

ENGG3112 Stage 4
TUT1-Group2

Edward Ford Building Retrofit Risk Analysis and Development Plan

ANGUS MCLEAN - 510545684
CONOR HORGAN - 510432421
PRITHIK SAINI - 510641919
SAMUEL JONES - 520432118
SITHMA GUNAWARDENA - 510510006

May 19, 2024



THE UNIVERSITY OF
SYDNEY

Contents

1 Executive Summary	1
2 Problem Definition	2
2.1 Problem Definition	2
2.2 Engineering Requirements	3
3 Proposed Solution	3
3.1 Solution Goals	3
3.2 Approach	4
3.3 Technical Details	5
3.3.1 Open-Office Space	5
3.3.2 Dedicated Meeting Rooms	7
3.3.3 Burkitt-Ford Lounge Upgrade	9
3.3.4 Refined Signage System	12
3.3.5 Introduce Digital Navigation Kiosks	13
3.3.6 Relocation of Artifacts	15
4 Risk Management Plan	16
4.1 Risk Assessment Criteria	16
4.2 Risk Register	17
5 Stakeholder Management Plan	19
5.1 Stakeholder Assessment Criteria	19
5.2 Stakeholder Grouping	19
5.3 Stakeholder Management Register	20
6 Proposed Costing	24
6.1 Precedent Comparison	26
6.2 Costing References	26
7 Proposed Timing	26
7.1 Gantt Chart References	26
7.2 Gantt Chart	26
A Informal Interview with Dean from Maintenance	33

1 Executive Summary

This report purposed the implementation plan for the solutions aimed at addressing the problems of the Edward Ford building as identified by the current, primary occupant - the School of Public Health. The key problem identified during solution design is the building's outdated layout which fails to support hybrid work, isolates colleagues, leaving much to be desired in terms of utilisation and community. The solution proposed by this report is multifaceted consisting of four sub-components, outlined below with key risks and timeline expectations:

1. **Open-office conversion** - increase capacity and sense of collegiality by recombining 8 small rooms into a single large open-office for junior staff and HDR students.
2. **Dedicated meeting rooms** - convert 3 underutilised rooms to technologically-enhanced meeting rooms optimised for effective collaboration.
3. **Burkitt-Ford lounge upgrade** - introduce new layout, furniture, and technology to the main student space to improve utilisation and support collaboration.
4. **Signage overhaul** - update all signage to follow an intuitive color-coding scheme.
5. **Way-finding kiosks** - introduce way-finding kiosks to provide directions at main building entrances to assist navigation and accessibility.

Stakeholder Considerations

Individuals offices the standard in the Edward Ford building, hence the primary risk faced is push-back from staff occupying the rooms proposed to be repurposed. These staff will be individually met with to formulate relocation plans to other buildings occupied by the School of Public Health, or elsewhere in the Edward Ford building as ample space exists due to low utilisation.

The construction associated with the office space recombination could cause more push-back by disturbing other building occupants. To minimise complaints the project will host feedback meetings with building staff during design, and maintain an email inbox to manage complaints and inform interested stakeholders. Additionally, construction has been preemptively scheduled for non-semester times.

Additionally, both the navigation and Burkitt-Ford lounge upgrades require relocation of historical artefacts, damage to which would bring disrepute upon the university. As such, trained University Museums staff will be engaged to perform such duties.

Timeline

The total expected duration of the project is 3 years from date of commencement, however this is slightly variable as disruptive implementation stages must be scheduled for semester breaks while observing mandatory shutdown periods. Additionally, since the Edward Ford building is considered to have high heritage significance [4] it is consequently subject to lengthy approvals contributing to a planning phase of 49 weeks, hence it is the advice of this report to commence this stage immediately. The duration of other project phases is summarised below in Table 1.

Table 1: Summarised Project Timeline

Project Phase	Commencement	Conclusion
Planning	May 2024	June 2025
Procurement	June 2025	September 2025
Implementation	December 2025	September 2026
Validation	February 2027	June 2027

Costing

The total costing of each solution component has been summarised below in Table 2.

Table 2: Summarised Project Costing

Project Component	Lower Estimate	Upper Estimate
Burkitt-Ford Upgrade	\$75,000	\$128,000
Open-Office Conversion	\$280,000	\$435,000
Dedicated Meeting Rooms	\$50,000	\$90,000
Administration	\$206,000	\$240,000
Navigation	\$94,000	\$495,000
Total	\$705,000	\$1,388,000

Note: Costings have been rounded to the nearest thousand for readability.

2 Problem Definition

2.1 Problem Definition

The key problem affecting the Edward Ford Building is its layout as it isolates colleagues, inadequately supports the hybrid and collaborative nature of modern work, and does not efficiently utilise space. These issues have led the building to fail in differentiating itself from at-home work leading to a fractured community with little incentive to return to campus. This diagnosis aligns with the goals identified by the School of Public Health's, specifically "modernise the building" and "become a user-friendly space that encourages staff and students to return to campus" [2].

To reiterate, the problem is the outdated layout which has manifested in a number of issues: poor spatial efficiency, lack of support of modern work, low building utilisation, isolation of colleagues, low incentive to work in-person, and diminished community. These issues caused by the outdated layout and their interrelation is depicted in Figure 1 and will be discussed in the next section.

2.2 Engineering Requirements

1. [Policy] Function-specific must meet or exceed the Australian Government's *Tertiary Education Quality and Standards Agency* technology-enhanced learning guidelines [3]. Derived from USYD's quality framework in which the target for educational experience is to be "recognised as the best in Australia" [4].
2. [Policy] Achieve a minimum 4-star Green Star rating. Derived from USYD's Sustainability Strategy and "Green Star" rating system [5][6]. This reflects client preference for energy efficiency and sustainability as expressed by the project brief [2].
3. [Policy] All new and modified technology must comply with USYD's Cyber Security Guidelines and Standards. Derived from USYD's Acceptable Use Of ICT Resources Policy 2019 [7].
4. [Social] Honor and integrate the building's Indigenous cultural context. Derived from USYD's *One Sydney, Many People* strategy [8]. Reflects client's desire to draw upon the Indigenous cultural context of the building as expressed by the project brief [2].
5. [Legal] Ensure accessibility to all required areas, including for those with disabilities. Derived from the Disability Discrimination Act 1992 and the Anti-Discrimination Act 1977 [9][10]. This aligns with client's desire to ensure the building is accessible to all individuals as expressed in the project brief [2].
6. [Legal] Maintain the building's heritage value and cultural significance. Derived from the Heritage Act 1977 and the USYD's Heritage Management Plan [11][12].
7. [Legal] All construction must comply with all requirements as set out by the *Building Code of Australia* (BCA). Derived from the legal requirement for all building works to comply with the BCA requirements regarding structural adequacy, fire resistance, access and egress, services and equipment, energy efficiency and sustainability, and provisions for the health and amenity of occupants [13].
8. [Environmental] Modifications to spaces must be evidenced as supportive of collaboration or collegiality/ community. Derived from USYD's goal to "create an environment that is collegial and collaborative" as identified in their 2032 Strategy [14].

3 Proposed Solution

3.1 Solution Goals

The design decisions forming our solution have been dictated by goals we set out to achieve. These goals are overall effects we hope our solution to accomplish, which a set of remedies for the issues listed above. However, it's important to note our solution does not target these issues directly as doing so would be futile as it ignores the overarching problem. Instead our solution proposes layout changes, addressing the problem, with these changes chosen by predicting their likely effect on the issues caused by the problem. Figure I below depicts the issues caused by the problem and their interconnection, along with the mapping of the seven project goals to the issues they were designed to address.

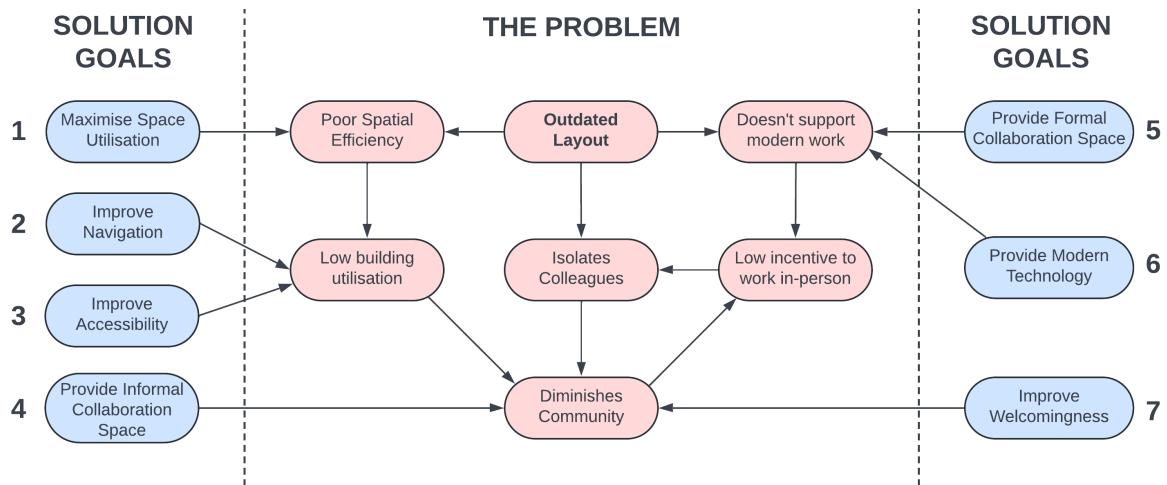


Figure 1: Mapping of Solution Goals Their Target Issue

3.2 Approach

Our approach to achieving the six project goals outlined above has five sub-components:

1. **Open-Office Conversion** - Combine 8 divided rooms on the 3rd floor into a single large open office for HDR students.
2. **Dedicated Meeting Rooms** - Convert 3 offices to dedicated, bookable meeting rooms with modern technology which supports both in-person and hybrid meetings.
3. **Burkitt-Ford Lounge Upgrade** - Rearrange layout and update facilities provided in the Burkitt-Ford lounge.
4. **Signage Overhaul** - Replace internal signage with a consistent, colour-coded scheme to improve navigation.
5. **Wayfinding Kiosks** - Introduce way-finding kiosks at building entrances to assist with navigation and accessibility.

Each approach addresses one or more of the seven stated goals as depicted below in Figure 2.

Solution Component	PROJECT GOAL						
	1 Space Usage	2 Navigation	3 Access- ibility	4 Informal Collab Space	5 Formal Collab Space	6 Modern Tech	7 Welcomin- gness
Burkitt-Ford Lounge Upgrade	✗			✗		✗	
Signage Overhaul		✗	✗				
Open-Office	✗			✗			
Dedicated Meeting Rooms	✗				✗	✗	
Wayfinding Kiosks		✗	✗				✗

Figure 2: Solution Approaches-Goals Mapping

3.3 Technical Details

3.3.1 Open-Office Space

Motivation

This open-office environment hopes to realise solution goal four by facilitating incidental interactions which contribute positively to feelings of collegiality [15], following engineering requirement [8]. By establishing an environment which helps to foster a sense of a shared mission the open-office hopes to provide a point of difference from at home work which encourage peoples to return from remote work [16].

It also hopes to address goal 1 by increasing the total capacity allowing more HDR and junior staff to have an on-campus office space. Our solution does recognise that open offices have some critical drawbacks, such as the distraction associated with working in a space with many other people [17]. Crucially however, many of these shortfalls also apply to the two person offices which compose the majority of offices spaces in the building [18]. Despite this, the other aspects of this solution have been selected in part to compliment the open office by helping lessen these negative effects. Specifically, the formal and informal collaboration spaces provided by the dedicated meeting rooms and Burkitt-Ford lounge upgrade.

Implementation

We propose the removal of dividing walls on the 3rd floor of the Edward Ford building to reinstate room 301 as a large open-office space. This space is designed primarily with Higher Degree Research students and junior academics in mind. This space was selected for the removal of walls as, in the absence of structural documentation, they were identified as likely to be non-structural for three reasons:

1. Walls are depicted in the floor plan as non-structural. This is indicated by them being thinner and disjoint from the primary structure of the building, as depicted in Figure [3].
2. Anecdotal evidence suggests the walls were added within the last 10 years indicating they are not part of the original structure and should be non-load-bearing, see appendix [A].
3. Rooms are all labelled 301 followed by a letter indicating that they were likely not present when the building's rooms were first numbered. This letter convention is seen in a few other places in the floor plan where walls also appear to be non-structural and thus indicates a past renovation divided existing rooms and led to the appending of letters to their names.

