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Labour Force Challenges in the Australian Building and Construction Industry: Skills Infrastructure and Migrant Workers

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Labour Force Challenges in the Australian Building and Construction Industry: Skills Infrastructure and Migrant Workers

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Background Paper – 1

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The Overseas-born Construction Industry workforce

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1. SUMMARY

SNAPSHOT AS AT 2001:

- ❖ Just over 2 million persons born overseas were recorded as being in the overall workforce, slightly less than a quarter of the total.
- ❖ The largest numbers of overseas-born workers were from the United Kingdom, New Zealand, Italy, Viet Nam and China.
- ❖ The proportion of Overseas-born workers was slightly less in Construction than in Other Industries.
- ❖ Persons born in Europe were more prevalent in Construction than elsewhere and persons born in Asia were more likely to be working in Industries other than Construction.
- ❖ Countries (or Regions) with proportionately greater representation in Construction than elsewhere were Italy, South East Asia, Croatia, Greece, The Netherlands, Ireland, Lebanon and Yugoslavia.
- ❖ In the Overseas-born workforce as a whole, by far the largest Occupational Groupings were Clerical, Sales & Service workers and Professionals.
- ❖ Proportionally, Overseas-born workers were most strongly represented in the Manager, Intermediate Production & Transport Worker and Professional Major Occupational Groups.
- ❖ In the Construction Industry workforce overall, the largest Occupational Group by far was the Trades and this was also the

case for Overseas-born Construction workers (amounting to almost 50% in each case).

- ❖ Overseas-born Construction workers were proportionally more prominent in the Intermediate Production & Transport Worker, Manager and Labourer Major Occupational Groups.
- ❖ The Occupational profiles of Overseas-born Construction workers from the various Regions were significantly different in a number of cases:
 - Persons born in Asia were much more prominently represented in the Professions (11% compared to 2.7% of all Overseas-born Construction workers);
 - Persons born in Asia were significantly under-represented in the Trades (37% compared to 48% for all Overseas-born Construction workers);
 - Persons born in the New Zealand/Other Oceania Region had higher than average proportions in Intermediate Production & Transport Workers (15% compared to 9.5%) and Labourers (15.1% compared to 11.7%) Major Occupation Groups;
 - Persons born in South/Sub-Saharan Africa were significantly over-represented in the Professional (6.9% compared to 2.7%) and Associate Professional categories (12.2% compared to 7.1%);
 - Persons born in South/Sub-Saharan Africa were under-represented in Intermediate Production & Transport Workers (4.6% compared to 9.5%) and Labourers (8.2% compared to the average of 11.7%).

2. INTRODUCTION

The analysis of the Australian Construction Industry workforce that is incorporated in this report is part of a broader project entitled *Labour Force Challenges in the Australian Building and Construction Industry: Skills Infrastructure and Migrant Workers*. The overall project examines the sustainability of present labour supply arrangements in the building and construction industry in the context of restructuring and reorientation of the major construction companies and the intensification of pyramid sub-contracting arrangements. This will highlight the challenges engendered by the changing pattern of training and skill accreditation, sourcing and recruitment arrangements, and industry resort to immigrant and short-term and clandestine migrant workers. The analysis of labour supply arrangements will inform a better assessment of the capacity of the industry to improve construction standards and promote technological advances, and thereby contribute to charting a new strategic vision.

The analysis following aims to illustrate current and emerging patterns in the structure of the Construction Industry workforce. The reference period is the 15 years between 1986 and 2001, with emphasis on the most recent Census data. In addition to the descriptive analysis of data, where possible comment is made on some of the factors which have made an impact on the requirements for occupational skills in the medium-term.

The map charts used in this Working Paper were prepared with Graphic Maps world outline images. The maps are used with permission of the publishers *Graphic Maps and World Atlas*.

Note that tables using different variables will show slightly different numbers because of differing proportions of persons failing to supply sufficient information to enable ABS Census coding to categories for each variable.

3. METHODOLOGY

This stage of the project involved intensive descriptive analysis of cross-classified data on population and employed persons from the Population Census conducted by the Australian Bureau of Statistics (ABS) in 2001. Additional data relating to the 1996, 1991 and 1986 Censuses was also referenced in this part of the analysis. Census data was chosen because it is the only source of Labour Market data available providing the degree of detail and level of precision desired for this project. The ABS Labour Force Survey provides a considerable amount of valuable data on a monthly and quarterly basis, but the precision is not high when cross-classified by detailed Industry and Occupation. The degree of precision in the Labour Force Estimates can be gauged using tables of standard errors of the estimates provided by ABS in their publications. For instance, Survey estimates approximating the 2001 Census figures for Drivers, Refrigeration & Air-conditioning Mechanics, Structural Steel Workers, Roof Tilers, Floor Finishers, Paving and Surfacing Labourers and Civil Engineers would be associated with relative standard error rates ranging from around 14% up to 30% at confidence levels of only 66%. (1) p67.

The specifications for the ABS data are outlined fully in Appendix 1 of this report. The variables covered were Industry, Occupation, Age, Year of Arrival (for persons born overseas) and Country of Birth. The

Birthplace, Industry and Occupation variables are the focus of this paper.

Cross-classified Census datasets which included all individual Birthplace Countries proved to be impractical because of their size and the high proportion of blank cells. Individual Birthplace Country categories for the tables obtained from ABS were chosen on their relative importance in the Overseas-born employed workforce. Australia, New Zealand, Other Oceania and the top ten individual Countries (in terms of Overseas-born Construction Industry workforce in 2001) were included, along with all major geographical Regions. Residual categories were also included where appropriate (e.g. Italy was included separately, along with the residual, Other Southern and Eastern Europe). Korea was also included separately as it was to be the subject of special study in another part of the overall project.

For the purposes of this analysis of the Overseas-born workforce, Industry was disaggregated only into Construction Industry (ANZSIC Division E) and Other Stated Industry (as a single group).

Because a further stage in this project involves relating current workforce and changes over time with the supply of skills through training, the maximum detail for Occupation was desired. The Australian Standard Classification of Occupations (ASCO) Second Edition, published in 1997, includes 9 Major Groups, 35 Sub-Minor Groups, 81 Minor Groups, 340 Unit Groups and 986 Occupations. The degree of occupational differentiation at Unit Group level was considered quite sufficient for the present study. At this level Construction workers such as Civil Engineers, Carpenters, Plumbers, Crane Operators, Labourers, etc. are included separately.

A preliminary analysis of 2001 Census data was undertaken to identify the most important Occupations in the Construction Industry. Based on this, a range of Unit Group Occupations were selected, with the rest of the workforce being included at Minor Group level. The preliminary analysis identified approximately 70 Unit Groups which included all key Occupations occurring in the Industry. All Trade, Sub-Trade, Labouring, Engineering and Sub-Professional Unit Group Occupations that were thought to be of importance in Construction were included at this detailed level.

4. OVERSEAS-BORN WORKERS BY REGION/COUNTRY - 2001

At the time of the 2001 Census conducted by the Australian Bureau of Statistics (ABS) there were 4.1 million persons in the population who indicated on their Census forms that they had been born overseas. This represented 21.6% of the Australian population.

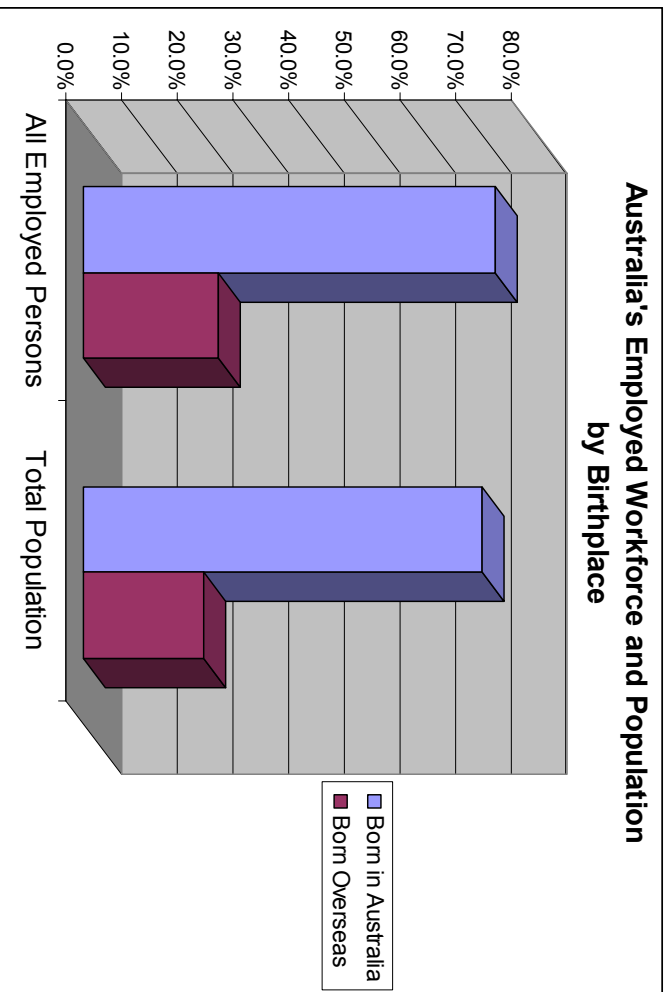
Slightly less than half of the Overseas-born population (2 million persons) were recorded as being in employment in the 2001 Census. This constituted just under a quarter of the total employed workforce Australia-wide (or 24.2%).

