

Other Considerations

(Revision A)

In support of Design & Access Statement

For
Community Hub
at
126, Eastgate, Pickering

On behalf of
The Wilf Ward Family Trust

McNeil Beechey O'Neill Architects LLP, York



Other Considerations

Issue:

Revision A – 26/11/20

Section J updated and expanded for accommodation of high level plant and assessment of Pool Plantroom equipment,

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a) Waste Storage & Collection

Construction Waste.

A detailed site waste management plan will be prepared by the building contractor during the Pre-construction Phase.

The existing concrete, stone and brick superstructure of the existing building, concrete ground floor slabs as well as the majority of external pavings/sub-base and tarmac roadway and parking areas will all require demolition and grubbing up in order to construct the new building. It is proposed that, as appropriate, these existing elements/materials would be sorted and crushed up on site to provide base course compacted fill where appropriate.

Other remaining materials including any exported soil etc. from the demolition such as timber/glass etc. would be sorted and where appropriate re-cycled, those materials which are not suitable for re-cycling will be skipped for disposal off site.

Building In-Use Waste Storage & Collection.

Compared with the previous use scheme staff levels and resident occupancy will increase marginally for the proposed use. As such refuse collection and storage requirements for the facility will also increase respectively.

A detailed statement and policy will be prepared by the schemes operator in consultations with RDC/Streetscene waste management service provider primarily relating to any commercial waste generated as a 'Mixed Hereditaments' (Combined Household & Commercial use.) However in accordance with RDC Household Waste Collection Service Policy (Sep 2014) it is anticipated that, and spatial provision has been made on the following assumptions :

Each waste type will regularly be taken to the external central recycling refuse enclosure & storage facility located at ground floor level adjacent to the outside stores and rear yard area located on the eastern boundary of the site. These will be taken to kerbside (or as agreed with service provider) for collection on requisite days.

Garden organic waste generated from within the proposed Sensory Garden is anticipated to be minimal and would be composted on site in a discrete location such as adjacent to the plantroom access area. In peak periods the operators will dispose of themselves. In the event it becomes apparent that large volume disposal is regularly required then use of the chargeable organic waste collection will be invoked. There is sufficient space in the same location for multiple 240 litre wheelie bins if required.

Please refer to drawing WWEP/102 for the location of the proposed central Waste & Recycling area.

Space has been allocated within the central Refuse & Recycling enclosure for 1No. 1100 litre Euro-bin (For commercial waste generated by the Cafe) & 6no. 180 litre wheelie bins, 4no. For the re-cycled materials currently collected in Pickering (Glass/Paper/Cans/Plastic) & 2no. for non recyclable household waste.

Should detailed discussions confirm the need for stacked smaller boxes for recyclables (rather than actual wheelie bins) then this facility will be provided.

Typically – per household the following is required : -
1No. 55 litre box for Plastic Bottles & Cans; 1No. 55 litre bag for paper & cardboard & 1No; 40 litre box for glass.

The proposed residential units are 'low' occupancy, probably 2 person maximum each, rather than larger 'family' occupancy so, in reality volumes generated are anticipated to be less than a typical household.

An assessment of storage capacity/volume required has been made on the basis of the following :

Number of properties = 3 (Unit 1 (1 Bed) ; Unit 2 (2 bed) & Unit 3 (2 Bed)

Plastic Bottles/Cans - 3 x 55 litres = 165 litres.
Therefore 1No. 180 litre wheelie bin space allocated.

Paper/Cardboard - 3 x 55 litres = 165 litres
Therefore 1No. 180 litre wheelie bin space allocated.

Glass - 3 x 40 litres = 120 litres
Therefore 1No. 180 litre wheelie bin space allocated.

For non-recyclable (household) waste on basis of 0.35m³ per occupant this equates to - 6 x 0.35 = 2.1 m³ Which equates to 210 litres.
Therefore space for 2No. 180 litre (360 litres) wheelie bins allocated.

In addition to the above, it is proposed that one 1100 litre Euro-bin be provided, purely for waste generated from the Café/Communal facilities.

This will be reviewed once the range of meal types and services to be dispensed are finalised. There is sufficient space available for the size of the Waste & Recycling Area to be increased if necessary.

b) Vehicle Parking.

Vehicle Parking

Flowchart guidance issued with the procedures for 'Stopping-Up' notices recommends that, due to the extended timescales involved with the several stage process, that the requisite number of spaces is best discussed, identified & agreed with the requisite LPA before formal issue of any notices. This should mitigate or avoid multiple notice processes being set in motion and consequent possible extended timescales.

The purpose of this application is to set-out a rationale for the number of spaces (or area) suggested to be allocated. In the event that this is agreed, then the formal process for 'Stopping-Up' any agreed quantity would be commenced

Informal consultations with North Yorkshire Highways indicated that in principle, they would look favourably upon re-surfacing of the full area to the front of 126, Eastgate, (at the applicants costs.) if subject to the acceptable submission process forming part of a Planning Application deemed it a necessary requirement to specifically allocate spaces for sole use of the development.

