APPENDIX A

Appendix 1. Summary of the reference case (refurbishing the exisiting facility)

1. Background to the current facility and its condition

1.1 Of all the city's sport and leisure facilities, the need to replace the King Alfred Leisure Centre is the most pressing. The current facility remains popular with users. However, parts of the building date from the 1930s, and the building falls significantly short of modern standards for energy efficiency or space efficiency. It does not meet modern users' expectations.

1.2 The seafront location has contributed to weathering to the building's fabric and foundations. That in turn has contributed the increasing costs of maintaining the facility, and the increasing challenge of keeping it open and operational.

1.3 Due to its age and condition, the centre also requires careful management of health and safety issues. Some of the basement areas are no longer in use being of particular high risk because of poor air quality and the presence of asbestos. This is reflected in the high costs of the reactive and planned maintenance that has been required for the facility during recent years.

1.4 These costs include significant recent investment to replace major plant including boilers, control panels, pool plant, and improvements to air handling and ventilation. Additionally, there have also been costs associated with reactive maintenance to address issues not previously anticipated. This is likely to continue given the age and condition of the building.

2. Refurbishment of the existing facility

2.1 As a baseline 'reference case', the project business case examines the cost and practicality of refurbishing the existing facility. This work shows that an estimated £13.98m would be required to carry out remedial works to enable the facility to continue operating for a further 10 years. It is important to note that these works would not deliver more or better facilities and would not improve the energy efficiency of space.

2.2 The works would entail:

- asbestos removal
- structural concrete repairs,
- reinforcement of foundations
- replacement of walls
- masonry strengthening
- renewal of roof coverings
- redecoration
- replacing the main plant and pool plant and other M&E works

- external works and services including external landscaping.

2.3 The works would be expected to extend the usable life of the facility by around 10 years. At that stage, the refurbished King Alfred would then still need to be replaced with a modern facility.

2.4 During the extended life of the refurbished King Alfred the running costs and energy efficiency, although improved, would remain high. The new boilers and other plant are expected to provide more efficient heat generation. However, heat losses through the fabric of the building would not be significantly improved by the works listed above. Therefore heat loss, heating costs, and emissions would remain much higher than for a new build.

2.5 Similarly, the refurbishment works would not address the poor space efficiency of the building. Large sections of unproductive corridor space, stairwells et cetera would remain which would require heating, lighting, cleaning, and maintenance. Energy costs and maintenance overheads would consequently remain higher than for a new facility.

2.6 The refurbishment would not significantly improve the facilities available to users of the pools, gym, studios, and sports hall. This is because there are practical limitations arising from the design, layout, construction and condition of the current facility that restricts the extent to which it could be improved by refurbishment. Examples of these issues are set out below.

Sports halls

2.7 The current sports halls are located within the original 1930s part of the building. They are constructed directly above what were the original swimming pools, with the size and shape of the pools therefore dictating the size and shape of the sports halls.

- The sports halls are not built in line with Sport England or sports' national governing body (NGB) requirements. The run-off outside the lined areas is constrained, and there are no spectator facilities, which limits the extent to which competitive events and matches can be held.
- The main sports hall at King Alfred is arranged into a single row of 5 courts, which greatly limits the extent to which the hall can be used and adapted to accommodate different activities and makes simultaneous use for two different sports generally impractical.
- The purpose-built main sports hall proposed for the replacement facility would feature 6 or 8 courts arranged into two rows. This would enable the hall to be split in half or even quarters so that, for example, five-a-side football could take place on one half of the hall with badminton taking place on the courts on the other half. That degree of flexibility is designed-in to modern sports facilities. It enables the operator to respond to customer demand and maximise the use and value of the facility's assets.

- The halls have no modern ventilation or heating systems. One consequence is that the halls do not confirm to Sport England guidance on the desired number of fresh air changes per hour.
- The halls both lack spectator space, meaning they are not suitable for hosting events or competitions. This is one of the drivers prompting local clubs to hold their competitions outside of the city.
- The heights of the ceilings, windows, and skylights reflect the original use as pool halls. The natural lighting requirements for newly designed sports halls is very different and the impact of bright sunlight creating glare for users of the current facility is an ongoing issue.