A small proportion of the population and employed workforce were visitors from overseas or did not provide sufficient details in relation to their Birthplace and/or employment status.

The following tables and graph summarise this ABS data from the 2001 Census.

All Employed Persons and Total Population by Country of Birth – Australia – 2001 Census

Birthplace	Employed Persons			Total Population		
	Males	Females	Total	Males	Females	Persons
Born in Australia	3,333,519	2,824,982	6,158,501	6,712,876	6,916,809	13,629,685
Born Overseas	1,140,517	871,589	2,012,106	2,031,613	2,073,831	4,105,444
Not Stated/O'seas Visitor	72,747	55,252	127,999	621,452	615,769	1,237,221
Total	4,546,783	3,751,823	8,298,606	9,365,941	9,606,409	18,972,350
	Number					
	Percentage					
Born in Australia	73.3%	75.3%	74.2%	71.7%	72.0%	71.8%
Born Overseas	25.1%	23.2%	24.2%	21.7%	21.6%	21.6%
Not Stated/O'seas Visitor	1.6%	1.5%	1.5%	6.6%	6.4%	6.5%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%



The following table shows population and employed workforce data from the 2001 Census broken down by main Country of Birth.

The largest population group was of course those born in Australia, amounting to a little under 72% of the total population. The next largest population group, by a large margin, was those born in the United Kingdom, with 5.5% of the population. Significant numbers of New Zealanders and Italian-born persons were also represented, with 1.9% and 1.2% of the population respectively. Other Countries constituting the 10 largest groups Overseas- born persons in 2001 were Viet Nam, China, Greece, Germany, The Philippines, India and The Netherlands. Persons born in these countries represented between 0.8% and 0.4% of the total population.

A similar pattern is evident in the Overseas-born employed workforce, although in this case South Africa and Malaysia are in the top ten Countries, with 0.6% and 0.5% of the workforce respectively.

Country of Birth	Employed Persons			Total Population		
	Males	Females	Total	Males	Females	Persons
Australia	3,333,519	2,824,982	6,158,501	6,712,876	6,916,809	13,629,685
Canada	8,704	8,161	16,865	13,059	14,230	27,289
China (excl. SARs & Taiwan)	34,907	28,505	63,412	66,617	76,163	142,780
Croatia	12,798	8,833	21,631	27,126	24,783	51,909
Egypt	9,015	5,471	14,486	17,003	16,429	33,432
Fiji	13,541	12,218	25,759	20,677	23,584	44,261
France	5,402	4,072	9,474	8,670	8,598	17,268
Germany	28,594	21,676	50,270	52,412	55,808	108,220
Greece	25,096	15,039	40,135	58,771	57,660	116,431
Hong Kong (SAR of China)	16,740	14,984	31,724	32,533	34,589	67,122
India	32,866	21,419	54,285	50,443	45,009	95,452
Indonesia	9,821	9,222	19,043	21,954	25,204	47,158
Ireland	16,349	12,636	28,985	25,979	24,256	50,235
Italy	50,712	26,003	76,715	114,848	103,870	218,718
Korea, Republic of (South)	7,603	6,324	13,927	17,972	20,928	38,900
Lebanon	18,676	7,470	26,146	37,112	34,237	71,349
Macedonia	12,939	9,227	22,166	22,385	21,142	43,527
Malaysia	22,268	22,435	44,703	36,359	42,499	78,858
Malta	12,244	7,214	19,458	24,396	22,602	46,998
Netherlands	22,660	15,123	37,783	43,174	40,150	83,324
New Zealand	121,582	96,007	217,589	180,283	175,482	355,765
Philippines	22,601	36,505	59,106	35,817	68,125	103,942
Poland	12,370	11,050	23,420	27,351	30,759	58,110
Singapore	7,590	7,756	15,346	15,406	18,079	33,485
South Africa	25,675	21,538	47,213	38,920	40,505	79,425
Sri Lanka	18,073	12,417	30,490	27,024	26,437	53,461
Turkey	7,702	3,877	11,579	15,370	14,451	29,821
United Kingdom	310,333	235,867	546,200	519,167	517,078	1,036,245
United States of America	16,141	13,318	29,459	27,470	26,224	53,694
Viet Nam	43,259	30,953	74,212	75,029	79,802	154,831
Yugoslavia, Federal Republic	13,102	9,535	22,637	28,586	26,779	55,365
Born elsewhere overseas	181,154	136,734	317,888	349,700	358,369	708,069
Not stated	72,747	55,252	127,999	525,977	508,143	1,034,120
Overseas Visitors				95,475	107,626	203,101
Total	4,546,783	3,751,823	8,298,606	9,365,941	9,606,409	18,972,350

OVERSEAS-BORN WORKERS BY REGION/COUNTRY & INDUSTRY - 2001

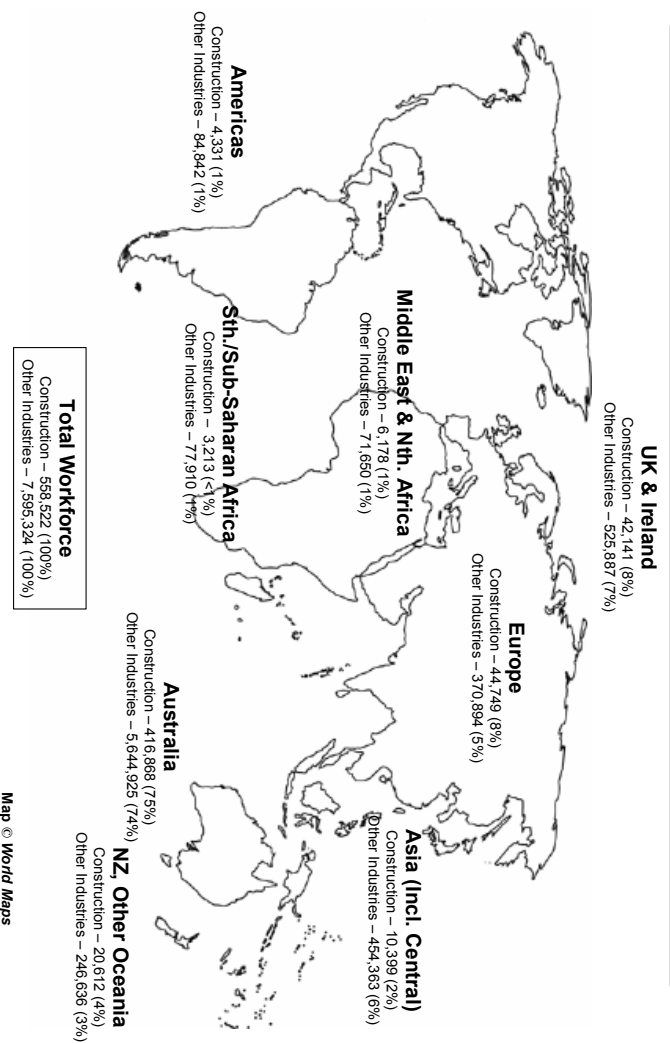
There are significant differences in the participation of Overseas-born workers in various Industries. At the time of the 2001 Census Australian-born workers represented a slightly higher proportion of the Construction Industry workforce than was evident for Other Industries as a whole (75% and 74% respectively). There are also differences evident between these Industry groupings when Major Regions and Countries of Birth are considered. The UK and Ireland-born group represents the largest number of Overseas-born persons in Other Industries (7% overall) but European-born persons are more numerous in Construction (with 8%). New Zealand-born workers are the third-largest Overseas-born group in the Construction Industry (with 4%), whilst in Other Industries they are much less prominent than Asian-born workers (with 3% and 6% of the Other Industries total respectively).

These patterns of workforce participation by Birthplace Region/Country are summarised in the following table and chart.

