ETHOS URBAN

21 May 2019

15780

Planning Panels Secretariat
Sydney Central City Planning Panel
320 Pitt Street
Sydney NSW 2000

Dear Sir / Madam,

DA/61/2018 / 2018SWC012DA – RESPONSE TO REASONS FOR DEFERRAL
48 – 54 BEECROFT ROAD & 52 – 54 RAWSON STREET, EPPING

We write on behalf of the proponent Double Gold Stone Pty Ltd (Double Gold Stone), in relation to the Development Application (DA) for a shop-top housing development at 48 – 54 Beecroft Road and 52 – 54 Rawson Street, Epping. At the Sydney Central City Planning Panel (the Panel) meeting held on 3 April 2019, the Panel unanimously agreed to defer the determination until the submission of additional information. This letter seeks to respond to the Deferral Letter issued by the Sydney Central City Planning Panel (the Panel) dated 3 April 2019.

Included as part of this letter are the following documents:

- Sydney Central City Planning Panel Letter of Deferral (**Attachment A**);
- Architectural Plans prepared by Woods Bagot (**Attachment B**);
- Landscape Plans prepared by Urbis (**Attachment C**);
- Wind Impact Assessment Report prepared by RWDI (**Attachment D**);
- Green Travel Plan prepared by TTM (**Attachment E**);
- Alignment Drawings prepared by Bornhorst + Ward (**Attachment F**); and
- Council email regarding Holding Redlich letters dated 7 March and 29 March 2019 (**Attachment G**).

1.0 Panel Meeting

The proposed development was considered by the Sydney Central City Planning Panel at a public meeting held on the 3 April 2019 (refer to **Attachment A**). The Panel agreed to defer the determination to request submission of the additional information as outlined below.

- An acceptable response from Transport for NSW (Sydney Metro).
- The provision of a satisfactory through-site link with a continuous accessible path of travel in accordance with AS1428.1 Clause 6.
- A further report on wind impacts to demonstrate that the proposal will satisfy a comfortable level of amenity and consideration being given to whether protection of the whole of the site through-site link.
- A revise the Green Travel Plan which makes provision for additional car share spaces, the redesign of the storage areas and allocation of storage areas within to the adjacent residential car parking space.
- Submission of alignment drawings to demonstrate compliance with the Parramatta Public Domain Guidelines.

The Applicant and the Project Team have reviewed the commentary provided by Council and have sought to make amendments to improve compliance and address the Panel's concerns. A response to each of the matters raised by the Panel is provided below.

2.0 Sydney Metro

The receipt of an acceptable response from Transport for NSW (Sydney Metro).

Douglas Partners have been engaged in recent discussions with Sydney Metro. We understand that a response from Sydney Metro is currently been finalised and will be provided shortly.

3.0 Architectural Amendments

Through-Site Link

The Panel requests that the scheme be amended to incorporate a through-site link with a continuous accessible path of travel. It is required that this through-site link be designed in accordance with AS1428.1 Clause 6.

The project team have amended the design of the through-site link in accordance with the Panel's feedback. As shown in **Figures 1** - **2**, the stairs accommodated within the through-site link have been removed to facilitate the achievement of a continuous accessible path of travel. This results in the lower part of the through site lane (Rawson Street end) matching the gradient of Hunts Lane then ramping to Beecroft Road at a gradient of 1:14. It is noted that the through-site link complies with the requirements of AS1428.1 Clause 6.

The revised through-site link is shown at **Attachment B** and **Attachment C**.



Figure 1 Through-site link as submitted with the DA under assessment

Source: Ethos Urban



Figure 2 Proposed through-site link

Source: Ethos Urban

The Panel requests that consideration be given to the weather protection of the entirety of the through-site link.

The project team have investigated the opportunity to incorporate an awning which extends for the full-length of the through-site link. As shown in **Figure 3**, given the incline of the through-site link from Rawson Street to Epping Road, providing an awning the entire length of the through-site link gives rise to adverse design outcomes, namely an awning that is either fully or partially located above the ceiling of the lower ground level (refer to **Figure 4** and **5**).

In light of this constraint, it is considered that a full-length awning, whether it be sloped (**Figure 5**) or located at a higher place on the façade (**Figure 4**), results in a less optimal design outcome as it would compromise the visual outlook and amenity of the southern side ground floor retail colonnade (as the awning would visually cut across this level) and also the visual connection for pedestrians between Rawson Street to Beecroft Road.

Conversely, the proposed awning (**Figure 6**) which partially covers the through-site link at the Rawson Street end achieves an improved visual connection between the two street frontages along with a greater sense of space and openness for both the through-site link and the southern ground level retail colonnade. For these reasons, the proposed awning is considered to provide a superior outcome with respect to architectural expression and amenity.

In addition to the above, Section 4.1.5 *Epping Town Centre* of the Parramatta DCP 2011 provides that pedestrian connections and laneways are to be "open to the air above". It is noted that all weather protection is still provided via stairs on the north western corner of the site that provides access to the ground level retail which then provides undercover access to Beecroft Road.

Finally, should the Panel be of the opinion that an awning is to be provided the full length of the through site link, this could be simply imposed as a condition of consent.

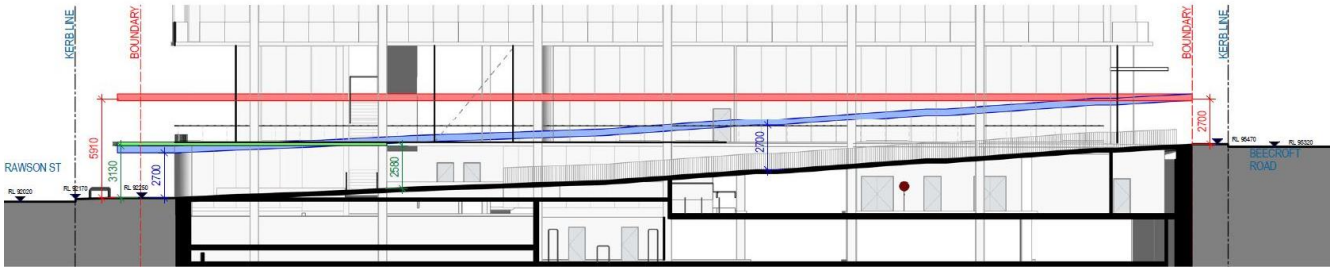


Figure 3 Through-site link and awning options

Source: Ethos Urban



Figure 4 Flat awning positioned at a higher level

Source: Woods Bagot



Figure 5 Sloped awning with a minimum height

Source: Woods Bagot

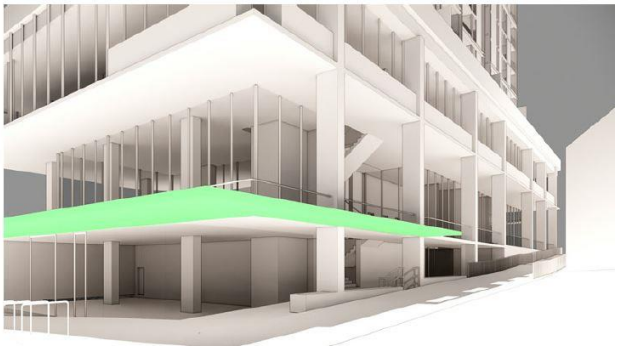


Figure 6 Proposed awning

Source: Woods Bagot

4.0 Pedestrian Wind Study

A further report on wind impacts to demonstrate that the proposal will satisfy a comfortable level of amenity.

An updated Pedestrian Wind Study has been prepared by RWDI and is included at **Attachment D**. The report provides an assessment of the wind impacts associated with the redevelopment of the site. It notes that the findings have been determined using the gust-based comfort criteria that is overly conservative. Accordingly, the results are based on a worst case scenario when accounting for the proposed development, the existing surrounding buildings and proposed wind mitigation measures (including the Rawson Street/through site link awning and tree planting) a satisfactory level of pedestrian comfort will be achieved.

Accordingly, the report concludes:

> *"The inclusion of purposely designed wind mitigation measures provides a substantial benefit to pedestrian wind comfort, Wind conditions in and around the proposed development are improved when compared against the unmitigated scenarios, and are predominantly suitable for walking use or calmer. Furthermore, there would be no exceedances of the safety criterion.*
>
> *The few "uncomfortable" conditions that persist only marginally exceed the threshold for comfortable walking. Given that these occur in areas where pedestrians are not expected to linger, and also given that the gust-based criteria for comfort are likely to be overly conservative in this scenario (see note below), we would conclude that the conditions are suitable for the intended pedestrian use."*

5.0 Green Travel Plan

To alleviate traffic impacts, the Panel requires the applicant to liaise with Council and revise the green travel plan and include additional car share spaces, redesign of the storage area and allocation of storage areas with the adjacent residential car parking space.

TTM have liaised with Council and updated the Green Travel Plan (GTP) which is included at **Attachment E**. Specifically, on 15 April 2019, TTM met with two officers from Council's Traffic and Transport unit to discuss the provisions within the Plan. As a result of the meeting, this plan has been updated to include measures that are considered to be more substantive and will sufficiently incentivise the use of public transport. The following additional measures are proposed:

- The inclusion of an additional car share spaces which will increase the total provision from 1 to 2 spaces.
- Redesign of the storage area and allocation of storage areas within the adjacent residential car parking space to prevent the potential retrofit of these spaces to accommodate additional car parking.
- A Monitoring Plan for the first three (3) years that the site is completed and occupied. The monitoring may include the following actions:
  - Use of social media or a similar method to survey residents to identify their travel behaviours, including mode of travel to work.
  - Undertake traffic counts at the basement entry / exit over two consecutive days at the AM and PM peak to identify the volume of traffic movements in and out.

These measures are proposed alongside the reduced provision of parking. As proposed by the amended design issued to Council on the 15 February 2019, the scheme has been revised to adopt the RMS (CBD) car parking rates) which has resulted in a sizeably reduced the quantity of parking by 55 spaces.

In response to the Panel's comments regarding storage, the storage areas located within the basement have been redesigned to include sliding doors as suggested by the Panel. Furthermore, the strata scheme could ensure each storage space be linked to the adjoining car space. Combined, these measures address Council's concern that the cages could be converted to parking spaces at a later date.

Gross Floor Area

Council have noted in their assessment report that the supplied GFA calculations do not include all the applicable floor space. Specifically, Council have noted that the following areas have been omitted from the calculations:

- Lower Ground: 28m^2 (retail waste);
- Upper Ground: 35.7m^2 (amenities) and
- Level 1: 15.7m^2 (storage).

In response to Council's comments, the development has been amended to achieve compliance with the maximum 6:1 FSR development standard applying to the site, with an amended design providing an FSR of 5.98:1. Further detail is provided on the Architectural Plans at **Attachment B**.

6.0 Alignment Drawings

Council requires the submission of alignment drawings to demonstrate compliance with the Parramatta Public Domain Guidelines.

Revised alignment drawings have been prepared by Bornhorst + Ward and are included at **Attachment F**. They demonstrate compliance with the Parramatta Public Domain Guidelines, in particular cross falls for the Beecroft Road and Rawson Street frontages are within the acceptable range of 1%-2.5%.

7.0 Owner's Consent / Access Arrangements

The Panel will refer the recent Holding Redlich letters dated 7 March and 29 March 2019 to Council for comment and advice.

Council have provided an email confirming that its solicitors have accepted the proposed site access arrangements (refer to **Attachment G**). In light of this, Council has indicated that the Applicant does not require land owner's consent from Council for site access.

Yours sincerely,





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adesgrand@ethosurban.com

Daniel West
Associate Director, Planning
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dwest@ethosurban.com

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APPENDIX A

Sydney Central City Planning Panel Letter of Deferral

RECORD OF DEFERRAL

SYDNEY CENTRAL CITY PLANNING PANEL

DATE OF DETERMINATION	3 April 2019
PANEL MEMBERS	Mary-Lynne Taylor (Acting Chair), Lindsay Fletcher, Richard Thorp, Mark Grayson and Cr Sameer Pandey
APOLOGIES	Paul Mitchell
DECLARATIONS OF INTEREST	Nil

Public meeting held at Rydalmere Operations Centre, City of Parramatta Council on 3 April 2019, opened at 2.00pm and closed at 4.25pm.

MATTER DEFERRED

Panel Ref – 2018SWC012 – LGA – City of Parramatta – DA61/2018 at 48-54 Beecroft Road and 52-54 Rawson Street, EPPING NSW 2121 (Lot 2 DP 592094, Lot 1 DP 541808, Lot 1 DP 592094, Lot 2 DP541808, Lot 4 DP 541960, Lot A DP 325036 and Lot 3 DP 541960) (as described in Schedule 1)

REASONS FOR DEFERRAL

The Panel is not prepared to refuse or approve this application today without a further acceptable response from Transport for NSW (Sydney Metro) and has agreed to defer the determination of the matter until –

- A satisfactory through site link is provided with a continuous accessible path of travel in accordance with AS1428.1 Clause 6;
- A further report on wind impacts to demonstrate that the proposal will satisfy a comfortable level of amenity and consideration being given to weather protection of the whole of the through site link;
- To alleviate traffic impacts, the Panel requires the applicant to liaise with council and revise the green travel plan and including additional car share spaces, redesign of the storage area and allocation of storage areas with the adjacent residential car parking space;
- Alignment drawings to demonstrate compliance with the Parramatta Public Domain Guidelines;
- The Panel will refer the recent Holding Redlich letters dated 7 March and 29 March 2019 to Council for comment and advice.

When this information has been received, the Panel will hold another public determination meeting.

The Panel adjourned during the meeting to deliberate on the matter and formulate a resolution.

The decision to defer the matter was unanimous.

CONSIDERATION OF COMMUNITY VIEWS

In coming to its decision, the Panel considered written submissions made during public exhibition and heard from all those wishing to address the panel. The Panel notes that issues of concern included:

- Use and ownership of the laneway

- Traffic impacts
- Non-compliance to LEP/DCP
- Loss of commercial space
- Through site link
- Wheel chair access
- Wind conditions in Rawson Street
- Vehicular access

The Panel considers that concerns raised by the community have not all been adequately addressed by the applicant as yet and that there are unresolved issues requiring information and further assessment.

PANEL MEMBERS	
Mary-Lynne Taylor (Acting Chair)	Sameer Pandey
Mark Grayson	Richard Thorp
Lindsay Fletcher	

SCHEDULE 1		
1	**PANEL REF – LGA – DA NO.**	Panel Ref – 2018SWC012 – LGA – City of Parramatta – DA61/2018
2	**PROPOSED DEVELOPMENT**	21 storey mixed use building comprising 2 – 3 storey podium containing 5 retail tenancies and 18 storeys of shop-top housing above containing 130 apartments (46 x 1 bed, 70 x 2 bed and 14 x 3 bed) over 4 storeys of basement car parking; public through-site link; and demolition of existing buildings.
3	**STREET ADDRESS**	48-54 Beecroft Road and 52-54 Rawson Street, EPPING NSW 2121 (Lot 2 DP 592094, Lot 1 DP 541808, Lot 1 DP 592094, Lot 2 DP541808, Lot 4 DP 541960, Lot A DP 325036 and Lot 3 DP 541960)
4	**APPLICANT/OWNER**	Applicant - Mr Sameh Ibrahim Owner - DGS Epping Development Pty Ltd
5	**TYPE OF REGIONAL DEVELOPMENT**	The development has a capital investment value of more than $20 million (at the time of lodgment)
6	**RELEVANT MANDATORY CONSIDERATIONS**	• Environmental planning instruments:

		• SEPP (Building Sustainability Index: BASIX) (BASIX SEPP) 2004 • SEPP (Infrastructure) (ISEPP) 2007 • SEPP (State and Regional Development) 2011 • SEPP (Sydney Harbour Catchment) (SEPP Sydney Harbour) 2005 • SEPP No. 55 (Remediation) (SEPP 55) • SEPP No. 65 (Design Quality of Residential Apartment Development) (SEPP 65) & Apartment Design Guide (ADG) • Parramatta Local Environmental Plan (PLEP) 2011 • Draft environmental planning instruments: Nil • Development control plans: o Parramatta Development Control Plan 2011 • Planning agreements: Nil • Provisions of the Environmental Planning and Assessment Regulation 2000 • Coastal zone management plan: Nil • The likely impacts of the development, including environmental impacts on the natural and built environment and social and economic impacts in the locality • The suitability of the site for the development • Any submissions made in accordance with the *Environmental Planning and Assessment Act 1979* or regulations • The public interest, including the principles of ecologically sustainable development
7	**MATERIAL CONSIDERED BY THE PANEL**	• Council report with attachments – 22 March 2019 • Written submissions during public exhibition: 48 • Verbal submissions at the public meeting: o In support – Nil o In objection – o Councillor Lorraine Wearne on behalf of residents and 3 Ward Councillors o Matt Mushalik o Dr Norman Jessup o Tony Hackett on behalf of the Epping Chamber of Commerce o Mike Moffatt on behalf of Epping Civic Trust o Council assessment officer – Alex McDougall o On behalf of the applicant – o Breellen Warry from Holding Redlich o Daniel West from Ethos

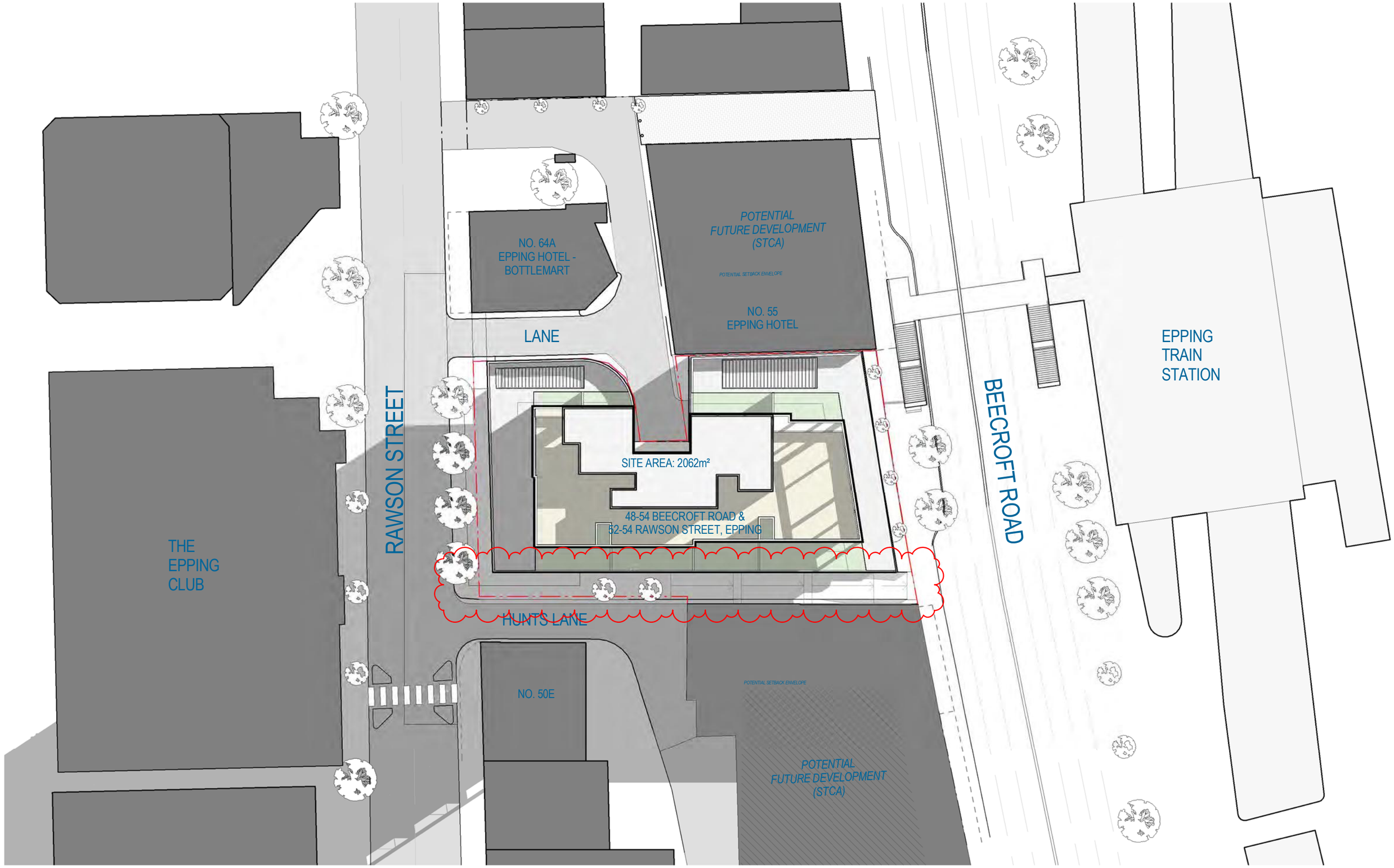
		○ Mel Fyfe ○ Kevin Peddie
8	**MEETINGS, BRIEFINGS AND SITE INSPECTIONS BY THE PANEL**	• Briefing – 12 February 2018 • Site Inspection – 3 April 2019 • Public meeting – 3 April 2019 • Final briefing to discuss council's recommendation, 3 April 2019, 12.30pm to 2.00pm. • Attendees: ○ Panel members: Mary-Lynne Taylor (Acting Chair), Lindsay Fletcher, Mark Grayson, Richard Thorp and Sameer Pandey ○ Council assessment staff: Alex McDougall, Myfanwy McNally and Hamish Murray
9	**COUNCIL RECOMMENDATION**	Refusal
10	**DRAFT CONDITIONS**	N/A

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APPENDIX B

Architectural Plans

Woods Bagot



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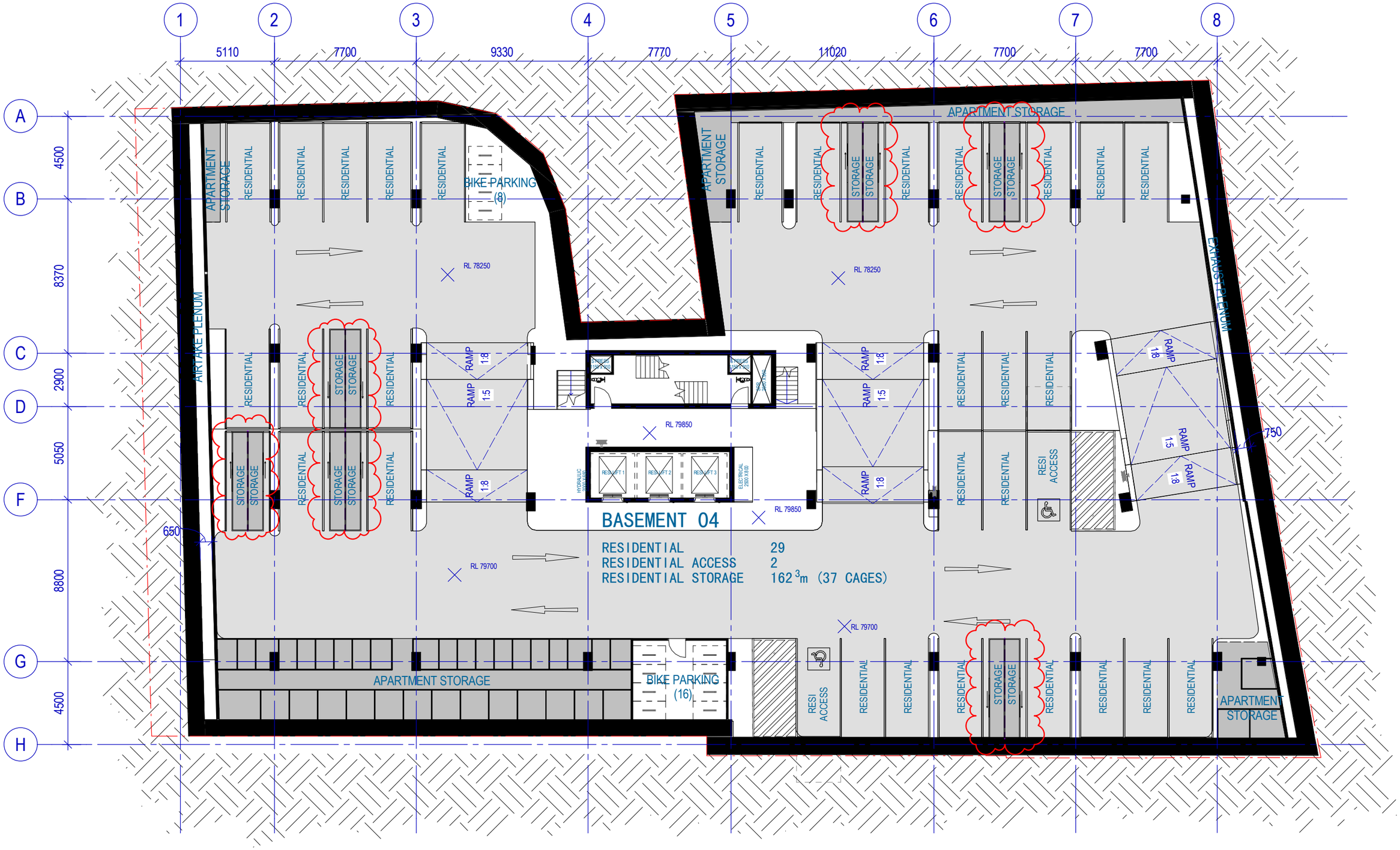
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Double Gold Stone Pty Ltd

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Epping Development
Address
48-54 Beecroft Rd &
52-54 Rawson Street, Epping

Sheet title
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Sheet no. **A-DA-1101**
Scale **1 : 500**
Revision **11**
Sheet size **A3**
Date **17.05.2019**

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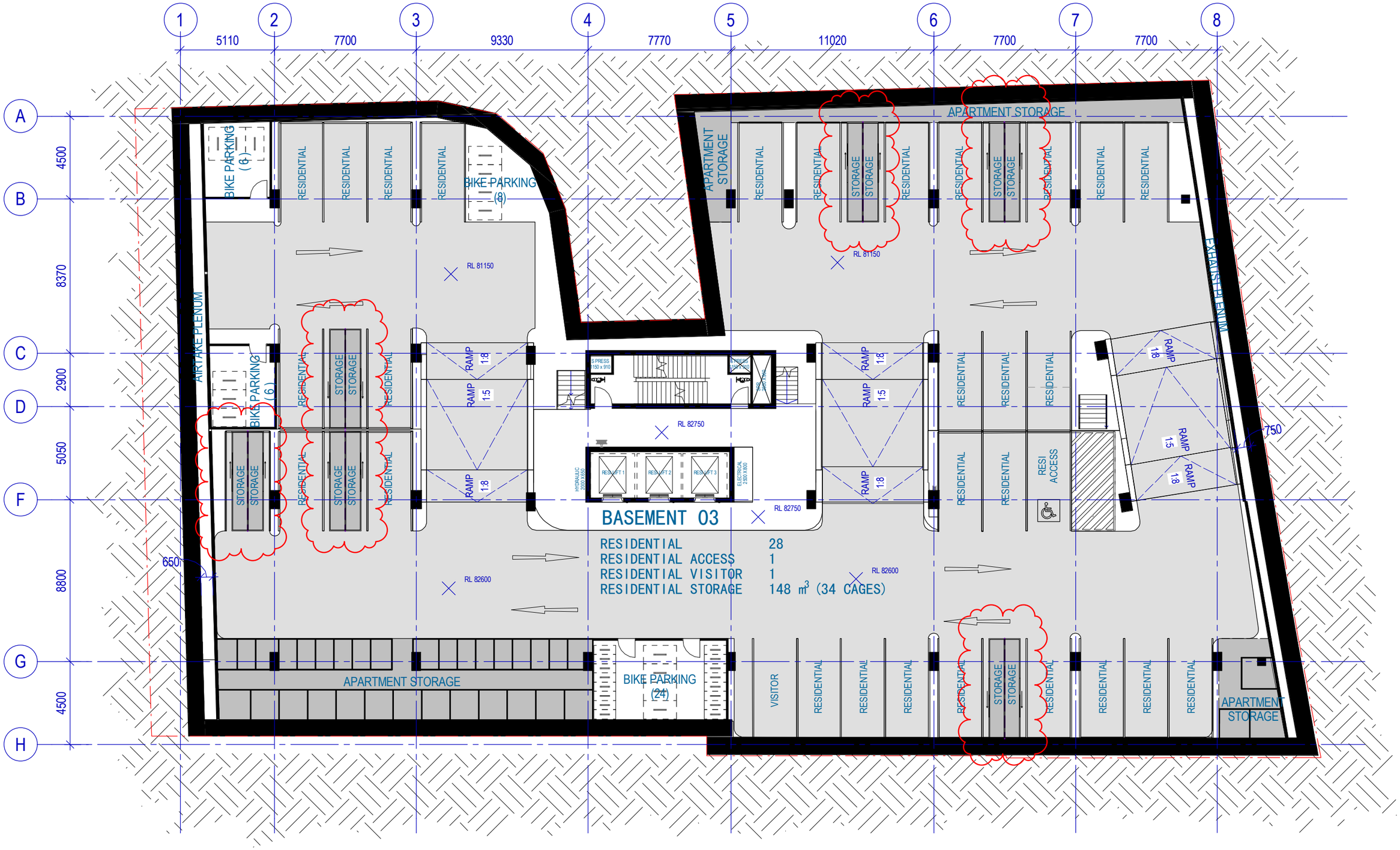
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Client
Double Gold Stone Pty Ltd

Project
Epping Development
Address
48-54 Beecroft Rd &
52-54 Rawson Street, Epping

Sheet title
BASEMENT LEVEL - B04

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Sheet no. **A-DA-1201**	Revision **12**	Date **17.05.2019**	



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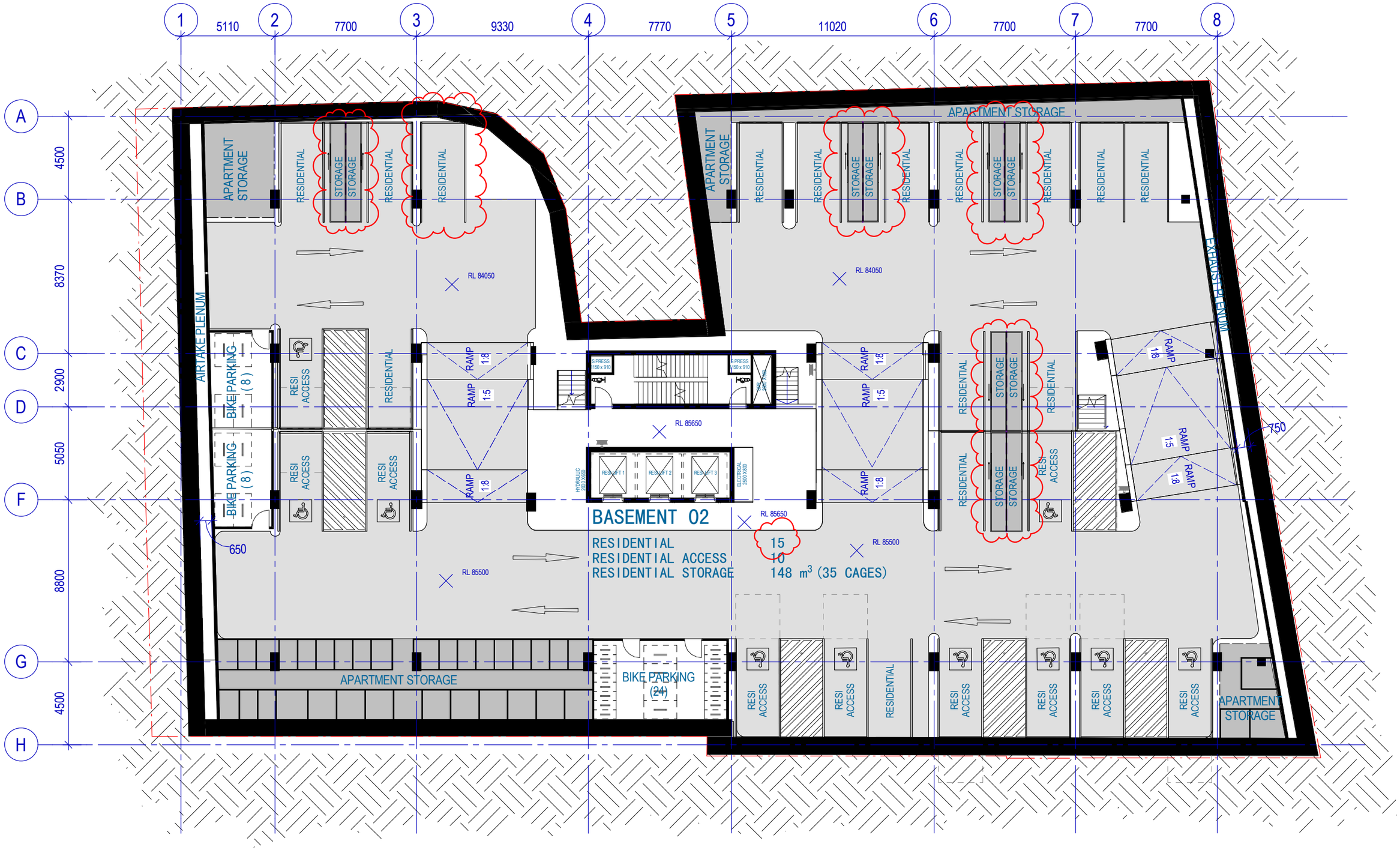
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Project
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Address
48-54 Beecroft Rd &
52-54 Rawson Street, Epping

Sheet title
BASEMENT LEVEL - B03

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Sheet no. **A-DA-1202**
Revision **12**
Date **17.05.2019**

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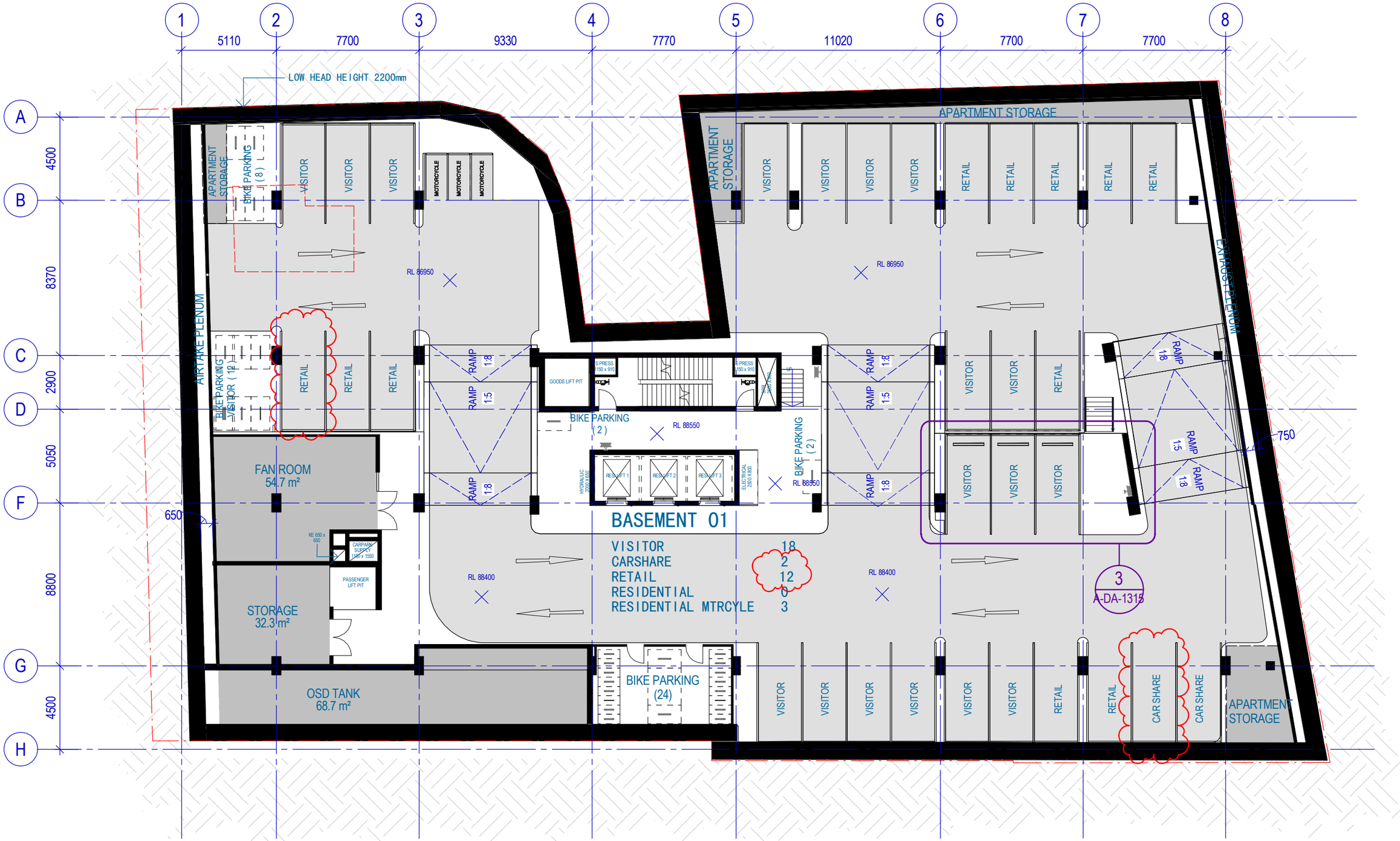
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52-54 Rawson Street, Epping

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BASEMENT LEVEL - B02

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Revision **12**
Date **17.05.2019**

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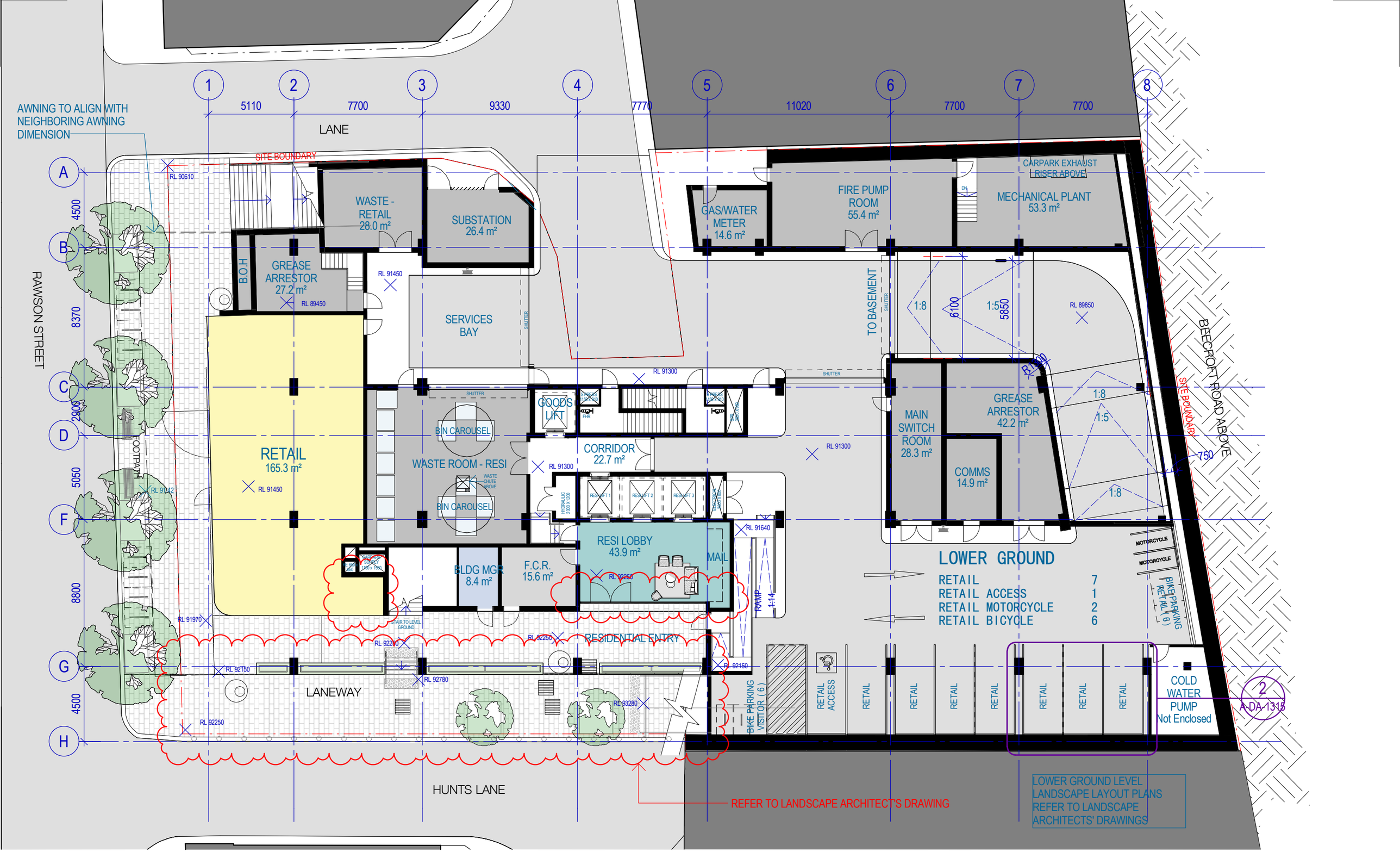
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52-54 Rawson Street, Epping

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17.05.2019

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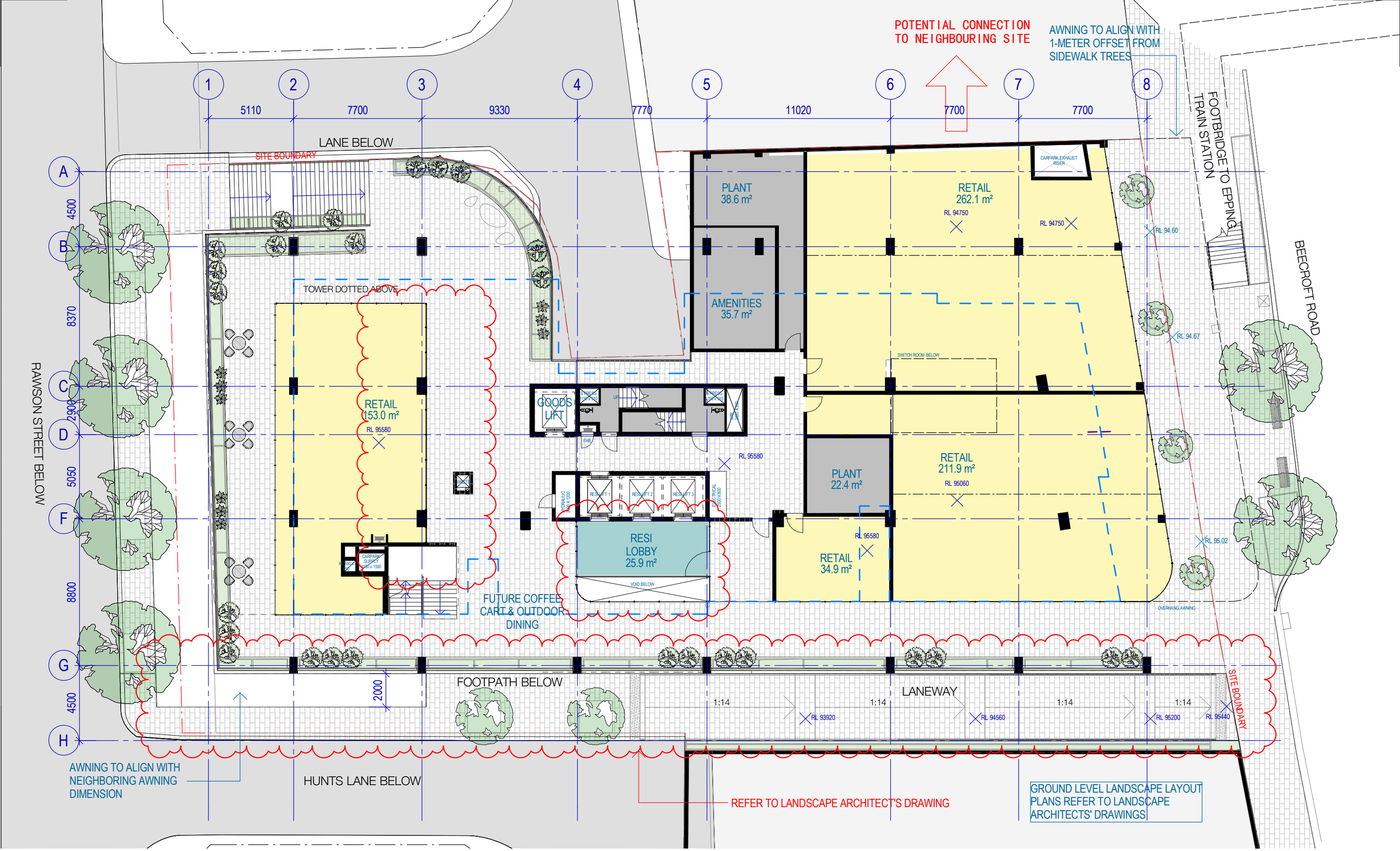
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Client
Double Gold Stone Pty Ltd

Project
Epping Development
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48-54 Beecroft Rd &
52-54 Rawson Street, Epping

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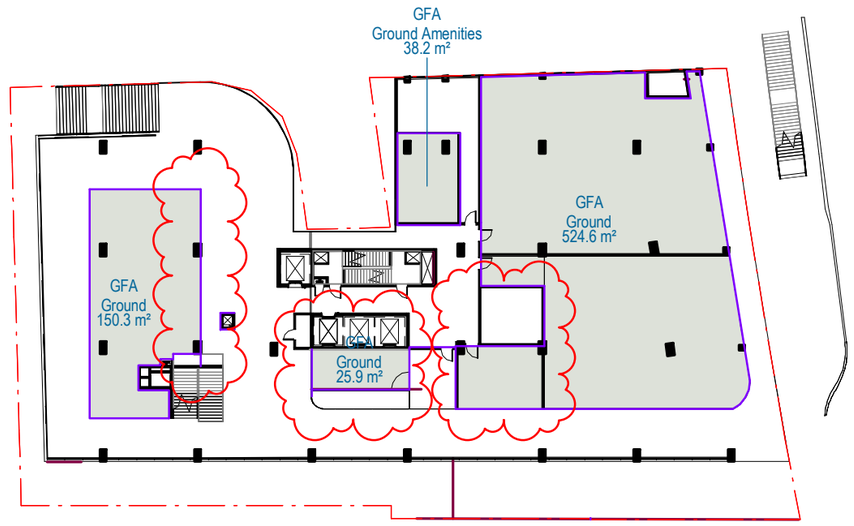
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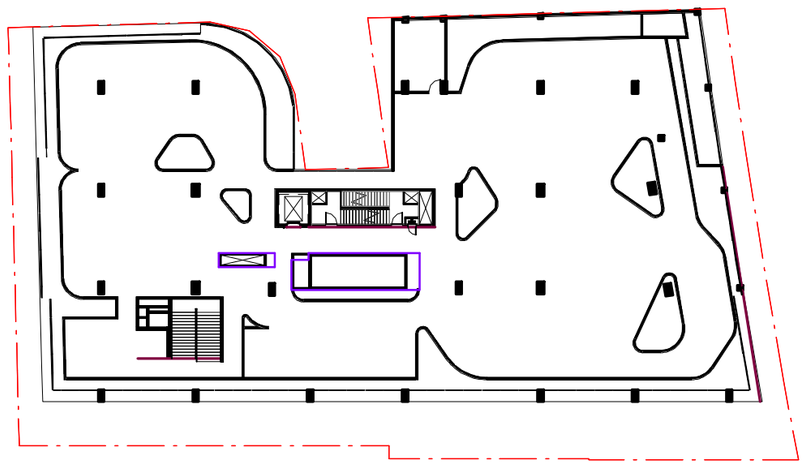
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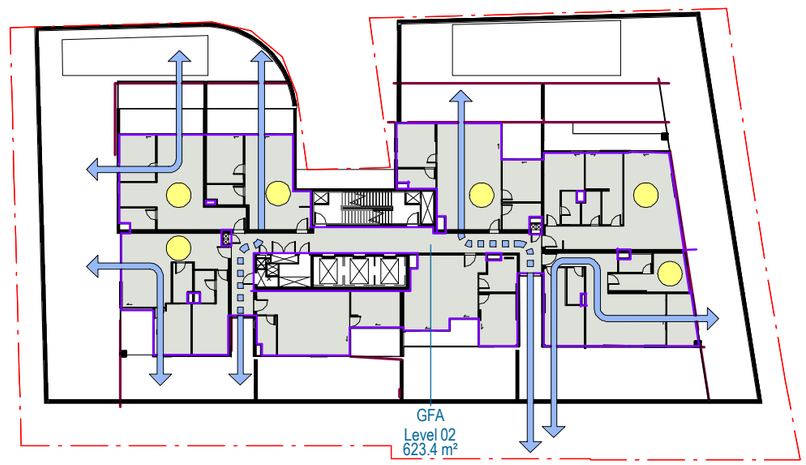
1 00 LG RAWSON ST/ BASEMENT LEVEL



2 00 G BEECROFT ROAD LEVEL



3 LEVEL 01 UPPER PODIUM LEVEL



4 LEVEL 02

LEGEND
>3 HOURS SOLAR
CROSS VENTILATION

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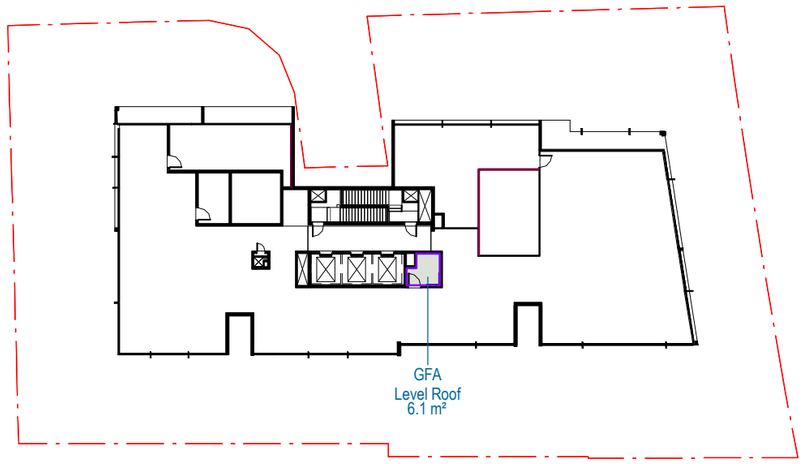
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52-54 Rawson Street, Epping

Sheet title
GFA PLANS 1

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Sheet size **A3**
Sheet no. **A-DA-2971**
Revision **13**
Date **17.05.2019**

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1 ROOF

LEGEND
>3 HOURS SOLAR
CROSS VENTILATION

EPPING | DEVELOPMENT SCHEDULE

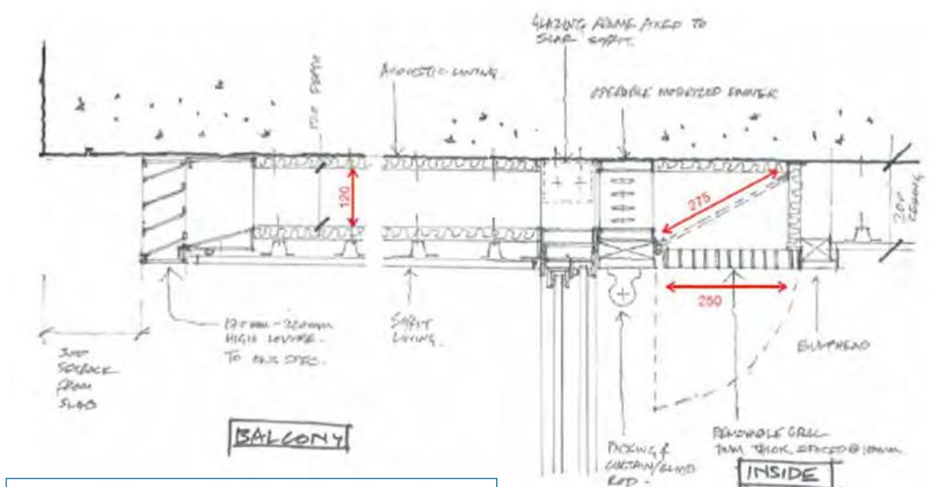
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Site Area:	2062	m²
LEP Height:	72	m
FSR Control:	6	:1
Max GFA:	12372	m²

Level		Predominant Use	Height F to F	RL	Area GFA Comm	Area GFA Res		1 Bed	2 Bed	3 Bed	Total	Cross-Vent	Solar
B5	B5	Parking											
B4	B4	Parking											
B3	B3	Parking											
B2	B2	Parking											
B1	B1	Parking											
LG	Rawson Street	Retail / Lobby			276	53							
G	Beecroft Rd	Retail			713	26							
1	Upper Podium	Retail			[illegible]	[illegible]							
2	Resi	Residential				623		4	4	0	8	5	6
3	Resi	Residential				623		4	4	0	8	5	6
4	Resi	Residential				[illegible]		4	4	0	8	5	6
5	Resi	Residential				[illegible]		4	4	0	8	5	6
6	Resi	Residential				[illegible]		4	4	0	8	5	6
7	Resi	Residential				[illegible]		4	4	0	8	5	6
8	Resi	Residential				623		2	4	1	7	5	5
9	Resi	Residential				626		2	4	1	7	5	5
10	Resi	Residential				[illegible]		2	4	1	7	5	5
11	Resi	Residential				[illegible]		2	4	1	7	5	5
12	Resi	Residential				[illegible]		2	4	1	7	5	5
13	Resi	Residential				[illegible]		2	4	1	7	5	5
14	Resi	Residential				[illegible]		2	4	1	7	5	5
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16	Resi	Residential				[illegible]		2	4	1	7	5	5
17	Resi	Residential				[illegible]		2	4	1	7	5	5
18	Resi	Residential				[illegible]		2	4	1	7	5	5
19	Resi	Residential				637		0	2	3	5	5	5
20	Roof	Plant / Amenity				6							
Total					989	11344		46	70	14	130	65%	74%
(excl overrun)						12333							

ADG Target
Parramatta DCP 2011 Target

FSR: 5.98 :1



Note: Typical vent detail use where acoustic treatment required.

WOODS BAGOT

Client
Double Gold Stone Pty Ltd

Project
Epping Development
Address
48-54 Beecroft Rd &
52-54 Rawson Street, Epping

Sheet title
GFA PLANS 3

Project no. **150245**
Scale **1 : 500**
Sheet size **A3**
Sheet no. **A-DA-2973**
Revision **5**
Date **17.05.2019**

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APPENDIX C

Landscape Plans

Urbis

URBIS

EPPING DEVELOPMENT

DEVELOPMENT APPLICATION - Landscape Design Incorporating Through Link Ramp

CLIENT: Double Gold Stone Pty Ltd

ARCHITECT: Woods Bagot

STATUS:	DEVELOPMENT APPLICATION
ISSUE:	[2]
DATE:	20.05.19
JOB REF:	ND1745

CONTENTS

LANDSCAPE PLANS 3

Landscape Plan - Rawson Street 3

Landscape Plan - Beecroft Road & Pedestrian Through Link 4

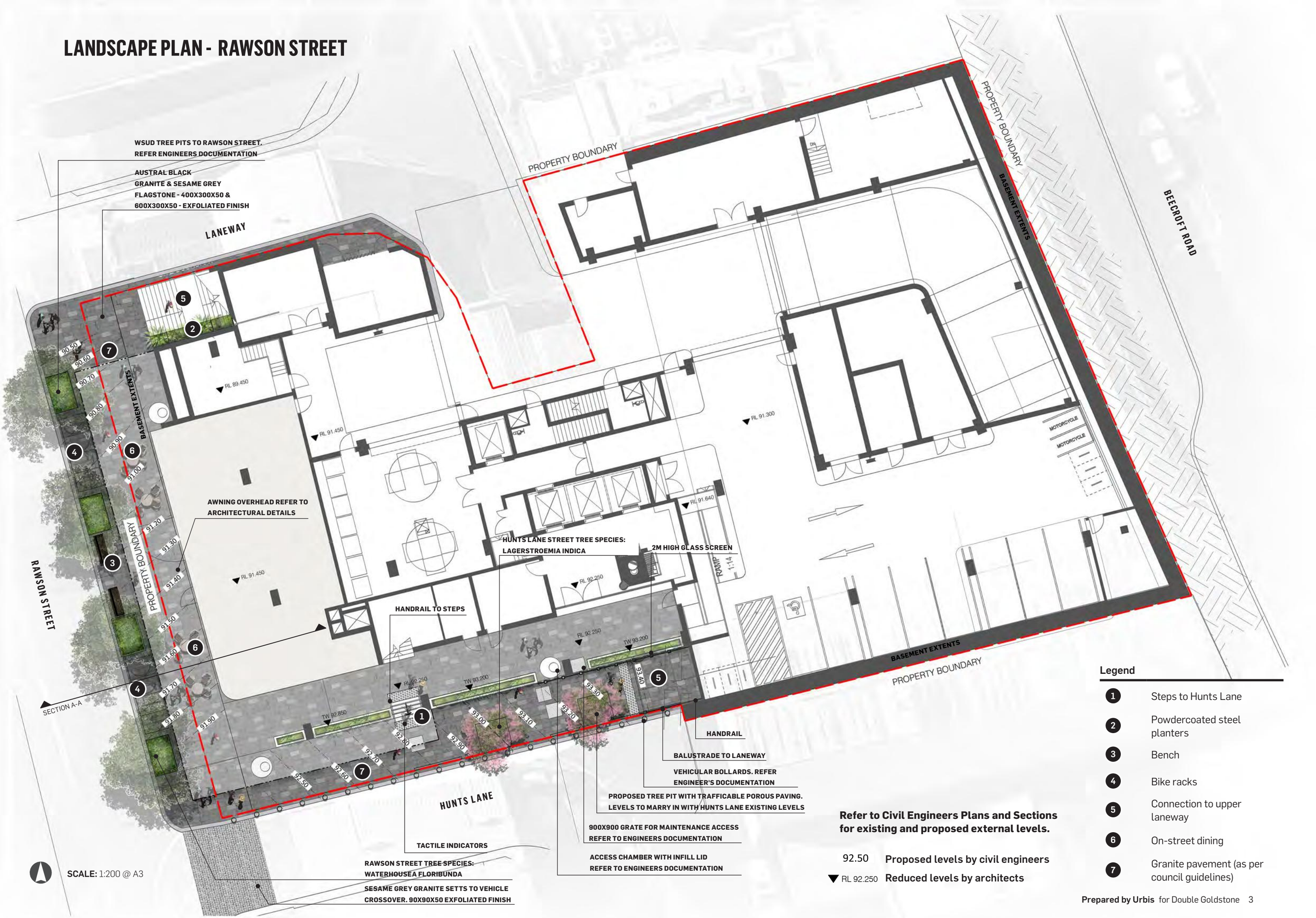
PLANTING PLANS 5

Lower Ground Level Landscape Layout Plan 5

Ground Level Landscape Layout Plan 6

Plant Schedule 7

LANDSCAPE PLAN - RAWSON STREET



SCALE: 1:200 @ A3

Refer to Civil Engineers Plans and Sections for existing and proposed external levels.

92.50 **Proposed levels by civil engineers**

▼ RL 92.250 **Reduced levels by architects**

Legend

1. Steps to Hunts Lane
2. Powdercoated steel planters
3. Bench
4. Bike racks
5. Connection to upper laneway
6. On-street dining
7. Granite pavement (as per council guidelines)



Refer to Civil Engineers Plans and Sections for existing and proposed external levels.

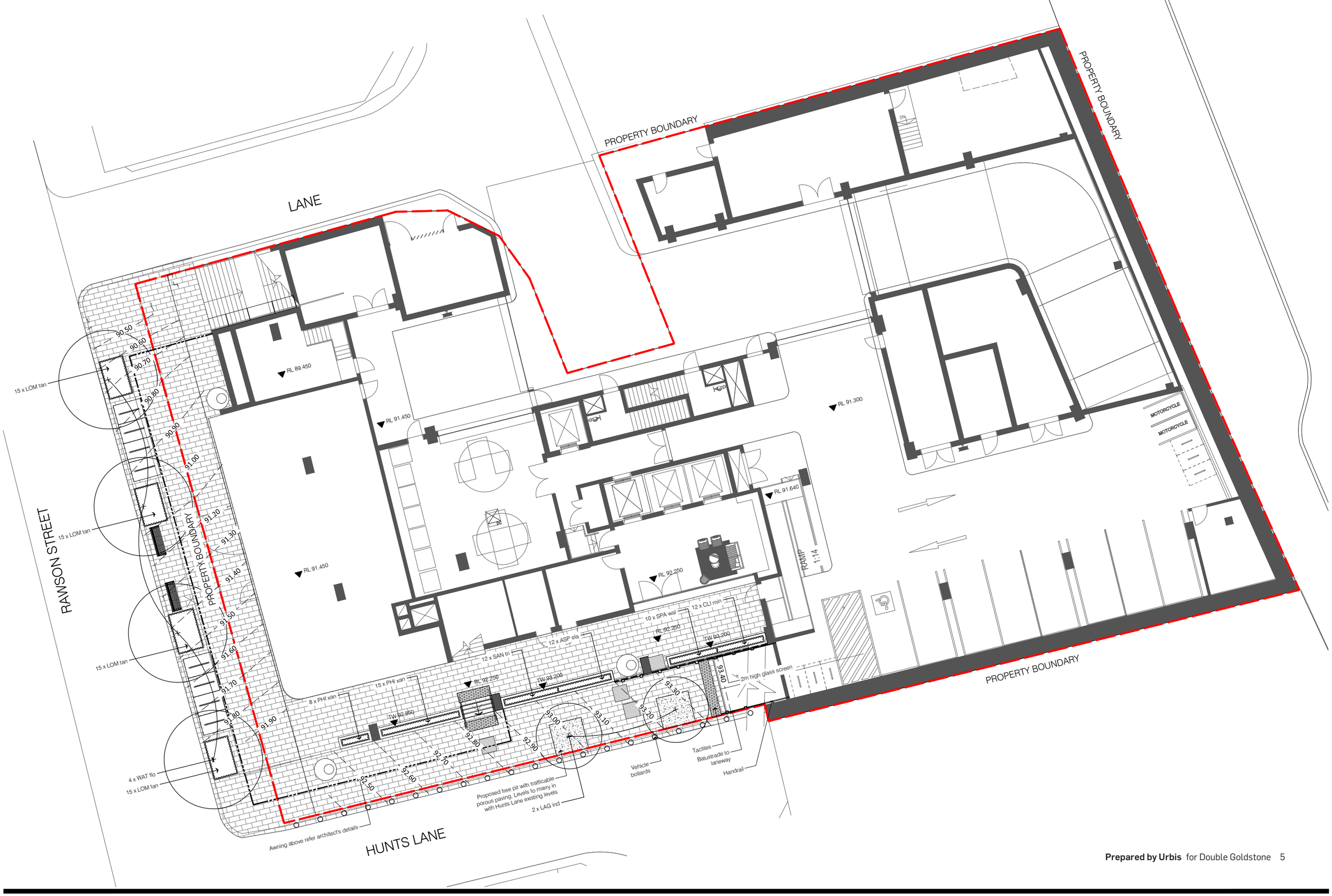
95.50	**Proposed levels by civil engineers**
▼ RL 95.58	**Reduced levels by architects**
▼ FFL 95.06	**Finished floor levels by architects**
▼ RL 94.04	**Reduced levels in through link by landscape architects**

Legend

1. Sculptural seating
2. Powdercoated steel planters
3. Benches
4. Dining Terrace
5. Through link to Rawson Street (1:14 ramp)
6. On-street dining
7. Granite pavement (as per council guidelines)
8. Trees in pots (refer to Planting Plan and Wind Consultant Report)

SCALE: 1:200 @ A3

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URBIS

48-54 BEECROFT ROAD / 52-54 RAWSON STREET
LOWER GROUND LEVEL LANDSCAPE LAYOUT PLAN

Tower 2, Level 23, Darling Park, 201 Sussex Street | Sydney NSW 2000 Australia | +61 2 8233 9900 | URBIS Pty Ltd | ABN 50 105 256 228

REV	DESCRIPTION	DWN	CHK	DATE
B	DEVELOPMENT APPLICATION	JT	MK	20.05.19
A	DEVELOPMENT APPLICATION	JT	MK	02.05.19

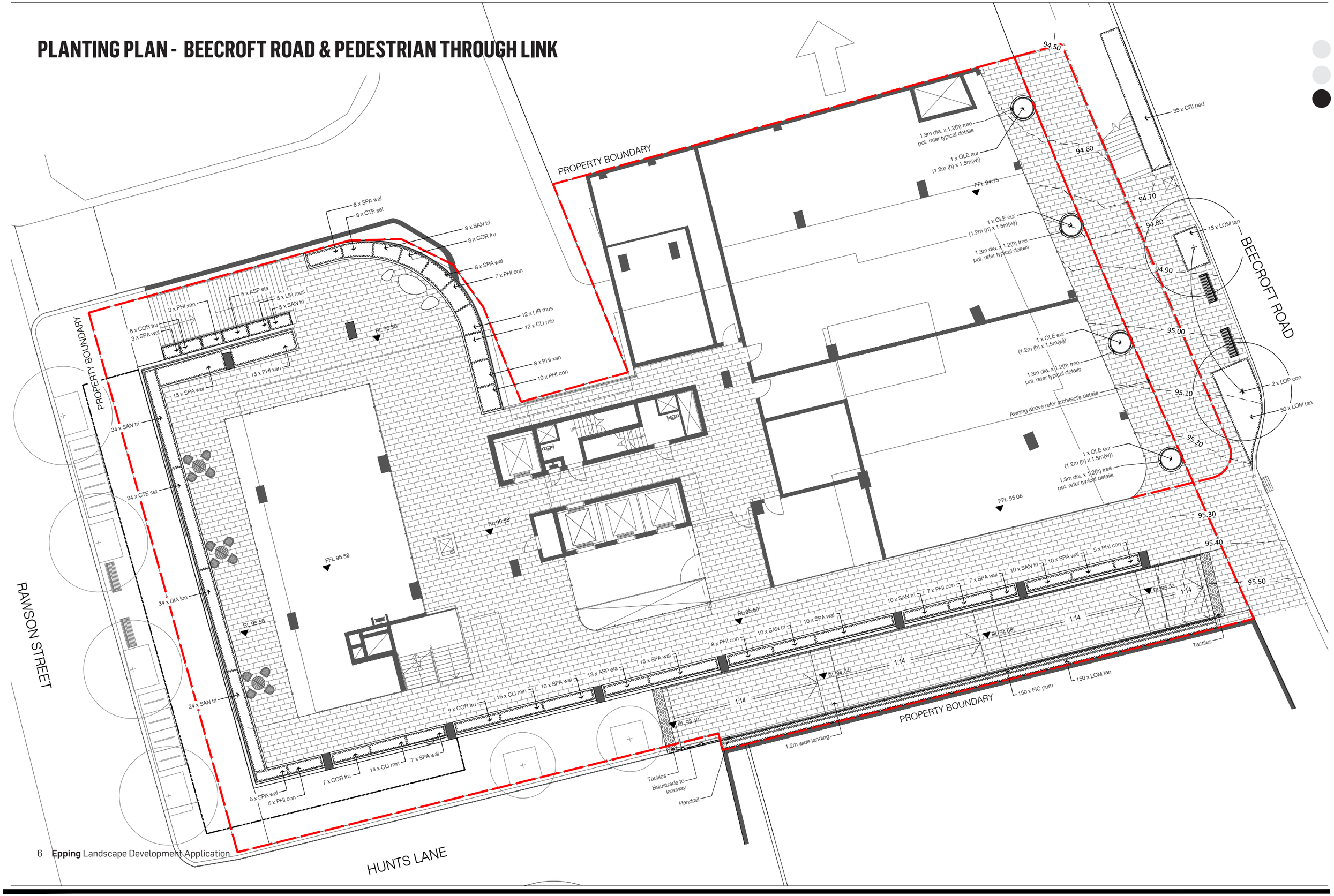
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CLIENT
DOUBLE GOLDSTONE PTY LTD

1:100 @ A1 1:200 @ A3
1 2 3 4 5m

PROJECT NO. ND1745
DATE 20.05.19
DRAWING NO. L-101
REVISION B

PLANTING PLAN - BEECROFT ROAD & PEDESTRIAN THROUGH LINK



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48-54 BEECROFT ROAD / 52-54 RAWSON STREET

GROUND LEVEL LANDSCAPE LAYOUT PLAN

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1:100 @ A1 1:200 @ A3
1 2 3 4 5m

PROJECT NO. ND1745
DATE 20.05.19
DRAWING NO. L-102
REVISION B

PLANT SCHEDULE

PLANT CODE	BOTANICAL NAME	COMMON NAME	MIN. CALLIPER @300mm height (mm)	MATURITY HEIGHT AND SPREAD (m)	SUPPLY HEIGHT AND SPREAD (m)	CONTAINER SIZE	DENSITY/ m²	QTY	COMMENTS
LOWER GROUND & GROUND LEVEL PLANT SCHEDULE									
TREES									
LAG ind	*Lagerstroemia indica*	Crepe Myrtle	TBC	6-8m x 5m	4 x 2	400L	as shown	2	
LOP con	*Lophostemon confertus*	Brush Box	TBC	12-15m x 10-12m	4 x 2	400L	as shown	2	
OLE eur	*Olea europaea*	Olive Tree	TBC	8m x 4m	1.8 x 2.5	200L	as shown	4	
WAT flo	*Waterhousea floribunda*	Weeping Lilly Pilly	TBC	10-12m x 5-8m	4 x 2	400L	as shown	4	
							SUBTOTAL	**12**	
SHRUBS & TUFTING PLANTS									
ASP ela	*Aspidistra elatior*	Cast Iron Plant	na	0.4m x 0.6m	na	200mm	4	30	
CLI min	*Clivia miniata*	Bush Lily	na	0.7m x 07m	na	200mm	4	54	
COR fru	*Cordyline fruticosa*	Palm Lily	na	2m x 0.7m	na	200mm	4	29	
CRI ped	*Crinum pedunculatum*	Swamp Lily	na	0.5-1m x 0.5-1m	na	200mm	2	35	
CTE set	*Ctenanthe setosa 'Grey Star'*	Grey Star Ctenanthe	na	1.2m x 0.8m	na	200mm	4	32	
PHI con	*Philodendron 'Congo'*	Philodendron Congo	na	1m x 0.7m	na	200mm	3	42	
PHI xan	*Philodendron xanadu*	Xanadu	na	1m x 1m	na	200mm	2	49	
SAN tri	*Sansevieria trifasciata*	Mother In Law Tongue	na	0.6m x 0.3m	na	200mm	4	113	
SPA wal	*Spathiphyllum wallisii*	Peace Lily	na	0.6m x 0.6m	na	200mm	3	106	
							SUBTOTAL	**490**	
GRASSES									
LOM tan	*Lomandra 'Tanika'*	Lomandra Tanika	na	0.6m x 0.6m	na	150mm	6	275	
FIC pum	*Ficus pumila*	Creeping Fig hedge	na	Ground Cover	na	150mm	4	150	
DIA lon	*Dianella longifolia*	Pale Flax Lilly	na	0.5m x 0.5m	na	150mm	6	34	
LIR mus	*Liriope muscari*	Border Grass	na	0.5m x 0.5m	na	200mm	6	17	
							SUBTOTAL	**476**	
							GRAND TOTAL	**978**	

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PROJECT NO. ND1745
DATE 02.05.19
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REVISION A

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APPENDIX D

Wind Impact Assessment Report

RWDI

REPORT

48 BEECROFT ROAD

EPPING, NSW

PEDESTRIAN WIND STUDY

RWDI #1804388 REV D

May 16, 2019

SUBMITTED TO

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1 INTRODUCTION

Rowan Williams Davies & Irwin Inc. (RWDI) was retained by PDS Australia to consult on the pedestrian wind conditions for the proposed 48-54 Beecroft Road located in Epping, Sydney, NSW. The proposed building is approximately 72 m tall from Beecroft Road and 76 m from Rawson Street due to the elevation change around the building footprint. The building consists of a 19-storey tower with a mechanical penthouse on the roof. The purpose of the study was to assess the wind environment around the development in terms of pedestrian wind comfort and safety. The achievement of this objective included wind tunnel testing of a 1:300 scale model of the proposed development for the following configurations:

Configuration A - Existing: existing site with existing and under-construction surroundings;

Configuration B - Proposed: proposed development with existing and under-construction surroundings; and

Configuration C - Proposed: revised proposed development with landscaping features and existing and under-construction surroundings.

Configuration D - Mitigation: revised proposed development with existing surrounding buildings and wind mitigation measures.

The photographs in Figures 1a, 1b, 1c and 1d show the test model in RWDI's boundary-layer wind tunnel. The test model was constructed using the design information and drawings listed in Appendix A. This report summarizes the methodology of wind tunnel studies for pedestrian wind conditions, describes the Parramatta pedestrian wind comfort and safety criteria, presents the local wind conditions and their effects on pedestrians and provides conceptual wind control measures, where necessary.

2 SUMMARY OF WIND CONDITIONS

The wind conditions around the proposed 48 Beecroft Road are discussed in detail in Section 5 of this report and may be summarized as follows:

- Around the existing site (Configuration A) conditions are largely suitable for a mix of sitting through walking activities, with the exception of parts of Rawson Street which are uncomfortably windy.
- Conditions would become windier as a result of the proposed development (Configuration B) without the consideration of landscaping features. Larger parts of Rawson Street and Beecroft Road would become uncomfortably windy in this scenario compared to the existing site.
- The revisions to the building massing and addition of landscaping in Configuration C do not significantly improve the wind microclimate results compared to Configuration B. Some locations become calmer, while others are made windier in this scenario.
- With the introduction of the wind mitigation measures (Configuration D), wind conditions in and around the proposed development are generally improved such that they become largely suitable for their intended use by the general public. However, there are some locations where uncomfortable conditions persist. These conditions may be tolerable by considering the usage of the area and given the wind speed only marginally exceeds the threshold value (16m/s) for comfortable walking. In RWDI's opinion, the gust-based comfort criteria are overly conservative in this case, and an assessment by more widely accepted "GEM" (gust-equivalent mean) criteria would demonstrate that the mitigated development would have wind conditions that are suitable for the intended pedestrian use.
- It is noted that the location of the site in Epping being inland is less exposed to prevailing coastal sea breezes compared to similar sites closer to the coast. As such, meteorological data from Bankstown Airport has been used in the assessment rather than data from Sydney International Airport.

3 METHODOLOGY

As shown in Figures 1a to 1d, the wind tunnel model included the proposed development and all relevant surrounding buildings and topography within a 340-m radius of the study site. The boundary-layer wind conditions beyond the modelled area were also simulated in RWDI's wind tunnels based on approach profiles and terrain roughness detailed in Appendix B. As shown in the profiles for mean wind speed and turbulence for each sector of terrain roughness, the calculated profiles by using the ESDU method were found to closely follow the standard suburban profile. Therefore, the wind tunnel tests were conducted using the suburban profile for all wind directions, and any difference between the calculated and tunnel profiles was corrected numerically after testing.

Configurations A and B were tested in RWDI's boundary layer wind tunnel facility in Guelph, Ontario, Canada. Configuration C, which incorporated updates to the design of the proposed development, and additional landscaping elements, was tested in RWDI's facility in Trivandrum, Kerala, India. Additional mitigation workshops were conducted in order to alleviate the undesired wind conditions predicted in previous Configuration C.

The model was instrumented with 60 (Irwin) wind speed sensors to measure the mean and gust wind speeds at a full-scale height of approximately 1.5 m (Appendix C). The measured wind speed ratios in Appendix C were referenced to the mean wind speed at a reference height close to the top of the boundary-layer profile, from which the site wind speed was then referenced to the 10 m height wind records at a local airport through detailed ESDU wind profile calculations.

The long-term weather data recorded at the Bankstown Airport (for the period from 1989 to 2014) were analyzed for the Summer (November through April) and Winter (May through October) seasons. Figure 2 graphically depicts the directional distributions of wind frequencies and speeds for the two seasons. Winds from the south-east and north-east are predominant during the summer, while winds in the winter originate predominantly from the north-west, west and south-west, as indicated by the wind roses in Figure 2. Annually, the stronger wind events tend to occur more often during the summer than the winter, with the northeast and south-easterly winds generating the majority of "windy" local microclimate conditions.

Wind statistics from Bankstown Airport were combined with the wind tunnel data in order to predict the frequency of occurrence of full-scale wind speeds. The full-scale wind predictions were then compared with the City of Parramatta criteria for pedestrian comfort and safety. Appendix D presents directional weightings for each sensor location to illustrate the statistical combination of wind speeds and directional frequency to determine an overall categorization of the wind conditions.

It is noted that the location of the site in Epping being inland is less exposed to prevailing coastal sea breezes compared to sites closer to the coast. Meteorological data from Bankstown Airport has therefore been used (rather than data from Sydney International Airport), since it is likely to be more representative of an inland location.

4 EXPLANATION OF CRITERIA

The City of Parramatta DCP wind criteria are described in the table below, using gust wind speeds occurring 0.1% of the time annually.

Gust Speed (m/s)	Pedestrian Area	Rating
Comfort		
≤10	Retail streets	Sitting
11-13	Major pedestrian streets, parks and public places	Standing
14-16	All other streets	Walking
17-23	All Pedestrian areas	Windy/Uncomfortable
Safety		
>23	All Pedestrian areas	Unacceptable/Unsafe

The rating at the last column is added for presentation purposes (and is used in the presentation of results later in this report). A wind speed greater than the 16 m/s criterion for all other streets is rated as Windy or Uncomfortable, and a wind speed greater than 23 m/s is rated as unacceptable or unsafe.

Gust wind speeds at a 0.1% occurrence represent a relatively infrequent wind event, and are not representative of the more commonly occurring wind conditions. We would argue that mean or gust equivalent mean (GEM) wind speeds at an occurrence of 20% are more representative for commonly occurring wind conditions affecting wind comfort. Municipalities around the world and in Australia including Sydney and Melbourne are moving away from using outdated gust-based criteria due to the inherent flaws with this approach, and notably windy precincts developed based on this approach. The GEM wind comfort criteria has also been applied for the majority of recent developments located within the Parramatta CBD precinct due to the greater accuracy to full-scale measurements. However, for the purpose of this assessment, results are presented as per the current requirements of the wind comfort criteria outlined in the Parramatta City Council DCP.

5 PREDICTED WIND CONDITIONS

Figures 3 to 6 graphically depict the predicted wind comfort conditions pertaining to the three tested configurations. The numerical information related to these results are presented in Table 1, located in the Tables section of this report.

Taller buildings tend to intercept the stronger winds at higher elevations and redirect them to the ground level (see Image 1). Such a Downwashing Flow is often the main cause for wind accelerations around large buildings at the pedestrian level. These flows subsequently accelerate around windward facing building corners and could result in severe wind activity near the corner (see Image 2). If these building/wind combinations occur for prevailing winds, there is a greater potential for increased wind activity.



Image 1 – Downwashing Flow

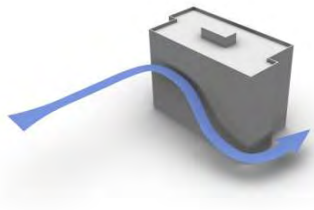


Image 2 – Corner Acceleration

The following is a detailed discussion of the suitability of the predicted wind comfort conditions for the anticipated pedestrian use of each area.

Wind conditions comfortable for walking are appropriate for footpaths and other areas where pedestrians are likely to be active. Lower wind speeds conducive to sitting are recommended for outdoor seating areas and terraces intended for relaxed passive activities, while winds suitable for standing are preferred at main entrances where pedestrians are apt to linger.

5.1 Configuration A – Existing (Figure 3)

For the existing configuration, wind conditions on and around the site are mostly expected to be in the range suitable for sitting use to walking use throughout the year (Figure 3). There is one location that has uncomfortable wind conditions, namely along Rawson Street represented by measurement location 22.

There were no occurrences of strong winds exceeding the safety threshold.

5.2 Configuration B – Proposed (Figure 4)

On-site Areas – Ground Level (Locations 1 to 10 and 47 to 60)

Wind speeds on the footpaths on-site to the north and on Beecroft Road are predicted to have walking wind conditions or better in the area around locations 31 and 47 with one uncomfortable condition at location 48.

Conditions comfortable for standing and sitting are expected throughout the year at the residential lobby entrance fronting on Hunts Lane (Location 10) and the entrance on Level 1 (Location 57) respectively. These conditions are appropriate for the intended use of these areas.

Wind speeds on the on-site footpath on Rawson Street are expected to be higher due to the downwashing and subsequent acceleration of winds from the north-west, west and south-west (Images 1 and 2). The resulting wind speeds are rated uncomfortable for any activities on the west and south sides of the proposed development, along Rawson street and Hunts Lane represented by locations 1 to 7. However, one location (Location 9) on the south side of the development (Hunts Lane) had walking wind conditions which are appropriate. The upper ground floor represented by the locations 51 to 60 is predicted to have a range of wind conditions suitable for standing use to walking use with one uncomfortable wind condition at location 60. These conditions are likely to be too windy for amenity activities.

Off-site Areas (Locations 11 to 46)

Wind conditions at surrounding areas and footpaths have a range of wind conditions suitable for sitting use through uncomfortable conditions as shown in figure 4. Locations where uncomfortable wind conditions are expected to occur are represented by locations 18, 20, 21, 22, 41, 43 and 44.

5.3 Configuration C – Proposed Development with Landscaping Features (Figure 5)

Configuration C incorporated modifications to the building massing and the addition of soft landscaping elements, which are visible in the photographs in Figure 1c. We would note that the station building and footbridge were updated in this configuration to include additional detail, to more accurately capture the wind behavior in this area.