The site (Greystones) is located within the Pickering Town Centre Pickering Conservation Area as well as within the Town Centre Commercial limit. As such, appropriate city centre parking standards would apply.

The site is well served by transport links & facilities :

There are two bus stops, either side of the road, for both inward & outbound travel less than 20 metres away from the building, with local stopping services and the Coastliner (840) service which links the site & Pickering directly to train services in Scarborough as well as inland amongst which to Malton, York & Leeds.

The large Eastgate public carpark is located within 100 metres on the opposite side of Eastgate to the side & rear of Eastgate Square. This has 124 spaces available with a 24 hour maximum stay.

The Vivis Lane public carpark 0.7 miles away has a further 58 spaces.

The forecourt area immediately in front of the adjacent carpet showroom/outlet has signage displayed which would suggest that it is designated solely for the use of the outlets customers.

There is currently no demarcation on the 'cobbled' area immediately in front of 125/126 Eastgate. This hard landscaped area is currently an area intermittently used for parking for up to 7No. cars.

Using the accepted size of 2.4m wide parking bays indicates that 4-5 parking bays could be accommodated in addition to keeping any access way to the current 'garage' area of 126, Eastgate (the site) free.

We are not aware of there having been any issues arising from parking for the sites previous uses, which comprised a café, retail outlet(s) and 3No. total dwellings (two dwellings and a short term (holiday) let property.)

The proposed development effectively retains the Café & 3 dwellings. The retail unit(s) are no longer retained but could be viewed or considered as being 'replaced' with the 'Multi-Use Rooms' in respect of anticipated vehicular requirements

The Rehabilitation & Therapy facilities do represent an addition to the equation. A significant proportion of the buildings area are given over to circulation and supporting facilities (such as large Transition spaces/corridors and store rooms for equipment.) The actual usable facilities are a relatively small proportion with the Pool Room itself 68m sq.; the Rebound/Sensory Room 19.5m sq & Treatment Room 12.5m sq = **100m sq. total**

RDC website appears to direct visitors to NYCC "Interim Guidance on Transport Issues including Parking Standards" is used to assess required parking provisions.

The proposed mixed-use of the building does not really 'fit' one or more of the categories defined within the above. As a Community Hub it would have a number of uses but none really requiring the typical space allocation for peak or intense high-attendance usage such as a some uses of a Community Centre, nor the large through-put perhaps more typical with larger Sports & Leisure Centre.

Using the above NYCC operational parking standards "Interim Guidance..... including Parking Standards" on the basis of 1 space / 25m sq. GFA for the 'Community & Leisure' accommodation totalling 100m sq would equate to provision of 4No.spaces.

National recommendations for centre parking standards for shops and buildings accessible to the public indicates making provision as following

- Where up to 25 spaces provided, one space should be of the 3.6m wider design for accessibility.
- 1no. 3.6m space should be provided for each dwelling built to mobility standards.

b) Vehicle Parking.

Vehicle Parking (cont.)

The proposal assessment would therefore be on the basis of the following :

Potential parking spaces directly outside the building are limited and as such any visitor parking will require management.

The principle would be that, as a town centre site, any parking spaces to the front area of the building should be available for the sole use of those with impairments and that wherever possible, all other visitors without would park in the public carpark available in close proximity.

The Wilf Ward Family Trust supports sustainable travel. It is anticipated there will be between 4 & 5 staff at any time and any staff using or employed within the facility will be encouraged not to drive to work and use public transport or cycle. Secure & covered cycle storage provision for up to 7 bicycles would be provided. Car parking space is available within 0.8 Km of the site also at one of the clients other properties at Westgate house in the event that space ever does become absolutely essential. As such no car parking spaces would be allocated for them.

A "Keep Clear" area would be designated to be used as a 'Drop-Off' bay to part of the area directly in front of the existing 'garage' doors access into the site. This would have a clear width of 3.6m so able to operate as an accessible use space.

In addition to the side of this would be residual space, a further 2400mm wide which is sufficiently wide enough that two vehicles are able to park side by side and unload at the same time.

Commercial deliveries etc. to the Café would be timed/controlled so as to not sterilise the drop-off bays use during core and key operational hours, ensuring its availability would not be precluded.

Residential units

It is very unlikely that any residents considered as suitable for the 'step-down' residency process would ever drive, nor even have a dedicated vehicle for their own use. At this stage of and as part of their step-down process to independence being that they learn to live & travel independently and not rely on being driven - so would ultimately be using public transport, most probably a bus.

The smaller Unit 1, could have a variety of uses, from a 'Step-down' facility in which case the above would also apply. It is possible also that it could be used for family visitors, Staff/Carer accommodation or even for a caretaker role. In any event primarily being accessible via the existing staircase it is not 'built to mobility standards.' As such in all cases occupants would be able to make use of the nearby Eastgate parking facilities, again, if necessary.

Café/Community Library & Multi-Use Room Facility.

