

**Contaminated Land Management
Bon Marche & Science Precinct
Concept Mod-6
University of Technology**

**Prepared for
University of
Technology of Sydney
August 2018**



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New South Wales

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Bon Marche & Science Precinct, University of Technology

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Introduction

Canopy Enterprises Pty Ltd (Canopy) has been engaged by the University of Technology of Sydney (UTS) as a subconsultant to Ethos Urban Pty Ltd (EU) to assist with a Section 75W modification application submitted to the Minister for Planning pursuant to the *Environmental Planning and Assessment Act 1979* (EP&A Act) and more specifically, Schedule 2 of the *Environmental Planning and Assessment (Savings, Transitional and Other Provisions) Regulation 2017* (MOD 6).

Based on information as provided to Canopy the Report herein addresses land contamination issues in the context of the proposed MOD 6 Application for the Bon Marche and Science Precinct of the UTS.

The Report is intended to be concise and focused on the MOD 6 Application requirements. Some commentary has also been made with respect to processes required in the future. The Report includes review of key reports, discussion as required and the salient points which require consideration.

Background and Site Appreciation

The MOD 6 Application relates to the Concept Plan Approval for the University of Technology Sydney (UTS) City Campus Broadway Precinct, which was approved in December 2009 (MP08_0116).

More specifically the modification application relates to the Bon Marche and Science Precinct (Buildings, 3, 4, 9 and 18) and includes establishing new building envelopes with corresponding height and Gross Floor Area (GFA) marked Area 4 in the Site Map and the associated figures as provided in Appendix A.

The existing Science buildings (Building 4) are nearing the end of their lifecycle, which together with the continued growing demands from students locally and abroad and growth in both Science and Design, Architecture and Building (DAB) faculties presents an opportunity for UTS to progress with plans to support additional and much needed teaching and research space. Particularly relevant to the Report herein are the basement works (including accommodation of plant) which will be required to support the broader development proposal.

It is understood that an appropriate summary of the previous approvals (Mod 1 to Mod 5) has been provided in alternative reports associated with the MOD 6 Application. It is not considered necessary to reiterate that detail given the context of the Report herein.

No physical works are proposed as part of this MOD 6 application, with detailed application(s) to follow any approval granted.

Secretary's Environmental Assessment Requirements (SEARs) were issued by the Department of Planning and Environment (DP&E) on 1 February 2018. Specifically, this report responds to the SEARs requirements with respect to contaminated land management.

Review of Previous Investigation

Canopy was provided with or sourced the following environmental or related reports which have been reviewed:

1. Geotechnical Assessment for Concept Plan by Jeffrey and Katauskas (Ref: 22549SPrptFinalRev1, dated 6 March 2009)
2. Stage 1 Environmental Site Assessment Report by Environmental Investigation Services (EIS, Ref E22549K RPT Final 4, May 2009) (2009 Stage 1 EIS Report)
3. Stage 1 Environmental Site Assessment Report by Environmental Investigation Services (EIS, Ref E24546Krpt, January 2011) Proposed Building 02 Basement Extension (2011 Stage 1 EIS Report)
4. Geotechnical Investigation and Hydrogeological Assessment for Proposed Broadway Building by Jeffrey and Katauskas (Ref: 2397WHRptRevised, dated September 2010)
5. Interpretive Report on Geotechnical Investigation for Proposed Building 02 Basement Extension, ASRS and Thomas Street Building by Jeffrey and Katauskas (Ref: 24546SPrpt2, dated 28 January 2011)
6. Stage 2 Environmental Site Assessment for Proposed New Broadway Building by EIS (Ref: E23970KBrpt-ver1.2, dated September 2010) (Stage 2 EIS Report)
7. Report on Preliminary Site Investigation (Contamination) prepared by Douglas Partner Pty Ltd UTS City Campus Redevelopment (Ref: 84895.01Rev.02 dated December 2015)
8. Report on Desktop Geotechnical Assessment UTS City Campus Redevelopment Broadway Ultimo Douglas Partner Geotechnical (Ref: 84895.01 dated 17 December 2015)

The Stage 2 EIS Report provides details of a detailed site assessment performed as part of the redevelopment of a building on the Corner of Jones Street and Broadway, which is in Area 1 of the map in Appendix A.

The salient points of the 2009 Stage 1 EIS Report can be summarised as follows:

- The general area has a history of widespread industrial use, some of which have the potential to cause soil contamination. This includes but is not limited to the use of imported backfill materials of unknown origin (and hence of unknown contamination status);
- Workcover records show the possible presence of Underground Storage Tanks (USTs);
- The investigation carried out by EIS did not reveal the presence of asbestos sheeting fragments on the surface of the investigated area. EIS also states that a detailed microscopic or other systematic screening for asbestos was not undertaken;
- EIS recommended that a Stage 2 Environmental Assessment be undertaken to address soil and groundwater at the site;
- The assessment should also further characterise geological subsurface conditions (e.g. the presence and thickness of fill) and investigate the possible presence of USTs in more detail; and
- A Hazardous Building Material Survey was recommended to be conducted prior to demolition or refurbishment of buildings.

