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17.06.2019

Ref: SY183106-MSR11-2

St. George Community Housing 38 Humphreys Lane, Hurstville NSW 2220

Dear Kate,

Re: 11 Gibbons Street, Redfern – Response to IPC – Mechanical Services Outside Air System

**Subject Premises:** 

11 Gibbons Street, Redfern NSW 2016

## Query 1:

How does the ventilation system provide adequate, safe and effective ventilation for future residents?

The base system for achieving compliant ventilation in accordance with BCA 2019 for all apartments is a trickle vent system, and the use of operable doors and windows which are provided to each habitable room. This design meets the building code requirements for ventilation and is typically implemented in most residential products of this nature.

Additional to this, the outside air system provides tenants with further amenity providing access to fresh air supply without having to open their windows which addresses the concerns raised relating to acoustic and air quality concerns due to the proximity of busy roads. This also provides additional air flow to the apartments to ensure mould prevention, a healthy internal environment is maintained for the comfort of the residents, and the need for ongoing maintenance to the apartments is reduced.

The mechanical outside air system has been designed in accordance with the following documents:

- NCC 2019 Section F, Clauses F4.5 and F4.6 Mechanical and Natural Ventilation of Rooms
- AS 1668.2:2012 The use of ventilation and air conditioning in buildings Mechanical ventilation in buildings
- AS/NZS 1668.1:2015 The use of ventilation and air conditioning in buildings Fire and smoke control in buildings

The mechanical system utilises a hybrid system which contains two independent ventilation systems.

System one serves all apartment bedrooms only, which includes a central outside air fan located at roof level (two fans for redundancy in design) to supply to all bedrooms. This includes ducting through the building from roof level and branching into every apartment.

System two serves all apartment living spaces and is designed to draw outside air from the façade through trickle vents, by utilising the apartment toilet/laundry and kitchen rangehood. Air will be drawn in through the living area via the kitchen and/or laundry fan depending on operation.

The two mechanical outside air systems will provide fresh air in accordance with BCA 2019 to all apartments in addition to the deemed to satisfy natural ventilation openings.

Date	Rev	Issue	Author	Verifier
14.06.2019	1	For Review	G. Harris	P. Young
17.06.2019	2	For Information	G. Harris	P. Young



## Query 2:

The Commission seeks to understand the proposed process for the ongoing maintenance and cleaning of the ventilation system and how this will be managed within the private residences.

The mechanical outside system has been designed to ensure all maintenance can occur outside of all apartments. The rooftop mechanical plant includes the fans, attenuators, filters, mechanical switchboards and the like to form a complete system.

All fire and smoke dampers are all accessible for maintenance from the common lobby space. Filters from the central outside air system are to be changed at a minimum of every 6 months. Following completion of the building, filters will need to be assessed monthly to accurately determine a filter replacement schedule. All other mechanical equipment (including fans, etc.) to be maintained annually, or as per manufacturer recommendations.

Yours faithfully,

Jan

George Harris Mechanical Engineer Northrop Consulting Engineers Pty Ltd