The majority of visitors and users for these facilities will most probably come from the surrounding local community as well as for passing 'footfall' for the café facility in particular

In the event that loading & unloading times are extended for the 'Meals on Wheels' service then sufficient space for this vehicles to pull into the garage area itself is still available to ensure the footpath & drop-off bay are kept clear at all times.

Rehabilitation & Therapy Facilities

a) The overwhelming number of the anticipated & identified users, in particular, for the Rehabilitation & Therapy facilities will be accompanied by at least one, but most likely two support carers (*1) who would be able to drop-off the visitor accompanied by one carer whilst the second would be able to park the vehicle in the Eastgate carpark. This process should be a reasonably swift turnaround anticipated to typically take between 5 and 10 minutes. As such each space could turnaround at least up to 6 visitor turnaround/hour.

b) For those visitors accompanied by one carer/companion who are not able to be left unsupervised & would require assistance at all times, one suitably qualified & trained member of WWFT staff will be present on site during all hours of operation to take the visitor into their care and supervision for the period it will take whilst their carer/companion returns to the front of the site to park their car off site.

This is likely to be the more protracted process and anticipated would typically take between 8 & 20 minutes. Because of the staff element, this process can of course only occur once at a time so limits one space to a 3 visitor turnaround per hour. A

c) The majority of other mobility impaired sole visitors, having driven to the site, should either be sufficiently able or capable of parking in the Eastgate public carpark and transferring to a wheelchair or mobility scooter if required to cross to access the building.

This approach would enable any residual space to remain free for use the majority of the time for other visitors & users arriving at the facility or, in the extremely rare event there are visitors to the site that for whatever reason do not

*1 - *Supporting info from WWFT ?????*

b) Vehicle Parking.

Occupancy levels for the Rehabilitation & Therapy Facilities

These are anticipated as follows :

Hydrotherapy Pool –

- 8 persons max at a time for hourly sessions
- 4 x 2 persons (1 user & 1 carer) = 4 cycles

NB - 2 x 3 persons (1 user & 2 carers) even with 3 groups results in fewer cycles as only 3.

The intention would be to have staggered 'pool time' sessions with 30 minutes overlap so, a 2nd set of 8 persons would also be Changing in the same 60 minute period as those swimming = 8 cycles/hour

Rebound Sensory Room

– Single use for 30 minute sessions, therefore = 2 cycles/hour

Treatment Room

– Single use for 20 minute sessions , therefore = 3 cycles/hour

This equates to a total of = **13 cycles/hour**

- Drop-Off bay - 6 cycles/hour
- Bay 1 - 3 cycles/hour
- Bay 2 - 6 cycles/hour

2 car parking spaces + the 'drop-off' area would service up to 15 cycles/hour which is in excess of the above requirement for the facilities' 13 cycles with an approx. 18% float for lateness/overruns etc. *(This also allows for/assumes 'worst case' scenario whereby all singly accompanied visitors will make use of or require assistance from the WWFT staff member which is improbable.)*

As such the proposal would be that the facility would require at varying times the use of, or have available for their use, **2No. spaces + the 'drop-off' area** to the front of 126, Eastgate

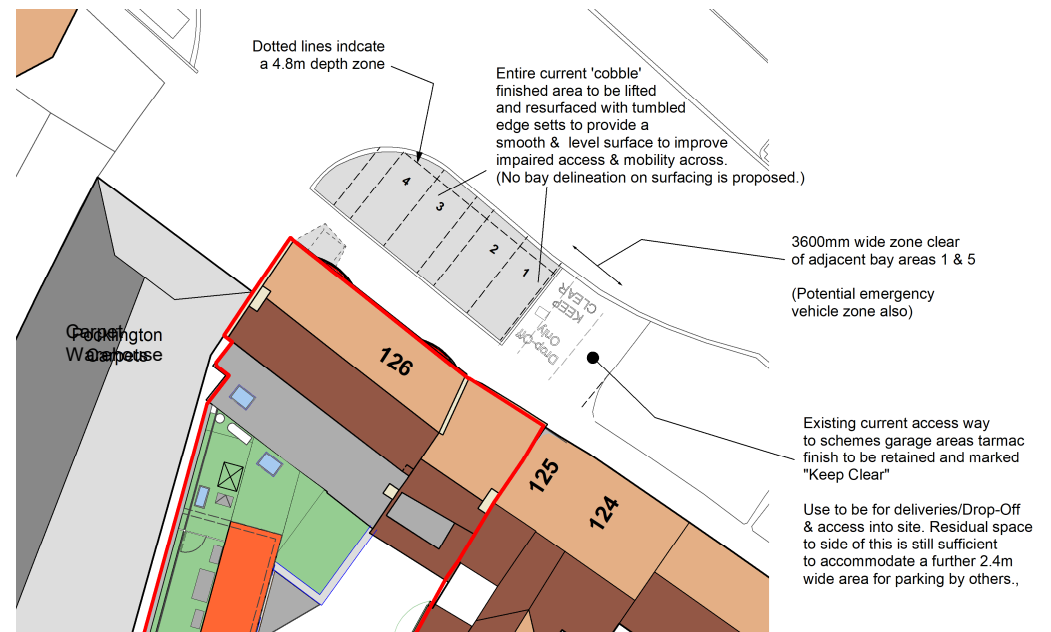
The layout left indicates how up to 4No. spaces minimum – all of which are sized to provide a 2.4m wide parking bay with an adjacent 1.2m wide transition zone providing disabled or mobility impaired access - could be provided in addition to the 'drop-off' area which would leave an area of at least a further two spaces not necessarily used by the facility. As well as the residual area of the drive (indicated to the opposite side of the 'drop-off' area.

