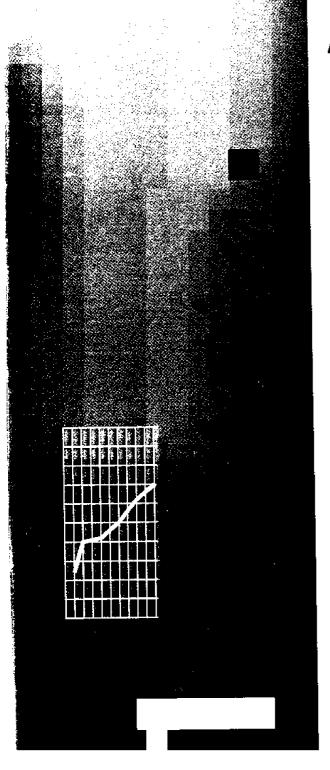


1992-93

Selected Technical Services Australia







SELECTED TECHNICAL SERVICES AUSTRALIA 1992-93

Architecture
Surveying
Consultant engineering

W. McLennan Australian Statistician



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INTRODUCTION

In respect of the 1992-93 financial year, the ABS conducted a series of surveys on a range of business services comprising legal, accounting, business management, advertising, architecture, computing, real estate, market research, surveying, consultant engineering and computer services.

Information in this publication relates to a survey of businesses classified to three of the four industry Classes classified to Group 782, Technical Services of the 1993 edition of the Australian and New Zealand Standard Industrial Classification (ANZSIC) (see paragraph 4 of the Explanatory Notes). The industries covered by this publication are Architectural Services (ANZSIC 7821), Surveying Services (ANZSIC 7822), and Consultant Engineering Services (ANZSIC 7823).

An earlier survey of these three industries was conducted with respect to 1987-88. Direct comparisons between the 1987-88 and 1992-93 data are only possible for the surveying services industry. Comparisons are not possible for the architectural and consultant engineering services industries because of differences in scope and industry classification. (Refer to paragraphs 10 to 13 of the Explanatory Notes for details).

In addition to this publication, data from the other surveys have been or will be released in the following publications:

- Computing Services Industry, Australia, 1992-93 (8669.0)
- Selected Business Services, Australia, 1992-93 (8677.0)
- Real Estate Agents Industry, Australia 1992-93 (8663.0)
- Legal and Accounting Services, Australia, 1992-93 (8678.0)

These publications contain only a small portion of the information available from the surveys. More detailed information is available from the ABS on request. This includes in-depth statistical analysis in formats tailored to meet the needs of individual clients.

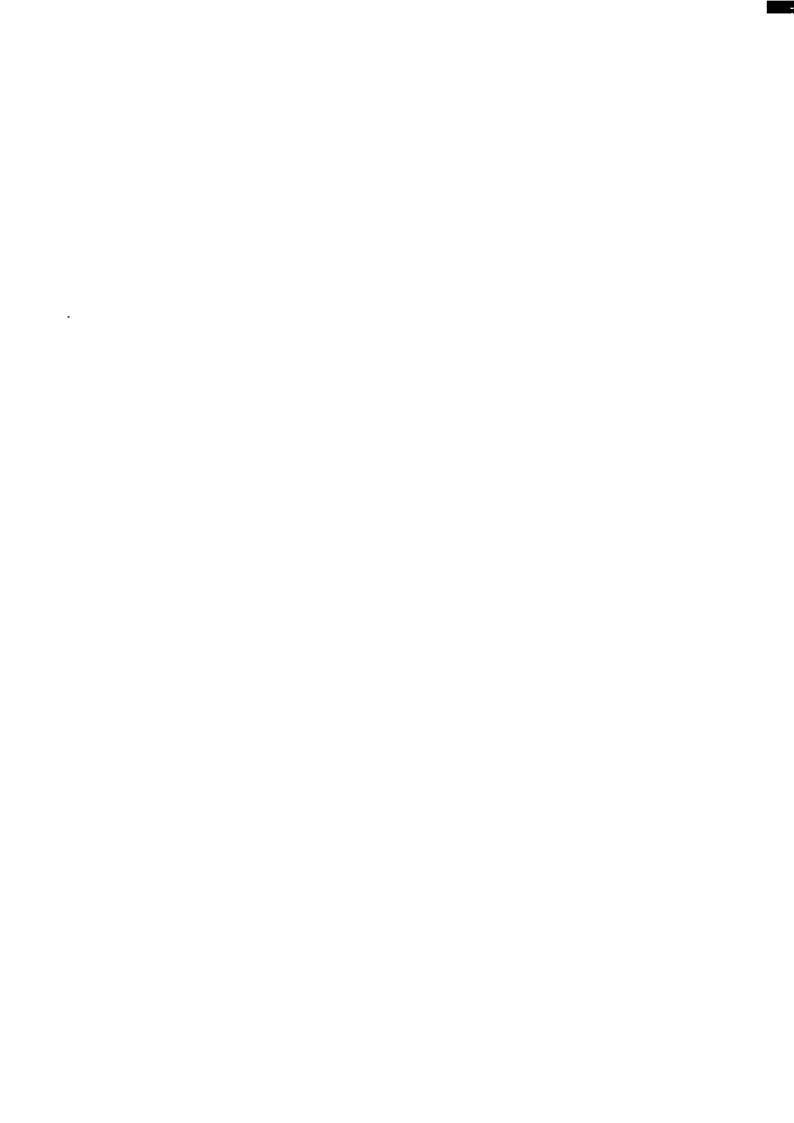
For the 1993-94 reference year the ABS is surveying the film and video production and distribution industries, motion picture exhibition and television and radio services industries.

The ABS is committed to providing more information on the service industries sector of the economy. However, the breadth of activities encompassed in the sector poses the problem of selecting which industries to include. To this end the ABS welcomes comments and suggestions from users recommending industries and data items for inclusion in future surveys. These comments should be addressed to: The Director, Service Industries Surveys, PO Box 10, Belconnen, ACT, 2616.

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PART A ARCHITECTURAL SERVICES



SECTION 1. ARCHITECTURAL SERVICES - AN OVERVIEW

Introduction

The architectural services industry comprises businesses whose primary activities include architectural consultancy services (except construction project management), architectural drafting services, landscape architectural services and town planning services.

Size of industry

At 30 June 1993, there were 4,409 businesses in this industry with a total employment of 16,204 persons. Total industry gross product (IGP) for the architectural services industry was \$574.1 million. This represents approximately 0.3 per cent of IGP for all non-farm industries.

These businesses generated \$945.2 million from the sale of goods and services and had an operating profit before tax of \$92.3 million.

Industry comparisons

Within the technical services industries covered in this publication there were 11,038 businesses employing 51,377 persons, and generating \$3,800 million in gross income.

Businesses in the architectural services industry accounted for 40 per cent of the businesses in technical services, 32 per cent of total employment within the industry group and 28 per cent of the industries' gross product. Employment per business was lowest in this industry with four persons employed per business, compared with six persons employed per business in both the surveying services and consultant engineering services industries.

Business size

The majority of architectural services businesses operating at 30 June 1993 were classified as small businesses (i.e. employing fewer than 20 persons). The small business category itself was dominated by businesses employing fewer than five persons. The 81 per cent of businesses in the industry which employed fewer than five persons contributed 31 per cent of the industry gross income and accounted for 44 per cent of total employment.

In contrast, the 77 businesses which formed the medium to large business categories, and which represented 2 per cent of the number of businesses in the industry, accounted for 18 per cent of total employment and contributed 29 per cent of the industry gross income.

The State dimension

Just over two thirds of businesses in the architectural services industry were located in New South Wales and Victoria. These two States accounted for 62 per cent of all persons employed in the industry, and 62 per cent of gross income. Gross income per person employed was highest in the Northern Territory (\$76,100) and lowest in Tasmania (\$41,600).

TABLE 1.1 ARCHITECTURAL SERVICES: SUMMARY OF OPERATIONS, AUSTRALIA, 1992-93

	MALIA, 1992-93	
ltern	Unit	Value
Businesses at end June 1993	No.	4,409
Employment		
Working proprietors		
and partners	No.	1,414
Employees	No.	14,790
Contract and agency staff	No.	2,377
Total	No.	18,581
Income statement		
Sales of goods and services	\$m	945.2
Less		
Selected expenses	\$m	37 1.1
Trading profit	\$m	574.1
Plus		
Interest income	\$m	4.9
Other income	\$m	5.6
Less		
Labour costs	\$m	420 .1
Depreciation	\$m	21.4
Other expenses	\$m	28.9
Earnings before interest and tax	\$m	114.2
Less		
Interest expenses	\$ m	22.0
Operating profit before tax	\$m	92.3
Operating profit margin	Per cent	9.8
Industry gross product	\$m	574.1

More information?

