

Technical Submission Proposal



Project:	New Victoria, Manchester			Project Nr:	C5247
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Company:	HE Simm	Company:	VCUK		
Copy to:					
Proposal:	Generator				
The following technical submittal sets out the proposal for the generator at New Victoria, Manchester for approval.					
Approval Required By:	31/01/2022				
Response From:		Signed:		Date:	

Technical Note VIC-HES-ZZ-ZZ-RP-E-60001

Project Name: New Victoria, Manchester

Project Title: New Victoria, Manchester

Project Ref: C5247

Date: 13th January 2022

Report Ref: VIC-HES-ZZ-ZZ-RP-E-60001 P03

Life Safety Generator Acoustic Derogation Technical Note

The development brief states that the life safety generator must meet an acoustic requirement of 65 dBA @ 1m. This arose from early-stage discussions about the need for a life safety generator (not present in the stage 3 design) and the potential use of a containerised generator, such as the image below. We also understand that this 65 dBA @ 1m rating is used for general use equipment & plant that is used daily, and not for life safety systems that are only to be used in an emergency such as the life safety generator. The generator would be run for maintenance purposes monthly (at no load) and annually (at full load) typically for 15 minutes at a time.

Whilst a containerised type of generator can have better acoustic properties than a canopied generator, they are also typically larger.

Figure 1: Typical Containerised Generator



As the detailed design continued to be developed along with the external landscaping design and other ER's requirements such as the need for minimum amounts of car parking spaces etc... it became apparent that a containerised generator would not be best suited.

Alternative solutions were progressed to comply with the scheme's requirements, including meeting minimum life safety loads, spatial restrictions etc... Unfortunately, a smaller canopied generator such as what has been put forward for New Victoria meets all these requirements, other than 65 dBA @ 1m. The set proposed meets 79 dba @ 1m (noting that actual readings have shown to better this).

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Figure 2: Cummins 550kVA Canopy Generator



To aid the reduction in noise in populated areas we have rotated the generator 180 degrees, so the exhaust flue is pointing away from the building and is as far away as possible from the building. It is anticipated that 65 dBA will be achieved at a distance of 7m from the generator.

To further support this approval process, we approached the projects acoustician to review the requirements for noise levels at the façade and any other acoustic requirements so that we weren't causing any acoustic non-compliances to the project.

Please see response received below from Matt Fisher Acoustics via Vinci's design manager, confirming that we are compliant to the other acoustic requirements of the project and wider Manchester council restrictions.

"As the proposed generator would only run in an emergency or during periodic short-term test runs, it would not be subject to the same stringent environmental noise limits that duty plant would be required to meet. Manchester City Council normally requires that emergency plant achieves an 'LAeq' noise level that is no greater than 10dB(A) above the pre-existing background noise level (LA90) at a residential receptor. Referring to the results of our noise surveys at the site, this would mean that the generator would be required to meet a noise limit of 70dB LAeq at the closest residential façade.

The closest apartment window is approximately 7m from the generator and it is anticipated that 65 dBA will be achieved at a distance of 7m. The expected noise level of 65dB(A) at the closest apartment due to the generator is the same as the pre-existing levels of ambient noise at this location (i.e. the average noise level due to, for example, traffic noise) and only 5dB(A) greater than the background noise level at this position (the background noise level is the underlying level of noise, for example in the absence of passing road traffic).

Given these noise levels, disturbance of occupants during operation of the generator is not expected.

Therefore, whilst a derogation has not been previously discussed for the standby generator noise level, we believe that it would be sensible and would not impact upon the quality of the development. The proposed generator would then be acceptable."

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Further, to meet the ER requirements to achieve a noise level of 65dB(A) at 1m from the standby generator would result in the Generator size increasing in length impacting car park spaces resulting in reduced number of car park spaces. The width and height of the Generator would also increase in size and based on discussions with Network Rail, this would not meet their approval.

With all the above in mind and the minimum running time for the generator within its periodic maintenance, we request that a derogation on the acoustic properties of the life safety generator is accepted.