

Helensburgh Community Council

Proposed Helensburgh Waterfront Development 18/01614/PP

Memo on Building Wave Overtopping Risk, Location,
Orientation, Glare and Alternative Proposal

10th January 2019



1 INTRODUCTION

This memo addresses the first part of the PPSL Committee's amendment from the meeting in December 2018, i.e. a request to the Planning Officer to:

Seek further information from the Applicant to ascertain whether altering the location of the building would change the flooding risk factor leading to vulnerability of the building

(We will address the second part, requesting additional flooding information, in a second memo.)

We demonstrate that moving the building further from the seawall would:

- reduce the amount of wave overtopping at the building, and
- remove the requirement for the additional 0.5m seawall that was added by the applicant in December as an inelegant and unsustainable response to the issue at a cost of £20,000 (as estimated in a response to a written question to the H&L Area Committee in December 2018).

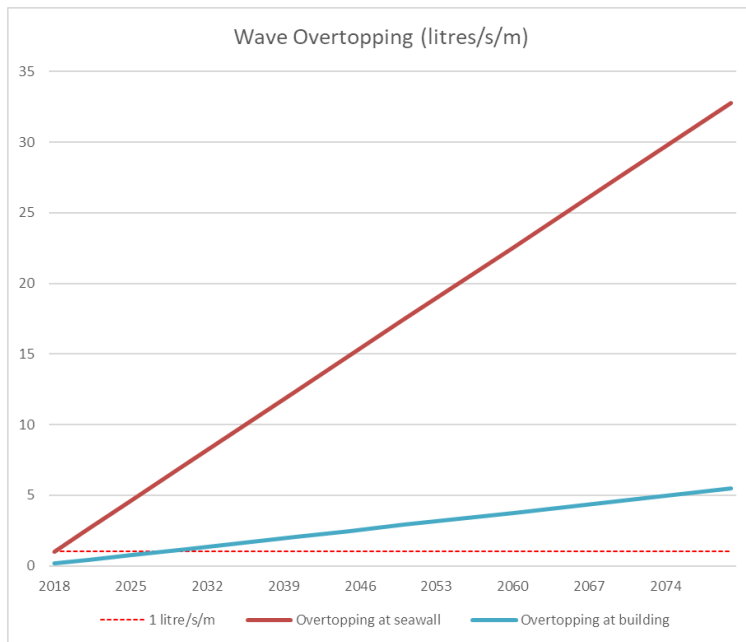
We show that this necessary move of the building away from the seawall mandates that the building be positioned as per the 2012 Masterplan proposal, and that this position has been affirmed by the community. We also include examples from existing leisure centres on Darnton B3's website that demonstrate glare cannot be a deciding issue for the orientation.

We conclude by identifying the opportunities that this building location then offers in terms of additional functional (coach parking) and leisure (skatepark, etc) features in a more holistic approach to the site.

2 WAVE OVERTOPPING IMPACT

The additional 0.5m seawall that was added by the applicant in December is, as described by the Councillors at the PPSL meeting, a "disappointing" and unimaginative approach to the flooding problem. The heightened seawall would be an unsightly addition to the Helensburgh seafront, would block the view, and would be an unsustainable approach to the issue. We therefore assume that the sea defence has to be reverted to the original proposed 5.4m AOD level.

Kaya's Flood Risk Assessments do not include the wave overtopping amount for 2060 for this 5.4m level, so we have interpolated backwards from the value in the Kaya June report for 2080. This corroborates the Flood Risk Advisor's statement in November 2018 that the sea defence would be untenable for the building (positioned 6.3m away) by 2030, and therefore is a sensible interpolation.



This calculation shows that 22.53 litres/s/m will overtop the sea defence in 2060.

From Eurotop, the amount of wave overtopping at the building can be calculated by dividing the figure at the seawall by the distance from the seawall.

Hence, the amount of water hitting the building at alternative distances from the seawall in 2060 would be:

Distance	Overtopping amount (l/s/m)
6.3m	3.58 – Unacceptable
23m	0.98 – Acceptable
45m	0.50 – Acceptable

The acceptable limit of wave overtopping at a building is 1 litre/s/m (per the Eurotop wave overtopping manual, 2007).

Hence:

- The building located at 6.3m away from the sea defence would be subject to damage.
- It would have to be located 23m away from the sea defence to be below the acceptable threshold, but this would leave 'dead space' between the sea defence and the leisure centre.
- For the reasons below, we recommend that it be moved to the location in the 2012 Masterplan, which puts it 45m away from the sea defence and hence well protected from wave overtopping.

