Sustainable Tring response to Nora Grace Hall refurbishment proposals

While we support the proposition that the Nora Grace Hall needs refurbishment, and welcome future works, we would like to see a refurbishment that complies with the 2019 declaration of a climate and ecological emergency which has been made a corporate priority for the Council. Tring Town Council and Dacorum Borough Council has pledged to become net zero as an organisation by 2030, and as a whole borough by 2050.

We therefore consider this proposal unsuitable as it stands and below we discuss the reasons and provide improvements to it.

Having read the report on the state of the Hall and the proposed works and discussed the report with experts on this type of work in community halls, Sustainable Tring questions and proposes the following:

1. **Flat roof work**. 120mm Kingspan is proposed onto the flat roof parts. Making it 150mm or even 200mm won't add a lot to the cost, as the materials' cost is only part of the overall spend whereas labour is a good proportion of it, and it is not going to be much more if you put 150mm instead of 120mm. However, 120mm is acceptable as meets building regulation standards.

   PIR for insulating roof is not ideal. Also, no mention of any overlap to reduce thermal bridge (as can't join the flat roof and loft insulation up…). Glass fibre is not great in reducing summer overheating compared to wood fibre, cellulose or rockwool.

2. **Pitched roof**. There is no mention of insulation for the pitched roof, or the flat roof/wall/pitched roof junction in the schedule of works. The roof will be opened up completely so this should be done, as retrofitting insulation at a later date would be very expensive. Thermal bridging in the wall between the flat and pitched roofs should be considered too, and this is again not mentioned in the schedule of works.

3. **Wall panels**. The plan is to remove existing wall panels, and replace with a mixture of 50mm Kingspan and 70mm super quilt. However, if you want this wall buildup, why not insulate with 200mm of super quilt instead of 70mm? Or you could use 120/150mm of OSB externally instead of 50mm. Kingspan seems like a very unambitious wall buildup; however, at least there's some insulation going in, but we question why the amount is so little. Note that it does meet building regs minimums.

   No Air and Vapour Control Layer (AVCL) is mentioned in the wall buildup and no mention of how it joins to roof AVCL under the insulation. AVCLs are installed to ensure that the occurrence of surface and interstitial condensation is controlled and minimised within the building's fabric. By fitting an AVCL with properly sealed

joints and interfaces, this helps to ensure that damp or mould will not occur in a property. The super quilt could do the job, but then that needs to be taped, not just stapled.

Other panel products are available rather than plasterboard and skim, which is not easy to repair (and gypsum then requires specialised disposal).

Polyisocyanurate (PIR) for insulating roofs is not ideal. Also, there is no mention of any overlap to reduce thermal bridge (as can't join the flat roof and loft insulation up…). Glass fibre is not great in reducing summer overheating compared to wood fibre, cellulose or rockwool.

Overall, there is clearly not a lot of insulation in the walls. About 0.5 W/(m2.K) from the PIR alone and then 0.2 if you include the super quilt. The super quilt is doing the heavy lifting and it is not proven that it performs very well, particularly as there will be repeating thermal bridges where the battens compress the multi-foil.

4. **Ventilation**. There's no mention of a ventilation assessment. As all publicly funded works need a PAS2035 assessment, and as they are replacing more than three major building elements (roof, wall, windows and heating system), then we assume a PAS2035 assessment will be needed? And for a community building with high occupancy during events, this means some form of mechanical ventilation with heat recovery (MVHR) is assumed; however, there is no mention of this at all.

5. **Heating system**. We question why a new gas boiler is proposed. Dacorum has declared a climate emergency, so how is a gas boiler compatible with that declaration? https://www.dacorum.gov.uk/home/environment-street-care/climate-change/tackling-climate-change

   The kitchen should be all electric so that the gas supply can be capped and meter removed. The electricity meter should be upgraded to a smart meter if not already installed.

6. **No renewables**. For a spend of £500k, a reasonably large solar array (PV) could be expected: 15kWp+ if they have three phase; 8kWp if they only have single, and potentially a battery system if enough groups are using the property in the evenings, and an electrified heating system (air to air heat pumps preferably) to allow better self-consumption of the solar array electricity. Again, this would be compatible with the Dacorum climate emergency declaration. PV should be monitored by the council to ensure continued operation.

   Full re-pipe and radiator replacement is worth looking at, with an air source heat pump (ASHP) and underfloor heating. An ASHP is worth considering but if it is only to be used very occasionally (e.g. just a few evenings for a few hours) then it might

be better to have air-to-air heat pumps, ie air conditioning, which could provide heating and cooling in the summer as required. If this approach was to be used, PV is essential.

7. **Floor**. No mention of the floor which, should be insulated, but it may not be cost effective to do so if it is a solid floor and there is limited space to build it up.
8. **Outer cedar or larch wall envelope.** This external cover of the building is welcome and can indeed enhance the exterior appearance of the building; however, it is expensive. We considered this element as 'good to have' but only after the building is energy efficient, properly insulated for hot and cold weather and efficiently moisture resilient: these elements guarantee the building's lifespan and considerably reduce the costs of maintenance in the future. Should these not be provided, in few years a new refurbishment will be needed.
9. **Lighting.** It is not clear what lighting has been specified. It should be LED, ideally dimmable, or with separate lighting circuits to provide different light levels in the hall for the range of activities.

