ETHOS URBAN

Amendment C220 to the Yarra Planning Scheme- Johnston Street, Collingwood and Abbotsford

Urban Design Expert Evidence

Instructed by Harwood Andrews on behalf of Yarra City Council

To be heard by Planning Panels Victoria commencing on 15 October 2018

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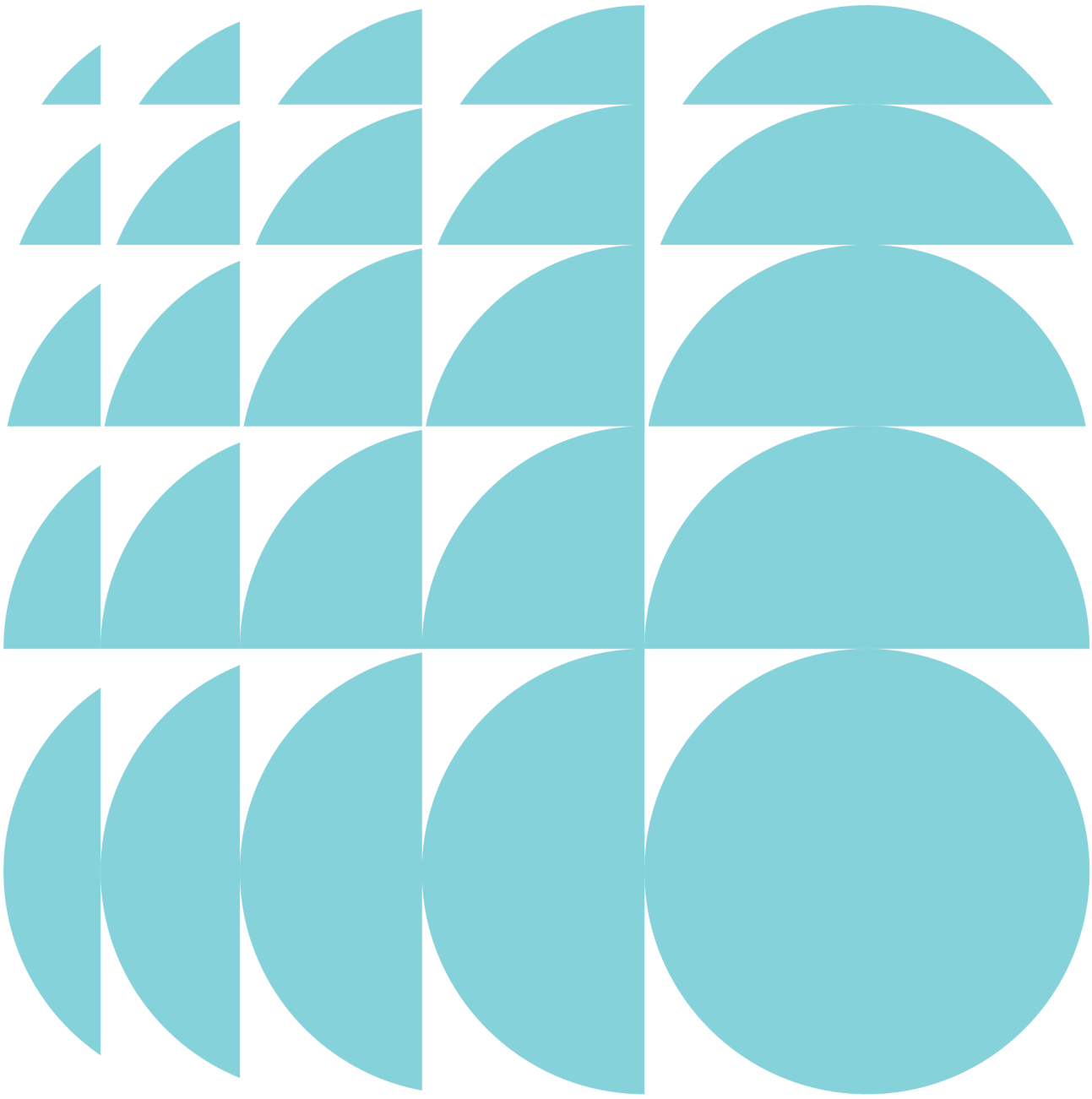
9 October 2018



1.0 Introduction

1. I have been requested by Yarra City Council to prepare a statement of evidence that considers urban design implications of Amendment C220 to the Yarra Planning Scheme (the Amendment).

2. I was engaged by Yarra City Council on 27 February 2018, after the exhibition period for the Amendment had completed. I have had no involvement in the preparation of any background documentation, technical reports or the proposed provisions to the Yarra Planning Scheme (YPS) that were on exhibition. I also had no involvement in the preparation of the interim controls introduced through Amendment C237.

3. On 10 March 2018 I finalised and submitted a Preliminary Review and Expert Opinion (from an urban design viewpoint) regarding Amendment C220 City of Yarra (refer **Attachment 1**). My preliminary review identified issues for further consideration and in particular strengthening the setback controls above the street wall height, adjustment of rear interface heights commensurate with heights in the adjoining residential zones and strengthening of side setback controls.

4. Council's consideration of these matters led to the commissioning of building envelope modelling for the whole precinct and the testing of alternative height and setback scenarios. The results of this work by Ethos Urban are covered in my 9 July 2018 report Modelling and Urban Design Review regarding Amendment C220 City of Yarra (refer **Attachment 2**).

5. Council's consideration of this modelling and of the submissions following Exhibition of the Amendment, led to Council endorsing on 21 August 2018 a refined version of the proposed controls, particularly an updated Schedule 15 to Clause 43.02 Design and Development Overlay (hereafter referred to as Preferred DDO15 **Attachment 3**). This Council Preferred version of DDO15 is what was finally modelled, forms the basis of the released fly-through and of my finalised expert evidence.
6. To assist with the SGS Economics' Capacity Analysis of potential development in Johnston Street, Ethos Urban has provided estimated gross floor area (GFA) figures for the Council preferred DDO15 scenario as modelled, breaking these down by sub-precinct and separating the lower two floors in each case (refer to **Attachment 8** Instructions from Harwood Andrews to SGS for details and assumptions).

2.0 3D Modelling parameters

7. It is important to note that the 3D modelling is used to illustrate maximum building envelopes for new development according to the Council Preferred DDO15 controls. It does not purport to represent actual building footprints which will be influenced by complex design considerations, including economic floorplate sizes, appropriate building depths for daylighting, vehicle access requirements, Planning Scheme Clause 58 Apartment Standards and market preferences generally. The capacity represented is therefore a theoretical maximum rather than a precise expectation.
8. The 3D model (refer Figures 2.1 & 2.2) was created using the Urban Engine cloud-based platform by Urban Circus Pty Ltd. The Urban Engine is a 3D modelling platform based on highly accurate GIS, LiDAR and point cloud data (refer to **Attachment 4** Digital Melbourne Detailed Model Report, Adrian Smith 3 October 2018). The model uses techniques that allow for accurate environment modelling including sun and shadow analysis and can be used in real-time. The accuracy of the Urban Engine Base Model and the Environment is the responsibility of Urban Circus. The modelled data provided by Urban Circus is correct within 0.1-0.2m according to their statement. The modelling of new building envelopes provided by Ethos Urban is a more manual adjustment to sites but is correct within 0.5m.

9. The built form parameters used in the Urban Engine to create the model are:
    - 4m floor to floor ground floor (representing potential commercial use)
    - 4m floor to floor first floor (representing potential commercial use)
    - 3m floor to floor heights above first floor (representing expected residential use)
    - Only building volumes/floorplates over 5m deep are considered feasible and modelled
    - Where preferred and mandatory control co-exist, the parameter providing the greatest envelope volume is modelled
    - Heritage facades (individually significant and contributory) are modelled and new development is set back approximately 0.5 metres to expose these facades as retained
    - Approved planning permits (light grey colour) and permit applications (dark grey colour) are modelled from either endorsed or considered plans provided by the City of Yarra (refer list in **Attachment 5**; Note: 109 Dight Street was only provided and modelled on 5 October 2018).

- The building envelopes for each sub-precinct are colour-coded to match the map colours of DDO15.

10. Shadow analysis was conducted and analysed within the Urban Engine from 10am – 2pm on the 22nd of September, on the above built form modelling. Specifically, testing considered the southern footpath (3m wide) along Johnston Street and within residential properties to the south of potential development. This shadow analysis identified both the current shadowing from the existing built form and the potential future shadowing based on the built form envelopes modelled on the above parameters.

11. The predetermined flythrough comprises a continuous video, using the Urban Engine and is captured from both a birds eye view and from pedestrian height of 1.7m.

Figure 2.1: Johnston Street looking east from Smith Street – 3D model of existing conditions

Figure 2.2: Johnston Street east of Hoddle Street – 3D model including existing permits (grey) and proposed applications (charcoal)

3.0 Matters considered in preparing the evidence

12. In preparing this statement I have undertaken the following:
    a) Reviewed the exhibited documentation as part of the Amendment including all background reports and proposed reference documents;
    b) Reviewed in particular the 2015 Johnston Street Local Area Plan with its Appendices (the Local Plan), which form the basis for the Amendment.
    c) Reviewed all relevant planning controls and policies contained within the Yarra Planning Scheme, including Plan Melbourne;
    d) Reviewed all written submissions lodged during the exhibition period;
    e) Reviewed of the Yarra Planning Committee report relevant to the Amendment;
    f) Reviewed relevant VCAT decisions, documentation adopted by Council within the study area, Practice Notes and Ministerial Directions, including the recently updated Practice Note 60 Height and Setback Controls for Activity Centres;
    g) Undertaken multiple inspections of numerous sites and the broader precinct that is generally affected by the Amendment.

13. I note that technical reports have been prepared to inform the Amendment, which were publicly available during the exhibition period. My assessment and review of the above-mentioned documents have informed my opinion, but I have also referenced where the Council Preferred Amendment C220 (Panel version) documentation, as adopted by Council on 21 August 2018, addresses my concerns.

14. The following statement provides a summary of my assessment and opinions in relation to the Amendment and the urban design merits of the proposed controls in the context of the Yarra Planning Scheme. Specifically, my evidence focuses on the urban design implications of the Amendment and the following key points:
    a) The application of Design and Development Overlay Schedule 15; and
    b) The use of mandatory and discretionary requirements including the built form provisions.

15. In preparing my evidence I have reviewed all written submissions made and considered the broader commentary on issues relating to the Amendment as well as individual sites which are the subject of some submissions. I have considered the proposed controls in the context of these individual sites, the possible impacts on future development and the anticipated outcomes.

16. I note that expert evidence may be presented on matters relating to heritage, planning and economic development parameters. I will not comment on these matters in any detail given they are outside my area of expertise.

17. My Preliminary Review raised the issue of wind impacts of differing built form scenarios and Council subsequently commissioned Michael Eaddy of Melconsult (report dated 13 September 2018 **Attachment 6**) to provide expert commentary on the appropriate wind criteria, the impact of building height, setbacks and continuity on wind impacts, and any other related wind matters. I refer to the information contained in this wind report, where relevant.

18. For the purposes of this report included in **Appendix A** is a summary of my experience and other relevant particulars.

4.0 The proposed changes to the Yarra Planning Scheme

19. The Johnston Street Local Area Plan was adopted by Council in December 2015. The Local Plan sets out a vision for the future of the precinct, covering the area north and south of Johnston Street from near the Yarra River in the east, through to Smith Street in the west. As well as part of the south side of Sackville Street. The Local Plan recommends creating a diverse mix of activity, with commercial uses generally at street level, and residential uses at upper levels to make the area more vibrant and accessible.

20. Amendment C237 was gazetted on 2 March 2018 to introduce built form controls for part of the Johnston Street Activity Centre by introducing Design and Development Overlay Schedule 15 to the Johnston Street East Precinct on an interim basis until 31 December 2019.

21. Yarra City Council is the planning authority for Amendment C220 which now seeks to make the following changes to the Yarra Planning Scheme:

    a) Introduce a new MSS section and policy at Clause 21.11 (to reference the Johnston Street Local Area Plan, 2015) and Clause 21.12 (Local Areas- outlining vision statements and implementation for the precincts);

    b) Rezone properties within the Commercial 2 Zone and General Residential Zone to the Commercial 1 Zone;

    c) Apply the Design and Development Overlay (DDO15) to the Subject Land;

    d) Apply a new Heritage Overlay precinct (HO505); and

    e) Apply the Environmental Audit Overlay to sites being rezoned from the Commercial 2 Zone to Commercial 1 Zone (which will enable residential uses).

22. Following the public exhibition period for the Amendment and review of the written submissions, Yarra City Council prepared a modified version of the proposed controls, adopted by Council on 21 August 2018 and now publicly available. The modified version of these controls includes some of the recommendations made in my earlier review and modelling (as noted above) and is the version to be considered at the Panel hearing commencing 16 October 2018.

5.0 The Planning Framework Context

23. The Amendment seeks to make a number of changes to the controls that specifically affect the Johnston Street Activity Centre. However as for every Amendment, there is always a broader policy context to consider. This context articulates the current Planning Policy Framework that must guide decision making on both macro and micro planning matters.

24. The following summarises the relevant provisions of the Yarra Planning Scheme, which I have taken into account in the preparation of this evidence statement.

Planning Policy Framework

25. The Planning Policy Framework (PPF) seeks to develop the objective for planning in Victoria (as set out in the *Planning and Environment Act 1987)* to foster appropriate land use and development, planning policies and practices that encompass relevant environmental, social and economic factors. As such, planning can be understood as the balancing of the requirements of strategically supported development and the guarantee of sufficient amenity and general fit within the particular context.

26. *Plan Melbourne 2017-2050- Metropolitan Planning Strategy* is of particular relevance to the Amendment given the importance of the inner city in the context to the commercial and residential growth of Melbourne and more broadly Victoria. Specifically, Direction 2.1 of Plan Melbourne identifies initiatives including to "*manage the supply of new housing in the right locations to meet population growth and create a sustainable city".* The overarching objective is also supported by Policy 2.1.2 which seeks to "*facilitate an increased percentage of new housing in established areas to create a city of 20-minute neighbourhoods close to existing services, jobs and public transport".* The Amendment lies within the Inner Metro Region of Plan Melbourne where increased development is anticipated.

27. It is therefore clear that strategically Johnston Street has a role to play in accommodating increased housing and employment uses. However, this should not be "at any cost" and I understand that work by others (SGS Planning and Economics evidence) indicates that there is ample capacity within Johnston Street and the City of Yarra to accommodate proposed housing growth.

Local Planning Policy Framework

28. I reviewed the Local Planning Policy Framework (LPPF) includes both the Municipal Strategic Statement (MSS) and local policies. I consider the following clauses of the LPPF to be most relevant to the Amendment:

    a) Clause 21.02-Clause 21.11 covers the Municipal Profile and Vision and is themed around Land Use, Built Form, Transport, Environmental sustainability, and includes strategies for implementation to specific neighbourhoods.

    b) Clause 21.04 (Land Use)

    c) Clause 21.05 (Built Form)

    d) Clause 21.08 (Abbotsford and Collingwood)

    e) Clause 22.10 (Built Form and Design Policy)

29. I note that Strategy 1.2 at Clause 21.04 specifies that *'direct higher residential development to Strategic Redevelopment Sites identified at Clause 21.08 and other sites identified through any structure plans or urban design frameworks'.* Specifically, Clause 21.04-2, Activity Centres, are identified as having a retail, hospitality and service focus.

30. Specific commentary regarding Abbotsford and Collingwood is at Clauses 21.08-1 (Abbotsford) and Clause 21.08-5 (Collingwood). The MSS within these sections identifies that Abbotsford is a varied neighbourhood with buildings of various types and eras. Johnston Street is identified as a Neighbourhood Activity Centre where it is important to maintain the hard edge of development along the main roads and that development reflects the fine grain of the subdivision pattern in building design where this exists. Applicable land use strategies for Abbotsford include strengthening the consistency and character of the building form including land adjacent to Hoddle Street and around Victoria Park station.

31. At Clause 21.08-5, the MSS identifies Collingwood as industrial in character with precincts surrounded by or interspersed with industrial buildings. There is differing character both north and south of Johnston Street with the north predominantly identified as a residential area and south of Johnston Street including a large area of public housing interspersed with varied built form and character. Johnston Street is identified as a Neighbourhood Activity Centre with no

specific built form character identified. The built form strategies, however, identify that in the precinct bounded by Johnston Street, Wellington Street, Victoria Parade and Smith Street that new development respects the scale of adjoining existing clusters of low rise residential development.

32. Clause 21.05-2 (Urban Design) identifies the low-rise urban form that constitutes much of the municipality and is sought to be reinforced with pockets of higher development. Strategy 17.2 specifically encourages:

> *'development… within activity centres should generally be no more than 5-6 storeys unless it can be demonstrated that the proposal can achieve specific benefits such as:*
>
> - *Significant upper level setbacks*
> - *Architectural design excellence*
> - *Best practice environmental sustainability objectives in design and construction*
> - *High quality restoration and adaptive re-use of heritage buildings*
> - *Positive contribution to the enhancement of the public domain*
> - *Provision of affordable housing*

33. Strategy 21.2 "r*equire new development within an activity centre to consider the context of the whole centre recognising that activity centres may consist of sub-precincts, each of which may have a different land use and built form character".*

34. Clause 22.10 (Built Form and Design Policy) seeks to ensure that new development positively responds to the context of the development and respects the scale and form of surrounding development where this is a valued feature of the neighbourhood character. The policy in turn discusses: urban form and character; setbacks and building height; street and public space quality; environmental sustainability; site coverage; off-site amenity; landscaping and fencing; parking, traffic and access; and service infrastructure.

35. I have taken these provisions of the LPPF in particular into account in the preparation of this evidence statement, and the focus they provide as to the strategic vision for Johnston Street Activity Centre – Abbotsford and Collingwood. They clearly indicate that the strategic

intensification of development needs to be balanced against considerations of amenity and respect for local context and that the centre should be considered as a whole despite localised variations in character (Strategy 21.2).

Zoning

36. The land affected by the Amendment is included within the Commercial 1 Zone, Commercial 2 Zone, Special Use Zone Schedules 2 and Schedule 6, Public Use Zone Schedule 2, Public Park and Recreation Zone, Road Zone Category 1, General Residential Zone Schedule 2 and Neighbourhood Residential Zone.

37. The properties fronting Johnston Street are zoned Commercial 1 Zone or Commercial 2 Zone with the exception of 28 Paterson Street and part of 403-405 Johnston Street, Abbotsford which is affected by the Neighbourhood Residential Zone Schedule 1, and 35 Johnston Street Collingwood which is affected by the Special Use Zone Schedule 6 (refer Figure 5.1). While the Collingwood Arts Precinct (the former TAFE at 35 Johnston Street) now enjoys a specific public use and is rightly the subject of independent controls, the two properties at the eastern end of Johnston Street, close to the river, are something of an anomaly which in my view requires reconsideration to incorporate them within the relevant sub-precinct controls, despite their current low scale residential form. If remaining as a lower Neighbourhood Residential zoning, they will create an illogical and unsightly gap in the otherwise 5-storey Commercial Zone street wall.

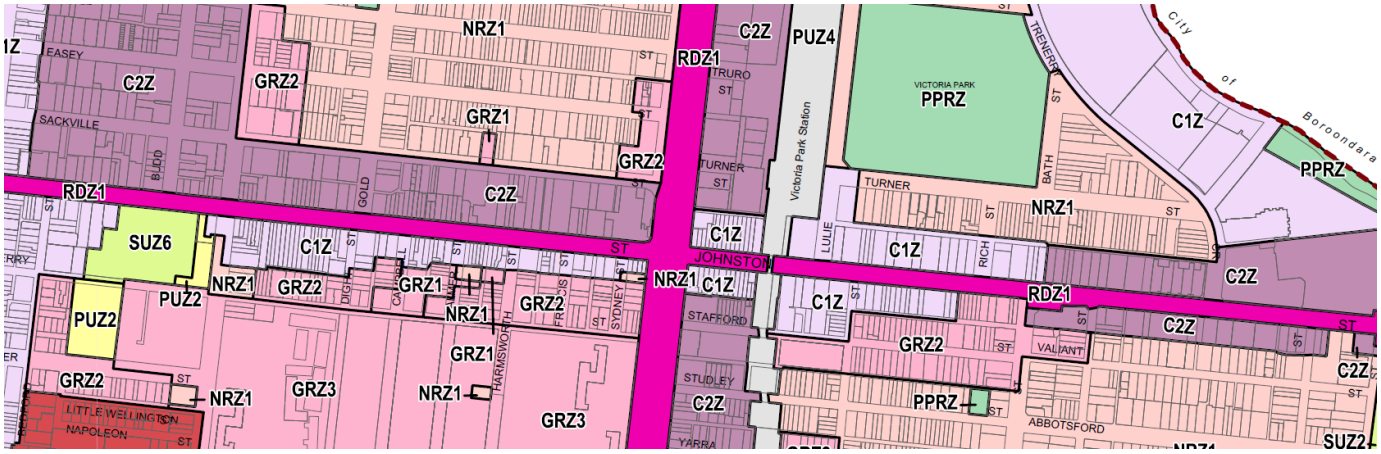


Figure 5.1: Current zoning map of the Johnston St precinct and its adjacent zones

Overlays

38. The land affected by the Amendment is subject to a number of overlays, however most of these are not being modified, with the notable exception of extending heritage controls between the railway and Hoddle Street. The built form controls which are subject to review and the focus of this evidence is Design and Development Overlay Schedule 15.

6.0 Local Area Plan

39. The subject area is divided into two precincts. Precinct 1 or Johnston Street Central covers both sides of Johnston Street from Smith Street to Hoddle Street, with the exclusion of the corner sites to Smith Street and the former Collingwood TAFE site. It also includes the south side of Sackville Street between Wellington Street and Hoddle Street. Precinct 2 or Johnston Street East stretches from Hoddle Street towards the Yarra River with Trenerry Crescent and Clarke Street as its eastern limit (refer to Figure 6.1).

Figure 6.1: Precinct Map for Johnston Street (with modelled sub-precinct built form controls)

40. Whilst it is not my role nor my expertise to review municipal policy and the strategic intent of the Johnston Street Local Area Plan ("Local Plan"), my review of the design objectives driving the proposed built form controls, leads to my general agreement with what is important in the Local Plan as follows:

Heritage Character

41. The Local Plan and the Design Objectives of Design and Development Overlay Schedule 15 recognise two distinct sections of Johnston Street in terms of heritage significance (refer Figures 6.2-6.5). In Precinct 1 to the west of Hoddle Street, the street has a valued heritage character of predominantly two-storey Victorian and Edwardian shop houses. To the east of Hoddle Street (Precinct 2) and up to the nearby railway bridge this two-storey heritage character continues relatively intact (as indicated by the updated heritage work accompanying

the Local Plan). Further east of the railway bridge (the rest of Precinct 2),the street character is more heterogeneous, with only sporadic heritage buildings identified and more warehouse-style buildings, mostly of an equivalent two-storey height.

Figure 6.2: Precinct 1 at Wellington St looking east

Figure 6.3: Precinct 1 at Palmer St looking east

Figure 6.4: Precinct 2 under Rail Bridge looking west

Figure 6.5: Precinct 2 at Rich St looking east

42. From an urban design perspective, the pedestrian-friendly character of the precinct west of the railway is substantially determined by the significant number of extant heritage buildings. It is not just the heritage structures themselves, but the consistently low-scale and fine-grain subdivision associated with them, that sets the perceived and real amenity of this area, including limited shadowing and wind effects, plus the presence of significant visual detail and variety. This character is difficult to replicate in modern construction and easy to lose if new structures dominate conserved street frontage sections, reducing them to an applied pastiche. The Local Plan correctly indicates that "the heritage fabric of some sections of the street poses a constraint on development opportunities that will be a consideration in future built form outcomes". Likewise, the Local Plan recognises that while some larger sites offer future development opportunities behind the existing heritage fabric, "creating a consistent street

wall façade along main streets is an important design element to be considered in future built form". I am therefore in strong agreement that heritage retention and respect for heritage neighbours has a wider local character importance, exceeding the architectural or historical significance of individual structures, and becoming a key urban design determinant, particularly in all of Johnston Street west of the railway

Neighbouring Amenity

43. The Local Plan and DDO1 Design Objectives seek to protect adjoining low-rise residential areas from unreasonable loss of amenity through visual bulk, overlooking and overshadowing. New development should provide a transition in scale towards residential areas and should be of a mid-rise nature, which is now defined as 5-10 storeys, reduced from 5-12 storeys in the exhibited version.

44. The 5-10 storey height range is very wide, but the proposed controls recognise differing interfaces and adapt overall heights and setback provisions accordingly. The sub-precinct specific cross-sections produced in support of the Local Plan (City of Yarra's report: Johnston Street Local Area Plan Amendment C220 Supporting Document October 2017) have robustly established the typical heights which can be reached within the preferred 45 ^{0} planes measured above the street wall and rear interface heights. These cross-sections have informed the preferred height range. As the adjoining areas are partly covered by heritage overlays with a Neighbourhood Residential Zone (NRZ) or General Residential Zone (GRZ), their expected change is limited and I agree it is entirely appropriate to protect their continued amenity. The detail is discussed below.

Street Activation

45. The Local Plan and DDO15 emphasise the need to activate the street frontage and provide passive surveillance. In particular, this requires support for commercial uses (in the broad sense of the term) at lower levels. In consequence, floor-to-floor heights should admit non-residential uses and 4.0m minimum for the lower two levels is recommended, unless heritage retention requires otherwise. I agree that this is the minimum desirable height for non-residential uses and I agree that provision should cover at least the two lower floors or 8m, to provide for some upper level variety of use with day-time activity to complement mostly night-

time residential presence. In addition, the 8m height positively achieves comparable street wall heights to adjacent heritage fabric with high floor to ceiling heights.

Public Realm

46. The quality of the public realm is to be promoted as a key element of Johnston Street. Although the public realm needs substantial upgrading in terms of layout and capital improvements, the street (or its southern footpath) currently enjoys excellent solar access and DDO15 seeks to maintain this. I agree that public realm amenity, particularly solar access, is essential and support strong overshadowing controls as a high priority. Street works can be upgraded, but shadowing by new buildings cannot be undone.

Development Equity

47. While the Local Plan does not specifically address the issue of equitable development, the DDO Design Objectives raise the need to respond to the development opportunities of neighbouring properties, including consolidation options. I agree it is critical that new development does not restrict the development of, or 'borrow amenity' from, neighbouring sites. This requires adequate side and rear setback controls, whose detail is discussed below.

7.0 Analysis of the Precinct

7.1 Existing Character

48. As indicated when describing the heritage parameters of the Local Plan, the urban design character of the western section of Johnston Street from Smith Street across Hoddle Street to the railway line, is determined by its substantially intact heritage built form. Not all buildings are heritage significant, but with their contributory neighbours and generally two to three storey infill, the streetscape retains its fundamental low-scale, fine grain attraction reminiscent of other Inner Melbourne strip shopping centres. These strip centres are a typical element of Melbourne's identity which distinguish it from other places and have in recent years enjoyed a resurgence with consequent benefits for local communities and economies. Their protection and development as a catalyst for growing local neighbourhoods is essential to successful urban renewal that appeals to residents and users. Once lost, this identity is not easily replaced and will take decades to develop a patina of mixed uses and forms. These strip centres are known for passing through phases of boom and bust but are regularly repurposed for new activity, so long as the strong urban design bones remain intact.

49. It is obvious that Johnston Street currently suffers a down-turn, though parts of the western end already evidence revitalisation with smaller cutting-edge tenancies, partly boosted by cheaper rent. Excessive traffic is probably Johnston Street's main issue, but traffic is a changeable phenomenon, dependent on strategic management and technological advancement (such as lesser pollution and vehicle numbers associated with the emergence of electric and shared vehicle fleets). In other words, current amenity problems are reversible, but built form frameworks are a more enduring determinant and must be redeveloped with caution.

50. So far, new development along the western section of Johnston Street is limited, but applications are increasing. With only two major approvals west of the railway (numbers 23 and 88 Johnston Street), there is still time to assure appropriate built form responses to the valued strip centre character of the precinct. That is, the amendment is timely and its outcome is crucial in determining the future direction of the precinct.

51. The eastern section of Johnston Street west of the railway in Abbotsford, has experienced more change over the years and is a mix of one and two storey mostly commercial

warehouses with scattered heritage buildings, almost exclusively on the southern side and mostly two-storey. As such, this is a less sensitive precinct which in principle admits greater change. In fact, significant change is already more evident in this area with an existing 6-storey building at 370 Johnston Street and three very substantial recent permits of 8, 9 and 12 storeys at numbers 288, 329 and 247 Johnston Street. However, the area still maintains the framework of a strip centre which can be strategically revitalised as a neighbourhood activity centre. Therefore, a proper mix of uses and moderate scale street presence remain important considerations.

52. Many of the Johnston Street properties have a sensitive rear interface. Often, low-scale residential areas zoned as Neighbourhood Residential or General Residential abut the Johnston Street strip. These are areas of limited change, warranting a significant degree of amenity protection (as noted above when discussing the Local Plan).

53. A few sections of Johnston Street abut existing commercial properties to the rear and are therefore less sensitive. In particular, the whole south side of Sackville Street from Wellington Street to Hoddle Street is included in the Amendment Area as it is an overwhelmingly one and two-storey commercial strip, mostly ripe for redevelopment. However, the northern side of Sackville Street immediately fronting this strip, is and will remain a low-scale residential neighbourhood with heritage significance. This interface will determine the future built form response to Sackville Street, noting that only one significant approval is known to date (61 Sackville Street which is joined through to 88 Johnston Street and steps up to 9 storeys).

7.2 Design Principles for New Development

54. I see the guiding urban design principles for the measured redevelopment of Johnston Street and its interfaces as three-fold, with more specific objectives nesting within each main driver, as follows:

55. **Street Amenity** requires protection and enhancement of the character of Johnston Street as a vibrant strip centre reflecting its heritage and focussing on its pedestrian amenity and interest. This in turn depends on:

    a) Conserving individual heritage structures reading as real buildings with physical integrity, not merely decorative facades. Retained structures should have sufficient depth to contain at least a typical tenancy space.

b) Respect heritage structures by closely matching their scale and articulation in adjoining redevelopment. Generally speaking a difference in abutting street wall height of one storey is reasonably accommodated, but anything above this or anything new directly behind the heritage façade, must be set back sufficiently to create a real visual distinction as a separate structure.

c) Where there is no immediate heritage context, moderate the frontage height and setback upper levels sufficiently to not visually dominate the street. Buildings notably taller than the street wall and continuously stepping 'wedding cake' forms draw attention to themselves and become visually dominant.

d) Ensure new development along the street frontage respects the fine grain subdivision pattern, allowing for retail and commercial tenancies and discreet building entries. This generally requires a mix of uses and entries with a floor height sufficient to accommodate shop and office use.

e) The height and setback of new development must ensure no additional overshadowing (at least to the southern footpath of Johnston Street) as solar access is a precious resource for pedestrians at many times of the year. The middle of the day at the September equinox is the widely recognised measurement time and leads to a solar access plane of around 45^0 inclination.

f) Upper level setbacks should be sufficient to avoid wind down draughts and there should be gaps between higher elements to avoid continuous walls of buildings that promote wind down draughts.

g) Higher buildings above the general street wall height will be visible over longer distances, so should be designed to be read in the round, with regular gaps to facilitate sky views and avoid a visually dominating continuous 'wall' of buildings.

