Whitehorse Centre Business Case

Part B: Facility Planning

Final | October 2015

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Whitehorse City Council

Part B: Facility Planning
Contract 12018

Williams Ross Architects in association with
Positive Solutions and Artefact Consulting

Final Issue
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Part B: Facility Planning — Contents

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Indicative Perspective Renderings

Foyer Entry View

Functions/Administration – Proscenium Theatre – Studio Theatre Indicative Section

Foyer – Proscenium Theatre – Backstage Indicative Section

1 Introduction and Background

This **Part B** section of the report comprises the **Facility Planning** study. It adopts the recommendations of the consultation and research findings and evaluates the facilities required to support activities, identifying a recommended development approach and the estimated capital cost of development.

1.1 Previous Studies

Substantial investigations and research have been undertaken of the project site. A document review of those provided is included in Appendix H.

1.2 Study Process

To prepare recommendations for facility and capital development the following investigations were carried out:

1 Prepare a preliminary Facility Brief identifying facilities and their functional characteristics required to support the activities recommended in the Business Case Needs Analysis, comprising:
   – Preliminary Functional Brief (Section 2)
   – Facility Space Program (Appendix A)

2 Evaluate the existing facility (Appendix H) in terms of:
   – Building fabric and plant equipment, regulatory compliance and functional issues, identifying works required to upgrade the facility.
   – Comparison of the existing facility with the recommended Facility Brief and Space Program.

3 Prepare scenarios (Section 4) testing alternative development options to enable comparable benefit-cost analysis:
   – Scenario 1: Alter and extend the existing centre to meet the agreed Facility Brief
   – Scenario 2: Demolish the existing and construct a new facility to the project brief on the existing site
   – Scenario 3: As for Scenario 2 but adopting an alternative site.

4 Evaluate development options and identify the preferred or optimum development scenario.

5 Identify development options for site car parking and their capital cost.

6 Develop indicative form imagery of the preferred to assist community consultation.

7 Adapt the Business Case to reflect the preferred Scenario (Part A)

8 Study Report summarising the process, analysis and recommendations.

The study process and activities has involved:

- Project Control Group briefings and meetings
- Documentation review
- Existing facility site inspections and evaluation in discussion with Whitehorse Centre staff identify functional and building condition issues
- Preparation of the recommended Facility Brief and Facility Space Program based on the SGL Report, Needs Analysis and OYBS Edition 3.

- Preparation of existing facility reviews by relevant disciplines in comparison with the Facility Space Program
- Review and approval of the Facility Brief by the Project Working Group and Council representatives.
- Concept scenarios testing opportunities arising out of retaining and/or redeveloping the existing centre
- Preliminary Cost Estimates of concept scenarios
- Presentation of concept scenarios and cost estimates to Council
- Identification of the preferred development scenario by Councillors
- Study Report

Facility analysis and review in this document is based upon:

- *Oh You Beautiful Stage: Australian Design and Technical Benchmarks for Performing Arts Centres,* edition 3, VAPAC, 2013
- Industry practice for facility planning and specific experience in performing arts and functions design.
- Building Code of Australia (BCA), disability access, occupational health and safety and other such code requirements.

1.3 Terms of Reference

This report was prepared for the use of City of Whitehorse by Williams Ross Architects and associated consultants. No one other than City of Whitehorse may rely on it and Williams Ross Architects does not accept responsibility to any other user. Williams Ross Architects confirms that to the best of its knowledge the content and drawings provided in this report are a fair and reasonable description of proposed facility requirements and a potential development approach at the time of writing.

1.4 Contributors

Williams Ross Architects wish to thank the following participants for their contribution to the study:

- City of Whitehorse Councillors
- Noelene Duff, Chief Executive Officer
- Terry Wilkinson, General Manager Human Services
- Bill Morrison, Manager Arts & Recreation Department
- Shayne Price, Team Leader Cultural Facilities and Programs
- Robyn McNicol, Whitehorse Centre Coordinator
- Rohan Prathapasinghe, Coordinator Buildings Project Management
- Staff of the Whitehorse Centre

The consultant team comprised:

- Virginia Ross, Director, Williams Ross Architects
- David Fishel, Director, Positive Solutions
- James Buick, Artefact Consulting
- Craig Gamble, Marshall Day Entertech
- John Alekna, Marshall Day Acoustics
- Sam Thorn, Director, BRT Consulting
- Phil Gardiner, Managing Director, and Peter Munzel, Director, Irwinconsult
- Peter Malley and Jo Garetty, Cardno
- Ray Bongiorno, Director and Andrew Sells, Associate, Sweett Group

1.5 Abbreviations / Terminology

The following terms are used in the report.

Accessible	Facilities complying with requirements of disability access codes and Acts
AHD	Australian Height Datum (metres) – height above sea level
BCA	Building Code of Australia, current version – also now referred to as the National Construction Code (NCC)
BO	Box Office: reception and ticketing area
DDA	Disability Discrimination Act 1992 (Commonwealth) and associated regulations
FF&E	Furniture, Fittings and Equipment – loose objects included in the project scope but not fixed into the building
FOH	Front-of-house
FRL	Fire Resistance Level (of a material or construction detail)

2 Preliminary Functional Brief

This document provides a preliminary description of required facilities to meet the needs identified in the market research process, for Council consideration. Reviews of the existing facility by consultant disciplines are attached.

This document is not a detailed Functional and Technical Brief. The building type is extremely complex, with a number of functional and dimensional relationships that are critical to creating a successful facility. It is strongly recommended that a ***Functional and Technical Design Brief*** (FTDB) is prepared for the proposed performing arts and functions in a separate phase of work prior to commencing design and construction. The FTDB can then be incorporated into the engagement terms and conditions of the design team to hold them accountable for the delivery of a functionally effective building.

2.1.1. Whitehorse Centre Vision and Purpose

The existing vision statement and goals for the Whitehorse Centre are:

> The Whitehorse Centre will provide diverse theatrical entertainment and quality event management to the communities of Whitehorse and the surrounding suburbs, to maintain its status as the leading theatre and function centre in the eastern region.

Goals

A Leading Theatre & Function Centre	To manage a quality, safe, well presented and fully utilised venue for hire with a range of services for our visitors.
Entertaining Shows	To entrepreneur quality, accessible and affordable professional performances that entertain, educate and stimulate.
Quality Functions	To provide high quality functions that meet customer needs.
Community Development	To foster a range of arts, entertainment and cultural programs to encourage local participation in, and attendance at, events.
High Performing Staff	Maintain a supportive and productive environment to deliver quality outcomes to our clients.
A Strong Financial Position	To manage the centre cost-effectively.

A performing arts and function centre serves the community in numerous ways:

- Opportunities for community participation in, and attendance at, performing arts activities: 'making', 'presenting' and 'consuming' arts events
- Community access to touring (professional) arts events
- Community development through involvement in arts activities and mentoring by Whitehorse Centre professional staff
- Education in arts activities, such as dance schools and all aspects of performance production and presentation
- Community functions, meetings, gatherings and celebrations

- Exhibition and display of community and smaller toured art exhibitions
- Community entertainment at internal and external events at the centre

Municipal performing arts centres are usually the premier performance facility in their community, providing capacity for a standard of performance quality that is a creative challenge to the local community.

Local arts activities usually 'grow into' a facility: initially they may be challenged to fill the new capacity and use its full range of performance possibilities, but over time they learn to use the facility.

Eventually, they often advise that the centre is insufficient (as is the case now with the Whitehorse Centre). This is a promising sign that the investment of decades before, and ongoing centre operation has generated such community development that it has now outgrown the facility. Such complaints are often signs that it is time for the facility's next major refurbishment or rework.

2.1.2. Project Objectives

Anticipated objectives of the Whitehorse Centre's redevelopment are to:

- Provide residents of Whitehorse with an arts and cultural centre that will meet the community's needs now and in future years.
- Enhance the centre's parkland setting, outdoor events program and the centre's relationship to its parkland environment.
- Be able to operate all proposed venues simultaneously with a minimum of functional compromise between them and with efficient operating capability.
- Construct a functionally effective complex with high operating efficiency (staff and other costs), low maintenance cost and low operating risk.
- Upgrade the existing facility or build a new facility so that it does not require major investment for 20-25 years, other than ongoing asset maintenance.
- Be able to readily upgrade the centre's technical, building services, plant and equipment as required with technological development in the future.

2.1.3. Anticipated Uses of the Centre

The Whitehorse Centre is a very successful and popular facility which hosts a wide range of uses. The centre is now not able to adequately meet its demand, which is a sign of its very successful operating team. The redeveloped centre will increase both the size of event that can be hosted, but as importantly, the number and types of events and their frequency.

To achieve this, it is critical that the venues are designed and built with adequate functional resources to enable ***effective simultaneous use***. Key factors include acoustic separation, back-of-house support services, furniture and equipment resources, multiple patron groups who may have very different demographic profiles (that is, not readily share a single foyer), adequate staffing resources, service vehicle access and so on.

Anticipated uses of the centre include:

- Performing arts (community and professional):
  - Musical theatre, opera and dance
  - Drama (spoken word), physical theatre, circus
  - Music recital
  - Children's theatre

- Rehearsals, education
  - Community groups rehearsals, dance schools, bands and so on
- Functions, meetings, gatherings:
  - Dinners, dinner-dance, weddings, club meetings, corporate events
  - Seminars, meetings, training events
  - Small–medium conferences
- Festivals and outdoor events:
  - Concerts, recitals, bands
  - Markets
- Exhibition and display:
  - Art displays in foyer areas and function rooms
  - Functions related trade shows

2.2 Facility Components

2.2.1. Proposed Venues

The needs analysis and market research has confirmed that there is sufficient demand to require the following facilities. The proposed complex is a *multi-venue centre*—each venue requires its relevant complement of support facilities, some of which can be shared between venues. In addition, foyer areas should be considered as hireable spaces and configured to facilitate use, including hire, for suitable events.

In facility planning it is essential to take into account need for future expansion. Some facilities could be a second stage of construction once future growth in demand justifies their provision.

Proscenium Theatre	580 – 600 seat auditorium proscenium theatre. The auditorium seating may be either a single rake (lower cost) or include a balcony (higher cost, greater intimacy). – proscenium opening12m wide x 7m high, – technical lighting bridges over a 2-3 storey auditorium volume – acting area 12 x 10m deep, prompt wing 5.5m. OP Wing 10m wide – full fly tower over the stagehouse with an accessible technical grid – orchestra pit (28 musicians) with a forestage lift
Studio Theatre	200 seat auditorium studio theatre with the following features: – retractable seating system enabling flat floor use – stage at floor level (portable rostra can create a raised stage if needed) – room sub-divisible to form two smaller rooms for various flat floor events (subject to acoustic compatibility of adjacent events) – technical catwalks over a two storey performance volume
Meeting Room	20 person meeting room for public and centre operational use.
Functions Room(s)	High quality function room with capacity for 250 persons seated dining plus a dance floor and band stage, or up to 300 seated (without band and dance floor), or 600 persons for a standing function: – sub-divisible into 3-4 smaller function rooms – bar facility – attractive outlook highly desirable

Rehearsal / Meeting Room(s)	Good quality rehearsal room (formerly the Banksia Room) providing a rehearsal room sized for the new main stage. Secondary use for flat floor events such as meetings. Also of use for very small performances and overflow dressing room: – simple technical grid and infrastructure – sprung floor and fit-out for dance training – after-hours access to toilets, dressing rooms – sub-divisible with an operable acoustic wall to enable two uses simultaneously
Sound Shell / Rehearsal Room	Sound Shell stage, doubling as rehearsal, dance, functions room and dressing room: – simple technical grid and infrastructure – sprung floor and fit-out for dance training – access to toilets, dressing rooms and theatre backstage
Centre Operations	Facilities to suit the required complement of operational and hirers staff.
Backstage	Backstage facilities to serve the Proscenium and Studio theatres
Functions Kitchen	Small commercial kitchen/catering facility to serve the functions rooms and centre.

The following table compares existing and proposed venues and their capacity:

Table 2.1 Comparison of Existing & Proposed Capacity Venues / Hireable Spaces	Existing Centre	Proposed Centre
Main Foyer	Nominal capacity 300	Nominal capacity 600
Proscenium Theatre	408 seat auditorium small productions only	600 seat auditorium small/medium productions
Studio Theatre	none	200 seat capacity variable format sub-divides into 2 smaller studio/function rooms
Sound Shell Stage	Concert stage Rehearsal/dance studio	Concert stage Rehearsal/dance studio
Meeting Room	none	20 person video-conference
Pre-functions Foyer	none	Nominal capacity 200
Function Room	180 dining 350 standing sub-divisible x2	250 dinner-dance 300 banquet 600 standing event sub-divisible x3 or 4
Rehearsal Room 1	Rehearsal/dance studio (former Banksia Room)	Rehearsal/dance studio (double Banksia size) small performances (100) sub-divisible x2
Rehearsal Room 2 *OPTIONAL*	*none*	*Potential future addition should demand be proven*

In addition Dressing Rooms may be usable for small community meetings.

2.3 The Types of Venue Proposed

The proposed venues cater for different types of performance and functions events. Each type of venue is configured differently, to suit the nature of the presentation or 'making' activity that occurs in them. Most will have various types of use.

The range of facilities proposed is intended to meet the wide variety of community needs in a complementary mix of venues that enable different activities and experiences. The overall capacity of the centre is also sized so that a whole-of-centre event, such as a conference can be accommodated with sufficient 'break-out' rooms to meet the theatre audience of about 600.

2.3.1. Multi-use Venues

Most venues will have primary and secondary (and even tertiary) uses. The primary use is that which the venue must service excellently without functional compromise: secondary uses often involve some functional or operational compromise to their use. For example, the Sound Shell's primary use is as a stage for outdoor concerts. Its secondary use is as a rehearsal and dance studio. In this case the secondary use is more frequent than the primary use, however the primary functional requirements of its stage operation must take precedence in any functional or design conflict between the two uses.

Similarly, Rehearsal/Function Rooms are primarily for performance rehearsal and 'making' activities. This requires robust, durable surfaces and a lively room acoustic which are less attractive for, say, corporate functions or seminar hire.

Sharing of uses of these spaces is possible provided the uses are reasonably compatible. If they are not compatible, then shared use becomes problematic, either operationally or in capital cost terms.

Primary uses: are those that define the determining characteristics and fit-out of the functional space and will function in the space optimally.

Secondary uses: are those that are compatible, and can be held in the space, but may encounter some functional compromise, such as acoustic conditions, labour cost for venue changeover, and may encounter less than optimum operating conditions, especially where these would conflict with the needs of the primary use.

The table overleaf describes the primary and secondary uses for the venues and hireable spaces. Optimum uses for spaces when sub-divided can differ from the primary use as a unified space.