3 ALTERNATIVE LOCATIONS AND ORIENTATIONS

3.1 MOVE BUILDING 6M FURTHER NORTH

Consider if the building was moved 6m further north than its current proposed location, as per this diagram.



As per the calculation above, it would be less susceptible to wave overtopping than its current proposed location, but:

- One row of car park spaces would be lost (circled in yellow). This would reduce the car park by at least 20 spaces which, as per the Traffic Analysis report, would leave insufficient spaces for the pierhead site.
- There would be 'dead space' between the leisure centre and the seawall (in blue). This could not be used for parking, and would be in front of the blank side of the leisure centre, hence would not be a desirable space to utilize.
- Overtopping waves would still have to be drained from the space highlighted in blue, which would be an untenable space for the public during storms.

3.2 MOVE BUILDING CLOSE TO EXISTING SWIMMING POOL & RETAIN PROPOSED ORIENTATION

Consider if the building was moved to minimize the impact of wave overtopping but without reorienting the building (the building is moved to the location in red below, with the existing site plan retained in greyscale).

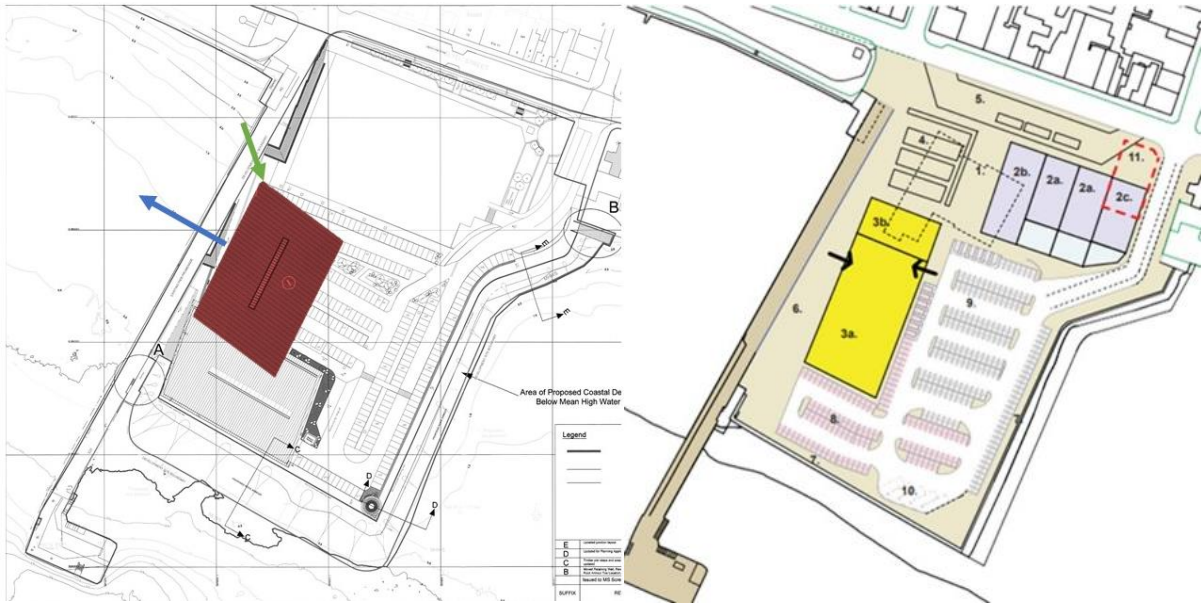


This building would be protected from wave overtopping, but the overall site layout would be inconsistent and inefficient.

- The building would effectively be a barrier across the pierhead site, limiting both access to the south section and views from the town.
- The entrance to the building would still be to the northwest (as indicated by the green arrow). This would be convenient for the town, but the majority of the car park would be at the opposite side of the building.
- The swimming pool windows would look directly out on the rear premises of the area identified for retail units.
- If no further development of the site was completed (if the retail units never came to fruition) then the building would appear abandoned within a sea of car parking.

3.3 MOVE BUILDING CLOSE TO EXISTING SWIMMING POOL & SWITCH ORIENTATION

Consider finally if the building was moved to the same location as 3.2 and then reoriented by 90° and flipped such that the swimming pool windows looked to the west (as indicated by the blue arrow). For comparison, the 2012 Masterplan is included in the diagram on the right to demonstrate that this is completely consistent with the Masterplan.