In the event that this calculation proposal is accepted then it would be proposed that the areas marked as Bays 1 & 2 plus the 'drop-off' area would form the basis of any subsequent 'Stopping-Up' order - should one actually be considered necessary.

In the event that this is deemed acceptable, it is proposed that a policy to ensure this method is adopted & will be implemented.

Wilf Ward Family Trust would also undertake to meet the costs associated with the re-surfacing works to adoptable Highway standards of the currently 'cobbled' area to ensure a safe level surface area be provided.

It is suggested that this area would not be demarcated into actual parking bays but be uniformly laid with tumbled edge setts to preserve the appearance within the Conservation area and general Streetscape.



Site Layout indicating possible carp parking provisions.

c) Foul & Surface Water Drainage.

Foul & Surface Water Drainage

As noted within Section 4.601 of the Design & Access Statement - attempts at discussion with Yorkshire Water via the usual enquiry route have not been able to obtain a response due to on-going national restrictions the service is currently severely limited/not available as a consequence of restrictions on staff availability.

In principle, mains drains are known to exist from the site, though records (as within Appendix 5.1) appear to be incomplete for the S24 section linking from within the site to the manhole/chamber within the adopted footpath/highway verge on Eastgate itself.

The drainage record plan obtained appears to indicate a manhole in front of the adjacent 125 Eastgate in the area of grass verge. The topographical survey undertaken however indicates a manhole (referenced on application drawings as EMH1) in the access or driveway in front of 126, Eastgate (Greystones) with the mains sewer run available falling 'up' Eastgate in the direction towards 122, Eastgate. It is assumed that this can be utilised to connect to currently.

There appears to be a small diameter run 'linking' with chambers in the opposite direction, it has been assumed that this is a breather/vent which could well also have a vertical vent pipe fixed to the western gable of Greystones.

Please also refer to - WWEP/52 Existing Plan
- WWEP/950 Proposed Drainage Layout

Foul Drainage.

Capacity for any increased discharge needs to be agreed with Yorkshire Water.

There are currently 7No. total WC pans and associated sanitary fittings connected into the mains. The proposed design does increase this quantity, though only modestly, to 10No. WC pans with associated sanitary fittings. There will of course also be some intermittent or periodic outfall increase from the Pool itself.

It is recognised that invert depths serving the majority of the rear areas of the facility will require installation of drainage deeper than the existing outfall levels from the existing site. The proposal would therefore be to pump back-up to the gravity outfall level.

Consent for regular pool backwash discharge to mains drains is we understand typically acceptable once consent has been obtained though notice in advance is required to be given.

Surface Water Drainage.

It is anticipated that this be a Condition of any Approval Notice following the formal consultation process and subject to confirmation of any acceptable outfall rate.

The assumption at this stage would be for attenuating within the site with a controlled outfall to mains surface water sewers.

An initial 'high level' assessment has been undertaken to generate a probable storage capacity to provide comfort that it may be achievable to accommodate attenuation given the balance of area of site that may be available should the site be developed as indicated on the proposed plans.

(A copy of the calculations for this are included within Appendix 6.)

The below summary would indicate that this can comfortably be accommodated in some way.

Existing Impermeable area = 320m² (Using Brownfield run off calculation - 4.5 l/s)

Additional Impermeable Area = 270m² (Using Greenfield run off calculation gives us 0.1 l/s)

Total Discharge rate = 4.6 l/s

Based on an impermeable area of 590m sq. and a discharge rate of 4.6 l/s
= **13m³** total storage

For a 100 year event +30% allowance for climate change. (See calculations within App. 6 for more detail.)

There is sufficient space within the site to accommodate either a 15 to 20m run of 1000mm diameter storage pipe or a circa 4x4x0.8m³ sized or equal volume rectangular tank.

There is also the possibility to store water 'on site' above ground level if necessary to the full garden area of the site without compromising the floor level and by extension the regular on-going use of the building itself.

In the event that this is not acceptable to the Local Drainage Board/Authority an alternative SUDS scheme may then need to be agreed.

d) Flood Risk Assessment

The site lies within Flood Risk Zone 1 (outside zones 2 & 3 – areas prone to an extreme flood.) See map below. No FRA needs to be prepared as the site lies within Flood Risk Zone 1 and at 0.106Ha is less than 1 hectare in area.



e) Biodiversity & Geological Conservation.