Table 2.2: Primary and Secondary Uses of Venues Venues / Hireable Spaces	Primary Uses	Secondary Uses
Main Foyer	Patron entry & circulation Audience gatherings Event "Openings" Bar / Lounge hospitality	Exhibition / display Private events Performance
Proscenium Theatre	Musical theatre / Opera Dance / ballet Drama / Spoken word Speeches / lectures Amplified & unamplified Audiences 300-600	Musical concerts Circus / Acrobatics Cinema
Studio Theatre a) theatre format, raked seating	Contemporary theatre End stage & other formats Drama / spoken word Unamplified acoustics Audiences <200	Musical recital Exhibition / display Trade show
b) flat floor format / sub-divided		Functions Meetings / seminars Exhibition / display Trade show
Sound Shell Stage	Outdoor concerts stage Outdoor civic events stage	Rehearsals Perf arts classes Performance marshalling Functions/meetings
Meeting Room	Meetings / small seminars Video-conference	Temporary workspace / project room
Pre-functions Foyer	Patron entry & circulation Tea/coffee food service to functions	Exhibition / display Trade show
Functions Room(s) —single room or various configurations	Dinner-dance / Banquet Functions Seminars / Presentations Cocktail parties	Exhibition / display Trade show
Rehearsal Room 1 a) single room	Rehearsals Perf arts classes	Meetings / seminars Performance marshalling Small performance <100
b) sub-divided room	Small rehearsals Meetings / seminars	Perf arts classes Performance marshalling
Rehearsal Room 2 *OPTIONAL, FUTURE STAGE?*	*As above*	*As above*

2.3.2. Multi-venue Centres

Many performing arts centres contain more than one performance venue. When recommendations for performing arts venues were first developed by the Victorian State Government in 1997[1], a key finding was that Victorian centres should plan to ultimately contain several venues, not just one theatre, subject to having the relevant audience participation (or 'demand') in their locality.

[1] Confidential report to Department of Premier and Cabinet, 1997, part available publically as *Oh You Beautiful Stage: Australian Design and Technical Benchmarks for Performing Arts Centres,* edition 3, VAPAC, 2013.

A key purpose of these multi-venue centres is that they would provide Victorian communities with a range of different opportunities to participate in and attend ('consume' in arts marketing language).

The 'ideal' centre would include:

- Proscenium theatre, AA, 3 star, minimum 500 seats
- Other format (studio) theatre, typically 200–300 seats
- Concert venue, minimum 750 seats – optional, only if market allows
- Rehearsal room (to suit main stage size)

Other ancillary but optional facilities noted as compatible, depending on local conditions, were:

- Meeting, functions and conference facilities (ie 'flat-floor venues)
- Exhibition / art gallery capability
- Interpretive centre / museum
- Cinema

The proposed Whitehorse Centre is consistent with these recommendations, providing the venues highlighted above. There is no identifiable demand for a concert venue (that is, a venue focused on musical recital) at Whitehorse. Exhibition capacity will be provided in the foyer and studio facilities.

The size, capacity and type of the venues

Community consultation and market research has consistently identified that there is demonstrable demand for presenting events with an audience capacity of 400–599 and for audiences of 100–199 in the City of Whitehorse.

The seating capacity of the theatre venues is crucial for two reasons: economics of productions, and audience experience. Sizing the theatre capacity to the identified audience market is vital for success.

For proscenium theatres 500 seats is considered a minimum threshold at which medium to large shows with larger casts, more complex sets and productions are economically viable to present. Commercial producers of such shows will simply not hire theatres below this capacity, even if there is a reliable audience, as the show will not viable. Whitehorse's current 408 seat theatre misses out on these shows due to this crucial factor, despite having a reliable audience 'market'.

A good experience for audiences is vital to develop a strong audience market to attract presentations. A presentation in a half-empty room is a very poor experience for audience and performers alike. Ideally, an audience will fill at least 75–80% of the seating capacity to make for a good experience. No theatre is always full for every show. Managers typically budget on 'houses' that are 80% full on average.

Similarly, a very large proscenium theatre, say 800-900 seats, may also result in many presentations with only 500+ audiences, feeling barnlike and leading to a poor audience experience.

Therefore, for smaller presentations such as community groups, emerging artists, youth and children, there are many reasons why it is much better (and cheaper) to present in a small theatre that suits their audience drawing-power. These presentations are often a different style of show — simpler sets, modern staging, inexperienced performers — and best suited to studio theatres that provide a different performance opportunity and experience to proscenium theatres.

When a performing arts centre grows in activity and range of audience markets and experiences, it is often more important to add a *second, different size and type of theatre* than to simply enlarge an existing proscenium theatre.

The Whitehorse Centre redevelopment is consistent with these strategic considerations:

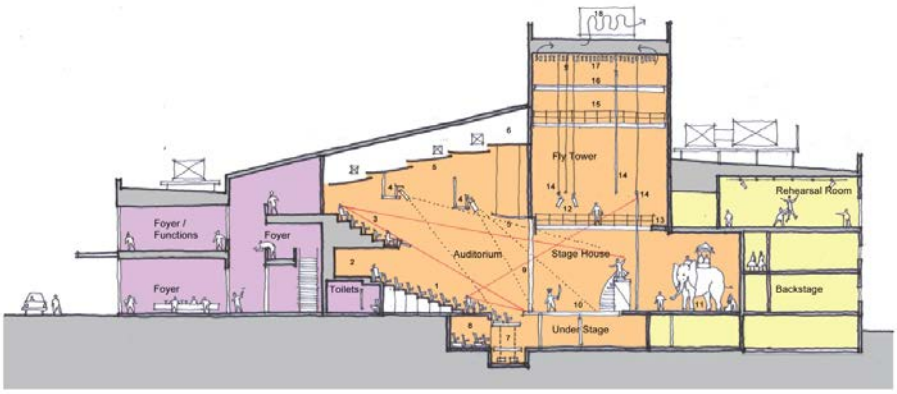
- the range of venue types covers the identified needs of the location community for both performance and flat-floor events,
- the proposed venues complement other relevant venues in the region – for instance it will not compete with Box Hill Town Hall
- the proposed types of venues enable a variety of types of productions styles from traditional to contemporary,
- the audience capacity of the theatres and functions facilities are tailored to the demonstrated audience and community user demand to optimise audience experience,
- the recommended facilities will enable growth in audience sizes (that is, meet audience demand to attend shows), but, perhaps more importantly, enable Whitehorse audiences to experience *a wider range of events, both larger and smaller, in appropriate settings*.
- a second theatre venue in the centre can be operated for much lower cost than standalone, as it benefits from the availability of existing staff, equipment, publicity and other facilities and services. Thus, it enables considerably more community activity and opportunities while operating at substantially lower operating cost.

2.3.3. Proscenium Theatre

Proscenium theatres are the predominant theatre form for musical theatre, opera, ballet / dance and drama or the spoken word. A proscenium theatre is defined by the proscenium wall, which separates the audience in the auditorium from the stage / acting space with a large opening – the proscenium arch. They usually have an orchestra pit to accommodate a largely concealed live orchestra. The function of the proscenium wall and its large opening, is to "frame" the performance and to screen from audience view the stage wings and working zones around the stage. A fly tower is provided over the stage to enable scenic elements, back-clothes, production effects and even actors to be flown in and out of view. The capacity to do this enables proscenium theatres to stage "spectacle", typical of musical theatre and opera (the falling chandelier in *Phantom,* the flying car in *Chitty Chitty Bang Bang, Mary Poppins* and her umbrella).

The fly tower makes musical concerts or recitals problematic as the room acoustic is not suitable for purely instrumental music. Variable acoustic treatment can be in included, at additional cost, that enables adaptation of the room acoustic for recital, however the compromise is seldom ideal, making it a secondary use.

Proscenium theatres can be sized between 500 to 2,500 in audience seating capacity depending on their market size. However, a successful drama theatre for unamplified spoken word is seldom larger than 800 to 900 seats. Theatres larger than this capacity are usually for large scale musical theatre events reliant on amplified sound.



Centreline Section of a typical Proscenium Theatre (from *Oh You Beautiful Stage*)

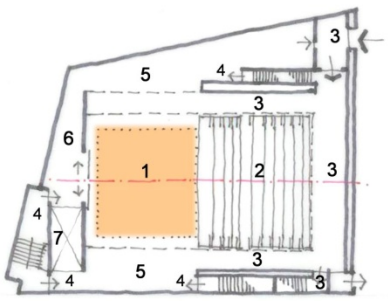
2.3.4. Studio Theatres

Studio Theatres are usually smaller in audience capacity than proscenium theatres, ranging from 100 to 600 seats. They are more commonly used for contemporary drama and usually have less complex set designs and staging effects, often featuring "open stage" sets. They do not require the complex installations of a proscenium theatre, and because they are usually a single room, require different theatrical installations to the proscenium theatre.

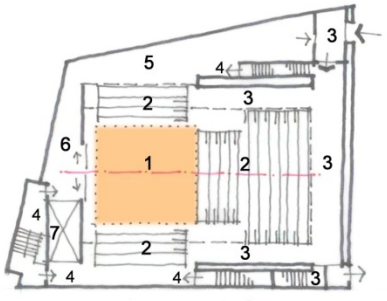
They also usually have smaller casts, making these productions more economic to tour to regional and small centres.

They are also associated with a wide variety of production formats or layouts, compared to the fixed end-stage format of a proscenium theatre.

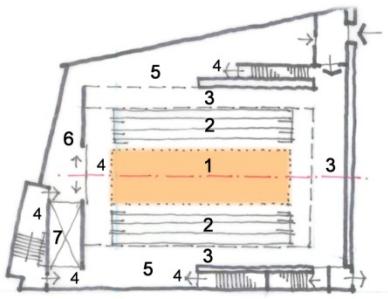
The most common formats are end stage, thrust, traverse, corner stage, in-the-round and promenade. The following diagrams depict these arrangements.



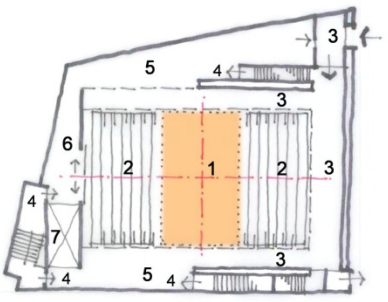
End Stage



Thrust



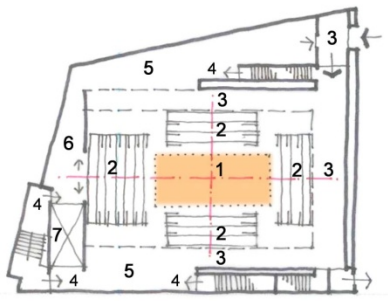
Long Traverse



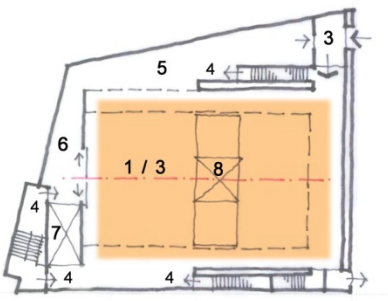
Short Traverse

Legend

1	Acting zone
2	Audience seating
3	Audience entry
4	Actor entry
5	Side entry
6	Rear stage
7	Loading lift
8	Forestage lift



In the Round



Promenade

Indicative contemporary drama formats / layouts (from *Oh You Beautiful Stage,* Q Theatre, Auckland)

Examples of Studio / Courtyard Theatres

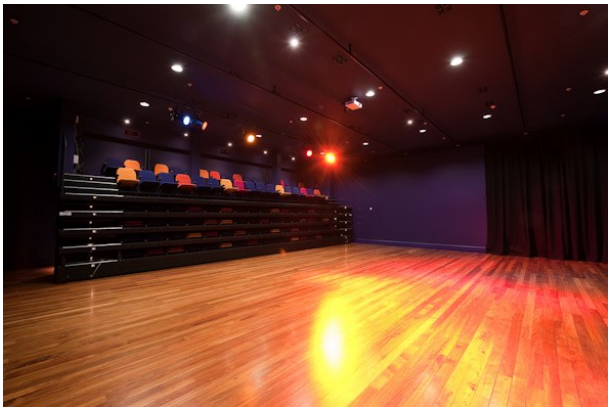
Cottesloe Theatre, National Theatre, UK, 1997: traverse format

Cottesloe Theatre: contemporary, unique format

Wyly Theatre, Dallas, USA, 2009, 600 seats, two galleries

Malthouse Theatre, Melbourne, 550 seats, refurbished 2006

Oamaru Opera House, Inkspot Studio, NZ, 2010



Inkspot: seating system retracted

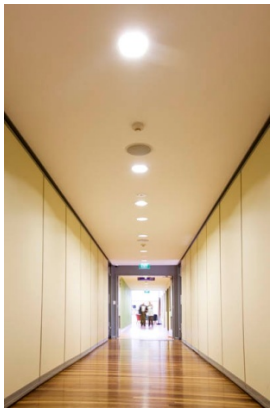
2.3.5. Function Rooms

The function room is a dedicated flat floor venue for functions, seminars and celebrations. Ideally, they are sub-divisible by acoustic operable walls, for use as a small or large space as needed for the event size. Ideally, two operable walls are installed providing an access/service corridor between functions rooms that also forms an acoustic buffer between the two simultaneous events.

Key requirements are:

- Audio-visual projection, sound amplification systems, internet access
- Floors suitable for dancing
- Close proximity of furniture and equipment storage so the room can be completely cleared and set up as required
- Natural daylight and outlook for visual relief is highly desirable.

Noble Park Community Centre, function room, 2004



Operable walls corridor

2.3.6. Rehearsal Room

Rehearsal rooms are primarily 'making' spaces in that artistic product is developed and rehearsed in these rooms, but presented in another space – the "presentation" venue.

In "touring" or "receiving" houses such as the Whitehorse Centre, which mostly receives in artistic works developed elsewhere, the rehearsal room is used by the touring company to enable the ensemble to rehearse the performance whilst at the same time the stage crew is bumping in and installing the production, lighting and sound rig, set and so on in the presentation facility. This is especially important for touring shows on tight touring programs and short visits.

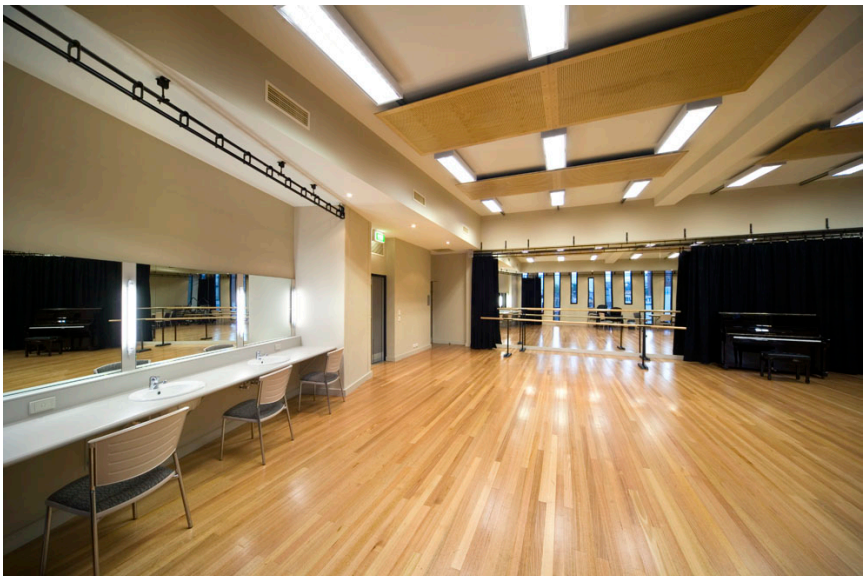
More often, the rehearsal room will also be used by local performing arts groups to rehearse their productions, dance schools and other educational programs, and secondarily for other events and meetings for which a high quality functions space is not necessary.

The key functional requirements of a rehearsal room are:

- Room size equals the Main Stage acting area dimensions plus a circulation zone on all sides, so that the action as occurring on the stage can be accurately replicated.
- Simple technical rigging bars and power outlets to enable a basic lighting set up to assist rehearsal.

