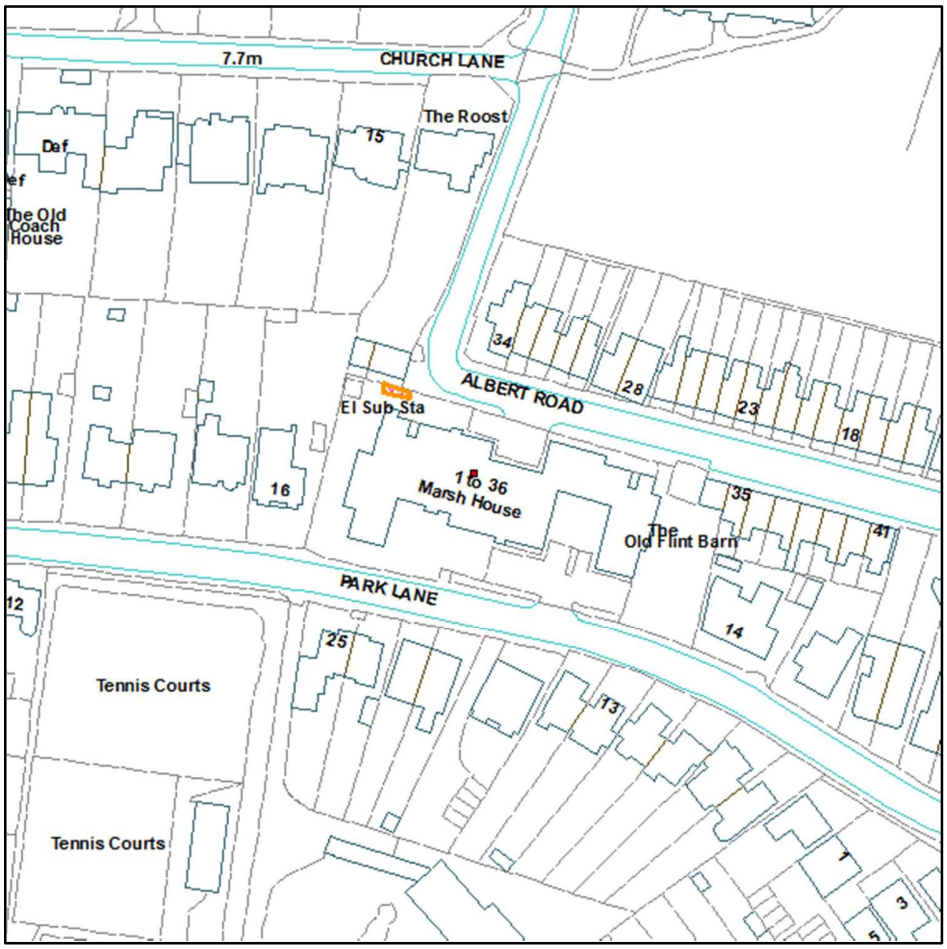
Application Number:	**AWDM/0800/21**	**Recommendation - APPROVE**
Site:	**Marsh House, Park Lane, Southwick**	
Proposal:	**Installation of new external air source heat pump units within a timber enclosure within the grounds of Marsh House**	
Applicant:	Adur District Council	Ward: Southwick Green
Agent:	Mr Matthew Foster	
Case Officer:	Peter Barnett	



Not to Scale

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Proposal, Site and Surroundings

This application seeks permission to install five 45kw air source heat pumps in the grounds of Marsh House. The units are to be sited on the northern boundary, close to the NW corner of the site and an existing plant room. The units are to be positioned in a single row within a 3m high timber 'hit and miss' fenced compound measuring 12m long and 2.3m wide.

The application has been submitted by Adur District Council as part of the commitment to reduce carbon emissions from their properties. Grant funding has been secured to provide and install Air Source Heat Pumps (ASHP) which will replace the existing life-expired gas fired boilers and central heating and hot water system at Marsh House, a purpose built sheltered retirement housing block.

The site lies immediately adjacent to, but outside of, the Southwick Conservation Area to the north.