Employed Persons by Birthplace Region/Country and Industry – Australia - 2001

Region/Country	Industry			Total
	Construction	Other Industries	Not stated	
Australia	416,868	5,644,925	96,707	6,158,500
NZ and Other Oceania	20,612	246,636	4,859	272,107
UK and Ireland	42,141	525,887	7,114	575,142
Europe	44,749	370,894	10,534	426,177
Middle East & North Africa	6,178	71,650	2,480	80,308
Asia (Incl Central/former USSR)	10,399	454,363	12,709	477,471
Americas	4,331	84,842	1,560	90,733
South/Sub-Saharan Africa	3,213	77,910	1,160	82,283
Not elsewhere classified	361	6,858	536	7,755
Not stated	9,670	111,359	6,971	128,000
Total	558,522	7,595,324	144,630	8,298,476

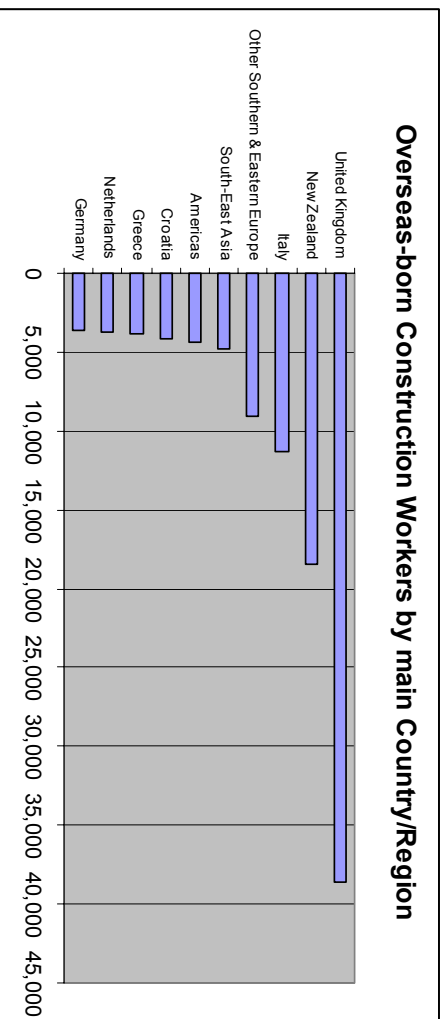
Construction Workers by Birthplace Region/Country & Industry - 2001



The table and graph below show the 2001 Census employed persons by Birthplace and Industry data in more detail. The prominence of certain Regions and individual Countries in the Construction Industry is even more pronounced in this table. Apart from the very large representation in this Industry by persons born in the United Kingdom and New Zealand, it is also apparent that significant numbers of persons born in the individual Countries of Italy, Croatia, Greece, The Netherlands, Germany, Ireland and Lebanon are also prominently represented.

Employed Persons by Birthplace Country and Industry – Australia - 2001

Country	Industry			Total
	Construction	Other Industries	Not stated	
Australia	416,868	5,644,925	96,707	6,158,500
New Zealand	18,452	195,814	3,352	217,618
Other Oceania & Antarctica	2,160	50,822	1,507	54,489
United Kingdom	38,561	500,982	6,663	546,206
Ireland	3,580	24,905	451	28,936
Germany	3,649	45,729	872	50,250
Netherlands	3,680	33,461	653	37,794
Other North-West Europe	3,355	36,785	689	40,829
Italy	11,328	63,197	2,170	76,695
Greece	3,869	35,090	1,208	40,167
Bosnia and Herzegovina	1,222	6,593	264	8,079
Croatia	4,161	16,845	619	21,625
Former Yugoslav Republic of Macedonia	1,367	20,204	638	22,209
Slovenia	328	1,684	55	2,067
Yugoslavia, Federal Republic of	2,693	19,283	660	22,636
Other Southern & Eastern Europe	9,097	92,023	2,706	103,826
Lebanon	3,313	21,930	928	26,171
Other Middle East	2,153	33,254	1,169	36,576
North Africa	712	16,466	383	17,561
South-East Asia	4,783	237,379	6,824	248,986
China (excl. SARs and Taiwan)	2,445	58,811	2,121	63,377
Korea	758	12,453	735	13,946
Other North-East Asia	750	49,022	896	50,668
Southern & Central Asia (excl. fmr. USSR)	1,613	95,737	2,107	99,457
Southern & Central Asia (fmr. USSR part)	50	961	26	1,037
Americas	4,331	84,842	1,560	90,733
South Africa	2,076	44,555	557	47,188
Other Sub-Saharan Africa	1,137	33,355	603	35,095
Not elsewhere classified	361	6,858	536	7,755
Not stated	9,670	111,359	6,971	128,000
Total	558,522	7,595,324	144,630	8,298,476



In order to further delineate the differences between Industries in the background of their Overseas-born workforce, the following table was compiled. The table lists 2001 Census data on Construction workers by Country/Region and percentages of the Construction Industry workforce. The data was then sorted from highest to lowest percentages and each Country/Region was ranked in order of magnitude. Alongside the Construction Industry workforce ranking is an additional column showing the ranking of the workforce by Birthplace Country/Region for All Other Industries combined. The side-by-side relative ranking columns highlight the differences between the Industries. Where significant differences in rank are evident, the lines in the table are printed in bold italic type.

This presentation of data shows, for instance, that persons of Italian background are more heavily represented in Construction than in Other Industries (relative rankings of 4 and 8 respectively). The most extreme case of over-representation of workers born in a particular Country/Region in Construction is Croatia, with respective relative rankings of 8 and 23.

On the other hand, South-East Asian Born workers are less likely to be found in Construction than in Other Industries (relative rankings of 5 and 3). An even more extreme situation is the case of Southern& Central Asia, which ranked 5 in Other Industries, but 20 in Construction.

Comparison of Overseas-born workers by Country/Region of Birth and Industry

Country/Region	Construction Industry			Other Industries	
	Construction	% of Total	Rank	Rank	Rank
Australia	416,868	74.6%	1	1	1
United Kingdom	38,561	6.9%	2	2	2
New Zealand	18,452	3.3%	3	4	4
Italy	11,328	2.0%	4	8	8
Other Southern & Eastern Europe	9,097	1.6%	5	5	5
South-East Asia	4,783	0.9%	6	3	3
Americas	4,331	0.8%	7	7	7
Croatia	4,161	0.7%	8	23	23
Greece	3,869	0.7%	9	15	15
Netherlands	3,680	0.7%	10	16	16
Germany	3,649	0.7%	11	12	12
Ireland	3,580	0.6%	12	19	19
Other North-West Europe	3,355	0.6%	13	14	14
Lebanon	3,313	0.6%	14	20	20
Yugoslavia, Federal Republic of	2,693	0.5%	15	22	22
China (excl. SARs and Taiwan Province)	2,445	0.4%	16	9	9
Other Oceania & Antarctica	2,160	0.4%	17	10	10
Other Middle East	2,153	0.4%	18	18	18
South Africa	2,076	0.4%	19	13	13
Southern & Central Asia (excl. fmr. USSR)	1,613	0.3%	20	5	5
Former Yugoslav Republic of Macedonia	1,367	0.2%	21	21	21
Bosnia and Herzegovina	1,222	0.2%	22	26	26
Other Sub-Saharan Africa	1,137	0.2%	23	17	17
Korea (Democratic Peoples Rep. & Republic)	758	0.1%	24	25	25
Other North-East Asia	750	0.1%	25	11	11
North Africa	712	0.1%	26	25	25
Slovenia	328	0.1%	27	27	27
Southern & Central Asia (former USSR part)	50	0.0%	28	28	28

5. OVERSEAS-BORN WORKERS BY OCCUPATION - 2001

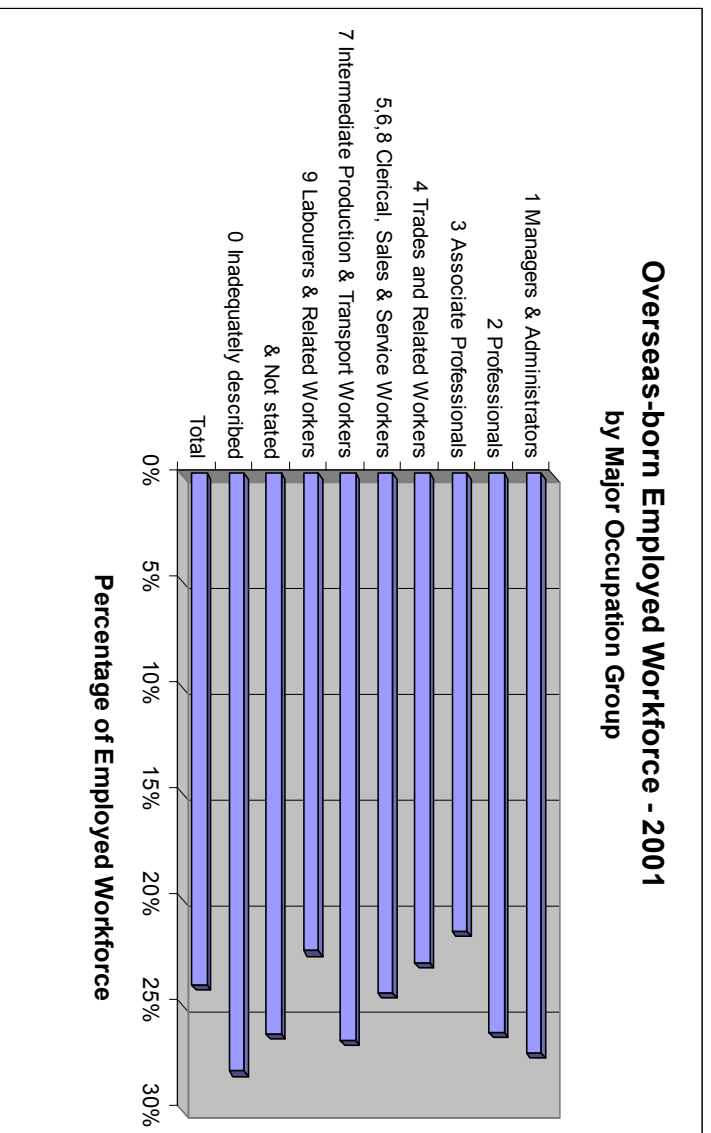
All Industries

In the Australian employed workforce as a whole, approximately one quarter (24%) were reported as having been Born Overseas in the 2001 Census. As the table below shows, the largest numbers of Overseas-born workers were in the Clerical, Sales and Service Workers Major Occupation Group. The next largest Occupation Group was Professionals, followed by Associate Professionals and Trades & Related Workers. There was a degree of variation in the proportion of Overseas-born workers in each Major Group. Professionals and Labourers & Related Workers Born Overseas had the largest proportions, both representing 27% of the Group total. At the low end of the scale, Clerical, Sales & Service Workers Born Overseas were 22% of the Group total, followed by Trades & Related Workers and Professionals, which both had 23% of the respective Occupation Group Totals.