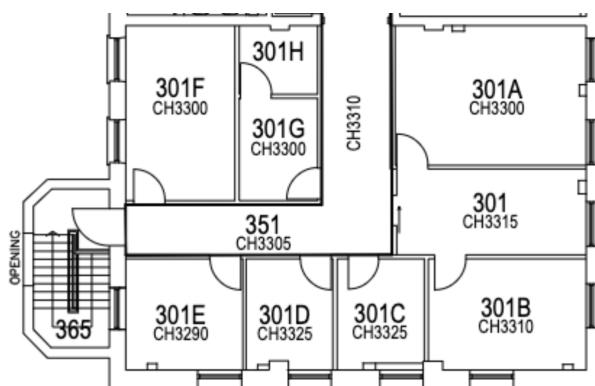


Figure 3: Current Floorplan of Proposed Office-Space

This also bodes well for heritage council approval, as the change likely isn't interacting significantly with the building's original character, aligning with engineering requirement 6.

This removal of walls and the associated works will be overseen by a licensed builder contractor to ensure engineering requirement 7 is observed. This person will oversee the works and facilitate communication between disciplines. The removal of walls will interact with MEP services existing within the non structural walls, hence the walls must be surveyed to ensure all trade disciplines are aware of interactions between systems.

- **Mechanical** - Mechanical services in this section of the building are limited to ventilation which is primarily reticulated through the cavity between the roof and ceiling. As such, there should be little need to interact with these services to remodel the space. The key aspect would be ensuring the new arrangement is effectively ventilated, heated and cooled via appropriate vent placement. These requirements will outlined explicitly in the construction contract.
- **Electrical** - The non-structural walls have existing electrical services routed in them that will need to be moved to facilitate the removal. To provide power to desks in the middle of the space services will be relocated into the floor and made available via coverable sockets.
- **Plumbing** - Only one room (301) proposed to be combined has been identified to have plumbing services. The room contains a kitchenette with a sink that is plumbed into a non-structural wall. As such, this plumbing will need to be removed from the wall. The proposed new location for the sink in the new kitchenette backs onto room 302A which is already a bathroom, thus having existing plumbing infrastructure that will be able to be tapped into. This will require inspection from a plumbing specialist and a licensed plumber to perform the work.

Open-Office Negative Effect Countermeasures

- **Sound deadening** - One of the biggest limitations of open plan office spaces is noise disturbances. This can have a significant impact on worker performance and well-being. To combat this carpets will be relayed with a sound deadening underlay that reduces the transmission of sound between levels, and also deadens sounds in the room, reducing the impact of noise in the space. The other area where sound deadening is critical is between workstations to ensure people are not subject to unwanted distractions from their colleagues. This will also create a visual barrier which has been shown to reduce distractions.
- **Natural light** - One key advantage of open plan offices is the permeation of natural light. This has been shown to improve productivity and mental health of workers. This can be achieved by leaving windows unobstructed and providing two layered curtains; one to allow light in while reducing intensity, and a strict block out for when the sun is low in the sky.
- **Layout** - The layout of an open office is key in ensuring the space can still be productive and welcoming. It is also plays a significant role in mitigating the potential drawbacks of an open plan office. The layout we are proposing finds balance between more permanent individual desk spaces for junior staff with a more full time presence in the building, and hot-swap work stations for HDR students.

3.3.2 Dedicated Meeting Rooms

Our solution proposes the conversion of three offices, one on each floor of the building, to dedicated and bookable meeting rooms. This component of our approach is targeted at achieving goal 5 of our solution, that is, providing a formal collaboration space. Having permanent, dedicated meeting rooms can help justify the investment in expensive collaboration technologies as it allows coworkers to share these tools which would otherwise be prohibitively expensive to provide on an individual basis.

Layout Design

The proposed meeting room configuration is shown below in figure 4. The key design consideration is the oval conference table which has been selected to consider accessibility of the hearing impaired who benefit from uninterrupted sight-lines between all attendees for both signing and lip-reading [19]. The benefit is twofold as it also ensures all meeting attendees are aware of each other and helps provide equal opportunity to contribute.

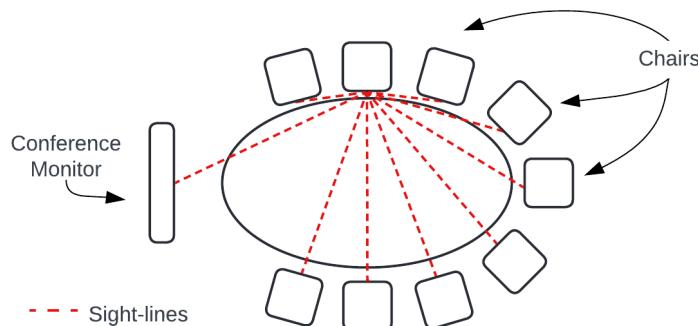


Figure 4: Conference Room Accessible Sight-Lines

Space has been left before the conference monitor to ensure all attendees have equally clear views and to maximise the presence of remote attendees, both critical for effective hybrid collaboration [20]. The room also contains 9 swivelling and rolling office chairs to allow meeting attendees to easily turn and face whoever may be speaking without straining, which may otherwise bias eye contact between certain individuals [21].

The selected table is the *Skutchi Designs Harmony Oval Powered Conference Table* measuring 1.2m wide and 2.8m long, additionally since 1.2m of clearance between the table and walls is required for maneuverability [22], we have a minimum room size of 3.6m x 5.2m. The specific rooms to be repurposed on each floor will be dependant on feedback received by occupants of the building (stakeholders group F and G).

Technology Selection

Our solution proposes the implementation Logitech's *Rally* video-conferencing ecosystem in the new meeting room spaces. This approach has been selected as using products which have been intentionally designed to interact with one another is more likely to deliver a quality user experience [23]. Additionally, this ecosystem is unified under Logitech's *Sync* device management software which provides USYD IT visibility into every device posturing the network to be more secure, in alignment with the USYD Cyber security standards captured in engineering requirement 3.

This ecosystem was selected for its capacity to provide remote attendees more natural visual engagement with in-person collaborators and better in-person representation, resolving some of the critical issues of hybrid interactions [24]. The combination of these technologies hopes to provide more equal collaborate opportunity and hence more effective meetings, aligning with engineering requirement 8 [25].

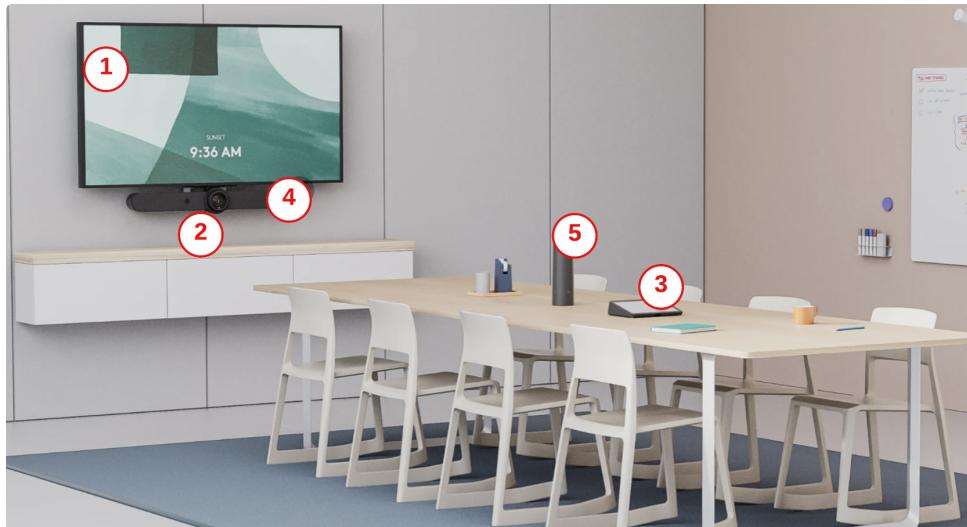


Figure 5: Example Device Implementation [26]

Table 3: Selected Meeting Room Devices

	Item	Model Name	Model Code
1	Conference monitor	Dell 55 inch conference monitor	P5524Q
2	Conference camera	Logitech Rally Camera	960-001226
3	Meeting room controller	Logitech Tap	939-001950
4	Speaker	Logitech Rally Speaker	960-001230
5	Microphone	Logitech Rally Mic Pod	989-000430
6	Conference PC	Lenovo ThinkSmart Core	N/A
7	Other	Logitech Display Hub	993-001951
8	Other	Logitech Table Hub	993-001952

The specific devices selected from the *Rally* are listed above in table 3, will be laid out as shown in figure 5 and must be connected as shown in figure 6. Note that devices 6-8 from table 3 are not present in figure 5 as they are mounted under the table.

The devices selected in table 3 have been selected using the Cyber Security guidelines as outlined by engineering requirement 3. Additionally, technology will be implemented by USYD ICT using the frame-works as established for other precedent implementations such as the meeting in the new Engineering and Technology Precinct Building (J03).

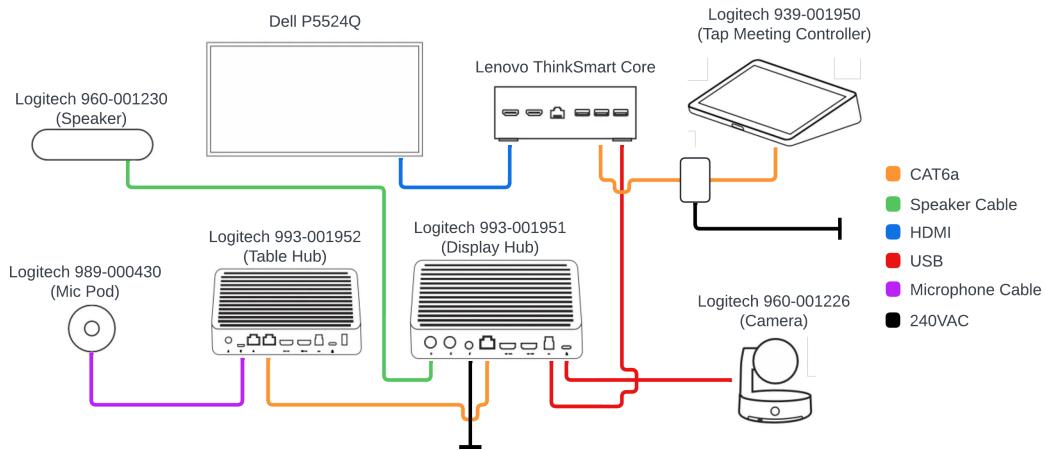


Figure 6: Wiring Diagram

Booking System

The booking system selected to manage meeting room scheduling is *Outlook Calendar* due to the native integration with all of the devices in Logitech's *Rally* ecosystem. Additionally, Microsoft's Outlook Calendar is already the platform through which meeting rooms in J03 and spaces in the current Burkitt-Ford room are available, as explained in appendix A. Thus, by utilising Microsoft's booking tool we get the most out of the selected hardware, leverage familiarity within ICT and the School of Public Health, and can utilise the extensive online training already made available by Microsoft.

3.3.3 Burkitt-Ford Lounge Upgrade

Motivation

As the primary student space in the Edward Ford building, the Burkitt-Ford lounge is recognised by building users to be chronically underutilised, as explained in appendix A interview. This solution proposes remedy this issue by refreshing the space with features and capacity to attract and support students, fulfilling engineering requirement 8. Our solution proposed to introduce a new layout with additional furniture and subsequent higher capacity in hopes to address both solution goals 1 and 4.

It also proposes to add 16 workstations to provide users of the space with modern technology, addressing goal 6 and engineering requirement 1 by resolving the TEQSA-identified risk of "insufficient and/or ineffective mechanisms for students to work collaboratively" 3. The chosen workstation technology has been selected to comply with the Cyber Security guidelines captured by engineering requirement 3.

Implementation

The first step of the implementation is the removal of the current furniture, and the historic artefacts which surround and forbid natural light in the room. With the artifacts gone it is permissible to open the blinds the without risk of UV damage. Furniture removal is contracted out with the option of auctioning items in good condition as seen in costing [2], while the artifacts are relocated according to Section [3.3.6].

To prevent further damage to the historic hard-wood flooring (eng req. [6]), the $290m^2$ room will be carpeted with cost-effective recycled polyester [2]. This not only protects the flooring but also dampens sound within the space, reducing noise and distractions for students [27].