On and Off-Site Areas

The wind conditions are largely consistent with Configuration B at many locations. There are fewer areas on Rawson Street and Beecroft Road that are classified as uncomfortable becoming suitable for walking at locations 1, 2, 20, 43, 48 and suitable for standing at locations 4, 11, 41, 44. However, several uncomfortable locations remain as per the previous configurations (locations 3, 5, 6, 7 and 18). There are two locations 35 and 47 where walking conditions were expected in previous configuration, which became uncomfortable in configuration C (not suitable for the intended pedestrian use, and therefore requiring mitigation measures).

Upper Ground Floor (Amenity Spaces)

Uncomfortable wind condition at location 60 in Configuration B became suitable for standing in Configuration C. However, location 53 became windier, expected to have uncomfortable wind conditions. All other locations have mix of standing and walking wind conditions which are likely to be too windy for the intended amenity use.

5.4 Configuration D – Proposed Development with Mitigation Measures (Figure 6 and Appendix F)

As part of the Client's commitment to ensure the suitable wind microclimate is achieved with the completed proposed development in situ, a number of mitigation measures have been explored to ensure the desired wind conditions for the intended pedestrians use. The following mitigation measures were developed through a series of wind mitigation workshops: -

- In addition to the trees at west side of the proposed development at ground level, shrubs of 1.8m high added between the trees;
- A series of porous screens of 2m wide and 2m high at 2m interval to the south-west corner of the proposed development;
- Shrubs of 1.8m high around Location 53, at south-east corner of the proposed development;
- A canopy of 1m deep at southwest corner of the proposed development;
- Three porous screens of 2m wide and 2m high at both sides of the retail in west side of the upper ground level; and
- Shrubs of 1.8m high at south side of the upper ground level around Location 56.

These wind mitigation measures are shown in Appendix F.

On and Off-Site Areas

The addition of mitigation measures helps to reduce the wind speed (refer table 1_Mitigation) at several key areas around the proposed development. The conditions along Rawson Street that were uncomfortable in Configuration C (Locations 3, 5, 6, 7 and 18) become suitable for walking in Configuration D. However, uncomfortable conditions (Locations 21, 22, 35) at north-west of the proposed development, along Rawson Street remain consistent with the configuration C and Location 22 is pre-existing in the baseline scenario (Existing – Configuration A). These conditions might be tolerable by considering the wind speed (only marginally exceeding the threshold value of walking criteria) and usage of the area where pedestrians would move intentionally (i.e. would have no reason to linger in these locations). Similarly, other such borderline cases where wind speed slightly increased when compared to configuration C (Locations 30 and 9) are likely acceptable for the intended pedestrian use.

The rest of the locations in and around the proposed development remain consistent with Configuration C, having a range of wind conditions suitable for sitting use to walking use.

Upper Ground Floor (Amenity Spaces)

The wind speed at southeast corner of the proposed development (Location 53) is reduced when compared with configuration C, and only marginally exceeds the threshold value of walking. Provided that there is no reason for pedestrians to linger in this specific location, the conditions are likely to be tolerable for the intended pedestrian use, especially given that the gust-based comfort criteria are overly conservative in this instance (a "GEM" or gust-equivalent-mean assessment would indicate that this area is suitable for its intended pedestrian use).

The rest of the area is predicted to have wind conditions suitable for standing use with exception of walking wind conditions at south side (Locations 56 and 60). Additional localised shelter (such as porous screen covering the southwest corner at Location 60) could be applied post-build for specific seating areas if required.

5.5 Safety Exceedance

There were no occurrences of strong winds exceeding the safety threshold in Configurations A, B, C and D.

5.6 Updated Landscape Design

After completion of the wind tunnel testing, the landscape design has been updated to consider the abovementioned treatment mitigation measures. The following are nopted to have been incorporated into the current design scheme:

- Urbis Landscape Design dated May 2, 2019. The landscape design has incorporated the noted tree and shrub planting along Hunts Lane as well as Rawson Street. The recommended shrub planting as also be incorporated on Ground Level to provide the required wind comfort criteria.
- The updated Architectural Model from Woods Bagot, dated May 10, 2019, has incorporated the recommended awning along Hunts Lane. It is noted that deeper awning options were modelled, however no benefit was noted from a wind mitigation perspective.
- It is recommended that the additional screening elements be incorporated in the landscape areas on Hunts Lane, as noted in the model tested for Configuration D, but included in the final Landscape Design, which is noted to be finalized during the detailed design phase.

6 CONCLUSIONS

The inclusion of purposely designed wind mitigation measures provides a substantial benefit to pedestrian wind comfort, Wind conditions in and around the proposed development are improved when compared against the unmitigated scenarios, and are predominantly suitable for walking use or calmer. Furthermore, there would be no exceedances of the safety criterion.

The few “uncomfortable” conditions that persist only marginally exceed the threshold for comfortable walking. Given that these occur in areas where pedestrians are not expected to linger, and also given that the gust-based criteria for comfort are likely to be overly conservative in this scenario (see note below), we would conclude that the conditions are suitable for the intended pedestrian use.

Note regarding gust-based criteria:

We would note that wind speed thresholds defined in the Parramatta wind comfort criteria (gust wind speeds at a 0.1% annual occurrence) represent relatively infrequent wind events, and are not representative of more commonly occurring wind conditions. We would argue that mean or gust equivalent mean wind speeds at an occurrence of 20% are more representative for commonly occurring wind conditions affecting wind comfort. The GEM wind comfort criteria has also been applied for the majority of recent developments located within the Parramatta CBD precinct due to the greater accuracy to full-scale measurements. However, for the purpose of this assessment, results are presented as per the current requirements of the wind comfort criteria outlined in the Parramatta City Council DCP.

7 APPLICABILITY

The wind conditions presented in this report pertain to the proposed 48 Beecroft Road development as detailed in the architectural design drawings listed in Appendix A. Should there be any design changes that deviate from this list of drawings, the wind condition predictions presented may change. Therefore, if changes in the design are made, it is recommended that RWDI be contacted and requested to review their potential effects on wind conditions.

8 REFERENCES

1) ASCE Task Committee on Outdoor Human Comfort (2004). *Outdoor Human Comfort and Its Assessment*, 68 pages, American Society of Civil Engineers, Reston, Virginia, USA.

2) Williams, C.J., Hunter, M.A. and Waechter, W.F. (1990). "Criteria for Assessing the Pedestrian Wind Environment," *Journal of Wind Engineering and Industrial Aerodynamics*, Vol.36, pp.811-815.

3) Williams, C.J., Soligo M.J. and Cote, J. (1992). "A Discussion of the Components for a Comprehensive Pedestrian Level Comfort Criteria," *Journal of Wind Engineering and Industrial Aerodynamics*, Vol.41-44, pp.2389-2390.

4) Soligo, M.J., Irwin, P.A., and Williams, C.J. (1993). "Pedestrian Comfort Including Wind and Thermal Effects," *Third Asia-Pacific Symposium on Wind Engineering*, Hong Kong.

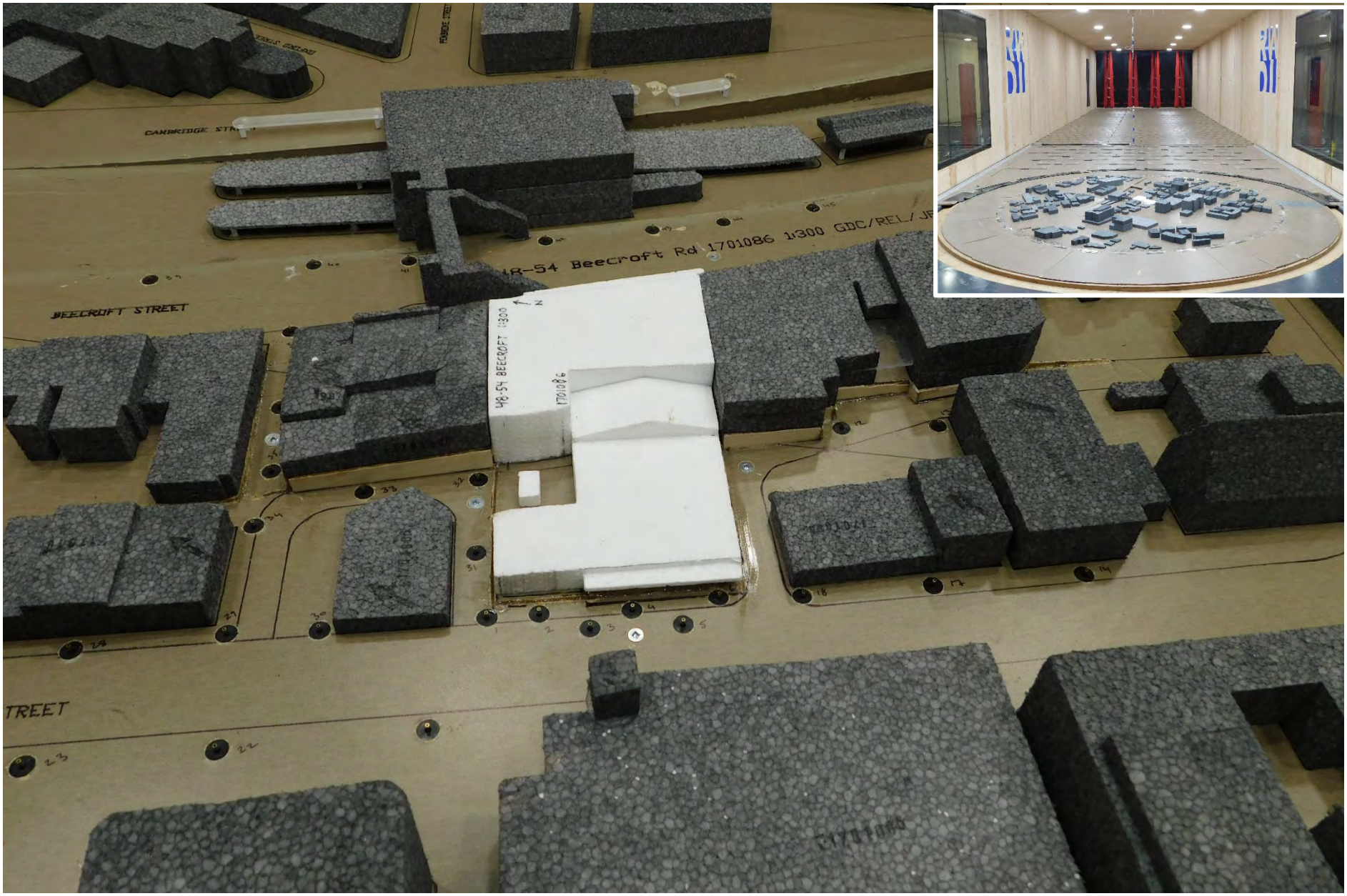
5) Soligo, M.J., Irwin, P.A., Williams, C.J. and Schuyler, G.D. (1998). "A Comprehensive Assessment of Pedestrian Comfort Including Thermal Effects," *Journal of Wind Engineering and Industrial Aerodynamics*, Vol.77&78, pp.753-766.

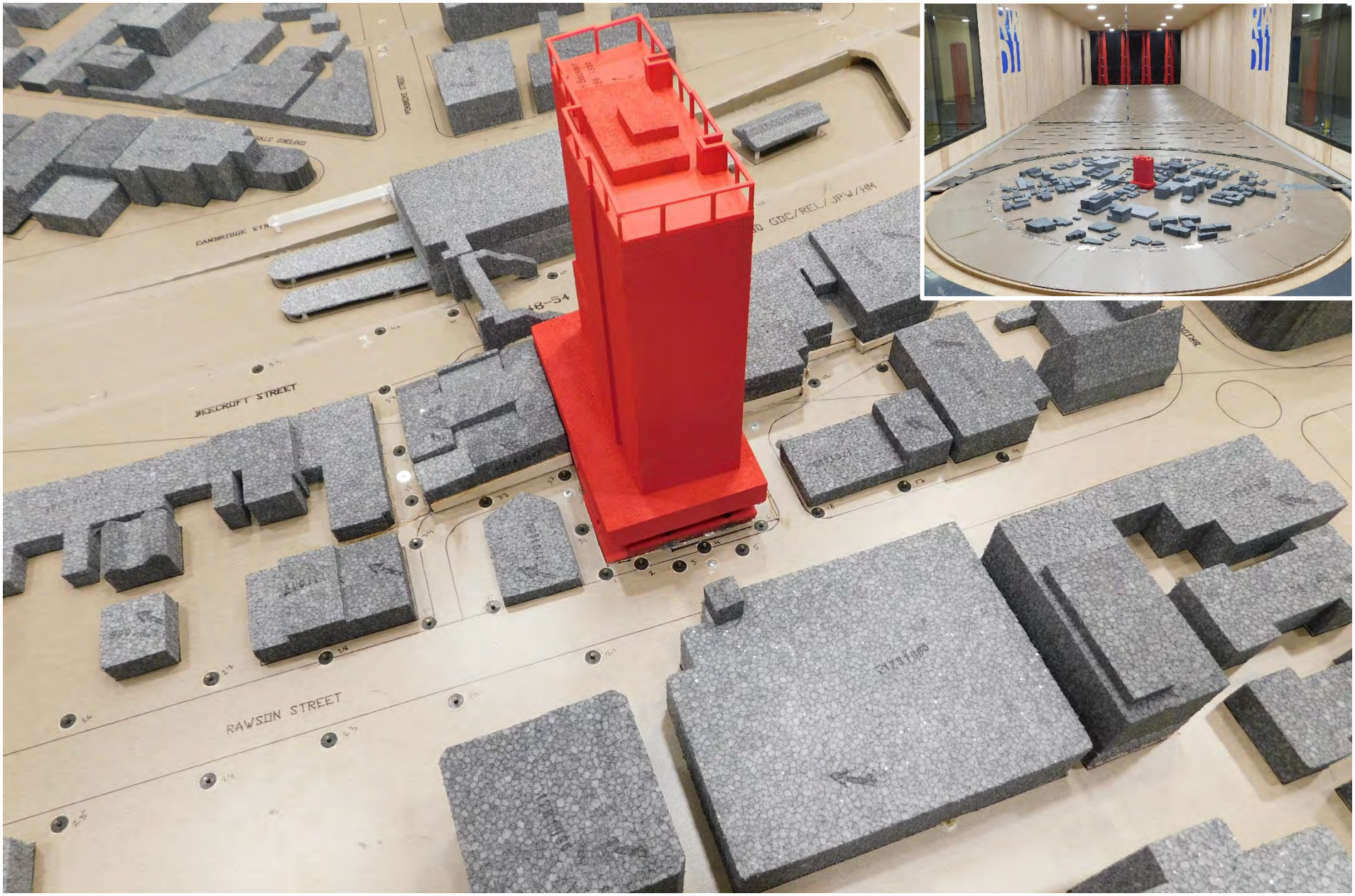
6) Williams, C.J., Wu, H., Waechter, W.F. and Baker, H.A. (1999). "Experiences with Remedial Solutions to Control Pedestrian Wind Problems," *Tenth International Conference on Wind Engineering*, Copenhagen, Denmark.

7) Lawson, T.V. (1973). "Wind Environment of Buildings: A Logical Approach to the Establishment of Criteria", Report No. TVL 7321, Department of Aeronautic Engineering, University of Bristol, Bristol, England.

8) Durgin, F.H. (1997). "Pedestrian Level Wind Criteria Using the Equivalent average", Journal of Wind Engineering and Industrial Aerodynamics, Vol. 66, pp. 215-226.

FIGURES


BEECROFT STREET
48-54 Beecroft Rd 1701086 1:300 GDC/REL/
48-54 BEECROFT 1:300
1701086

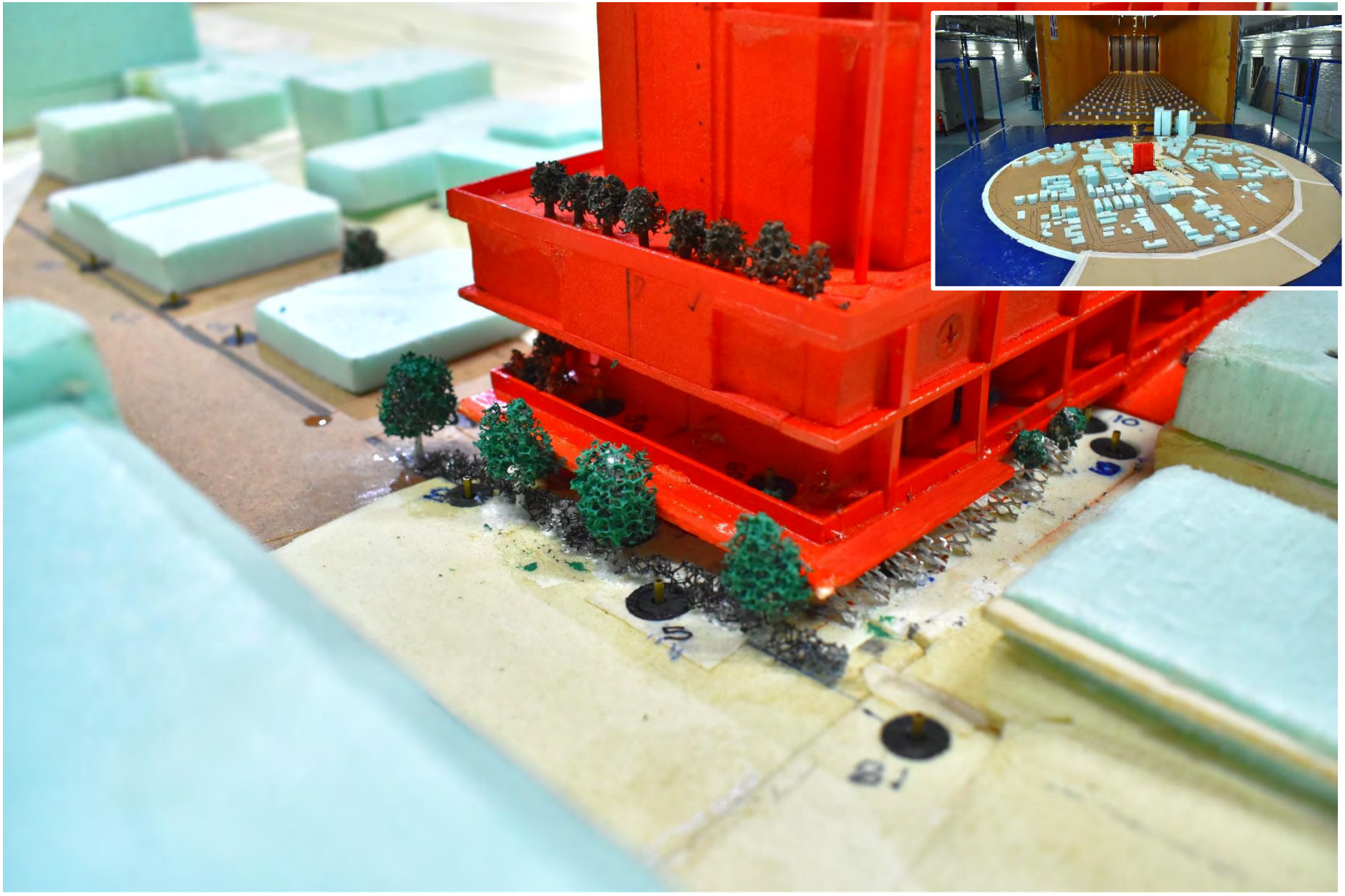


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RWDI



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Wind Tunnel Study Model
Mitigation

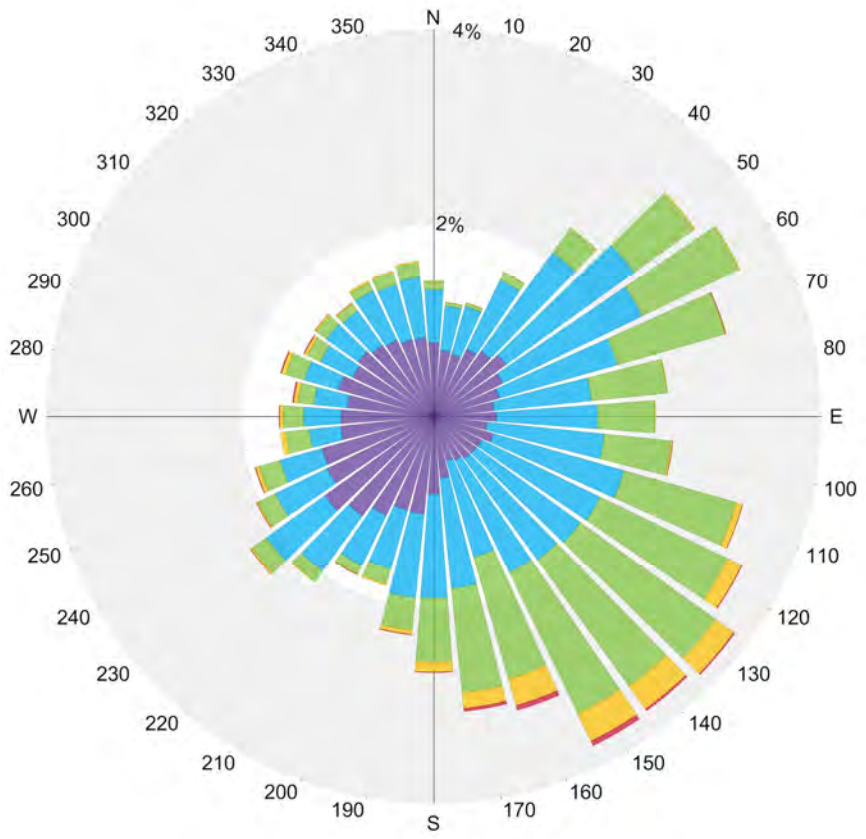
48 Beecroft Road – Sydney, Australia

Project #1804388

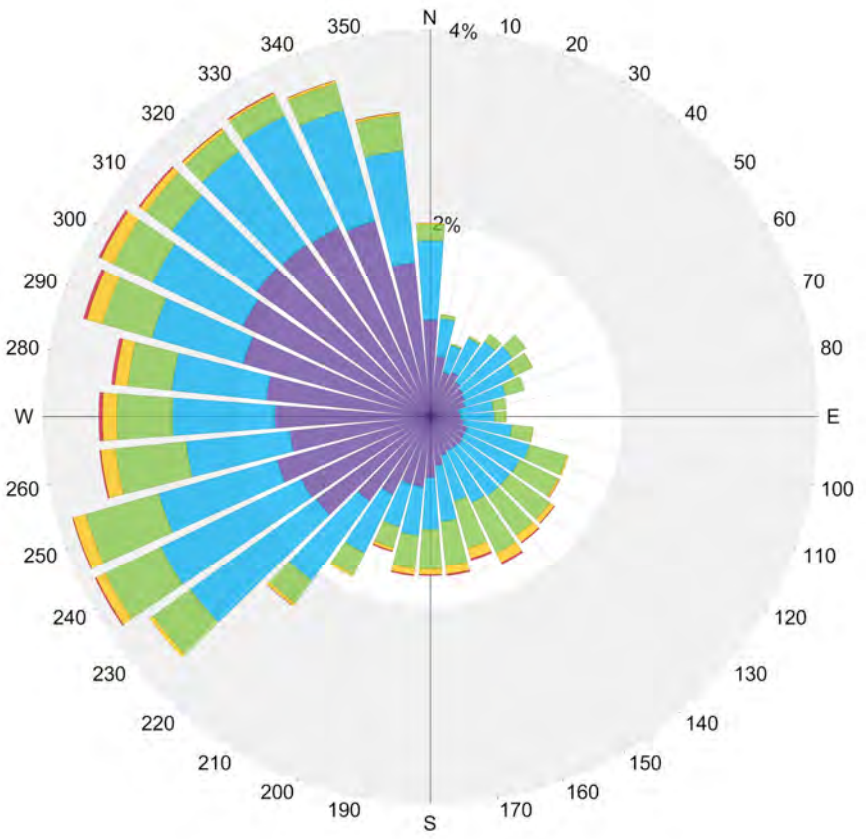
Figure No. 1d

Date: April 22, 2019

RWDI



Summer
(November - April)



Winter
(May - October)

Wind Speed (km/h)	Probability (%) Summer	Winter
Calm	17.8	21.1
1-10	30.2	36.0
11-20	30.3	28.2
21-30	19.3	12.5
31-40	2.1	1.9
>40	0.2	0.3

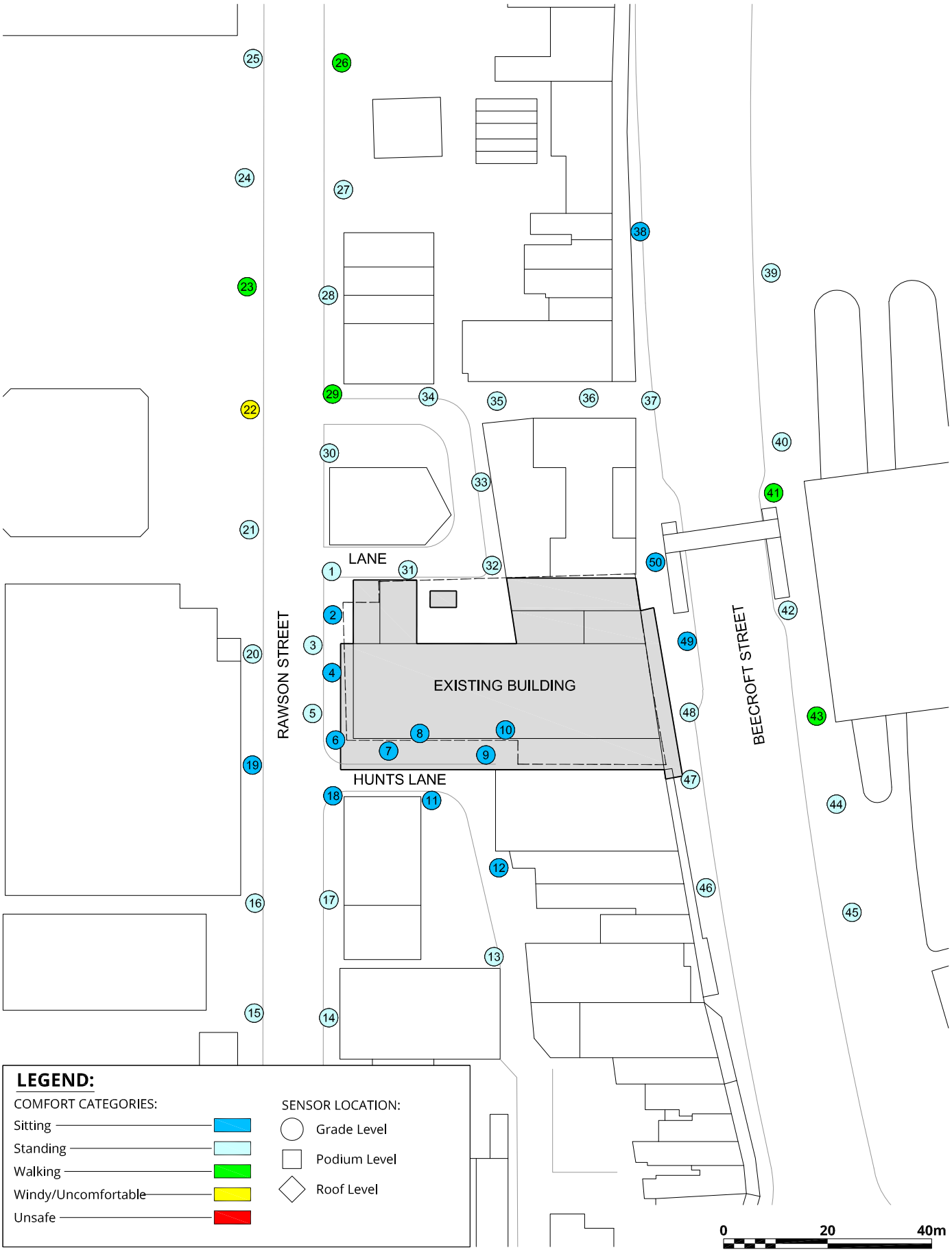
Directional Distribution (%) of Winds (Blowing From)
Bankstown Airport (BOM) (1989 - 2014)

48 Beecroft Road – Epping (Sydney), NSW

Project #1804388

Figure No. 2

Date: April 29, 2019



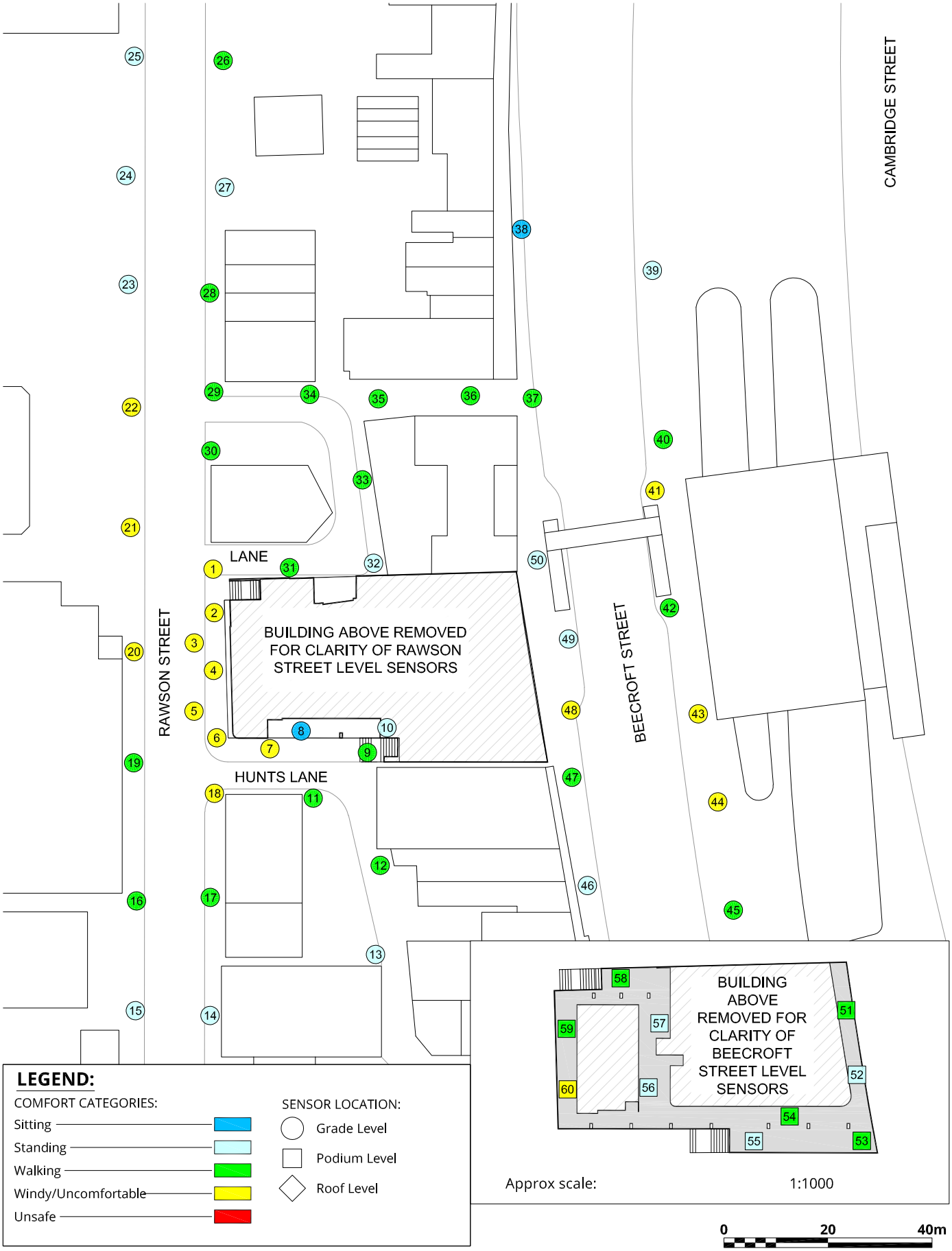
Pedestrian Wind Safety Conditions
Existing Development
Configuration - A
Annual

48 Beecroft Road - Sydney, NSW

Project #1804388

True North

Drawn by: MBR	Figure: 3
Approx. Scale:	1:1000
Date Revised:	Jan. 24, 2019



Pedestrian Wind Safety Conditions

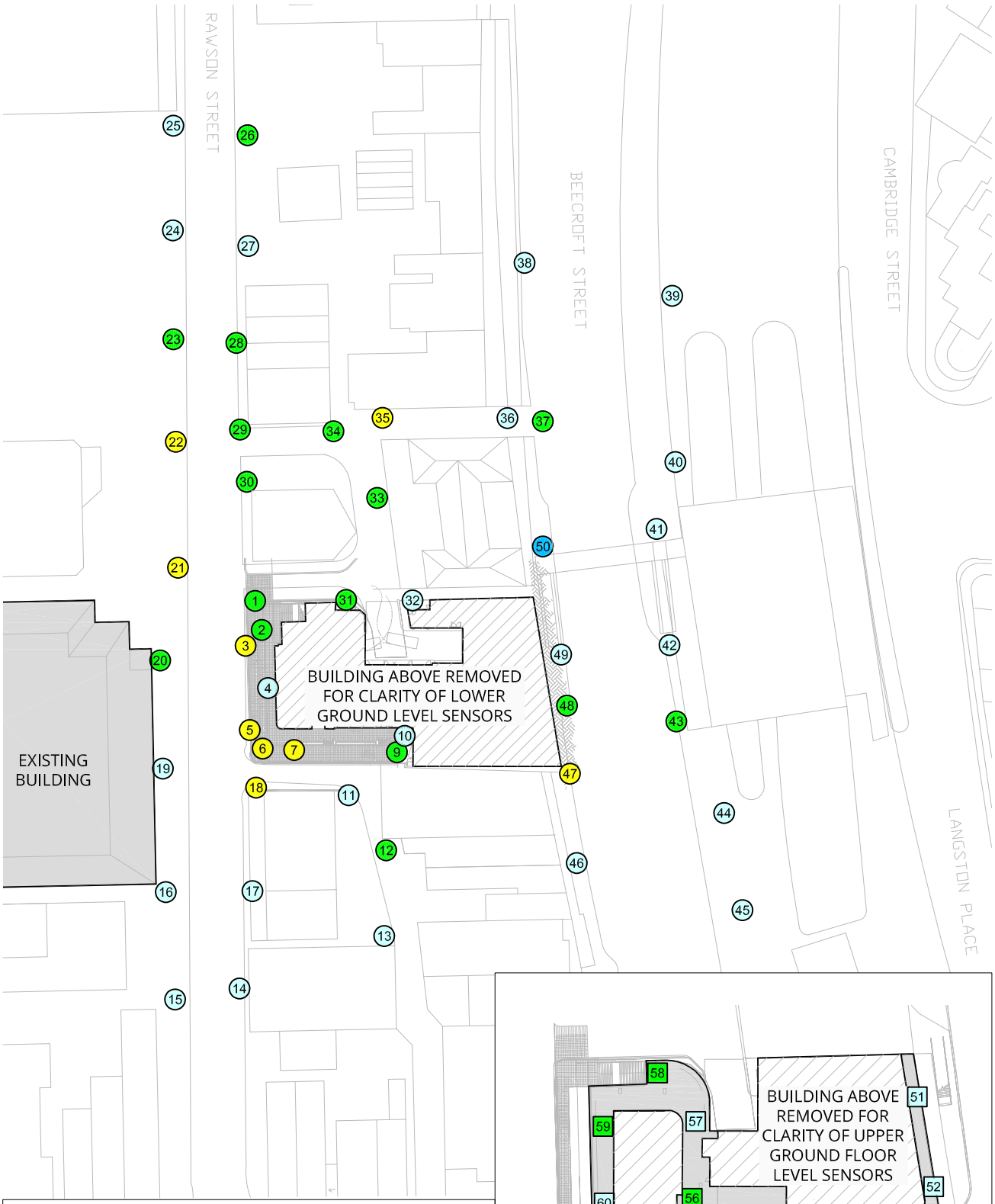
Proposed Development
Configuration - B
Annual

48 Beecroft Road - Sydney, NSW

Project #1804388

True North

Drawn by: MBR	Figure: 4
Approx. Scale:	1:1000
Date Revised:	Jan. 24, 2019



UPPER GROUND FLOOR PLAN
Scale: 1:1000

LEGEND:

COMFORT CATEGORIES:
- Sitting
- Standing
- Walking
- Windy/Uncomfortable
- Unsafe

SENSOR LOCATION:
- Grade Level
- Podium Level

0 25 50m

Pedestrian Wind Safety Conditions

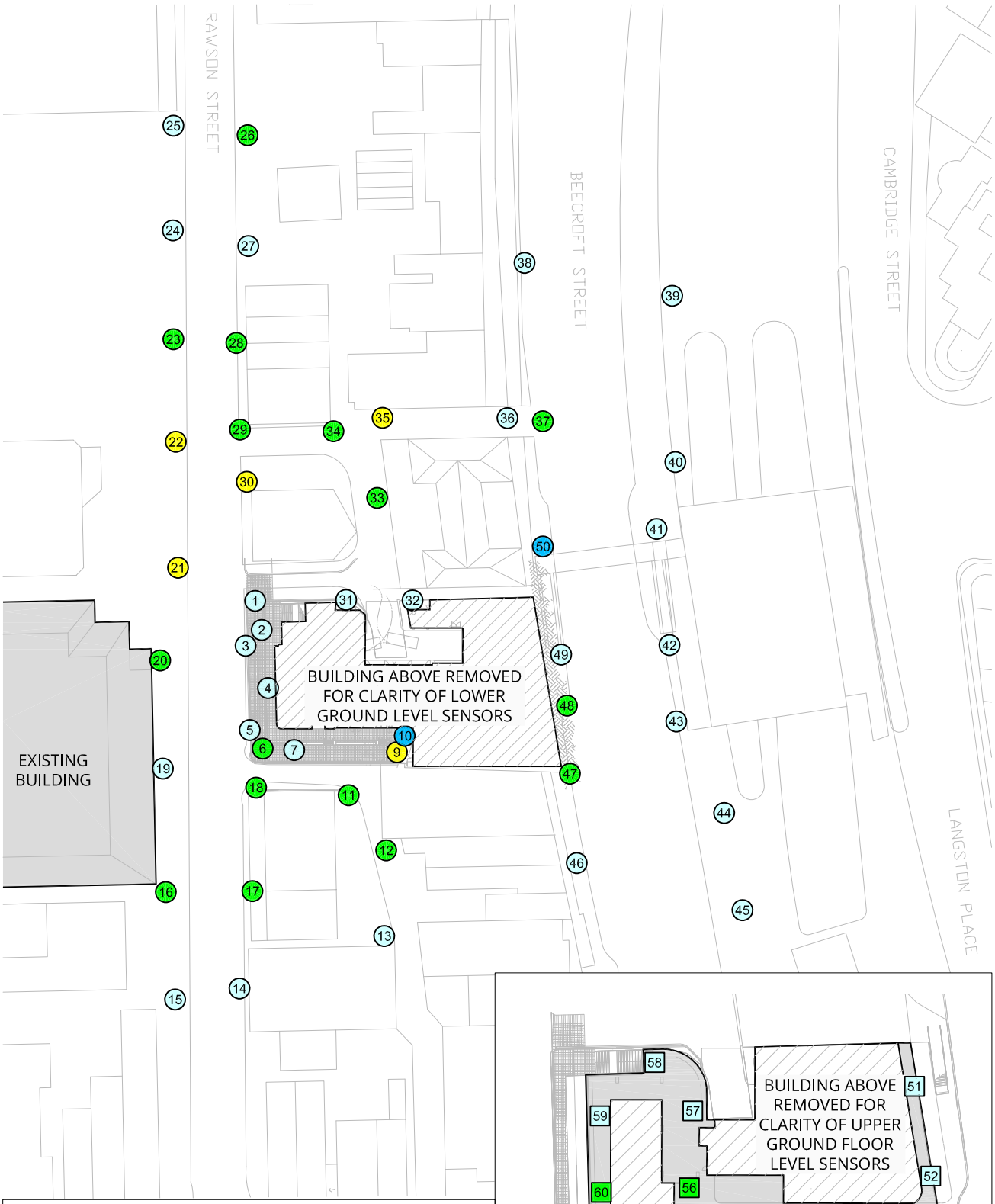
Proposed Development with Landscaping features
Configuration - C
Annual

48 Beecroft Road - Sydney, NSW

Project #1804388

True North

Drawn by: ABN	Figure: 5	
Approx. Scale:	1:1250	
Date Revised:	Apr. 29, 2019	



UPPER GROUND FLOOR PLAN
Scale: 1:1000

LEGEND:

COMFORT CATEGORIES:
- Sitting
- Standing
- Walking
- Windy/Uncomfortable
- Unsafe

SENSOR LOCATION:
- Grade Level
- Podium Level

0 25 50m

Pedestrian Wind Comfort Conditions

Mitigation
Configuration - D
Annual

48 Beecroft Road - Sydney, NSW

Project #1804388

True North

Drawn by:	ABN	Figure:	6
Approx. Scale:	1:1250		
Date Revised:	Apr. 29, 2019		

TABLES

Location	Configuration	Comfort and Safety	
		Annual	
		Speed (m/s)	Rating
1	Configuration A	11	Standing
	Configuration B	17	Uncomfortable
	Configuration C	14	Walking
	Configuration D	11	Standing
2	Configuration A	9	Sitting
	Configuration B	17	Uncomfortable
	Configuration C	14	Walking
	Configuration D	12	Standing
3	Configuration A	11	Standing
	Configuration B	19	Uncomfortable
	Configuration C	17	Uncomfortable
	Configuration D	13	Standing
4	Configuration A	10	Sitting
	Configuration B	18	Uncomfortable
	Configuration C	11	Standing
	Configuration D	11	Standing
5	Configuration A	11	Standing
	Configuration B	19	Uncomfortable
	Configuration C	17	Uncomfortable
	Configuration D	11	Standing

Configurations
Configuration A = Existing site with existing approved surroundings
Configuration B = Proposed development with existing approved surroundings
Configuration C = Proposed development with landscaping features and existing approved surroundings
Configuration D = Proposed development with existing approved surroundings and wind mitigation measures

≤ 10 m/s	Sitting
11 to 13	Standing
14 to 16	Walking
17 to 23	Uncomfortable
>23 m/s	Unsafe

Location	Configuration	Comfort and Safety	
		Annual	
		Speed (m/s)	Rating
6	Configuration A	9	Sitting
	Configuration B	20	Uncomfortable
	Configuration C	21	Uncomfortable
	Configuration D	15	Walking
7	Configuration A	3	Sitting
	Configuration B	18	Uncomfortable
	Configuration C	17	Uncomfortable
	Configuration D	13	Standing
8	Configuration A	3	Sitting
	Configuration B	8	Sitting
	Configuration C	-	-
	Configuration D	-	-
9	Configuration A	5	Sitting
	Configuration B	15	Walking
	Configuration C	15	Walking
	Configuration D	17	Uncomfortable
10	Configuration A	7	Sitting
	Configuration B	11	Standing
	Configuration C	11	Standing
	Configuration D	10	Sitting

Configurations
Configuration A = Existing site with existing approved surroundings
Configuration B = Proposed development with existing approved surroundings
Configuration C = Proposed development with landscaping features and existing approved surroundings
Configuration D = Proposed development with existing approved surroundings and wind mitigation measures

≤ 10 m/s	Sitting
11 to 13	Standing
14 to 16	Walking
17 to 23	Uncomfortable
>23 m/s	Unsafe

Location	Configuration	Comfort and Safety	
		Annual	
		Speed (m/s)	Rating
11	Configuration A	9	Sitting
	Configuration B	14	Walking
	Configuration C	13	Standing
	Configuration D	14	Walking
12	Configuration A	9	Sitting
	Configuration B	14	Walking
	Configuration C	14	Walking
	Configuration D	14	Walking
13	Configuration A	11	Standing
	Configuration B	12	Standing
	Configuration C	11	Standing
	Configuration D	11	Standing
14	Configuration A	12	Standing
	Configuration B	13	Standing
	Configuration C	11	Standing
	Configuration D	11	Standing
15	Configuration A	13	Standing
	Configuration B	12	Standing
	Configuration C	11	Standing
	Configuration D	11	Standing

Configurations
Configuration A = Existing site with existing approved surroundings
Configuration B = Proposed development with existing approved surroundings
Configuration C = Proposed development with landscaping features and existing approved surroundings
Configuration D = Proposed development with existing approved surroundings and wind mitigation measures

≤ 10 m/s	Sitting
11 to 13	Standing
14 to 16	Walking
17 to 23	Uncomfortable
>23 m/s	Unsafe

Location	Configuration	Comfort and Safety	
		Annual	
		Speed (m/s)	Rating
16	Configuration A	12	Standing
	Configuration B	14	Walking
	Configuration C	12	Standing
	Configuration D	14	Walking
17	Configuration A	12	Standing
	Configuration B	14	Walking
	Configuration C	12	Standing
	Configuration D	14	Walking
18	Configuration A	9	Sitting
	Configuration B	17	Uncomfortable
	Configuration C	17	Uncomfortable
	Configuration D	15	Walking
19	Configuration A	9	Sitting
	Configuration B	14	Walking
	Configuration C	12	Standing
	Configuration D	12	Standing
20	Configuration A	11	Standing
	Configuration B	18	Uncomfortable
	Configuration C	16	Walking
	Configuration D	15	Walking

Configurations
Configuration A = Existing site with existing approved surroundings
Configuration B = Proposed development with existing approved surroundings
Configuration C = Proposed development with landscaping features and existing approved surroundings
Configuration D = Proposed development with existing approved surroundings and wind mitigation measures

≤ 10 m/s	Sitting
11 to 13	Standing
14 to 16	Walking
17 to 23	Uncomfortable
>23 m/s	Unsafe

Location	Configuration	Comfort and Safety	
		Annual	
		Speed (m/s)	Rating
21	Configuration A	12	Standing
	Configuration B	18	Uncomfortable
	Configuration C	18	Uncomfortable
	Configuration D	17	Uncomfortable
22	Configuration A	17	Uncomfortable
	Configuration B	17	Uncomfortable
	Configuration C	17	Uncomfortable
	Configuration D	17	Uncomfortable
23	Configuration A	14	Walking
	Configuration B	13	Standing
	Configuration C	14	Walking
	Configuration D	14	Walking
24	Configuration A	13	Standing
	Configuration B	13	Standing
	Configuration C	13	Standing
	Configuration D	13	Standing
25	Configuration A	12	Standing
	Configuration B	12	Standing
	Configuration C	11	Standing
	Configuration D	11	Standing

Configurations
Configuration A = Existing site with existing approved surroundings
Configuration B = Proposed development with existing approved surroundings
Configuration C = Proposed development with landscaping features and existing approved surroundings
Configuration D = Proposed development with existing approved surroundings and wind mitigation measures

≤ 10 m/s	Sitting
11 to 13	Standing
14 to 16	Walking
17 to 23	Uncomfortable
>23 m/s	Unsafe

Location	Configuration	Comfort and Safety	
		Annual	
		Speed (m/s)	Rating
26	Configuration A	15	Walking
	Configuration B	14	Walking
	Configuration C	14	Walking
	Configuration D	14	Walking
27	Configuration A	12	Standing
	Configuration B	13	Standing
	Configuration C	12	Standing
	Configuration D	12	Standing
28	Configuration A	12	Standing
	Configuration B	14	Walking
	Configuration C	14	Walking
	Configuration D	14	Walking
29	Configuration A	15	Walking
	Configuration B	15	Walking
	Configuration C	14	Walking
	Configuration D	14	Walking
30	Configuration A	12	Standing
	Configuration B	16	Walking
	Configuration C	16	Walking
	Configuration D	17	Uncomfortable

Configurations
Configuration A = Existing site with existing approved surroundings
Configuration B = Proposed development with existing approved surroundings
Configuration C = Proposed development with landscaping features and existing approved surroundings
Configuration D = Proposed development with existing approved surroundings and wind mitigation measures

≤ 10 m/s	Sitting
11 to 13	Standing
14 to 16	Walking
17 to 23	Uncomfortable
>23 m/s	Unsafe

Location	Configuration	Comfort and Safety	
		Annual	
		Speed (m/s)	Rating
31	Configuration A	11	Standing
	Configuration B	14	Walking
	Configuration C	14	Walking
	Configuration D	13	Standing
32	Configuration A	11	Standing
	Configuration B	12	Standing
	Configuration C	13	Standing
	Configuration D	13	Standing
33	Configuration A	11	Standing
	Configuration B	14	Walking
	Configuration C	15	Walking
	Configuration D	14	Walking
34	Configuration A	11	Standing
	Configuration B	15	Walking
	Configuration C	14	Walking
	Configuration D	15	Walking
35	Configuration A	11	Standing
	Configuration B	14	Walking
	Configuration C	17	Uncomfortable
	Configuration D	17	Uncomfortable

Configurations
Configuration A = Existing site with existing approved surroundings
Configuration B = Proposed development with existing approved surroundings
Configuration C = Proposed development with landscaping features and existing approved surroundings
Configuration D = Proposed development with existing approved surroundings and wind mitigation measures

≤ 10 m/s	Sitting
11 to 13	Standing
14 to 16	Walking
17 to 23	Uncomfortable
>23 m/s	Unsafe

Location	Configuration	Comfort and Safety	
		Annual	
		Speed (m/s)	Rating
36	Configuration A	11	Standing
	Configuration B	14	Walking
	Configuration C	13	Standing
	Configuration D	12	Standing
37	Configuration A	11	Standing
	Configuration B	14	Walking
	Configuration C	14	Walking
	Configuration D	14	Walking
38	Configuration A	9	Sitting
	Configuration B	10	Sitting
	Configuration C	11	Standing
	Configuration D	11	Standing
39	Configuration A	12	Standing
	Configuration B	12	Standing
	Configuration C	13	Standing
	Configuration D	12	Standing
40	Configuration A	12	Standing
	Configuration B	15	Walking
	Configuration C	13	Standing
	Configuration D	13	Standing

Configurations
Configuration A = Existing site with existing approved surroundings
Configuration B = Proposed development with existing approved surroundings
Configuration C = Proposed development with landscaping features and existing approved surroundings
Configuration D = Proposed development with existing approved surroundings and wind mitigation measures

≤ 10 m/s	Sitting
11 to 13	Standing
14 to 16	Walking
17 to 23	Uncomfortable
>23 m/s	Unsafe

Location	Configuration	Comfort and Safety	
		Annual	
		Speed (m/s)	Rating
41	Configuration A	14	Walking
	Configuration B	20	Uncomfortable
	Configuration C	12	Standing
	Configuration D	11	Standing
42	Configuration A	11	Standing
	Configuration B	14	Walking
	Configuration C	11	Standing
	Configuration D	11	Standing
43	Configuration A	14	Walking
	Configuration B	17	Uncomfortable
	Configuration C	14	Walking
	Configuration D	13	Standing
44	Configuration A	12	Standing
	Configuration B	17	Uncomfortable
	Configuration C	12	Standing
	Configuration D	13	Standing
45	Configuration A	13	Standing
	Configuration B	14	Walking
	Configuration C	13	Standing
	Configuration D	13	Standing

Configurations
Configuration A = Existing site with existing approved surroundings
Configuration B = Proposed development with existing approved surroundings
Configuration C = Proposed development with landscaping features and existing approved surroundings
Configuration D = Proposed development with existing approved surroundings and wind mitigation measures

≤ 10 m/s	Sitting
11 to 13	Standing
14 to 16	Walking
17 to 23	Uncomfortable
>23 m/s	Unsafe

Location	Configuration	Comfort and Safety	
		Annual	
		Speed (m/s)	Rating
46	Configuration A	12	Standing
	Configuration B	12	Standing
	Configuration C	12	Standing
	Configuration D	12	Standing
47	Configuration A	11	Standing
	Configuration B	14	Walking
	Configuration C	17	Uncomfortable
	Configuration D	14	Walking
48	Configuration A	11	Standing
	Configuration B	19	Uncomfortable
	Configuration C	14	Walking
	Configuration D	14	Walking
49	Configuration A	8	Sitting
	Configuration B	13	Standing
	Configuration C	13	Standing
	Configuration D	12	Standing
50	Configuration A	9	Sitting
	Configuration B	11	Standing
	Configuration C	9	Sitting
	Configuration D	9	Sitting

Configurations
Configuration A = Existing site with existing approved surroundings
Configuration B = Proposed development with existing approved surroundings
Configuration C = Proposed development with landscaping features and existing approved surroundings
Configuration D = Proposed development with existing approved surroundings and wind mitigation measures

≤ 10 m/s	Sitting
11 to 13	Standing
14 to 16	Walking
17 to 23	Uncomfortable
>23 m/s	Unsafe

Location	Configuration	Comfort and Safety	
		Annual	
		Speed (m/s)	Rating
51	Configuration A	-	-
	Configuration B	15	Walking
	Configuration C	13	Standing
	Configuration D	12	Standing
52	Configuration A	-	-
	Configuration B	13	Standing
	Configuration C	12	Standing
	Configuration D	12	Standing
53	Configuration A	-	-
	Configuration B	15	Walking
	Configuration C	19	Uncomfortable
	Configuration D	17	Uncomfortable
54	Configuration A	-	-
	Configuration B	14	Walking
	Configuration C	14	Walking
	Configuration D	11	Standing
55	Configuration A	-	-
	Configuration B	11	Standing
	Configuration C	12	Standing
	Configuration D	12	Standing

Configurations
Configuration A = Existing site with existing approved surroundings
Configuration B = Proposed development with existing approved surroundings
Configuration C = Proposed development with landscaping features and existing approved surroundings
Configuration D = Proposed development with existing approved surroundings and wind mitigation measures

≤ 10 m/s	Sitting
11 to 13	Standing
14 to 16	Walking
17 to 23	Uncomfortable
>23 m/s	Unsafe

Location	Configuration	Comfort and Safety	
		Annual	
		Speed (m/s)	Rating
56	Configuration A	-	-
	Configuration B	12	Standing
	Configuration C	16	Walking
	Configuration D	14	Walking
57	Configuration A	-	-
	Configuration B	11	Standing
	Configuration C	12	Standing
	Configuration D	12	Standing
58	Configuration A	-	-
	Configuration B	14	Walking
	Configuration C	14	Walking
	Configuration D	11	Standing
59	Configuration A	-	-
	Configuration B	15	Walking
	Configuration C	14	Walking
	Configuration D	12	Standing
60	Configuration A	-	-
	Configuration B	18	Uncomfortable
	Configuration C	13	Standing
	Configuration D	14	Walking

Configurations
Configuration A = Existing site with existing approved surroundings
Configuration B = Proposed development with existing approved surroundings
Configuration C = Proposed development with landscaping features and existing approved surroundings
Configuration D = Proposed development with existing approved surroundings and wind mitigation measures

≤ 10 m/s	Sitting
11 to 13	Standing
14 to 16	Walking
17 to 23	Uncomfortable
>23 m/s	Unsafe

APPENDIX A

APPENDIX A: DRAWING LIST FOR MODEL CONSTRUCTION

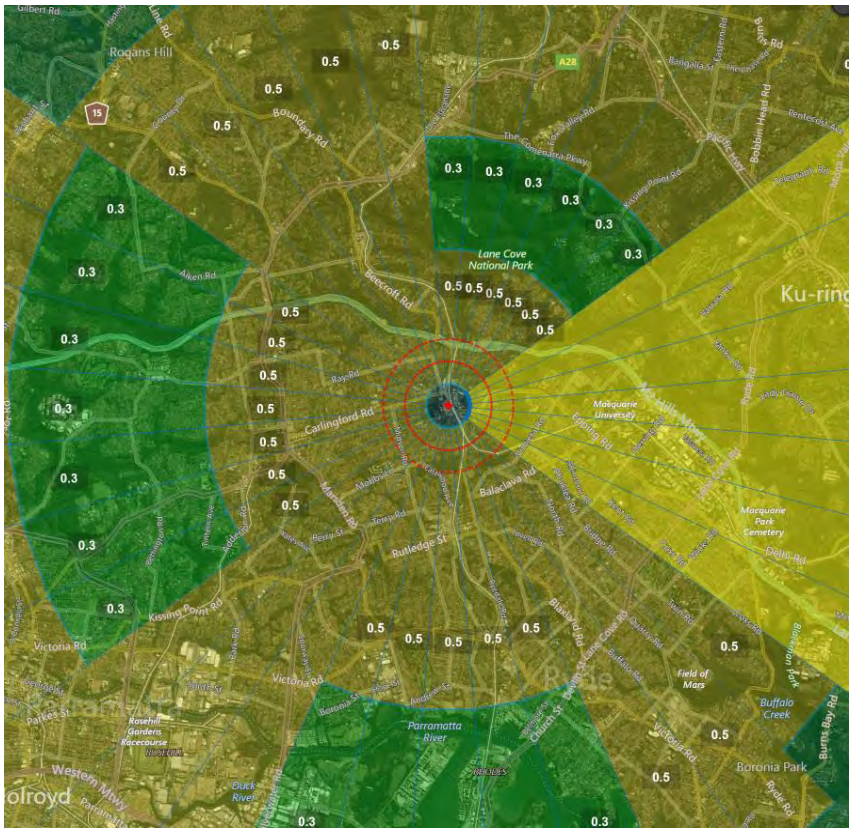
The drawings and information listed below were received from PDS Australia and were used to construct the scale model of the proposed 48 Beecroft Road at Sydney, Australia. Should there be any design changes that deviate from this list of drawings, the results may change. Therefore, if changes in the design are made, it is recommended that RWDI be contacted and requested to review their potential effects on wind conditions.

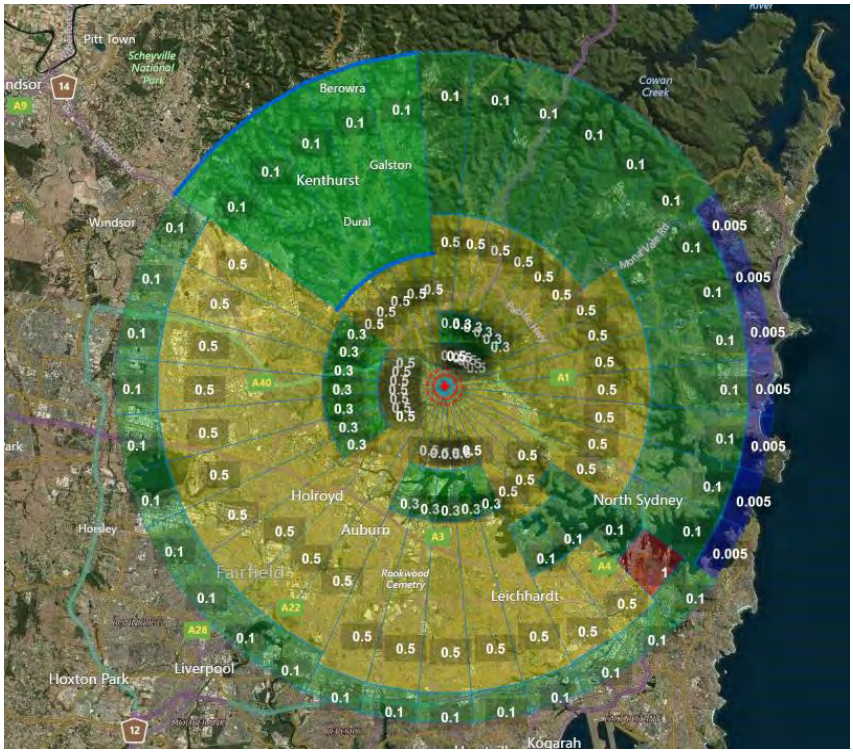
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150245-A-DA-1208(9)-Floor Plan - LEVEL 02_PLANTER BOX.dwg	**Autocad**	**05/10/2018**

APPENDIX B

APPENDIX B: UPWIND TERRAIN AND BOUNDARY LAYER PROFILE

Site Location with Graphics Representation of the Terrain Roughness





ESDU Terrain for the Site

	Angle Range							
	10-50, 360	60-120	130	140,150	160-200	210-230	240-300	310-350
z0(m)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
l(m)	2213	12197	7634	8864	4643	17097	3750	7634
z0(m)	0.3	0.1	0.1	0.1	0.3	0.1	0.3	0.1
l(m)	1854	8000	6703	3223	2975		3305	
z0(m)	0.5	0.005	0.5	0.5	0.5		0.5	
l(m)	5871		3054	5654	10280		10063	
z0(m)	0.1		0.1	0.1	0.1		0.1	
l(m)			6000	8000	10000			
z0(m)			0.005	0.005	0.005			

Wind Tunnel Profiles

U indicates the mean wind speed, **Iu** the along-wind turbulence intensity.

Uref indicates the mean wind speed at reference height (2/3 of the building height), i.e. at 50m of height above ground level, full scale.

Scale: 1:300

		WT Profile 4	
MS Height (m)	FS Height (m)	U/Uref	Iu
0.051	15.30	0.463	0.274
0.076	22.80	0.513	0.253
0.102	30.60	0.551	0.240
0.127	38.10	0.577	0.230
0.152	45.60	0.600	0.220
0.178	53.40	0.623	0.213
0.203	60.90	0.643	0.206
0.254	76.20	0.676	0.194
0.305	91.50	0.709	0.182
0.356	106.80	0.731	0.177
0.406	121.80	0.753	0.166
0.508	152.40	0.794	0.156
0.610	183.00	0.821	0.149
0.711	213.30	0.848	0.142
0.813	243.90	0.874	0.136
0.914	274.20	0.899	0.131

ESDU Target Profiles

U/Uref

Angle Range (deg, CW from North):		10-50, 360	60-120	130	140,150	160-200	210-230	240-300	310-350
MS Height (m)	FS Height (m)	U/Uref	U/Uref	U/Uref	U/Uref	U/Uref	U/Uref	U/Uref	U/Uref
0.033	10.00	0.645	0.642	0.642	0.642	0.643	0.641	0.643	0.642
0.100	30.00	0.887	0.884	0.884	0.884	0.886	0.884	0.886	0.884
0.167	50.00	1.001	1.001	1.001	1.001	1.001	1.001	1.001	1.001
0.333	100.00	1.167	1.161	1.158	1.159	1.166	1.166	1.167	1.158
0.500	150.00	1.273	1.261	1.264	1.264	1.273	1.267	1.273	1.264
0.667	200.00	1.353	1.343	1.346	1.346	1.354	1.348	1.354	1.346
1.000	300.00	1.477	1.477	1.473	1.474	1.480	1.478	1.480	1.473
1.333	400.00	1.576	1.586	1.572	1.573	1.580	1.582	1.579	1.573
2.000	600.00	1.737	1.756	1.726	1.729	1.746	1.748	1.738	1.729

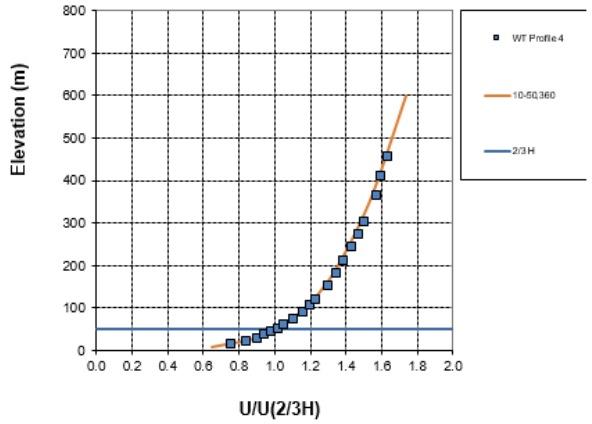
Iu

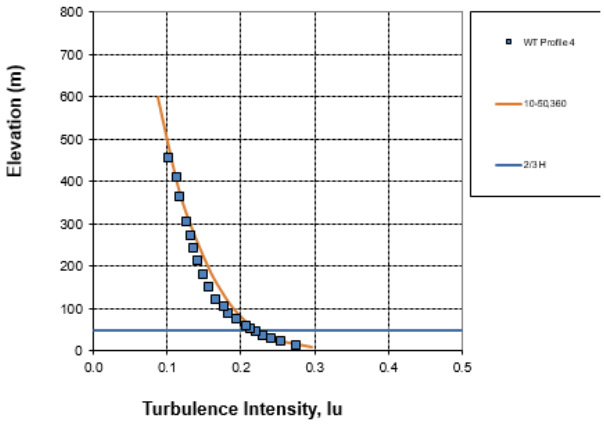
Angle Range (deg, CW from North):		10-50, 360	60-120	130	140,150	160-200	210-230	240-300	310-350
MS Height (m)	FS Height (m)	Iu	Iu	Iu	Iu	Iu	Iu	Iu	Iu
0.033	10.00	0.296	0.287	0.293	0.295	0.299	0.300	0.300	0.292
0.100	30.00	0.240	0.233	0.237	0.239	0.243	0.243	0.243	0.236
0.167	50.00	0.220	0.213	0.217	0.219	0.222	0.223	0.223	0.216
0.333	100.00	0.191	0.186	0.188	0.190	0.194	0.195	0.194	0.187
0.500	150.00	0.171	0.165	0.167	0.170	0.175	0.176	0.175	0.166
0.667	200.00	0.156	0.146	0.151	0.154	0.159	0.159	0.160	0.149
1.000	300.00	0.132	0.116	0.126	0.129	0.136	0.134	0.137	0.124
1.333	400.00	0.114	0.093	0.108	0.110	0.116	0.116	0.119	0.107
2.000	600.00	0.088	0.062	0.079	0.081	0.085	0.090	0.094	0.084

Vertical Profile Plots

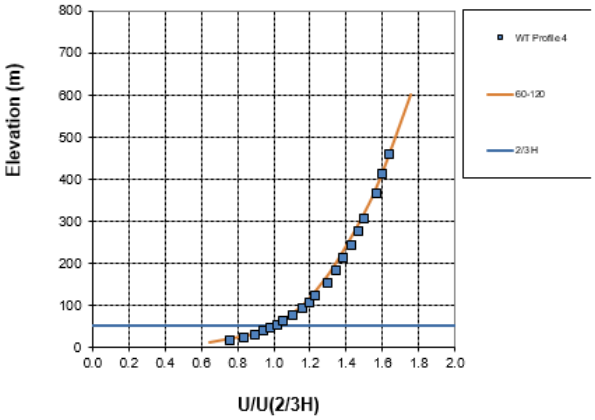
The Mean Wind Speed Profiles below are normalized against their value at 2/3 roof height at full scale

