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Young**
A TETRA TECH COMPANY

Consultant Advice

From: **Michael Lewis** Date: **23 Feb. 18** File No: s26442\023\A-121\ca180220s0030 Pages: 2
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	Attention	Company	Email
To:	Stephen Simpson	Mirvac Projects Pty Ltd	stephen.simpson@mirvac.com
	Matthew Kelly	Mirvac Real Estate Pty Ltd	matthew.kelly@mirvac.com

Mechanical – Exhaust Ventilation to Blacksmith Area

Bays 1 and 2 in the proposed redevelopment of the Locomotive Workshop will consist of an open space area that contains three (3) different areas/usages, being the Cultural Heritage Retail Spaces (Ground Floor and Level 1 - North), Heritage Exhibition Area (Ground Floor – Middle) and Blacksmith/Hard Arts Area (Ground Floor – South), which are shown on the proposed Bay 1 and 2 layout below.



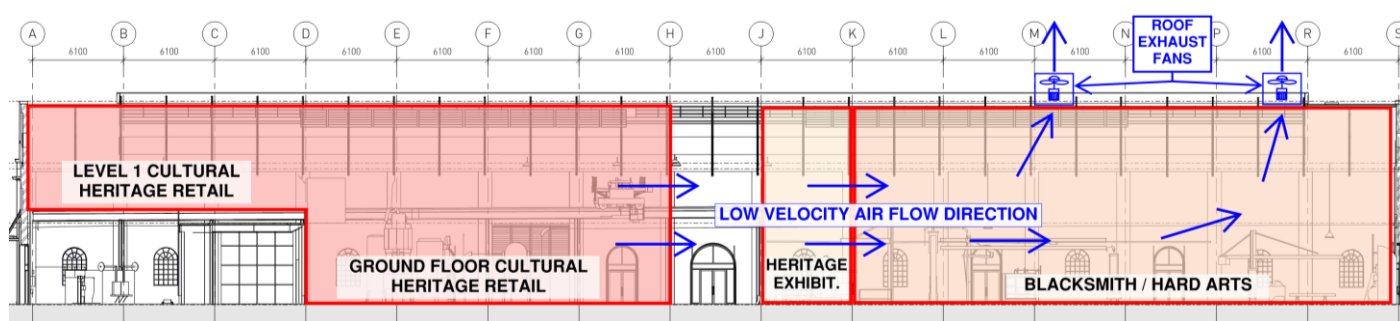
Proposed plan layout of space usage for Bays 1 and 2 at Locomotive Workshop Building



Bays 1 and 2 is to be generally a single open space, with exception of the food preparation zones within the Cultural Heritage Retail Areas, which will be enclosed to ensure a controlled and complaint set of built conditions. The existing blacksmith is to remain within the space as shown, so consideration needed to be given as to how airborne fumes/contaminants from the blacksmith processes are prevented from affecting the other areas within the space.

Whilst some Blacksmith equipment is fitted with dedicated flues and exhaust systems, there are still some processes that the Blacksmith carries out which can generate smells and fumes that could spread throughout the entire space.

To help mitigate the spread of these smells/fumes into the other two areas a number of roof mounted fans are to be located above the Blacksmith area that will exhaust air from the space, as shown in the figure below.



Cross section of Bays 1 and 2 showing proposed roof exhaust fan strategy

These exhaust systems will create a low velocity movement of air from the Cultural Heritage Retail and Heritage Exhibition areas towards the Blacksmith area, which will mitigate the spread of the fumes and other airborne contaminants from the Blacksmith area to the other adjacent areas.

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Michael Lewis
Senior Associate
m.lewis@ndy.com