56. **Residential Interfaces** require the protection of the environmental and visual amenity of properties to the rear of higher development along Johnston Street, wherever lower scale residential areas are likely to remain as such. This depends on:

a) Limiting additional overshadowing, particularly of private residential open space and windows to habitable rooms. The expectation would be to generally meet the standards of Clause 55 (former ResCode). However, a simpler measure and normal benchmark is to test the midday equinox representing an approximate 45^0 solar plane.

b) Ensuring relative privacy whilst avoiding the need for screening of habitable windows. Rescode expectations have established a 9m separation as generally acceptable.

c) Avoiding visual dominance of the residential outlook. While private views are not and should not be protected, there is a reasonable expectation of elevated sky views and regular gaps between higher development.

57. **New Development Interfaces** require forethought as to the appropriate inter-relationship between new developments on different sites. This depends on:

a) Matching the height and any setback of lower built forms to create a continuous street wall to positively define the street space and avoid blank side walls left uncovered by neighbouring redevelopment.

b) Assuring adequate separation between upper level buildings, both to provide adequate daylight, privacy and outlook between neighbouring windows, and to create sufficiently legible gaps in a potentially negative wall of higher buildings. In practice a 9m amenity separation is considered desirable (as discussed above).

c) Providing for equitable development opportunities across all sites and flexibility for change over time. Relying on neighbouring developments to adopt matching typologies or assuming uses will not change over time are high risk strategies. Built form rules must be robust enough to manage all future eventualities.

8.0 Analysis of the Amendment

8.1 The Reason for Change

58. It is evident from the background documentation associated with the Amendment that limited built form controls were in place prior to the interim controls introduced under Amendment C237, and these did not include a robust response to heritage. A comprehensive review was necessary.

59. The comprehensive review ensures that consideration of future permit applications does not compromise the quality of pedestrian amenity nor the relationship to the scale of the local heritage context, requires active frontages, and ensures that taller buildings do not diminish public amenity at street level or for neighbours.

8.2 The Role of Mandatory Controls

60. The Amendment has adopted an evidence-based approach to examine the past, present and future of the Johnston Street Activity Centre to determine the appropriate balance between discretionary and mandatory provisions.

61. Ministerial Practice Note 60 Height and Setback Controls for Activity Centres (recently revised), makes clear that built form controls, and particularly mandatory height controls, require robust justification. It states that mandatory controls should generally only be applied where up-to-date, comprehensive built form analysis has been undertaken (in this case the work undertaken for the Local Plan and the recent 3D modelling) and where special circumstances apply, such as heritage protection (in this case particularly the heritage overlay areas west of the railway).

62. Interestingly, the built form controls review for Johnston Street, together with Moonee Ponds and Ivanhoe, were the three Pilot Projects used to inform the revised Practice Note 60. As reported in the Practice Note 60 Key Findings Report, all three centres had interim controls of a mandatory nature imposed in 2017, with the evidence suggesting that these mandatory controls did not inhibit planning permit applications (Moonee Ponds had four in the year and Ivanhoe two). The Minister approved mandatory height controls for the Ivanhoe Activity Centre at the same time that he approved the revised Practice Note 60 in September 2018.

63. The Practice Note 60 background material also notes the following relevant aspects:

i. Johnston Street as a Neighbourhood Activity Centre and a fine grain 'strip shopping centre' plays a lesser role in providing development capacity
ii. Built form controls need to be holistic and apart from height, should consider setback controls, including to side and rear boundaries.

64. In the case of Johnston Street west of the railway (Precinct 1 and part of Precinct 2), there is in my view ample heritage content (and heritage overlays) to justify mandatory street wall and setback controls to protect the significantly intact precinct character which promotes and attracts pedestrian activity. Throughout the whole street, in my opinion, overshadowing controls to protect crucial sunlight to the Johnston Street southern footpath, also meet the Practice Note criteria, as do controls to limit overshadowing of adjoining low scale residential areas.

65. More complex is the justification of when visual dominance becomes an issue that requires mandatory limitation and this is discussed in more detail below. Suffice it to say here that I believe separation between adjoining buildings should be strictly controlled to ensure minimum levels of daylight, privacy and outlook, which are serious issues with long-term consequences.

8.3 General Considerations

66. Amendment C220 as refined in Council's Preferred version recognises a total of 12 different sub-precincts, six in Precinct 1 west of Hoddle Street and a further six in Precinct 2 to the east of Hoddle Street. The designation is based on context, specifically heritage content, orientation north or south of Johnston Street, sensitivity and proximity of adjoining interfaces, as well as depth and width of development parcels. Having reviewed the subdivision and zoning patterns, as well as undertaken comprehensive site inspection, I support the definition of the different sub-precincts as a necessary means of nuancing the built form controls. I support Council's Preferred version rationalisation of sub-precincts 1AA and 2C to include the deep corner sites to Hoddle Street and Lulie Street, which do not have sensitive rear interfaces. I also appreciate that the permitted site west of the Collingwood Arts Precincts (the former TAFE at 35 Johnston Street) is a special case, which warrants separation as its own sub-precinct 1AAA, in the 21 August 2018 Council adoption. This site has a sensitive interface with

the Collingwood Arts Precinct, and is also of a sufficient size to facilitate distinct height outcomes.

67. With these considerations of sub-precinct identity, preferred or mandatory nature of controls, and the Design Principles of Section 5.2 in mind, I now undertake a detailed review of the proposed controls outlined in DDO 15, noting which matters I support and matters where further refinement may be considered. The review analyses each element in turn, beginning with the Street Wall Height, followed by Setbacks above the Street Wall, Rear Interface Heights and Setbacks, and Boundary and Side Street Setbacks. As each Sub-Precinct has a somewhat different context, responses to each element vary and are therefore discussed sub-precinct-by-sub-precinct. The Amendment utilises colour coding to identify the different sub-precincts, and the 3D modelling (as illustrated) does the same, with grey-toned buildings being those with live permits or applications (which may not follow the proposed controls). I note throughout where additional refinements have been included in the updated C220 Amendment documentation (especially in DDO15) as adopted by Council on 21 August 2018, many to address concerns I originally raised in my 10 March 2018 and 18 July 2016 reports.

8.4 Street Wall Heights

Heritage Sub-Precincts 1A, 1AA (part), 1AAA(new), 1C, 1D, 2A & 2B

68. All buildings in the Johnston Street precinct have been assessed and graded as 'non-contributory', 'contributory' or 'individually significant' in heritage terms. Clause 22.02-5.1 of the Yarra Planning Scheme encourages the complete retention of all 'individually significant' buildings and all parts (including the roof) of 'contributory' buildings visible from the street or other public space. Council's position in Johnston Street is that all graded heritage facades should be retained, generally with at least one room depth to ensure a degree of historic integrity. I accept this approach and my review (plus the associated modelling) has been undertaken on this basis, with all heritage-graded facades retained as the street wall of any new development.

69. In the western sub-precincts, the heritage character is consistent enough to require a unified response to the clearly two-storey dominant street wall height. As heritage floor heights are uniformly generous, I consider the DDO recommended street wall of 8m high to be appropriate with the mandatory cap of 11m being necessary to ensure infill buildings rarely exceed the height of the heritage context by more than one storey (as discussed under Design Principles in

7.2 above). No new development should project directly above the heritage parapet. Modelling shows that increasing the street wall height on or close behind the heritage façade, overwhelms the existing building which loses its integrity as a real object. The use of a heritage façade as a decorative screen, with airspace or obviously distinct inserts directly behind it, is equally distracting and presents a streetscape lacking genuine activation and continuity (refer Figure 8.1 and 8.2).

Figure 8.1: Use of heritage remnants as a false façade, Market St, South Melbourne
Figure 8.2: Heritage front retained as active shop with substantial upper setback, 2 Johnston St

Figure 8.3: Retained heritage facades with full street wall (11m) adjoining – street / upper views

Figure 8.4: Retained heritage facades and matching street wall within 6m – street / upper views

70. DDO15 also requires that infill development west of the railway (that is, within the sub-precincts noted in the header and covered by the heritage overlays HO324 and proposed HO505) should match the parapet height of a neighbouring 'contributory' or 'individually significant' heritage building. However, no length of 'matching' façade was indicated in the

Exhibited DDO15 wording. I suggested to match infill street wall heights to these neighbours for a distance of at least 6m (Figures 8.3 and 8.4), which is similar to the preferred setback from the frontage and which I consider reasonable, rather than limiting the whole façade width (which is sometimes considerable). I note this 6m transition is now included in Council's Preferred DDO15.

71. Council has recently clarified that the 'matching' adjoining façade should never be lower than 8m height, even when the heritage neighbour is single storey. This is to avoid long sections of unreasonably low streetscape which negatively impact the general street wall definition. I support this caveat and the modelling has been adjusted accordingly (noting that few sites are actually affected).

72. On all sites west of the railway which do not adjoin heritage graded buildings, the street wall height should remain at 11m to not overwhelm the predominant 2-3 storey heritage streetscape. As there are relatively few non-heritage infill sites west of the railway, there is insufficient frontage width to transition to higher facades, so the 11m limitation is totally appropriate and should be mandatory.

73. ***SUMMARY:*** *For sub-precincts 1A, 1AA(part), 1AAA(new), 1C, 1D, 2A & 2B, I support the proposed preferred street wall height of 8m with a mandatory cap of 11m. I support the added guidance for transitioning street wall heights adjacent to heritage graded buildings to prefer matching adjoining parapet heights for at least 6m from the heritage façade, with the exception that this 'matching' should never be less than 8m in height.*

Sackville Street Sub-Precincts 1B & 1AA (part)

74. The section of Sackville Street contained within the study area has no heritage precinct overlay and no individually significant heritage buildings, although there is a heritage overlay on much of the low-scale residential precinct across the street to the north (refer Figure 8.5). This proximity recommends a maximum street wall of 11m to not visually dominate the sensitive northern neighbours, being already much higher than the mostly single-storey dwellings expected to remain across the street. As there is not a direct abutting interface, nor heritage buildings, nor any possibility of overshadowing nor wind effects, I agree in this case that the 11m Street wall height be 'preferred' and not 'mandatory'.

Figure 8.5: Sackville St looking east, with Sub-Precinct 1B to south (right side)

75. The original DDO proposed a 3m landscaped setback to Sackville Street, or alternatively "a high-quality public realm treatment". If not achieved consistently, the result will be disjointed and there is already a permit approval without any setback. Also, any frontage setback will be partly occupied by service cupboards and paved access ways, with 3m being too narrow to secure significant tree planting. A consistent frontage to the footpath is recommended and I support the removal of this setback from Council's Preferred DDO15.

76. ***SUMMARY:*** *For sub-precincts 1B and 1AA(Part to Sackville St) I support the proposed preferred street wall height of 11m with no mandatory cap. There should be no ground level street setback.*

East of Railway Sub-Precincts 2C, 2D, 2E & 2F

77. To the east of the railway, where there is no precinct heritage overlay, DDO15 requires only that new development 'transition' to the limited number of 'individually significant' heritage buildings. I support allowing the street wall height of new buildings directly abutting heritage buildings to be one storey or 4m more than the heritage façade, once again for a minimum distance of 6m (Figure 8.6). In the DDO 15, the preferred street wall height east of the railway and away from heritage buildings is 15m with a maximum cap of 18m. I support mandatory application of the maximum 18m limit as this is the height beyond which it begins to shadow the southern footpath of Johnston Street between10am-2pm on 22 September (Figure 8.7).

78. It is appropriate to replicate this maximum18m height on the southern side of Johnston Street in this area to complete the street cross-section with the roughly 1:1 proportions preferred for good definition without visual dominance. It is noted that 15-20m is considered the maximum

street wall height for inner city contexts without heritage or other constraints. Both the CBD and Fishermans Bend controls prefer a maximum 20m street wall height to ensure 'human scale', that is, limiting frontages to a height where detail and activity of upper levels is perceivable to the pedestrian. The modelling shows that if built to a continuous 18m street wall, the space is already very enclosed and any additional height would become oppressive (refer Figure 8.7).

79. ***SUMMARY:*** *For sub-precincts 2c, 2D, 2E and 2F, I support the proposed preferred street wall height of 15m with a mandatory cap of 18m. I note the inclusion in Council's updated DDO15 of my suggested additional guidance for transitioning street wall heights adjacent to heritage graded buildings to prefer a maximum 4m (one storey) difference from adjoining parapet heights for at least 6m from the heritage building.*

Figure 8.6: East of rail, 18m street wall and reduced to one storey more than heritage building(s)

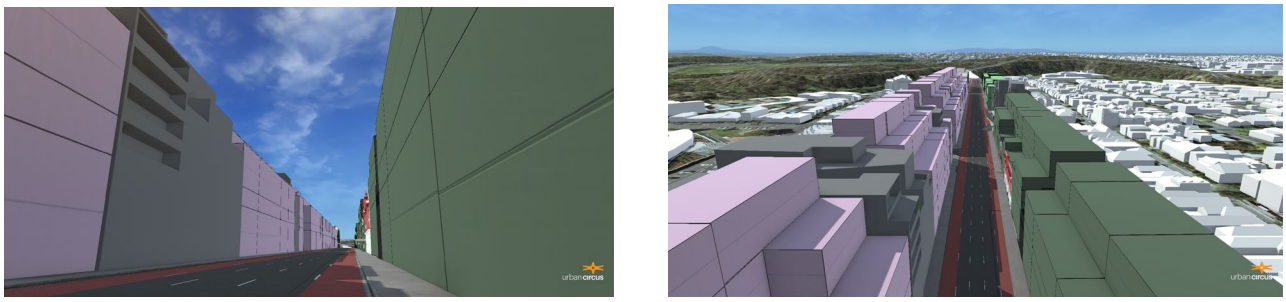


Figure 8.7: East of rail, maximum 18m street wall just avoids shadows on southern footpath

8.5 Setback Above Street Wall

Heritage Sub-Precincts 1A, 1AA (part), 1AAA(new), 1C, 1D, 2A & 2B

80. Within the heritage precincts, the retained front sections of significant and contributory buildings need to be coupled with a mandatory setback above street wall height in order to protect the integrity of the heritage structure. More importantly, the human scale of Johnston Street as an activity centre should be protected to encourage pedestrian use and to limit adverse overshadowing and wind effects. DDO15 proposes a 6m mandatory setback above the street wall for all developments in the western 'heritage' sub-precincts. I agree that the alternative of an upper setback of around 3m is insufficient to secure the visual integrity of any heritage façade and does not achieve a clear distinction between the upper and lower parts of the building. It is in my view perilous to rely on subjective architectural treatments to distinguish the two parts, when the matter is of such importance. The wind evidence discussed below recommends 6m as the minimum setback above the street wall to deflect potential wind down draughts from structures higher than around 15m. I therefore support a mandatory minimum 6m setback above street wall height throughout.

81. Apart from the visual independence of the street wall and the heritage integrity achieved through sufficient setback directly above the street wall, there is the issue of the visual dominance and shadowing caused by further upper levels. DDO15 proposes that further levels above the street wall should be set back below a 45^0 plane commencing above the street wall. However, the Exhibited DDO15 wording was unclear whether this is above the actual street façade (which could be a lower heritage-graded building) or above the theoretical maximum street wall (11m in these sub-precincts). The difference (Figure 8.8) produces a generally significant reduction in overall building height and volume where the 45^0 starts above a retained heritage façade. While there is improvement in context for the heritage structure, the loss of yield is so significant as to create a strong negative incentive to demolish contributory heritage facades. I note Council's updated DDO15 includes this clarification suggested by me.

Figure 8.8: 45^0 setback above theoretical 11m street wall and directly above the heritage parapets

82. The 45^0 setback above street wall is supported as a suitable means of limiting visual dominance and overshadowing of the southern footpath. The alternative of a straight-up façade beyond the 6m setback was modelled (Figure 8.9) and is not supported due to its visual and shadowing impacts.

Figure 8.9: Straight-up from 6m setback and continuous stepping at 45^0

83. However, the continuously stepped 'wedding cake' setback (floor-by-floor at 45^0) is visually dominant and draws attention to itself, particularly when not all sites are redeveloped and the side profile becomes evident (refer Figure 8.10). The Exhibited DDO contains general wording to "avoid repetitive stepped form within the 45^0 envelope", but I recommended this be supplemented with measurable guidance. The Preferred DDO15 introduces a caveat that building setbacks should be in at least two-storey increments to avoid repetitive stepped form and 'wedding cake' outcomes. Greater increments (eg. three storeys) have a considerable impact on yield.

Figure 8.10: Wedding cake effect of storey-by-storey steps within Johnston Street and then within, York St and Market St, South Melbourne

84. ***SUMMARY:*** *I support a mandatory minimum 6m setback above the street wall in precincts 1A, 1AA(part), 1AAA, 1C, 1D, 2A and 2B, with a preferred setback of upper levels below a 45^0 plane commencing at the 11m maximum street wall height. Furthermore, I support a preferred minimum built form increment of two storeys per step.*

Sackville Street Sub-Precincts 1B & 1AA (part)

85. As discussed above, the sensitive aspect of Sackville Street is its interface with the low scale, generally heritage and residential buildings across the street. While it is to the south of the residential area and hence causes no shadowing impacts, it does have significant visual impact with preferred overall heights up to 24m fronting what are commonly 3-5m single-storey houses. Therefore, setbacks above the street wall (preferred maximum height 11m) are important. Setbacks of 3m were originally included in the Exhibited DDO15, but at my

recommendation are now increased in the Preferred version to 6m. I support the 6m setback to ensure the street wall is distinguished as a separate element transitioning to the residential area across Sackville Street, which as largely Neighbourhood Residential Zone (NRZ1) with a heritage overlay (HO321), is unlikely to change dramatically. However, I believe the issue is important enough to merit a mandatory setback, particularly considering exposure to northerly winds and potential down draughts.

86. Upper levels above the preferred 11m street wall are to be setback below 45^0. This is to be a preferred requirement, as there are no crucial overshadowing impacts associated. As discussed above, the angled setbacks produce the required transition to the northern, low residential area, and once again the 'wedding cake' storey-by-storey setback is not favoured with two-storey steps being preferred.

87. ***SUMMARY:*** *For Sackville Street sub-precincts 1B and 1AA(part), I support a 6m mandatory (NOT Council's preferred) setback above the street wall, combined with upper levels contained below a preferred 45^0 plane measured from the 11m preferred street wall height. Building increments within the setback should be two-storeys per step.*

East of Railway Sub-Precincts 2C, 2D, 2E & 2F

88. As discussed above, this eastern precinct has a higher street wall of 18m mandatory maximum and lesser heritage significance. However, this does not mean that reducing shadowing and visual impacts above this height is unimportant, potentially quite the opposite given the already substantial scale of permitted frontage structures. The eastern sub-precinct remains an area where pedestrian activity is to be promoted and an improvement of pedestrian amenity is a big part of this strategy, including an appropriate scale of frontage development. The Exhibited DDO15 contains a minimum setback above the street wall of just 3m preferred. As discussed above, I consider this inadequate to secure a meaningful distinction between upper and lower levels, particularly when viewed at an angle along the street, and potentially insufficient to deflect wind down draughts. I consider a mandatory 6m setback is required to secure these important aspects. I note Council's Preferred DDO15 now proposes a 6m setback in this sub-

precinct, but preferred rather than mandatory. In my view, the visual separation and wind aspects demand a mandatory treatment.

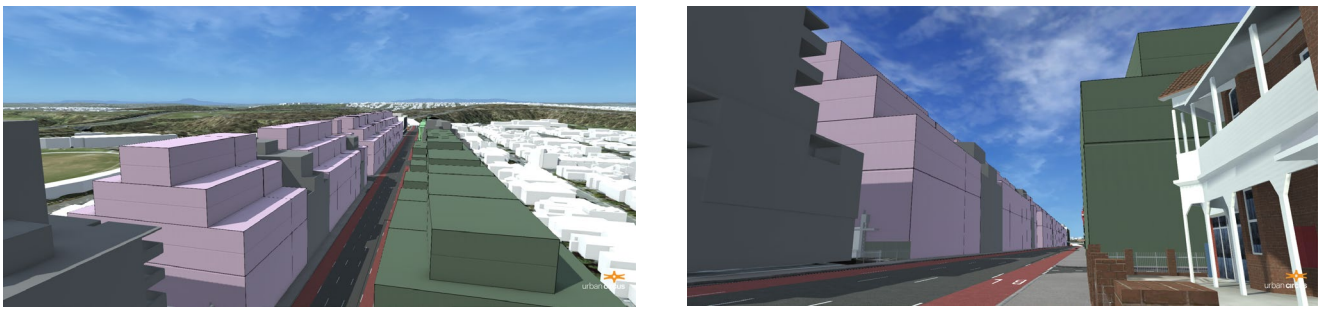


Figure 8.11: Modelled 6m and 45^0 setbacks above 18m street wall – upper and street views

Figure 8.12: Modelled 6m setbacks straight up above 18m street wall – upper and street views

89. As with the areas west of the railway, upper levels above the street wall are proposed to remain below a preferred 45^0 plane (now measured from the top of the maximum 18m street wall). This condition and a straight up façade at the 6m setback were modelled (Figures 8.11 and 8.12) showing the dominant nature of the 'straight up' option and its greater shadowing impact (reaching the southern footpath at a height of around 24m above the 6m setback). The angled setbacks produce the required transition to Johnston Street, and once again the 'wedding cake' storey-by-storey setback is not favoured with two-storey steps being preferred.

90. ***SUMMARY:*** *For the eastern sub-precincts 2C, 2D, 2E and 2F, I support a mandatory (NOT Council's preferred) 6m setback above the street wall, combined with a preferred upper level containment below a 45^0 plane from above the 18m street wall, with building steps of two floors to reduce 'wedding cake' effects.*

8.6 Rear Interface Height

Commercial (& Street) Interface Sub-Precincts 1A, 1AA, 1AAA, 1B, 2A, 2B & 2C

91. In the Exhibited DDO no rear interface height is specified in the proposed DDO when the interface is NOT to an existing, lower residential area. These sub-precincts are backed by

commercial areas. The lack of recommendations for the rear interface is potentially problematic, particularly when adjoining sites are still undeveloped. It is necessary to provide a minimum protection between neighbours to ensure basic amenity and equity over time. At my recommendation, the Preferred DDO now includes a preferred rear interface height equivalent to the street wall height of 11m (Figure 8.13). Bearing in mind the lower floors are assumed built out to boundaries. any base building higher than three storeys introduces an excess of deep, dark floor plates unsuitable for residential use. Sub-precinct 1AA contains sites which stretch from street-to-street and therefore may not have a 'rear' interface to control. Some discretion will be required in assessing specific proposals on through sites (between two streets) provided they manage internal and external amenity impacts.

92. ***SUMMARY:*** *I support a preferred rear interface height of 11m (equivalent to the street wall height) for sites in sub-precincts 1A,1AAA, 1B, 2A, 2B and 2C, noting that through sites including 1AA will require the exercise of discretion when there are no rear interfaces.*

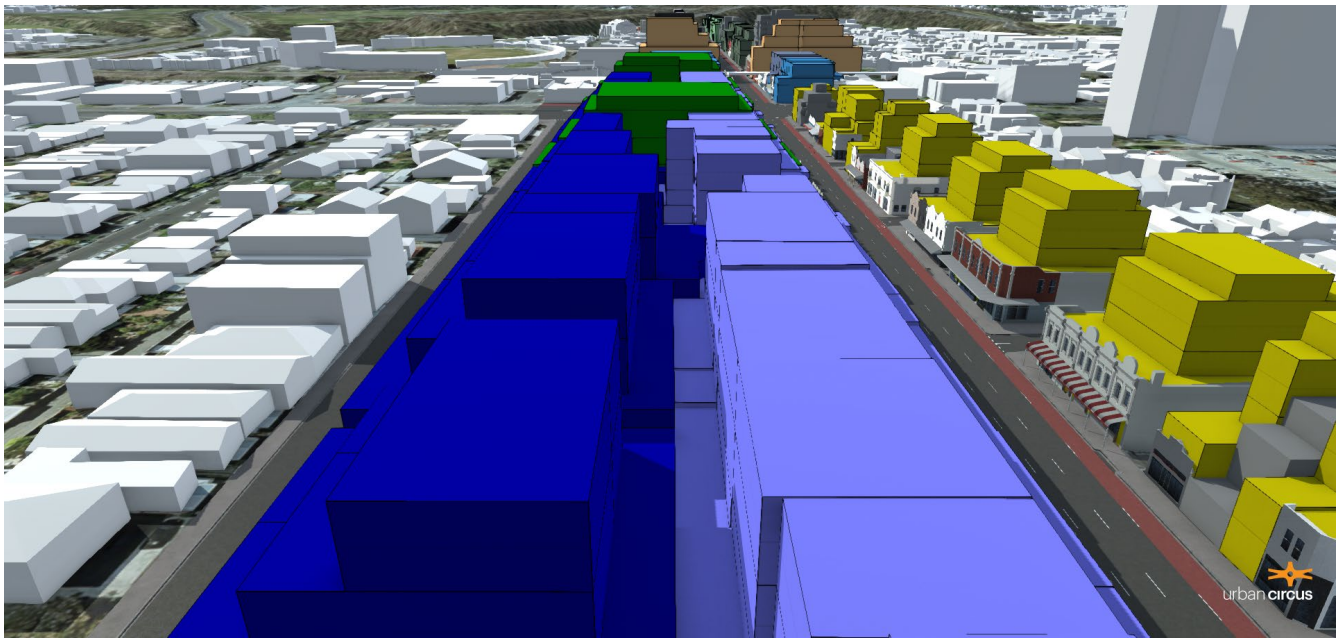


Figure 8.13: Preferred 11m rear interface height, with 4.5m+4.5m rear setback between buildings

Residential Interface Sub-Precincts 1C, 1D, 2D, 2E, 2F

93. While a variety of rear interface heights were proposed in the Exhibited DDO15 for sub-precincts backing onto residential areas, I recommended a more consistent approach. Bearing in mind that the adjoining GRZ is likely to admit heights up to 11m and the NRZ heights of 9m, the activity centre boundary should never be lower than this and may transition upward from there, especially if there is an intervening laneway. The rear interface height has therefore been modified to 11m in the Preferred DDO for 1C, 1D, 2D & 2E where there is a laneway or GRZ

adjoining, and at 9m only in sensitive 2F which directly adjoins an NRZ without a laneway. A modelled rear interface height even one storey higher proved dominating (refer Figure 8.14) and a recent example exists at 109 Dight Street in sub-precinct 1C (refer Figure 8.15). As these interface heights are to protect sensitive residential amenity, the height should be mandatory.

Figure 8.14: Rear interface heights of 11m and 14m to GRZ, with 45^0 setback above

Figure 8.15: 109 Dight St, 5-storey building under construction next to low residential rear interface

94. ***SUMMARY:*** *I support a mandatory rear interface height of 11m for sites in sub-precincts 1C, 1D, 2D, and 2E, with a mandatory 9m for 2F which directly abuts a Neighbourhood Residential Zone.*

8.7 Setback above Rear Interface

Commercial (& Street) Interface Sub-Precincts 1A, 1AA, 1AAA, 1B, 2A, 2B & 2C (not to Stafford)

95. Where there is no lower residential interface to the rear, the Exhibited DDO15 seeks that new development "enable daylight and/or solar access ..... and consider future development opportunities on neighbouring sites" but indicates no specific rear setbacks. To ensure a minimum degree of amenity (whatever the adjoining use) I recommend a single 4.5m setback above the chosen rear interface height of 11m (refer to Figure 8.13). In fact, I would support this setback being made mandatory as the best way to protect the amenity and equity of all adjoining sites, where the failure of one owner to comply affects the overall separation between neighbours (allowing a potential outcome inferior to 9m). I note Council's Preferred version of DDO15 leaves it as preferred. Note that part of 2C fronts Stafford Street at the rear, so should be governed by a 45^0 preferred upper setback.

96. ***SUMMARY:*** *I support a* ***mandatory*** *4.5m boundary setback for upper floors above the preferred rear boundary height (to ensure 4.5m+4.5m = 9m building separation).*

Residential Interface Sub-Precincts 1C, 1D, 2D, 2E, 2F, 2C (to Stafford only)

97. Above the preferred maximum rear interface height to lower residential areas (generally 11m, but 9m in sensitive sub-precinct 2F, the Preferred DDO specifies a 45^0 plane for upper level setbacks. This angle ensures limited additional overshadowing to the south (10am – 2pm on 22 September) and limits the visual presence of the new building from neighbouring houses and their open spaces (Figure 8.14). Council proposes a discretionary 45^0 plane, but I support a mandatory control as the simplest way to put a known limit on overshadowing. The alternatives of "no additional shadowing at given times" or ResCode type shadowing limits are more onerous and more complicated to measure.

98. ***SUMMARY:*** *I support a* ***mandatory*** *45^0 setback of upper levels above the rear interface as the simplest and safest way to limit overshadowing and dominance (Council recommends preferred).*

8.8 Side Boundary Setbacks

Corner Site Frontages

99. The Exhibited DDO15 did not specifically clarify what setback regime should apply to side streets and laneways. Council's Preferred DDO15 includes my recommended returning of the street wall height from the main street (with a transition to the rear interface height) with a setback above of 3m (Figure 8.16). So as not to overly penalise corner sites, this is a reduced setback (not the frontage 6m with 45^0 above) and is preferred, not mandatory. Side setbacks to laneways are to be measured from the centreline of the laneway, with 4.5m being my preferred upper level setback, above the returned street wall to ensure a 9m separation between fronting facades to facilitate unscreened windows.

100. I also support applying this return and 3m upper setback to sites adjoining open spaces and the railway reserve. Council is silent on this aspect, but the modelling assumes my interpretation. It is important to note that the fundamental built form nature of Johnston Street is as a continuous, consistent strip of defined space. As such corner sites do **not** represent points of particular interest (as they do in the CBD grid) and should not be developed as landmarks with higher built form or lesser setbacks.

101. ***SUMMARY:*** *The street wall height should return down side streets and laneways with a preferred setback above of 3m for side streets and 4.5m from the centreline of laneways.*

Figure 8.16: Street wall returned down side streets with single 3m setback above

Within Lower Levels

102. There is currently no clear guidance on residential development within the lower levels, which may be built boundary-to-boundary without secure daylight, potentially up to a height of five storeys (refer Figure 8.17). The apartment standards introduced as Clause 58 of the planning scheme provide no measurable guidance on setbacks nor light courts. Although relating to building separation at upper levels, Council's Preferred DDO15 proposes a discretionary

setback of 4.5m from habitable room windows which could be used as guidance. I would recommend this be specified as a mandatory minimum clear distance in front of all habitable room windows at all levels, to a return distance of at least 1.0m either side of the window, noting that this is an absolute minimum protection. An example of a how this might work as a joint light court has been modelled (Figure 8.18).