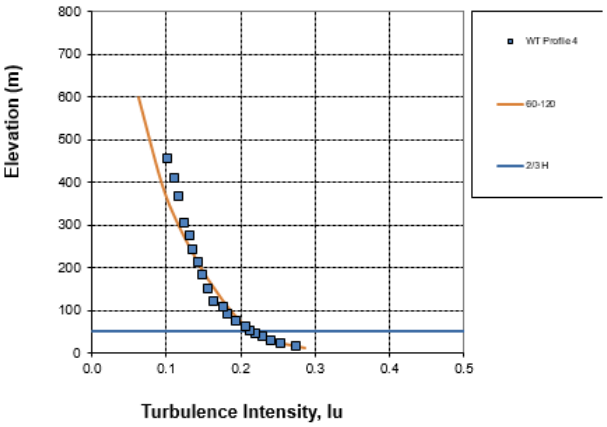
Angle Range: 10-50,360 - WT Profile 4



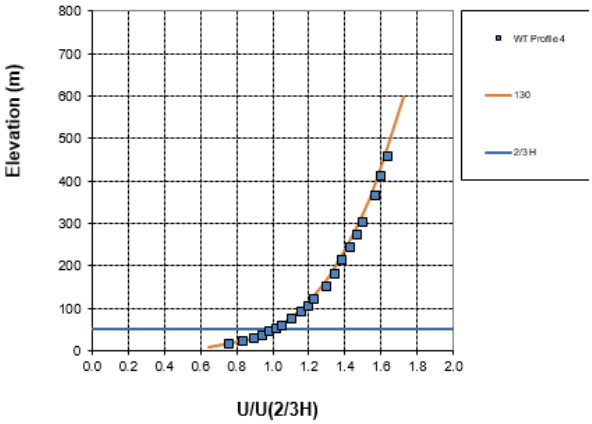


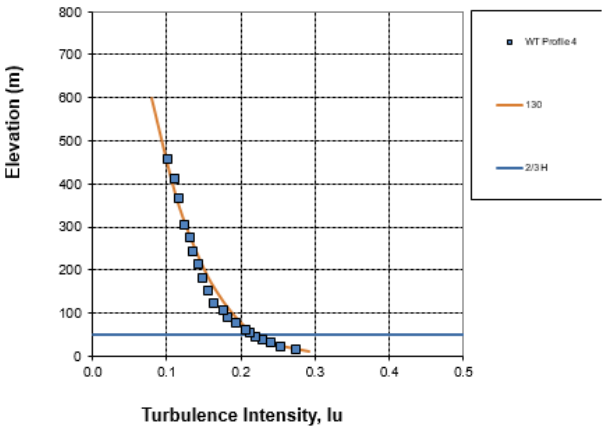
Angle Range: 60-120 - WT Profile 4



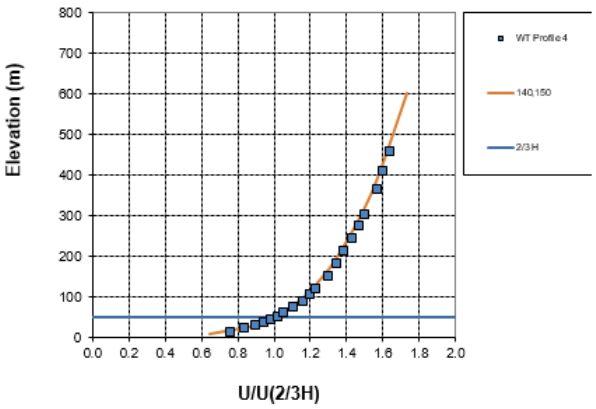


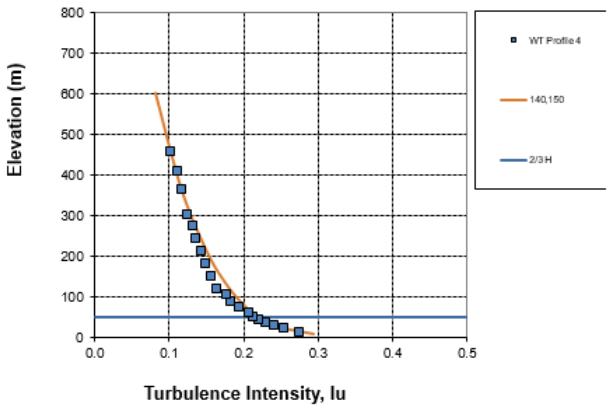
Angle Range: 130 - WT Profile 4



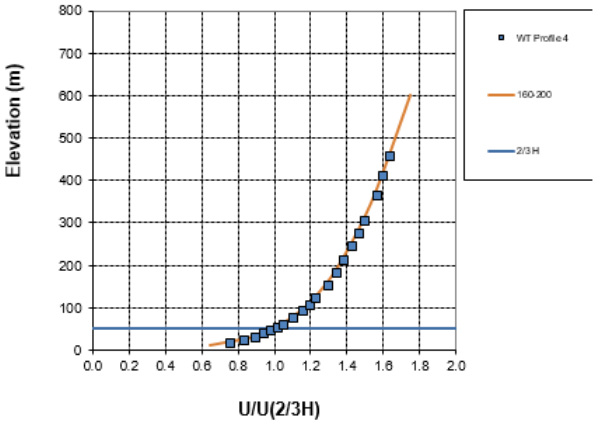


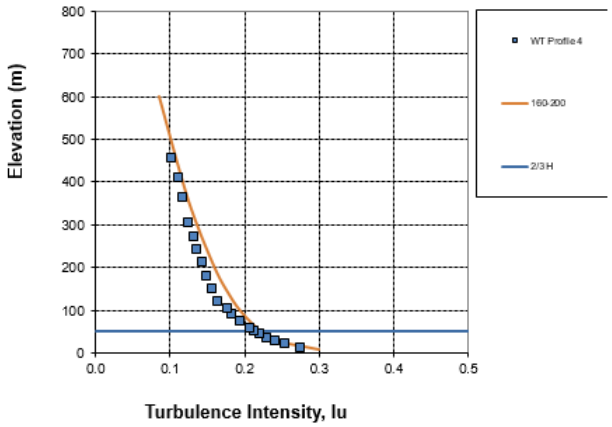
Angle Range: 140, 150 - WT Profile 4



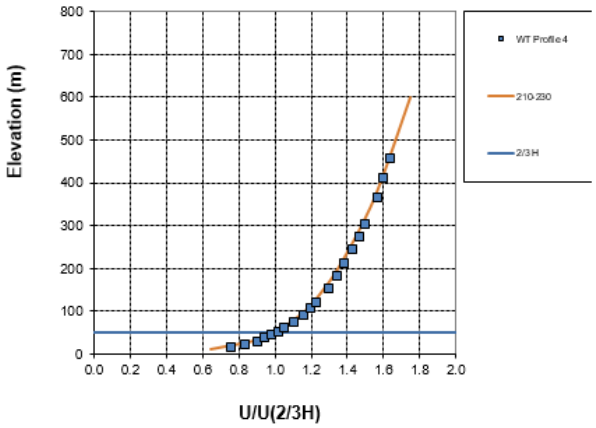


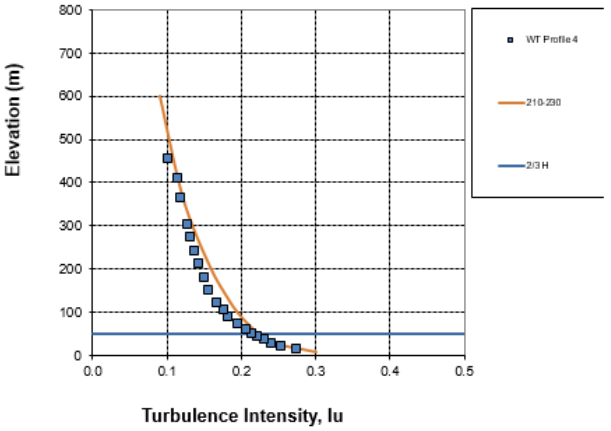
Angle Range: 160-200 - WT Profile 4



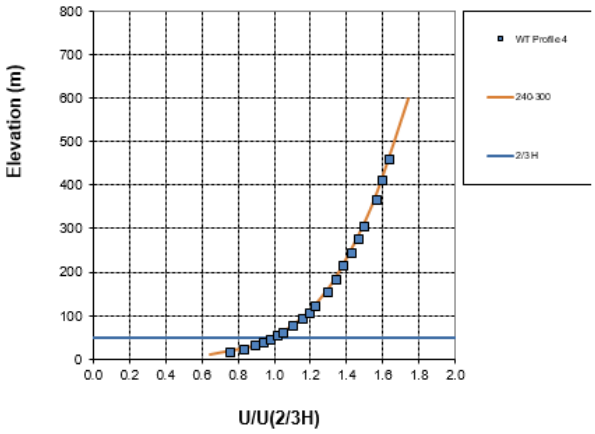


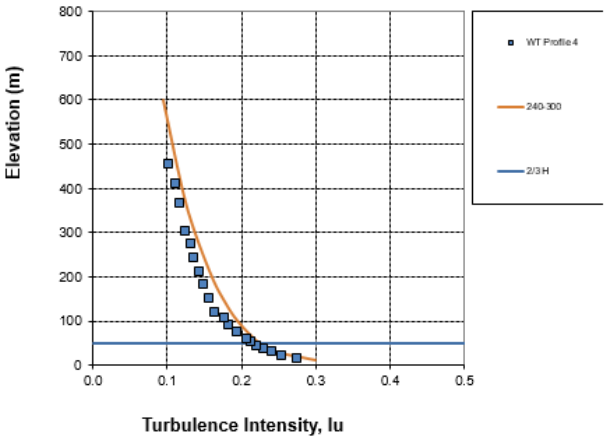
Angle Range: 210-230 - WT Profile 4



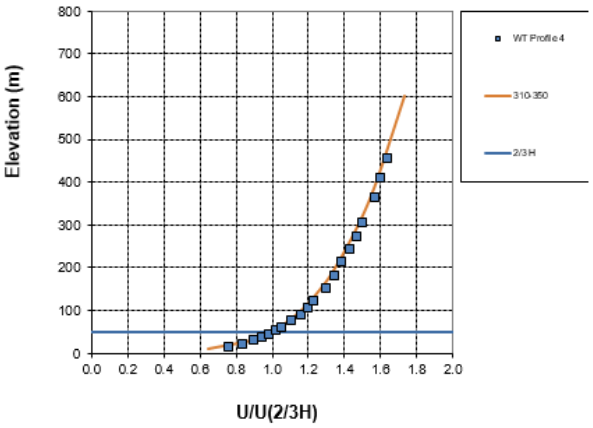


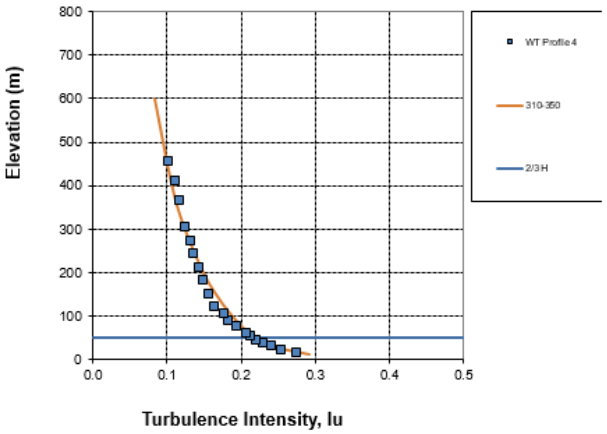
Angle Range: 240-300 - WT Profile 4





Angle Range: 310-350 - WT Profile 4





APPENDIX C

Configuration A: Mean Velocity Ratios

Dir	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180	190	200	210	220	230	240	250	260	270	280	290	300	310	320	330	340	350	360
1	0.207	0.199	0.187	0.176	0.153	0.148	0.148	0.165	0.158	0.152	0.159	0.197	0.207	0.186	0.157	0.161	0.115	0.111	0.109	0.119	0.166	0.198	0.174	0.155	0.179	0.183	0.188	0.174	0.182	0.195	0.214	0.221	0.217	0.217	0.204	0.207
2	0.220	0.201	0.181	0.175	0.138	0.131	0.130	0.156	0.180	0.168	0.175	0.222	0.235	0.210	0.181	0.185	0.142	0.130	0.123	0.121	0.128	0.144	0.119	0.115	0.152	0.174	0.172	0.150	0.152	0.163	0.186	0.194	0.194	0.202	0.205	0.219
3	0.325	0.288	0.249	0.239	0.204	0.188	0.181	0.201	0.221	0.196	0.205	0.255	0.243	0.208	0.191	0.198	0.141	0.129	0.121	0.119	0.147	0.179	0.147	0.128	0.181	0.240	0.230	0.176	0.166	0.179	0.206	0.232	0.255	0.283	0.295	0.332
4	0.288	0.255	0.217	0.207	0.164	0.144	0.141	0.155	0.194	0.178	0.189	0.223	0.204	0.185	0.165	0.172	0.151	0.140	0.133	0.129	0.135	0.156	0.148	0.131	0.186	0.227	0.215	0.167	0.139	0.144	0.161	0.181	0.211	0.245	0.259	0.292
5	0.350	0.311	0.273	0.268	0.240	0.225	0.216	0.228	0.232	0.198	0.206	0.240	0.204	0.184	0.192	0.206	0.155	0.151	0.150	0.143	0.158	0.178	0.171	0.136	0.181	0.231	0.235	0.205	0.169	0.163	0.170	0.193	0.229	0.268	0.287	0.344
6	0.222	0.198	0.177	0.172	0.155	0.143	0.140	0.140	0.141	0.129	0.142	0.153	0.129	0.118	0.120	0.121	0.093	0.095	0.097	0.096	0.099	0.111	0.124	0.108	0.130	0.153	0.148	0.134	0.129	0.125	0.130	0.139	0.162	0.189	0.195	0.226
7	0.078	0.078	0.084	0.085	0.093	0.092	0.091	0.092	0.078	0.079	0.080	0.080	0.076	0.076	0.076	0.076	0.085	0.086	0.088	0.087	0.081	0.079	0.081	0.088	0.108	0.108	0.109	0.108	0.102	0.099	0.102	0.102	0.095	0.096	0.095	0.094
8	0.078	0.079	0.079	0.080	0.078	0.078	0.079	0.079	0.085	0.085	0.085	0.085	0.078	0.078	0.079	0.079	0.079	0.080	0.081	0.080	0.086	0.085	0.086	0.090	0.079	0.078	0.078	0.078	0.098	0.099	0.099	0.098	0.091	0.092	0.093	0.093
9	0.087	0.089	0.089	0.087	0.086	0.087	0.087	0.088	0.091	0.092	0.091	0.092	0.092	0.094	0.092	0.097	0.108	0.111	0.114	0.116	0.111	0.104	0.107	0.109	0.096	0.093	0.098	0.099	0.098	0.095	0.092	0.090	0.104	0.102	0.101	0.102
10	0.122	0.126	0.124	0.120	0.119	0.121	0.123	0.123	0.122	0.121	0.119	0.120	0.122	0.123	0.122	0.130	0.130	0.134	0.140	0.144	0.142	0.132	0.137	0.140	0.136	0.129	0.138	0.138	0.139	0.136	0.131	0.126	0.121	0.121	0.122	0.122
11	0.097	0.103	0.104	0.111	0.126	0.117	0.119	0.146	0.138	0.116	0.097	0.104	0.136	0.139	0.112	0.130	0.168	0.182	0.174	0.177	0.172	0.155	0.184	0.181	0.139	0.127	0.154	0.160	0.159	0.141	0.121	0.105	0.099	0.096	0.097	0.098
12	0.093	0.097	0.094	0.093	0.104	0.100	0.097	0.106	0.088	0.087	0.104	0.138	0.145	0.128	0.105	0.114	0.139	0.158	0.149	0.142	0.136	0.125	0.125	0.140	0.121	0.119	0.143	0.158	0.187	0.192	0.180	0.155	0.124	0.107	0.101	0.096
13	0.235	0.215	0.187	0.169	0.169	0.156	0.124	0.121	0.100	0.098	0.093	0.097	0.113	0.105	0.091	0.098	0.107	0.109	0.122	0.139	0.166	0.205	0.217	0.214	0.164	0.146	0.179	0.193	0.215	0.216	0.216	0.227	0.225	0.234	0.242	0.248
14	0.280	0.270	0.273	0.264	0.260	0.262	0.222	0.209	0.178	0.167	0.166	0.143	0.154	0.185	0.222	0.297	0.273	0.295	0.320	0.337	0.331	0.294	0.267	0.237	0.181	0.134	0.129	0.137	0.182	0.231	0.270	0.257	0.255	0.266	0.273	0.285
15	0.223	0.254	0.268	0.257	0.294	0.323	0.302	0.342	0.317	0.294	0.285	0.241	0.259	0.263	0.265	0.306	0.328	0.359	0.374	0.338	0.329	0.307	0.284	0.275	0.268	0.209	0.145	0.120	0.155	0.169	0.163	0.160	0.146	0.151	0.176	0.207
16	0.321	0.300	0.302	0.281	0.246	0.259	0.271	0.293	0.305	0.299	0.262	0.222	0.210	0.228	0.201	0.190	0.186	0.208	0.228	0.243	0.242	0.211	0.206	0.223	0.199	0.144	0.138	0.204	0.308	0.358	0.375	0.355	0.332	0.338	0.339	0.338
17	0.291	0.284	0.277	0.270	0.245	0.252	0.225	0.209	0.180	0.178	0.190	0.150	0.158	0.199	0.234	0.286	0.282	0.331	0.380	0.393	0.371	0.305	0.235	0.169	0.131	0.120	0.129	0.145	0.176	0.203	0.202	0.188	0.202	0.222	0.239	0.276
18	0.231	0.220	0.212	0.205	0.187	0.191	0.184	0.171	0.154	0.156	0.172	0.160	0.156	0.156	0.165	0.178	0.137	0.159	0.179	0.173	0.170	0.152	0.136	0.124	0.111	0.101	0.102	0.112	0.155	0.168	0.157	0.151	0.148	0.166	0.175	0.211
19	0.158	0.198	0.232	0.233	0.212	0.201	0.201	0.197	0.193	0.186	0.180	0.172	0.155	0.170	0.180	0.173	0.123	0.118	0.117	0.147	0.166	0.176	0.172	0.153	0.117	0.100	0.096	0.094	0.101	0.106	0.111	0.119	0.125	0.132	0.151	0.169
20	0.345	0.298	0.243	0.238	0.215	0.200	0.185	0.207	0.220	0.204	0.233	0.282	0.251	0.217	0.228	0.239	0.190	0.180	0.180	0.198	0.212	0.188	0.145	0.122	0.120	0.133	0.143	0.139	0.119	0.115	0.119	0.140	0.187	0.234	0.253	0.317
21	0.323	0.286	0.233	0.250	0.248	0.220	0.217	0.217	0.227	0.217	0.235	0.290	0.267	0.224	0.210	0.219	0.180	0.176	0.169	0.160	0.177	0.168	0.140	0.171	0.229	0.240	0.259	0.256	0.236	0.218	0.215	0.223	0.234	0.253	0.249	0.293
22	0.346	0.321	0.223	0.208	0.200	0.212	0.235	0.236	0.263	0.281	0.278	0.327	0.332	0.284	0.234	0.240	0.195	0.183	0.171	0.173	0.166	0.160	0.158	0.196	0.255	0.328	0.413	0.461	0.489	0.480	0.480	0.476	0.433	0.399	0.344	0.321
23	0.300	0.298	0.215	0.181	0.205	0.224	0.256	0.258	0.259	0.276	0.262	0.289	0.312	0.273	0.222	0.227	0.171	0.150	0.144	0.146	0.143	0.187	0.234	0.263	0.306	0.344	0.360	0.348	0.363	0.359	0.336	0.296	0.243	0.231	0.219	0.264
24	0.288	0.321	0.274	0.216	0.227	0.280	0.305	0.276	0.258	0.258	0.255	0.244	0.281	0.282	0.237	0.227	0.176	0.160	0.158	0.165	0.197	0.284	0.312	0.342	0.370	0.389	0.378	0.320	0.299	0.287	0.249	0.208	0.182	0.181	0.198	0.246
25	0.316	0.363	0.361	0.340	0.280	0.247	0.284	0.290	0.253	0.219	0.211	0.202	0.227	0.220	0.203	0.211	0.202	0.204	0.204	0.236	0.281	0.297	0.283	0.321	0.347	0.339	0.254	0.213	0.228	0.202	0.217	0.213	0.188	0.209	0.235	0.278
26	0.279	0.351	0.335	0.289	0.259	0.246	0.271	0.270	0.249	0.212	0.214	0.242	0.245	0.231	0.222	0.203	0.195	0.194	0.194	0.211	0.240	0.292	0.280	0.299	0.319	0.324	0.295	0.338	0.391	0.357	0.323	0.272	0.251	0.239	0.224	0.247
27	0.278	0.263	0.201	0.193	0.220	0.226	0.219	0.211	0.218	0.225	0.248	0.208	0.193	0.191	0.197	0.167	0.154	0.144	0.144	0.160	0.178	0.234	0.270	0.305	0.330	0.345	0.355	0.337	0.326	0.296	0.283	0.251	0.215	0.198	0.198	0.237
28	0.252	0.192	0.142	0.136	0.133	0.149	0.167	0.183	0.225	0.241	0.201	0.181	0.215	0.244	0.213	0.205	0.163	0.147	0.136	0.146	0.164	0.167	0.191	0.229	0.267	0.290	0.285	0.262	0.251	0.232	0.219	0.215	0.212	0.206	0.214	0.250
29	0.258	0.217	0.196	0.196	0.198	0.193	0.200	0.196	0.220	0.241	0.226	0.215	0.266	0.302	0.280	0.287	0.272	0.257	0.227	0.219	0.216	0.233	0.253	0.305	0.357	0.414	0.446	0.439	0.444	0.417	0.377	0.339	0.297	0.264	0.258	0.275
30	0.204	0.195	0.200	0.187	0.152	0.134	0.130	0.125	0.118	0.118	0.105	0.102	0.116	0.108	0.098	0.097	0.103	0.106	0.109	0.120	0.131	0.137	0.147	0.161	0.174	0.193	0.231	0.261	0.281	0.277	0.278	0.278	0.246	0.220	0.208	0.206
31	0.245	0.254	0.222	0.192	0.162	0.149	0.150	0.157	0.176	0.172	0.166	0.201	0.208	0.183	0.172	0.192	0.201	0.187	0.175	0.184	0.188	0.234	0.240	0.162	0.141	0.139	0.156	0.160	0.195	0.219	0.247	0.253	0.238	0.229	0.240	0.251
32	0.125	0.126	0.117	0.112	0.107	0.102	0.103	0.106	0.128	0.126	0.116	0.122	0.133	0.140	0.129	0.117	0.117	0.122	0.128	0.131	0.133	0.169	0.203	0.169	0.173	0.164	0.182	0.193	0.182	0.166	0.153	0.154	0.146	0.133	0.130	0.129
33	0.181	0.182	0.168	0.151	0.098	0.085	0.081	0.077	0.077	0.077	0.077	0.076	0.088	0.107	0.111	0.140	0.165	0.165	0.168	0.161	0.156	0.191	0.206	0.170	0.181	0.196	0.216	0.220	0.222	0.214	0.199	0.189	0.164	0.154	0.159	0.166
34	0.209	0.248	0.285	0.307	0.259	0.188	0.148	0.127	0.124	0.136	0.140	0.140	0.174	0.212	0.204	0.220	0.207	0.198	0.186	0.185	0.212	0.228	0.198	0.164	0.183	0.215	0.231	0.216	0.214	0.218	0.240	0.224	0.195	0.193	0.193	0.195
35	0.281	0.289	0.279	0.271	0.231	0.175	0.139	0.109	0.110	0.132	0.149	0.127	0.136	0.180	0.198	0.216	0.244	0.241	0.231	0.229	0.244	0.240	0.183	0.173	0.206	0.226	0.229	0.212	0.230	0.226	0.239	0.238	0.208	0.215	0.232	0.253
36	0.224	0.238	0.230	0.226	0.214	0.196	0.185	0.148	0.130	0.140	0.154	0.128	0.125	0.140	0.164	0.213	0.247	0.248	0.248	0.252	0.271	0.275	0.192	0.189	0.229	0.238	0.237	0.217	0.231	0.221	0.225	0.211	0.192	0.205	0.220	0.220
37	0.320	0.322	0.309	0.301	0.289	0.253	0.239	0.223	0.201	0.196	0.188	0.170	0.184	0.231	0.267	0.223	0.192	0.229	0.233	0.234	0.234	0.242	0.245	0.173	0.137	0.138	0.160	0.179	0.205	0.219	0.210	0.222	0.251	0.276	0.303	0.319
38	0.204	0.225	0.215	0.204	0.196	0.208	0.206	0.173	0.176	0.171	0.157	0.147	0.147	0.131	0.124	0.104	0.088	0.112	0.117	0.125	0.135	0.114	0.143	0.145	0.108	0.100	0.108	0.111	0.111	0.109	0.105	0.119	0.146	0.162	0.189	0.208
39	0.396	0.399	0.381	0.367	0.350	0.298	0.266	0.267	0.241	0.196	0.201	0.189	0.174	0.177	0.187	0.204	0.211	0.263	0.283	0.283	0.301	0.293	0.259	0.266	0.257	0.210	0.161	0.191	0.253	0.244	0.226	0.268	0.303	0.338	0.367	0.393
40	0.332	0.349	0.360	0.347	0.318	0.283	0.276	0.224	0.166	0.168	0.176	0.172	0.185	0.215	0.270	0.277	0.270	0.317	0.329	0.320	0.311	0.298	0.278	0.220	0.187	0.172	0.161	0.157	0.201	0.236	0.232	0.255	0.290	0.305	0.318	0.328
41	0.390	0.386	0.365	0.329	0.276	0.237	0.190	0.147	0.201	0.274	0.291	0.292	0.306	0.352	0.421	0.422	0.397	0.440	0.459	0.435	0.397	0.361	0.373	0.303	0.194	0.162	0.165	0.168	0.213	0.264	0.272	0.318	0.363	0.381	0.393	0.394
42	0.180	0.212	0.213	0.173	0.148	0.150	0.141	0.160	0.206	0.217	0.206	0.197	0.196	0.232	0.270	0.262	0.235	0.213	0.224	0.224	0.198	0.168	0.166	0.158	0.157	0.166	0.192	0.209	0.203	0.199	0.212	0.174	0.192	0.198	0.184	0.175
43	0.281	0.310	0.272	0.214	0.193	0.194	0.182	0.221	0.266	0.310	0.344	0.360	0.384	0.355	0.351	0.331	0.276	0.216	0.199	0.201	0.190	0.157	0.192	0.194	0.202	0.228	0.243	0.230	0.237	0.243	0.251	0.229	0.232	0.233	0.224	0.234
44	0.276	0.287	0.231	0.204	0.244	0.247	0.194	0.225	0.267	0.279	0.259	0.238	0.263	0.318	0.349	0.327	0.245	0.191	0.182	0.183	0.191	0.158	0.164	0.189	0.193	0.227	0.271	0.264	0.249	0.234	0.243	0.229	0.237	0.237	0.231	0.244
45	0.280	0.258	0.219	0.254	0.295	0.241	0.183	0.235	0.253	0.247	0.246	0.262	0.295	0.351	0.375	0.355	0.276	0.218	0.226	0.237	0.244	0.193	0.149	0.141	0.155	0.199	0.271	0.311	0.312	0.276	0.261	0.249	0.253	0.252	0.246	0.256
46	0.166	0.207	0.222	0.214	0.179	0.194	0.239	0.273	0.276	0.289	0.300	0.342	0.370	0.381	0.351	0.212	0.132	0.109	0.110	0.110	0.108	0.101	0.098	0.093	0.104	0.120	0.157	0.204	0.231	0.227	0.208	0.194	0.191	0.174	0.158	0.151
47	0.173	0.184	0.207	0.243	0.252	0.202	0.169	0.218	0.250	0.245	0.237	0.264	0.289	0.306	0.288	0.194	0.151	0.139	0.137	0.128	0.111	0.097	0.102	0.127	0.181	0.207	0.247	0.254	0.247	0.233	0.225	0.232	0.233	0.220	0.213	0.201
48	0.220	0.220	0.228	0.245	0.260	0.233	0.192	0.222	0.259	0.270	0.261	0.292	0.335	0.363	0.352	0.276	0.208	0.176	0.170	0.158	0.137	0.120	0.117	0.134	0.143	0.159	0.181	0.175	0.177	0.173	0.175	0.193	0.202	0.201	0.218	0.228
49	0.188	0.197	0.183	0.166	0.161	0.154	0.146	0.161	0.174	0.188	0.189	0.201	0.231	0.239	0.229	0.185	0.146	0.142	0.145	0.134	0.101	0.088	0.089	0.092	0.099	0.111	0.114	0.102	0.104	0.102	0.105	0.109	0.111	0.119	0.142	0.168
50	0.207	0.213	0.211	0.206	0.198	0.195	0.199	0.191	0.166	0.173	0.178	0.167	0.162	0.177	0.193	0.183	0.179	0.203	0.201	0.188	0.192	0.237	0.261	0.192	0.175	0.181	0.173	0.154	0.155	0.156	0.156	0.162	0.185	0.194	0.203	0.206
51	0.067	0.068	0.067	0.067	0.067	0.067	0.067	0.068	0.067	0.068	0.066	0.067	0.068	0.068	0.069	0.068	0.067	0.067	0.068	0.067	0.068	0.067	0.067	0.067	0.068	0.067	0.068	0.068	0.067	0.067	0.067	0.067	0.071	0.071	0.072	0.072
52	0.067	0.068	0.067	0.067	0.072	0.071	0.071	0.071	0.067	0.067	0.067	0.066	0.070	0.069	0.070	0.069	0.068	0.068	0.068	0.067	0.069	0.069	0.069	0.068	0.071	0.069	0.069	0.070	0.066	0.066	0.066	0.066	0.070	0.069	0.070	0.069
53	0.067	0.068	0.068	0.067	0.066	0.066	0.066	0.067	0.067	0.068	0.068	0.067	0.069	0.068	0.068	0.068	0.072	0.073	0.073	0.072	0.067	0.066	0.066	0.066	0.066	0.066	0.066	0.066	0.083	0.084	0.083	0.083	0.068	0.068	0.068	0.068
54	0.075	0.077	0.076	0.076	0.067	0.066	0.066	0.066	0.068	0.067	0.067	0.067	0.070	0.069	0.070	0.069	0.070	0.071	0.072	0.071	0.067	0.067	0.066	0.067	0.069	0.068	0.068	0.068	0.067	0.067	0.067	0.067	0.068	0.069	0.068	0.068
55	0.067	0.067	0.067	0.067	0.066	0.066	0.067	0.067	0.075	0.076	0.075	0.074	0.071	0.071	0.071	0.070	0.067	0.067	0.068	0.067	0.068	0.068	0.068	0.069	0.070	0.070	0.071	0.072	0.067	0.067	0.067	0.067	0.067	0.068	0.068	0.068
56	0.068	0.070	0.070	0.070	0.068	0.069	0.069	0.070	0.067	0.067	0.067	0.066	0.069	0.068	0.069	0.068	0.071	0.071	0.072	0.072	0.067	0.067	0.067	0.068	0.069	0.068	0.069	0.069	0.067	0.066	0.066	0.066	0.072	0.072	0.072	0.071
57	0.066	0.067	0.066	0.065	0.072	0.070	0.071	0.070	0.070	0.070	0.069	0.070	0.069	0.070	0.071	0.069	0.069	0.070	0.070	0.070	0.071	0.070	0.071	0.071	0.068	0.068	0.068	0.068	0.072	0.072	0.071	0.071	0.075	0.076	0.076	0.076
58	0.070	0.071	0.068	0.068	0.068	0.066	0.067	0.067	0.067	0.067	0.067	0.067	0.068	0.068	0.069	0.069	0.073	0.074	0.076	0.075	0.068	0.068	0.071	0.071	0.066	0.065	0.066	0.067	0.065	0.065	0.065	0.065	0.067	0.067	0.067	0.067
59	0.081	0.084	0.088	0.090	0.069	0.068	0.068	0.068	0.070	0.070	0.070	0.069	0.069	0.070	0.070	0.069	0.067	0.067	0.067	0.067	0.071	0.070	0.069	0.070	0.067	0.066	0.067	0.067	0.066	0.066	0.066	0.066	0.066	0.066	0.067	0.066
60	0.070	0.070	0.073	0.073	0.068	0.068	0.068	0.068	0.067	0.067	0.066	0.066	0.067	0.066	0.067	0.067	0.070	0.070	0.071	0.071	0.069	0.069	0.069	0.067	0.067	0.067	0.067	0.067	0.074	0.074	0.075	0.076	0.073	0.073	0.073	0.074

Configuration A: Peak Velocity Ratios

Dir	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180	190	200	210	220	230	240	250	260	270	280	290	300	310	320	330	340	350	360
1	0.4490	0.4554	0.4628	0.4509	0.3995	0.3608	0.3690	0.4164	0.4033	0.3986	0.4145	0.4431	0.4392	0.4190	0.3852	0.3834	0.3140	0.3037	0.3483	0.4001	0.4666	0.4874	0.4619	0.4016	0.4437	0.4696	0.4990	0.4368	0.4589	0.4945	0.5248	0.5455	0.5039	0.5235	0.4769	0.4811
2	0.4521	0.4468	0.4401	0.4401	0.4006	0.3817	0.3892	0.4521	0.4570	0.4366	0.4321	0.4669	0.4768	0.4433	0.4132	0.4103	0.3213	0.3060	0.3184	0.3320	0.3868	0.4103	0.3591	0.3384	0.3800	0.3942	0.4302	0.3989	0.4184	0.4581	0.5006	0.5030	0.4743	0.4923	0.4438	0.4860
3	0.6274	0.5917	0.5527	0.5828	0.5314	0.5149	0.5008	0.5506	0.5707	0.5213	0.5473	0.5667	0.5505	0.4858	0.4860	0.4969	0.3588	0.3443	0.3566	0.3536	0.4412	0.4610	0.4331	0.4076	0.4478	0.4898	0.5058	0.4765	0.4881	0.5234	0.5443	0.5611	0.5469	0.5773	0.5633	0.6223
4	0.5390	0.5147	0.4816	0.4807	0.4278	0.3991	0.3885	0.4510	0.4668	0.4268	0.4364	0.4520	0.4467	0.4158	0.4162	0.4279	0.3371	0.3125	0.3110	0.2986	0.3610	0.4402	0.4329	0.4060	0.4653	0.4935	0.4796	0.4803	0.4294	0.4262	0.4621	0.4819	0.4815	0.5470	0.4916	0.5377
5	0.7070	0.6467	0.6034	0.6128	0.5656	0.5579	0.5438	0.5933	0.5721	0.5211	0.5535	0.5414	0.5399	0.4907	0.4981	0.5298	0.4044	0.4096	0.4153	0.4055	0.4115	0.4683	0.4474	0.4080	0.4386	0.4820	0.4787	0.4739	0.4691	0.4390	0.4567	0.4878	0.5097	0.5488	0.5663	0.6911
6	0.4911	0.4713	0.4233	0.4314	0.4166	0.3824	0.3514	0.3941	0.3626	0.3318	0.3678	0.3740	0.366	0.3545	0.3640	0.3767	0.2649	0.2562	0.2634	0.2578	0.2994	0.4033	0.4763	0.3994	0.3854	0.4144	0.4144	0.3818	0.3771	0.3845	0.3884	0.4178	0.3956	0.4580	0.4341	0.4810
7	0.1485	0.1449	0.1512	0.1525	0.1568	0.1552	0.1532	0.1559	0.1465	0.1474	0.1461	0.1471	0.1421	0.1407	0.1420	0.1420	0.1512	0.1548	0.1571	0.1534	0.1448	0.1472	0.1493	0.1531	0.1640	0.1669	0.1680	0.1675	0.1613	0.1612	0.1648	0.1631	0.1565	0.1586	0.1585	0.1556
8	0.1510	0.1511	0.1519	0.1485	0.1487	0.1501	0.1476	0.1482	0.1557	0.1601	0.1596	0.1576	0.1487	0.1490	0.1516	0.1554	0.1523	0.1552	0.1541	0.1562	0.1629	0.1592	0.1621	0.1634	0.1493	0.1490	0.1475	0.1505	0.1709	0.1691	0.1696	0.1680	0.1603	0.1664	0.1625	0.1637
9	0.1801	0.1810	0.1775	0.1757	0.1767	0.1765	0.1777	0.1743	0.1758	0.1825	0.1833	0.1808	0.1977	0.2020	0.1989	0.2347	0.2462	0.2498	0.2642	0.2734	0.2543	0.2323	0.2449	0.2399	0.2224	0.1987	0.2118	0.2097	0.2224	0.2104	0.1942	0.1885	0.1948	0.1897	0.1834	0.1893
10	0.2512	0.2612	0.2570	0.2436	0.2483	0.2497	0.2428	0.2440	0.2373	0.2442	0.234	0.2407	0.2484	0.2629	0.2505	0.2953	0.3104	0.3130	0.3330	0.3448	0.3265	0.3037	0.3360	0.3298	0.2972	0.2798	0.3008	0.2952	0.3111	0.2940	0.2791	0.2584	0.2533	0.2386	0.2474	0.2501
11	0.2763	0.3034	0.3031	0.3455	0.3497	0.3649	0.3854	0.4123	0.3654	0.3402	0.2672	0.2975	0.3684	0.3996	0.3376	0.3982	0.4395	0.4539	0.4564	0.4881	0.4474	0.4563	0.4843	0.5233	0.4716	0.3787	0.4499	0.4263	0.4551	0.4030	0.3555	0.2960	0.2723	0.2559	0.2675	0.2527
12	0.2375	0.2428	0.2327	0.2365	0.2535	0.2461	0.2536	0.2780	0.2366	0.2468	0.3311	0.3844	0.3816	0.3547	0.3096	0.3329	0.3894	0.4125	0.4106	0.3911	0.3950	0.3698	0.4293	0.4436	0.4136	0.3689	0.4335	0.4540	0.4874	0.4851	0.4527	0.3916	0.3411	0.3355	0.2797	0.2502
13	0.4767	0.4809	0.4307	0.4258	0.4201	0.4130	0.3544	0.2967	0.2578	0.2386	0.2153	0.2163	0.2404	0.2349	0.2282	0.2697	0.2968	0.3233	0.3716	0.4112	0.5219	0.6016	0.5972	0.5747	0.4702	0.3925	0.4454	0.4529	0.4569	0.4684	0.4958	0.5007	0.4959	0.4828	0.5074	0.5108
14	0.5334	0.5359	0.5396	0.5343	0.5101	0.5119	0.4607	0.4399	0.4140	0.4312	0.4160	0.3849	0.4136	0.4360	0.4799	0.5954	0.6111	0.6199	0.6605	0.6416	0.6837	0.6311	0.6055	0.5917	0.4755	0.3890	0.3474	0.3638	0.4437	0.4896	0.5457	0.5296	0.4922	0.5067	0.5067	0.5418
15	0.4959	0.5855	0.6085	0.6359	0.6832	0.7001	0.6953	0.7255	0.7042	0.7015	0.6967	0.6545	0.6177	0.6043	0.5752	0.6295	0.6608	0.6712	0.6983	0.6757	0.6571	0.6485	0.5739	0.5670	0.5433	0.5252	0.4168	0.3366	0.3582	0.3860	0.3997	0.4031	0.4040	0.3838	0.4143	0.4635
16	0.6653	0.5970	0.6395	0.6268	0.6084	0.6612	0.6444	0.6699	0.6770	0.6851	0.6082	0.5637	0.5669	0.5792	0.5355	0.4976	0.4350	0.4475	0.5007	0.5051	0.5043	0.4822	0.4759	0.4950	0.4616	0.3752	0.3709	0.4851	0.5554	0.6387	0.6874	0.6720	0.6402	0.6551	0.6780	0.6604
17	0.5309	0.5470	0.5516	0.5282	0.5106	0.5408	0.5072	0.5047	0.4572	0.4536	0.4192	0.4102	0.4661	0.5050	0.4905	0.5537	0.5473	0.6761	0.7173	0.7168	0.7193	0.6684	0.6141	0.5608	0.3796	0.2910	0.3345	0.3639	0.4309	0.4877	0.5168	0.4852	0.4619	0.4541	0.4855	0.5255
18	0.5290	0.5025	0.4821	0.4778	0.4624	0.4705	0.4495	0.4667	0.4319	0.4227	0.4228	0.4271	0.4590	0.4316	0.4322	0.4647	0.3791	0.4119	0.4443	0.4457	0.4475	0.4350	0.3983	0.3972	0.3851	0.3467	0.3482	0.3535	0.4667	0.4763	0.4871	0.4384	0.4011	0.4266	0.4389	0.5138
19	0.4599	0.5762	0.6557	0.6215	0.6280	0.5667	0.5710	0.5889	0.5169	0.4939	0.5008	0.4723	0.4503	0.4894	0.4864	0.4649	0.3226	0.3103	0.3283	0.3984	0.4110	0.4147	0.4212	0.4187	0.3290	0.2668	0.2589	0.2367	0.2659	0.2968	0.3110	0.3387	0.3698	0.3755	0.4371	0.4661
20	0.7936	0.7469	0.6161	0.6386	0.6400	0.5818	0.5265	0.6669	0.6408	0.5941	0.6258	0.6732	0.6628	0.5564	0.5375	0.5137	0.3901	0.3699	0.3948	0.4239	0.4439	0.3984	0.3532	0.3315	0.3003	0.3077	0.3169	0.3333	0.3083	0.3407	0.3611	0.4192	0.5266	0.5593	0.6269	0.7317
21	0.7063	0.7134	0.5926	0.6035	0.6147	0.6032	0.6191	0.6324	0.6125	0.6067	0.6253	0.6582	0.6243	0.5600	0.5437	0.5247	0.4159	0.3754	0.3819	0.3654	0.3933	0.4096	0.3666	0.4770	0.5556	0.5790	0.5985	0.5894	0.6073	0.5795	0.5952	0.5665	0.5930	0.6444	0.5737	0.6401
22	0.7117	0.7404	0.6165	0.5202	0.5237	0.5979	0.6105	0.5935	0.6318	0.6577	0.6330	0.6610	0.6511	0.6049	0.5322	0.5513	0.4359	0.4223	0.3946	0.4150	0.4422	0.4233	0.4773	0.5579	0.6117	0.7259	0.7978	0.8285	0.8692	0.8736	0.8871	0.9081	0.8725	0.8375	0.7806	0.7011
23	0.6504	0.7055	0.6052	0.5035	0.5593	0.5574	0.5881	0.5679	0.5966	0.6384	0.5897	0.6209	0.6206	0.5763	0.5313	0.5267	0.4405	0.4342	0.4329	0.4312	0.4843	0.5817	0.5615	0.5757	0.5853	0.6120	0.6339	0.6343	0.6534	0.6424	0.6341	0.6238	0.5538	0.5322	0.5368	0.6145
24	0.6181	0.7142	0.7086	0.6196	0.6075	0.6438	0.6774	0.5941	0.5700	0.5489	0.5619	0.5689	0.5930	0.5962	0.5345	0.5103	0.4426	0.4568	0.4857	0.4661	0.5940	0.6143	0.6089	0.6538	0.6513	0.6576	0.6754	0.6122	0.5968	0.5565	0.5904	0.5412	0.4761	0.4624	0.5326	0.5810
25	0.6623	0.7814	0.8408	0.8451	0.7881	0.6375	0.6725	0.6331	0.6073	0.5568	0.5385	0.4982	0.5607	0.5077	0.4620	0.4713	0.4691	0.5074	0.5240	0.5941	0.6541	0.6145	0.5753	0.6054	0.5984	0.5917	0.5644	0.5434	0.5440	0.4984	0.5189	0.5011	0.4962	0.4904	0.5545	0.6056
26	0.7012	0.7590	0.7701	0.7343	0.6784	0.6342	0.6739	0.6790	0.6476	0.5830	0.5657	0.5694	0.6066	0.5959	0.5730	0.5407	0.5312	0.4847	0.5243	0.5493	0.5778	0.6041	0.5574	0.5768	0.5891	0.5939	0.6412	0.7624	0.8407	0.7766	0.7052	0.6055	0.5590	0.5281	0.5322	0.6043
27	0.6037	0.6018	0.5151	0.5076	0.6177	0.5883	0.6236	0.5343	0.5176	0.4773	0.5386	0.5302	0.5140	0.4766	0.5215	0.4722	0.4804	0.4349	0.4375	0.4875	0.5100	0.5610	0.5551	0.5794	0.5874	0.6055	0.6129	0.6037	0.6116	0.6169	0.5951	0.5418	0.4801	0.4685	0.5020	0.5608
28	0.5387	0.5055	0.3850	0.3778	0.3731	0.4307	0.4518	0.4942	0.5418	0.5503	0.4830	0.4321	0.5450	0.5384	0.5059	0.4863	0.4087	0.4055	0.4382	0.4745	0.5181	0.4999	0.5338	0.6221	0.6153	0.6327	0.6164	0.5783	0.5541	0.5079	0.5081	0.5151	0.5320	0.4764	0.4852	0.5368
29	0.5504	0.5337	0.5051	0.5257	0.5245	0.4816	0.4447	0.4779	0.5108	0.5160	0.5093	0.4682	0.5410	0.5832	0.5878	0.5965	0.5911	0.5611	0.5291	0.5273	0.5454	0.5621	0.6195	0.6798	0.6978	0.7335	0.7657	0.7524	0.7396	0.7025	0.6859	0.6503	0.6020	0.5692	0.5629	0.5687
30	0.4454	0.4982	0.6093	0.5519	0.4289	0.3837	0.3444	0.3878	0.3520	0.3532	0.3270	0.339	0.3423	0.3131	0.2803	0.3073	0.2922	0.2997	0.3094	0.3584	0.3759	0.3917	0.4030	0.3922	0.4096	0.4546	0.5172	0.5346	0.5805	0.6006	0.6326	0.6769	0.6425	0.5963	0.5276	0.4364
31	0.4817	0.5482	0.5134	0.4679	0.4341	0.3963	0.3660	0.4008	0.4191	0.3919	0.3859	0.4277	0.4553	0.4321	0.4070	0.4383	0.4563	0.4467	0.4560	0.4642	0.5001	0.5606	0.5819	0.4782	0.3972	0.3893	0.4318	0.4238	0.4986	0.5470	0.5686	0.5859	0.5479	0.4803	0.4919	0.5224
32	0.3213	0.3168	0.2752	0.2709	0.2547	0.2366	0.2309	0.2412	0.2628	0.2691	0.2634	0.2657	0.2937	0.3002	0.2976	0.2845	0.2870	0.3433	0.3687	0.3978	0.4491	0.5649	0.5969	0.5346	0.4989	0.4704	0.5336	0.5423	0.5597	0.5120	0.4607	0.4163	0.3792	0.3511	0.2931	0.2988
33	0.3689	0.3854	0.3684	0.3477	0.2730	0.2412	0.2053	0.1951	0.1967	0.2149	0.2001	0.2028	0.2553	0.3111	0.2999	0.3744	0.4063	0.4192	0.4627	0.4644	0.5154	0.5938	0.6050	0.4902	0.5128	0.5267	0.5772	0.5592	0.5694	0.5150	0.5207	0.4714	0.4477	0.3827	0.3649	0.3876
34	0.4842	0.5953	0.6183	0.6707	0.6097	0.5457	0.4231	0.3545	0.3604	0.3804	0.3924	0.3833	0.4753	0.5019	0.4856	0.5347	0.5240	0.5210	0.4518	0.4767	0.5259	0.5306	0.5195	0.4238	0.3975	0.4355	0.4728	0.4695	0.4835	0.4890	0.4727	0.4502	0.4175	0.3969	0.4021	0.4341
35	0.5211	0.5830	0.5419	0.5254	0.5396	0.4731	0.3757	0.3240	0.3216	0.3637	0.3825	0.3520	0.3774	0.4160	0.4191	0.4483	0.4649	0.4558	0.4586	0.4714	0.5277	0.5102	0.4423	0.4368	0.4865	0.5009	0.5338	0.5293	0.5365	0.4974	0.4990	0.4681	0.4660	0.4471	0.4588	0.5045
36	0.5019	0.5457	0.5170	0.5243	0.5275	0.5281	0.4659	0.4379	0.4033	0.3853	0.3945	0.3733	0.3534	0.3379	0.3631	0.4843	0.5017	0.5157	0.5249	0.5468	0.6185	0.6075	0.5245	0.4608	0.4979	0.5071	0.5161	0.4979	0.5215	0.4858	0.5215	0.4924	0.4932	0.4887	0.5111	0.4981
37	0.5729	0.6171	0.5818	0.6017	0.6035	0.6087	0.5271	0.5111	0.5048	0.5131	0.4816	0.4833	0.5024	0.5460	0.5563	0.5233	0.4771	0.4682	0.4918	0.4978	0.4902	0.5676	0.5929	0.4769	0.3921	0.3464	0.4652	0.4430	0.4903	0.4822	0.4587	0.4943	0.5393	0.5245	0.5414	0.5567
38	0.4696	0.5832	0.5787	0.6066	0.5645	0.5782	0.6027	0.5176	0.5232	0.5241	0.4937	0.4731	0.4607	0.3820	0.3406	0.3365	0.2485	0.3059	0.3054	0.3174	0.3033	0.2889	0.3267	0.3049	0.2489	0.2367	0.2574	0.2454	0.2938	0.2910	0.3122	0.3478	0.3831	0.3806	0.3865	0.4473
39	0.6468	0.6813	0.6940	0.6549	0.6826	0.6791	0.6287	0.6058	0.5962	0.5407	0.5308	0.5274	0.4652	0.4348	0.4577	0.4632	0.4356	0.5379	0.5505	0.5620	0.6312	0.6198	0.5976	0.5701	0.5209	0.5107	0.4517	0.5464	0.5664	0.5881	0.6124	0.6264	0.6516	0.6263	0.6333	0.6626
40	0.6004	0.6432	0.6654	0.6431	0.6468	0.6466	0.5956	0.5756	0.4850	0.4184	0.4032	0.3928	0.4158	0.4883	0.5599	0.5612	0.5500	0.6599	0.6617	0.6439	0.6694	0.6483	0.6357	0.5465	0.5247	0.4659	0.4234	0.4496	0.5398	0.5816	0.5432	0.5804	0.5918	0.5694	0.5676	0.5941
41	0.7403	0.7200	0.6812	0.6539	0.5831	0.5315	0.4759	0.4183	0.4592	0.5538	0.5917	0.5870	0.6167	0.6617	0.7290	0.7430	0.7117	0.7944	0.8154	0.7969	0.7642	0.7205	0.7416	0.7163	0.6180	0.4825	0.4473	0.4470	0.5427	0.6128	0.5907	0.6564	0.6664	0.6569	0.6977	0.7338
42	0.4632	0.4999	0.4708	0.4529	0.3475	0.3609	0.3473	0.4123	0.4450	0.4871	0.4644	0.4734	0.4560	0.5036	0.5428	0.5227	0.5247	0.5105	0.5372	0.5657	0.5315	0.4766	0.4869	0.4331	0.4443	0.4484	0.5153	0.5251	0.5596	0.5962	0.6022	0.5433	0.5338	0.5318	0.5052	0.5122
43	0.5727	0.5999	0.5455	0.4938	0.5006	0.4940	0.5153	0.5537	0.5796	0.6656	0.7182	0.7525	0.7854	0.7055	0.6468	0.6242	0.6105	0.5240	0.5011	0.5076	0.5233	0.4704	0.5833	0.5103	0.5401	0.5492	0.5926	0.5098	0.5049	0.5033	0.5201	0.4887	0.4940	0.5042	0.4988	0.5387
44	0.5786	0.6050	0.5365	0.5517	0.5732	0.5749	0.5303	0.5358	0.5755	0.5963	0.5765	0.5357	0.5156	0.5906	0.5966	0.6067	0.5749	0.5099	0.4891	0.4940	0.5158	0.4508	0.4845	0.4924	0.5058	0.5461	0.5732	0.5374	0.5295	0.5022	0.5113	0.4774	0.4881	0.4842	0.4763	0.5534
45	0.5989	0.6052	0.5388	0.5741	0.6090	0.6109	0.5575	0.5793	0.5615	0.5537	0.5551	0.5634	0.5659	0.6228	0.6296	0.6688	0.6288	0.5396	0.5004	0.5366	0.5387	0.5347	0.4437	0.4123	0.4315	0.4829	0.5735	0.5661	0.5942	0.5693	0.5369	0.5112	0.5190	0.5265	0.5027	0.5651
46	0.4784	0.5454	0.5720	0.5574	0.4915	0.5621	0.6397	0.6947	0.6873	0.6510	0.6326	0.6645	0.7111	0.6759	0.6474	0.4929	0.3710	0.3024	0.3305	0.3105	0.3014	0.2771	0.2760	0.2433	0.2472	0.2771	0.3556	0.3967	0.4356	0.4306	0.4059	0.3923	0.3941	0.3720	0.3847	0.4023
47	0.4226	0.4633	0.5391	0.6001	0.6114	0.5451	0.5379	0.6164	0.6340	0.5852	0.5803	0.5511	0.5826	0.5764	0.5596	0.4507	0.3655	0.3645	0.3742	0.3494	0.3283	0.2695	0.3264	0.3384	0.3973	0.4179	0.4365	0.4225	0.4076	0.3742	0.3765	0.4100	0.4276	0.4192	0.4227	0.4288
48	0.4816	0.5106	0.5476	0.5832	0.5942	0.5520	0.5310	0.6240	0.6264	0.5939	0.5900	0.5816	0.5980	0.6088	0.5928	0.5298	0.4478	0.3748	0.3948	0.3849	0.3477	0.3244	0.3215	0.3898	0.3734	0.4123	0.4195	0.3767	0.3600	0.3533	0.3601	0.4159	0.4455	0.4621	0.4680	0.4922
49	0.3894	0.4038	0.3913	0.3876	0.4169	0.4419	0.4220	0.4125	0.4491	0.4649	0.4504	0.4514	0.4662	0.4462	0.4396	0.3857	0.3569	0.3438	0.3643	0.3300	0.2959	0.2680	0.2719	0.2941	0.2978	0.3399	0.3230	0.2729	0.2731	0.2493	0.2445	0.2647	0.2895	0.3245	0.3450	0.3873
50	0.3982	0.4364	0.4518	0.4343	0.4599	0.4519	0.4541	0.4673	0.4361	0.4015	0.4033	0.3901	0.3689	0.3964	0.3862	0.3864	0.3779	0.4254	0.4516	0.4938	0.5090	0.5641	0.5920	0.5352	0.4597	0.4626	0.4526	0.3624	0.3538	0.3447	0.3429	0.3444	0.3995	0.3634	0.3805	0.3856
51	0.1247	0.1261	0.1255	0.1242	0.1219	0.1226	0.1222	0.1232	0.1234	0.1256	0.1241	0.1223	0.1253	0.1239	0.1248	0.1268	0.1260	0.1245	0.1268	0.1260	0.1264	0.1222	0.1244	0.1252	0.1239	0.1216	0.1271	0.1242	0.1220	0.1258	0.1205	0.1233	0.1276	0.1309	0.1308	0.1295
52	0.1217	0.1256	0.1223	0.1244	0.1318	0.1288	0.1308	0.1271	0.1229	0.1235	0.1220	0.1219	0.1267	0.1267	0.1275	0.1271	0.1233	0.1235	0.1213	0.1239	0.1254	0.1223	0.1281	0.1228	0.1297	0.1271	0.1276	0.1278	0.1215	0.1223	0.1205	0.1206	0.1289	0.1250	0.1268	0.1288
53	0.1231	0.1250	0.1231	0.1249	0.1219	0.1218	0.1243	0.1246	0.1241	0.1253	0.1250	0.1216	0.1262	0.1257	0.1280	0.1249	0.1289	0.1323	0.1298	0.1306	0.1257	0.1226	0.1198	0.1235	0.1222	0.1193	0.1211	0.1190	0.1368	0.1362	0.1371	0.1377	0.1250	0.1231	0.1238	0.1250
54	0.1326	0.1359	0.1334	0.1337	0.1219	0.1208	0.1232	0.1231	0.1269	0.1252	0.1238	0.1229	0.1282	0.1281	0.1251	0.1279	0.1253	0.1325	0.1305	0.1299	0.1246	0.1223	0.1217	0.1225	0.1253	0.1282	0.1234	0.1255	0.1241	0.1217	0.1239	0.1241	0.1255	0.1258	0.1246	0.1247
55	0.1226	0.1223	0.1233	0.1234	0.1211	0.1212	0.1229	0.1203	0.1337	0.1331	0.1339	0.1322	0.1305	0.1279	0.1284	0.1272	0.1233	0.1241	0.1251	0.1227	0.1259	0.1257	0.1261	0.1279	0.1274	0.1296	0.1281	0.1309	0.1226	0.1241	0.1257	0.1220	0.1227	0.1261	0.1222	0.1252
56	0.1263	0.1266	0.1314	0.1267	0.1261	0.1263	0.1257	0.1282	0.1219	0.1254	0.1222	0.1211	0.1250	0.1251	0.1254	0.1244	0.1297	0.1296	0.1297	0.1299	0.1206	0.1233	0.1207	0.1242	0.1272	0.1244	0.1255	0.1288	0.1227	0.1195	0.1218	0.1200	0.1309	0.1297	0.1310	0.1282
57	0.1214	0.1218	0.1213	0.1203	0.1297	0.1293	0.1292	0.1277	0.1286	0.1290	0.1247	0.1268	0.1255	0.1263	0.1278	0.1256	0.1232	0.1265	0.1281	0.1262	0.1271	0.1235	0.1290	0.1273	0.1262	0.1229	0.1231	0.1238	0.1288	0.1273	0.1264	0.1261	0.1292	0.1322	0.1310	0.1301
58	0.1252	0.1289	0.1269	0.1247	0.1244	0.1222	0.1211	0.1231	0.1246	0.1254	0.1235	0.1222	0.1245	0.1227	0.1267	0.1280	0.1297	0.1317	0.1329	0.1331	0.1246	0.1247	0.1274	0.1280	0.1206	0.1215	0.1201	0.1221	0.1216	0.1220	0.1182	0.1204	0.1233	0.1245	0.1233	0.1227
59	0.1385	0.1411	0.1431	0.1443	0.1275	0.1253	0.1232	0.1256	0.1276	0.1279	0.1279	0.1295	0.1261	0.1259	0.1274	0.1296	0.1227	0.1235	0.1227	0.1219	0.1294	0.1277	0.1271	0.1293	0.1216	0.1247	0.1238	0.1226	0.1221	0.1226	0.1239	0.1211	0.1225	0.1235	0.1237	0.1212
60	0.1305	0.1290	0.1280	0.1318	0.1249	0.1219	0.1247	0.1230	0.1235	0.1242	0.1236	0.1225	0.1245	0.1228	0.1241	0.1218	0.1284	0.1294	0.1282	0.1296	0.1284	0.1260	0.1273	0.1267	0.1253	0.1243	0.1245	0.1252	0.1318	0.1311	0.1341	0.1343	0.1314	0.1322	0.1334	0.1313

Configuration B: Mean Velocity Ratios

Dir	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180	190	200	210	220	230	240	250	260	270	280	290	300	310	320	330	340	350	360
1	0.4740	0.4807	0.4342	0.4047	0.3305	0.2962	0.2218	0.2143	0.3121	0.4074	0.3822	0.3419	0.3573	0.4162	0.4717	0.5068	0.4845	0.4508	0.4205	0.4236	0.4196	0.4061	0.4068	0.3465	0.2456	0.2375	0.2307	0.2257	0.2420	0.2614	0.3120	0.3607	0.3871	0.4043	0.4421	0.4664
2	0.5944	0.5907	0.5376	0.5138	0.4078	0.3045	0.2050	0.1984	0.2708	0.3583	0.3360	0.2897	0.3150	0.3828	0.4453	0.4937	0.4916	0.4590	0.4425	0.4391	0.4185	0.4104	0.4198	0.3429	0.2158	0.1775	0.1860	0.2096	0.2516	0.3003	0.3793	0.4490	0.4959	0.5212	0.5605	0.5878
3	0.6514	0.6340	0.5813	0.5740	0.4816	0.3872	0.2466	0.2135	0.3293	0.4543	0.4683	0.4790	0.5363	0.5654	0.5696	0.5646	0.5397	0.4879	0.4177	0.3724	0.3076	0.2709	0.2727	0.2543	0.2240	0.2186	0.2075	0.2092	0.2451	0.3094	0.4122	0.4876	0.5510	0.5899	0.6291	0.6510
4	0.5201	0.4511	0.3959	0.3964	0.3483	0.2834	0.1950	0.1835	0.2769	0.4001	0.3902	0.3432	0.3701	0.4162	0.4626	0.5086	0.5229	0.4826	0.4269	0.3747	0.2616	0.1855	0.1640	0.1776	0.2047	0.1923	0.1992	0.2211	0.2670	0.3063	0.3791	0.4316	0.4800	0.5170	0.5456	0.5523
5	0.6709	0.6389	0.5657	0.5548	0.4900	0.4143	0.2639	0.2572	0.3647	0.4804	0.5295	0.5884	0.6221	0.6102	0.6062	0.6142	0.5752	0.5594	0.4729	0.4028	0.3087	0.2217	0.2059	0.2079	0.2325	0.2750	0.2929	0.3119	0.3549	0.3911	0.4660	0.5057	0.5454	0.5871	0.6388	0.6701
6	0.5306	0.4493	0.3843	0.3822	0.3515	0.3167	0.2095	0.1659	0.2420	0.3944	0.4920	0.5986	0.6763	0.6616	0.6519	0.6488	0.6125	0.5862	0.4806	0.4059	0.3426	0.2353	0.1758	0.1621	0.2367	0.3603	0.4147	0.4576	0.5096	0.5142	0.5273	0.5150	0.5206	0.5381	0.5646	0.5627
7	0.1679	0.1674	0.1716	0.1847	0.1720	0.1533	0.1517	0.1415	0.1995	0.2814	0.3313	0.4310	0.5040	0.5003	0.4897	0.4798	0.4554	0.4362	0.3618	0.3132	0.2928	0.2327	0.1992	0.1883	0.2537	0.4422	0.5135	0.5411	0.5269	0.4108	0.2476	0.1778	0.1555	0.1560	0.1612	0.1640
8	0.1674	0.1599	0.1642	0.1733	0.1639	0.1427	0.1186	0.1178	0.1502	0.1607	0.1546	0.1625	0.1857	0.1786	0.1748	0.1790	0.2106	0.2137	0.1906	0.1821	0.1606	0.1349	0.1159	0.1063	0.1093	0.1281	0.1465	0.1640	0.1802	0.1752	0.1517	0.1196	0.1114	0.1186	0.1339	0.1492
9	0.1451	0.1368	0.1412	0.1633	0.1563	0.1410	0.1208	0.1293	0.1771	0.2397	0.2352	0.2208	0.2157	0.2102	0.2240	0.2283	0.1965	0.2054	0.1973	0.1806	0.2040	0.2120	0.2029	0.1734	0.1615	0.2836	0.3752	0.4167	0.4045	0.3336	0.2416	0.1827	0.1815	0.1733	0.1681	0.1662
10	0.1086	0.1239	0.1108	0.1042	0.1047	0.1007	0.0989	0.0989	0.0991	0.1061	0.1056	0.1011	0.0988	0.1111	0.1414	0.1758	0.1547	0.1553	0.1396	0.1230	0.1198	0.1109	0.1034	0.0969	0.1092	0.1590	0.1959	0.2275	0.2454	0.2328	0.1954	0.1410	0.1211	0.1169	0.1169	0.1148
11	0.1701	0.2367	0.3297	0.3514	0.2790	0.2110	0.1684	0.1872	0.2206	0.2208	0.2093	0.2630	0.3121	0.2915	0.2934	0.3077	0.3000	0.3260	0.3127	0.3002	0.2864	0.2940	0.3150	0.2571	0.1871	0.1987	0.2038	0.2070	0.1940	0.1648	0.1437	0.1318	0.1305	0.1432	0.1448	0.1452
12	0.2745	0.3200	0.3383	0.3383	0.2569	0.1903	0.1741	0.1747	0.1692	0.1532	0.1230	0.1096	0.1168	0.1262	0.1295	0.1356	0.1301	0.1299	0.1410	0.1539	0.1476	0.1380	0.1469	0.1690	0.1941	0.2919	0.3351	0.3404	0.3225	0.2794	0.2492	0.2380	0.2252	0.2038	0.1992	0.2264
13	0.1693	0.2057	0.2725	0.3019	0.2569	0.2147	0.1634	0.1311	0.1171	0.1157	0.1142	0.1425	0.2036	0.2198	0.2353	0.2669	0.2639	0.2767	0.2498	0.2367	0.2308	0.2333	0.2425	0.2051	0.1775	0.2204	0.2455	0.2734	0.3088	0.3042	0.3085	0.2927	0.2467	0.1951	0.1811	0.1702
14	0.3389	0.3497	0.2735	0.2458	0.2174	0.2049	0.1848	0.1685	0.1847	0.1891	0.1758	0.1712	0.1366	0.1236	0.1105	0.1375	0.1627	0.1974	0.2195	0.2480	0.2528	0.2300	0.2117	0.1921	0.1606	0.1459	0.1459	0.2090	0.3180	0.3776	0.3996	0.3793	0.3761	0.3689	0.3525	0.3470
15	0.1652	0.1748	0.1960	0.2475	0.2951	0.3325	0.3379	0.3426	0.3346	0.3154	0.2810	0.2912	0.2780	0.2168	0.1795	0.1844	0.2063	0.2602	0.3103	0.2853	0.2826	0.2836	0.2764	0.2598	0.2342	0.1731	0.1325	0.1478	0.1741	0.1757	0.1767	0.1691	0.1736	0.1634	0.1531	0.1608
16	0.3587	0.3418	0.3007	0.2759	0.2718	0.3004	0.2756	0.2933	0.2828	0.2929	0.2745	0.2988	0.3397	0.3527	0.2857	0.1917	0.1887	0.2048	0.2123	0.2141	0.1890	0.1837	0.1672	0.1604	0.1907	0.2366	0.2699	0.3049	0.3556	0.3760	0.3649	0.3512	0.3740	0.3763	0.3678	0.3736
17	0.3447	0.3594	0.2916	0.2902	0.2620	0.2241	0.1797	0.1768	0.1847	0.1715	0.1546	0.1825	0.2419	0.2049	0.1668	0.1819	0.1788	0.1836	0.1800	0.1820	0.1718	0.1608	0.1576	0.1237	0.1720	0.1989	0.2593	0.3445	0.4039	0.3835	0.3629	0.3503	0.3463	0.3437	0.3388	0.3433
18	0.5048	0.4732	0.4056	0.3701	0.2860	0.2298	0.1741	0.1726	0.2076	0.1988	0.1786	0.1822	0.1944	0.1914	0.1382	0.1140	0.1040	0.1105	0.1131	0.1163	0.1473	0.2051	0.2489	0.2341	0.2603	0.4268	0.4698	0.4534	0.4015	0.3534	0.3473	0.3711	0.3995	0.4269	0.4679	0.5032
19	0.5242	0.5932	0.5613	0.5292	0.3849	0.2698	0.2537	0.2671	0.2724	0.2520	0.2367	0.2345	0.2159	0.2013	0.2147	0.2501	0.2516	0.2641	0.2340	0.2046	0.1964	0.1930	0.1990	0.1943	0.2220	0.3409	0.3723	0.3769	0.3758	0.3476	0.3457	0.3406	0.3176	0.3417	0.4114	0.4682
20	0.4668	0.4540	0.4314	0.4347	0.4038	0.4102	0.2907	0.2140	0.2929	0.4437	0.4856	0.5766	0.6674	0.6387	0.5914	0.5647	0.5411	0.5217	0.4569	0.4104	0.3610	0.3325	0.3047	0.2266	0.2326	0.2636	0.2580	0.2429	0.2369	0.2452	0.3323	0.4018	0.4512	0.4647	0.4593	0.4744
21	0.2738	0.2570	0.2415	0.2396	0.2151	0.2083	0.2367	0.2648	0.2632	0.3415	0.3982	0.4712	0.5274	0.5573	0.5389	0.5029	0.4686	0.3990	0.3493	0.3579	0.3706	0.4416	0.4629	0.3616	0.2908	0.2867	0.2707	0.2456	0.2290	0.2180	0.2602	0.2773	0.2952	0.3018	0.2866	0.2857
22	0.2219	0.2187	0.2033	0.2083	0.1782	0.1866	0.2147	0.2245	0.2294	0.2794	0.2679	0.2432	0.2572	0.3033	0.3558	0.3729	0.3313	0.2585	0.2345	0.2627	0.2841	0.3428	0.3407	0.2501	0.2016	0.2504	0.3254	0.3821	0.4314	0.4239	0.4266	0.3781	0.3334	0.2757	0.2304	0.2137
23	0.1992	0.1931	0.1939	0.2359	0.2196	0.2202	0.2214	0.1963	0.1968	0.2436	0.2352	0.2116	0.1942	0.1906	0.2132	0.2376	0.2248	0.2071	0.2036	0.2111	0.2122	0.2344	0.2494	0.2734	0.3026	0.3375	0.3378	0.3268	0.3222	0.3112	0.2786	0.2357	0.2003	0.1843	0.1775	0.2000
24	0.2309	0.2298	0.2243	0.2292	0.2358	0.2881	0.2979	0.2698	0.2433	0.2579	0.2532	0.2401	0.2131	0.1764	0.1752	0.2019	0.2012	0.1985	0.1860	0.1698	0.2124	0.2677	0.3104	0.3591	0.3688	0.3814	0.3580	0.3074	0.2893	0.2579	0.2141	0.1844	0.1658	0.1644	0.1783	0.2143
25	0.3124	0.3142	0.3126	0.3063	0.2623	0.2581	0.2802	0.3022	0.2843	0.2243	0.2632	0.2967	0.2973	0.2146	0.1719	0.2095	0.2408	0.2458	0.2432	0.2576	0.2962	0.3122	0.3026	0.3305	0.3496	0.3455	0.2623	0.2112	0.1943	0.1804	0.2080	0.1964	0.1932	0.1962	0.2211	0.2707
26	0.2313	0.2696	0.2682	0.2526	0.2266	0.2385	0.2530	0.2553	0.2852	0.2577	0.3054	0.3507	0.3429	0.2482	0.1645	0.1641	0.2054	0.2209	0.2213	0.2206	0.2583	0.3035	0.3123	0.3207	0.3258	0.3351	0.2958	0.3235	0.3481	0.3292	0.3153	0.2659	0.2267	0.1963	0.1790	0.1980
27	0.1783	0.1924	0.2000	0.2389	0.2250	0.2224	0.2145	0.2007	0.1954	0.2100	0.2258	0.2316	0.2217	0.1758	0.1862	0.2181	0.2299	0.2240	0.2243	0.2263	0.2410	0.2662	0.2862	0.3249	0.3378	0.3523	0.3472	0.3360	0.3169	0.2803	0.2587	0.2206	0.1805	0.1548	0.1510	0.1657
28	0.1354	0.1460	0.1510	0.1819	0.1624	0.1504	0.1451	0.1364	0.1286	0.1752	0.1973	0.2574	0.2909	0.2555	0.2573	0.2993	0.3269	0.3104	0.2811	0.2852	0.2848	0.2957	0.2434	0.2144	0.2583	0.2770	0.2691	0.2487	0.2404	0.2157	0.1983	0.1883	0.1657	0.1476	0.1433	0.1464
29	0.1970	0.2549	0.2637	0.3018	0.2755	0.2505	0.2284	0.2192	0.2589	0.3294	0.3015	0.2934	0.3356	0.3291	0.3238	0.3366	0.3451	0.3425	0.3389	0.3389	0.2997	0.2985	0.2870	0.2716	0.3316	0.3925	0.4170	0.4148	0.4079	0.3566	0.2836	0.2255	0.1987	0.1896	0.1798	0.1789
30	0.2527	0.2673	0.2519	0.2350	0.2113	0.1832	0.1499	0.1529	0.1689	0.2026	0.2180	0.2537	0.2709	0.2469	0.2742	0.3601	0.4072	0.4545	0.4232	0.3703	0.2449	0.1867	0.1550	0.1565	0.1822	0.1848	0.2047	0.2204	0.2348	0.2297	0.2318	0.2320	0.2197	0.2134	0.2232	0.2285
31	0.2740	0.2506	0.2112	0.1993	0.1636	0.1332	0.1294	0.1871	0.2328	0.2673	0.2299	0.1856	0.2098	0.2490	0.3009	0.3594	0.3653	0.4162	0.4527	0.4844	0.5233	0.5534	0.5332	0.3752	0.2487	0.2354	0.2080	0.1779	0.1820	0.1824	0.2098	0.2426	0.2509	0.2460	0.2674	0.2835
32	0.2397	0.2116	0.1641	0.1522	0.1430	0.1330	0.1241	0.1330	0.1449	0.2076	0.2034	0.1871	0.2023	0.2238	0.2306	0.2522	0.2853	0.3365	0.3605	0.3725	0.3680	0.3665	0.3451	0.2641	0.2022	0.1967	0.1780	0.1574	0.1548	0.1415	0.1409	0.1484	0.1679	0.2057	0.2476	0.2500
33	0.1632	0.1552	0.1578	0.1749	0.1874	0.1884	0.1258	0.0925	0.1176	0.1811	0.2111	0.2338	0.2310	0.2236	0.2313	0.2611	0.2641	0.3001	0.2985	0.2913	0.2520	0.2219	0.1936	0.1573	0.1492	0.1593	0.1777	0.1777	0.1902	0.1942	0.2097	0.2236	0.2580	0.2769	0.2359	0.2029
34	0.2361	0.2691	0.2758	0.2885	0.2503	0.1980	0.1602	0.1487	0.1656	0.2087	0.2179	0.2639	0.2978	0.3077	0.3173	0.3666	0.4043	0.4529	0.4525	0.4302	0.3783	0.3619	0.3271	0.2479	0.1989	0.2317	0.2466	0.2538	0.2645	0.2431	0.2209	0.2213	0.2203	0.2093	0.2019	0.2117
35	0.2074	0.2354	0.2380	0.2484	0.2415	0.2071	0.1554	0.1345	0.1608	0.2446	0.2664	0.2682	0.2288	0.2045	0.2266	0.2866	0.3386	0.4172	0.4991	0.5308	0.4600	0.4305	0.4157	0.3096	0.2537	0.2572	0.2536	0.2510	0.2388	0.1985	0.1649	0.1636	0.1494	0.1439	0.1695	0.1838
36	0.1586	0.1750	0.1811	0.1962	0.1934	0.1947	0.1753	0.1544	0.1697	0.2111	0.2226	0.2116	0.1842	0.1560	0.1691	0.2095	0.2441	0.2873	0.3662	0.4408	0.4027	0.3699	0.3809	0.2924	0.2328	0.2521	0.2625	0.2687	0.2707	0.2319	0.2022	0.1837	0.1585	0.1401	0.1570	0.1567
37	0.2158	0.2334	0.2330	0.2531	0.2419	0.2393	0.2383	0.2371	0.2427	0.2974	0.3106	0.3405	0.3448	0.3412	0.3425	0.3579	0.3783	0.3458	0.2747	0.2527	0.2419	0.2510	0.2765	0.1756	0.1275	0.1767	0.2240	0.2433	0.2422	0.2079	0.2027	0.2063	0.1835	0.1694	0.1843	0.1965
38	0.1360	0.1620	0.1707	0.1841	0.1750	0.1965	0.1862	0.1629	0.1765	0.1865	0.1843	0.1754	0.1726	0.1657	0.1495	0.1580	0.1713	0.1712	0.1569	0.1404	0.1150	0.1132	0.1084	0.0907	0.0851	0.0918	0.1008	0.0954	0.0995	0.1081	0.1214	0.1087	0.1030	0.1038	0.1096	0.1198
39	0.3328	0.3357	0.3223	0.3340	0.3024	0.2620	0.2601	0.2656	0.2461	0.2123	0.2371	0.2311	0.2156	0.2095	0.1879	0.1995	0.1879	0.1858	0.1789	0.2264	0.2865	0.2977	0.2605	0.1967	0.1779	0.1552	0.1475	0.1803	0.2324	0.2458	0.2382	0.2184	0.2379	0.2816	0.3176	0.3302
40	0.2800	0.2754	0.2684	0.2866	0.2495	0.2312	0.2186	0.1973	0.1994	0.2454	0.2504	0.2771	0.3112	0.3222	0.3480	0.3961	0.4217	0.4249	0.3747	0.3451	0.3148	0.2697	0.2444	0.2048	0.1447	0.1362	0.1464	0.1612	0.1881	0.2110	0.2269	0.2205	0.2256	0.2544	0.2768	0.2771
41	0.3603	0.3345	0.2954	0.2772	0.2010	0.1789	0.2210	0.2661	0.3352	0.4155	0.4497	0.5074	0.5422	0.5636	0.5889	0.6329	0.6677	0.7065	0.6500	0.5576	0.4300	0.2597	0.2262	0.1756	0.1528	0.1697	0.1778	0.1878	0.2215	0.2399	0.2599	0.2759	0.3083	0.3538	0.3782	0.3806
42	0.2461	0.2577	0.2616	0.2639	0.2653	0.3008	0.3136	0.2667	0.2286	0.2420	0.2458	0.2798	0.3289	0.3602	0.3803	0.3915	0.3754	0.3998	0.4271	0.4507	0.4684	0.4449	0.3466	0.2196	0.1807	0.1852	0.2098	0.2500	0.3072	0.3345	0.3851	0.3695	0.3579	0.3441	0.3189	0.2814
43	0.3486	0.3659	0.3560	0.3357	0.2763	0.2577	0.2243	0.1835	0.1940	0.2369	0.2602	0.3128	0.3541	0.3696	0.3726	0.3448	0.3003	0.3127	0.2974	0.2707	0.2535	0.2471	0.2308	0.1888	0.1806	0.2231	0.2814	0.3489	0.4253	0.4562	0.4950	0.4805	0.4733	0.4377	0.3888	0.3631
44	0.3390	0.3536	0.3329	0.2929	0.2417	0.2361	0.2072	0.1761	0.2009	0.2076	0.1909	0.2146	0.2811	0.3203	0.3258	0.2887	0.2600	0.2785	0.2769	0.2557	0.2291	0.2132	0.2069	0.1802	0.1599	0.1980	0.2411	0.2907	0.3637	0.4070	0.4674	0.4713	0.4700	0.4293	0.3762	0.3497
45	0.3323	0.3524	0.3139	0.2794	0.2787	0.2751	0.1945	0.1760	0.1947	0.1873	0.1731	0.2201	0.2849	0.3167	0.3257	0.2871	0.2195	0.2150	0.2327	0.2142	0.1902	0.1802	0.1862	0.1476	0.1458	0.1880	0.2182	0.2399	0.2572	0.2803	0.3674	0.4052	0.4215	0.3924	0.3516	0.3342
46	0.3596	0.3764	0.3503	0.3418	0.2640	0.2416	0.2391	0.2249	0.1991	0.2024	0.1968	0.2348	0.2595	0.2432	0.2261	0.2059	0.1897	0.2164	0.2452	0.2432	0.2355	0.2334	0.2296	0.1537	0.1047	0.1037	0.1195	0.1320	0.1656	0.2124	0.2486	0.2759	0.3162	0.3433	0.3456	0.3564
47	0.3596	0.3456	0.3134	0.3173	0.3038	0.3082	0.2867	0.2413	0.2087	0.1857	0.1694	0.1907	0.2046	0.2174	0.2206	0.2118	0.1923	0.1907	0.1823	0.1595	0.1346	0.1255	0.1130	0.1241	0.1486	0.1318	0.1259	0.1489	0.1973	0.2615	0.3764	0.4104	0.4270	0.4188	0.3923	0.3792
48	0.4280	0.3947	0.3517	0.3401	0.2798	0.2726	0.2574	0.2208	0.2081	0.2136	0.2294	0.3050	0.3939	0.4474	0.4936	0.5793	0.6231	0.6666	0.6589	0.6565	0.6263	0.5201	0.3591	0.2131	0.1441	0.1342	0.1711	0.2484	0.3536	0.4253	0.5075	0.5302	0.5515	0.5426	0.4937	0.4669
49	0.1945	0.1815	0.1682	0.1702	0.1645	0.1813	0.1811	0.1709	0.1836	0.2075	0.2054	0.2245	0.2451	0.2622	0.2913	0.3137	0.2842	0.2549	0.2029	0.1471	0.1258	0.1232	0.1230	0.1130	0.1071	0.1349	0.1801	0.2116	0.2316	0.2318	0.2393	0.2426	0.2532	0.2421	0.2170	0.2042
50	0.1740	0.1771	0.1742	0.1811	0.1589	0.1645	0.1611	0.1720	0.1885	0.1934	0.1972	0.2032	0.2097	0.2153	0.2252	0.2350	0.2229	0.2381	0.2314	0.2179	0.2205	0.2302	0.2017	0.1609	0.1466	0.1892	0.2253	0.2513	0.2808	0.2714	0.2813	0.2695	0.2363	0.2099	0.1874	0.1762
51	0.0753	0.0766	0.0772	0.0773	0.0688	0.0691	0.0702	0.0699	0.0810	0.0826	0.0842	0.0832	0.0677	0.0675	0.0664	0.0670	0.0679	0.0681	0.0684	0.0685	0.0678	0.0681	0.0670	0.0679	0.0820	0.0821	0.0817	0.0819	0.0692	0.0682	0.0696	0.0686	0.0679	0.0680	0.0684	0.0688
52	0.0700	0.0697	0.0695	0.0689	0.0669	0.0674	0.0665	0.0673	0.0679	0.0668	0.0664	0.0675	0.0673	0.0672	0.0662	0.0663	0.0679	0.0678	0.0687	0.0676	0.0756	0.0776	0.0793	0.0811	0.0666	0.0670	0.0677	0.0668	0.0668	0.0666	0.0673	0.0658	0.0664	0.0662	0.0670	0.0669
53	0.0661	0.0657	0.0661	0.0659	0.0661	0.0665	0.0664	0.0660	0.0682	0.0681	0.0684	0.0676	0.0682	0.0674	0.0666	0.0666	0.0665	0.0660	0.0666	0.0671	0.0691	0.0701	0.0709	0.0711	0.0672	0.0673	0.0677	0.0680	0.0675	0.0670	0.0674	0.0672	0.0659	0.0666	0.0667	0.0668
54	0.0680	0.0684	0.0680	0.0673	0.0682	0.0690	0.0691	0.0692	0.0687	0.0694	0.0703	0.0705	0.0699	0.0705	0.0712	0.0711	0.0670	0.0675	0.0679	0.0680	0.0680	0.0681	0.0671	0.0677	0.0729	0.0722	0.0733	0.0729	0.0674	0.0670	0.0673	0.0665	0.0698	0.0692	0.0699	0.0693
55	0.0701	0.0719	0.0723	0.0709	0.0674	0.0670	0.0669	0.0668	0.0669	0.0669	0.0673	0.0672	0.0729	0.0736	0.0724	0.0750	0.0662	0.0671	0.0672	0.0671	0.0673	0.0675	0.0672	0.0675	0.0674	0.0667	0.0674	0.0664	0.0667	0.0671	0.0674	0.0669	0.0742	0.0731	0.0746	0.0742
56	0.0690	0.0692	0.0681	0.0678	0.0671	0.0682	0.0677	0.0681	0.0680	0.0680	0.0678	0.0678	0.0671	0.0664	0.0667	0.0666	0.0675	0.0679	0.0682	0.0690	0.0665	0.0670	0.0672	0.0671	0.0685	0.0679	0.0674	0.0672	0.0678	0.0679	0.0689	0.0688	0.0667	0.0665	0.0671	0.0667
57	0.0658	0.0658	0.0656	0.0651	0.0684	0.0683	0.0680	0.0682	0.0666	0.0681	0.0679	0.0682	0.0662	0.0652	0.0646	0.0655	0.0655	0.0655	0.0661	0.0671	0.0658	0.0661	0.0661	0.0658	0.0668	0.0669	0.0675	0.0677	0.0667	0.0664	0.0664	0.0657	0.0662	0.0661	0.0662	0.0669
58	0.0777	0.0776	0.0777	0.0773	0.0715	0.0720	0.0715	0.0712	0.0683	0.0678	0.0677	0.0676	0.0739	0.0725	0.0708	0.0703	0.0670	0.0665	0.0676	0.0672	0.0706	0.0720	0.0710	0.0725	0.0666	0.0663	0.0666	0.0664	0.0669	0.0674	0.0672	0.0671	0.0662	0.0658	0.0673	0.0662
59	0.0664	0.0661	0.0665	0.0660	0.0668	0.0672	0.0668	0.0679	0.0749	0.0719	0.0713	0.0720	0.0728	0.0742	0.0742	0.0753	0.0667	0.0673	0.0675	0.0693	0.0810	0.0836	0.0837	0.0854	0.0678	0.0672	0.0674	0.0666	0.0682	0.0682	0.0686	0.0682	0.0673	0.0680	0.0675	0.0675
60	0.0673	0.0674	0.0673	0.0679	0.0689	0.0700	0.0707	0.0711	0.0774	0.0776	0.0782	0.0787	0.0713	0.0718	0.0723	0.0731	0.0684	0.0681	0.0694	0.0692	0.0684	0.0680	0.0676	0.0676	0.0689	0.0695	0.0702	0.0702	0.0682	0.0683	0.0684	0.0674	0.0728	0.0723	0.0730	0.0734

