Roof Safety Survey

GENERAL INFORMATION

CAMPUS: Wollongong Campus

BUILDING: SMART Infrastructure Facility (6)

DESCRIPTION: Modern 4 storey building with metal roof - plantroom occupies the upper floor - balcony areas on second and third floors and large atrium area covered by glass skylights on the interior.

RISK ASSESSMENT #: UOW01885

ROOF ACCESS: Multiple access points to roofs and landings:
1) Level 2 West Small unmarked window cleaning access door behind Room 208 beside kitchen area - onto exterior walkway - anchor points installed on floor inside door and on rail system to glass structure
2) Level 2 East Glass doors on Eastern end of building open onto terrace area - parapet 1200 mm. System links to Building 3. Horizontal lifeline
3) Level 3 West Small unmarked window cleaning access door behind Room 208 beside kitchen area - onto exterior walkway - anchor points installed to floor, rail system to glass structure
4) Level 3 South West Door at end of southern corridor beside rooms 314I & 314H - up short ladder onto landing to exterior door to roof above second floor - horizontal lifelines and parapet varying from 1200 - 150 mm. System link to Building 35 Horizontal lifeline (but not accessible from Building 6 - only Building 35)
5) Level 3 East Glass doors on Eastern end of building open onto smaller terrace area - parapet 1200 mm
6) Stair 1 to plantroom Leads to plantroom on fourth floor for access to roof proper.
7) Stair 2 to plantroom Leads to plantroom on fourth floor for access to roof proper.
8) Stair 3 to plantroom Leads to plantroom on fourth floor for access to roof proper.
9) Lift 1 to plantroom Leads to plantroom on fourth floor for access to roof proper.
10) Roof Access North beside Stair 3 In plantroom - climb four rung ladder onto landing to open door - to access solar panels and other services on northern side.
11) Roof Access South East In plantroom - climb four rung ladder onto landing to open door - to access roof above 3rd floor on the southern side. Short parapet (900 - 150 mm) and horizontal lifeline. Note: Large step downonto roof from South East access - CAUTION
12) Roof via RP3 Cooling Tower Through doors into courtyard where cooling towers are located - stairs lead up to short handrailed walkway to access upper roof and services - horizontal lifelines around building edge - no protection from edge of cooling tower courtyard
13) Service corridor on level 3 Access to upper area of Atrium - 1200 mm balustrate
14) Highbay/ Mezzanine The mezzanine level is located in the workshop area. East end. The mezzanine is used for storage. These areas are generally accessed by SMART staff. The anchors are located on the concrete floor and must be attached to prior to removal of the handrail. There are sections of handrail that can be removed in order to forklift or move materials using bridge crane to the mezzanine floor. It should be also noted the Handrails must be re-instated prior to disconnection from the systems

SIGNAGE:
Danger - No Access to Roof without a Buildings and Grounds Roof Access UOW Permit to work.

COMPLIANCE PLATES:
Compliance plates are located on the access doors leading to the roof and access doors from plant room and kitchen areas and on the wall adjacent to the roof of walkovers between Buildings 3 and 35

SAFE WORK AREAS:
None on roof - balcony areas only and enclosed cooling tower plant

ROOFING SYSTEM:
Sala Evolution Lifeline "RAPTOR" RAIL SYSTEMS.

TYPICAL ANCHORS

VEGETATION:
No

ADJOINING ROOFEES:
Nil

SERVICES:

| Gutters | Yes |
| A/C Units | Yes |
| Exhaust Fans | Yes |
| Ducts | Yes |
| Roof Ventilators | Yes |
| Fume Cupboards | Yes |
| Telco Towers | Yes |
| Satellite Dishes | Yes |
| Antenna | Yes |
| Skylights Domes | Yes |
| Glass Skylights | Yes |
| Pipework | Yes |
| Cooling Tower | Yes |
| Solar Dishes | Yes |

EXISTING SAFETY ITEMS:

| Horizontal Lifelines | Yes |
| Anchor Points | Yes |
| Vertical Lifelines | No |
| Handrail | No |
| Walkways | No |
| Parapets | Yes |
| 1200 - 200 mm |

WORK ACTIVITY DETAILS:

| Clean Gutters / Routine Maintenance | Service A/C Plant |
| TBA | TBA |

Note: Before commencing any work obtain Roof Permit from Facilities Management Division
## Building 6 Roof Safety Assessment

### Roof Safety Survey

#### Risk Assessment

**Risk Assessment / Task Location**

**BUILDING 6**

**Note:** The hazards identified do not include hazards that related to specific work tasks. These should be identified in the Safe Work Method Statement (SWMS) of the contractor.