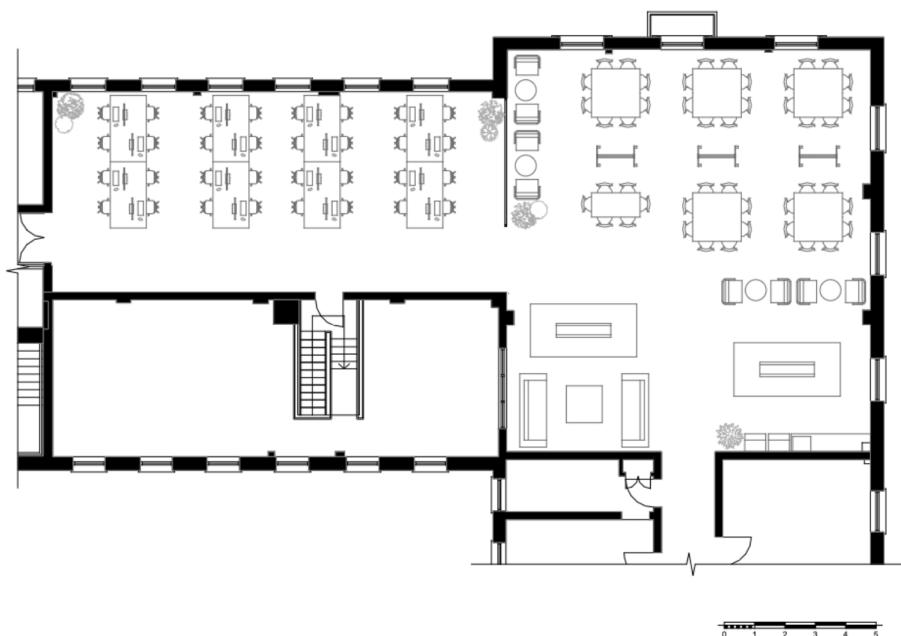


Figure 7: Proposed Floor Plan

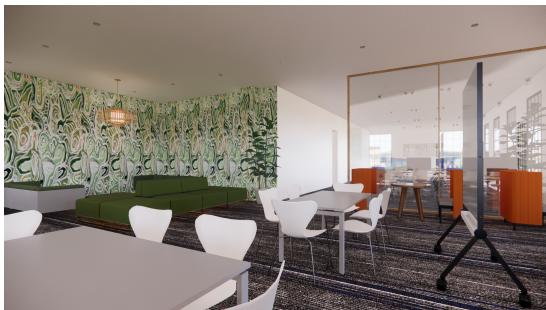
As seen in the floor plan in figure [7], the quiet individual-working area has been moved away from the entrance and replaced with two types of collaborative spaces. This improves the Feng Shui of the space which according to research is a critical consideration [28]. The entrance holds an informal collaboration space (figure [8]) consisting of lounges and booths to promote collegiality (goal 7) and move distractions away from the formal spaces. The space also holds the printing and stationary corner, the room currently does not have a functional printer.

Past this is the formal-collaborative space which consists of six large tables and six whiteboards. This significantly improves on the spaces' existing outfit by providing tables to work on, tripling the number of whiteboards and increasing student capacity by 117% seen in table [4] below.

Metric	Original Design*	New Design	Change
Collaborative capacity	30	65	+117%
Formal / individual capacity	27	32	+19%
Workstation capacity	7	16	+129%
Collaboration screens & whiteboards	2	6	+200%

Table 4: Burkitt-Ford Lounge Capacity (*primary observations)

To separate the individual working area from the collaborative a non-structural glass wall is proposed as seen in figure 8. This acts as a noise and spatial barrier while also allowing natural light to be shared between. The individual section is upgraded with sixteen new workstations across eight desks and increases capacity by 19%.



(a) New collaborative desk space



(b) New individual desk space

Figure 8: Proposed Burkitt-Ford Lounge Renderings

Workstation Implementation

As desktop technology is a rapidly evolving space, computers become outdated in as little as three years [29]. In contrast, display technology has reached a stage where further improvement yields diminishing returns [30]. Hence, our approach to introducing more workstations, as part of the capacity improvements, is to introduce "hot-swap" workstations.

A hot-swap workstation has the normal peripheral devices of displays, a mouse, and a keyboard however it lacks a dedicated computer. Instead the set-up is purposed to connect with and expand the functionality of the user's own laptop. With monitors lasting up to 45 years [31], this type of workstation helps minimise upgrade frequency hence being economic and sustainable by minimising e-waste [32]. The specific devices that have been selected to implement these workstations are outlined below in table 5.

Table 5: Selected Meeting Room Devices

Item	Model Name	Model Code
Docking station	Dell Thunderbolt Dock	WD22TB4
Keyboard and mouse	HP 225 Wired Mouse and Keyboard Combo	286J4AA
Monitor	HP V24IE 24" FHD Monitor	6D8H0AA

The devices selected in table 5 have been chosen using the Cyber Security guidelines as outlined by engineering requirement 3. Additionally, technology will be implemented using the frameworks as established for other precedent implementations such as the hot-swap workstations in Abercrombie Building level 1 learning hubs.

3.3.4 Refined Signage System

Motivation

Efficient wayfinding is essential for navigating complex environments such as buildings, campuses, or facilities [33]. The current signage system, while functional, presents opportunities for enhancement to better serve the needs of users. The primary objective is to improve signage by incorporating positive design choices and guidelines [34, 35] to significantly decrease navigation time in accordance with Goal 5 and enhance accessibility as outlined in Goal 7.

Category	Description
 ADMIN ROOMS	Dedicated spaces for administrative and support staff to perform office work, manage operations, and handle organizational tasks, i.e. Professor Miranda's Room
 AMENITIES	Supplementary facilities or services provided to enhance comfort, convenience, and overall experience for users, i.e. toilets and printer rooms
 COMMUNAL SPACES	Shared areas designed to encourage social interaction, relaxation, and informal meetings among occupants, i.e. Burkitt-Ford Lounge
 CONFERENCE ROOMS	Designated spaces equipped with essential amenities and technologies to facilitate meetings
 LECTURE HALLS	Auditorium-style spaces designed to accommodate a significant number of attendees for lectures, presentations, and educational sessions
 TUTORIAL ROOMS	Smaller, focused learning environments designed to facilitate interactive and personalized educational sessions, used for group discussions, tutoring, and workshops

Table 6: Proposed color schemes and room categories

The proposed system organizes rooms into groups with distinct color schemes, as detailed in Table 6. This visual differentiation aids intuitive navigation for users, as supported by previous research [37, 38]. Additionally, strategically placed directional arrows further enhance clarity and reduce ambiguity in wayfinding [39, 40]. By leveraging principles of visual differentiation and spatial cognition, this approach aims to streamline navigation and improve the overall user experience.

Furthermore, the color-coded system has been thoughtfully designed to accommodate individuals with color vision impairments by utilizing an accessible color palette [41] and category-specific symbols [42], as demonstrated in Figure 9. This approach aligns with Engineering Requirement 5, subsequently enhancing accessibility and improving color contrast [43] for the general population.

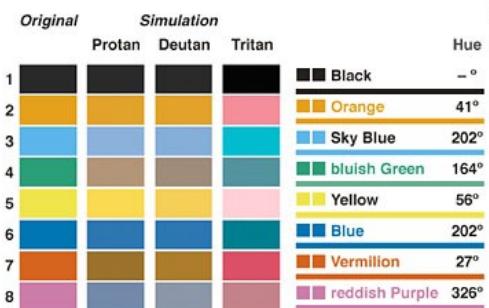


Figure 9: Barrier-free color palette [36]

Implementation

All existing signage holders will be repurposed to accommodate the proposed engraved signage, as illustrated in Figure 10. The production of the new signage will be outsourced to an external vendor, ensuring high-quality results. Installation of the signage will be strategically scheduled for off-peak hours during weekdays or at any time over the weekends. This approach is designed to minimize traffic disruptions and avoid inconveniencing the general public.



(a) Original Signage



(b) Proposed Signage

Figure 10: Comparison of Signage Appeal

3.3.5 Introduce Digital Navigation Kiosks

Motivation

Building upon the successful implementation observed at the Hamad International Airport [45], the introduction of kiosks represents a pivotal solution aimed at facilitating seamless navigation within the building's intricate layout, thus realizing Goal 5. The notable 6.3% growth [46] in kiosk utilization reflects a discernible shift towards user preference for self-service navigation over traditional interaction-based inquiries. This shift is particularly pertinent for individuals grappling with social anxiety, a phenomenon extensively documented in numerous publications [47, 48], and resonates with the broader demographic consensus, with 51% of individuals more likely to consider self-service [49]. Consequently, the implementation of navigational kiosks assumes paramount importance in addressing diverse user needs and aligning with evolving user preferences, while concurrently meeting Engineering Requirement 5 and Goal 7.



Figure 11: TM-349 display [44]

The Curevision TM-349 series (Figure 11) has been identified as an optimal choice for serving as the designated navigational kiosks. Boasting ample memory capacity and LAN/optional WiFi connectivity to seamlessly integrate with the University's dedicated IT server, coupled with its ergonomic design and vandal-resistant properties, the TM-349 series is well-suited to fulfill the intended function. These kiosks will be strategically positioned at key entry points, stairway junctions, and high-traffic areas, as illustrated in Figure 12. This placement strategy ensures maximum effectiveness and user utilization at decision points along the navigation route, while also prioritizing minimal disruption to the general public, as per established guidelines. [50, 51]

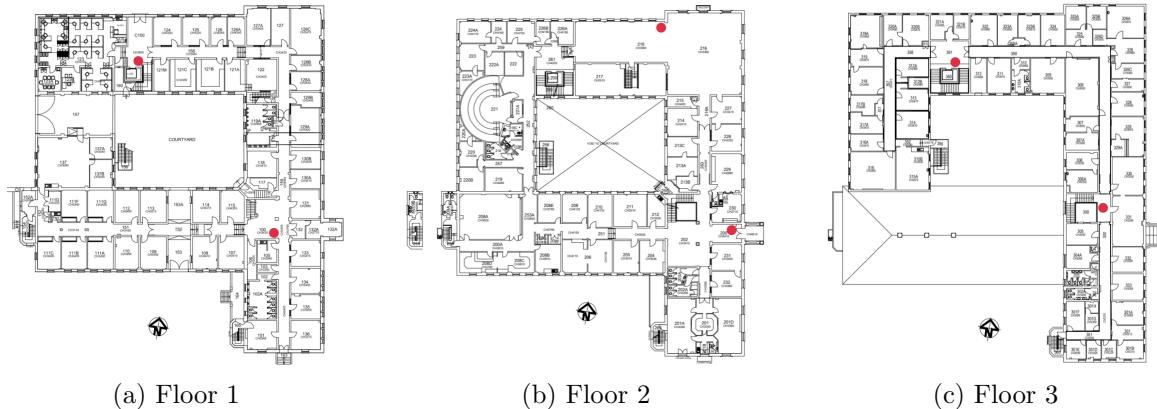


Figure 12: Red Marker for Kiosks

Additionally, it is proposed that the kiosks serve as a platform for promoting various in-house establishments, including USU fast food stalls, events, and university merchandise, thus generating advertising revenue. This initiative aims to generate profits that can be reinvested into the ongoing renovation plan, ensuring the sustainable development of the university's infrastructure.

Implementation

These kiosks will operate on a dedicated software platform hosted on a remote server, ensuring robust security measures and facilitating timely updates, in strict accordance with USYD's Cybersecurity Framework outlined in Engineering Requirement 3. The software will meticulously determine the most optimal routes to users' desired destinations within the premises. Furthermore, it highlights cleverly positioned points of interest, as detailed in Section 3.3.6. Users will benefit from a comprehensive overview of their selected route through an image accessible via scanning a QR code (Figure 13), thereby enabling real-time navigation assistance.

The proposed implementation of a dedicated software, integrated with the kiosks' installation, suggests leveraging a Student Capstone Project framework [52], thereby engaging university students enrolled in pertinent courses such as Software and Mechatronics Engineering. This initiative would be conducted under the guidance of a distinguished panel of professors from relevant engineering departments. By harnessing the expertise and talents of students, this in-house software development plan ensures that incentives are aligned with the university's best interests, while concurrently mitigating various risks associated with data collection, security, and compliance with the university's ICT guidelines and cybersecurity framework. Furthermore, this approach significantly alleviates financial burdens, sparing the university considerable expenses that would otherwise be incurred through hiring external development teams, legal contract fabrication, oversight, and associated overhead costs [53].

Alternatively, the software could be developed by a team of professional software engineers, provided they adhere to the stringent guidelines outlined by the university's policy and framework.



Figure 13: Example QR code

Navigation Software Project Brief

1. Key Functionalities:

- Show user's current location and list room categories (Table 6).
- Dropdown menu for selecting rooms under chosen category.
- Determine optimal route using APIs
- Display scrollable slideshow with directional images.
- Generate QR code for mobile route access.

Working Android prototype demonstrated (see Appendix D).

2. Passive Functionalities:

- Intuitive buttons and auto-return to home screen.
- Highlight and link to detailed information about historic artifacts.
- Run ads for in-house campaigns without disrupting functionality.

3. Development Strategy:

- Adhere to university policies and standards [54, 55]; obtain necessary approvals.
- Use advanced mapping APIs and ensure responsive design.
- Implement a user-friendly interfacing by conduct user research, extensive testing, and quality assurance.
- Provide staff training and ongoing support.