- Access from stage for smaller scenic elements so that a key set element can be included in rehearsal.
- Sprung floor suitable for dance, together with dance fitout – full-height mirrors, dance barrs and curtains covering the mirrors.
- Minimum 4.5m clear height so that actors / dancers can lift or jump.
- Appropriate room acoustics.

Rehearsal rooms often are used for very small performances, enabling emerging and amateur productions to stage presentations at low cost.



Rehearsal Room, The Drum Theatre Dandenong

2.4 Facility Space Program

Refer Appendix A: Facility Space Program, Issue V9, 21 August 2013

The *Facility Space Program* is a list of functional spaces required to service the proposed occupant, activities and venues, forming a preliminary brief. The Space Program identifies anticipated public and staff occupancy and required net area (internal dimensions) of each functional space. Allocations for circulation and building structure are added as percentage allowances based on industry experience.

The Space Program is used as a tool to identify a preliminary brief of spatial requirements for the centre. This can then be used to evaluate the existing building, prepare a preliminary cost estimate, inform the business case, and form the basis of early design activity. It also forms the basis for development of a Functional and Technical Design Brief.

Occupancy is based on all facilities in typical, simultaneous use with professional users of venues. Some users, especially community groups, may have larger casts and stage crews. Area allocations for some technical spaces are preliminary and will vary with specific configuration.

The Space Program projects the most efficient, lowest area facility achievable. Concept designs differ from the Space Program as they respond to the site and project requirements that can lead to higher floor area to achieve necessary functional relationships. Constrained sites can result in less efficient facility planning also leading to increased floor area.

Therefore, the concept design frequently is of higher floor area than the Space Program. This potential variance is addressed by adding an area/circulation 'contingency' allowance to the *Facility Space Program*.

The listed functional spaces, and their areas, are based upon *Oh You Beautiful Stage*, industry practice for facility planning and specific experience in performing arts and functions design. Allocations are informed by disability access, occupational health and safety and Building Code of Australia (BCA) requirements.

Patron and performer sanitary fittings provision is increased over minimum BCA requirements as experience has demonstrated that BCA allowances are insufficient for practical operation.

The Zones in the Space Program refer to functional zones used in *Oh You Beautiful Stage.*

The Space Program lists the following information:

Zone, Room/Space:	Identifies the functional zone and functional purpose of the room or space.
Description:	A brief description highlighting use, key features, especially those with cost implications, to inform cost planning. The description is not a comprehensive functional specification.
Patron Numbers:	A typical number of public occupants in the relevant functional space of the proposed centre.
Staff/Crew Numbers:	A typical number of staff (centre, hirer or volunteer) in the relevant functional space.

Existing Area	The net floor area of the relevant function in the existing centre (some are absent altogether).
Recommended Area: Internal	Net internal floor area of the proposed function
Recommended Area: External	Net external floor area of the proposed function
CS2 Internal	The approximate area included in Concept Scenario 2 – sometimes aggregated into zone areas. (refer to Appendix A).
Difference:	Recommended internal area minus the existing floor area (m2).
Difference %:	Existing centre area expressed as a percentage of the recommended area – thus quantifying the proportion of functional space in the existing centre compared with that considered necessary for the proposed function. Any space less than about 75% of required space can be considered to be functionally compromised.

Table 2.3 Facility Space Program – Summary

Description	Patron Numbers	Staff / Crew Numbers	Existing Area (m2)	Recommended Area Internal	Recommended Area External	Difference New–Extg	Diff %
Zone 1: Front-of-House		3	264	878	265	614	30%
Zone 2: Centre Operation	5	17	53	369	25	316	14%
Zone 4: Functions Room	250	19	429	904		475	48%
Zone 4: Rehearsal/Meeting Rooms	30		126	262		136	48%
Zone 5: Proscenium Auditorium	600	37	368	780		412	47%
Zone 5: Stagehouse		5	327	902	100	575	36%
Zone 6: Studio Theatre	200	18		649		649	
Zone 7: Sound Shell/Festivals	30	12	173	218	30	45	79%
Zone 8: Production / Stage Support		7	174	379		205	46%
Zone 8: Performer & Crew Support		38	112	353	25	215	39%
Zone 9: Centre Servicing			214	368	85	368	30%
Sub-total	1,115	156	2,164	6,061	530	3,863	36%
Building structure allowance @ 5%			190	303		113	
Building area/circulation allowance 5%				303		303	
Total Projected Occupants and Building Area (m2)	1,115	156	2,354	6,668	530	4,314 (shortfall)	35%

2.4.1. Space Program Findings

The analysis indicates that the upgraded centre would accommodate about 1,200 patrons served by around 150 staff with all venues in simultaneous use.

The existing centre is approximately 2,354m^2 gross. The recommended centre is approximately 6,668m^2 gross floor area, an increase of 4,314m^2, including the area contingency. This analysis shows that the existing centre is 35% of the recommended floor area for the required functional spaces.

The Space Program demonstrates substantial under-sizing of existing facilities at the Whitehorse Centre, which is well-understood by users and operators. Key areas of spatial under-provision are; Centre Operation 14% of area needed, Foyer 24% of needed, Backstage aggregate 39% of needed and Functions 48% of needed.

With such substantial under-provision of functional space, it would be very difficult to retain major portions of the existing facility when designing the new complex.

2.5 Staff Profile

With increased patron capacity, more activities and additional venues the new centre will require an increased staff complement.

To inform the facility planning Positive Solutions and Artefact Consulting have recommended the capacity to accommodate the following staff in the facility, although these positions are not all full time:

- centre manager
- 3x Box Office positions
- 3x FOH co-ordinators and duty officers
- 7-8 administration workstations, including provision for interns, auditors and growth
- 3 technical positions, and 2 workstations for casuals, hirers and so on

2.6 Toilet Amenities

2.6.1. Existing Toilet Provision

Existing general patrons toilets are reasonably generous for existing activities and audience size, but would need to be supplemented to meet the new range of venues and their patrons.

Existing accessible toilets in the centre do not comply with the current building code (they are too small), although they would comply with the standards that applied at the time of construction. Given the high importance placed on accessible toilets they would need to be replaced with complying sizes, or additional facilities that comply would be required.

2.6.2. Proposed Toilet Provision

Oh You Beautiful Stage recommends provision of toilet facilities substantially increased above the minimum numbers required by the Building Code of Australia. For theatre events, experience has demonstrated that women's facilities need to be increased by 150-200%, while males should increase by 150%. In the short timeframe of a performance interval patrons need to access toilets and refreshments. The direct impact of inadequate facilities is high patron complaints and dissatisfaction and reduced bar revenue.

The BCA allocates toilet numbers in clusters, such as 100 patrons per toilet fitting. Therefore, the number of fittings does not change substantially with small changes in the numbers of people served. Unisex accessible toilet facilities can be counted for both sexes, and male and female fittings numbers can be discounted to allow for accessible fittings. One accessible facility is required for every storey containing toilet amenities. Closet pans can be substituted for urinal fittings for males.

The current version of the Building Code and Access Standards do not require an Accessible facility to be located with each block of toilets. However, this was mooted in recent drafts of the code. It is therefore desirable to include an accessible fitting with every block to maximise universal access and to future-proof the complex for code changes.

For a multi-event site such as the Whitehorse Centre, with substantial fluctuations in occupancy, a degree of over-provision is reasonable. This should be assessed by a Building Surveyor in subsequent design stages.

The proposed sanitary fittings provision is listed overleaf.

Table 2.5: Sanitary Fittings Class of Use / Occupants	Recommended Toilet & Amenities	WC	UR	WHB	Area (m^2)
(x) – number required by BCA discounted to take into account accessible fittings					
Performance – Patrons BCA Class 9b Multiple Auditoria	Male Not discounted for accessible, UR increased	2	(4) 6	3	**28**
Pros Theatre 600 Studio Theatre 200	Female Increase (BCA req'd number) x2	(8) 16	-	(3) 6	**66**
(400 male, 400 female)	Accessible unisex 1 required	1	-	1	**7**
Function Room Patrons BCA Class 9b Public hall	Male Discounted for accessible fitting	2	(5) 4	3	**25**
New "Waratah" Room 250 Function/Rehearsal Rooms 90	Female Discounted for accessible fitting	(5) 4	-	3	**24**
(490: 250 male, 250 female)	Accessible unisex WC, WHB	1	-	1	**7**
Function Rehearsal Room Patrons 30 total	Accessible unisex WC, WHB (Not required by BCA)	1	-	1	**7**
Kitchen & Cafe – Employees BCA Class 6	Ambulant unisex cubicle Accommodates 20 male, 15 female	1	-	1	
Performance – Participants and/or functions staff BCA Class 9b Theatre/Cinemas	Male 1x UR, WHB discounted for accessible	3	(5) 4	(5) 4	**33**
Total 95 (Say 50 male, 50 female)	Female 1x pan, WHB discounted for accessible	(5) 4	-	(5) 4	**30**
	Accessible bathroom: WC, WHB, SWR	1	-	1	**8**
Performance – Participant Showers	10 no. required (1 per participant) of which min 1 must be accessible (above)				**23**
Administration & FOH Staff BCA Class 5 (Office) Employee	Male 1x urinal discounted for accessible fitting	1	(1) -	1	**4**
Total 43 (Say 20 male, 20 female)	Female 1x pan discounted for accessible fitting	(2) 1	-	1	**4**
	Accessible WC, WHB	1	-	1	**7**

2.7 Parking and Traffic Analysis

Refer to Appendix G: Car Parking Discussion, Cardno.

2.7.1. Parking Demand Analysis

Car parking demand analysis was undertaken by Cardno traffic engineers to identify the parking demand likely to result from the upgraded facility. The redevelopment includes capacity increase of 462 patrons.

The Whitehorse civic precinct currently provides on-site parking for up to 381 cars including 104 parking spaces dedicated to staff.

Observations on-site concluded that leading up to a show all formal car parking within the subject site was at capacity. Informal parking was observed on grassed areas at the northeast of the site as well as informal parking within Walker Park and vehicles parking along the service road (34 cars). Council determined to add this informal parking into the new car parking provision to address this demand.

Based on the parking rates set out in the Whitehorse Planning Scheme, the increase in patrons for the Whitehorse Centre would attract a requirement for 139 parking spaces.

Parking surveys indicate a daytime parking demand between 0.3 and 0.4 spaces per patron. A minimum rate of 0.35 spaces per patron is recommended. An evening parking demand for 0.46 spaces per patron has been derived from parking surveys. Considering that the Civic Centre would usually be closed for staff and visitors during the evening, there is an opportunity for the sharing of parking resources between the Civic Centre and the theatre use.

2.7.2. New Parking Requirement

The proposed facility adds to the number of participants potentially using site facilities. Under the Planning Scheme this generates a requirement for additional parking provision.

Theatre patron increase (408 to 600)	192
Studio Theatre (new facility)	200
Function Room increase (180 to 250)	70
Total usage / capacity increase	**462**

The Whitehorse Planning Scheme requires an additional 139 car parks for this number of patrons. In the concept design provision has been made for 141 new spaces given yield losses can occur during design.

Therefore, the development proposal needs to accommodate the following additional car parks.

Additional car parks due to capacity increase	139
Existing informal car parking demand	+34
Total Additional Car Parks	**173**

Of the additional car parks 4 accessible parks are required (1 accessible park per 50 car parks, BCA Table D3.5). In current design standards every two accessible parks take up the space of 3 standard car parks to provide a shared circulation zone between the accessible parks.

In addition, layouts need to replace any car parks lost in the new concept design.

2.7.3. Other vehicle movements

As well as patron car parking the centre design must provide for appropriate vehicle movements for the following traffic:

- Patron car and taxi drop-off at the entry
- Mini-buses and full size buses for dropping off community and school groups at the entry
- Theatre loading docks (2)
  - Vans, rigid trucks and articulated trucks (semi-trailers)
- Functions / service dock (separate to theatre dock) serving:
  - Deliveries trucks and vans
  - Rubbish trucks
- Ambulance and emergency vehicle access
- Service and maintenance vehicle access

2.8 Site Analysis and Opportunities

Site aerial view and existing site plan extract

The Whitehorse Centre is built in a natural bowl falling from the Maroondah Highway to residential areas to the north and features and parkland setting. It is obscured from view from the Highway by the Civic Centre and Police Station. Car parking extends from the Civic Centre to the Whitehorse Centre down the centre of the bowl or 'valley'.

The site is heavily treed with a mixture of mature exotic and native species. Arborist reports have identified many of the trees as desirable for retention. The Fountain Garden includes sister city plantings of Japanese Cherry trees which would need to be retained or re-planted.

The large sloping lawn between the Civic Centre and Whitehorse Centre is used several times yearly as a highly successful public event space, attracting audiences of up to 15,000 people for events such as the Australia Day concert. This lawn must be retained and not intruded upon. The Sound Shell stage must retain a similar relationship to the 'concert lawn'. **This is a critical constraint on facility planning.**

Existing walkways and routes through the park need to be maintained. An indigenous garden has been established to the west of the concert lawn, and ideally would not be disturbed.

Existing car parking provision for the various site uses must be maintained and supplemented for the new capacity of the centre, as noted.

The site is a natural overland flow pathway in a water catchment estimated to be 22.3 hectares. A 760mm (30 inch) stormwater drain runs north-south adjacent to the existing centre in an easement. The site is further constrained by another easement running east-west immediately north of the building that contains a 300mm diameter sewer main and a 375mm diameter stormwater main. These services could be relocated with associated cost impacts on the project. Their diversion requires permission from relevant authorities but is unlikely to be withheld.

It is reported that the building site and part of the Concert lawn may have been a landfill site in the 1960s (see aerial photo below), however there is no evidence for this in the geotechnical report sampling. This requires further investigation. Budget allowances ($2.0m) have been made for potential soil contamination, and additional depth to structural foundations may be required.

CIVIC CENTRE 1962

Existing storage sheds are not retained as part of the redeveloped site. Community storage and set building has not been factored into the design because these are low cost 'making' activities that are more suited to less valuable development sites.

To do so at the current level of storage requirements for the sheds (approx. 260m^2) and current facility storage (basement area 177m^2) would be at a total project cost rate (including contingencies, fees, etc) of approx. $3,500+GST per m^2 would add in the order of $1,530,000+GST to the project cost in 2014 dollars.

2.9 Flood Assessment

Refer Appendix F: Flood Study Report, Irwinconsult.

2.9.1. Flood Assessment Summary

Flood assessment was undertaken during the study to evaluate existing flood circumstances and the impact of flooding on the preferred Scenario.

The existing centre floor level is approximately 126.3 AHD (Australian Height Datum) at the foyer, with the theatre stage and Sound Shell about a metre higher, and orchestra pit and basement storage lower. The flood assessment of the existing site shows that the centre is impacted by flood water for storm events of 10% AEP (10 year ARI) storm event and greater. For the 10% AEP event modelling shows water to lap up to the south east corner of the building. For the 1% AEP (100 year ARI) storm event the existing centre is significantly impacted by flood with water levels estimated to reach 126.5m AHD on the east side of the building. This flood level is 200mm above the existing main floor level.

The draft recommendation for the new building height is 127.5 AHD; that is 1.2m higher than the existing main floor level.

This will require design resolution and substantial civil engineering works to the entrance of the new centre to achieve an integrated universal design to centre entry. The levels in the entry area are constrained by the heights and extent of existing trees and their root zones.