Configuration B: Peak Velocity Ratios

Dir	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180	190	200	210	220	230	240	250	260	270	280	290	300	310	320	330	340	350	360
1	0.7556	0.7674	0.7314	0.7498	0.6195	0.5686	0.5152	0.4977	0.6836	0.7724	0.7779	0.7640	0.7937	0.8405	0.9077	0.9133	0.8700	0.8567	0.7433	0.7083	0.7188	0.6929	0.7012	0.6997	0.5867	0.5209	0.5002	0.5334	0.5660	0.5585	0.6494	0.7119	0.7218	0.7377	0.7491	0.7821
2	0.8867	0.8697	0.8466	0.8455	0.7452	0.6532	0.5304	0.4866	0.5999	0.7112	0.7259	0.7145	0.7892	0.8684	0.8927	0.9291	0.8818	0.8651	0.7669	0.7496	0.7267	0.7511	0.7467	0.7478	0.6250	0.4785	0.4877	0.5254	0.5845	0.5903	0.7279	0.7941	0.8289	0.8756	0.9018	0.9151
3	1.0132	0.9844	0.9332	0.9541	0.8662	0.7828	0.6434	0.5494	0.7270	0.8327	0.8623	0.8730	0.9350	0.9687	0.9816	0.9839	0.9552	0.9217	0.7710	0.7299	0.6586	0.6052	0.5468	0.5902	0.5641	0.5537	0.5041	0.5406	0.6362	0.6352	0.8040	0.8943	0.9288	1.0138	1.0372	1.0152
4	0.8734	0.8025	0.7766	0.7854	0.6952	0.6442	0.4988	0.4774	0.6584	0.7572	0.7724	0.7602	0.8186	0.8715	0.8879	0.9217	0.9166	0.9135	0.8055	0.7615	0.6663	0.5656	0.4598	0.5086	0.5599	0.5418	0.5512	0.5699	0.6356	0.6424	0.7290	0.7928	0.8185	0.8814	0.9019	0.8977
5	1.0117	1.0010	0.9506	0.9773	0.8953	0.8204	0.6815	0.6047	0.7415	0.8389	0.8980	0.9436	0.9691	0.9813	0.9851	1.0206	0.9523	0.9736	0.8490	0.7513	0.7085	0.5918	0.5002	0.5277	0.5862	0.6040	0.6451	0.6593	0.7115	0.6971	0.8170	0.8852	0.9116	0.9898	1.0410	1.0507
6	0.8823	0.8282	0.7789	0.8109	0.7211	0.6418	0.5492	0.4651	0.6225	0.7920	0.9206	0.9841	1.0311	1.0673	1.0540	1.0792	1.0143	1.0572	0.9642	0.8326	0.7590	0.6896	0.4950	0.4712	0.6541	0.7295	0.7868	0.8248	0.8814	0.8495	0.8522	0.8741	0.8666	0.9386	0.9174	0.9232
7	0.2879	0.3130	0.4012	0.4710	0.4627	0.4316	0.3899	0.3650	0.4728	0.6055	0.7213	0.7734	0.8182	0.8506	0.8488	0.8657	0.8154	0.8348	0.8012	0.6864	0.6526	0.6155	0.5465	0.5381	0.6808	0.8437	0.8692	0.9152	0.9333	0.8648	0.6910	0.4744	0.3745	0.3093	0.2901	0.2967
8	0.3677	0.3694	0.3710	0.4180	0.3603	0.3415	0.2869	0.2656	0.3031	0.3062	0.3599	0.4051	0.4237	0.4167	0.4208	0.4227	0.4276	0.4557	0.4378	0.4083	0.4108	0.3579	0.3511	0.2883	0.2946	0.3090	0.3415	0.3519	0.3673	0.3654	0.3603	0.3004	0.2773	0.3326	0.3718	0.3627
9	0.3454	0.3155	0.3621	0.4072	0.3805	0.3531	0.2919	0.2943	0.3917	0.4580	0.4503	0.4734	0.4965	0.5435	0.5703	0.6104	0.6113	0.6544	0.6127	0.5570	0.5910	0.5543	0.5247	0.4439	0.5467	0.7339	0.7797	0.7884	0.7899	0.7207	0.6004	0.4533	0.4106	0.4153	0.3863	0.3727
10	0.2268	0.2374	0.2447	0.2656	0.2514	0.2276	0.2043	0.1971	0.1954	0.2216	0.2511	0.3260	0.3314	0.4310	0.4843	0.5196	0.4916	0.4874	0.4743	0.4251	0.3825	0.3514	0.3168	0.2620	0.3548	0.4844	0.4906	0.5655	0.5645	0.4919	0.4282	0.3583	0.3019	0.2763	0.2520	0.2372
11	0.4069	0.5176	0.6736	0.7592	0.6676	0.5515	0.4701	0.4810	0.5129	0.5124	0.5667	0.6534	0.6742	0.6876	0.6853	0.6879	0.6616	0.7340	0.6907	0.6511	0.6568	0.6510	0.6455	0.6011	0.5133	0.5133	0.4954	0.4914	0.4673	0.4157	0.3466	0.3209	0.3375	0.3882	0.3831	0.3708
12	0.5455	0.5870	0.6581	0.7025	0.5814	0.4932	0.4109	0.3760	0.3570	0.3345	0.3390	0.3244	0.3174	0.3774	0.3798	0.3560	0.3617	0.3582	0.4266	0.4625	0.4463	0.4269	0.4696	0.5344	0.5669	0.6700	0.7143	0.6785	0.6751	0.6223	0.5637	0.5261	0.5615	0.5564	0.5158	0.5059
13	0.4157	0.4678	0.6023	0.6982	0.6351	0.5743	0.4712	0.3692	0.3338	0.3156	0.3024	0.3979	0.5064	0.4991	0.5154	0.5459	0.5649	0.6182	0.5711	0.5496	0.5497	0.5137	0.5130	0.5199	0.4474	0.4613	0.4865	0.5405	0.6206	0.6231	0.6359	0.6034	0.5905	0.5114	0.4530	0.4338
14	0.6898	0.7051	0.6278	0.5776	0.4955	0.4626	0.4304	0.3946	0.3994	0.4104	0.3805	0.4028	0.3754	0.3449	0.3432	0.3900	0.4542	0.5129	0.5354	0.5586	0.5463	0.5627	0.5346	0.4974	0.4052	0.3951	0.4268	0.5459	0.6440	0.6629	0.6934	0.6893	0.6893	0.7143	0.7155	0.7497
15	0.4492	0.4540	0.5239	0.6452	0.7280	0.7625	0.7554	0.6987	0.6862	0.6566	0.6451	0.6990	0.6267	0.5426	0.4939	0.5187	0.5345	0.6186	0.6596	0.6039	0.5945	0.6034	0.6124	0.5427	0.5509	0.4953	0.3706	0.4132	0.4838	0.4550	0.4897	0.4295	0.4419	0.4450	0.4285	0.4243
16	0.6426	0.6172	0.5772	0.6224	0.6794	0.7212	0.6832	0.6279	0.6387	0.6460	0.6747	0.6825	0.7203	0.7659	0.7297	0.6640	0.4931	0.4428	0.4227	0.4235	0.4194	0.4162	0.4385	0.4382	0.4605	0.4817	0.4723	0.5719	0.6292	0.6499	0.6640	0.6302	0.6632	0.6625	0.6446	0.6717
17	0.6732	0.6760	0.6266	0.6242	0.5995	0.5456	0.4754	0.4947	0.4918	0.4723	0.4386	0.5354	0.5530	0.5134	0.4430	0.4362	0.4502	0.4603	0.4853	0.5204	0.5266	0.4864	0.4959	0.4071	0.4703	0.5461	0.6354	0.7107	0.7569	0.7454	0.7076	0.6781	0.6646	0.6689	0.6554	0.6884
18	0.8241	0.7943	0.7625	0.7490	0.6507	0.5797	0.4737	0.4448	0.4666	0.4530	0.4406	0.5245	0.5919	0.6531	0.5802	0.4122	0.3619	0.3726	0.3606	0.3974	0.4996	0.6676	0.6444	0.6277	0.7263	0.8099	0.8462	0.8461	0.7962	0.7672	0.6959	0.7163	0.7329	0.7949	0.8451	0.8663
19	0.9708	1.0174	0.9866	0.9941	0.8490	0.7252	0.6859	0.6609	0.6139	0.6320	0.6011	0.5628	0.4707	0.4125	0.4629	0.4991	0.5230	0.5222	0.4598	0.4221	0.4066	0.5051	0.4695	0.4683	0.5327	0.6161	0.6352	0.6249	0.6522	0.6074	0.6392	0.6486	0.6491	0.7916	0.8830	0.9422
20	0.7901	0.7746	0.8030	0.8409	0.8099	0.8101	0.7579	0.6429	0.7825	0.8752	0.8971	0.9743	1.0214	0.9743	0.9367	0.8938	0.8353	0.8207	0.7140	0.6601	0.6219	0.6207	0.5804	0.5417	0.5084	0.5445	0.5468	0.5266	0.5045	0.5568	0.6651	0.7083	0.7467	0.7791	0.7655	0.8272
21	0.5786	0.5927	0.5785	0.5906	0.5564	0.5661	0.6311	0.6484	0.7240	0.7972	0.8893	0.9182	0.9460	0.9647	0.9551	0.9092	0.8648	0.8003	0.6841	0.7095	0.7543	0.8472	0.8167	0.7645	0.6681	0.6213	0.6237	0.5896	0.5838	0.5918	0.6397	0.6033	0.6220	0.6518	0.5883	0.6183
22	0.5795	0.5448	0.4816	0.5162	0.4633	0.5127	0.6085	0.6265	0.6800	0.7491	0.7075	0.6662	0.6805	0.7540	0.7979	0.8260	0.7597	0.6652	0.5936	0.6471	0.6690	0.7336	0.7330	0.6343	0.5979	0.6492	0.7226	0.7985	0.8355	0.8383	0.8325	0.8089	0.8176	0.6908	0.6269	0.5431
23	0.5787	0.5987	0.5615	0.6425	0.5807	0.5735	0.5662	0.5290	0.5412	0.6555	0.6293	0.6007	0.5337	0.5420	0.5809	0.6445	0.5682	0.5006	0.5087	0.5667	0.5874	0.6160	0.5852	0.5634	0.6108	0.6276	0.6162	0.5946	0.6013	0.5960	0.5994	0.5848	0.5224	0.4729	0.4667	0.5156
24	0.5755	0.6362	0.6602	0.6122	0.6056	0.6320	0.6675	0.6050	0.5633	0.5942	0.6407	0.6167	0.6010	0.5010	0.5244	0.5639	0.5306	0.4997	0.4792	0.4615	0.5447	0.6210	0.6261	0.6619	0.6624	0.6569	0.6317	0.6279	0.5869	0.5560	0.5350	0.4899	0.4460	0.4777	0.4908	0.5270
25	0.6700	0.7231	0.7775	0.7862	0.6807	0.6109	0.6339	0.6394	0.6371	0.5972	0.6176	0.6327	0.6813	0.5858	0.5104	0.5475	0.5824	0.5835	0.5538	0.6116	0.6107	0.6401	0.5826	0.6105	0.6149	0.6032	0.5433	0.5019	0.4881	0.4777	0.5396	0.4901	0.4611	0.4703	0.5320	0.6047
26	0.6153	0.6588	0.6970	0.6535	0.6131	0.6737	0.7044	0.6544	0.6434	0.6276	0.6544	0.6846	0.7359	0.6684	0.5639	0.5398	0.5182	0.5360	0.5377	0.5384	0.5693	0.6422	0.5957	0.5866	0.5983	0.6109	0.6277	0.7575	0.7731	0.7327	0.6846	0.6118	0.5304	0.4851	0.4843	0.5392
27	0.4823	0.5525	0.5607	0.6756	0.5910	0.5883	0.5548	0.5428	0.4925	0.5208	0.5898	0.6187	0.6281	0.5153	0.5800	0.6138	0.5918	0.5649	0.5318	0.5173	0.5569	0.5871	0.5777	0.5787	0.6170	0.5955	0.6060	0.6185	0.5880	0.5789	0.5774	0.5241	0.4596	0.4034	0.4318	0.4587
28	0.4032	0.4625	0.4331	0.4943	0.4106	0.3904	0.3743	0.3532	0.3738	0.5594	0.6715	0.7627	0.7747	0.7126	0.6591	0.7177	0.7271	0.7033	0.6247	0.6145	0.6618	0.6748	0.6148	0.5818	0.6359	0.6358	0.5955	0.6081	0.5707	0.5170	0.4993	0.4643	0.4467	0.3821	0.3892	0.3985
29	0.4903	0.5500	0.5436	0.5787	0.5172	0.4932	0.4715	0.5420	0.7112	0.8180	0.7765	0.6967	0.6769	0.6687	0.6456	0.6660	0.6769	0.6903	0.6720	0.6936	0.6633	0.6529	0.6501	0.6614	0.7147	0.7478	0.7497	0.7314	0.7635	0.6898	0.6200	0.5695	0.5492	0.4707	0.4671	0.4492
30	0.5795	0.5873	0.5381	0.4949	0.4577	0.4260	0.3983	0.4745	0.5972	0.5659	0.5906	0.6854	0.7691	0.7490	0.7827	0.8654	0.8644	0.8681	0.7161	0.6543	0.5640	0.4595	0.4015	0.4209	0.4482	0.4535	0.4781	0.5050	0.5050	0.4976	0.6016	0.5976	0.6090	0.5317	0.5131	0.5610
31	0.5422	0.5270	0.4805	0.4964	0.4099	0.3514	0.3315	0.3972	0.4947	0.5804	0.5660	0.5292	0.4887	0.5438	0.6108	0.6566	0.6806	0.7286	0.7962	0.7877	0.8777	0.9199	0.8905	0.8073	0.6108	0.5373	0.5148	0.4500	0.4473	0.4516	0.5378	0.5719	0.5426	0.5345	0.5485	0.5666
32	0.5755	0.5214	0.4450	0.4044	0.3010	0.2384	0.2326	0.2980	0.3989	0.5063	0.4810	0.4389	0.4925	0.5264	0.5607	0.6122	0.6226	0.6414	0.6341	0.6228	0.6498	0.6817	0.6304	0.5776	0.4735	0.4432	0.4206	0.3965	0.3833	0.3639	0.4179	0.5070	0.6188	0.6367	0.6429	0.6400
33	0.5363	0.4217	0.4048	0.4207	0.3920	0.3890	0.3357	0.2308	0.3517	0.4925	0.4809	0.5076	0.4994	0.5224	0.5934	0.7151	0.7258	0.6741	0.6211	0.6207	0.5820	0.5744	0.5057	0.4496	0.4297	0.4433	0.4893	0.5040	0.5375	0.5488	0.5841	0.6293	0.6864	0.7075	0.6274	0.6126
34	0.5467	0.5744	0.5875	0.6690	0.6014	0.5106	0.3882	0.3895	0.4943	0.5680	0.5477	0.6465	0.6729	0.7026	0.7515	0.8189	0.8381	0.8645	0.7969	0.7710	0.7008	0.6589	0.6164	0.5720	0.4523	0.5192	0.5021	0.5438	0.5769	0.5556	0.5306	0.5203	0.5254	0.5247	0.4652	0.5048
35	0.4490	0.4850	0.4754	0.4948	0.4713	0.435	0.3761	0.3988	0.5092	0.5363	0.5616	0.5634	0.5251	0.5390	0.5603	0.6358	0.7103	0.8280	0.8842	0.8972	0.8799	0.8371	0.8104	0.7005	0.5410	0.5552	0.5525	0.5752	0.5892	0.5742	0.5029	0.4303	0.4109	0.3863	0.4326	0.4516
36	0.4553	0.4430	0.4358	0.4598	0.4376	0.4524	0.4475	0.4254	0.4684	0.4768	0.5026	0.5131	0.4834	0.4394	0.4683	0.5109	0.5449	0.6858	0.7953	0.8573	0.8837	0.7903	0.7861	0.7093	0.5206	0.5417	0.5214	0.5490	0.5565	0.5517	0.4994	0.4355	0.4177	0.4212	0.4214	0.4268
37	0.4245	0.4966	0.5043	0.5624	0.5309	0.5649	0.5115	0.5535	0.5851	0.6128	0.6115	0.6443	0.6430	0.6490	0.6851	0.7907	0.7843	0.7680	0.6888	0.6928	0.7375	0.7379	0.7225	0.5869	0.3655	0.4535	0.4837	0.5708	0.5757	0.5185	0.4760	0.5003	0.4930	0.4533	0.4343	0.4244
38	0.3855	0.4755	0.5004	0.5736	0.5192	0.5803	0.5365	0.5015	0.5132	0.5462	0.5360	0.5253	0.4561	0.4383	0.4473	0.5184	0.5603	0.5512	0.4701	0.4077	0.3195	0.2835	0.2652	0.2205	0.2014	0.2205	0.2353	0.2248	0.2356	0.2829	0.3292	0.3185	0.2886	0.2856	0.2884	0.3040
39	0.5907	0.6100	0.6056	0.6470	0.6368	0.6482	0.6062	0.5826	0.6068	0.5426	0.5649	0.5538	0.5328	0.5128	0.4770	0.5592	0.5292	0.5120	0.5150	0.5937	0.7057	0.7116	0.6559	0.5372	0.4604	0.4051	0.4155	0.5313	0.5762	0.5761	0.6025	0.6053	0.5791	0.5908	0.5875	0.5795
40	0.5278	0.5457	0.5574	0.5983	0.5614	0.5565	0.5644	0.5298	0.5335	0.5297	0.5461	0.5571	0.5846	0.6006	0.6951	0.8275	0.8427	0.8675	0.7709	0.7425	0.7100	0.6522	0.6561	0.5838	0.4594	0.3839	0.3934	0.4549	0.4813	0.4986	0.5434	0.5358	0.5456	0.5463	0.5292	0.5272
41	0.6275	0.6309	0.6062	0.6144	0.5249	0.4766	0.5423	0.6049	0.6655	0.6981	0.7588	0.8014	0.8250	0.8265	0.9164	1.0861	1.1134	1.1639	1.0730	1.0217	0.9222	0.7749	0.5977	0.5526	0.4095	0.4130	0.4264	0.4536	0.5110	0.5400	0.5812	0.5961	0.6187	0.6264	0.6244	0.6408
42	0.5468	0.5276	0.5506	0.5814	0.5769	0.6431	0.6494	0.6003	0.6085	0.5188	0.4946	0.5377	0.5664	0.58	0.6411	0.6918	0.6911	0.7349	0.7904	0.8018	0.8352	0.8028	0.7762	0.6210	0.4452	0.4622	0.5456	0.6177	0.6646	0.6825	0.7224	0.6908	0.6912	0.6472	0.6431	0.6078
43	0.6174	0.6413	0.6767	0.7335	0.6403	0.6291	0.6139	0.5126	0.4900	0.5733	0.6134	0.6918	0.7194	0.6204	0.6363	0.7042	0.6956	0.7433	0.6985	0.6737	0.6403	0.5818	0.6201	0.5657	0.4732	0.5618	0.7220	0.7695	0.8627	0.8390	0.8663	0.8840	0.9002	0.8540	0.7553	0.7370
44	0.6303	0.6588	0.6925	0.7115	0.6086	0.5826	0.5520	0.4717	0.4907	0.5391	0.4594	0.5099	0.5907	0.5773	0.5763	0.5943	0.5811	0.6444	0.6271	0.5854	0.5076	0.5348	0.5041	0.4860	0.4684	0.5057	0.5970	0.7047	0.7911	0.8140	0.9047	0.9060	0.9118	0.8712	0.7812	0.7354
45	0.6224	0.6601	0.6804	0.6468	0.6002	0.6202	0.5531	0.5175	0.4986	0.4912	0.4466	0.5369	0.5937	0.5946	0.6053	0.5969	0.5514	0.5546	0.5482	0.5034	0.4820	0.4796	0.4806	0.4217	0.4181	0.5199	0.5026	0.5552	0.6562	0.6738	0.8056	0.8652	0.8749	0.8213	0.7385	0.6937
46	0.6817	0.7138	0.7663	0.7918	0.7058	0.6537	0.6153	0.6370	0.5624	0.5402	0.5269	0.5536	0.5374	0.4940	0.5274	0.4947	0.4820	0.5332	0.5531	0.5239	0.4949	0.4927	0.4575	0.3724	0.2733	0.2797	0.3143	0.3692	0.4631	0.5807	0.6653	0.6857	0.7464	0.7273	0.7020	0.6975
47	0.6413	0.6211	0.6378	0.6831	0.6343	0.6745	0.6528	0.6286	0.5846	0.5412	0.4489	0.4454	0.4460	0.4447	0.5237	0.6636	0.6389	0.6258	0.5959	0.4612	0.3631	0.3142	0.3300	0.3823	0.4441	0.4141	0.3314	0.4321	0.5488	0.5866	0.7730	0.7656	0.8305	0.8195	0.7726	0.7450
48	0.7541	0.6721	0.6421	0.6665	0.5854	0.6005	0.5927	0.5661	0.5588	0.5303	0.5044	0.6734	0.7513	0.7977	0.8879	1.0002	1.0152	1.0484	1.0369	1.0010	0.9680	0.8883	0.8097	0.5580	0.4066	0.3365	0.4379	0.5702	0.7085	0.7504	0.9550	0.9514	1.0283	1.0117	0.9538	0.8634
49	0.4340	0.4303	0.4511	0.4489	0.4549	0.4682	0.4942	0.4596	0.4471	0.4631	0.4507	0.4608	0.4960	0.5462	0.6224	0.6949	0.6945	0.6610	0.6439	0.5527	0.4208	0.3947	0.3761	0.3738	0.2784	0.3221	0.3892	0.4647	0.4754	0.5062	0.5603	0.6098	0.6515	0.6288	0.5759	0.4943
50	0.3772	0.4085	0.4278	0.4574	0.4109	0.4536	0.4486	0.4441	0.4220	0.4238	0.4062	0.4142	0.4159	0.4453	0.4483	0.5261	0.5557	0.6011	0.6243	0.6143	0.5368	0.5261	0.4738	0.4374	0.3880	0.4359	0.4559	0.5025	0.5056	0.4977	0.5260	0.5395	0.5044	0.4628	0.4764	0.4310
51	0.1299	0.1336	0.1340	0.1331	0.1266	0.1272	0.1270	0.1298	0.1350	0.1393	0.1363	0.1398	0.1243	0.1225	0.1236	0.1226	0.1256	0.1258	0.1256	0.1276	0.1241	0.1234	0.1216	0.1234	0.1363	0.1370	0.1396	0.1367	0.1275	0.1245	0.1265	0.1281	0.1254	0.1259	0.1246	0.1266
52	0.1254	0.1269	0.1273	0.1256	0.1226	0.1241	0.1207	0.1216	0.1215	0.1224	0.1214	0.1207	0.1245	0.1230	0.1224	0.1222	0.1241	0.1242	0.1276	0.1224	0.1326	0.1365	0.1335	0.1358	0.1228	0.1218	0.1220	0.1213	0.1238	0.1232	0.1232	0.1193	0.1197	0.1198	0.1225	0.1226
53	0.1190	0.1186	0.1203	0.1210	0.1203	0.1220	0.1206	0.1205	0.1260	0.1242	0.1258	0.1271	0.1245	0.1216	0.1229	0.1222	0.1221	0.1199	0.1218	0.1227	0.1292	0.1262	0.1282	0.1278	0.1235	0.1223	0.1214	0.1257	0.1238	0.1231	0.1268	0.1237	0.1191	0.1206	0.1210	0.1237
54	0.1223	0.1251	0.1218	0.1231	0.1247	0.1263	0.1294	0.1257	0.1254	0.1272	0.1268	0.1286	0.1274	0.1282	0.1274	0.1276	0.1216	0.1229	0.1228	0.1254	0.1225	0.1256	0.1248	0.1247	0.1305	0.1292	0.1325	0.1307	0.1221	0.1242	0.1233	0.1220	0.1280	0.1283	0.1275	0.1258
55	0.1267	0.1284	0.1304	0.1298	0.1221	0.1234	0.1192	0.1217	0.1213	0.1223	0.1237	0.1229	0.1310	0.1308	0.1297	0.1325	0.1223	0.1226	0.1235	0.1238	0.1227	0.1228	0.1258	0.1235	0.1235	0.1219	0.1224	0.1200	0.1221	0.1214	0.1255	0.1229	0.1306	0.1309	0.1315	0.1317
56	0.1251	0.1264	0.1246	0.1234	0.1233	0.1236	0.1237	0.1232	0.1229	0.1252	0.1225	0.1256	0.1213	0.1215	0.1224	0.1197	0.1217	0.1245	0.1246	0.1242	0.1231	0.1229	0.1237	0.1256	0.1246	0.1243	0.1205	0.1212	0.1249	0.1251	0.1286	0.1227	0.1212	0.1236	0.1220	0.1259
57	0.1195	0.1208	0.1203	0.1195	0.1243	0.1238	0.1222	0.1218	0.1207	0.1245	0.1249	0.1238	0.1205	0.1203	0.1159	0.1179	0.1199	0.1198	0.1189	0.1221	0.1204	0.1201	0.1221	0.1198	0.1211	0.1206	0.1236	0.1211	0.1204	0.1235	0.1211	0.1190	0.1194	0.1220	0.1201	0.1224
58	0.1329	0.1338	0.1326	0.1334	0.1282	0.1276	0.1271	0.1277	0.1229	0.1228	0.1252	0.1231	0.1307	0.1272	0.1244	0.1265	0.1225	0.1215	0.1242	0.1231	0.1273	0.1295	0.1282	0.1300	0.1228	0.1228	0.1215	0.1225	0.1239	0.1211	0.1209	0.1217	0.1199	0.1201	0.1221	0.1210
59	0.1209	0.1205	0.1207	0.1213	0.1213	0.1229	0.1226	0.1253	0.1322	0.1303	0.1285	0.1279	0.1277	0.1294	0.1288	0.1294	0.1223	0.1203	0.1233	0.1279	0.1401	0.1404	0.1372	0.1400	0.1243	0.1227	0.1243	0.1235	0.1262	0.1244	0.1253	0.1269	0.1234	0.1248	0.1234	0.1238
60	0.1212	0.1219	0.1236	0.1230	0.1259	0.1268	0.1258	0.1305	0.1355	0.1341	0.1362	0.1333	0.1286	0.1310	0.1302	0.1297	0.1265	0.1262	0.1286	0.1279	0.1248	0.1233	0.1236	0.1254	0.1281	0.1290	0.1245	0.1284	0.1250	0.1279	0.1249	0.1225	0.1286	0.1306	0.1328	0.1319

Configuration C: Mean Velocity Ratios

Dir	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180	190	200	210	220	230	240	250	260	270	280	290	300	310	320	330	340	350	360
1	0.3357	0.3227	0.4109	0.4286	0.4424	0.3451	0.2299	0.2311	0.3130	0.3164	0.2727	0.1942	0.2154	0.2535	0.3191	0.3642	0.3667	0.3622	0.4162	0.4364	0.4291	0.4390	0.4316	0.3040	0.1918	0.1862	0.1950	0.2139	0.2188	0.2436	0.2853	0.3344	0.4193	0.4606	0.4977	0.4658
2	0.3604	0.3015	0.3451	0.3504	0.3355	0.2359	0.1278	0.1239	0.1346	0.1525	0.1201	0.1516	0.1569	0.1092	0.1416	0.1783	0.1440	0.1636	0.2544	0.3199	0.3516	0.4239	0.4303	0.3150	0.2540	0.2703	0.2474	0.2366	0.2270	0.3305	0.3957	0.4171	0.4560	0.4731	0.5034	0.4834
3	0.3710	0.3374	0.4057	0.4286	0.4361	0.3530	0.3040	0.3281	0.4293	0.4234	0.3592	0.2982	0.3138	0.3930	0.4317	0.4088	0.3839	0.3168	0.2948	0.2826	0.2704	0.2306	0.2235	0.1644	0.1811	0.2058	0.2119	0.2271	0.2879	0.3358	0.4000	0.4252	0.4814	0.5026	0.5292	0.5028
4	0.2677	0.2249	0.2314	0.2462	0.2468	0.2564	0.2552	0.2129	0.1949	0.2025	0.1990	0.2042	0.2235	0.2196	0.2383	0.2593	0.2709	0.2273	0.2200	0.2184	0.1573	0.1447	0.1503	0.1417	0.1513	0.1778	0.1765	0.1734	0.1954	0.2776	0.3438	0.3674	0.3891	0.3445	0.3623	0.3486
5	0.2708	0.2160	0.2176	0.2592	0.2917	0.3514	0.2871	0.2420	0.3145	0.3875	0.4224	0.4933	0.5414	0.5590	0.5404	0.5483	0.5783	0.5227	0.4321	0.3646	0.2429	0.1759	0.1853	0.1982	0.2655	0.3402	0.3185	0.2757	0.2200	0.2140	0.2226	0.2316	0.2615	0.3420	0.4070	0.3913
6	0.1521	0.1301	0.1358	0.1570	0.1967	0.2785	0.2160	0.2385	0.4179	0.5387	0.5942	0.6767	0.7161	0.7425	0.7392	0.7543	0.795	0.7296	0.6658	0.5746	0.3858	0.2059	0.1504	0.1511	0.2136	0.2720	0.2778	0.2681	0.2170	0.1598	0.1591	0.1693	0.1844	0.2066	0.2198	0.2068
7	0.1282	0.1352	0.1442	0.1618	0.1907	0.2061	0.1735	0.2088	0.3599	0.4433	0.4753	0.5201	0.5553	0.5728	0.5467	0.5378	0.5603	0.5192	0.4445	0.3781	0.2938	0.1938	0.1711	0.1832	0.3247	0.4016	0.4538	0.4908	0.4543	0.3156	0.2187	0.1698	0.1392	0.1438	0.1487	0.1378
8	0.0884	0.0856	0.0861	0.0872	0.0875	0.0857	0.0863	0.0851	0.0865	0.0915	0.0884	0.0952	0.0964	0.0863	0.0887	0.0930	0.0886	0.0953	0.0970	0.0966	0.0875	0.0894	0.0904	0.0866	0.0868	0.0891	0.0901	0.0894	0.0971	0.0959	0.0929	0.0897	0.0889	0.0882	0.0895	0.0912
9	0.1442	0.1401	0.1586	0.1899	0.2066	0.1697	0.1949	0.2086	0.2904	0.3320	0.3253	0.3167	0.3284	0.3176	0.2767	0.2699	0.2526	0.2071	0.2030	0.2042	0.1833	0.2019	0.2504	0.2316	0.3037	0.3889	0.4498	0.4981	0.4876	0.3980	0.3436	0.2994	0.2292	0.1922	0.1775	0.1580
10	0.0980	0.0975	0.0964	0.1006	0.1041	0.1017	0.1070	0.1068	0.1470	0.1898	0.2015	0.2427	0.2451	0.2401	0.1851	0.1560	0.1463	0.1508	0.1306	0.1207	0.1250	0.1205	0.1396	0.1511	0.1659	0.2475	0.3071	0.2998	0.2820	0.2288	0.1799	0.1422	0.1094	0.1043	0.1032	0.0975
11	0.1319	0.1405	0.1571	0.1736	0.1849	0.1551	0.1639	0.1804	0.2003	0.2136	0.2136	0.2388	0.2955	0.3152	0.3032	0.2983	0.3083	0.2996	0.2930	0.2741	0.2645	0.2789	0.2977	0.2541	0.2523	0.3157	0.3466	0.3720	0.3334	0.2203	0.1606	0.1458	0.153	0.1516	0.1417	0.1287
12	0.1734	0.2203	0.2597	0.2653	0.2578	0.2275	0.2103	0.1922	0.1928	0.1680	0.1449	0.1284	0.1286	0.1480	0.1526	0.1534	0.1778	0.1727	0.1657	0.1532	0.1784	0.1856	0.2025	0.2112	0.2723	0.3576	0.4351	0.4649	0.4255	0.2826	0.2219	0.1991	0.1947	0.2029	0.1841	0.1702
13	0.1635	0.2221	0.2722	0.2817	0.2671	0.2315	0.1819	0.1469	0.1430	0.1249	0.1123	0.1428	0.1512	0.1451	0.1332	0.1544	0.1527	0.1570	0.1951	0.1893	0.2128	0.2247	0.2360	0.2007	0.1929	0.2207	0.2257	0.2524	0.2741	0.2585	0.2624	0.2652	0.2565	0.2258	0.2129	0.1937
14	0.2058	0.1654	0.2025	0.2200	0.2202	0.1689	0.1442	0.1317	0.1333	0.1414	0.1284	0.1486	0.1723	0.1093	0.1611	0.1750	0.2051	0.2271	0.2226	0.2043	0.2393	0.1978	0.1750	0.1778	0.1569	0.1336	0.1672	0.1653	0.2769	0.2742	0.3205	0.3082	0.3071	0.3355	0.3245	0.2827
15	0.1644	0.1813	0.2335	0.2827	0.3321	0.3337	0.3186	0.3067	0.3022	0.2857	0.3068	0.2199	0.1767	0.2026	0.1960	0.1677	0.2132	0.1969	0.1962	0.1776	0.2524	0.2676	0.2237	0.1773	0.1870	0.1643	0.2085	0.2183	0.2573	0.1663	0.1703	0.1831	0.1748	0.1752	0.1905	0.1948
16	0.3000	0.2506	0.2472	0.2693	0.2733	0.2883	0.3277	0.3141	0.3282	0.3075	0.2786	0.2428	0.2410	0.2526	0.2235	0.2253	0.2460	0.2299	0.2457	0.2401	0.2425	0.2049	0.1421	0.1085	0.1037	0.1049	0.1583	0.2368	0.3423	0.3639	0.3945	0.4056	0.4144	0.4253	0.3789	0.3595
17	0.2391	0.1691	0.1761	0.1964	0.2271	0.1907	0.1412	0.1217	0.1226	0.1333	0.1295	0.1205	0.1313	0.1202	0.1338	0.1462	0.1455	0.1714	0.1599	0.1608	0.1349	0.1403	0.1364	0.1286	0.1707	0.1805	0.2579	0.2993	0.3602	0.3441	0.3527	0.3281	0.3175	0.3570	0.4095	0.3834
18	0.2835	0.2570	0.3049	0.3418	0.3575	0.2917	0.2899	0.2744	0.2630	0.2727	0.3034	0.3425	0.4465	0.5299	0.5560	0.5758	0.6171	0.5649	0.5219	0.4806	0.3875	0.3252	0.3160	0.2637	0.2666	0.3314	0.3384	0.3149	0.2735	0.2324	0.2382	0.2470	0.2759	0.3352	0.4038	0.4018
19	0.2637	0.2257	0.3477	0.3410	0.3207	0.3225	0.3548	0.2902	0.2898	0.2919	0.2818	0.3652	0.3106	0.1963	0.1938	0.2139	0.1874	0.2747	0.2546	0.2059	0.1429	0.1606	0.1666	0.1776	0.2220	0.2735	0.2818	0.2790	0.2364	0.2852	0.2852	0.2707	0.2682	0.3018	0.3719	0.3591
20	0.3999	0.3460	0.3029	0.3213	0.3316	0.3240	0.2227	0.2230	0.3522	0.4121	0.4189	0.4715	0.5032	0.5430	0.5326	0.4982	0.4805	0.4396	0.3922	0.3524	0.3102	0.3052	0.2786	0.2376	0.2150	0.2397	0.2271	0.1808	0.1544	0.2266	0.2946	0.3930	0.4867	0.4422	0.4106	0.3828
21	0.2479	0.2179	0.1982	0.2078	0.2172	0.2101	0.2365	0.2813	0.4745	0.5742	0.5881	0.6108	0.6236	0.6511	0.5766	0.4840	0.4462	0.3597	0.3664	0.3595	0.3689	0.4174	0.3815	0.2926	0.2449	0.2759	0.3059	0.2698	0.2557	0.2512	0.2867	0.2983	0.3025	0.3032	0.3335	0.3150
22	0.2041	0.1747	0.1408	0.1396	0.1670	0.1926	0.2267	0.2363	0.2659	0.3043	0.2839	0.3456	0.3934	0.4709	0.4618	0.3643	0.3187	0.2511	0.2408	0.2361	0.2447	0.2525	0.1814	0.1737	0.1961	0.2435	0.3113	0.3294	0.3538	0.3637	0.3932	0.3673	0.3068	0.2440	0.1829	0.1654
23	0.1758	0.1608	0.1409	0.1554	0.1944	0.1999	0.2252	0.2306	0.2959	0.3008	0.2354	0.1901	0.1847	0.2454	0.2982	0.2503	0.2346	0.1801	0.1794	0.1873	0.1772	0.1829	0.1720	0.2087	0.2211	0.2517	0.2926	0.2780	0.2952	0.2615	0.2553	0.2165	0.1837	0.1449	0.1475	0.1553
24	0.2048	0.1953	0.1724	0.1805	0.2198	0.2229	0.2735	0.2872	0.2738	0.3101	0.3343	0.2664	0.2195	0.2071	0.2528	0.2474	0.2415	0.1983	0.2004	0.1982	0.2034	0.2759	0.3167	0.3405	0.3932	0.4024	0.3863	0.3166	0.2951	0.2714	0.2418	0.2263	0.1944	0.1495	0.1598	0.1795
25	0.1660	0.1464	0.1193	0.1175	0.1350	0.1651	0.1882	0.2082	0.2321	0.2001	0.1912	0.2377	0.2019	0.1634	0.1689	0.1727	0.1803	0.2195	0.2195	0.2049	0.2376	0.2667	0.2661	0.2897	0.3122	0.2975	0.2284	0.1764	0.1510	0.1378	0.1397	0.1380	0.1230	0.1162	0.1327	0.1536
26	0.1869	0.1675	0.1294	0.1224	0.1545	0.1934	0.2380	0.2509	0.2552	0.2152	0.2068	0.2271	0.2183	0.2101	0.1942	0.1890	0.2232	0.2076	0.1973	0.1817	0.2221	0.2623	0.2645	0.2622	0.2818	0.2872	0.3022	0.3692	0.3625	0.3080	0.3074	0.2889	0.2273	0.1456	0.1433	0.1653
27	0.1648	0.1587	0.1493	0.1765	0.2115	0.1969	0.2316	0.2376	0.2090	0.2434	0.2688	0.2152	0.2051	0.2274	0.2530	0.2663	0.2734	0.1985	0.2099	0.2249	0.2195	0.2657	0.3023	0.3151	0.3775	0.3918	0.3899	0.3632	0.3369	0.2940	0.2789	0.2616	0.2195	0.1732	0.1771	0.1857
28	0.1396	0.1448	0.1469	0.1619	0.1959	0.1594	0.1853	0.1903	0.2513	0.2627	0.2388	0.1623	0.1912	0.2654	0.3068	0.3377	0.3911	0.2983	0.2593	0.2385	0.2180	0.2345	0.2396	0.2220	0.2608	0.2811	0.2848	0.2656	0.2870	0.2606	0.2370	0.2327	0.1914	0.1570	0.1588	0.1661
29	0.1433	0.1665	0.2122	0.2400	0.2711	0.1966	0.2300	0.2793	0.3497	0.3741	0.3322	0.2348	0.2922	0.3496	0.3672	0.3754	0.4111	0.3725	0.4051	0.4065	0.3678	0.3542	0.3055	0.2358	0.2874	0.3449	0.3935	0.3920	0.3576	0.2737	0.2599	0.2300	0.2041	0.2095	0.2182	0.2191
30	0.1564	0.1451	0.1395	0.1475	0.1543	0.1492	0.1615	0.1788	0.2072	0.2091	0.2494	0.2690	0.3235	0.4153	0.4724	0.4864	0.5245	0.4733	0.4213	0.3584	0.3182	0.2767	0.2505	0.2109	0.1837	0.2097	0.2577	0.2592	0.2820	0.2488	0.2482	0.2257	0.2070	0.2104	0.2136	0.1947
31	0.1569	0.1446	0.1816	0.1969	0.2235	0.2228	0.1935	0.1444	0.1420	0.1690	0.1345	0.1563	0.1421	0.1252	0.1309	0.1320	0.1264	0.1882	0.3143	0.4071	0.4980	0.5529	0.5422	0.4211	0.3421	0.3377	0.2915	0.2441	0.1957	0.1920	0.1942	0.1754	0.1729	0.1865	0.2070	0.1935
32	0.1758	0.2791	0.3511	0.3366	0.3701	0.3995	0.4015	0.2736	0.2144	0.2640	0.3115	0.2995	0.2674	0.2237	0.1831	0.1630	0.1620	0.1573	0.2518	0.2406	0.2204	0.2526	0.2538	0.2287	0.2964	0.3429	0.3683	0.3438	0.3381	0.3202	0.3385	0.2904	0.2588	0.2620	0.2171	0.2093
33	0.2534	0.3255	0.3427	0.2723	0.2346	0.3271	0.3351	0.1690	0.2178	0.2794	0.3106	0.2583	0.2745	0.2941	0.3208	0.3349	0.3524	0.3020	0.4317	0.4196	0.4017	0.4158	0.3178	0.2262	0.2649	0.2657	0.3068	0.2672	0.2613	0.2268	0.3029	0.3176	0.4049	0.4610	0.4403	0.4229
34	0.1292	0.1166	0.1251	0.1262	0.1266	0.1226	0.1198	0.1269	0.1506	0.1693	0.1893	0.2443	0.2827	0.3187	0.3427	0.3974	0.4627	0.4568	0.4015	0.3319	0.2610	0.2501	0.2263	0.1852	0.1435	0.1565	0.1740	0.1878	0.1727	0.1666	0.1627	0.1646	0.1693	0.1636	0.1610	0.1518
35	0.1442	0.1953	0.2509	0.2668	0.2927	0.2777	0.2613	0.2176	0.2683	0.3383	0.3498	0.3284	0.3168	0.2946	0.2620	0.3210	0.4416	0.5231	0.6055	0.6162	0.6176	0.6115	0.5235	0.3794	0.3561	0.3862	0.4047	0.3908	0.3273	0.2516	0.2312	0.2000	0.1914	0.1945	0.1849	0.1679
36	0.1389	0.2593	0.2882	0.2437	0.2529	0.3119	0.3358	0.2765	0.3557	0.4238	0.4232	0.4087	0.3697	0.3499	0.3140	0.2716	0.2661	0.2519	0.2870	0.2359	0.2526	0.3348	0.2901	0.2350	0.2503	0.2441	0.2714	0.2463	0.2781	0.2766	0.2506	0.2149	0.1877	0.1971	0.1577	0.1472
37	0.1617	0.1794	0.2077	0.2016	0.2069	0.2203	0.2317	0.2145	0.3200	0.4010	0.4087	0.4113	0.4265	0.4485	0.4098	0.3966	0.4156	0.3496	0.3365	0.2761	0.2246	0.2249	0.1952	0.1782	0.1926	0.1910	0.1979	0.1730	0.1971	0.2157	0.2091	0.1995	0.2109	0.2111	0.2030	0.1875
38	0.1632	0.1884	0.2127	0.2199	0.2410	0.2290	0.2443	0.2164	0.2445	0.3057	0.3220	0.2846	0.2797	0.2796	0.2673	0.2746	0.2969	0.1965	0.2562	0.2776	0.2527	0.2463	0.2245	0.1464	0.1510	0.1643	0.1832	0.1939	0.2007	0.1557	0.1632	0.1569	0.1788	0.2032	0.2104	0.2149
39	0.1676	0.2146	0.1998	0.2222	0.2303	0.2196	0.2149	0.1969	0.2037	0.2121	0.2264	0.1968	0.2070	0.2561	0.3022	0.2805	0.2581	0.1892	0.1691	0.2387	0.3143	0.3389	0.3316	0.2002	0.1783	0.2156	0.2134	0.2867	0.3038	0.2974	0.2770	0.2889	0.3110	0.2894	0.3304	0.2698
40	0.1371	0.1874	0.1990	0.1549	0.1228	0.1981	0.2013	0.1278	0.1293	0.1381	0.1581	0.1883	0.1749	0.1553	0.1629	0.2370	0.3341	0.3608	0.2816	0.2236	0.1979	0.1853	0.2719	0.2134	0.1517	0.1504	0.1527	0.1807	0.2069	0.2351	0.2315	0.2444	0.2349	0.2065	0.2126	0.1519
41	0.1489	0.2218	0.2036	0.1345	0.1127	0.1843	0.1946	0.1288	0.1670	0.2082	0.2352	0.2653	0.2358	0.2216	0.2288	0.2518	0.2867	0.3065	0.3108	0.2745	0.2592	0.2321	0.1875	0.1771	0.1577	0.1549	0.1764	0.1901	0.2049	0.2239	0.2316	0.2070	0.2276	0.2841	0.2651	0.1851
42	0.1210	0.1755	0.1725	0.1648	0.1884	0.1549	0.1670	0.1783	0.1619	0.1649	0.1625	0.1917	0.2207	0.2721	0.3073	0.3217	0.3498	0.3645	0.3526	0.3631	0.3744	0.3258	0.2890	0.2054	0.1407	0.1291	0.1557	0.1657	0.1472	0.1352	0.1457	0.1333	0.1353	0.1559	0.1232	0.1202
43	0.1855	0.3381	0.3450	0.3055	0.3028	0.3082	0.2974	0.2038	0.2826	0.3324	0.3657	0.3644	0.3500	0.3691	0.3819	0.3673	0.3906	0.3605	0.4102	0.3730	0.3591	0.3420	0.3033	0.2155	0.1949	0.1975	0.2566	0.2655	0.2601	0.2470	0.2945	0.2937	0.2922	0.2780	0.2287	0.2119
44	0.1419	0.1423	0.1349	0.1376	0.1428	0.1278	0.1183	0.1433	0.1825	0.1840	0.2002	0.2299	0.2269	0.2595	0.2575	0.2550	0.2264	0.2596	0.2931	0.2840	0.2842	0.2873	0.3075	0.2467	0.1951	0.2152	0.1872	0.1856	0.2030	0.2290	0.2587	0.2696	0.2569	0.1935	0.1677	0.1481
45	0.2106	0.1554	0.1472	0.1577	0.1516	0.1431	0.1551	0.1596	0.1515	0.1447	0.1405	0.1991	0.2345	0.3077	0.3367	0.3366	0.2554	0.2537	0.2479	0.2839	0.3059	0.2496	0.1890	0.1961	0.1958	0.2564	0.2097	0.1770	0.1824	0.2297	0.2447	0.2491	0.2552	0.2481	0.2612	0.2095
46	0.2682	0.3520	0.4002	0.3593	0.3462	0.3069	0.3037	0.2276	0.1872	0.1756	0.1746	0.1616	0.1710	0.1818	0.1887	0.2138	0.2546	0.2476	0.2955	0.2563	0.2197	0.2315	0.1760	0.1415	0.1387	0.1206	0.1540	0.1193	0.1303	0.2166	0.3279	0.3981	0.4500	0.4518	0.4486	0.4069
47	0.2774	0.2115	0.2527	0.2846	0.3159	0.2520	0.2302	0.2091	0.1655	0.1527	0.1661	0.2673	0.3390	0.3714	0.3678	0.4048	0.4596	0.4689	0.3896	0.3335	0.3514	0.2711	0.2387	0.2165	0.1410	0.1586	0.1784	0.2020	0.2662	0.3816	0.4642	0.5266	0.5536	0.5063	0.4866	0.4230
48	0.2276	0.1512	0.1455	0.2021	0.2418	0.1845	0.1974	0.1645	0.2102	0.2496	0.2689	0.2741	0.3333	0.3842	0.3641	0.3295	0.3172	0.2424	0.1614	0.1611	0.1889	0.1486	0.2582	0.1944	0.1609	0.1790	0.1623	0.1909	0.2421	0.2891	0.3595	0.4492	0.4758	0.4139	0.4023	0.3657
49	0.1519	0.1512	0.1844	0.1860	0.1932	0.1748	0.1759	0.1585	0.1694	0.1763	0.1659	0.2044	0.1985	0.1891	0.1992	0.2771	0.3470	0.3273	0.2084	0.1184	0.1089	0.1148	0.1474	0.1402	0.1109	0.0985	0.1022	0.1149	0.1329	0.1621	0.1831	0.1874	0.1935	0.1981	0.2100	0.1969
50	0.1077	0.2038	0.2019	0.1474	0.1256	0.2128	0.2257	0.1374	0.1391	0.1604	0.1714	0.1542	0.1181	0.1111	0.1130	0.1170	0.1247	0.1327	0.2013	0.1842	0.1898	0.2271	0.1491	0.1444	0.1607	0.1634	0.1701	0.1534	0.1616	0.1615	0.1705	0.1519	0.1429	0.1465	0.1250	0.1194
51	0.1682	0.2147	0.2342	0.2223	0.2387	0.3115	0.3694	0.3514	0.4462	0.5240	0.5265	0.4983	0.4650	0.4383	0.3741	0.3530	0.3365	0.2681	0.2160	0.1604	0.1846	0.2331	0.1729	0.1496	0.1608	0.1573	0.1869	0.2134	0.2889	0.3260	0.3748	0.3630	0.3278	0.3016	0.2532	0.2223
52	0.2596	0.2580	0.2777	0.2507	0.2308	0.2393	0.2404	0.2041	0.2492	0.2916	0.3173	0.3775	0.4249	0.4193	0.2699	0.1882	0.1583	0.1328	0.1616	0.1374	0.1321	0.1635	0.1483	0.1231	0.1198	0.1354	0.1541	0.1340	0.1448	0.1936	0.2622	0.2928	0.3375	0.3804	0.3930	0.3540
53	0.3101	0.3201	0.4096	0.4772	0.5009	0.3575	0.3109	0.3076	0.2393	0.2025	0.2100	0.2093	0.2528	0.3205	0.4585	0.5606	0.6548	0.6449	0.6792	0.6925	0.6789	0.6158	0.5250	0.3376	0.1449	0.1506	0.2090	0.2737	0.2402	0.1725	0.1559	0.1979	0.2565	0.2757	0.3302	0.3202
54	0.1268	0.1171	0.1437	0.1862	0.2305	0.2693	0.3244	0.2991	0.3124	0.2826	0.2604	0.2964	0.3535	0.3972	0.4104	0.4331	0.4807	0.4614	0.4462	0.4337	0.4168	0.3776	0.3730	0.2672	0.1345	0.1393	0.1320	0.1385	0.1383	0.1344	0.1420	0.1473	0.1421	0.1374	0.1484	0.1456
55	0.2187	0.2018	0.2405	0.3240	0.4052	0.3448	0.3604	0.3363	0.3225	0.2708	0.1924	0.1572	0.1507	0.1687	0.1871	0.1957	0.2041	0.1824	0.2149	0.2243	0.2565	0.2601	0.2932	0.2445	0.1473	0.1359	0.1412	0.1225	0.1287	0.1334	0.1380	0.1199	0.1367	0.1598	0.1821	0.1944
56	0.3515	0.2967	0.2940	0.2827	0.2318	0.1684	0.1714	0.1833	0.2747	0.3391	0.3872	0.4346	0.4702	0.4804	0.4467	0.4437	0.4943	0.4538	0.4476	0.4220	0.3163	0.2478	0.1904	0.1211	0.1628	0.2345	0.3281	0.4180	0.5106	0.5424	0.5763	0.5466	0.5135	0.4901	0.5019	0.4667
57	0.2023	0.1629	0.2033	0.2241	0.2137	0.1189	0.1137	0.1659	0.2531	0.3324	0.3664	0.3974	0.4142	0.4316	0.4297	0.4266	0.4602	0.4302	0.4159	0.4075	0.3800	0.3567	0.3423	0.2356	0.1420	0.1372	0.1416	0.1684	0.1871	0.1962	0.2167	0.2367	0.2636	0.2916	0.3402	0.3153
58	0.2530	0.1886	0.2271	0.2496	0.2605	0.182	0.1695	0.1752	0.2229	0.2825	0.3370	0.3415	0.3602	0.3750	0.3876	0.3915	0.4075	0.2953	0.2762	0.2718	0.2623	0.2536	0.2372	0.1594	0.1853	0.2030	0.2169	0.2334	0.2473	0.2644	0.2885	0.3024	0.3354	0.3497	0.3633	0.3569
59	0.1459	0.1889	0.1740	0.1294	0.1059	0.2135	0.2690	0.1713	0.1690	0.1432	0.1140	0.1028	0.0965	0.1024	0.1141	0.1276	0.1238	0.1628	0.2454	0.2569	0.3106	0.3910	0.4011	0.3048	0.2889	0.3412	0.3077	0.2415	0.2621	0.3367	0.3869	0.3213	0.2369	0.2180	0.1949	0.1827
60	0.1213	0.0956	0.1014	0.1333	0.1751	0.2264	0.2249	0.1539	0.1285	0.1324	0.1344	0.1074	0.1194	0.1311	0.1442	0.1566	0.1674	0.1244	0.1561	0.1701	0.1977	0.2483	0.2842	0.2404	0.2896	0.3665	0.3836	0.3859	0.3439	0.2797	0.2687	0.2362	0.1834	0.1586	0.1578	0.1481

Configuration C: Peak Velocity Ratios

	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180	190	200	210	220	230	240	250	260	270	280	290	300	310	320	330	340	350	360
1	0.6553	0.5982	0.6827	0.7043	0.7254	0.6093	0.4611	0.4888	0.6249	0.6561	0.5989	0.4627	0.4586	0.5891	0.6920	0.7271	0.6813	0.6482	0.7360	0.7562	0.7787	0.7961	0.7960	0.7322	0.4803	0.4452	0.4512	0.4812	0.5051	0.5360	0.5870	0.6489	0.7499	0.7556	0.7809	0.7401
2	0.6649	0.5322	0.5957	0.5881	0.5961	0.5067	0.3513	0.3125	0.3497	0.3940	0.3339	0.2861	0.2742	0.2682	0.3251	0.3395	0.3501	0.4625	0.5908	0.6822	0.7161	0.7615	0.7704	0.6927	0.5092	0.5308	0.5175	0.5018	0.5329	0.6147	0.6523	0.7095	0.7174	0.7559	0.7857	0.7909
3	0.6699	0.5786	0.6627	0.6566	0.6872	0.6202	0.6335	0.6707	0.7827	0.8376	0.8031	0.7704	0.7408	0.8531	0.8731	0.8922	0.7716	0.6621	0.6163	0.5835	0.5792	0.4947	0.4354	0.4334	0.4378	0.4748	0.4782	0.4870	0.5689	0.6310	0.6706	0.7296	0.7557	0.7731	0.8093	0.7975
4	0.5130	0.4091	0.4266	0.4289	0.4770	0.5635	0.5304	0.4798	0.4286	0.4436	0.3772	0.3733	0.3730	0.3915	0.4416	0.4407	0.4598	0.4015	0.3910	0.3723	0.3533	0.3941	0.4103	0.3917	0.4009	0.4389	0.4451	0.4282	0.4580	0.5492	0.5946	0.6718	0.6569	0.5910	0.6108	0.6369
5	0.6452	0.5965	0.6296	0.6763	0.6934	0.7000	0.6245	0.5294	0.5531	0.6466	0.6945	0.7946	0.8225	0.8244	0.8369	0.8732	0.9108	0.8467	0.7512	0.6997	0.5958	0.4625	0.4648	0.4977	0.5862	0.6409	0.6473	0.5842	0.5224	0.4393	0.4946	0.5462	0.6535	0.7492	0.7564	0.7590
6	0.3749	0.4144	0.4698	0.5167	0.5717	0.5958	0.4731	0.5244	0.6784	0.8263	0.8786	1.0093	1.0131	1.0755	1.0761	1.1490	1.1545	1.0871	1.0182	0.9528	0.8665	0.6244	0.3652	0.3828	0.4507	0.5068	0.4987	0.4936	0.4836	0.4026	0.3546	0.3492	0.4438	0.4755	0.4852	0.4509
7	0.3444	0.3383	0.3559	0.4042	0.4746	0.5053	0.4323	0.4605	0.5920	0.6964	0.7275	0.8038	0.8139	0.8415	0.8307	0.8830	0.8837	0.8475	0.7916	0.7040	0.6381	0.5072	0.4232	0.5039	0.6545	0.7195	0.7827	0.7966	0.7997	0.6897	0.5637	0.4567	0.4105	0.4200	0.4249	0.3892
8	0.1673	0.1656	0.1660	0.1644	0.1712	0.1612	0.1657	0.1626	0.1648	0.1737	0.1669	0.1753	0.1778	0.1668	0.1669	0.1760	0.1670	0.1756	0.1782	0.1796	0.1677	0.1736	0.1723	0.1654	0.1704	0.1789	0.1827	0.1856	0.1933	0.2102	0.1947	0.1827	0.1743	0.1689	0.1686	0.1705
9	0.3307	0.3185	0.3320	0.3751	0.3980	0.3820	0.4385	0.4216	0.4846	0.5452	0.5230	0.5214	0.5157	0.5322	0.4944	0.5189	0.4786	0.4551	0.4529	0.4260	0.4344	0.4717	0.5031	0.5155	0.6467	0.7203	0.8032	0.8054	0.8097	0.7131	0.5905	0.5147	0.4625	0.4443	0.4049	0.3577
1	0.2253	0.2281	0.2331	0.2399	0.2379	0.2509	0.2700	0.2842	0.3460	0.4038	0.4001	0.4331	0.4282	0.4325	0.4094	0.4130	0.3922	0.3714	0.3689	0.3320	0.3576	0.3442	0.3465	0.3659	0.4458	0.5243	0.5621	0.5362	0.5000	0.4230	0.3608	0.3198	0.2496	0.2447	0.2539	0.2233
1	0.3289	0.3205	0.3553	0.3617	0.3756	0.3636	0.3755	0.4004	0.3950	0.4786	0.5156	0.5534	0.5573	0.5947	0.5962	0.6152	0.6250	0.6012	0.5910	0.5663	0.5519	0.5743	0.5570	0.5338	0.6028	0.6310	0.6783	0.6825	0.6440	0.5348	0.3887	0.2924	0.3308	0.3594	0.3365	0.3169
1	0.4030	0.4673	0.5154	0.4876	0.4794	0.4208	0.4021	0.3815	0.3664	0.3405	0.3181	0.3053	0.3375	0.3784	0.3888	0.4051	0.4327	0.3843	0.4184	0.4115	0.4101	0.4390	0.4831	0.5328	0.6011	0.6897	0.7577	0.7514	0.7322	0.6066	0.4937	0.4561	0.5178	0.4757	0.4512	0.4168
1	0.4053	0.5109	0.5678	0.5951	0.5908	0.5137	0.4624	0.3976	0.4294	0.3555	0.2945	0.2995	0.3236	0.3509	0.3982	0.4612	0.458	0.4519	0.5043	0.4838	0.4962	0.4991	0.4857	0.4555	0.4234	0.4442	0.4698	0.4812	0.5380	0.5389	0.5310	0.5303	0.5446	0.5596	0.5310	0.4795
1	0.5609	0.4300	0.4804	0.5227	0.5463	0.4493	0.3819	0.3314	0.3435	0.3338	0.3376	0.2919	0.2532	0.3187	0.3944	0.4488	0.5073	0.5155	0.5514	0.5313	0.5372	0.5034	0.4550	0.4453	0.4128	0.3742	0.3712	0.3952	0.4681	0.5168	0.5838	0.5885	0.6215	0.6558	0.6819	0.6668
1	0.4157	0.4664	0.5730	0.6240	0.7166	0.7249	0.7285	0.6569	0.6431	0.6697	0.6408	0.5878	0.5246	0.4875	0.5074	0.4416	0.4929	0.4946	0.5558	0.5517	0.6182	0.6042	0.5154	0.4380	0.4540	0.3890	0.3758	0.4164	0.4417	0.3603	0.3637	0.4151	0.3803	0.3642	0.4280	0.4302
1	0.6318	0.5564	0.5382	0.6079	0.6006	0.6769	0.7483	0.7035	0.7400	0.6855	0.6388	0.5843	0.5282	0.5499	0.5054	0.4469	0.4438	0.4110	0.4435	0.4257	0.4385	0.4095	0.3496	0.2825	0.2634	0.2678	0.3965	0.5231	0.6171	0.6144	0.6507	0.6953	0.6917	0.7001	0.6919	0.6680
1	0.5947	0.4805	0.5056	0.5293	0.5325	0.4460	0.3995	0.3658	0.3416	0.3315	0.3187	0.3047	0.3549	0.3567	0.3511	0.3311	0.3553	0.3875	0.3797	0.3396	0.3860	0.4121	0.3593	0.3464	0.4254	0.4680	0.5589	0.5904	0.6482	0.6163	0.6100	0.5894	0.6286	0.6842	0.7436	0.7473
1	0.6133	0.5419	0.6046	0.6397	0.6586	0.5841	0.6408	0.5940	0.5532	0.5506	0.6324	0.7321	0.7755	0.8767	0.8863	0.9450	0.9482	0.9139	0.8617	0.8136	0.7540	0.6701	0.6479	0.5798	0.5957	0.6340	0.6177	0.6145	0.5901	0.5408	0.4915	0.5210	0.5760	0.6670	0.7434	0.7466
1	0.6157	0.6233	0.7011	0.6923	0.6842	0.7401	0.8353	0.7050	0.6939	0.7121	0.7156	0.7197	0.6395	0.5123	0.4607	0.5076	0.4656	0.4819	0.4625	0.4160	0.3627	0.4132	0.4353	0.4211	0.4518	0.4948	0.4827	0.4917	0.4821	0.5353	0.5546	0.5491	0.5791	0.6549	0.7431	0.7301
2	0.8508	0.7269	0.6507	0.6778	0.7487	0.7368	0.5871	0.5517	0.6990	0.7992	0.7884	0.8280	0.8395	0.9152	0.8511	0.8184	0.7827	0.7058	0.6681	0.5851	0.5556	0.5496	0.5581	0.5144	0.4640	0.4933	0.4889	0.4382	0.4102	0.5078	0.6195	0.7530	0.8154	0.7655	0.7225	0.7596
2	0.5981	0.5359	0.4409	0.4758	0.4946	0.5204	0.5340	0.6770	0.8629	0.9956	1.0387	1.0249	0.9911	1.0575	0.9701	0.9054	0.7914	0.6755	0.6701	0.6521	0.7425	0.7528	0.7289	0.6612	0.5422	0.5564	0.5689	0.5128	0.4953	0.5431	0.5965	0.5849	0.6555	0.7121	0.7287	0.6925
2	0.5998	0.5192	0.4370	0.4537	0.5508	0.5342	0.5993	0.6057	0.6261	0.7437	0.7342	0.8112	0.8336	0.9482	0.9316	0.8616	0.7823	0.6510	0.6113	0.5942	0.6187	0.6003	0.5379	0.4864	0.4974	0.5381	0.6161	0.6116	0.6493	0.6564	0.7056	0.7219	0.6592	0.5974	0.5410	0.4692
2	0.5298	0.4563	0.4606	0.4926	0.5565	0.5407	0.5432	0.5468	0.6102	0.7042	0.6232	0.6016	0.6022	0.7480	0.7985	0.7750	0.7096	0.5490	0.5121	0.5177	0.5527	0.5317	0.4916	0.4886	0.4949	0.5092	0.5407	0.5452	0.5768	0.5117	0.5418	0.5227	0.4730	0.4291	0.4281	0.4581
2	0.5466	0.5283	0.4670	0.4138	0.4960	0.5631	0.5793	0.5516	0.5507	0.6100	0.6454	0.6257	0.5306	0.5485	0.6698	0.6568	0.6021	0.4729	0.4961	0.4936	0.5678	0.6009	0.6210	0.6271	0.6338	0.6471	0.6608	0.5998	0.5957	0.5497	0.5626	0.5286	0.4593	0.4209	0.4338	0.5185
2	0.4478	0.4271	0.3727	0.3006	0.4218	0.5265	0.5451	0.5320	0.5668	0.5446	0.5056	0.5383	0.5594	0.4990	0.5106	0.5027	0.5063	0.5167	0.5192	0.5583	0.5789	0.5705	0.5395	0.5228	0.5380	0.5465	0.4867	0.3983	0.3741	0.3505	0.3461	0.3582	0.3157	0.3122	0.3805	0.4192
2	0.5243	0.4844	0.4422	0.3790	0.4469	0.5458	0.6076	0.5785	0.5586	0.5386	0.5414	0.5521	0.5685	0.5850	0.6040	0.6208	0.6423	0.5401	0.5322	0.5177	0.5543	0.5469	0.5709	0.5072	0.5089	0.5436	0.6653	0.7908	0.7163	0.6489	0.6043	0.5617	0.4979	0.4250	0.3975	0.4741
2	0.5074	0.4396	0.3543	0.3993	0.4674	0.4886	0.5354	0.5418	0.4846	0.5327	0.5448	0.5601	0.5349	0.5455	0.5831	0.5753	0.5459	0.4848	0.5089	0.4970	0.5285	0.5592	0.5812	0.5913	0.5966	0.6297	0.6335	0.6144	0.6144	0.5941	0.5416	0.5177	0.4570	0.3959	0.4031	0.4327
2	0.4328	0.4176	0.3906	0.3961	0.4843	0.4274	0.4404	0.4478	0.5390	0.5794	0.5289	0.5450	0.5564	0.6376	0.6895	0.7131	0.7608	0.6385	0.5750	0.4950	0.5054	0.5190	0.5325	0.5637	0.5837	0.5950	0.5647	0.5604	0.6090	0.5789	0.5289	0.5528	0.4696	0.3787	0.3568	0.3756
2	0.3979	0.3622	0.4204	0.4509	0.5155	0.4352	0.4854	0.5612	0.6878	0.8403	0.7431	0.6013	0.6219	0.6648	0.6603	0.6644	0.6844	0.7016	0.7454	0.7572	0.7383	0.7230	0.6130	0.5416	0.5591	0.5855	0.6439	0.6802	0.6342	0.5524	0.5229	0.5311	0.4742	0.4736	0.4746	0.4452
3	0.3970	0.3612	0.3471	0.3709	0.3926	0.3781	0.4160	0.4493	0.4859	0.5390	0.6366	0.6713	0.7732	0.8286	0.8774	0.8697	0.8691	0.7821	0.6944	0.6566	0.6292	0.6030	0.5859	0.5410	0.4468	0.4777	0.5120	0.5063	0.5339	0.4889	0.4806	0.4995	0.4722	0.4717	0.4386	0.4323
3	0.4378	0.3975	0.4561	0.4602	0.4760	0.4598	0.4149	0.3546	0.3529	0.4184	0.3683	0.3551	0.3181	0.3276	0.3735	0.4278	0.4200	0.4966	0.6537	0.7655	0.8354	0.9119	0.9121	0.8252	0.6417	0.6251	0.5757	0.5265	0.4402	0.4554	0.5081	0.5124	0.4810	0.5277	0.5091	0.5034
3	0.6538	0.5564	0.6461	0.6276	0.6306	0.6160	0.6129	0.5248	0.4085	0.5054	0.5356	0.4911	0.4591	0.4204	0.3972	0.3918	0.3817	0.3559	0.4240	0.4455	0.4568	0.5196	0.5489	0.5253	0.5584	0.6246	0.6594	0.6332	0.6243	0.6337	0.6762	0.6509	0.7063	0.7393	0.6889	0.7263
3	0.6958	0.4745	0.5182	0.5001	0.4372	0.4134	0.4100	0.2964	0.4382	0.5689	0.5643	0.5238	0.5798	0.5731	0.6964	0.7872	0.7447	0.6096	0.6964	0.7274	0.7541	0.8061	0.6977	0.5808	0.5666	0.5637	0.6071	0.5754	0.5456	0.5514	0.6600	0.7583	0.8301	0.8385	0.8234	0.8265
3	0.3584	0.2991	0.3217	0.3276	0.3666	0.3378	0.3022	0.3374	0.4487	0.5303	0.5126	0.5535	0.6040	0.6244	0.7341	0.7990	0.8425	0.7972	0.7337	0.6783	0.5438	0.5270	0.5540	0.5215	0.3837	0.3901	0.4236	0.4493	0.4556	0.4304	0.4224	0.4338	0.4355	0.4345	0.4192	0.4134
3	0.4004	0.3991	0.5365	0.5333	0.5731	0.5397	0.4987	0.4315	0.5141	0.5470	0.5633	0.5558	0.5507	0.5601	0.5710	0.7217	0.8386	0.8802	0.9838	1.0161	0.9839	1.0035	0.9387	0.7604	0.6406	0.6844	0.7100	0.7412	0.6877	0.5829	0.5274	0.5185	0.4978	0.4835	0.4971	0.4379
3	0.4228	0.4962	0.5571	0.5794	0.5885	0.5676	0.6334	0.5635	0.6582	0.7129	0.7100	0.6513	0.6116	0.5970	0.6233	0.6525	0.6354	0.5851	0.5759	0.6082	0.6516	0.6952	0.6214	0.4981	0.4957	0.5510	0.5774	0.5341	0.6168	0.6086	0.5492	0.5316	0.4997	0.4433	0.3774	0.3726
3	0.4621	0.4050	0.4706	0.5007	0.5168	0.4843	0.5147	0.4910	0.6166	0.7147	0.6977	0.6926	0.6855	0.7355	0.7106	0.8213	0.8505	0.7475	0.7300	0.6842	0.5970	0.5488	0.5432	0.4717	0.4527	0.5142	0.5095	0.4662	0.5480	0.5508	0.5073	0.5189	0.5177	0.4607	0.4561	0.4503
3	0.4401	0.3846	0.4412	0.4426	0.5085	0.5064	0.5034	0.4690	0.4895	0.5806	0.6232	0.5562	0.5236	0.5569	0.5486	0.6455	0.6526	0.5914	0.6049	0.6130	0.5537	0.5139	0.4278	0.3442	0.3202	0.3553	0.3700	0.3747	0.3846	0.3695	0.4035	0.4467	0.4303	0.4185	0.4236	0.4338
3	0.4954	0.3725	0.4906	0.5192	0.5327	0.4004	0.3747	0.4574	0.4321	0.4108	0.4303	0.4396	0.4427	0.4771	0.5361	0.5300	0.5056	0.4812	0.4942	0.6708	0.7406	0.7924	0.7649	0.6049	0.4477	0.5039	0.5079	0.5812	0.5908	0.6214	0.6394	0.5957	0.5828	0.5820	0.5882	0.5396
4	0.3782	0.3428	0.3223	0.3187	0.3265	0.2928	0.3265	0.3457	0.3345	0.3607	0.3497	0.3687	0.3552	0.3818	0.5088	0.6581	0.7598	0.7365	0.7118	0.6534	0.4746	0.5789	0.6967	0.6313	0.4199	0.3909	0.4081	0.4651	0.5003	0.5414	0.5419	0.5453	0.5374	0.5094	0.4765	0.3945
4	0.3651	0.4648	0.4258	0.3281	0.3162	0.3873	0.4443	0.3738	0.4176	0.4683	0.4700	0.4997	0.4679	0.4477	0.5254	0.5945	0.6199	0.6377	0.6738	0.6490	0.6663	0.6270	0.5333	0.4866	0.4055	0.4032	0.4432	0.4927	0.5070	0.5429	0.5532	0.5522	0.5508	0.5912	0.5451	0.4481
4	0.2984	0.3283	0.3761	0.3897	0.4305	0.3948	0.4215	0.4318	0.3843	0.3829	0.3901	0.4374	0.4685	0.5156	0.5287	0.5695	0.5966	0.5925	0.6408	0.6439	0.6599	0.6411	0.6179	0.5027	0.3526	0.3270	0.4057	0.4295	0.4062	0.3694	0.3562	0.3584	0.4025	0.3384	0.2975	0.2979
4	0.4202	0.5934	0.6081	0.5554	0.5853	0.5323	0.5294	0.4388	0.4968	0.5857	0.6046	0.6088	0.5976	0.6049	0.6043	0.6894	0.7384	0.7062	0.7590	0.7345	0.7170	0.6621	0.5788	0.5144	0.4516	0.4347	0.5088	0.5138	0.5087	0.5436	0.6728	0.6656	0.6610	0.5931	0.5368	0.4739
4	0.3687	0.4059	0.3684	0.3772	0.3843	0.3582	0.3426	0.3975	0.4407	0.4714	0.4439	0.4810	0.4974	0.5036	0.5037	0.5404	0.5338	0.5314	0.6262	0.6360	0.6599	0.7009	0.6943	0.5914	0.5524	0.5762	0.5256	0.5081	0.5642	0.6102	0.6720	0.6577	0.5967	0.5325	0.4337	0.3965
4	0.4590	0.4401	0.4209	0.4363	0.4411	0.4032	0.3871	0.4351	0.4218	0.4119	0.3884	0.4649	0.5192	0.5757	0.6221	0.6279	0.6015	0.5518	0.5870	0.6051	0.6597	0.6382	0.5304	0.5101	0.5591	0.5870	0.5668	0.5621	0.5949	0.6138	0.6531	0.6116	0.5864	0.5219	0.4843	0.4488
4	0.5833	0.6820	0.7619	0.7108	0.7272	0.6562	0.6383	0.6051	0.5354	0.4614	0.4407	0.3965	0.3617	0.3954	0.4514	0.5127	0.5293	0.4824	0.5135	0.4760	0.4419	0.4317	0.3533	0.3162	0.2867	0.2902	0.3290	0.2963	0.3695	0.5228	0.6492	0.7270	0.8048	0.7621	0.7827	0.7250
4	0.6233	0.5312	0.5855	0.5933	0.6283	0.5904	0.5869	0.5509	0.5009	0.4567	0.4625	0.6006	0.6365	0.7103	0.7871	0.8472	0.8733	0.8424	0.8172	0.8071	0.7810	0.7291	0.6293	0.5347	0.3852	0.4145	0.3949	0.4182	0.5853	0.7146	0.8090	0.8899	0.9004	0.8583	0.8582	0.8024
4	0.5666	0.3584	0.3916	0.4162	0.4466	0.3620	0.3620	0.3882	0.4309	0.4593	0.4786	0.5341	0.5790	0.6451	0.6025	0.5904	0.5637	0.5105	0.4974	0.3722	0.3550	0.3441	0.5334	0.4588	0.3378	0.3446	0.3403	0.4329	0.5463	0.6319	0.7512	0.8055	0.8238	0.7970	0.7850	0.7359
4	0.3640	0.3693	0.4443	0.4538	0.4740	0.4713	0.4718	0.4444	0.4297	0.4241	0.3995	0.3798	0.3486	0.4102	0.6078	0.7205	0.7383	0.6670	0.5777	0.3511	0.2773	0.3628	0.4370	0.4054	0.2936	0.2237	0.2474	0.3266	0.3396	0.4101	0.4318	0.4584	0.4287	0.4528	0.4441	0.4414
5	0.3001	0.3887	0.4070	0.3381	0.3382	0.3905	0.4279	0.4285	0.3797	0.4544	0.4914	0.5001	0.3379	0.2491	0.3085	0.3231	0.4163	0.4264	0.5162	0.5385	0.5245	0.5373	0.4046	0.3930	0.4474	0.4342	0.4301	0.4128	0.3916	0.3812	0.4060	0.3917	0.4105	0.3783	0.3356	0.3249
5	0.4317	0.4413	0.4984	0.5357	0.5564	0.6393	0.6945	0.6896	0.7589	0.8533	0.8075	0.7577	0.6871	0.6568	0.6046	0.6532	0.6687	0.5597	0.4857	0.3962	0.4307	0.4716	0.4262	0.3902	0.3285	0.2936	0.3486	0.4319	0.5346	0.5638	0.6176	0.6238	0.6047	0.5684	0.5524	0.4965
5	0.4931	0.4668	0.5324	0.5236	0.4989	0.5056	0.5363	0.5678	0.6281	0.6640	0.6250	0.6623	0.6922	0.7045	0.6488	0.5779	0.3617	0.2942	0.3069	0.2548	0.2479	0.3130	0.3569	0.3136	0.2669	0.3319	0.3389	0.3266	0.3716	0.4291	0.4907	0.5332	0.5757	0.6002	0.6064	0.5974
5	0.5442	0.6871	0.7668	0.7892	0.8477	0.7064	0.6509	0.6028	0.5056	0.4549	0.4347	0.5181	0.6063	0.7683	0.9248	1.0078	1.0796	1.0322	1.0847	1.0910	1.0905	1.0454	0.9460	0.7280	0.4374	0.3673	0.4326	0.4831	0.5028	0.4318	0.3656	0.4105	0.4841	0.5221	0.5584	0.5643
5	0.3167	0.3287	0.3880	0.4677	0.5548	0.5922	0.6469	0.5797	0.5634	0.5503	0.5252	0.5879	0.6077	0.6671	0.6742	0.7117	0.7518	0.7322	0.7249	0.7035	0.6872	0.6564	0.6369	0.5705	0.3510	0.3309	0.3058	0.2910	0.3105	0.2921	0.3017	0.3146	0.3488	0.3855	0.3993	0.3642
5	0.4881	0.5308	0.6578	0.7424	0.8126	0.7428	0.7735	0.7059	0.5918	0.5744	0.5035	0.4153	0.4042	0.4416	0.5871	0.6116	0.5997	0.5576	0.5361	0.5534	0.6071	0.5965	0.5782	0.5475	0.3595	0.3687	0.3211	0.3111	0.3201	0.3040	0.2678	0.2853	0.3448	0.3729	0.4504	0.4854
5	0.6810	0.5266	0.4985	0.4924	0.4601	0.3426	0.3320	0.3894	0.4651	0.5447	0.6216	0.6907	0.7012	0.7330	0.7360	0.7457	0.7850	0.7460	0.7371	0.7239	0.6461	0.5450	0.4264	0.3015	0.3739	0.4764	0.6083	0.6993	0.7784	0.8061	0.8611	0.8377	0.8092	0.7712	0.7970	0.7741
5	0.5189	0.3881	0.4274	0.4413	0.4134	0.3107	0.2723	0.3315	0.4182	0.5084	0.5423	0.5727	0.5831	0.6257	0.6303	0.6569	0.6724	0.6370	0.6139	0.6060	0.5712	0.5567	0.5479	0.4717	0.3546	0.3419	0.3287	0.3494	0.3877	0.4044	0.4351	0.4774	0.5440	0.6696	0.6969	0.6991
5	0.6546	0.4298	0.4588	0.4818	0.4518	0.3485	0.3164	0.3265	0.4351	0.5403	0.5817	0.6161	0.6451	0.6622	0.6901	0.6806	0.6706	0.5547	0.4770	0.4571	0.4515	0.4722	0.4314	0.3865	0.4273	0.4470	0.4967	0.5152	0.5506	0.6075	0.6421	0.7038	0.7151	0.7723	0.7800	0.8119
5	0.3532	0.3877	0.2756	0.2581	0.2664	0.4810	0.5398	0.4352	0.4577	0.4736	0.3688	0.2771	0.2451	0.2859	0.3191	0.3346	0.3489	0.4314	0.5338	0.6113	0.6709	0.7431	0.7537	0.6844	0.6249	0.6718	0.6650	0.5651	0.6015	0.6581	0.7159	0.7103	0.6418	0.4945	0.3330	0.3364
6	0.2539	0.2432	0.2501	0.3819	0.5273	0.6343	0.5062	0.3992	0.2478	0.2442	0.2224	0.1992	0.2095	0.2307	0.2545	0.2587	0.2774	0.3582	0.4090	0.4144	0.4854	0.5921	0.6065	0.5707	0.6170	0.6696	0.6992	0.6909	0.6583	0.5659	0.5501	0.4924	0.4028	0.3144	0.2925	0.2975

Configuration D: Mean Velocity Ratios

Dir	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180	190	200	210	220	230	240	250	260	270	280	290	300	310	320	330	340	350	360
1	0.261	0.2349	0.3006	0.3367	0.3351	0.2600	0.2017	0.2101	0.2712	0.2784	0.1997	0.1711	0.1710	0.2022	0.2251	0.2568	0.2751	0.3207	0.3410	0.3663	0.3590	0.3160	0.2836	0.2278	0.1834	0.1775	0.1730	0.1778	0.1697	0.1711	0.1898	0.2401	0.2930	0.3318	0.3563	0.3474
2	0.382	0.2978	0.3292	0.3527	0.3274	0.2148	0.1206	0.1200	0.1163	0.1119	0.0993	0.0909	0.0989	0.0937	0.1319	0.0954	0.0932	0.1162	0.1335	0.2117	0.2223	0.2534	0.2539	0.1964	0.1310	0.1253	0.1269	0.1682	0.2445	0.3364	0.3809	0.4166	0.4530	0.4643	0.4589	0.4693
3	0.140	0.1332	0.1509	0.1700	0.1736	0.1485	0.2121	0.2508	0.3287	0.3512	0.3201	0.3389	0.3448	0.3747	0.3522	0.3241	0.2883	0.2986	0.2879	0.2795	0.3099	0.2977	0.2873	0.1915	0.1474	0.1463	0.1435	0.1370	0.1417	0.1374	0.1549	0.1784	0.2002	0.2107	0.2373	0.2140
4	0.305	0.2553	0.2563	0.2745	0.2534	0.1954	0.1660	0.1518	0.1828	0.2425	0.2738	0.3123	0.3089	0.3073	0.3027	0.2960	0.2864	0.2842	0.2783	0.2722	0.2224	0.1790	0.1636	0.1475	0.1594	0.1956	0.2013	0.2233	0.2609	0.3195	0.3565	0.3818	0.4003	0.3855	0.3706	0.3624
5	0.308	0.2569	0.2868	0.3287	0.3314	0.3080	0.2627	0.1962	0.1945	0.1676	0.1252	0.1245	0.1204	0.1300	0.1145	0.1303	0.1224	0.1213	0.1212	0.1068	0.1325	0.1578	0.1854	0.1799	0.1767	0.2434	0.2175	0.1799	0.1909	0.2292	0.2491	0.2674	0.2834	0.3409	0.4152	0.4220
6	0.221	0.1610	0.1537	0.1539	0.1401	0.1571	0.1636	0.1740	0.2958	0.3892	0.4489	0.4917	0.5088	0.5256	0.5359	0.5288	0.5308	0.5494	0.4893	0.4555	0.3530	0.2371	0.2012	0.1930	0.2624	0.3643	0.3678	0.3718	0.3628	0.3329	0.3366	0.3242	0.3173	0.2962	0.2665	0.2686
7	0.100	0.1233	0.1317	0.1465	0.1604	0.1364	0.1171	0.1578	0.2486	0.3111	0.3399	0.3731	0.4057	0.4279	0.4310	0.4309	0.4420	0.4582	0.4049	0.3755	0.2971	0.1848	0.1261	0.1273	0.1926	0.2294	0.2399	0.2824	0.3321	0.3233	0.2535	0.1472	0.1040	0.0965	0.0944	0.0961
8	0.088	0.0867	0.0862	0.0862	0.0861	0.0853	0.0851	0.0862	0.0877	0.0882	0.0870	0.0867	0.0870	0.0887	0.0873	0.0872	0.0876	0.0886	0.0884	0.0877	0.0893	0.0926	0.0975	0.0872	0.0877	0.0879	0.0898	0.0894	0.0922	0.0957	0.0977	0.0988	0.1018	0.1060	0.1077	0.1127
9	0.149	0.1578	0.1815	0.2009	0.2154	0.2232	0.2638	0.2691	0.3466	0.3698	0.3522	0.3490	0.3639	0.3585	0.3218	0.2588	0.2450	0.2476	0.1884	0.1795	0.1691	0.1968	0.2548	0.2690	0.3285	0.4784	0.5127	0.5592	0.5690	0.4644	0.3830	0.2956	0.2293	0.1916	0.1504	0.1460
10	0.097	0.0983	0.0959	0.1006	0.1045	0.1119	0.0966	0.0942	0.1008	0.1446	0.2230	0.2933	0.3340	0.3173	0.2457	0.1952	0.1687	0.1721	0.1657	0.1452	0.1459	0.1278	0.1302	0.1403	0.1586	0.2172	0.2532	0.2653	0.2434	0.1842	0.1505	0.1238	0.1084	0.1067	0.1247	0.1043
11	0.136	0.1722	0.1950	0.2099	0.2180	0.1802	0.1980	0.2539	0.2828	0.2830	0.2519	0.2530	0.2565	0.2811	0.2597	0.2531	0.2438	0.2675	0.2553	0.2474	0.2476	0.2632	0.2939	0.2599	0.2632	0.3479	0.3359	0.3490	0.3230	0.2538	0.2666	0.2650	0.2655	0.2343	0.1888	0.1481
12	0.179	0.2365	0.2832	0.3016	0.2772	0.2480	0.2252	0.2244	0.2211	0.2099	0.2058	0.1665	0.1446	0.1396	0.1323	0.1415	0.1408	0.1447	0.1532	0.1477	0.1649	0.1958	0.2181	0.2200	0.2642	0.3646	0.3967	0.4317	0.4089	0.2651	0.2208	0.2011	0.2005	0.2224	0.2281	0.1934
13	0.169	0.1952	0.2545	0.2760	0.2519	0.2105	0.1676	0.1279	0.1265	0.1164	0.1222	0.1308	0.1439	0.1324	0.1519	0.1548	0.1371	0.1481	0.1724	0.1990	0.1906	0.2042	0.2122	0.2056	0.1878	0.2265	0.2177	0.2489	0.2664	0.2386	0.2230	0.2340	0.2424	0.2194	0.2082	0.2064
14	0.209	0.1565	0.1705	0.2129	0.2059	0.1725	0.1431	0.1387	0.1376	0.1514	0.1733	0.1497	0.1323	0.1334	0.1670	0.2334	0.2406	0.2528	0.2736	0.2514	0.2932	0.2390	0.2140	0.1961	0.1769	0.1527	0.1371	0.1610	0.2051	0.2780	0.3184	0.3070	0.3182	0.3391	0.3765	0.3031
15	0.147	0.1558	0.2010	0.2492	0.2896	0.3079	0.2970	0.2719	0.2818	0.2818	0.2615	0.2434	0.1932	0.1688	0.1512	0.1723	0.1724	0.1881	0.1934	0.1738	0.2396	0.2472	0.2232	0.1718	0.1830	0.1528	0.1887	0.2154	0.2172	0.1526	0.1475	0.1521	0.1566	0.1446	0.2043	0.1676
16	0.338	0.2853	0.2715	0.2894	0.2719	0.2699	0.2940	0.3075	0.3253	0.3137	0.2500	0.2366	0.2239	0.2278	0.1979	0.1935	0.1892	0.2020	0.2155	0.2151	0.2268	0.2015	0.1649	0.1184	0.1142	0.1173	0.1723	0.2562	0.3592	0.3931	0.4271	0.4412	0.4606	0.4774	0.4251	0.4037
17	0.285	0.1778	0.1814	0.2111	0.2266	0.2180	0.1727	0.1508	0.1491	0.1427	0.1771	0.1626	0.1461	0.1469	0.1370	0.1469	0.1457	0.1629	0.1940	0.1611	0.1699	0.1617	0.1682	0.1603	0.2050	0.2480	0.2849	0.3667	0.4190	0.4035	0.3821	0.3660	0.3839	0.4069	0.4580	0.4262
18	0.382	0.3082	0.3613	0.3947	0.3713	0.2683	0.2305	0.2443	0.2507	0.2302	0.2349	0.2839	0.3647	0.4390	0.4680	0.4660	0.4699	0.4958	0.4085	0.3820	0.3253	0.2797	0.2687	0.2537	0.2367	0.3182	0.3303	0.3085	0.2981	0.2722	0.2857	0.3063	0.3322	0.3956	0.4637	0.4947
19	0.327	0.2613	0.4126	0.4695	0.4255	0.3369	0.3279	0.2875	0.2829	0.2634	0.3229	0.3507	0.3074	0.2322	0.2708	0.2549	0.2461	0.2553	0.2476	0.2431	0.1462	0.1468	0.1624	0.2075	0.2193	0.2869	0.2955	0.2939	0.3002	0.3012	0.2927	0.2937	0.3067	0.3358	0.3796	0.4195
20	0.430	0.3946	0.3377	0.3639	0.3724	0.3561	0.2539	0.2122	0.3011	0.3464	0.3680	0.3901	0.4118	0.4486	0.4547	0.4084	0.3792	0.3808	0.3382	0.3215	0.2769	0.2699	0.2659	0.2285	0.2045	0.2360	0.2208	0.1904	0.1819	0.2395	0.3070	0.4357	0.5460	0.5189	0.4541	0.4398
21	0.254	0.2362	0.1873	0.1976	0.2173	0.2221	0.2358	0.2777	0.4472	0.5391	0.5648	0.5998	0.5936	0.6064	0.5412	0.4359	0.3778	0.3705	0.3425	0.3426	0.3516	0.4031	0.4095	0.3024	0.2384	0.2722	0.2850	0.2533	0.2534	0.2639	0.3012	0.3180	0.3287	0.3228	0.3241	0.3073
22	0.208	0.2031	0.1591	0.1692	0.1919	0.1973	0.2196	0.2480	0.2944	0.3257	0.3095	0.3497	0.3949	0.4536	0.4527	0.3573	0.2852	0.2646	0.2294	0.2695	0.2760	0.3088	0.2740	0.1999	0.2123	0.2698	0.3198	0.3494	0.3700	0.3718	0.3860	0.3633	0.3394	0.2848	0.1954	0.1925
23	0.167	0.1588	0.1309	0.1432	0.1541	0.1922	0.1973	0.2117	0.2669	0.2841	0.2563	0.2219	0.2183	0.2752	0.3032	0.2799	0.2282	0.2037	0.1938	0.1860	0.2170	0.2250	0.2336	0.2345	0.2805	0.3146	0.3323	0.3365	0.3241	0.3337	0.3148	0.2666	0.2514	0.1988	0.2072	0.1770
24	0.202	0.1966	0.1751	0.1731	0.1962	0.2110	0.2570	0.2868	0.2708	0.2917	0.2969	0.2654	0.2047	0.2021	0.2341	0.2181	0.2078	0.2252	0.2050	0.2122	0.2160	0.2680	0.3137	0.3492	0.4068	0.4268	0.3927	0.3274	0.3031	0.2972	0.2571	0.2276	0.2202	0.1671	0.1407	0.1765
25	0.186	0.1676	0.1367	0.1160	0.1233	0.1563	0.1871	0.2191	0.2375	0.2034	0.2178	0.2193	0.1896	0.1607	0.1865	0.1794	0.1957	0.2094	0.2067	0.2036	0.2217	0.2442	0.2538	0.2919	0.3117	0.3011	0.2252	0.1769	0.1592	0.1378	0.1373	0.1388	0.1303	0.1200	0.1214	0.1527
26	0.185	0.1722	0.1379	0.1266	0.1379	0.1863	0.2360	0.2587	0.2568	0.2255	0.2066	0.2231	0.2151	0.1967	0.1841	0.2007	0.2112	0.2196	0.2208	0.2150	0.2338	0.2589	0.2740	0.2761	0.3043	0.3096	0.2977	0.3701	0.3783	0.3021	0.3019	0.2874	0.2467	0.1611	0.1566	0.1671
27	0.158	0.1581	0.1400	0.1553	0.1851	0.1901	0.2298	0.2433	0.2133	0.2258	0.2246	0.2161	0.1942	0.2118	0.2055	0.2075	0.2095	0.2134	0.1859	0.1924	0.2010	0.2336	0.2770	0.3058	0.3663	0.3925	0.3731	0.3494	0.3238	0.2945	0.2684	0.2516	0.2179	0.1663	0.1638	0.1751
28	0.133	0.1291	0.1132	0.1328	0.1447	0.1611	0.1716	0.1845	0.2322	0.2569	0.2054	0.1894	0.2016	0.2593	0.2962	0.3188	0.3499	0.3387	0.2746	0.2645	0.2356	0.2337	0.2299	0.2037	0.2510	0.2862	0.2714	0.2487	0.2607	0.2692	0.2399	0.2242	0.2018	0.1578	0.1311	0.1527
29	0.134	0.1521	0.1685	0.1978	0.2177	0.1861	0.2001	0.2419	0.3080	0.3206	0.2379	0.2590	0.3256	0.3584	0.3401	0.3205	0.3267	0.3559	0.3405	0.3557	0.3254	0.3026	0.2891	0.2459	0.3291	0.4074	0.4501	0.4534	0.4138	0.3185	0.2813	0.2212	0.1880	0.1745	0.1574	0.1545
30	0.148	0.1332	0.1189	0.1226	0.1247	0.1364	0.1332	0.1500	0.1847	0.1833	0.2370	0.2970	0.3654	0.4355	0.4831	0.5023	0.5140	0.5265	0.4831	0.4601	0.3979	0.3483	0.3232	0.2410	0.1797	0.1947	0.2288	0.2462	0.2435	0.2461	0.2368	0.2176	0.2025	0.2013	0.2161	0.1896
31	0.235	0.1989	0.2549	0.2797	0.2954	0.2834	0.2512	0.1774	0.1443	0.1630	0.1650	0.1574	0.1546	0.1385	0.1503	0.1517	0.1392	0.1428	0.2109	0.3259	0.4274	0.5000	0.5168	0.4158	0.3109	0.3060	0.2494	0.2118	0.1927	0.1845	0.1993	0.2295	0.2539	0.2763	0.2753	0.2764
32	0.169	0.1665	0.2458	0.2784	0.3039	0.3230	0.3326	0.2738	0.2222	0.2542	0.3093	0.2894	0.2428	0.1852	0.1662	0.1400	0.1248	0.1544	0.1919	0.2484	0.2030	0.2361	0.2515	0.2693	0.3133	0.3778	0.3786	0.3674	0.3584	0.3381	0.3254	0.2811	0.2708	0.2588	0.1951	0.1903
33	0.268	0.1493	0.1594	0.1846	0.1782	0.1453	0.1578	0.1553	0.1808	0.2467	0.2598	0.2535	0.2756	0.2619	0.2898	0.2816	0.2879	0.3243	0.3659	0.4512	0.4525	0.4619	0.3731	0.2792	0.2516	0.2667	0.2822	0.2734	0.2495	0.2416	0.2505	0.3048	0.3769	0.4208	0.3801	0.3826
34	0.134	0.1060	0.1027	0.1110	0.1136	0.1297	0.1302	0.1311	0.1646	0.1705	0.2087	0.2283	0.2734	0.3044	0.3466	0.4144	0.4848	0.5119	0.4647	0.4177	0.3143	0.2934	0.2791	0.2076	0.1538	0.1695	0.1891	0.2123	0.2002	0.1676	0.1555	0.1615	0.1774	0.1768	0.1585	0.1572
35	0.145	0.1550	0.2171	0.2724	0.2947	0.2558	0.2411	0.2244	0.2567	0.3443	0.3182	0.3141	0.3041	0.2768	0.2368	0.2886	0.4164	0.5433	0.5831	0.6249	0.5968	0.5865	0.5414	0.4023	0.3681	0.4120	0.4159	0.4078	0.3521	0.2529	0.2008	0.1687	0.1707	0.1653	0.1476	0.1418
36	0.132	0.1491	0.2012	0.2204	0.2428	0.2610	0.2710	0.2869	0.3500	0.4159	0.4275	0.4100	0.3677	0.3357	0.3164	0.2619	0.2424	0.2502	0.2368	0.2360	0.2219	0.3193	0.3073	0.2323	0.2216	0.2325	0.2468	0.2326	0.2519	0.2756	0.2214	0.1932	0.1823	0.1809	0.1570	0.1523
37	0.185	0.1465	0.1683	0.2007	0.2143	0.2066	0.2130	0.2286	0.3062	0.3808	0.4045	0.4094	0.4219	0.4286	0.4007	0.3666	0.3630	0.3501	0.3202	0.2934	0.2226	0.2313	0.2128	0.1799	0.1724	0.1824	0.1867	0.1705	0.1838	0.2230	0.2011	0.2116	0.2104	0.2141	0.2055	0.2057
38	0.216	0.1737	0.1668	0.2060	0.2322	0.2119	0.2191	0.2199	0.2358	0.2727	0.2617	0.2610	0.2472	0.2443	0.2257	0.2198	0.2193	0.2246	0.1983	0.2408	0.2392	0.2339	0.2196	0.1494	0.1424	0.1657	0.1814	0.2099	0.2182	0.1930	0.1911	0.1922	0.1974	0.2299	0.2396	0.2500
39	0.202	0.1715	0.2224	0.2543	0.2394	0.1869	0.1975	0.2146	0.2222	0.2055	0.1715	0.1956	0.1782	0.2543	0.2582	0.2593	0.2132	0.2221	0.2137	0.1960	0.2855	0.2913	0.3507	0.2059	0.1790	0.2056	0.2108	0.2590	0.2857	0.2730	0.2879	0.2851	0.2862	0.2853	0.3200	0.2779
40	0.139	0.1591	0.1509	0.1315	0.1296	0.1553	0.1558	0.1272	0.1367	0.1434	0.1801	0.1917	0.1582	0.1578	0.1674	0.2359	0.3270	0.3712	0.3346	0.2285	0.2149	0.1793	0.2731	0.2249	0.1766	0.1663	0.1703	0.1901	0.2114	0.2242	0.2437	0.2478	0.2382	0.2163	0.2259	0.1838
41	0.148	0.1547	0.1384	0.1179	0.1083	0.1095	0.1170	0.1183	0.1443	0.1768	0.2381	0.2486	0.2322	0.2199	0.2391	0.2466	0.2702	0.2893	0.2863	0.2888	0.2695	0.2500	0.2003	0.1839	0.1543	0.1599	0.1708	0.1908	0.2018	0.2183	0.2202	0.2166	0.2137	0.2538	0.2570	0.2070
42	0.116	0.1590	0.1569	0.1753	0.1939	0.2152	0.2340	0.1994	0.1890	0.1785	0.1713	0.1697	0.1722	0.2370	0.2716	0.3145	0.3514	0.3909	0.3863	0.3445	0.3573	0.3101	0.2962	0.2147	0.1517	0.1435	0.1642	0.1814	0.1694	0.1540	0.1537	0.1563	0.1525	0.1478	0.1317	0.1259
43	0.139	0.2281	0.2418	0.2566	0.2644	0.1940	0.1866	0.1965	0.2647	0.3017	0.3319	0.3646	0.3587	0.3540	0.3632	0.3351	0.3340	0.3775	0.3673	0.3737	0.3307	0.3403	0.3116	0.2476	0.1728	0.1972	0.2225	0.2449	0.2383	0.2245	0.2382	0.2466	0.2576	0.2382	0.1795	0.1657
44	0.137	0.1660	0.1625	0.1596	0.1611	0.1441	0.1315	0.1502	0.1848	0.1862	0.2047	0.2266	0.2259	0.2628	0.2795	0.2678	0.2398	0.2675	0.3025	0.3083	0.2876	0.3099	0.3206	0.2708	0.2130	0.2555	0.1965	0.1933	0.2103	0.2337	0.2459	0.2423	0.2513	0.1992	0.1569	0.1405
45	0.228	0.2085	0.1998	0.1910	0.1744	0.1501	0.1198	0.1233	0.1217	0.1286	0.1487	0.1647	0.1912	0.2585	0.3076	0.3058	0.2425	0.2220	0.2572	0.2852	0.2962	0.2322	0.2106	0.2007	0.2129	0.2961	0.2396	0.1955	0.2011	0.2457	0.2893	0.2880	0.2814	0.2941	0.3026	0.2643
46	0.275	0.2537	0.3252	0.3382	0.3170	0.2231	0.2013	0.1959	0.1626	0.1625	0.1699	0.1670	0.1508	0.1191	0.1629	0.1756	0.1734	0.1631	0.1860	0.2543	0.2114	0.2496	0.2186	0.1819	0.1237	0.1267	0.1358	0.1189	0.1164	0.1633	0.2187	0.3390	0.4001	0.3872	0.3812	0.3692
47	0.309	0.2750	0.3247	0.3565	0.3694	0.3098	0.3026	0.2606	0.2282	0.2297	0.1833	0.2016	0.2044	0.2242	0.2376	0.2347	0.2255	0.2357	0.2069	0.2093	0.1915	0.1916	0.1755	0.1491	0.1373	0.1581	0.1794	0.2006	0.2511	0.3562	0.4295	0.4971	0.5337	0.5015	0.4540	0.4136
48	0.253	0.1631	0.1682	0.1696	0.1656	0.1544	0.1411	0.1418	0.1475	0.1509	0.2032	0.2300	0.2814	0.2925	0.3077	0.2437	0.1920	0.1944	0.1762	0.1836	0.1100	0.1423	0.1467	0.2044	0.1434	0.1427	0.1204	0.1200	0.1486	0.2526	0.3354	0.4217	0.4657	0.4452	0.3766	0.3446
49	0.153	0.1350	0.1553	0.1700	0.1869	0.1705	0.1731	0.1897	0.2359	0.2574	0.2310	0.2362	0.2238	0.2347	0.2275	0.2835	0.3267	0.3201	0.2177	0.1257	0.1389	0.1172	0.1803	0.1485	0.1353	0.1310	0.1294	0.1395	0.1639	0.1930	0.2152	0.2212	0.2198	0.1996	0.1899	0.1810
50	0.109	0.1089	0.1171	0.1215	0.1225	0.1218	0.1309	0.1393	0.1459	0.1763	0.1945	0.1576	0.1333	0.1151	0.1403	0.1252	0.1252	0.1334	0.1434	0.2032	0.1915	0.2333	0.1636	0.1791	0.1703	0.1954	0.1903	0.1732	0.1807	0.1899	0.1696	0.1557	0.1531	0.1523	0.1244	0.1187
51	0.170	0.1563	0.1956	0.2252	0.2428	0.2794	0.3133	0.3334	0.4180	0.4811	0.5085	0.4932	0.4599	0.4243	0.3761	0.3139	0.2768	0.2544	0.1826	0.1760	0.1888	0.2535	0.1977	0.1575	0.1473	0.1701	0.1751	0.1960	0.2362	0.2803	0.2974	0.2872	0.2838	0.2649	0.2261	0.2032
52	0.316	0.2443	0.2561	0.2593	0.2347	0.2249	0.2105	0.2013	0.2228	0.2635	0.3147	0.3739	0.4142	0.3820	0.2711	0.1479	0.1352	0.1387	0.1273	0.1367	0.1213	0.1545	0.1456	0.1370	0.1187	0.1441	0.1920	0.1781	0.1633	0.2083	0.2874	0.3398	0.3601	0.4107	0.4229	0.4024
53	0.306	0.3777	0.4588	0.5200	0.5361	0.4715	0.4394	0.3267	0.2463	0.2101	0.1719	0.2512	0.3358	0.4147	0.4527	0.5233	0.5720	0.6214	0.6188	0.6364	0.6257	0.5814	0.5580	0.3972	0.1938	0.1459	0.1458	0.1755	0.1894	0.1581	0.1525	0.1957	0.2494	0.2887	0.3268	0.3329
54	0.120	0.1289	0.1516	0.1822	0.2088	0.2996	0.3419	0.3000	0.3081	0.2500	0.1958	0.1882	0.2360	0.2735	0.2871	0.3068	0.3305	0.3553	0.3399	0.3501	0.3391	0.3340	0.3545	0.2716	0.1422	0.1365	0.1467	0.1474	0.1431	0.1045	0.1063	0.1142	0.1239	0.1359	0.1464	0.1415
55	0.187	0.2762	0.3656	0.4419	0.4570	0.4408	0.4364	0.3434	0.3237	0.2746	0.2407	0.1805	0.1434	0.1506	0.1562	0.1588	0.1464	0.1608	0.2025	0.2132	0.2483	0.2608	0.3216	0.2648	0.2002	0.2532	0.2389	0.2631	0.3102	0.2718	0.2147	0.1457	0.1147	0.1481	0.1700	0.1998
56	0.378	0.2860	0.2697	0.2757	0.2298	0.1344	0.1203	0.1664	0.2557	0.3331	0.3756	0.4006	0.4155	0.4181	0.3947	0.3730	0.3821	0.4017	0.3589	0.3571	0.3088	0.2836	0.2627	0.1761	0.1565	0.2465	0.3228	0.4135	0.4771	0.5335	0.5503	0.5551	0.5623	0.5251	0.5021	0.4816
57	0.291	0.2369	0.2732	0.2892	0.2489	0.1491	0.1395	0.1573	0.2092	0.2775	0.3117	0.3362	0.3281	0.3345	0.3161	0.3042	0.2960	0.3105	0.2833	0.2644	0.2598	0.2562	0.2792	0.2170	0.1462	0.1424	0.1789	0.2239	0.2363	0.2507	0.2676	0.2857	0.3226	0.3588	0.3951	0.3864
58	0.269	0.1862	0.1928	0.2104	0.1982	0.1321	0.1229	0.1299	0.1465	0.1788	0.1781	0.1942	0.2114	0.2304	0.2157	0.2173	0.2194	0.2142	0.1681	0.1565	0.1433	0.1351	0.1455	0.1312	0.1836	0.2166	0.2351	0.2692	0.2829	0.3154	0.3330	0.3343	0.3538	0.3459	0.3496	0.3545
59	0.124	0.0998	0.0956	0.0976	0.0969	0.1370	0.1710	0.1378	0.1242	0.1141	0.1009	0.0945	0.1012	0.0976	0.1170	0.1206	0.1232	0.1557	0.2123	0.2737	0.3019	0.3609	0.3667	0.2957	0.2620	0.3352	0.2926	0.2491	0.2086	0.2154	0.2271	0.2051	0.1804	0.1825	0.1705	0.1676
60	0.131	0.1090	0.1090	0.1208	0.1499	0.2107	0.2057	0.1453	0.1474	0.1663	0.1573	0.1791	0.1833	0.1972	0.2011	0.2295	0.2412	0.2621	0.2871	0.2935	0.2394	0.2229	0.2533	0.2247	0.2694	0.3748	0.3763	0.3833	0.3759	0.3271	0.3070	0.2478	0.2153	0.1884	0.1836	0.1755

