#### Background

Perth Children's Hospital (PCH) replaces the 100-year-old Princess Margaret Hospital as Western Australia's only dedicated paediatric hospital.

The WA Government appointed John Holland to design and construct the 298-bed hospital in late 2011. When it opens later in 2017, PCH is set to become one of the world's leading paediatric hospitals.

The extensive use of façade panels is a distinctive and defining design feature of PCH.

John Holland contracted Aurecon Australia Pty Ltd (Aurecon) to develop the façade performance specifications, including the unitised roof panels (URPs), in accordance with the National Construction Code (NCC).

Following an international scan of façade manufacturers, John Holland invited four suppliers to tender for the panel supply contract in July 2012.

Yuanda (Australia), a recognised global façade supplier and supplier of panels to 68 buildings in Australia (including 14 in WA), was awarded the contract in December 2012 with the knowledge that the panels would be manufactured in China by Yuanda China using components from various sources.

It was a clear contract requirement for the panels to be free of asbestos-containing materials.

The URP design and composition was approved by representatives of John Holland and Aurecon as Design Verifier, and to a point where the client (WA State Government), 'had no further comment'.

This process involved reviewing internal material samples, including a fibre cement sheet provided by Yuanda, which was accompanied by a test report from a non-profit scientific Chinese government research laboratory that stated the product was 'autoclaved cellulose fibre cement flat sheet' (non asbestos)'. The *Building Commission Interim Report Perth Children's Hospital – Asbestos* found that 'the procurement processes used by John Holland were comprehensive and consistent with industry practice.'

Between January 2013 and April 2014, a mix of representatives from John Holland, Aurecon, the Client and the Client's technical advisor made six visits to the Yuanda China factory to view and assess the panel production and quality management processes.

John Holland undertook a proactive and thorough response to the discovery of asbestos to immediately contain the impact of the incident, and provided extensive support to all workers engaged by the project.

This response included:

- Undertaking 388 separate tests (mix of airborne monitoring and tape/dust tests) by independent accredited laboratories.
- Holding more than 20 information sessions attended by 550 John Holland personnel, subcontractors and State Government employees and contractors.
- Offering baseline health tests, access to an occupational GP, tool cleaning and replacement, and vehicle tests for workers directly involved in the works.
- Establishing an infoline and email addressed specifically to respond to any worker concerns.
- Offering all personnel on site, irrespective of their employer, access to John Holland's EAP program.

Timeline of Events			
Seq.	Description	Event Date	Event Time
1.	A mix of representatives from John Holland (JH), Aurecon, the Client and the Client's technical advisor made six visits to the Yuanda China factory to view and assess the production and quality management processes of the façade panels.	January 2013 and April 2014	
2.	(JH) and Aurecon request sample material and compliance testing certification for the composition of the unitised roofing panels (URPs). Yuanda Australia provide the cross section technical drawing, material samples and test certificate that state the material was "Non-Asbestos".	January 2013	
3.	Yuanda Australia delivered 189 URPs as per design to the Perth Children's Hospital (PCH). The URPs, which were all completely sealed, were installed over a period of two months into the atrium roof.	March 2014	
4.	34 partial-vision and 155 non-vision URPs were installed on the atrium roof.	May 2014 - January 2015	
5.	Aurecon was engaged by John Holland (JH) to produce a design change to add an additional extraction system (plus+1), which was reviewed and agreed to by both the State and JH.	June 2016	
	Saturday 9 July 2016		
	On the PCH site, a JH Carpenter was tasked with marking out the penetration on the underside of the URPs on 11/07/2016 by GCS workers.		
	JH Supervisor and JH Construction Manager reviewed the Yuanda shop drawings and verified materials to be encountered when penetrating the URPs.		
	The JH Carpenter drilled 2 holes into the underside of the URPs using a 200mm drill bit, which penetrated the entire URP.		
6.	The JH Carpenter then drilled 8 holes through the top of the URPs, which penetrated through the URPs. Nobody was underneath the URPs when the 8 holes were drilled.	9/07/2016	08:00
	The JH Carpenter then sealed the 8 holes on the roof with silicone.		
	During the subsequent incident investigation, the JH Carpenter described the material that came out of the pilot holes as "powdery, with metal fragments from the outer case and fibre particles from the insulation". He was not wearing a face mask, but was wearing glasses and helmet.		

