

Memorandum

To	Adam Goff	Page	1
CC	Andy Lappas		
Subject	University of Sydney FASS - Multiplier Analysis Results		
From	David Lambert		
File/Ref No.		Date	26-Apr-2016

Dear Adam,

As requested, we have completed a multiplier analysis for the construction of the proposed new Faculty of Arts & Social Sciences (FASS) building at the University of Sydney.

This report describes the economic effects of the construction of the proposed new Faculty of Arts & Social Sciences (FASS) on the state of New South Wales. This analysis estimates the anticipated employment effects during the construction cycle.

Employment effects from capital expenditures

The analysis is based on the capital costs provided by the Capital Investment Value (CIV) Report, produced April 19, 2016. These costs have been allocated to the following industry classifications, as defined by the Australian and New Zealand Standard Industrial Classifications (ANZSIC):

- Non-Residential Building Construction (Division E, Subdivision 30)
- Professional, Scientific and Technical Services (Division M, Subdivision 69)

Table 1 details the allocation of costs from the CIV Report.

Table 1- ANZSIC Cost Allocations

	Description	Industry Allocation	CIV (\$2015/2016)
1	New FASS Building	Non-Residential Building Construction	\$33,391,202
2	R D Watt refurbishment	Non-Residential Building Construction	\$7,046,042
3	Preliminaries and margin	Non-Residential Building Construction	\$10,089,092
4	Consultant costs	Professional, Scientific and Technical Services	\$1,700,000
5	Design contingency	Professional, Scientific and Technical Services	\$580,000
6	Professional fees	Professional, Scientific and Technical Services	\$5,470,883
7	Substation contribution	Non-Residential Building Construction	\$350,000
8	FFE/ICT	Non-Residential Building Construction	\$4,500,000
	All Industries (Total)		\$63,127,219
	<i>Non-Residential Building Construction (Total)</i>		<i>\$55,376,336</i>
	<i>Professional, Scientific and Technical Services (Total)</i>		<i>\$7,750,883</i>

Source: AECOM, 2016

Note: Non-Residential Building Construction (Total) is the sum of cost components numbered 1, 2, 3, 7 and 8; Professional, Scientific and Technical Services (Total) is the sum of the cost components numbered 4, 5 and 6.

Methodology

The economic contribution of the proposed FASS has been assessed by quantifying the direct and flow-on economic impacts of Base expenditure using economic multipliers derived from Input-Output (I-O) tables. Specifically, economic employment multipliers will be used to estimate the creation of new jobs, measured in terms of full-time equivalent (FTE) positions

The Australian Bureau of Statistics (ABS) compiles an I-O table at the national level. The most recent ABS national I-O table (Australian Bureau of Statistics, 2015) describes inter-industry transactions during 2012-13. State tables and multipliers have been derived by AECOM from the national table using national accounting aggregates from the state-based Gross Domestic Product (GDP) account (Australian Bureau of Statistics, 2013). The ABS provides a detailed procedure for calculating the standard multipliers (Australian Bureau of Statistics, 1995) which has been adopted for this assessment.

Three types of effect or multipliers are normally derived from an I-O model:

- A direct or initial effect captures the direct effect of an increase in final demand for an industry's output.
- A Type 1 multiplier captures both the direct effect and production induced effects. The latter refers to the industry's purchase of inputs from other businesses (referred to as first round production effects), and the further purchase of inputs by those other businesses (industrial flow-on effects).
- A Type 2 multiplier captures the direct and production induced effects of the Type 1 multiplier, and also captures consumption induced effects that flow from the expenditure of the income that is earned from the production of the additional sales of an industry.

Table 2 provides the multipliers used to estimate the employment impacts from the proposed project.

Table 2-NSW Multipliers 2012/2013

Industry	Multipliers	
	Type 1A	Type 2A
Non-Residential Building Construction	4.56	12.23
Professional, Scientific and Technical Services	5.51	12.85

Source: ABS and AECOM, 2016

The Type 1A multiplier represents the change in the number of persons employed in all industries in the economy, after the initial and first round induced output. For each additional person employed in the Non-residential Building Construction industry, an extra 4.56 persons are employed, after the initial and first round induced output.

The Type 2A multiplier represents the change in the number of persons employed in all industries in the economy. For each additional person employed in the Non-residential Building Construction industry, an extra 12.23 persons are employed by all industries in the economy. This number includes the original increase of one person employed by the Non-residential Building Construction industry.

Results

Applying the Type 1A and 2A multipliers for the Non-Residential Building Construction and Professional, Scientific and Technical Services industries to the capital expenditures provides estimates of the employment impacts generated by the project. One Full-Time Equivalent (FTE) is defined as a job for one person of one year's duration. Table 3 summarises the results of the assessment¹.

Table 3-Employment Impacts

Industry	Economic Employment Contribution		
	Direct (Type 1A)	Indirect	Total (Type 2A)
Non-Residential Building Construction	237 FTE	399 FTE	636 FTE
Professional, Scientific and Technical Services	40 FTE	53 FTE	94 FTE
Total	277 FTE	452 FTE	729 FTE

Source: AECOM, 2016

Direct employment from the proposed new FASS for the University of Sydney is estimated to be 277 FTE jobs in all industries. The indirect (consumption induced) employment is an additional 452 FTE jobs generated in all industries. The total employment impact is an additional 729 FTE jobs generated in all industries.

¹ Note: The indirect effect is the difference between the total and direct effects. Totals may not sum due to rounding.