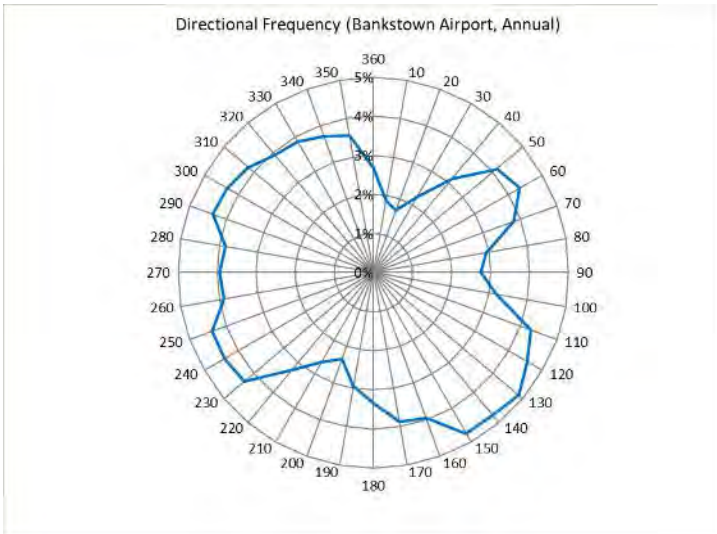
Configuration D: Peak Velocity Ratios

Dir	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180	190	200	210	220	230	240	250	260	270	280	290	300	310	320	330	340	350	360
1	0.5183	0.471	0.5316	0.5763	0.5705	0.4829	0.4128	0.4397	0.5076	0.545	0.5282	0.4217	0.3749	0.3977	0.4819	0.5511	0.5034	0.5385	0.5402	0.5934	0.6075	0.5525	0.5174	0.4865	0.4252	0.4055	0.4151	0.4483	0.4269	0.4686	0.4772	0.5598	0.587	0.6075	0.6356	0.6189
2	0.6315	0.5175	0.5395	0.6059	0.5744	0.4814	0.3287	0.2990	0.3194	0.3195	0.2646	0.1939	0.1978	0.1977	0.2316	0.2125	0.1985	0.2579	0.3009	0.3873	0.4481	0.4438	0.4522	0.4421	0.3534	0.3369	0.3358	0.4199	0.5323	0.6140	0.6462	0.6887	0.7297	0.7473	0.7194	0.7397
3	0.2817	0.2786	0.2838	0.3104	0.3239	0.3880	0.4907	0.4982	0.5862	0.6393	0.6320	0.6223	0.6233	0.6685	0.7073	0.7021	0.5385	0.5363	0.5025	0.5257	0.5398	0.5269	0.5027	0.4465	0.3756	0.3610	0.3383	0.3077	0.2819	0.2658	0.2878	0.3188	0.3331	0.3403	0.3522	0.3355
4	0.5292	0.4359	0.4218	0.4635	0.4542	0.4765	0.4728	0.3602	0.4146	0.4697	0.4682	0.5005	0.4827	0.4825	0.4991	0.4921	0.4644	0.4698	0.4810	0.4739	0.4392	0.4107	0.4006	0.3711	0.3929	0.4028	0.3972	0.4475	0.4873	0.5683	0.6006	0.6013	0.6293	0.6456	0.5775	0.5878
5	0.6309	0.5598	0.5629	0.6128	0.6372	0.5567	0.5451	0.4727	0.4897	0.4832	0.3699	0.3561	0.2307	0.2510	0.2480	0.2560	0.2308	0.2389	0.2694	0.3048	0.3710	0.3994	0.4483	0.4302	0.4629	0.5455	0.5387	0.4806	0.4422	0.4802	0.5159	0.5462	0.6091	0.7004	0.7505	0.7455
6	0.4113	0.3410	0.3354	0.3655	0.3515	0.3880	0.4036	0.4239	0.5260	0.6232	0.6620	0.7106	0.7331	0.7457	0.8229	0.8289	0.8003	0.8399	0.7833	0.7558	0.6869	0.5476	0.4654	0.4742	0.5761	0.6560	0.6365	0.6502	0.6309	0.5893	0.5590	0.5369	0.5244	0.5237	0.4636	0.4744
7	0.2496	0.3059	0.3313	0.3716	0.3837	0.3555	0.2941	0.3788	0.4459	0.5143	0.5422	0.5833	0.6135	0.6208	0.6688	0.6788	0.6739	0.6964	0.6362	0.6353	0.5818	0.4601	0.3572	0.3537	0.4448	0.4643	0.4741	0.5275	0.5606	0.5561	0.5024	0.3993	0.2945	0.2121	0.2345	0.2430
8	0.1714	0.1643	0.1653	0.1649	0.1638	0.1620	0.1612	0.1629	0.1687	0.1670	0.1656	0.1704	0.1648	0.1682	0.1654	0.1660	0.1655	0.1683	0.1641	0.1652	0.1685	0.1702	0.1790	0.1681	0.1677	0.1681	0.1746	0.1690	0.1798	0.1849	0.1926	0.1910	0.1943	0.2008	0.1959	0.1973
9	0.3393	0.3630	0.4213	0.4707	0.4904	0.5256	0.5717	0.5542	0.5886	0.6306	0.6057	0.6107	0.5782	0.5752	0.5876	0.5428	0.4896	0.4951	0.4763	0.4281	0.4339	0.5067	0.5493	0.5643	0.7218	0.8170	0.8641	0.9080	0.8873	0.8173	0.6314	0.5167	0.4702	0.4416	0.3920	0.3550
10	0.2276	0.2366	0.2361	0.2654	0.2823	0.2765	0.2263	0.2222	0.2804	0.4098	0.4709	0.5463	0.5401	0.5343	0.5174	0.4510	0.3966	0.3997	0.4022	0.3790	0.3601	0.3134	0.3013	0.3239	0.3876	0.4711	0.4825	0.5018	0.4809	0.3766	0.3021	0.2787	0.2400	0.2463	0.2515	0.2508
11	0.3279	0.3940	0.4306	0.4402	0.4297	0.4269	0.4686	0.4990	0.5282	0.5035	0.4841	0.5113	0.5282	0.5487	0.5459	0.5634	0.5504	0.5805	0.5498	0.5391	0.5487	0.5633	0.5692	0.5516	0.6425	0.7606	0.7297	0.7119	0.6744	0.5468	0.4863	0.5024	0.5374	0.5496	0.4629	0.3619
12	0.4545	0.5252	0.5707	0.5740	0.5453	0.4693	0.4288	0.4062	0.4113	0.4007	0.3999	0.3708	0.3274	0.3251	0.3588	0.3618	0.3862	0.3931	0.3922	0.4234	0.4406	0.4540	0.4668	0.4753	0.5712	0.6385	0.6780	0.7215	0.6931	0.6114	0.5009	0.4526	0.5755	0.5592	0.5016	0.4546
13	0.4028	0.4809	0.5550	0.5739	0.6142	0.5099	0.4692	0.4102	0.3993	0.3564	0.3040	0.2814	0.3203	0.3368	0.4144	0.4369	0.4112	0.4497	0.4461	0.4600	0.4636	0.4662	0.4719	0.4350	0.4044	0.4585	0.4594	0.5207	0.5358	0.5242	0.4865	0.5131	0.5468	0.5228	0.5181	0.5048
14	0.5743	0.4268	0.4119	0.5036	0.5083	0.4562	0.3809	0.3329	0.3688	0.3784	0.3985	0.3609	0.3283	0.4013	0.4392	0.5360	0.5269	0.5770	0.5787	0.6226	0.6279	0.5452	0.5469	0.4908	0.5011	0.3866	0.3750	0.4159	0.4564	0.5695	0.5831	0.5759	0.6559	0.7109	0.7210	0.7035
15	0.4153	0.4419	0.533	0.6110	0.6707	0.7459	0.7253	0.6354	0.6586	0.6454	0.6070	0.6084	0.5465	0.4780	0.4547	0.4312	0.4467	0.5247	0.5279	0.4905	0.6057	0.5864	0.5490	0.4444	0.4724	0.4287	0.3924	0.4420	0.4370	0.3627	0.3762	0.3721	0.4178	0.3705	0.4017	0.4285
16	0.6980	0.5923	0.5530	0.6266	0.6114	0.6126	0.6558	0.6656	0.6836	0.6551	0.5692	0.5742	0.4907	0.5059	0.4858	0.4564	0.4230	0.3953	0.4062	0.3907	0.4118	0.3888	0.3440	0.2902	0.2621	0.3059	0.4014	0.5472	0.6342	0.6717	0.7167	0.7312	0.7740	0.8103	0.7475	0.7437
17	0.6192	0.4851	0.4802	0.5414	0.5622	0.5304	0.4667	0.4212	0.4015	0.3764	0.3641	0.3744	0.3831	0.3729	0.3340	0.3810	0.3843	0.4141	0.4164	0.4043	0.4133	0.4633	0.4425	0.4271	0.5524	0.5969	0.6394	0.7225	0.7664	0.7555	0.7049	0.6781	0.7194	0.7553	0.7691	0.7223
18	0.7362	0.6183	0.6588	0.7104	0.6797	0.5816	0.5670	0.5905	0.5921	0.5062	0.5436	0.6123	0.6640	0.7376	0.8379	0.8255	0.7795	0.8177	0.7522	0.7092	0.6482	0.6106	0.5967	0.5688	0.5518	0.5896	0.6120	0.5917	0.6026	0.5549	0.5411	0.5941	0.6825	0.7865	0.8437	0.8782
19	0.7242	0.7087	0.7755	0.8780	0.8318	0.7465	0.7843	0.6990	0.6837	0.6602	0.6995	0.6926	0.6270	0.5318	0.5090	0.4905	0.4737	0.4684	0.4620	0.4543	0.3950	0.4334	0.4421	0.4443	0.4503	0.4998	0.4997	0.5094	0.5400	0.5685	0.5585	0.5583	0.6227	0.6799	0.7502	0.7980
20	0.8749	0.7975	0.6669	0.6975	0.7644	0.7452	0.6490	0.5502	0.6294	0.7210	0.6943	0.7197	0.7649	0.7539	0.7872	0.7217	0.6501	0.6467	0.5743	0.5333	0.5256	0.5093	0.5049	0.4656	0.4172	0.4624	0.4586	0.3968	0.4055	0.5402	0.6517	0.8103	0.9338	0.8893	0.8102	0.8821
21	0.5912	0.5842	0.4487	0.4658	0.5429	0.5570	0.5663	0.6885	0.8446	0.9516	0.9735	1.0051	0.9795	0.9554	0.9760	0.8707	0.6870	0.7057	0.6237	0.6661	0.7048	0.7463	0.7540	0.6926	0.5448	0.5650	0.5755	0.5059	0.5105	0.6120	0.6637	0.6229	0.6754	0.7063	0.6893	0.6558
22	0.5472	0.5538	0.4291	0.4310	0.5021	0.5218	0.5607	0.5716	0.6105	0.6889	0.6989	0.7591	0.8261	0.8809	0.9359	0.8266	0.6989	0.6763	0.5678	0.6255	0.6417	0.6445	0.6113	0.5214	0.4943	0.5458	0.5791	0.6276	0.6445	0.6552	0.7076	0.6963	0.6775	0.6104	0.5261	0.5054
23	0.5224	0.5198	0.4075	0.4357	0.4688	0.4923	0.4818	0.5172	0.5939	0.6241	0.5946	0.5795	0.6450	0.7191	0.8063	0.7532	0.6502	0.6372	0.5126	0.5685	0.6053	0.5986	0.5643	0.5408	0.5569	0.6135	0.6063	0.6262	0.6091	0.6107	0.6021	0.5718	0.5535	0.4934	0.4615	0.4932
24	0.5556	0.5296	0.4700	0.4054	0.4419	0.4925	0.5485	0.5716	0.5269	0.5458	0.5841	0.5839	0.5276	0.5635	0.6527	0.6241	0.5231	0.5302	0.5037	0.4905	0.5449	0.5954	0.6362	0.6539	0.6518	0.6745	0.6692	0.6330	0.5746	0.5997	0.6067	0.5404	0.4926	0.4247	0.4125	0.5271
25	0.4433	0.4531	0.3929	0.3242	0.3731	0.5106	0.5423	0.5463	0.5628	0.5714	0.5195	0.5282	0.5281	0.4776	0.4897	0.4957	0.5316	0.5101	0.5119	0.5048	0.5371	0.5538	0.5515	0.5155	0.5271	0.5359	0.4852	0.4305	0.3960	0.3347	0.3378	0.3499	0.3341	0.3316	0.3423	0.4172
26	0.5114	0.4943	0.4158	0.3733	0.3904	0.5514	0.6009	0.6086	0.5395	0.5454	0.5021	0.5158	0.5643	0.5589	0.5702	0.5916	0.5911	0.5783	0.5324	0.5198	0.5529	0.5508	0.5817	0.5026	0.5500	0.5661	0.6381	0.7736	0.7741	0.6454	0.6206	0.5650	0.5317	0.4388	0.3903	0.5203
27	0.4441	0.4474	0.3471	0.3677	0.4477	0.4687	0.5187	0.5396	0.4798	0.5057	0.5372	0.5270	0.5058	0.5466	0.5763	0.5650	0.5131	0.5066	0.4675	0.5327	0.5498	0.5633	0.5594	0.5888	0.6085	0.6276	0.6238	0.6386	0.6075	0.5931	0.5533	0.5203	0.4825	0.4261	0.4198	0.4436
28	0.3899	0.3845	0.3113	0.3996	0.4000	0.4344	0.4170	0.4401	0.5273	0.5288	0.5208	0.5317	0.5895	0.6547	0.7100	0.7184	0.6998	0.7046	0.6055	0.5709	0.5496	0.5389	0.5143	0.5306	0.5738	0.5883	0.5422	0.5647	0.5985	0.5929	0.5483	0.5370	0.4934	0.4005	0.3588	0.4017
29	0.3870	0.4000	0.3434	0.3932	0.4300	0.4031	0.4248	0.5035	0.6158	0.6812	0.6078	0.5906	0.6816	0.6880	0.6593	0.6251	0.6142	0.6259	0.6210	0.6851	0.6801	0.6454	0.6111	0.5900	0.6309	0.7033	0.7374	0.7861	0.7266	0.6560	0.5931	0.5819	0.5459	0.4419	0.3864	0.3780
30	0.4029	0.3715	0.2964	0.3296	0.3405	0.3850	0.3778	0.4232	0.4835	0.4936	0.5770	0.7072	0.7694	0.8370	0.9060	0.9059	0.8216	0.8233	0.7619	0.7649	0.7516	0.6729	0.6534	0.5953	0.4439	0.4558	0.4718	0.4907	0.4629	0.4916	0.4987	0.4931	0.4617	0.4588	0.4348	0.4278
31	0.5578	0.4974	0.5349	0.5779	0.5713	0.5207	0.4877	0.4202	0.3381	0.3872	0.3840	0.3420	0.3510	0.3368	0.3828	0.4196	0.4185	0.3874	0.5022	0.6199	0.7276	0.8083	0.8429	0.7934	0.6341	0.6273	0.5398	0.4793	0.4341	0.4536	0.5027	0.5668	0.6017	0.6334	0.6318	0.6052
32	0.5817	0.5114	0.5296	0.5497	0.5688	0.5356	0.5404	0.5111	0.4562	0.5319	0.5582	0.4994	0.4433	0.3696	0.3870	0.3708	0.3308	0.3378	0.3857	0.4177	0.4190	0.5171	0.5734	0.5675	0.6040	0.6340	0.6755	0.6610	0.6305	0.6196	0.6458	0.6266	0.6662	0.7190	0.6757	0.6688
33	0.6298	0.4464	0.3816	0.4357	0.3880	0.3109	0.2825	0.2922	0.4135	0.5206	0.5354	0.5144	0.5727	0.5687	0.7148	0.7292	0.7105	0.6664	0.6717	0.7701	0.8474	0.8244	0.7786	0.7160	0.5793	0.6186	0.6367	0.6296	0.5764	0.5851	0.6078	0.7681	0.7939	0.8766	0.7970	0.7214
34	0.3836	0.3052	0.2608	0.3053	0.2958	0.3100	0.3170	0.3584	0.4695	0.5036	0.5501	0.5768	0.6344	0.6374	0.7609	0.8350	0.8346	0.8643	0.7913	0.7805	0.6483	0.5775	0.5904	0.5241	0.3942	0.4001	0.4415	0.4892	0.5144	0.4756	0.4091	0.4491	0.4665	0.4624	0.4214	0.4014
35	0.3932	0.3621	0.4708	0.5495	0.5845	0.5053	0.4866	0.4302	0.5316	0.5723	0.5375	0.5478	0.5806	0.5718	0.5698	0.6916	0.7844	0.9247	0.9418	1.0130	1.0099	0.9617	0.9435	0.8032	0.6668	0.7373	0.7632	0.7772	0.7196	0.6321	0.5319	0.4835	0.5158	0.5270	0.4365	0.4081
36	0.3809	0.4345	0.4922	0.5226	0.5575	0.5178	0.5558	0.5712	0.6845	0.6947	0.6692	0.6485	0.5910	0.5826	0.6290	0.6238	0.5874	0.5528	0.5265	0.5640	0.6057	0.6618	0.6404	0.5367	0.4965	0.5437	0.5730	0.5714	0.5748	0.6630	0.5373	0.5064	0.4996	0.4386	0.3830	0.3637
37	0.4906	0.4129	0.4119	0.5053	0.5325	0.4890	0.4970	0.4983	0.6426	0.6699	0.6742	0.6703	0.6684	0.6879	0.7315	0.7597	0.7544	0.7486	0.7002	0.6610	0.5835	0.5222	0.5095	0.5409	0.4482	0.5008	0.5087	0.4976	0.4970	0.5952	0.5033	0.5052	0.5196	0.4577	0.4376	0.4924
38	0.5487	0.4407	0.3851	0.4391	0.4914	0.4923	0.4994	0.4418	0.4698	0.5151	0.5161	0.5060	0.4842	0.5066	0.5409	0.6005	0.5446	0.5771	0.5313	0.5689	0.5334	0.4943	0.4426	0.3453	0.3401	0.4055	0.4008	0.4473	0.4513	0.4324	0.4811	0.5176	0.5130	0.4993	0.4662	0.5312
39	0.4693	0.4458	0.4795	0.5528	0.5684	0.4905	0.4852	0.4846	0.4525	0.4127	0.3934	0.4341	0.3960	0.4838	0.5027	0.5197	0.4497	0.4944	0.4502	0.5610	0.6713	0.7387	0.7578	0.6092	0.4550	0.4745	0.4748	0.5488	0.5516	0.6141	0.6399	0.6116	0.5687	0.5779	0.5624	0.5517
40	0.3466	0.3681	0.3735	0.3459	0.3523	0.3638	0.3845	0.3431	0.3539	0.3348	0.3735	0.3683	0.3438	0.3698	0.5175	0.6371	0.6983	0.7535	0.7312	0.6681	0.5103	0.5788	0.6853	0.6259	0.4589	0.4514	0.4443	0.4769	0.4977	0.4677	0.5151	0.5309	0.5263	0.4911	0.4678	0.3986
41	0.3793	0.3772	0.3834	0.3209	0.2838	0.3027	0.3556	0.3552	0.4021	0.4097	0.4523	0.4738	0.4521	0.4253	0.5060	0.5536	0.5672	0.6341	0.6269	0.6695	0.6756	0.6404	0.5252	0.4736	0.3975	0.4144	0.4321	0.4647	0.4957	0.4963	0.5445	0.5255	0.5228	0.5433	0.5256	0.4711
42	0.3279	0.4149	0.4138	0.4502	0.4513	0.4608	0.4992	0.4528	0.4539	0.4263	0.3814	0.3980	0.4462	0.5068	0.5544	0.6087	0.6120	0.6488	0.6369	0.6732	0.6685	0.6411	0.6114	0.5557	0.4076	0.3604	0.3955	0.4244	0.4133	0.4122	0.3611	0.4081	0.3943	0.4042	0.3173	0.3162
43	0.4075	0.5168	0.5236	0.5434	0.5683	0.4814	0.4492	0.4640	0.5003	0.5392	0.5868	0.6146	0.6077	0.5916	0.5965	0.6715	0.6768	0.7263	0.6980	0.7231	0.6628	0.6348	0.6110	0.5884	0.4987	0.5064	0.4640	0.5070	0.5152	0.5624	0.6521	0.6779	0.6551	0.6450	0.5253	0.4093
44	0.3405	0.4013	0.3858	0.3859	0.3872	0.3618	0.3453	0.3924	0.4359	0.4301	0.4582	0.4593	0.4904	0.4926	0.5095	0.5097	0.5202	0.5810	0.5924	0.6387	0.6801	0.7340	0.6943	0.6378	0.5580	0.6208	0.5397	0.5492	0.6169	0.6435	0.6757	0.6618	0.6303	0.5662	0.4392	0.3661
45	0.4592	0.4914	0.4700	0.4874	0.4609	0.4302	0.3512	0.3550	0.3312	0.3593	0.3864	0.4345	0.4920	0.5204	0.5550	0.5486	0.5245	0.5208	0.5424	0.5948	0.6202	0.5757	0.5669	0.5493	0.5942	0.6779	0.6089	0.5364	0.6319	0.6844	0.7510	0.6400	0.6264	0.5882	0.5535	0.5281
46	0.5567	0.6027	0.6776	0.7027	0.6978	0.6283	0.5906	0.5447	0.4932	0.4938	0.4397	0.4203	0.3585	0.3177	0.3695	0.4076	0.4125	0.4011	0.4489	0.4494	0.4040	0.4233	0.3993	0.3606	0.2956	0.3020	0.3200	0.3062	0.3404	0.4735	0.5463	0.6829	0.7792	0.7621	0.7108	0.6869
47	0.6208	0.5543	0.6059	0.6553	0.6767	0.6180	0.6249	0.5960	0.5041	0.4895	0.4319	0.4199	0.4100	0.4375	0.4720	0.5251	0.4879	0.5073	0.4914	0.4574	0.4170	0.3880	0.3687	0.3714	0.3733	0.4052	0.4045	0.4375	0.5320	0.6616	0.7479	0.8347	0.8797	0.8639	0.7951	0.7302
48	0.5864	0.4260	0.3986	0.4274	0.4387	0.4000	0.3925	0.3751	0.3763	0.3968	0.4064	0.4553	0.5149	0.5309	0.5653	0.5417	0.4633	0.5011	0.5062	0.3895	0.2803	0.3249	0.4337	0.4862	0.3805	0.3344	0.3019	0.3362	0.4365	0.6027	0.6880	0.8129	0.8189	0.8285	0.7534	0.7153
49	0.3688	0.3685	0.4377	0.4988	0.5314	0.4684	0.4684	0.4431	0.4682	0.4727	0.4667	0.4256	0.3712	0.4384	0.6089	0.6876	0.6818	0.6413	0.5608	0.3950	0.3085	0.3405	0.4580	0.4271	0.3326	0.2769	0.2825	0.3192	0.3674	0.4100	0.4389	0.4625	0.4752	0.4676	0.4412	0.4151
50	0.3047	0.3131	0.3551	0.3376	0.3464	0.3408	0.3986	0.3981	0.4007	0.4513	0.4919	0.4627	0.3745	0.2859	0.3175	0.3560	0.4671	0.5485	0.4971	0.6055	0.5526	0.5175	0.4284	0.4348	0.4337	0.4565	0.4544	0.4415	0.4067	0.4283	0.4014	0.3916	0.4064	0.4094	0.3409	0.3211
51	0.4055	0.3979	0.4694	0.5781	0.5859	0.6580	0.6463	0.6798	0.7450	0.7864	0.7898	0.7537	0.6824	0.6234	0.6087	0.5891	0.5655	0.5144	0.4285	0.3996	0.4351	0.4771	0.4651	0.3816	0.3174	0.3049	0.3090	0.3775	0.4494	0.5051	0.5234	0.5678	0.5779	0.5592	0.4829	0.4562
52	0.5623	0.4734	0.5036	0.5552	0.5370	0.5555	0.5625	0.5683	0.5874	0.6247	0.6271	0.6528	0.6669	0.6613	0.6203	0.4854	0.3515	0.3122	0.3151	0.2900	0.2551	0.3124	0.3377	0.3243	0.2909	0.3425	0.3883	0.4003	0.3771	0.4526	0.5382	0.5782	0.6091	0.6508	0.6484	0.6414
53	0.5676	0.6970	0.7623	0.8238	0.8421	0.7698	0.7179	0.6739	0.5456	0.4489	0.4297	0.5780	0.6327	0.7329	0.8534	0.9063	0.9051	0.9689	0.9578	1.0139	0.9759	0.9011	0.8803	0.8248	0.5523	0.4275	0.3577	0.4050	0.4431	0.4102	0.3586	0.4517	0.5088	0.5695	0.5922	0.6277
54	0.2881	0.3285	0.3793	0.4100	0.4985	0.6497	0.6899	0.6102	0.6055	0.5681	0.5024	0.4582	0.4655	0.5060	0.5452	0.5392	0.5545	0.5695	0.5432	0.5738	0.5967	0.5849	0.6067	0.5764	0.3722	0.3258	0.3273	0.3204	0.3076	0.2500	0.2282	0.2628	0.3000	0.3595	0.3811	0.3557
55	0.4382	0.6163	0.7076	0.7884	0.8091	0.7594	0.7683	0.6956	0.5951	0.5669	0.5033	0.4430	0.3435	0.3695	0.3982	0.4675	0.4296	0.4798	0.4950	0.5290	0.5879	0.5957	0.6224	0.6039	0.4819	0.5299	0.5332	0.5795	0.6117	0.5738	0.4061	0.3246	0.2887	0.3657	0.4195	0.4410
56	0.6536	0.4950	0.4373	0.4624	0.4403	0.3237	0.3029	0.3623	0.4239	0.4996	0.5365	0.5803	0.5920	0.5899	0.6024	0.6012	0.5883	0.6205	0.5696	0.5649	0.5108	0.4542	0.4445	0.4168	0.3608	0.4685	0.5632	0.6551	0.7051	0.7643	0.7747	0.8280	0.8474	0.8330	0.7650	0.7633
57	0.6265	0.4699	0.4628	0.5344	0.4712	0.3510	0.2911	0.2958	0.3633	0.4424	0.4561	0.4919	0.4882	0.4846	0.5024	0.5006	0.4584	0.4810	0.4604	0.4167	0.4101	0.4646	0.4711	0.4639	0.3506	0.3453	0.4162	0.4793	0.4963	0.5754	0.5861	0.6087	0.6571	0.7020	0.7608	0.7418
58	0.5615	0.4663	0.4223	0.4549	0.4093	0.3099	0.2900	0.2814	0.3484	0.4036	0.4165	0.4491	0.4670	0.4756	0.5163	0.4658	0.3933	0.3832	0.3290	0.3419	0.3173	0.3134	0.3149	0.3276	0.4338	0.4417	0.4874	0.5287	0.5215	0.5888	0.6000	0.6643	0.6397	0.6492	0.6723	0.6510
59	0.2527	0.2155	0.1910	0.2077	0.2103	0.3976	0.4336	0.3611	0.3226	0.3278	0.2908	0.2258	0.2384	0.2263	0.2693	0.2864	0.3113	0.4022	0.4451	0.5474	0.6084	0.6287	0.6663	0.6215	0.6175	0.6591	0.6658	0.6073	0.5236	0.4625	0.4411	0.4347	0.4267	0.3679	0.2868	0.2874
60	0.2956	0.2423	0.2607	0.3407	0.4416	0.5479	0.5237	0.3783	0.2762	0.2756	0.2680	0.2882	0.3031	0.3544	0.4181	0.4806	0.4765	0.5107	0.5275	0.5351	0.5199	0.5565	0.5622	0.5443	0.6225	0.6718	0.7153	0.7284	0.6809	0.6299	0.5507	0.5016	0.4506	0.3801	0.3625	0.3441

APPENDIX D

APPENDIX D: DIRECTIONAL WEIGHTING

This appendix contains directional weighting charts for each measurement location in each test configuration. They show the percentage of time for which each comfort threshold is exceeded (as per the City of Paramatta DCP wind criteria, presented below for reference).



The wind tunnel measurement data is weighted by the probability of occurrence, which is derived from historical wind data acquired at Sydney International Airport. The chart to the right shows the total percentage of all wind records by direction (solid blue line).

The thresholds defined in the criteria are based on a relatively low frequency of occurrence (0.1%), and so the directional weighting charts in this appendix have been scaled appropriately to show these infrequent events. The radial axes of the subsequent charts are scaled from 0% to 0.5%.

Criteria

The City of Parramatta DCP wind criteria are based on gust wind speeds occurring 0.1% of the time annually.

≤ 10 m/s	Sitting
11 m/s – 13 m/s	Standing
14 m/s – 16 m/s	Walking
17 m/s – 23 m/s	Uncomfortable
> 23 m/s	Unsafe

Configurations

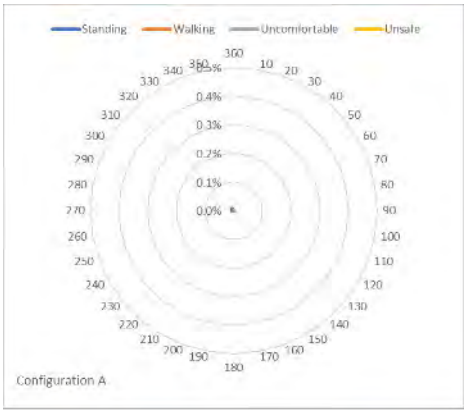
A: Existing site with existing and approved surroundings

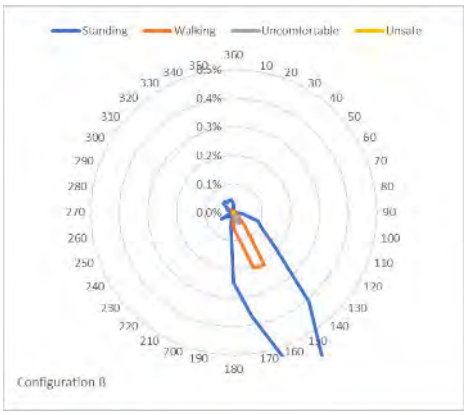
B: Proposed development with existing and approved surroundings

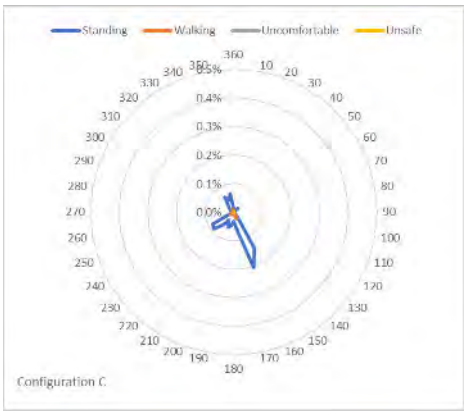
C: Revised proposed development with landscaping features and existing approved surroundings

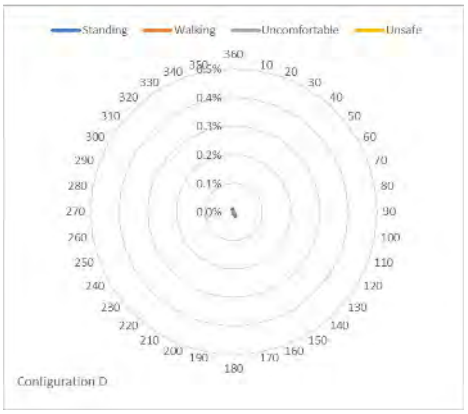
D: Revised proposed development with existing surrounding buildings and wind mitigation measures

Measurement Location:1

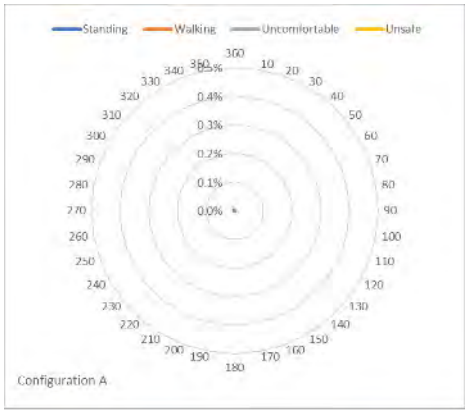


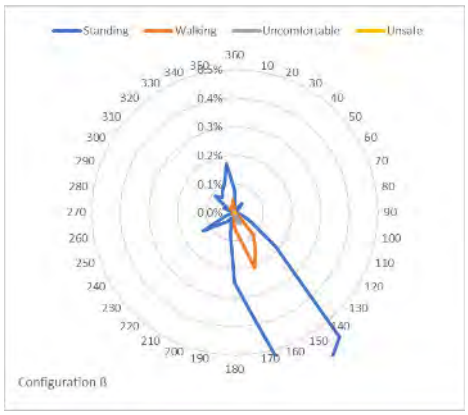


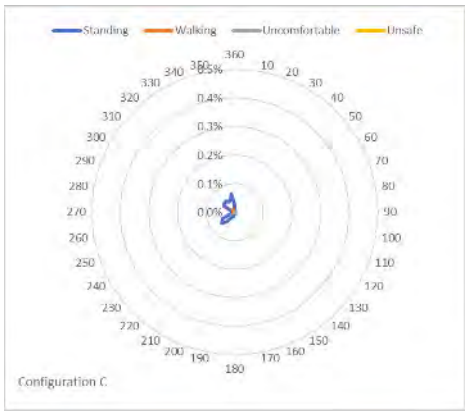


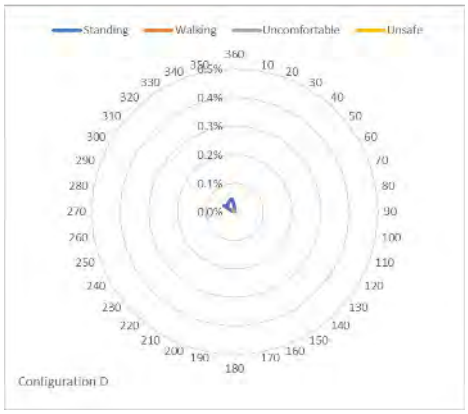


Measurement Location: 2

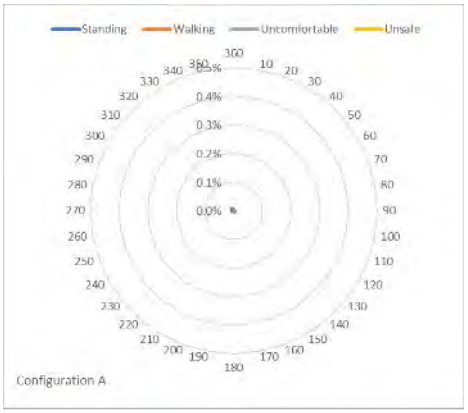


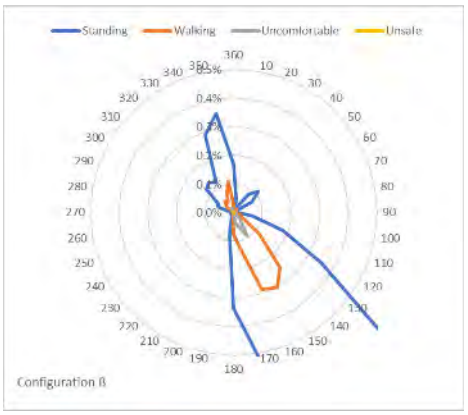


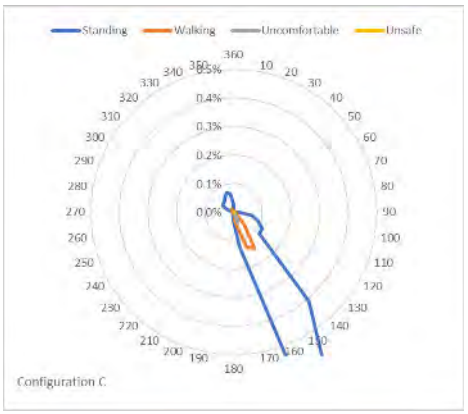


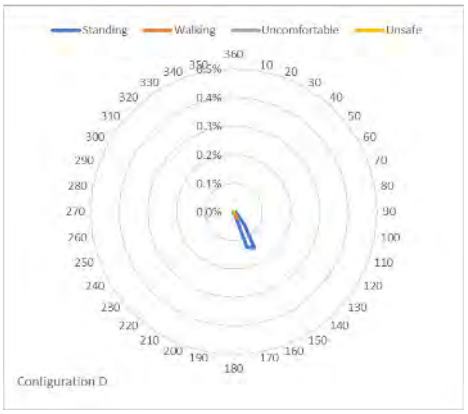


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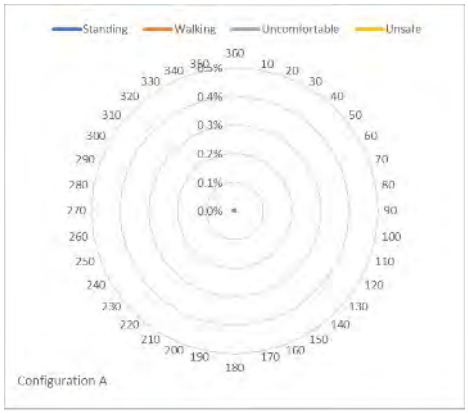


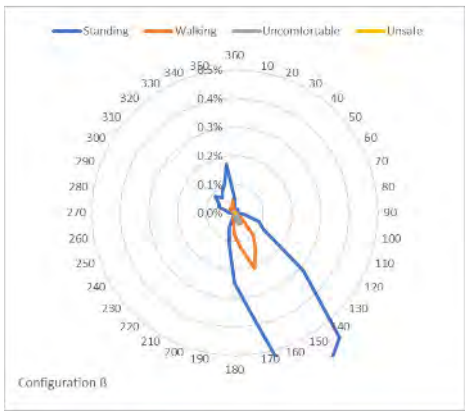


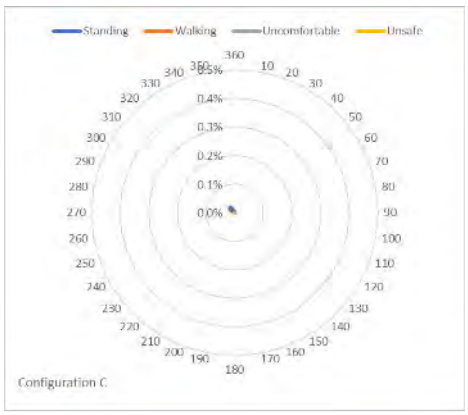


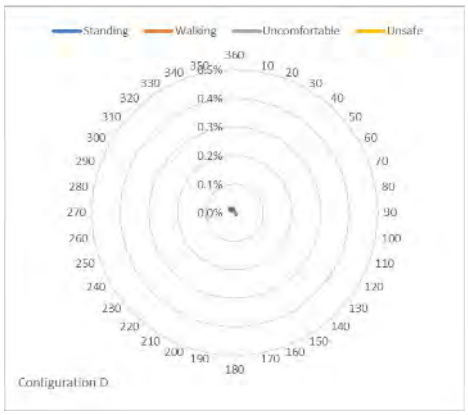


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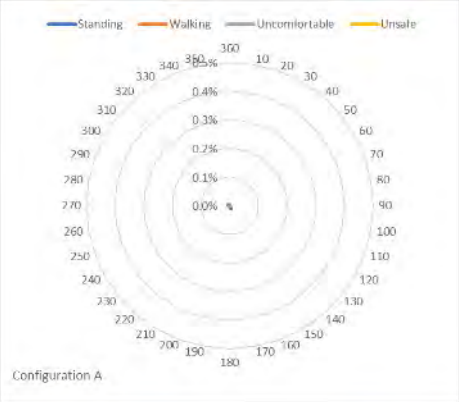


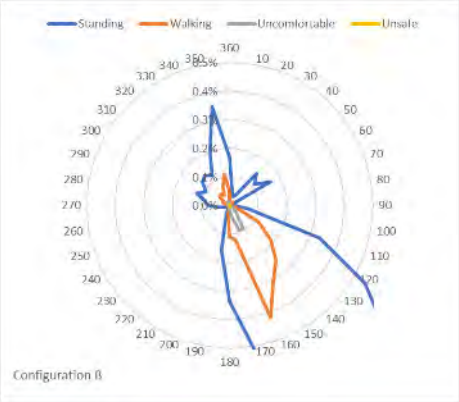


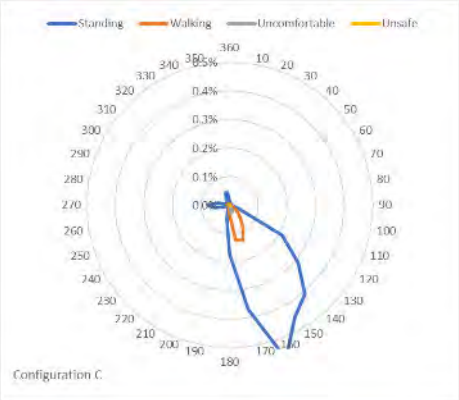


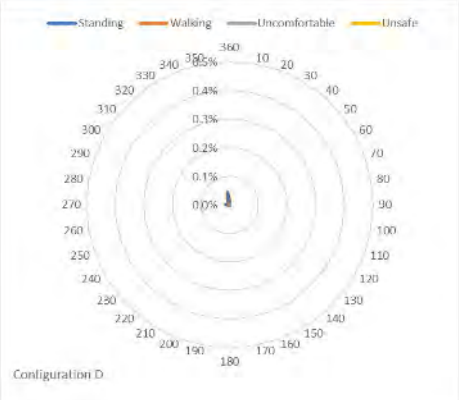


Measurement Location: 5

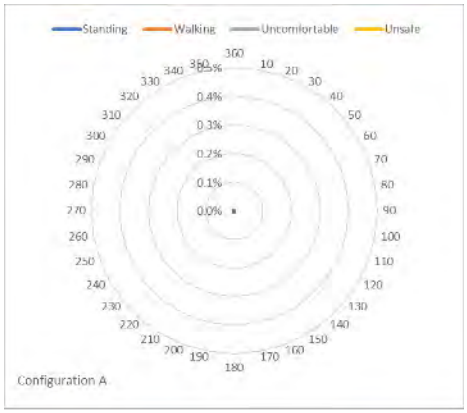


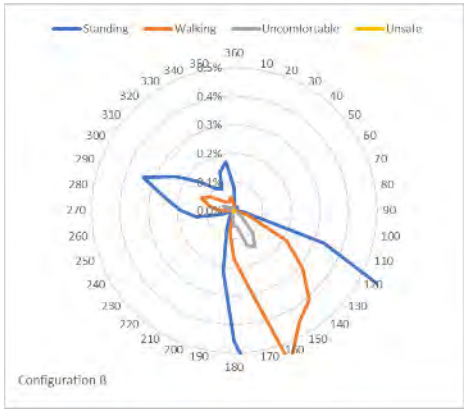


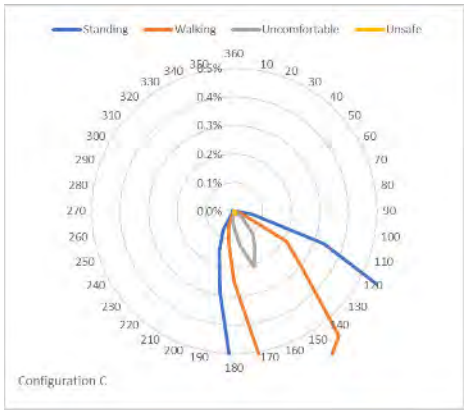


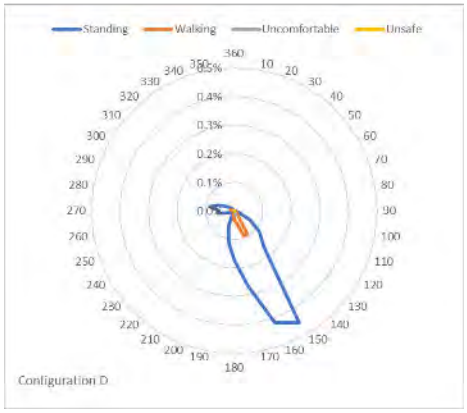


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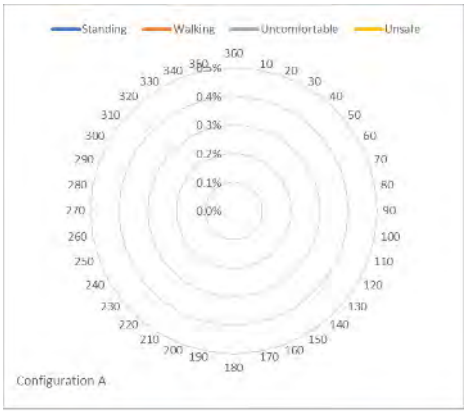


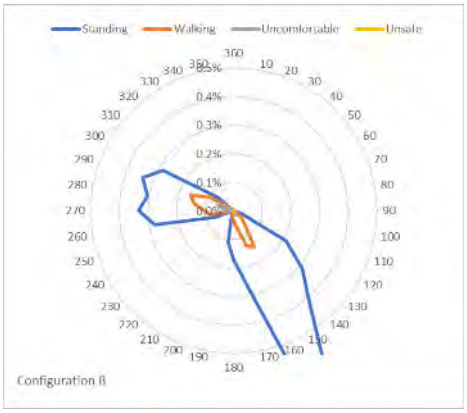


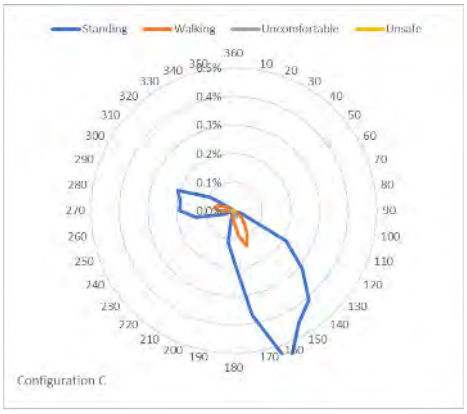


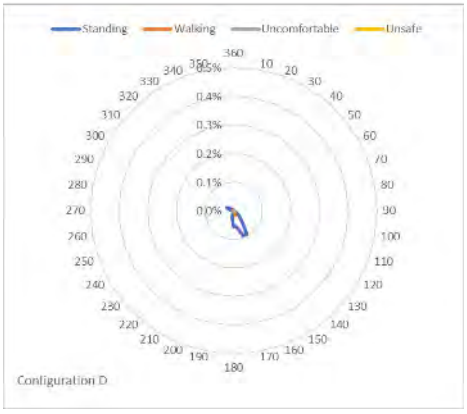


Measurement Location: 7

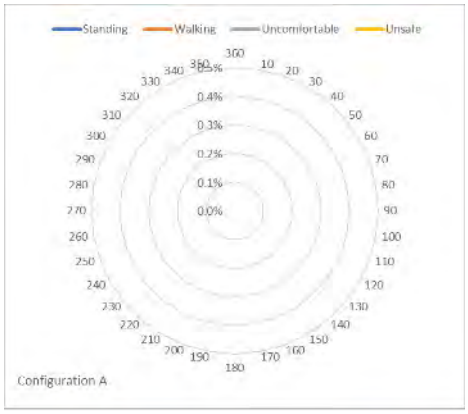


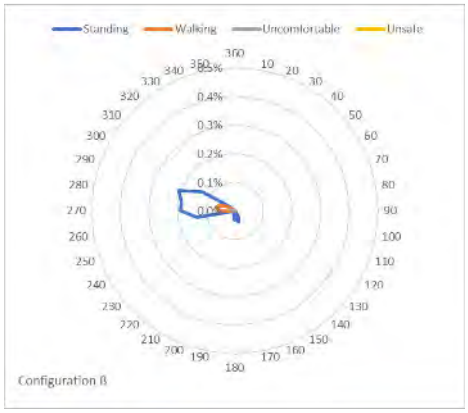


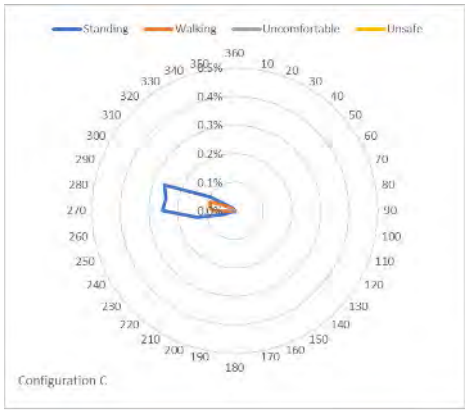


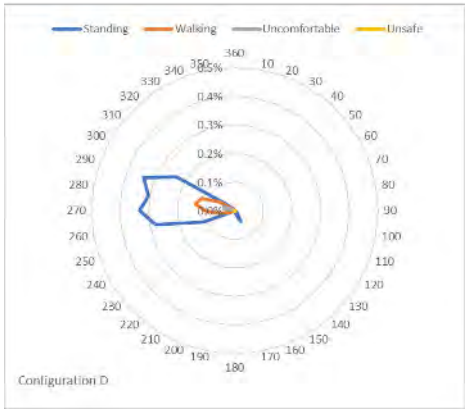


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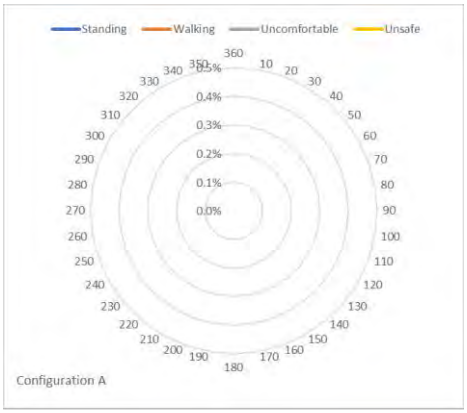


