

Executive Summary

The introduction of a fitness studio within the lower ground floor level within Primark Reading Headquarters requires an increase in mechanical ventilation provisions. Following a review of options it has been determined that an additional air handling unit (AHU) is required and that locating this additional AHU on a plant deck on the first floor roof, will have the minimal visual and noise impact.

The original planning submission included a single air handling unit (AHU 7) in the roof area in question; this AHU served the Auditorium which is also at basement level. Locating the additional AHU internally is not feasible as the required space take, including access space around and ducting connections to air intake / exhaust points cannot be accommodated within the internal layout.

Hoare Lea has investigated a number of alternative options for locating the air handling unit serving the fitness studio (AHU 8) and summary findings are given below. Additional information is provided within the 'AHU 7 & AHU 8 Location Options' section below:

- 1. Fitness studio air handling unit (AHU 8) to be located on the first floor utilising the existing external plant deck; minimal visual and noise impact – preferred option.**
2. Fitness studio AHU 8 / or auditorium air handling unit AHU 7 located at roof level. There is limited space at roof level to house an additional unit within the agreed plant deck locations and major redesign at roof level and within the risers would be required to accommodate the additional duct routes; visual and noise impact to the surrounding neighbouring properties higher than preferred option; therefore this option has been rejected.
3. Fitness studio AHU 8 / or auditorium air handling unit AHU 7 located in loading bay by the bike store. This option would impact on bike storage and the loading bay and internal office space layouts, noise impact to the surrounding neighbouring properties is higher than the preferred option; therefore this option has been rejected.
4. Fitness studio AHU 8 located within the existing LV room at lower ground floor level. The intake and exhaust ducts would need to be routed to roof level or first floor external plant space, thus requiring additional risers around the existing stairs. Impact on the office circulation space and neighbouring properties due to the noise from the additional plant.

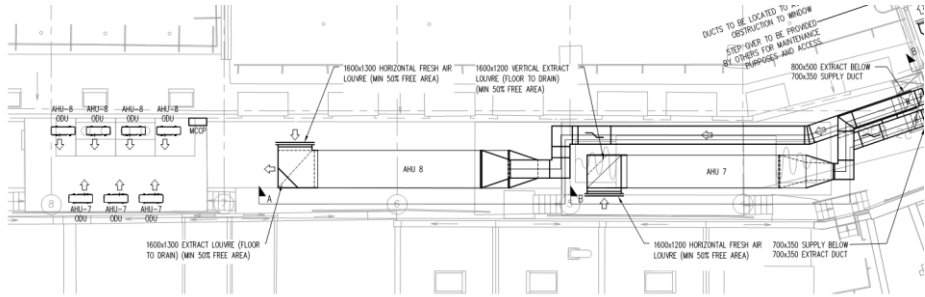
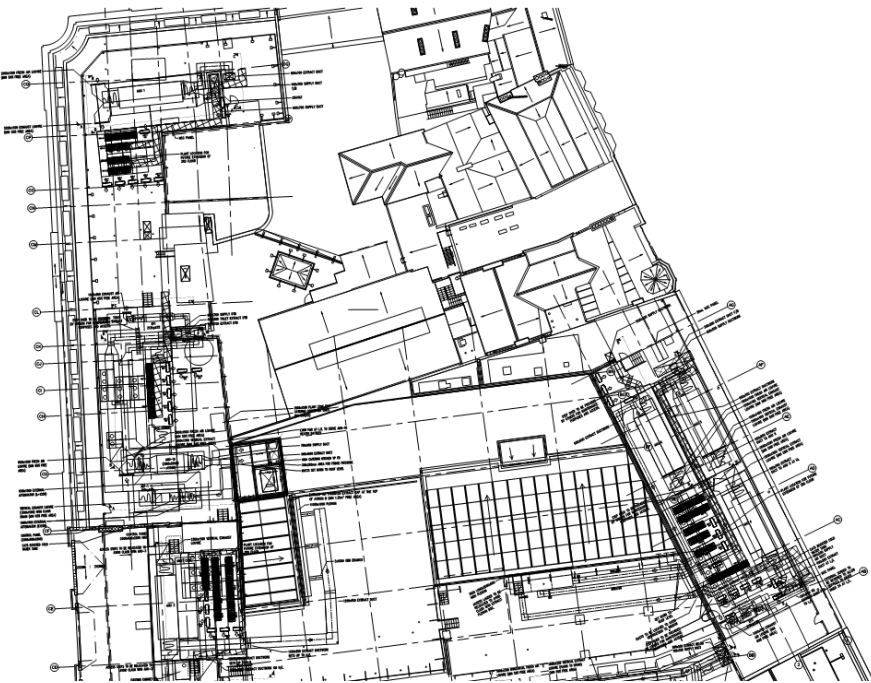
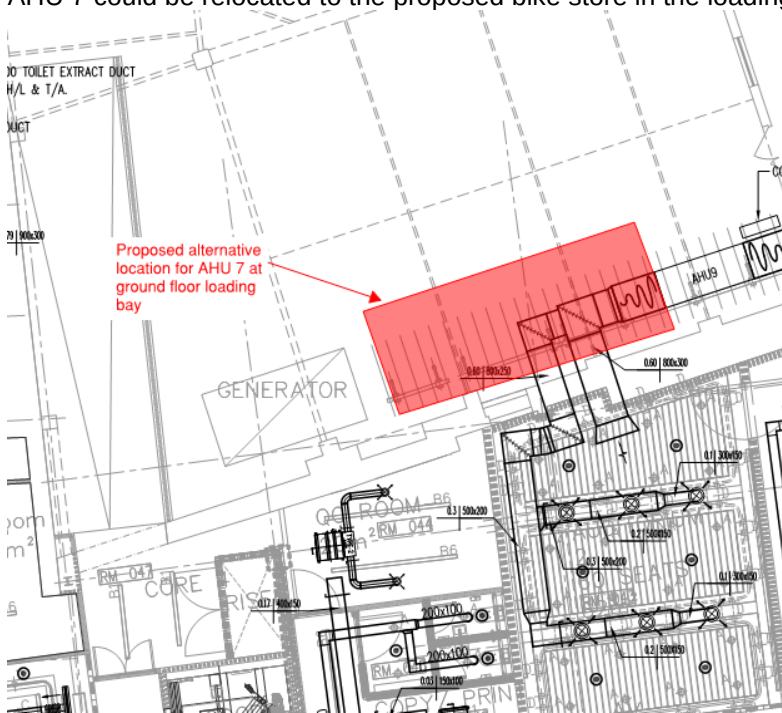
Therefore, the installation of the additional air handling unit to serve the fitness studio on the existing first floor plant deck is technically feasible, has minimal visual and noise impact and does not require any additional plant space on the upper roof levels.