Figure 8.17: Shallow light wells likely to be built-out by neighbours, 370 Johnston Street

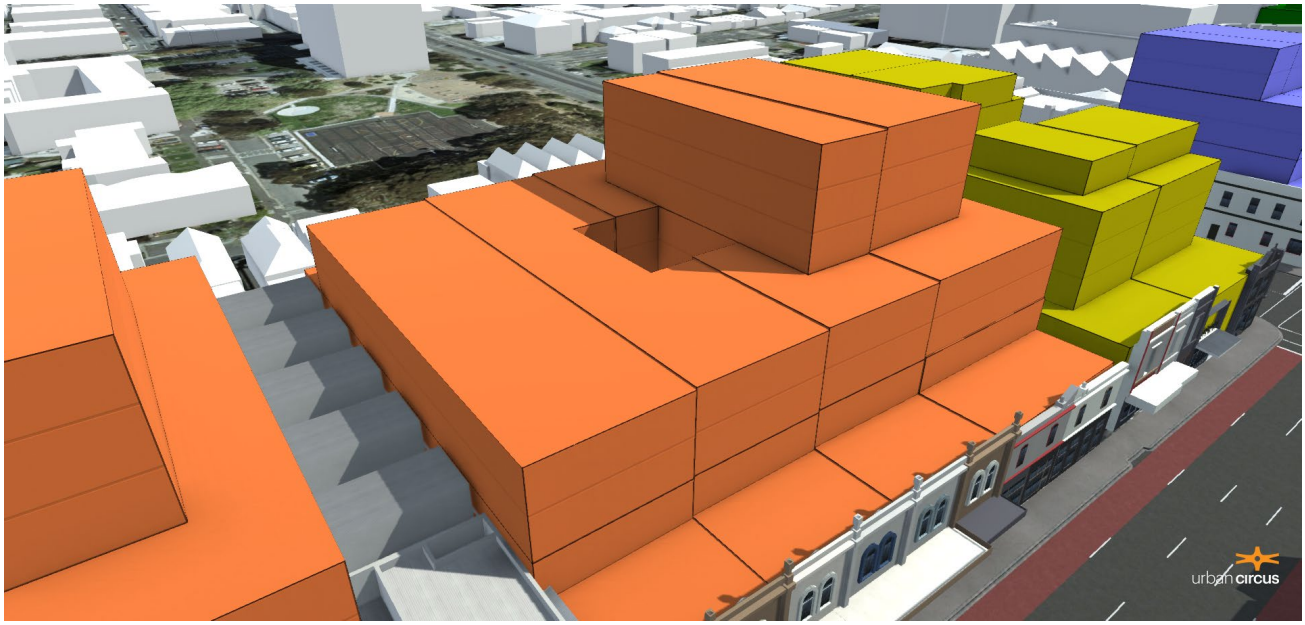


Figure 8.18: Modelled example of joint light court with 4.5m width

103. ***SUMMARY:*** *To ensure internal amenity, I support a minimum 4.5m clear distance in front of all windows (to light courts) below the street wall height.*

Within Upper Levels

104. The Building Separation provisions of the Exhibited DDO15 propose a preferred 4.5m setback from habitable rooms to side boundaries at 'upper' levels and 3.0m for non-habitable and commercial/office windows. The Preferred Council DDO15 adds that "development above 21m should provide an appropriate side setback to provide spacing between buildings in order to maintain views to the sky from Johnston and Sackville Streets and from residential properties adjacent to the development". The objective is important but does not include consideration of an adequate side setback enabling buildings to be seen in the round with active windows rather than blank side walls (refer Figure 8.18). To secure this and ensure a 4.5m+4.5m = 9m separation between any side windows (without the need for screening) requires a consistent and therefore mandatory setback regime, applicable to all upper levels whether specifically containing habitable room windows or not.

Figure 8.19: Impact of no side setbacks at upper levels- Lygon St, Carlton North and High St, Preston

105. Uses can change over time from commercial to residential and allowing an upper level wall to the boundary (because it has no windows) causes an amenity challenge for a neighbouring development. I suggest five storeys or 18m (rather than Council's 21m) as the reasonable cut-off point above which upper levels must be separated by side setbacks. Above this height

(which corresponds to the highest street wall height in the Johnston Street precinct) buildings are generally visible over greater distances and a continuous built form or a series of blank boundary walls, is dominating if not ugly. The modelled images compare continuous boundary-to-boundary development with the recommended option of all levels above five storeys setback 4.5m, or 9m between two neighbours (Figure 8.19). Therefore, sites less than 15m wide are effectively limited to five storeys in height. However, there could well be allowance for two smaller sites to build wall-to-wall via a mutual legal agreement and this possibility is also modelled (Figure 8.18).

106. Notably, the wind evidence (**Attachment 6**) recommends regular gaps between higher buildings (above around 15m) to facilitate the passage of wind and lessen negative down draught impacts.

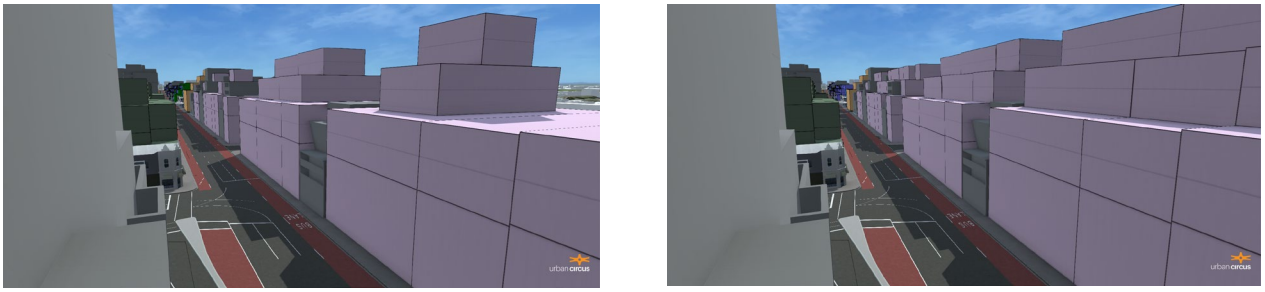


Figure 8.20: Side setbacks of 4.5m above five storeys and without side setbacks

107. ***SUMMARY:*** *While Council proposes preferred upper level side setbacks above 21m, I support the* ***mandatory*** *application of setbacks to neighbouring boundaries at upper levels, above five storeys or 18m. A 4.5m setback, no matter what the use, achieves a 9m building separation ensuring internal amenity and adequate gaps between buildings allowing side window openings and visibility in the round for higher structures. Allowance should be made for neighbouring sites to agree a shared upper level boundary.*

8.9 Overall Height

Height limitation principles

108. As discussed above, the overall heights specified in Council's DDO15 closely reflect the outcomes of applying the proposed built form parameters including street wall height, setbacks above and the 45^0 envelope plane. I consider these outcomes and heights were robustly tested (including with cross-sections) in Council's Johnston Street Local Area Plan Amendment C220 Supporting Document dated October 2017.

109. Council's Exhibited DDO15 includes preferred **and** mandatory overall height controls (depending on the sub-precinct) and their Preferred DDO15 includes a refined series of conditions or caveats which must be met before the approval of height above the **preferred** maximum in Table 2 (but always below the mandatory maximum where specified). I have no problem with a dual specification, but the requirements to move above one to the other need careful consideration. Those requirements referring to the achievement of the design objectives contained in the DDO, and Clause 21 more generally, are appropriate and typical. Consistency with the mid-rise height range (now appropriately modified to 5-10 storeys) and not increasing amenity impacts on residential neighbours are also reasonable conditions. However, requirements unrelated to built form impacts may place in doubt the validity of setting a height control at all.

110. I note that mandatory height limitations on sites less than 20m deep or 10m wide (which were capped at 18m or 5 storeys) in the Exhibited DDO are, as I recommended, removed in Council's Preferred DDO15. Such limitations are best managed through the available performance related parameters. In this case, the upper level setbacks (6m to the street and 4.5m to other boundaries) will automatically exclude taller development on smaller sites or will require consolidation (Figure 8.20). The challengeable site size parameters are adding nothing new.

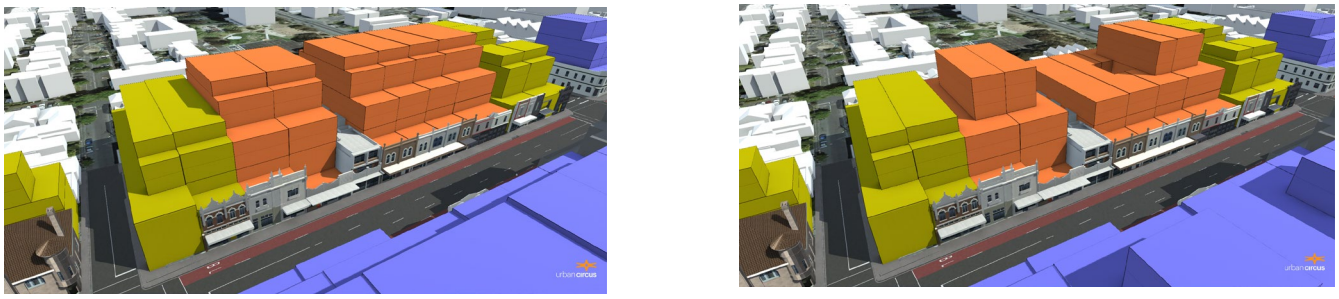


Figure 8.21: Effect on smaller sites of no side setbacks or 4.5m side setbacks above five storeys

Commercial (& Street) Interface Sub-Precincts 1A, 1AA, 1AAA, 1B, 2A, 2B & 2C

111. The proposed overall heights are preferred, not mandatory, in these sub-precincts with commercial interfaces. They vary from 21m to 34m depending on the context and particularly the site depth, which determines the ultimate height within inclined 45^0 setbacks.

112. In reality, the overall height is rarely capable of further increase if the shadowing and 45^0 angle controls are consistently applied. The exceptions are deeper sites which as tested by modelling and are shown to allow theoretical increases (Figure 8.21).

113. As the preferred height range for the whole Johnston Street precinct is 5-10 storeys, I recommend limiting the preferred height in any precinct to 31m. This requires Council to adjust their preferred overall height for Sub-Precinct 2C (which is shown as 34m).

Figure 8.22: Permit up to 34m with theoretical **stepped setbacks up to 40m on deeper site**

114. ***SUMMARY:*** *I have no issue with preferred overall heights, however I do not support mandatory height caps when heights are already appropriately limited by more performance-based parameters such as setbacks and overshadowing controls. If more performance-based controls such as the 45 ^{0} envelope were not included, then a mandatory height control would be required. Note: The preferred height in 2C should be reduced to 31m to reflect the preferred precinct range of 5-10 storeys.*

Residential Interface Sub-Precincts 1C, 1D, 2D, 2E, 2F

115. The overall heights in these sub-precincts with a residential interface are proposed by Council as mandatory and vary from 21m to 31m according to the context and site depth. In reality, it is unlikely these heights will be exceeded if the shadowing and 45^{0} angle controls are met. Therefore, it is unnecessary that overall height controls be mandatory and I recommend they all be preferred.

116. ***SUMMARY:*** *I have no issue with the proposed preferred maximum heights (especially in sub-precincts with residential interfaces) but believe they do not need to be mandatory as other built form requirements already protect amenity. If more performance-based controls such as the 45 ^{0} envelope were not included, then a mandatory height control would be required.*

8.10 Street Frontage Treatment

General Principles

118. The design objectives seek to retain the visual dominance of heritage facades and create near continuous frontage activation to provide visual interest and surveillance, both at ground level and within the street wall height generally. These are common urban design objectives to be expected in any designated activity centre or area with a heritage overlay. To provide weight, it is important that the objectives are matched with a measurable parameter, though this should be preferred rather than mandatory, to reflect cases where compliance may be more flexible (eg less activation possible in heritage frontages) or where other solutions may be justified.

Specific Parameters

119. The Exhibited and Preferred DDO15 recommends that the two lower floors should be for commercial use. In practice this is translated to requiring floor-to-floor heights of at least 4m (heritage constraints permitting) for the two lower floors. While this may be appropriate on Johnston Street, it is probably excessive for more secondary Sackville Street fronting a lower residential zone. I recommend a ground floor of at least 4.0m would be sufficient for Sackville Street.

120. The DDO places no specific measures around ground floor activation. I would recommend the typical preference for 80% of the length of Johnston Street frontages to be occupied by tenancy or entry openings.

121. In terms of vehicle cross-overs, the DDO 15 states that vehicle access should be avoided on Johnston Street, with a preference for side street or laneway access. This might be more strongly expressed, as crossovers are presently rare and are a major disruption to active frontages and safe pedestrian movement. I recommend phrasing as a prohibition on Johnston Street vehicle access, unless no alternative point is possible, and adding a limit to one crossing with a maximum width of 6m. Council is encouraged to undertake a more general parking review, with the aim of limiting parking rates within the activity centre and restricting crossovers.

122. ***SUMMARY:*** *The DDO provisions regarding active frontages should be strengthened to include a preferred 80% active frontage length and more specific vehicle crossing restrictions on*

Johnston Street. I recommend the two lower floors of 4m height for possible commercial use, should be limited to Johnston Street, with one floor elsewhere.

8.11 Wind Impacts

123. At my recommendation, Council's preferred version of DDO15 now includes a Decision Guideline requiring consideration of "the wind impacts of the proposed development". Council commissioned Melconsult to provide a report on the wind aspects of the C220 built form controls (refer **Attachment 6**). Melconsult's main recommendations include:

– Due to the exposure of the area to prevailing winds from the north-west to the south-west and the relatively low, adjoining built form, negative wind impacts are possible from buildings above around 15m high;

- Setting back buildings above this height will help mitigate wind effects and the recommended minimum setback (above the podium) is 6m;

- Curved or angled built forms also tend to better divert wind flows;

- A continuous wall of buildings higher than around 15m will also tend to produce negative wind effects and separated buildings are recommended.

124. These recommendations on likely wind effects and how to avoid them, support a limitation on the street wall height. Melconsult's recommended 15m height falls between the proposed street walls of 11m and 18m for different sections of Johnston Street. The preferred setback of 6m above this street wall to divert wind down draughts also supports the proposed upper level setback control. Finally, the notion of providing breaks in any 'wall' of higher buildings (above 15m) supports the notion of adequate side setbacks between higher buildings, to be read in the round.

9.0 Submissions Review

Of the submissions to Amendment C220 formally lodged after public exhibition, I was specifically instructed to consider and respond to the following seven submissions:

9.1 SUBMISSION 11: 329 Johnston Street

125. While I am not qualified to comment on the strategic, land use or legal matters related to the requested change to zoning boundaries, from an urban design viewpoint I see no objection to the expanded development site including the southern properties 236 Nicholson Street and 37 Hunter Street within the activity centre boundary. While all the built form and interface parameters are met there is no reasons to discourage a larger development footprint.

126. I also agree that due to its semi-island context and General Residential Zone to the south, the site nature is more akin to sub-precinct 2E than the current allocation to 2F. The change would allow a rear interface height raised from 9m to 11m (equalling the GRZ height potential) and raising the maximum overall height from 21m to 24m (in recognition of the greater site depth).

127. For the reasons explained throughout my report, all other built form parameters should remain as proposed in DDO15, including the maximum street wall height, setback above, and 45^0 inclined envelope planes to front and rear.

9.2 SUBMISSION 14: 422-430 Johnston Street

128. I do not consider the subject site, located at the eastern end of sub-precinct 2D, to be similar to the sites in sub-precinct 2C adjoining Lulie Street. The 2C Lulie Street sites are slightly deeper, but more importantly adjoin a new 4-storey apartment block to the north, whereas 2D and the subject site adjoin low scale housing in a Neighbourhood Residential Zone (both immediately across the same laneway).

129. There is in my view no argument that this site forms a 'bookend' as higher commercial development continues immediately east across Trenerry Crescent (outside the designated activity centre). Future redevelopment will achieve a near consistent street wall continuity and there is no justification for extra height or design 'freedom'.

130. For all the reasons explained throughout my report, I believe the proposed built form controls are appropriate and should not be relaxed for this site (nor for Sub-Precinct 2C on the north side of Johnston Street).

9.3 SUBMISSION 15: 166-168, 174-176 Johnston Street and 121 Sackville Street

131. The sites together span between Johnston Street and Sackville Street and are therefore subject in part to the requirements of 1A and in part 1B. Sites occasionally span distinct control areas and can generally comply with the relevant built form measures on the respective site segments. The submission apparently accepts this situation and accepts the preferred set of controls for 1B (Sackville Street).

132. However, the submission recommends that the built form controls within 1A, particularly the street wall height and setback above, should all be preferred rather than mandatory to provide design flexibility. As reasoned in my report, I believe the street wall to be a critical element in determining street character and amenity, hence the related maximum and minimum controls should remain mandatory. In particular these sites include two heritage fronts to Johnston Street, reinforcing the need for respectful heights and setbacks.

9.4 SUBMISSION 18: 40 Johnston Street and 35-37 Sackville Street

133. I am not qualified to comment on the strategic, land use and legal definition of precinct and zone boundaries but do appreciate that the two parts of the subject site and its northern neighbours are currently commercial premises of limited architectural significance.

134. The submission appears to take issue with Practice Note 60 (or its former version) and what are to be considered exceptional circumstances justifying mandatory controls. For the reasons discussed throughout my report, I believe protecting the character and amenity of Johnston Street as a pedestrian-focused **neighbourhood** activity centre is crucial to the success of the precinct and 'strip shopping centres' as a key part of local identity must be protected with robust controls.

135. The concept plans prepared by Peddle Thorp Architects presume the controls for through sites applied in sub-precinct 1AA. The main effect would be the avoidance of a separation in between the two parts of the site and the creation of a wedding cake style development. This Is valid as a theoretical exercise, however the narrow site width and the submitted concept create side amenity issues where apartments front a narrow lane with a setback of as little as 3m to the laneway centre line. This would presumably lead to near complete screening of apartment outlook, which I consider unacceptable.

9.5 SUBMISSION 19: 196-202 Johnston Street

136. The subject site runs between Johnston Street and Sackville Street and is in sub-precinct 1AA. It is therefore able to be developed in a stepped fashion to a considerable overall preferred height of 28m.

137. The submission objects to the mandatory nature of some proposed controls (street wall height and setback above to Johnston Street **only**). The submission also objects to the 45^0 envelope preference, which is preferred not mandatory and therefore allows for adjusted or alternative responses. For the reasons discussed throughout my report, I believe protecting the character and amenity of Johnston Street as a pedestrian-focused **neighbourhood** activity centre is crucial to the success of the precinct and 'strip shopping centres' as a key part of local identity must be protected with robust controls.

9.6 SUBMISSION 22 (corrected from 21): 288-296 Johnston Street

138. Since this submission was made, Council changed the subject group of sites located on the north-east corner of Johnston and Lulie Streets from sub-precinct 2D to the more flexible 2C. The difference particularly relates to the rear or northern interface, where 2C allows for a preferred (not mandatory) rear interface of 11m and a single 4.5m setback above (rather than a 45^0 angle), both in recognition of the new 4-story apartment block across the lane to the north. Additionally, the maximum overall height is preferred, with no mandatory cap. I recommend 31m preferred in line with the top of the 5-10 storey precinct range.

139. As discussed above and throughout my report, I support the mandatory street wall controls and believe the preferred upper level and overall height controls allow sufficient potential to respond to appropriate response-specific adjustments.

140. I am not qualified to comment on the removal of the site from the 'Activity Node' nor on transition provisions for existing permits.

9.7 SUBMISSION 23: 220, 222, 222A Johnston Street and 153-155, 165 Sackville Street

141. The subject site occupies the 1AA area near the corner of Johnston and Hoddle Streets, but also apparently includes immediately abutting pockets of 1A and 1B. While I am not qualified to comment on the strategic or legal definition of sub-precinct boundaries, I see no strong urban design reason to not incorporate all sections of a consolidated site in the one 1AA sub-precinct.

142. In terms of the mandatory maximum 11m street wall height to Johnston Street, as discussed above and throughout my report, I believe protecting the character and amenity of Johnston Street as a pedestrian-focused neighbourhood activity centre is crucial to the success of the precinct and 'strip shopping centres' as a key part of local identity must be protected with robust controls. The 11m maximum allows for variation of floor height to include higher commercial floors at ground and first floors if desired.

143. In terms of relaxing the upper level setbacks because this site is adjacent to the corner of Hoddle Street, I point out that there is an intervening strip of land owned by VicRoads (which could be developed) and any additional or closer-to-the-street upper levels threaten to overshadow the southern footpath of Johnston Street.

144. The fundamental built form nature of Johnston Street is as a continuous, consistent strip of defined space. As such corner sites do **not** represent points of particular interest (as they do in the CBD grid) and should not be developed as landmarks. The widened Hoddle Street separation is an impost to be minimised, not celebrated.

10.0 Conclusion

145. While the recent changes to Practice Note 60 regarding Height and Setback Controls for Activity Centres are relatively subtle, there is clear direction that robust and up-to-date strategic work is a necessary support for mandatory controls. I believe that Council has provided this strategic work and there is a strong case that selective mandatory controls are justified to secure the built form outcomes necessary to ensure the more intense redevelopment of Johnston Street, while retaining its neighbourhood 'strip centre' character and attraction.

146. In summary, my conclusions with respect to the DDO15 built form controls are as follows (Note: a tabulated comparison with the Exhibited and the Council Preferred DDO15 can be found at **Attachment 7**):

Element	Summary of Position
Street Wall Heights	For sub-precincts 1A, 1AA(part), 1AAA(new), 1C, 1D, 2A & 2B, I support the proposed preferred street wall height of 8m with a **mandatory** cap of 11m. I support the added guidance for transitioning street wall heights adjacent to heritage graded buildings to prefer matching adjoining parapet heights for at least 6m from the heritage façade, with the exception that this 'matching' should never be less than 8m in height.
	For sub-precincts 1B and 1AA(Part to Sackville St) I support the proposed preferred street wall height of 11m with no mandatory cap. There should be no ground level street setback.
	For sub-precincts 2c, 2D, 2E and 2F, I support the proposed preferred street wall height of 15m with a **mandatory** cap of 18m. I note the inclusion in Council's updated DDO15 of my suggested additional guidance for transitioning street wall heights adjacent to heritage graded buildings to prefer a maximum 4m (one storey) difference from adjoining parapet heights for at least 6m from the heritage façade.
Setback Above Street Wall	I support a **mandatory** minimum 6m setback above the street wall in precincts 1A, 1AA(part), 1AAA, 1C, 1D, 2A and 2B, with a preferred

	setback of upper levels below a 45^0 plane commencing at the 11m maximum street wall height. Furthermore, I support a preferred minimum built form increment of two storeys per step.
	For Sackville Street sub-precincts 1B and 1AA(part), I support a 6m **mandatory** (NOT Council's preferred) setback above the street wall, combined with upper levels contained below a preferred 45^0 plane measured from the 11m preferred street wall height. Building increments within the setback should be two-storeys per step.
	For the eastern sub-precincts 2C, 2D, 2E and 2F, I support a **mandatory** (NOT Council's preferred) 6m setback above the street wall, combined with a preferred upper level containment below a 45^0 plane from above the 18m street wall, with building steps of two floors to reduce 'wedding cake' effects.
Rear Interface Height	I support a preferred rear interface height of 11m (equivalent to the street wall height) for sites in sub-precincts 1A,1AAA, 1B, 2A, 2B and 2C, noting that through sites including1AA will require the use of discretion when there are no rear interfaces
	I support a **mandatory** rear interface height of 11m for sites in sub-precincts 1C, 1D, 2D, and 2E, with a mandatory 9m for 2F which directly abuts a Neighbourhood Residential Zone.
Setback Above Rear Interface	I support a **mandatory** 4.5m boundary setback for upper floors (to ensure 4.5m+4.5m = 9m building separation) above the preferred rear interface height for sites in sub-precincts 1A,1AAA, 1B, 2A, 2B and 2C.
	I support a **mandatory** 45^0 setback of upper levels above the rear interface as the simplest and safest way to limit overshadowing and dominance for sites in sub precincts 1C, 1D, 2D, 2E and 2F (Council recommends preferred).

Side Boundary Setbacks	The street wall height should return down side streets and laneways with a preferred setback above of 3m for side streets and 4.5m from the centreline of laneways at corner-site frontages.
	To ensure internal amenity, I support a minimum 4.5m clear distance in front of all windows (to light courts) below the street wall height within lower levels.
	While Council proposes preferred upper level side setbacks above 21m, I support the **mandatory** application of setbacks to neighbouring boundaries at upper levels, above five storeys or 18m. A 4.5m setback, no matter what the use, achieves a 9m building separation ensuring internal amenity and adequate gaps between buildings allowing side window openings and visibility in the round for higher structures. Allowance should be made for neighbouring sites to agree a shared upper level boundary.
Overall Height	I have no issue with preferred overall heights in1A, 1AA, 1AAA, 1B, 2A, 2B & 2C (with commercial interfaces), however I do not support mandatory height caps as these are already appropriately limited by more performance-based parameters such as setbacks and overshadowing controls. If more performance-based controls such as the 45 ^{0} envelope were not included, then a mandatory height control would be required. Note: The preferred height in 2C should be reduced to 31m to reflect the preferred precinct range of 5-10 storeys.
	I have no issue with the proposed preferred maximum heights in 1C, 1D, 2D, 2E & 2F (with residential interfaces) but believe they do not need to be mandatory as other built form requirements already protect amenity. If more performance-based controls such as the 45 ^{0} envelope were not included, then a mandatory height control would be required.
Street Frontage Treatment	The DDO provisions regarding active frontages should be strengthened to include a preferred 80% active frontage length and more specific

	vehicle crossing restrictions on Johnston Street. I recommend the two lower floors of 4m height for possible commercial use, should be limited to Johnston Street, with one floor elsewhere.

147. I am therefore supportive of the Amendment subject to the modifications outlined.

Larry Parsons

Director Ethos Urban

11.0 Appendices

APPENDIX A: Summary of Experience & Personal Details

Full Name and Address

Laurence (Larry) James Parsons

Ethos Urban Pty Ltd

Level 8, 30 Collins Street

MELBOURNE VIC 3000

Qualifications, experience and Area of Expertise

Qualifications

- Full Member of the Planning Institute of Australia (PIA)
- Member of Victorian Environmental & Planning Law Association (VPELA)
- Bachelor of Architecture (Hons), University of Melbourne, Australia, 1976
- Masters of Arts (Urban Design), Oxford Brookes University, United Kingdom, 1978
- Arquitecto Superior (Urbanismo), Spain, 1994

Professional experience

- Director, Ethos Urban, 2017 to present
- Director, Development Approvals & Urban Design, Department of Environment, Land, Water & Planning, 2013-2017
- Director, Urban Design, Department of Planning & Community Development (then Department of Transport, Planning & Local Infrastructure), 2009-2013
- Senior Urban Designer, Arup Melbourne, 2008-2009
- Principal, Navarra de Arquitectura y Gestion, Spain, 1989-2008
- Head, Urban Design Unit, City of Melbourne, 1985-1988

Area of Expertise

I have over 35 years' experience in private practice with various architecture and urban design consultancies in Australia and Spain including over 15 years' solely practicing Urban Design.

Expertise to Prepare this Report

I have led strategic built form reviews including as Project Director of the Central City Built Form Review, Amendment C270 to the Melbourne Planning Scheme on behalf of the Victorian Minister for Planning. I have also had extensive experience as both a responsible authority and applicant for planning permits for medium to high-rise development. This has involved negotiation of similar issues regarding height, setbacks and neighbouring context, for around 50 significant developments in the CBD, Southbank, Docklands and elsewhere. As a practising architect in Spain, I have designed and supervised the construction of numerous apartment buildings, set within inner urban contexts.

Extent to which this report was adopted

I can confirm there is no private or business relationship between myself and the client for whom the report has been prepared.

Instructions which defined the scope of this report

I am engaged by Harwood Andrews on behalf of Yarra City Council.

I have been requested to give expert evidence in relation to the key urban design aspects of the proposed Amendment.

I have received verbal and written instructions from Harwood Andrews, and various documents relating to the Amendment.

Facts, matters and assumptions relied upon

- Inspection of the subject site and surrounding area;
- Review of planning controls and policies affecting the area; and
- Review of Amendment documentation as supplied by Harwood Andrews.

Documents taken into account

- The Yarra Scheme, all submissions, and the following documents;
- Johnston Street Local Area Plan including all appendices (adopted December 2015);
- Heritage Gap Study, Review of Johnston Street East (Final Report, April 2016);

- Amendment C237 to the Yarra Planning Scheme (Interim Controls for Johnston Street Activity Centre, Abbotsford and Collingwood).

Summary of opinions

Refer to the conclusion of this statement (refer to section 6.0).

Provisional opinions

This report is complete and accurate to the best of my knowledge and does not contain any provisional opinions except where noted.

Questions outside my area of expertise, incomplete or inaccurate aspects of the report

This report focuses on urban design matters and does not purport to analyse statutory planning, traffic, or other matters which fall outside of my expertise.

I have made all the inquiries that I believe are desirable and appropriate and no matters of significance which I regard as relevant have to my knowledge been withheld from the Panel.