	Monday 11 July 2016		
7.	A JH Supervisor (and JH Trades Assistants) marked out the URPs in Level 8 of the atrium roof for pre-works to enable installation of ventilation components. The JH Carpenter then drilled 4 pilot holes for the main	11/07/2016	07:00
	GCS façade installers cut two larger holes, and eight smaller holes in the URPs, which contained fire sheeting made of 2 x 12mm thick bonded material, using a combination of methods (drilling pilot holes, followed by hammering out larger pieces and trimming edges using a grinder with a 1mm cutting disc).		
	The workers wore standard PPE including face shields for cutting activities. P2 dust masks were worn for some cutting activities.		
8.	The material from the penetration was cleaned up using usual disposal systems (collected and placed in 80 litre green plastic wheelie bins with lids, transported via lift 4 to skips and removed from site via Matera Waste Management).	11/07/2016	09:00
	OSE welders (welding support beams), and Caledonia scaffolders (providing/removing access), JH Trade Assistants (general housekeeping activities), Duct Up ducting installers (installing ducting) and JH supervisors (general supervision) were also present in the area during these activities.		
	The work occurred adjacent to the Level 8 link bridge, which was used as a transit route for other trades and non-task related personnel.		
	Five workers from Duct Up were bringing in ducting to Level 8 plant rooms 1 and 2 for installation into the URPs.		
9.	The Supervisors of Duct Up stood under the penetration cut by GCS to measure the diameter to ensure it was the correct size.	11/07/2016	12:00
	Material that was being removed from the URPs was being placed from the scaffolded area by the GCS crew into the available wheelie bins.		
10.	A subsequent internal investigation determined that actions #8 –15 occurred but were not made known to John Holland at the time of occurrence:	11/07/2016	13:00
	A GCS worker asked an OSE welder to hand him a piece of material that came from the URPs.		
11.	The OSE welder picked up a palm size piece of material that came from the URPs and handed it to the GCS worker. The OSE welder asked why the GCS worker wanted the material and the GCS worker stated that he had information that a site	11/07/2016	13:05

	in Brisbane had been shut down due to asbestos being found within products supplied by Yuanda, which was the same supplier of the URPs. The GCS worker believed the material may contain asbestos and wanted to get the sample tested. Again, the GGS worker did not notify his direct Supervisor or the JH Supervisor.		
12.	In an incident investigation interview, the OSE welder stated that he informed his supervisor and queried if the concerns raised by the GCS worker were valid. The OSE supervisor advised the welder that he did not believe that the URPs contained asbestos, but admitted that he did not know what asbestos looked like and said he would find out.	11/07/2016	15:00
13.	Workers from Caledonia were erecting scaffolding to enable penetration of the URPs. They were unaware of any concerns around any potentially hazardous substances.	11/07/2016	17:00
14.	Ace Roofing workers install upstands for support beams.	11/07/2016	17:30
15.	GCS Supervisor briefly speaks to the four GCS workers. None of the workers (including the worker who obtained a sample) raised any concerns in relation to the material from the URPs.	11/07/2016	18:00
	Tuesday 12 July 2016		
16.	<b>Tuesday 12 July 2016</b> GCS conduct their pre start meeting. The four workers who were associated with the penetration of the URPs attended and did not raise any concerns regarding material with the URPs.	12/07/2016	05:30
16.	Tuesday 12 July 2016GCS conduct their pre start meeting. The four workers who were associated with the penetration of the URPs attended and did not raise any concerns regarding material with the URPs.GCS workers and OSE welders continue to install support beams and complete the penetration of both URPs within the plant room void on Level 8, supported by Caledonia scaffolders.	12/07/2016	05:30 06:00
16. 17. 18.	<ul> <li>Tuesday 12 July 2016</li> <li>GCS conduct their pre start meeting. The four workers who were associated with the penetration of the URPs attended and did not raise any concerns regarding material with the URPs.</li> <li>GCS workers and OSE welders continue to install support beams and complete the penetration of both URPs within the plant room void on Level 8, supported by Caledonia scaffolders.</li> <li>The OSE Supervisor made contact with a JH Supervisor for the first time and asked if the URPs contained asbestos and asked if a GCS worker had taken material for testing. JH Supervisor responded that the URPs did not contain asbestos as he had sighted the drawings, specification and certification for the URPs, however he advised the OSE Supervisor that he would obtain reconfirmation. The JH Supervisor said he did not know if a GCS worker had taken a sample.</li> </ul>	12/07/2016 12/07/2016 12/07/2016	05:30 06:00 08:00