Detailed information is available on request regarding

- sources of income (including a breakdown of type of customer e.g. contractors and/or developers, owner clients, lessee clients, and other clients)
- · items of expenditure

TABLE 1.2 ARCHITECTURAL SERVICES: PERCENTAGE CHANGE IN KEY DATA ITEMS, AUSTRALIA, 1987-88 AND 1992-93

				Percentage
Item	Unit	1987-88	1 9 92-93	change
Businesses at end June	No.	4,534	4,409	-2.8
Employment				
Working proprietors and partners	No.	2,342	1,414	-39.6
Employees (a)				
Males	No.	10,104	10,630	5.2
Fernales	Na.	5,271	5,574	5.7
Total employment at end June	No.	17,71 7	16,204	-8 .5
Contract and agency staff (a)	No.	n.a.	2,377	n.a.
Income				
Sales of goods and services	\$m	1,030.4	945.2	-8.3
Interest income	\$m	5.3	4.9	-7.5
Other non-operating				
income (b)	\$m	n.a.	5.6	n.a.
Gross income (b)	\$m	1,035.7	955.7	-7.7
Expenses				
Labour costs	\$m	381.7	420 .1	10.1
Contract and agency costs	\$m	127.1	91.6	-27.9
Interest expenses	\$m	20.4	22.0	7.8
Other expenses	\$m	336.3	329.7	-2.0
Total expenses	\$m	865.5	863.4	-0.2
Operating profit before tax	\$m	(c) 17 0.2	92.3	-45.8
Operating profit margin	\$m	(c) 16.5	9.8	-40.6

⁽a) The number of contract and agency staff employed by the industry was not collected in 1987-88. (b) Other non-operating income was not collected in 1987-88. (c) Excludes Other non-operating income.

HISTORICAL COMPARISON

Decrease in the number of businesses

Between June 1988 and June 1993, the number of businesses in the architectural services industry declined by 3 per cent. Over the same period there was a reduction in total employment of 9 per cent (excluding contract and agency staff) resulting in a marginal decline in the average business size from 3.9 persons per business in June 1988, to 3.7 persons per business in June 1993.

Changing composition of employment

The decline in total employment of 9 per cent between June 1988 and June 1993, occurred despite growth in the number of employees (both male and female) of 5 per cent, and is attributable to a significant fall of 40 per cent in the number of working proprietors and partners.

Income and expense patterns

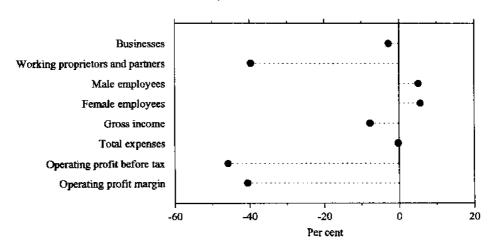
Gross income for the architectural services industry fell by 8 per cent between 1987-88 and 1992-93. Of the two reported income categories, receipts from the sale of goods and services fell by 8 per cent, while interest income also fell by 8 per cent.

In contrast with the decline in income, industry expenses decreased by only 0.2 per cent over the period. This relatively small change to total expenses masks a significant change in the relative contribution of individual expense items. Increases in labour costs of 10 per cent and a rise in interest expenses of 8 per cent have been offset by a reduction in contract and agency costs of 28 per cent and a fall of 2 per cent in other expenses.

Operating profit

The greater than proportional decline in industry income relative to expenses between 1987-88 and 1992-93 has resulted in a 46 per cent reduction in operating profit before tax and a 41 per cent fall in the operating profit margin. Between 1987-88 and 1992-93 the level of operating profit per business dropped from \$37,500 to \$20,900.

CHART 1.1 ARCHITECTURAL SERVICES: PERCENTAGE CHANGE IN KEY DATA ITEMS, AUSTRALIA 1987-88 AND 1992-93



SECTION 2. INCOME AND EXPENDITURE

Profit

Gross income (\$955.7 million) exceeded total expenses (\$863.4 million) resulting in an operating profit before tax of \$92.3 million.

Gross income per person employed was \$59,000 compared with \$53,300 in total expenses per person employed.

Major sources of income

During the 1992-93 financial year, the architectural services industry generated \$955.7m in gross income. Almost half of this income came from contract documentation and administration. Design development, another of the main phases of architectural services, generated 14 per cent of the industry's income. Average income per business was \$216,800.

income per business

Of the 4,409 businesses in the architectural services industry, 75 per cent generated income from design development. More businesses earned some income from this source than any other. Income per business from design development (\$39,000) was relatively low compared with other sources of income, for example, contract administration (\$63,500 per business), and other architectural and related services (\$79,000). Income per business was highest (\$91,000) from contract documentation.

TABLE 2.1 ARCHITECTURAL SERVICES: SOURCES OF INCOME, AUSTRALIA, 1992-93

		F	Percentage	
	Businesses	Value	of total	
Activity	No.	\$m	%	
Sales of goods and services				
Income from architectural and related services				
Pre-design services	2,747	70.4	7.4	
Schematic design	3,122	106.1	11.1	
Design development	3,321	129.5	13.6	
Contract documentation	3,015	274.1	28.7	
Contract administration	2,581	163,8	17.1	
Architectural drafting service	1,301	57. 9	6.1	
Other architectural and related services	1,660	131.2	13.7	
Total income from architectural and related				
services	4,409	933.0	97.6	
Other operating income	436	12.2	1.3	
Total sales of goods and services		945.2	98.9	
interest	1,353	4.9	0.5	
Other non-operating income	511	5.6	0.6	
Gross income		955.7	100.0	

More information?

Income and expense data analysis using the mean, median, mode, and deciles, is available on request. This information is also available by business size groupings.

TABLE 2.2 ARCHITECTURAL SERVICES: ITEMS OF EXPENDITURE, AUSTRALIA, 1992-93

		F	ercentage
	Businesses	Value	of total
Type of expense	No.	\$m	%
Labour costs			
Wages and salaries	3,706	390.1	45.2
Employer contributions to superannuation funds	3,227	27.9	3.2
Workers' compensation costs	2,986	2.1	0.2
Total labour costs		420.2	48.7
Selected expenses			
Payments to sub-contractors and consultants	1,678	49.9	5.8
Payments to contract and agency staff	1,323	41.7	4.8
Rent leasing and hiring	2,870	75 .7	8.8
Motor vehicle running expenses	3,819	24.2	2.8
Document reproduction expenses	3,663	15.7	1.8
Other business expenses	4,409	164.0	19.0
Total selected expenses		371.1	43.0
Interest expenses	2,717	22.0	2.5
Depreciation on buildings and other fixed			
tangible assets	2,680	21.4	2.5
Other expenses	3,774	28.9	3.3
Total expenses		863.4	100.0

Labour expenses a major component of expenditure

The architectural services industry was very labour intensive, with labour costs accounting for 49 per cent of total industry expenses. Sub-contract payments, and payments made to contract and agency staff, q accounted for a further 11 per cent of total expenses.

Thirty-eight per cent of businesses had contract, agency and sub-contract expenses (\$29,700 per business), and 30 per cent made payments to contract and agency staff (\$31,500 per business).

Average wage per employee

The average wage for employees of the architectural services industry during 1992-93 was \$26,400 compared with \$17,500 for staff engaged on a contract or through an agency. By way of comparison, the average earnings per employee in the Australian labour force was \$27,400.

Contributions to superannuation funds

Although only a small component of labour expenses, contributions to superannuation funds were made by 73 per cent of businesses in this industry. Employer contributions to superannuation funds were almost \$1,900 per employee.

Interest expenses

Interest expenses were not significant in the architectural services industry, accounting for less than three per cent of total expenses. By way of comparison, interest expenses accounted for seven per cent of expenses for all non-farm industries in Australia during this period.

SECTION 3. EMPLOYMENT

Incidence of contract employees

At the end of June 1993, there were 18,581 people working in the architectural services industry. These persons are divided into two groups, i.e. employees of the business (87 per cent), and those engaged on a contract basis or through an agency (13 per cent).

Proportion of females

Overall females represented only one third of persons working in this industry. This proportion decreased to 28 per cent of working directors and 20 per cent of contract and agency staff.

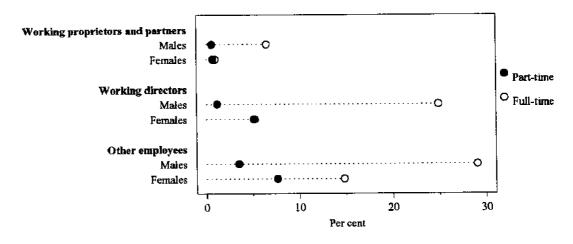
Predominance of full-time employment

Almost 80 per cent of people working in the industry were employed on a full-time basis. This proportion was higher for working proprietors and partners (86 per cent) and lower for contract staff (60 per cent). Males were more likely to work on a full-time basis (59 per cent) than females (19 per cent).

TABLE 3.1 ARCHITECTURAL SERVICES: CHARACTERISTICS OF EMPLOYMENT, AUSTRALIA, END JUNE 1993

(Number) Males Females Total Full Part Full Part Full Part Type of Total time time employment time time Total time time Total *91 *155 *114 269 1,209 *205 1,414 Working proprietors and partners 1,054 1,145 Working directors of incorporated 1,663 4,881 1,016 5,896 4.036 *197 4,233 845 819 companies and trusts 8,894 5,252 2,403 1,239 3,641 7,095 1,799 4,692 560 Other employees 10,630 3,403 2.171 5,574 13,185 3,019 16,204 9,782 848 **Total employment** Architectural and related staff 2,293 925 1,368 1,186 662 1,847 182 263 446 - engaged on a contract 3 24 *7 31 74 10 84 50 54 - engaged through an agency 476 1.442 935 2,377 Total contract and agency staff 1,901 206 270 1,236 665 3,964 18,581 12,531 3,609 2,441 6,050 14,627 11,018 1,513 Total

CHART 3.1 ARCHITECTURAL SERVICES: TYPE OF EMPLOYMENT WORKING FULL-TIME AND PART-TIME BY SEX, AUSTRALIA, 1992-93



SECTION 4. BUSINESS SIZE ANALYSIS

Architectural services industry dominated by small businesses

The architectural services industry was dominated by small businesses with 98 per cent of all businesses in the industry being defined as small (i.e. employing fewer than 20 persons excluding contract and agency staff). These small architectural services businesses accounted for 82 per cent of industry employment, 71 per cent of income and 75 per cent of operating profit before tax. Businesses with employment of less than five accounted for the majority of small businesses.