Larry Parsons

12.0 Attachments

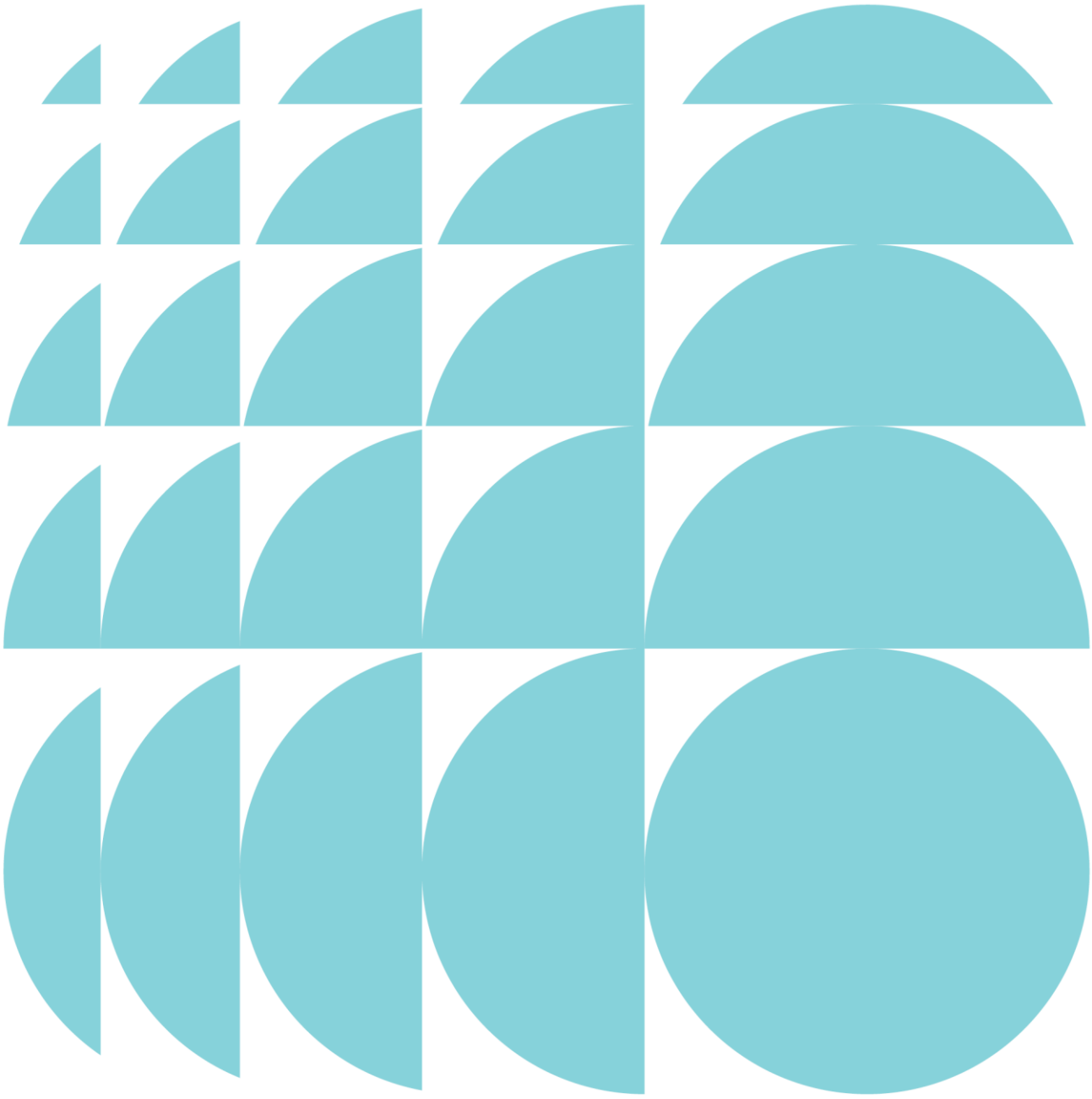
Attachment 1 : Preliminary Review and Expert Opinion 10 March 2018

ETHOS URBAN

AMENDMENT C220 CITY OF YARRA
Preliminary Review and Expert Opinion

Submitted to Hardwood Andrews
On behalf of City of Yarra

10 March 2018 | J0910



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LARRY PARSONS	9 MARCH 2018	TANIA CRISAFI	9 MARCH 2018

VERSION NO.	DATE OF ISSUE	REVISION BY	APPROVED BY
V2 – corrections and additions	10 March 2018	L Parsons	

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1.0 Background

1.1 Purpose and Scope

Harwood Andrews on behalf of the City of Yarra has engaged me as an urban design expert to review the proposed Yarra Planning Scheme Amendment C220 – Johnston Street Activity Centre. Apart from rezoning land to Commercial Zone 1, modifying the MSS and local policy, and applying a new heritage overlay and environmental audit overlay, the amendment introduces a new Design and Development Overlay DDO15, to manage built form outcomes. The latter document is the focus of this report and the particular issues considered include:

- Whether the proposed heights are appropriate and supportable as mandatory or preferred limits, considering the likely views of a Planning Panel
- Whether other parameters such as setbacks and shadowing controls are appropriate to context, or might benefit from refinement or strengthening
- Whether the Amendment's supporting material adequately justifies the proposed requirements, in particular the December 2015 Local Plan, its Appendix B: Built Form Analysis and Recommendations and the October 2017 updated Amendment C220 Supporting Document

The documents reviewed, which have informed this position, include:

- Johnston Street Local Area Plan, Amendment C220 Supporting Document, October 2017 prepared by Yarra City Council ("Supporting Document");
- Johnston Street Local Area Plan, Adopted by Yarra City Council in December 2015 prepared by Yarra City Council ("Local Plan");
- Proposed Schedule 15 to the Design and Development Overlay ("DDO15"); and
- Yarra Planning Scheme.

As my expertise is in urban design, I note that I have not commented on the specifically heritage aspects of the proposed Amendment, taking the recommended heritage overlay changes as a given. I have focused on the effectiveness of the proposed DDO15 provisions to achieve the desired built form outcomes, that is, allowing for urban renewal and more intense development that does not unduly impact the amenity of the precinct or its interfacing areas.

The subject area is divided into two precincts. Precinct 1 or Johnston Street Central covers both sides of Johnston Street from Smith Street to Hoddle Street, with the exclusion of the corner sites to Smith Street and the former Collingwood TAFE site. It also includes the south side of Sackville Street between Wellington Street and Hoddle Street. Precinct 2 or Johnston Street East stretches from Hoddle Street towards the Yarra River with Trenerry Crescent and Clarke Street as its eastern limit.

Yarra Planning Scheme Amendment C220 is to be reviewed by Planning Panels Victoria with the hearing due to commence on 25 June 2018. In the meantime, the area is subject to Interim Controls, which basically replicate the proposed DDO15 and have a sunset date of 31 December 2018 (introduced via Amendment C237 on 2 March 2018).

2.0 Design Objectives

It is not my role nor my expertise to review municipal policy and the strategic intent of the Local Plan, however, my review of the design objectives driving the proposed built form controls, leads to my general agreement with what is important in the Local Plan, as follows:

2.1 Heritage Character

The Local Plan and the DDO Design Objectives recognise two distinct sections of Johnston Street in terms of heritage significance. In Precinct 1 to the west of Hoddle Street, the street has a valued heritage character of predominantly two-storey Victorian and Edwardian shop houses. To the east of Hoddle Street and up to the nearby railway bridge this two-storey heritage character continues relatively intact (as indicated by the updated heritage work accompanying the Local Plan). Further east of the railway bridge the street character is more heterogeneous, with only sporadic heritage buildings identified and more warehouse-style buildings, mostly of an equivalent two-storey height.

Comment: *Without reviewing individual building gradings, my site inspection confirmed the significantly intact heritage character of Johnston Street west of Victoria Park Station. The Victorian and Edwardian streetscape is complete enough to determine the urban design character of the street as its most positive asset, and I agree the protection of heritage character is crucial.*

2.2 Neighbouring Amenity

The Local Plan and DDO1 Design Objectives seek to protect adjoining low-rise residential areas from unreasonable loss of amenity through visual bulk, overlooking and overshadowing. New development should be of a mid-rise nature, which is defined as 5-12 storeys, and should provide a transition in scale towards residential areas.

Comment: *As the neighbouring interfaces are partly covered by heritage overlays with a Neighbourhood Residential Zone (NRZ) or General Residential Zone (GRZ, abutting the south interface), their expected change is limited and I agree it is entirely appropriate to protect their continued amenity. Strategic intensification will bring change but should not unreasonably disadvantage existing residents.*

2.3 Street Activation

The Local Plan and DDO15 emphasise the need to activate the street frontage and provide passive surveillance. In particular this requires support for commercial uses (in the broad sense of the term) at lower levels.

Comment: *Johnston Street is well activated by a variety of uses at present, although some are of a secondary or service nature. It is justified to promote continued activation in new development frontages.*

2.4 Public Realm

The quality of the public realm is to be promoted as a key element of Johnston Street. Although the public realm needs substantial upgrading in terms of layout and capital

improvements, the street (or its southern footpath) currently enjoys excellent solar access and the DDO seeks to maintain this.

Comment: *I agree that public realm amenity, including solar access, is essential and support this objective as high priority. Street works can be upgraded, but shadowing cannot be easily undone.*

2.5 Development Equity

While the Local Plan does not specifically address the issue of equitable development, the DDO Design Objectives raise the need to respond to the development opportunities of neighbouring properties, including consolidation options.

Comment: *It is critical that new development does not restrict development of, or 'borrow amenity' from, adjoining sites. Therefore, ensuring development equity is a key objective of any effective built form controls.*

3.0 Street Wall Height and Setbacks Above

3.1 General Principles

Ministerial Practice Note 60, makes clear that built form controls, and particularly mandatory height controls, require robust justification. Mandatory controls should generally only be applied where necessary to protect a heritage streetscape, identified by a heritage overlay, or to avoid unacceptable amenity impacts resulting from visually dominant built form and/or overshadowing. Generally speaking, good urban design can accommodate one storey up or down from the predominant height. Above this height, upper floors need to be set back sufficiently to create a real visual distinction, without relying on mere materials or stylistic differences.

3.2 Precinct 1 (west of railway)

In my view, the identified heritage character and Heritage Overlays (HO) along Johnston Street west of the railway, are ample justification for a mandatory street wall height. The heritage character is consistent enough to require a unified response, and the street wall height is clearly two-storey, so the 8m preferred street wall is responsive and the 11m mandatory cap is an upper limit which allows for some variation and flexibility. Any greater height threatens dominating the numerous significant and contributory heritage buildings and producing visible side walls above the relatively low frontage.

To achieve visual separation between the low-scale heritage street wall and modern upper floors a mandatory 6m minimum setback is specified in DDO15. I consider this to be a minimum provision, in line with best practice in areas such as Central Melbourne where 10m is the preferred setback, with a mandatory minimum of 5m, even in non-heritage circumstances. In addition, when heritage facades are retained, it is critical to provide sufficient separation from the new fabric to ensure the lower building retains its integrity as an independent structure.

In Sackville Street, which is not a particular heritage frontage on its south side, the DDO15 street wall height is a preferred (not mandatory) 11m high with a preferred 3m setback above. I consider the discretionary nature of the provisions to be correct, with 11m being an appropriate maximum given the mostly one-storey heritage housing on the north side of the street. However, I recommend increasing the preferred upper levels setback to 6m to ensure a meaningful articulation of the two levels, noting that the ‘preferred’ status still admits consideration of alternative design responses.

Recommendation: *For Johnston Street Central, I support the* ***preferred*** *8m and* ***mandatory*** *11m street wall heights with a* ***mandatory*** *6m setback above. While I support the* ***preferred*** *11m street wall height for Sackville Street, I recommend the upper level setback be increased to a* ***preferred*** *6m in this case. I consider the material contained in the Dec 2015 Local Plan and the Oct 2017 Supporting Document to be sufficient to justify these controls.*

3.3 Precinct 2 (east of railway)

The Local Plan’s review of Johnston Street West correctly identifies two different sub-areas. The area west of the railway bridge retains a strong heritage character similar to Johnston Street Central (with a new heritage overlay being proposed) and the area to the east,

between the railway and the river, is a less sensitive streetscape where a new character might prevail, although considering adjoining low-scale residential interfaces.

In the heritage character area between the railway and Hoddle Street (sub-precincts 2A and 2B), the same street wall controls as in Precinct 1 are proposed, that is, 8m preferred street wall with an 11m mandatory cap and a 6m mandatory setback above. For the reasons discussed above this is appropriate.

To the east of the railway (sub precincts 2C, 2D, 2E and 2F), while there are a few heritage buildings there is no intact heritage streetscape to establish a street wall height, nor is there a particular imperative to limit visually dominant built form. However, the need to protect street amenity and the important solar access to the southern footpath does support a maximum height for the north-side street wall. A height somewhat less than the street width of 20m would assure this due to the roughly 45^0 shadow plane (see later discussion), hence the proposed 18m mandatory maximum height is appropriate, noting that the preferred street wall of 15m is only marginally lower.

To provide a well-defined street cross-section with a roughly 1:1 width-to-height proportion, replicating these heights on the southern side is supported. A 15-20m maximum street wall is established practice in inner city contexts without heritage or other constraints. Both the CBD and Fishermans Bend controls provide for a maximum 20m street wall height to ensure ‘human scale’, that is, limiting frontages to a height where detail is perceivable to the pedestrian. It is also noted that any building with a street wall higher than 15-20m, is sufficiently exposed in this neighbourhood to potentially create wind down draft effects, which are hard to manage. As discussed above, in lieu of the proposed 3m upper level setback, a 6m preferred setback above street wall provides the needed visual separation and wind protection.

Recommendation: *For Johnston Street East, for the heritage character area west of the railway, I support the* ***preferred*** *8m and* ***mandatory*** *11m street wall heights with a* ***mandatory*** *6m setback above. For the rest of the precinct east of the railway, I support the* ***preferred*** *15m and* ***mandatory*** *18m street wall height, but I recommend the upper level setback be increased to a* ***preferred*** *6m. I consider the material contained in the Dec 2015 Local Plan and the Oct 2017 Supporting Document to be sufficient to justify these controls, although further consideration of potential wind impacts would be helpful.*

4.0 Rear Interface Height and Setbacks Above

4.1 General Principles

As noted above, Practice Note 60 supports mandatory height controls where there are unreasonable impacts due to visually dominant built form and/or overshadowing. The interface of new development with existing low-scale residential areas is a case in point, where these neighbouring areas are unlikely to experience substantial change. In the case of the rear interfaces to Johnston Street these are partly affected by heritage overlays and are zoned either NRZ or GRZ with expected heights not exceeding 9m / two storeys and 11m / three storeys (noting that the applicable RGZ Schedules provide specific heights of 10.5m for RGZ1 and 9m for GRZ2).

4.2 Precinct 1 (west of Hoddle Street)

In Johnston Street Central, the only **direct** interfaces with low-scale residential are to the south, sub-precincts 1C and 1D, between Wellington and Hoddle Streets. These residential areas are mostly zoned GRZ1 & 2 and include a mix of dwelling types and private open space areas. As this adjoining residential development is expected to reach maximum heights of 9 to10.5m according to the corresponding schedules, the preferred maximum rear interface height of 8m is potentially below that of neighbours being 'protected', so should be raised to 11m.

Above this rear interface height, setbacks are to be determined by a preferred 45^0 plane below which new development should remain. As this angle generally corresponds with the relevant shadow plane (see discussion below) and the lower dwellings are to the south, it is an appropriate guide for determining upper setbacks. It is noted that repetitive stepped forms should be avoided.

Recommendation: *For Johnston Street Central, I recommend raising the rear interface height within sub-precincts 1C & 1D to 11m* ***preferred*** *maximum but agree that a 45^0 plane should be applied above this height to determine upper setbacks. The Supporting Document needs reviewing in line with the zoning of these interfaces.*

4.3 Precinct 2 (east of Hoddle Street)

In Johnston Street East, sub-precincts 2A & 2B interface with C2Z zoning and 2C interfaces with a street (to south) and a C2Z site (across lane to north), so control of the rear interface height is not justified in these cases close to the station. Only sub-precincts 2E & 2F have direct interfaces with low-scale residential lots, but as noted for Precinct 1 above, this adjoining residential has heights up to 10.5m for GRZ2 and 9m for NRZ. Therefore, the proposed preferred maximum rear interface height of 8m for these areas is not logical and should be raised to 11m. Sub-precinct 2D has an interface across a lane from NRZ properties. Therefore, the proposed rear interface height of 11m is considered appropriate.

As discussed above, a 45^0 angle for setbacks above the 11m rear interface height is appropriate for sub-precincts 2E & 2F (limiting shadowing), and although 2D is to the north, the 45^0 angled setback is justified by overlooking. It is noted that repetitive stepped forms should be avoided.

Recommendation: *For Johnston Street East, I recommend applying the preferred rear interface height only to sub-precincts 2D, 2E & 2F, raised to 11m and with the proposed 45^0 angled setback above. The Supporting Document needs reviewing in line with the zoning of the residential interfaces.*

5.0 Side Boundary Setbacks

5.1 General Principles

Setbacks to immediately adjoining neighbours, both existing and potential, is a crucial issue in urban renewal. Side boundary setbacks ensure reasonable occupant amenity (daylight, outlook and privacy), allow for equitable development of all sites, and avoid high walls of continuous buildings. It is one of the issues which has caused most grief, as it has frequently been overlooked or considered 'improbable' that neighbours would develop or that building uses and internal layouts would change over time. Therefore, I believe we should make very few assumptions about the future and plan for 'worst case' scenarios. That is, the neighbour may or may not build high, and may change from commercial to residential use. Boundary setback controls should robustly allow for all eventualities.

5.2 Lower Levels

DDO15 reasonably allows for boundary to boundary development up to the street wall height. Presumably this is up to the mandatory maximum height rather than the preferred street wall height, or just the preferred height when there is no other. That is, in Precinct 1 up to 11m and in Precinct 2, either 11m east of the railway or 18m west of the railway.

The question which is not answered, is the setback from habitable room windows within the lower level 'podium'. This may involve internal patios or light courts, for which there are no clear guidelines in the planning scheme, including within Clause 58 (Better Apartment Standards is silent on this matter). Although an internal amenity issue, rather than a strictly external built form issue, some guidance would be desirable. As we are potentially dealing with light courts up to 4 storeys high, I recommend including a preferred open-to-sky space at least 3.0m wide and 4.5m deep, perpendicular to, any habitable room window, noting this provides insufficient outlook for a living room. In the absence of supporting studies this aspect could well be challenged.

Recommendation: *For the lower levels up to the maximum street wall height, I support providing the option to build to boundaries. However, there should be clarity that this is above the mandatory maximum street wall. There should also be guidance as to the necessary size of any light courts, potential applying the 4.5m from habitable windows measure, but noting the lack of strong supporting evidence.*

5.3 Upper Levels

DDO15, in its Building Separation section, proposes a 4.5m separation from the side boundary for habitable room windows and 3.0m for non-habitable room windows or commercial windows. To enable uses and internal layouts to change over time, it is recommended to always require a habitable or 4.5m setback for upper floors above the street wall height. Importantly, this ensures equity for the neighbour and provides a reasonable gap between buildings, as 4.5m on each side of a boundary (or laneway centre line) totals the 9m separation which is an established measure beyond which screening is generally considered unnecessary.

Achieving a consistent 4.5m minimum boundary setback or 9m upper level building separation, ensures meaningful gaps between taller buildings, alleviating the visual effects of a continuous built 'wall', as well as allowing potential passage for wind around higher

buildings. It also means that habitable windows can freely orient to side boundaries, avoiding blank walls visible along the street.

Recommendation: *Above the street wall height, I support a mandatory setback from side boundaries of 4.5m. Further documentation is desirable to support a robust case on amenity for flexible uses and avoiding visual bulk and wind impacts.*

6.0 Overall Height and Shadowing Impacts

6.1 General Principles

Practice Note 60 recognises that limiting unreasonable overshadowing impacts is a justifiable trigger for mandatory built form controls, particularly height limitations. As has been discussed above, overshadowing is a key issue for the public realm in Johnston Street and for low-scale residential properties south of potential new development. These shadowing considerations will limit some overall heights, but it is necessary to decide what is a reasonable period of protection (time of year and time of day). Except for extremely significant public spaces, such as the Yarra River, it is generally accepted that the September 22 equinox is a reasonable control date and the hours around midday a reasonable control period.

Apart from heritage impacts, the other generally accepted justification for height limitation is unreasonable impacts due to “visually dominant built form” (wording from Practice Note 60). The DDO15 adopts the mechanism of a 45^0 plane traced from the top of the street wall. However, there is no real justification given in the Local Plan or DDO documents to support this particular angle or starting point. In fact, the other examples of Moreland C134 and Darebin C136, reviewed in the Oct 2017 Supporting Document, show the angled plane commencing at a key view point at or near ground (at eye level or somewhat above). A 45^0 angle from the top of a commonly 11m high street wall, hits eye level in the middle of the roadway (with Johnston Street approximately 20m wide). If we were more reasonably considering limiting upper views from the opposite footpath at eye level, this lowers the angled plane (and hence the preferred building height) quite considerably, by around two floors in fact. The problem is that buildings are not just viewed from directly across the street, but also obliquely along the street, with much more visibility in the direction of travel.

There is also a considerable assumption in determining what is the economical depth of upper floors that limit further stepping to a greater overall height. The 10m minimum floor plate width utilised is not unreasonable but depends on accepting the 45^0 angling from both sides. The call to avoid repetitive building stepping is supported, as it creates a bulky visual effect with higher construction and maintenance costs but is unlikely to be heeded without some statutory weight.

The documentation’s apparent acceptance of a mid-rise height of 5-12 storeys, would make it difficult to resist proposals up to that height. At least it would seem to preclude mandatory overall height limits, unless determined by robustly argued heritage and shadowing impacts.

6.2 Precinct 1 (west of Hoddle Street)

The DDO15 proposed shadowing control period from 10am to 2pm on 22 September is a recognised, reasonable requirement. For the roughly north-south orientation of lots along Johnston Street, modelling shows this is equivalent to a solar access plane inclined at around 42^0 at 10am and up to around 48^0 at 2pm on 22 September. Therefore, the 45^0 plane recommended for upper level setbacks above the street wall is relatively correct to limit shadowing beyond what the required street wall or rear interface height creates. This affects the whole northern frontage to Johnston Street which overshadows the street, especially sub-precinct 1A, but to the south affects only sub-precincts 1C & 1D, which overshadow residential (noting that the rear height might be raised from 8m to 11m).

Shadowing has limited bearing on heights in sub-precinct 1B, the rear of 1A and the front of 1C & 1D.

In other areas, the decision on an overall height is more subjective. Having undertaken a walking site visit, I generally concur with the overall heights recommended, but note that the evidence provided in the Oct 2017 testing is not particularly robust. The sections in the documentation show that sub-precincts 1AA & 1C have a greater depth and actually allow for a much higher 'stepped pyramid' but have been truncated on generic 'visual impact' grounds. It would seem much safer to rely on the full 3D modelling and key views from street level (the modelled images are from the air). Further work is needed to robustly justify a maximum overall height, particularly if some of these are to remain mandatory (1C at 28m and 1D at 21m).

Recommendation: *For Precinct 1, in principle I support the general overall preferred heights that are proposed for each sub-precinct (from 21m to 28m depending on plot depth), but do not see enough evidence to commit to a mandatory height limit (except where this is a consequence of limiting shadowing). The 45^0 angled plane leads to bulky stepped forms, is not robustly applied in the testing and its rationale is not fully explained (why 45^0 and why from atop the street wall?). Further work is required and should assess 3D modelling from a pedestrian viewpoint.*

6.3 Precinct 2 (east of Hoddle Street)

As with Precinct 1 above, shadowing in Precinct 2 is an issue determining the overall height of the north side of Johnston Street (sub-precinct 2D and parts of 2A & 2C). It is also a determining issue for relatively shallow precincts 2E & 2F abutting low-scale housing to the south.

In other areas the 45^0 plane is applied without robust justification (see commentary above), with the need to adapt to reviewed rear interface heights (from 8m to 11m). Overall heights exceeding 30m in sub-precincts 2C & 2D may be visually challenging and should be further assessed from ground level views in the modelling, noting that the general mid-rise height range of 5-12 storeys has already been accepted in the DDO objectives, so is difficult to discount.

Recommendation: *For Precinct 2, in principle I support the general overall preferred heights that are proposed for each sub-precinct. Overall heights greater than 30m merit further review but fall within the accepted 5-12 storey height range, and I do not see enough evidence to commit to a mandatory height limit (except where this is a consequence of limiting shadowing). The 45^0 angled plane needs further explanation (as discussed above). Further work is required and should assess 3D modelling from a pedestrian viewpoint.*

6.4 Caveats on extra height

DDO15 includes a series of conditions or caveats which must be met before the approval of height above the **preferred** maximum in Table 1. Those requirements referring to the achievement of the design objects contained in the DDO, and Clause 21 more generally, are appropriate and normal. Consistency with the height range of 5-12 storeys and not increasing amenity impacts on residential neighbours are also reasonable conditions. However, requirements unrelated to built form impacts are challengeable, due to lack of

direct nexus. In my view, these include achievement of housing diversity, universal accessibility, private open space provisions, ESD ratings and heritage upgrades. The correct application of extra yield in exchange for public benefits, is through a floor area ratio and uplift or bonus system contained in the zoning. Legal advice in relation to the recent C270 Central Melbourne Built Form Review required this approach, which even so met with questioning at Panel.

The further mandatory height limitations on sites less than 20m deep or 10m wide (which are capped at 18m or 5 storeys), require explanation. While the practicalities of developing smaller sites are understood, these are best managed through the available performance related parameters. In this case, the upper level setbacks (6m to the street and 4.5m to other boundaries) will automatically exclude taller development on the site geometries indicated. The challengeable site size parameters are adding nothing new.

Recommendation: *In general, the requirements for considering heights above the preferred heights of DDO15 Table 1, include parameters which have no nexus with the impacts (housing diversity, etc) and may therefore be considered ultra vires. These should be reconsidered, as should the need for limiting height due to site size, especially when performance parameters can adequately cover this.*

7.0 Street Frontage Treatment

7.1 General Principles

The design objectives seek to retain the visual dominance of heritage facades and create near continuous frontage activation to provide visual interest and surveillance, both at ground level and within the street wall height generally. These are common urban design objectives to be expected in any designated activity centre or area with a heritage overlay. To provide weight, it is important that the objectives are matched with a measurable parameter, though this should be preferred rather than mandatory, to reflect cases where compliance may be more flexible (eg less activation possible in heritage frontages) or where other solutions may be justified.

7.2 Specific Parameters

DDO15 recommends that the two lower floors should be for commercial use. In practice this is translated to requiring floor-to-floor heights of at least 4m (heritage constraints permitting) for the two lower floors. While this may be appropriate on Johnston Street, it is probably excessive for more secondary Sackville Street fronting a lower residential zone. I consider a ground floor of at least 4.0m would be sufficient for Sackville Street.

The DDO places no specific measures around ground floor activation. I would recommend the typical preference for 80% of the length of Johnston Street frontages to be occupied by tenancy or entry openings.

In terms of vehicle cross-overs, the DDO 15 states that vehicle access should be avoided on Johnston Street, with a preference for side street or laneway access. This might be more strongly expressed, as crossovers are presently rare and are a major disruption to active frontages and safe pedestrian movement. I recommend phrasing as a prohibition on Johnston Street vehicle access, unless no alternative point is possible, and adding a limit to one crossing with a maximum width of 6m.

Recommendation: *The DDO provisions regarding active frontages should be strengthened to include a preferred 80% active frontage length and more specific vehicle crossing requirements. The recommended two lower floors of 4m height for possible commercial use, might be limited to Johnston Street, with one floor elsewhere.*

8.0 Summary

Design Objectives

Without reviewing individual building gradings, my site inspection confirmed the significantly intact heritage character of Johnston Street west of Victoria Park Station. The Victorian and Edwardian streetscape is complete enough to determine the urban design character of the street as its most positive asset, and I agree the protection of heritage character is crucial.

As the neighbouring interfaces are partly covered by heritage overlays with a Neighbourhood Residential Zone (NRZ) or General Residential Zone (GRZ, abutting the south interface), their expected change is limited and I agree it is entirely appropriate to protect their continued amenity. Strategic intensification will bring change but should not unreasonably disadvantage existing residents.

Johnston Street is well activated by a variety of uses at present, although some are of a secondary or service nature. It is justified to promote continued activation in new development frontages.

I agree that public realm amenity, including solar access, is essential and support this objective as high priority. Street works can be upgraded, but shadowing cannot be easily undone.

It is critical that new development does not restrict development of, or 'borrow amenity' from, adjoining sites. Therefore, ensuring development equity is a key objective of any effective built form controls.

Street Wall Height and Setbacks Above

*For Johnston Street Central, I support the **preferred** 8m and **mandatory** 11m street wall heights with a **mandatory** 6m setback above. While I support the **preferred** 11m street wall height for Sackville Street, I recommend the upper level setback be increased to a **preferred** 6m in this case. I consider the material contained in the Dec 2015 Local Plan and the Oct 2017 Supporting Document to be sufficient to justify these controls.*

*For Johnston Street East, for the heritage character area west of the railway, I support the **preferred** 8m and **mandatory** 11m street wall heights with a **mandatory** 6m setback above. For the rest of the precinct east of the railway, I support the **preferred** 15m and **mandatory** 18m street wall height, but I recommend the upper level setback be increased to a **preferred** 6m. I consider the material contained in the Dec 2015 Local Plan and the Oct 2017 Supporting Document to be sufficient to justify these controls, although further consideration of potential wind impacts would be helpful.*

Rear Interface Height and Setbacks Above

*For Johnston Street Central, I recommend raising the rear interface height within sub-precincts 1C & 1D to 11m **preferred** maximum but agree that a 45^0 plane should be applied above this height to determine upper setbacks. The Supporting Document needs reviewing in line with the zoning of these interfaces.*

For Johnston Street East, I recommend applying the preferred rear interface height only to sub-precincts 2D, 2E & 2F, raised to 11m and with the proposed 45^0 angled setback above. The Supporting Document needs reviewing in line with the zoning of the residential interfaces.

Side Boundary Setbacks

For the lower levels up to the maximum street wall height, I support providing the option to build to boundaries. However, there should be clarity that this is above the mandatory maximum street wall. There should also be guidance as to the necessary size of any light courts, potential applying the 4.5m from habitable windows measure, but noting the lack of strong supporting evidence.

Above the street wall height, I support a mandatory setback from side boundaries of 4.5m. Further documentation is desirable to support a robust case on amenity for flexible uses and avoiding visual bulk and wind impacts.

Overall Height and Shadowing Impacts

For Precinct 1, in principle I support the general overall preferred heights that are proposed for each sub-precinct (from 21m to 28m depending on plot depth), but do not see enough evidence to commit to a mandatory height limit (except where this is a consequence of limiting shadowing). The 45^0 angled plane leads to bulky stepped forms, is not robustly applied in the testing and its rationale is not fully explained (why 45^0 and why from atop the street wall?). Further work is required and should assess 3D modelling from a pedestrian viewpoint.

For Precinct 2, in principle I support the general overall preferred heights that are proposed for each sub-precinct. Overall heights greater than 30m merit further review but fall within the accepted 5-12 storey height range, and I do not see enough evidence to commit to a mandatory height limit (except where this is a consequence of limiting shadowing). The 45^0 angled plane needs further explanation (as discussed above). Further work is required and should assess 3D modelling from a pedestrian viewpoint.

In general, the requirements for considering heights above the preferred heights of DDO15 Table 1, include parameters which have no nexus with the impacts (housing diversity, etc) and may therefore be considered ultra vires. These should be reconsidered, as should the need for limiting height due to site size, especially when performance parameters can adequately cover this.

Street Frontage Treatment

The DDO provisions regarding active frontages should be strengthened to include a preferred 80% active frontage length and more specific vehicle crossing requirements. The recommended two lower floors of 4m height for possible commercial use, might be limited to Johnston Street, with one floor elsewhere.