The 2011 Stage 1 EIS Report details the findings of soil and groundwater sampling conducted at the northern part of Area 2 in Appendix A. The conclusions and recommendations can be summarised as follows:

- Subsurface soils generally consisted of a fill layer of varying thickness (maximum thickness was 4.3m) which was underlain by either medium plasticity silty clay followed by shale or sandstone bedrock;
- None of the soil samples (mostly obtained from the fill layer) showed soil contamination above the adopted assessment criteria;
- Fill material was classified as General Solid Waste (GSW);
- Groundwater was encountered in two borings at a depth of approximately 5.5m bgl (which equates to roughly 15m AHD);
- Water in one of the two monitor wells showed marginally elevated concentration of copper, the other well showed marginally elevated concentration of zinc. Heavy metals concentrations were considered to be the result of regional groundwater conditions and not specific to the investigation area.
- One water sample showed a slight detection of chloroform at a concentration below the assessment criterion. EIS stated that the traces of chloroform were likely the result of a reaction between organic material and chlorine (used to disinfect water) and may point at a leaking drinking water infrastructure in the area; and
- EIS concluded that “... *the site can be made suitable for the proposed development provided that the site is inspected by experienced environmental personnel during demolition and excavation works.*”

The Stage 2 EIS Report did investigate subsurface soils and groundwater in part of Area 1 (Appendix A) and in summary concluded the following:

- Subsurface soils generally consisted of a fill layer of varying thickness (maximum thickness was 3m) which was underlain by natural silty clay followed by shale and sandstone bedrock;
- Groundwater was encountered in one boring near the western boundary of the investigation area (near Wattle Street) at a depth of approximately 12m bgl;
- Soil contamination encountered during the investigation was limited to the fill layer and soils associated with a number of underground (petroleum) storage tanks (USTs). The contaminants that exceeded the adopted site criteria were Total Petroleum Hydrocarbons (TPH), mainly encountered near the tank farm), lead and Polycyclic Aromatic Hydrocarbons (PAH). Fill material was classified as General Solid Waste (GSW) and off-site disposal to a licensed landfill with subsequent validation was recommended as part of the implementation of yet to be developed Remediation Action Plan (RAP);

- Water in the one boring along the western boundary showed heavy metals (arsenic and copper) above the adopted site assessment criteria and some Volatile Organic Compounds (VOC) below the adopted site assessment criteria. Heavy metals concentrations were considered to be the result of regional groundwater conditions and not specific to the investigation area. EIS stated that the VOC concentrations “may be an artefact associated with installation of the monitoring wells” and recommended a second round of groundwater sampling. Canopy is unaware of whether this has taken place; and
- Soil samples obtained from a borehole were analysed to identify whether there was a potential for Acid Sulfate Soils (ASS) to be encountered during excavation works. EIS concluded that the risk associated with encountering ASS during development was relatively low and did not consider the development of an acid sulfate soil management plan necessary.

Canopy generally concurs with the findings and recommendations of the two investigations and provides the following commentary:

- While the available information suggests that there is a possibility that contamination will be encountered in the subsurface of the subject area, it is likely that if encountered the contamination will be confined to the shallow subsurface and that it will be of a nature that can be dealt with during the excavation stage of any underground carparks (or other underground facilities that may be proposed);
- The findings on the 2011 Stage 1 EIS reports and the Stage 2 EIS Report provide additional information regarding the soil and water conditions in the subsurface of the area and in general confirm the above point;
- The difficulties of conducting a Stage 2 investigation (also called a Detailed Site Investigation, DSI) at the Site in any effective manner would be considerable (due to the vast majority of the investigation area being covered by buildings which are presently occupied). Whilst a DSI for Area 4 (as generally recommended in the 2009 Stage 1 EIS Report) would provide some additional information on the presence of contamination, the value that that information would be unlikely to bring any meaningful benefit to the project; and
- The Workcover records provided in the 2009 Stage 1 EIS Report indicate that the locations of registered USTs are near the corner of Jones Street and Broadway which is an area labelled Area 1 in the Map as contained within Appendix A. Those USTs (presumed to by now have been removed) are hence of no relevance to this project. We acknowledge that this does not mean that there will be no ‘unknown’ abandoned USTs encountered during excavation works. Since all reasonable endeavours have been made by EIS to identify UST locations, any USTs in the area would in the first instance be unexpected and should as such be dealt with as part of the ‘Unexpected Finds Protocol’ during construction.

SEPP 55 Remediation of Land

Reference is made to SEPP No. 55 Remediation of Land (SEPP 55 Regulation) with consideration to its companion document titled: Managing Land Contamination Planning Guidelines SEPP 55 – Remediation of Land (1998) (SEPP Guidelines).

SEPP 55 Regulation deals with a number of planning matters with relation to considering and managing contaminated land and its remediation. In the context of the s75w MOD 6 application the following matters are highlighted as follows:

Under the SEPP 55 Regulations two fundamental categories of remedial works are identified (Category 1) needing consent and (Category 2) work not needing consent. For a number of reasons, the UTS project will most likely be determined as a Category 1 remediation however this can be addressed at a later stage in the approvals process.

