Laboratory Accessibility Working Group (LAWG)

[Redacted] teaching laboratory ([Redacted]) recommendations and action items following LAWG lab tour 6th Feb 2023.

Original document developed by Vicky Barnett in conjunction with other LAWG members present during this lab tour; updated to include additional items (row 1) & Action/Progress column after meeting with [Redacted] stakeholders on 7th March 2023[1].

Please see below recommendations to improve accessibility to the [Redacted]teaching laboratories. The Laboratory Accessibility Working Group does not recognise any of these proposed changes as posing potential unjustifiable hardship to the University or any users of the space.

Short – term suggestions

Recommendation	Rationale	Further comments	Source / Cost estimate	Action/Progress
Revise existing risk assessments (RAs) for B500 teaching laboratories and activities to include risks and mitigation actions for students in a seated position.	Current RAs are based on students conducting experiments in a standing position only and do not take into consideration students in a seated position. RAs need to be reviewed in order to also identify risks and thus mitigation actions for students in a seated position so that the safety of these students is also considered.	H&S aspects are the highest priority for any chemistry laboratory activity. The laboratory is a hazardous environment and we have an obligation to "provide a safe working environment" to all staff and students, whilst also teaching students how to "work safely in the laboratory". Underpinning this is a requirement to comply with relevant WA legislation & Acts in the workplace and Curtin's H&S policies and procedures. RAs are an	B500 staff (technical & Unit Coordinators). No additional cost *per se*, but time-consuming.	Experiment RAs are stored in the appropriate folder in the "Discipline of Chemistry Units" on MS Teams. Rob has made accommodations to the B500 Chemistry Lab RA for a stool in the lab. UCs need to modify experiment RAs. Vicky to ask CoP for examples of RAs

[1] Present: Vicky Barnett & [Redacted] (representing LAWG[Redacted] (Leading [Redacted] stakeholders).

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	Updated RAs that include accessibility considerations will also aid in identifying accessibility requirements, and identify any current activities that may not be able to performed by a seated student.	essential component of meeting these requirements. Non-compliance can lead to harsh penalties for Curtin University and staff. Hence, it is important to update RAs to protect both students and staff as we strive towards improving accessibility (and meeting DDA requirements) safely (thus also meeting H&S requirements).		they have prepared for different accessibility adjustments / student needs.
Replace at least one of the lab benches with a sit-stand lab bench.	This will enable wheelchair accessibility to the otherwise wheelchair-inaccessible lab.	Ideally the new bench should be located close to the safety shower, eye wash station (and ductless fume hood if installed, see below) – not in the 'back corner'.	E.g., Westlab's "Height Adjustable Frame & Top" Height Adjustable Frame & Top (westlab.com.au) is "DDA Compliant" and is a "Laboratory Grade Compact Laminate Worktop". $2,150.00 excl. GST. Lead time ~ 4 weeks. Removal of old bench & drawers underneath – can these be relocated/repurposed in [Redacted] or removed (properties?).	[Redacted] to look into logistics of a height adjustable lab bench; Interim measure to use a short desk/bench if required; stool if required.
Repurpose first aid room on [Redacted] to a multi-purpose space.	This can act as a quiet space for students to retreat to and regroup if needed. This would suit neurodiverse	An internal refurbishment/overhaul would be nice, but in the short term:	This is a shared space with [Redacted] I met with [Redacted] on 17/01/2023 and he is fully supportive of the proposal to repurpose it.	[Redacted] proposed finding an alternate space in [Redacted] for various uses (e.g. a Level 1 office