See Section 5 of Design & Access Statement regarding History of the site.

The site has been identified as having primarily been a dwelling certainly since the late 1950's and that the site has had no use other than for amenity garden purposes or as a small holding for several centuries.

The site is situated within the Pickering Town Centre, all of the buildings on the site - whilst having been vacant well in excess of a year - are well sealed. Recent inspections to full exterior areas as well as infrequently accessed internal roof void areas, both to be retained and those proposed to be demolished, have been undertaken to all locations with no evidence of droppings etc. encountered.

f) Hazardous Substances.

Chlorine will be used within the Hydrotherapy Pool, quantities stored on site will be very small and strictly (controlled in compliance with recommended guidance) with the "free chlorine" level within the pool itself of relatively low levels between about one and three parts per million.

As noted in c) **Foul & Surface Water Drainage** section - Consent for regular pool backwash discharge to mains drains is, we understand, typically acceptable once consent has been obtained though notice in advance is required to be given.

g) Land Contamination Assessment.

Refer to Page 2 – 'Risk View Residential' within Appendix 6

Landmark Information Group consider it unlikely that the property would be designated "contaminated land" within the meaning of Part 2A of the Environmental Protection Act 1990. Therefore, there should be no adverse effect on the security of the property for normal lending purposes.

In addition (See Section 5 of Design & Access Statement) the site has been identified as a dwelling since the 1950's and no other evidence suggests the site has had any use other than amenity or as a small holding for several centuries.

The site is in an area with intermediate probability of elevated Radon levels which can be mitigated with appropriate ground slab barrier design.

h) Lighting Assessment

All new lighting will be low energy type, and typically either point inwards or be shrouded downward pointing wall type to the areas of the rear external coffee yard and landscaped area adjacent to the eastern boundary with 124 & 125, Eastgate.

Any lighting within the more sensitive areas surrounding the scheme on the southern & western boundaries forming the proposed Sensory Garden, as noted within the M&E Services Strategy (See Appendix 7) will be carefully considered and designed to mitigate any nuisance and detrimental impact upon the amenity of adjoining residential properties. All lighting will be time controlled with sensors deactivated 'out-of-hours.' Any required to satisfy statutory legislation/requirements, such as for Emergency wayfinding lighting, will **NOT** typically be 'on' during the hours of darkness and will only switch on when essential, such as when a real fire alarm activation occurs.

It is requested that in the event the application being considered acceptable that this matter be the subject of a conditional approval whereby a detailed landscaping and external lighting design be prepared, with scheme design drawings and lux plot plans submitted to RDC for consideration and comment/approval as appropriate.

i) Noise Impact Statement

i) Noise Impact Statement

The proposed scheme is a mixed use development and it is not anticipated that the internal uses/ functions should result in or generate increased levels of noise or disturbance greater than those pre-existing.

Coffee Yard/Multi-Use Rooms Areas

Western boundary

The carpet warehouse on the western boundary is occupied during typical commercial operational hours. There is the existing solid two storey brick wall for the publicly abutting areas of the warehouse in addition the construction of the new external wall between the two facilities so no impact is anticipated.

Eastern boundary

The properties onto the eastern boundary are Holiday Lets with short term occupancy.

125, Eastgate has a very small external 'lightwell' type of external yard space (approx. 2 x 2.5m long in size) between the rear door to the property & an outhouse that has been converted to a Utility Room use. This is a relatively small space virtually fully enclosed with tall masonry walls on all sides, the boundary wall between the two properties is approx. 2.1m tall of which nearly half of it's length is to the rear of the gable wall forming the staircase access leading up to the (Unit 1) 'studio' flat.

The Café located in this area is a pre-existing use. Enabling the proposed Café and the Multi-Use Room to access the rear external Coffee Yard area would introduce a change to the pre-existing, however access would be limited to hours of operation only with very low levels of noise generation anticipated that may impact upon 125, Eastgate.

There is one small area of garden space of 126, Eastgate on the opposite side of the 1.8m tall stone eastern boundary wall deeper into the site, though it's primary external or garden space is on the opposite side of Grindale Mews itself. The seated or occupied area that would be the Coffee Yard area has intentionally been stopped short of this adjoining portion via the design of proposed landscaping to signal or demarcate the area beyond as a semi-private area so as not to encourage people to sit or dwell within this area. The only reason for persons to enter or pass through this area would be to access the Sensory garden area beyond so naturally steps-down' occupancy and appropriate for being outside of the Treatment Room and Transition Area.

Sensory Garden, Rebound/Sensory & Hydrotherapy Pool buildings.

As described in detail within Sections 6 & 7 of the Design & Access Statement, careful consideration from the outset has been given to the siting of these facilities. These areas of the site are remote from surrounding residential properties. All windows on the southern boundary are small, at high level and are for secondary or supporting facilities such as changing rooms.