Clause 6 (1) (c) of SEPP 55 Regulation states as follows:

- (c) if the land requires remediation to be made suitable for the purpose for which the land in that zone is permitted to be used, the planning authority is **satisfied that the land will be so remediated before the land is used for that purpose.***

Clauses 6 (4) (c) (i) of SEPP Regulation states as follows:

- (c) To the extent to which it is proposed to carry development on it for residential, **educational recreational or child care purposes***
- (i) in relation to which there is no knowledge **(or incomplete knowledge)** as to whether development for a purpose referred to in Table 1 to the contaminated land planning guidelines has been carried out ... (Canopy's highlights)*

The two clauses read together (among others) in conjunction with consideration to the contents of the Report herein, Canopy concludes that Clause 6 (1) (c) is able to be satisfied.

Summary and Conclusions

Canopy provides the following summary and Conclusions:

- The subject area forms part of a Phase 1 Assessment carried out in 2009;
- Despite there currently being incomplete knowledge about the contamination status of the subject Site, it is reasonable to presume (but not known) that the sub surface conditions in Area 4 will transpire to be similar to the ones in adjacent areas encountered during a number of more detailed investigations that were carried out subsequent to the 2009 Stage 1 EIS Report;
- Canopy agrees with the recommendation in the 2009 Stage 1 EIS report which outlines the need of a Detailed Site Investigation (DSI), however this can be done at a later stage;
- Previous geotechnical and environmental investigations carried out in the vicinity of the Site indicate that the majority of the natural silty clay and underlying shale/sandstone bedrock at the Site is considered to be Virgin Excavated Natural Material (VENM) which can be reused (noting the relevant regulations but outlined in abridged form in the RMS Waste Fact Sheet No.1 dated September 2015 and titled: Virgin Excavated Natural material (VENM);
- Based on information provided in the reviewed reports, it is likely on balance that a risk assessment will conclude that contamination below the remaining buildings (if encountered) will not pose an unacceptable risk;
- The timing of the Hazardous Building Material Survey can be undertaken in conjunction with the DSI and presumed remedial works to suit the refurbishment and rebuilding program;
- Effective communication between contractors and the environmental consultants tasked with the assessments RAP and waste classification of soils will be critical to a beneficial outcome;
- Subject to the above considerations and there being no change to the present land use it is Canopy's opinion that the land can be made suitable as per Clause 6 (1) (c) of the SEPP 55.

Please do not hesitate to contact Fenn Hinchcliffe at any time on **0412 987 456** as required.

SPECIALISTS IN ENVIRONMENTAL PROJECT MANAGEMENT

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Appendix A- Site Map & Figures

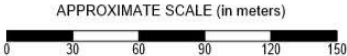


Recreated from Google Earth



TOTAL SITE AREA

AREA BOUNDARY



Note: Reference should be made to the text for a full understanding of this plan

LOCATION PLAN

UTS Broadway Campus,
13,15 & 83 Broadway;
235 & 638 Jones Street;
and 702 Harris Street, ULTIMO, NSW



Job No: E22549K
Figure: 2

Reference: Environmental Investigation Services, Stage 1 Environmental Site Assessment for UTS, Ref E22549K RPT Final 4, May 2009

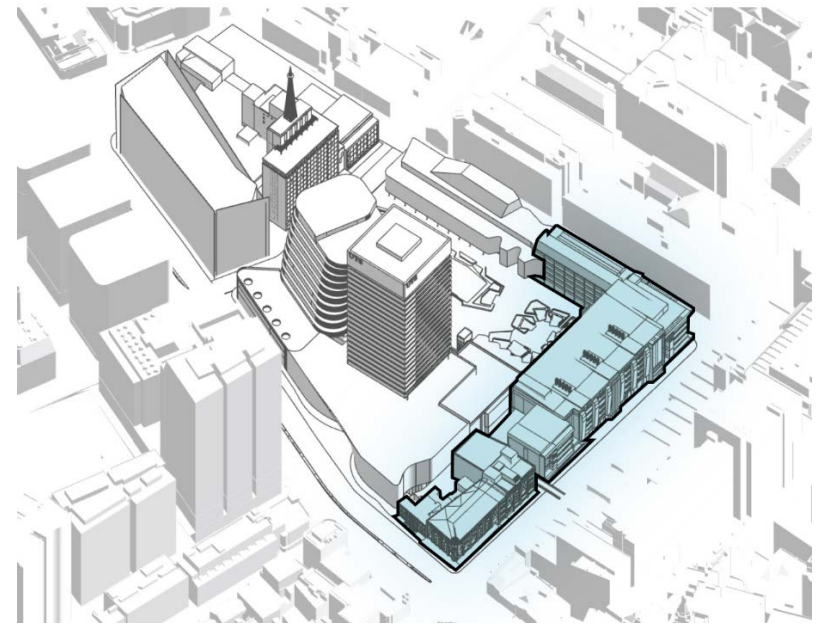


The Site

⊕ NOT TO SCALE

Aerial image of Bon Marche and Science Precinct (outlined in red) – May 2018

Source – Nearmaps



3D perspective of the existing Bon Marche and Science Precinct

Source: BVN