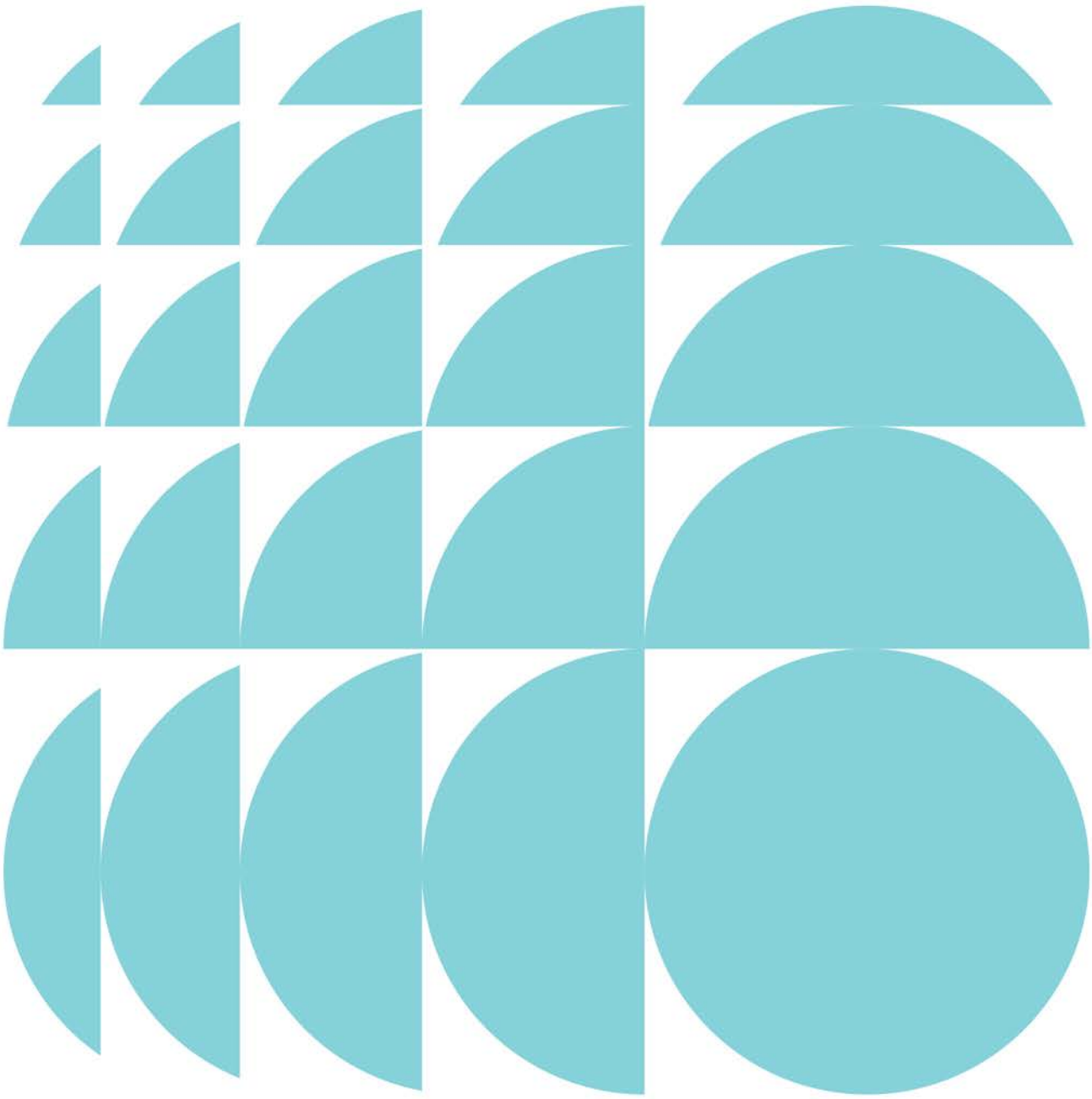
Attachment 2: Modelling and Urban Design Review 9 July 2018

ETHOS URBAN

AMENDMENT C220 CITY OF YARRA
Modelling and Urban Design Review

Submitted to Hardwood Andrews
On behalf of City of Yarra

9 July 2018 | J0910



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LARRY PARSONS	9 JULY 2018	TANIA CRISAFI	9 JULY 2018

VERSION NO.	DATE OF ISSUE	REVISION BY	APPROVED BY

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1.0 Background

1.1 Purpose and Scope

Harwood Andrews on behalf of the City of Yarra has engaged me as an urban design expert to review the proposed Yarra Planning Scheme Amendment C220 – Johnston Street Activity Centre. Apart from rezoning land to Commercial Zone 1, modifying the MSS and local policy, and applying a new heritage overlay and environmental audit overlay, the amendment introduces a new Design and Development Overlay DDO15, to manage built form outcomes. The latter document was the focus of my Initial Review dated 10 March 2018. On considering the issues raised in my review, the City of Yarra decided to engage further modelling of the proposed controls. In particular, this modelling tests:

- The street wall height, particularly in relation to heritage facades
- The depth of front setback above the street wall
- The effect of the 45^0 angled stepping above the street wall
- The rear interface height in relation to neighbours
- The effect of the angled 45^0 stepping above the rear interface (and the need for another provision where the 45^0 angle is not prescribed)
- The overall building heights in terms of visual impact and overshadowing
- The return of upper level setbacks along side streets
- The need for side setbacks above the street wall height, along boundaries between sites.

As my expertise is in urban design, I note that I have not commented on the specifically heritage aspects of the proposed Amendment, taking the recommended heritage gradings (significant and contributory) as a given. I have focused on the effectiveness of the proposed DDO15 provisions to achieve the desired built form outcomes, that is, allowing for urban renewal and more intense development that does not unduly impact the amenity of the precinct or its interfacing areas.

The subject area is divided into two precincts. Precinct 1 or Johnston Street Central covers both sides of Johnston Street from Smith Street to Hoddle Street, with the exclusion of the corner sites to Smith Street and the former Collingwood TAFE site. It also includes the south side of Sackville Street between Wellington Street and Hoddle Street. Precinct 2 or Johnston Street East stretches from Hoddle Street towards the Yarra River with Trenerry Crescent and Clarke Street as its eastern limit.

Yarra Planning Scheme Amendment C220 is to be reviewed by Planning Panels Victoria with the hearing due to commence on 15 October 2018. In the meantime, the area is subject to Interim Controls, which basically replicate the proposed DDO15 and have a sunset date of 31 December 2018 (introduced via Amendment C237 on 2 March 2018).

Fig.1.1 Johnston Street looking east from Smith Street – 3D model of existing conditions

The 3D modelling (Fig.1.1) was prepared by Urban Circus using GIS information supplied by Council and supplemented with DELWP Lidar point cloud data. The basic detail of facades and roofs has been modelled to assist identification and provide the relevant context for the built form controls being tested. Buildings adjoining the activity centre are modelled in white to a more simplified form, but sufficient to illustrate general interface relationships. The ground plane is accurate to within 10cm elevation and incorporates footpaths and road marking. There are no significant street trees in Johnston Street.

Approved permits were specifically modelled from the latest plans supplied by Council and are represented in grey (Fig.1.2). The proposed built form envelopes under various planning controls' scenarios were modelled in block form to an accuracy within + or - 0.5m. The colours used for each sub-precinct match the colours of the proposed DDO15 Table 1. The colours can be used to locate the model images according to sub-precinct.

Fig.1.2 Johnston Street east of Hoddle Street – 3D model including existing permits (grey)

2.0 Street Wall Height

2.1 Heritage Sub-Precincts 1A, 1AA (part), 1AAA, 1C, 1D, 2A & 2B

All buildings in the precinct have been assessed and graded as 'non-contributory', 'contributory' or 'individually significant' in heritage terms. Clause 22.02-5.1 of the Yarra Planning Scheme encourages the complete retention of all 'individually significant' buildings and all parts (including the roof) of 'contributory' buildings visible from the street or other public space. Council's position in Johnston Street is that all graded heritage facades should be retained, generally with at least one room depth to ensure a degree of historic integrity. I accept this approach and the modelling has been undertaken on this basis, with all heritage-graded facades retained as the street wall of any new development. That is, no new development projects directly above the heritage parapet. Modelling shows that increasing the street wall height on or close behind the heritage façade, overwhelms the existing building which loses its integrity as a real object. Apart from the heritage implications of this, the result reduces perceived genuine diversity along the streetscape, which adds to its visual dominance Fig.2.1).

Fig.2.1 Retained heritage facades with full street wall (11m) adjoining – street / upper views

Fig.2.2 Retained heritage facades and matching street wall within 6m – street / upper views

DDO15 requires that infill development west of the railway (that is, within the heritage overlays HO324 and proposed HO505) should match the parapet height of a neighbouring 'contributory' or 'individually significant' heritage building. No length of 'matching' is indicated. The modelling has chosen to match infill street wall heights to these neighbours for a distance of 6m (Fig.2.2), which is similar to the preferred setback from the frontage and which I consider reasonable, rather than limiting the whole façade width (which is sometimes considerable).

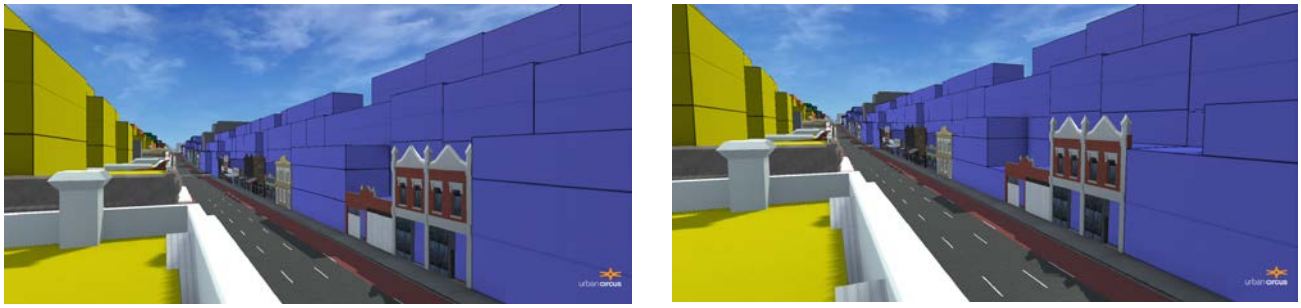

Fig.2.3 Buildings adjoining heritage at full 11m street wall and matching height for 6m

On all other sites away from heritage graded buildings, the street wall height is modelled at 11m west of the railway to not overwhelm the predominant 2-3 storey heritage streetscape. As there are relatively few non-heritage infill sites west of the railway, there is insufficient frontage width to transition to higher facades, so the 11m limitation is totally appropriate and should be mandatory. The model testing also shows the appropriateness of some variety of heights along the street wall, similar to the existing character which includes one and two-storey heritage buildings (Fig.2.3).

2.2 Sackville Street Sub-Precincts 1B & 1AA (part)

The section of Sackville Street contained within the study area has no heritage precinct overlay and no individually significant heritage buildings, although there is a heritage overlay on much of the low-scale residential precinct across the street to the north. This proximity recommends a maximum street wall of 11m to not visually dominate the sensitive northern neighbours, as shown in the modelling which also tested a higher street wall (Fig.2.4).

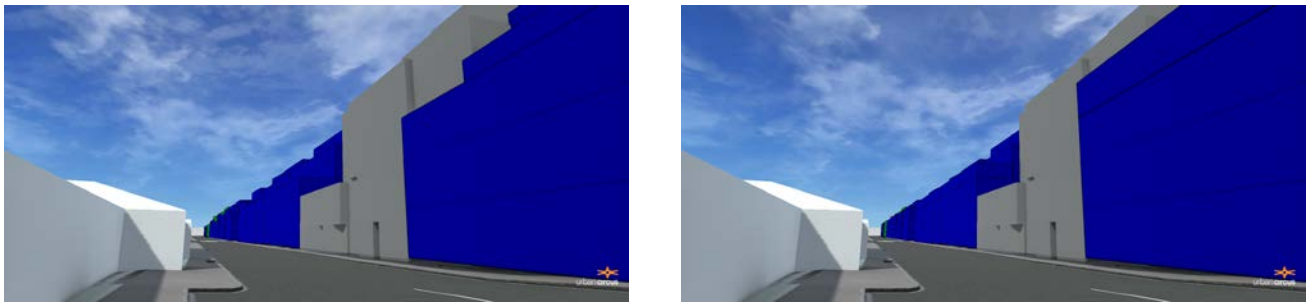

Fig.2.4 Sackville Street modelled with 11m and 14m street wall heights + existing permit

2.3 East of Railway Sub-Precincts 2C, 2D, 2E & 2F

To the east of the railway, where there is no precinct heritage overlay, DDO15 requires only that new development 'transition' to the limited number of 'individually significant' heritage buildings. The modelling chooses to limit the street wall height of new buildings directly abutting heritage buildings to one storey or 3-4m more than the heritage façade, once again for a minimum distance of 6m (Fig.2.5). Away from the limited heritage remnants to the east of the railway, the street wall height is more flexible. It is modelled at the maximum 18m, beyond which it begins to shadow the southern footpath of Johnston Street (10am-2pm on 22 September) and becomes a dominant element relative to the pedestrian scale (Fig.2.6).


Fig.2.6 East of rail,18m street wall and reduced to one storey more than heritage facades


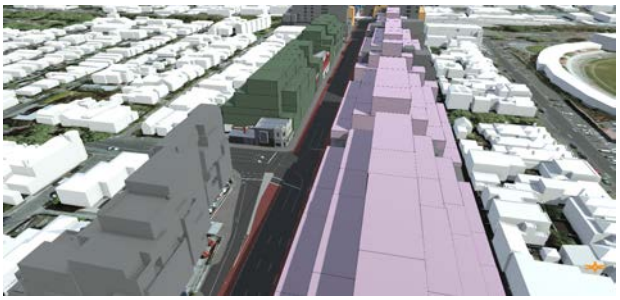

Fig.2.7 East of rail, 18m street wall just avoids shadows on southern footpath

3.0 Setback above Street Wall

3.1 Heritage Sub-Precincts 1A, 1AA (part), 1AAA, 1C, 1D, 2A & 2B

Within the heritage precincts, the retained front sections of significant and contributory buildings need to be coupled with a mandatory setback above street wall height in order to protect the integrity of the heritage structure. More importantly, the human scale of Johnston Street as an activity centre should be protected to encourage pedestrian use and to limit adverse overshadowing and wind effects. Both 3m and 6m setbacks have been modelled and the 6m setback is the preference in order to distinguish the street wall from upper level elements. The 3m setback provides insufficient independence of the lower frontage, as well as presenting the heritage remains as superficial decoration (Fig.3.1 and Fig.3.2).


Fig.3.1 Street view of 6m and 3m setback above street wall, including heritage facades


Fig.3.2 Upper view of 6m and 3m setback above street wall, including heritage facades

Apart from the independence of the street wall and heritage integrity achieved through sufficient setback directly above the street wall, there is the issue of the visual dominance and shadowing caused by further upper levels. Building mass above the street wall was modelled within a 45^0 plane above the theoretical street wall (that is, from the 11m maximum height in this case) and alternatively from directly atop any heritage façade (which are generally below 11m), but this dramatically reduces overall heights and yields, without a commensurate visual improvement (Fig.3.3). Its application may produce a negative incentive to demolish contributory heritage structures. The straight up option testing indicated a visually dominant upper building, causing shadowing to the southern Johnston Street footpath beyond a height of around 24m, at the 6m setback (Fig.3.4). However, and as discouraged in the proposed DDO, modelling shows the continuously stepped 'wedding cake' setback (floor-by-floor at 45^0) is visually dominant and draws attention to itself, particularly when not all sites are redeveloped and the side profile becomes evident (Fig.3.5). Therefore, we recommend introducing a caveat that building stepping should be in at least two-storey increments, which is how the overall base modelling has been produced. Greater increments (eg. three storeys) have a considerable impact on yield.


Fig.3.3 45^0 setback above theoretical 11m street wall and directly above heritage parapets

Fig.3.4 No 45^0 setback allows shadowing

Fig.3.5 Continuous stepping is obtrusive

3.2 Sackville Street Sub-Precincts 1B & 1AA (part)

As discussed above, the sensitive aspect of Sackville Street is its interface with the low scale, generally heritage and residential buildings across the street. While it is to the south of the residential area and hence causes no shadowing impacts, it does have significant visual impact as evidenced by the modelling with preferred maximum heights up to 24m fronting what are commonly 3-5m single-storey houses. Therefore, setbacks above the street wall (preferred maximum height 11m) are important. Setbacks of 3m and 6m were modelled (Fig. 3.6) and the larger setback clearly serves to distinguish the street wall as a separate element transitioning to the residential area across Sackville Street, which as largely Neighbourhood Residential Zone (NRZ1) with a heritage overlay (HO321), is unlikely to change dramatically.

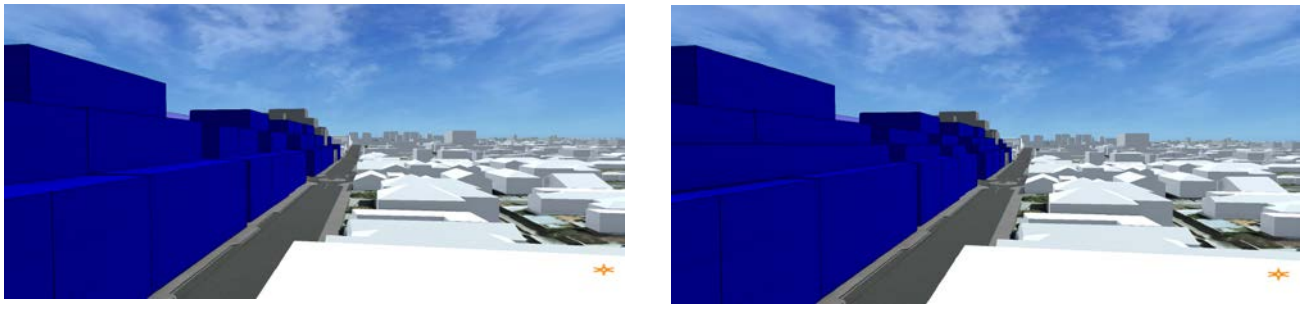

Fig.3.6 Sackville Street with 6m and 3m setback above 11m street wall

Upper levels above the street wall were modelled below 45^0 (Fig.3.6) and as a straight up façade at the 6m setback (Fig.3.7). Once again, the angled setbacks produced the required transition to the northern, low residential area, and once again the 'wedding cake' storey-by-storey setback was not favoured with two-storey steps being modelled.

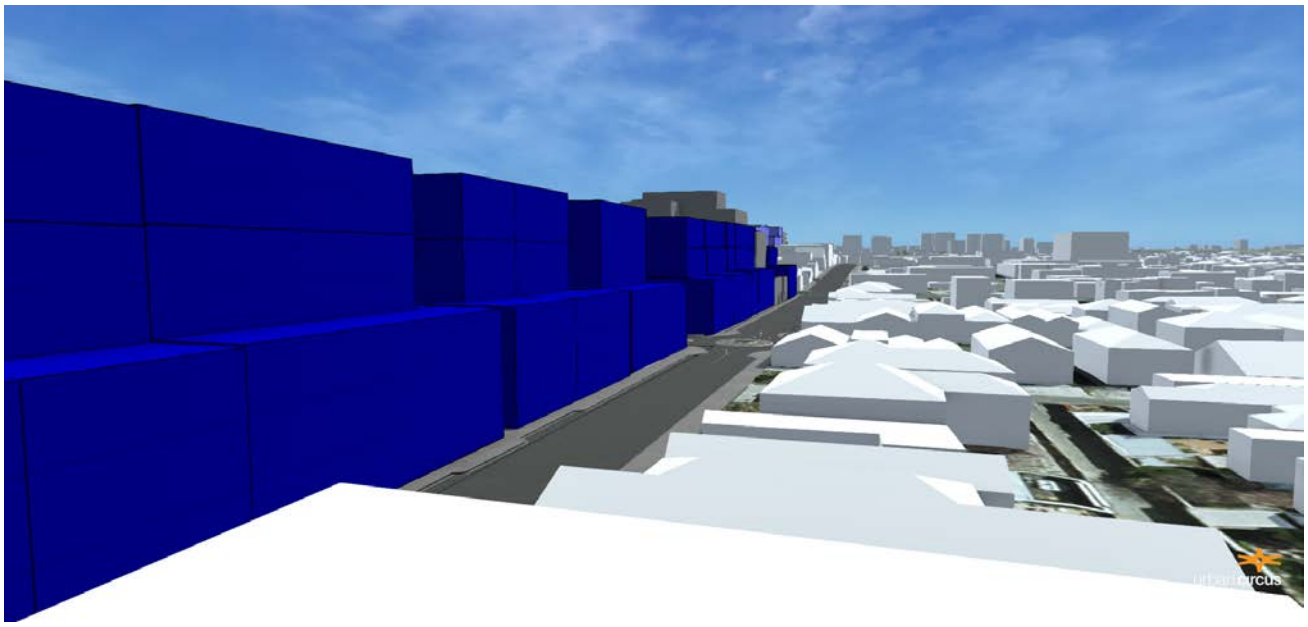

Fig.3.7 Sackville Street without 45^0 angled setback above street wall

3.3 East of Railway Sub-Precincts 2C, 2D, 2E & 2F

As discussed above, this precinct has a higher street wall of 18m mandatory maximum and lesser heritage significance. However, this does not mean that reducing shadowing and visual impacts above this height is unimportant, potentially quite the opposite given the already substantial scale of permitted frontage structures. The eastern sub-precinct is still an area where pedestrian activity is to be promoted and an improvement of pedestrian amenity is a big part of this strategy, including an appropriate scale of frontage development. Setbacks of both 3m and 6m were modelled (Fig.3.8 and Fig.3.9), with the larger setback considered necessary to provide an independent building frontage, rather than a continuous mass dominating the street with a continuously stepped profile.

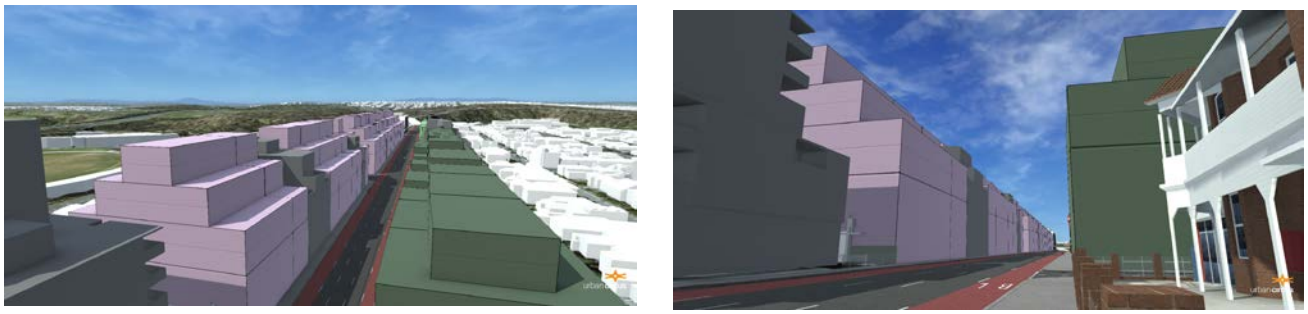

Fig.3.8 Modelled 6m and 45^0 setbacks above 18m street wall – upper and street views

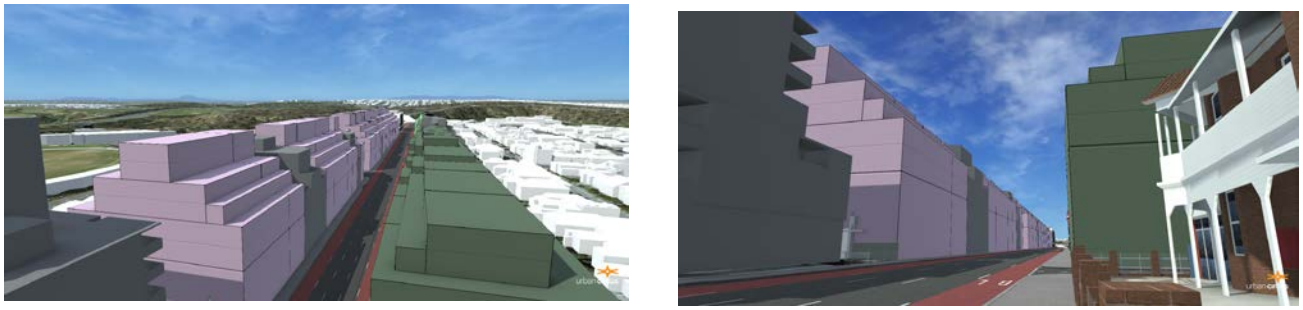

Fig.3.9 Modelled 3m and 45^0 setbacks above 18m street wall – upper and street views

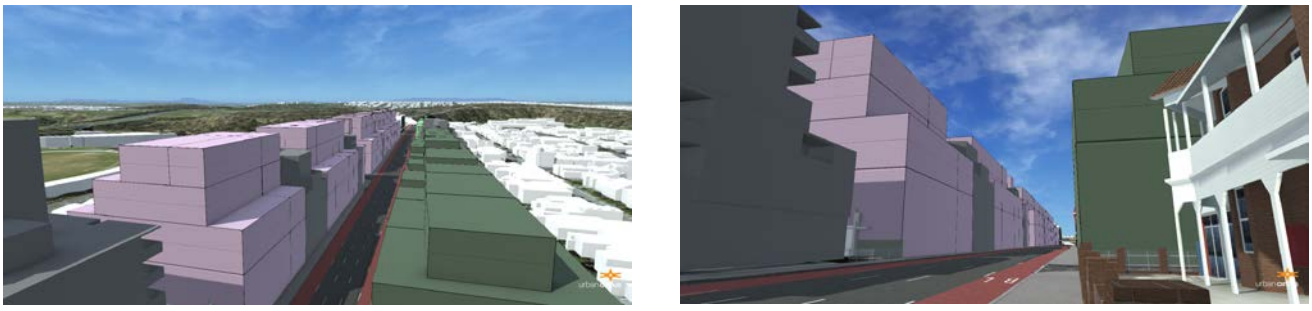

Fig.3.10 Modelled 6m setbacks straight up above 18m street wall – upper and street views

As with the areas west of the railway, upper levels above the street wall were modelled below 45^0 and as a straight up façade at the 6m setback (Fig.3.10). The angled setbacks produced the required transition to Johnston Street and once again the ‘wedding cake’

storey-by-storey setback was not favoured with two-storey steps being modelled. The straight up option testing indicated a visually dominant upper building, causing shadowing to the southern Johnston Street footpath beyond a height of around 24m (at the 6m setback).

4.0 Rear Interface Height

4.1 Commercial (& Street) Interface Sub-Precincts 1A, 1AA, 1AAA, 1B, 2A, 2B & 2C

No rear interface height is specified in the proposed DDO when the interface is not to an existing, lower residential area. These sub-precincts are backed by commercial areas. The lack of recommendations for the rear interface is potentially problematic, particularly when adjoining sites are still undeveloped. It is necessary to provide a minimum protection between neighbours to ensure basic amenity and equity over time. The chosen method is to model a rear interface height equivalent to the street wall height of 11m (Fig.4.1). Bearing in mind the lower floors are assumed built out to boundaries. any base building higher than three storeys introduces an excess of deep, dark floor plates unsuitable for residential use.

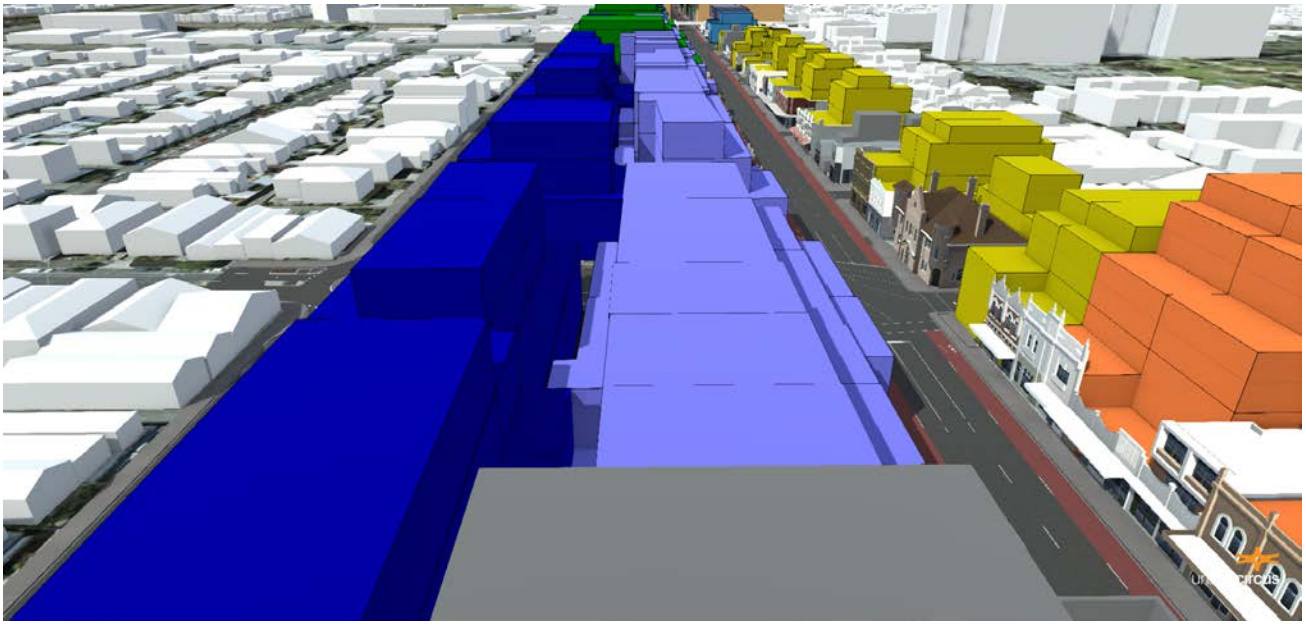

Fig.4.1 Preferred 11m rear interface height, with 4.5m+4.5m rear setback between buildings

4.2 Residential Interface Sub-Precincts 1C, 1D, 2D, 2E, 2F

While a variety of rear interface heights were proposed in DDO15 for sub-precincts backing onto residential areas, I recommend a more consistent approach. Bearing in mind that the adjoining GRZ is likely to admit heights up to 11m and the NRZ heights of 9m, the activity centre boundary should never be lower than this and may transition upward from there, especially if there is an intervening laneway. The rear interface height has therefore been modelled at 11m for 1C, 1D, 2D & 2E where there is a laneway or GRZ adjoining, and at 9m only in sensitive 2F which directly adjoins an NRZ without a laneway. A modelled rear interface height even one storey higher proved dominating (Fig.4.2).

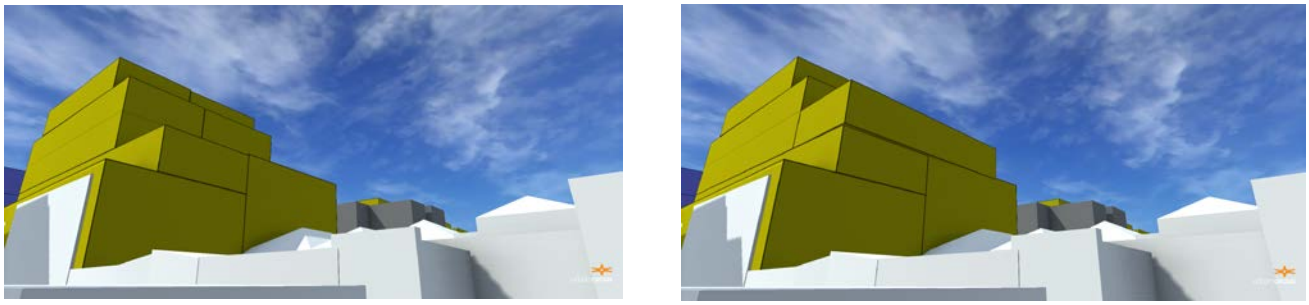

Fig.4.2 Modelled rear interface heights of 11m and 14m, with 45^0 setback above

5.0 Setback above Rear Interface

5.1 Commercial (& Street) Interface Sub-Precincts 1A, 1AA, 1AAA, 1B, 2A, 2B & 2C

Where there is no lower residential interface to the rear, the proposed DDO seeks that new development "enable daylight and/or solar access ….. and consider future development opportunities on neighbouring sites" but indicates no specific rear setbacks. To ensure a minimum degree of amenity (whatever the adjoining use) the modelling provides for a single 4.5m setback above 11m, which is the chosen rear interface height (Fig.4.1). In fact, I would support this setback being made mandatory as the best way to protect the amenity and equity of all adjoining sites.