All Employed Persons by Birthplace and Occupation Major Group – Australia - 2001

Occupation Major Group	Birthplace		Total*
	Australia	Overseas	
1 Managers & Administrators	583,325	172,398	764,825
2 Professionals	1,092,795	405,291	1,514,079
3 Associate Professionals	723,695	238,952	975,689
4 Trades and Related Workers	763,585	235,638	1,018,876
5,6,8 Clerical, Sales & Service Workers	1,895,503	533,052	2,469,021
7 Intermediate Production & Transport Workers	480,288	176,917	670,783
9 Labourers & Related Workers	504,409	196,351	717,416
0 Inadequately described & Not stated	47,733	19,453	68,962
Total	67,167	26,169	98,825
	6,158,500	2,004,221	8,298,476

* Includes Industry Not Stated, etc.



OVERSEAS-BORN WORKERS BY OCCUPATION - 2001

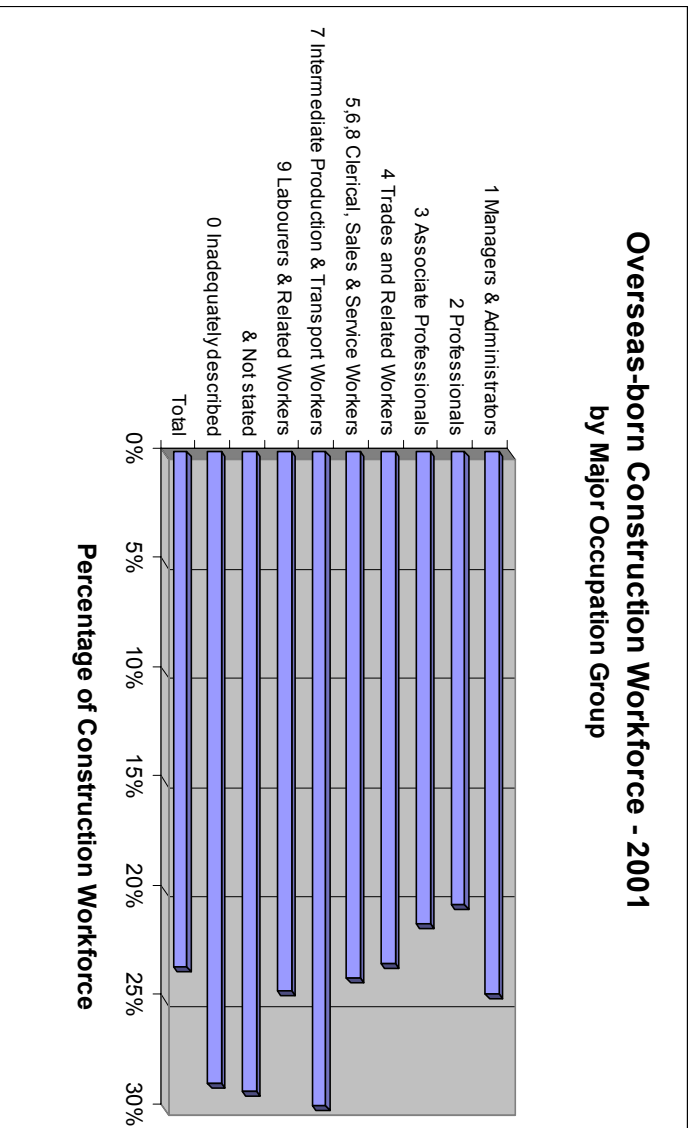
Construction Industry

In the Construction Industry, once again approximately one quarter (24%) were reported as having been Born Overseas in the 2001 Census. In the table below it can be seen that nearly half of Overseas-born Construction workers were in the Trades & Related Workers Major Occupation Group. The next largest Occupation Group was Labourers, followed by Managers & Administrators and Clerical, Sales & Service Workers. There was significant variation in the proportion of Overseas-born workers in each Major Group. Intermediate Production & Transport Workers Born Overseas had the largest proportion, representing 30%, followed by Labourers and Managers with 25% each of the Group totals. The lowest proportions of Overseas Born Construction workers were for Professionals and Associate Professionals, which had respectively 21 and 22% of their Occupation Group Totals.

Construction Workers by Birthplace and Occupation Major Group – Australia - 2001

Occupation Major Group	Birthplace		
	Australia	Overseas	Total*
1 Managers & Administrators	40,271	13,479	54,567
2 Professionals	10,573	4,587	15,326
3 Associate Professionals	29,667	9,556	39,698
4 Trades and Related Workers	200,684	63,036	268,935
5, 6, 8 Clerical, Sales & Service Workers	43,263	12,147	56,117
7 Intermediate Production & Transport Workers	40,873	10,941	52,828
9 Labourers & Related Workers	47,818	16,293	65,590
0 Inadequately described & Not stated	2,736	1,149	3,976
Total	983	435	1,485
	416,868	131,623	558,522

* Includes Industry Not Stated, etc.



Composition of workforce by Birthplace Region and Major Occupation Group

The table below (split into 2 parts) shows the Occupational composition of the Construction Industry employed workforce by Birthplace Region. For example, half the Australian-born workforce was employed in a Trade job in 2001 (48.1%), with the bulk of the remainder employed in Labouring (11.5%), Intermediate Production & Transport (9.8%) or Management/Administration (9.7%) jobs. Only 2.5% of Australian-born workers were Professionals.

The broad Occupational profiles are quite similar to the Australian-born workforce for several of the Birthplace Regions (for example, UK and Ireland, and to a lesser extent, The Americas). However the profiles for the Asian-born, New Zealander-born and South African-born workforce are significantly different. The most significant differences are highlighted with bold type in the table.

The most dramatic difference is the proportion of Professionals in the Asian-born workforce. The Asian-born Professional percentage of 11% is much higher than for any other Birthplace group and over 4 times the Australian-born percentage (2.5%). Also of note is the significantly lower than average proportion of Trades workers amongst the Asian-born workforce (37.4%, compared to 48.1% for workers born in Australia).

New Zealand-born Construction workers are more concentrated in the lesser skilled Occupation Groups of Labourers and Intermediate Production & Transport Workers (15.1% and 15% respectively).

In the South African-born Construction workforce, there is a much higher than average proportion of Professionals and Associate Professionals (6.9% and 12.2% respectively).

Percentage of Australian/Oversas-born Construction Workforce in Occupation Major Groups - 2001

Region/Country	Occupation Major Group					Total
	Managers & Administrators	Professionals	Professional Associates	Trades	Clerical, Sales & Service Wkrs	
Australia	9.7%	2.5%	7.1%	48.1%	10.4%	100.0%
NZ and Other Oceania	9.0%	2.3%	6.6%	43.0%	8.1%	100.0%
UK and Ireland	10.0%	3.1%	8.6%	49.8%	10.7%	100.0%
Europe	10.9%	2.1%	5.3%	50.8%	7.4%	100.0%
Middle East & North Africa	11.9%	4.4%	6.3%	49.9%	7.6%	100.0%
Asia (Incl Central/fmr USSR)	10.7%	11.0%	10.0%	37.4%	13.0%	100.0%
Americas	8.4%	4.7%	8.1%	48.2%	10.2%	100.0%
South/Sub-Saharan Africa	10.5%	6.9%	12.2%	43.4%	12.7%	100.0%
Total	9.8%	2.7%	7.1%	48.2%	10.0%	100.0%