Small businesses employed 72 per cent of contract and agency staff employed in the industry. However, contract and agency staff represented only 11 per cent of total employment for small businesses, compared with 19 per cent for other sized businesses.

Gross income per working person

Gross income per working person increased progressively from \$36,100 for businesses with fewer than five employees, to \$79,500 for businesses with more than 50 employees. The average gross income for all businesses was \$51,400.

TABLE 4.1 ARCHITECTURAL SERVICES: KEY CHARACTERISTICS BY BUSINESS SIZE, AUSTRALIA, 1992-93

(Employment size category at end June)

			Small busine	reae		Medium businesses	Large businesses	All businesses
(tama	Unit							
Item	OTH	0-4	5-9	10-19	Total	20-49	50+	
Businesses	No.	3,558	607	167	4,333	64	13	4,409
	%	80.7	13.8	3.8	98.3	1.5	0.3	100.0
Working proprietors & partners	No.	1,246	*152	12	1,410	4	-	1,414
	%	88.1	10.7	0.8	99 .7	0.3	-	100.0
Working directors	No.	3,975	1,108	450	5,533	281	82	5.896
	%	67.4	18.8	7. 6	93.8	4.8	1.4	100.0
Other employees	No.	1, 96 1	2,705	1,733	6,399	1,625	870	8,894
	%	22.0	30.4	19.5	71.9	18.3	9.8	100.0
Total employment	No.	7,182	3,965	2,195	13,342	1,910	952	16,204
	%	44.3	24.5	13.5	82.3	11.8	5.9	100.0
Contract & agency staff	No.	1,029	484	*200	1,713	582	83	2,377
	%	43.3	20.4	8.4	72.1	24.5	3.5	100.0
Total staff and employment	No.	8,211	4,449	2,395	15,054	2,492	1,035	18,581
	%	44.2	23.9	12.9	81.0	13.4	5.6	100.0
Gross income	\$m	296.2	238.2	145.9	680.3	*193.1	82.3	955.7
	%	31.0	24.9	15.3	71.2	20.2	8.6	100.0
Operating profit before tax	\$m	38.1	26.8	10.5	75.4	12.3	4.5	92.3

SECTION 5. STATE DATA

Introduction

In the 1992-93 selected technical services industries survey, the only data items collected by State were employment, wages and salaries, and selected income. These were the only data items for which multi-State technical services businesses were able to accurately supply State data.

Industry concentration in Victoria and New South Wales

Businesses in the architectural services industry were concentrated in New South Wales (38 per cent) and Victoria (30 per cent). The 3,069 architectural services businesses operating in these two States accounted for 63 per cent of all people employed in the industry, and 62 per cent of income.

Income ratios

Architectural businesses varied significantly between States with respect to income ratios. Gross income per business was highest in the Northern Territory (\$381,000) and lowest in Victoria (\$158,400). The Australian average was \$207,900 per business.

Gross income per person employed ranged from \$76,100 in the Northern Territory to \$41,600 per person in Tasmania. The Australian average was \$50,900 per person employed.

TABLE 5.1 ARCHITECTURAL SERVICES: KEY CHARACTERISTICS BY STATE, 1992-93

			Wages	
		Total	and	Selected
	Businesses (a)	employment	salaries	income (b)
	No.	No.	\$m	\$m
New South Wales	1,726	6,579	162.9	374.5
Victoria	1,343	5,028	107.0	212.7
Queensland	723	3,334	76.7	162.4
South Australia	197	9 99	22.8	47.8
Western Australia	329	1,509	37.8	93.2
Tasmania	66	255	3.9	10.6
Northern Territory	3 1	155	4.7	11.8
Australian Capital Territory	130	*722	*15.9	32.1
Australia	4,409	18,581	431.8	945.2

⁽a) Multi-State businesses are counted in each State in which they operate. Hence States do not sum to the total for Australia. (b) Selected income is gross income minus interest income, royalties income, and dividends received, and other non-operating income.

CHART 5.1 ARCHITECTURAL SERVICES: GROSS INCOME PER PERSON EMPLOYED BY STATE, 1992-93

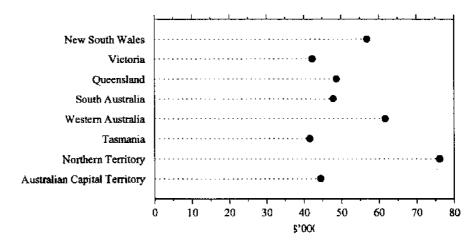


TABLE 5.2 ARCHITECTURAL SERVICES: PERCENTAGE CHANGE IN KEY DATA ITEMS BY STATE, END JUNE 1988 AND 1993

	Businesses at e	nd June	Percentage	Selected inco	me (a)	Percentage
	1988	1993	change	1988	1993	change
	No.	No.	%	\$m	\$m	%
New South Wales	1,805	1,726	-4,4	398.7	374.5	- 6 .1
Victoria	1,260	1,343	6.6	278.4	212.7	-23.6
Queensland	551	723	31.2	112.8	162.4	44.0
South Australia	266	197	-25.9	57.0	47.8	-16.1
Western Australia	495	329	-33.5	119.9	93.2	-22.3
Tasmania	78	66	-15.4	11.2	10.6	-5.4
Northern Territory	29	31	3.7	10.4	11.8	13.5
Australian Capital Territory	134	130	-3,0	41.9	32.1	-23.4
Australia	4,534	4,409	-2.8	1,030.4	945.2	-8.3

⁽a) Selected income is gross income minus interest income, royalties income, and dividends received, and other non-operating income.

Increase in business size

Between 1987-88 and 1992-93, there was a decline of 3 per cent in the number of businesses, and an increase of five per cent in total employment in the architectural services industry in Australia. This resulted in an increase in average business size from 3.9 persons to 4.2 persons per business.

Decline in number of businesses

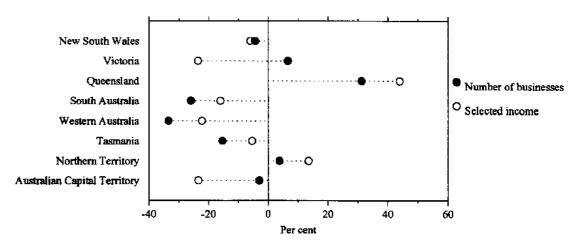
Only two States and one Territory experienced an increase in the number of businesses (Victoria 6.6 per cent, Queensland 31.2 per cent, and the Northern Territory 3.7 per cent) between June 1988 and June 1993. These increases were more than offset by decreases in the number of businesses experienced by the other five States and the Australian Capital Territory.

Changes in selected income

Consistent with this reduction in the number of businesses, most States experienced decreases in selected income during the reference period. The largest decreases were reported by Victoria (24 per cent), Western Australia (22 per cent), and the Australian Capital Territory (23 per cent).

In sharp contrast with these decreases in selected income, Queensland experienced a large increase (44 per cent), with the Northern Territory experiencing an increase of 14 per cent.

CHART 5.2 ARCHITECTURAL SERVICES: MAJOR VARIABLES, PERCENTAGE CHANGE BETWEEN JUNE 1988 AND JUNE 1993



SECTION 6. PERFORMANCE MEASURES

Proportion of businesses making a profit

For the 1992-93 financial year, 76 per cent of businesses in the architectural services industry either broke even or made an operating profit before tax. Of those businesses making a profit, 22 per cent fell in the \$5,000 to \$19,999 range, and 22 per cent fell in the \$20,000 to \$99,999 range. Almost one quarter of businesses in this industry incurred a loss.

TABLE 6.1 ARCHITECTURAL SERVICES: DISTRIBUTION OF BUSINESSES BY RANGE OF OPERATING PROFIT/LOSS BEFORE TAX, AUSTRALIA, 1992-93

Operating profit/loss	Total number of	Percentage
before tax	businesses	of total
BUSINESSES REPORTING PROFIT		
Greater than \$500,000	18	0.4
\$100,000 to \$499,999	219	5.0
\$20,000 to \$99,999	951	21.6
\$5,000 to \$19,999	96 4	21.9
\$1,000 to \$4,999	595	13.5
Total	2,746	62.3
BUSINESSES BREAKING EVEN	586	13.3
BUSINESSES REPORTING LOSSES		
\$1,000 to \$4,999	436	9.9
\$5,000 to \$19,999	434	9.8
\$20,000 to \$99,999	175	4.0
Greater than \$100,000	*32	0.7
Total	1,077	24.4

TABLE 6.2 ARCHITECTURAL SERVICES: SELECTED PERFORMANCE RATIOS, AUSTRALIA, 1992-93

Ratio	Unit	Small businesses	Other businesses	All businesses
Employment ratios:				
Gross income per person employed	\$'000	45.2	78.1	51.4
Labour costs per employee	\$'000	25.2	41.8	28.4
Operating profit before tax				
per person employed	\$1000	5.0	4.8	5.0
Financial ratios				
Operating profit margin	Per cent	11.2	6.2	9.8
Interest coverage	Times	5.5	4.2	5.2

Employment ratios

Gross income per person employed was 73 per cent higher for other businesses (\$78,100) than for small businesses (\$45,200). Because the architectural services industry was dominated by small businesses, gross income per person employed for all businesses was only marginally higher than for small businesses. The influence of other sized businesses on the performance ratios was small.