5.2 Residential Interface Sub-Precincts 1C, 1D, 2D, 2E, 2F

Above the preferred maximum rear interface height to lower residential areas (generally 11m, but 9m in sensitive sub-precinct 2F, the proposed DDO specifies a 45^0 plane for upper level setbacks. The modelling confirms that this angle does ensure limited additional overshadowing to the south (10am – 2pm on 22 September) and limits the visual presence of the new building from neighbouring houses and their open spaces (Fig.4.2). Straight up facades at a 6m setback line do not achieve the same result.

6.0 Overall Building Height

6.1 Commercial (& Street) Interface Sub-Precincts 1A, 1AA, 1AAA, 1B, 2A, 2B & 2C

The proposed overall heights are preferred, not mandatory, in these sub-precincts with commercial interfaces. They vary from 21m to 34m depending on the context and particularly the site depth, which determines the ultimate height within inclined setbacks. In reality, the overall height is rarely capable of further increase if the shadowing and 45^0 angle controls are consistently applied. The exceptions are deeper sites which are tested by modelling and are shown to have little additional impact (Fig.6.1).

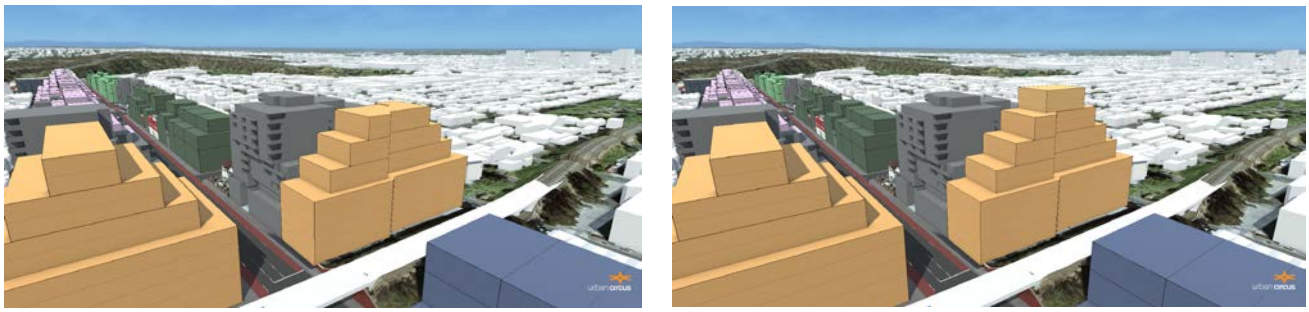

Fig.6.1 Permit up to 34m with new stepped setbacks up to 34m and 40m on deeper site

6.2 Residential Interface Sub-Precincts 1C, 1D, 2D, 2E, 2F

The overall heights in these sub-precincts with a residential interface were proposed as mandatory and vary from 21m to 31m according to the context and site depth. In reality, it is unlikely these heights will be exceeded if the shadowing and 45^0 angle controls are met. Therefore, it is probably unnecessary that overall height controls be mandatory. The modelling includes testing of sites where extra height is possible (Fig.6.2 and Fig.6.3).

Fig.6.2 Overall height up to 28m (deeper site in green) – street and upper views

Fig.6.3 Overall height up to 37m (deeper site in green) – street and upper views

7.0 Side Street Setbacks

7.1 Main Streets

The return of street wall heights and associated setbacks down side streets for corner sites is not specifically covered in the proposed DDO15. In the case of Johnston Street, the side streets are north-south with lesser shadowing issues and are more secondary in terms of activity. Therefore, a lesser setback of 3m above the street wall with no further stepping is proposed and modelled Fig.7.1).

7.2 Laneways

Where development abuts a laneway, it is important that it is adequately separated from potential neighbours on the opposite side of the laneway, as commonly both developments open windows to the laneway which can also provide positive surveillance. Above the returned street wall height an upper levels setback of 4.5m to the laneway centreline is proposed.

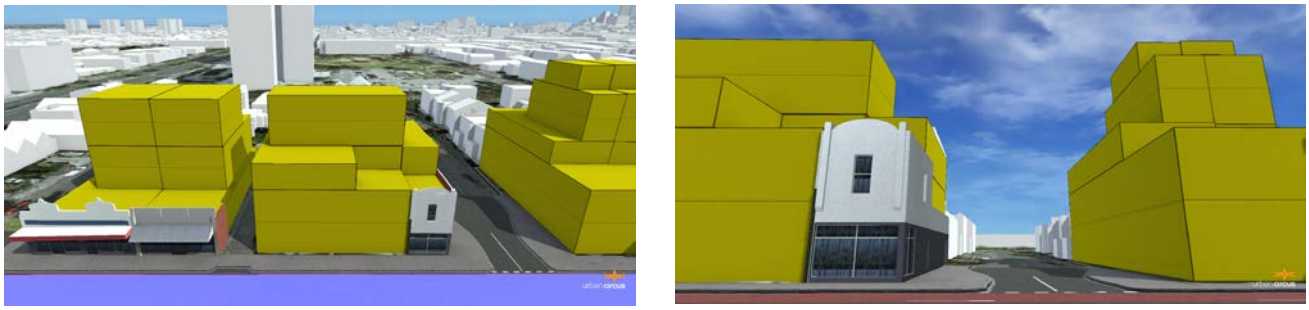

Fig.7.1 Street wall returned down side streets with single 3m setback above

8.0 Side Boundary Setbacks

8.1 Within Lower Levels

There is currently no clear guidance on residential development within the lower levels, which may be built boundary-to-boundary without secure daylight, potentially up to a height of five storeys. The apartment standards introduced as Clause 58 of the planning scheme provide no measurable guidance on setbacks nor light courts. Although relating to building separation at upper levels, DDO15 proposes a discretionary setback of 4.5m from habitable room windows which could be used as guidance. I would recommend this be specified as a mandatory minimum clear distance in front of all habitable room windows at all levels, to a return distance of at least 1.0m either side of the window, noting that this is an absolute minimum protection. As the placement of such windows and light courts is a site-specific layout matter, they are generally not modelled (Fig.8.1).

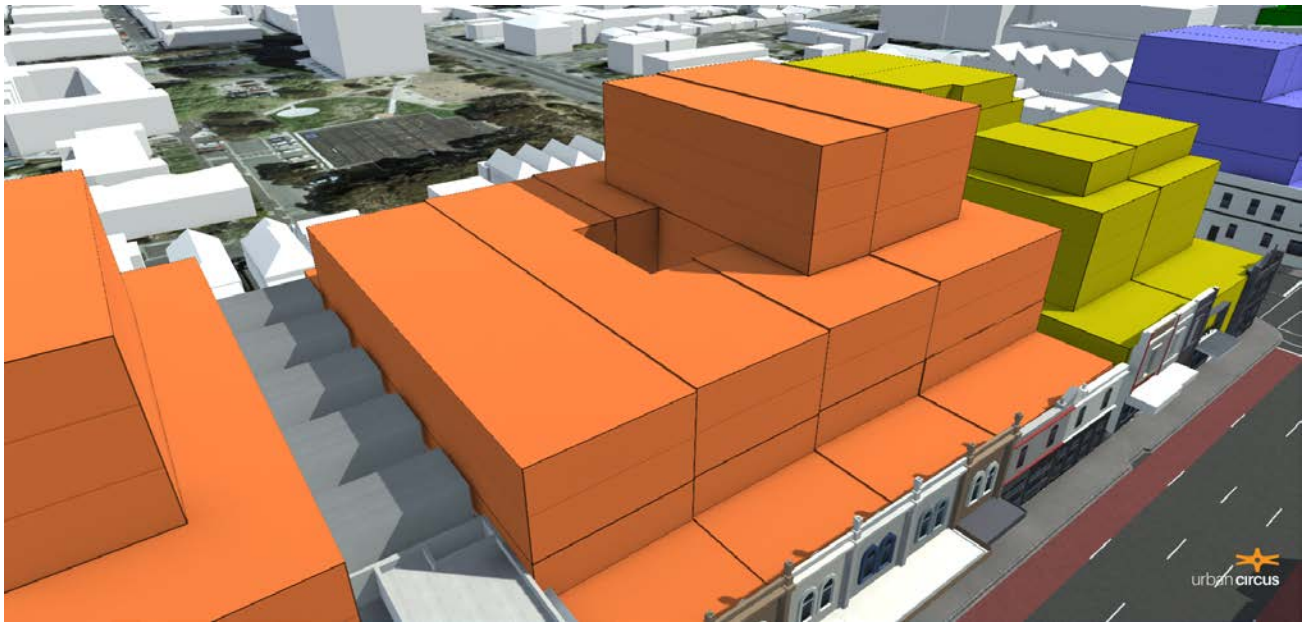

Fig.8.1 Modelled example of joint light court with 4.5m width

8.2 **Within Upper Levels**

The Building Separation provisions of DDO15 propose a preferred 4.5m setback from habitable rooms to side boundaries at 'upper' levels and 3.0m for non-habitable and commercial/office windows. The stated objective is "to provide separation between buildings at the upper levels and to avoid a 'wall' of development above the street wall when viewed from the opposite side of Johnston Street and Sackville Street." The objective is important, and in addition, a decent side setback enables buildings to be seen in the round with active windows rather than blank side walls. To secure this and ensure a 4.5m+4.5m = 9m separation between any side windows (without the need for screening) requires a consistent and therefore mandatory setback regime, applicable to all upper levels whether specifically containing habitable room windows or not. Uses can change over time from commercial to residential and allowing an upper level wall to the boundary (because it has no windows) causes an amenity challenge for a neighbouring development. I suggest five storeys as the reasonable cut-off point above which upper levels must be separated by side setbacks. Above this height buildings are generally visible over greater distances and a continuous built form or a series of blank boundary walls, is dominating if not ugly. The modelling compares continuous boundary-to-boundary development with the recommended option of all levels above five storeys setback 4.5m, or 9m between two neighbours. Therefore, sites less than 15m wide are effectively limited to five storeys in height. However, there could well be allowance for two smaller sites to build wall-to-wall via a mutual legal agreement and this possibility is also modelled (Fig.8.2).

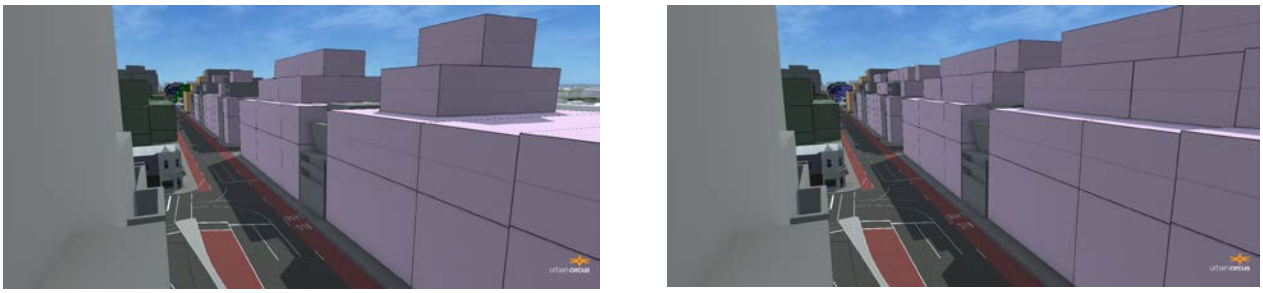

Fig.8.2 Side setbacks of 4.5m above five storeys and without side setbacks

9.0 Other Provisions

9.1 Minimum Lot Size

The DDO proposes limiting overall height to 5 storeys if the site is not at least 10m wide and 20m deep. Rather than such an apparently arbitrary control, I believe it preferable to employ an amenity measure which addresses the issues and has a similar effect. For instance, by mandating built form above 5 storeys to be set back from side boundaries to assure outlook and especially allow higher form to seen in the round by providing gaps in an otherwise potentially continuous 'built wall'. If the recommended 4.5m setback (refer 8.2 above) is mandated, this assures that smaller sites do not develop above 5 storeys.

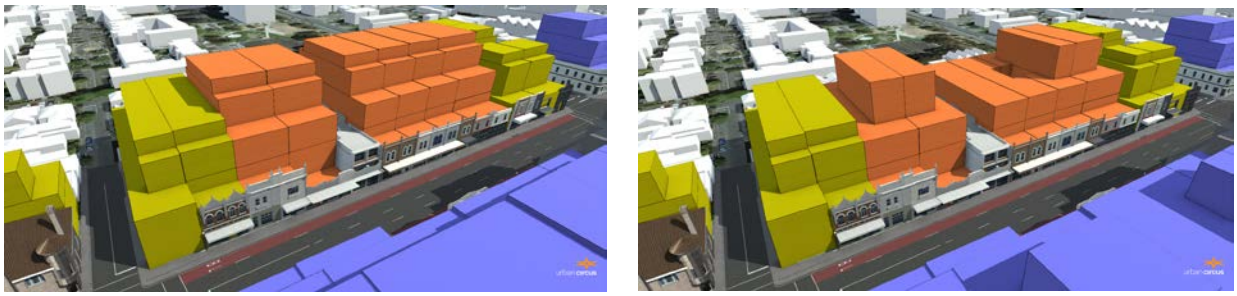

Fig.9.2 Effect on smaller sites of no side setbacks or 4.5m side setbacks above five storeys

9.2 Sackville Street Front Setback

The DDO proposes a 3m landscaped setback to Sackville Street, or alternatively "a high quality public realm treatment". If not achieved consistently, the result will be disjointed and there is already a permit approval without any setback. Also, any frontage setback will be partly occupied by service cupboards and paved access ways, with 3m being too narrow to secure significant tree planting. A consistent frontage to the footpath is recommended.

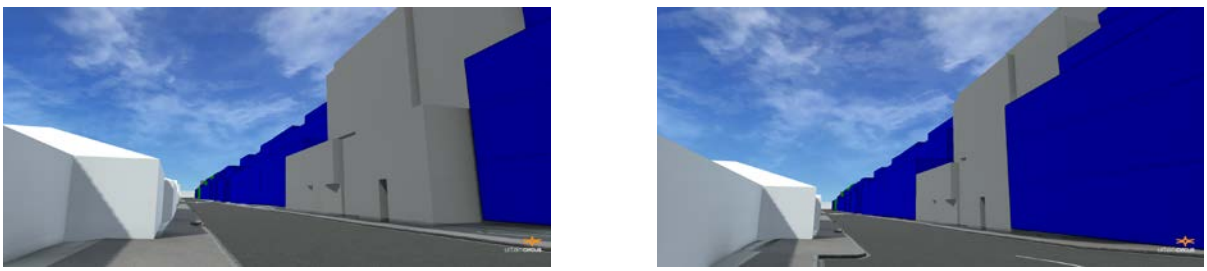

Fig.9.3 Sackville Street with 3m ground level setback and built to footpath

10.0 Summary Table - Recommendations

Table 1 - Building Height and Setback Requirements

Sub-Precinct	Preferred Max Overall Height	Mandatory Max Street Wall Height	Mandatory Min Setback above Street Wall	Preferred Upper Level Setbacks above Street Wall[7]	Rear Interface Height	Mandatory Min Setback above Rear Interface[7]	Mandatory Upper Level Side Setbacks
1A	24m	11m[1]	6m[3]	45[0] above 11m[4]	11m preferred	4.5m	4.5m above 5st.[6]
1AA	28m	11m[1]	6m[3]	45[0] above 11m[4]	11m preferred	4.5m	4.5m above 5st.[6]
1AAA	28m	11m[1]	6m	45[0] above 11m	11m preferred	4.5m	4.5m above 5st.[6]
1B	24m	11m	6m[3]	45[0] above 11m	11m preferred	4.5m	4.5m above 5st.[6]
1C	28m (21m)	11m[1]	6m	45[0] above 11m	11m mandatory	45[0] above 11m[5]	4.5m above 5st.[6]
1D	21m	11m[1]	6m[3]	45[0] above 11m	11m mandatory	45[0] above 11m[5]	4.5m above 5st.[6]
2A	21m	11m[1]	6m[3]	45[0] above 11m[4]	11m preferred	4.5m	4.5m above 5st.[6]
2B	21m	11m[1]	6m[3]	45[0] above 11m	11m preferred	4.5m	4.5m above 5st.[6]
2C	34m	18m[2]	6m[3]	45[0] above 18m[4]	11m preferred	4.5m to N/45[0] to S	4.5m above 5st.[6]
2D	31m (24m)	18m[2]	6m[3]	45[0] above 18m[4]	11m mandatory	45[0] above 11m	4.5m above 5st.[6]
2E	24m (21m)	18m[2]	6m[3]	45[0] above 18m	11m mandatory	45[0] above 11m[5]	4.5m above 5st.[6]
2F	21m	18m[2]	6m[3]	45[0] above 18m	9m mandatory	45[0] above 9m[5]	4.5m above 5st.[6]

NOTES:
1. Must limit street wall height to retained façade height for Individually Significant and Contributory heritage buildings and to the same adjoining height within 6m of an Individually Significant or Contributory heritage building.
2. Must limit street wall height to retained façade height for Individually Significant and Contributory heritage buildings and to one storey or 4m above this height adjoining and within 6m of an Individually Significant or Contributory heritage building.
3. Street wall returns along side streets and abutting open spaces including the railway corridor, with a 3.0m minimum setback above maximum street wall height.
4. Building heights and setbacks must assure no overshadowing of southern footpath of Johnston Street, measured 3m out from façade.
5. Building heights and setbacks must assure limited new shadowing of private open spaces and windows in adjoining lower residential areas.
6. Adjoining sites may formalise a legal agreement to mutually build to a common boundary above 5 storeys.
7. Repetitive stepped form should be avoided by employing stepped setbacks of at least two storeys height.

11.0 Appendix – Sub-precinct colour coding

Attachment 3: Preferred Version of DDO15 to the Yarra Planning Scheme

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SCHEDULE 15 TO CLAUSE 43.02 DESIGN AND DEVELOPMENT OVERLAY

Shown on the planning scheme map as **DDO15.**

JOHNSTON STREET ACTIVITY CENTRE

1.0 Design objectives

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- To preserve the valued heritage character of the streetscape and ensure that the predominantly two storey heritage street-wall remains the visually prominent built form of Johnston Street west of the railway line bridge, ensuring that upper levels are visually recessive.
- To ensure that the overall scale and form of new buildings is mid-rise (5 to 10 storeys) and provides a suitable transition to low scale residential areas, protecting surrounding residential properties from unreasonable loss of amenity through visual bulk, overlooking and overshadowing.
- To ensure that new development does not compromise the operation of the state significant Collingwood Arts Precinct from unreasonable loss of amenity through visual bulk, overlooking, overshadowing of open space areas and vehicle access.
- To activate the street edge, provide passive surveillance opportunities and accommodate commercial activity at the lower levels of new development and enhance the public realm through high quality buildings and protect footpaths and public spaces on the southern side of Johnston Street from loss of amenity from overshadowing.
- To provide for equitable development outcomes through built form design that responds to the development opportunities of neighbouring properties, and through the consolidation of finer grain sites.

2.0 Buildings and works

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Definitions

Building height is measured as the vertical distance between the footpath at the centre of the frontage and the highest point of the building. It does not include architectural features and service equipment including plant rooms, lift overruns, structures associated with green roof areas and other such equipment provided that the following criteria are met for the equipment or structure:

- Less than 50% of the roof area is occupied by the equipment (other than solar panels);
- Any equipment is located in a position on the roof so as to avoid additional overshadowing;
- Any equipment does not extend higher than 3.6 metres above the maximum building height; and
- Any equipment and any screening is integrated into the design of the building to the satisfaction of the Responsible Authority.

Heritage Building refers to any building subject to a heritage overlay, graded as either *Contributory* or *Individually Significant.*

Rear interface is the rear wall of any proposed building or structure at any level, whether on the property boundary or set back from the property boundary.

Setback is the shortest horizontal distance from a building, including projections such as balconies, building services and architectural features, to the property boundary.

Street wall is the façade of a building at the street boundary.

Street wall height is measured as the vertical distance between the footpath at the centre of the frontage and the highest point of the building at the street edge, with the exception of architectural features.

Upper Level Development refers to the levels of buildings that are above the street wall.

Building Heights and Setbacks (including street-wall height and rear interface Height)

The maximum building height, street-wall height and minimum setback requirements are set out at Table 2 of this schedule.

A permit must not be granted or amended (unless the amendment would not increase the extent of non-compliance) for buildings and works which exceed the mandatory maximum building height, mandatory maximum street wall height or are less than the mandatory minimum upper level setback for a relevant sub-precinct specified in Table 2 to this Schedule.

A permit may be granted to exceed the preferred maximum building height and/or preferred maximum street-wall height specified in Table 2 if the following criteria are met to the satisfaction of the responsible authority:

- the built form outcome as a result of the proposed variation satisfies the design objectives of Clause 1.0 and the provisions of Clause 21.12-1;
- the proposed building height achieves the preferred future mid rise character within Johnston Street for the sub-precinct;
- the proposal will achieve each of the following:
    - housing for diverse households types, including people with disability, older persons, and families, through the inclusion of varying dwelling sizes and configurations;
    - universal access, and communal and/or private open space provision that exceeds the minimum standards in Clauses 55.07 and 58;
    - excellence for environmental sustainable design measured as a minimum BESS project score of 70% or 5 Star Green Standard;
    - greater building separation than the minimum requirement in this schedule;
    - no additional amenity impacts to residential zoned properties, beyond that which would be generated by a proposal that complies with the preferred building height;
    - for *Heritage Buildings*, the proposed development enhances the heritage fabric of the building (primarily through restoration of the front façade and external features visible from the street).

Building Envelope Requirement

New development on sites with a north-south orientation fronting either Johnston Street or Sackville Street, should be setback from the front and rear property boundary, as illustrated in Figure 1 and as specified in Table 1.

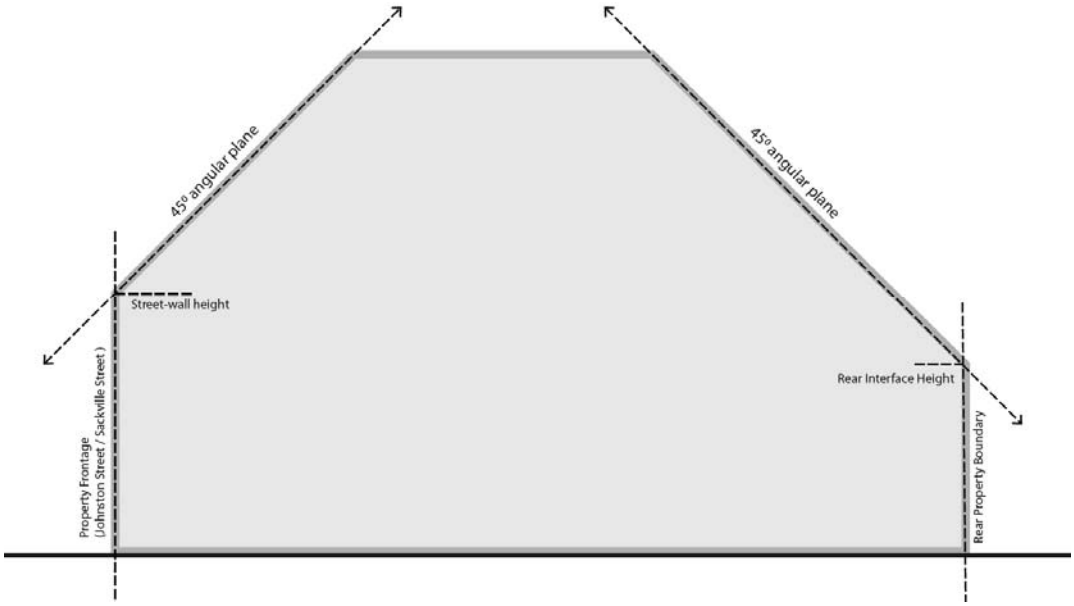
The front and rear setback/envelope requirements are also illustrated in Figure 1.

In complying with the 45-degree envelope requirement, development should provide incremental setbacks of at least two storeys to avoid repetitive stepped form and ‘wedding cake’ outcomes.

Table 1: 45^0 Envelope and Setback Requirements

Sub-precinct	Preferred upper level setback/envelope from property frontage (measured as the distance above ground level as specified below)	Preferred Minimum setback/envelope from rear property boundary (measured from 11m above ground level, above 9m for 2F)
1A	45^0 above 11m	4.5m
1AA	45^0 above 11m	4.5m
1AAA	45^0 above 11m	4.5m
1B	45^0 above 11m	4.5m
1C	45^0 above 11m	45^0
1D	45^0 above 11m	45^0
2A	45^0 above 11m	4.5m
2B	45^0 above 11m	4.5m
2C	45^0 above 18m	4.5m / 45^0 (Stafford Street)
2D	45^0 above 18m	45^0
2E	45^0 above 18m	45^0
2F	45^0 above 18m	45^0 above 9m

Figure 1 – Building Envelope Requirement



Building Separation Requirement

An application for development should provide a design response that considers the future development opportunities of adjacent properties in terms of outlook, daylight and solar access to windows, as well as managing visual bulk.

Where development shares a common boundary, upper level development should:

- be set back a minimum of 4.5m from the common boundary where a habitable room window is proposed

- be set back a minimum of 3m from the common boundary where a non-habitable room window or commercial window is proposed.

Where the common boundary is a laneway, the setback is measured from the centre of the laneway.

Development above 21m should provide an appropriate side setback to provide spacing between buildings in order to maintain views to the sky from Johnston and Sackville Streets and from residential properties adjacent to the development.

Corner Site Requirements

New development on a corner site (a site with a frontage to a side street) should:

- continue the street wall height established at the primary frontage with a transition in height to match the rear interface where required.
- upper level development along the side street of a corner site should be setback a minimum of 3m.

Overshadowing and Solar Access Requirements

New development must not overshadow the southern footpath of Johnston Street, measured as 3.0m from the boundary of Johnston Street, between 10am and 2pm at September 22. A permit cannot be granted to vary this requirement.

Development in Sub-Precincts 1C, 1D, 2C, 2E and 2F should be designed to avoid additional overshadowing of residential zoned properties to the south measured from 10am to 2pm at the equinox (September 22).

Street Frontage Requirements

New development should:

- be built to the front property boundary on in-fill (non-heritage) sites along Johnston Street and Sackville street.
- ensure that heritage facades remain the visually prominent feature in the streetscape.
- address the primary street frontage and, where heritage elements are not a constraint, incorporate design elements that contribute to the provision of a continuous, visible and active frontage at ground level.
- provide passive surveillance and active/visually interesting interface(s) with the public realm, areas of public open space and public transport stops.
- be designed to accommodate commercial activity at the lowest two levels incorporating floor to floor heights suitable for commercial activity of at least 4m, where heritage elements are not a constraint.
- be designed to locate service entries/access doors away from the primary street frontage, or where not possible, be sensitively designed to integrate into the façade of the building.

East of the railway bridge, new development should:

- contribute to a new, well-designed, contemporary urban character that provides articulation in building façades, reinforcing a finer grain street pattern; and
- provide a transitional street wall height (maximum one storey higher, but not less than 8m) on sites that are adjacent to Individually Significant heritage properties.

West of the railway bridge, new development should provide a street-wall façade height that matches the parapet height of a neighbouring heritage building, where present, for a minimum distance of 6m.

Upper Level Design Requirements

Upper level development should be designed so that all façades, including side walls, employ a high standard of architectural design and are well-articulated, to be read as part of the overall building design and do not detract from the character of the streetscape when viewed from direct and oblique views along either Johnston Street or Sackville Street.

- Upper level development above retained heritage building façades and on sites adjacent to a heritage building should:Ensure that heritage facades remain the visually prominent feature within the streetscape when viewed from ground level.
- Be visually recessive in mass, scale and materiality, incorporating materials and finishes that are sympathetic and in keeping with the character of the heritage streetscape.

Vehicle Access and Car Parking

New development should be designed to:

- Avoid providing vehicle access from Johnston Street and provide access from a side street or laneway where practical.
- Conceal the provision of car parking within the building or by providing basement car parking.
- Avoid providing recessed parking spaces at the ground floor level of buildings and onsite parking spaces at the front of properties.

3.0 Subdivision

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None specified.

4.0 Advertising signs

--/--/20--
C--

None specified

5.0 Application requirements

--/--/20--
C--

None specified.

6.0 Decision guidelines

--/--/20--
C--

The following decision guidelines apply to an application for a permit under Clause 43.02, in addition to those specified in Clause 43.02 and elsewhere in the scheme which must be considered, as appropriate, by the responsible authority:

- The extent to which the proposal satisfies the Design Objectives at Clause 1.0.
- The architectural quality of the proposal, which includes the design, scale, height, materials, mass and visual bulk of the development in relation to the surrounding built form.
- The profile and impact of development on the vista along Johnston Street.
- How the proposal responds to the presence of heritage buildings either on, or in close proximity to the site and whether an increased upper level setback is required having regard to the heritage significance and contributory features of the site.
- The design response at the interface with existing low-scale residential properties and the potential amenity impacts to neighbouring residential properties.
- Whether the proposal provides an active street interface to Johnston Street and contributes positively to the pedestrian environment and other areas of the public realm.
- The wind impacts of the proposed development.

Map 1: Johnston Street Sub-Precincts Plan

Table 2: Building Height and Setback Requirements (subject to the criteria outlined at Clause 2.0 of this schedule)

Sub-Precinct	Preferred Maximum Building Height	Mandatory Maximum Building Height	Preferred (minimum and maximum) Street-Wall Height (non-heritage frontage)	Mandatory Maximum Street-Wall Height (non-heritage frontage)	Preferred Minimum Setback (for upper levels from Street Wall Facade)	Mandatory Minimum Setback (for upper levels from Street Wall Facade)	Preferred Maximum Rear Interface Height (on boundary)	**Mandatory Maximum Rear Interface Height (on boundary)**
1A	24m	—	8m (Min)	11m	—	6m	11m	
1AA	28m	—	11m (Max) (fronting Sackville St.)	11m (fronting Johnston St.)	6m (fronting Sackville St.)	6m (fronting Johnston St.)	—	
1AAA	—	28m	—	11m (fronting Johnston St.)	—	6m (fronting Johnston St.)	11m	
1B	24m	—	11m (Max)	—	6m	—	11m	
1C	21m	28m	8m (Min)	11m	—	6m	—	11m
1D	—	21m	8m (Min)	11m	—	6m	—	11m
2A	21m	—	8m (Min)	11m	—	6m	11m	
2B	21m	—	8m (Min)	11m	—	6m	11m	
2C	34m	—	15m (Max)	18m	6m	—	11m	
2D	24m	31m	15m (Max)	18m	6m	—	—	11m
2E	21m	24m	15m (Max)	18m	6m	6m (293 & 323-325 Johnston St.)	—	11m
2F	—	21m	15m (Max)	18m	6m	—	—	9m

Attachment 4: Digital Yarra City Council Model Data Report

Digital Yarra City Council Model Data Report

03/10/18 – Adrian Smith

This report focuses on the datasets used for the Yarra City Council model.