<table>
<thead>
<tr>
<th>Hazard Identification</th>
<th>Risk Assessment &amp; Control Measures</th>
<th>Risk Control</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Access to Roof</strong></td>
<td>Unauthorised access</td>
<td>M</td>
</tr>
<tr>
<td></td>
<td>All access points to roof are locked and made secure so are not accessible by unauthorised persons; signage</td>
<td>Risk Assessment and Roof Safety Survey</td>
</tr>
<tr>
<td><strong>Access to Roof via plantroom door</strong></td>
<td>Climbing stairs to access south and north side roofs</td>
<td>Step access to roof</td>
</tr>
<tr>
<td></td>
<td>Minimum awareness</td>
<td></td>
</tr>
<tr>
<td><strong>Access to upper roof via stair - cooling tower</strong></td>
<td>Falling</td>
<td>Compliant stair access with handrails</td>
</tr>
<tr>
<td></td>
<td>Nil</td>
<td></td>
</tr>
<tr>
<td><strong>Gutter Maintenance on Roof and Awnings</strong></td>
<td>Falling</td>
<td>Horizontal Lifeline &amp; Anchors Installed</td>
</tr>
<tr>
<td></td>
<td>Ensure horizontal lifeline &amp; anchors used correctly</td>
<td></td>
</tr>
<tr>
<td><strong>Access to roofs from Buildings 3 &amp; 35 bridge links</strong></td>
<td>Falling</td>
<td>Horizontal Lifeline &amp; Anchors Installed</td>
</tr>
<tr>
<td></td>
<td>Ensure horizontal lifeline &amp; anchors used correctly</td>
<td></td>
</tr>
<tr>
<td><strong>Roof Plant Maintenance greater than 2m from roof edge</strong></td>
<td>Refer to SWMS for contractor</td>
<td>Safe Work Procedure</td>
</tr>
<tr>
<td></td>
<td>Nil</td>
<td></td>
</tr>
<tr>
<td><strong>Roof Plant Maintenance within 2m from roof edge</strong></td>
<td>Falling &amp; Refer to SWMS for contractor</td>
<td>Horizontal Lifeline &amp; Anchors Installed</td>
</tr>
<tr>
<td></td>
<td>Ensure horizontal lifeline &amp; anchors used correctly</td>
<td>Officer so that fume cupboards are tagged out of service when regular maintenance in</td>
</tr>
<tr>
<td><strong>Fume Cupboard Maintenance</strong></td>
<td>Fume Cupboard Emissions</td>
<td>Nil</td>
</tr>
<tr>
<td><strong>Glass Roofs</strong></td>
<td>Falling near or through skylight</td>
<td>H</td>
</tr>
<tr>
<td></td>
<td>Horizontal Lifeline &amp; Anchors Installed</td>
<td></td>
</tr>
<tr>
<td><strong>Antenna Maintenance</strong></td>
<td>Falling and Refer to SWMS of contractor</td>
<td>Anchor Points Installed</td>
</tr>
<tr>
<td></td>
<td>Ensure SWMS developed is followed by Contractors</td>
<td></td>
</tr>
<tr>
<td><strong>General</strong></td>
<td>Trip Hazard - Roof Sheet</td>
<td>M</td>
</tr>
<tr>
<td></td>
<td>Safe Work Procedure</td>
<td></td>
</tr>
<tr>
<td><strong>General</strong></td>
<td>Trip Hazard - Horizontal Lifeline or Anchor Points</td>
<td>M</td>
</tr>
<tr>
<td></td>
<td>Be aware of location of horizontal lifeline &amp; anchor points</td>
<td></td>
</tr>
<tr>
<td><strong>General</strong></td>
<td>Weather Trips/Slips - Wet Roofs</td>
<td>H</td>
</tr>
<tr>
<td></td>
<td>Do not work while roofs are wet or have dew</td>
<td></td>
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<tr>
<td><strong>General</strong></td>
<td>Weather - Windy Condition</td>
<td>H</td>
</tr>
<tr>
<td></td>
<td>Safe Work Procedure, do not work in high wind conditions</td>
<td></td>
</tr>
<tr>
<td><strong>General</strong></td>
<td>Weather - Hot Conditions</td>
<td>M</td>
</tr>
<tr>
<td></td>
<td>Thermal Comfort Guidelines</td>
<td></td>
</tr>
<tr>
<td><strong>General</strong></td>
<td>Climbing ladder</td>
<td>M</td>
</tr>
<tr>
<td></td>
<td>Maintain 3 points of contact; Signage; and Working at Heights Guidelines - Working from Ladders</td>
<td></td>
</tr>
<tr>
<td><strong>General</strong></td>
<td>Environmental Hazards - Spiders, Wasps, and other insects</td>
<td>M</td>
</tr>
<tr>
<td></td>
<td>On-going pest control measures</td>
<td></td>
</tr>
</tbody>
</table>

