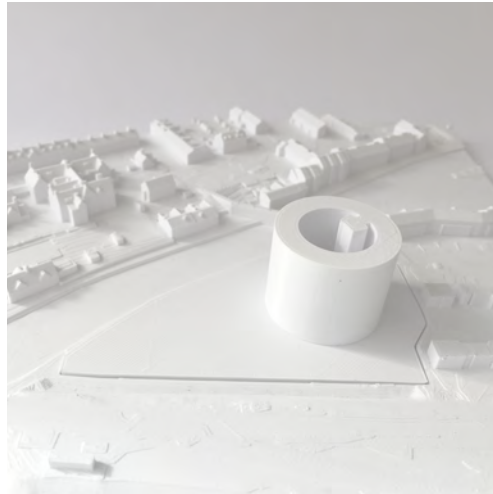
5. Design Consequences of Retention

Prior to receiving any of the above information, we explored a wide range of design concepts that are illustrated below.

These included the re-use or provision of a new building within the footprint of the gas holder. Our view was that a new building in this location and of the same scale would be over bearing upon its neighbours and render the balance of the site very difficult to resolve well.

Given the required parking provision for the site, there is a risk of the site becoming dominated by car parking which is not in line with architectural vision for this important site.

The 'Kings Cross' approach was also explored but of course has the same relationship with the site and the adjoining buildings, and so was in our view not a good design solution. The perceived bulk of an 'infilled' gas holder would be very different to that of a light, permeable structure and so we moved to explore alternative layouts. The subsequent engineering and economic input supported this approach.