This building would be protected from wave overtopping by its distance from the seawall, and would offer the following additional benefits.

- The entrance would still be to the northwest, which would be easily accessible by pedestrians from the town and also accessible from the majority of the car park.
- The overall site layout matches the 2012 Masterplan and is consistent in layout – the leisure features are to the west of the site, with parking flowing around the building. Section 6 enlarges on how this positioning provides opportunities for a ‘destination’ leisure environment.
- The swimming pool would benefit from views to west-north-west, approximately along the line of Helensburgh promenade.
- The low edge of the roofline would be to the west and therefore would present a smaller cross-section to the prevailing winds than the proposed design (which has the high edge to the south).
- The upstairs gym and studios would have views to Ardmore and Greenock with a potential option, if the first floor layout was switched with the gym to the south, the gym could take maximum advantage of views in this direction.

4 COMMUNITY VIEWS ON LOCATION AND ORIENTATION

To address the PPSL committee’s concerns in November that there would be no consensus on the location or orientation of the building, Helensburgh Community Council undertook an online survey in early December. This was publicized through our Facebook page and therefore should have had only local input.

We were impressed to receive 400 responses within 24 hours of opening the survey, which indicates that the local community cares deeply about this subject. We received a total of 634 responses in one week, with results as follows.

In terms of location:

- 93% wanted to ensure that the building was protected from damage by the flooding for its lifespan.

- 85% wanted to move it northwards if that would ensure it was protected while reducing the cost of the sea defence.

In terms of orientation:

- 55% wanted the swimming pool to face towards Rosneath and Helensburgh promenade.
- 53% did not care whether the gym looked towards Greenock or Craigendoran.

Hence the view from the swimming pool windows was significant to the community, but that from the gym was not particularly significant.

5 GLARE

The applicant's response to the Community Council's submission to December's PPSL meeting majored on the issue of glare. The applicant said in that response:

"We cannot emphasise strongly enough the importance that we place on our design responsibility and liability, which is set out in various statutory provisions. A simple but important example would be the duties of the Designer under the Construction (Design and Management) Regulations, Section 9, which states unequivocally:

'(2) When preparing or modifying a design the designer must take into account the general principles of prevention and any pre-construction information to eliminate, so far as is reasonably practicable, foreseeable risk to the health or safety of any person...'

'(3) If it is not possible to eliminate these risks, the designer must, so far as is reasonably practicable –

(a) take steps to reduce or, if that is not possible, control the risks through the subsequent design process;...'"

We completely agree with the applicant here.

What is inexplicable, though, is that the applicant appears to have given no weight to the dangers caused by flooding and wave overtopping in preparing the design.

The project team recommended in December 2017 that the Helensburgh and Lomond Area Committee approve the leisure centre location be moved from the 2012 Masterplan position to be "located at the southern end of the pier head". Darnton B3, the designers, were involved in this recommendation and yet they did nothing to highlight the dangers that would result to users of the building as a result of the placing it in the most vulnerable location on the site.

Indeed, despite having to increase the proposed sea defences a year later in their December 2018 modified plan, the designers appear to be content that the Council's Flood Risk Advisor still has to recommend that the leisure centre would require a condition which stated:

Severe weather plan to be developed and implemented by the site operator(s) of the building, car park and coastal defences. This to include actions to be undertaken in the event of forecast or actual severe weather (including high winds and flooding) such as closure of the public footway at the flood defences, management of the plant room fire exit door during a severe weather event, and safe evacuation of the site

Which other newly-designed leisure centres in Britain are subject to planning conditions that say they will need to ensure the safety of their users in severe weather? We have not been able to identify any.

What we have identified, though, is other leisure centres for which Darnton B3 provided design services (on the Darnton B3 website) and which have

- southwest-facing windows directly on to the swimming pool hall
- ensured that the solar glare issue is a non-issue.