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**Hazard Identification**

- **What is the Activity/Service Item**
  - Access to Roof
  - Access to Roof via plantroom door
  - Access to upper roof via stair - cooling tower
  - Gutter Maintenance on Roof and Awnings
  - Access to roofs from Buildings 3 & 35 bridge links
  - Roof Plant Maintenance greater than 2m from roof edge
  - Roof Plant Maintenance within 2m from roof edge
  - Fume Cupboard Maintenance
  - Glass Roofs
  - Antenna Maintenance
  - General
  - General
  - General
  - General
  - General
  - General

**Risk Assesment & Control Measures**

- **What are the potential Hazards**
  - Unauthorised access
  - Climbing stairs to access south and north side roofs
  - Falling
  - Falling
  - Falling & Refer to SWMS for contractor
  - Fume Cupboard Emissions
  - Falling near or through skylight
  - Falling and Refer to SWMS of contractor
  - Trip Hazard - Roof Sheet
  - Trip Hazard - Horizontal Lifeline or Anchor Points
  - Weather Trips/Slips - Wet Roofs
  - Weather - Windy Condition
  - Weather - Hot Conditions
  - Climbing ladder
  - Environmental Hazards - Spiders, Wasps, and other insects

- **What is the Risk Level**
  - M
  - M
  - M
  - H
  - F
  - M
  - M
  - M
  - M
  - M

- **List any Control Measures already Implemented**
  - All access points to roof are locked and made secure so are not accessible by unauthorised persons; signage
  - Step access to roof
  - Compliant stair access with handrails
  - Horizontal Lifeline & Anchors Installed
  - Horizontal Lifeline & Anchors Installed
  - Refer to SWMS for contractor
  - Nil
  - Nil
  - Horizontal Lifeline & Anchors Installed
  - Horizontal Lifeline & Anchors Installed
  - Safe Work Procedure
  - Horizontal Lifeline & Anchors Installed
  - Fume Cupboard Emissions
  - Horizontal Lifeline & Anchors Installed
  - Horizontal Lifeline & Anchors Installed
  - Anchor Points Installed
  - Signage & System is visible
  - Safe Work Procedure, do not work on wet roof
  - Safe Work Procedure, do not work in high wind conditions
  - Thermal Comfort Guidelines
  - Maintain 3 points of contact; Signage; and Working from Heights Guidelines - Working from Ladders
  - Appropriate PPE and insect repellent and Pest control as required

- **Describe what can be done to eliminate risk or reduce the harm**
  - Risk Assessment and Roof Safety Survey
  - Minimum awareness
  - Nil
  - Ensure horizontal lifeline & anchors used correctly
  - Ensure horizontal lifeline & anchors used correctly
  - Ensure horizontal lifeline & anchors used correctly
  - Ensure Horizontal Lifeline and Anchors used correctly. Requires fragile and brittle roof signage.
  - Officer so that fume cupboards are tagged out of service when regular maintenance in
  - Ensure Horizontal Lifeline and Anchors used correctly.
  - Ensure SWMS developed is followed by Contractors
  - Be aware of location of horizontal lifeline & anchor points
  - Do not work while roofs are wet or have dew
  - Use suncream, hats and remain hydrated and take appropriate breaks
  - Ensure that ladder is used correctly
  - On-going pest control measures
Reference Documentation

Legislation
NSW Work Health and Safety Regulation 2011 Part 4.4 Falls
Public Health (Microbial Control) Regulation 2000