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	students, students with anxiety-related issues, and students with medical conditions that may require a quiet space for medicating. Additionally, this room has been in the past for staff to medicate (e.g., diabetic injecting insulin) and nursing mothers to express milk/breastfeed. Repurposing this room would have the additional benefit of seeing it more appropriate for this type of use as well, than it currently is.	A coffee table & a couple of comfortable chairs; The lie-down bed could be replaced with a fold-up bed to save space, located such that it is easily accessible if it needs to be used; The phone either should be fixed or removed; The first aid box needs clear signage and a book with instructions to log all use; Currently there is a "do not disturb" sign made by a previous user that can be put on the door handle when in use. This works, but a better set-up would be ideal; A small refrigerator that users could use (e.g., storing breast milk; insulin?). If so, clear signage that users are responsible for their stored materials, & a guide to state what can (and specifically what cannot) be stored, &	Coffee table/chairs: Curtin properties (or relocate from staff room on Level 3?) Fold up bed: E.g., Fold Away bed – Single Bed $89 (K mart) Fold Away Bed - Single Bed - Kmart; Portable Folding Bed $109 https://www.mydeal.com.au/portable-folding-bed; Zodiac Single Foldaway Bed $479 (currently on sale) https://www.livingstyles.com.au/zodiac-single-foldaway-bed; Astro Single Foldaway Bed $489 (currently on sale) https://www.livingstyles.com.au/astro-single-foldaway-bed Linen; mattress protector: e.g., Spotlight stores &10-$80 per item https://www.spotlightstores.com/bedroom Removal of existing bed: Curtin properties? Phone: Curtin? First aid box: liaise between Curtin [Redacted] first aid officer and [Redacted] First Aid officer. Small fridge? (See comments to the left) Sharps container (see comments to the left)	repurposed for breastfeeding, prayer) as a better option than having only room [Redacted] as a designated space for all the needs stated. PF&D checking to see what standards Curtin has for design both of a first aid type room and a breastfeeding/prayer room.

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		someone appointed to check fridge regularly to dispose of out of date materials?? Access to a tap/sink is ideal for washing expressing equipment and hands. A sharps container (e.g., medication such as insulin).	A new door?? One that has a privacy option (for safety the door has to have at least a small window that can be seen through, even if it is one of those privacy windows that are blurred so that you can see through it enough to see if there are people inside but not clear enough that you can see all detail). Perhaps a signage option for "in use, please do not disturb", e.g.:  Note: door should not be lockable. A privacy screen?	
Adjust the timing of the elevator doors to make them close more slowly.	This would make it easier for mobility impaired students and staff to use the elevators without needing assistance from someone else.	Currently the doors close too quickly. People requiring mobility aids have too little time between hearing the 'ding' or seeing the light go on to know which lift to enter, the door opening and then closing. Specifically, the door is often already closing on them before they can	Curtin properties? Lift service contractors? Potentially a simple solution to alter the timing for the doors to begin to close after arriving at its pick-up floor. If not, then this item may belong in the long – term proposals.	PF&D to ask lift contractor to action this.

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		manoeuvre themselves into the correct doorway.		
Remove furniture from in front of the external lift control panels to enable mobility impaired people to easily access the controls prior to entering the lift.	Small tables were placed in front of these controls panel on each floor limiting access.	Limits access to the control panel.	Locations of small tables already changed by [Redacted] on the day of the meeting.	PF&D to contact cleaning contractor to action and advise [Redacted] of change. Appears to be complete.
Extend / lower handle for safety shower activation.	Wheelchair users cannot reach the activation handle for the safety shower, meaning they are reliant on others.		? Simply add an extension (chain) to the handle so it can be reached for a lowered height as well for activation.	To be incorporated as an action in the facility RA (see item in Row 1 above). PF&D checking with plumber about what modifications can be done to extend handle.
Install a second fire blanket at a lower height so it can be accessed by a wheelchair user	Wheelchair users cannot reach the fire blanket, meaning not only are they reliant on others if they need to access the blanket to put out a small fire in their own space, but they are also unable to	The current fire blanket could be relocated, however considering there is only 1 fire blanket for the 2 adjoining labs it might be a good idea to purchase a 2nd one anyway.	Properties?	To be incorporated as an action in the facility RA (see item in Row 1 above). Subsequent query from [Redacted] [Redacted] as to whether wheelchair user using a fire

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	help others if others need it.			blanket is appropriate?
Until the eye wash station is confirmed as wheelchair accessible, have disposable eye wash kits in the first aid kit of each lab	Eye wash station might be too high for a wheelchair user – I'm not sure. This should be checked and amended if required.		First aid officer?	To be incorporated as an action in the facility RA (see item in Row 1 above)

Medium – term suggestions

Recommendation	Rationale	Further comments	Source / Cost estimate	Action/Progress
Replace large whiteboards with other options (e.g., e-screens mounted at the end of each bench series)	This will enable pre-lab presentations to be delivered to the students as smaller groups, thus minimising crowding at the front of the class and associated issues; This will free up wall space that could then be used for other purposes (e.g., cupboards for storage, thus creating the capacity to remove at least some of the under-bench cupboards (see below).	Training needed for the e-screens, but this will be manageable (especially considering the technology already in the lab).	? Curtin IT Removal of whiteboards: Curtin properties?	[Redacted] consider upgrade of lab technology in future budget.