View along Kennet Walk, looking east

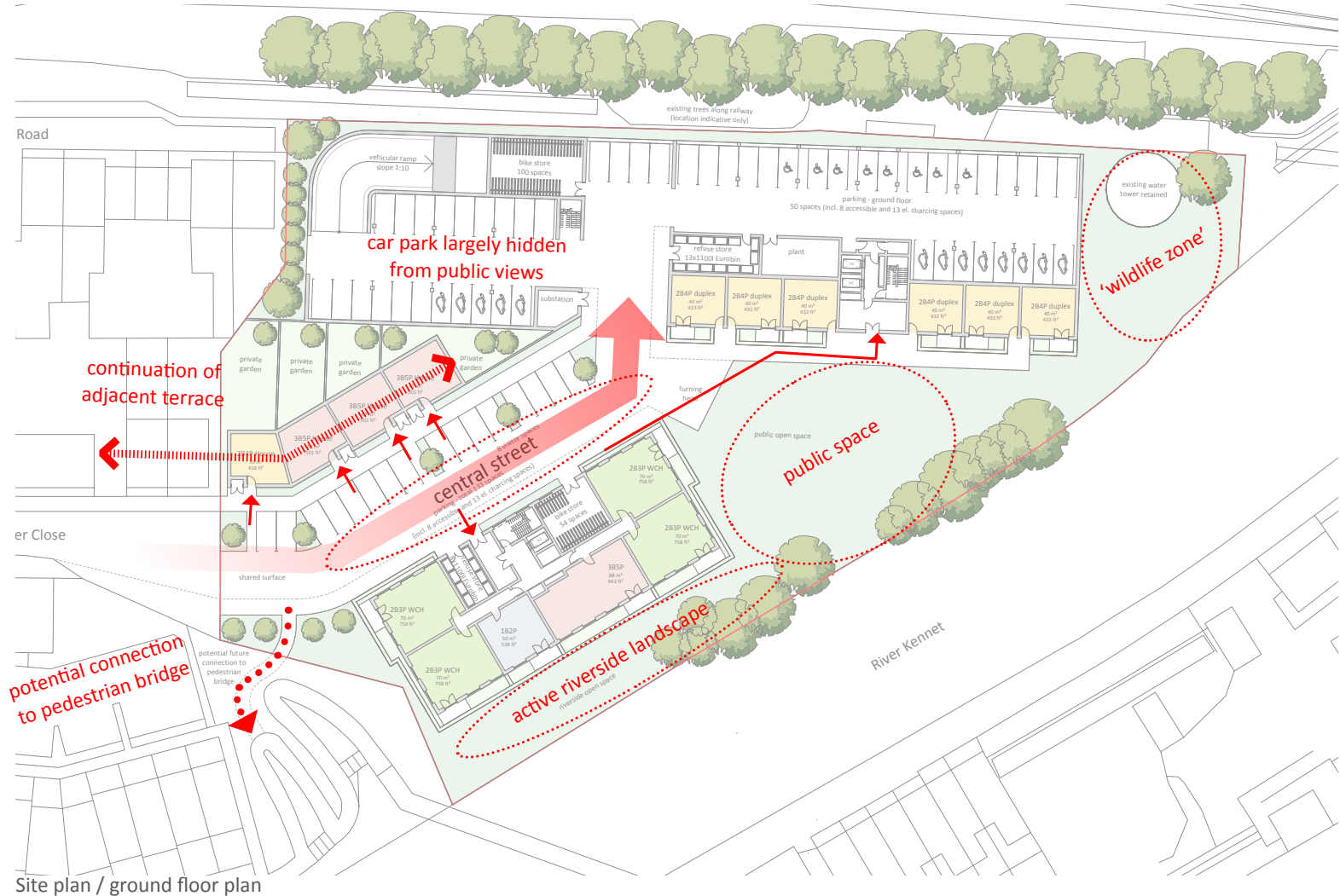


View along the River Kennet, looking east

6. Design Opportunities of Removal

Along with exploring options to retain and reuse the existing gas holder, a number of options based on its removal have also been considered. The preferred option has been developed through a number of consultations with officers, local residents and Design:South East review panel.

The scheme comprises three principal blocks: a row of terraced houses, a 4 storey river facing block and a 11 storey building in the eastern part of the site. The removal of the existing structure and the current layout delivers a much better scheme that offers more benefits to the surrounding community as well as within the wider context.



The proposed scheme delivers a number of benefits which would not be provided if the gas holder were to be retained. These include:

- The three principal buildings are arranged around a central street with a clear access route and a defined sense of arrival.
- Despite the large number of parking spaces provided, car parking is well integrated into the scheme and screened from public views.
- Greater variety in the mix of residential units; including good quality houses, duplexes and flats.
- The provision of affordable housing will be easier to accommodate with multiple cores and a greater mix of units.
- There is a clearly defined river frontage, allowing for a 10m buffer as required by the Environment Agency, and better replicating the existing more intimate relationship with the river elsewhere in the area.
- The site layout allows for a much larger public open space that can be enjoyed by the future residents and visitors alike.
- Ecology and landscape improvements with a potential connection to the existing pedestrian bridge could be more readily accommodated.
- There is a clear hierarchy of volumes, creating a good massing relationship within the scheme itself, and the adjacent developments. The tall building is located more appropriately, away from the low rise properties, creating a much friendlier neighbour with minimal, if any, impact in terms of privacy and overshadowing.
- While the critical mass requires a substantial building, the current massing and site layout will ensure that the building appears slender, unlike the consistently large scale of a tall cylindrical building.
- There is a potential to create great architecture, inspired by the local industrial heritage and using locally found materials, that will act as a focal point at this important gateway location.