3.3.6 Relocation of Artifacts

Motivation

A significant portion of the exhibited artifacts is currently housed within the Burkett-Ford Lounge and the main foyer, featuring an assortment of canvas portrait paintings and statues. Regrettably, their current placement presents several challenges. Enclosed within the gallery space, these artifacts not only fail to complement the lounge's ambiance but also impose restrictions on the functionality of the space, contravening Goal 6. This arrangement hinders the opening of window sills due to concerns over potential damage, violating Engineering Requirement 6. Moreover, the extensive array of paintings and statues adorning the main foyer presents an imposing sight [56] and fails to elicit significant engagement from passersby, thereby falling short on Engineering Requirement 8.

To effectively address these challenges, a nuanced approach is proposed: the strategic dispersal of these artifacts throughout the premises. By envisaging their placement as more than mere static displays, these artifacts will be reimaged as functional elements, serving as navigational aids, as detailed in [Introducing kiosks]. Positioned judiciously along pathways and junctions, these artifacts will serve as distinctive waypoints, enhancing both the visual appeal of the environment and aiding users in navigating towards their destinations [57]. This approach not only alleviates current spatial constraints but also enriches the overall user experience, fostering a harmonious fusion of functionality and aesthetics within our establishment. By adhering to Engineering Requirements achieving Goals 1 and 6, this strategy ensures a comprehensive and effective solution to the existing challenges.

Implementation

The historical displays currently situated in the foyer and lounge will be dispersed throughout the building as appropriate, keeping it away from direct sunlight to aid preservation. This strategic dispersal ensures both the preservation of artifacts and adherence to artifact conservation standards whilst serving as aforementioned points of interest. The transportation and reinstallation of these artifacts will be conducted by the Sydney University Museums' staff, following guidelines provided by accompanying plaques positioned adjacent to these souvenirs. This meticulous approach not only ensures the safe relocation of the exhibits but also maintains their historical integrity and significance.

4 Risk Management Plan

4.1 Risk Assessment Criteria

The following table summarises the risks that may arise as a direct result of the proposed Edward Ford Building retrofit and, where relevant, the corresponding mitigation measures to be taken. Identified risks will be scored 1-5 on two criteria probability and impact, with the assessment criteria of each listed below in table 7

Table 7: Risk Assessment Criteria

Probability	Impact
<p>The likelihood of the risk incurring any of its identified consequences.</p> <ul style="list-style-type: none"> 1. Remotely possible 2. Reasonably possible 3. Moderately likely 4. More likely to happen than not 5. Almost guaranteed 	<p>The maximum effect the risk's consequences pose to relevant stakeholder(s) or the project.</p> <ul style="list-style-type: none"> 1. Minor inconvenience 2. Mention-able disruption 3. Requires external resolution 4. Requiring immediate & continued remediation 5. Unrectifiable damage

Then, the total risk score will be the product of its probability and impact scores:

$$\text{total risk score} = \text{probability score} \times \text{impact score}$$

A risk will be considered acceptable if its total risk score is 6 or lower. Where a risk has a total score greater than 6, mitigation measures will be detailed. The efficacy of mitigation measures will then be assessed by reevaluating the risk's probability and impact scores. If a risk cannot be mitigated to achieve a score below the acceptable threshold, their acceptability will be individual justified in the risk monitoring plan.

4.2 Risk Register

7 [58] 8 [59] 9 [60] 10 [61] 11 [62] 12 [63] 13 [64] 14 [65] 15 [66] 16 [0] 19 [0] 20 [0] 21 [0]
 22 [0] 23 [0]

	Hazard	Risk	Consequences	Risk Category	Probability Score	Impact Score	Total Risk Score	Mitigation Strategy	Revised Probability Score	Revised Impact Score	Revised Total Risk Score
1	Improper artefact handling during relocation.	Damage to artefacts.	Loss of cultural and financial assets.	Construction	3	2	6	Only trained Sydney University Museums staff are to relocate artefacts.	1	2	2
2	Improper demolition methods.	Structural damage during wall demolition	Expansion of project budget and timeline due to unbudgeted repairs.	Financial	2	5	10	Ensure structural survey is completed to identify critical areas of the structure and a reputable contractor is selected.	1	3	3
3	Noise due to construction.	Upsetting building users.	Project timeline extended to avoid further upsetting building users.	Stakeholder	3	2	6	Schedule construction outside of working hours or outside of semester times.	1	2	2
4	Material requiring removal from 3rd floor.	Improper material handling.	Personal injury to contractors. Damage to building causing increased project budget and timeline.	Environmental	2	4	8	Ensure a contractor with heritage construction experience is selected to minimise risk of damage.	1	4	4
5	Relocation of Burkitt-Ford historical displays.	Upsettin Prof. Catherine Storey OAM who manages the historical displays.	Extention of project timeline due to redesign of Burkitt-Ford lounge to observe stakeholder requests.	Design	4	4	16	Consult and negotiate changes to the historical displays with the stakeholder to preemptively minimise dissatisfaction.	1	3	3
6	Permanent eviction of staff from private offices.	Upsetting affected staff.	Project timeline extented due to protesting stakeholders.	Stakeholder	5	4	20	Consult affected stakeholders to negotiate develop acceptable relocation plans.	2	3	6
7	Affecting heritage value.	Legal implications as heritage value is protected.	Project scope expanded to include unforeseen repairs. Budget and timeline must be expanded to accomodate works.	Legal	3	4	12	Ensure all building works are approved by the Heritage Council and contractor is selected using the NSW government Built Heritage Conservation Consultations Scheme,	1	4	4
8	Working with hazardous materials.	Risk to health of contractors and building users.	Contractor long-term health complications.	Environmental	3	4	12	Ensure demolition areas are preinspected, PPE***	1	4	4
9	Open office environment.	Negatively affecting productivity of office users.	Project looked on unfavourably leading to reduced funding.	Design	3	3	9	Ensure new open office observes design principles which minimise negative consequences, and communicate this to stakeholders.	2	3	6
10	Theft of technology.	Additional cost associated with replacing stolen items.	Project budget expanded to replace stolen items. Failure to deliver on key project goal if budget cannot afford replacement.	Financial	3	4	12	Ensure all technology is mounted using security hardware or attached to fixed structures with steel cable.	1	4	4
11	Chosen technology or furniture unavailable for purchase.	Aspect of retrofit not completed.	Extention of project timeline or failure to deliver on a key project goal.	Design	3	3	9	Select a equivalent replacement as a back-up should the first choice be unavailable.	1	3	3
12	360 recording in meeting rooms.	Privacy of passersby.	Complaints leading to removal of valuable technology and partial failure to deliver on key project goal.	Stakeholder	2	2	4	Minimise or eliminate sight-lines from the camera to outside the meeting room.	1	2	2
13	Kiosks obstructing walkways.	Negatively affecting building accessibility	Infringing on non-discrimination rights of building users.	Legal	2	3	6	Ensure placement of kiosks does not impede on AS1428 (accessibility requirements) compliance.	1	3	3

	Hazard	Risk	Consequences	Risk Category	Probability Score	Impact Score	Total Risk Score	Mitigation Strategy	Revised Probability Score	Revised Impact Score	Revised Total Risk Score
14	Misrouting of kiosk users.	Upsetting or endangering kiosk users or uses of the building.	Personal safety of user if routed through dangerous area. Inconvenience to staff if students are routed to staff spaces.	Stakeholder	3	2	6	Ensure product functionality is thoroughly tested and fixed where required prior to being made available to the general public.	1	2	2
15	Removal and installation of furniture.	Personal injury or damage to equipment and structures.	Project budget expanded to replace damaged items or repair building damages. Injury to removalist staff.	Environmental	3	3	9	Use of a professional contractor who has appropriate equipment and is trained in safe moving practices.	1	2	2
16	Design of indigenous mural in the Burkitt-Ford lounge	Insensitive design and/or cultural appropriation.	Damage to University reputation for tokenistically using indigenous art.	Reputation	2	3	6	Consultation, collaborate, or subcontract mural to an indigenous artist or group to facilitate self-representation.	1	1	1
17	Misplacement of wayfinding kiosks.	Underutilisation / unsability of wayfinding kiosks	Failure to deliver on a key project goal.	Design	2	3	6	Use of lighting to draw attention to kiosks, testing to ensure lighting does not cause glare which impedes use.	1	3	3
18	Temporary room closures during refitting.	Upsetting users of the spaces.	Project timeline extended due to resolving the protests of stakeholders.	Stakeholder	5	4	20	Engage stakeholders to advise of closures in advance. Conduct closures during periods of minimum utilisation such as between semesters.	2	3	6
19	New room layout impacts fire safety.	Rooms fail to be recertified as compliant with ABS Fire Safety requirements.	Project timeline and budget expanded to encompass redesign and changes to modified layouts.	Legal	2	4	8	Consult with *** to ensure modified building layouts will not face issues with Fire Safety Compliance recertification.	1	3	3
20	Wayfinding kiosks take inadequate cybersecurity precautions.	Kiosks is compromised or hacked.	Kiosks display offensive or incorrect information causing users to be misguided or offended.	Reputation	2	3	6	Conduct thorough cyber security risk assessments for each vendor providing ICT services, including regular reviews and audits. Include specific security requirements in vendor contracts to ensure compliance with USYD standards. Monitor vendor performance and enforce compliance with contractual obligations. [Vendor Management]	1	3	3
21	Meeting room booking system is inaccessible or has poor usability.	Meeting room is not effectively utilised.	Failure to deliver on a key project goal.	Design	3	3	9	Communicate with intended users of the room to explain the booking system. Post signage on meeting rooms explaining how they can be booked.	1	3	3
22	Booking system is overly accessible.	Meeting rooms are unavailable to users of the building.	Failure to deliver on a key project goal.	Design	3	3	9	Through the booking software ensure only allowed individuals are able to book meeting rooms.	1	3	3
23	Material unavailability or cost increase, labour shortage, subcontractor issues, and unforeseen weather events	Contractor unable to complete work at quoted cost or timeline.	Expansion of project timeline and budget.	Construction	3	4	12	Use a experienced contractor who will include these uncertainty in their quote of project cost and timeline. Include a 10% buffer over contractor estimates to absorb small increases without affecting the project.	2	1	2

5 Stakeholder Management Plan

5.1 Stakeholder Assessment Criteria

To determine the appropriate engagement methods stakeholders will be assessed on the nature and level of interest in the project, and their level of influence over the project. Both levels of interest and influence will be quantified on a 1-5 scale with the assessment criteria of each outlined in table 8 below.

Table 8: Stakeholder Assessment Criteria

Level of Interest	Level of Influence
The degree of information the stakeholder will want to receive about the project. 1. Minimal: Bare minimum information required to fulfil personal responsibilities (e.g. loan officer). 2. Headlines: Key information about project milestones. 3. Single Aspect: Regular communication about one aspect of the project. 4. Multi-Aspect: Regular communication of multiple aspects of the project. 5. Full Spectrum: Regular communication of all aspects of the project.	The ability of the stakeholder to affect the outcome of the project. 1. Communication: Not directly consulted, but able to communicate with influential parties. 2. Consultation: Directly consulted about aspects of the project, but not an official advisor. 3. Indirect control: Advisory role to more influential parties. 4. Direct control: Can affect aspects of the project. 5. Unilateral control: Can affect delivery of the entire project.

5.2 Stakeholder Grouping

Many stakeholders share a similar level of interest and influence, hence we can cluster these stakeholders under the same management plan for simplicity which will aid project execution. The stakeholder compass in figure 14 illustrates the different stakeholder groups.

