

Use this form to document Safe Work Procedures for hazardous activities and processes. The information in your Safe Work Procedure (SWP) should be supported by a risk assessment.

Faculty/School:	Faculty of Science — School of Physics (SAIL Labs)		Initial Issue Date: 2016-06-16
			Next Review Date: 2027-07-16
SWP Reference Number:	SWP-A28-SAIL-116B-temperature-controlled-room	Version: 2.0	Version Issue Date: 2026-07-16
SWP Title:	Occupancy and Work Within the SAIL Temperature Controlled Room (Room 116B)		
Prepared by:	Chris Betters		
Responsible supervisor/s:	Sergio Leon-Saval, Chris Betters		

List the Hazards and risk controls as per risk assessment

Associated risk assessment reference:	Hazards	Risk controls
RA-A28-SAIL-116B-temperature-controlled-room	Carbon dioxide accumulation in a sealed, recirculating air conditioned room	- Main door MUST remain open whenever the room is occupied - primary control - CO2 monitor triggers automatic fresh air intake before levels become unsafe - Red mushroom panic button installed in the room to sound an alarm - Evacuate immediately if the CO2 alarm sounds - do NOT investigate first - If the door must be closed for thermal stability, leave the room - General SAIL induction and specific 116B induction
RA-A28-SAIL-116B-temperature-controlled-room	Failure of the CO2 monitor, alarm or automatic fresh air intake	- The door open rule protects you independently of the monitor - Do NOT occupy the room for extended work with a faulty CO2 system - Report any fault, sensor error or alarm activation to the supervisor and building manager - Scheduled function test and calibration by Facilities
RA-A28-SAIL-116B-temperature-controlled-room	Working in isolation within a sealed room, particularly after hours	- Notify your supervisor or an appropriate person that you are working in the lab - Confirm the panic button is reachable from your work position before starting - Carry a mobile phone - Agree a check-in time for extended or after-hours work - Do NOT work alone in the room if feeling unwell
RA-A28-SAIL-116B-temperature-controlled-room	Door closed or latched while a person is inside	- Secure the door open with a hold-open device or wedge before starting work - Check the room is unoccupied before closing the door - Verify the door opens from the inside - Signage on both faces of the door
RA-A28-SAIL-116B-temperature-controlled-room	Electric shock from flood water on the laboratory floor, and slips on wet flooring	- Check the floor for standing water BEFORE entering - Do NOT enter or step into standing water - isolate power at the distribution board first - Socket outlets are RCD protected and mounted above floor level - Report water ingress or drainage faults immediately

List resources required including personal protective clothing, chemicals and equipment needed

No PPE is required for occupancy of the room itself. The controls for this room are engineering and administrative, not PPE based.

PPE required by the SWP of any equipment operated inside the room applies as normal.

Enclosed footwear as per general laboratory rules.

NOTE: no respiratory protection is provided or appropriate for CO₂. A filter cartridge does NOT protect against CO₂ or oxygen displacement. Evacuation is the only response.

Mobile phone, carried, for emergency calls and check-ins.

Door wedge or hold-open device.

Access credentials for Room 116B.

Safety equipment that MUST be present and operational: CO₂ monitor with automatic fresh air intake; red mushroom panic button, unobstructed and reachable from the work position; door openable from the inside; warning signage on the door.

Nearest fire extinguisher and emergency exit - location known before starting.

First aid kit: same level as the laboratories, near the parents room.

Room 116B is a sealed room with recirculating air conditioning for thermal stability. It has no continuous outside air supply while the door is closed. Fresh air is introduced automatically when the CO₂ monitor detects rising levels. The OPEN DOOR is the reliable source of fresh air - the CO₂ monitor is a backstop, not a licence to close the door.

List step by step instructions or order for undertaking the task

BEFORE STARTING: NEVER work in Room 116B with the door closed. If the door must be closed to hold temperature, you MUST leave the room. NEVER silence, bypass or obstruct the CO₂ monitor, fresh air intake or panic button. Evacuate immediately if the CO₂ alarm sounds. Do NOT work alone if you feel unwell.