2.9.2. Existing Flood Assessment

The existing centre site is known to be affected by overland flood flows that pass through the site from the south to the north. The major contributing catchments to the overland flows include commercial developed land to the south including part of Whitehorse Road, Nunawading football oval (Walker Park) to the east and residential land to the west of the site. Development on the Whitehorse Centre site itself includes the City of Whitehorse council offices, existing arts centre, access roads, car parking, gardens and park land. The total contributing catchment to the drainage and overland flow system is approximately 22 hectares.

There is an 800mm diameter trunk drain that passes through the centre of the site that runs from Whitehorse Rd on the south side of the site to the north. This drain passes directly to the west of the existing arts centre building. Other minor pipe drains connect laterally to the trunk drain along its length that serve the surrounding catchment.

Flood assessment of the existing site has been using 2-Dimensional flood modelling software XP-2D. The flood model hydraulically analyses both the below ground pipe network running through the site and surface overland flow mapping. Analysis has been completed for the 10 year and 100 year ARI storm events. Critical time peak flows for the catchment were found to result from the 20 minute storm duration.

The flood modelling completed shows the minor pipe drainage system to surcharge for lesser 10 year ARI storm event resulting in minor overland flows through the site. The 100 year ARI event was found to produce significant flooding through the site that converges on the existing arts centre building. Major flow paths were identified along the low land line through the centre of the site and also overland flood flows from residential areas and car parking on the east side of the site. The

depth of flood water around the existing arts building is estimated to be in the order of 100 to 400mm.

2.9.3. Proposed Facility Flood Assessment

The proposed Whitehorse Centre Scenario 2B has a larger footprint than the existing arts centre building and creates a greater obstacle to flood flows. Significantly, the building extends further to the east than the existing building by approximately 15m and into the path of the existing overland flood flow. The effect of this building shift is to displace the overland flood flows to the east and causing increase in flow depth and increase in velocity of the flood water for the 1% AEP storm event.

The nominated FFL of the building is 127.5m AHD with flood water freeboard level set 300mm lower than the FFL at 127.2m AHD. The freeboard level is observed to be exceeded in the model only on the southern side of the building. The flood water at this location is only minor sheet flows from the adjacent park land and not from the major overland flow path. Defence of the building from flooding at this location may be achieved by providing a small diversion drain or building a flood barrier into the building terrace wall. Floodwater elsewhere around the building is below the building freeboard level and not considered to place the building at risk of flood.

Flood modelling has not identified a significant increase in flood levels across the existing car parking spaces. Hence the increased flood risk to the car parking is considered to be negligible.

The overall increase in flood depth to the east of the building has been observed in the model to be relatively minor with increases in flood profile in the order of 50 to 150mm. These increases in flood levels are not observed to impact on other properties and the afflux affects in terms of flood risk are considered negligible.

The Scenario 2B development proposal has resulted in increased flow depths and velocities on the east side of the building for the critical 1% AEP storm event modelled. The maximum flood water depth increase has been relatively minor, however in some localised areas east of the building the flood water does exceed the nominated safe depth of 0.35m with water depths observed in the flood model up 0.44m.

The increase on flood flow velocity to the east of the building has been quite significant with the peak flow velocity increasing from max value of 1.15m/s for the existing scenario to approximately 2.2m/s for the developed Scenario 3B, which exceeds the nominated acceptable level of 1.5m/s. The resultant increase in depth and velocity to the east side of the building for the developed Scenario 2B produces an increase in the relative hazard. As measured by the product of velocity and depth (VxD) the maximum observed value is 0.55m2/s, which exceeds the nominated acceptable level of 0.35m2/s.

To mitigate the excessive depth and flow velocities observed in the developed scenario model it is proposed to re-profile the access road and car parking areas directly east of the building to be better disperse the flood flows in this area.

The Scenario 2B development proposal will need to consider access and egress in the building design to ensure that people attempting to enter or leave the building during a flood event are not endangered by deep or fast flowing water. The area of hazardous flood flows has been identified on the eastern side of the building. These hazardous areas should be considered in the design of the building to ensure there are alternative entrance and exit points to the building away from the identified hazardous flood area on the east side of the building.

It is considered that the Whitehorse Centre Scenario 2B development proposal can be managed in terms of flood risk. The flood study has identified that the development will result in increased maximum depth and flow velocities to flood flows on the east side of the new building. It is considered that this change in flow dynamics can be largely mitigated by re-grading the access roads and car parking this area to better disperse the flows.

2.10 Planning Scheme

Because the site is Public Use Zone the Planning Scheme does not require a planning permit for the use of the land or any buildings or works where they are being carried out by or on behalf of the Public Land Manager (the City of Whitehorse).

A Planning Permit may be required if the proposed car parking provision is less than that required in the Planning Scheme for the facility as a 'Place of Assembly'.

The current Concept Scenario provides car parking in compliance with these requirements.

3 Existing Facility Review

The existing Whitehorse Centre can be considered in three aspects:

- Its overall urban design characteristics, siting, context and relationship to the high quality parkland setting
- The condition of the existing building fabric, structure, code compliance, fitness for purpose, future lifespan and the burden of maintenance investment required to keep it operating and upgrade it to current standards
- Its suitability and adequacy in comparison to the proposed Facility Brief — that is, does it meet today's and future requirements, and if not, to what extent?

The best aspect of the centre is to the outdoor performance area.

This Section assesses the condition and suitability of the existing centre for retention and alteration to meet the defined future needs.

The conclusion of these various reviews is essentially that:

- Little of the existing building could be retained without substantial alteration or reconstruction due to required Building Code upgrades,
- The building services and theatrical infrastructure would have to be entirely replaced
- Many existing spaces are functional compromised and several required spaces are not provided

Thus, retention of the existing building, or components of it, would be likely to constrain the future facility without providing a meaningful capital cost benefit.

Nevertheless, scenario planning has investigated partial retention of the centre while testing possible development opportunities. Refer Section 4.

3.1 Context and Urban Design

The SGL Report previously noted the following issues with the centre's location and functional layout

- Civic precinct lacks a sense of an arts/cultural identity
- The centre lacks presence to Whitehorse Road and its surroundings
- Disability access upgrade is required throughout the centre[2]

In addition we note that the centre is entirely inwardly focused—only the foyer entrance provides a view to the exterior, and this aspect is mostly of car park and asphalt roads. Once inside, centre patrons could be anywhere, with no relationship to the highly attractive parkland setting outside. The existing building fails to create a positive, connected relationship to its landscape setting. It has no 'active frontage' apart from the foyer entry and does not display its activities or attract people to enter.

Architecturally the centre is inconspicuous and ageing. It lacks 'active frontage' and does not display community life or cultural activity of the centre. The fly tower exterior is decorative but unexceptional.

Edinburgh Festival Theatre — an excellent example of 'active frontage' displaying the foyer occupants and activity to the street (a modern foyer attached to a heritage theatre) [3]

Whitehorse Centre entry facade and forecourt

3.2 Building Condition, Lifespan and Fitness-for-Purpose Review

3.2.1. Code Compliance

Code compliance for the building type relates mainly to the following jurisdictions:

- Building Code of Australia and all referenced Australian Standards relating to construction and essential services
- Disability access defined by the Disability Discrimination Act (and case law), Building Code of Australia, AS 1428 Parts 1-4 and the Access to Premises Standard
- Health Regulations, City of Whitehorse and Food Handling Regulations, State Government

[2] SGL Report, p2

[3] *Making Space for Theatre: British architecture and theatre since 1958*, ed R Mulryne and M Shewring, Mulryne and Shewring, 1995

- Occupational Health and Safety Acts, Regulations and Codes of Practice
- Safety Guidelines for the Entertainment Industry, Australian Entertainment Industry Association and the Media Entertainment and Arts Alliance

A building surveyor was not part of the consultant team engagement, and therefore the following is not a comprehensive regulatory review. However, the following disability compliance issues are apparent upon visual inspection:

- Disability access to the foyer, function room and theatre is direct and easily achieved, apart from doors not complying.
- The accessible toilets do not comply and are undersized.
- There is no compliant disability access in backstage areas, with inadequate corridor widths, lack of door clearances, steps and no ramps, no lift access, lack of disabled sanitary fittings, lack of disability signage or tactile indicators.
- The orchestra pit lacks an alternative means of escape.

Other regulatory issues are identified in consultant reports appended.

3.2.2. Building Code of Australia Compliance

The Building Code of Australia (BCA) requires that when a building is altered by more than 50% of the building area, the entire building must be brought into full compliance with the current building code and relevant regulations, standards and codes of practice. This means that if the existing building is partially retained it will need substantial reconstruction.

Major recent changes in the BCA which will severely impact on a full upgrade of the building include disability access and energy efficiency requirements.

These changes mean that the following works will be required:

- Demolish and replace the roofing system to increase insulation
- Line and insulate all concrete block external walls, and insulate as required all external wall materials
- Demolish and widen corridors to provide complying disability access widths and turning circles and entry points
- Rework all doorways to provide 500mm access side clearance
- Demolish and replace all window frames and glass (safety & thermal issues)
- Replace all switchboards, electrical cabling and light fittings throughout
- Install accessible counters at box office, bar and kiosk
- New HVAC plant installations (energy efficiency)

3.2.3. Building Fabric

The building has been kept in good general condition through regular maintenance. The following building fabric factors are noted:

- The building roof and fly tower cladding are suffering from degradation with increasing leaks. Insulation is degrading.
- Painted concrete walls are robust and relatively low maintenance.
- Painted internal surfaces are well-maintained.
- The Waratah Room ambience is pleasant but lacks visual outlook or relief.
- The auditorium is highly valued by patrons for its intimacy (small size, dark colour, curved seat rows and low height being the contributing factors). The room is fairly plain but made 'intimate' largely by its dark colour.
- Plant is near the end of its working life and maintenance costs are reported to be high, with increasing unscheduled, 'emergency' maintenance arising.

3.2.4. Fitness-for-Purpose

Is the existing Centre fit for *future* purpose? Clearly the Centre has operated with great success for many years and can successfully host both, functions performance and community making activities.

The Space Program (refer Section 2.4) clearly identifies that the existing facility is substantially undersized for the activities for which community demand can be confidently expected. To repeat that analysis, the existing centre is 35% of the size of the anticipated requirements. If the new Studio Theatre is removed from the area, a like-for-like comparison of the existing area shows it is 40% of required area.

Key areas of spatial under-provision are:

Centre Operation (administration)	14% of area needed
Foyer	24% of needed
Backstage aggregate	39% of needed
Functions	48% of needed

Such substantial discrepancies in functional space indicate that the centre is subject to operational inefficiencies as a result of the area shortfall. This is a hidden cost to Council as it means staff investment is not optimised towards customer benefit. Instead, time is lost in struggling with the inadequacies of the building. For instance, furniture has to be moved two or three times to stage events, rather than just in and out of storage. Staff spend longer setting up for events due to circulation difficulties or poor equipment access. In addition, the area discrepancy suggests functional limitations. For instance, the insufficient circulation in the backstage means that dressing rooms become circulation routes.

With such substantial under-provision of functional space, it will be very difficult to retain major portions of the existing facility when designing the new complex.

Why is there such a large area discrepancy?

- The new centre is sized to cater for current needs and future population growth compared to that of 1985
- Patronage growth of 30-40% increases all aspects of front-of-house: foyers, toilets, circulation and so on.
- Simultaneous use of all venues requires additional foyer and support space.
- The new Studio Theatre adds about 650m^2
- Operational support space was under-provided and the staff numbers have grown
- Staff and performer standards of accommodation have increased
- Patron expectations of comfort have increased, theatre seats are getting bigger, and tolerance of foyer crushes are noticeably reducing.
- Performance production designs, technology and ambition for "spectacle" have becomes more complex and demanding in recent years, especially in musical theatre. This requires additional building infrastructure, electrical capacity and physical space.
- Disability access standards substantially increases floor space in public buildings – corridors, toilet spaces, wheelchair seats, ramp access and lifts.
- Occupational health and safety requirements have increased – staircases instead of ladders, multiple access routes, safe access zones and so on
- Generally, theatre buildings in the mid twentieth century were built with inadequate backstage facilities. The performance industry has matured since then, and standards such as *Oh You Beautiful Stage* have identified benchmarks that were not available when the centre was built.

3.2.5. Functional Space Inadequacies in the Existing Centre

At the Whitehorse Centre, many support spaces are seriously undersized or absent altogether. The Space Program provides a quantitative comparison of the extent of inadequacy. As previously noted, if a space is less than 75% of its required function, operational compromise is almost inevitable.

The table below summarises these inadequacies.

Table 3.1: Existing Centre – Functional Space Inadequacies

Zone:	Seriously Under-sized Facilities	Absent Facilities:
Zone 1: Front-of-House	Foyer Accessible toilets	First Aid Room Cloakroom FOH Store Bar store
Zone 2: Centre Operation	Box Office Administration workstations Printer / resources facilities	Meeting Room FOH Managers Office Operations Office FOH Ushers lockers and change FOH staff lounge and change Box Office store
Zone 4: Functions Rooms	Function Room – size compromised due to urgent need for storage, circulation Food storage	Pre-functions foyer separate to main Foyer Beverage store
Zone 4: Rehearsal/Meeting Rooms	Banksia Room size does not suit Main Stage rehearsal purposes	Furniture store
Zone 5: Proscenium Auditorium	4 wheelchairs seats (8 required), with lack of variety in Auditorium locations Audio mix position at loss of seats Side lighting OHS inadequate	Follow-spot positions Forestage grid
Zone 5: Stagehouse	Stage acting area and wings Stage crossover compromises stage depth Flying height only just adequate Orchestra pit undersized, inadequate access	Under-stage (desirable, optional)
Zone 7: Sound Shell/Festivals	Size adequate but functionally seriously compromised by door configuration and lack of infrastructure	2x Dressing rooms Stage crossover, link to backstage
Zone 8: Production / Stage Support	Lighting and Sound Storage Technical storage generally Piano Store gained at cost of tech storage Inadequate truck access/manoeuvring to loading dock	Scene Dock Technicians Office SM, Drapes and Props store Hirers Equipment Store Accessible stage level bathroom Crew change room, lockers
Zone 8: Performer & Crew Support	Stage Door entry Technicians Workshop Insufficient crew/performer amenities Circulation inadequate	Greenroom Pros: 2 DR provided – 6 needed Absent: Principals (2x), Actors (2x) Wardrobe / laundry & Costume storage Musicians room and store Disability access
Zone 9: Centre Servicing	Access to plant rooms – OH&S issues General service dock	Communications Room Refuse Yard

3.3 Existing Building Services

Refer to Appendix E: Document and Existing condition Review by BRT Consultants.

> 'Having reviewed the condition and capacity of the existing building services we do not believe that there would be a significant cost difference whether the building was redeveloped or rebuilt.'[4]

The building services consultants note the following key points in reviewing the existing building services:

- Building fabric:
  - The building fabric has high leakage which results in energy loss to the air-handling system, making it extremely difficult to control internal temperature or manage energy costs
  - Building insulation is breaking down and not to current standards
- Hydraulic and fire services:
  - An authority main sewer runs north of the building and most likely cannot be built over, constraining development to the north.
  - Cold water and fire water supplies from the civic building are adequately sized for the facility.
  - Fire service pressure and flow rates appear to be adequate.
  - Fire sprinkler services are installed to the stage and stagehouse only.
  - The gas meter and incoming supply capacity appears to be adequate for the development, but this requires further investigation.
- Electrical and data services:
  - The incoming power supply (approx. 400A) will need to be upgraded for the redevelopment.
  - The existing sub-station will require upgrade to its capacity
  - Existing 30 pair Telstra cable assets running from the Civic Centre should be sufficient for the development.
  - The existing electrical installations are nearing the end of their useful life. Whether altered or replaced, entirely new electrical cable and fittings installations will be needed due to the scale of change required.
  - All switchboards do not comply with current regulations and must be replaced
  - All light fittings and most electrical appliances should be replaced.
- Mechanical HVAC services (heating, ventilation, air-conditioning)
  - Much of the HVAC plant is poorly located, creating acoustic intrusion issues to the theatre, obstructing expansion and problematic for safe maintenance access.
  - The majority of existing plant is not suitable for re-use with changed room configurations.