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Remove at least some of the under-bench cupboards and replace with lab stools	This can mitigate OH&S issues for students having difficulty standing for 3 hours as they will be able to rest on the stool periodically.	This could aid many students, even those without a recognised disability. E.g., it is difficult for very tall students to maintain a healthy ergonomic posture in the lab, and having the capacity to rest on the stool periodically would help ease back strain; it would help students prone or at risk of fainting (anxiety, stress, heat, medical condition) to have ready access to a stool to rest against as soon as they begin to feel unwell. Note: A case can be made against the inclusion of stools based on the increased risk of chemicals being spilled on the lap. This can be mitigated by handling the most harmful chemicals only in a fume hood and disallowing the use of stools at the fumehoods. For less harmful chemical spills, the same H&S measures would be taken as if the student were in a	Removal of benches: Can they be relocated within [Redacted]? Otherwise, Curtin Properties? Stools: For example, Westlab LabZest Laboratory Stools ($347) or Ergoflex Lab Stool & Lock Under Load Castors ($678) Lab Chairs | Lab Stools with Wheels | Westlab Australia. New cupboard for storage? Curtin Properties?	

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		standing position during the spill. Students can be encouraged to only use the stools for occasional respite if needed, and the stools should be of a design that won't see a student seated in a low fully seated position. To make way for stools, under bench cupboards would need to be removed. One proposal is to remove only 25-50% of these and have a limited number of stools. The relocation of some of the materials in the cupboards could be placed in new built-in cupboards in the space currently occupied by the whiteboard (see above), or possibly under fumehoods (which would also help in restricting students from moving stools to the fumehoods).		
Purchase and instal at least one wheelchair accessible fume hood.	This would enable wheelchair access to an even larger suite of laboratory learning	Ductless fumehoods are available, and compliant to undertake most applications	E.g., ThermoFisher Scientific Topair Ductless Fumehoods (Ductless Fume Hoods |	

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	experiences, which is what we should be aspiring towards in alignment with the DDA.	for an undergraduate teaching lab, although there will need to be training of technical staff on which filters are applicable for specific experiments, and UCs/technical staff will need to check that the experiments are suitable, making modifications if required (support is available through spec sheets, suppliers and manufacturers): E.g., A general carbon filter would suit most applications, but not all - staff would need to be aware of the right filter to use. Filters are easy to switch over. Filters would need to be monitored (inbuilt monitoring is included in the fume hood, so this is not onerous) and replaced when required – hence they are 'consumables' (replacement is not required too often, so this should not be a prohibiting factor).	Thermo Fisher Scientific - AU); Ductless; Compliance: "EN-14175/CE/ASHRAE 110-1995 certified"; Pro series also "Complies with AFNOR NFX 15-211 standard (Class 1 and 2)". $10K-$15K, depending on size. 9 stands (wheelchair accessible) ~$800; Filter options $500-$1000. *(Thermo Fisher Scientific, Malaga WA 6090; Email exchange between VB and WA-based rep (Sam Chami), available on request).* E.g., Purair Advanced Ductless Fume Hoods Purair Advanced Fume Cabinet | ume Cabinet Suppliers (laftech.com.au); Ductless option, $13K-$15K (includes shipment, installation, onsite NATA testing); Compliance: AS 2243.9-2009 *("Performance specifications and construction meet or exceed OSHA, ANSI and relevant*	