Relevant Planning History

None of direct relevance

Consultations

Adur & Worthing Councils: The ***Environmental Health*** officer has no objections. Comments that the acoustician has calculated the combined noise of the units of 66dB(A) and added 4dB(A) for the acoustic correction as indicated in BS4142 to give a 70dB(A) rating level. Based on their calculations, a 13dB(A) reduction by using the enclosure specification prescribed would bring the facade level 5m away from source down to 43dB(A).

I don't know where the acoustician has measured from to ascertain the 5m to the nearest receptor but I will assume the nearest point from the edge of the line of pumps to the facade. They have then added the noise of all the heat pumps together and measured it as a single point source from this nearest edge, but in reality the noise sources are spread over approximately 15 metres. Each unit is 2m wide and there needs to be spacing of at least 1m in between each unit to allow for air flow and the chosen attenuation. Thus I expect that the original assessment has overestimated the noise contribution from the units by at least 4dB. There is also the point as to whether the noise from the units should be actually considered a line source for noise, this depends on the actual length of the array and the proximity to the receptor. The acoustic guidance states, "a line source has to be at least three times as long as the distance between the source and receiver, otherwise it behaves as a point source." With a line source the noise level drops 3dB per doubling of distance instead of 6dB reduction per doubling of distance for a point source. Modelling should maybe have been undertaken here to provide a more accurate picture of the noise impact from this development.

If we calculate the noise as 5 separate noise point sources and add their noise

contribution together at the receptor rather than calculate it as one point source we get a different answer. For example the nearest unit is 5m away from the receptor the furthest is 17+metres away. So on the assumption each unit is 2m wide and there is a 1m gap in between each unit to allow for air flow and the acoustic attenuation, I calculated the following:

Each unit produces 59dB(A) at 1m, and with attenuation this is reduced to 51dB(A).

Therefore the nearest unit with attenuation will contribute 37dB(A) at 5m, at the nearest receptor.

the second unit will contribute 33dB(A) at 8m

the third unit will contribute 30dB(A) at 11m

the fourth unit will contribute 28dB(A) at 14m

and the fifth unit will contribute 26dB(A) at 17m

Add these contributions together and you get 40dB(A) rounded to the nearest dB. If we halve that reduction in the event of it being a line source, i.e. a 3dB reduction per doubling of distance rather than 6dB, then we have 45dB(A). The worst case scenario is 1dB(A) below background and with an open window this would be 30dB(A) inside, so the noise level from these units would comply with BS8233. The measured background level was 46dB(A). If we add the acoustic correction of 4dB(A) as indicated in BS4142 because of the character of the sound, then we have a rating level at the facade of 44dB(A) and a worst case of 49dB(A). The BS41412 rating level provides an indication of the noise impact and is not the actual noise level at the receptor. A rating level below background means a low impact, depending on context and a rating level just over background is an indication of an adverse impact depending on context. The context in this case is whether a character penalty needs to be added to an attenuated noise source. Also this is the worst case scenario when all Air Source Heat pumps are operating,and in reality the operation of the heat pumps will be staggered and it will only be during really cold weather that all 5 pumps will be operating simultaneously. In such climatic conditions it is probable that windows will be kept closed.

The **Trees and Landscape** Officer: Considers that the use of a permeable load bearing Cell system within the trees RPA should ensure that there is minimal disturbance to the trees. There will still need to be some excavations for connecting pipes etc. However this should be able to avoid any major or anchoring roots. Therefore if the proposed works are done in conjunction with the Arb report he recommends approval.

Adur District Conservation Advisory Group: Approve

Representations

None received

Relevant Planning Policies and Guidance

Adur Local Plan 2017 Policy 1, 15, 17, 18, 19, 30, 34
Sustainable Energy SPD (August 2019)
CarbonNeutralPlan (Adur&Worthing Dec 2019))
Carbon Neutral Study for Adur & Worthing June 2020
National Planning Policy Framework (February 2019)

Relevant Legislation

The Committee should consider the planning application in accordance with:

Section 70 of the Town and Country Planning Act 1990 (as amended) provides that the application may be granted either unconditionally or subject to relevant conditions, or refused. Regard shall be given to relevant development plan policies, any relevant local finance considerations, and other material considerations; and

Section 38(6) Planning and Compulsory Purchase Act 2004 that requires the decision to be made in accordance with the development plan unless material considerations indicate otherwise.