[4] *Document & Existing Conditions Review of the Building Services*, BRT Consultants, Appendix E, p4.

3.4 Theatrical and Acoustic Review

Refer Appendix E: *Existing Conditions Review, Theatre Systems and Acoustics*, Marshall Day Entertech

3.4.1. Theatrical Review

The theatre design consultants note the following key points in reviewing the existing building:

- Theatre seating capacity is small for the nature of the centre
- Wheelchair seating provision is desirably increased
- Seating rake considered too shallow
- Maximum seating distance is acceptable (<20m to stage)
- Lack of technical access between the stage, lighting bridges, control room
- Proscenium size, plus stage size restricts the scale of works that can be presented, and the stage acting depth is unusually small (7.7m)
- Stage wings size and height inadequate
- Flying system working load capacity is below minimum industry recommendations (240kg vs 340-500kg). System condition 'fair'.
- Flying height is barely adequate, restricting some staging effects.
- Orchestra pit has irregular configuration and lacks backstage access.
- Manual handling issues with orchestra pit lids.
- Orchestra pit capacity is small for community theatre use.
- Only ensemble Dressing Rooms provided (30 + 15 persons), no Principal or smaller dressing rooms. Condition 'aging'.
- Complete sound system replacement required.
- Dimmers – analogue are unreliable, lack earth leakage protection, poor layout, inadequate installation.
- Theatre infrastructure – lacks digital connectivity, fibre-optic, digital video, Ethernet DMX or modern stage management console.
- Waratah Room: track lighting not suitable for event lighting. Lacks adaptable rigging or audio-visual infrastructure. No connectivity with theatre.
- Sound Shell: appropriate size and generally functions well. Temporary infrastructure inadequate for increasing production sizes and demand. Working height and rigging inadequate, doors impede concert operation.
- Loading dock unsuitable for larger trucks
- Lack of a general deliveries dock separate to the theatre loading dock
- Backstage 'workshop' use is compromised by a variety of uses due to lack of adequate backstage accommodation, and hirer storage.
- No scene dock facility
- Storage provision generally inadequate resulting in storage in potentially unsafe locations (fire risk).
- Staff accommodation inappropriate for the number of staff.

3.4.2. Acoustic Characteristics

Refer Appendix E: *Existing Conditions Review, Theatre Systems and Acoustics*, Marshall Day Entertech

The acoustic consultants review identifies the following key points:

- Room acoustic characteristics:
  - Theatre: room acoustics suitable for drama, amplified and acoustic music and events. No particular acoustic issues identified.
  - Waratah Room: acoustics are suitable.
  - Foyer: relatively lively room acoustics
  - Banksia Room: acceptable for use as a rehearsal room
  - Sound Shell: adequate.
- Internal sound insulation:
  - Waratah Room acoustic wall – adequate for meetings, conferences, insufficient for events with amplified music.
  - Waratah Bar/Kitchen noise intrusion onto function room
  - Backstage / Theatre noise intrusion impeded production activities during performance.
- External sound insulation:
  - Building plant noise intrudes on the theatre
  - Rain noise intrudes on the theatre

3.5 Building Structure

Refer to Appendix E: *Structural Engineering Review*, Irwinconsult.

The Geotechnical Reports identify that non-structural fill is present on the site, with suitable foundation support at depths of between 1-2m and 2-3 metres. Rock is present in some locations. These findings imply that foundations, excavation for basements and the provision of suspended concrete slabs floors could add to construction cost.

Regarding alteration of the existing building Irwinconsult note:

'The building, although in good condition and possible to extend beyond its perimeter, would not be straightforward to upgrade to accommodate a modern theatre, equipment and associated loadings. It is probable that such upgrades would require demolition and replacement of the fly tower superstructure. Similarly, the addition of new plant platforms or gallery theatre seating would involve replacement of part of the roof structure and the addition of new perimeter supports and foundations.

The Marshall Day conclusions correctly identify major structural issues with changes to seating capacity, proscenium, stages, fly tower, counterweights, orchestra pit and lighting bridge.

These issues can all be resolved with strengthening and or partial rebuild but would need to be compared to the cost of demolition and new build.

Cost would appear to be the only structural issue associated with this as we believe the existing structures are in good condition and there have been no significant regulatory changes that would impact on the re-use, albeit with alteration.'

4 Concept Scenarios

Functions/Administration – Proscenium Theatre – Studio Theatre Indicative Section

Refer Appendix I: Business Case Facility Drawings

Three indicative site and building layouts were prepared to explore siting, site relationships and functional layouts. The three scenarios tested were:

1 Retain existing building elements
2 New building on existing site
3 New building on new site

Construction staging and operational continuity were considered in all scenarios.

Key criteria for assessing and evaluating the development scenarios are:

- Effective functional layout, enhanced operating efficiency, e.g. capacity to use the Rehearsal Room for performance marshalling / backstage amenity
- Capital cost – affordability while also investing an appropriate amount to achieve a long-lasting facility.
- Minimise parkland area taken up by building, enhance parkland setting
- Festivals / outdoor event – retain existing space, enhance and improve festival capacity
- Centre identity / address – improved visibility, sense of address, strength of identity
- Site relationship – strong indoor-outdoor connection, parkland views , opportunities for external events
- Capacity to achieve project aspirations, functional brief, VAPAC benchmarks
- Parking – additional parking provision with low impact on park
- Load-in / truck movements – safe pedestrians & traffic flows, low park impact

The following describes the key features of each concept scenario, with extracts of the scenario drawings. The full drawings are included in Appendix I.

4.1 Concept Scenario One – retain some of the existing centre

Concept Scenario 1, Ground floor plan

This scenario retains the existing theatre, stage, backstage & sound shell, converting the theatre into a new Studio Theatre and Rehearsal Room. The existing fly tower is retained and reclad. Existing backstage facilities becomes the support amenities for the Sound Shell and new Studio. Beside the existing structure a new Proscenium theatre is built, with a single storey functions wing extending south towards the Civic Centre, encompassing the existing feature garden site.

- View to Concert Lawn from Entry
- Foyer addresses Concert Lawn with close bar service
- Box Office and Bar prominent.
- Meeting & Function Rooms view to Concert Lawn
- Studio Theatre use of fly tower added value
- New building verandah edge to concert lawn
- Functions courtyard to entry featuring mature trees
- Separate functions entry, toilets, small foyer enabling separate operation
- Two truck docks
- Possible controlled truck exit to Carter Avenue to reduce roading on site

Issues:

- Stage/backstage extends over stormwater easement – requires diversion
- Existing fly tower compromises the ambience of the Studio
- Trees and fountain garden removed
- Exit onto Carter Avenue problematic

Scenario One would require relocation and temporary operation elsewhere during construction.

4.2 Concept Scenario Two – new building on the existing site

Concept Scenario 2, Ground and First Floor plans

This new building on the existing site provides opportunities for:

- Strong form and identity potential – foyer glazed two-storey "garden room"
- Theatre auditorium expressed as sculptural form within foyer
- Box office prominent on entry
- Cafe foyer destination, serving to Concert lawn
- New sculptural Sound Shell with glazed outlook onto to parkland
- Studio Theatre with garden outlook
- Meeting and Rehearsal Room display activity to entry forecourt, Rehearsal Room with north views
- Functions rooms & support upstairs with eastern aspect
- Rehearsal room after-hours access
- Majority of existing trees retained

Issues:

- Sound Shell isolated from backstage connections, marshalling opportunities
- Relocation of stormwater drain and easement

Scenario Two would require relocation and temporary operation elsewhere during construction.

4.3 Concept Scenario Three

Concept Scenario 3, Ground and First Floor plans

In this scenario the centre is connected to the Civic Centre with the new building alongside the Concert Lawn. The wing containing library space and the Courtyard Room is demolished and replaced. Features are:

- New centre close to Whitehorse Road, less sense of isolation
- Views to Mullum Mullum valley from the Civic Centre beyond the new sculptural Sound Shell
- Two-storey foyer direct view to garden, Bar serving indoor-outdoor
- Box office prominent on entry
- Meeting Room displays activity to entry
- New Courtyard Room integrated to foyer, courtyard and Concert Lawn
- Theatre auditorium expressed as sculptural form at entry
- Studio Theatre and Rehearsal Room with garden outlook
- Rehearsal Room excellent after-hours access
- Function rooms view to concert lawn
- Direct connection into Civic Centre / Library
- New upgraded Courtyard Room facility
- Upgrade landscape/amphitheatre adjacent to Civic Centre (not in costing)
- Concert Lawn area remains as existing

Issues:

- Additional cost to re-build Courtyard Room and Library space +$2.35m
- Function Rooms & support facilities on upper level, remote from Sound Shell
- Closes in the east approach to Concert Lawn
- Theatre load-in requires car park layout amendments but no new parkland road

A major advantage of this scenario is no need for operational relocation – the new centre could be built while keeping the current facility operating.

4.4 Car Parking and Traffic Options

Refer to the Business Case drawings Appendix I.

As noted the development needs to provide 175 additional car parks, including 4 accessible parks, as well as replacing any existing car parks that are lost in the redevelopment. The total number of car parks needed is therefore around 200-210, depending on the design. It also needs to address theatrical, service, rubbish and emergency vehicle access on the site and the new centre.

Truck movements needs to include access to at least one theatre loading dock by a semi-trailer – that is, an articulated truck about 21m long. Semi-trailer movements are unlikely to occur more than once a month in the future operation. The majority of truck movements are smaller rigid trucks. All trucks need to be able to make efficient turning manoeuvres without putting other users at risk, and to exit the site in a forward direction.

4.4.1. Preliminary Car Park Options Cost Estimates

Several parking options were investigated and costed on the basis of providing for 175 car parks:

1.	All parking accommodated on grade. This has maximum loss of open space.	$1.63m
2.	Multi-level above-ground open car park. This reduces the open space area reduction but has urban design impact in terms of an elevated building	$5.35m
3.	Partial basement parking – 57 parks under the new building (Scenario 2), remaining 158 parks on grade	$8.13m
4.	Entirely basement parking – all car parks under the new building (Scenario 3)	$12.3m

These cost estimates do not include provision for disposal of contaminated soil in the excavation of the deck and basement parking, which is included in the final car park cost estimates.

A mixture of on-grade, decked and basement parking is possible, and each solution can be applied to each of the development scenarios. Each proposal needs to be adapted to reflect the number of car parks lost in the development scenario.

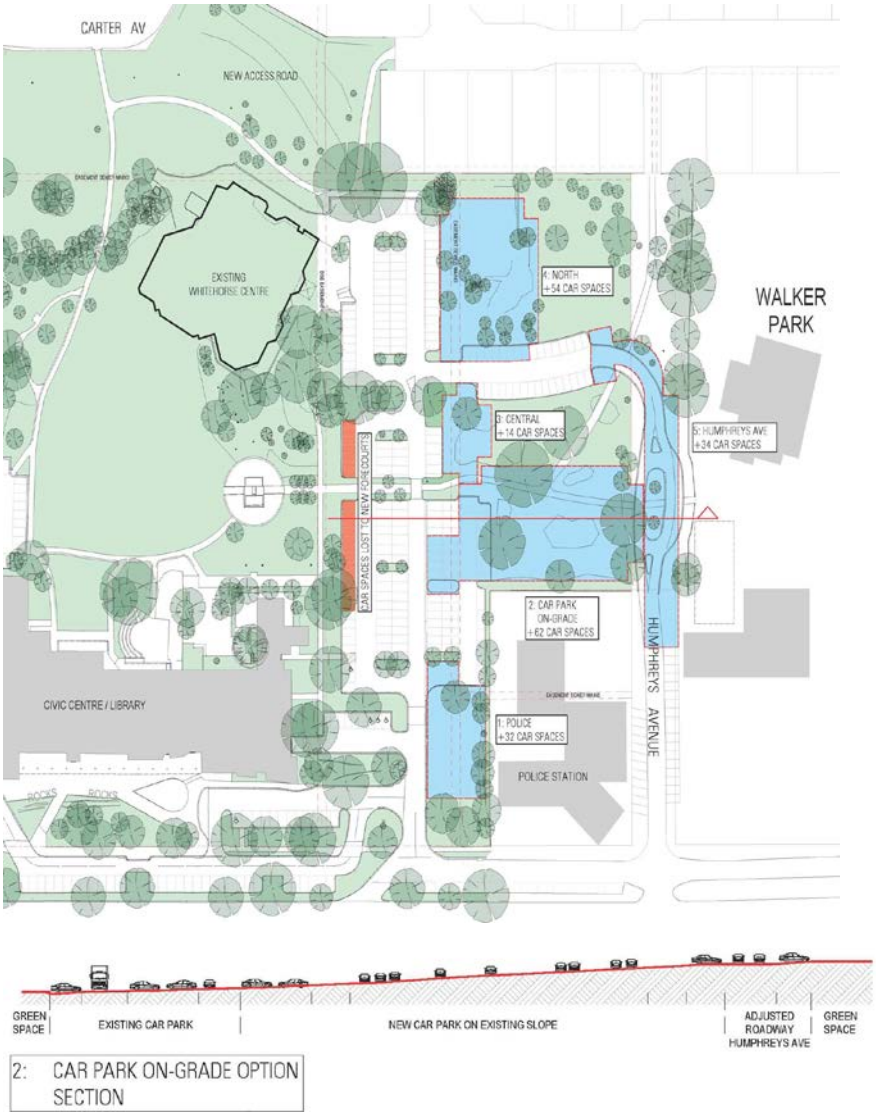
Because of the slope of the site, in some locations a multi-deck car park can connect at grade at two levels, with the ground level connecting to the main car park and first upper level connecting to Humphreys Avenue. Cutting the ground level car parking into the slope reduces the visual impact and apparent bulk of the parking structure. It could be clad in a decorative, 'art-work' screen.

Basement car parking is problematic on the site because of the potential for flooding of the basement, together with the possibility of contaminated fill, which would incur substantial cost to dispose of off-site.

Humphreys Avenue is the alternate exit route from the site between the Police Station and Walker Park. Right-angled parking is located on the Avenue closer to the Maroondah Highway. There is potential to increase on-grade parking along the avenue, with reconfiguration of kerbs and the current island crossing point. This would enable 20-30 car parks to be accommodated. As this area is visually low impact, it is included in all of the parking options.

The following describes car parking findings.