It should be noted that working proprietors and partners are included as employed persons although they do not draw a wage. Labour costs may therefore be lower in these businesses, affecting operating profit before tax. There were 1,086 unincorporated businesses in the architectural services industry, comprising 25 per cent of all businesses in the industry. Working proprietors and partners represented 9 per cent of total employment.

Labour costs per employee were 66 per cent higher for other businesses than for small businesses.

In 1992-93, operating profit before tax per person employed in the architectural services industry was \$5,000. There was very little difference between small (i.e. those with less than 20 employees) and other businesses. However, this ratio compares unfavourably with all non-farm industries where operating profit before tax per person employed was \$12,800 over the same period.

Financial ratios

The operating profit margin for small businesses was 11.2 per cent compared with 6.2 per cent for other businesses. In other words, small businesses generally converted a higher proportion of their sales into profits than did other businesses.

The operating profit margin for architectural services businesses (9.8 per cent) was much higher than for all non-farm businesses (5.9 per cent) during 1992-93.

Small businesses reported a higher interest coverage than did other businesses indicating a greater ability to service the costs of debt.

PART B SURVEYING SERVICES



SECTION 7. SURVEYING SERVICES - AN OVERVIEW

Introduction

The surveying services industry comprises businesses whose primary activities include aerial photography services, aerial surveying services, cadastral surveying services, hydrographic surveying services, map preparation services, photogrammetry and seismic surveying services (on a contract or fee basis). It should be noted that businesses primarily engaged in exploration for crude oil, natural gas or minerals on their own account are not included in this industry.

Size of industry

At 30 June 1993, there were 1,175 businesses in the surveying services industry. These businesses had a total employment of 6,964 persons and a total industry gross product (IGP) of \$261.9 million. This represents approximately 0.1 per cent of IGP for all non-farm industries.

The surveying services industry generated \$481.2 million from the sale of goods and services in 1992-93 and had an operating profit before tax of \$47.6 million.

Industry comparisons

The surveying services industry was the smallest of the three technical services industries surveyed. This industry contributed 11 per cent of the total number of businesses, 14 per cent of the total employment and 13 per cent of industry gross product.

Business size

The surveying services industry was dominated by small businesses with 58 per cent of businesses employing fewer than five persons, and 96 per cent of businesses employing fewer than 20 persons.

Businesses employing fewer than 10 persons comprised 88 per cent of the total number of businesses, contributed 42 per cent of industry gross income and accounted for 60 per cent of total employment. In contrast, businesses employing in excess of 49 persons represented 0.3 per cent of the industry by number. These businesses contributed 12 per cent of the industry gross income in 1992-93 and accounted for 5 per cent of total employment.

The State dimension

Western Australia dominated the surveying services industry with 15 per cent of businesses, 19 per cent of total employment and 42 per cent of gross income. By way of comparison, it is estimated that 10 per cent of the Australian population lived in Western Australia at the end of June 1993.

Gross income per person was highest in Western Australia (\$149,100).

TABLE 7.1 SURVEYING SERVICES: SUMMARY OF OPERATIONS, AUSTRALIA, 1992-93

ltem .	Unit	Value
Businesses at end June 1993	No.	1,175
Employment		
Working proprietors		
and partners	No.	356
Employees	No.	6,608
Total	No.	6,964
Income statement		
Sales of goods and services	\$ m	481.2
Less		
Selected expenses	\$ m	219.3
Trading profit	\$m	261.9
Plus		
Interest income	\$ m	0.9
Other income	\$m	4.3
Less		
Labour costs	\$m	179.3
Depreciation	\$гп	23.1
Other expenses	\$m	9,6
Earnings before interest and tax	\$m	55.1
Less		
Interest expenses	\$m	7.4
Operating profit before tax	\$m	47.6
Operating profit margin	Per cent	9.9
Industry gross product	\$m	261.9

More information?

Detailed information is available on request regarding sources of income and items of expenditure

SECTION 8. INCOME AND EXPENDITURE

Profit

Gross income (\$486.4 million) exceeded total expenses (\$438.8 million) resulting in an operating profit before tax of \$47.6 million i.e. 10 per cent of gross income.

Gross income per person employed was \$69,800, compared with \$63,000 in total expenses per person employed.

Major sources of income

The surveying services industry generated \$486.4m in gross income during 1992-93. Almost one third of income generated in the surveying services industry came from cadastral services, 23 per cent from mining and other subsurface surveying, and 16 per cent from engineering services.

Income per business

Most businesses (66 per cent) generated some income from cadastral and engineering services. Average income per business from these sources was \$194,100 and \$100,100 respectively. This contrasts sharply with only 13 per cent of businesses generating income from mining and other sub-surface surveying, but earning \$758,400 per business from this source.

TABLE 8.1 SURVEYING SERVICES: SOURCES OF INCOME, AUSTRALIA, 1992-93

		F	ercentage
	Businesses	Value	of total
Activity	No.	\$m	%
Sales of goods and services			
Income from surveying and related services			
Cadastral	781	151.6	31.2
Engineering	774	77.5	15.9
Mining and other subsurface surveying	149	113.0	23.2
Other surveying	228	34.5	7.1
Mapping, aerial photography and related services	197	31.5	6.5
Geographic/land information systems	37	6.7	1.4
Other surveying and related services	249	*52.6	10.8
Total income from surveying and related services	s 1,175	467.3	96.1
Other operating income	152	13.9	2.9
Total sales of goods and services		481.2	98.9
Interest income	417	0.9	0.2
Other non-operating income	271	4.3	0.9
Gross income		486.4	100.0

TABLE 8.2 SURVEYING SERVICES: ITEMS OF EXPENDITURE, AUSTRALIA, 1992-93

		F	Percentage
	Businesses	Value	of total
Type of expense	No.	\$m	%
Labour costs			
Wages and salaries	1,168	164.3	37.4
Employer contributions to superannuation funds	1, 066	13.0	3.0
Workers'compensation costs	1,052	2.0	0.5
Total labour costs		179.3	40.9
Selected expenses			
Payments to sub-contractors and consultants			
for surveying and related work	720	*43.6	9.9
Rent, leasing and hiring	818	28.2	6.4
Motor vehicle running expenses	1,142	13.5	3.1
Other business expenses	1,173	134.1	30.6
Total selected expenses		219.3	50.0
Interest expenses	885	7.4	1.7
Depreciation on buildings and other fixed			
tangible assets	835	23.1	5.3
Other expenses	1,114	9.6	2.2
Total expenses		438.8	100,0

Labour costs largest expenditure item

Labour costs were the largest expenditure items for the surveying services industry, comprising 41 per cent of total expenses. Payments to sub-contractors and consultants (for surveying and related work) accounted for an additional 10 per cent of total expenses. Sixty-one per cent of businesses made payments to sub-contractors and consultants (\$60,600 per business).

Major expenses per business

Rent, leasing and hiring expenses represented 6 per cent of total expenses and were incurred by 70 per cent of businesses (\$34,500 per business). For the 71 per cent of businesses incurring depreciation expenses, the cost per business was relatively high in the surveying services industry (\$27,700).

Contributions to superannuation funds were made by 91 per cent of businesses in this industry. Employer contributions to superannuation funds were almost \$2,000 per employee.

SECTION 9. EMPLOYMENT

Male dominated industry

At the end of June 1993, there were 6,964 people working in the surveying services industry. One quarter of people employed in the industry were female. However, there were differences in the proportions of males and females in different employment types. Only 15 per cent of working proprietors and partners were female, 29 per cent of working directors, and 24 per cent of other employees.

Incidence of full-time and part-time employment

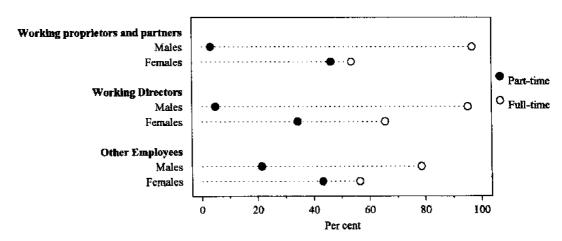
Persons working full-time dominated the industry, accounting for 78 per cent of total employment. Sixty-three per cent of males and 15 per cent of females employed in the industry worked full-time. This proportion varied significantly between the different types of employment. With respect to working proprietors and partners, 97 per cent of males worked full-time compared with only 54 per cent of females. Full-time male employment dropped to 79 per cent for other employees, while full-time employment increased slightly to 57 per cent for other female employees.

TABLE 9.1 SURVEYING SERVICES: CHARACTERISTICS OF EMPLOYMENT, AUSTRALIA, END JUNE 1993

(Number)									
	Males		Females		Total				
Type of employment	Full time	Part time	Total	Full time	Part time	Total	Full tim e	Part time	Total
Working proprietors and partners Working directors of incorporated	292	*10	303	*29	*25	*54	321	*35	356
companies and trusts	1,230	*64	1,293	340	178	518	1,570	242	1,812
Other employees	2,877	784	3,661	643	492	1,136	3,520	1,276	4,796
Total employment	4,399	858	5,257	1,012	696	1,708	5,411	1,553	6,964

The number of contract and agency staff was not collected for the surveying services industry for 1992-93.