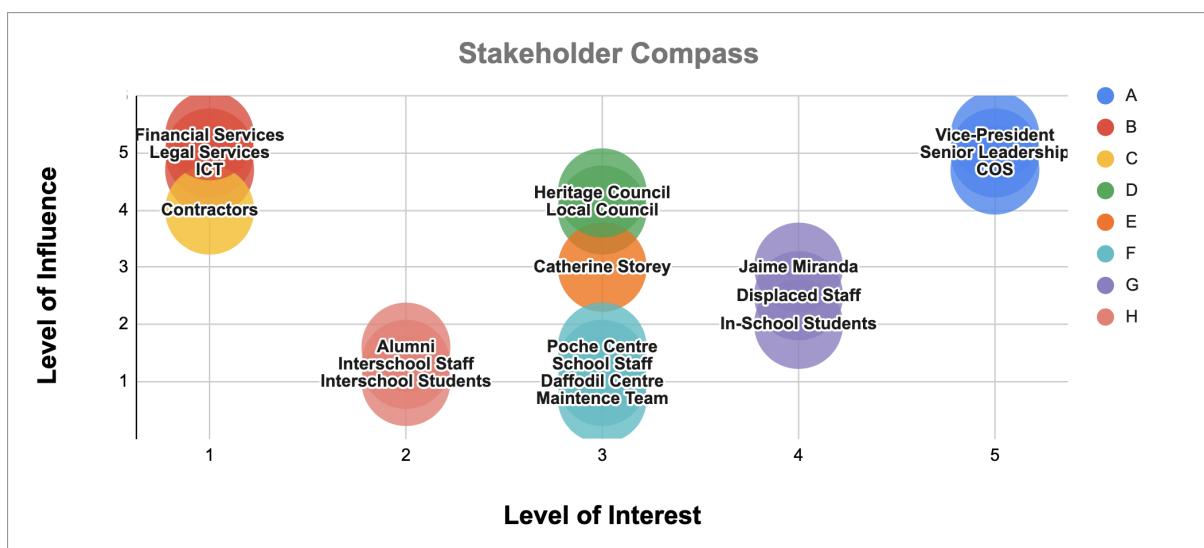


Figure 14: Stakeholder Compass

5.3 Stakeholder Management Register

Group	Stakeholders	Nature of Interest	Interest and Influence Levels	Engagement Method (info in + info out)	Engagement Timeframe	Anticipated Outcomes
A	Vice-President (Operations)	Responsible for "the ongoing use of our infrastructure, through a focus on the strategic whole-of-life asset management, protective services, safety, as well as enhanced delivery of essential operational services which delivers to our sustainability objectives"	5 - Full-spectrum interest 5 - Unilateral Control	Engagement will be conducted in the form of multiple meetings between these stakeholders and the appointed project manager(s) until the project scope, timeline, and budget have been formalised. Once formalised, communication will consist of progress updates in the form of text-based digital documents. This document will include quantitative and qualitative descriptions of project progress to communicate whether it is running on-budget and on-time. Where this document indicates the project is steering off-course in one of those metrics a meeting will be organised with the same attendees to discuss problems and develop remediation plans.	The planning meetings will be conducted in the design phase in which the budget and project scope are discussed and formalised between all stakeholders. The progress update documents will be communicated monthly, or at points of major progress or problems. As explained, problem remediation meetings will be organised ad-hoc where problems are identified in the recurring update document. This engagement will continue throughout the project until completion.	Design phase meetings will formalise project budget and scope in the form of a contract or other document by Legal Services, the contents of which directly determining the scope and execution of Recurring progress update documents are infrequent enough to minimise administrative overhead, but frequent enough to catch and remediate problems early. Verification meeting will evaluate the success of the approach taken by the project and inform future developments at USYD.
	Senior Leadership		1 - Minimal interest 5 - Unilateral control	Have the capacity to halt the critical path at any point of the project.	Stakeholders from this group will be first contacted during design in which technological implementation plans, contractors, and spending are being organised.	
	Central Operations Services (COS)		1 - Minimal interest 5 - Unilateral control	USYD professional service units through which the entire project must pass through in some capacity; all spending must be approved and performed by Financial Services and all contracts and building applications must be completed or signed-off on by Legal Services.	Stakeholders may be engaged later in implementation in the case of problems with contractors or budgeting later in implementation. In the case of problems engagement will consist only of information exchange until the tasks required to solve the problem have been completed.	Interactions will be completely successfully and be purely transactional occurring only at times where tasks are to be completed, and consisting only of information required to complete said tasks.
B	Financial Services Legal Services ICT	USYD teams responsible for: - All aspects of our financial management including reporting, billing, purchasing and payments. - Administrative and discrimination law, property and construction. - Development, implementation and support of technology-based services that support the core functions of the University.	1 - Minimal interest 5 - Unilateral control	These stakeholders will be engaged only where appointed project manager(s) have tasks for them to complete. These tasks will be communicated predominantly through text-based digital communication such as email and online portals. Clarification and additional information will be requested by these stakeholders and returned through the same medium.		
C	Contractors	External companies and teams who have been engaged to perform specialised tasks and who are contractually obliged to complete them to the standard set out by a legal contract.	1 - Minimal interest 4 - Direct control	The scope of work will be communicated through initial planning meetings between appointed project manager(s) and these stakeholders. Stakeholders will then communicate their expected cost, timeframe, and final result in the form of a quote which will be formalised in a contract created by Legal Services which is signed by both parties. Progress update meetings will communicate the progress of the contractor on their respective work to the appointed project manager(s).	Contractors will be engaged during planning stages, multiple contractors engaged for a single task to ensure the best selection is made. This means that some contractors will be engaged for a quote, but not be engaged to complete the job. Progress update meetings will be scheduled at regular intervals appropriate for the expected duration of the work. For example, constructions meetings will be conducted monthly, but removalist meetings on a weekly basis.	The scope of work will be communicated through initial planning meetings between appointed project manager(s) and these stakeholders. Stakeholders will then communicate their expected cost, timeframe, and final result in the form of a quote which will be formalised in a contract created by Legal Services which is signed by both parties. Progress-update meetings will be scheduled with project manager(s) at intervals appropriate expected duration of work. Should the contract need updating, this will be negotiated through Legal Services and reformed.

Group	Stakeholders	Nature of Interest	Interest and Influence Levels	Engagement Method (Info in + Info out)	Engagement Timeframe	Anticipated Outcomes
D	Heritage Council Local Council	Regulatory councils whose responsibilities will include for the building works applied for the combination of rooms into the single open-office.	<p>3 - Single aspect interest</p> <p>4 - Direct control</p> <p>These stakeholders have the ability to approve or block development applications during the design component of the critical path.</p>	Engaged formally through an <i>integrated development application</i> (IDA) and a <i>section 60 fast track application</i> (S60A) (both required for works or activities that may impact heritage listed items). If discussion, additional information, or clarification is required the applicant will be formally contacted and formally respond in the form of a document containing the requested information.	These stakeholders are engaged once design has been finalised with internal stakeholders. The IDA must be completed first and has a maximum duration of 65 days before a result must be issued. The S60A then has a maximum of 74 days before an assessment must be issued. Where additional information is requested by either council in either application the maximum duration timers stop until the information is received. To account for this an additional 14 days will be allocated to gathering and collating requested information giving a total duration of engagement of 153 days during the planning stage of the project, assuming each application is approved. If either application is denied, the failing criteria will be assessed with the appointed project manager(s) who will assess the failing criteria, meet with group a stakeholders to adjust the project plan, and resubmit the application adding approximately 80 days to the engagement duration.	The IDA will be submitted first by the appointed project manager, ensuring it meets all completeness criteria to avoid being delayed. The respective council will likely request additional information. If additional information is requested or an application is denied, it will be made priority of the appointed project manager(s) to minimise delay. Note, if the IDA is approved it is highly unlikely the S60A will be denied due to the substantial content overlap.
E	Catherine Storey	Passionate about and responsible for curating and managing the historical displays located in the Burkitt-Ford lounge [interview].	<p>3 - Single aspect interest</p> <p>3 - Indirect control</p> <p>While Associate Professor Storey does not have official advisory role in the project, she is Chair of the Cultural Heritage Committee of the Royal Australasian College of Physicians and in 2022 was awarded Honorary Fellowship by USYD for her "exception impact as a historian of medicine". For these reasons she likely holds strong influence over those in official advisory positions</p>	Engaged via email to inform of the projects goals for the Burkitt-Ford lounge, including intention to modify or relocate the historical displays, to confirm level of interest. If highly interested, as expected, Professor Storey will be assigned an advisory capacity help inform changes to the Burkitt-Ford lounge. Design changes will be made iteratively, each being discussed in a meeting with Professor Storey. Any advice provided will be appreciated by the appointed project manager(s) and closely considered. This will continue until Professor Storey is satisfied with the changes, or it is clear a resolution cannot be made under any circumstances. Once this point has been reached or Professor Storey found to be not high interested, she will be kept closely informed regarding the plans and relocation of historical displays via email when updates to the plan or implementation occur.	Professor Storey will be engaged during the design phase of the project in which she will be involved in advising the iterative changes to historical integration in the Burkitt-Ford lounge. Engagement with Professor Storey will continue through to project completion and verification. As explained, Profesor Storey will be kept informed of the relocation of current displays, and will be met with by the appointed project manager(s) to evaluate whether the plans she advised on have been implemented to the standard negotiated.	Professor Storey will be informed of the proposed changes to the Burkitt-Ford lounge to which she has some objection. She will be met with by appointed project manager(s) who will assess her desires and priorities, ensure her advice is appreciated, suggest a compromise, and propose a modified design. This process will repeat until an adequate compromise is found at which point designs will be finalised. Catherine will be informed which displays are relocated when, where and by whom. Once implementation is complete Professor Storey will be invited to meet with the appointed project manager(s) to showcase the final result who will take any feedback, and act on it if possible or necessary.

Group	Stakeholders	Nature of Interest	Interest and Influence Levels	Engagement Method (info in + info out)	Engagement Timeframe	Anticipated Outcomes
F	The Poche Centre for Indigenous Health School staff Maintence team Daffodil centre	Occupants of the Edward Ford Building who are not directly displaced by the renovations, but as users of the building will experience some degree of disruption and ideally benefit from the proposed changes.	<p>3 - Single aspect interest</p> <p>2 - Consulting influence</p> <p>As users of the building, group F stakeholders will be consulted to minimise risk hence they can influence the project through this consultation.</p>	<p>An email will be sent to all building occupants containing information regarding the project, inform them that they can write to a specific email account which is monitored for staff feedback. The email should also contain option to fill in a form to subscribe to a mailing list for information regarding the project.</p> <p>The appointed project manager(s) will also facilitate in-person concerns by holding an in-person meeting in which concerned individuals or groups can voice opinions regarding the project. Contact details of each individual attending should be collected to provide all attendees with a copy of the meeting minutes to ensure feedback feels heard.</p> <p>Where decisions are finalised or milestones reached during implementation an email should be sent to those subscribed to the mailing list with the relevant information.</p>	<p>The initial email informing building occupants of the project plan will be sent early in the design phase of the project. It will also include the details of the in-person meeting to be conducted within one week of the initial email. This is to ensure feedback feels prioritised and heard. The meeting minutes should be sent within 24 hours of the in-person meeting to ensure all feedback feels heard.</p> <p>Engagement will then continue throughout the entire implementation phase of the project, updating stakeholders about major milestones reached or changes to design decisions.</p>	<p>The email detailing the project plan is unlikely to elicit a significant response from the vast majority, however some individuals will be concerned and write to the indicated inbox which will defuse some tension. The in-person meeting will further allow individuals to express their concerns or feedback. The feedback from the in-person meeting will be summarised and sent out allowing occupants to feel heard. The feedback considered, and incorporated into the design and implementation plans where appropriate as decided by the appointed project manager(s). The result of the incorporated feedback will be sent out and cause occupants to feel considered. This sentiment of consideration will continue as emails are received informing staff of any room closures, construction, completions, or other interruptions/milestones.</p>
G	Jamie Miranda Displaced staff In-school students	Building occupants who will be directly and unavoidably affected by the proposed changes.	<p>4 - Multi-aspect interest</p> <p>3 - Indirect control</p> <p>While not having direct control over the project the School of Public Health is a key client whose values have been prioritised during design, hence their opinion regarding all aspects of the project is closely considered by the groups with direct control.</p>	<p>These stakeholders are also subject to the engagement plan for group F, with additional engagement due more directly affecting these groups. This additional engagement involves scheduling a second in-person meeting for this stakeholder group, the feedback from which will be prioritised more highly. Additionally, displaced staff will be personally met with by a project representative to clarify their relocation plan.</p>	<p>As explained in group F, the advisory email and engagement meeting will be conducted during planning. Then, the second engagement meeting will be scheduled two weeks later to provide time for feedback from the first meeting to be considered and reflected in the design/implementation plan. The one-on-one relocation meetings will be scheduled as the first step of the implementation plan, after all approvals have been received and the work confirmed.</p>	<p>The email detailing the plan for replacing individual offices with an open-office or meeting rooms will undoubtedly be poorly received, but the quick follow-up on feedback will hopefully help staff feel considered. Feedback received via email or the in-person meeting will be by the appointed project manager(s) to shape the implementation pacing and plan.</p>
H	Interschool Students Alumni Interschool Staff	USYD staff and students not currently part of the School of Public Health	<p>2 - Headline interest</p> <p>1 - Communication influence</p> <p>While not unavoidable affect by the project, these parties have the option to benefit or suffer as a result and hence can communicate with more influential parties to impart opinions.</p>	<p>These stakeholders will be engaged solely through email in an informative capacity. They will not be able to voice concerns directly to appointed project manager(s), but instead must go through more involved parties. Emails will be addressed through the university-wide mailing list and contain information about key project milestones.</p>	<p>Stakeholder group H will only be contacted on the finalisation of design phase/commencement of implementation. Stakeholders will then be kept informed ad-hoc when key milestones are achieved, engagement concluding with the completion of implementation and completion of the project.</p>	<p>Group F stakeholders will be peripherally aware of the project status and as a result may be interested in visiting the space once complete. A minority may have opinions regarding the project and contact staff within the building to voice those concerns on their behalf.</p>