4.4.2. Car Parking Option 1 – All Parking On-grade, $1.63m (any scenario)



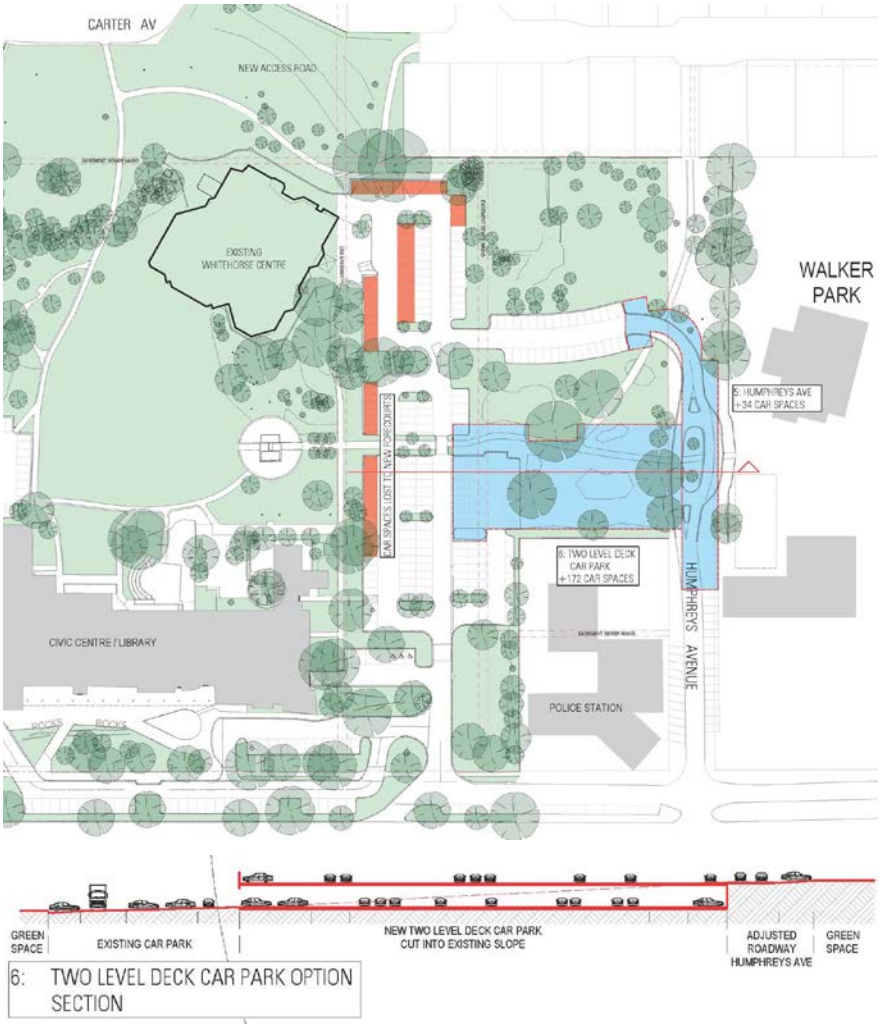
Parking Option 1: On-grade CS.11, extract

On-grade opportunities identified in the following provision:

Adjacent to Police Station	+32
Central landscape (behind Police Station)	+76
North landscape (adjacent to north residences)	+54
Humphreys Ave additional roadside parking	+34
Total parking provision	**196**

21 car parks are lost to the development.

4.4.3. Car Parking Option 2 – Deck parking (2 levels), $5.35m (any scenario)



Parking Option 2: Deck, CS.12, extract

A multi-level car park could be located either adjacent to the Police Station, which would partly screen the parking structure from view on arriving on site. This landscape area is attractive, and is the main visual and pedestrian link to Walker Park. It features some attractive mature trees.

An alternative site is on the northern landscaped area adjacent to the Whitehorse Centre. This area is less attractive open space, and the existing trees are less significant specimens. However, it is close to neighbouring residences who may resist a multi-storey car park beside them, and may object to the potential noise impacts of vehicle movements, especially after evening events at the centre.

For these reasons the Police Station site is the preferred decked car park location. Following public consultation, Council decided to not proceed with the alternative northern boundary site and informed residents of this decision.

The investigation identified in the following potential provision:

Deck ground level	+67
Deck upper level	+96
Humphreys Ave additional roadside parking	+34
Total parking provision	**197**

22 car parks are lost to the development.

4.4.4. Car Parking Option 3 – Concept Scenario 2: Basement & On-grade, $8.13m

Parking Option 3: Basement & On-grade, CS.13, extract

Scenarios Two and Three could have basement parking included in the new building to varying extent. In this option 57 basement parks could be provided under the compact footprint of Scenario Two. The balance of parking is provided on-grade at the locations previously identified:

Scenario Two basement	+57
Various on-grade locations	+122
Humphreys Ave additional roadside parking	+34
Total parking provision	**213**

Up to 38 car parks may be lost to the development in the Scenario Two forecourt.

4.4.5. Car Parking Option 4 – Concept Scenario 3: Basement & On-grade, $12.3m

In Scenario Three basement car parking could be located both under the building, and in the zone of the demolished existing centre, covered by earthworks to form a new landscaped area. This option therefore indicates the cost impact of locating all car parks underground.

Scenario Three & existing centre basement parking	+162
Humphreys Ave additional roadside parking	+34
Total parking provision	**196**

21 car parks are lost to the development.

Parking Option 4: Basement & On-grade, CS.14, extract

4.4.6. Multi-deck Parking Options 1 & 2

Of these four approaches to car parking on-ground car parking would not be acceptable because of the substantial loss of parkland. Fully underground car parking was considered too costly, therefore a multi-deck car park was considered the preferred solution, balancing impact on parkland with capital cost.

Two possible sites for a multi-deck car park were identified: (1) behind the police station, or (2) adjacent to the centre on the northern boundary, with Option 1 being the preferred multi-deck site option.

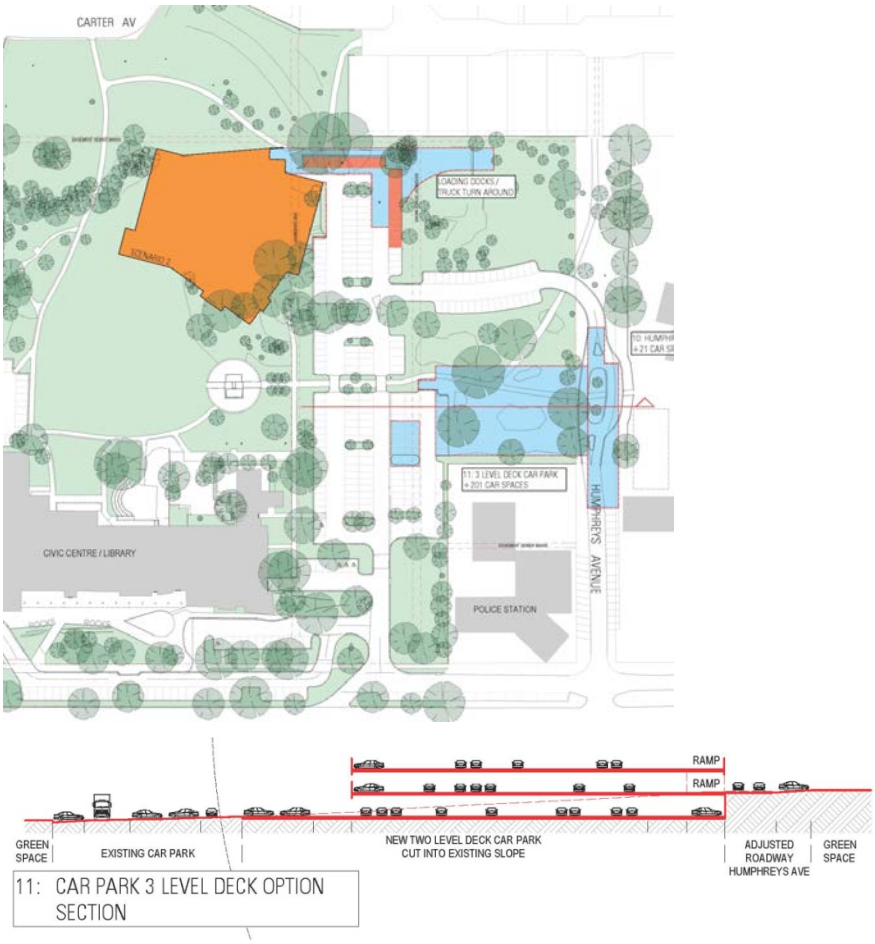
Following the community expressing considerable concern about Option 2, Council has responded by advising residents that the northern boundary site will no longer be considered and that other car parking options will be explored (see further).

The multi-deck car park options are described below.

Multi-deck Car Park Option 1

In the following revised layout, the upper deck is reduced in extent to align with the Police Station boundary to reduce its visual impact. This results in the structure adopting three levels to provide the numbers required. A ramp provides vehicle access between all levels enabling patrons to circulate through the car park to find a park. The parking provision of the Police Station site is:

Deck – 3 levels	+211
Humphreys Ave additional roadside parking	+21
Car parks lost	– 35
Total parking provision	+197



Preferred Parking Option: Three level deck, CS.15, extract

Alternative Multi-deck Car Park Option 2

In the alternative parking layout on the northern landscape area, the deck adopts a longer, narrower configuration to leave room for the dock truck turning path.

Deck – 3 levels	+200
Humphreys Ave additional roadside parking	+21
Car parks lost	– 37
Total parking provision	**+184**

Actual car parking provision and the layout would be resolved in subsequent design phases.

Alternative Parking Option: Three level deck, CS.16, extract

As noted, above Multi-deck Car Park Option 2 has been rejected by Council.

4.4.7. Further Car Parking Investigations

Council has undertaken to investigate car parking solutions further.

Other options could include the following, although all options have disadvantages:

- locate the additional car parking over existing car park areas
  - this would mean the multi-deck car park is larger than Car Park Option 1, with potentially greater urban design impact on the park,
- recess some parking under-ground in car park areas or under the building,
  - this would reduce the apparent size of the car park but increase the capital cost,
- change the staff-only designation of existing parking for after-hours use,
  - although the staff car park is across the Concert Lawn and thus has a long outdoor walk to the centre, and
  - would need upgrades to lighting and so on for user safety,
- other possible locations in the precinct
  - which would all be more remote from the centre, with long journey times and would require lighting,
  - no such sites were identified.

4.5 Preferred Concept Scenario

Councillors selected Scenario Two as the preferred development option because:

- It is the most compact building footprint, preserving open space in the parkland
- Scenario One was not considered good value given its similar cost to all new construction while being constrained by retaining existing building areas
- Scenario Three overly obstructed the east-west connections across the site and especially access to the Concert lawn. It also was the most visually imposing scheme.
- Scenario Two has good opportunities for urban design and architectural form
- It has excellent internal functional layout with the Rehearsal Room readily accessed for after-hours use and the Sound Shell well connected into the centre.

Scenario Two represents an indicative set of functional relationships and design opportunities on the site. It will no doubt develop and evolve in future design work, most likely taking on a different layout, form and expression in the course of resolving the project.

Desirable improvements to be made Scenario Two in future include:

- Remove functional space from under the stalls raked seating to enable the seating rake to be lowered (and thus also lower the height and pitch of the upper balcony and the volume of the auditorium). This requires adding floor area at ground level to accommodate the FOH offices and Box Office.
- Split the ground floor patron toilet facilities either side of the proscenium theatre so that some can more directly serve the Studio Theatre when both are in use simultaneously by potentially different audiences
- If possible, create a connection from backstage to the Sound Shell to enable it to be used as an overflow dressing area for large events in the other venues (perhaps at the upper level)

5 Capital Cost Estimate

Refer Appendix C: *Capital Cost Estimates*, Wilde and Woollard

5.1 Development Cost Estimates

5.1.1. Preferred Scenario Cost Estimates

In September 2014 costs the Concept Scenario Two cost estimate is $52.5m for the redeveloped Whitehorse Centre, and $9.52m for the 3 level decked car park, with the main components of the project costing as follows:

Whitehorse Centre Redevelopment	2014 Estimate
Foyer, centre operations, proscenium theatre and technical equipment, backstage (including Studio facilities) and plant areas	$36.04m
Functions centre, kitchen and storage	$5.89m
Rehearsal and Meeting Rooms	$1.73m
Studio Theatre (backstage facilities in top item above)	$5.77m
Sound Shell stage and backstage	$2.34m
Access road works (car park and loading dock alterations)	$370,000
Demolition of existing building	$377,000
Total End Cost – Redeveloped Whitehorse Centre 2014	**$52.48m**
Total End Cost – Car Park, 3 levels, approx. 200 car parks	$9.52m
Total End Cost – Total Redevelopment	**$62.01m**

These sums include provision for demolition and construction costs, design and construction contingencies (20%), professional fees (12%), authority charges, theatre technical infrastructure, and loose furniture and equipment.

The following specific allowances have been included:

Loose furniture and fittings	$1,700,000
Theatrical technical and audio-visual infrastructure	$3,450,200
Soil contamination – Whitehorse Centre	$1,000,000
Soil contamination – car park structure	$1,000,000

This estimate excludes the following costs:

- GST
- Poor ground conditions
- Hazardous materials removal
- Out of hours work
- Cost escalation
- Decanting and temporary accommodation
- Temporary operation of the centre elsewhere
- Council project management costs
- Non-standard procurement processes

Building Services Cost Estimates

Building services cost estimates were prepared by BRT Consultants P/L for all scenarios and allowances totalling $6,080m are included.

Theatrical Cost Estimates

Cost estimates for theatrical and audio-visual infrastructure and equipment were prepared by Marshall Day Entertech, refer Appendix C). These are included in the estimate above:

Proscenium Theatre	$2,218,400
Studio Theatre	$865,400
Rehearsal Room and Functions Rooms	$179,200
Sound Shell	$187,200
Total Technical Estimate	**$3,450,200**

These sums do not include installation of a tension wire grid in the Studio Theatre (approximately $221,000), and assumes that allowances for installations of pipe grids or catwalks are included in the building works estimate.

5.1.2. Council and Other Project Costs

Council will incur other costs to implement and manage the project including internal project management, probity, legal, risk, communications, tendering, signage and so on. These are estimated to cost $1,990,000.

In addition, for prudent financial management, Council has allocated a further contingency allowance to the project of approximately 6.5%.

5.1.3. Cost Escalation

Cost escalation to a tender in mid 2019 based on 3% per annum compounding would result in a project cost in the order of $71.88 million. Cost escalation cannot be estimated longer than five years due to increasing uncertainty as to actual market conditions.

Thus, cost escalation adds on average $1.58m for the building and $287,000 for the car park for every year that elapses until the centre is built.

Item	2014 Estimate	2019 Estimate
Scenario Two building works	$52,484,000	$60,400,306
Car park option 5, 3 levels	$9,523,000	$10,959,380
Total direct capital stage cost estimate	**$62,007,000**	**$71,359,686**
Council project costs		$1,990,000
Project contingency (approx. 6.5%)		$4,650,314
Total End Cost Estimate, 2019		**$78,000,000**

5.2 Concept Scenario Cost Estimates – Discussion

Concept designs typically result in increased floor area to the projected Brief (*Facility Space Program*) as they take into account constraints imposed by the site such as existing trees, the concert lawn, existing car parking, roads and so on. They also sometimes require additional floor area to meet the functional relationships required of a centre with multiple venues.

The following discussion relates to the concept scenarios prior to the refinement and revisions to Concept Scenario Two and its cost estimate.

Concept Scenario 1 - $48,866,300 (excluding car parking costs)

Measured floor area approximately 6,330m^2 (under the Design Brief by 35m^2).

The retained structure saves approximately $500,000 in construction cost compared to a completely new building.
Functional constraints imposed by retaining the existing building include:

- The Studio Theatre and Rehearsal Room are larger than briefed due to fitting into the existing structure.
- The Studio Theatre audience seating is wider than desirable, resulting in a less intimate room character
- It will be difficult to achieve disability compliant after-hours access to the Rehearsal Room, and may require another lift to be included.
- The existing fly tower structure is retained and has to be stripped and re-clad to make it weatherproof. Retention of the fly tower provides a broader range of theatrical opportunities to Studio performances but detracts from its studio character and ambience for functions events.
- The new building floor level has to be lifted 1m to match the existing theatre stage level, increasing sub-structure cost costs.