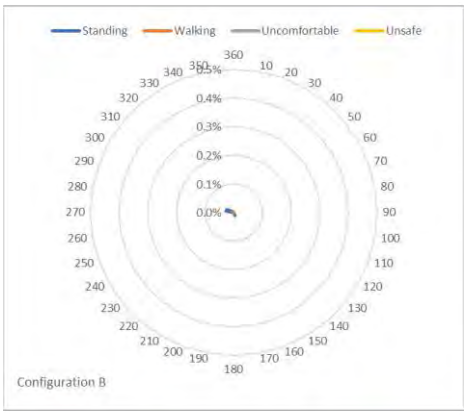


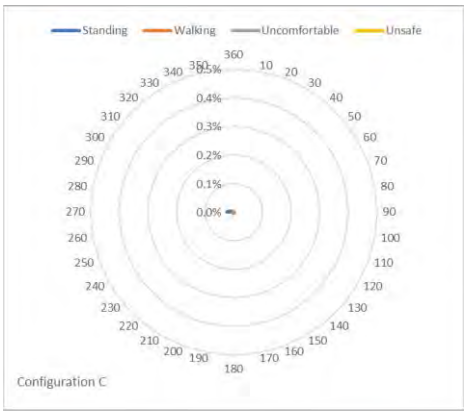


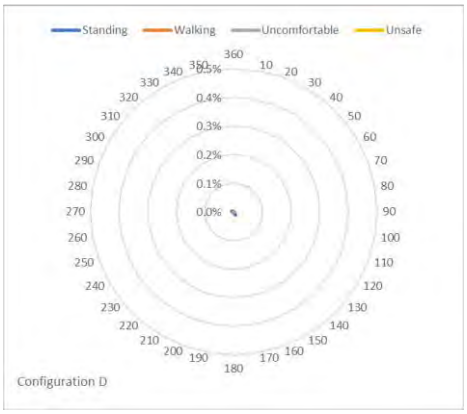


Measurement Location: 10

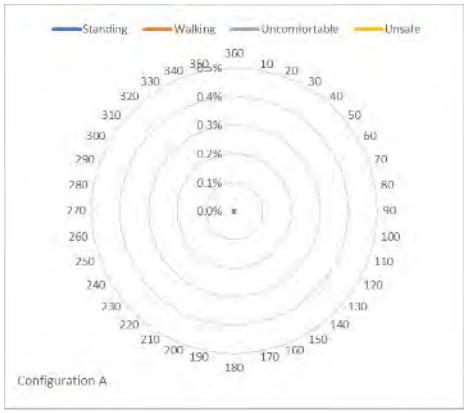


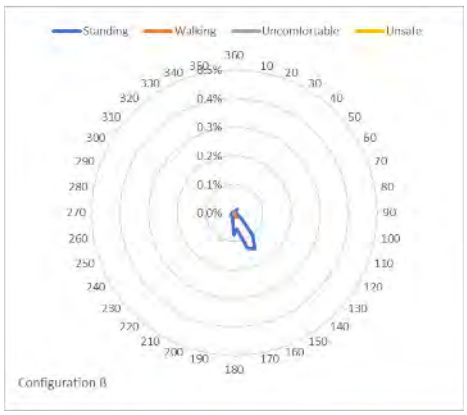


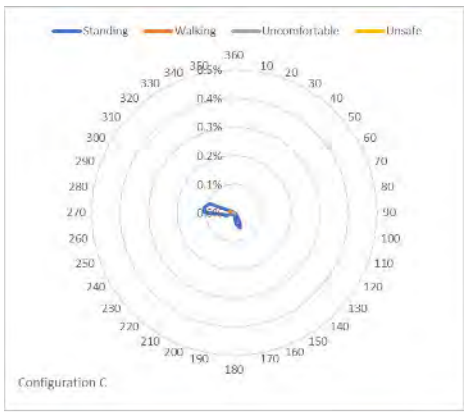


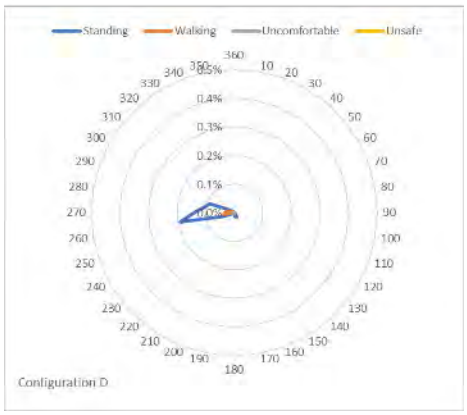


Measurement Location: 11

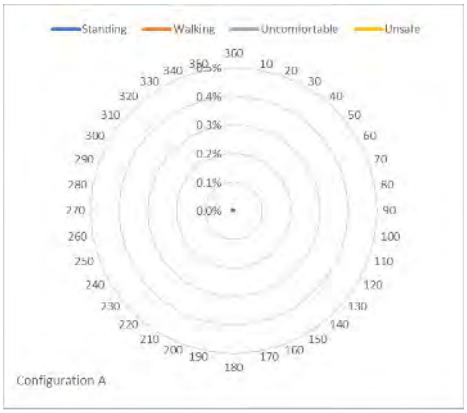


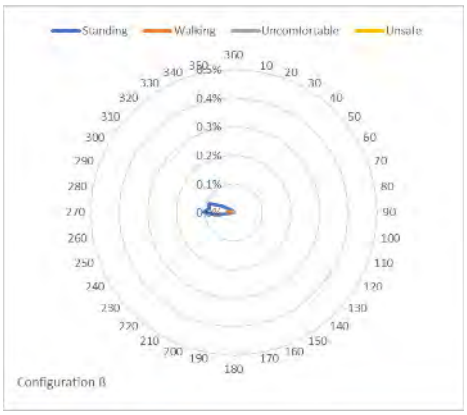


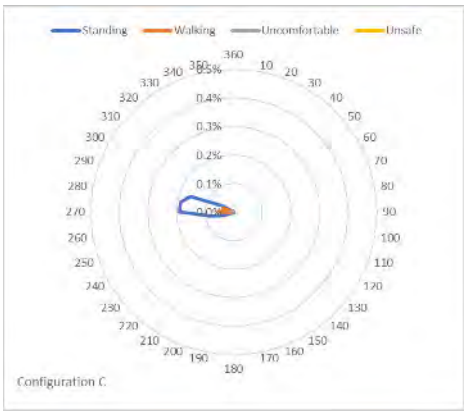


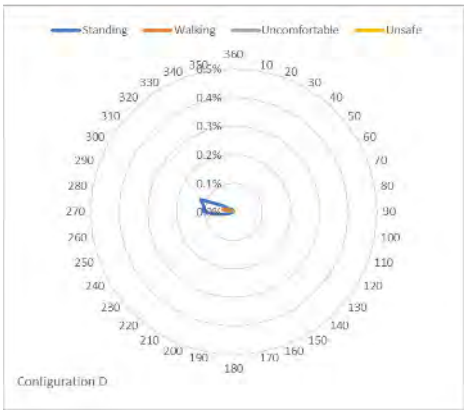


Measurement Location: 12

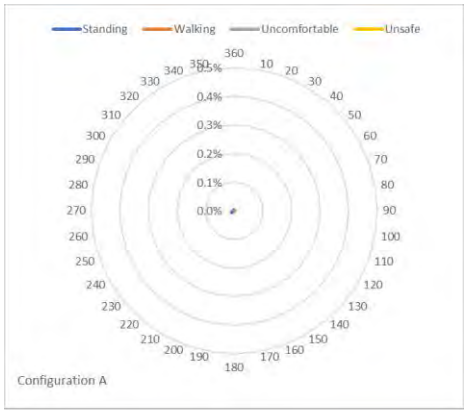


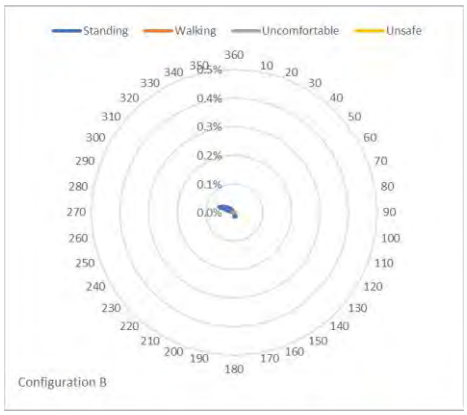


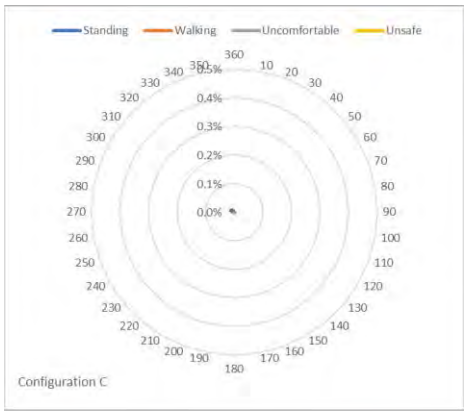


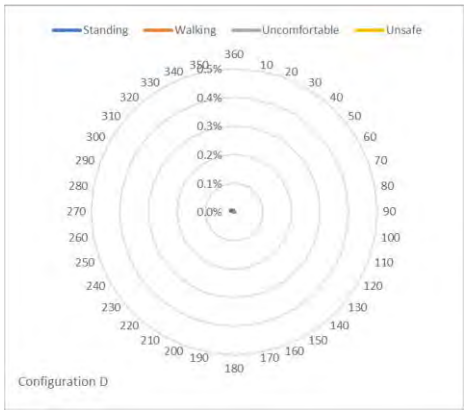


Measurement Location: 13

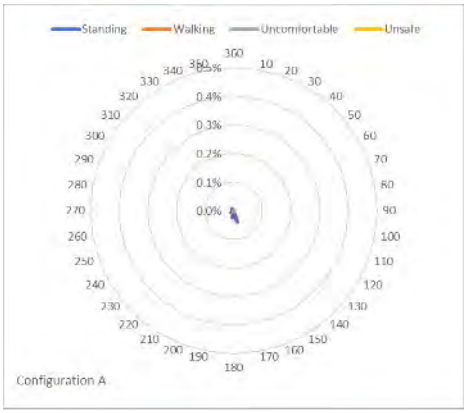


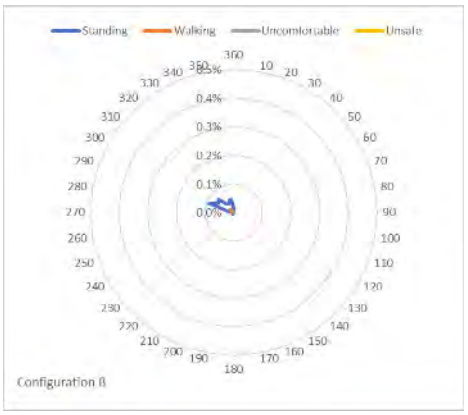


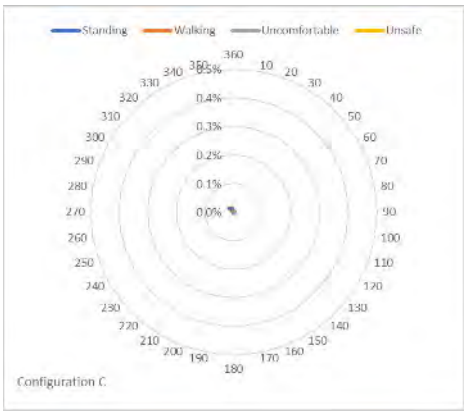


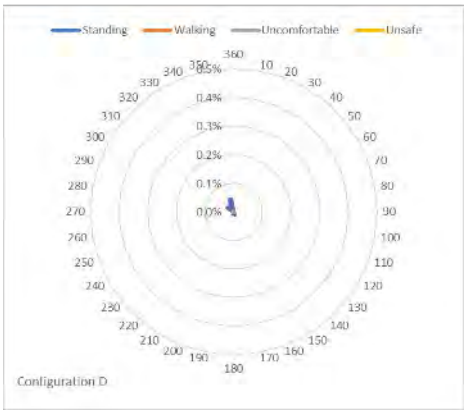


Measurement Location: 14

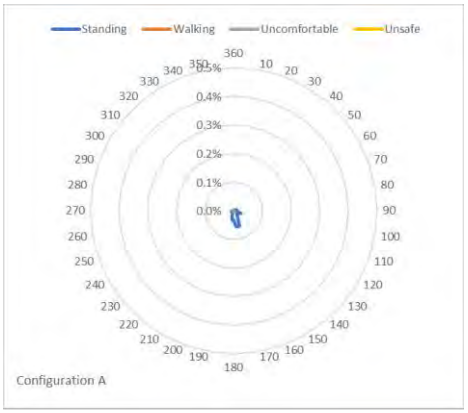


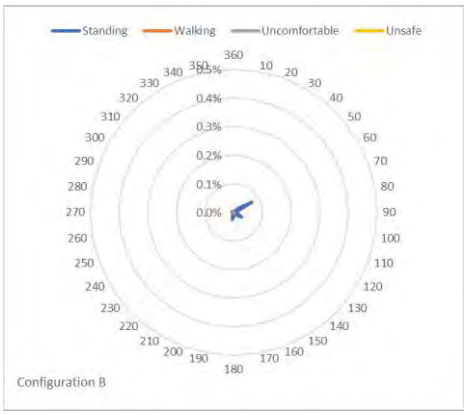


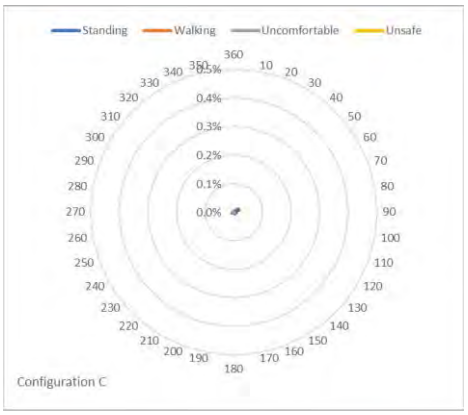


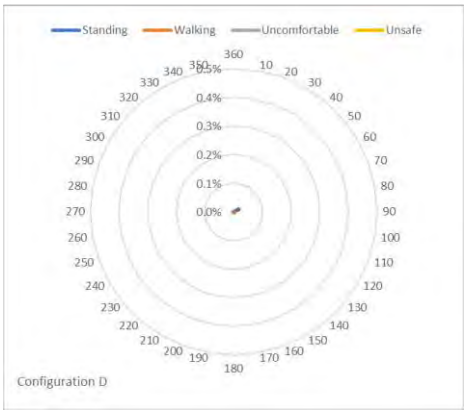


Measurement Location: 15

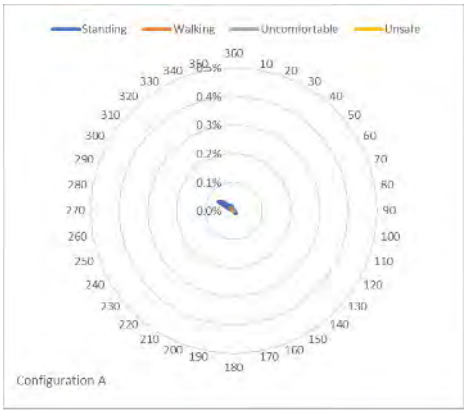


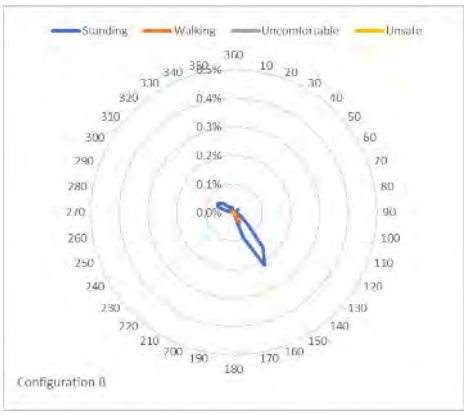


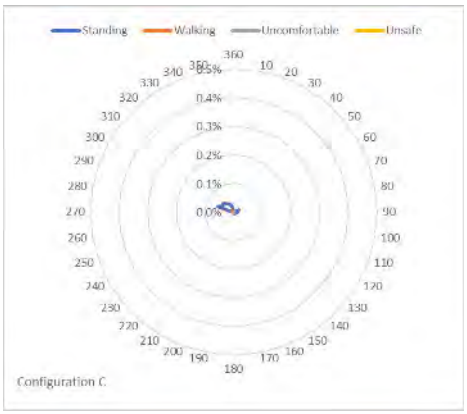


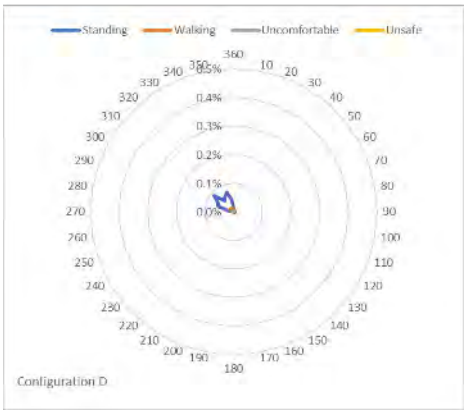


Measurement Location: 16

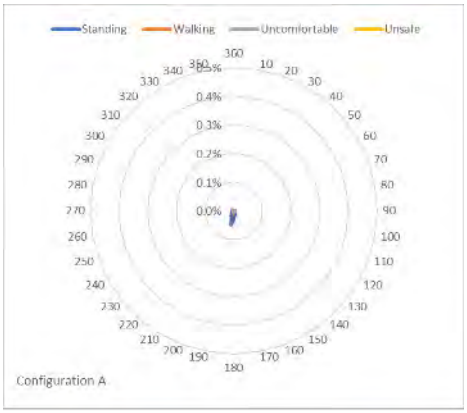


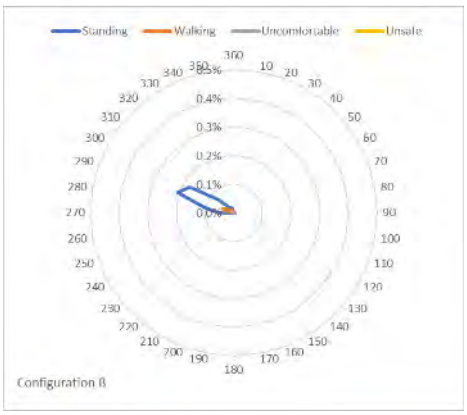


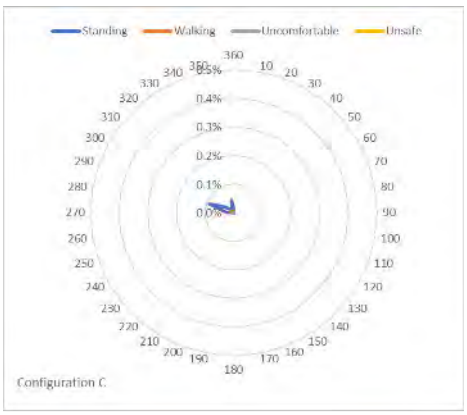


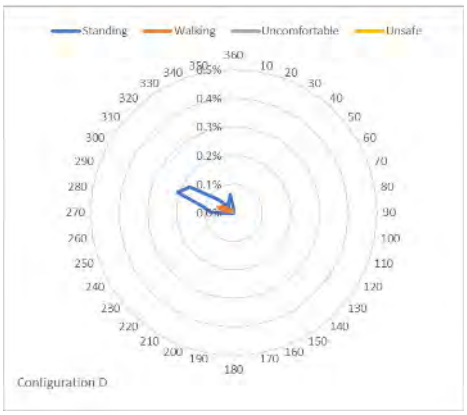


Measurement Location: 17

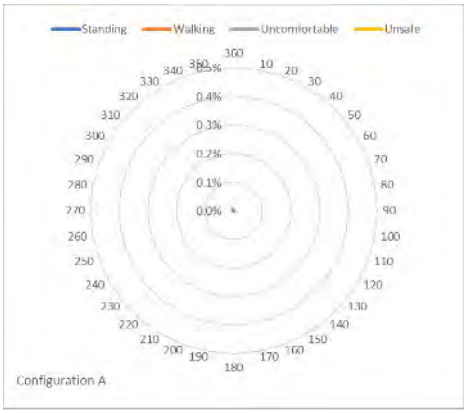


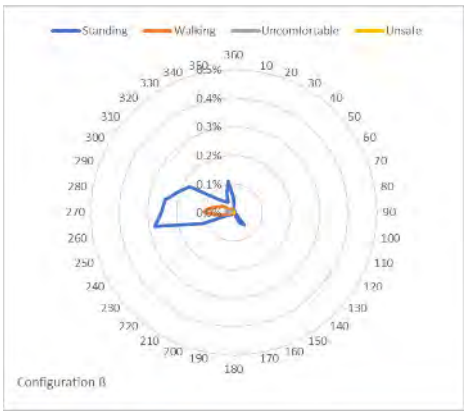


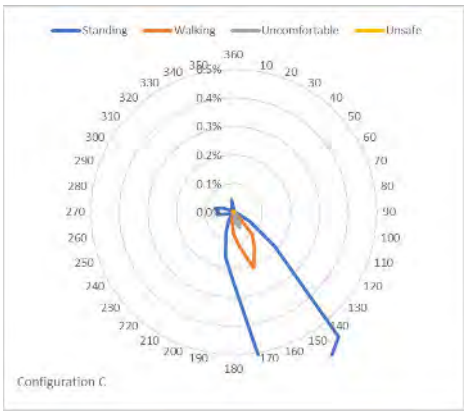


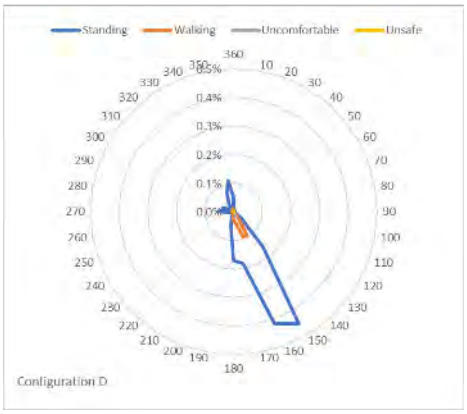


Measurement Location: 18

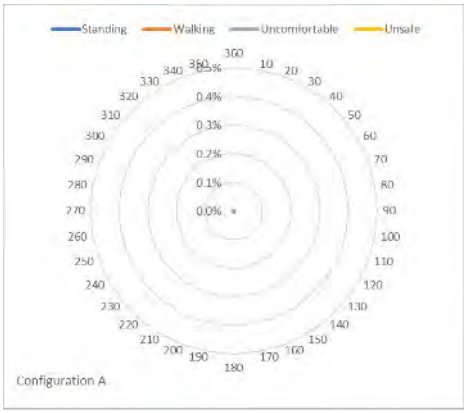


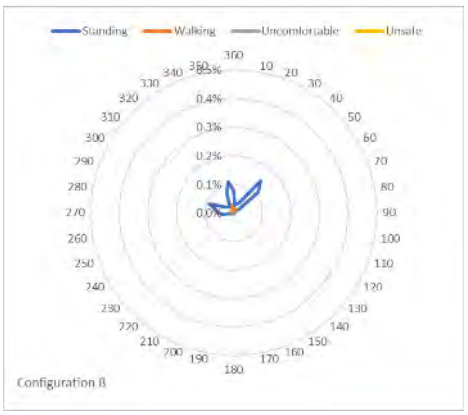


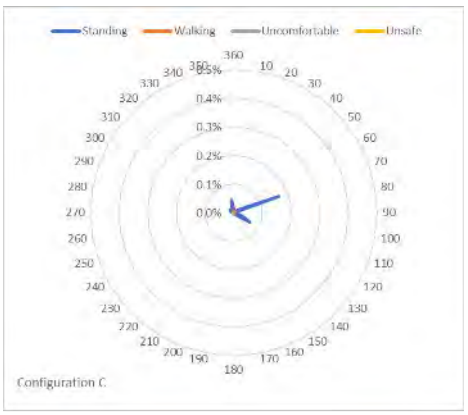


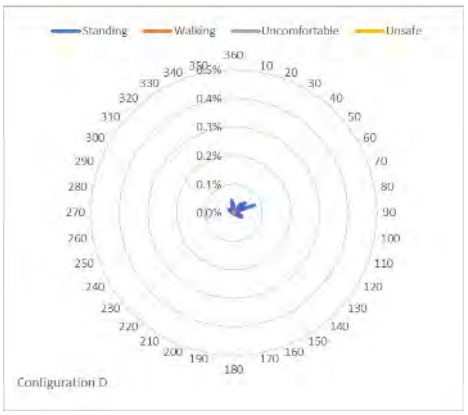


Measurement Location: 19

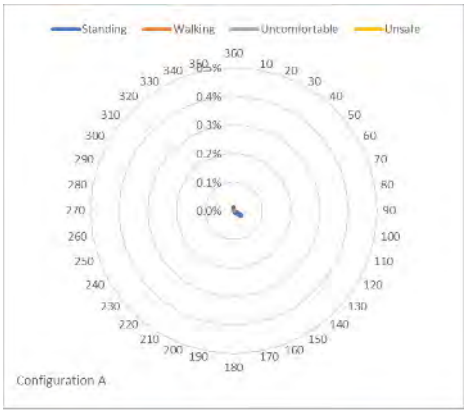


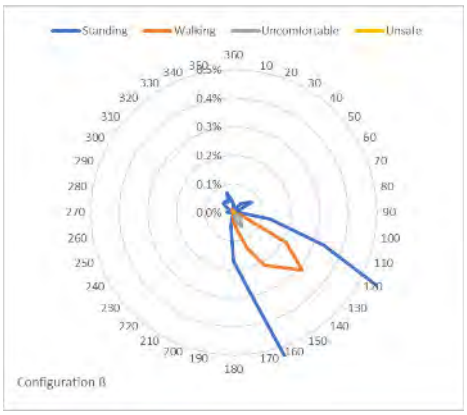


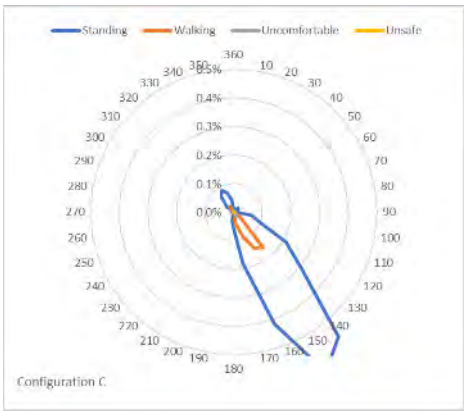


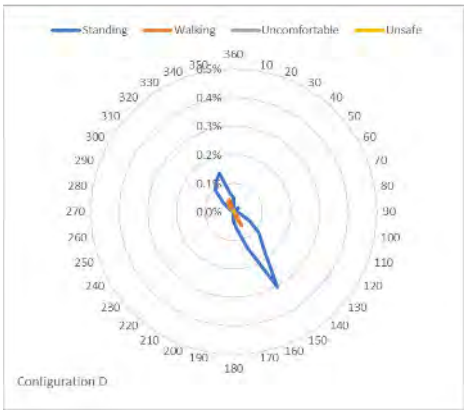


Measurement Location: 20

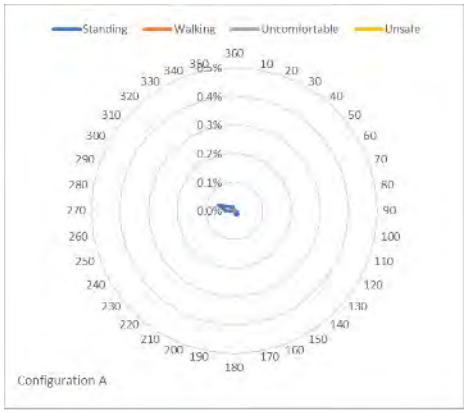


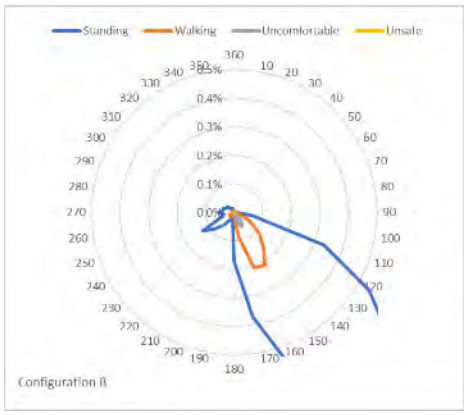


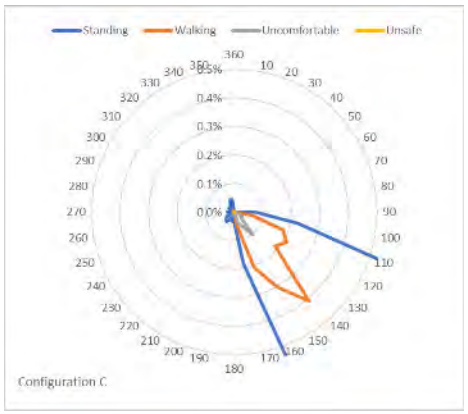


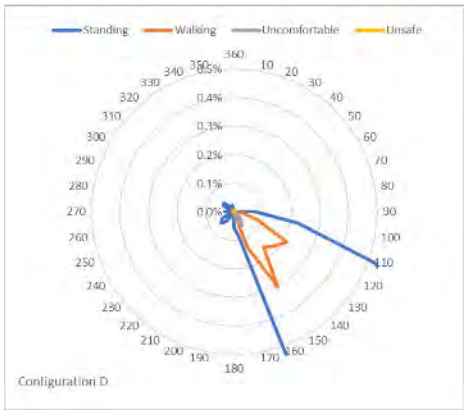


Measurement Location: 21

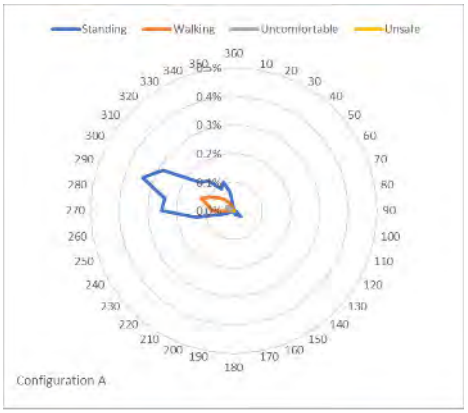


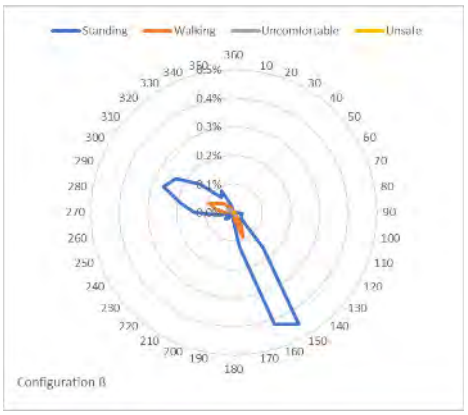


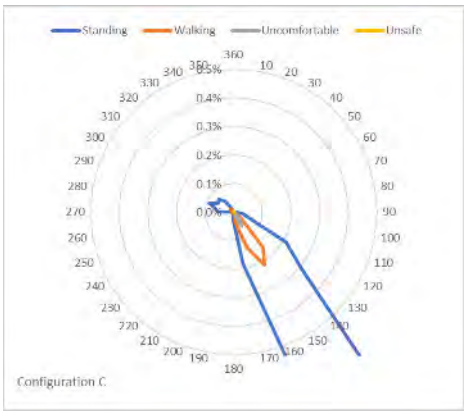


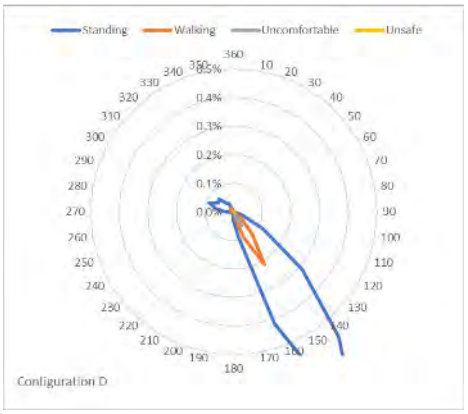


Measurement Location: 22

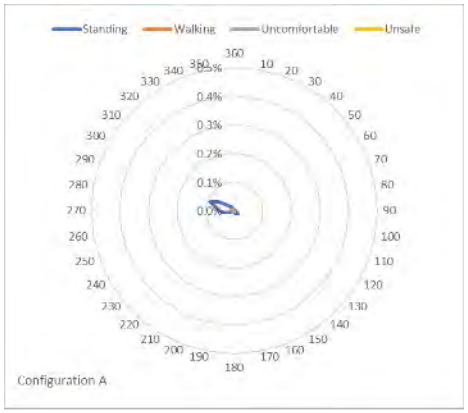


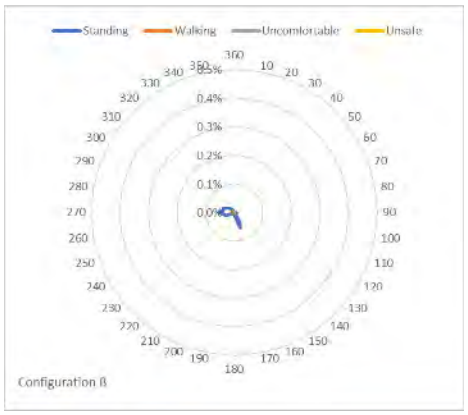


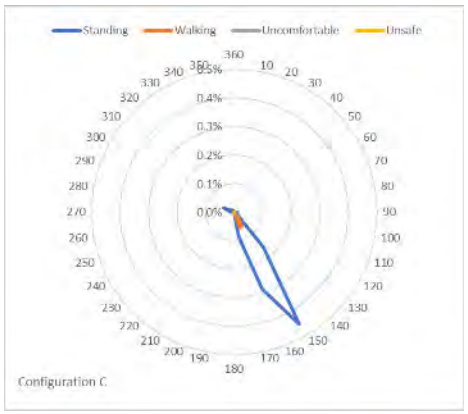


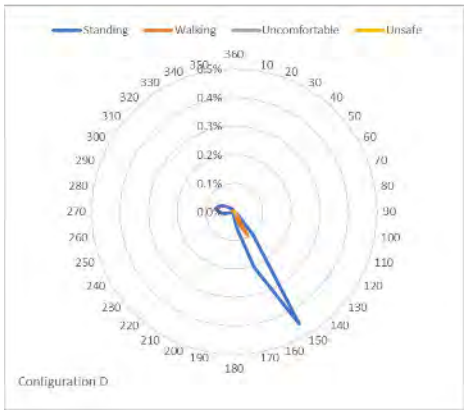


Measurement Location: 23

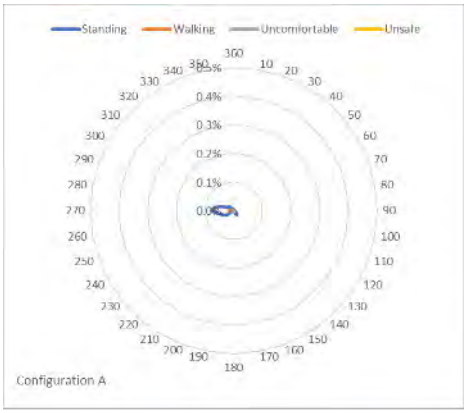


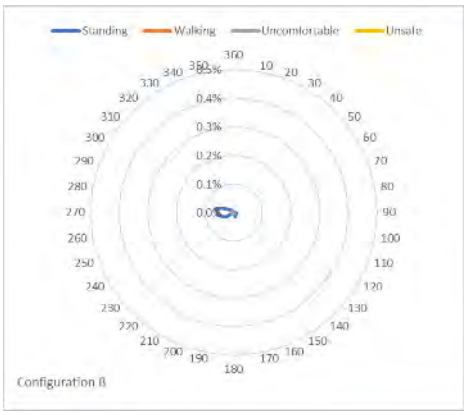


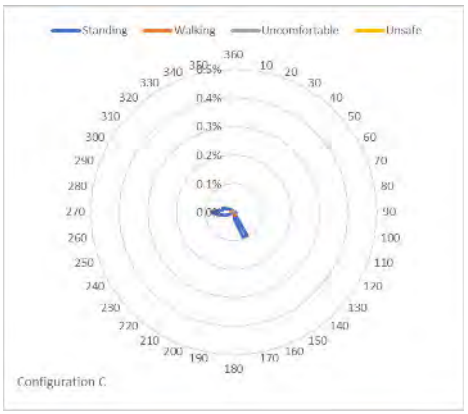


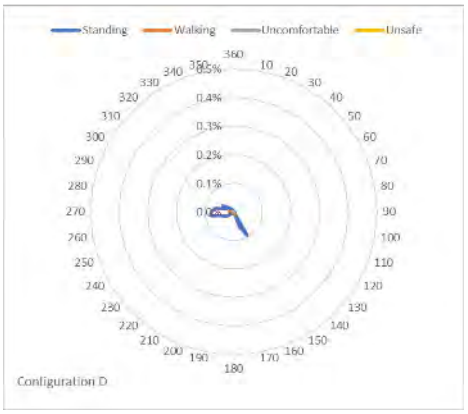


Measurement Location: 24

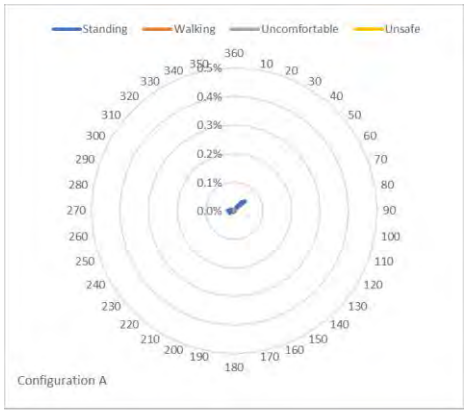


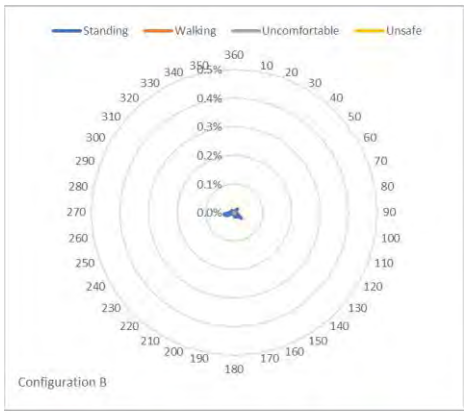


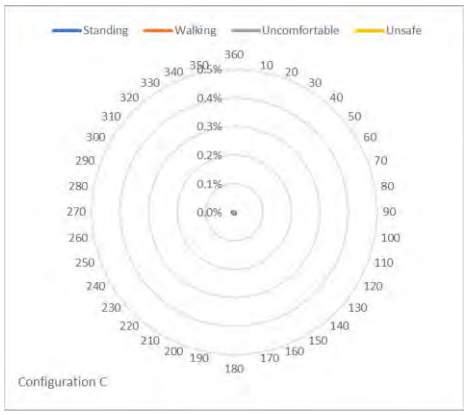


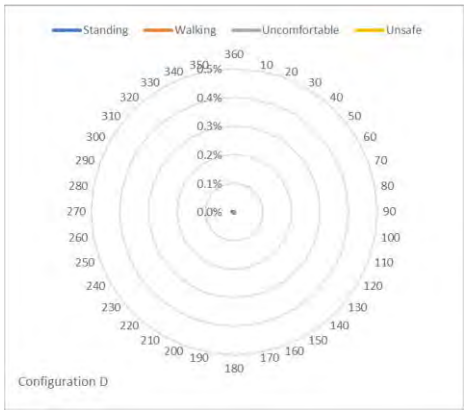


Measurement Location: 25

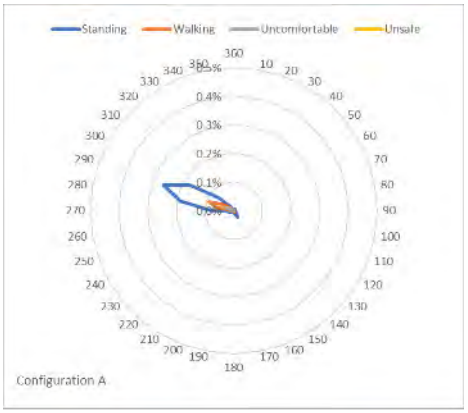


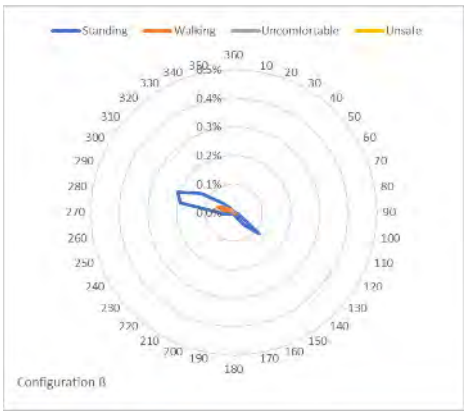


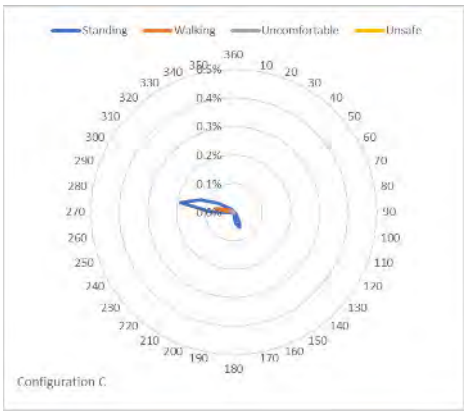


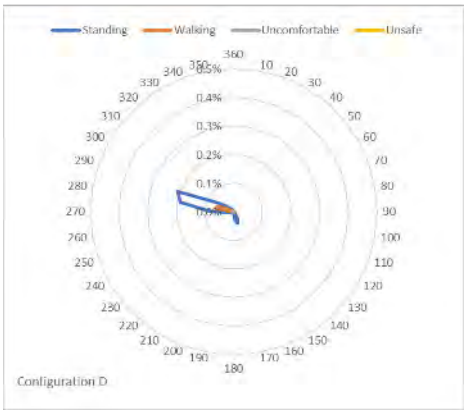


Measurement Location: 26

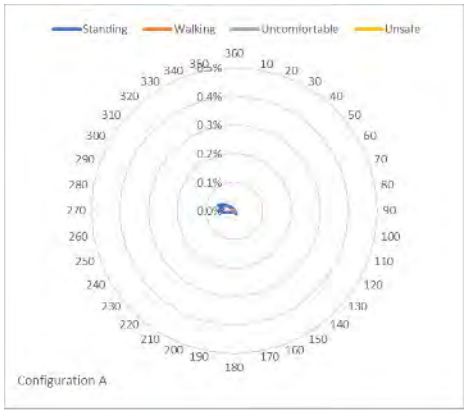


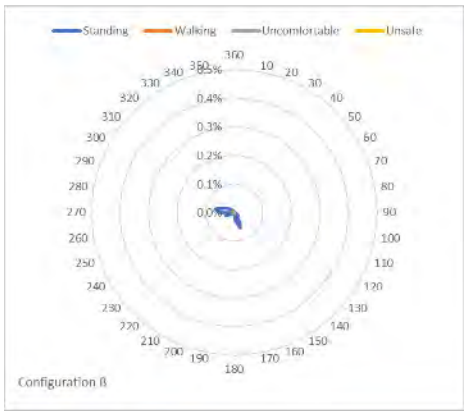


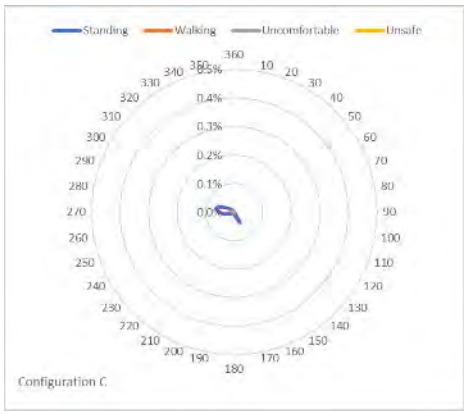


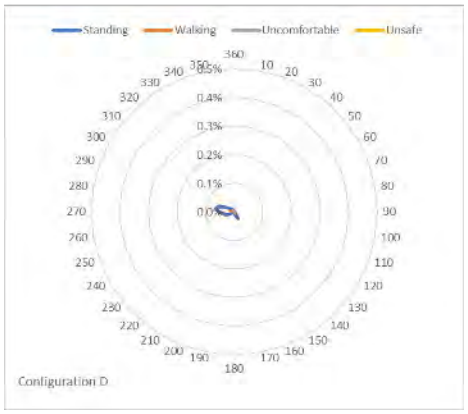


Measurement Location: 27

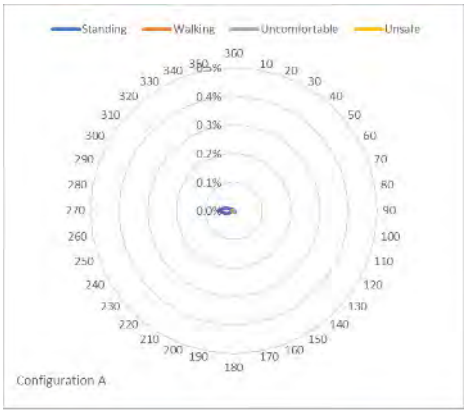


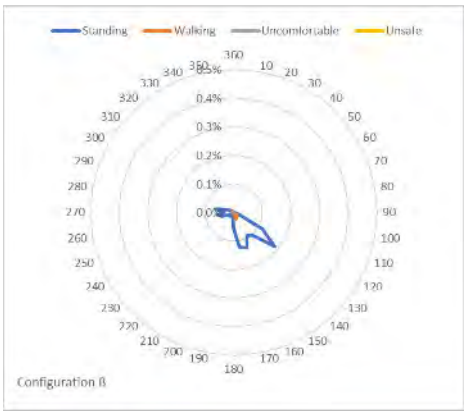


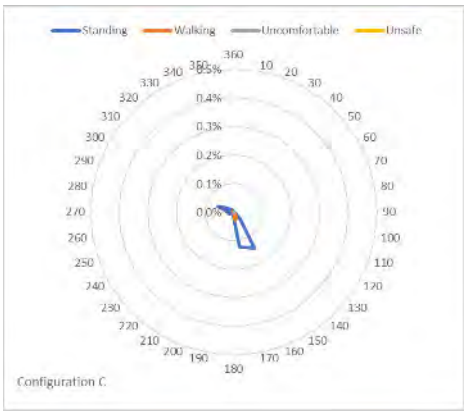


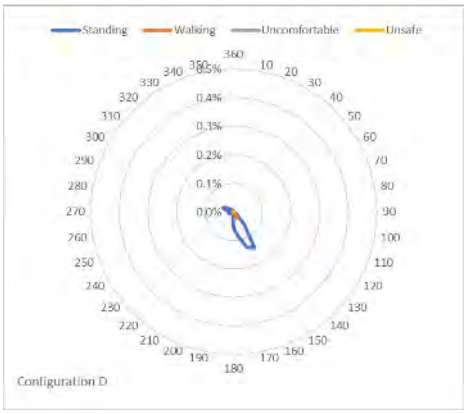


Measurement Location: 28

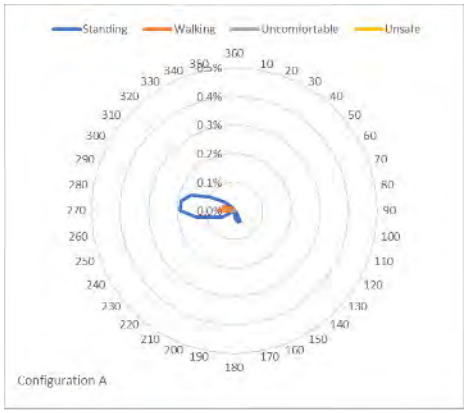


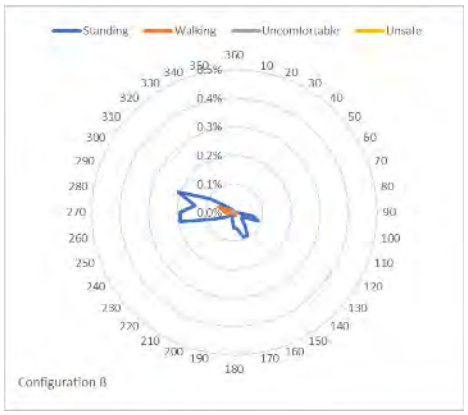


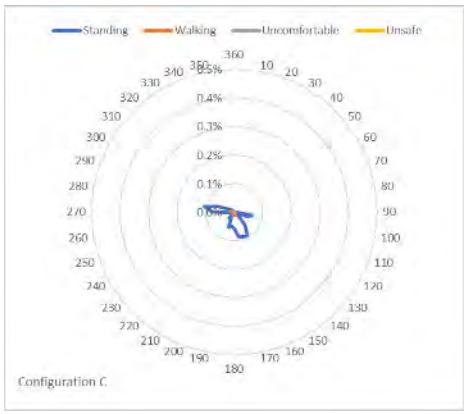


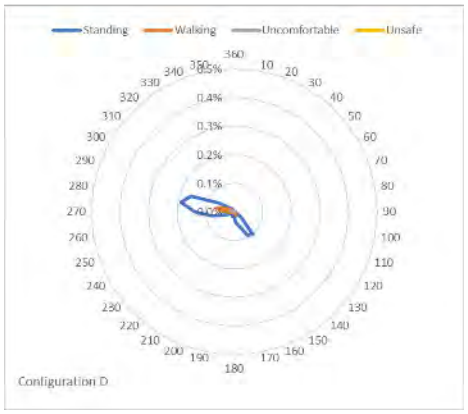


Measurement Location: 29

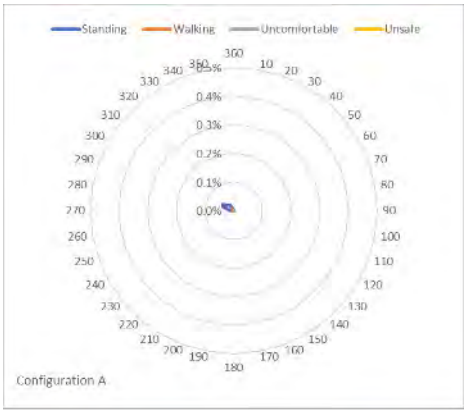


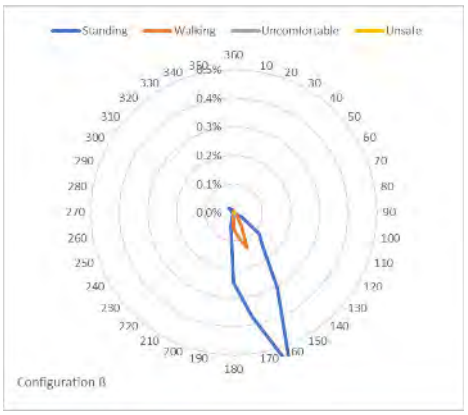


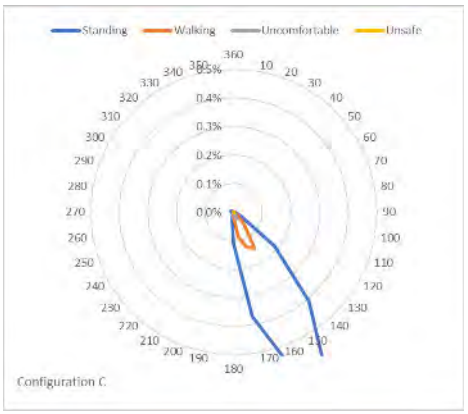


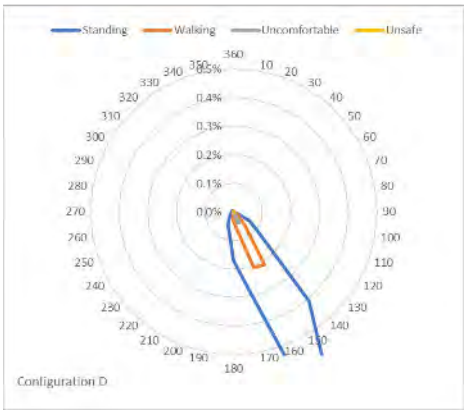


Measurement Location: 30

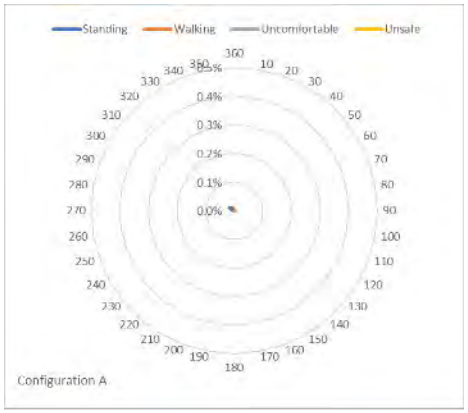


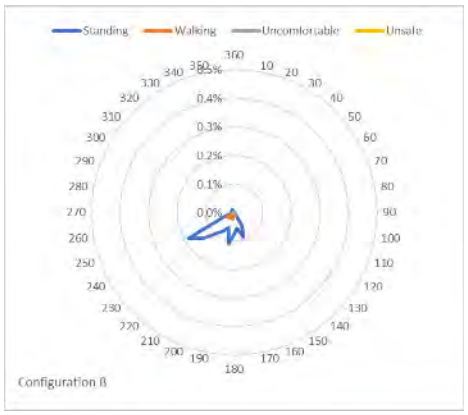


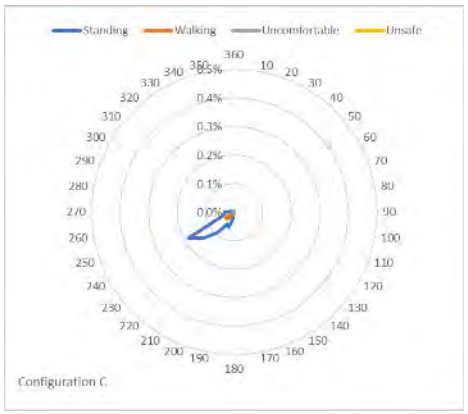


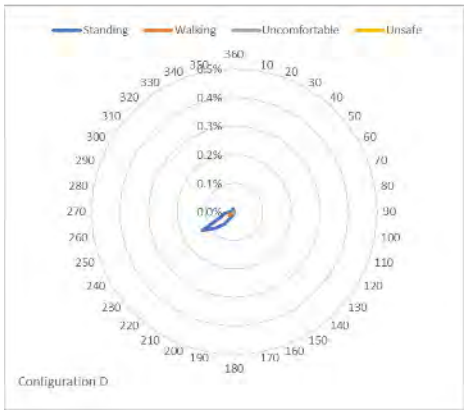


Measurement Location: 31

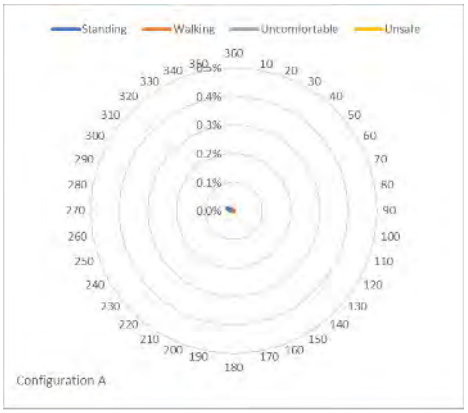


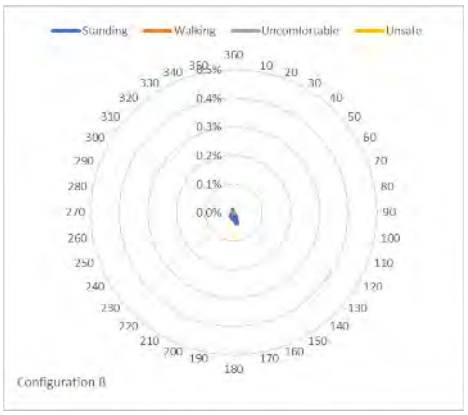


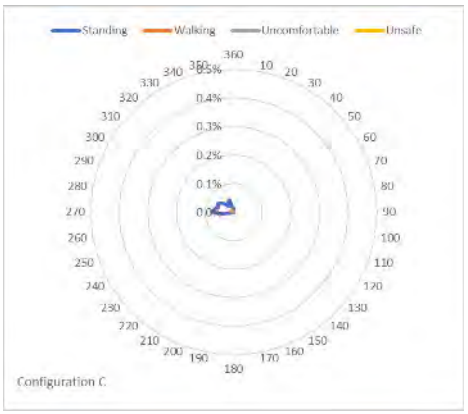


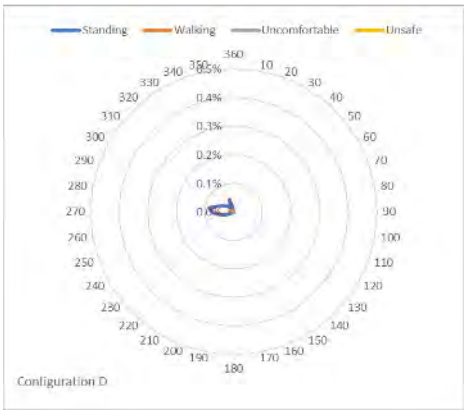


Measurement Location: 32

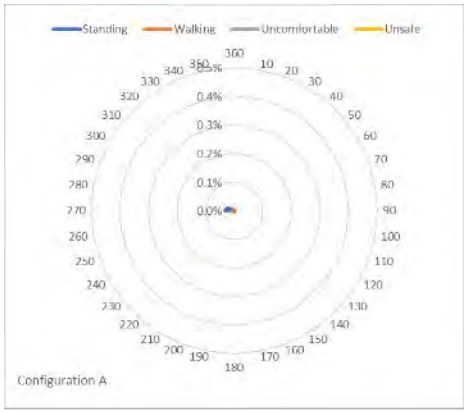


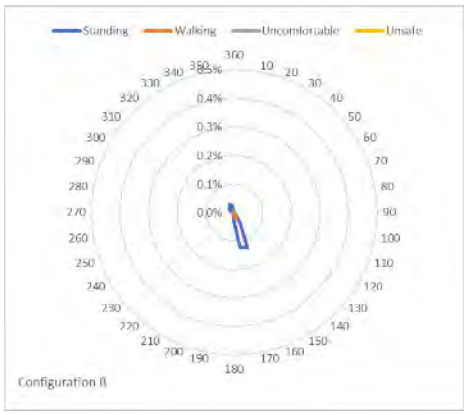


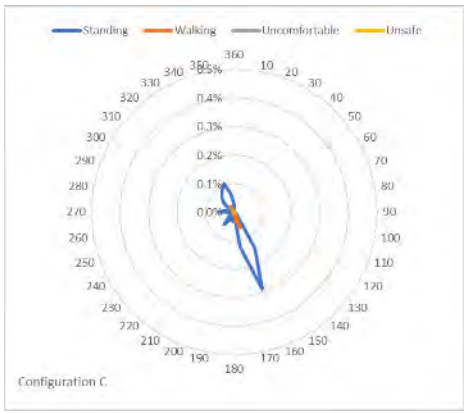


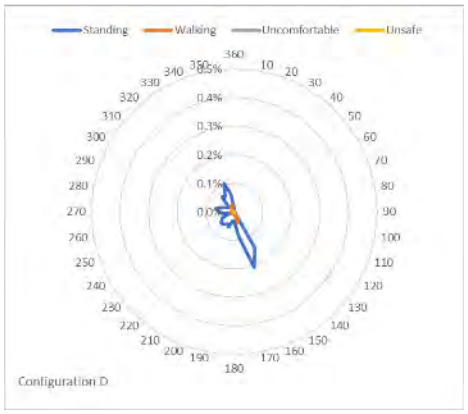


Measurement Location: 33

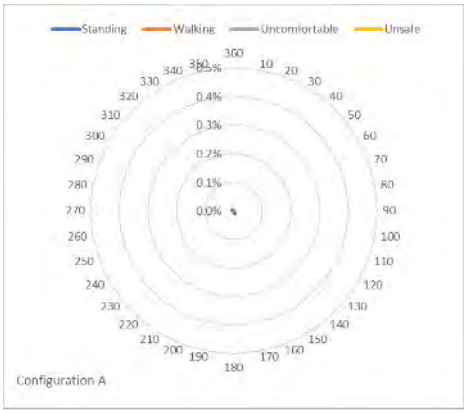


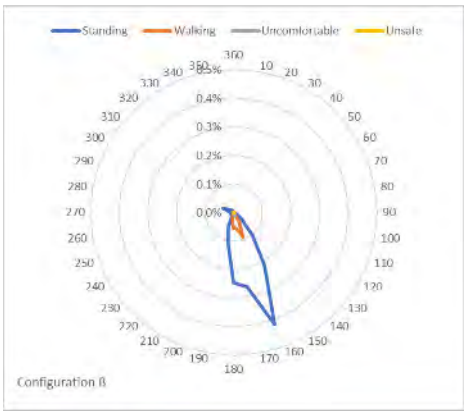


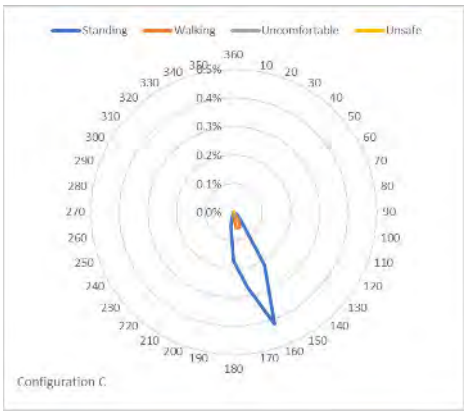


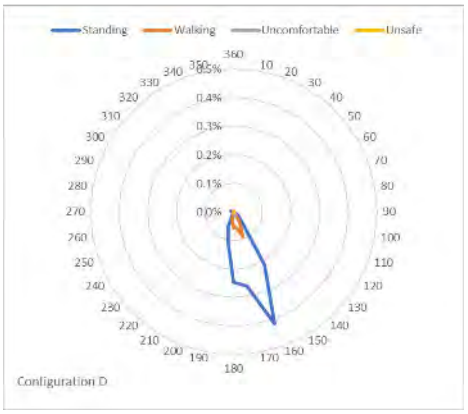


Measurement Location: 34

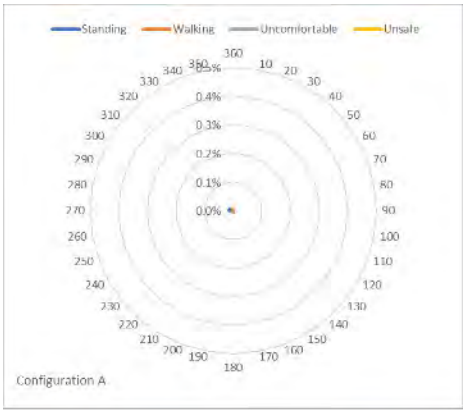


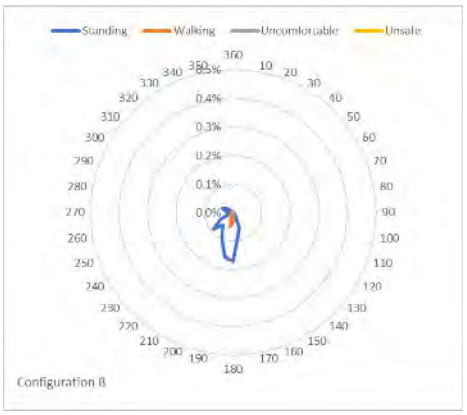


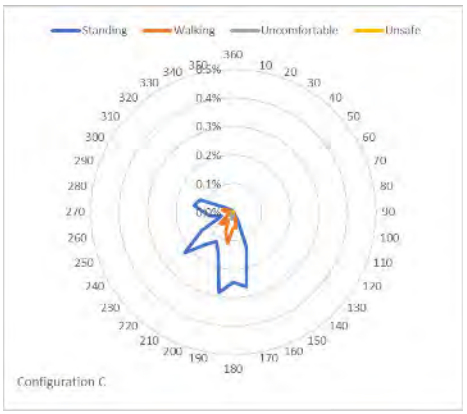


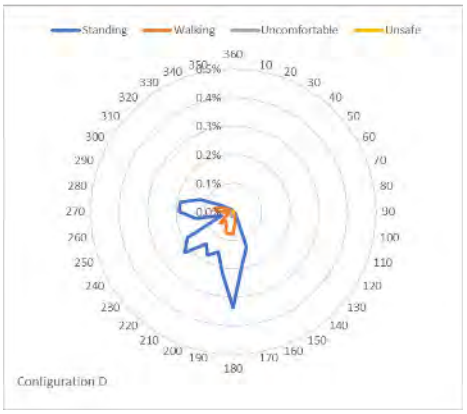


Measurement Location: 35

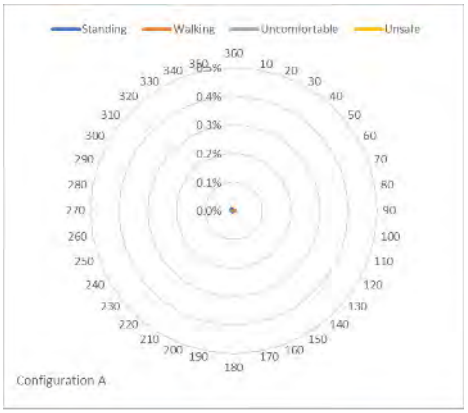


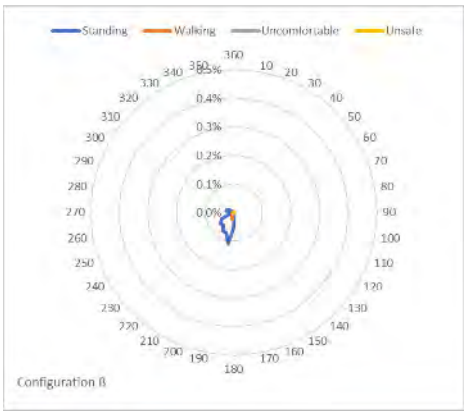


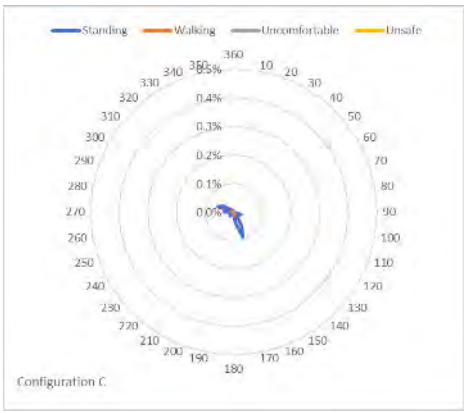


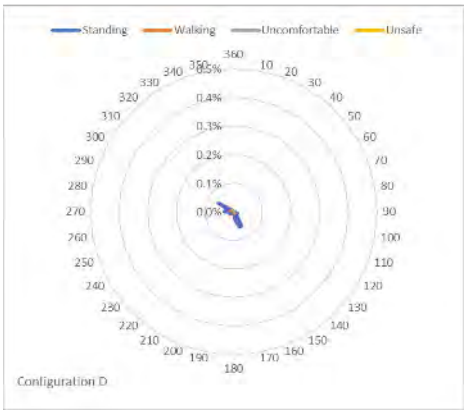


Measurement Location: 36

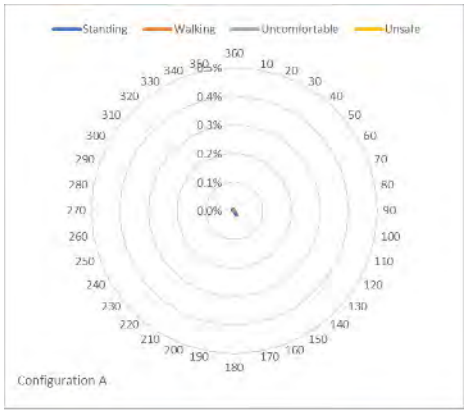


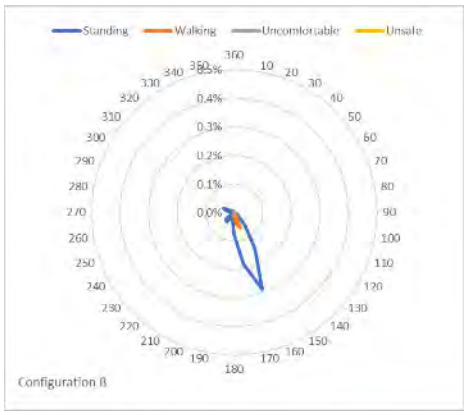


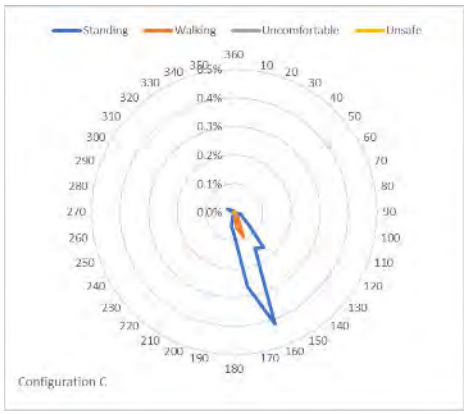


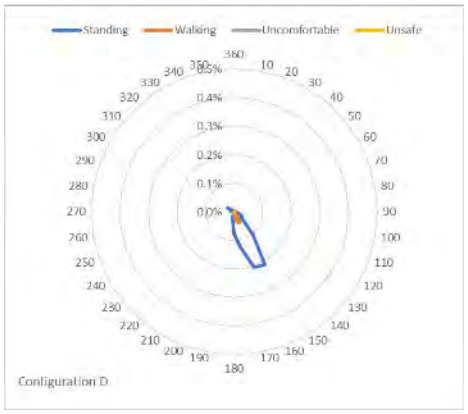


Measurement Location: 37

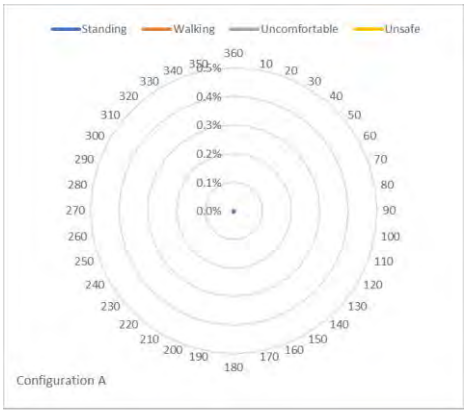


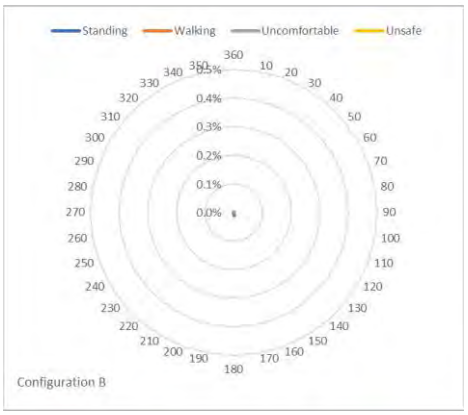


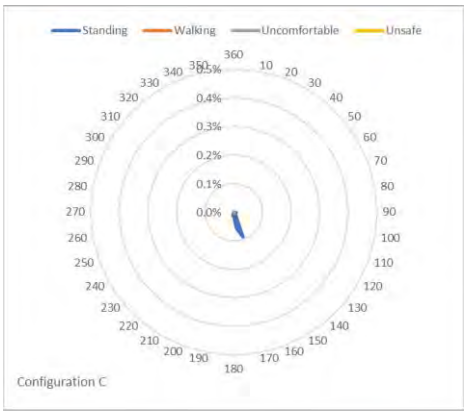


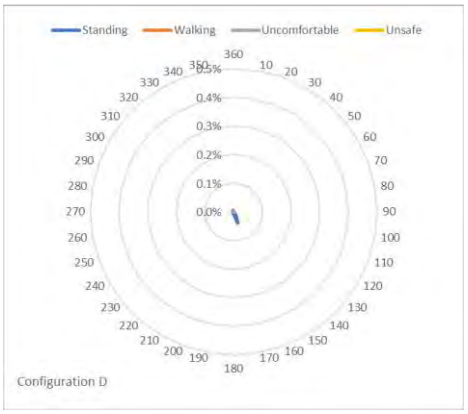


Measurement Location: 38

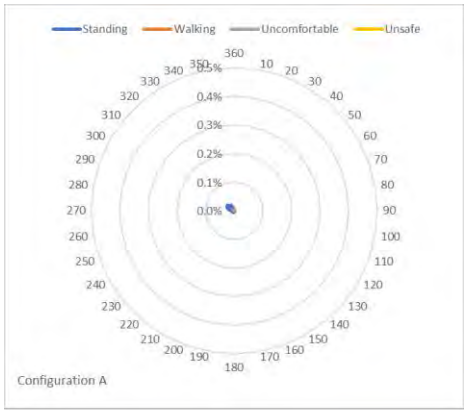


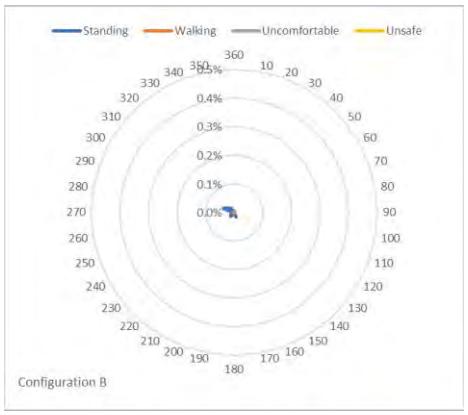


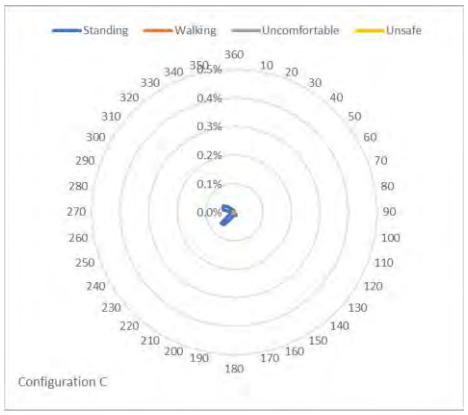


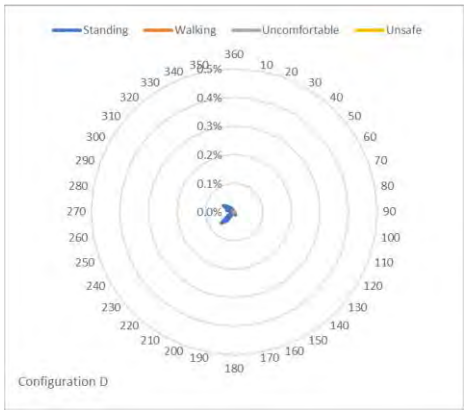


Measurement Location: 39

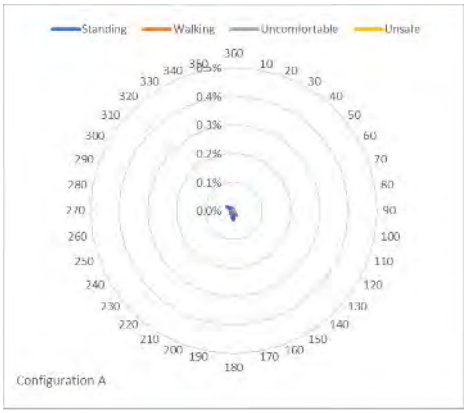


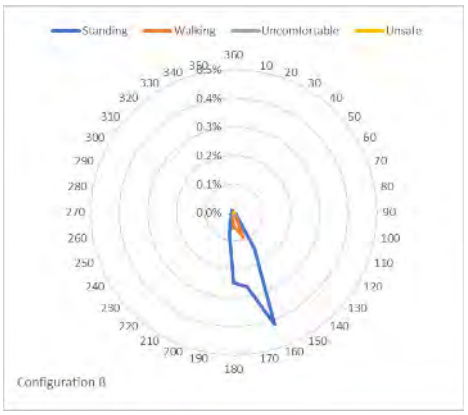


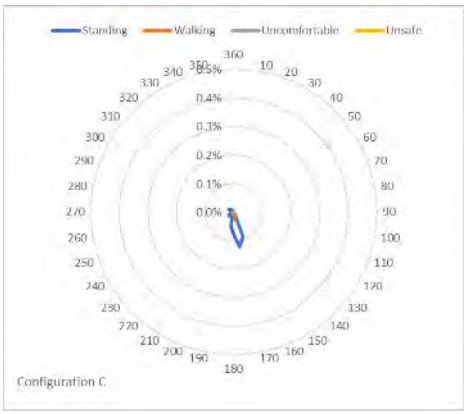


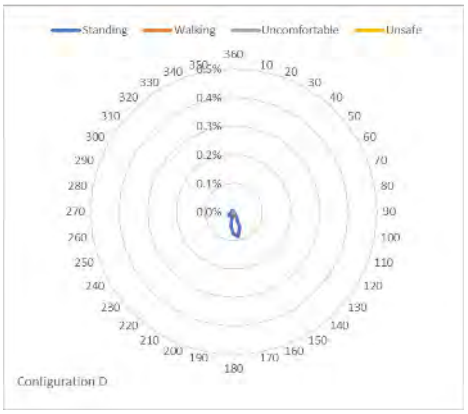


Measurement Location: 40

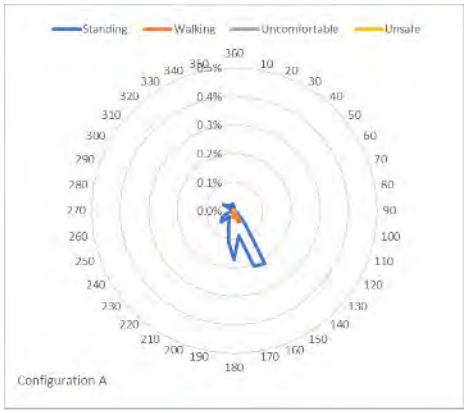


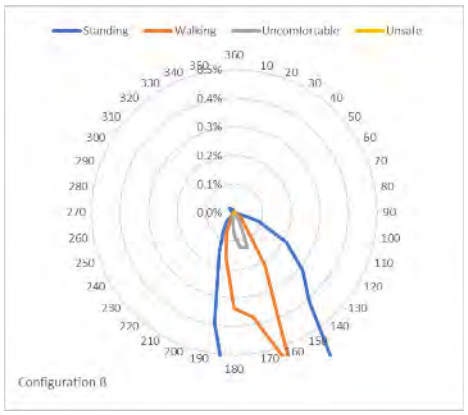


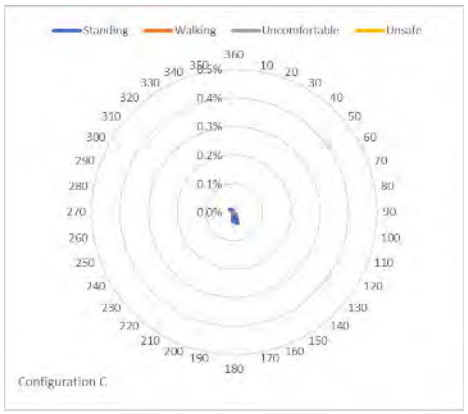


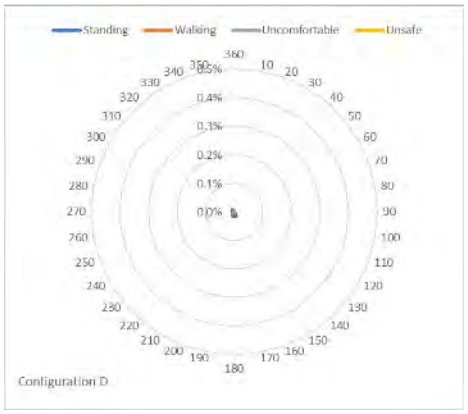


Measurement Location: 41

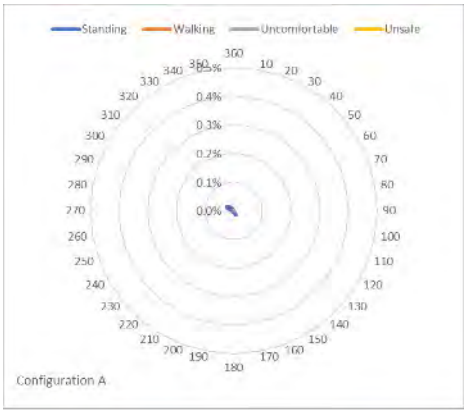


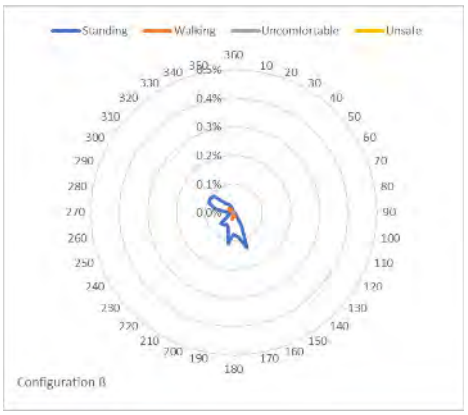


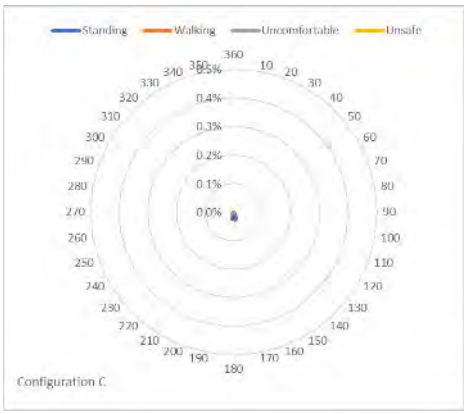


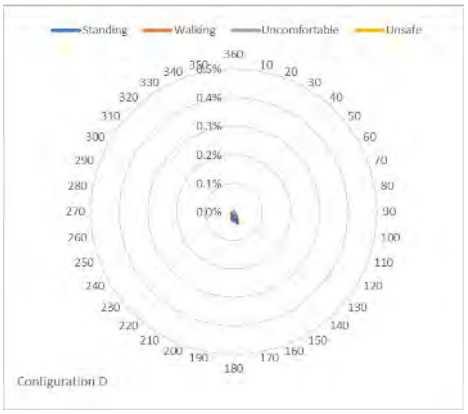


Measurement Location: 42

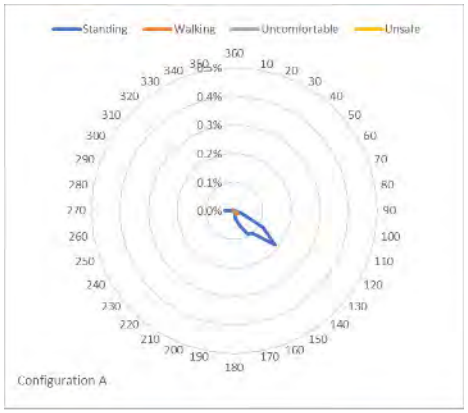


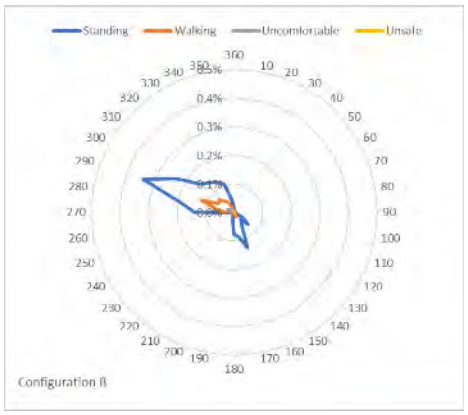


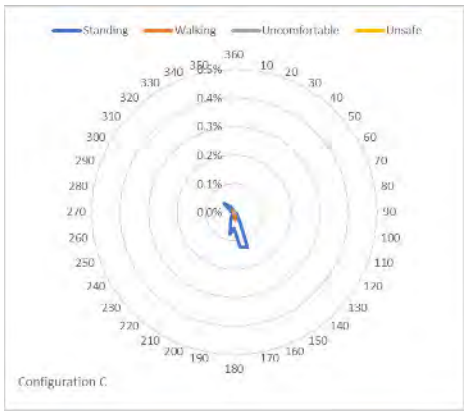


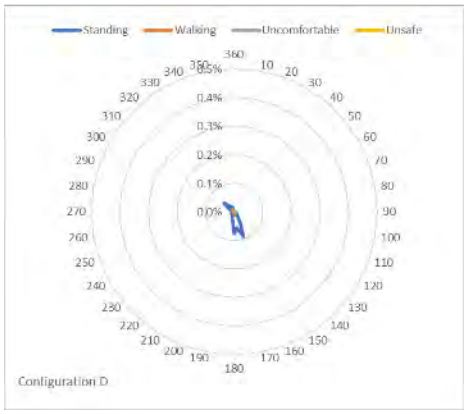


Measurement Location: 43

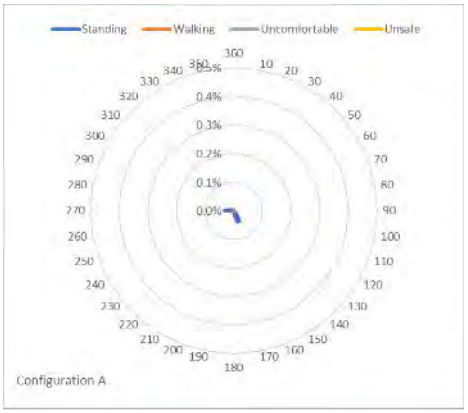


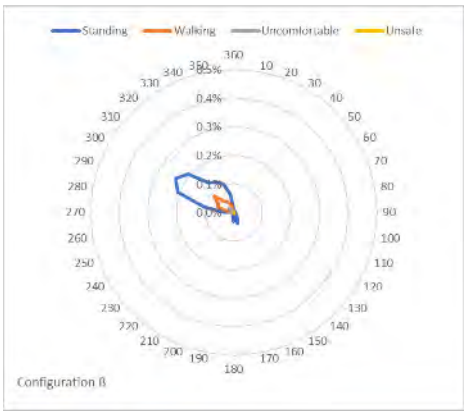


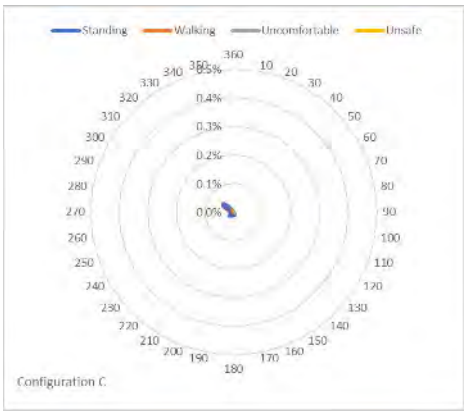


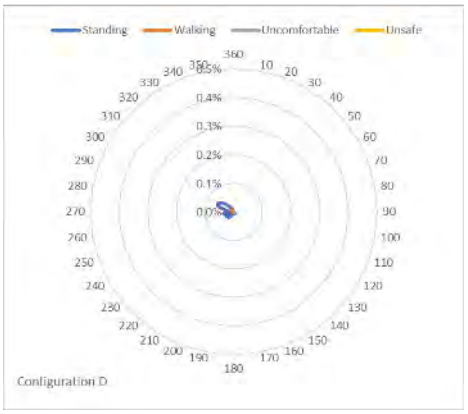


Measurement Location: 44

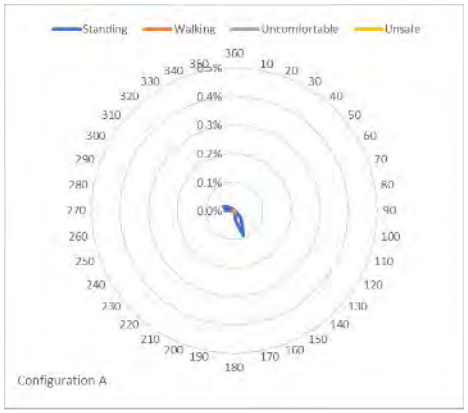


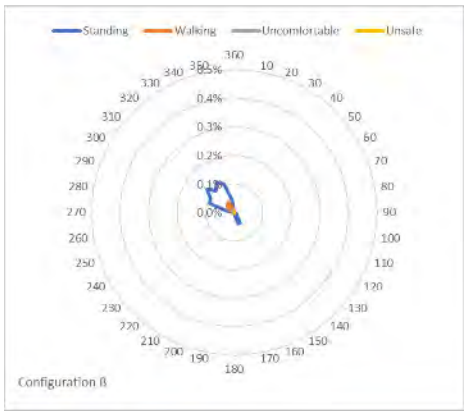


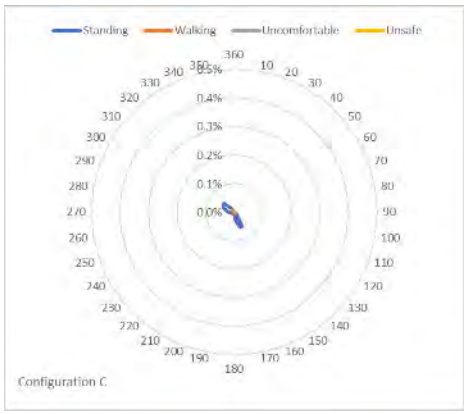


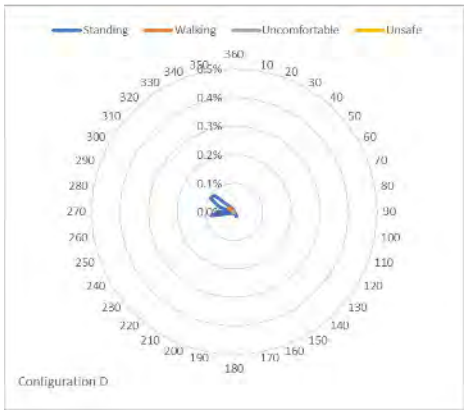


Measurement Location: 45

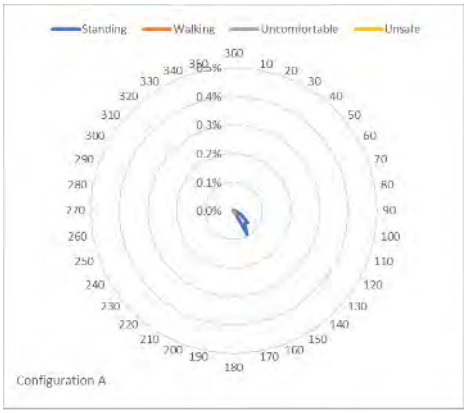


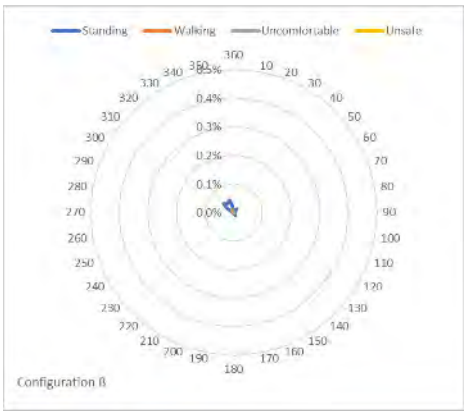


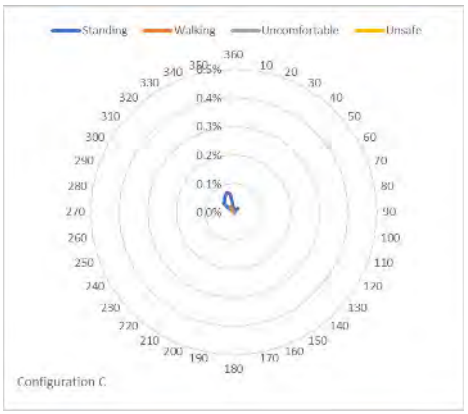


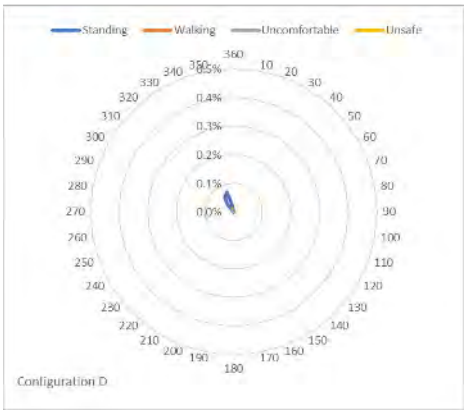


Measurement Location: 46

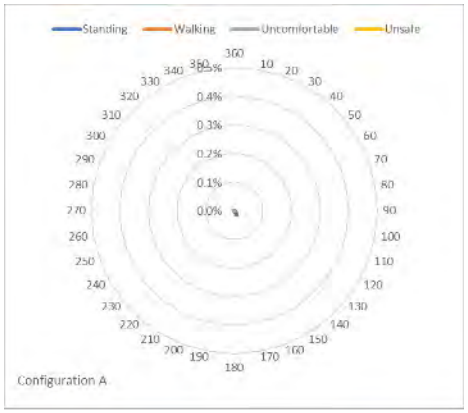


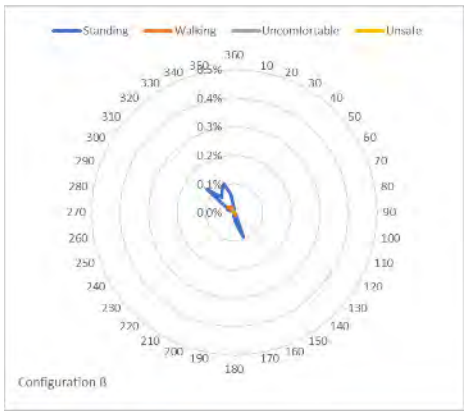


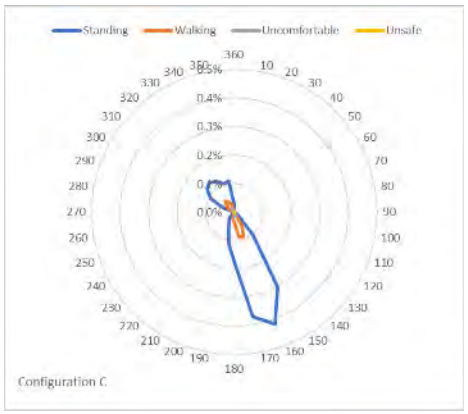


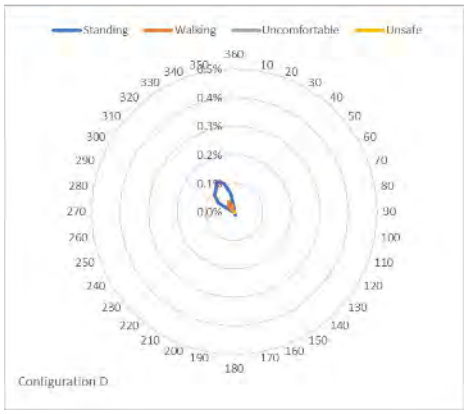


Measurement Location: 47

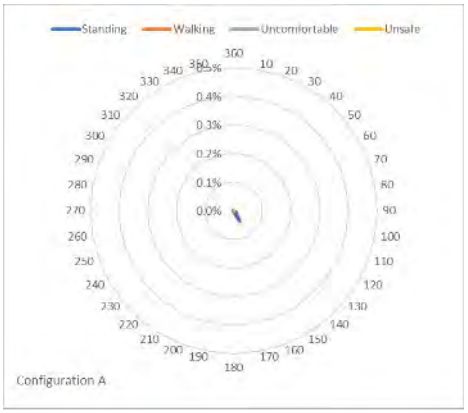


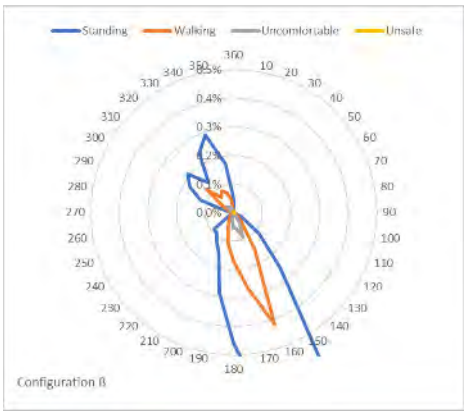


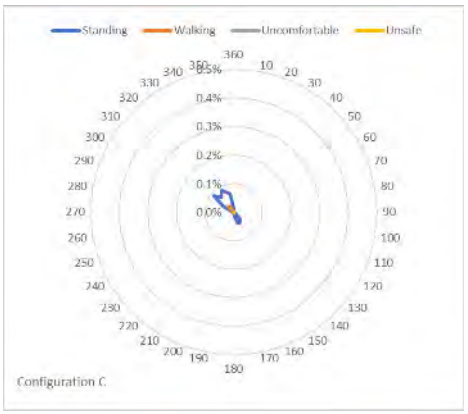


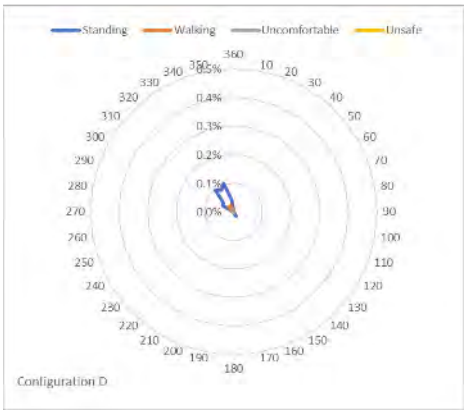


Measurement Location: 48

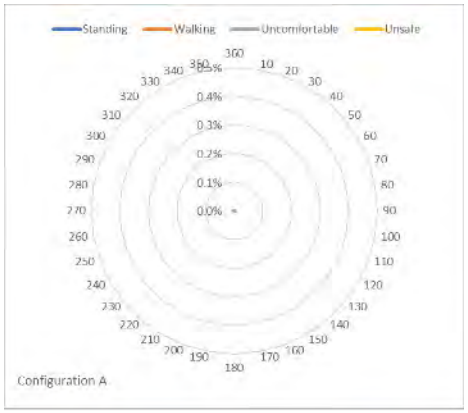


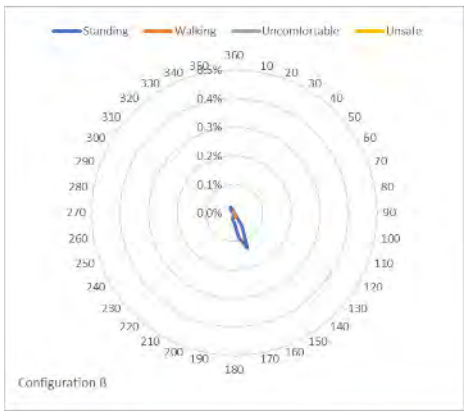


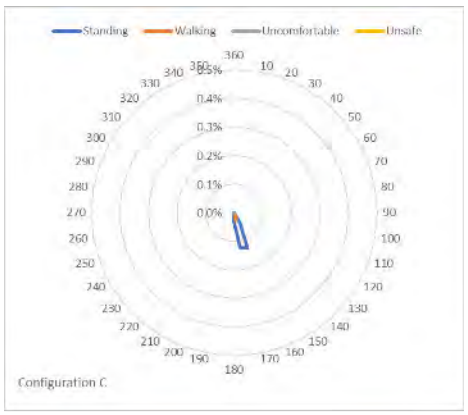


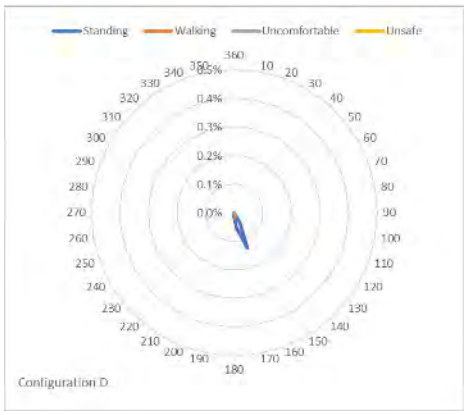


Measurement Location: 49

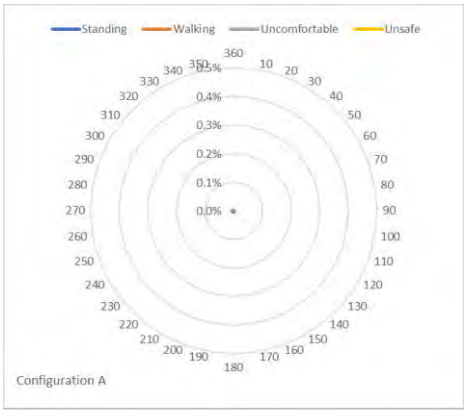


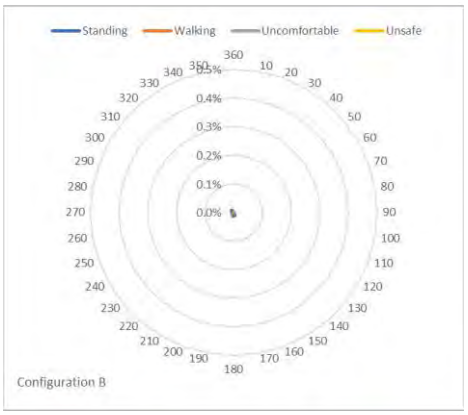


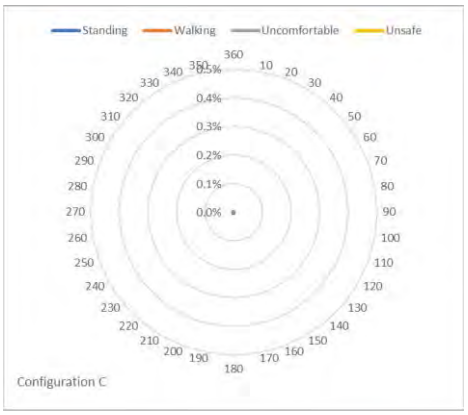


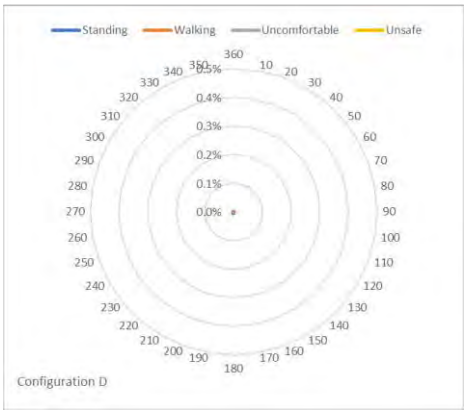


Measurement Location: 50

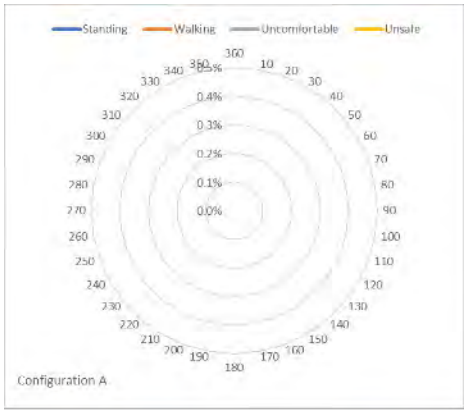


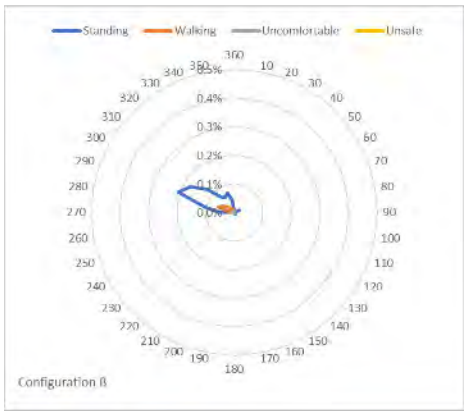


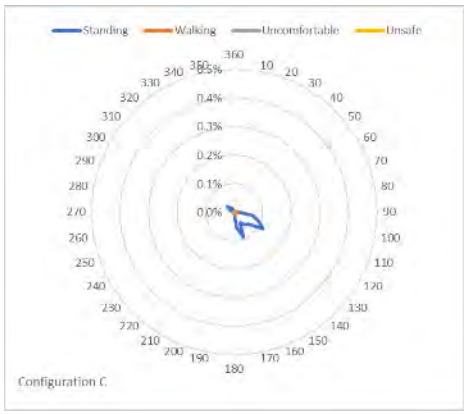


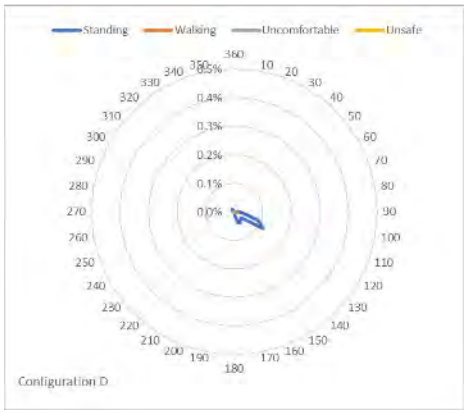


Measurement Location: 51

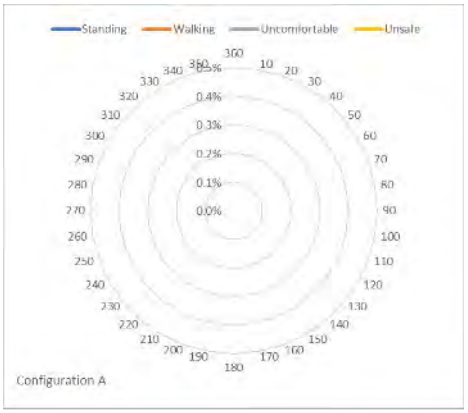


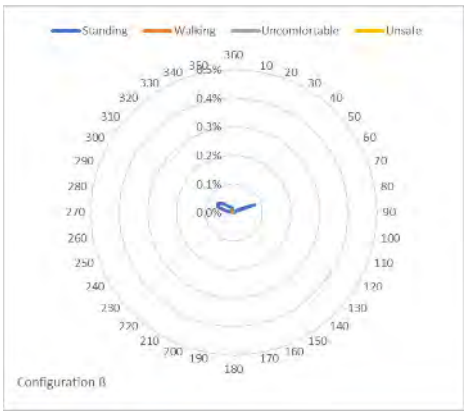


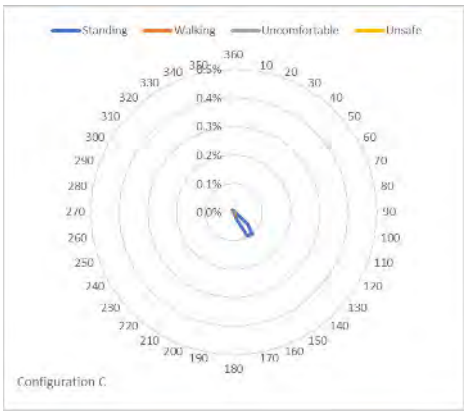


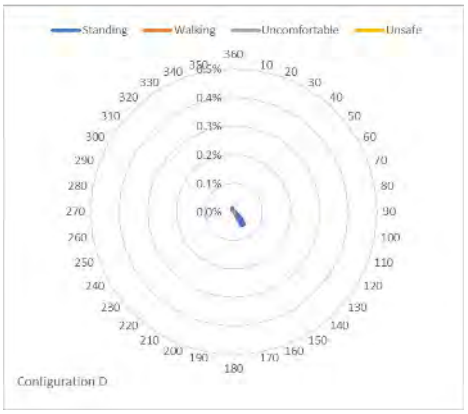


Measurement Location: 52

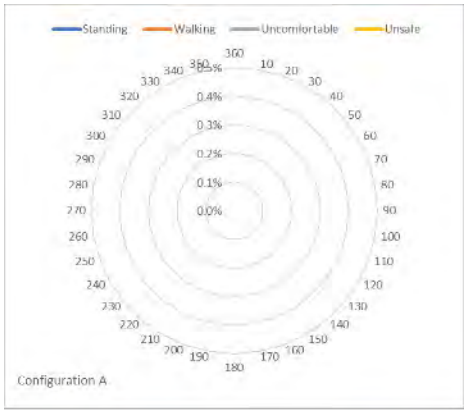


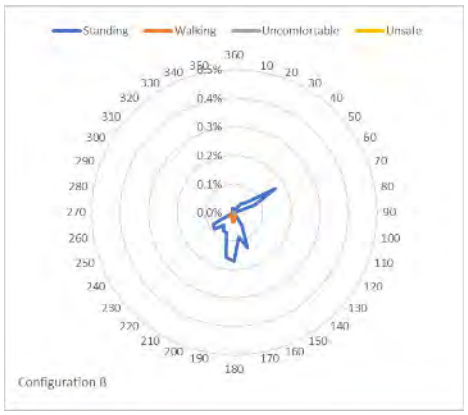


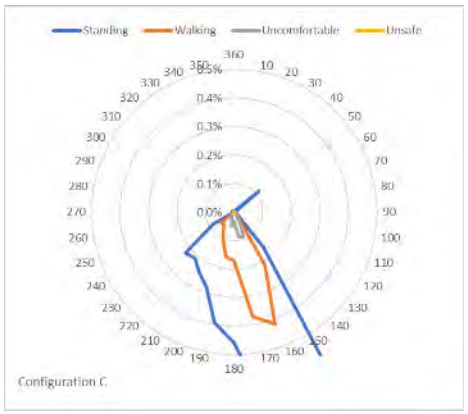


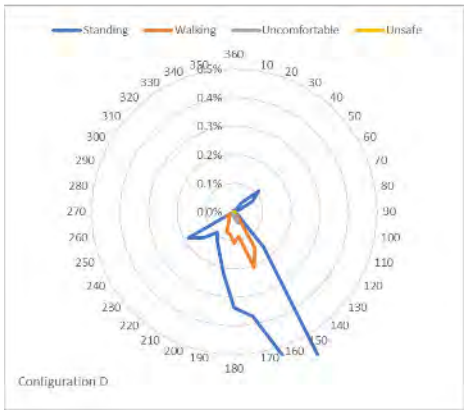


Measurement Location: 53

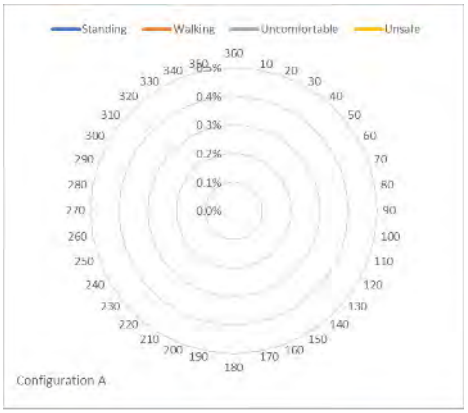


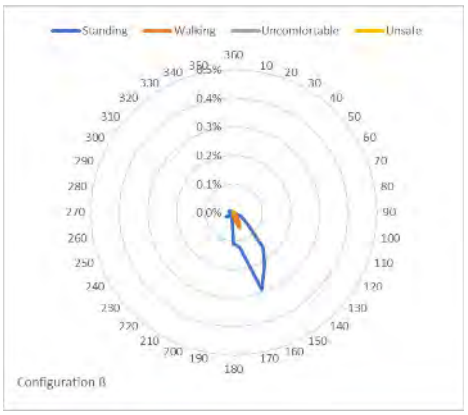


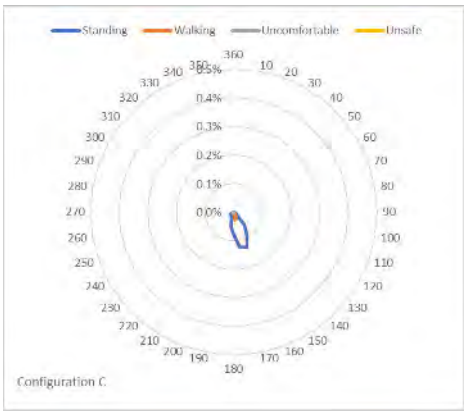


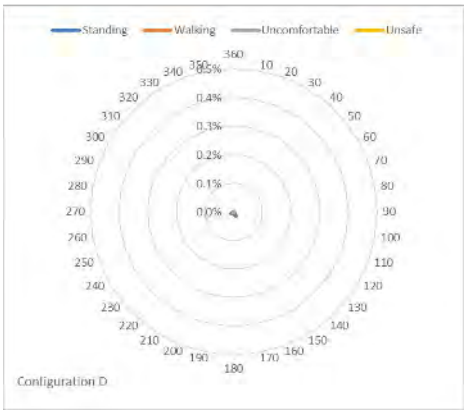


Measurement Location: 54

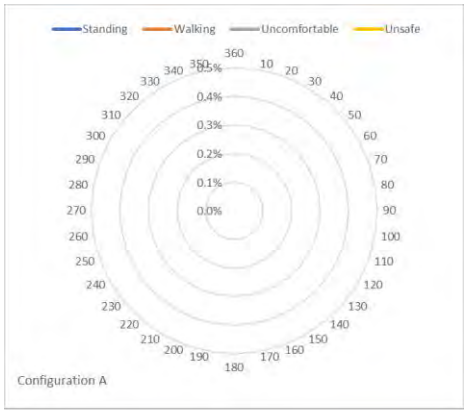


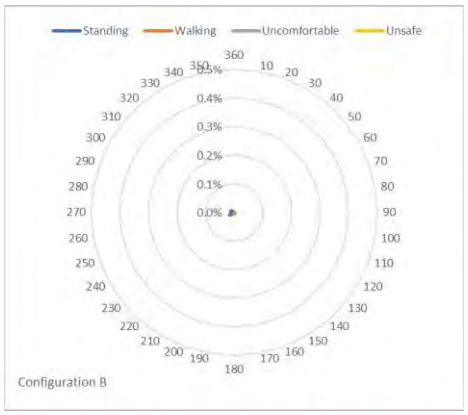


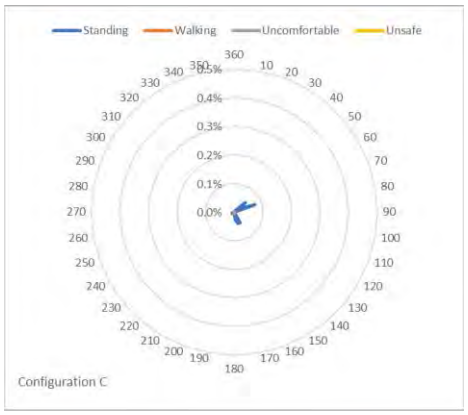


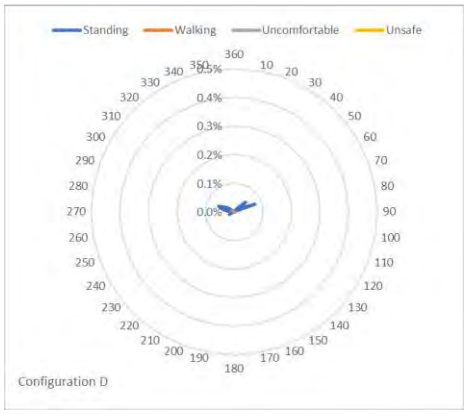


Measurement Location: 55

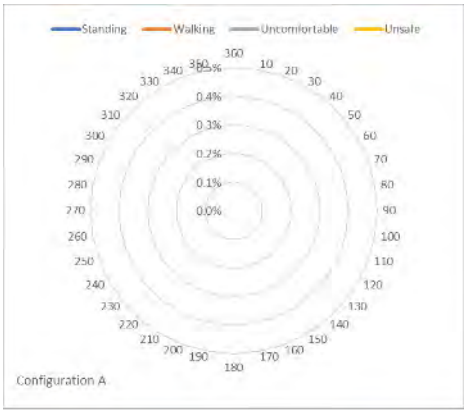


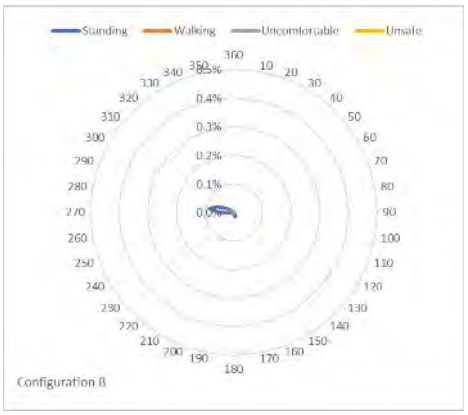


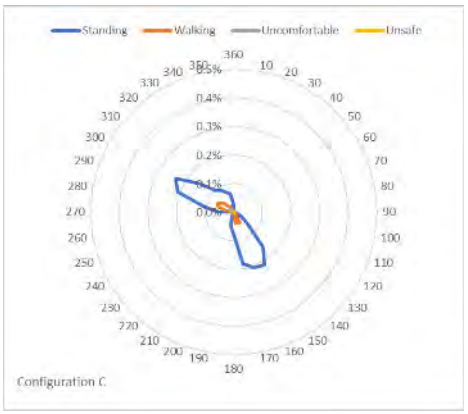


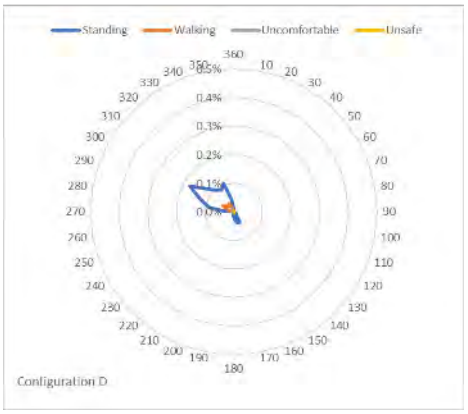


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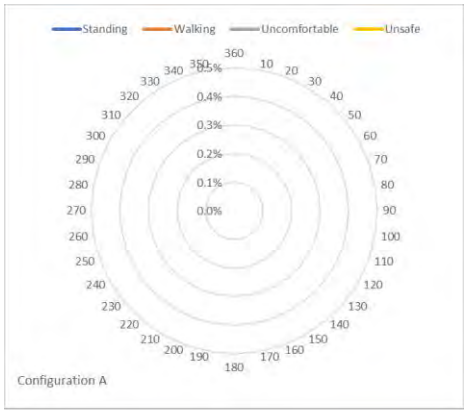


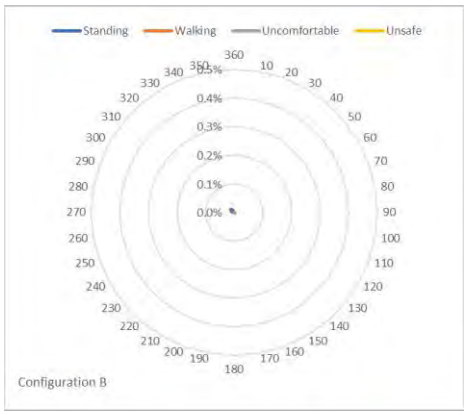


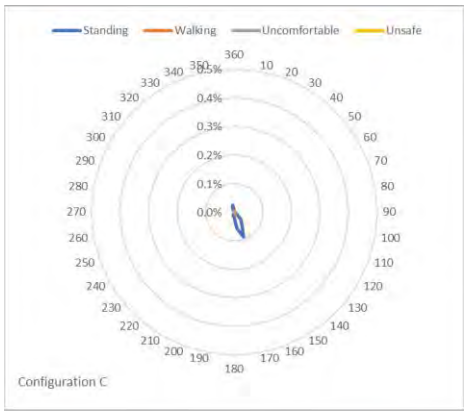


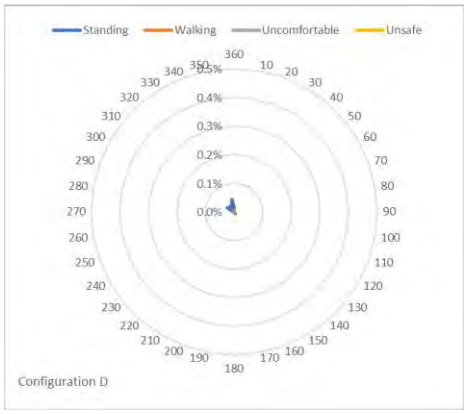


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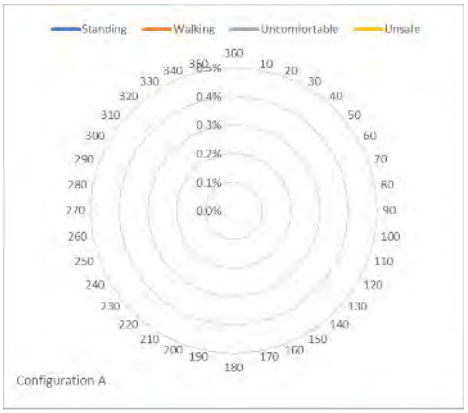


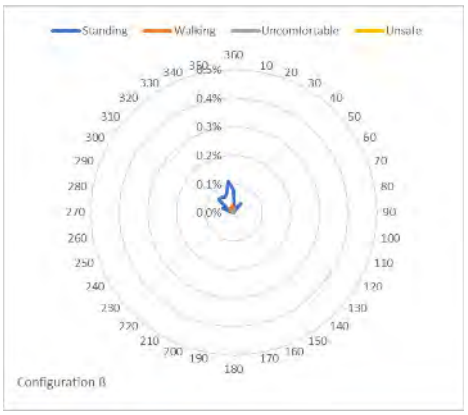


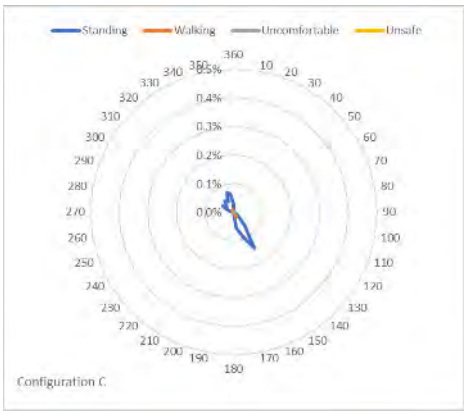


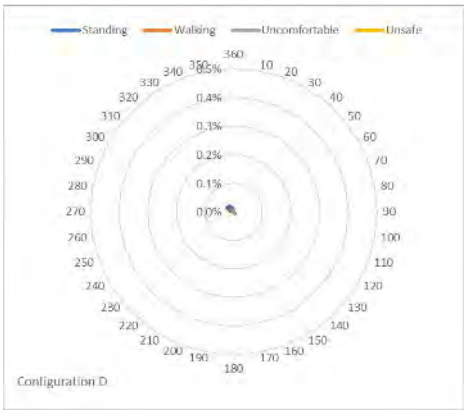


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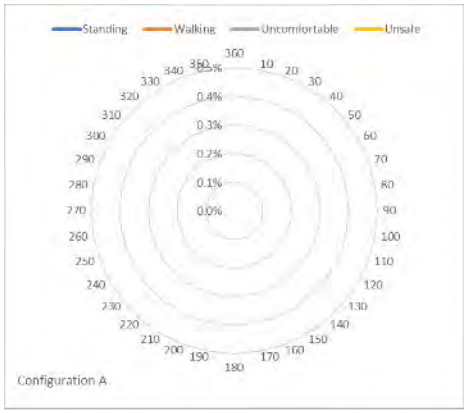


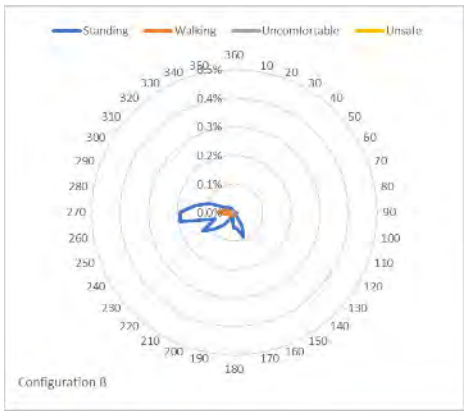


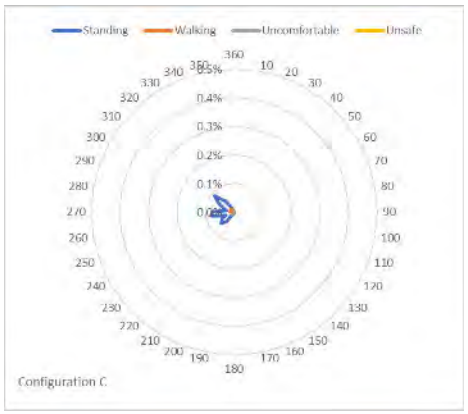


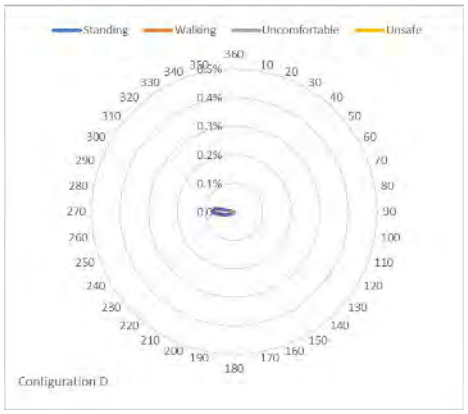


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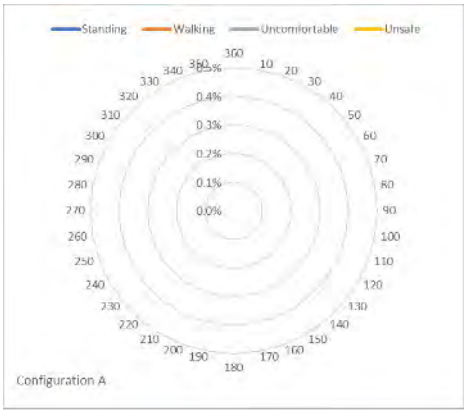


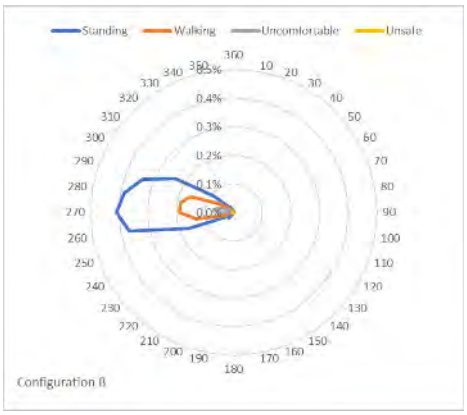


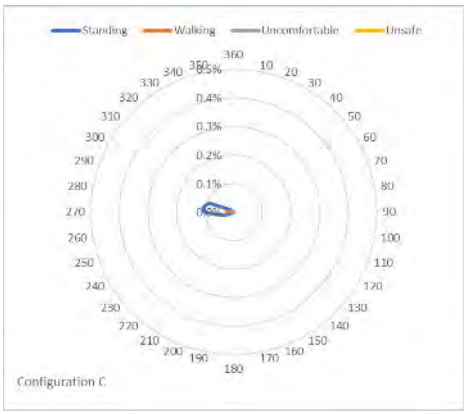


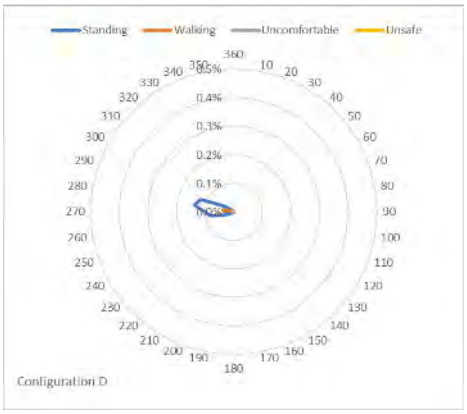


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APPENDIX E

Figure 4.18 Epping Town Centre - Street Tree Strategy



EPPING TOWN CENTRE STREET TREE

- *Bunckinghamia celsissima* (Ivory Curl Flower)
- *Fraxinus pennsylvanica 'Urbanite'* (Urbanite Green Ash)
- *Lophostemon confertus* (Brush Box)
- *Lagerstroemia indica 'Natchez'* (Crepe Myrtle)
- *Syncarpia glomulifera* (Turpentine Tree)
- *Tristaniopsis laurina 'Lucious'* (Lucious Water Gum)
- *Waterhousia floribunda 'Green Avenue'* (Weeping Lilly Pilly)
- *Zelkova serrata 'Green Vase'* (Japanese Elm)
- Planting within Setbacks
  - *Brachychiton acerifolius; Jacaranda mimosifolia*

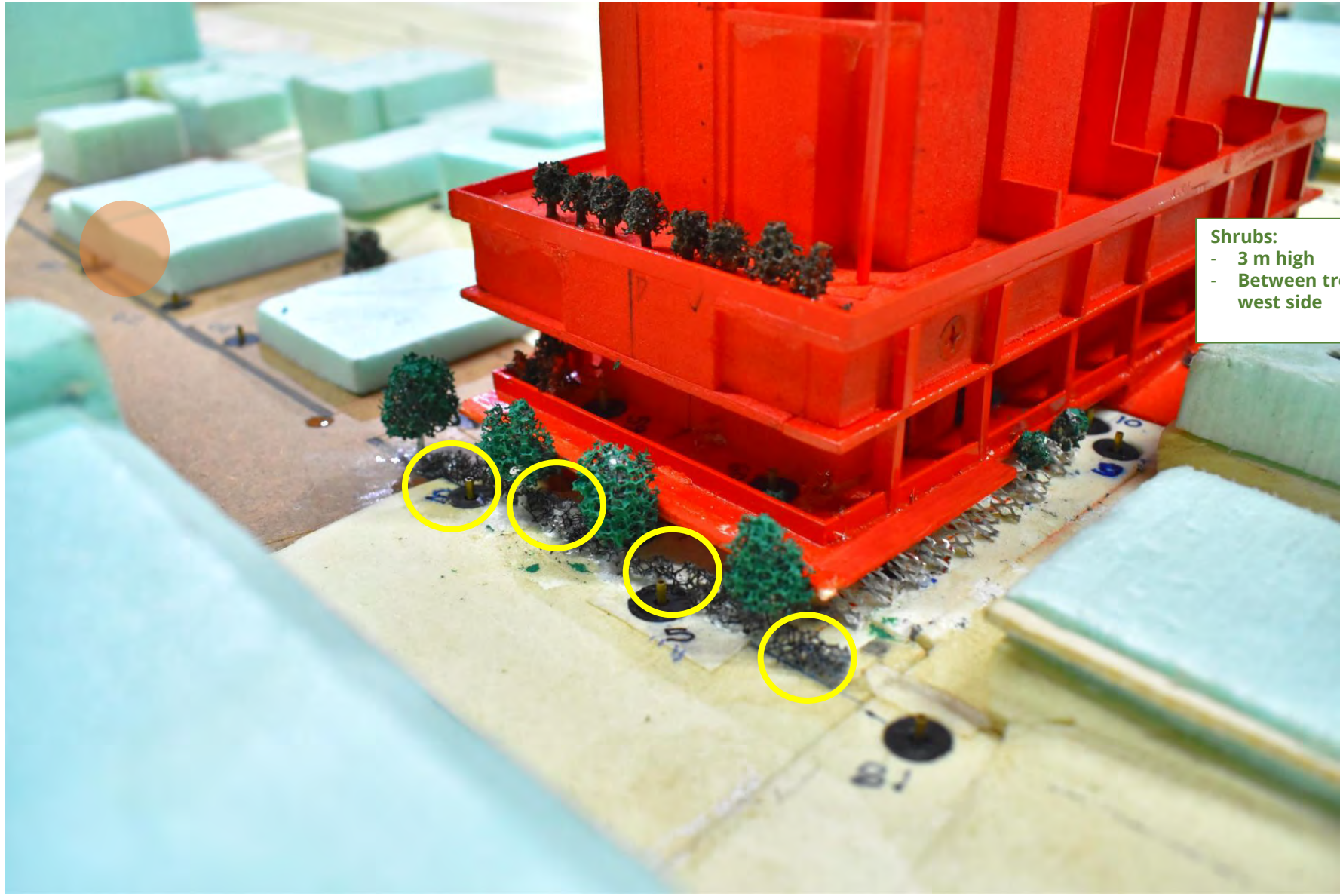
Parkland
Waterway
Train Station
Bus Interchange
DCP boundary
Bridge
Proposed Laneway^
Proposed Pedestrian Link^

^ All the proposed links and lanes are subject to final Epping Town Centre Master Plan and future DCP.

0 100 300 500m

APPENDIX F

Lower Ground – Shrubs of 1.8m high between trees at west side

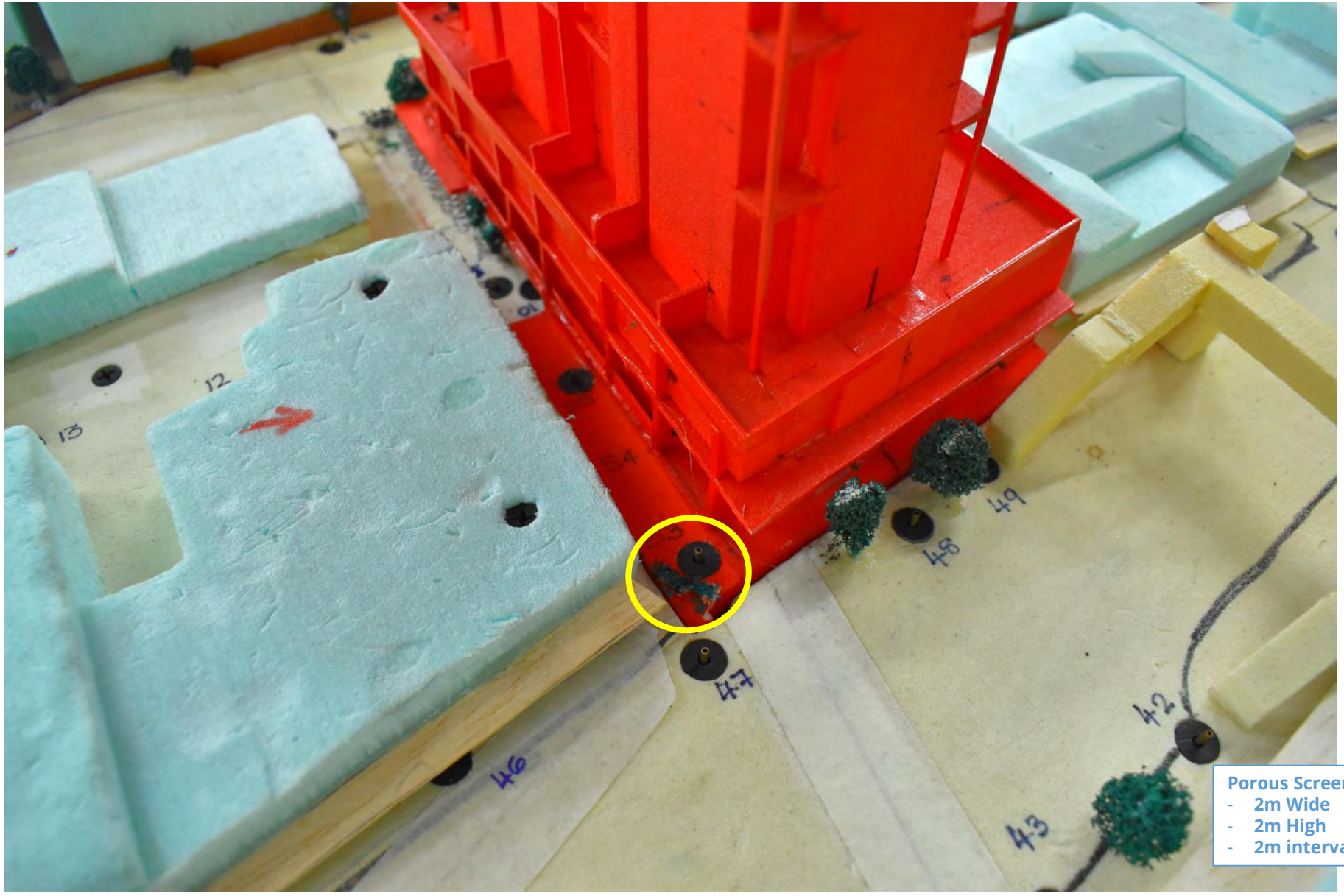


Lower Ground – Porous screens of 2m wide and 2m high at 2m interval

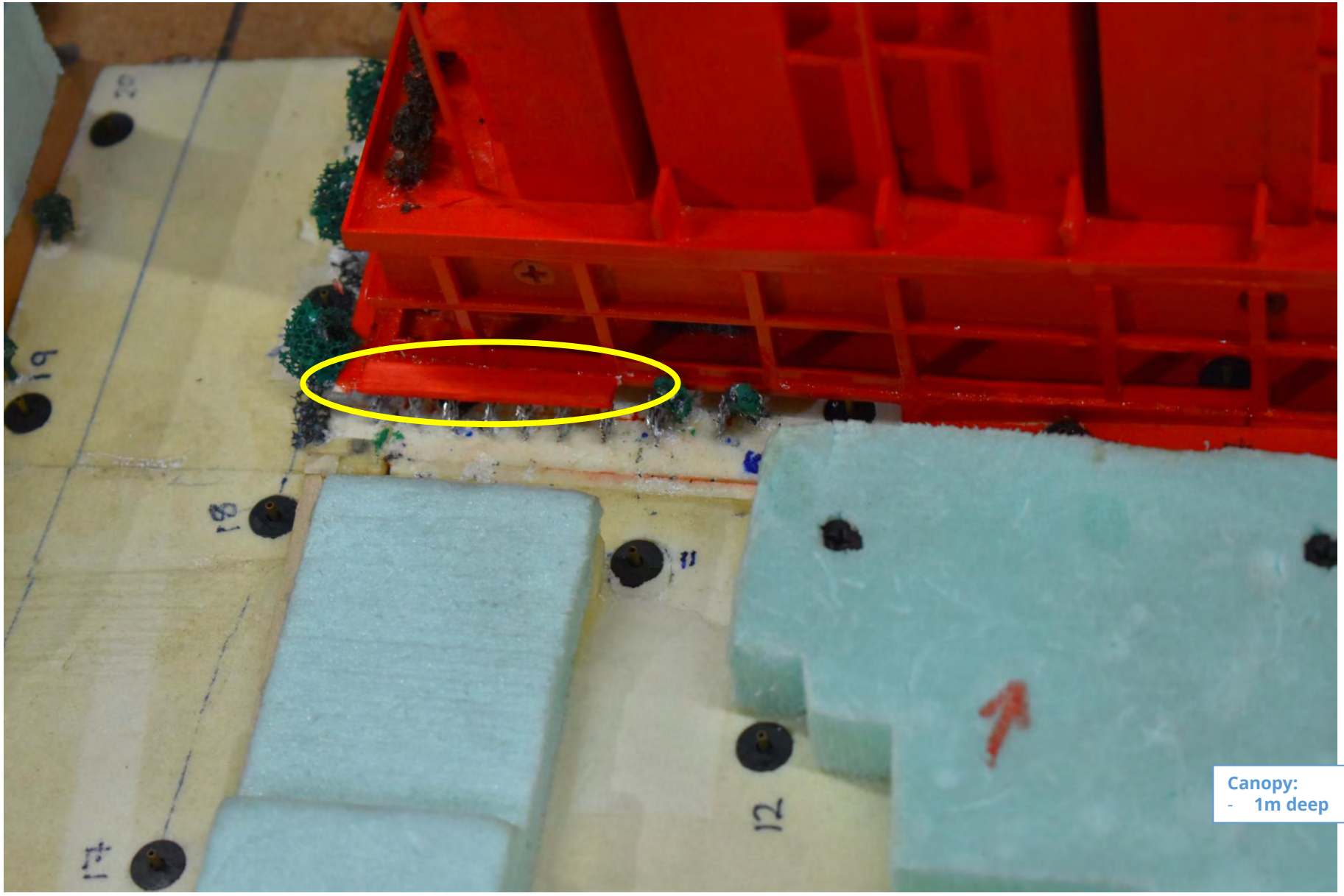


Porous Screens:
- 2m Wide
- 2m High
- 2m interval

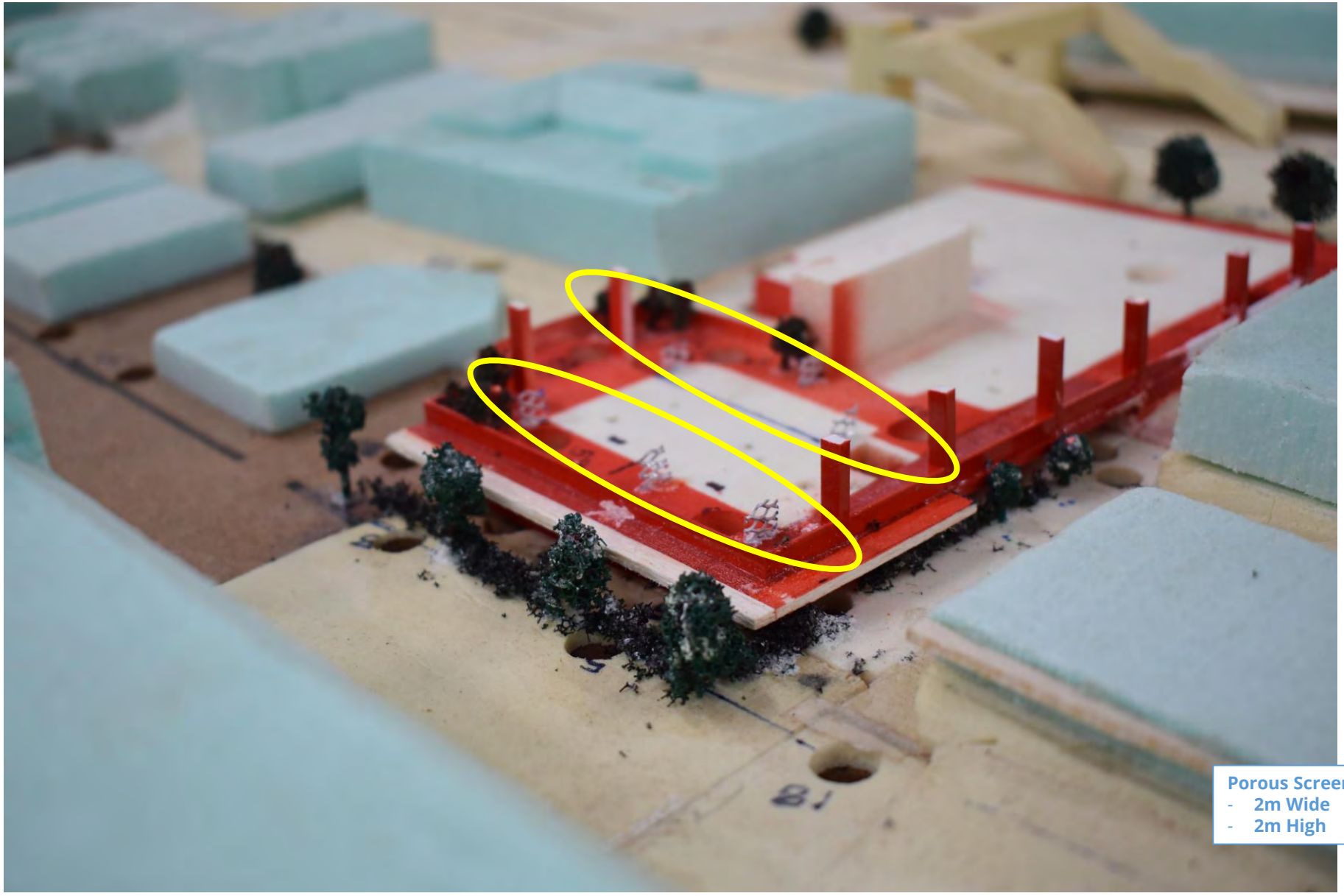
Lower Ground – Shrubs of 1.8m high at south-east corner (Location 53)



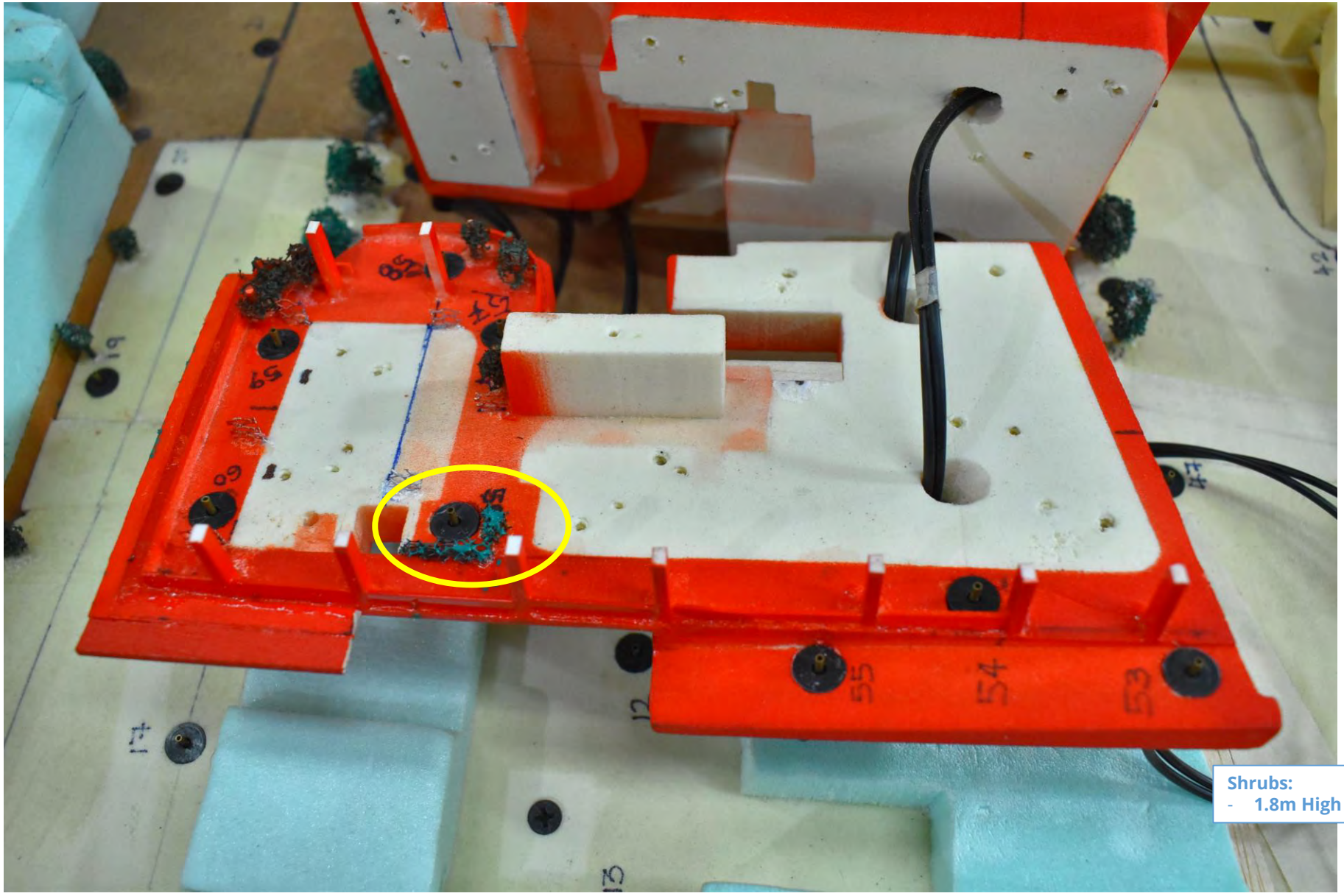
Upper Ground – Canopy of 1m deep at south-west corner



Upper Ground – Porous screens of 2m wide and 2m high



Upper Ground – Shrubs of 1.8m high



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APPENDIX E

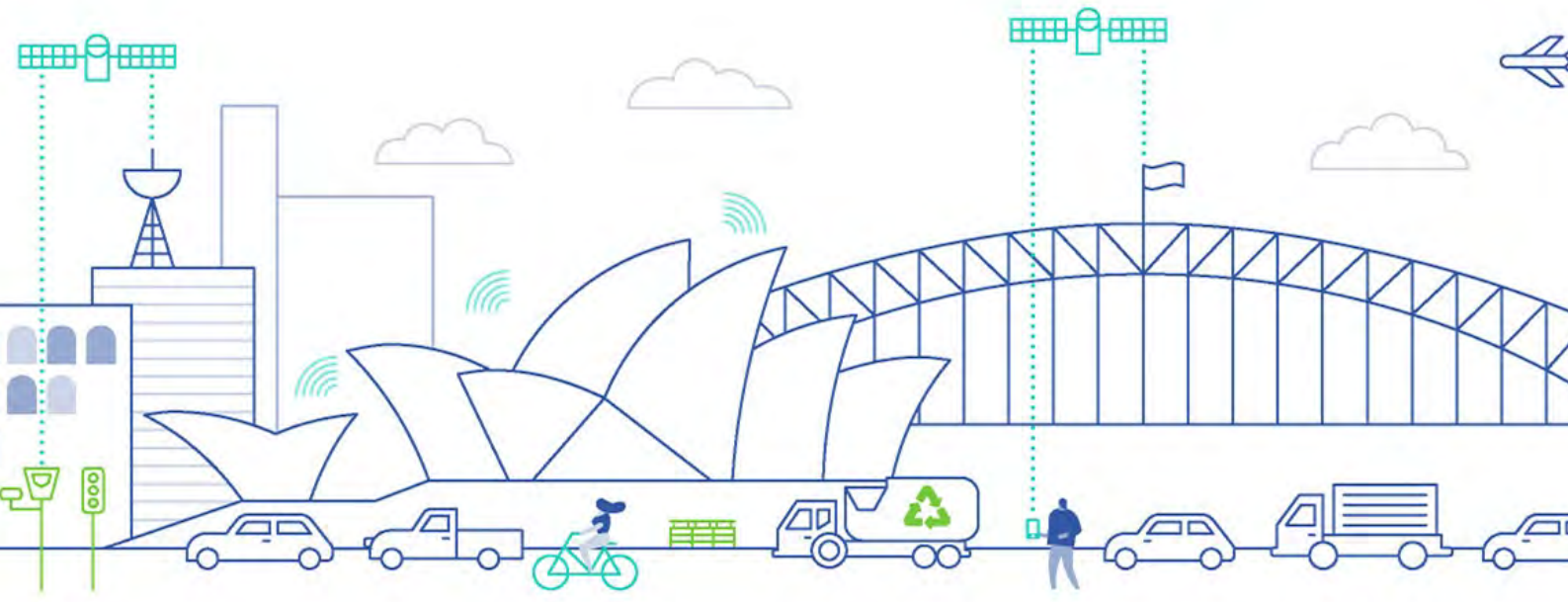
Green Travel Plan

TTM

Green Travel Plan

48-54 Beecroft Road & 52-54 Rawson Street,
Epping

PDS Australia



About TTM

For 30 years, we've been at the centre of the Australian development and infrastructure industry. Our unique combination of acoustics, data, traffic and waste services is fundamental to the success of any architectural or development project.

We have over 50 staff, with an unrivalled depth of experience. Our industry knowledge, technical expertise and commercial insight allow us to deliver an exceptional and reliable service.

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Revision Record

No.	Author	Reviewed/Approved	Description	Date
1.	M Fyfe	M Fyfe	Green Travel Plan	11/02/19
2.	M Fyfe	M Fyfe	Green Travel Plan	15/04/19
3.	M Fyfe	M Fyfe	Green Travel Plan	01/05/19

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1 Background

The proposed development is located at 48-54 Beecroft Road with a dual frontage at 52-54 Rawson Street, Epping.

The proposed development will include demolition of the existing buildings and construction of a 21 storey mixed use development with ground floor retail, residential above and three basement levels for car and bicycle parking, and other associated building infrastructure such as storage, fire and life safety requirements and lift cores.



Figure 1 - Artist impression of proposed development

1.1 Site and Context

The site is located at 48-54 Beecroft Road & 52-54 Rawson Street, Epping within the Parramatta Local Government Area (LGA), approximately 15 kilometres north-west of the Sydney CBD and 9 kilometres north-east of the Parramatta CBD. The site is within walking distance from the Epping Railway Station and lies within the Epping Town Centre. The Epping Town Centre is located adjacent to the Epping railway station and provides a range of local amenities including retail, open space and entertainment and recreational facilities.

The Epping Town Centre is strategically located with access to high capacity public transport, including the soon to open Sydney Metro line. It is within close proximity to major strategic centres including Chatswood and Parramatta, which are easily accessible via the Sydney Trains and Sydney Metro networks. The Epping Town Centre has been identified for higher density development within close proximity to public transport infrastructure.



1.2 Consultation

This Green Travel Plan was developed in consultation with the City of Parramatta Council.

On 15 April 2019, TTM met with two officers from Council's Traffic and Transport until to discuss the Green Travel Plan.

As a result of that meeting, this plan has been updated to include the following:

- A Monitoring Plan for the first three (3) years that the site is completed and occupied;
- An additional car share space in the development; and
- Some additional wording around some actions in the Action Plan.

2 Role of a Green Travel Plan

The primary purpose of a Green Travel Plan (GTP) is to encourage people who will live, work or travel to a place to use more sustainable means of transport. This generally means reducing the reliance on private vehicle travel and shifting travel choice behaviour to public and active transport.

From a road network perspective, the main benefit is reduced congestion. From a societal perspective, a major benefit is improved health outcomes due to incidental exercise and reductions in the impacts of traffic air and noise pollution.

A Green Travel Plan uses economic tools such as incentives and penalties to encourage behavioural shifts toward preferred travel choices.

In terms of sustainability, shifts towards active and public transport are preferred due to their high travel efficiency (i.e. they do not take up much space) and high social benefits (i.e. improved health outcomes and improved social connections).

2.1 Objectives

The GTP is prepared with the objectives to over a progressive period:

- Reduce impacts on the road network;
- Improve travel choice through knowledge about services; and
- Achieve long-term behaviour change towards sustainable modes.

2.2 Why is a Green Travel Plan required?