20.	The JH Construction Manager called the JH Project Manager. The JH Project Manager advised that he would contact the GCS Supervisor to verify if there were any concerns.	12/07/2016	09:05
21.	JH Project Manager contacted the GCS Supervisor to ask him if any of his workers collected a sample of material for testing or had been raised any concerns in relation to asbestos in URPs. The GCS Supervisor advised that no issues had been raised by the work crew and nor had a sample been taking for sampling. He advised that he would check with his work crew.	12/07/2016	09:30
22.	GCS Supervisor checked with his work crew and stated that no issues were raised and they advised that no material had been taken for testing. The GCS Supervisor called the JH Project Manager and advised that there were no issues raised by the work crew.	12/07/2016	10:00
23.	The JH Project Manager contacted the JH Construction Manager and advised that the GCS Supervisor confirmed that there were no issues raised by the GCS work crew.	12/07/2016	10:05
24.	Two hours later, the JH Supervisor was advised by the GCS façade installers (who performed the works to create the new penetrations) of their concerns that the fibre cement sheeting in the URPs may contain asbestos. JH Supervisor speaks to the GCS supervisor to gain further understanding of any concerns, and GCS supervisor makes contact with his team. JH Supervisor reviews drawings and specifications that confirm the URPs do not contain asbestos, and advises GCS supervisor. GCS supervisor notes again that the team indicate no concern. JH Supervisor is advised by an OSE worker that a GCS worker has kept a fragment of material to be tested as he thought it may contain asbestos. As a precaution, the JH Supervisor contacts the JH Construction Manager. The JH Construction Manager contacts the JH Project Manager who contacts the GCS Supervisor.	12/07/2016	12:00
25.	Concurrently, the JH Project Director receives an ABC online news report notification that states that asbestos fibres have been found in imported building material used in spigots supplied by Yuanda to a Brisbane construction site (1 William Street).	12/07/2016	14:00

26.	JH Project Director contacts JH Project Manager.	12/07/2016	14:30
27.	<ul> <li>JH Project Director meets with JH Project Manager.</li> <li>JH Project Director asks JH Project Manager to check if the same gaskets are contained within the PCH façade.</li> <li>JH Project Manager advises the JH Project Director that he has just become aware of a rumour that GCS workers had collected a sample of material for testing and suspected that the URPs contained asbestos.</li> <li>JH Project Manager advised that he had contacted the GCS</li> </ul>	12/07/2016	15:00
28.	Supervisor and he confirmed that there were no issues raised by the GCS work crew. JH Construction Manager contacts Aurecon as verifier of the URPs to alert them of the potential issue and to seek confirmation of technical specifications.	12/07/2016	15:10
29.	JH Project Director sends briefing note to the State advising of the ABC online news coverage and actions being undertaken immediately on site, including contact with Yuanda and review of Project Product Register. Works finished in the area by all workforce. No other works were intended for the remainder of the day.	12/07/2016	15:50
30.	JH Project Manager, JH Construction Manager and JH Project HSE Manager meet to discuss GCS employee concerns about the URPs and the Yuanda media reports. JH HSE Manager contacts Indoor Air Quality Solutions (IAQS) to confirm which laboratory is suitable to conduct a Polarised Light Microscopy (PLM) test of the sample and provide the results that afternoon/evening. It is identified that the sample of the fire sheeting from the URPs is to be tested at Analytical Reference Laboratory WA (ARL) to confirm that it is "non-asbestos" as per the technical specification and certification. This testing is arranged by JH Project Manager. JH HSE Manager contacts Subcontractors (GCS, Caledonia and OSE) involved with the remedial works to organise a toolbox meeting on 13/07/2016 at 7:00 to discuss the expected negative PLM test results.	12/07/2016	16:00
31.	JH Construction Manager obtained a sample of material from the exposed URP. JH Construction Manager provides JH Project Manager with the sample.	12/07/2016	16:30
32.	Aurecon Facades Leader emails technical specification and drawings to the JH Construction Manager and JH Project Manager confirming no presence of asbestos in the URPs.	12/07/2016	16:52
33.	The JH Project Manager drops off the sample of material at ARL (NATA-accredited laboratory) for testing.	12/07/2016	17:05