PRE-ENTRY CHECK 1 - Floor: look for standing water or signs of water ingress before entering. If water is present, do NOT enter. Go to the flood water emergency procedure.

PRE-ENTRY CHECK 2 - CO₂ monitor: confirm the monitor is powered and not displaying a fault or alarm. If in alarm, do NOT enter and notify the supervisor and building manager. If faulty, blank or showing a sensor error, do NOT occupy for extended work. Report it.

PRE-ENTRY CHECK 3 - Panic button: confirm the red mushroom button is visible, unobstructed and reachable from where you will be working. If equipment blocks it, clear the access before starting.

PRE-ENTRY CHECK 4 - Door: open the main door fully. Fit the hold-open device or wedge so it cannot swing or be pushed closed. Confirm the door can be opened from the inside.

PRE-ENTRY CHECK 5 - Notify: tell your supervisor or another appropriate person that you are working in the lab and state the expected duration. For extended or after-hours work, agree a check-in time. Carry your mobile phone.

PRE-ENTRY CHECK 6 - Equipment: any instrument operated inside 116B has its own SWP. Complete its pre-operation checks as well.

BRIEF EQUIPMENT CHECK (door closed): permitted ONLY for checking, starting or stopping equipment. Confirm the CO₂ monitor is not in alarm, enter, perform the check, and leave. Do NOT settle in to work. If the task extends beyond a brief check, open and secure the door, or leave. If you feel any headache, dizziness or drowsiness, leave immediately.

EXTENDED WORK (door open): confirm the door is secured open before starting. This is not optional. Carry out the work per the relevant equipment SWP.

EXTENDED WORK: monitor yourself throughout for CO₂ symptoms - headache, dizziness, drowsiness, rapid breathing, difficulty concentrating. If any symptom appears, leave the room immediately, move to fresh air, and report it. Do NOT dismiss it.

EXTENDED WORK: if the CO₂ alarm sounds, evacuate immediately. Do NOT allow anyone to close the door while you are inside. Meet any agreed check-in times.

THERMAL STABILITY WORK REQUIRING A CLOSED DOOR: complete all in-room work first with the door open, then LEAVE THE ROOM and close the door from outside. Verify visually that no one else is inside before closing - do NOT assume. Monitor and control the experiment remotely where possible. To return, repeat the pre-entry checks.

COMPLETION: complete or safely pause work per the equipment SWP. Check that no other person remains in the room.

COMPLETION: remove the door hold-open device and close the door. The room is now unoccupied and the door is closed for thermal stability.

COMPLETION: confirm the CO₂ monitor is operating and not in fault, and that the panic button remains unobstructed.

COMPLETION: notify your supervisor or check-in contact that you have finished, if a check-in was agreed. Report any fault, alarm activation or water ingress observed during the session.

List emergency shutdown procedures

The room has no process requiring emergency shutdown. The emergency action for Room 116B is EVACUATION OF THE ROOM, not shutdown of plant.

Evacuate if: the CO₂ alarm sounds; you experience headache, dizziness, drowsiness or rapid breathing; another occupant appears confused, drowsy or unresponsive; water appears on the floor; there is smoke, fire or a burning smell; the building fire alarm sounds; or the CO₂ monitor fails while you are inside.

Leave the room immediately and move to fresh air in the corridor.

Press the red mushroom panic button on the way out IF a person is affected or trapped.

Close the door behind you once the room is unoccupied.

Do NOT re-enter to retrieve items.

Isolate power to room equipment at the distribution board ONLY if it is safe and dry to do so.

Notify the supervisor and building manager. Restrict access until cleared.

Call 000 if anyone is unconscious, unresponsive or has symptoms beyond mild.

RETURNING: do NOT enter until CO₂ levels are confirmed normal and the supervisor or building manager has verified the system is operational. Investigate and record the cause (door left closed, sensor malfunction, ventilation failure). Report via RiskWare. Extended work MUST NOT resume until all safety systems are verified functional.