In conclusion, Sustainable Tring recommends rejecting this plan of works for Nora Grace refurbishment and either discuss and implement our suggestions with current contractor or find another contractor that can deliver a more sustainable refurbishment. We can provide support on this if needed.

Notes:

- **Grants** are usually available to retrofit community buildings, but nobody will give a grant to cover heating bills and running costs. We need to think of the building as a whole system, and make sure to put as many things as possible in place, with the grant money, to reduce the long-term running costs. This means:
    - more insulation than the minimums
    - better windows and doors (triple-glazed isn't much more expensive than double these days)
    - a mechanical ventilation with heat recovery (MVHR) system to recycle stale, damp air from the inside of the building and retain the heat in the building, and
    - air source heat pumps combined with solar energy and a battery system.

  These are the elements that really drive down long-term costs.

- **Cost-benefit perspective** Looking at this project from a, what would the running costs of the building look like if they applied more than building regs minimum levels of insulation, installed better, triple-glazed windows and insulated composite doors, installed an MVHR system, and included a solar array, battery

and heat pump system as part of the project? (Severn Wye Energy Agency is a good source for completing a full energy audit of the property, giving approximate payback periods for different interventions such as heat pumps and solar arrays.)

- **From a climate and ecological crisis perspective,** the project contradicts the following statements and actions already taken by DBC and Tring Council:

    - While 99% of the borough's emissions are outside our direct control, we pledge to support individuals, community groups, businesses and schools to become net zero. This particular target is everyone's responsibility, and we all have an important part to play.
    - Carbon Literacy Training to over 70 key members of staff and councillors, including our CEO.
    - By becoming the first borough to have become a Silver-level Carbon Literate Organisation (CLO) we have demonstrated a substantial commitment to understanding and tackling the climate emergency. For the context of an organisation, this would be: Scope 1: All direct emissions from the activities of an organisation or under their control, e.g. fleet vehicles and fuel combustion on site such as gas boilers.
    - Emissions included within Scope 1 and 2 essentially cover assets where the Council are responsible for paying the fuel bills.
    - The borough's emissions (scopes 1-3) should have dropped below 295,000 tonnes of CO2e by 2025, and to below 130,000 by 2030, for us to be on track for reaching net-zero by 2050, in line with the Tyndall centre recommendations.
    - Shown by the emissions data, transport and **energy used in buildings** are the two largest emitting sectors.
    - The impact the Council can have should not be underestimated as a third of UK emissions comes from residential buildings, surface transport and waste – all of which are key areas which councils can influence.
    - Buildings owned and used by the Council to deliver services. The Council will carry out the surveying work, initially on our main buildings with the biggest emissions, to determine the work required to make them as energy efficient as possible. A programme will be drawn up regarding the works required. Initially, this will be largely improvements to insulation plus installation of solar panels where possible.
    - Working alongside the community to engage, enable and educate will be critical in order to achieve net-zero by 2050. Community awareness and participation in working towards net zero and improving biodiversity will be facilitated and encouraged.

- Climate Change Motion B:6. District authorities are well placed to lead the vanguard in reducing carbon emissions and protecting biodiversity, as their responsibility for planning policies and housing stock opens up a range of sustainable transport, buildings, household and commercial/community waste and energy opportunities.
- Appendix B: Climate Emergency – Statement of intent

'A Borough that takes robust action to tackle the local and worldwide threat of climate change, both internally and in partnership with local organisations and residents, and to minimise its environmental impact by cutting carbon, waste and pollution.'

Dacorum Borough Council is determined to play its part in helping to tackle the Climate Emergency. We have committed to ensuring that the operations, activities, and impact of our built assets will be net carbon neutral by 2030. This will be achieved through a combination of specific new projects, use of our policy making and regulatory powers and incorporating climate change and sustainability a part of business as usual. In doing so, we will adhere to the highest standards of quality in our efforts to provide services that add value to our residents, partners, and employees – and to protect the earth's vital resources for the future. We will demonstrate leadership through ensuring that Dacorum Borough Council, its operations and activities will be net carbon neutral by 2030 and promise/pledge to:

- Lead by example in reducing carbon emissions year on year.
- Use our powers, such as Town Planning, to require all new development to be as low carbon as is possible.
- Work with government, business, community groups and other partners to maximise our impact on decarbonisation.
- Encourage and support residents, community groups and businesses to reduce their emissions across the borough.
- Prepare and plan for the impacts of climate change and their mitigation in our own services together with residents, community groups, businesses and partners.
- Keep residents and businesses as fully informed as possible about what action can be taken.

- We also refer **to Dacorum's** published **Key Objectives**:

The challenge of addressing the Climate and Ecological Emergency cannot be underestimated. It requires rapid, far-reaching and unprecedented changes in all aspects of society. As part of our Climate Emergency declaration, a number of commitments have been made. Alongside consultancy with APSE Energy and internal discussion, these can be summarised in our five key objectives: **1. Reach net-zero emissions as an organisation by 2030.** 2. Reach net-zero emissions for

our Council housing stock as quickly as possible, by 2050 at the latest. 3. Support the borough in reducing its emissions and reaching net-zero as quickly as possible, by 2050 at the latest. 4. Support the borough in improving biodiversity. 5. Support the borough in creating more sustainable communities.