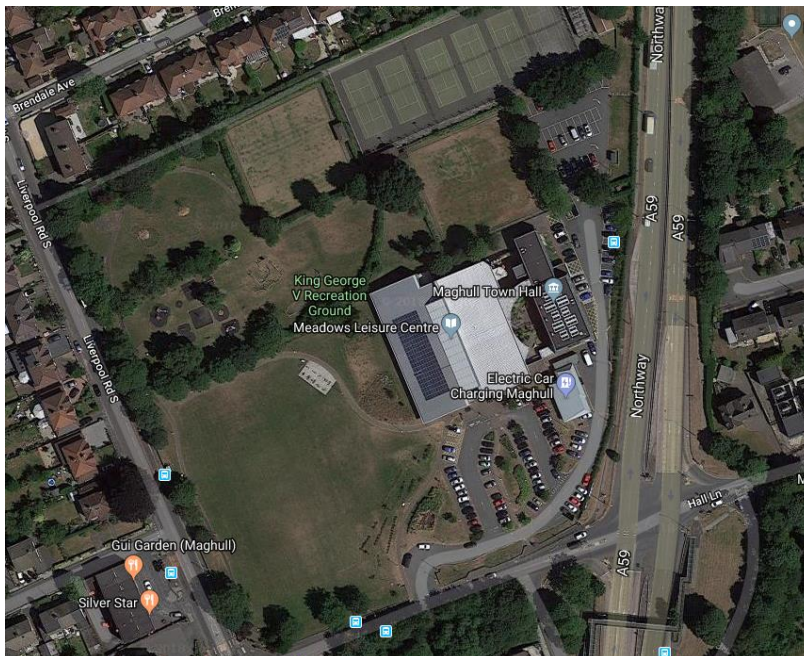
5.1 MAGHULL LEISURE CENTRE

Maghull leisure centre's planning application, approved by Sefton Borough Council, contained the following in the design statement from the architects (GLR):

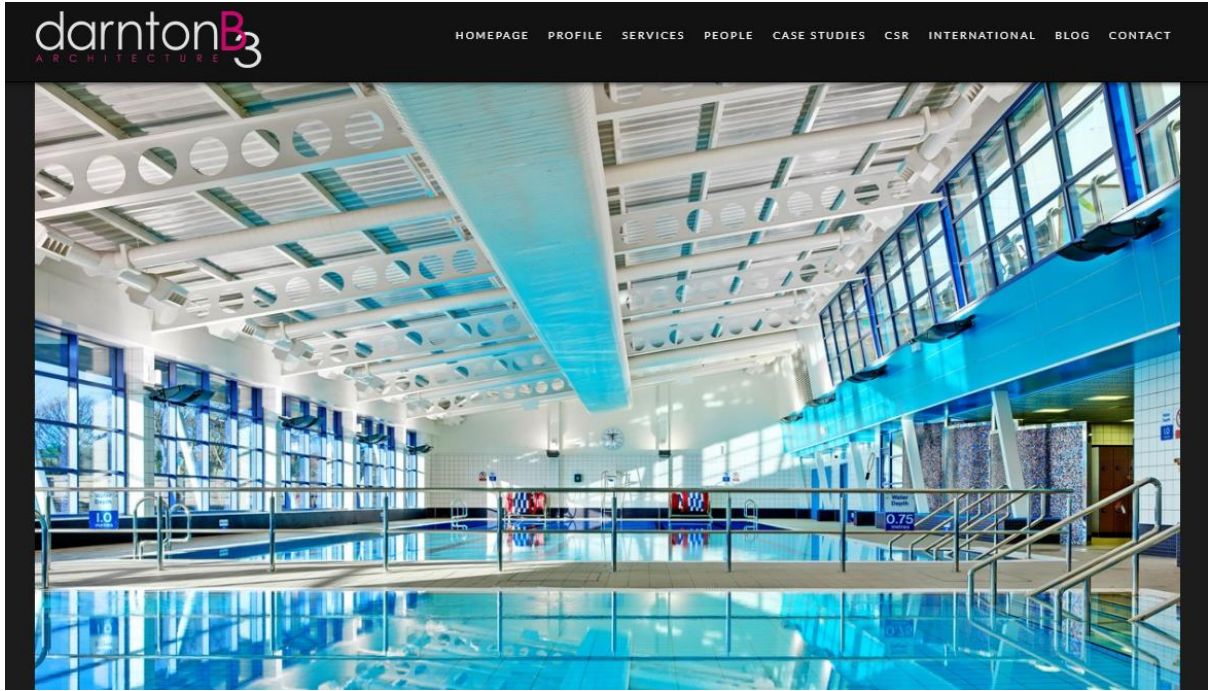
“Natural lighting of the pool hall is another critical consideration. Sunlight hitting the water at a shallow angle results in speculative reflections off the surface of the water which can stop lifeguards from being able to see bathers below the water who may be in trouble. High level light hitting the water, however, will penetrate to surface and help to light the pool tank making it easier for lifeguards to spot those in difficulty.