The 'internal uses' for all of this group of buildings are for rehabilitation, therapy and sensory stimulation purposes rather than general 'leisure' with anticipated noise levels generated from these activities capable of being contained by standard or typical building fabric measures, none have or are intended to have large open areas of glazing or doors that will be left open permitting the escape of noise. The pool in particular, for energy conservation reasons and also control of moisture to protect the building fabric, requires the climate to be strictly regulated precluding doors and windows being left open.

The Sensory Garden will essentially be designed to stimulate visual and olfactory senses and as a result 'quiet' activities. In addition to safe-guarding reasons, access to this area will be controlled, with most visitors accompanied and supervised as well as being restricted to the hours of operation.

j) Ventilation/Extract & Plant Statement

j) Ventilation/Extract (& Plant) Statement

Please read in conjunction with scheme drawings submitted with this application.

Please also refer to the Mechanical & Electrical Services Strategy included within Appendix 7.

The below commentary is an overview of the proposed principals with respect to determining siting and orientation of any ventilation & servicing plant. More detailed assessments, explanations and descriptions for siting are included within sections 6 & 7 of the Design & Access Statement.

In the event of the proposals contained within the larger application being considered acceptable, it is proposed that this matter be reserved and subject to discharge of a condition for the acoustic assessments of the completed detailed designs, undertaken by appropriately qualified acousticians with mitigating features submitted to RDC for consideration and comment/approval as appropriate.

Café.

A working commercial kitchen has operated on the site for several years servicing the Café. The proposed kitchen location is effectively in the same location and its ventilation would also rise and terminate in a very similar location and at a similar level.

With the proposed design the kitchen exhaust & supply air would rise as shown on the scheme drawings in the rear most corner of our site adjacent to the carpet warehouses boundary wall, rising within a zone between the rear line of the existing properties fronting onto Eastgate & the new access stair and terminate at high level (above eaves level)

This would be at a similar height to and approximately 2 metres further away from the adjoining residential properties of 125 & 126 Eastgate than the pre-existing installation.

Roof Area Plant.

To deliver a sustainable scheme minimising reliance on fossil fuel sources, the proposed Mechanical & Electrical strategy proposes to utilise VRF air source heat pumps for heating & hot water needs for all of the proposed facilities (other than the Hydrotherapy Pool complex – see notes on following page for this.)

Roof Area Plant (cont.)

The pumps for these are proposed to be sited at high level to be as remote as possible from both the existing surrounding properties as well as within the site.

These are anticipated to operate at around 38 – 42 dB (dependant upon frequency)

This area would be at roof level set down within a 'recessed' area created by the use of a taller single pitch roof on the eastern side to enclose a flat roof area behind it and the adjacent existing roof of the carpet warehouse. An acoustic fence would be provided to the fourth side of this to enclose the area, to safely access and service it, whilst also shielding the surrounding residential properties directing any resultant nuisance (or noise) they may create upwards & over the high roof of the carpet warehouse.

Recessed area created for Air Source Heat Pumps (ASHP's) to be set-down into, shrouded by roofs from surrounding properties.



Birdseye view of roof interfaces & shielded plant

j) Ventilation/Extract & Plant Statement

Ventilation/Extract (& Plant) Statement (continued.)

Hydrotherapy Pool Plantroom Equipment

As also described within Sections 6 & 7 of the Design & Access Statement, careful consideration from the outset has been given to the siting of any Mechanical & Electrical plant for this area that may generate noise or give rise to nuisance in use and as a result of any maintenance.

All services are routed internally so will not have any impact externally. Domestic type Heat Recovery Units (HRU's) set internally within the ceiling void areas will provide heating and ventilation for the supporting Changing room accommodation closest to the southern boundary and adjoining residential properties.

Please also refer to 'Indicative Pool Plantroom Equipment Literature' as included within Appendix 9.

The below assessments are based on probable equipment that will be installed.

The CHP unit is as that proposed by the Consultant M&E Services Design Engineer (& as shown within Pool Plant 1 on the Ground floor plan dwg WWEP/102.) The HRU is that proposed by one of the possible Pool manufacturers. The detailed design of the project has not been undertaken at this stage and as such, none have been appointed as yet, so are not certain or guaranteed to be the actual equipment that will be installed but the following data and assessments have been provided and undertaken in order to provide confidence that an acceptable solution is possible to provide without a fundamental review or significant re-design of the scheme would be necessary to deliver.

The two most noisy pieces of equipment to be accommodated within the plantroom will be the Combined Heat & Power Unit (CHP) and The Heat Recovery Unit (HRU.)

To address this the pool complex's plantroom has been located as far away as is possible from surrounding residential properties with air handling louvres facing onto and directing any intake and exhaust air towards unused areas of and the blank elevations of the adjoining carpet warehouse.