Australian Standards
AS 1657 - 2013 : Fixed platforms, walkways, stairways and ladders - Design, construction and installation
AS 1891.1 - 2007 : Industrial fall-arrest systems and devices - Harnesses and ancillary equipment
AS 1891.2 - 2001 : Industrial fall-arrest systems and devices - Horizontal lifeline and rail systems
AS 1891.3 - 1997 : Industrial fall-arrest systems and devices - Fall-arrest devices
AS 1891.4 - 2009 : Industrial fall-arrest systems and devices - Selection, use and maintenance
AS 2210.1 - 2010 : Safety, protective and occupational footwear - Guide to selection, care and use
AS 2243.8 - 2006 : Safety in Laboratories - Fume Cupboards
AS 2243.9 - 2009 : Safety in Laboratories - Recirculating Fume Cabinets
AS 3666- 2011 : Air-handling & Water Systems for Buildings - Microbial Control
AS 4994.1 - 2009 : Temporary edge protection - General requirements
AS 4994.2 - 2009 : Temporary edge protection - Roof edge protection - Installation and dismantling
AS 5532 - 2013 : Manufacturing requirements for single-point anchor device used for harness-based work at height

Code of Practice
Safe Work Australia - Managing the Risk of Falls at Workplaces
NSW Health Department Code of Practice for the Control of Legionnaires' Disease

UOW Documentation
Managing the Risk of Falls Guidelines
Thermal Comfort Guidelines
UOW Roof Access Permit
UOW Roof Access Certificate

Other
SALA - Fall Arrest and Height Safety Systems - Fall Protection Manual
WorkCover - Safe Working at Heights Guide 2006
3rd floor roof - access, lifeline & parapet

Looking east over cooling tower plant

SE roof - access, lifeline & parapet

Looking east from stairs

Telco & weather monitor on southern side

North-western corner

Walkway on western exterior used to access windows for cleaning

Roof of overpass joining to Building 35 showing horizontal lifeline
Solar panels and fall restraint on northern side

View of atrium and landing

Stairs from plantroom up to roof

Ladder & landing & gate to Roof Access North

Interior view of skylight

HRD-WHS-REF-436.2  2014 March
SAFE USE OF SALA “EVOLUTION” LIFELINE.

1. TYPICAL LIFELINE.
2. ATTACHMENT OF SHUTTLE

3. SHUTTLE IN CLOSED POSITION.

SALA EVOLUTION SHUTTLE
- Depress the large round grey button on top and small grey button under the connection ring simultaneously. The bottom jaws will open.
- Place the shuttle jaws over the cable with the jaws facing downward and the connecting ring facing toward the gutter.
- Close the jaws and check the cable is locked within the jaw.
- It is possible to orientate to different sides of the cable without the need to disconnect the shuttle from the cable. Simply depress the top round button only and swivel the “D” loop ring to the opposite side. Release the button and the ring will lock to the other side.
SAFE USE OF “RAPTOR” RAIL SYSTEMS. (BUILDING 6 WINDOWS)

1. TYPICAL ANCHOR IN KITCHEN.  
2. REMOVAL OF COVER AND USE OF ANCHOR.

3. ACCESS RAIL TROLLEY SHUTTLE.  
4. TYPICAL SYSTEM USE.

CONNECTION OF THE RAIL SYSTEM.
- Remove cap on anchor in Kitchen floor.
- Connect twin tailed lanyard to anchor before opening door.
- Upon opening door, access ledge and Rail system.
- Connect second Tail of lanyard to Rail trolley.
- Disconnect from floor anchor.
- Release wire cable from the rail trolley and travel on Rail whilst still connected to the Trolley.
- At completion of use, re-attach the wire cable (this is to ensure the Trolley remains in a position of easy access until it is used again)
**GUIDE LINE ONLY**

**THIS OPERATION MANUAL SHOULD BE CONSIDERED A GUIDE ONLY. ALL PERSONS USING THE EQUIPMENT LISTED IN THIS MANUAL MUST BE COMPETENTLY TRAINED. “THE INSTALLER” INSTALLS SYSTEMS ONLY AND DOES NOT MANUFACTURE THE SYSTEMS. END USERS TO ENQUIRE WITH “THE MANUFACTURER” (BULLIVANTS) AT THEIR OWN DISCRETION. ALWAYS FOLLOW MANUFACTURERS INSTRUCTIONS.**

**TYPICAL ANCHORS**