List Emergency procedures for how to deal with fires, spills or exposure to hazardous substances

CO₂ ALARM: evacuate the room immediately - do NOT investigate first. Close the door behind you once the room is empty. Do NOT re-enter to retrieve items. Notify the supervisor and building manager immediately. Restrict access until the alarm clears. Do NOT enter until CO₂ levels are confirmed normal and the system verified operational. Investigate the cause and report via RiskWare.

CO₂ EXPOSURE (headache, dizziness, confusion, rapid breathing, loss of consciousness): remove the person from the room immediately IF safe to do so. Do NOT enter a room with an active CO₂ alarm alone - secure the door fully open first. If you cannot reach them safely, call 000 and wait for emergency services.

CO₂ EXPOSURE: move the person to a fresh air area. If unconscious, call 000 immediately and begin first aid if

trained. Loosen tight clothing. Keep the person calm and still. Monitor breathing and consciousness. Seek medical attention for moderate to severe symptoms. Report to the supervisor and via RiskWare.

CO2 RESCUE LIMIT: there is no respirator or breathing apparatus available for CO2 in this room. Do NOT attempt a rescue that requires you to remain in a hazardous atmosphere.

FLOOD WATER / ELECTRIC SHOCK: do NOT enter the room or step into standing water. Isolate power to the room at the distribution board IF the board is safe and dry to reach. Evacuate the affected area and prevent others from entering. Notify Facilities and the building manager immediately.

ELECTRIC SHOCK: if a person is in contact with electricity, do NOT touch them. Isolate the supply first. Call 000. Once isolated and the person is clear, begin first aid if trained and commence CPR if trained and required. All persons who receive an electric shock MUST seek medical attention, even if they appear uninjured.

FLOOD AFTERMATH: equipment exposed to water MUST be tagged out and inspected by a qualified electrician before reuse. Report via RiskWare.

PANIC BUTTON ACTIVATION: the red mushroom button sounds an alarm to summon assistance. Responders MUST NOT enter the room alone if a CO2 alarm is also active. Secure the door fully open before entering. Call 000 if the person is unconscious or unresponsive. Notify the supervisor.

FIRE: evacuate the room, activate the building fire alarm, call 000, do NOT re-enter. Follow the building evacuation procedure and fire warden instructions. Proceed to the designated assembly point. Only fight a small fire if it is safe to do so and you are trained.

EQUIPMENT MALFUNCTION: cease work in the room. Do NOT continue occupancy with a failed CO2 monitor, fresh air intake or panic button. Tag the room or system as defective. Notify the supervisor and building manager. Arrange qualified technician inspection. Do NOT resume extended work until safety systems are verified functional.

EMERGENCY CONTACTS: Emergency services 000. USyd Security 9351 3333. Poisons Information Centre 13 11 26.

TODO: Insert direct contact numbers for the supervisors, the School of Physics Safety Officer, the A28 Building Manager / Facilities, the building fire warden and the first aid officers.

First aid kit location: same level as the laboratories, near the parents room (outside the laboratory areas).

List Clean up and waste disposal requirements

Occupancy of the room generates no waste and requires no specific clean up.

After each use: remove personal items and any temporary equipment.

Keep the area around the panic button clear at all times.

Keep the door swept clear so it can be secured open.

Return the door wedge or hold-open device to its storage point.

Do NOT leave items on the floor that would obstruct evacuation or be affected by water ingress.

Waste generated by equipment operated inside the room is covered by that equipment's own SWP.

PERIODIC MAINTENANCE: CO2 sensor calibration and fresh air intake function test (NOT a power-on check) - quarterly, Facilities.

PERIODIC MAINTENANCE: panic button function test, and confirmation of where the alarm reports to - quarterly, Facilities / Laboratory Manager.

PERIODIC MAINTENANCE: verify the door opens from the inside - quarterly.

PERIODIC MAINTENANCE: confirm signage is present and legible on both faces of the door - quarterly.

PERIODIC MAINTENANCE: RCD testing and equipment test and tag per AS/NZS 3760 - Facilities.

Report drainage or water ingress faults immediately. Do NOT wait for the schedule.