Region/Country	Int Prod. & Transport Workers	Labourers & Related Workers	Inadequately described	Not stated	Total
	Australia	9.8%	11.5%	0.7%	
NZ and Other Oceania	15.0%	15.1%	0.7%	0.2%	100.0%
UK and Ireland	7.7%	9.0%	0.8%	0.2%	100.0%
Europe	7.2%	15.0%	0.9%	0.4%	100.0%
Middle East & North Africa	5.4%	13.1%	0.8%	0.5%	100.0%
Asia (Incl Central/fmr USSR)	6.2%	10.1%	1.2%	0.5%	100.0%
Americas	6.3%	12.9%	0.9%	0.4%	100.0%
South/Sub-Saharan Africa	4.6%	8.2%	1.3%	0.2%	100.0%
Total	9.5%	11.7%	0.7%	0.3%	100.0%

OVERSEAS-BORN CONSTRUCTION WORKERS – DETAILED OCCUPATION - 2001

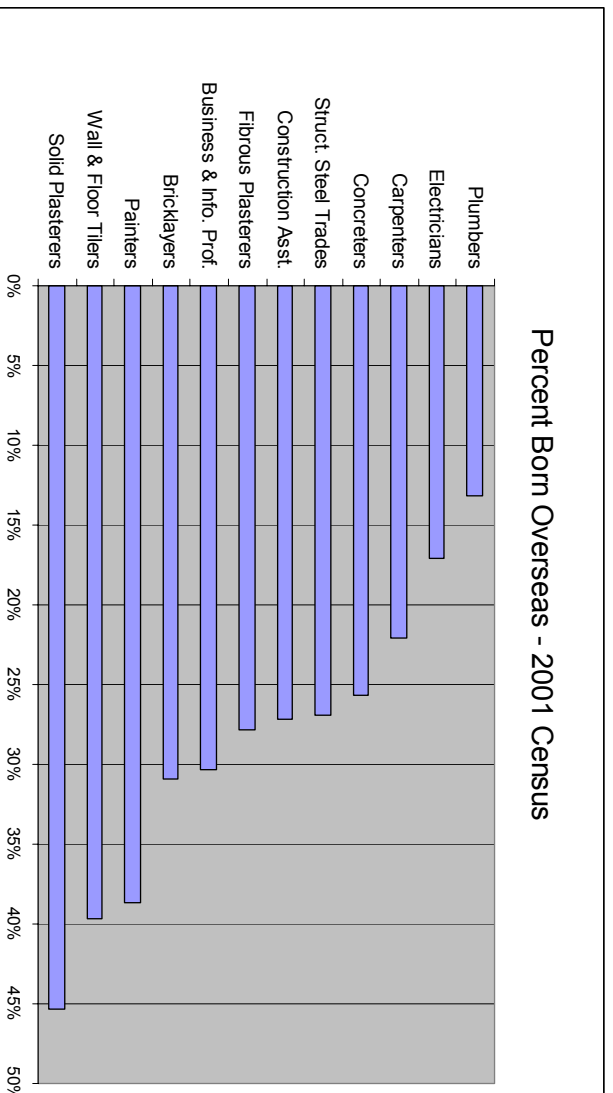
The table below shows the Overseas-born Construction workforce in 2001 for key Occupations. A full listing of all Occupations in ASCO Classification can be found in Appendix 3.

It can be seen in the table that over 50% of the Overseas-born Construction workforce was in just 10 Occupations: Carpentry through to Concreters (not including the broader grouping of Clerical Workers). On-site Trades workers and their assistants are most prominent, along with Building and Construction Managers. Off-site workers such as Clerical workers, Secretaries, Business Associate Professionals are not as prominent.

Overseas-born Construction workers by Detailed Occupation/Minor Group – 2001		
Occupation/Minor Group	Number	Percent
4411 Carpentry and Joinery Tradespersons	11,909	9%
4421 Painters and Decorators	11,737	9%
1191 Building and Construction Managers	9,029	7%
4311 Electricians	7,082	5%
4414 Bricklayers	5,845	4%
4431 Plumbers	5,240	4%
9916 Construction and Plumber's Assistants	5,177	4%
61 Intermediate Clerical Workers	4,646	4%
4412 Fibrous Plasterers	4,511	3%
4416 Wall and Floor Tilers and Stonemasons	4,251	3%
9917 Concreters	4,241	3%
3121 Building, Architectural and Surveying Ass. Prof.	4,077	3%
51 Secretaries and Personal Assistants	3,575	3%
32 Business and Administration Associate Professionals	3,456	3%
7111 Mobile Construction Plant Operators	2,915	2%
99 Other Labourers and Related Workers, nec	2,889	2%
7913 Structural Steel Construction Workers	2,198	2%
59 Other Advanced Clerical and Service Workers	2,156	2%
12 Specialist Managers	2,070	2%
22 Business and Information Professionals	1,869	1%
46 Skilled Agricultural and Horticultural Workers	1,514	1%
11 Generalist managers, nec	1,475	1%
7914 Insulation and Home Improvements Installers	1,361	1%
4312 Refrigeration and Airconditioning Mechanics	1,324	1%
4423 Floor Finishers	1,318	1%
73 Road and Rail Transport Drivers	1,290	1%
4122 Structural Steel and Welding Tradespersons	1,190	1%
0 Inadequately described	1,149	1%
4415 Solid Plasterers	1,139	1%
4413 Roof Slaters and Tilers	1,049	1%
72 Intermediate Machine Operators	1,035	1%
41 Mechanical and Fabrication Engineering Trades, nec	1,002	1%
Other Occupations	17,904	14%
Total	131,623	100%

Construction Industry Workers in 2001 Born Overseas
(Number/percent excludes workers whose birthplace was not stated)

Selected Occupation categories based on number or percentage of workforce overseas-born	No. Born Overseas	% Born Overseas
4411 Carpentry and Joinery Tradespersons	11926	22.1%
4421 Painters and Decorators	11779	38.7%
4311 Electricians	7100	17.1%
4414 Bricklayers	5851	30.9%
4431 Plumbers	5250	13.2%
9916 Construction and Plumber's Assistants	5186	27.2%
4412 Fibrous Plasterers - - Included in "Plasterers All Types"	4534	27.8%
4415 Solid Plasterers - Included in "Plasterers All Types"	1148	45.3%
4416 Wall and Floor Tilers and Stonemasons	4266	39.7%
9917 Concreters	4251	25.7%
22 Business and Information Professionals	1879	30.3%
4122 Structural Steel and Welding Tradespersons	1196	26.9%
2124 Civil Engineers	854	28.4%
91 Cleaners	725	32.5%
Total of selected group	66675	



OVERSEAS-BORN CONSTRUCTION WORKERS - LICENSED OCCUPATIONS - 2001

Many on-site Construction Occupations are subject to regulation by government authorities. These regulatory requirements, where applicable, generally entail compulsory registration or licensing with State government bodies. In Rod Stinson's authoritative "Job Markets Australia – 2003" publication, the following on-site Construction Occupations are listed as requiring licensing:

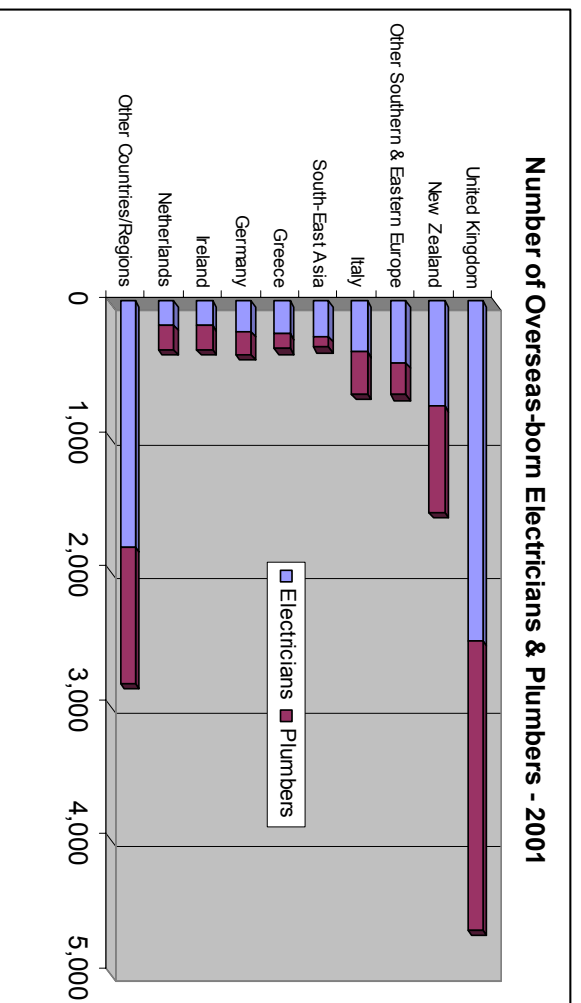
- Electricians
- Plumbers
- Mobile Plant Operators (various kinds)
- Drivers (various kinds)
- Crane, Hoist and Lift Operators
- Concrete Pump Operators

The Driving/Operating Occupations are regulated in a somewhat similar manner to all public road users: they must already possess a recognised license or be tested for competence before being issued with a license.

Licensing of Electricians and Plumbers involves a more stringent procedure because of the significant public health and safety issues involved.