CHART 9.1 SURVEYING SERVICES: TYPE OF EMPLOYMENT WORKING FULL-TIME AND PART-TIME BY SEX, AUSTRALIA, 1992-93



SECTION 10. BUSINESS SIZE ANALYSIS

industry dominated by small businesses

Small businesses (i.e. those with employment of less than 20 persons) accounted for 96 per cent of all businesses in the surveying services industry, 77 per cent of employment, 64 per cent of gross income and 85 per cent of operating profit before tax.

Profitability of small businesses

Compared with other small businesses, those in the 10-19 employment size category had the highest income per business (\$1,045,000), the highest gross income per working person (\$86,200), and the highest operating profit before tax per working person.

Operating profit before tax per person employed

Compared with other small businesses, those businesses in the 10-19 employment size category had the highest operating profit before tax per person employed (\$14,000), and those in the 0-4 employment size category had the lowest (\$10,800).

Gross income per person employed increased with business size. Gross income per person employed earned by large businesses (\$186,300) was more than two times higher than for medium sized businesses (\$93,500) and more than three times higher than for small businesses (\$57,400).

TABLE 10.1 SURVEYING SERVICES: KEY CHARACTERISTICS BY BUSINESS SIZE, AUSTRALIA, 1992-93

(Employment size category at end June)

			Small businesses			Medium businesses	Large businesses	All businesses
Item Un	Unit	0-4	5-9	10-19	Total	20-49		
Businesses	No.	681	349	*100	1,130	41	4	1,175
	%	<i>58.0</i>	29.7	8.5	96.2	3.5	0.3	100.0
Working proprietors & partners	No.	259	*76	18	353	3	-	356
	%	72.8	21.3	5.1	99. <i>2</i>	0.8	-	100.0
Working directors	No.	792	627	*240	1,659	143	9	1,812
	%	43.7	34.6	13.2	91.6	7.9	0.5	100.0
Other employees	No.	725	1,701	954	3,380	1,103	313	4,796
	%	15.1	35.5	19.9	70.5	23.0	6 .5	100.0
Total employment	No.	1,776	2,404	1,212	5,393	1,250	322	6,964
	%	<i>2</i> 5.3	34.5	17.4	77.4	1 <i>7</i> .9	4.6	100.0
Gross income	\$m	76.1	128.9	*104.5	309.5	116.9	60.0	486.4
	%	15.6	26.5	21.4	63.6	24.0	12.3	100.0
Operating profit before tax	\$m	10.8	12.6	*17.1	40.5	n.p.	n.p.	47.6

SECTION 11. STATE DATA

Introduction

In the 1992-93 survey of the surveying services industry, all data items were collected at the State level. Only key data items are included in this publication; additional data are available on request.

Western Australia the most significant State

Western Australia was the most significant State in the surveying services industry with 42 percent of gross income, 15 per cent of businesses and 19 per cent of employment. By way of comparison, Western Australia accounted for only 10 per cent of Australia's population at the end of June 1993. On the other hand, the surveying industry in Victoria was very small. Victoria contributed only 10 per cent of businesses, 9 per cent of employment and 6 per cent of gross income to the surveying industry.

Income ratios

There were large differences between States with respect to income ratios for businesses in the surveying industry. Gross income per business was highest in Western Australia (\$1.1 million) and lowest in Tasmania (\$248,500). The Australian average was \$406,000 per business.

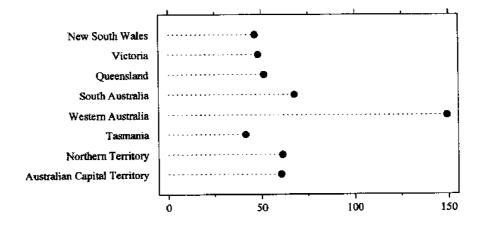
Gross income per person employed was also highest in Western Australia (\$149,100). The Australian average was \$69,100 per person employed.

TABLE 11.1 SURVEYING SERVICES: KEY CHARACTERISTICS BY STATE, 1992-93

			Wages	
		Total	and	Gross
	Businesses (a)	employment	salaries	income
	No.	No.	\$m	\$ m
New South Wales	447	2,419	52.8	112.8
Victoria	121	630	14,6	30.4
Queensland	305	1 ,835	37.6	94.5
South Australia	65	346	10.5	23.4
Western Australia	182	1,342	40.0	200.1
Tasmenia	33	197	3.9	8.2
Northern Territory	10	62	1.5	3.8
Australian Capital Territory	23	132	3.5	8.0
Australia	1,175	6,964	164.3	481.2

⁽a) Multi-State businesses are counted in each State in which they operate. Hence States do not sum to the total for Australia.

CHART 11.1 SURVEYING SERVICES: GROSS INCOME PER PERSON EMPLOYED BY STATE, 1992-93



SECTION 12. PERFORMANCE MEASURES

Proportion of businesses making a profit

Using operating profit before tax as the measure, the surveying services industry performed well during 1992-93 with 86 per cent of businesses either breaking even or making a profit. Of those businesses making an operating profit before tax, 46 per cent were in the range \$20,000 to \$99,999. The losses incurred by businesses in this industry were generally small, with more than half of the losses falling in the range \$1,000 to \$4,999.

TABLE 12.1 SURVEYING SERVICES: DISTRIBUTION OF BUSINESSES BY RANGE OF OPERATING PROFIT/LOSS BEFORE TAX, AUSTRALIA, 1992-93

Operating profit/loss	Total number of	Percentage	
before tax	businesses	of tota	
BUSINESSES REPORTING PROFIT			
Greater than \$500,000	*16	1.4	
\$100,000 to \$499,999	64	5.4	
\$20,000 to \$99,999	452	38.5	
\$5,000 to \$19,999	278	23.7	
\$1,000 to \$4,999	*169	14.4	
Total	979	83.3	
BUSINESSES BREAKING EVEN	26	2.2	
BUSINESSES REPORTING LOSSES			
\$1,000 to \$4,999	*9 5	8.1	
\$5,000 to \$19,999	33	2.8	
\$20,000 to \$99,999	34	2.9	
Greater than \$100,000	* 9	0.8	
Total	170	14.5	

TABLE 12.2 SURVEYING SERVICES: SELECTED PERFORMANCE RATIOS, AUSTRALIA, 1992-93

D-é-	l lais	Small	Other	All
Ratio	Unit	businesses	businesses	businesses
Employment ratios:				
Gross income per person employed	\$'000	57.4	112.6	69.8
Labour costs per employee	\$'000	25.4	32.8	27 .1
Operating profit before tax				
per person employed	\$'000	7.5	*4.6	6.8
Financial ratios				
Operating profit margin	Per cent	13.2	*4.1	9.9
Interest coverage	Times	*8,7	4.3	7.4

Employment ratios

In the surveying services industry, gross income per person employed was \$69,800. Gross income per person employed was 96 per cent higher for other businesses than for small businesses. Labour costs per employee were also higher (29 per cent) for other businesses.

It should be noted that working proprietors and partners are included as employed persons although they do not draw a wage. Labour costs may therefore be lower in these businesses, affecting operating profit before tax. There were 306 unincorporated businesses in the surveying services industry, comprising 26 per cent of all businesses in the industry. Working proprietors and partners represented 5 per cent of total employment.

Small businesses performed better than other businesses when operating profit before tax per person employed is used as the measure. Operating profit before tax per person employed was \$7,500 for small businesses and \$4,600 for other businesses.

Financial ratios

The operating profit margin for small businesses, which account for 96 per cent of all businesses, was 13.2 per cent compared with 4.1 per cent for other businesses. The operating profit margin for all non-farm businesses during 1992-93 was 5.9 per cent.

Interest coverage was also significantly higher for small businesses than for other businesses in the surveying industry, indicating that small businesses were more able to meet the costs of debt than were other businesses.



PART C CONSULTANT ENGINEERING SERVICES



SECTION 13. CONSULTANT ENGINEERING - AN OVERVIEW

Introduction

The consultant engineering services industry includes businesses primarily engaged in quantity surveying as well as those businesses mainly providing consultant engineering services.

Size of industry

At 30 June 1993, there were 5,454 businesses in the industry employing a total of 28,209 persons. Total industry gross product (IGP) for the consultant engineering services industry was \$1,213.2 million. This represents approximately 0.6 per cent of IGP for all non-farm industries.

The 5,454 consultant engineering businesses generated \$2,325.2 million from the sale of goods and services and returned an operating profit before tax of \$155.7 million.

Business size

Ninety-seven per cent of consultant engineering services businesses employed fewer than 20 persons. These businesses accounted for 57 per cent of the total industry employment and contributed 45 per cent of the gross income.

In contrast, those businesses employing 50 persons or more represented 1 per cent of the total number of businesses in the consultant engineering services industry. These large businesses contributed 38 per cent of the total industry gross income and accounted for 30 per cent of the total employment.

The State dimension

Two thirds of consultant engineering businesses were located in New South Wales and Victoria. New South Wales, Victoria and Queensland, each accounted for 24 per cent of gross income. Gross income per person employed ranged from \$86,000 in the Australian Capital Territory to \$62,000 in Tasmania.

Profitability

The operating profit margin for the consulting engineering services industry (6.7 per cent) was marginally higher than the operating profit margin reported for all non-farm industries (5.9 per cent) for 1992-93.