The main pool hall in this proposal is to the south west of the building and we have therefore designed the form to ensure the south west facing windows are shaded to stop direct sunlight causing speculative reflections. This is achieved by incorporating large overhanging eaves. To the north east side high level glazing allows light to be borrowed from the central spine which helps to illuminate the bottom of the pool tanks.”

From Google Maps, the swimming pool is clearly oriented to look southwest (towards the open area of grass in the lower left of the map below):



From Darnton B3's website, the swimming pool lets a lot of natural light in from the southwest (left in the picture below) and this side of the building is protected by an overhang:



5.2 FORMBY

Formby leisure centre is also a recent build by Sefton Borough Council. This building is oriented similarly to Maghull, and also has ground-level southwest facing windows from the pool hall that provide a dramatic framing of the view.





5.3 CONCLUSION ON GLARE

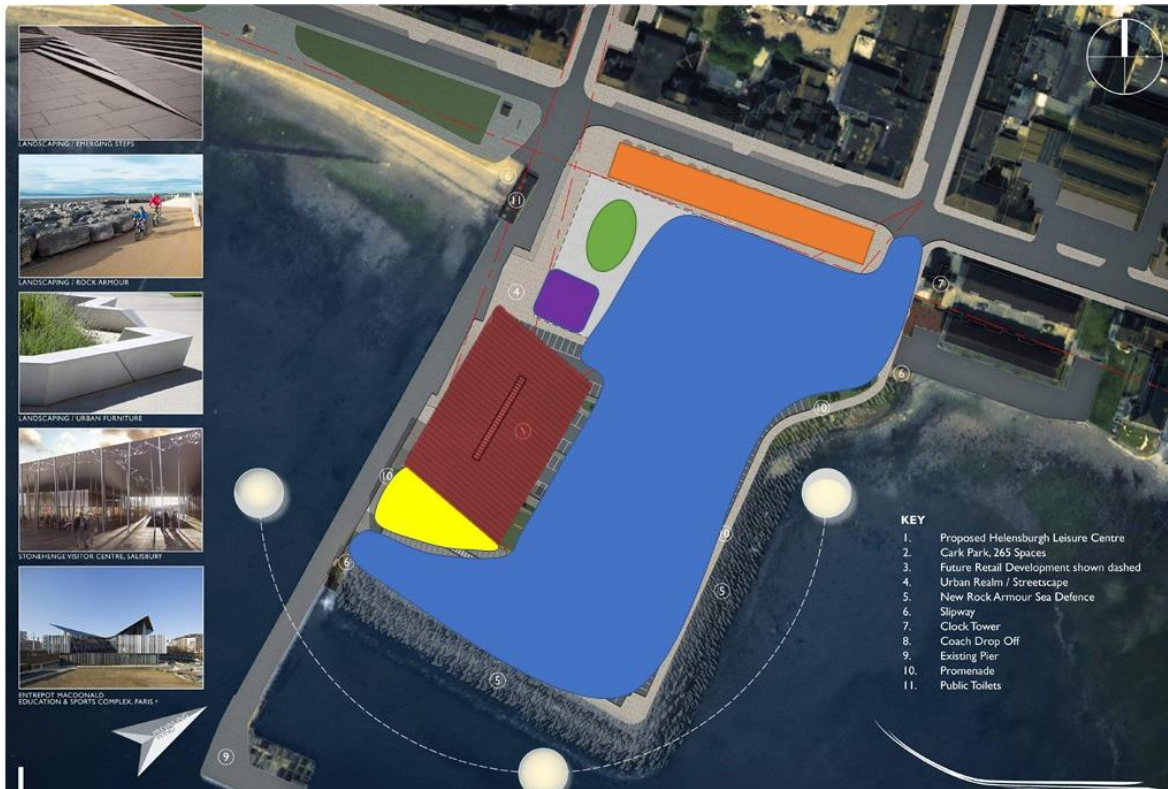
If the designers are willing to recommend an additional £20,000 be spent for the 0.5m increased seawall to reduce the flooding risk to users of the leisure centre, as they did in December, then they can address the equally significant glare issue with an equivalent costed solution involving shading. This has clearly been done by the designers at other sites.