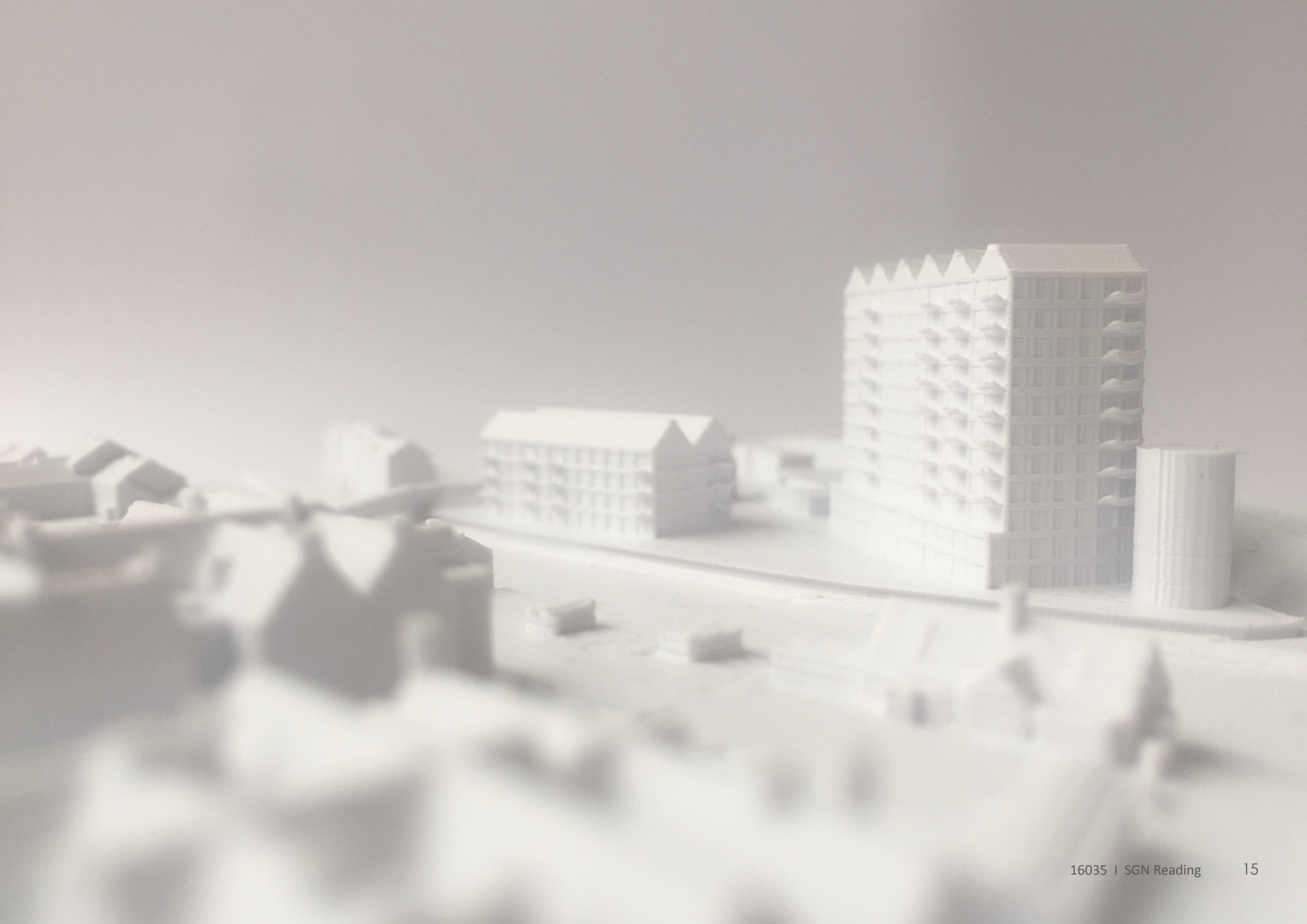
7. Conclusion

Following a full assessment of the heritage, economics, engineering and design challenges and opportunities that come with exploring removal of the existing gas holder, the overwhelming conclusion is that the retention would prejudice viable development. Furthermore, this report illustrates that as a result of the retention of the gas holder a number of significant enhancements would be denied, including:

- Public access to the river
- Significant open space and ecological contribution
- Affordable (and private) housing
- The incorporation and enhancement of the existing pedestrian bridge
- A possible improvement to the topography and townscape of the site.

On the other hand, the assessment sets out the following benefits that come with the removal of the gas holder.

- Clear layout and sense of arrival with well incorporated parking
- A greater number of good quality units in range of types, sizes and tenures
- Strong landscape design with large open space and ecology improvements
- Potential enhancement of the connection to the existing pedestrian bridge
- Good massing relationship with the adjacent developments with minimal, if any, impact in terms of privacy and overshadowing
- Potential for great architecture and a new focal point at this important gateway location



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