A suitable entry point for basement car parking could not be identified, and it would be a very inefficient car park due to the small area of new building available.

Concept Scenario 2 - $ 51,229,000 (excluding car parking costs)

Measured floor area approximately 6,544m^2 (exceeds Design Brief by 115m^2).

Scenario 2 is larger than Scenario 1 resulting in approximately $1.7m additional construction cost. The foyer is substantially larger than Scenario 1 (+200 m^2) and as a two storey with voids and stairs, is a high value space, attracting a high cost rate. The additional area, and thereby cost, could be refined and reduced in further design phases.

Concept Scenario 3 - $ 51,688,500 (excluding car parking costs)

Measured floor area approximately 6,944m^2, however this includes 600m^2 of floor area to replace the Courtyard Room, other demolished space and add the Civic Centre link. The Whitehorse Centre functional area is thus approximately 6,344 m^2, similar to Scenario 1, reflecting that this is a highly efficient layout.

The additional 'un-briefed' space of 600m^2 replacement floor area costs in the order of $2.35m in demolition and new construction. This is incurred as a result of the new site location, but delivers other benefits. The cost of the 'briefed' building itself, $49,338,500, is $470,000 more than Scenario 1.

5.3 Car Parking Cost Estimates

Estimates were prepared for a variety of car parking options (refer item 4.4.1)

The preferred decked car park option with three upper levels is estimated to cost $9.523 in September 2014 costs. This includes a $1.0m allowance for soil contamination, which may not be applicable.

CARPARKING OPTION 5				3rd September 2014
	Unit	**Qty.**	**Rate**	**Amount**
CARPARKING OPTION 5 - ONE LOWER LEVEL OF DECK AND TWO UPPER LEVELS				
Bituminous on grade carparking including kerb and channel and line marking	m2	1501.5	160	240,240
Lower level of decked carparking	m2	2,050	395	809,800
Upper levels of decked carparking	m2	4,025	1,200	4,830,000
Additional provisional cost for removal of contaminated material				1,000,000
Carpark lighting	item			80,000
Removal of trees	no	11	500	5,500
Sub Total excluding GST				**6,965,540**
Design contingency (say approx. 10%)				696,600
Contract contingency (say approx. 10%)				696,600
Sub Total excluding GST				**8,358,740**
Allow for professional fees (12%)	item			1,004,000
Allowance for authorities fees and charges (2%)	item			160,000
TOTAL OPTION 5 - ON DECK CARPARKING (Rounded) Excl GST				**9,523,000**

Carparking Option 5 cost estimate, extract

5.4 Next Steps / Recommendations

The following steps and activities are recommended to implement the project.

5.4.1. Funding and Decision to Proceed

Council needs to determine whether or not to proceed with the project:

- Determine a funding strategy using various sources such as:
  - Council revenue
  - Various Council capital works program, such as landscape, infrastructure works, roads, etc as well as capital works
  - Borrowings
  - State and Federal grants
  - Philanthropic (minor)
  - Community fund-raising (minor)
- Make a Council resolution to adopt this report recommendations
- Confirm a Governance structure to manage the project and determine and assign necessary resources

Refer also to the Risk Management Plan for a variety of actions identified to progress the project.

5.4.2. Investigations and Enabling Works

Some investigations can be undertaken prior to the full design engagement and will better inform the design process if available on commencement. These include:

- Functional and Technical Design Brief (see below)
- Detailed Feature and Level Survey of the construction site area
- Title Re-establishment Survey locating property boundaries, easements, etc
- Soil contamination / hazardous materials testing in a form suitable for use in the construction tender documentation
- Geotechnical investigations to identify foundation design requirements
- Further traffic analysis, if required
- In-ground services surveys to locate all existing services
- Existing services condition testing to identify their suitability such as;
  - Electrical load tests
  - Fire services pressure testing
  - Sewer CCTV review

A number of other possible investigations were indicated in the study brief and should be reviewed for their relevance. These include: Environmental Impact Assessment, property legal / ownership investigations, Aboriginal heritage.

Enabling Works

Enabling works are those early works that may facilitate the development and could be carried out in advance of the main construction contract. They are usually designed by the design team to co-ordinate the works with project requirements. These could include:

- New substation and/or electrical mains supply cables
- Diversion of the stormwater drain and legal easement
- Gas meter relocation
- Relocation of other relevant services around the building site and in the Concert Lawn
- Flood mitigation works
- Relocation of trees at suitable seasons – such as the Japanese Cherries

- Car park construction
- Humphrey Avenue road and car park works

5.4.3. Functional and Technical Design Brief

Preparation of a Functional and Technical Design Brief (FTDB) as a separate pre-design exercise is strongly recommended, given the complex nature of this building type. Benefits include:

- Council is able to focus on detailed project requirements prior to time pressures occurring during the design process,
- The FTDB can be included in the engagement terms of the design team, enabling them to be held accountable for suitable functional design,
- The FTDB provides Council with a benchmark against which design proposals can be compared
- The FTDB helps prevent 'scope creep' and thus capital cost inflation during the project.

The Functional and Technical Design Brief should be prepared by a team with extensive experience in the design of performing arts facilities. The team should include disciplines of architecture, theatre planning, acoustic consulting and preferably also services engineering.

5.4.4. Design Program and Procurement

The following timeframes are recommended to enable suitable and effective design of the proposed centre:

Functional and Technical Brief	4–6 months
Consultant design/delivery team tender/appointment	3 months
with three separate engagements for:	
Project Manager, Quantity Surveyor and Consultant design team	
Schematic Design	5 months
Planning Permit (if required)	6 months
can occur in parallel to Design development	
Design Development	4 months
Contract Documentation	4 months
Pre-tender Estimate	1 month
Building Permit & Tender Process (in parallel)	3 months
Construction Period	18–24 months
Commissioning	2 months
Total indicative time frame	**4+ years**

Because of the complexity of performance venues, and the ease with which significant design or construction errors can cripple a centre's operational capacity, it is strongly recommended that an experienced design team is engaged directly by Council with a traditional procurement process engaging a Main Contractor under a fixed lump sum contract. Other procurement methods leave design and construction quality, and thus functionality, open to compromise by the Construction Contractor.

5.4.5. Temporary Operation and Relocation Plan

Substantial planning is required to investigate and determine the preferred strategy for relocating the operation of the Whitehorse Centre during construction. This planning should assume the construction period is 2–2.5 years.

This will also require planning for the re-opening of the centre and the new artistic program to be presented during its first year. This program will establish the reputation of the new building and thus requires careful consideration to attract back previous patrons and also new patrons.

If the car park structure was built prior to commencing the redevelopment, it could be considered for use, with temporary adaptation, for some aspects of the temporary operation.

5.4.6. Construction Staging Strategy

Should funds be insufficient it may be necessary to adopt a staged approach to the project capital works. The obvious component to defer is the new Studio Theatre venue and associated support spaces.

The Concept Two Cost Estimate identifies the Studio theatre component as $4.95m in 2014 costs. Five years cost escalation would take this figure to about $5.74m.

This costing includes only the venue and its backstage facilities. In theory the foyer and patron toilet facilities could also reduce, depending on the design solution adopted.

It is therefore possible that a somewhat higher figure could be removed from the project budget by removing all direct building areas serving the Studio Theatre operation.

Thus, by adopting the Studio Theatre as a future stage of works, the capital cost could be reduced by in the order of $6.0m in 2019 figures.

williams ross

A Facility Space Program

Facility Space Program, Issue C, 7 September 2015, Williams Ross Architects

williams ross architects

Whitehorse Centre - Business Case Development

City of Whitehorse

Facility Space Program

Issue: C

Area Analysis Summary:

Constrained sites can result in less efficient facility planning leading to increased floor area.
The area analysis indicates the most efficient, lowest area facility achievable.
Occupancy is based on all facilities in typical, simultaneous use for professional performance.
Some users, especially community groups may have larger stage crews.
Note: area allocations for some technical spaces are preliminary and will vary with specific configuration.
The Facility Space Program is NOT a Functional Brief, and cannot be considered an adequate or complete description of functional requirements.
Zones refer to the categories of *Oh You Beautiful Stage*

Date: September 2015
WRA Ref: 1306

Issues / Revisions	Issue	Date	Notes
Preliminary DRAFT report issue	A	16/09/2014	
Final DRAFT report issue	B	18/09/2014	
Final Report Issue	C	7/09/2015	

Description	Population		Facility Area (m2)			Footprint Analysis (m2)		
	Patron Numbers	Staff / Crew Nos	Existing Centre	Proposed Internal Area	Proposed External Area	Base-ment	Ground Floor	Upper Levels
Zone 1: Front-of-House	0	3	264	878	265		512	231
Zone 2: Centre Operation	5	17	53	369	25	0	369	0
Zone 4: Functions Room	250	19	429	904	0	0	0	904
Zone 4: Rehearsal/Meeting Rooms	30	0	126	262	0	0	262	0
Zone 5: Proscenium Auditorium (OYBS 3*)	600	37	368	780	0	42	457	281
Zone 5: Stagehouse (OYBS 3*)	0	5	327	902	100	120	441	377
Zone 6: Studio Theatre	200	18	0	649	0	0	649	0
Zone 7: Sound Shell/Festivals	30	12	173	218	30	0	218	0
Zone 8: Production / Stage Support - Backstage	0	7	174	379	0	63	301	12
Zone 8: Performer & Crew Support - Backstage	0	38	138	353	25	0	135	203
Zone 9: Centre Servicing	0	0	112	368	85	60	87	221
Sub-total	**1,115**	**156**	**2,164**	**6,061**	**530**	**285**	**3,431**	**2,229**
Building structure allowance @ 5%			190	303		3	4	11
Building area/circulation allowance @ 5%				303		14	172	111
Total Projected Occupants / Building Area (m2)	**1,115**	**156**	**2,354**	**6,668**	**530**	**299**	**3,602**	**2,341**
Area Difference: Existing - Projected (m2)				-4,314				

Room / Space	Description	Patron Numbers	Staff / Crew Nos	Existing Centre	Proposed Internal Area	Proposed External Area	Base-ment	Ground Floor	Upper Levels
	Zone 1: Front-of-House								
Porte Cochere	Short-term vehicle & bus drop-off at entry, pref under shelter.					65			
Forecourt / Plaza / Functions Courtyard	Large outdoor courtyard / plaza desirable for foyer & cafe outlook, external events including performance and projection. Configuration to suit large gatherings. Performance infrastructure, power, water and sewer services, capacity to locate marquees essential. Signage. Liquour license for Functions. Say,					200			
Airlock	2 sets of automatic doors.			27	16			16	
Main Foyer - Auditorium	Based on 0.7m2 per patron/seat, 580 patrons, nominal.	see venues		162	406			264	142
Bar	Servery, multiple serving stations. Upstairs foyer bar required.		2	23	60			60	
Bar store	Adjacent beverage & supplies store				20			20	
FOH Lift	1x passenger lift. Full-size stretcher capacity.				27		9	9	9
FOH Stairs	2 access/exit staircases, footprint 15m2, 2x levels				60			30	30
First Aid	Handbasin, store, bed/chair, alarm. BO view. Ambulance access.				12			12	
FOH Patrons Store/Alcove	Wheelchairs, prams, walkers, etc. Close to venue(s) entries				10			10	
Cloakroom/Merchandise	Cloakroom store & counter. Extension of Box Office counter		1		10			10	
Foyer Circulation	Corridors to venue entries (min 2, pref 3m wide)				140				
Patrons Toilets	Based on Audience nos., double BCA requirement for women. Spread over number of foyer levels.*Note: toilet numbers must be sized for peak occupancy periods.*								
Theatre Male Toilets	2 WC, 6 UR, 3 WHB - distribute to PT and ST			18	33			21	12
Theatre Female Toilets	16 WC, 6 WHB - distribute to PT and ST			31	70			46	25
Theatre Accessible toilets	One new facility on each level. Existing facilities non-compliant.			3	14			14	14
CS2: FOYER & SUPPORT SPACES (F)	Incl. FOH line items above, Rehearsal / Meeting Rm Foyer space and Studio Theatre Foyer space (level 1& 2)								
	Zone 1: Front-of-House	***0***	***3***	***264***	***878***	***265***	***9***	***512***	***231***

Room / Space	Description	Patron Numbers	Staff / Crew Nos	Existing Centre	Proposed Internal Area	Proposed External Area	Base-ment	Ground Floor	Upper Levels
	Zone 2: Centre Operation								
	Front-of-House								
Box Office Reception	3 staff service/ticketing counter positions. EFTPos, ticket printers, brochures/mktg, cash security, CCTV, duress alarm. Direct access to Box Office.		2	6	16			16	
Box Office	Shared office, 3 workstations, phone ticketing, secure view to Box Office/Foyer, drop-box safe, cash security, CCTV.		3		30			30	
Reception Store	Small store/alcove for receipt of deliveries				4			4	
FOH Store	FOH signage, eqpmt, spares, marketing, brochures, flags, banners, etc				10			10	
FOH Office	Shared office, 3 workstations, casuals sign-in. View to Box Office/Foyer, FOH comms rack & Control Panel		3		30			30	
FOH Staff Change	Lockers/change room/uniform store.				10			10	
Meeting Room	20p, whitebd, audio-visual, datapoints, kitchenette. Public access. Centre mgmt, production team, sponsorship meetings.	5			40			40	
	Administration								
Centre Manager	1 workstation, 2 - 3 visitors, meetings for 6		1	12	18			18	
Administration Office	7-8 open plan workstations, files, resources, informal meeting table, etc. 2 spare wkstns growth, interns, placements, auditors. 10m2 per workstation.		8	29	80			80	
Admin Store	Administration resources, equipment				12			12	
Print Services	Printers, binding, layout bench, paper store. Extraction system.				8			8	
Staff Lounge	Kitchenette, fridge, dishwasher, whitebd, pinbd, show relay. Proximity to Admin foyer for hospitality desirable. External area / outlook desirable			6	30	25		30	
Staff Amenities	Accessible bathroom, serves 15 F, 20M				7			7	
Archive	Files, centre memorabilia, historic material, facility records. 50m2				Off-site			Off-site	
ADMIN (A)	Incl Centre Operation line items above (incl. levels 1& 2)								
	Zone 2: Centre Operation	***5***	***17***	***53***	***295***	***25***	***0***	***295***	***0***
	Circulation @ 25%				*74*		*0*	*74*	*0*
	Zone 2: Centre Operation	***5***	***17***	***53***	***369***	***25***	***0***	***369***	***0***