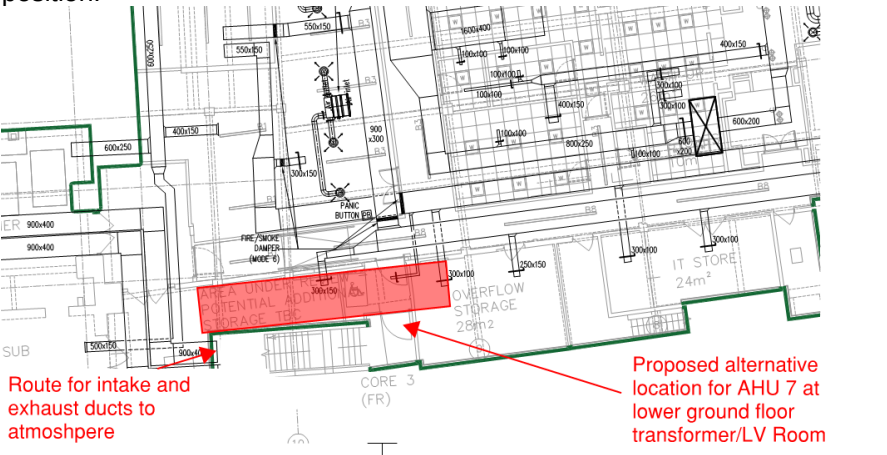
This document should be read in conjunction with the noise impact assessment carried out by dBX acoustic as contained in their report dated 6th December 2016. The dBX report recaps on the original roof plant proposals and demonstrates that the additional AHU 8 location as proposed (i.e. the preferred option referred to above) will not impact on the planning condition maximum noise level requirements.