Overseas-born Construction Workers in the Driving/Operating Occupations with adequate previous experience in the home country should not experience special difficulty in obtaining their Australian licenses. It is not so straightforward for Electricians and Plumbers because of the more complicated sets of government regulations involved and the variation in these from country to country. The theory component of testing (e.g. knowledge of local regulations and rules) would also demand competency in English.

Analysis of data from the 2001 Census shows that a large proportion of Overseas-born Electricians and Plumbers in the Construction Industry were from the English-speaking countries of the United Kingdom and New Zealand. As can be seen in the chart below, approximately half of all Overseas-born Electricians and Plumbers were from these 2 countries (47% for Electricians and 56% for Plumbers).



6. OVERSEAS-BORN WORKERS BY YEAR OF ARRIVAL – 2001

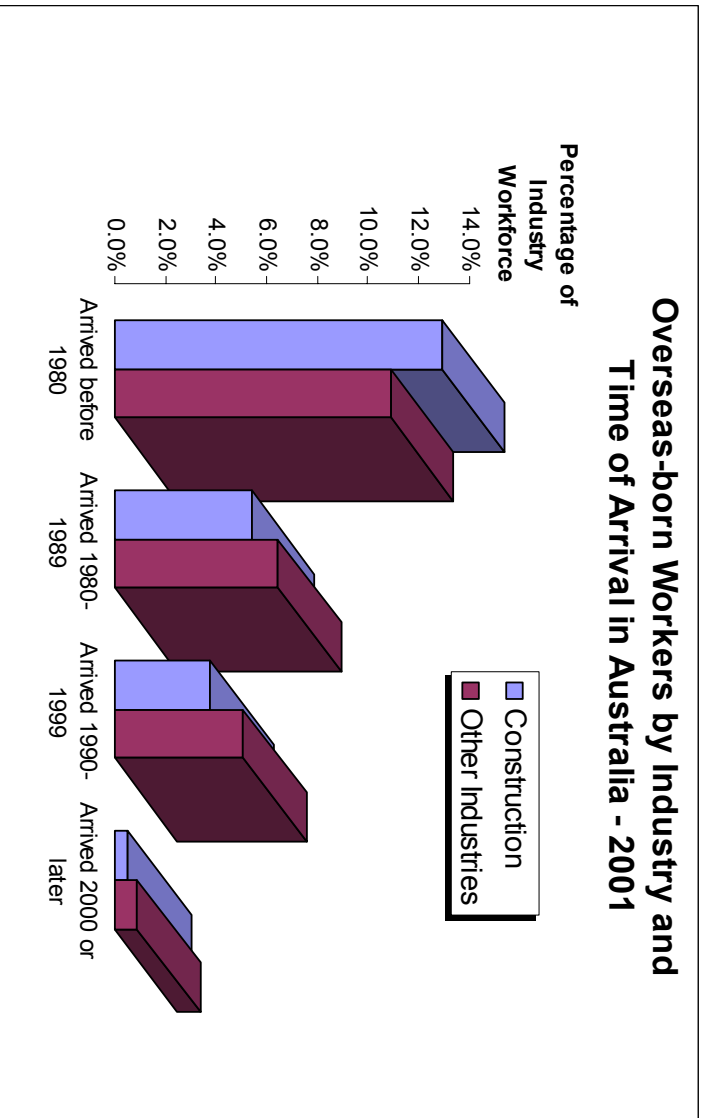
The 2001 Census form included a question on Year of Arrival in Australia for Overseas-born persons. The following table shows the number of employed persons by Industry (Construction and Other) and grouped Year of Arrival up to 1999, with those arriving in 2000 or 2001 shown separately.

As might be expected, the largest proportion of workers arrived in the period up to 1980. However there was a significant difference in the proportions for Construction and Other Industries: A total of 55% of Overseas-born Construction workers arrived prior to 1980, compared to 45% of those working in Other Industries.

Overseas-born Workers by Time of Arrival in Australia and Industry – 2001 Census

Year of Arrival	Other Industries		Total
	Construction	Not stated	
Arrived before 1980	72,237	15,450	916,710
Arrived 1980-1989	30,243	490,414	530,651
Arrived 1990-1994	9,453	185,461	199,572
Arrived 1995-1999	11,600	200,366	217,119
Arrived 2000	2,066	46,652	49,919
Arrived 2001	817	20,957	22,371
Not stated	5,577	66,261	75,737
Not applicable	426,529	5,756,190	6,286,397
Total	558,522	7,595,324	8,298,476

The increased propensity of more recently arrived migrants to work in Industries other than Construction is also evident in the graph of total workforce percentages below.



2001 Census				
Years since Arrival	Construction	Other		Total
		Industries	Not stated	
22 years or more	72,237	829,023	15,450	916,710
12 to 21 years	30,243	490,414	9,994	530,651
7 to 11 years	9,453	185,461	4,658	199,572
2 to 6 years	11,600	200,366	5,153	217,119
Up to 1 year	2,883	67,609	1,798	72,290
Not stated	5,577	66,261	3,899	75,737
Total	131,993	1,839,134	40,952	2,012,079

1996 Census				
Years since Arrival	Construction	Other		Total
		Industries	Not stated	
22 years or more	84,683	1,028,763	22,009	1,135,455
12 to 21 years	12,260	201,247	4,371	217,878
7 to 11 years	14,779	260,239	5,816	280,834
2 to 6 years	5,924	128,945	3,297	138,166
Up to 1 year	2,438	52,024	1,637	56,099
Not stated	2,570	30,042	1,994	34,606
Total	122,654	1,701,260	39,124	1,863,038

1991 Census				
Years since Arrival	Construction	Other		Total
		Industries	Not stated	
22 years or more	64,757	735,897	63,921	864,575
12 to 21 years	23,411	362,914	29,782	416,107
7 to 11 years	10,432	173,494	15,596	199,522
2 to 6 years	11,316	195,099	19,752	226,167
Up to 1 year	2,145	51,464	6,151	59,760
Not stated	1,953	23,401	4,520	29,874
Total	114,014	1,542,269	139,722	1,796,005

1986 Census				
Years since Arrival	Construction	Other		Total
		Industries	Not stated	
22 years or more	53,156	546,549	16,579	616,284
12 to 21 years	45,330	518,954	16,788	581,072
7 to 11 years	8,748	140,057	4,819	153,624
2 to 6 years	11,842	179,200	6,571	197,613
Up to 1 year	3,586	48,731	2,052	54,369
Not stated	3,122	30,570	2,588	36,280
Total	125,784	1,464,061	49,397	1,639,242

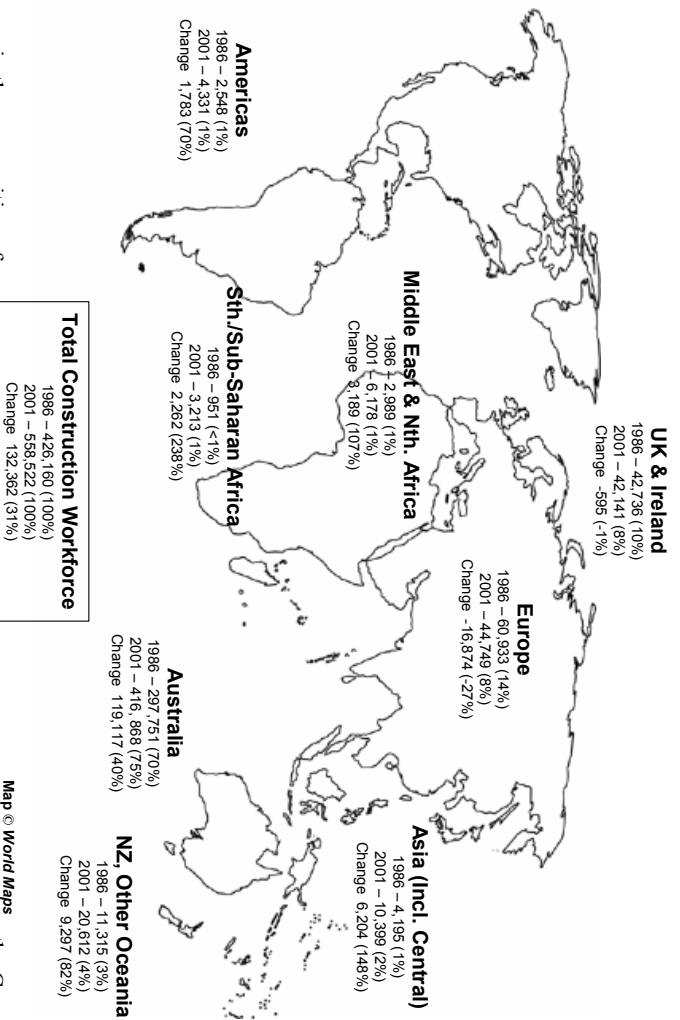
7. OVERSEAS-BORN CONSTRUCTION WORKERS – KEY TRENDS 1986 TO 2001

One of the key objectives of the Labour Force Challenges in the Australian Building and Construction Industry project was to document developments over time, in particular, the contribution of Migrant Workers to the Industry's skills in infrastructure. The achievement of this objective has proved to be a difficult and frustrating endeavour because of changes to the Occupation and Industry coding systems employed by ABS in the Censuses during the project's data analysis reference period of 1986 to 2001, as well as procedural changes in applying the Industry codes. These difficulties have been explained at some length in the project's first Working Paper The structure of the Construction Industry workforce: past trends and current patterns. Despite the problems, some analysis of broad changes in the Construction Industry Migrant Workforce between 1986 and 2001 was able to be undertaken. In addition, more detailed analysis was carried out for individual Occupations which were not unduly influenced by inter-censal coding changes.