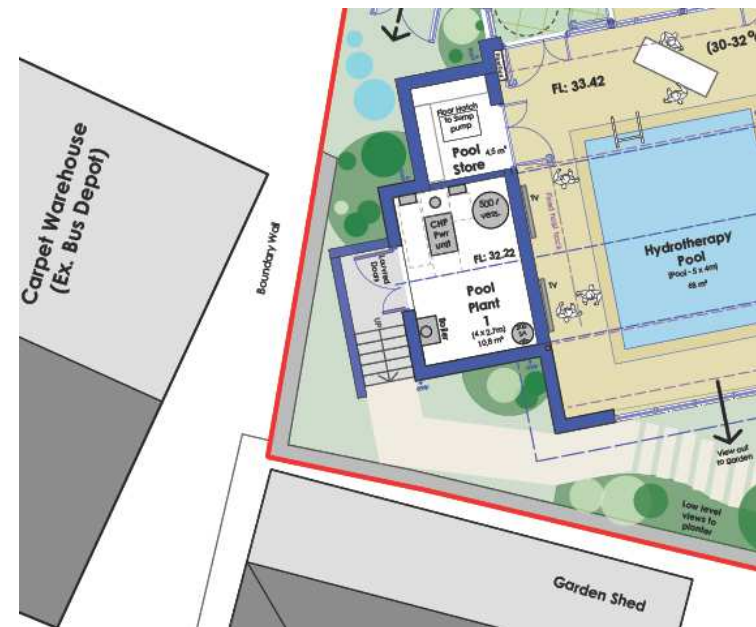
- The walls of the plantroom will be that of a dense blockwork inner leaf, cavity wall insulation and brick outer leaf construction. This can typically reduce sounds in excess of 41- 45dBA.
- Roof constructions achieving a similar level are also relatively routine to achieve with underdrawn dense acoustic liner boards etc.
- The external louvres louvre are anticipated to be the 'weakest' point or element to attenuate (see following page.)

Combined Heat & Power unit (CHP)

A modestly sized gas fired CHP is proposed for the Hydrotherapy Pool Complex to provide space heating and hot water generation for the operation of the pool throughout the year. This would be a floor mounted unit – similar in size to a typical under counter domestic fridge - generating similar levels of noise with a standard flue apparent externally.

The CHP unit operates at 49dB (A) (sound pressure @ 1 metre distance) – See page 54 of manual within appendix 9.)

This is broadly equivalent to the noise generated by a built-in domestic dishwasher which, with the masonry wall, roof and louvres, should not be audible externally.



Part plan showing Pool Plantroom 1 In context

j) Ventilation/Extract & Plant Statement

Heat Recovery Unit (HRU)

There will also be reasonably significant volumes of air to handle and treat to within the pool area. The fabric of the plantrooms itself will be constructed using heavy 'mass' masonry construction are anticipated to reduce this by up to 40dbA.

The louvres are anticipated to be the 'weakest' point to address which will be attenuated, correctly sized & designed to mitigate turbulence and noise resulting from the passage of air through them. (If ventilation louvres are designed adequately then there is no noise generated or resulting as a consequence of turbulence or excessive pressure as a result of too much air trying to be forced through too small a louvre.)

As such an assessment and initial design for the louvres has been undertaken by IAC Acoustics Co. UK Ltd. (Ref 2005267 doc.) utilising the data from the technical literature for a Heatstar XF EC 3000 Super+ HRU (as proposed by the Pool manufacturer/supplier) and MBO Sketch drawing WWEP/Sk01_171120.

(Full copies of all are included with Appendix 9)

The Heat recovery Unit (HRU) which is the air handling unit operates at between 52.4 & 67.7 dB @1 metre distance (depending upon at which frequency) for the exhaust and fresh air as per the extract (right) and as "Installations Services" page 9 of manual within appendix 9.

Air Movement:					
Air Flow Rating:	Return/Supply to Hall:	2,500 M ³ /Hr.			
	Max. External Res.:	150 Pa			
	Exhaust Out/Fresh Air In:	2,400 M ³ /Hr.			
	Max. External Res.:	50 Pa			
Sound Data:					
Linear Sound Power	Frequency Hz	Return air	Supply air	Fresh air	Exhaust air
<i>L_w dB :</i>	63	67.9	65.1	65.6	67.7
	125	69.1	66.2	66.2	69.5
	250	66.9	64.1	63.8	67.7
	500	67.9	65.1	64.5	69.1
	1000	65.1	62.3	61.7	66.3
	2000	66.9	64.1	63.4	68.1
	4000	64.3	61.5	60.9	65.3
	8000	55.4	52.6	52.4	56.0