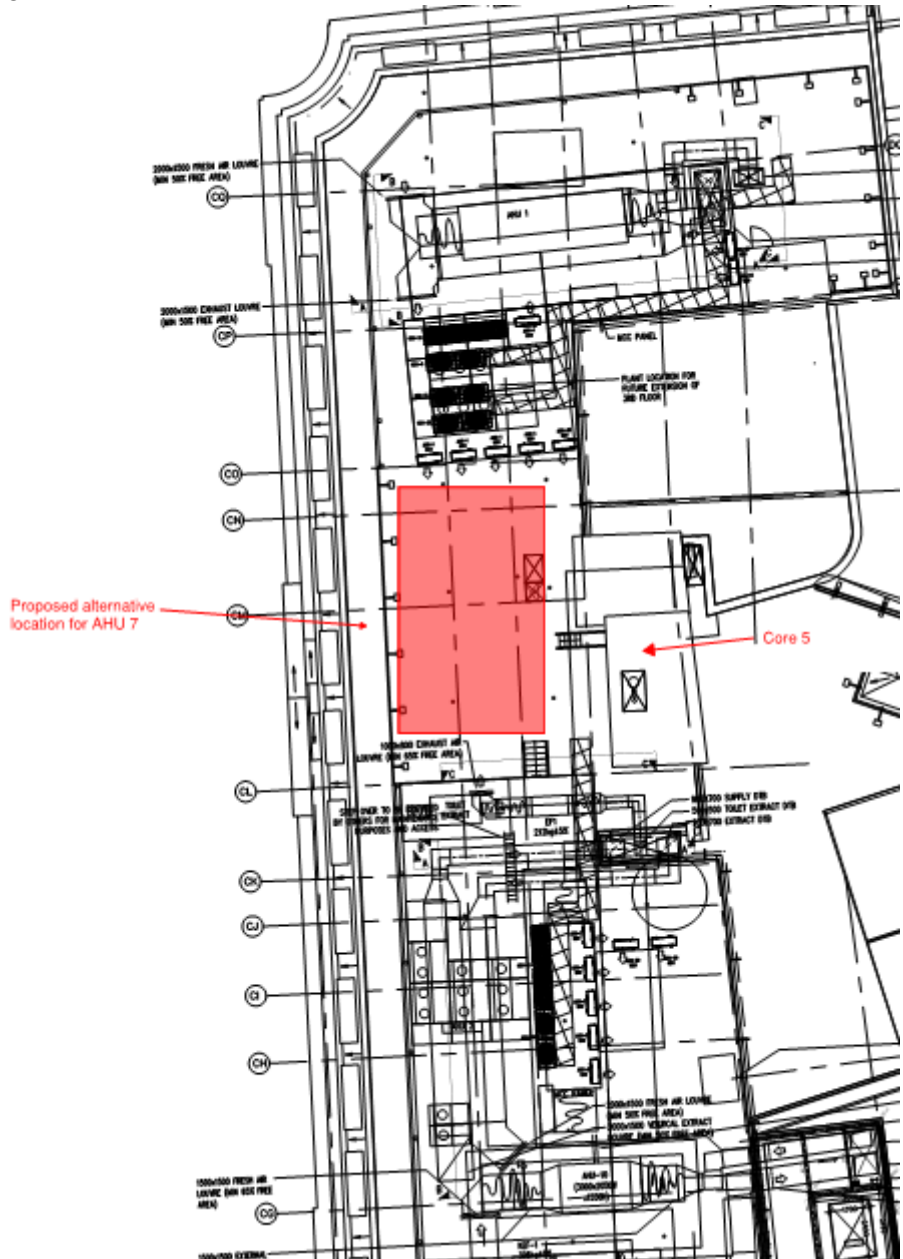


AHU 7 Option Locations

This summary note has been prepared to provide the proposals following the request to review the alternative locations for the fitness studio additional AHU 8 or Primark Reading Headquarters.

No	Preferred Option	Proposals	Alternative Proposals
1	It is proposed to locate the fitness studio AHU (AHU 8) and the lower ground floor auditorium AHU (AHU 7) in the plant area on the first floor external plant deck as shown below:  When reviewing the proposal, the intention is to retain the AHU associated with the fitness studio (AHU 8) at the first floor plant space, move to the current position of the lower ground floor auditorium AHU (AHU 7) space and thus relocate AHU 7 into a new position.	Currently all plant at roof level is located along Cheapside street and West street roof areas, no plant is located on the new atrium roof except the ducts serving Atrium A and B, please refer to the proposed roof plant drawing below: 	AHU 7 could be relocated to the proposed bike store in the loading bay.  The bike store could be located at the front of the AHU 7. The route of the intake and exhaust ducts will need to be considered to minimise the impact to for the bike store and loading bay area. There shall be noise impact to the neighbouring properties due to this additional unit.

No	Current Design Intent	Proposals	Alternative Proposals
2		AHU 7 located at West street plant area:  In order to locate AHU 7 to this area, major redesign would be required to the current scheme. Additional space would need to be found at roof level to relocate condensers that serve office floors in order to house AHU 7, potentially moving onto the new atrium roof. In addition, additional riser space would be required to house the ducts running from the roof to the lower ground space in Core 1 or Core 2. Additional riser space would have an impact to the office floor and reception layouts if Core 1 was used whereas additional riser in Core 2 would impact retail units at ground floor as the ducts would need to run through those units. Therefore, relocation of the AHU 7 to West Street roof plant area would not be recommended.	Alternatively, AHU 8 (fitness studio AHU) could be relocated to the existing transformer/LV rooms and AHU 7 (auditorium AHU) retained in the current position.  Intake and exhaust ducts would need to terminate either at roof level in core 3 area or first floor external plant space. In either scenario, space and risers would need to be created for the ducts around the existing stairs, further services coordination would be required at roof level. This proposal would impact the office circulation space and there will also be additional noise impact to the neighbouring properties due to the termination location of the intake and exhaust louvres.

No	Current Design Intent	Proposals	Alternative Proposals
3		AHU 7 located at Cheapside street plant area: AHU 7 potentially could be relocated near core 5:  This would require additional plant deck to support this AHU and additional riser space around core 5 for the ducts to run to the lower ground floor. However, due to very low floor to ceiling height at the lower ground floor plant space, the ducts serving auditorium, would impact clear floor to ceiling height and would restrict access for escape, maintenance and plant replacement. Therefore, this proposal is not recommended.	

As can be seen from all the proposals, relocation of the fitness studio/auditorium AHU would impact the plant space at roof level and office layouts, therefore currently proposed location to house both AHUs in the first floor plant external area appears to be the most feasible location with minimal impact to the internal layouts.