34.	Façade consultant from Aurecon sends a copy of the Yuanda submitted sample form, signed off by JH and Aurecon, which includes a test report that describes the product (twice) as "Autoclaved Cellulose Fibre Cement Flat Sheet (Non- asbestos)".	12/07/2016	17:05
35.	ARL confirms via email to JH Project Manager confirming the presence of chrysotile asbestos in the fire sheeting.	12/07/2016	17:50
36.	JH Project Manager, forwards ARL email to JH Project Director and JH Construction Manager.	12/07/2016	18:10
37.	JH Project Director calls JH Project Manager to ask where the sample was from. JH Project Manager confirms that it was from the roof area in the atrium.	12/07/2016	18:11
38.	JH Project Director went to Level 8, and viewed the roof area in the atrium where the panels had been penetrated.	12/07/2016	18:30
	JH Project Director gives an instruction to quarantine the area and establish alternative exit points to prevent workers from entering the affected area.		
39.	The Southern Emergency Department (ED) Entrance was chosen as the exit point for all remaining parties on site.	12/07/2016	18:35
	JH Project Director meets with JH Supervisor and JH Night Shift Supervisors in the atrium to instruct them to clear all floors using the southern Emergency Department entrance.		
40.	JH Supervisor and JH Night Shift Supervisor leave site and pick up the compliant PPE as per their Asbestos Restricted licences in order to assist with containment activities.	12/07/2016	18:35
41.	JH Project Director requests Focus Demolition (Licenced Asbestos Removal Contractor) and L&M Construction (Restricted Licenced Asbestos Removal Contractor) to mobilise to site. JH HSE Manager contact IAQS and requests them to mobilise to assist him with visual assessments and commence containment and remediation activities.	12/07/2016	19:45
42.	JH Project Director clears the remainder of the site of all workers (approximately 200 workers) as a precautionary measure. (Note: These workers were not working in the area of the penetrated URPs.)	12/07/2016	20:00
	i ne event area is restricted via control of the lifts and stairs.		
43.	JH HSE Manager provides a brief to IAQS of the details of the event and an overview of specialist contractors who are being deployed to site to assist with managing the event.	12/07/2016	20:00
44.	JH HSE Managers confirms arrangements with IAQS with JH Project Director.	12/07/2016	20:30

	IAQS and Focus Demolition mobilise to site and undertake visual assessments of the affected area and potential transit areas.		
	Following the visual assessment by Focus Demolition, the JH Project HSE Manager undertakes a hazard assessment and reviewed the Asbestos Control Plan provided by Focus Demolition and activates the PCH Project Asbestos Management Plan.		
	Inspection of the area directly below the removed ceiling section on Level 8 confirms a layer of construction dust with occasional 2mm fragments of sheeting covering it. Some soundproof sheet fragments were noted on the level directly below (Level 7) with dust noted on the glass barricading and horizontal ledges from Level 7 to the ground.		
45.	Material samples and surface dust samples were taken from directly below the ceiling void and from areas outside the affected perimeter to verify raw material/dust composition and define the extent of contamination.	12/07/2016	21:30
	It is agreed that air sampling is to be installed on both Level 7 and Level 8 within the containment areas by Lancall (Occupational and Environmental Consultants), with fragment and surface tests (three fragments and four tape surface tests) to be conducted by IAQS.		
	The event area is physically isolated (encapsulated with black plastic) on both Level 8, ceiling penetration between Level 8 and Level 7 and Level 7 link-bridge area. Note: Encapsulation and preliminary remediation activities are completed by Focus Demolition and L&M Construction in line with their internal protocols and as per requirements of their the asbestos removal licences.		
	Barricades are installed on each of the entrance stairs to the plant room area and security patrols are notified of exclusion area and advised to prevent access by non-authorised personnel.		
46.	Lancall install static air monitors directly adjacent to the work area on Level 8 and Level 7 directly below the void.	12/07/2016	22:00
47.	Test sample 16-05143 R00 taken by JH tested in the laboratory returns a positive result for white asbestos (chrysotile).	12/07/2016	22:30
48.	JH Project Director sends briefing note to the State providing an update on actions and strategies in relation to the event.	12/07/2016	23:45
	Wednesday 13 July 2016		
49.	Lancall collects air monitoring samples, which had run through the night during remediation activities.	13/07/2016	04:15