Swimming pools

2.8 The current swimming pools are located in the rear extension to the facility which was added in the 1980s. They comprise a six-lane 25m pool, a leisure water area, and a separate small, shallow, teaching pool. Whilst a refurbishment could improve the finish of the pools with new tiling, there are other more fundamental issues about the design of the pools which a refurbishment could not address. These are:

- The main 25m pool and leisure water area use the same shared body of water and have a common filtration system. This means it is not possible to independently control their temperatures. To deliver the best user experience the leisure water should be maintained at a higher temperature than the main pool, but this is not possible with the shared body of water. In addition, any contamination in one pool, or any issue with the filtration system would result in both pools, rather than just one, being closed.
- The main pool has only 6 lanes, rather than 8, which limits use for competitive swimming clubs.
- Many of the swimmers we spoke to during the engagement work, particularly the younger women and girls, reported feeling uncomfortable about the lack of privacy. Whilst it is common to have the main pool overlooked by the gym, the size and layout of the pools and the shallowness of the teaching pool doesn’t can’t accommodate sessions for, say, faith groups. This issue was raised by some of those we spoke to during engagement as a barrier to them participating.
- The pools do not now operate as originally designed in relation to the pool water circulation system. There is no water inlet in the leisure water area (due to a historical pipework failure). This means that the circulation system does not perform as designed or as well as a modern system. As a result, there is limited turnover and agitation of the leisure water, which could result in increased contamination.
- Whilst some improvements to the plant room have been made over the years (including replacement of ozone with ultraviolet (UV) for secondary disinfection) further improvements and efficiencies are not practical.

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Gym

2.9 The gym is located close to the main entrance and is separated from the reception area by transparent partitions and overlooks the swimming pool. The space occupied by the gym was previously the location of the café, and as with the sports halls is not a purpose-designed space.

- The current gym accommodates a total of 31 stations with a mix of cardio-vascular (CV) and fixed resistance machines, with some free weights. Whilst the slightly unusual shape of the gym space may have worked well in its former use as a café, it limits the ways in which gym equipment can be deployed. With only 31 stations it is smaller than would be expected for a sports and leisure facility of the King Alfred's size. It could not accommodate the minimum 100 stations proposed for the new West Hub. Gym and fitness remains one of the most popular ways for people to be active in our city, and therefore increasing the capacity and performance of our gyms will enable us to meet the demand now and in the future.

- The small capacity of the gym limits the number of members that can be signed up, which in turns impacts the financial viability of the whole facility. Health and Fitness membership - which includes the gym - is one of the most important income sources for a modern leisure centre, generating much more revenue per square metre than sports halls or studios.

- The lack of space around the gym means the studios are not in adjoining rooms and the spin room is located at the other side of the building. Ideally, the health and fitness suite should be adjacent to the studio space, which could be achieved with a new build but not with a refurbishment.

- The gym needs to be maintained at a cool temperature with low humidity. However, its location next the pools with only glass separation means that it frequently becomes hotter and more humid than is desirable, with heavy condensation sometimes forming on the windows and other surfaces. This also results in air conditioning units having to work much harder to maintain suitable conditions, resulting in greater energy consumption, more maintenance, and shorter lifespans for the units.

Voids, wells, and roofs

2.10 The design of the 1930s parts of the building features a number or prominent void or well areas which are not readily accessible. These voids introduce a number of issues, in particular:

- They represent further unused space within the footprint of the building. This adds to the space efficiency issues outline above.

- They add additional surface area to the building. In many cases the glazing is in poor condition, all of which adds to the heat loss and energy inefficiency issues described above.
- They create a challenging maintenance problem. The void areas are very difficult to access, so much so that arial drones had to be used to undertake the recent survey of the building. Pigeons and gulls have accessed the area causing damage with guano and droppings which, given the accessibility issues, is very difficult to manage and rectify. The internal walls of the voids are also subject to weathering and climatic damage, which is much more difficult to mitigate and repair than for external walls which can be accessed normally.
- In addition to the two large main voids, the 1930s building has other similarly problematic features including an open tower and a well in the ballroom area which is a full height (four storey) void which also attracts gulls, pigeons, and general weathering.

Energy efficiency

2.11 The building's layout also gives rise to wider challenges heating and lighting.

2.12 A single plant room is equipped with the three boilers and the control systems which provide heating for all parts of the building including the pools and hot water for the changing room showers. The building's layout is a compromised combination of repurposed elements from the 1930s and new build from the 1980s. This means that the heating system has to pump hot water through a very large and complex network of pipes which take long, circuitous routes around the whole building.

2.13 This plumbing arrangement is highly inefficient, with lots of lost heat energy through the old pipework, as well as creating multiple points of failure and potential for leaks in locations that are difficult to access. There is no plan of the pipe system, having been adapted numerous times over the years which also complicates any redevelopment or remodelling of the existing building.

2.14 It is likely that the 1930s parts of the building will not be suitable for cavity wall insulation. As part of the objective of refurbishing the building would be to preserve the character of the 1930s building, external cladding could not be used to improve energy efficiency. There would be limited scope for internal cladding, and use of internal cladding would result in the loss of even more internal space adding to the compromises set out above for areas like the sports halls.