The development of a GTP is widely accepted as one of the best ways to increase active travel around the site. A successful GTP offers many benefits for residents and visitors, including:

- Reduces traffic and local road congestion with Epping;
- Building confidence and improving social interaction by walking and/or cycling;
- Improving the environment by reducing air pollution from private vehicles; and
- Making the most of the investment in public transport infrastructure.

As a result, it is likely that residents and visitors with a good understanding of an active and sustainable mode of transport will follow a healthy and active lifestyle, care about the environment and prioritise location and lifestyle over car ownership.

3 Factors influencing a Green Travel Plan

Several factors have a high level of influence on the travel choices of individuals and groups and are discussed in more detail below.

3.1 Availability and pricing of car parking

Access to car parking, particularly parking that has no time or pricing restriction, has an incredible influence on travel behaviour. Shopping complexes are a key demonstration of this situation; they are designed to encourage people to drive and are supported by an abundance of parking that is essentially free.

In developments where parking is adequate but not abundant, people can make informed choices about their travel needs and the locational choice for their journeys (e.g. a person may choose to walk to the local shops instead of drive or may forgo a car entirely if a parking space is not available and use other means of transport).

3.2 Accessibility to public transport and frequency

Similarly, having good access to public transport services is a significant factor for the success of a Green Travel Plan. However, it is not enough that a public transport service exists, it must be useful in order to make it an appealing offer.

In the case of a city context, useful means it must have services or connections to meaningful destinations and have a level of frequency that is attractive and convenient. It must also be accessible to all members of the community, including people with limited mobility or who may have specific needs (e.g. wheelchair users).

3.3 Active transport infrastructure and access to end of trip facilities

Active transport is any mode of travel under human-generated power. Most commonly it refers to walking and cycling, but can include skateboarding, rollerblading, scootering and other forms of human-powered travel.

Active transport is the most spatially efficient of all transport modes and is given preference where there is limited physical space for movement (e.g. within city centres). Active transport is also preferred as a means to reduce congestion, particularly through the use of cycling as it offers people the capability to travel a reasonable distance (5-10 kilometres) to most destinations within cities with a relative degree of speed.

3.4 Available incentives/penalties

Behaviour change does not occur without a compelling personal need for change or the right incentives and penalties in place to influence a change in travel choice.

The success of a Green Travel Plan is to balance incentives and penalties to achieve the desired outcomes.

3.5 Knowledge of options and their convenience relative to travel needs

A major barrier to converting people from car travel to public and active transport is often knowledge of available services and learning how to navigate the task of journey planning. It is not possible for a person to use a public transport service if they do not know it exists, or they are confused by how to gain access to a service or perform an interchange.

Therefore, it is important that a Green Travel Plan includes communications that are kept relevant about transport services and how to access them, including Opal services. The rise of app technology and Transport for NSW's Open Data portal has greatly improved the availability of information to remove these barriers.

4 Context

All Green Travel Plans must consider their context in order to achieve success. Key contextual factors influencing effective outcomes and proposed actions are outlines below.

4.1 Epping Town Centre Traffic Study

The *Epping Town Centre Traffic Study* (EMM, May 2018) was commissioned by Parramatta City Council to review the traffic networks in and around the Epping Town Centre in the context of current and future land use scenarios.

The key assumptions used in the modelling are an additional 5,000 dwellings by 2026 and an additional 10,000 by 2036. A key objective of the study is to identify through and local traffic in the modelling.

The study finds that given the significantly higher forecast growth of the Town Centre, there is additional pressure on the road network, primarily attributable to regional traffic in a north-south direction, and by the 2036 scenario includes pressure on the east-west journeys.

5 Objectives of the Green Travel Plan

The objectives of this Green Travel Plan are as follows:

5.1 Reduce impacts on road network

In the case of the proposed development, a major objective is to reduce impacts on the road network generated by the development.

The proposed development will deliver a significant uplift in density compared to the existing land use but will also deliver improved quality of built form and amenity in the Epping Town Centre. The expected traffic generation is small. Its location on Beecroft Road, which is operating at a poor service level, increases the level of urgency by the respective road authorities to shift demand to public and active transport to reduce congestion on this road.

However, it is important that there is adequate recognition that the location of Epping Town Centre being a short distance from the M2 motorway plays a significant role in the congestion impacts which is supported by the *Epping Town Centre Traffic Study*.

It is also important in terms of broad collective responsibility to reduce the cumulative impact from developments in the Town Centre to a reasonable the extent that still maintains amenity and commercial viability for the development itself.

5.2 Improve travel choice through knowledge about services

A second major objective of this Plan is to empower people to make informed travel choices by understanding the alternatives available to them. Alternatives travel choices may include modes such as car share, public transport and active transport.

The following are *examples* of tools and actions to assist residents or employees to be aware of the availability of public transport options in the area (for a list of actions relevant to this Green Travel Plan, please refer to Section 8.1):

- Provision of a Transport Access Guide (TAG) which would be given to every new occupant of the dwellings. This document would be based upon facilities currently available at the site and would be updated regularly to reflect the changes in public transport service, active travel facilities and other relevant pieces of information. The TAG would include public transport timetables, stop/station locations, walking times/distances etc;
- Provide real time information on public transport arrival/departure times by providing information screens in the lifts showing train departure times from Epping, the bus schedules servicing the bus stops along with the local weather;
- A half year newsletter could be provided to every household for up to two years after occupation bringing the latest news on sustainable travel initiatives in the area. This newsletter could incorporate events occurring from the pedestrian generators; and

- Provision of good quality, accurate and useful directional signage to promote walking and cycling in essential and it is proposed that this is provided stating times to destination in minutes taken as well as distances in half kilometres.

Technology is playing a major role in keeping people informed about their travel choices and how that influences their own convenience (e.g. journey time, cost).

5.3 Achieve long-term behaviour change toward sustainable modes

The long-term objective is to influence people's travel behaviours so positively that they make a genuine and lasting decision to choose public and active transport for most of their journeys, rather than a private car.

This shift towards public and active transport would have major benefits in terms of personal health and pollution reduction.

6 Green Travel Plan Framework

The following framework outlines the functional flow of this Green Travel Plan and how it will use levers to influence behaviours and travel choices.

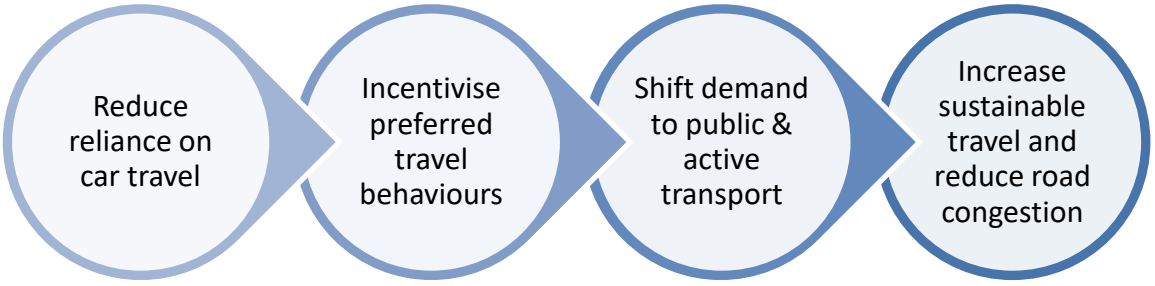


Figure 2 – Framework of this Green Travel Plan

7 Existing Conditions

7.1 Key services

The proposed development has good access to local services as shown in the diagram below. This includes access to medical, a supermarket and food and beverage options all within easy walking distance.



Figure 3 - Epping Town Centre local services

7.2 Sydney Metro / Sydney Trains

Directly opposite the proposed development is the existing Epping rail station that is in the process of being converted to a Sydney Metro service. Epping will be one of 13 new stations for the Sydney Metro North

West line. The Metro service for Epping is due to start operations in 2019, so will be fully active by the time the proposed development is completed.

Sydney Metro North West line will connect with the City and Southwest line which is under construction and is due to open in 2024.



Figure 4 - Sydney Metro North West alignment

A key benefit of Metro compared to Sydney's existing heavy rail is Metro offers both higher capacity and higher frequency services. Metro trains will be able to carry an additional 15,000 people per hour on each line, compared to existing train capacity. Metro trains will run every four minutes in the peak, providing 15 services per hour.

This capacity will be very welcome at Epping station, where train loads currently exceed 135% (this means that all seats are taken, people are standing in the aisle on each level of the train and the vestibule of the train is full and crowded). The existing Central Coast and Newcastle line alternate stopping patterns between Epping and Eastwood.

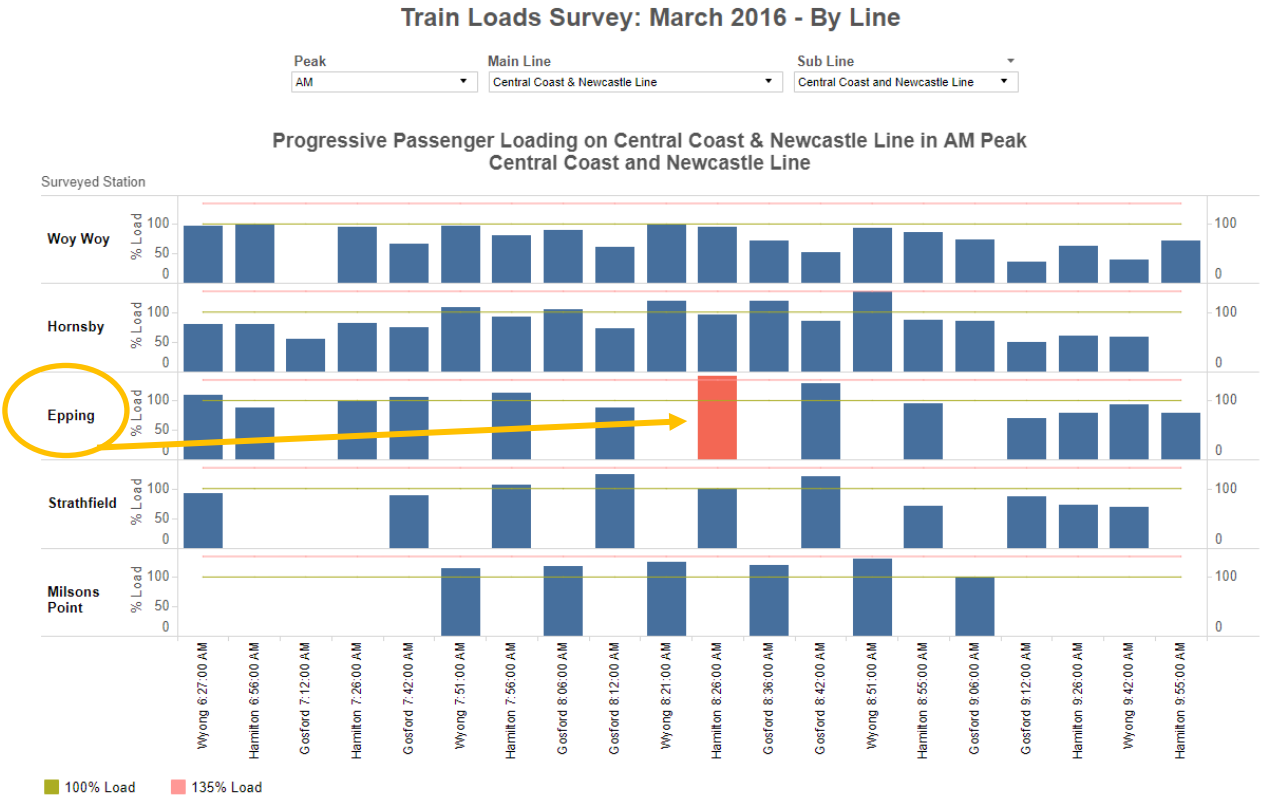


Figure 5 - Train loads at Epping exceeding capacity (2016 Transport for NSW)

The additional train capacity delivered by Metro is highly likely have a significant impact on mode choice given it will connect to all major services, particularly in 2024 when Metro City and Southwest opens and no interchange will be required to travel into the Sydney city centre.

7.3 Bus

The Epping Town Centre is currently well-serviced by buses, providing strong interchange between bus and rail.

Bus stops are located on Beecroft Road and Rawson Street. There is also a bus stop on Cambridge Street opposite Epping station. In total, nine bus routes operate and service both north-south and east-west trips for both regional and local connections.

Service frequency varies for each route, and time of day, however on average, a service is due to arrive every 10 minutes in the peak.

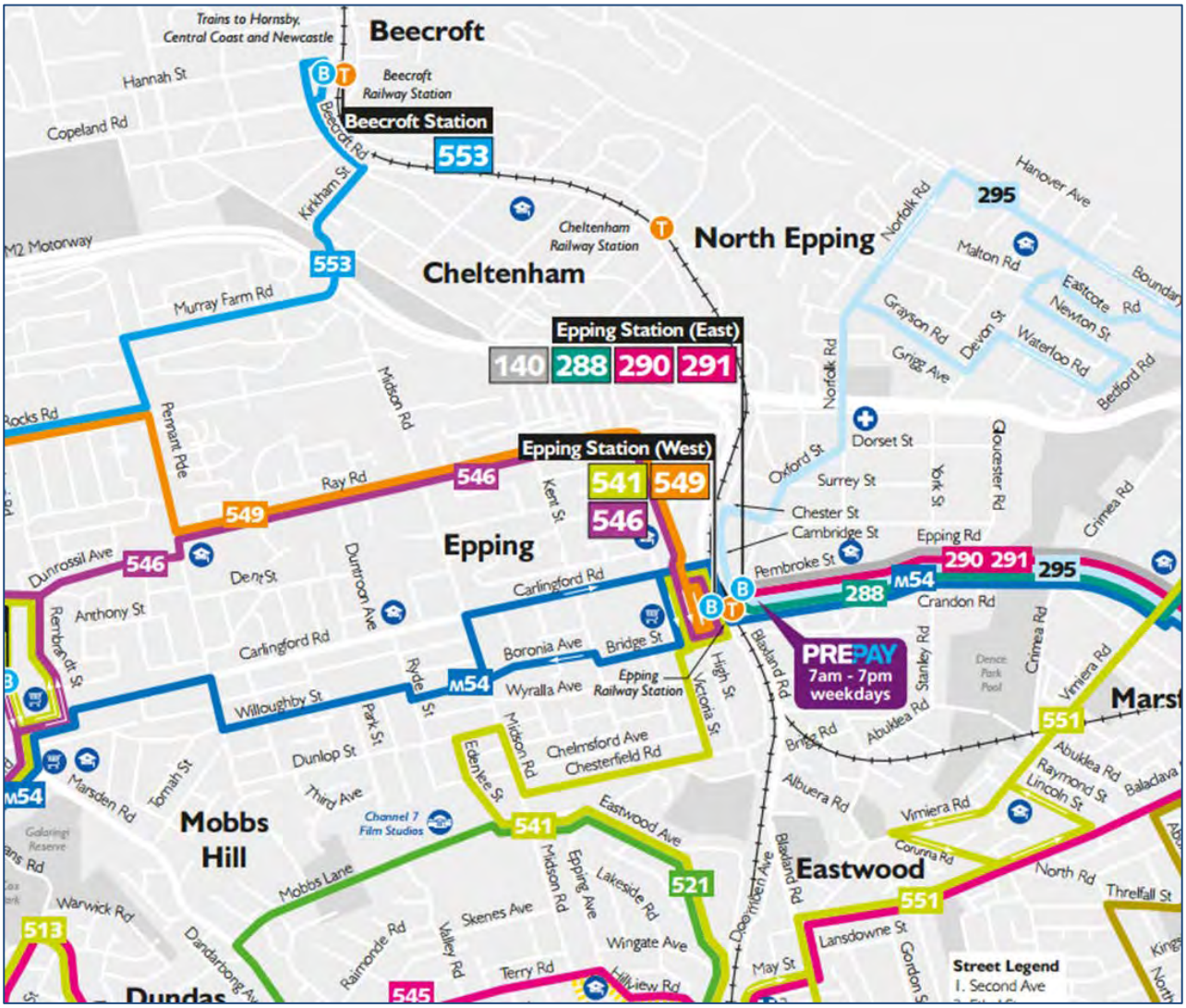


Figure 6 - Sydney Buses network servicing Epping Town Centre

Bus services via Beecroft Road/Rawson Street include:

- Route 541 – Eastwood to Epping
- Route 546 – Parramatta to Epping via Oatlands and North Rocks
- Route 549 – Parramatta to Epping via North Rocks
- Route 630 – Blacktown to Macquarie Park via Carlingford
- Route M54 – Parramatta to Macquarie Park via Epping

Bus Services via Cambridge Street include:

- Route 288 – Epping to City Erskine Street
- Route 290 – Epping to City King Street Wharf via Macquarie University and North Sydney
- Route 291 – Epping to McMahons Point
- Route 295 – North Epping to Macquarie Centre

Buses have a lower capacity than rail services but provide an important role in trunk-and-feeder service models, which is what the development of the current Sydney transport network is based on.

These models work by concentrating high-capacity, frequent services along a spine or "trunk" and just like the branches of a tree, these trunks are connected to lower-capacity service types that connect people via "feeder" services from more diverse origins to the trunk services.

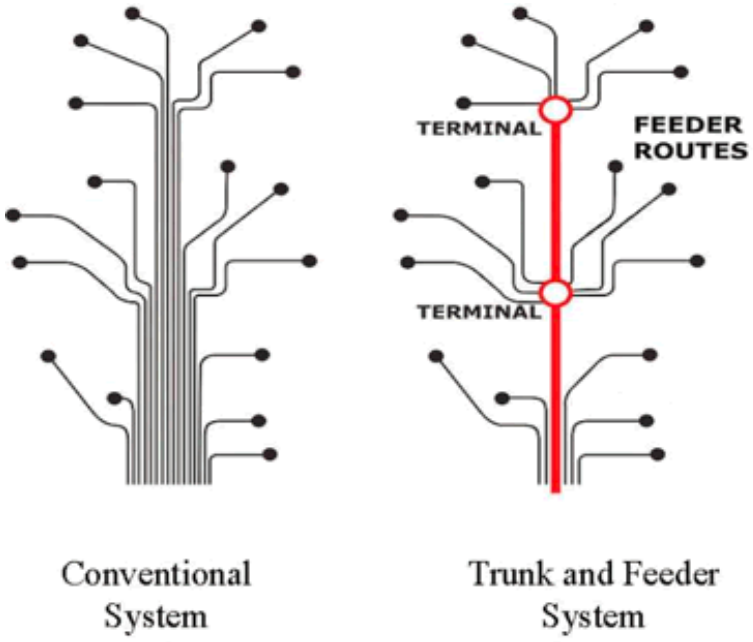


Figure 7 - Illustration of a Trunk and Feeder model compared to a conventional/ Direct service model

7.4 Active transport

Walking and cycling are ideal mode choices for relatively short trips (less than 5 kilometres).

7.4.1 Walking

Epping Town Centre has well-maintained footpaths on both sides of its main streets (Beecroft Road and Rawson Street). Rawson Street has mid-block marked and raised pedestrian crossings to access key destinations such as the Epping Centre and the Coles supermarket. Pedestrian access over Beecroft Road is limited to a pedestrian bridge at the train station. The bridge includes both full lift access and stairs enabling full accessibility to Epping station.



Figure 8 - Accessible Pedestrian Bridge over Beecroft Road

There are no other pedestrian crossing opportunities to the north of Beecroft Road, as this leads to the M2 motorway, and the next crossing opportunity to the south is around a 200m walk to the intersection of Beecroft/Blaxland/Epping/Langston. A three-leg pedestrian facility is provided here which is satisfactory given then are no active land uses on the missing leg.

A publicly accessible through site link has been provided within the site as part of the development. The link will be publicly accessible at all times and provides a link from Rawson Street to Beecroft Road and the Epping Train Station. The link is provided along the southern boundary of the site and will form one of several new pedestrian linkages that will facilitate improved pedestrian access throughout the Epping Town Centre.

7.4.2 Cycling

Cycling routes servicing the Epping Town Centre are generally of medium difficulty on on-street. This indicates that cycling is a low priority, which is supported by a very low mode share of 0.4% at the 2011 Census (EMM, 2018, *Epping Town Centre Traffic Study).*

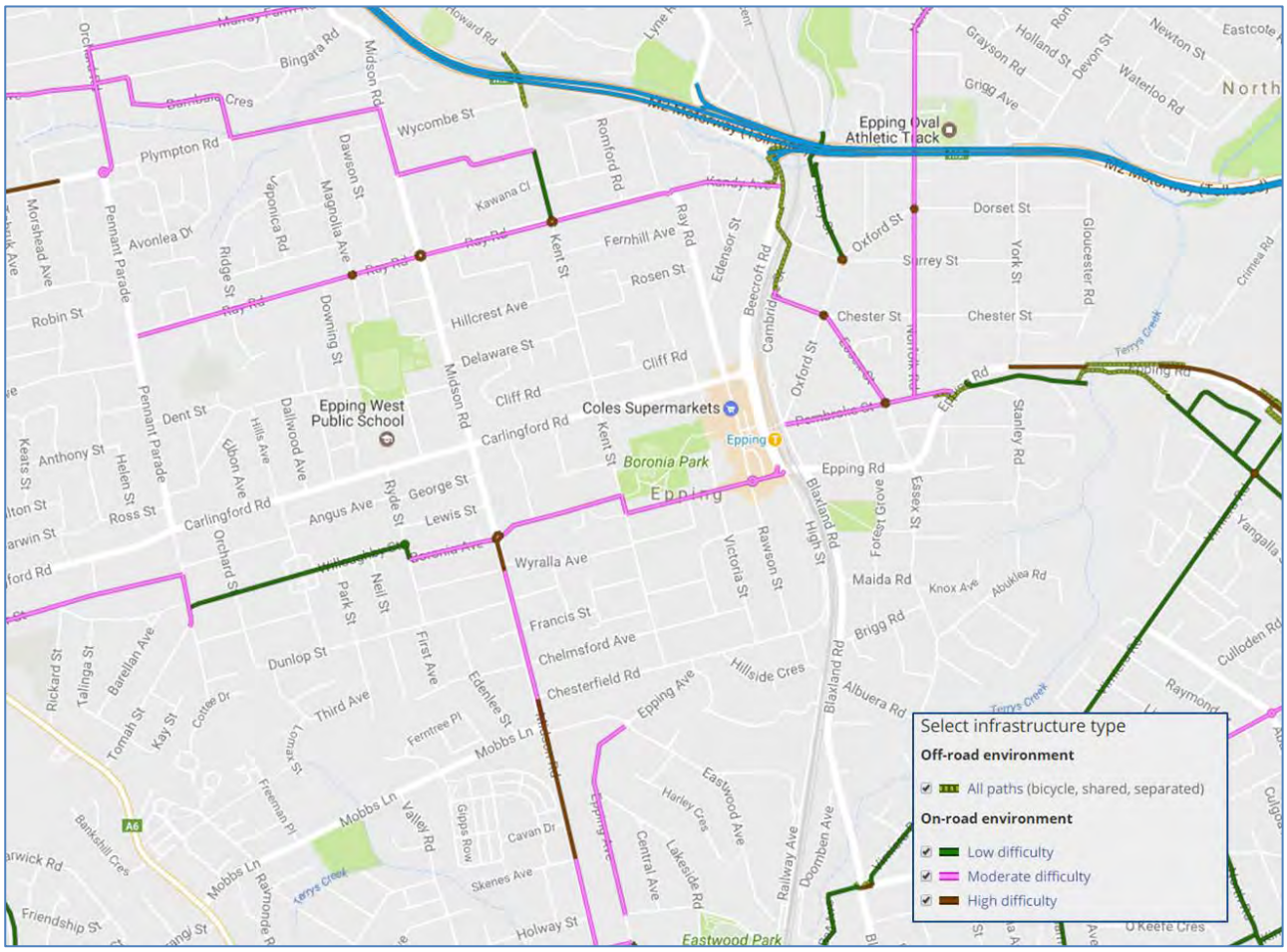


Figure 9 - Regional Cycle Network (RMS)

Investment in cycling infrastructure could significantly increase the mode share for cycling to reduce impact on the road network.

7.5 Car share

There are currently nine car share vehicles available for rent in and nearby the Epping Town Centre. Go Get is currently the only operator in the area with a dominant market position.

Flexicar and Hertz 24/7 are potential future operators in the area.

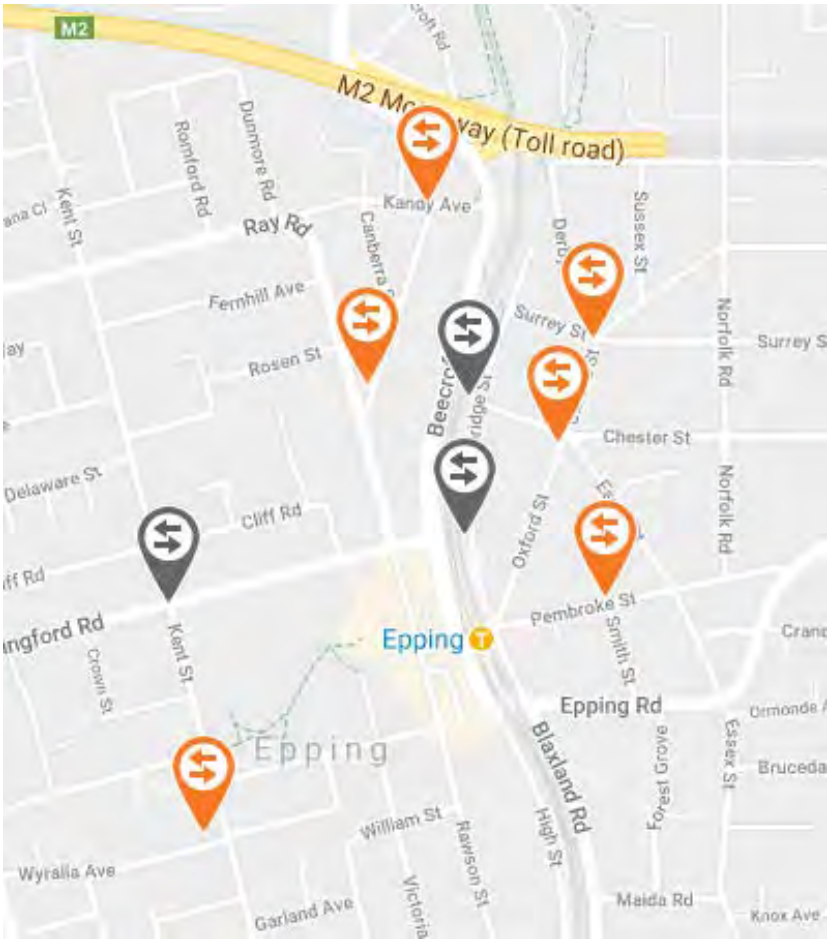


Figure 10 - Go Get vehicles near Epping Town Centre

Car share is an excellent option for people who may not want the expense of purchasing maintaining their own car, may not have parking available at their residence, or who may want the diversity of different vehicle options including luxury cars, vans or utility vehicles.

The proposed development includes two car share parking spaces which will be available for use by residents and the general public.

7.6 Road network

The road network characteristics are as shown in Table 1 below.

Road	Speed Limit	Lanes	Road Authority
Beecroft Road	60kph	6 (divided, plus time restricted parking)	RMS
Rawson Street	50kph	2 (undivided, plus time restricted parking)	Council
Bridge Street	50kph	2 (undivided, plus parking)	Council

Carlingford Road	60kph	4 (undivided)	RMS
Ray Road	50kph	2 (undivided, plus parking)	Council

Table 1 - Characteristics of Epping Town Centre road network

The area is dominated by regional through traffic accessing the M2 motorway and east-west movements between Macquarie Park and the Parramatta area (as shown by the black arrows in Figure 10 below).