List references used in the development of this SWP, e.g. codes of practice

Work Health and Safety Act 2011 (NSW)

Work Health and Safety Regulation 2017 (NSW)

Safe Work Australia, Workplace Exposure Standards for Airborne Contaminants (2024) - carbon dioxide TWA 5,000 ppm, STEL 30,000 ppm

Safe Work Australia, Confined Spaces Code of Practice (2020) - guidance only; Room 116B is NOT a confined space

AS 1668.2-2012 Mechanical ventilation in buildings

AS/NZS 3000:2018 Electrical installations (Wiring Rules)

AS/NZS 3760:2022 In-service safety inspection and testing of electrical equipment

University of Sydney WHS policies, including working alone and after-hours guidance

SAIL General Optical and Laser Laboratory Safety risk assessment and safe work procedure (general-lab-safety)

Superseded document RA-SWP-A28-116B (26/04/2020)

List competency required – qualifications, certificates, licensing, training - e.g. course or instruction:

General SAIL induction.

Specific Room 116B induction, covering: why the room is sealed and what recirculating air conditioning means for the atmosphere; the door open rule and why it is the primary control, not a convenience; what to do when thermal stability requires a closed door (leave the room).

Specific Room 116B induction, covering: location, function and reading of the CO₂ monitor; location and operation of the red mushroom panic button and where the alarm reports to; recognition of CO₂ exposure symptoms in yourself and others.

Specific Room 116B induction, covering: CO₂ alarm response (evacuate, do NOT investigate); flood water and electric shock response and the power isolation point; lone working notification and check-in expectations; that no respiratory protection is available or appropriate for CO₂.

Equipment-specific training for any instrument operated within the room, per its own SWP.

COMPETENCY ASSESSMENT - the user MUST demonstrate, in the room: correct pre-entry checks (floor, CO₂ monitor, panic button, door secured open); locating and describing operation of the panic button from the work position; correct statement of the door rule including the closed-door case.

COMPETENCY ASSESSMENT - the user MUST demonstrate: correct description of CO₂ symptoms and the required response; correct CO₂ alarm response; correct flood water response including not entering; correct notification and check-in procedure for solo work.

ONGOING: refresher at induction renewal, or after any incident or alarm activation in 116B. Re-brief all users if the CO₂ system, panic button or door arrangement changes.

RECORD KEEPING: induction and competency sign-off recorded by the Laboratory Manager. Alarm activations, faults and incidents logged and reported via RiskWare. Function test and calibration records retained by Facilities.

Staff approved to assess competence for this SWP

Sergio Leon-Saval, Chris Betters, Barnaby Norris

SWP Sign off sheet

SWP name and version:	Occupancy and Work Within the SAIL Temperature Controlled Room (Room 116B) (Version 2.0)
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In signing this section the assessor agrees that the following persons are competent in following this SWP.

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Risk Matrix

			Potential Consequences				
			Class 3	Class 2	Class 2	Class 1b/1c	Class 1a
			Minor injuries or physical discomfort. Short-term psychological impact (isolated or one-off event).	Injury or illness requiring medical treatment and/or short-term impairment (less than 2 weeks). Psychological impact requiring support.	Injury or illness requiring hospital admission and/or temporary impairment (less than 6 months). Psychological impact requiring medical treatment.	Injury or illness (physical or psychological) resulting in long-term or permanent impairment (more than 6 months). Injury or illness resulting in temporary impairment to multiple people.	One or more fatalities. Injury or illness resulting in long-term or permanent impairment to multiple people.
			Insignificant	Minor	Moderate	Major	Severe
Likelihood	Expected to occur regularly under normal circumstances	Almost Certain	Medium	High	Very High	Very High	Very High
	Expected to occur at some time	Likely	Low	Medium	High	Very High	Very High
	May occur at some time	Possible	Low	Medium	Medium	High	High
	Not likely to occur in normal circumstances	Unlikely	Low	Low	Medium	Medium	High
	Could happen, but probably never will	Rare	Low	Low	Low	Medium	Medium