Base Context Model

Aerial Imagery

The model was authored at the time with Aerial Photography of the following source:

- **Imagery Capture Date:** 5th January 2018
- **Resolution:** 6cm
- **Projection:** MGA Zone 55
- **Filename: yarra_2018jan05_air_vis_06cm_mga55**

Ground Terrain Data

The ground surface terrain was built using ground classified LiDAR spanning 2 sets of data supplied by DELWP.

Image 1: Terrain Data coverage

Image 1 illustrates the location of each data type.

- The area shown as blue in **Image 1** is Ground Surface Terrain generated from ground classified Aerial Lidar data captured in 2008. The LiDAR data is accurate to: HORIZONTAL+/- 0.2m, VERTICAL +/- 0.1m interval

- The area shown as pink in **Image 1** is Ground Surface Terrain generated from ground classified Aerial Lidar data captured in 2007. The LiDAR data is accurate to +/- 0.1m

Detailed Johnston St/Sackville St Precinct model

Built Form Data

The detailed buildings along Johnston Street (from Smith St. to the River) and Sackville Street (from Smith St. to Hoddle St.), were modelled around the following sets of data,

- White buildings were supplied by council. The supplier of this data was AAM and the data was generated in 2015 using photogrammetry modelled processes.
- Detailed Colour buildings were modelled by Urban Circus using council supplied Mobile Laser Scan data. This data was captured in 2015
    - Google Street View was used as a further detail reference for manual modelling (Latest capture August 2017)

Modelled Road and Footpath

- Roads and kerb were modelled using a 2-Dimensional shape file supplied by council to get horizontal placement, it was then aligned to the LiDAR for vertical alignment.

Urban Engine Lighting/Shadows

- The UE sun position is generated from the Solpos algorithm provided by the National Renewable Energy Laboratory (US)
- This provides a sun position in the UE in relation to true north
- The North in the DELWP platform model utilise Grid North in relation to MGA Zone 55
- In order to position the sun correctly in relation to MGA Zone 55, True North is calculated using Redfearn's formula, as provided by GeoScience Australia
- This has been compared against Sketchup, which matches almost perfectly with under 10cm tolerance
- The UE sun position is based on the current year of use.

Attachment 5 : List of Permit Applications provided by City of Yarra

AMENDMENT C220 PERMIT INFORMATION (JOHNSTON STREET) PROVIDED BY CITY OF YARRA

	Permit No.	Address	Proposal	Council Decision or status	VCAT	Approval	Endorsed Plans (Dated) & Modelling Undertaken	Status
COLLINGWOOD								
1	PLN11/1014	2 Johnston Street, Collingwood	6 storeys	(Failure to determine)	Approved – Council decision set aside - VCAT Ref: P2808/2012	Generally, same as proposal.	Provided with plans prepared by Chamberlain Javens Architects and dated 15 November 2011 (not the endorsed plans).	BUILT and is within the base model within the Urban Engine.
2	PLN15/0077	64 Johnston Street	4 storey office	Approved by Council	N/A	N/A	Prepared by Ridolfi Architecture dated 17 December 2015 and endorsed on 21 June 2016.	BUILT. It is noted that the site was modelled as the building did not form part of the base model within the Urban Engine.
3	PLN16/0337	80-90 Johnston and 59-63 Sackville Street	9 Storey Office Building	Approved by Council through mediation at VCAT	Approved – Council decision set aside - VCAT Ref: P1675/2016	Generally, same as proposal. Conditions outlined at VCAT	Currently no endorsed plans* *It is advised that we have modelled the provided plans prepared by Clarke Hopkins Clarke dated 28 November 2016 which do not encompass the changes sought by conditions of the VCAT decision.	PERMIT ISSUED
4	PL09/0606	105-107 Johnston Street	3-4 storey residential	Refused	Approved – Council decision set aside - VCAT Ref: P2352/2010 Amended – Council to amend permit - VCAT Ref: P210/2013	Generally, same as proposal.	Provided with plans prepared by Vast Architects date stamped received 26 August 2011.	BUILT and is within the base model within the Urban Engine.
5	PLN15/0963	145-145A Johnston Street	4 storey residential	Approved by Council	N/A	N/A	Prepared by Slab dated 21 June 2017 and endorsed on 28 February 2018.	PERMIT ISSUED
6	PLN10/0828	183 Johnston Street	3 storey residential	Approved by Council	N/A	N/A	Prepared by MS Designer Living Architectural Design and amended plans endorsed on 7 March 2014.	BUILT and is within the base model within the Urban Engine.
7	PLN15/0294	203-205 Johnston Street	5 storey mixed use	Approved by Council	N/A	N/A	Provided with plans prepared by Will Chan Architect dated 22 January 2018 (not the endorsed plans).	PERMIT ISSUED
8	PLN16/0845	23-33 Johnston Street	12 storey mixed-use	Refused by Council	Approved at 9 storeys (affected by Am C237) Approved – Council decision set aside - VCAT Ref: P1963/2017	9 storeys (<28m) approved	Currently no endorsed plans* *It is advised that we have modelled the provided plans prepared by Cox Architecture dated 22 March 2018 which do not encompass the changes sought by conditions of the VCAT decision.	PERMIT ISSUED
9	PLN17/0807	122 Johnston Street	7 storey commercial	Current proposal	N/A	N/A	Currently no endorsed plans*	CURRENT PROPOSAL

							*It is advised that we have modelled the provided plans prepared by the Silver Arc dated 1 May 2018 which may not encompass changes to plans sought by conditions.	
10	PLN13/0763	4-6 Gold Street	7 storey mixed-use	Approved by Council – amended plans submitted, advertising stage	N/A	N/A	Currently no endorsed plans* *It is advised that we have modelled the provided plans prepared by Hassell date stamped received 10 October 2015 which may not encompass changes to plans sought by conditions. *It is advised that we have modelled the current amended plans provided plans prepared by Hassell dated stamped received 11 May 2018.	PERMIT ISSUED (CURRENT PROPOSAL – AMENDED PLANS)
	PLN14/0134	109 Dight Street, Collingwood	6 storeys mixed-use				Prepared by Fieldwork dated 20 October 2017 and amended plans endorsed on 5 March 2018.	UNDER CONSTRUCTION
ABBOTSFORD								
11	PLN15/0612	247-259 Johnston & 36 – 40 Stafford Street	18 storey mixed use	Approved by Council at 11 storeys	VCAT approved a 12 storey mixed use development		Prepared by SJB Architects dated 9 August 2017 and endorsed on 11 January 2018. Plans prepared by SJB Architects dated 7 August 2018 also provided. It is noted that these are very minor changes to plans which do not result in a revised building envelope.	PERMIT ISSUED
12	PLN12/1148	288-298 Johnston Street	8 storey mixed use	Council approved 6 storey development	Decision set aside – 8 storeys approved		Prepared by Cox Architecture dated March 2015 and endorsed on 16 December 2015.	PERMIT ISSUED
	PLN17/0948	288-296 Johnston Street	12 storey mixed-use	Current proposal (affected by Am C237 – exceeds mandatory overall height)	N/A	N/A	Currently no endorsed plans* *It is advised that we have modelled the provided plans prepared by Plus Architecture dated 31 January 2018.	CURRENT PROPOSAL (On hold due to Am C237 interim control)
13	PLN16/1155	312-314 Johnston Street	7 storey mixed-use	Unclear	Approved – Council decision set aside - VCAT Ref: P1776/2017	Generally, same as proposal	Prepared by Vast Architects (date unclear) and endorsed on 8 May 2018.	PERMIT ISSUED
14	PLN15/0644	316-322 Johnston Street	10 storey mixed use	Approved through mediation at VCAT	Amended – Council to amend permit - VCAT Ref:	Approved at 8 storeys through mediation	Provided with plans prepared by Fieldwork dated 6 March 2018 (not the endorsed plans).	PERMIT ISSUED

					P1220/2016 P1352/2016			
15	PLN16/0471	344 Johnston Street	8 storey mixed use	Approved by Council	N/A	N/A	Prepared by CHT Architects dated 26 April 2017 and endorsed on 1 June 2017.	PERMIT ISSUED
16	PLN11/0770	370 Johnston Street	6 storey mixed use	Approved through VCAT	Approved – Council decision set aside - VCAT Ref: P2459/2012		Provided with plans prepared by CBG Architects dated 15 November 2013 (not the endorsed plans).	BUILT. It is noted that the site was modelled as the building did not form part of the base model within the Urban Engine.
17	PLN16/1188	329 Johnston Street	9 Storey mixed-use (residential hotel) Changed to mixed-use: retail, office and childcare	Approved through VCAT	Approved – Council decision set aside - VCAT Ref: P1488/2017	Approved at 8 storeys	Currently no endorsed plans* *It is advised that we have modelled the provided plans prepared by Fieldwork dated 30 August 2017 which do not encompass the changes sought by conditions of the VCAT decision.	PERMIT ISSUED
18	PLN17/0369	283 Johnston Street	5 storey mixed use	Current proposal	N/A	N/A	Provided with plans prepared by Michael Carr Architect dated October 2017.	CURRENT PROPOSAL
19	PL12/0700	270 Johnston Street	3 storey mixed use	Approved			Provided with plans prepared by Archimedium Australia Pty Ltd dated May 2012 and endorsed on 13 February 2014.	UNDER CONSTRUCTION

Attachment 6: Melconsult Wind Impacts Report dated 13 September 2018

M E L
CONSULTANTS

AMENDMENT C220
YARRA PLANNING SCHEME
YARRA CITY COUNCIL

MEL CONSULTANTS PTY LTD IS A WIND ENGINEERING CONSULTANCY SPECIALISING IN DETERMINING WIND EFFECTS ON BUILDINGS, STRUCTURES, AND THE ENVIRONMENT.

CONTENTS

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1. INTRODUCTION

The *Yarra Planning Scheme Amendment C220* will apply to land in Precincts 1 and 2 as identified in the Johnston Street Local Area Plan as shown in Figure 1.

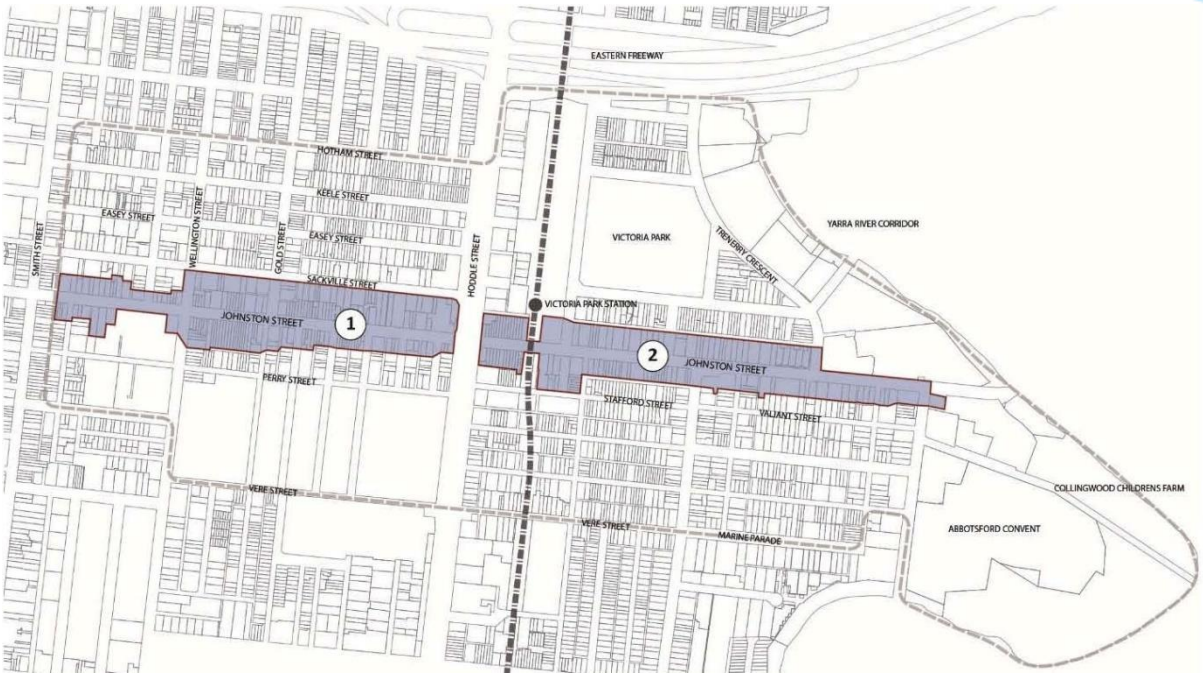


Figure 1: Precincts 1 and 2 for the Yarra Planning Scheme Amendment C220.

The Amendment implements the land use and built form objectives and strategies within the Johnston Street Local Area Plan that relate to Precincts 1 and 2.

This document aims to inform the City of Yarra through discussion on the following topics:

- The appropriate criteria to be used in the assessment of wind and the reasons for it;
- Above what total overall building height and what street wall height may buildings along Johnston Street create problematic wind impacts, particularly on the street and considering that initially isolated buildings up to 31m high are planned;
- What is the minimum setback of a higher building above a low podium or street wall (11m or 18m high) to generally protect the street from excessive wind down draughts (3m or 6m are proposed);
- Whether a continuous wall of joined higher buildings (between 24m and 34m high) have a more detrimental wind impact than high buildings separated by gaps (of say 9m) at upper levels (above 11m or 18m);

- What built form devices would likely mitigate wind effects at street level and on roof tops, in particular canopies, screens, cut-outs, and curves, and are such features sufficient for primary mitigation;
- Any other matters or recommendations you consider Council should consider with respect to the Amendment.;
- Review of relevant submission lodged in response to the Amendment and respond to these submissions.

These topics will be extended to provide a background information on the Melbourne wind climate and wind effects of built forms to assist with the understanding of the responses to the requested topics.

2. MELBOURNE WIND CLIMATE

2.1 Melbourne Wind Climate

Wind climate in Melbourne, in relation to Australia, is under the influence of a wind climate known colloquially as the roaring forties. The roaring forties take place when the atmospheric pressures systems move from west to east bringing with them a cycle of wind events that can be described in relation to Melbourne as follows:

- A high pressure system bringing warm northerly winds
- The northerly winds build in intensity until they give way to a cold front in front of a low pressure system bringing wind from the Southern Ocean. This system sometimes brings thunderstorm conditions.
- The low pressure system causes a swing in wind directions from northerlies through westerlies to southerlies. The cycle is then repeated. The cycle occurs predominantly from August to January, the windier months of the region.

As a result of the above wind cycle, the strongest winds in the Melbourne region come from the north and west sectors. Secondary strong winds come from the south sector and moderate winds from the east sector.

The northerly winds in the Melbourne region are intensified by the topographical effects of the Great Divide. These mountains have a gap to the north of Melbourne that funnels the northerly winds into the metropolitan area. The strength of the northerly wind decreases with distance south of the Great Divide such that the northerly wind speeds at Melbourne Airport are stronger than those experienced in Collingwood and Abbotsford. The northerly winds are the most frequent and strong and last for the longest periods. The northerly winds account for approximately 60% of the strong winds in the Melbourne region.

The westerly winds are less frequent but are just as strong as the northerly winds. They are associated with the passage of thunderstorms, which are quite brief, and with synoptic storms. Strong synoptic westerly storms are occasional but can last for several days. The thunderstorm winds dominate the strong winds for the westerly winds with the synoptic winds being less frequent.

Melbourne is also affected by a general diurnal wind pattern, unless overridden by very strong pressure systems. The diurnal wind pattern starts with relatively light winds in the morning,

towards midday the pattern builds up to the strongest winds, and then drops off in the evening. This means the majority of the winds occur during daylight hours when pedestrians are more likely to be affected by the wind conditions, including affecting the operation of cafés/restaurants with outdoor seating areas.

The best source of wind climate data for Melbourne is the National Climate Data Centre of the Bureau of Meteorology (BOM). Wind climate data can be obtained for any of the automatic weather stations around Melbourne for statistical analysis. The wind roses and data presented on the webpages and obtained from the National Climate Centre are not corrected to the standard reference height of 10m in open country terrain. The selection of an appropriate weather station for Collingwood and Abbotsford should be undertaken with care as stations closer or within the metropolitan area, such as Moorabbin Airport, are compromised by the surrounding buildings and require considerable correction factors for each wind direction to obtain the wind speeds at the standard height of 10m in Terrain Category 2. Automatic weather stations at Melbourne Airport and Laverton Airport are less affected by buildings and would require less correction to determine the wind speeds at a height of 10m in Terrain Category 2. However, these stations are located a considerable distance from the Collingwood and Abbotsford and consideration would need to be given to the magnitude of the wind speeds in these areas.

2.2 Wind Effects of Built Forms

The existing built forms of Johnston Street are typically 2 to 3 level commercial buildings and typical suburban housing of 1 to 2 levels. There are some taller, approximately 10 level, recently developed buildings amongst the lower buildings. This built form configuration would mean the 2-3 level buildings would be shielded from direct wind flow by the surrounding suburban housing and the uniformity of the built form means the faster moving wind would pass over the buildings without affecting the streetscapes and pedestrian amenity as shown in Figures 2 and 3.

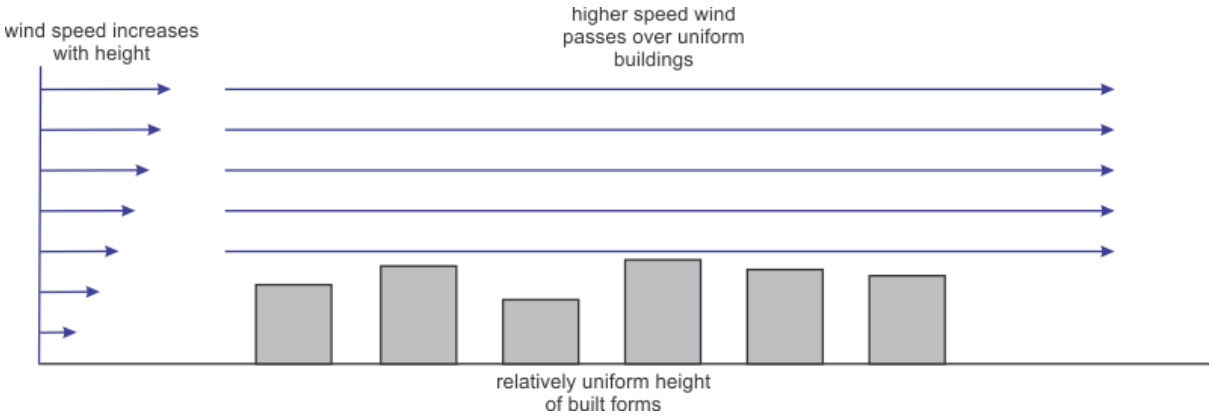


Figure 2: Wind flow over relatively uniform built forms

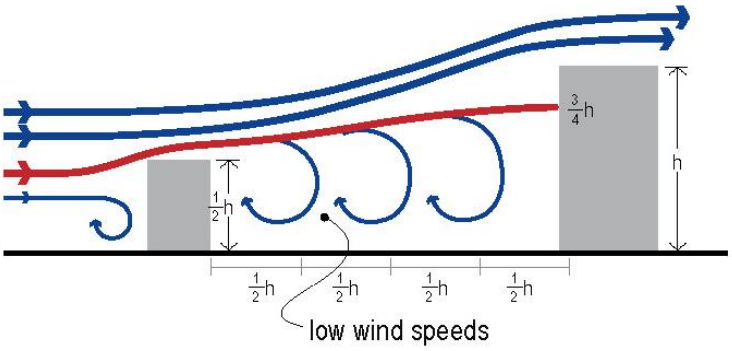


Figure 3: Wind shielding provided by upstream built forms

Pedestrian level wind impacts of built forms occur when there is a considerable height difference between buildings and the surrounding buildings. The taller built forms relative to the surrounding built forms will have exposure to the higher speed winds approaching over the low built forms as shown in Figure 4. Typically these wind impacts occur when the taller built form is more than about 50% taller than the surrounding buildings.

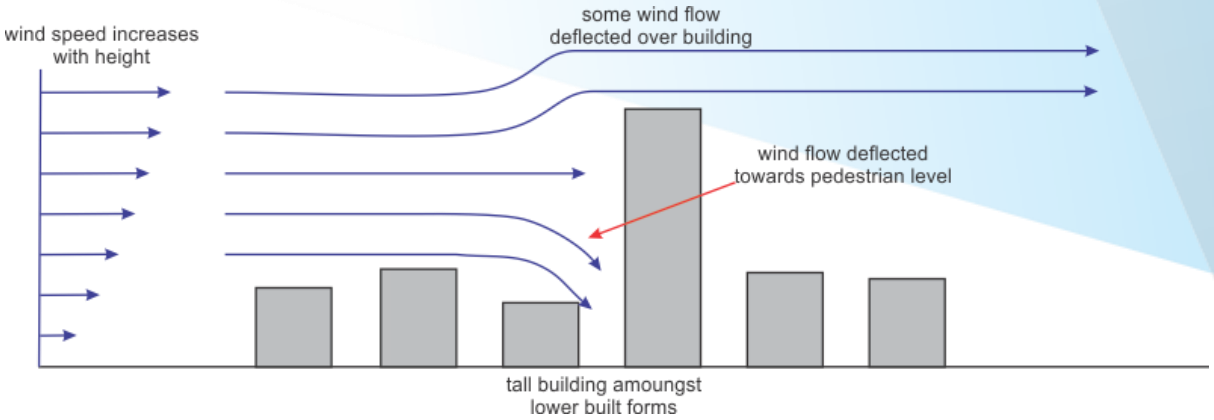


Figure 4: Wind flow over lower built form with a tall building

A built form could be imagined as a wind scoop deflecting additional wind flow towards pedestrian level and this deflected wind flow is commonly referred to a 'downwash' as shown in Figures 4 and 5. The wind flow around a built form creates a stagnation point at approximately two thirds to three quarters of the built form height. Above the stagnation point the wind flow is deflected over the built form, but below this point is the downwash wind flow. This downwash wind flow will result in higher wind speeds on the windward side and around the windward corners of the building. This means that the pedestrian level winds are significantly impacted by the downwash unless wind mitigation strategies are employed.

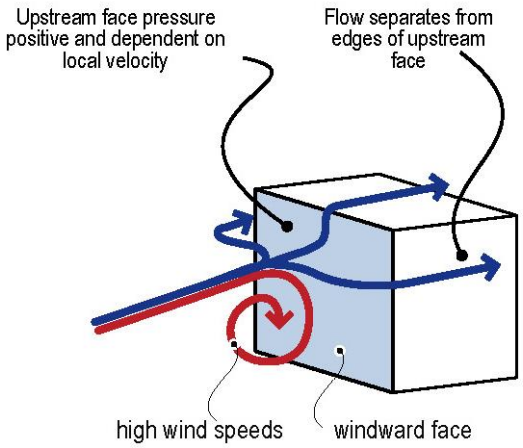


Figure 5: Schematic of wind flow around built form

Another issue with the building form configuration is an adverse interference built form configuration. This configuration, shown in Figure 6, where the upstream built form is approximately one third the height of the downstream built form and separated by approximately one third of the downstream built form height. This configuration causes an adverse interference where the downwash from the taller built form adds adversely to the

recirculation zone behind the lower built form. The result of the adverse interference is significantly higher wind speeds between the two built forms. As an example, this is the configuration of the Menzies Building and the Campus Centre at Monash University Clayton Campus where the plaza between the buildings experience adverse wind conditions for the strong and frequent north sector wind directions. The wind conditions between the buildings have improved in recent times as tall buildings have been constructed to the north of the campus centre, which provide shielding from these wind directions.

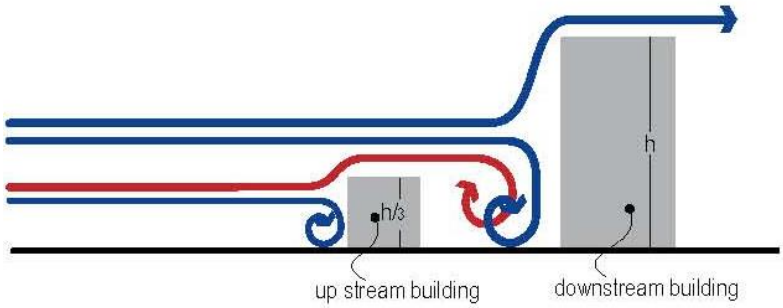


Figure 6: Adverse interference built form configuration

A common misunderstanding is that the built form above the podium is responsible for the wind effects at pedestrian level but poorly considered podiums often contribute. Podiums that are designed to hold the street line with sharp corners can create areas of high wind acceleration in proximity to the corners and these wind conditions can exceed pedestrian comfort criteria. Instead of holding the street line, using curved built form around the corners reduces the wind acceleration and creates better pedestrian level wind conditions.

The shape of the built form is key to the wind effects, with rectangular prismatic shapes worse than significantly curved shapes such as circular or oval built forms. The shape of the built form has a close relationship to the amount of additional wind flow deflected towards pedestrian level. Figure 5 showed a schematic of the wind flow around a rectangular prism shaped built form that would have strong downwash wind flow towards pedestrian level. Built forms of near circular form, shown in Figure 7, promote horizontal wind flow around the built form instead of downwash wind flow. However, built forms with curved shape of the right diagram in Figure 7 would promote wind to flow around the form for some wind directions, but from others the concave shape as shown in the diagram would produce strong downwash wind flow, potentially worse than a rectangular shaped built form of Figure 7.

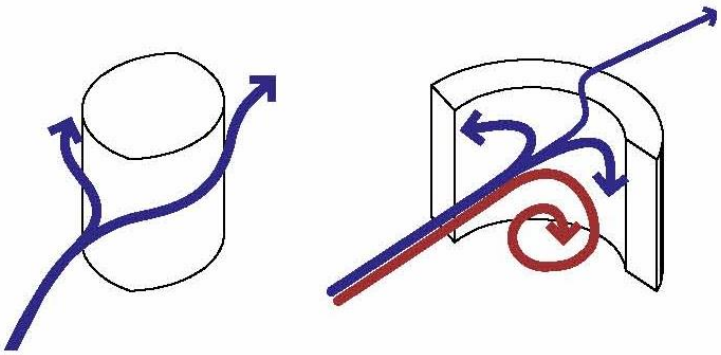


Figure 7: Wind flow around a circular built form

Finally, the last wind effect of built forms to be discussed is that for through built form connections that is shown in Figure 8. Open pedestrian arcades through the base of built forms can experience adverse wind conditions due to the pressure difference across the building. The wind conditions through the arcades can be well above the standing and sitting criteria, and in some cases well above the walking criterion. These high wind conditions would affect the ability to activate the arcades for any type of pedestrian stationary activity.

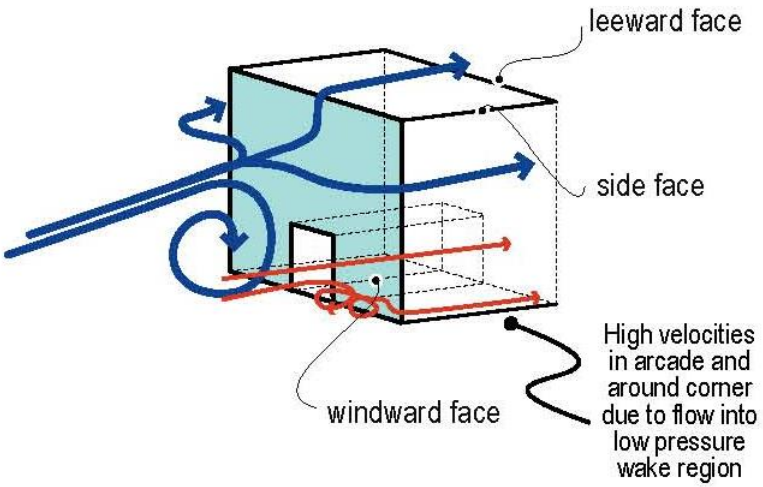


Figure 8: Pedestrian arcades through built forms

In summary, this section has discussed the wind effects of generic shaped built forms on the pedestrian level wind conditions. With this understanding of the wind effects, wind mitigation strategies to reduce the wind effects of built forms to achieve the pedestrian wind comfort criteria for the proposed activations will be discussed in a later section of this document.

3. PEDESTRIAN COMFORT CRITERIA

3.1 Background on Pedestrian Comfort Criteria

Pedestrian wind comfort criteria are based on assigning a wind speed to a proposed activation of the public realm. The criteria generally used are:

- Sitting (Long duration)
- Standing (Short duration)
- Walking
- Uncomfortable for Walking
- Unsafe

The first four categories specify an upper limit and the last specifies a lower limit (Durgin 1997) although most criteria do not consider an 'uncomfortable for walking' criterion and commonly use the 'walking' criterion. Ratcliff and Peterka (1989) compared five pedestrian criteria, those of Penwarden and Wise, Isyumov and Davenport, Lawson and Penwarden and Hunt and Melbourne. These criteria are based on a percentage of time that either, or both, a mean or peak wind speed is exceeded. The results obtained from applying each of the criteria to the same situation indicated that there is a difference between the criteria that were based on peak gusts, (i.e. Melbourne's criteria) and the other criteria that are based on both mean and peak wind speeds. The five criteria ranged from very strict, (Melbourne) where a great majority of the locations in the test environment were deemed uncomfortable or unacceptable, to lenient, (Lawson) where only a small number of locations were classified uncomfortable or unacceptable. The other criteria tested fell between these two extremes. As a conclusion to this investigation they offer the suggestion that using several of these criteria as well as engineering judgement is the favoured method of determining the pedestrian wind criteria for a location. Also, they point out that no thermal effects were considered, but for the Melbourne this is not an issue. Durgin (1997) compared a number of criteria and made the point that any criteria are not absolute; any location can have dangerous wind conditions in severe storms. Instead, criteria imply that if a location falls into a certain category, then the location will have the wind speeds making the given activity possible most of the time.

The criteria discussed, as noted above, have been presented as either mean or gust wind speeds. Recently, criteria are being expressed as both mean and gust wind speeds to account for the effects of constant (mean) and rapidly changing (gust or turbulent) wind speeds. While this is useful it is the gust wind speeds that will dominate the wind conditions in the urban

environment of Melbourne where wind gustiness (turbulence) exceeds 30%. However, for consistency the proposed criteria will be defined in term of mean and gust (or gust equivalent mean – GEM) wind speeds.

3.2 Proposed Criteria for the Amendment

Melbourne is located in the wind climate known colloquially as the roaring forties. The roaring forties take place when the atmospheric pressure systems move from west to east bringing with them a cycle of wind events. The prevailing winds are from the southwest through west to north, with the south a secondary strong wind sector. The north sector winds are strongly influenced by synoptic conditions with few stronger wind events such as thunderstorms. For the synoptic winds the west sector occurrences are considerably less frequent compared to the north sector, but the stronger wind events are strongly influenced by weather fronts and thunderstorm events. Therefore, the issue we have with defining the wind criteria based on more frequent wind events, i.e. less than weekly (20% exceedance), weekly, monthly, in the mixed (synoptic and strong wind events [thunderstorms]) wind climate of Melbourne is that the less frequent but stronger wind events would be ignored. Ignoring the less frequent but stronger wind events, which would still influence pedestrian comfort would infer that wind conditions in streetscapes would be better than they would be perceived by pedestrians.