Planning Assessment

Principle

One of the main visions and objectives of the Adur Local Plan is to make progress "*towards a low carbon, sustainable community through sustainable construction, energy efficiency, the use of renewable energy, water efficiency measures, waste reduction measures and appropriate location of development and transport infrastructure to reduce air pollution and noise; and to make a significant contribution to low and zero carbon energy production*."

Policy 19 encourages the use of "*low carbon energy, renewable energy and residual heat/cooling for both domestic and non-domestic developments.*"

At a local level, Adur District Council has declared a Climate Emergency and committed to being carbon neutral as a council by 2030. The council has also made the UK100 Cities Pledge to achieve 100% clean energy by 2050. The council has committed to work with partners to ensure all energy use be delivered through zero carbon sources. To help meet these objectives, the development of renewable, low carbon, or decentralised energy schemes should be supported through the planning system and those based on fossil fuel combustion should not be supported.

The Council has produced its own Carbon Neutral Plan for the council decarbonisation. This has a strong focus on moving away from gas fired heating systems towards renewable and low carbon alternatives, in particular heat pumps. This approach is aligned with national policy approaches to move away from gas based systems towards non-fossil fuel alternatives as set out in the Clean Growth Strategy.

The proposed air source heat pumps are therefore supported in principle.

Visual amenity and impact on setting of Conservation Area

The proposed pumps are to be sited adjacent to a low brick wall on the northern boundary and the new 3m high fence will be visible above the wall. As originally submitted the fenced compound would have been positioned slightly further east, where there is an existing 5 bar gate which would have made the development more prominent in views from Albert Road to the north, as well as being sited closer to windows within Marsh House itself. As amended, the compound has been relocated further west and is slightly less prominent, being partly screened by mature trees outside of the site. It will still be visible behind part of the gate but it cannot be positioned further west as sufficient space is required to enable noise attenuators to be fitted and for airspace around the ASHPs to ensure they operate efficiently.

While the new fence will be visible, it is not considered to be harmfully intrusive in the street scene, given its position and the presence of partial tree screening. A timber fence is also considered to be more acceptable than a metal louvred compound, which had been an option. The visual impact of the fence should also be weighed against the sustainable energy benefits of the development itself. On balance, the development is considered to preserve the setting of the Conservation Area and is acceptable in visual terms.

Residential amenity

The amended position of the pumps has taken them further from windows within Marsh House. A noise impact assessment report has been submitted which identifies that mitigation measures will need to be in place to minimise the potential negative noise impacts on the nearest affected flat located on the upper floor of Marsh House.

Discussions have been had with Adur District Council's Environmental Health Team on the Noise Impact Assessment and the required attenuation levels and it has been agreed that the proposed attenuation measures will achieve a mitigation level of 8dB(A) which should mitigate any potential acoustic impact on neighbouring residents. This level of mitigation can be achieved by the proposed attenuators being fitted to the sides and top of each ASHP, thereby avoiding the need for a higher and larger acoustic louvered metal enclosure. While less than the 13 dB(A) recommended in the Noise Assessment the Environmental Health Officer has provided a detailed reasoning (set out in full above) as to why he would be satisfied with an 8dB(A) reduction. That reasoning points out that, in reality, the operation of the heat pumps will be staggered and it will only be during really cold weather that all 5 pumps will be operating simultaneously. In such climatic conditions it is probable that windows will be kept closed.

The Environmental Health Officer has confirmed that he has no objection to the proposal on this basis.

Trees

There are mature trees close to the development, outside of the site. An Arboricultural Impact Statement has been submitted which makes recommendations to minimise the impact on the tree roots. The Council's Tree and Landscape Officer is happy with these recommendations and has no objection.

Recommendation

Approve

Subject to conditions:-

1. Approved Plans.

2. Standard time limit.

3. To be carried out in full accordance with the recommendations in the Arboricultural Impact Assessment
4. ASHPs not to be operated until timber compound built in accordance with approved plans