### Sequence of Events and Identified Facts

50.	Details of restricted areas added to pre-start notices.	13/07/2016	05:00
51.	Results of airborne testing from placed monitors received (from Lancall) were below occupational exposure limits.	13/07/2016	05:48
52.	Details of exclusion zone is communicated to workforce in pre-start and security guards positioned to ensure containment areas remain secure while further confirmatory testing is conducted. Confirmatory tests by IAQS confirm the presence of chrysotile asbestos in the fire sheeting contained in the	13/07/2016	06:00
	URPs.		
53.	Focus Demolition arrives on site to continue remediation activities.	13/07/2016	06:30
54.	IAQS confirms delineation area based on initial surface dust samples and visual inspection.	13/07/2016	07:00
55.	JH Site Supervisor contacts Supervisors of subcontractors who worked in the area where asbestos was identified.	13/07/2016	07:15
56.	Briefing given to GCS Supervisors by JH Project HSE Manager, JH Regional HSEQ Manager and JH Supervisor.	13/07/2016	07:30
57.	JH holds workforce information session, specifically for workers identified as directly exposed (or at risk of being exposed) supported by the IAQS Industrial Hygienist. Information provided at the sessions includes details of event as known to date, current actions being undertaken by JH, potential health impact, potential for cross contamination, processes in place to manage potential contamination of tools/clothing/PPE, personal items (e.g. cars), and baseline health monitoring. Details were also provided regarding an Asbestos Exposure Register and workers were invited to ask questions surrounding the event and its potential health impacts. IAQS Industrial Hygienist provides contact details to subcontractor leads/supervisors in case they have further questions or want to arrange specific briefings/information for their teams. Asbestos Exposure Register made open to all workers who were concerned they may have come in contact with asbestos. <i>Note: 524 people added their name to the register John Holland established, including 129 people who were not working on site when the penetrations were made. Everyone on the register was contacted directly to provide information regarding the incident, including independent advice from Coffey regarding the level of exposure.</i>	13/07/2016	08:00

	A cleaning station is set-up on Level 8 for workers who worked in the contained area to drop off tools for cleaning at the work station, as requested in information sessions.		
	Tools used that involved air circulation, e.g. circular saws were collected, bagged and removed from site. All tools were replaced with like for like tools.		
58.	JH Regional HSEQ Manager notifies Comcare of the situation.	13/07/2016	09:00
59.	Comcare inspectors attend site and meet with the Regional HSEQ Manager and the PCH HSE Manager who provide an update at the site gates. Comcare advises they are satisfied the action being taken is 'reasonable' and leave without entering the site.	13/07/2016	11:00
	Comcare also consults with CFMEU Representative at the gate.		
60.	An extraordinary meeting held for HSRs to update them on the event, which was attended by JH HSE Manager, JH Site Manager and IAQS Industrial Hygienist	13/07/2016	13:00
61.	Additional tests conducted in Level 8 plant rooms, Level 7 and Level 7 ceiling voids. These areas remain restricted.	13/07/2016	14:00
	Airborne testing ongoing on Level 7 and Level 8.		
62.	Three fragments and one tape test returns positive for chrysotile asbestos from inside the containment area and directly relates to work completed (not from adjacent or other areas).	13/07/2016	16:00
	Additional 8 fragments sent to laboratory for testing.		
63.	Additional testing conducted in crib rooms, ablution facilities, subcontractor offices and waste transit routes (e.g. lift, basement, site entry turnstiles) to identify any cross contamination. No asbestos fibres were identified during these tests.	13/07/2016	17:00
64.	<ul> <li>LL422375 – 5 air tests conducted in Level 7 and Level 8, with 4 results being below occupational exposure limits and one sample rejected due to heavy dust load.</li> <li>LL422377 – 26 tape test were conducted in common areas (crib rooms, offices, and toilets) and all results were free of asbestos.</li> <li>LL422378 – 8 samples of the fibre cement sheeting are all positive for asbestos. 4 out of the 5 samples of insulation surface tests are non-asbestos, 1 out of the 5 samples came back positive for asbestos, however Focus Demolition is of the view that fibres from this sample were from the cut cement sheeting settled on the insulation to cause a positive response.</li> </ul>	13/07/2016	17:00