Consideration has been given to the mixed wind climate of Melbourne, and these following criteria for the Yarra Planning Scheme Amendment C220 are suggested;

Comfortable wind conditions are defined as a mean wind speed from any wind direction (minimum 16 wind direction sectors) with probability of exceedance of 0.1%, equal to or less than:

- 5 metres per second for sitting areas
- 7 metres per second for standing areas
- 9 metres per second for walking areas.

Where the mean wind speed os defined as the maximum of:

- Hourly mean wind speed, or
- Gust equivalent mean speed (3 second gust wind speed divided by 1.85).

The above wind speeds and probability of exceedance have been selected to be approximately an annual return period wind for Melbourne with a consideration of both the period of time when these spaces will be activated/occupied by pedestrians as well as the mixed wind climate of the roaring forties in which Melbourne is located.

Additionally, the safety criterion (unsafe wind conditions) is defined as:

Unsafe wind conditions are defined as the hourly maximum 3 second wind gust which exceeds 23 metres per second from any wind direction (minimum 16 wind direction sectors) with a probability of exceedance of 0.1%.

This definition of unsafe wind conditions is in line with the Australasian Wind Engineering Society (AWES) Guidelines for Pedestrian Wind Effects Criteria September 2014. The probability of exceedance of 0.1% is approximately an annual occurrence and would include the strong wind events associated with thunderstorms and other less frequent strong wind events.

The built form trigger height to require a wind assessment (desktop and/or wind tunnel study) is subjective. For the built environment of the Melbourne CBD they have a trigger of 40m for the requirement of an environmental wind effects assessment. However, the surrounding Terrain Category of Collingwood and Abbotsford is different to the Melbourne CBD and made up of typical suburban housing, low-rise commercial, and some recently developed taller buildings of approximately 10 levels for all wind directions. The typical suburban housing and low-rise commercial buildings are typically up to about 9m (three levels) and, as discussed in Section 2.2, would provide shielding to downstream buildings up to 4-5 levels depending on the distance between the buildings. Therefore, it would be proposed to have a trigger for the requirement for the assessment of wind impacts for a built form that is 15m or higher from the natural ground level. The trigger is considerably lower than the Melbourne CBD but is necessary due to the surrounding terrain and built forms.

4. WIND MITIGATION STRATEGIES

From the knowledge of the wind effects of built forms, discussed in Section 2.2, there are strategies to mitigate these wind effects. The focus should be on designing the built form that considers the wind exposure and strength at the site and the intended activation of the surrounding streetscapes.

It is not possible to eliminate the wind so the wind mitigation strategies are designed to deflect additional wind flow away from pedestrian areas to improve wind conditions. However, care needs to be taken with the strategies as improving one location may have detrimental effects on other locations. Wind mitigation strategies could be as follows:

Built Form

The built form has a critical importance for mitigating pedestrian level wind effects in the surrounding streetscapes. This should be the initial consideration of any concept design. A built form that responds to the wind climate of the location and context of surrounding buildings is a key starting point to mitigating the wind effects of new developments. Curved or circular built forms, greater set-backs on low podiums (of similar height to existing surrounding built forms) for the prevailing wind directions, corner cut outs, stepping back of built form with height from the site boundary/podium edge, and creating rough built form vertical corners instead of uniform vertical edges are some examples. For long building envelopes a strategy would be to break up the continuous built form into several individual built forms on a low podium to allow wind flow between the built forms as shown in Figure 9. The definition of minimum setbacks, such as 3m or 6m, to mitigate wind effects at pedestrian level is dependent on the proposed built form. A square prismatic built form with broad faces orientated towards the prevailing and strong wind directions would require larger setbacks from the podium edges, due to significant wind downwash impacts, compared to an aerodynamic built form that induces wind flow around the form (see Figure 7). Therefore, we would suggest a nominal setback of 6m but this could be applied with discretion depending on the architecture of the built form.

Additionally, the gradual increase of built form height from the edges of the entire precinct to the centre of the precinct is an effective mitigation strategy as shown in Figure 3. The lower upstream built forms shield the slightly taller downstream built forms allowing taller forms to be built downstream.

Designers often propose that their built form is broken up by placing relatively small fins and other face protrusions on the building. These relatively small architectural features have no significant wind mitigation benefit as it is the pressure field from the built form massing that controls the wind effects in the surrounding streetscapes.

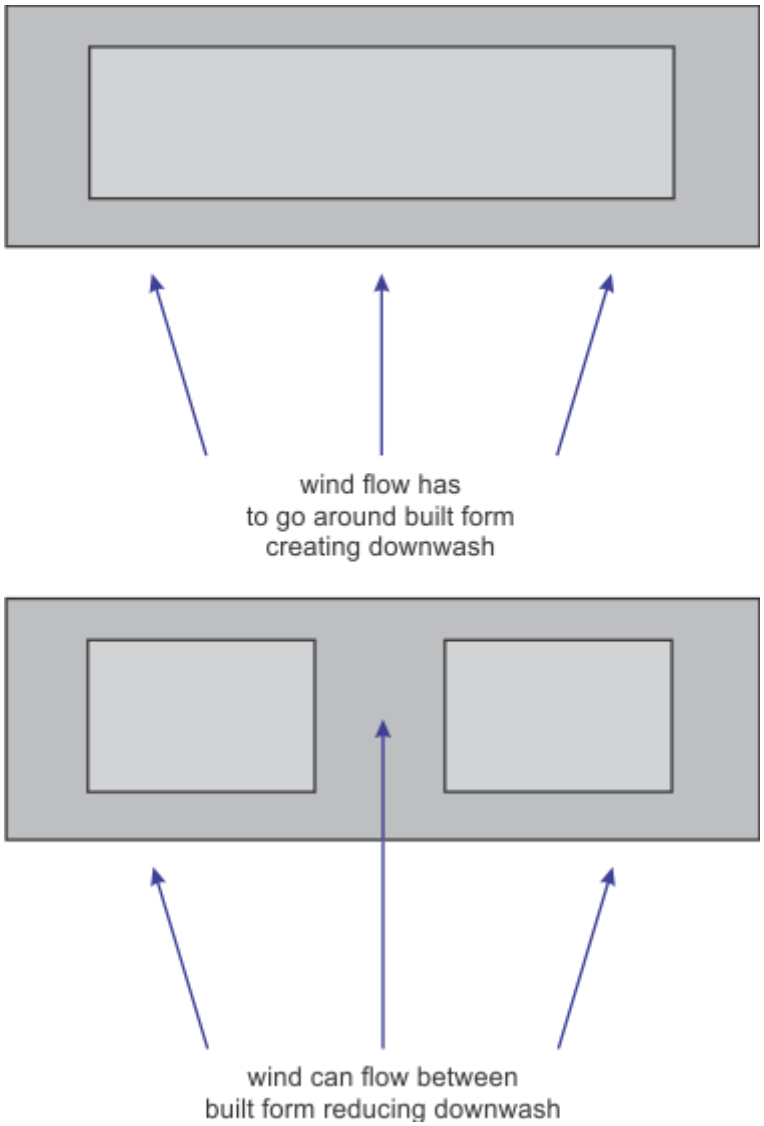


Figure 9: Break up of built form

Building Orientation

Built forms will induce additional wind flow towards pedestrian level when the built form, in part or fully, is exposed to direct wind flow. This wind effect is enhanced if the built form face is orientated towards the strong and prevailing wind directions for the location. Figure 10 illustrates this situation on the left and a mitigation strategy on the right. The mitigation strategy is to orientate the built form with a corner pointing to the strong and prevailing wind direction. The change of orientation would induce horizontal wind flow around the built form rather than

downwash. This may be difficult to achieve in Collingwood and Abbotsford since the road network controls the built form orientation and this results in the built form faces being orientated towards the strong and prevailing wind directions.

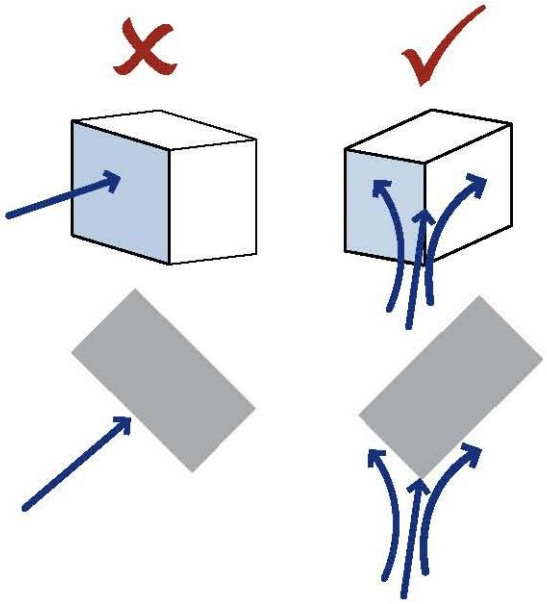


Figure 10: Built form orientation

Porous Built Form Levels

This mitigation strategy uses the pressure difference across a built form to draw wind flow through porous levels as shown in Figure 11. The porous levels draw wind flow through the built form above pedestrian level to reduce the volume of downwash impacting the pedestrian streetscapes. A similar scenario is achieved by elevating the built form above the podium by several levels, but the area created under the built form would be windy and unlikely to be activated for pedestrian activities.

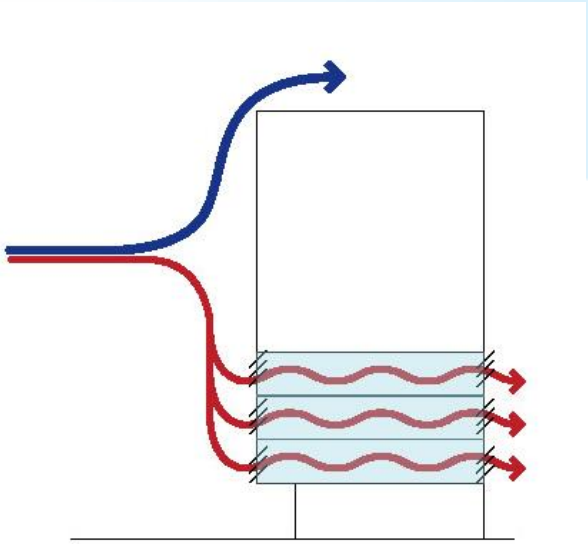


Figure 11: Porous facade venting

Canopies

The use of street canopies is common practice for weather protection, including wind. These are often quite successful at providing wind mitigation but the effectiveness is based on the width of the canopy. An effective wide canopy creates a local shelf that deflects wind flow above pedestrian level and around the built form corners as shown in Figure 12.

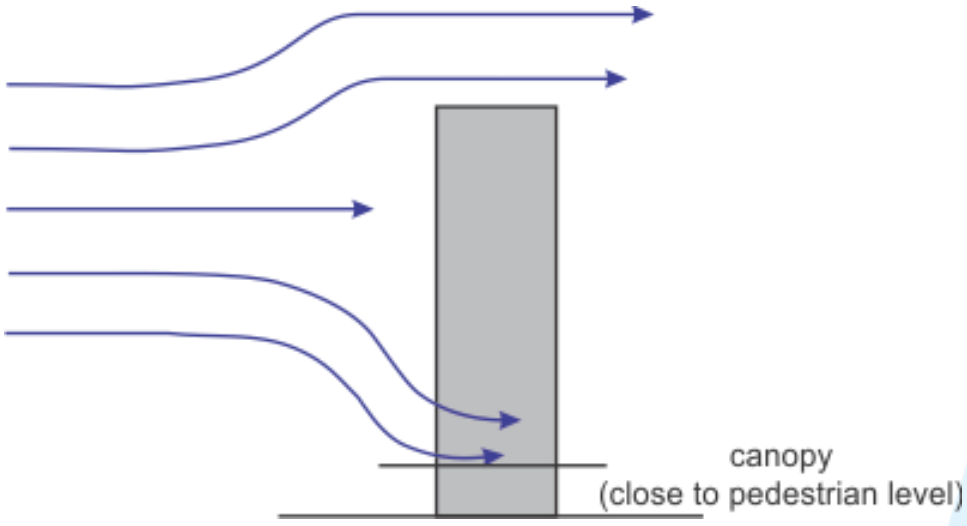


Figure 12: Built form canopy

However, if the wind impacts of a built form are significant then a canopy would be unlikely to fully mitigate the pedestrian wind conditions and modifications to the built form would need to be considered as well.

Street Trees and Local Wind Breaks

Large dense canopy street trees are effective wind mitigation features for wind effects as shown in Figure 13. However, solely relying on street trees in areas of high wind effects (high wind speeds) would likely not be successful as the trees will not thrive and provide the intended wind mitigation. Also, often the trees are planted in an immature condition without enough irrigation so they never reach maturity and/or die due to the harsh wind conditions that they are intended to mitigate. Street trees should not be used to mitigate wind conditions that approach or exceed the unsafe criterion.

Some responsible authorities do not allow the use of street trees on their land for wind mitigation as they become responsible for the maintenance of the wind mitigation for the developer's built form and are aware that trees do not thrive in these windy areas.

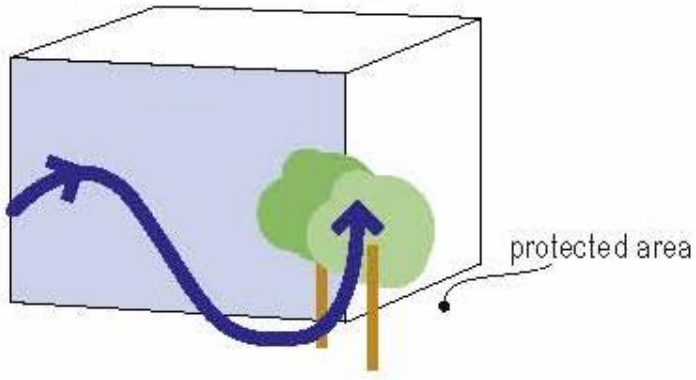


Figure 13: Wind break trees

Local wind break features are commonly used throughout cities, such as Melbourne, to provide immediate wind protection to seated café areas and important outdoor seating areas. These vertical features, such as glass screens or dense green walls, vary in height depending on the amount of protection required and would only be effective for a small area downstream of the wind break feature. These features are commonly seen throughout Melbourne around outdoor café areas and can be permanent or removable.

Pedestrian Outdoor Arcades and Streets

The alignment of pedestrian outdoor arcades and streets within the built forms often funnel wind through along these arcades and streets. Figure 14 shows mitigation strategies that suggest to orientate the arcades/street perpendicular to the prevailing wind directions or break up the road network to mitigate the funnelling.

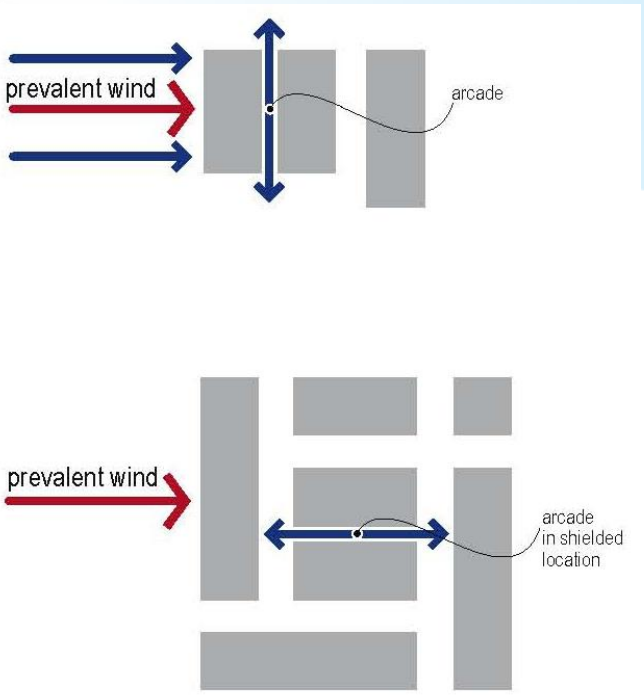


Figure 14: Mitigation of Pedestrian Arcades and Streets

The above discussion is for open arcades and streets, not the arcades through built forms that was discussed in Section 2.2. The most effective mitigation strategy for arcades through built forms is to create an effective seal at one or both ends of the arcade. It is often proposed by designers to use an air-lock as the effective seal, but these are ineffective in situations of moderate to high pedestrian traffic.

A localised wind mitigation strategy, common throughout Melbourne, is to provide wind protection to seated areas in the form of local wind break features. These features could be vertical hardscape elements, such as glass walls, or landscaping in the form of dense planting, trees, or green walls. However, local wind breaks should not be relied upon to provide the entire wind mitigation for the built forms, rather the final strategy to achieve conditions suitable for sitting type activities.

Roof Top Terraces

The wind typically flows over roof terraces, as indicated schematically in Section 2.2. For small roof terraces, increasing the roof edge balustrade would improve the roof top terrace wind conditions, but for large terraces there may be the requirement for additional wind break features within the terrace, e.g. canopies and wind break screens. Roof top terraces are located in the separated flow area over the top of the building and they typically have lower mean wind speeds but higher gustiness (turbulence). The higher gustiness can be perceived by users as unpleasant.

5. OTHER CONSIDERATIONS

The definition of prescribed built forms, e.g. minimum setbacks and envelopes, would be expected to restrict the design response to the planning controls and may not achieve the desired pedestrian level wind conditions with a conforming form. An alternative approach would be to define the required activation of the streetscapes within the precincts as this can be related to wind comfort criteria with quantifiable parameters. This would allow freedom of built form within the envelope as long the design outcome achieves the prescribed wind criteria. The City of Yarra will need to decide how the streetscapes should be activated and guidance for this can be taken from the existing streetscapes activation.

For example;

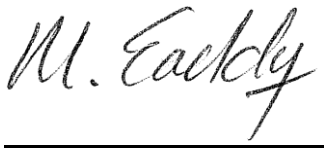
- the active frontages (footpaths) in the retail core may be assigned the minimum standing criterion and outdoor seating areas require sitting criterion.
- Building entrances require the standing criterion
- Pedestrian Streets require the standing criterion adjacent to shop frontages and this could be relaxed to walking for pedestrian transit areas
- Roadways (vehicular) require the walking criterion
- Service lanes and non-core streetscapes require the walking criterion
- Outdoor parks require the walking criterion
- The railway station requires standing criterion for platforms and the sitting criterion in ticket areas

The assigning of these minimum required criteria for the streetscapes within the precincts would indirectly control the built form. The outcome of this approach would be streetscapes that achieve the required criteria for the pedestrian activation and freedom to develop built form that responds to the wind climate of Melbourne. The developers of the sites within the Amendment C220 Precincts 1 and 2 should be provided with guidelines in the form of required criteria and wind mitigation strategies.

6. COMMENTS ON SUBMISSIONS

None of the submissions by interested parties have mentioned the environmental wind conditions or criteria in their response. Therefore, no comments are necessary.

For MEL Consultants Pty Ltd:



M. Eaddy

13th September 2018
Ref: 103-18-DE-EWC-00

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Attachment 7: Summary Table Comparing the Different Versions of DDO15

SUMMARY TABLE OF SCHEDULE 15 OF THE DESIGN AND DEVELOPMENT OVERLAY AMENDMENT C220 TO THE YARRA PLANNING SCHEME (Version Comparison)

KEY:
Exhibited version of DDO15 (2017)
Preferred version of DDO15 (Council 21 Aug 208)
Recommended version of DDO15 (Larry Parsons Oct 2018)
All measures are in metres (excluding where degrees are specified)
Bolded and underlined text within the table denotes a mandatory provision

SUB PRECINCT	MAXIMUM BUILDING HEIGHT	MAX. STREET WALL HEIGHT (NON-HERITAGE FAÇADE) ***	MAX. STREET WALL HEIGHT (ABUTTING HERITAGE FAÇADE)	MINIMUM SETBACK BEHIND STREET WALL FAÇADE	MAXIMUM BUILDING ENVELOPE ABOVE NON-HERITAGE STREET WALL HEIGHT ***	MAXIMUM REAR INTERFACE HEIGHT	MAXIMUM BUILDING ENVELOPE ABOVE REAR INTERFACE HEIGHT ***	MINIMUM UPPER LEVEL SIDE SEPARATION ***	MINIMUM UPPER LEVEL SETBACK FOR CORNER SITE RETURNS *
1A	24* 24 24	**11** (8 minimum) **11** (8 minimum) **11** (8 minimm)	Match heritage height Match heritage height within 6m* Match heritage height within 6m*	**6** **6** **6**	45° 45° above 11m 45° above 11m	- 11 11	- 4.5m from rear **4.5m from rear**	4.5/3.0m windows 4.5/3.0m+ above 21m **4.5m above 18m**	- 3m above street wall 3m above street wall
1AA	28* 28 28	11 Sackville / **11 Johnston** 11 Sackville / **11 Johnston** 11 Sackville /**11 Johnston**	Match heritage height Match heritage height within 6m* Match heritage height within 6m*	3 Sackville/**6 Johnston** 6 Sackville/**6 Johnston** **6**	45° 45° above 11m 45° above 11m	- - -	- 4.5m from rear -	4.5/3.0m windows 4.5/3.0m above 21m **4.5 above 18m**	- 3m above street wall 3m above street wall
1AAA	- **28** 28	- **11** **11**	- Match heritage height within 6m* Match heritage height within 6m*	- **6** **6**	- 45° above 11m 45° above 11m	- 11 11	- 4.5m from rear **4.5m from rear**	- 4.5/3.0m above 21m **4.5 above 18m**	- 3m above street wall 3m above street wall
1B	24* 24 24	11 11 11	Match heritage height Match heritage height 6m* Match heritage height 6m*	3 6 **6**	45° 45° above 11m 45° above 11m	- 11 11	- 4.5m from rear **4.5m from rear**	4.5/3.0m windows 4.5/3.0m above 21m **4.5 above 18m**	- 3m above street wall 3m above street wall
1C	21-**28*** 21-**28** 28	**11** (8 minimum) **11** (8 minimum) **11** (8 minimum)	Match heritage height Match heritage height within 6m* Match heritage height within 6m*	**6** **6** **6**	45° 45° above 11m 45° above 11m	8 **11** **11**	45° 45^0 above 11m* **45^0 above 11m**	4.5/3.0m windows 4.5/3.0m above 21m **4.5 above 18m**	- 3m above street wall 3m above street wall
1D	**21*** **21** 21	**11** (8 minimum) **11** (8 minimum) **11** (8 minimum)	Match heritage height Match heritage height within 6m* Match heritage height within 6m*	**6** **6** **6**	45° 45° above 11m 45^{0}above 11m	8 **11** **11**	45° 45^0 above 11m* **45^0 above 11m**	4.5/3.0m windows 4.5/3.0m above 21m **4.5 above 18m**	- 3m above street wall 3m above street wall
2A	21* 21 21	**11** (8 minimum) **11** (8 minimum) **11** (8 minimum)	Match heritage height Match heritage height within 6m* Match heritage height within 6m*	**6** **6** **6**	45° 45° above 11m 45^{0}above 11m	11 11 11	45° 4.5m from rear **4.5m from rear**	4.5/3.0m windows 4.5/3.0m above 21m **4.5 above 18m**	- 3m above street wall 3m above street wall
2B	21* 21 21	**11** (8 minimum) **11** (8 minimum) **11** (8 minimum)	Match heritage height Match heritage height within 6m* Match heritage height within 6m*	**6** **6** **6**	45° 45° above 11m 45^{0}above 11m	8 11 11	- 4.5m from rear **4.5m from rear**	4.5/3.0m windows 4.5/3.0m above 21m **4.5 above 18m**	- 3m above street wall 3m above street wall
2C	34* 34 31*	15-**18** 15-**18** **18**	Transitional heritage height Max one storey higher* Max 4m higher for 6m*	3 6 **6**	45° 45° above 18m 45^{0}above 11m	15 11 11	45° from Stafford 4.5m from rear, 45° Stafford **4.5m from rear/ 45° Stafford**	4.5/3.0m windows 4.5/3.0m above 21m **4.5 above 18m**	- 3m above street wall 3m above street wall
2D	24-**31*** 24-**31** 31	15-**18** 15-**18** **18**	Transitional heritage height Max one storey higher* Max 4m higher for 6m*	3 6 **6**	45° 45° above 18m 45^{0}above 11m	11 **11** **11**	45^0 45^0 above 11m **45^9 above 11m**	4.5/3.0m windows 4.5/3.0m above 21m **4.5 above 18m**	- 3m above street wall 3m above street wall
2E	21-**24*** 21-**24** 24	15-**18** 15-**18** **18**	Transitional heritage height Max one storey higher* Max 4m higher for 6m*	3 6 **6**	45° 45° above 18m 45^{0}above 11m	8 **11** **11**	45° 45^0 above 11m **45^0 above 11m**	4.5/3.0m windows 4.5/3.0m above 21m **4.5 above 18m**	- 3m above street wall 3m above street wall
2F	**21*** **21** 21	15-**18** 15-**18** **18**	Transitional heritage height Max one storey higher* Max 4m higher for 6m*	3 6 **6**	45° 45° above 18m 45^{0}above 11m	8 **9** **9**	45° 4.5m above 9m **4.5m above 9m**	4.5/3.0m windows 4.5/3.0m above 21m **4.5 above 18m**	- 3m above street wall 3m above street wall
	*Maximum Height 18m where sites <20m deep or <10m wide * 31m is max. height within 5-10 storey preferred range	*** All individual significant and contributory heritage facades must be retained	**Min 8m even next to lower heritage facade		***must not overshadow south 3m footpath Johnston St, 10-2 on 22 September **min 2 storey steps		***should not further overshadow residential properties **min 2 storey steps	** 4.5m from centre of lane *4.5m clear, no matter if habitable windows or not *Possible joining agreement of 2 sites to common boundary **4.5m from habitable windows/ 3.0m from non-hab. and commercial windows	* 4.5m measured from centreline of laneway * Including from railway and public open space

Attachment 8: Letter to A Spencer, SGS Economics and Planning 3 October 2018

HARWOOD ANDREWS

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Direct Line: 03 9611 0146
Direct Email: tpatereskos@ha.legal
Principal: Greg Tobin

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3 October 2018

Andrew Spencer
SGS Economics & Planning

By email: ASpencer@sgsep.com.au
cc: LPike@sgsep.com.au

Subject to legal professional privilege

Certified B Corporation

Dear Andrew,

Amendment C220 to the Yarra Planning Scheme – Johnston Street, Collingwood and Abbotsford

We continue to act on behalf of Yarra City Council (**Council**) in relation to Amendment C220 to the Yarra Planning Scheme (**Amendment**).

Background

We refer to our letter of instruction to you dated 18 September 2018.

This letter provides you with supplementary instructions and raises a number of further issues for your consideration.

Capacity Figures Johnston St – Council's Preferred DDO15

In our letter dated 18 September 2018, we referred to the fact that Ethos Urban could provide gross floor area per precinct along Johnston St.

We note your email dated 26 September 2018 in which you sought information in order to update the SGS capacity modelling for Johnston St (**attachment 1**).

We confirm that Mr Parsons from Urban Ethos responded to that email (**attachment 2**).

In response to your query about whether 80% is an appropriate assumption (gross to net floor area), Urban Ethos have advised that, based upon a review of local permits, an assumption of 75% efficiency (GFA to NSA) is more appropriate.

In response to your query about how parking should be treated, we respond as follows. Planning permit applications will be assessed against the existing clause 52.06 provisions and the MSS and local policies. Whether or not parking would be provided in the basement or at grade or above, the extent of ground floor allocated for access and the car parking rate are all matters that would be assessed on a case by case basis. Please make your own assumptions about car parking, having regard to those instructions. Please also ensure that your report notes the limitations of your analysis having regard to the uncertainties associated with this issue.

Ethos Urban have now prepared the capacity figures for each Johnston Street sub precinct, based upon the Council's preferred version of DDO15 (as per its resolution dated 21 August 2018) (**attachment 3**).

We are instructed by Ethos Urban that:

1. The Modelled GFA figures are taken from the model precinct-by-precinct, with levels 1&2 (non-residential) separated from upper levels (residential).

2. Ethos Urban have assumed 10% loss for light courts/ setbacks (ie. 90% of modelled GFA is shown).

Ethos Urban has also advised that the height and coverage figures are averages and they have been provided to assist with your assumptions.

Take Up Rates

We understand that the SGS report "Residential Capacity in Activity Centres" report dated June 2018, referred to in our initial brief to you, uses trend estimates to identify future take up rates for development. In particular, it states that the results are based upon the following assumption (among others):

> *Future take up rate of residential development based on UDP2017 data (in the short term) and housing trends from the last 5 years to estimate the medium and long term.*

As you are aware, the Amendment proposes to rezone some of the land in the Johnston St precincts from the Commercial 2 Zone to the Commercial 1 Zone. Council assumes that the rezoning will trigger development proposals in those areas. In those circumstances, please give consideration to the take up rate for the land proposed for rezoning, in circumstances where the historical rate may no longer reflect the future take up rate.

If you require any information from council officers in order to assist you to determine a suitable rate, please let us know as soon as possible by contacting Thomas Patereskos on 9611 0146 or Greg Tobin on 5225 5252.

Yours faithfully,

Harwood Andrews

HARWOOD ANDREWS

Encl.

JOHNSTON STREET - CAPACITY ESTIMATES UNDER COUNCIL PREFERRED C220 CONTROLS – 1 OCT 2018 / ETHOS URBAN USING URBAN CIRCUS MODEL													
SUB-PRECINCT	1A	1AA	1AAA	1B	1C	1D	2A	2B	2C	2D	2E	2F	**TOTAL GFA**
APPROX PODIUM COVER	90%	90%	90%	90%	90%	90%	90% 5 levels	90% 5 levels	90% 5 levels	90% 5 levels	90% 5 levels	90% 5 levels	
APPROX UPPER COVER	60%	70%	60%	60%	60%	50%	60%	60%	70%	70%	60%	60%	
AVERAGE PODIUM HEIGHT	3 levels	3 levels	3 levels	3 levels	3 levels	3 levels	3 levels	3 levels	5 levels	5 levels	5 levels	5 levels	
AVERAGE OVERALL HEIGHT Inc podium	6 levels	8 levels	9 levels	7 levels	6 levels	5 levels	5 levels	5 levels	10levels	8levels	7 levels	6 levels	
MODELLED GFA (90%) LVs1&2 Non-residential	29,360	5,940	3,280	18,390	6,360	13,790	6,630	2,390	10,180	26,420	12,860	16,730	**152,330**
MODELLED GFA (90%) UPPER LEVELS Residential	39,140	12,100	11,300	26,900	11,450	12,680	6,420	2,350	30,550	54,090	19,920	23,090	**249,990**
NOTES	Modelled GFA has deducted 10% in all cases for probable light courts or setbacks / All figures are GFA; NSA likely to average 75% of GFA												