6 Proposed Costing

	Reference	Component	Item	Expense / Income	Unit Cost		Units			Total	
					Lower	Upper	Lower	Upper	Measure	Lower	Upper
Burkitt-Ford Upgrade	1.1.1	Old fitout removal	Historical display relocation	Expense	\$52.67	\$83.10	50	150	hours	\$2,633.50	\$12,465.00
	1.1.2		Old furniture	Income	\$50.00	\$200.00	10	20	count	\$500.00	\$4,000.00
	1.1.3		Removalist expenses	Expense	\$1,100.00	\$1,600.00	1	1	m^2	\$1,100.00	\$1,600.00
	1.2.1	Furniture	Desks	Expense	\$400.00	\$600.00	24	24	count	\$9,600.00	\$14,400.00
	1.2.2		Office chairs	Expense	\$180.00	\$300.00	40	40	count	\$7,200.00	\$12,000.00
	1.2.3	Lounge		Expense	\$15,000.00	\$20,000.00	1	1	count	\$15,000.00	\$20,000.00
	1.2.4		Whiteboards	Expense	\$380.00	\$550.00	3	4	count	\$1,140.00	\$2,200.00
	1.2.5	Communal seating		Expense	\$700.00	\$1,500.00	6	8	count	\$4,200.00	\$12,000.00
	1.2.6		Dividers	Expense	\$450.00	\$585.00	2	2	count	\$900.00	\$1,170.00
	1.2.7	Glass non-structural wall		Expense	\$2,000.00	\$4,000.00	1	1	count	\$2,000.00	\$4,000.00
	1.2.8		Reclyed polyester carpet	Expense	\$40.00	\$50.00	290	290	m^2	\$11,600.00	\$14,500.00
Open Office Space	1.3.1	Technology	Monitors	Expense	\$177.00	\$249.00	16	16	count	\$2,832.00	\$3,984.00
	1.3.2		Mice and keyboards	Expense	\$33.00	\$35.00	16	16	count	\$528.00	\$560.00
	1.3.3		Docking station	Expense	\$279.00	\$455.40	16	16	count	\$4,464.00	\$7,286.40
	1.3.4		Security cable locks	Expense	\$39.95	\$40.00	16	16	count	\$639.20	\$640.00
	1.3.5		Photocopier and Printer	Expense	\$10,000.00	\$17,000.00	1	1	year	\$10,000.00	\$17,000.00
	2.1.1	Removal of furniture from rooms 301X		Expense	\$1,100.00	\$1,600.00	1	1	m^2	\$1,100.00	\$1,600.00
	2.1.2		Moving of server room by ICT	Expense	\$47.71	\$70.98	16	32	hours	\$763.32	\$2,271.39
	2.1.3	Structural survey of walls		Expense	\$100	\$130	8	24	hours	\$800	\$3,120
	2.1.4		Intrusive survey of walls, floor and ceiling	Expense	\$1,672.00	\$1,782.00	48	104	hours	\$3,915	\$11,495
	2.1.5	Wall removal/fixing of floors		Expense	\$1,350.00	\$1,500.00	140	140	m^2	\$189,000.00	\$210,000.00
	2.1.6		Carpet install	Expense	\$15	\$20	110	110	m^2	\$10,797.52	\$27,927.60
	2.1.7	Sound underlay install		Expense	\$15	\$20	110	110	m^2	\$1,650	\$2,200
	2.1.8		Carpet material cost	Expense	\$20	\$30	110	110	m^2	\$2,200	\$3,300
	2.1.9	Underlay material cost		Expense	\$68.04	\$80.56	110	110	m^2	\$7,484.40	\$8,861.60
	2.1.10		Lighting	Expense	\$220.00	\$340.00	6	10	count	\$1,320.00	\$3,400.00
	2.1.11	Rewiring of power outlets		Expense	\$150.00	\$300.00	7	12	count	\$1,050.00	\$3,600.00
	2.1.12		Rebalance aircon flow for the open space	Expense	\$200.00	\$300.00	24	40	hours	\$4,800.00	\$12,000.00
	2.1.13	Construction project manager		Expense	\$43.00	\$65.00	400	625	hours	\$17,200.00	\$40,625.00
	2.1.14		Redo ceiling	Expense	\$70.00	\$130.00	40	110	m^2	\$2,800.00	\$14,300.00
	2.1.15		Repaint walls	Expense	\$10.00	\$60.00	180	260	m^2	\$1,800.00	\$15,600.00

			Item	Expense / Income	Unit Cost		Units			Total	
					Lower	Upper	Lower	Upper	Measure	Lower	Upper
Open Office Space	2.1.16		Relocation of sink and plumbing	Expense	\$80.00	\$135.00	8	24	hours	\$640.00	\$3,240.00
	2.1.17		New furniture installation	Expense	\$180.00	\$240.00	8	16	hours	\$1,440.00	\$3,840.00
	2.1.18		Kitchenette Build	Expense	\$420.00	\$780.00	8	12	m^2	\$3,360.00	\$9,360.00
	2.1.19		Blinds	Expense	\$57.00	\$70.00	11	11	m^2	\$627.00	\$770.00
	2.1.20		Blinds install	Expense	\$55.00	\$55.00	4	7	count	\$355.00	\$520.00
	2.1.21		3-way desks	Expense	\$1,672.00	\$1,782.00	2	4	count	\$3,344.00	\$7,128.00
	2.1.22		Corner desks	Expense	\$1,539.00	\$1,588.00	8	10	count	\$12,312.00	\$15,880.00
	2.1.23		Desk chairs	Expense	\$129.00	\$500.00	14	22	count	\$1,806.00	\$11,000.00
	2.1.24		Monitors	Expense	\$177.00	\$249.00	28	44	count	\$4,956.00	\$10,956.00
	2.1.25		Mice and keyboards	Expense	\$33.00	\$35.00	14	22	count	\$462.00	\$770.00
Dedicated Meeting Rooms	2.1.26		Docking station	Expense	\$279.00	\$455.40	14	22	count	\$3,906.00	\$10,018.80
	2.1.27		Security cable locks	Expense	\$39.95	\$40.00	14	22	count	\$559.30	\$880.00
	3.1.1	Technology	Conference monitor	Expense	\$1,513.60	\$2,644.55	3	3	count	\$4,540.80	\$7,933.65
	3.1.2		Conference camera	Expense	\$949.00	\$1,699.00	3	3	count	\$2,847.00	\$5,097.00
	3.1.3		Meeting touch controller	Expense	\$1,149.00	\$1,179.00	3	3	count	\$3,447.00	\$3,537.00
	3.1.4		Display hub	Expense	\$799.00	\$978.96	3	3	count	\$2,397.00	\$2,936.88
	3.1.5		Speaker	Expense	\$299.99	\$395.95	3	3	count	\$899.97	\$1,187.85
	3.1.6		Microphone	Expense	\$499.99	\$549.99	3	3	count	\$1,499.97	\$1,649.97
	3.1.7		Conference PC	Expense	\$2,221.99	\$2,299.00	3	3	count	\$6,665.97	\$6,897.00
	3.1.8		Table hub	Expense	\$651.99	\$790.00	3	3	count	\$1,955.97	\$2,370.00
Implementation	3.2.1	Furniture	Conference table	Expense	\$5,811.29	\$6,933.63	3	3	count	\$17,433.87	\$20,800.89
	3.2.2		Office chairs	Expense	\$119.00	\$279.00	27	27	count	\$3,213.00	\$7,533.00
	3.3.1	Implementation	Removalist expenses	Expense	\$73.00	\$440.00	60	60	m^2	\$4,380.00	\$26,400.00
	3.3.2		ICT Configuration	Expense	\$47.71	\$70.98	20	40	hour	\$954.15	\$2,839.24
	4.1.1	Project management	Project manager salary	Expense	\$130,000.00	\$150,000.00	1.5	1.5	years	\$195,000.00	\$225,000.00
Admin	4.2.1	Legal services	Construction contract writing	Expense	\$5,500.00	\$8,000.00	1	1	count	\$5,500.00	\$8,000.00
	4.3.1	Financial services	Approving spending requests	Expense	\$70,000.00	\$90,000.00	0.08	0.08		\$5,600.00	\$7,200.00
	5.1.1		TM-349 kiosks	Expense	\$800.00	\$1,200.00	6	6	count	\$4,800.00	\$7,200.00
Navigation	5.1.2		Kiosk's software development (team of 4)	Expense	\$0.00	\$10,256.00	6	12	weeks	\$0.00	\$123,072.00
	5.1.3		Large signages (1m * 0.1 m)	Expense	\$83.60	\$100.00	300	500	count	\$25,080.00	\$50,000.00
	5.1.4		Small signages (0.3m * 0.05m)	Expense	\$13.05	\$25.00	300	600	count	\$3,915.00	\$15,000.00
	5.1.5		Display advertisement	Income	\$5,000.00	\$25,000.00	12	12	yearly	\$60,000.00	\$300,000.00

6.1 Precedent Comparison

The renovation project for the Edward Ford Building focuses on usability improvements, modernizing building systems, accessibility, addressing infrastructure needs, and energy efficiency. This project covers 445 square meters (approximately 4,800 square feet). In comparison, the University of Michigan School of Public Health with identical goals to the Edward Ford Building involved 69,000 square feet of renovation and a 125,000 square foot addition, with a total cost of \$68.5 million [0].

Cost Comparison: University of Michigan vs Edward Ford Building

University of Michigan:

$$\text{Cost per square foot} = \frac{\$68,500,000}{69,000 \text{ sq feet}} = \$993.48 \text{ per sq ft}$$

Edward Ford Building:

$$\text{Cost per square foot} = \frac{\$700,000}{4,800 \text{ sq feet}} = \$145.83 \text{ per sq ft}$$

Ratio of costs per square foot:

$$\text{Ratio of costs per square foot} = \frac{\$993.48 \text{ per sq ft}}{\$145.83 \text{ per sq feet}} \approx 6.81$$

Although the University of Michigan's renovation project cost per square foot is approximately 6.81 times higher than that of the Edward Ford Building, this significant difference is attributed to the larger scale and complexity of the University of Michigan's public health building project. Our project's budget of \$700,000 focuses solely on renovation without additional construction. This reduced scope justifies the lower cost, as it involves upgrading existing facilities rather than extensive new construction.

6.2 Costing References

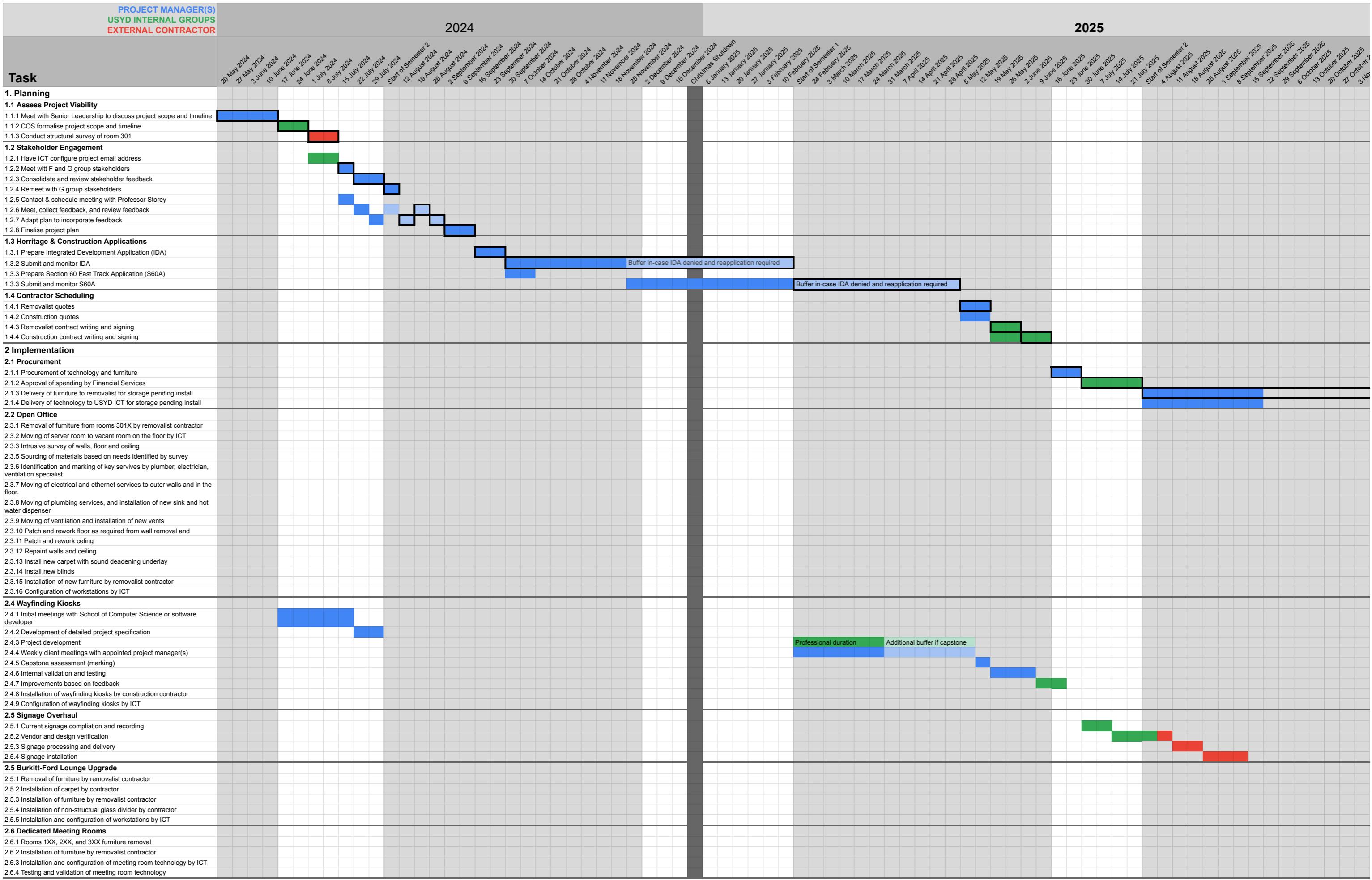
1.1.1 [0] 1.1.2 [0] 1.1.3 [0] 1.2.1 [?] 1.2.2 [?] 1.2.3 [0] 1.2.4 [0] 1.2.5 [0] 1.2.6 [0] 1.2.7 1.2.8 [0] 1.3.1 [0] 1.3.2 [0] 1.3.3 [0] 1.3.4 [0] 2.1.15 2.1.16 2.1.17 2.1.18 2.1.19 2.1.20 2.1.21 2.1.22 2.1.23 2.1.24 [0] 2.1.25 [0] 2.1.26 [0] 2.1.27