TABLE 13.1 CONSULTANT ENGINEERING SERVICES: SUMMARY OF OPERATIONS, AUSTRALIA, 1992-93

Item	Unit	Value
Businesses at end June 1993	No.	5,464
Employment		
Working proprietors		
and partners	No.	1,013
Employees	No.	27,196
Contract and agency staff	No.	3,954
Total employment and staff	No.	32,163
Income statement		
Sales of goods and services	\$m	2,325.2
Less		
Selected expenses	\$m	1,112.0
Trading profit	\$m	1,213.2
Plus		
Interest income	\$m	10.5
Other income	\$m	22.0
Less		
Labour costs	\$m	97 1.1
Depreciation	\$m	47.0
Other expenses	\$m	40.3
Earnings before interest and tax	\$m	187.2
Less		
Interest expenses	\$ m	31.5
Operating profit before tax	\$m	155.7
Operating profit margin	Per cent	6.7
Industry gross product	\$m	1,213.2

More information?

Detailed information is available on request regarding sources of income and items of expenditure

SECTION 14. INCOME AND EXPENDITURE

Profit

Gross income (\$2,357.7 million) exceeded total expenses (\$2,201.9 million) resulting in an operating profit before tax of \$155.7 million i.e. 7 per cent of gross income.

Gross income per person employed was \$83,600, compared with \$78,100 in total expenses per person employed.

Major sources of income

During 1992-93, the consultant engineering services industry generated \$2.4 billion in gross income. This income came from a number of different sources with no large primary source. The largest sources of income in this industry were electrical/electronic services (14 per cent of gross income), civil engineering (16 per cent), mechanical engineering (16 per cent) and other engineering services (18 per cent).

Income per business

More businesses derived income from mechanical engineering (35 per cent) than from any other source. Income per business was highest (\$442,300) from mining engineering services although only 9 per cent of businesses derived some income from this source.

TABLE 14.1 CONSULTANT ENGINEERING SERVICES: SOURCES OF INCOME, AUSTRALIA, 1992-93

		F	Percentage	
	Businesses	Value	of total	
Activity	No.	\$m	%	
Sales of goods and services				
Income from consultant engineering services				
Chemical	*24 9	*70.3	3.0	
Civil	1,397	385.5	16.4	
Building/structural	1 ,779	332.9	14.1	
Electrical/electronic	1,120	323.0	13.7	
Mechanical	1,828	378.7	16.1	
Mining	447	197.7	8.4	
Industrial	499	61.7	2.6	
Other consultant engineering services	1,715	418.1	17.7	
Total income from consultant engineering service	s 5,257	2,167.9	91.9	
Income from quantity surveying services	202	97.5	4,1	
Other operating income	478	*62.1	2.6	
Total sales of goods and services		2,325.2	98.6	
Interest income	1,812	10.5	0.4	
Other non-operating income	681	22.0	0.9	
Gross Income		2,357.7	100.0	

Labour costs largest expenditure item

For the consultant engineering services industry, labour costs represented 44 per cent of total expenses. Contract, agency and sub-contract payments accounted for an additional 20 per cent of total expenses. Only thirty-nine per cent of businesses had sub-contract and consultancy expenses (\$104,500 per business), and 21 per cent made payments to contract and agency staff (\$195,100 per business).

For the 78 per cent of businesses in the surveying services industry that contributed to superannuation funds, the cost per business was almost \$16,500. Seventy-five per cent of businesses also incurred workers' compensation costs; the average cost of this item was almost \$2,000.

Only 53 per cent of businesses incurred interest expenses.

TABLE 14.2 CONSULTANT ENGINEERING SERVICES: ITEMS OF EXPENDITURE, AUSTRALIA, 1992-93

			Percentage
	Businesses	Value	of total
Туре of ехрепѕе	No.	\$m	%
Labour costs			
Wages and salaries	4,813	892.7	40.5
Employer contributions to superannuation funds	4,274	70.4	3.2
Workers' compensation costs	4,078	8.0	0.4
Total labour costs		971.1	44.1
Selected expenses			
Payments to sub-contractors and consultants	2,138	223.4	10.1
Payments to contract and agency staff	1,155	225.3	10.2
Rent, leasing and hiring	3,004	127.2	5.8
Motor vehicle running expenses	4,760	49.3	2.2
Other business expenses	5,448	486.7	22 .1
Total selected expenses		1,112.0	50.5
Interest expenses	2,885	31.5	1.4
Depreciation on buildings and other fixed			
tangible assets	3,556	47.0	2.1
Other expenses	4,720	40.3	1.8
Totał expenses		2,201,9	100.0

More information?

Further information is available on request providing details of expense items, cross classified by business size and/or by type of consultant engineering service (e.g. chemical, civil, building/structural, electrical/electronic, mechanical, mining, industrial, and other)

SECTION 15. EMPLOYMENT

Incidence of contract employees

At the end of June 1993, there were 32,163 people working in the consultant engineering services industry. These persons were divided into two groups, i.e. employees of the business (88 per cent), and those engaged on a contract basis or through an agency (12 per cent). Contract and agency staff included engineering and related staff working under substantial direction and control of businesses in the consultant engineering services industry.

Characteristics of contract and agency staff

A larger proportion of contract staff (93 per cent) and agency staff (85 per cent) were males than was the case for total employment (72 per cent). More contract and agency staff (28 per cent) worked part-time than was the case for those persons employed within the industry (18 per cent).

Male and female employment

Males comprised 72 per cent of persons working in this industry. This proportion varied by type of employment, ranging from a high of 93 per cent of contract staff to a low of 69 per cent of working directors.

Incidence of full-time and part-time employment

The majority (82 per cent) of people working in the industry were employed on a full-time basis. Males were more likely to work on a full-time basis (91 per cent) than females (60 per cent). A larger proportion of female working proprietors and partners, and working directors worked on a part-time rather than full-time basis.

TABLE 15.1 CONSULTANT ENGINEERING: CHARACTERISTICS OF EMPLOYMENT, AUSTRALIA, END JUNE 1993

(NU	ımberi

		Males		,	-emales			Total	
Type of employment	Full time	Part time	Total	Full time	Part time	Total	Full time	Part time	Total
Working proprietors and partners	692	*118	810	*77	*126	*203	769	*244	1,013
Working directors of incorporated									
companies and trusts	5,743	*421	6,164	1,207	1,547	2,754	6,950	1,968	8,919
Other employees	12,106	1,254	13,360	3,41 9	1,498	4,917	15,525	2,752	18,277
Total employment	18,541	1,793	20,335	4,703	3,171	7,874	23,244	4,964	28,208
Engineering and related staff									
- engaged on a contract	2,226	933	3,160	126	*112	238	2,352	1,045	3,397
- engaged through an agency	449	*26	475	58	*24	82	507	*50	557
Total contract and agency staff	2,675	960	3,635	183	*136	319	2,859	1,095	3,954
Total	21,217	2,753	23,970	4,886	3,307	8,193	26,103	6,060	32,163

SECTION 16. BUSINESS SIZE ANALYSIS

industry dominated by small businesses

Ninety-seven per cent of consultant engineering businesses were small (i.e. employing less than 20 persons), and 84 per cent of these small businesses employed less than five persons. Small businesses, however, accounted for only 57 per cent of total employment and 45 per cent of gross income.

Contract and agency staff

Contract and agency staff represented only 12 per cent of employment in this industry. This proportion ranged from 7 per cent for businesses with five to nine working persons, to 15 per cent for businesses with 10-19 working person and for medium sized businesses. Small businesses employed 56 per cent of contract and agency staff employed in the industry.

Gross income per person employed

Gross income per person employed was highest for medium sized businesses (\$111,500) and lowest for businesses with employment of less than five persons (\$53,100). Large businesses generated \$104,900 in gross income per person employed.

There were large differences in operating profit before tax per person employed between the different business sizes. Businesses with employment between 10 and 19 persons had the highest (\$12,400) operating profit before tax per person employed, and large businesses had the lowest (\$1,500).

TABLE 16.1 CONSULTANT ENGINEERING SERVICES: KEY CHARACTERISTICS BY BUSINESS SIZE, AUSTRALIA, 1992-93

(Employment size category at end June)

			Small busine	5585		Medium businesses	Large businesses	All businesses
ltem	Unit	0-4	5-9	10-19	Total	20-49	50+	
Businesses	No.	4,439	580	245	5,263	130	60	5,454
	%	81.4	10,6	4.5	96.5	2.4	1.1	100.0
Working proprietors & partners	No.	932	*56	-	988	-	25	1,013
<u>.</u>	%	92.0	5.5	-	97.5	-	2.5	100,0
Working directors	No	6,416	983	782	8,180	406	332	8,919
•	%	71.9	11.0	8.8	91.7	4.6	3.7	100.0
Other employees	No.	1,697	2,686	2,572	6,955	3,057	8,265	18,277
	%	9.3	14.7	14.1	<i>38.</i> 1	16.7	45.2	100.0
Contract & agency staff	No.	1,341	283	*608	2,232	644	1,078	3,954
	%	33.9	7.2	15.4	56.4	16.3	27.3	100.0
Total employment and staff	No.	10,386	4,008	3,962	18,356	4,107	9,700	32,163
	%	32.3	12.5	12.3	57.1	12.8	30.2	100.0
Gross income	\$m	480.2	257.5	*329.9	1,067.6	386.0	904.1	2,357.7
	%	20.4	10.9	14.0	45.3	16.4	38.3	100.0
Operating profit before tax	\$m	64.5	*10.4	*41,5	116.5	26.5	12.8	155.7

SECTION 17. STATE DATA

Introduction

In the 1992-93 selected technical services industries survey, the only data items collected by State were employment, wages and salaries, and selected income. These were the only data items for which multi-State technical services businesses were able to accurately supply State data.