The chart below shows the Construction Industry workforce in 1986 and 2001 broken down by Major Birthplace Region. Along with the numbers in each Census year are included the percentage of the total in brackets, as well as the change over the period in numeric and percentage terms.

Of interest is the fact that the Australia-born proportion increased from 70% to 75% over the period. There was also a striking fall in the number (and proportion) of persons in the Industry born in Europe (down 16,000 or 27%). There was from a very slight fall in the number of UK/Ireland-born Construction workers. On the other side of the ledger, persons from New Zealand/Other Oceania rose by 9,000 (82%), Asian-born persons increased by over 6,000 (148%), Middle Eastern-born persons rose by over 3,000 (107%) and those born in South/Sub-Saharan Africa rose by over 2,000 (238%).

Construction Workers by Birthplace - Australia, Other Regions – 1986 & 2001



Map © World Maps shows the Construction Industry workforce between 1986 and 2001 for the three key on-site Major Occupation Groups. In each case significant declines in the number of workers born in the UK/Ireland and Europe are compensated by major increases in persons born elsewhere, particularly New Zealand/Other Oceania and Asia.

Construction Industry Workforce by Birthplace Region/Country – 1986 and 2001 Selected Major Occupation Groups

Region/Country	Trades and Related Workers		
	1986	2001	% Change
Australia	136,466	200,684	64.218
			47%

NZ and Other Oceania	4,924	8,859	3,935	80%
UK and Ireland	21,985	20,988	-997	-5%
Europe	30,751	22,731	-8,020	-26%
Middle East & North Africa	1,311	3,085	1,774	135%
Asia	1,440	3,889	2,449	170%
Americas	1,150	2,089	939	82%
South Africa	496	1,395	899	181%
Total *	199,831	268,935	69,104	35%

Intermediate Production & Transport Workers

Region/Country	1986	2001	Change	% Change
Australia	32,081	40,873	8,792	27%
NZ and Other Oceania	1,535	3,088	1,553	101%
UK and Ireland	3,514	3,256	-258	-7%
Europe	4,946	3,204	-1,742	-35%
Middle East & North Africa	188	331	143	76%
Asia	227	643	416	183%
Americas	237	272	35	15%
South Africa	21	147	126	600%
Total *	43,020	52,828	9,808	23%

Labourers & Related Workers

Region/Country	1986	2001	Change	% Change
Australia	36,669	47,818	11,149	30%
NZ and Other Oceania	1,933	3,114	1,181	61%
UK and Ireland	4,576	3,784	-792	-17%
Europe	11,337	6,713	-4,624	-41%
Middle East & North Africa	347	811	464	134%
Asia	546	1,049	503	92%
Americas	443	558	115	26%
South Africa	65	264	199	306%
Total *	56,369	65,590	9,221	16%

* Totals include Inadequately Described and Not Stated.

Construction Workers in Selected Occupations by Birthplace Region – 1986 to 2001

A number of key individual Occupations (13) were selected for analysis of trends in employment (in the Construction Industry) of persons born overseas, as reported in the Censuses carried out in 1986, 1991, 1996 and 2001. The largest on-site Occupations were included, along with Civil Engineers and Business Professionals. Some Occupations were not included because of excessive difficulties in aligning ASCO1 and ASCO2 Occupation codes over the period of analysis. The notes below and tables following summarise the trends.

With the exception of Bricklayers (-1,000 or -6%), all the largest on-site Occupations selected for analysis at this level of detail increased over the 15 year period. By far the biggest increase was for Electricians (+15,000 or +56%) and there were also significant increases (of between 7,000 to 9,000) for Painters, Construction Assistants, Plumbers and Plasterers. Much smaller numeric increases were recorded for Carpenters and Concreters.

Civil Engineers (Decrease overall of 1,199 or -28%)

The decline in numbers occurred for nearly all the major Overseas Birthplace Regions, but was especially marked (around 50%) for UK, Ireland and Europe.

Business Professionals (+4,113 or +197%)

There were increases in the numbers of Business Professionals for all the major Overseas Birthplace Regions, with Asia being the most prominent (up 365%).

Structural Steel Trades (-1,138 or -20%)

Very large declines were recorded over the 15 year period for persons born in UK, Ireland and Europe, but there were small increases in persons born in New Zealand and Asia.

Electricians (+14,883 or +56%)

Increases were apparent for all the major Overseas Birthplace Regions, particularly New Zealand (+100%), Asia (+240%) and South Africa (+500%).

Carpenters (+3,979 or 8%)

There was a significant decline in the numbers of Carpenters born in the UK, Ireland and Europe (e.g. Europe was down nearly 50%), although this was offset by large increases in those born in New Zealand and Asia.

Plasterers (+7,290 or 63%)

There were strong increases in employment of persons born in most of the major Overseas Birthplace Regions, especially Asia, New Zealand and the Middle East.

Bricklayers (-1,157 or -6%)

Significant declines in the numbers of Bricklayers born in the UK, Ireland and Europe were evident, with very small partially offsetting increases in other Overseas Birthplace Regions such as New Zealand.

Floor and Wall Tilers (+6,030 or +128%)

Sizeable increases were recorded for most of the major Overseas Birthplace Regions, but there was an overwhelming increase for Tilers born in Asia (up over 3,000%).

Painters (+9,107 or 43%)

Employment increases were recorded for Painters born in all of the major Overseas Birthplace Regions, with the exception of Europe. The major increases were for those born in the Middle East (up 300%), New Zealand and Asia.

Plumbers (+8,230 or 26%)

Significant declines were recorded for Plumbers born in the UK, Ireland and Europe, although this was offset somewhat by increases for those born in New Zealand and South Africa.

Cleaners (+288 or +15%)

Over the reference period there were increases in Cleaners born in most of the major Overseas Birthplace Regions (except Europe), with the most prominent being for Asia and New Zealand.

Construction Assistants (+9,001 or +89%)

The increase for Construction Assistants may be influenced by ASCO alignment problems. All of the major Overseas Birthplace Regions showed increased employment, with the biggest proportional increases being for persons born in New Zealand and the Middle East.

Concreters (+4,053 or +33%)

There were significant declines in the numbers of Concreters born in the UK, Ireland and Europe, although this was partially offset by a sizeable increase for those born in New Zealand.

Construction Workers in Selected Occupations by Birthplace Region - 1986, 1991, 1996 & 2001

(Continued)

	Carpenters & Joiners				Change 1986 - 2001	% Change 1986 - 2001
	1986	1991	1996	2001		
Australia	34,328	34,457	36,322	41,002	6,674	19.4%
NZ and Other Oceania	1,781	1,956	1,966	2,311	530	29.8%
UK and Ireland	4,419	3,907	3,727	3,807	-612	-13.8%
Europe	8,308	5,961	4,198	4,513	-3,795	-45.7%
Middle East & North Africa	208	174	1,112	263	55	26.4%
Asia	199	317	428	399	200	100.5%
Americas	329	377	31	422	93	28.3%
South Africa	123	181	495	194	71	57.7%
Total (Incl. not stated etc.)	50,008	47,444	48,888	53,987	3,979	8.0%
Plasterers						
	1986	1991	1996	2001	Change 1986 - 2001	% Change 1986 - 2001
Australia	7,364	7,895	9,687	12,730	5,366	72.9%
NZ and Other Oceania	222	316	380	594	372	167.6%
UK and Ireland	1,189	1,097	1,206	1,383	194	16.3%
Europe	2,074	1,843	1,548	2,269	195	9.4%
Middle East & North Africa	86	85	619	317	231	268.6%
Asia	424	497	688	825	401	94.6%
Americas	67	92	0	169	102	152.2%
South Africa	29	45	179	93	64	220.7%
Total (Incl. not stated etc.)	11,538	11,913	14,523	18,828	7,290	63.2%
Bricklayers						
	1986	1991	1996	2001	Change 1986 - 2001	% Change 1986 - 2001
Australia	11,001	10,902	11,460	12,661	1,660	15.1%
NZ and Other Oceania	272	362	350	413	141	51.8%
UK and Ireland	3,712	2,835	2,750	2,610	-1,102	-29.7%
Europe	4,634	3,201	2,535	2,460	-2,174	-46.9%
Middle East & North Africa	58	56	340	126	68	117.2%
Asia	44	52	88	55	11	25.0%
Americas	68	76	12	79	11	16.2%
South Africa	97	98	151	102	5	5.2%
Total (Incl. not stated etc.)	20,064	17,628	17,903	18,907	-1,157	-5.8%
Wall & Floor Tilers						
	1986	1991	1996	2001	Change 1986 - 2001	% Change 1986 - 2001
Australia	2,315	3,554	5,167	6,235	3,920	169.3%
NZ and Other Oceania	52	112	158	188	136	261.5%
UK and Ireland	420	541	671	706	286	68.1%
Europe	1,658	1,827	1,715	2,158	500	30.2%
Middle East & North Africa	91	145	748	403	312	342.9%
Asia	13	90	308	438	425	3269.2%
Americas	108	149	6	268	160	148.1%
South Africa	19	37	271	90	71	373.7%
Total (Incl. not stated etc.)	4,713	6,478	9,162	10,743	6,030	127.9%