6 HELENSBURGH COMMUNITY COUNCIL ALTERNATIVE PROPOSAL

Section 3.3 concluded that the sensible location for the leisure centre was as per the 2012 Masterplan. The issues debated at the PPSL meetings in November and December 2018 have identified that this location also presents several possibilities for the whole site which would address a number of concerns that the Councillors considered.

- Additional coach and car parking could be provided.
- The skatepark could be created during the initial phase of this proposal.
- Additional leisure elements could be included to ensure that the proposal was less mundane and instead became a desirable destination venue without tinkering with the design of the building.
- Any future uncertainty about whether retail units would be permitted by SEPA could be eliminated by re-using that space for leisure and parking.

The alternative proposal is pictured below, with the highlighted areas described in more detail as follows.



Red area – the leisure centre, positioned and oriented as per the 2012 Masterplan.

Green and purple areas – skatepark and adult gym.

- The walkway between Colquhoun Street and the entrance to the leisure centre is now clearly defined and therefore a prime site for creating a “leisure corridor” to encourage users from the town to the leisure centre. This is the area in which the skatepark (green) will be located, as per the 2012 Masterplan, and would also be ideal to position an “adult gym” of outdoor equipment (purple).
- With respect to the skatepark, the applicant has now said that a “temporary skatepark” will be sited on the “blank area” once the site is infilled to 5.4m AOD. This seems short-sighted – if a bowl-shape skatepark was built while the infill was being constructed then this would save future cost. The area where the skatepark is currently is will be infilled by approximately 2.1m. That should be sufficient depth for a skatepark bowl – see the example from Clissold Park, London, below.



Blue and orange areas – car park and crazy golf:

- The remainder of the “blank area” in the applicant’s proposal is still assumed to be future retail units, despite this being roundly rejected (by 62%) of the community survey in May 2018. Also, SEPA stated in their response to the planning application on 22nd August 2018 that: “We also highlighted that we would be unsupportive of future uses of the site which could increase in land use vulnerability from a least vulnerable use (which is the current use classification).” Significantly increasing the public usage of the site with retail would therefore be rejected by SEPA and therefore the future retail units are unlikely to be approved as a planning application.
- We urge the applicant to therefore take the opportunity for the remainder of the “blank area” to be repurposed for uses which the community have endorsed – leisure and car parking. The income from the additional 100 (approximately) car parking spaces that would be provided would go a long way to offset the loss of capital income from not being able to sell the land for retail (8 years of income would equal £1M).
- The remainder of the space, along West Clyde Street, could be provided as a site for crazy golf, which would again lead leisure-based users towards the leisure centre (from where they could pay for the clubs and balls). Further, the “town square” currently planned for the east end of this area is not required or desired by the community, and removing it would save the £0.5M additional landscaping that the Area Committee have just been asked to add to the budget.

Yellow area – coach parking or outdoor pool:

- The area to the south of the leisure centre, between the south end of the leisure centre and the seawall is now sufficient to allow a) full vehicular access to the slipway (which had been lost in the current proposal) and b) additional parking. In particular, this is an ideal space in which to provide coach parking – the coaches will be hidden from the town by the mass of the leisure centre. We suggest that 5 coach parking spaces could be provided there.
- If, in the future, this coach parking provision is underutilized then this space is ideal to be re-used (subject to future funding) for a function that the community has expressed a desire for – an outdoor pool and lido. This south-facing space could be built up to the same level (5.4m) as the leisure centre to provide a small outdoor pool and sunbathing area with access through the south wall of the leisure centre (to the inside changing areas). This would give Helensburgh a unique indoor/outdoor pool facility that would draw visitors on good days (and wild ones!) to enjoy the seafront.

The benefits that this alternative proposal brings are:

- safety from wave overtopping
- additional coach (and car) parking
- an efficient solution to the skatepark
- a holistic development of the complete site which stamps its authority as, not just the leisure centre for Helensburgh, but the centre for leisure in Helensburgh & Lomond.

Once the leisure centre is positioned and oriented as above, the ancillary changes in this section are in fact tweaks to the site layout and would require minimal intervention from the applicant.

7 CONCLUSION

In this memo, Helensburgh Community Council have demonstrated that moving and re-orienting the leisure centre as per the 2012 Masterplan would secure the safety of the building, would provide a focal point for the whole site and would generate opportunities for the remainder of the site that (with minimal, if any, additional cost) could make this the successful development that the community demands and deserves.

We urge the project team to take these recommendations on board to provide a planning application that could be endorsed by all parties concerned.