	LL422380 – 3 air tests conducted (1 field blank) in Level 7 and Level 8, with results below occupational exposure limits.		
	LL422387 - 1 sample of the fibre cement sheeting (sample taken by GCS worker) was tested and was positive for asbestos.		
	16-05146 R00 - 4 tape tests were conducted in Level 8 with 1 out of the 4 samples positive for asbestos. 3 samples of the fibre cement sheeting were tested and all positive for asbestos. These tests were taken inside the containment area directly related to the work completed and were not samples for adjacent or other areas.		
	Thursday 14 July 2016		
	Information sessions on the event continue to be delivered to the workforce by the IAQS Industrial Hygienist.		
65.	Note: More than 20 information sessions organised by John Holland were attended by 550 John Holland personnel, subcontractors and State Government employees and contractors.	14/07/2016	06:00
66.	WA Health Minister holds a media conference to inform the public of action taken to date. JH Project Director provides update on situation and remedial action being taken.	14/07/2017	09:30
67.	Email with extensive summary of events issued to all subcontractors.	14/07/2016	11:00
68.	A plan is developed to remediate the 189 URPs, with a view of identifying the most effective methodology.	14/07/2016	11:00
69.	Project incident management team meets to review events and validate progress on post incident actions.	14/07/2016	13:00
70.	CFMEU attends two briefing sessions conducted by the IAQS Industrial Hygienist.	14/07/2016	13:00
71.	Comcare and WorkSafe WA visit PCH, attended by JH Regional HSEQ Manager. Comcare and WorkSafe WA were satisfied with how the event was being managed.	14/07/2016	15:00
72.	Public Health Officer site walk with the JH Project Director, State Representative and JH Project HSE Manager.	14/07/2016	15:00
	Results of further 8 samples from 5 other URPs received, with all positive for chrysotile asbestos.		
73.	Remediation program development for the URPs includes contacting alternative suppliers and onsite inspection staff who were involved in the installation of the URPs.	14/07/2016	15:00
	Tape testing of affected workers' vehicles conducted. Verbal results indicate no asbestos.		

### Sequence of Events and Identified Facts

74.	Project incident management team meets.	14/07/2016	18:00
75.	Incident update and Frequently Asked Questions (FAQs) distributed via pre-start notice for 15/7/16 and made available in crib rooms.	14/07/2016	19:00
76.	Laboratory results of testing received. 16-05205 RO1 - 9 tape tests were conducted in Level 7 and Level 8 and all results confirm no asbestos was present in fine dusts across tested areas including transit lifts.	14/07/2016	19:00
	Friday 15 July 2016		
77.	Laboratory results of testing received. 16-05251 RO1 – 1 air test conducted in Level 5, with results confirming no asbestos was present.	15/07/2016	06:00
78.	Information sessions on the event continue to be delivered to the workforce by the IAQS Industrial Hygienist. Ongoing air and dust monitoring, outside the containment area continue.	15/07/2016	06:00
79.	JH Regional Safety Manager initiates internal investigation.	15/07/2016	06:00
80.	Briefing sessions conducted by IAQS Industrial Hygienist to workforce and attended by ETU.	15/07/2016	11:30
81.	Project incident management team meeting daily to provide updates to JH Executive.	15/07/2016	13:00
	Monday 18 July 2016		
82.	WorkSafe WA advises that the exposure event is a "Notifiable" event and requests all subcontractors involved in the event report it to WorkSafe WA.	18/07/2016	08:00
83.	JH Construction Manager and State Representative conduct a site walk with the WA Building Commissioner.	18/07/2016	11:00
84.	JH Construction Manager contacts Yuanda and issues them several formal questions around how the asbestos came to be in their product, contrary to the compliance certificate.	18/07/2016	12:00
85.	State Representative organises an onsite safety briefing with CFMEU, ETU, PTEU, AMA, JH Regional HSEQ Manager and IAQS Industrial Hygienist.	18/07/2016	16:00
	TUESDAY 19 JULY 2016		
86.	JH Regional HSEQ Manager engages Coffey (Industrial Hygienists) to conduct independent sampling of all affected areas and to oversee full and final clearance certification.	19/07/2016	08:00