Industry concentrated in New South Wales and Victoria

Two thirds of consultant engineering businesses were located in New South Wales (37 per cent) and Victoria (29 per cent). New South Wales, Victoria, and Queensland, each accounted for 24 per cent of gross income.

Income ratios

Gross income per business ranged from \$841,500 in South Australia to \$279,200 in New South Wales.

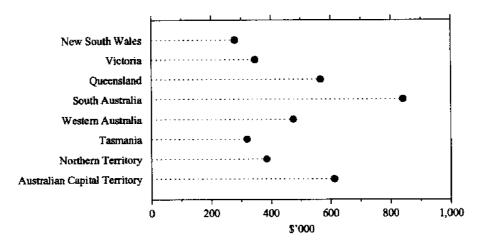
Gross income per person employed ranged from a high of \$86,000 in the Australian Capital Territory to a low of \$62,000 in Tasmania. The Australian average was \$72,300 in gross income per person. Average employment per business was highest in South Australia (11) and lowest in New South Wales (4). Average Australian employment per business was six in this industry.

TABLE 17.1 CONSULTANT ENGINEERING SERVICES: KEY CHARACTERISTICS BY STATE, 1992-93

_				
	Businesses		Wages	
	at end	Total	and	Gross
	June (a)	employment	salaries	income
	No.	No.	\$m	\$m
New South Wales	2,017	8,824	266.3	563.2
Victoria	1, 60 6	7,883	255.7	557.4
Queensland	912	7,098	289.2	567.0
South Australia	224	2,396	101.3	188.5
Western Australia	722	4,568	159.8	342.9
Tasmania	88	452	14.0	28.1
Northern Territory	44	229	7.2	17.0
Australian Capital Territory	100	712	24.6	*61.2
Australia	5,454	32,163	1,118.0	2,325.2

⁽a) Multi-State businesses are counted in each State in which they operate. Hence States do not sum to the total for Australia.

CHART 17.1 CONSULTANT ENGINEERING SERVICES: GROSS INCOME PER BUSINESS BY STATE, 1992-93



SECTION 18. PERFORMANCE MEASURES

Proportion of businesses making a profit

During the 1992-93 financial year, 77 per cent of businesses in the consultant engineering industry reported either an operating profit before tax or broke even. Less than 1 per cent (44) of businesses reported an operating profit before tax of greater than \$500,000, while 23 per cent were in the \$20,000 to \$99,999 bracket. Almost one quarter of businesses reported a loss.

TABLE 18.1 CONSULTANT ENGINEERING SERVICES: DISTRIBUTION OF BUSINESSES BY RANGE OF OPERATING PROFIT/LOSS BEFORE TAX, AUSTRALIA, 1992-93

Operating profit/loss	Total number of	Percentage	
before tax	businesses	of tota	
BUSINESSES REPORTING PROFIT	• • • • • • • • • • • • • • • • • • • •		
Greater than \$500,000	44	0.8	
\$100,000 to \$499,999	382	7.0	
\$20,000 to \$99,999	1,253	23.0	
\$5,000 to \$19,999	1,003	18.4	
\$1,000 to \$4,999	740	13.6	
Total	3,422	62.7	
BUSINESSES BREAKING EVEN	754	13.8	
BUSINESSES REPORTING LOSSES			
\$1,000 to \$4,999	592	10.9	
\$5,000 to \$19,999	*434	8.0	
\$20,000 to \$99,999	217	4.0	
\$100,000 to \$499,999	*24	0.4	
Greater than \$500,000	10	0.2	
Total	1,277	23.4	

TABLE 18.2 CONSULTANT ENGINEERING SERVICES: SELECTED PERFORMANCE RATIOS, AUSTRALIA, 1992-93

		Small	Other	Ali
Ratio	Unit	businesses	businesses	businesses
Employment ratios:				
Gross income per person employed	\$'000	58.2	93.4	73.3
Labour costs per employee	\$1000	30.1	42.7	35.7
Operating profit before tax				
per person employed	\$'000	6.3	2.8	4.8
Financial ratios				
Operating profit margin	Per cent	11.0	3 .1	6.7
Interest coverage	Times	7.2	4.1	5.9

Employment ratios

Labour costs per employee were 42 per cent higher for other businesses than for small businesses i.e. \$42,700 compared with \$30,100.

It should be noted that working proprietors and partners are included as employed persons although they do not draw a wage. Labour costs may therefore be lower in these businesses, affecting operating profit before tax. There were 793 unincorporated businesses in the consultant engineering services industry, comprising 15 per cent of all businesses in the industry. Working proprietors and partners represented 4 per cent of total employment.

In the consultant engineering services industry, gross income per person employed was \$73,300. Although other businesses had the higher gross income per person employed (\$93,400 compared with \$58,200 for small businesses), operating profit before tax per person employed was much higher for small businesses (\$6,300) than for other businesses (\$2,800).

One reason the high gross income per person employed by other businesses did not translate to a high operating profit before tax per person employed for these businesses was the high labour cost per employee (\$42,700 compared with only \$30,100 for small businesses).

Financial ratios

The operating profit margin for the consultant engineering industry was 6.7 per cent. The operating profit margin for small businesses (11.0 per cent) was considerably higher than for other businesses (3.1 per cent).

Interest coverage was also higher for small businesses than other businesses, indicating the greater ability of small businesses to meet the cost of servicing debt.

EXPLANATORY NOTES

Survey scope and methodology

- 1 This publication contains data derived from a survey of the architectural, surveying and consultant engineering service industries for 1992-93.
- 2 The survey of the architectural services and consultant engineering services industries included businesses which had no employees at the time the survey population was selected. The surveying industry, on the other hand, excluded businesses which did not have employees.
- 3 The survey was conducted by mail with full enumeration of the larger businesses and a sample of the smaller businesses.

Classification by industry

The survey included three of the four industries classified to Group 782 of the 1993 edition of the Australian and New Zealand Standard Industrial Classification (ANZSIC). Subdivision 782 includes all units mainly engaged in providing architectural services (ANZSIC class 7821), surveying services (ANZSIC class 7822) and consultant engineering services (ANZSIC class 7823). The other class in the group, ANZSIC class 7824, technical services n.e.c. was excluded from the survey.

Statistical unit

The unit for which statistics were reported in the survey was the *management unit*. The management unit is the highest-level accounting unit within a business, having regard for industry homogeneity, for which accounts are maintained. In nearly all cases it coincides with the legal entity owning the business (i.e. company, partnership trust, sole operator, etc). In the case of large diversified businesses, however, there may be more than one management unit, each coinciding with a 'division' or 'line of business'. A division or line of business is recognised where separate and comprehensive accounts are compiled for it.

State data

- 6 For the architecture and consultant engineering service industries, data were collected from the Australia-wide operations of each business. Businesses which operated in more than one State were asked to provide a dissection of total operating income, employment, and wages, salaries and commissions to enable State statistics to be compiled.
 - For the surveying industry, all data items were collected at the State level.

Reference period

8 Data contained in the tables of this publication relate to all businesses which operated in Australia at any time during the year ended 30 June 1993. Counts of businesses include only those businesses that were operating at 30 June 1993.

Businesses ceased during the year

9 A very small number of businesses ceased operations during the 1992-93 reference period. It is normal ABS procedure to include the contributions of these businesses in the survey output.

Comparability with previous statistics

10 Direct comparability between the 1987-88 survey and the 1992-93 survey of the architectural services industry is possible because of consistency in industry classification and scope of the survey.

Architectural services

11 The standard units definitions employed in the system of integrated economic statistics were revised in 1988-89. Prior to this period, the enterprise was the statistical unit for which data was collected.

However, for the majority of businesses prior to 1988-89, the management unit and enterprise are expected to be the same allowing comparisons between the 1987-88 and 1992-93 reference periods for the survey of the architectural services industry.

Surveying services

12 While the 1987-88 survey of the surveying services industry included all businesses, the 1992-93 survey excluded those businesses which did not have employees. Statistics for this earlier survey are limited to those released in the publication *Surveying Services Industry, Australia, 1987-88* (Catalogue No. 8665.0). No statistics from this earlier survey are available with the non-employing businesses subtracted.

Consultant engineering services

13 It is not possible to compare data from the previous survey conducted with respect to 1987-88 because of significant differences in the industry classification. In the 1987-88 survey, consultant engineering services was classified to class 6336 of the 1983 edition of the Australian Standard Industry Classification (ASIC). However, with the development of the 1993 edition of the Australian and New Zealand Standard Industrial Classification, the consultant engineering industry was split into two parts, technical services n.e.c. and consultant engineering. This industry split prevents direct comparability between the two surveys.