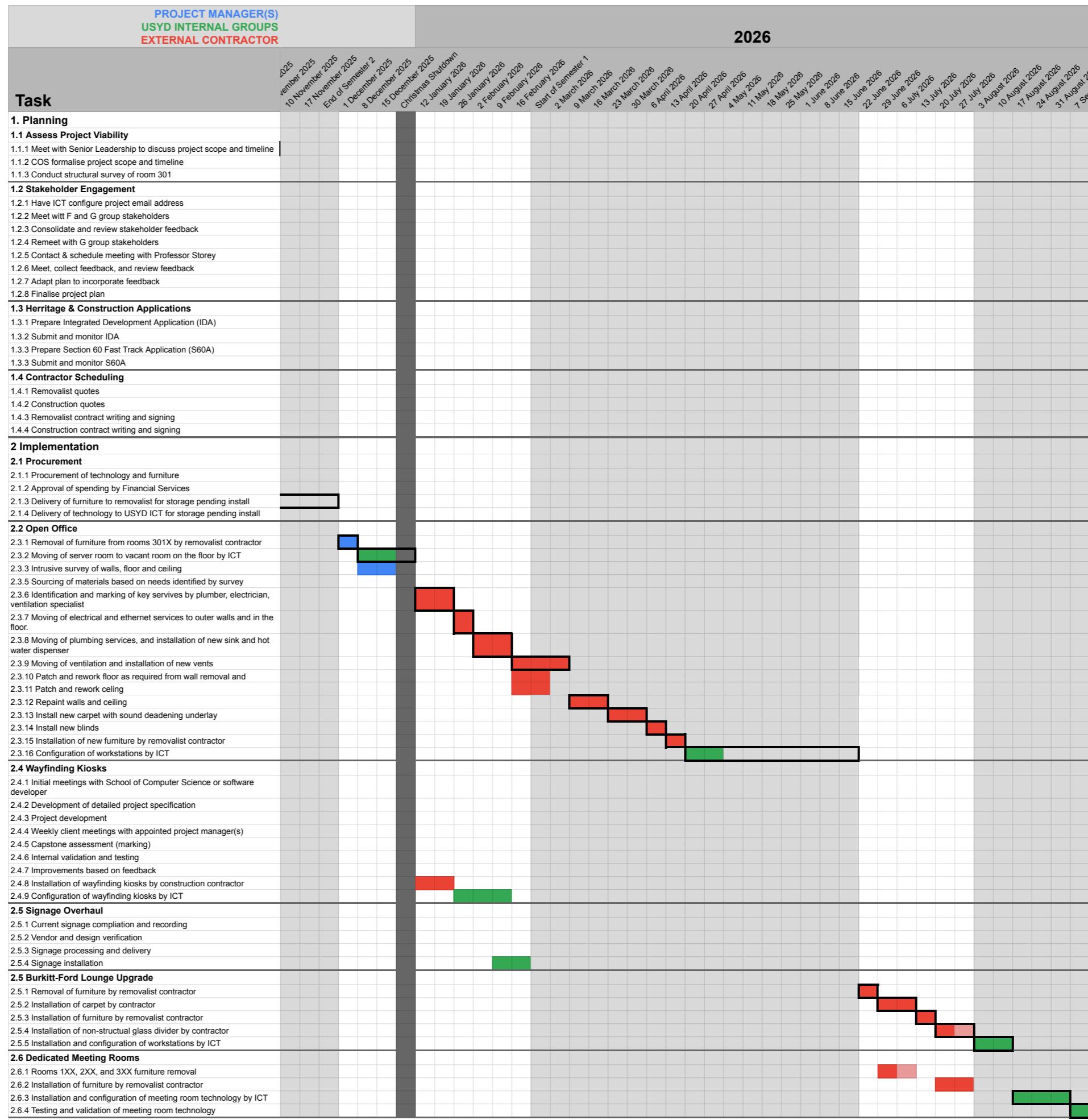
7 Proposed Timing

7.1 Gantt Chart References

1.3.2 [0] 1.3.3 [0] 2.1.2 [0] 2.3.7 [0] 2.3.8 [0] 2.3.9 [0] 2.3.12 [0] 2.3.13 [0] 2.4 [?] , [0]

7.2 Gantt Chart





References

- [1] C. Infrastructure and S. Planning. (2013) Assessment of heritage impact. [Online]. Available: <https://majorprojects.planningportal.nsw.gov.au/prweb/PRRestService/mp/01/getContent?AttachRef=SSD-6123%2120190227T054513.416%20GMT>
- [2] T. Goldfinch, "School of public health client brief," 2024.
- [3] Apr 2019. [Online]. Available: <https://www.teqsa.gov.au/sites/default/files/guidance-note-technology-enhanced-learning-v1-2-web.pdf>
- [4] R. Weiss, "University quality framework," Jan 2020. [Online]. Available: <https://www.sydney.edu.au/content/dam/corporate/documents/about-us/governance-and-structure/university-quality-framework.pdf>
- [5] S. Portfolio, "Sustainability strategy 2020," Aug 2020. [Online]. Available: https://www.sydney.edu.au/content/dam/corporate/documents/about-us/values-and-visions/sustainability/sustainability_strategy_2020.pdf
- [6] Oct 2019. [Online]. Available: <https://new.gbc.org.au/green-star/rating-system/interiors/>
- [7] "Acceptable use of ict resources policy 2019," 2019. [Online]. Available: <https://www.sydney.edu.au/policies/showdoc.aspx?recnum=PDOC2011/140&RendNum=0>
- [8] Dec 2020. [Online]. Available: <https://www.sydney.edu.au/content/dam/corporate/documents/about-us/values-and-visions/one-sydney-many-people-digital.pdf>
- [9] A.-G. Department, "Disability discrimination act 1992," Oct 2023. [Online]. Available: <https://www.legislation.gov.au/C2004A04426/2018-04-12/text>
- [10] "Anti-discrimination act 1977 no 48," Nov 2023. [Online]. Available: <https://legislation.nsw.gov.au/view/html/inforce/current/act-1977-048>
- [11] Oct 2023. [Online]. Available: <https://legislation.nsw.gov.au/view/html/inforce/current/act-1977-136>
- [12] M. Spence, "Heritage management policy 2014," Mar 2014. [Online]. Available: <https://www.sydney.edu.au/policies/showdoc.aspx?recnum=PDOC2011/9&RendNum=0>
- [13] A. B. C. Board, "Editions of the national construction code," 2022. [Online]. Available: <https://ncc.abcb.gov.au/editions-national-construction-code>
- [14] Marketing and Communications, "Sydney in 2032 strategy," Aug 2022. [Online]. Available: <https://www.sydney.edu.au/content/dam/corporate/documents/about-us/strategy-2032/strategic-plan-2032-final.pdf>
- [15] Aug 2019. [Online]. Available: <https://designnation.com.au/blog/open-plan-office-advantages-disadvantages/>
- [16] D. Scalco, "Do open office plans hurt productivity?" Nov 2023. [Online]. Available: <https://www.business.com/articles/dan-scalco-workplace-productivity/>
- [17] Sep 2021. [Online]. Available: <https://hbr.org/2019/11/the-truth-about-open-offices>
- [18] L. Lai, "Open plan offices are bad for business," Feb 2023. [Online]. Available: <https://www.bi.edu/research/business-review/articles/2023/02/open-plan-offices-are-bad-for-business>

- [19] H. B. Architects, “Deafspace: Principles and elements of deafspace,” Aug 2010. [Online]. Available: <https://infoguides.rit.edu/deafspace/principles>
- [20] “What’s the latest in conference room technology?” Oct 2024. [Online]. Available: <https://robinpowered.com/blog/whats-the-latest-in-conference-room-technology>
- [21] Steelcase, “i2i swivel office lounge chair seating,” Mar 2024. [Online]. Available: <https://www.steelcase.com/eu-en/products/side-conference-chairs/i2i/>
- [22] 2024. [Online]. Available: <https://www.provincialhomeliving.com.au/blog/guides/right-size-dining-table>
- [23] C. Mackin, “UX for ecosystems: Why it’s important,” Jun 2023. [Online]. Available: <https://builtin.com/articles/product-ecosystem-UX>
- [24] S. De Freitas and M. Oliver, “Blended reality: Issues and potentials in combining virtual worlds and face-to-face classes,” 2006.
- [25] C. Wood, “Hybrid meetings: 5 best practices for better outcomes,” 2023. [Online]. Available: <https://www.cio.com/article/305353/6-tips-for-better-hybrid-meetings.html>
- [26] Logitech, *Rending of Conference Room with Logitech Rally Products*, 2024. [Online]. Available: <https://www.logitech.com/en-au/business/solutions/traditional-conference-room.html>
- [27] C. M. Harris, “Acoustical properties of carpet,” *The Journal of the Acoustical Society of America*, vol. 27, pp. 1077–1082, 11 1955.
- [28] Kryżanowski, “Feng shui: A comprehensive review of its effectiveness based on evaluation studies,” *International Journal of Advances in Scientific Research and Engineering*, vol. 07, pp. 61–71, 2021.
- [29] “What is the average lifespan of a computer?” Sep 2022. [Online]. Available: <https://www.hp.com/in-en/shop/tech-takes/post/average-computer-lifespan>
- [30] A. Elkady, ““vision is not just in your eyes”: The case for 8k.” Feb 2022. [Online]. Available: <https://www.v-net.tv/2022/02/25/vision-is-not-just-in-your-eyes-the-case-for-8k/>
- [31] “Tips to increase your led display’s lifespan,” Feb 2023. [Online]. Available: <https://visualled.com/en/led-screens/tips-to-increase-your-led-displays-lifespan/>
- [32] D. Tougaw and J. Sanders, “Sunray: a cost-effective desktop computer solution,” Jan-Feb 2002.
- [33] WayfoundVictoria. What is wayfinding? [Online]. Available: <https://wayfoundvictoria.vic.gov.au/what-is-wayfinding/>
- [34] D. P. Symonds. (2023) 10 common signage design mistakes made in wayfinding. [Online]. Available: <https://www.travelwayfinding.com/signage-design-mistakes/>
- [35] DesignerPeople. (2023) Wayfinding signage – everything you need to know in 2024. [Online]. Available: <https://www.designerpeople.com/blog/wayfinding-signage/>
- [36] M. Okabe. (2002) Color universal design (cud). [Online]. Available: <https://jfly.uni-koeln.de/color/>
- [37] K. Stanton. (2023) Colors and emotions: how colors make you feel. [Online]. Available: <https://99designs.com/blog/tips/how-color-impacts-emotions-and-behaviors/>