87.	Tape Tests 16-05331 and 16-05332 indicate no asbestos present.	19/07/2016	08:45
88.	JH Construction Manager contacts waste disposal contractor to ensure that all waste material removed from the contaminated has been isolated and processed as ACM.	19/07/2016	09:00
89.	JH Project HSE Manager and JH Construction Manager hold a HSR meeting and advise HSRs that the site is safe outside of the "exclusion zone", as verified by continuous testing.	19/07/2016	11:30
	Wednesday 20 July 2016		
90.	JH Construction Manager investigates anecdotal reports of previous penetrations to the URPs. It was identified that whilst one URPs outer case was previously penetrated, this did not involve penetrating the sheeting within the URPs.	20/07/2016	06:00
91.	Focus Demolition conduct commercial cleaning of plant rooms 1 and 2 on Level 8.	20/07/2016	06:45
92.	IAQS Industrial Hygienist conducts briefing sessions with workforce.	20/07/2016	08:30
93.	Coffey conducts test tape sampling on the roof gutter space and obtains an initial fibre sample which will be further tested.	20/07/2016	11:00
	Thursday 21 July 2016		
94.	Coffey tested all lifts and passageways leading from Level 7 and Level 8, the through all levels to the lower basement.	21/07/2016	06:00
95.	Focus Demolition conducts a full industrial clean of the roof gutter system.	21/07/2016	06:30
	Friday 22 July 2016		
96.	Ongoing final clean and testing of Level 8 continues.	22/07/2016	06:00
97.	Investigation into the procurement of the Yuanda URPs commences.	22/07/2016	10:00
	Monday 25 July 2016		
98.			
	Coffey conduct clearance testing on plant rooms 1 and 2	25/07/2016	06:00
99.	Coffey conduct clearance testing on plant rooms 1 and 2 Construction Manager sends original sample provided by Yuanda Australia to Coffey for further testing.	25/07/2016 25/07/2016	06:00 07:00

101.	Comcare and WorkSafe WA attend site to inspect Plant Rooms 1 and 2. Comcare and WorkSafe WA were satisfied how the event is being managed.	25/07/2016	15:00
102.	JH Construction Manager liaises with Australian Border Force to share information on Yuanda products and how they were procured.	25/07/2016	16:00
	Tuesday 26 July 2016		
103.	Communication issued to workforce at prestart that Plant rooms 1 and 2 have been issued a full clearance certificate by Coffey.	26/07/2016	06:00
104.	Coffey issues interim clearance for Plant Rooms 1 and 2. HSRs conduct an inspection of Plant Rooms 1 and 2 and sign off on the clearance certificate.	26/07/2016	08:00
	Wednesday 27 July 2016		
105.	Plant rooms 1 and 2 open.	27/07/2016	06:00
106.	Roof remediation plan in final development and to be reviewed with consideration of all possible risk.	27/07/2016	08:00
107.	Communication of test results for plant rooms 1 and 2 are given to all subcontractors.	27/07/2016	10:00
108.	JH Construction Manager responded to questions issued by Australian Border Force.	27/07/2016	11:00
109.	Roof Remediation Methodology risk workshop conducted.	27/07/2016	12:00
110.	Two Occupational Physicians from Sonic Health conduct a site visit to assess the potential exposure risk to workers in preparation for any contact by workers. Assessment determined that exposure would be unlikely to amount to more than would be expected in the course of day to day activity throughout the course of an average lifetime.	27/07/2016	14:00
111.	Preliminary clearance post-industrial clean of the fire doors on Levels 7 and 8 are obtained by Coffey.	27/07/2016	15:00
112.	JH Project Director meets with the WA Building Commissioner to review the event and provide responses to questions raised.	27/07/2016	17:00
	Thursday 28 July 2016		
113.	Coffey issues a full clearance certification for link bridge on Level 7.	28/07/2016	08:00
114.	HSRs conduct an inspection of the link bridge of Level 7 and sign off on the Clearance ITP.	28/07/2016	14:00

	Friday 29 July 2016		
115.	Workforce are informed at prestart that the link bridge on Level 7 had been cleared.	29/07/2016	06:00
116.	Coffey issues a full clearance certification for roof space, east and west walkway of Level 8.	29/07/2016	08:00
117.	Coffey issues a full clearance certification for plant rooms 1, 2 and 9 of Level 8.	29/07/2016	08:40
	September 2016		
118.	All URPs were remediated using a 'top down' in-situ approach using stringent safety controls.	September 2016	
	November 2016		
119.	Of the 189 URPs replaced, 132 were found to contain white asbestos.	November 2016	