TABLE 19.1 RELATIVE STANDARD ERRORS OF SUMMARY OF OPERATIONS, AUSTRALIA, 1992-93

	(Per cent)	•	
	ANZSIC	ANZSIC	ANZSIC
	7821	7822	7823
			Consultant
	Architectural	Surveying	engineering
ltem .	services	services	services
Businesses at end June 1993	4	4	4
Employment			
Working proprietors and partners	11	18	15
Employees	5	6	5
Contract and agency staff	8		10
Total	4	5	5
Income statement			
Sales of goods and services	7	9	8
Less			
Selected expenses	7	12	11
Trading profit	7	7	6
Plus			
Interest income	15	20	18
Other income	17	9	12
Less			
Labour costs	8	7	6
Depreciation	8	6	15
Other expenses	19	8	6
Earnings before interest and tax	9	18	11
Less			
Interest expenses	8	11	8
Operating profit before tax	10	21	12
Operating profit margin	11	14	11
Industry gross product	7	7	6

Reliability of estimates

14 The estimates presented in this publication are subject to both sampling and non-sampling error.

Sampling errors

- 15 Since the estimates in this publication are based on information obtained from a sample drawn from units in the surveyed population, the estimates are subject to sampling variability, i.e. they may differ from figures that would have been obtained if all units had been included in the survey. One measure of the likely difference is given by the standard error, which indicates the extent to which an estimate might have varied by chance because only a sample of units was included.
- 16 There are about two chances in three that a sample estimate will differ by less than one standard error from the figure that would have been obtained if all units had been included in the survey, and approximately nineteen chances in twenty that the difference will be less than two standard errors.
- 17 Sampling variability can be measured by the relative standard error (RSE) which is obtained by expressing the standard error as a percentage of the estimate to which it refers. The RSE is a useful measure in that it provides an immediate indication of the percentage errors likely to have occurred due to sampling, and thus avoids the need to refer also to the size of the estimate.
- 18 The table above contains estimates of RSEs for a selection of statistics presented in this publication.
- As an example of the above, an estimate of the employment for the architecture service industry is 18,569 persons and the RSE is 4 per cent giving a standard error of 743 persons. Therefore, there would be two chances in three that, if all units had been included in the survey, a figure within the range of 17,826 persons to 19,312 persons would have been obtained, and nineteen chances in twenty that the figure would have been within the range of 17,113 persons to 20,025 persons (a confidence interval of 95 per cent).
- 20 Where the RSE of an estimate included in this publication exceeds 25 per cent, it has been annotated with an asterisk (*) as a warning to users.

Non-sampling error

21 Errors other than those due to sampling may occur because of deficiencies in the register of units from which the sample was selected, non-response, and imperfections in reporting by respondents. Inaccuracies of this kind are referred to as non-sampling error and they may occur in any collection, whether it be a census or a sample. Every effort has been made to reduce non-sampling error to a minimum by careful design and testing of questionnaires, efficient operating procedures and systems used to compile the statistics.

Availability of unpublished statistics

- As well as statistics included in this publication, the ABS has a large range of more detailed data on the architecture, surveying and consultant engineering service industries. For example, more detailed income and expense data may be made available on request.
- 23 Inquiries on architecture, surveying and consultant engineering service statistics should be made by telephoning Dennis Robson on (03) 9615 7634.

Other publications in this series

- 24 The 1992-93 series of surveys included several other property and business services industries. Statistics have been released in four separate publications:
 - Real Estate Agents Industry, Australia, 1992-93 (Catalogue No. 8663.0)
 - Computing Services Industry, Australia, 1992-93 (Catalogue No. 8669.0)
 This publication includes four industries providing computer services: data processing, information storage and retrieval, computer maintenance, and computer consultancy;
 - Selected Business Services, Australia, 1992-93 (Catalogue No. 8677.0)
 This publication includes the advertising, market research, and business management services industries; and
 - Legal and Accounting Services, Australia, 1992-93 (Catalogue No. 8678.0)

Symbols and other abbreviations

nil or rounded to zero

.. not applicable

n.a. not available

n.p. not available for separate publication, but included in totals where applicable

* subject to sampling variability too high for practical purposes (i.e. relative standard error greater than 25 per cent)

Where figures have been rounded, discrepancies may occur between the sum of component items and the total.

ABS Australian Bureau of Statistics

ANZSIC Australian and New Zealand Standard Industrial Classification

ASIC Australian Standard Industrial Classification

GLOSSARY OF TERMS

Contract administration

The oversight by an architect of the actual construction of the building to ensure it complies with the specifications.

Computer assisted drafting (CAD)

Involves the use of specialised computer hardware and software to replace the work previously undertaken by architectural draftsmen.

Contract, agency and subcontract payments and wages and salaries

This item includes payments to other businesses for carrying out work for the business. For the surveying industry, it also includes wages and salaries paid to agency and contract employees working for the business.

For the architectural and consultant engineering service industries, these two components were collected separately as contract, agency and sub-contract payments, and wages and salaries and agency payments to contract and agency staff.

Contract documentation

Development of the building specifications so that it can go to tender.

Cost of sales

Is equal to selected expenses. Includes rent, leasing and hiring expenses, motor vehicle running expenses and other business expenses.

In the architectural services industry, this item includes payments to sub-contractors and consultants, document reproduction expenses and contract and agency payments.

In the surveying services industry, this item includes payments to sub-contractors and consultants.

In the consultant engineering services industry, this item includes payments to subcontractors and consultants and contract and agency payments.

Design development

Building on the basic design to all facets of a building.

Earnings before interest and tax (EBIT)

A measure of profit prior to the deduction of interest expense and income tax.

Employment

Includes working proprietors, working partners and proprietors and other employees working for a business during the last pay period in June each year. Employees absent on paid or prepaid leave are included. Sub-consultants and sub-contractors are excluded.

Environmental work

This data item is applicable to the consultant engineering industry only. Environmental protection work relates to the environmental impact of projects and the treatment of environmentally damaging by-products such as wastes and emissions. This type of work includes such activities as pollution control and monitoring equipment design, site contamination assessments, acoustical engineering services, chemical and non-chemical waste systems engineering, etc.

Full-time employees

Employees who work 35 hours per week or more.

Gross Domestic Product

The total market value of goods and services produced in Australia after deducting the cost of goods and services used up in the process of production (intermediate consumption), but before deducting consumption of fixed capital.

Gross income

Sum of all income items.

Industry gross product

Is a measure of the unduplicated gross product of a businesses derived as follows:

IGP = Sales of goods and services

- Selected expenses

Interest coverage

The number of times over that businesses can meet their interest expenses from their earnings before interest, i.e. EBIT/interest expenses.

Operating profit before tax

A measure of profit before extraordinary items are brought to account and prior to the deduction of income tax and appropriations to owners (eg dividends paid).

Operating profit margin

The percentage of sales of goods and services available as operating profit, i.e. (operating profit before tax \times 100)/sales of goods and services.

Other architectural and related services

Includes interior design and fitout, landscape design, town planning etc.

Other non-operating income

Includes dividends received and income from net profit (loss) on sale of fixed tangible assets, net profit (loss) on foreign loans as a result of variations in foreign exchange rates/transactions, dividends received and royalties income. Does not include extraordinary profit (loss).

Other operating income

Includes export market development grants.

In the architectural services industry, this item includes rent, leasing and hiring income.

In the surveying services industry, this item includes income from town planning and engineering design.

In the consultant engineering services industry, this item includes income from town planning and cadastral surveying.

Part-time employees

Employees who work less than 35 hours per week.

Persons employed at end June 1993 Includes working proprietors and working partners of unincorporated businesses, working directors of incorporated companies and trusts, and other employees working for a business during the last pay period ending in June 1993.

Pre-design services

Includes consultation and advice on suitable land, environmental considerations and planning restrictions.

Quality assurance accreditation

Is being introduced by the departments responsible for public works. It involves businesses wishing to tender for public sector work in a process of examination and testing to determine their capacity to carry out such work.

Rent, leasing and hiring expenses

Includes rent, leasing and hiring of motor vehicles and all expenses paid/payable to landlords.

Sales of goods and services

In the architectural services industry, this item includes income from architectural and related services and other operating income.

In the surveying services industry, this item includes income from surveying and related services and other operating income.

In the consultant engineering services industry, this item includes income from engineering services, income from quantity surveying undertaken by the business and other operating income.

Schematic design

This is the actual drawing of an architectural design with the appropriate specifications.

Selected expenses

Includes payments to sub-contractors and consultants, motor vehicle running expenses, rent, leasing and hiring expenses and other business expenses.

In the architectural services industry, this item includes document reproduction costs and contract and agency payments.

In the consultant engineering services industry, this item includes contract and agency payments.

Sub-contractors and consultants

Payments to other businesses, including self-employed persons, for carrying out work for this business. It excludes payments to staff of the business working on a contract or agency basis. It also excludes payments to sub-contractors for non-industry related work (eg cleaning services) and payments to consultants directly paid by clients.

Training expenses

An estimate of the amount spent on the provision of formal training to workers in the business. Formal training is defined as all training activities which have a structured plan and format designed to develop job related skills and competence.

Wages and salaries

Are gross earnings of all employees before taxation and other deductions. Payments to sub-contractors/sub-consultants and payments to proprietors/partners of unincorporated businesses are excluded.

SPECIAL DATA SERVICES

- The ABS can provide a wider range of data for the architecture, surveying and consultant engineering industries than is contained in this publication. Three examples of standard products that can be made available on request are detailed components of income and expenditure, detailed statistics by employment size groupings, and measures of profitability by principal activity of the business.
- Other statistical products can be tailored to satisfy the specific requirements of clients.
- For further information on unpublished statistics that can be made available, contact Dennis Robson, on Melbourne (03) 9615 7634.



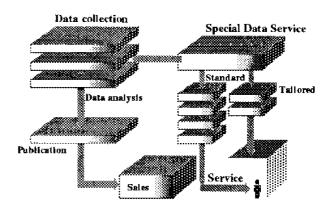
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