Room / Space	Description	Patron Numbers	Staff / Crew Nos	Existing Centre	Proposed Internal Area	Proposed External Area	Base-ment	Ground Floor	Upper Levels
	Zone 4: Functions Room								
Pre-Functions / Foyer	Circulation to functions rooms, tea station (discounted). Capacity for serving buffet morning/afternoon teas, etc.			12	100				100
Functions Male Toilets	2WC, 5UR, 3 WHB				25				25
Functions Female Toilets	5 WC, 3 WHB				24				24
Functions Accessible Toilet	1 WC, WHB accessible (not required by BCA)			4	6				6
Function Room	Sub-divisable into 3-4 rooms. Proposed: 600 standing, 250 dinner-dance, band, or 300 banquet.	250	12	246	380				380
Functions Bar/Servery	Bar / drinks servery, serving at least 2 function rooms		3	18	30				30
Functions Store	Functions equipment, distributed as required			19	100				100
Functions Kitchen	Commercial grade installation but not full commercial operation		3	48	75				75
Functions / Food Store	Crockery/small equip/linen (15). Dry & cool stores (15)			7	30				30
Beverage Store	Secure cool store. (No post-mix required)				20				20
F&B staff toilet	1xWC, 1xWHB, shared with all F&B staff			4	4				4
F&B Office	1 workstation		1		10				10
Existing BOH circ'n/store	Circulation from kitchen to all function rooms (say). Corridors wide for temporary location of trolleys, etc.			71	100				100
Refuse Yard	Recycling bins, cartons, H&C, FW. Vehicle access desirable					refer 900			
Service Dock	Functions/general deliveries, separate to theatre dock.					refer 900			
FUNCTIONS SUPPORT (FS)	Incl Function line items above								
	Zone 4: Functions Room	***250***	***19***	***429***	***904***	***0***			***904***
	Zone 4: Rehearsal/Meeting Rooms								
R/M Foyer	Circulation to Rehearsal/Studio spaces. Kitchenette. After-hours access by community groups essential to R/M & toilets.				49			49	
R/M Accessible Toilet	Unisex 1 WC, WHB accessible (not required by BCA)				6			6	
Rehearsal Room 1	15x13m to suit Main Stage (12x10) rehearsal, located at stage level. Sub-divisable, operable wall. Min ceiling 4.5m, lighting grid, sprung floor, tarkett, wall mirrors, curtains, dance barrs, 1-2 makeup stations, 1whb.	30		126	195			195	
RR1 Store	Furniture, equipment store				12			12	
	Zone 4: Rehearsal/Meeting Rooms	***30***	***0***	***126***	***262***	***0***		***262***	

Room / Space	Description	Patron Numbers	Staff / Crew Nos	Existing Centre	Proposed Internal Area	Proposed External Area	Base-ment	Ground Floor	Upper Levels
	Zone 5: Proscenium Auditorium (OYBS 3*)								
Latecomers/Crying Room	Acoustically isolated viewing of performance with audio relay. access from foyer. (12) Option Foyer CCTV				foyer				
Viewing Room	Performance description for hearing assistance, Director viewing of performance. access from foyer. (12) Option foyer CCTV				foyer				
Theatre Entries, Sound/Light Locks	6x 6m2. Double acoustic door sets, storage cupbds (programs, seat cushions, usher equipment). Pram, walker, WC store adj			16	36			24	12
Aud Seat Stores	Store removed theatre seats (75) from pit, WC positions				25			15	10
Auditorium	Audience seating and aisles, approx. 1.0m2/seat	588	4	309	588			382	206
Accessible seating	12 spaces, companion seating & circulation. 2m2/wheelchair incl circulation. Various locations.	12		above	24			16	8
Orchestra Pit	Forestage lift, 3 level settings + overrun pit. Lift run 3.0m. Minimum area 1.5m2/musician (28/4*). Two entry/exits.		28	20	42		42		
Audio Mix Positions	Mix position at stalls rear, in addition to seating area		1	above	12			12	
Control Room	Lighting & audio control, cabling & patch panel racks. A/C (Existing area includes 8m2 access)		2	23	25				25
Follow spot positions	Locations either side of auditorium		2		12				12
Box Boom Positions	Vertical side lighting positions either side - access ladders / platforms. 4m2 x 2 sides x 2 levels = 16m2				16			8	8
FOH Bridges / Tech Access	2 essential, 3 desirable. Each approx. 30m2. Access catwalk to bridges. Access from Control to Stage. Say 100m2								
Forestage Grid	Technical grid over orchestra pit, 2.5m high clearance, = pit area. Required if orchestra pit installed. (=pit)								
	Zone 5: Proscenium Auditorium (OYBS 3*)	***600***	***37***	***368***	***780***	***0***	***42***	***457***	***281***
	Zone 5: Stagehouse (OYBS 3*)								
Stage Entry Locks	2 no. locks, 6m2 minimum			10	circulation			24	12
Stage & Wings	Acting: 12x10D, overall (5.5+12+10)x10D including wings, 19.5m to u'side of grid. Acoustic scenic doors to stage 7mH. Pros 3*: 12x7m, tormentors. (Existing stage 16.5W x 7.5D)		5	176	275			275	
Rear Stage Crossover	Stage crossover or corridor to Backstage min. 1.5mW			incl above	27			27	
Rear Stage	In addition to crossover area, 6m deep to stagehouse width.				not included				
Fly Galleries	2 no. technical galleries, 2.5m wide, + crossover gallery. Underside clearance to proscenium height 7.5m			25	75				75
Loading Gallery	1 no. technical gallery, 25m2 (Counterweight rigging system)				see grid				
Stage Gallery Access Stair	Linking galleries & grid (4 levels), footprint 15m2				30			15	15
Stage Grid	Technical grid, 2.5mH clear. =stage area			95	275				275
Under Stage	Forestage lift - essential. Scenery/stage store, =Acting area				120		120		
Stage/Scenery Store	7.5m clear height. Bunded scenic art sink.				40			40	
Scene Dock	Acoustic doors to entry & stage, 6m high.			21	60			60	
Loading Dock	Canopy, pedestrian access. Semi-trailer access. Dock leveller & gates. Door 4Hx3W. Min. 25 x 4m					100			
	Zone 5: Stagehouse (OYBS 3*)	***0***	***5***	***327***	***902***	***100***	***120***	***441***	***377***

Room / Space	Description	Patron Numbers	Staff / Crew Nos	Existing Centre	Proposed Internal Area	Proposed External Area	Base-ment	Ground Floor	Upper Levels
	Zone 6: Studio Theatre								
Studio Foyer/Circulation	Foyer / patron circulation. (200 x 0.7m2/seat = 140m2, say). Desirable to be able to open up to main foyer.				100			100	
Studio Sound Locks	Double acoustic door sets, storage cupbds (programs, seat cushions, usher equipment). Min 2 locks x 2 sub-divisable rms				circulation			circulation	
Studio Theatre A - Audience	14.5Wx13D audience tiered seating & control platform. Technical catwalks over, ceiling 9m high. Sprung dance floor.	200	2		183			183	
ST Technical Gallery	Control platform, tech storage, retractable seating unit under.		1		45			45	
Studio Theatre B - Stage	Acting 8x8, stage 12Wx10D. Acoustic operable wall at stage front to enable division into two rehearsal/function rooms. Technical catwalks/grid over, ceiling 9m high. Sprung floor.		3		120			120	
ST Scene Dock	Scene Dock, stage/set backstage. 6m high. 6x3m door into Studio Stage. Adjacent to loading dock.				40			40	
ST Seat Store	Removeable seats, equipment, assuming retractable system				30			30	
ST Hirers Equip Store	Secure store				10			10	
ST Dressing Room 1	6-8 performers, makeup benches, mirrors & lighting, 4 x WHB.		6		24			24	
ST Dressing Room 2	6-8 performers, makeup benches, mirrors & lighting, 4 x WHB.		6		24			24	
ST Male Bathroom	1 WC, 1 UR, 1WHB, ambulant				9			9	
ST Female Bathroom	1 WC, 1 WHB ambulant				5			5	
ST Showers	2 showers, unisex				5			5	
ST Accessible Bathroom	WC, WHB, SWR accessible. Close to stage. Performers & crew				8			8	
ST Backstage Circulation	Allowance - 30% of backstage facilities excluding Studio Theatre				47			47	
STUDIO THEATRE (ST)									
STUDIO BACKSTAGE (STB)	Incl Backstage line items for Studio Theatre above & Sound shell (Level 1&2)								
STUDIO BACKSTAGE (STB)	Incl Backstage line items for Studio Theatre above. Share Scene Dock and Backstage with Stagehouse								
	Zone 6: Studio Theatre	***200***	***18***	***0***	***649***	***0***		***649***	
	Zone 7: Sound Shell/Festivals								
	Assumes Sound Shell used for rehearsal when theatres in use.								
Sound Shell Stage	Existing 8x15m + apron + wings. 6m clear height, technical grid. Sprung floor finish. Overflow dressing / warmup use.	30		155	170			170	
Control Desk	In the lawn. Technical infrastructure connections.					30			
SS/Festival DR 1	6-10 performers, makeup benches, mirrors & lighting, 4 x WHB.		6	9	24			24	
SS/Festival DR 2	6-10 performers, makeup benches, mirrors & lighting, 4 x WHB.		6	9	24			24	
Techncial infrastructure	In the lawn. Control position, lighting, power, data, comms, etc.								
SOUND SHELL BACKSTAGE (SSB)	Incl line items above								
	Zone 7: Sound Shell/Festivals	***30***	***12***	***173***	***218***	***30***		***218***	

Room / Space	Description	Patron Numbers	Staff / Crew Nos	Existing Centre	Proposed Internal Area	Proposed External Area	Base-ment	Ground Floor	Upper Levels
	Zone 8: Production / Stage Support - Backstage								
Seating Store(s)	Storage for forestage lift seat trucks, pit balustrades, etc.				50		50		
Quick Change Dressing Rm	Accessible DR close to stage (if Dressings Rooms remote from stage). 1x makeup station. 20m2				not included				
Accessible Bathroom	WC/WHB/SWR, accessible, close to stage, perf & crew use.			4	7			7	
Technical Office	Tech, hirer techs/SM workstations, meeting, files, resources, kitchenette. 10m2/workstation + capacity for casual/temp staff. 1x Studio hirer workstation. Stage Door overview		5		50			50	
Technical Workshop	Electronics/eqpmt repair, bench, storage. (OYBS 25+15=40)			in below	25			25	
Crew Change	Crew change area M, F				10			10	
Touring Company Office 1	Office & overflow Dressing Room / makeup. 2x workstation services, 1x makeup station. Studio: adopt workstation in Tech office.		2		12				12
General Workshop	General workshop for stage/set repairs, etc. Laundry tub.				not included				
	Stage Stores (close proximity to stages)								
Lighting Equipment Store(s)	Lx Store, stage level (OYBS 20+15=35)			142	35			35	
Sound Equipment Store(s)	Sx Store, stage level (OYBS 20+15=35)			in above	35			35	
Hirers Equip Store	Secure store/cage, 1 per venue PT & ST. 2x 20				40			40	
Stage Management Store	Stage management equipment, charging stations			in above	6			6	
Drapes Store	Stage drapes, curtains, legs, masking			in above	8			8	
Properties / Weapon Store	Secure store. Fridge, sink bench, shelving. Weapons safe.			in above	10			10	
Piano / Large Instruments	Dust free, envir control. Racking. 1x Grand, 1x Upright			in above	15			15	
Existing backstage circulation				28					
	Zone 8: Production / Stage Support - Backstage	***0***	***7***	***174***	***303***	***0***	***50***	***241***	***12***
	Circulation @ 25%				*76*		*13*	*60*	*3*
	Zone 8: Production / Stage Support - Backstage	***0***	***7***	***174***	***379***	***0***	***63***	***301***	***12***

Room / Space	Description	Patron Numbers	Staff / Crew Nos	Existing Centre	Proposed Internal Area	Proposed External Area	Base-ment	Ground Floor	Upper Levels
	Zone 8: Performer & Crew Support - Backstage								
Stage Door	Secure entry, capacity for security desk, data/phone. 10m2				circulation				
Vending Machine Alcove	3-4 machines, water, power, data				circulation				
Green Room	Kitchen, pinbds, lounge, table & chairs, program relay. Private courtyard/balcony desirable.				50	25			50
Rehearsal Room / Dance Studio	Main stage acting area dimensions plus circulation zone, wall mirrors, dance barrs, lighting grid, sprung floor. Overflow makeup station and whb desirable. Sub-divided by acoustic operable wall				refer FR Rooms				
Rehearsal Store	Furniture and equipment store				refer FR Rooms				
Laundry / Wardrobe	Costume, props maintenance, ironing, sewing workstation. Sink bench, commercial washers (2) & dryers (2), drying cabinet (costumes, wigs). (Wardrobe+dressers) (OYBS 25+20=45)		2		40			40	
Costume Store	Corridors min 2.5m wide for road cases, costume racks.				circulation				
	Proscenium Theatre								
Dressing Room 1	Principal (2-4 persons): 2x makeup stations, 1x WHB.		2		12			12	
DR 1 Ensuite	1 WC, 1 SWR accessible.				7			7	
Dressing Room 2	Principal: as above		2		12			12	
DR 2 Ensuite	1 WC, 1 SWR				7			7	
Dressing Room 3	Actors (4-8 perons): 4x makeup stations, 2x WHB. Shared bathroom.		4		25			25	
Dressing Room 4	Actors: As above		4		25			25	
DR 3 & 4 Bathroom	1 WC, WHB, SWR (preferably acessible).				7			7	
Dressing Room 5	Chorus: 12-20 performers, 6x makeup stations, 3x WHB.		12	42	36				36
Dressing Room 6	Chorus: As above		12	68	36				36
Chorus Male Toilets	1 WC, 2UR/WC, 1 WHB			9	12				12
Chorus Female Toilets	1 WC, 1WHB			10	3				3
Showers	4 showers required				10				10
Musicians Room	2m2 per musician. Min 3m ceiling. Room acoustics for warmup. Small instrument shelves. 1x makeup station		see pit		56				56
Musicians Store	Small music cases				see above				
Dressing Rooms Store	Furniture store to clear Dressings Rooms (desirable), 15m2				15				
Existing circulation				9					
BACKSTAGE (BS)	Includes line items from Stagehouse, Production / Stage Support and Performer / Crew Support noted above								
BACKSTAGE (BS)	Includes line items from Stagehouse, Production / Stage Support and Performer / Crew Support noted above AND backstage line items for Sound Shell and Studio Theatre								
	Zone 8: Performer & Crew Support - Backstage	***0***	***38***	***138***	***353***	***25***		***135***	***203***
	Circulation @ 25%				*88*			*34*	*51*
	Zone 8: Performer & Crew Support - Backstage	***0***	***38***	***138***	***441***	***25***		***169***	***254***

Room / Space	Description	Patron Numbers	Staff / Crew Nos	Existing Centre	Proposed Internal Area	Proposed External Area	Base-ment	Ground Floor	Upper Levels
	Zone 9: Centre Servicing								
Central Cleaner	Cleaners sink, storage shelving. Storage, cleaners sink, chemicals mixing system.			2	15			15	
Satellite Cleaner	On each building level/separate functional zone. Cleaners sink				6				6
General Store	Furniture, equipment. Close to stage door for deliveries.				40	15	40		
Communications Room	PABX, Server, Security, PA system, service workstation. Generally locate in Admin area				20			20	
Misc plant rooms	Switchboard, meters, pumps, FIP, minor plant areas, say			13	20		20		
Plant Room / Platforms	Acoustic treatment / screening required, say			97	200				200
Plant Room Access	Stair footprint 15m2				15				15
Substation	Authority requirements. Direct external access.				40			40	
Bulk Deliveries	Temp store for receivables, pallet loads. At Stage Door				12			12	
General loading dock	Separate to theatre dock. 8-10m rigid trucks. Pedestrian entry.					50			
Recycling/Refuse Yard	Roofed, screened, outdoor recycling, H&C water, bin washing, rubbish compactus.					20			
PLANT ROOM (P)	Incl line items above								
	Zone 9: Centre Servicing	*0*	*0*	*112*	*368*	*85*	*60*	*87*	*221*