- [38] S. Gans. (2024) Color psychology: Does it affect how you feel? [Online]. Available: <https://www.verywellmind.com/color-psychology-2795824>
- [39] D. P. Symonds. (2023) How to design and use arrows on signage for wayfinding. [Online]. Available: <https://www.travelwayfinding.com/design-arrows-wayfinding-signage/>
- [40] S. Team. (2024) How to effectively use directional signage in a commercial setting. [Online]. Available: <https://www.signmanager.com.au/index.php/how-to-effectively-use-directional-signage-in-a-commercial-setting/>
- [41] I. Kilin. (2022) The best charts for color blind viewers. [Online]. Available: <https://www.datylon.com/blog/data-visualization-for-colorblind-readers#:~:text=The%20first%20rule%20of%20making,out%20of%20these%20two%20hues.>
- [42] L. C. Muth. (2020) What to consider when visualizing data for colorblind readers. [Online]. Available: <https://blog.datawrapper.de/colorblindness-part2/>
- [43] USERway. What is color contrast and why it's critical to improve accessibility. [Online]. Available: <https://userway.org/blog/why-is-color-contrast-so-critical/>
- [44] CUREvision. Tm-349 series. [Online]. Available: <https://www.curevision.ca/product/en/tm-349-series>
- [45] FutureTravelExperience. (2023) Hamad airport partners with atos and royal schiphol group to implement digital passenger assistance kiosks. [Online]. Available: <https://www.futuretravelexperience.com/2023/09/hamad-airport-partners-with-atos-and-royal-schiphol-group-to-implement-digital-passenger-assistance-kiosks.html>
- [46] T. Pangarkar. (2024) Interactive kiosk statistics: Exhibits consistent growth. [Online]. Available: <https://scoop.market.us/interactive-kiosk-statistics/>
- [47] AnxietyCommunity. (2016) Using self-checkout instead of a cashier. [Online]. Available: <https://www.anxietycommunity.com/index.php?threads/using-self-checkout-instead-of-a-cashier.243/>
- [48] E. J. Davies. (2023) Supermarket tills make me anxious. [Online]. Available: <https://www.dailymail.co.uk/femail/article-12799047/Supermarket-tills-make-anxious-worry-stores-axe-self-service-checkouts-staff-judge-food.html>
- [49] Q. Farrukh. (2021) Are introverts more likely to consider self service? [Online]. Available: <https://www.wavetec.com/blog/self-service/introverts-self-service/>
- [50] (2023) 5 tips for the perfect kiosk placement. [Online]. Available: <https://www.tillster.com/blog/5-tips-for-the-perfect-kiosk-placement#:~:text=There's%20an%20obvious%20answer%20to,visibility%2C%20high%2Dtraffic%20locations.>
- [51] S. Writer. (2022) Kiosk location and kiosk placement – best practice. [Online]. Available: <https://kioskindustry.org/kiosk-location-and-kiosk-placement-best-practice/>
- [52] S. Lukins. (2024) What is a capstone project? and why is it important? [Online]. Available: <https://www.topuniversities.com/student-info/careers-advice-articles/what-capstone-project-why-it-important>

- [53] G. Raptis. (2022) Costs to consider before hiring a lawyer to review your contract. [Online]. Available: <https://legalvision.com.au/costs-consider-before-hiring-lawyer-review-contract/>
- [54] IMO. (2015) Guideline on software quality assurance and human-centred design for e-navigation. [Online]. Available: [https://wwwcdn.imo.org/localresources/en/OurWork/Safety/Documents/enavigation/MSC.1-Circ.1512%20-%20Guideline%20On%20Software%20Quality%20Assurance%20And%20Human-Centred%20Design%20For%20E-Navigation%20\(Secretariat\)%20\(1\).pdf](https://wwwcdn.imo.org/localresources/en/OurWork/Safety/Documents/enavigation/MSC.1-Circ.1512%20-%20Guideline%20On%20Software%20Quality%20Assurance%20And%20Human-Centred%20Design%20For%20E-Navigation%20(Secretariat)%20(1).pdf)
- [55] TechsheetEnterprise. (2023) As/nzs iso/iec/ieee 42010:2023. [Online]. Available: <https://subscriptions.techstreet.com/products/1003543>
- [56] B. C. Scates. (2017) Monumental errors: how australia can fix its racist colonial statues. [Online]. Available: <https://www.artshub.com.au/news/features/monumental-errors-how-australia-can-fix-its-racist-colonial-statues-254330-2357163/>
- [57] APIZE. Understanding points on a map: Its importance in navigation. [Online]. Available: <https://www.mapize.com/points-on-a-map-vital-coordinates-in-navigation/>
- [58] A. Government. (2024) Damage to heritage places and objects. [Online]. Available: <https://www.environment.act.gov.au/heritage/heritage-registration-and-protection/damage-to-heritage-places-and-objects>
- [59] R. V. Junk and Demo. (2024) Diy home demolition: The risks you need to know and avoid. [Online]. Available: <https://rivervalleyjunkanddemo.com/diy-home-demolition-the-risks-you-need-to-know-and-avoid/>
- [60] E. Insight. (2013) The role of facilities management in building performance. [Online]. Available: <https://www.emerald.com/insight/content/doi/10.1108/JFM-02-2013-0011/full/html>
- [61]
- [62] H. Reinhardt. (2018) Factors influencing the decision to buy private label brands in the fmccg sector and the role of the packaging design. [Online]. Available: https://researchsystem.canberra.edu.au/ws/portalfiles/portal/33502847/Reinhardt_Hannes.pdf
- [63] N. I. of Standards and T. (NIST). (2021) Preventing eavesdropping and protecting privacy in virtual meetings. [Online]. Available: <https://www.nist.gov/blogs/cybersecurity-insights/preventing-eavesdropping-and-protecting-privacy-virtual-meetings>
- [64] A. H. R. Commission, “Frequently asked questions: Access to premises — australian human rights commission,” 2014. [Online]. Available: <https://humanrights.gov.au/our-work/disability-rights/frequently-asked-questions-access-premises>
- [65] L. Access, “Unlocking kiosk accessibility: Tips for inclusive, compliant self-service experiences,” Jun 2023. [Online]. Available: <https://www.levelaccess.com/blog/unlocking-kiosk-accessibility-tips-for-inclusive-compliant-self-service-experiences/>
- [66] “health and safety matters removalists must prioritise — brilliance removals2023,” May2023.[Online].Available
-
is cultural appropriation? [Online]. Available: <https://proudlyindigenouscrafts.com/wp-content/uploads/2021/12/Cultural-Appropriation-Presentation.pdf>

- R. Cruz, "3 steps to planning a fire safety system upgrade." [Online]. Available: <https://www.facilitiesnet.com/firesafety/article/3-Steps-To-Planning-A-Fire-Safety-System-Upgrade--1816>
- Doohly, "Cyber security for digital signage," Jan 2023. [Online]. Available: <https://www.google.com/url?q=https://www.dooh.ly/post/digital-signage-cyber-security&sa=D&source=editors&ust=1716129117992947&usg=A0vVaw2I3jzonhA9CVu8nmSuxfTt>
- J. Carlsson, "Meeting room booking: Working smarter with workplace analytics," Nov 2019. [Online]. Available: <https://www.meetio.com/blog/meeting-room-booking-working-smarter-with-work>
- M. Lekarapa and S. Grobbelaar, "Evaluation of budgeting methods for maintenance of heritage buildings," *South African Journal of Industrial Engineering*, vol. 32, no. 3, 2022.
- E. University of Michigan Architecture and Construction, May 2024. [Online]. Available: <https://umaec.umich.edu/projects/completed-projects/school-of-public-health-buildings-addition-project-data/>
- [Online]. Available: <https://www.grays.com/>
- Jan 2020. [Online]. Available: <https://office-removals-sydney.com.au/office-moving-costs/>
- Apr 2024. [Online]. Available: <https://ownworld.com.au/>
- Slimlinewarehouse.com.au, "Portable whiteboards." [Online]. Available: <https://www.slimlinewarehouse.com.au/fswb90180/portable-whiteboards>
- Jul 2023. [Online]. Available: <https://www.designerallboards.com.au/product/modulo-room-dividers/>
- L. Zhang, "Ultimate carpet cost pricing guide [2023]: Floorvenue," Jan 2023. [Online]. Available: <https://floorvenue.com.au/ultimate-carpet-cost-pricing-guide-2022-sydney/>
- [Online]. Available: https://www.officeworks.com.au/shop/officeworks/p/hp-v24ie-g5-24-fhd-75hz-istCompanyId=0403b0ba-0671-498f-aeb7-e2ff71b61924&istFeedId=ea709c9a-279e-40be-951f-2668243&istItemId=lmirtrtlx&istBid=t®ion_id=GTYP2H&cm_mmc=Google%3ASEM%3AAlways_on%3ARP%7CTechnology%7CMonitors%2B%26%2BDigital%2BDisplays%7CGeneral%7C%7C%7CSH%7CPMAX&s_kwcid=AL%2112073%213%21%21%21x%21%21&gad_source=1&gclid=CjwKCAjwo6GyBhBwEiwAzQTmc8V10fZG7BzqUSRoCRggQAvD_BwE&gclsrc=aw.ds®ionIdSet=true
- Big1, "Hp 225 wired mouse and keyboard combo," May 2022. [Online]. Available: https://www.hp.com/au-en/shop/hp-225-wired-mouse-and-keyboard-combo-286j4aa.html?istCompanyId=f8ba79ad-74d6-4099-aa15-52776254a959&istFeedId=4931e2eb-bd01-452b-9699-2dc704e204f1&istItemId=ptmlxlmar&istBid=t&gad_source=1&gclid=CjwKCAjwo6GyBhBwEiwAzQTmc8MAKUAJStdjcxWMjMjTd8rV2S2MRotWiG86xoC-4UQAvD_BwE&gclsrc=aw.ds
- [Online]. Available: <https://www.mwave.com.au/product/dell-wd22tb4-usbc-thunderbolt-4-dock-130w>
- P. Plastering. (2021) How much does it cost to replace a ceiling in sydney nsw. [Online]. Available: <https://paulsplastering.com.au/how-much-does-it-cost-to-replace-a-ceiling-in-sydney/#:~:text=A%20rough%20ballpark%20figure%20of, size%20bedroom%3A%20%241200%2D%242500>
- Author, "Section 60 fast track works application," Feb 2024. [Online]. Available: <https://www.environment.nsw.gov.au/topics/heritage/apply-for-heritage-approvals-and-permits/state-heritage-register-items/section-60-fast-track-works-application>
- , "Integrated development," Feb 2024. [Online]. Available: <https://www.environment.nsw.gov.au/topics/heritage/apply-for-heritage-approvals-and-permits/integrated-development>

- [Online]. Available: <https://www.foodexport.org/how-to-submit-a-branded-reimbursement-claim-in->
- L. SEO, "How long does electrical installation take to complete?: O'brien electrical dubbo," Jul 2022. [Online]. Available: <https://www.obrien.com.au/members/electrical-dubbo/articles/how-long-does-electrical-installation-take-to-complete/>
- Dec 2023. [Online]. Available: <https://www.fullspeedplumbing.com/how-long-does-it-usually-take-to>
- Feb 2023. [Online]. Available: <https://vortexairbalance.com/how-much-does-air-balancing-cost/>
- R. Hilditch, "How long does it take to paint a room in your house?" Feb 2023. [Online]. Available: <https://hardingsservices.com/how-long-does-it-take-to-paint-a-room-in-your-house/>
- L. Search. (2024) How long does it take to lay carpet? [Online]. Available: <https://www.localsearch.com.au/guides/carpet-vinyl-layers/how-long-does-it-take-to-lay-carpet>
- P. Signs. (2024) How long does it take to make a custom sign? [Online]. Available: [https://performancesigns.net/faqs/how-long-does-it-take-to-make-a-custom-sign/#:~:text=Sign%20production%20times%20vary%20by, and%20free%2Dstanding%20signs\).](https://performancesigns.net/faqs/how-long-does-it-take-to-make-a-custom-sign/#:~:text=Sign%20production%20times%20vary%20by, and%20free%2Dstanding%20signs).)

Appendices

A Informal Interview with Dean from Maintenance

These quotes are paraphrased renditions of what was said by Dean from USYD's maintenance team in an informal interview conducted during a team visit to the Burkitt-Ford room.

- "The Daffodil Centre was going to move into Burkitt-Ford room, which would have evicted the displays which Catherine Storey manages, which would have been relocated to the Anderson Stuart building though that would have required her downsize."
- "There are six or so tiny offices on level 3 that they made from one big room just before my time here, so that would have had to be 9 or so years ago."
- "Burkitt-Ford was apparently very popular before COVID. I was in here kick out students every night at 5pm. I think a lot of student graduated during COVID and just never passed down the knowledge of this place to new students."
- "These collaboration spaces were the Head of School's initiative. I believe we were told they're bookable through Outlook or Microsoft something, but I have no idea where to find that information now."