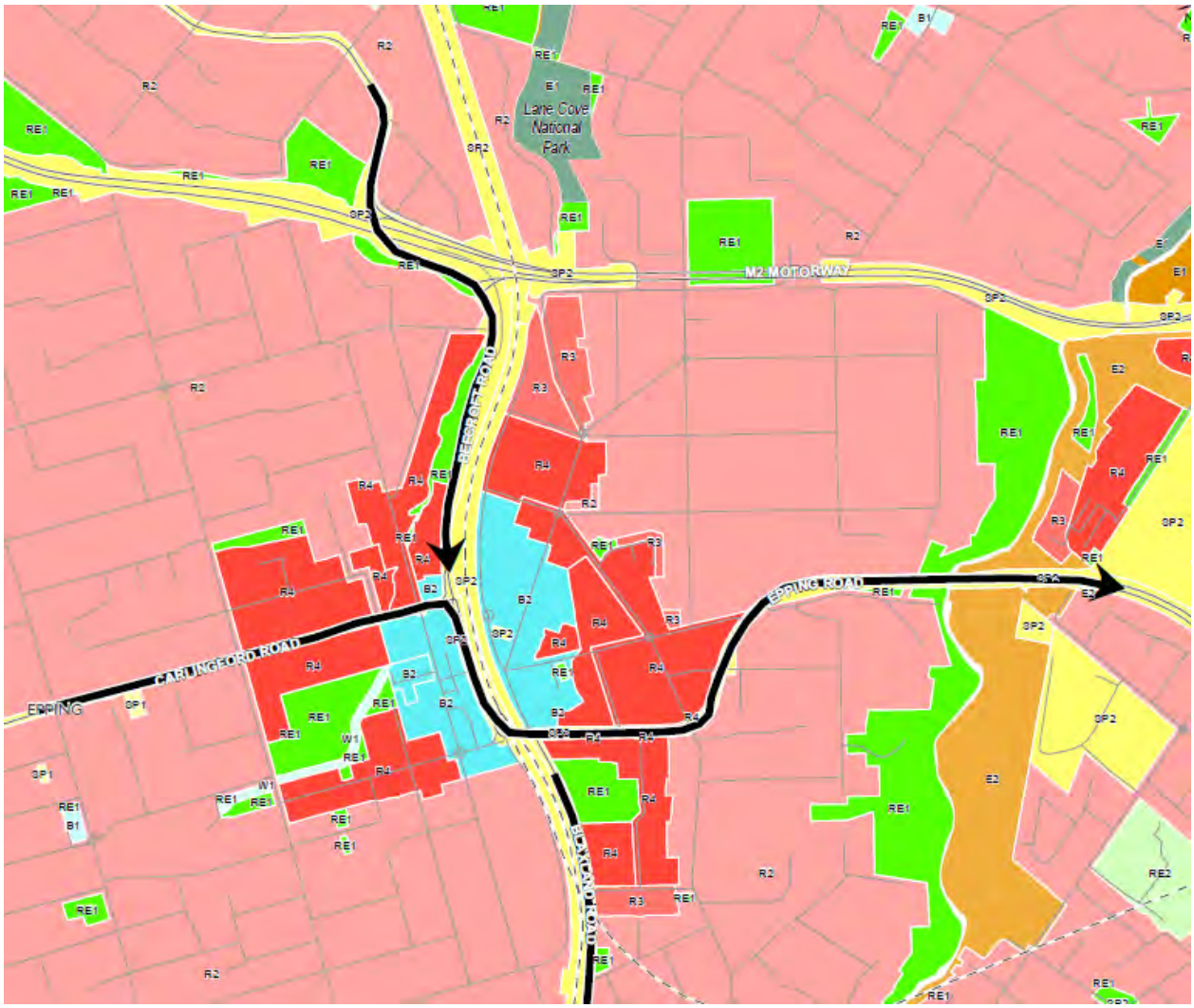


Figure 11 - Through-traffic movements in Epping Town Centre (EMM, 2018)

The *Epping Town Centre Traffic Study* does not make clear, despite its objectives, to what extent local traffic is impacting on the road network performance including that generated by the subject site.

The proposed development will provide 85 car parking spaces in line with Roads and Maritime Services (RMS) CBD rates, and these rates are lower than the maximum parking rates allowed in Parramatta DCP 2011.

8 Site-specific actions

The following actions are recommended to deliver on the Green Travel Plan Framework for this proposed development.

8.1 Action Plan

Item	Description	Beneficiary	Timeframe	Implementer
1. Reduce car parking on site	Reduce total number of car parking spaces to RMS CBD rates (this is included in the proposed development).	Residents Road network users	At design stage	Architect (complete)
2. Car parks only sold within the development	A suitable restriction will be implemented to restrict the use of any residential car space to an owner or occupier of the building	Road network users	At design stage	Legal
3. Car share (x2)	Provide for two (2) car share spaces within the proposed development. Enter into an agreement with a car share operator.	Residents Local residents and businesses	Prior to occupation	Body Corporate Car share operator
4. Create a resident-focussed social media community (for example, Facebook)	Create a social media community for residents (for example, setting up a Facebook page or other similar platform) within the development on a relevant social media platform. Provides a low-effort, high efficacy tool for building management to communicate with resident group in real time.	Residents and building management	Prior to occupation	Body Corporate

Item	Description	Beneficiary	Timeframe	Implementer
	Resident-led activities may include creation of a 'bike bus' or 'walk bus' to assist children to attend school by active transport methods.			
5. Resident Welcome Pack	Pack to include: • Information about social media group • Information about the bike or walk bus (if implemented at that stage) • Other relevant travel information • Transport Access Guide Information to be placed in an accessible place for all residents (e.g. resident noticeboard) and updated as necessary.	Residents	Moving in day	Body Corporate
6. End-of Trip facilities (only if there is a conversion to a commercial use in the future)	To encourage physical activity, including riding a bike to work, end-of-trip facilities should be fitted into the development to meet this need. Residents do not require end-of-trip facilities (apart from bike parking which is included) as they can freshen up at home.	(Potential future) commercial tenants	As required should use be converted	Architect (future)

8.2 Monitoring Plan

Following completion of the building and after occupation, the Body Corporate may undertake monitoring of the plan annually for the first three (3) years.

The Monitoring may include the following actions:

- Using the social media group or other method, survey residents to identify their travel behaviours, including mode of travel to work; and
- Undertake traffic counts at the basement entry/exit over two consecutive days at the AM and PM peak to identify the volume of traffic movements in and out.

8.3 Management and implementation

The success of a Green Travel Plan relies partly on the actions identified, but also with the willingness and capacity to implement them. The other key elements in the development and implementation of a successful GTP include:

- Communications – Good communications are an essential part of the GTP. It will be necessary to explain the reason for adopting the plan, promote the benefits available and provide information about the alternatives to reliance on private car travel;
- Commitment – GTPs involve changing established habits and providing the impetus for occupants in new developments to choose a travel mode other than private car use. To achieve co–operation, it is essential to promote positively the wider objectives and benefits of the Plan. This commitment includes the provision of the necessary resources to implement the Plan, beginning with the introduction of encouragement for changing travel modes upon occupation; and
- Consensus – It will be necessary to obtain broad support for the introduction of the Plan.

Once the Plan has been adopted it will be essential to maintain interest in the scheme and any new initiative in the Plan will need to be publicised and marketed. At all stages, residents should be consulted on any new initiatives to ensure that they are tailored to their needs, if they are in keeping with the Green Travel Plan Framework and the objectives of this plan.

At a development of this scale, it would be unreasonable to require the employment of a dedicated Green Travel Coordinator, however, with the right tools to maximise reach to residents (e.g. social media), this role could be included in the building manager's portfolio.

9 Conclusion

A Green Travel Plan is a useful tool to manage the culminative impacts of developments by enabling each developer to put in place tools to reduce reliance on private car travel and increase public and active transport use.

The proposed development at Beecroft Road is ideally located across from a major train station, offering frequent, high capacity services on Sydney Metro and Sydney Trains services to the Central Coast and Newcastle. These services offer connections to local destinations to the north and south, and access to the Hunter region and beyond. The development is also well serviced by multiple bus services that provide both local and regional connections.

Cycling routes are available in the local region and walking infrastructure is generally good with a fully accessible pedestrian bridge connection between the development and Epping station, and well-maintained footpaths with kerb ramps on the main streets. A through-site link will improve connectivity between Rawson Street and Beecroft Road.

The area is well serviced by local amenities, again decreasing the need to travel by means other than active transport for general food shopping, restaurants and medical needs.

Successful implementation of a Green Travel Plan will require commitment, communication and consensus to achieve the desired outcomes.

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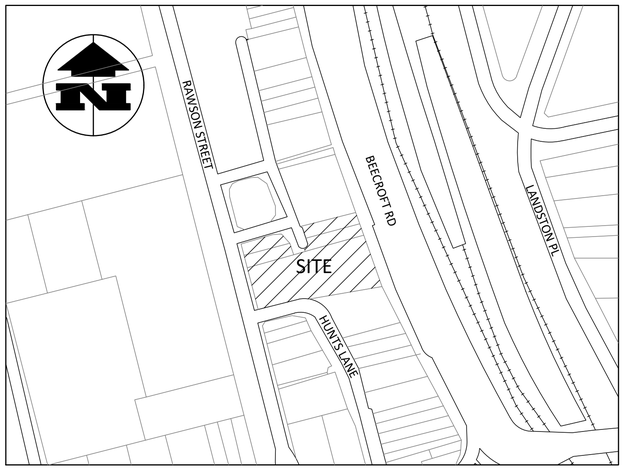
APPENDIX F

Alignment Drawings

Bornhorst + Ward

EPPING TOWER

PUBLIC DOMAIN ALIGNMENT WORKS



LOCALITY MAP
N.T.S

DRAWING LIST

C0000	COVER SHEET
C0001	LEGEND
C0210	EXISTING AND PROPOSED CONTOURS
C0310	VERGE SECTIONS LAYOUT
C0420	NORTH LANEWAY VERGE LONGITUDINAL SECTION
C0421	BEECROFT RD VERGE LONGITUDINAL SECTION
C0422	HUNTS LANE VERGE LONGITUDINAL SECTION
C0423	RAWSON ST VERGE LONGITUDINAL SECTION
C0500	NORTH LANEWAY VERGE SECTIONS SHEET 1
C0501	NORTH LANEWAY VERGE SECTIONS SHEET 2
C0502	BEECROFT RD VERGE SECTIONS
C0503	HUNTS LN VERGE SECTIONS SHEET 1
C0504	HUNTS LN VERGE SECTIONS SHEET 2
C0505	HUNTS LN VERGE SECTIONS SHEET 3
C0506	RAWSON ST VERGE SECTION SHEET 1
C0507	RAWSON ST VERGE SECTION SHEET 2

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D	17.05.19	DBS REVISED RESPOSE	TK	MS	RG	RG
C	07.02.19	RE-ISSUE	TK	ZW		
B	21.12.18	RESPONSE TO COUNCIL RFI	TK	MS	ZW	NR
A	06.07.18	PDG ALIGNMENT DRAWINGS	ABU	ZW	NR	

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DATE 21.12.18

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CLIENT
PDS AUSTRALIA PTY LTD

PROJECT
EPPING TOWER

SUBJECT
COVER SHEET

PROJECT No.
16115

DRAWING No.
C0000

REVISION
D

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ORIGINAL SIZE A1

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BOUNDARIES

EXISTING	PROPOSED	
		EASEMENT
		PROPERTY BOUNDARY

ROADWORKS

EXISTING	PROPOSED	
TOP OF BATTER / TOE OF BATTER	TOP OF BATTER / TOE OF BATTER	BATTER
		SKIP BIN
		BUILDING PAD
52	52	CONTOURS
		CONTROL LINE
		DRIVEWAY
		EXTENT OF BITUMEN
		EXTENT OF BUILDING
		EDGE OF SHOULDER
		FENCE
		FOOTPATH
		KERB AND CHANNEL
		KERB MOUNTABLE
		KERB INVERT
		KERB ONLY
		EDGE RESTRAINT
		LINE OF VEGETATION
		KERB RAMP
TOP OF WALL / TOE OF WALL	TOP OF WALL / TOE OF WALL	RETAINING WALL
	10	SETOUT POINT
		SAWCUT
		STONE PITCHING
		STREET NAME SIGN
		TREE
		TRAFFIC SIGN

CROSS SECTIONS

STRUCTURAL FLOOR

EXISTING SURVEY LEVEL

STORMWATER

EXISTING	
	CATCHMENT NUMBER
	CATCHMENT BOUNDARY
	OPEN CHANNEL
RW — RW	ROOFWATER DRAINAGE
SW — SW	STORMWATER DRAINAGE
COMP — SW	STORMWATER DRAINAGE (FROM RECORDS)
	STORMWATER DRAINAGE PIPE
	STORMWATER STRUCTURE NUMBER
SB	SUBSOIL DRAINAGE & CLEANOUT
	KERB ADAPTER

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PROJECT: EPPING TOWER

SUBJECT: LEGEND

PROJECT No.: 16115

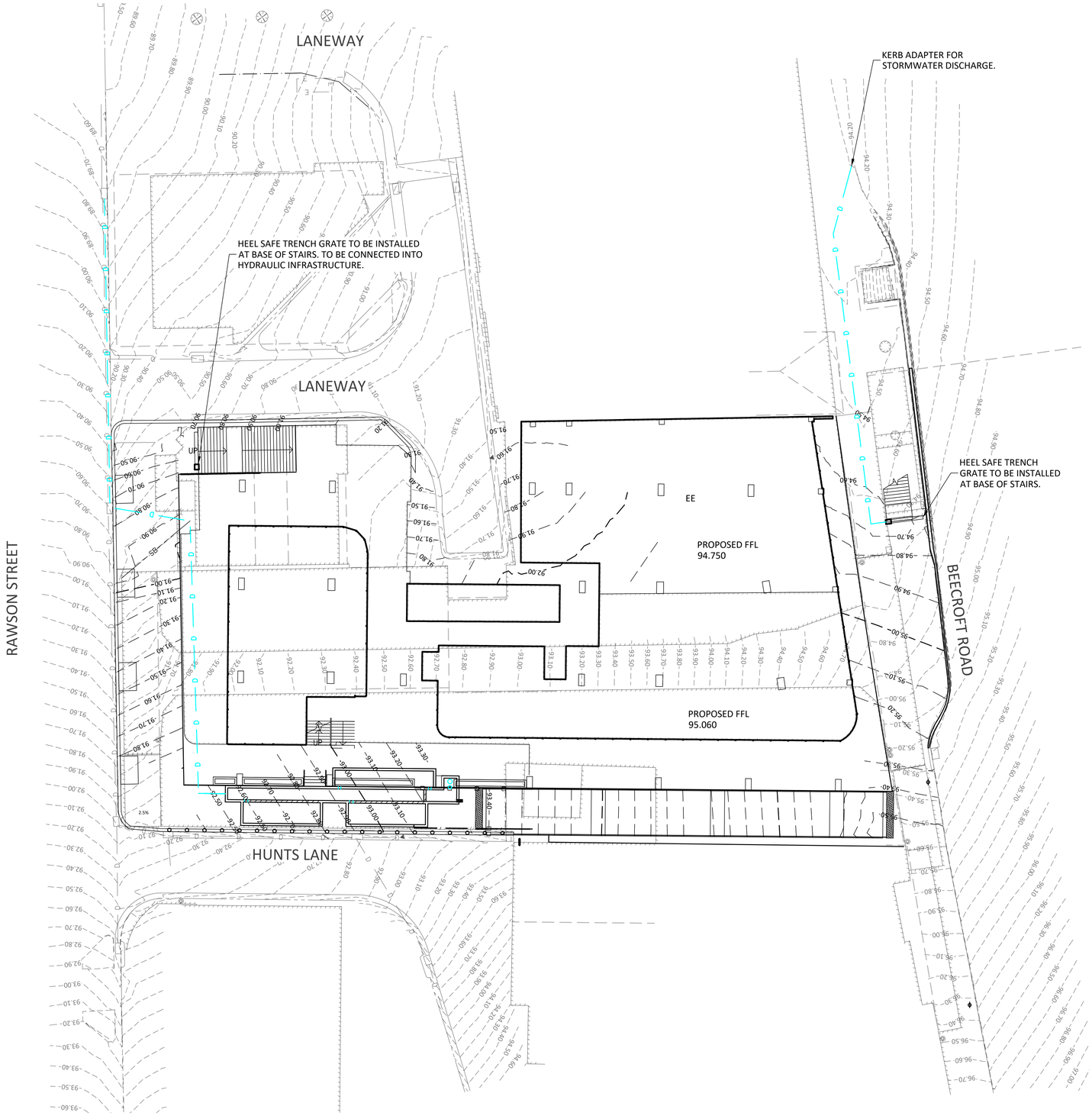
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SCALE 1:200

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SCALES — UNREDUCED / REDUCED

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C	21.12.18	RESPONSE TO COUNCIL RFI	TK	MS	ZW	NR
B	15.10.18	PLAN UPDATED WITH SECTION LOCATIONS	TK	BK		
A	06.07.18	PDG ALINGMENT DRAWINGS	ABU	ZW	NR	

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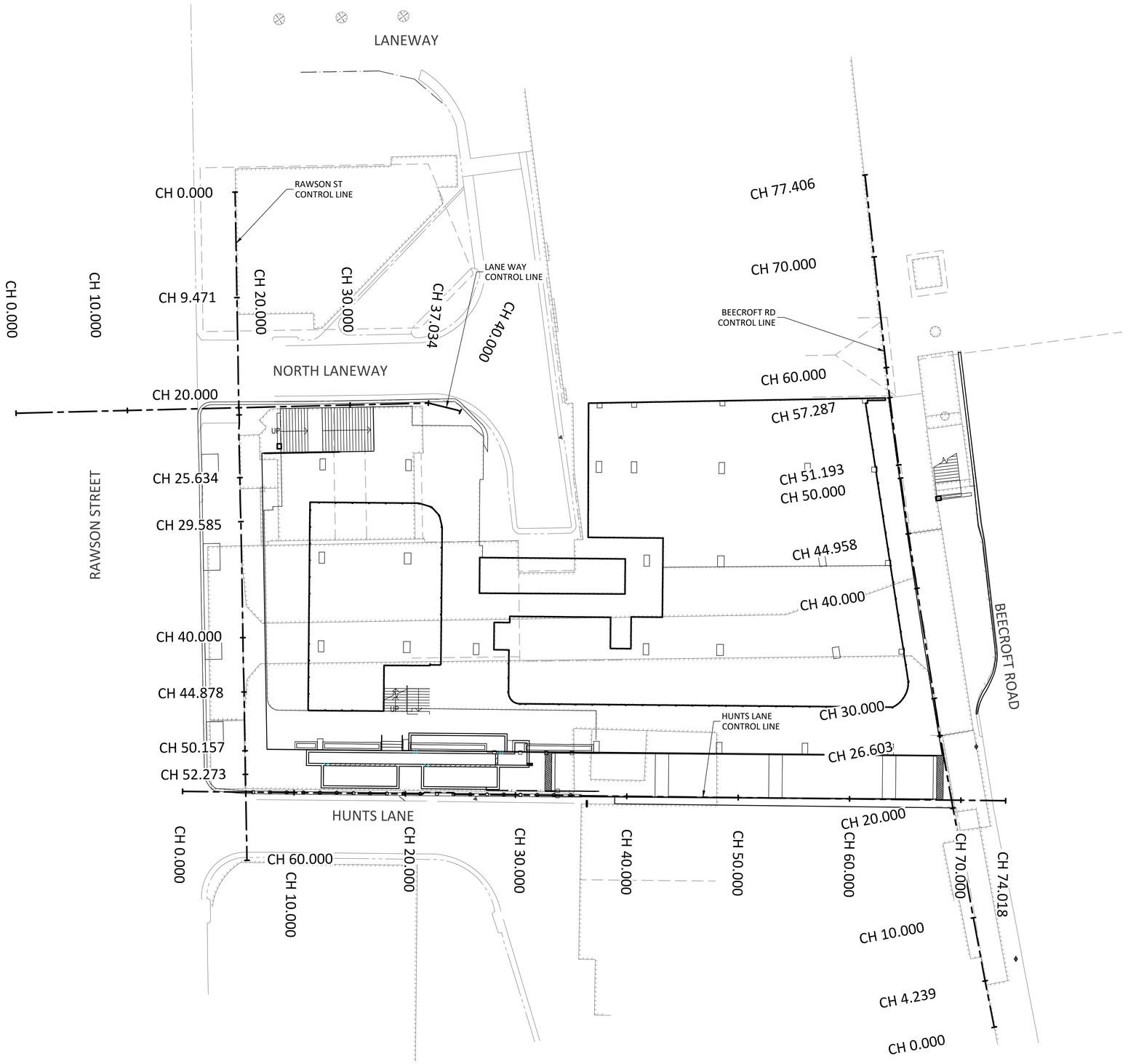
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SCALE 1:200

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SCALES — UNREDUCED / REDUCED

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C	21.12.18	RESPONSE TO COUNCIL RFI	TK	MS	ZW	NR
B	15.10.18	PLAN UPDATED WITH SECTION LOCATIONS	TK	BK		
A	06.07.18	PDG ALINGMENT DRAWINGS	ABU	ZW	NR	

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PROJECT: EPPING TOWER

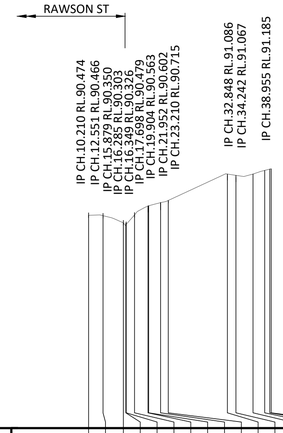
SUBJECT: VERGE SECTIONS LAYOUT

PROJECT No. 16115

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VERTICAL DATA
DATUM 87.00

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CONTROL LINE FINISHED LEVEL	90.474	90.466	90.350	90.303	90.326	90.479	90.563	90.565	90.602	90.715	91.086	91.067	91.137	91.185	91.211	91.219
CONTROL LINE CHAINAGES	10.210	12.551	15.879	16.285	16.349	17.698	19.904	20.000	21.952	23.210	32.848	34.242	37.034	38.955	39.766	40.000

LONGITUDINAL SECTIONS
SCALE 1:500 (HOR)
1:50 (VERT)

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A3 REDUCED

SCALES — UNREDUCED / REDUCED

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C	07.02.19	RE-ISSUE	TK	ZW		
B	21.12.18	RESPONSE TO COUNCIL RFI	TK	MS	ZW	NR
A	15.10.18	BOUNDARY LONGITUDINAL SECTIONS	MW	BK		

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PROJECT: EPPING TOWER

SUBJECT: NORTH LANEWAY VERGE LONGITUDINAL SECTION

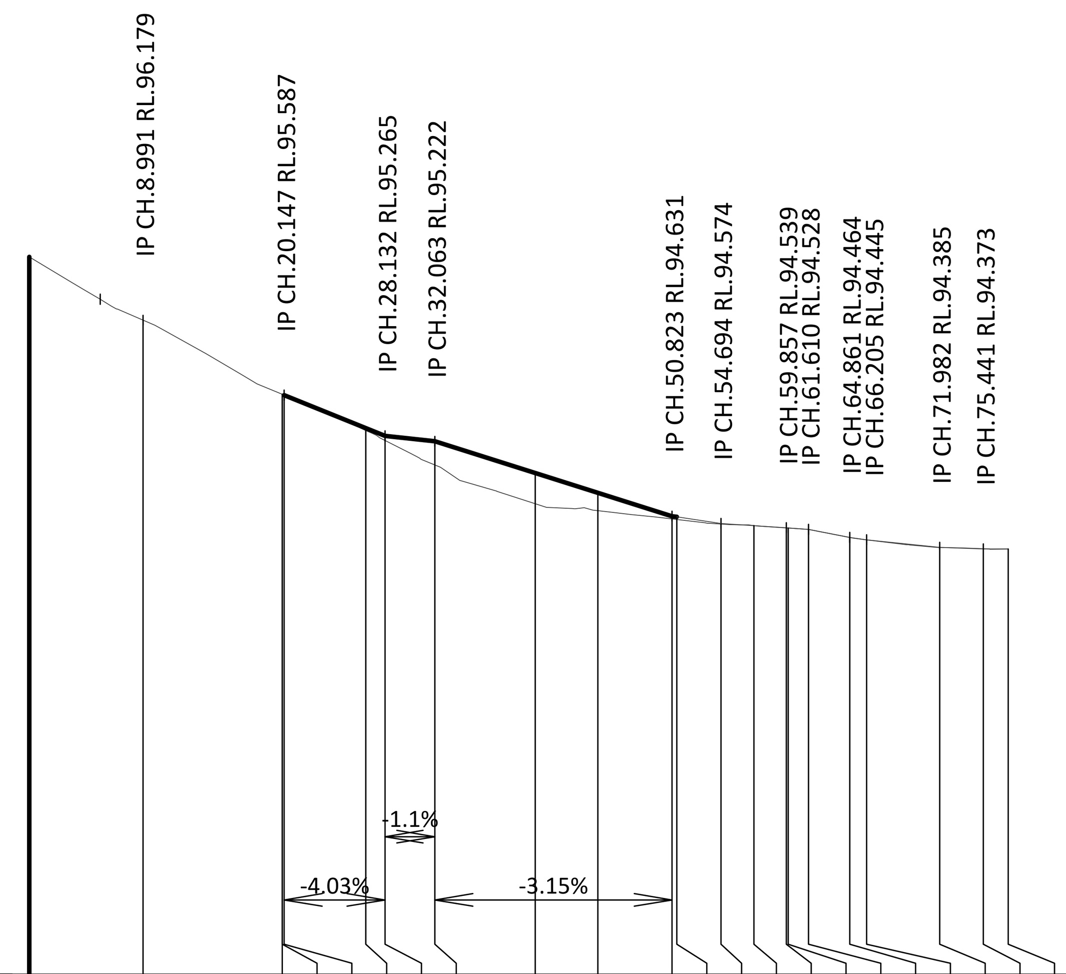
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REVISION D

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HORIZONTAL DATA
VERTICAL DATA
DATUM 91.00

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CONTROL LINE FINISHED LEVEL			96.179	95.595	95.595	95.587	95.327	95.265	95.222	94.972	94.816	94.631	94.626										
CONTROL LINE CHAINAGES	0.000	4.239	8.991	20.000	20.000	20.147	26.603	28.132	32.063	40.000	44.958	50.823	51.193	54.694	57.287	59.857	60.000	61.610	64.861	66.205	71.982	75.441	77.406

LONGITUDINAL SECTIONS
SCALE 1:500 (HOR)
1:50 (VERT)

DIMENSIONS IN METRES EXCEPT WHERE SHOWN OTHERWISE. CULVERT AND PIPE SIZES IN MILLIMETRES
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A3 REDUCED
SCALES UNREDUCED / REDUCED
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B	21.12.18	RESPONSE TO COUNCIL RFI	TK	MS	ZW	NR
A	15.10.18	BOUNDARY LONGITUDINAL SECTIONS	MW	BK		

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APPROVED 7729 RPEQ DATE 21.12.18
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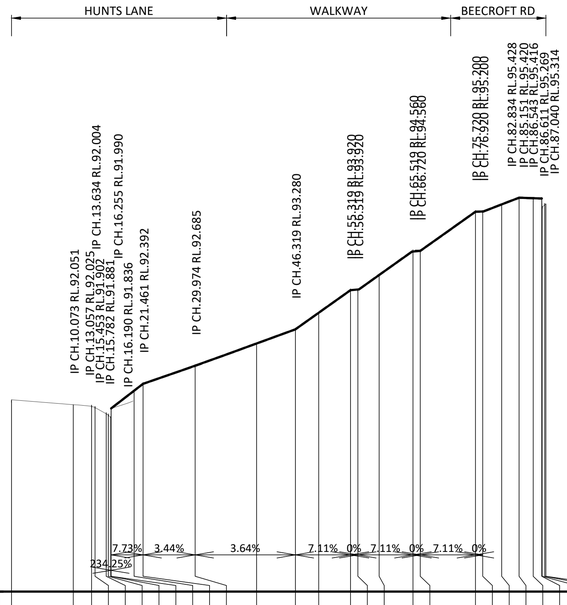
PROJECT
EPPING TOWER

SUBJECT
BEECROFT RD VERGE
LONGITUDINAL SECTION

PROJECT No. 16115
DRAWING No. C0421
REVISION D

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ORIGINAL SIZE A1

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HORIZONTAL DATA
VERTICAL DATA
DATUM 89.00

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CONTROL LINE FINISHED LEVEL	92.111		92.051	92.025	92.004	91.902	91.881	91.836	91.990	92.279	92.392	92.685	93.050	93.280	93.552	93.920	93.920	94.168	94.560	94.560	95.200	95.200	95.319	95.428	95.420	95.416	95.269	95.314	95.327	
CONTROL LINE CHAINAGES	0.000		10.073	13.057	13.634	15.453	15.782	16.190	16.255	20.000	21.461	29.974	40.000	46.319	50.141	55.319	56.519	60.000	65.519	66.720	75.720	76.920	80.000	82.834	85.151	86.543	86.611	87.040	87.229	

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SCALE 1:500 (HOR)
1:50 (VERT)

DIMENSIONS IN METRES EXCEPT WHERE SHOWN OTHERWISE. CULVERT AND PIPE SIZES IN MILLIMETRES

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A3 REDUCED

SCALES — UNREDUCED / REDUCED

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0 0.5 1.0 1.5 2.0 2.5m — 1 : 50 / 1 : 100

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REV	DATE	DESCRIPTION	DWN	DES	CHK	APP
D	17.05.19	DBS REVISED RESPOSE	TK	MS	RG	RG
C	07.02.19	RE-ISSUE	TK	ZW		
B	21.12.18	RESPONSE TO COUNCIL RFI	TK	MS	ZW	NR
A	15.10.18	BOUNDARY LONGITUDINAL SECTIONS	MW	BK		

ASSOCIATED CONSULTANTS
WOODS BAGOT
EMF GRIFFITHS

APPROVED — 7729 RPEQ — DATE 21.12.18

CHECKED — DATE 21.12.18

BORNHORST + WARD
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mail@bornhorstward.com.au
www.bornhorstward.com.au

CLIENT: PDS AUSTRALIA PTY LTD

PROJECT: EPPING TOWER

SUBJECT: HUNTS LANE VERGE LONGITUDINAL SECTION

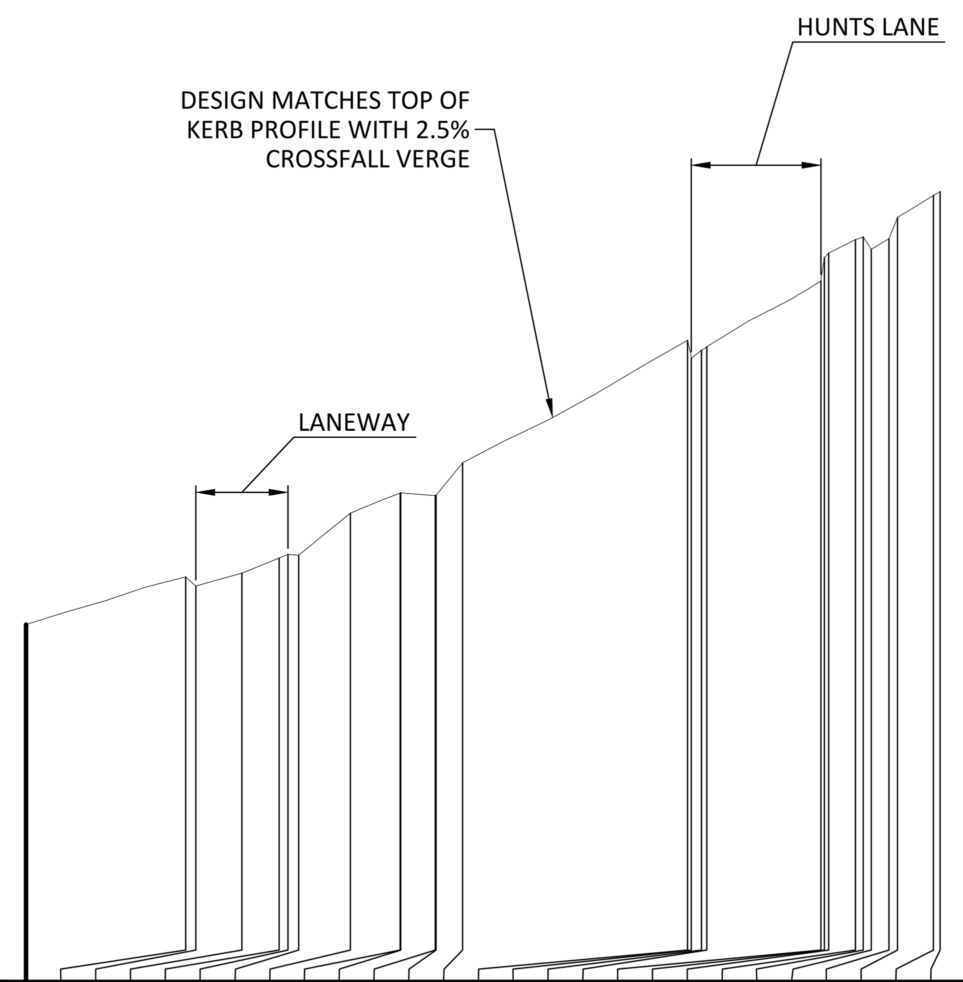
PROJECT No. 16115

DRAWING No. C0422

REVISION D

0 10 20 30 40 50 100 ORIGINAL SIZE A1

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17/05/2019 5:00:41 PM



HORIZONTAL DATA
VERTICAL DATA
DATUM 87.00

EXISTING SURFACE LEVEL	89.825	90.201	90.129	90.231	90.350	90.379	90.372	90.706	90.864	90.866	90.844	90.848	91.104	92.073	91.931	91.994	92.022	92.542	92.727	92.763	92.868	92.889	92.792	92.875	93.044	93.219	93.247
CONTROL LINE FINISHED LEVEL	89.825	90.201	90.129	90.231	90.350	90.379	90.372	90.706	90.864	90.866	90.844	90.848	91.104	92.073	91.931	91.994	92.022	92.542	92.727	92.763	92.868	92.889	92.792	92.875	93.044	93.219	93.247
CONTROL LINE CHAINAGES	0.000	12.610	13.415	17.056	20.000	20.705	21.549	25.634	29.563	29.585	32.338	32.413	34.509	52.273	52.573	53.376	53.793	62.819	63.102	63.438	65.558	66.156	66.789	68.199	68.877	71.715	72.230

LONGITUDINAL SECTIONS
SCALE 1:500 (HOR)
1:50 (VERT)

DIMENSIONS IN METRES EXCEPT WHERE SHOWN OTHERWISE. CULVERT AND PIPE SIZES IN MILLIMETRES

A1 UNREDUCED
A3 REDUCED

SCALES — UNREDUCED / REDUCED
0 5 10 15 20 25m — 1 : 500 / 1 : 1000
0 0.5 1.0 1.5 2.0 2.5m — 1 : 50 / 1 : 100

STATUS
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D	17.05.19	DBS REVISED RESPOSE	TK	MS	RG	RG
C	07.02.19	RE-ISSUE	TK	ZW		
B	21.12.18	RESPONSE TO COUNCIL RFI	TK	MS	ZW	NR
A	15.10.18	BOUNDARY LONGITUDINAL SECTIONS	MW	BK		

ASSOCIATED CONSULTANTS
WOODS BAGOT
EMF GRIFFITHS

APPROVED 7729 RPEQ
DATE 21.12.18

CHECKED
DATE 21.12.18

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CLIENT
PDS AUSTRALIA PTY LTD

PROJECT
EPPING TOWER

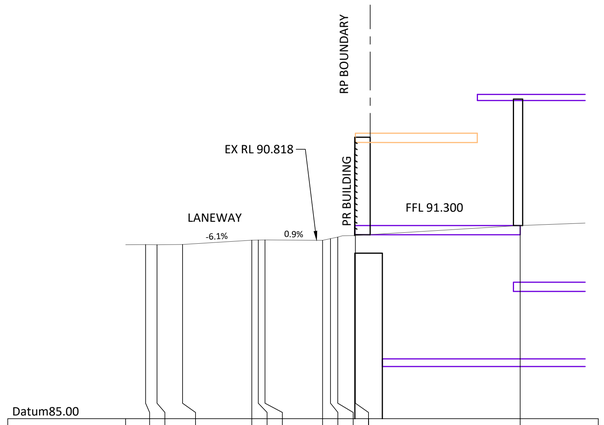
SUBJECT
RAWSON ST VERGE
LONGITUDINAL SECTION

PROJECT No.
16115

DRAWING No. C0423
REVISION D

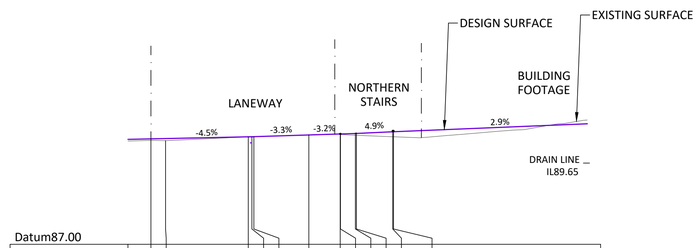
0 10 20 30 40 50 100
ORIGINAL SIZE A1

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17/05/2019 5:00:42 PM



Datum85.00															
DESIGN HEIGHT	90.679	90.675	90.684		90.821	90.828	90.833		90.817	90.872	90.925	90.961		91.300	
EXISTING HEIGHT	90.679	90.675	90.684		90.821	90.828	90.833		90.817	90.872	90.925				
OFFSETS	-6.851	-6.479	-5.643		-3.384	-3.170	-2.951		-1.071	-0.815	-0.574	0.000			

SECTION CHAINAGE 30.000
SCALE 1:100



Datum87.00															
DESIGN HEIGHT	90.390	90.384		90.505	90.510	90.513		90.572	90.604	90.605	90.639	90.641	90.699	90.700	
EXISTING HEIGHT	90.390	90.384		90.505	90.510	90.513		90.572	90.604	90.605	90.639	90.641	90.699	90.700	
OFFSETS	-6.676	-6.200		-3.496	-3.377	-3.316		-1.520	-0.496	-0.488	0.000	0.036	1.220	1.245	

SECTION CHAINAGE 20.000
SCALE 1:100

DIMENSIONS IN METRES EXCEPT WHERE SHOWN OTHERWISE. CULVERT AND PIPE SIZES IN MILLIMETRES

A1 UNREDUCED
A3 REDUCED

SCALES — UNREDUCED / REDUCED

0 1.0 2.0 3.0 4.0 5.0m

1 : 100 / 1 : 200

STATUS

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B	07.02.19	RE-ISSUE	TK	ZW		
A	21.12.18	RESPONSE TO COUNCIL RFI	TK	MS	ZW	NR

ASSOCIATED CONSULTANTS
WOODS BAGOT

APPROVED — 7729 RPEQ — DATE 21.12.18

CHECKED — DATE 21.12.18

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www.bornhorstward.com.au

CLIENT: PDS AUSTRALIA PTY LTD

PROJECT: EPPING TOWER

SUBJECT: NORTH LANEWAY VERGE SECTIONS SHEET 1

PROJECT No. 16115

DRAWING No. C0500

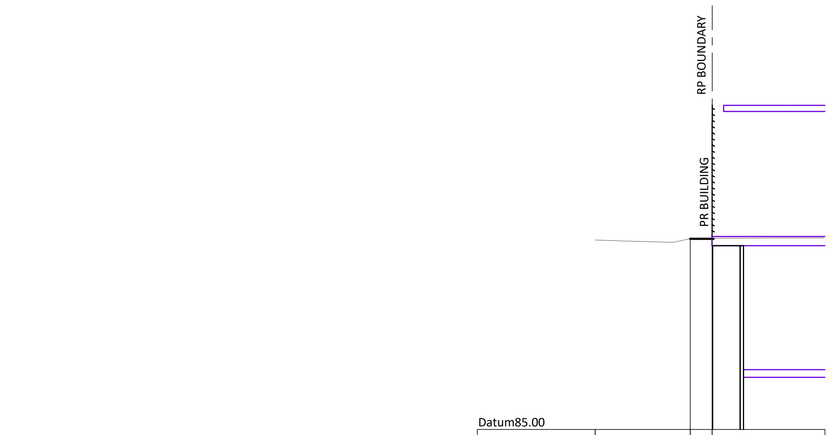
REVISION D

0 10 20 30 40 50 100

ORIGINAL SIZE A1

I:\16116\16115\05_DRAWINGS\DRG\C0500.DWG

17/05/2019 5:00:45 PM



Datum85.00

DESIGN HEIGHT	91.230	91.230	
EXISTING HEIGHT	91.232	91.244	
OFFSETS	10.605	11.317	

SECTION CHAINAGE 40.000

SCALE 1:100

DIMENSIONS IN METRES EXCEPT WHERE SHOWN OTHERWISE. CULVERT AND PIPE SIZES IN MILLIMETRES — A1 UNREDUCED / A3 REDUCED

SCALES — UNREDUCED / REDUCED

0 1.0 2.0 3.0 4.0 5.0m — 1 : 100 / 1 : 200

STATUS

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D	17.05.19	DBS REVISED REPONSE	TK	MS	RG	RG
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B	07.02.19	RE-ISSUE	TK	ZW		
A	21.12.18	RESPONSE TO COUNCIL RFI	TK	MS	ZW	NR

ASSOCIATED CONSULTANTS
WOODS BAGOT

APPROVED — 7729 RPEQ — DATE 21.12.18

CHECKED — DATE 21.12.18

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CLIENT
PDS AUSTRALIA PTY LTD

PROJECT
EPPING TOWER

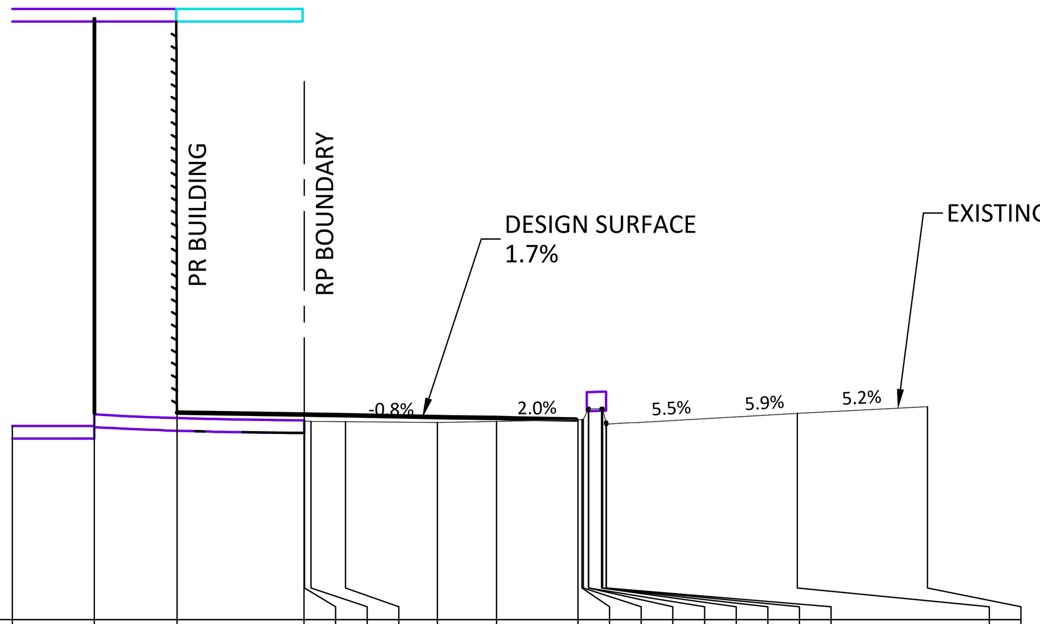
SUBJECT
NORTH LANEWAY VERGE SECTIONS SHEET 2

PROJECT No. 16115

DRAWING No. C0501 — REVISION D

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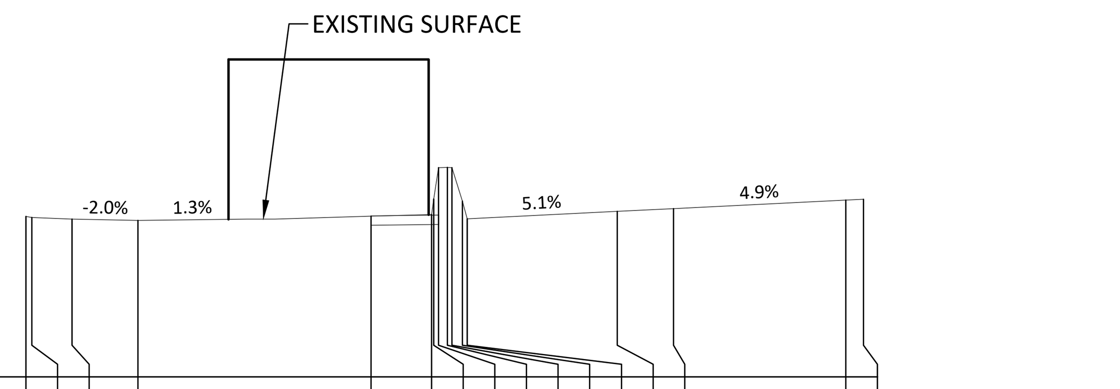
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17/05/2019 5:00:45 PM



Datum92.00

DESIGN HEIGHT	95.060	95.241	95.270	95.241	95.241	95.239	95.228	95.201	95.184											
EXISTING HEIGHT	95.060	95.241		95.135	95.135	95.130	95.127	95.115	95.133	95.158	95.160	95.160	95.324	95.332	95.331	95.331	95.113	95.087	95.258	95.365
OFFSETS	-4.619	-3.321		-0.008	0.000	0.103	0.646	2.099	3.035	4.323	4.388	4.409	4.490	4.492	4.695	4.712	4.766	4.771	7.791	9.846

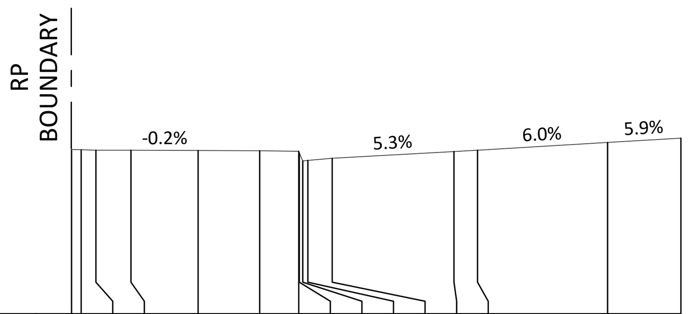
SECTION CHAINAGE 30.000
SCALE 1:100



Datum92.00

EXISTING HEIGHT	94.537	94.518	94.491	94.470	94.538	94.564	94.810	95.306	95.308	95.308	94.778	94.495	94.616	94.659	94.793	94.807
OFFSETS	0.043	0.136	0.771	1.814	5.496	6.451	6.487	6.562	6.700	6.773	6.937	7.014	9.387	10.275	12.995	13.278

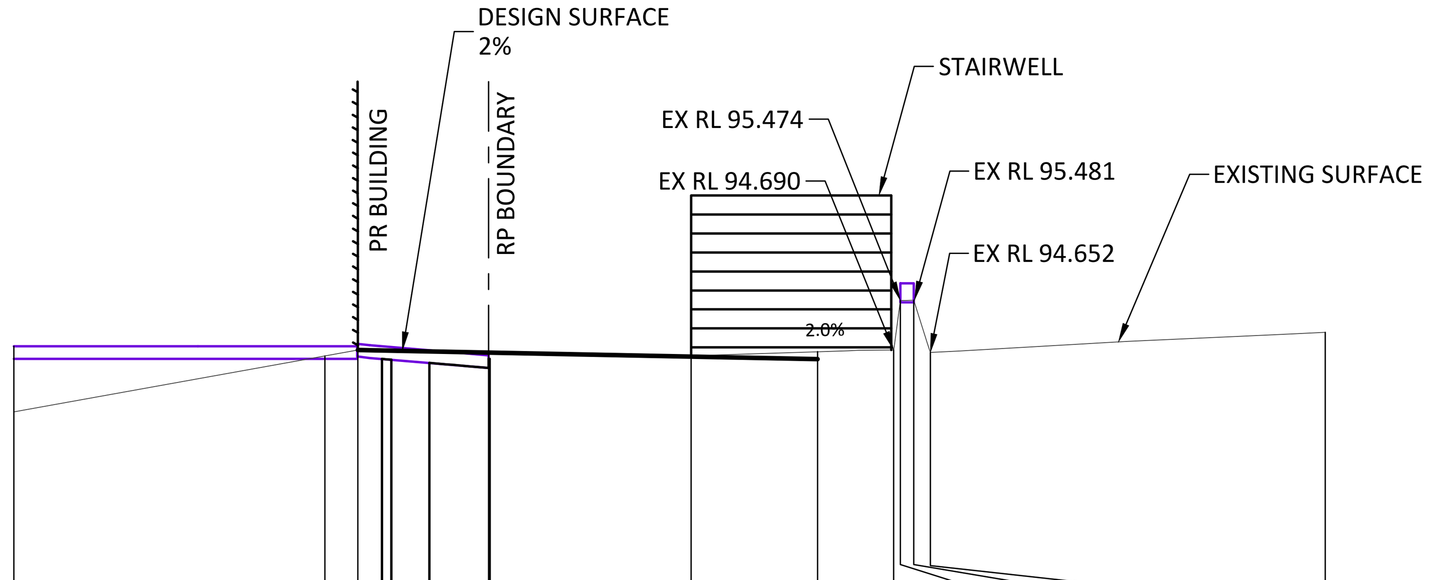
SECTION CHAINAGE 60.000
SCALE 1:100



Datum93.00

EXISTING HEIGHT	95.592	95.583	95.582	95.580	95.574	95.568	95.544	95.417	95.425	95.459	95.561	95.583	95.706	95.775
OFFSETS	0.152	0.385	0.940	2.003	2.977	3.592	3.603	3.656	3.737	4.124	6.047	6.419	8.480	9.639

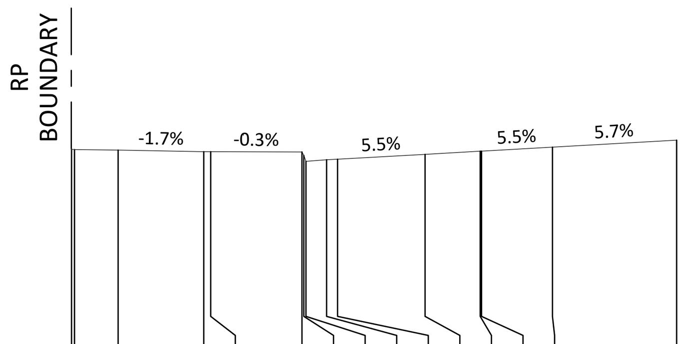
SECTION CHAINAGE 20.000
SCALE 1:100



Datum91.00

DESIGN HEIGHT	94.750	94.750	94.708	94.649	94.646					94.973
EXISTING HEIGHT	94.598	94.692	94.650			94.690	95.474	95.481	94.652	94.973
OFFSETS	-2.585	-2.066	0	3.200	5.200	6.400	6.508	6.719	6.979	13.222

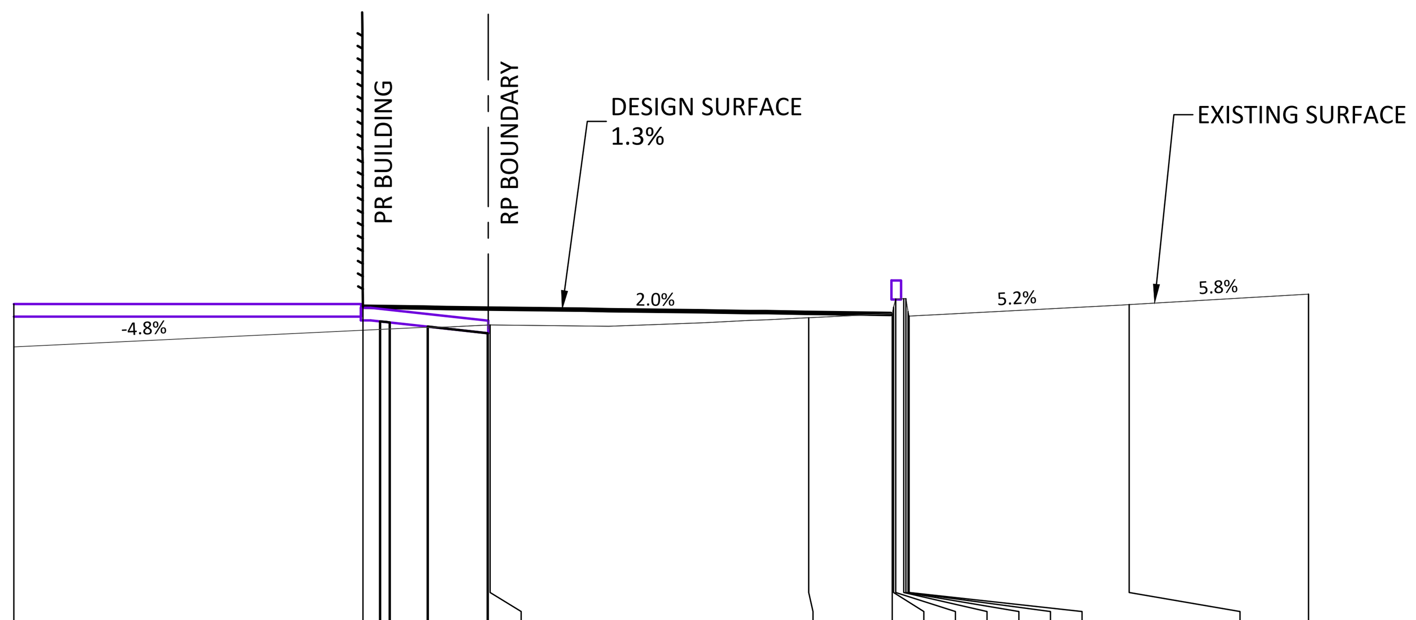
SECTION CHAINAGE 50.000
SCALE 1:100



Datum93.00

EXISTING HEIGHT	96.135	96.123	96.100	96.100	96.096	96.040	95.949	95.970	95.982	96.058	96.108	96.108	96.169	96.282
OFFSETS	0.045	0.734	2.090	2.199	3.642	3.674	3.709	4.035	4.208	5.591	6.463	6.486	7.608	9.572

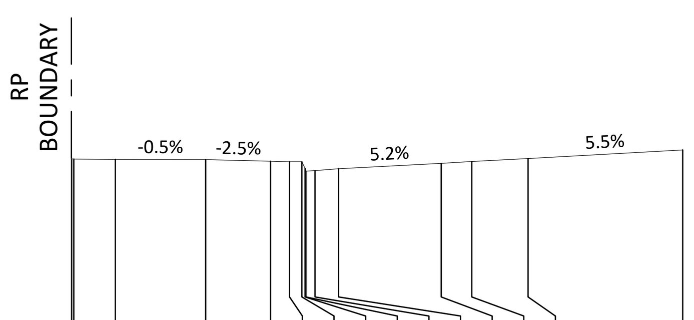
SECTION CHAINAGE 10.000
SCALE 1:100



Datum90.00

DESIGN HEIGHT	95.014	94.729	94.843	94.907	95.008	95.141	95.144	95.144	94.939	94.868	95.050	95.214
EXISTING HEIGHT	94.645	94.729	94.843	94.907	95.008	95.141	95.144	95.144	94.939	94.868	95.050	95.214
OFFSETS	-2.013	0.000	5.038	6.359	6.379	6.411	6.538	6.572	6.606	6.625	10.105	12.941

SECTION CHAINAGE 40.000
SCALE 1:100



Datum94.00

EXISTING HEIGHT	96.679	96.675	96.668	96.642	96.636	96.634	96.531	96.488	96.497	96.526	96.611	96.638	96.687	96.822
OFFSETS	0.033	0.690	2.114	3.142	3.442	3.636	3.687	3.698	3.844	4.216	5.837	6.319	7.208	9.651

SECTION CHAINAGE 0.000
SCALE 1:100

DIMENSIONS IN METRES EXCEPT WHERE SHOWN OTHERWISE. CULVERT AND PIPE SIZES IN MILLIMETRES

A1 UNREDUCED
A3 REDUCED

SCALES UNREDUCED / REDUCED
0 1.0 2.0 3.0 4.0 5.0m
1 : 100 / 1 : 200

STATUS
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REV	DATE	DESCRIPTION	DWN	DES	CHK	APP
D	17.05.19	DBS REVISED REPONSE	TK	MS	RG	RG
C	28.03.19	RESPONSE TO RFI	ABU	MS		
B	07.02.19	RE-ISSUE	TK	ZW		
A	21.12.18	RESPONSE TO COUNCIL RFI	TK	MS	ZW	NR

ASSOCIATED CONSULTANTS
WOODS BAGOT

APPROVED
M. Kozij 7729 RPEQ
DATE 21.12.18

CHECKED
M. Kozij
DATE 21.12.18

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CLIENT
PDS AUSTRALIA PTY LTD

PROJECT
EPPING TOWER

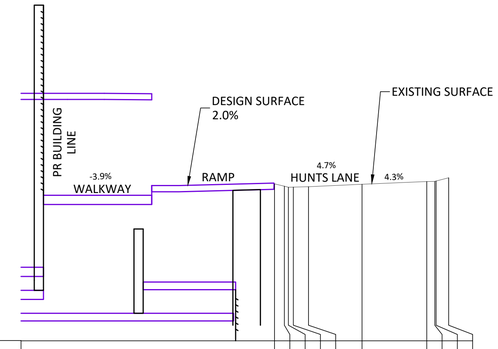
SUBJECT
BEECROFT RD VERGE
SECTIONS

PROJECT No.
16115

DRAWING No. C0502
REVISION D

0 10 20 30 40 50 100
ORIGINAL SIZE A1

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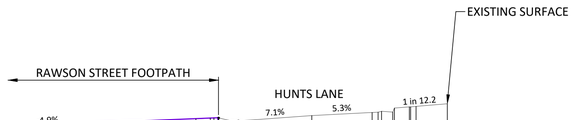


Datum 52.5

DESIGN HEIGHT	92.624	92.547	92.514	92.518	92.529	92.611	92.702	92.707	92.718	92.825		
EXISTING HEIGHT	92.624	92.547	92.514	92.518	92.529	92.611	92.702	92.707	92.718	92.825		
OFFSETS	-0.615	-0.294	-0.161	0.000	0.495	2.242	4.353	4.616	4.659	5.069		

SECTION CHAINAGE 10.000

SCALE 1:100



Datum89.00

DESIGN HEIGHT	92.232	92.255	92.261	92.268	92.264	92.161	92.161	92.161	92.168	92.169	92.170	92.340	92.443	92.480	92.456	92.585	92.624	92.627	92.642	92.726
EXISTING HEIGHT	92.232	92.255	92.261	92.268	92.264	92.161	92.161	92.161	92.168	92.169	92.170	92.340	92.443	92.480	92.456	92.585	92.624	92.627	92.642	92.726
DESIGN HEIGHT	92.142	92.237																		
OFFSETS	-1.369	-0.899	-0.780	-0.635	-0.621	-0.184	-0.175	-0.145	0.000	0.005	0.033	2.414	4.383	4.576	4.691	5.057	5.109	5.598	5.639	5.818	6.837

SECTION CHAINAGE 2.000

SCALE 1:100

DIMENSIONS IN METRES EXCEPT WHERE SHOWN OTHERWISE. CULVERT AND PIPE SIZES IN MILLIMETRES — A1 UNREDUCED, A3 REDUCED

SCALES — UNREDUCED / REDUCED

0 1.0 2.0 3.0 4.0 5.0m — 1 : 100 / 1 : 200

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REV	DATE	DESCRIPTION	DWN	DES	CHK	APP
E	17.05.19	DBS REVISED REPONSE	TK	MS	RG	RG
D	24.04.19	HUNTS LANE AMENDED TO RAMP	ABU	MS		
C	28.03.19	RESPONSE TO RFI	ABU	MS		
B	07.02.19	RE-ISSUE	TK	ZW		
A	21.12.18	RESPONSE TO COUNCIL RFI	TK	MS	ZW	NR

ASSOCIATED CONSULTANTS
WOODS BAGOT

APPROVED — 7729 RPEQ — DATE 21.12.18

CHECKED — DATE 21.12.18

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www.bornhorstward.com.au

CLIENT: PDS AUSTRALIA PTY LTD

PROJECT: EPPING TOWER

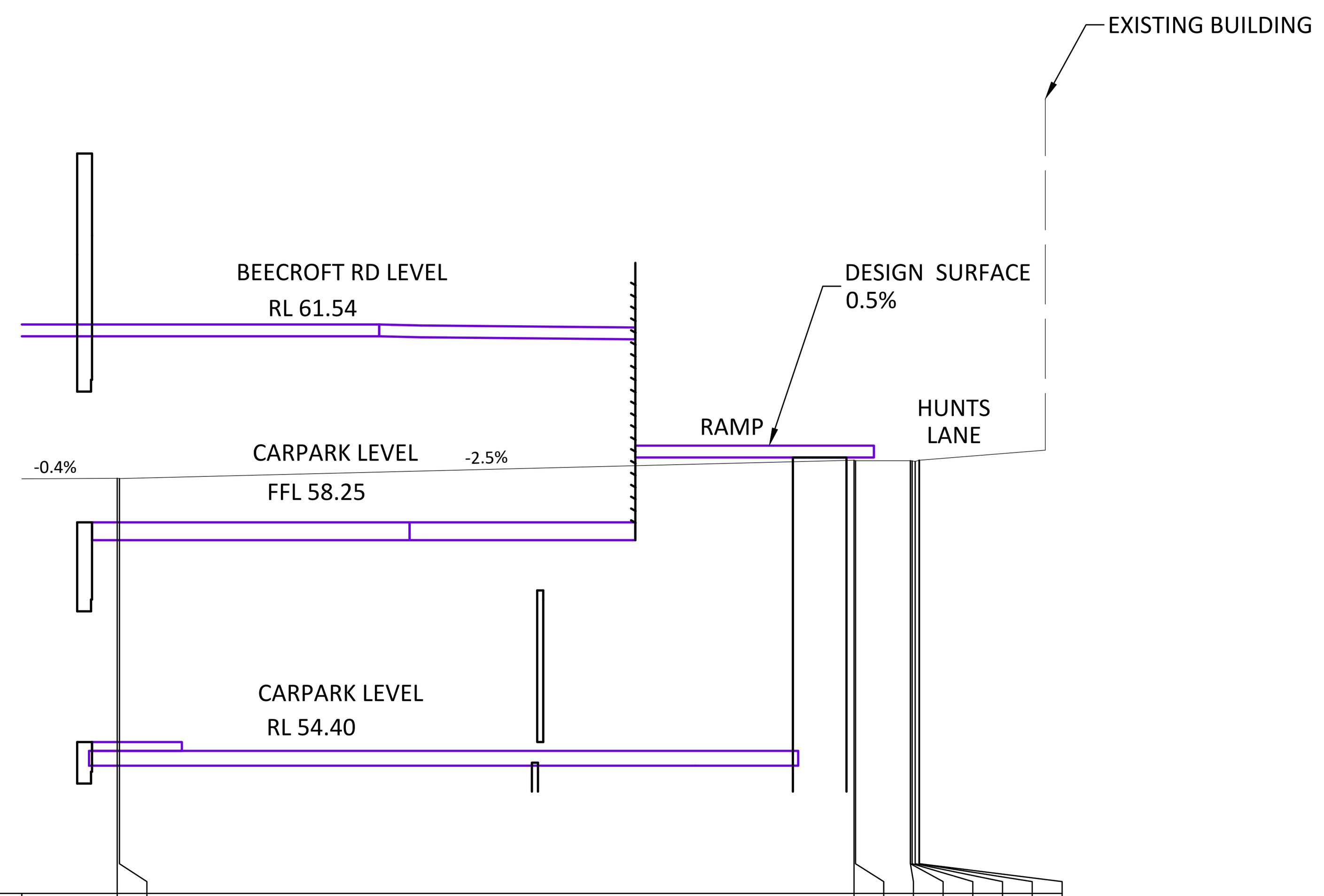
SUBJECT: HUNTS LN VERGE SECTIONS SHEET 1

PROJECT No. 16115

DRAWING No. C0503 — REVISION E

0 10 20 30 40 50 100 — ORIGINAL SIZE A1

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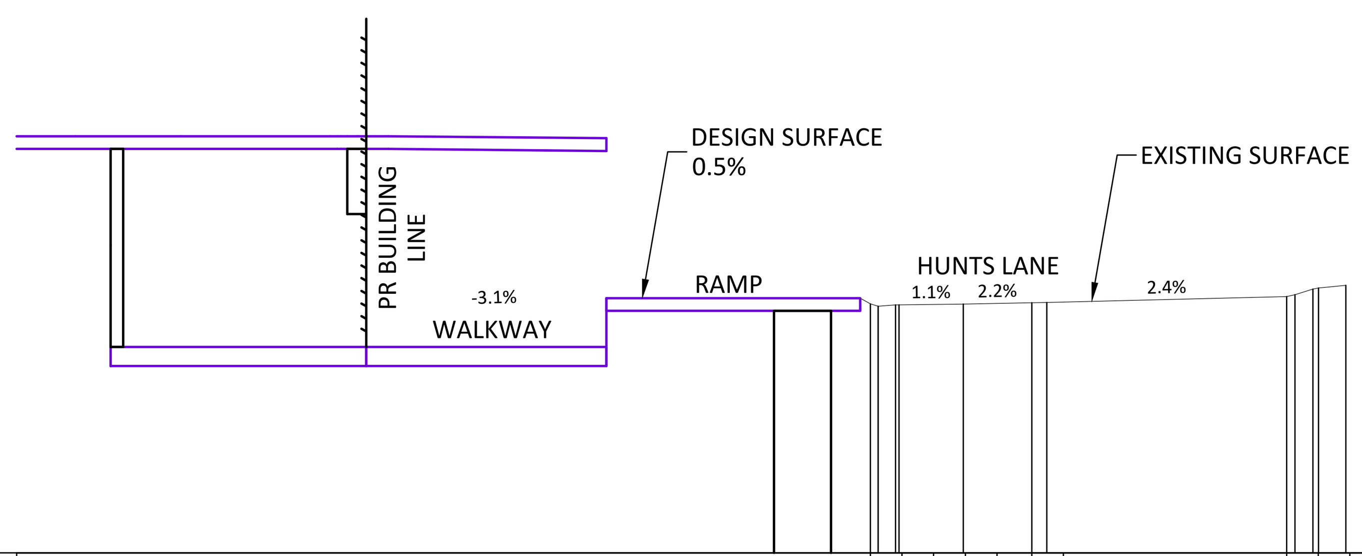


Datum52.00

DESIGN HEIGHT	92.987	92.987	93.296	93.287	93.287	93.287	93.282	93.271	93.293	93.294
EXISTING HEIGHT	92.987	92.987	93.296	93.287	93.287	93.287	93.282	93.271	93.293	93.294
OFFSETS	-13.343	-13.305	-0.948	-0.922	0.000	0.001	0.031	0.082	0.144	0.155

SECTION CHAINAGE 30.000

SCALE 1:100



Datum55.00

DESIGN HEIGHT	92.934	92.893	92.915	92.916	92.927	92.951	92.956	93.045	93.076	93.165	93.182	93.225
EXISTING HEIGHT	92.934	92.893	92.915	92.916	92.927	92.951	92.956	93.045	93.076	93.165	93.182	93.225
OFFSETS	-0.451	-0.329	-0.055	0.000	1.017	2.102	2.339	6.130	6.261	6.545	6.634	7.067

SECTION CHAINAGE 20.000

SCALE 1:100

DIMENSIONS IN METRES EXCEPT WHERE SHOWN OTHERWISE. CULVERT AND PIPE SIZES IN MILLIMETRES

A1 UNREDUCED
A3 REDUCED

SCALES — UNREDUCED / REDUCED

0 1.0 2.0 3.0 4.0 5.0m — 1 : 100 / 1 : 200

STATUS

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D	24.04.19	HUNTS LANE AMENDED TO RAMP	ABU	MS		
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B	07.02.19	RE-ISSUE	TK	ZW		
A	21.12.18	RESPONSE TO COUNCIL RFI	TK	MS	ZW	NR

ASSOCIATED CONSULTANTS
WOODS BAGOT

APPROVED — 7729 RPEQ — DATE 21.12.18

CHECKED — DATE 21.12.18

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P. +61 (7) 3013 4699
mail@bornhorstward.com.au
www.bornhorstward.com.au

CLIENT: PDS AUSTRALIA PTY LTD

PROJECT: EPPING TOWER

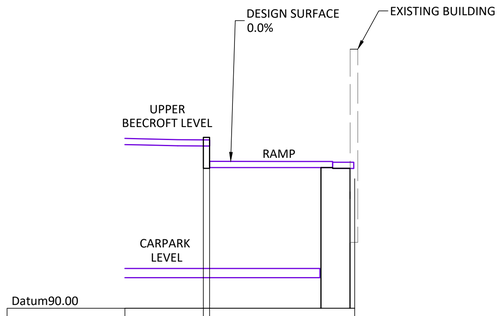
SUBJECT: HUNTS LN VERGE SECTIONS SHEET 2

PROJECT No. 16115

DRAWING No. C0504 — REVISION E

0 10 20 30 40 50 100 ORIGINAL SIZE A1

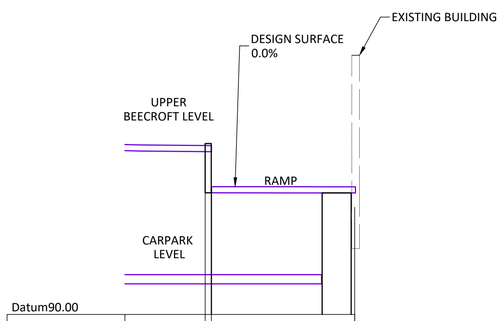
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Datum90.00

DESIGN HEIGHT	95.496	94.795	94.230
EXISTING HEIGHT			
DESIGN HEIGHT			
OFFSETS	4.938	4.738	0.000

SECTION CHAINAGE 70.000
SCALE 1:100



Datum90.00

DESIGN HEIGHT	97.514	94.169	93.503
EXISTING HEIGHT			
DESIGN HEIGHT			
OFFSETS	4.880	4.778	0.000

SECTION CHAINAGE 60.000
SCALE 1:100

DIMENSIONS IN METRES EXCEPT WHERE SHOWN OTHERWISE. CULVERT AND PIPE SIZES IN MILLIMETRES

A1 UNREDUCED
A3 REDUCED

SCALES — UNREDUCED / REDUCED

0 1.0 2.0 3.0 4.0 5.0m

1 : 100 / 1 : 200

STATUS

FOR APPROVAL

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REV	DATE	DESCRIPTION	DWN	DES	CHK	APP
E	17.05.19	DBS REVISED REPONSE	TK	MS	RG	RG
D	24.04.19	HUNTS LANE AMENDED TO RAMP	ABU	MS		
C	28.03.19	RESPONSE TO RFI	ABU	MS		
B	07.02.19	RE-ISSUE	TK	ZW		
A	21.12.18	RESPONSE TO COUNCIL RFI	TK	MS	ZW	NR

ASSOCIATED CONSULTANTS
WOODS BAGOT

APPROVED — 7729 RPEQ — DATE 21.12.18

CHECKED — DATE 21.12.18

BORNHORST + WARD
CONSULTING ENGINEERS
CIVIL AND STRUCTURAL

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CLIENT
PDS AUSTRALIA PTY LTD

PROJECT
EPPING TOWER

SUBJECT
HUNTS LN VERGE SECTIONS
SHEET 3

PROJECT No. 16115

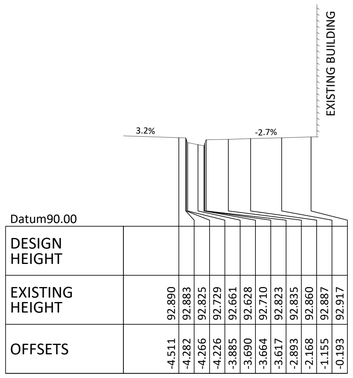
DRAWING No. C0505

REVISION E

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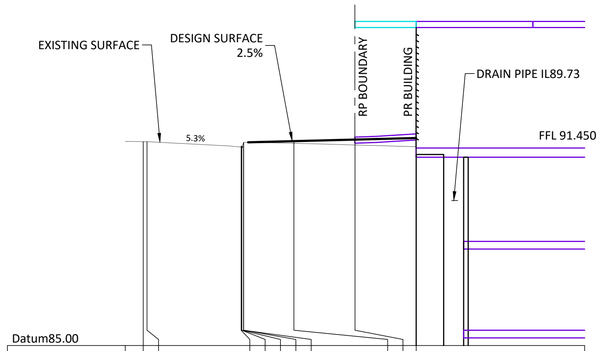
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17/05/2019 5:00:49 PM



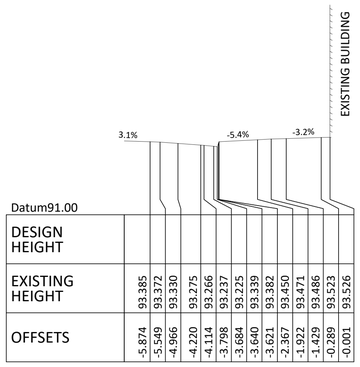
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DESIGN HEIGHT											
EXISTING HEIGHT	92.890	92.883	92.825	92.729	92.661	92.628	92.710	92.823	92.835	92.860	92.887	92.917
OFFSETS	-4.511	-4.282	-4.266	-4.226	-3.885	-3.690	-3.664	-3.617	-2.893	-2.168	-1.155	-0.193

SECTION CHAINAGE 10.000
SCALE 1:100



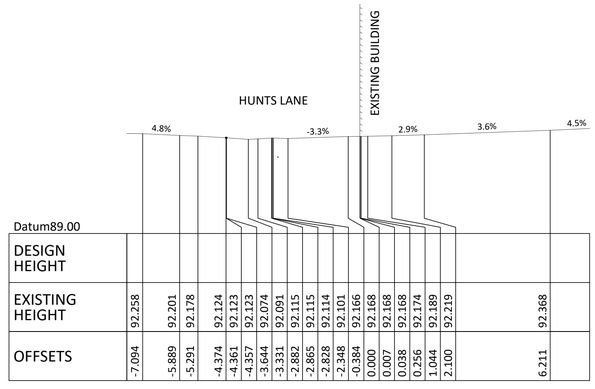
Datum85.00												
DESIGN HEIGHT	91.658	91.656	91.477	91.475	91.475	91.485	91.629	91.629	91.719	91.800	91.490	
EXISTING HEIGHT	91.658	91.656	91.477	91.475	91.475	91.485	91.629	91.629	91.719	91.800		
OFFSETS	-6.912	-6.787	-3.716	-3.695	-3.693	-3.636	-3.635		-1.992	0.000	0.429	

SECTION CHAINAGE 30.000
SCALE 1:100



Datum91.00											
DESIGN HEIGHT											
EXISTING HEIGHT	93.385	93.372	93.330	93.275	93.266	93.237	93.225	93.339	93.382	93.450	93.471	93.486	93.523	93.526
OFFSETS	-5.874	-5.549	-4.966	-4.220	-4.114	-3.798	-3.684	-3.640	-3.621	-2.367	-1.922	-1.429	-0.289	-0.001

SECTION CHAINAGE 0.000
SCALE 1:100



Datum89.00															
DESIGN HEIGHT															
EXISTING HEIGHT	92.258	92.201	92.178	92.124	92.123	92.123	92.074	92.091	92.115	92.115	92.114	92.101	92.166	92.168	92.168	92.168	92.174	92.189	92.219	92.368	
OFFSETS	-7.094	-5.889	-5.291	-4.374	-4.361	-4.357	-3.644	-3.331	-2.882	-2.865	-2.828	-2.348	-0.384	0.000	0.007	0.038	0.256	1.044	2.100	6.211	

SECTION CHAINAGE 20.000
SCALE 1:100

DIMENSIONS IN METRES EXCEPT WHERE SHOWN OTHERWISE. CULVERT AND PIPE SIZES IN MILLIMETRES

A1 UNREDUCED
A3 REDUCED

SCALES — UNREDUCED / REDUCED

0 1.0 2.0 3.0 4.0 5.0m

1 : 100 / 1 : 200

STATUS

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REV	DATE	DESCRIPTION	DWN	DES	CHK	APP
D	17.05.19	DBS REVISED REPONSE	TK	MS	RG	RG
C	28.03.19	RESPONSE TO RFI	ABU	MS		
B	07.02.19	RE-ISSUE	TK	ZW		
A	21.12.18	RESPONSE TO COUNCIL RFI	TK	MS	ZW	NR

ASSOCIATED CONSULTANTS
WOODS BAGOT

APPROVED
7729 RPEQ
DATE 21.12.18

CHECKED
DATE 21.12.18

BORNHORST + WARD
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CLIENT
PDS AUSTRALIA PTY LTD

PROJECT
EPPING TOWER

SUBJECT
RAWSON ST VERGE SECTION
SHEET 1

PROJECT No. 16115

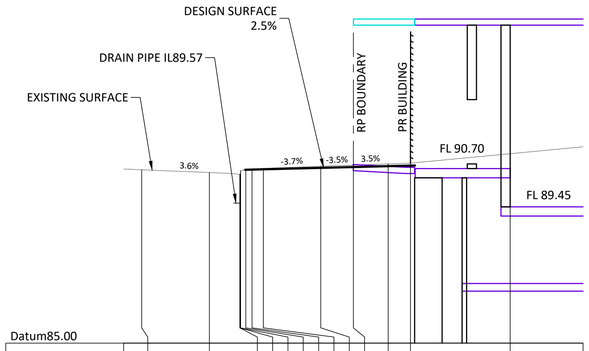
DRAWING No. C0506

REVISION D

0 10 20 30 40 50 100

ORIGINAL SIZE A1

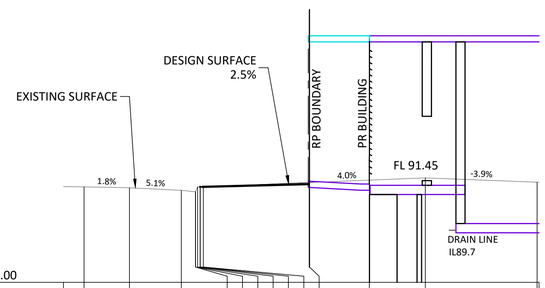
17/05/2019 5:00:51 PM J:\2016\16115\05_DRAWINGS\DRG\C0500.DWG



Datum85.00

DESIGN HEIGHT					90.661	90.665	90.672	90.707	90.726	90.746	90.767	90.700	
EXISTING HEIGHT	90.659	90.573	90.508	90.506	90.626	90.665	90.684	90.705	90.775	90.813	90.853	90.876	91.184	
OFFSETS	-6.911	-4.703	-3.707	-3.699	-3.682	-3.511	-3.309	-2.940	-1.065	0.000	1.136	1.864	4.753	

SECTION CHAINAGE 50.000
SCALE 1:100



Datum88.00

DESIGN HEIGHT	91.113	91.087	90.999	90.954	90.961	91.113	91.115	91.121	91.259	90.774	91.450	
EXISTING HEIGHT	91.113	91.087	90.999	90.954	90.961	91.113	91.115	91.121	91.261	91.336	91.409	91.266
OFFSETS	-7.356	-5.877	-4.183	-3.718	-3.715	-3.647	-3.567	-3.565	-3.460	0.000	1.641	3.786	7.435

SECTION CHAINAGE 40.000
SCALE 1:100

DIMENSIONS IN METRES EXCEPT WHERE SHOWN OTHERWISE. CULVERT AND PIPE SIZES IN MILLIMETRES

A1 UNREDUCED
A3 REDUCED

SCALES — UNREDUCED / REDUCED

0 1.0 2.0 3.0 4.0 5.0m

1 : 100 / 1 : 200

STATUS

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A	21.12.18	RESPONSE TO COUNCIL RFI	TK	MS	ZW	NR

ASSOCIATED CONSULTANTS
WOODS BAGOT

APPROVED — 7729 RPEQ — DATE 21.12.18

CHECKED — DATE 21.12.18

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www.bornhorstward.com.au

CLIENT: PDS AUSTRALIA PTY LTD

PROJECT: EPPING TOWER

SUBJECT: RAWSON ST VERGE SECTION SHEET 2

PROJECT No. 16115

DRAWING No. C0507

REVISION D

0 10 20 30 40 50 100

ORIGINAL SIZE A1

I:\16116\16115\05_DRAWINGS\DRG\C0500.DWG

17/05/2019 5:00:52 PM

Council email regarding Holding Redlich letters dated 7 March and 29 March 2019

Daniel West

From: Alex McDougall <AMcDougall@cityofparramatta.nsw.gov.au>
Sent: Wednesday, 8 May 2019 9:21 AM
To: Breellen Warry; Myfanwy McNally
Cc: Daniel West; Sameh Ibrahim
Subject: RE: DA/61/2018 - 48 - 54 Beecroft and 52 - 54 Rawson Street, Epping, 2121 [HR-SYD.FID472217]

Dear Ms. Warry

We have received advice back from Council's solicitors which accepts that the proposed site access is from a public road and as such does not require Council's landowners consent.

The other matters raised in Council's report to the SCCPP dated 22/03/19 remain outstanding and require resolution.

Regards

Alex McDougall
Executive Planner | City Significant Development

02 9806 5998
amcdougall@cityofparramatta.nsw.gov.au

City of Parramatta
126 Church Street, Parramatta NSW 2150
PO Box 32, Parramatta, NSW 2124
cityofparramatta.nsw.gov.au





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From: Breellen Warry <Breellen.Warry@holdingredlich.com>
Sent: Tuesday, 7 May 2019 12:14 PM
To: Myfanwy McNally <MMcNally@cityofparramatta.nsw.gov.au>; Alex McDougall <AMcDougall@cityofparramatta.nsw.gov.au>
Cc: Daniel West <Dwest@ethosurban.com>; Sameh Ibrahim <sameh@pdsintnl.com>
Subject: DA/61/2018 - 48 - 54 Beecroft and 52 - 54 Rawson Street, Epping, 2121 [HR-SYD.FID472217]

Dear Myfanwy and Alex

We note that at the meeting of 3 April 2019, the Panel advised that it would refer our advices of 7 March 2019 and 29 March 2019 to Council for comment and advice.

Can you please confirm whether you have now been able to consider those advices and if you have any further queries or comments in relation to the matters raised.

We would be grateful if you could advise as soon as possible.

Please do not hesitate to contact me with any queries or if you would like to discuss our advices further.

Regards

Breellen Warry | Partner

HOLDING REDLICH

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breellen.warry@holdingredlich.com www.holdingredlich.com
Sydney . Melbourne . Brisbane . Cairns

LawExchange

Holding Redlich requests that all documents are sent to us electronically as PDF or Microsoft Word files

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