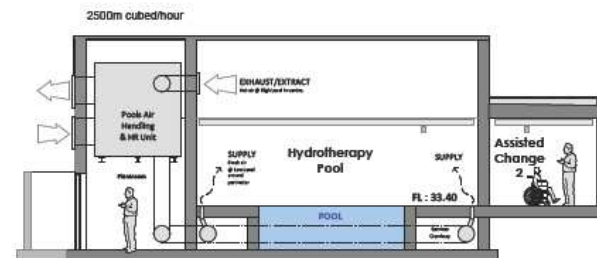
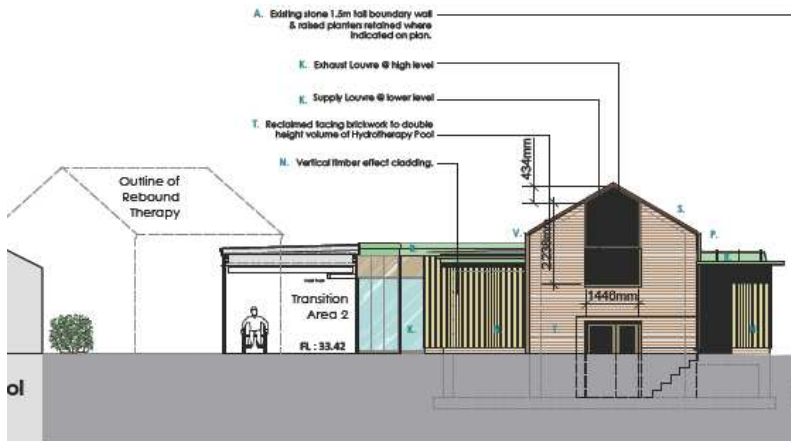
Extract from page 9 of HRU technical data.

The calculations by IAC indicate that two of their products can achieve as below :

Model SL300VH Supply Air (FAI) - Acoustic performance would be 44 dBA @ 1m or 38 dBA @2m
 Exhaust Air - Acoustic performance would be 48 dBA @ 1m or 42 dBA @2m.

Model SL600 Supply Air (FAI) - Acoustic performance would be 39 dBA @ 1m or 32 dBA @2m.
 Exhaust Air - Acoustic performance would be 42 dBA @ 1m or 36 dBA @2m.

Also that the louvres as shown on MBO sketch (& as per drawing WWEP/124 submitted with the Planning Application) are larger than the minimum area required to ensure that the required minimum free area can be provided.



MBO sketch Sk01_171120

j) Ventilation/Extract & Plant Statement

It is anticipated that the ventilation system would operate, but only at a reduced or 'background' level, out of operational hours.

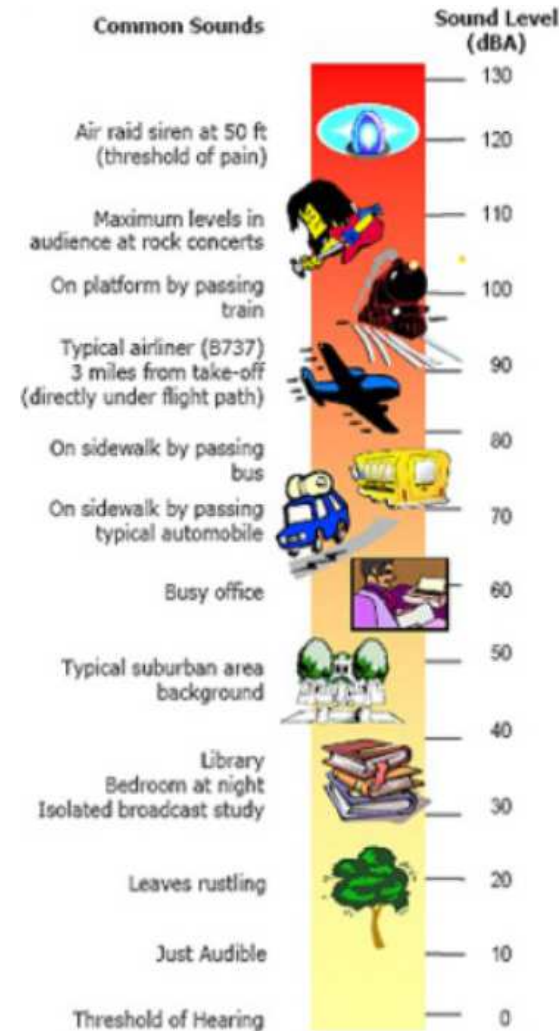
Sound levels would need to be taken for the site itself to ascertain what ambient background noise levels actually are during the daytime and in the evening and at night.

For one previous scheme MBO have been involved with for the construction of a new building surrounded on three sides by existing residential properties (in much closer proximity than for this application) ambient external noise levels of between 44-46dBL_{aeq,T} (dB) and 38-40 L_{af90,T} (dB) were recorded.

Assuming broadly similar readings arise for this site then one of the attenuated louvres, in conjunction with the site specific conditions and increased distance (circa 26 to 40m+ to surrounding residential properties) possibly even in conjunction with further measures, if necessary, should be capable of delivering an acceptable reading.

These are initial and perhaps simplistic calculations and will vary depending upon proximity & frequency etc. so would need to be reviewed by design & acoustic engineers.

As such, in the event of the proposals contained within the larger application being considered are acceptable, it is requested that this matter be the subject to discharge of a condition for the acoustic assessments of the completed detailed designs, and review undertaken by appropriately qualified acousticians with mitigating features submitted to RDC for consideration and comment/approval as appropriate.



Source: Handbook of Environmental Acoustics, James P. Cowan, 1994