

## Technical Note **Method Comments in Bold Red**

<b>Project Title</b>	Imperial Hotel		
<b>Subject</b>	Services equipment acoustics table	<b>Date</b>	12 April 2019
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### 1 Introduction

This technical note identifies the major noise generating equipment proposed for the services installation, their location and the anticipated approach to acoustic treatment to meet planning requirements.

### 2 Noise generating plant

#### Existing Plant

Existing Plant	Existing Available	Known dB Rating	In Operation?	Impact
Chillers	<b>None</b>	<b>n/a</b>	<b>n/a</b>	<b>None</b>
Extract	<b>Toile extract in L10 Plant Room</b>	<b>Not known</b>	<b>Yes</b>	<b>To be removed</b>
Fans	<b>Fans in L9/10 Plant Rooms</b>	<b>Not known</b>	<b>No</b>	<b>None – to be removed</b>

Kitchen Fans	Local at Level 1 Roof	Not known	Yes	To be removed and replaced by new fans in L9 plant room
Generator	Located in basement car park	Not known	Yes (back-up, occasional use only)	To be retained (no change)
Ventilation System	Fans in L9/10 Plant Rooms	Not known	No	None – to be removed
Car Park Extract	In basement plant room	Not known	No	To be replaced with new fans in basement car park

Equipment	Location	Noise source to outside	Proposed or anticipated acoustic treatment
Air handling units	Ground floor courtyard plant room, mezzanine plant room, level 9 restaurant plant	Fan noise to outside via ducts and louvres.	<ul style="list-style-type: none"> <li>All equipment to be located internally inside plant rooms.</li> <li>Attenuators to be provided on intake and</li> </ul>

	room and kitchen plant room.		<p>exhaust ducts to outside.</p> <ul style="list-style-type: none"> <li>• Spatial planning of plant rooms to date has included space for attenuators to be installed.</li> </ul>
Kitchen exhaust fans	Level 9 kitchen plant room.	Fan noise to outside.	<ul style="list-style-type: none"> <li>• Fans to be located internally inside plant room (not on roof).</li> <li>• Attenuators to be provided on fan discharge.</li> <li>• Spatial planning of plant room currently allows for attenuators.</li> </ul>
Chilled water pumps	Rear courtyard plant room	Through wall or louvres	<ul style="list-style-type: none"> <li>• Attenuators on louvres (if present).</li> <li>• Pumps rotational speed and sizing to meet acoustic requirements.</li> </ul>
Generator	Rear courtyard plant room	Through structure, louvres or flue.	<ul style="list-style-type: none"> <li>• Two options to reduce noise break-out. Both have been allowed for in spatial planning of the plant room.</li> <li>• Option 1: Containerised generator set with integral muffler and attenuators on air discharge and attenuator on louvre air intake.</li> </ul>

			<ul style="list-style-type: none"> <li>Option 2: Non-containerised with muffler, attenuators on air intake/discharge and acoustic treatment to rooms.</li> </ul>
Boiler flue booster fans	Basement boiler room	Via flue discharge	<ul style="list-style-type: none"> <li>Attenuators on discharge side of booster fans.</li> </ul>
Chillers	Rear courtyard	Compressor noise and evaporator fan noise	<ul style="list-style-type: none"> <li>Proposed chiller to be scroll compressors rather than slightly more efficient screw compressors due to lower noise levels.</li> <li>Full enclosure acoustic package to be specified for each chiller</li> <li>Additional acoustic hood required to be developed between Specialist acoustics manufacturer with input from Acoustician.</li> </ul>