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		A ductless fume hood could be placed along the wall (currently blocked by a large bench), in between existing ducted fumehoods. *Would require technical confirmation that this would be viable without perturbing current systems.*	*international standards to assure operator safety").* *(LafTech Technologies; Qld; Email exchange (quote & specs) between VB and rep (John King), available on request.)*	
Pre-purchase risk assessment for new fume hood to be completed in consultation with student representative or other mobility impaired person and student disability advisor	1. To ensure that all safety needs & feedback of mobility impaired people are taken into consideration 2. To ensure that all people who use this fume hood are aware of the safety risks involved and have the appropriate controls in place when using the fume hood	Risks include but are not limited to: 1. The ductless fume hoods can be ordered specifically as wheelchair accessible, with a stand designed for wheelchair users, or can be placed on a height-adjustable lab bench. This would need to be checked to ensure that the height of the fume hood is appropriate to suit the user so their face is above the access zone and thus protected. 2. Although the ductless fume hoods are designed to contain spills (have a lipped front edge), for particularly	Risk Assessment in collaboration with UC/technical staff/student.	

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		hazardous chemicals additional bunding should be utilised to mitigate the risk of spills outside the fume hood onto the user's lap. In the unlikely event of a chemical spill onto the user, there should be easy access to the safety shower from the fume hood. for a wheelchair user. Another option to enhance safety (when a particularly hazardous chemical is used) is to have a protective apron covering the lap of the wheelchair user. Note that feedback from previous students suggest this is not an option for 'normal' PPE (strings get caught in wheels; the often plastic-based aprons cause overheating of the user; they are generally unnecessary and demeaning (wheelchair users are as capable as non-wheelchair users in handling materials on a bench top, e.g. boiling water in a kitchen), hence I'd		

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		propose this action as a 'requirement' only for particularly harmful chemical use (e.g. concentrated acids), and as an 'option' at the student's choosing for other uses.		

Long – term proposals

Recommendation	Rationale	Further comments	Source / Cost estimate
Purchase and install at least one ducted wheelchair accessible fume hood. *(Note: Compliant ductless fume hoods are available and included above as a medium-term option).*	This would enable wheelchair access to a larger suite of laboratory learning experiences, which is what we should be aspiring towards in alignment with the DDA.	Ducted fume hoods are superior to ductless fume hoods in that they can accommodate a larger range of chemicals being used and do not require the use of consumable/specific filters. Likely to be financially prohibitive in an already established system like the one in B500 ($1-2 million?), but if a repair/refurbishment comes up then it should be considered that an existing unit be replaced with a wheelchair accessible one.	E.g., Dynaflow DDA Dynaflow DDA (Disability Access) Cupboard | Dynaflow; Ducted option, cost unknown at this stage.
Installation of wheelchair accessible sinks and basins;	Wheelchair users cannot access the sinks to wash glassware, hence must rely on others to clean up after	Short people find the sinks difficult to use. A lower wheelchair	

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Installation of wheelchair accessible eye wash station.	themselves, thus are not independent. The handbasin may or may not be accessible already – this should be revised and amended if needed. Eye wash station might be too high for a wheelchair user – like the handbasin. This should be checked and amended if required. *In the meantime, disposable eye wash bottles should be included in the first aid kit for use.*	accessible sink would benefit more than wheelchair users.	
Refurbishment of [Redacted], in particular: All internal doors leading to common spaces and teaching spaces should be switched for wheelchair accessible doors; *This includes the door to [Redacted].* There should be wheel-chair accessible toilets on every floor of [Redacted], including [Redacted].	This would enable wheelchair access to all relevant areas of the building and meet compliance with the DDA and Australian Standards for Wheelchair Access — Accessed.	The laboratory / laboratory corridors are negatively pressured. This currently makes these doors extremely hard to open and impossible for some people, including wheelchair users. Replacing these doors might pose additional issues compared to the other doors. *However*, other chemistry labs have push button or swipe card doors (for easy access) despite negative pressuring. Also, there may now be alternative options for this safety aspect that	Inaccessible doors elsewhere on campus have been replaced with accessible ones; accessible toilets have been installed in various locations around campus. These improvements are in line with UDL (Curtin's DAIP aspiration), and the DDA. [Redacted] discussing with Portfolio Manager Project Delivery about accessibility plans across campus.

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		make it possible without having such a hard to open door.	