# Step 1

## Is the product potentially "high risk"?

#### Government authorities have identified the following product types as being "high risk" of containing asbestos:

Cement compound board (CFC sheeting) Cement flat sheeting or panels Cement pipes, tubes, fittings Cement shingles or tiles (external or ceiling) Ducting materials Compressed asbestos sheeting (eg. millboard) Brake pad disks, linings or blocks Bitumen products used for damp proofing Asbestos rope and tape Heating equipment Lagging Switchgear with washers Electrical panel partitioning Electrical cloths and tape Fire blankets/curtains Fire resistant building materials Pre-assembled switchrooms Effluent treatment equipment Various gaskets and seals Heat resistant sealing and caulking compounds Mastics, sealants, putties or adhesives Sheet vinyl backing Textured paints or coatings Tiles (eg. ceiling tiles and floor tiles) Joining materials in flues Washers and friction materials Insulation for bulkheads, pipes and cables Flash vessels

If the product can be identified in the above list, proceed to step 2.

# Step 2

#### Where did it come from?

If the product type is potentially "high risk" and it is being imported, ascertain whether or not the product is being imported from a "high risk" country.

High risk countries\* of manufacture include: China Canada India Russia Kazakhstan Thailand Zimbabwe Brazil United States of America

\*These countries permit the manufacture, or use of ACM products

# Step 3

If John Holland (or its subcontractor) will be importing a "high risk" product from a "high risk" country, take the following actions:

John Holland (or its subcontractor) must:

1. make a **direct enquiry** of the supplier/manufacturer about the use of any asbestos in any products proposed to be supplied, including any materials used in the manufacture of the product.

2. Obtain written certification from the supplier/manufacturer that there is no asbestos content. **Clarify that there is no tolerance.** 

3. Request a sample of the product be **tested prior to transporting** to Australia. The sample must be from the batch of goods being transported and must be from a testing laboratory that is a signatory to a Mutual Recognition Agreement with NATA. Once delivered to site, a number of samples of the product must also be tested by a NATA accredited facility to confirm the product delivered is compliant and reflects that tested overseas.

4. Ensure that testing requirements and necessary documentation including Material Test Certificates, Certificates of Conformity and Manufacturer's Data Reports are specified in the Quality Requirements Template (JH-APP-PMA-017-05) for inclusion in Contract Agreements as per Standard Contract Agreement Procedure (JH-MPR-PMA-017).

## Types of Asbestos

It is important to appreciate that "asbestos" is a term for a group of six naturally occurring mineral fibres belonging to two groups:

- a) Serpentine Group: comprised of only chrysotile (white asbestos); and
- Amphibole Group: comprised of amosite (brown asbestos or grey asbestos), anthophyllite, crocidolite (blue asbestos), termolite, and actinolite.

Asbestos containing material can be categorised as either "friable" or "non-friable":

- a) Friable asbestos: is material containing asbestos that when dry, is in powder form or could be crushed or pulverised into powder form by hand pressure. This material poses a higher risk of exposing people to airborne asbestos fibres; and
- b) Non friable asbestos: is all forms of asbestos other than friable asbestos such as asbestos cement sheeting and other materials where asbestos fibres are bonded into a matrix. If non-friable asbestos is damaged or degraded, it might become friable and pose a higher risk of fibre release.

## **NATA** Testing

Sampling/testing must be from a testing laboratory that is accredited by a NATA equivalent authority (details of international accreditation authorities are available at the NATA website). If unable to identify an accredited testing facility, contact your regional HSEQ Manager for further advice.

The accreditation must relate to the relevant test method (AS 4964 Method for the Qualitative Identification of asbestos in bulk samples). Furthermore:

- i. check that the laboratory is accredited by a NATA recognised equivalent through a Mutual Recognition Arrangement (MRA) for the test required;
- ii. check that the laboratory's scope of accreditation is still valid and in date at the time of testing;
- any certification must be in writing and demonstrate that the testing laboratory had a valid scope of accreditation for the testing of asbetsos in bulk samples at the time the testing took place;
- iv. demonstrate that the sample tested has been drawn from the actual goods being exported. Whilst direct supervision and documentation of this process in the supplier/manufacturer country will assist in confirming the source of the samples, this may not be practical in all circumstances.