Construction Workers in Selected Occupations by Birthplace Region - 1986, 1991, 1996 & 2001

(Continued)

					Change	% Change
	1986	1991	1996	2001	1986 - 2001	1986 - 2001
Painters						
Australia	1986	1991	1996	2001	Change	% Change
NZ and Other Oceania	11,185	11,025	15,243	18,016	1986 - 2001	1986 - 2001
UK and Ireland	579	704	931	1,232	6,831	61.1%
Europe	3,380	2,618	3,472	3,451	653	112.8%
Middle East & North Africa	5,451	4,268	4,117	5,166	71	2.1%
Asia	232	309	1,186	960	-285	-5.2%
Americas	128	203	678	452	728	313.8%
South Africa	143	214	26	381	324	253.1%
Total (Incl. not stated etc.)	25	48	335	95	238	166.4%
	21,319	19,491	26,335	30,426	70	280.0%
					9,107	42.7%
Plumbers						
Australia	1986	1991	1996	2001	Change	% Change
NZ and Other Oceania	25,687	27,273	30,220	33,847	1986 - 2001	1986 - 2001
UK and Ireland	568	678	727	882	2001	2001
Europe	2,608	2,514	2,514	2,336	8,160	31.8%
Middle East & North Africa	2,241	1,735	1,324	1,416	314	55.3%
Asia	111	119	349	163	-272	-10.4%
Americas	76	111	149	162	-825	-36.8%
South Africa	70	82	25	114	52	46.8%
Total (Incl. not stated etc.)	55	101	210	167	86	113.2%
	31,563	32,684	35,996	39,793	44	62.9%
					112	203.6%
					8,230	26.1%
Cleaners						
Australia	1986	1991	1996	2001	Change	% Change
NZ and Other Oceania	1,211	1,387	1,392	1,466	1986 - 2001	1986 - 2001
UK and Ireland	47	76	89	97	255	21.1%
Europe	179	172	179	170	50	106.4%
Middle East & North Africa	400	291	206	257	-9	-5.0%
Asia	17	11	66	41	-143	-35.8%
Americas	36	44	52	104	24	141.2%
South Africa	23	33	10	47	68	188.9%
Total (Incl. not stated etc.)	6	12	47	6	24	104.3%
	1,941	2,031	2,067	2,229	0	0.0%
					288	14.8%
Construction Assistants						
Australia	1986	1991	1996	2001	Change	% Change
NZ and Other Oceania	7,113	5,699	10,067	13,475	1986 - 2001	1986 - 2001
UK and Ireland	379	313	675	1,075	2001	2001
Europe	961	669	1,036	1,232	6,362	89.4%
Middle East & North Africa	1,218	778	1,288	1,943	696	183.6%
Asia	77	52	501	369	271	28.2%
Americas	177	161	171	275	725	59.5%
South Africa	84	100	18	206	292	379.2%
Total (Incl. not stated etc.)	16	29	154	77	98	55.4%
	10,091	7,833	14,118	19,092	122	145.2%
					61	381.3%
					9,001	89.2%

Construction Workers in Selected Occupations by Birthplace Region - 1986, 1991, 1996 & 2001
(Continued)

Concreters	1986	1991	1996	2001	Change	
					1986 - 2001	% Change 1986 - 2001
Australia	6,247	6,903	9,104	11,909	5,662	90.6%
NZ and Other Oceania	377	422	529	759	382	101.3%
UK and Ireland	615	523	558	572	-43	-7.0%
Europe	4,901	3,396	2,742	2,591	-2,310	-47.1%
Middle East & North Africa	72	97	406	139	67	93.1%
Asia	34	30	49	47	13	38.2%
Americas	74	78	6	95	21	28.4%
South Africa	9	16	105	38	29	322.2%
Total (Incl. not stated etc.)	12,474	11,496	13,690	16,527	4,053	32.5%

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- (5) Australian Bureau of Statistics, 1997. Australian Standard Classification of Occupations. Second Edition. Cat. No. 1220.0.
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APPENDIX 1

VARIABLES AND CATEGORIES FOR ABS UNPUBLISHED CENSUS TABLES IN RELATION TO COUNTRY OF BIRTH

The variables and categories selected for inclusion in the spreadsheet crossstab and SuperTable are as follows:

INDUSTRY

ANZSIC Division E Construction, Other Industries as a group, residual categories (not known, etc).

AGE GROUP

Persons aged 15 years and over.

YEAR OF ARRIVAL (Persons born overseas)

2001, 2000, 1995-1999, 1990-1994, 1980-1989, pre 1980, (and residual categories, “year not known”, etc).

COUNTRY OF BIRTH

- 1) Australia, New Zealand, Other Oceania [all separately]
- 2) North West Europe
- 3) Southern and Eastern Europe
- 4) North Africa and Middle East
- 5) South-East Asia
- 6) North-East Asia
- 7) Southern and Central Asia
- 8) Americas
- 9) Sub-Saharan Africa
- 10) Residual [not stated, etc]

Plus the country of special interest: Korea.

Plus the top ten individual countries not already included. (Ranking determined by number of overseas-born persons employed in Construction in the 2001 Census). Residual categories also to be added to the main country groupings in a similar way as Oceania (i.e. individual countries, Other).

OCCUPATION

The Occupation and Occupation group categories selected for inclusion in the Census data sets were as follows:

All the 2 digit ASCO occupation categories and the ASCO Occupation Unit Groups listed below (which were found to be significantly represented in the Construction Industry workforce in 2001).

1191 Building and Construction Managers
2100 Science, Building and Engineering Professionals, n.f.d.
2110 Natural and Physical Science Professionals, n.f.d.
2111 Chemists
2112 Geologists and Geophysicists
2113 Life Scientists
2114 Environmental and Agricultural Science Professionals
2115 Medical Scientists
2119 Other Natural and Physical Science Professionals
2120 Building and Engineering Professionals, n.f.d.
2121 Architects and Landscape Architects
2122 Quantity Surveyors
2123 Cartographers and Surveyors
2124 Civil Engineers
2125 Electrical and Electronics Engineers
2126 Mechanical, Production and Plant Engineers
2127 Mining and Materials Engineers
2128 Engineering Technologists
2129 Other Building and Engineering Professionals
3100 Science, Engineering and Related Associate Professionals, n.f.d.
3110 Medical and Science Technical Officers, n.f.d.
3111 Medical Technical Officers
3112 Science Technical Officers
3120 Building and Engineering Associate Professionals, n.f.d.
3121 Building, Architectural and Surveying Associate Professionals
3122 Civil Engineering Associate Professionals
3123 Electrical Engineering Associate Professionals
3124 Electronics Engineering Associate Professionals
3125 Mechanical Engineering Associate Professionals
3129 Other Building and Engineering Associate Professionals
4121 General Fabrication Engineering Tradespersons
4122 Structural Steel and Welding Tradespersons
4124 Sheetmetal Tradespersons
4311 Electricians
4312 Refrigeration and Airconditioning Mechanics
4316 Communications Tradespersons
4400 Construction Tradespersons, n.f.d.
4410 Structural Construction Tradespersons, n.f.d.
4411 Carpentry and Joinery Tradespersons
4412 Fibrous Plasterers
4413 Roof Slaters and Tilers
4414 Bricklayers
4415 Solid Plasterers
4416 Wall and Floor Tilers and Stonemasons
4420 Final Finishes Construction Tradespersons, n.f.d.
4421 Painters and Decorators
4422 Signwriters
4423 Floor Finishers
4431 Plumbers
4982 Glass Tradespersons
7110 Mobile Plant Operators, n.f.d.
7111 Mobile Construction Plant Operators
7112 Forklift Drivers
7119 Other Mobile Plant Operators

7122 Crane, Hoist and Lift Operators
7129 Other Intermediate Stationary Plant Operators
7912 Blasting Workers
7913 Structural Steel Construction Workers
7914 Insulation and Home Improvements Installers
9910 Mining, Construction and Related Labourers, n.f.d
9911 Mining Support Workers and Driller's Assistants
9912 Earthmoving Labourers
9913 Paving and Surfacing Labourers
9914 Survey Hands
9915 Railway Labourers
9916 Construction and Plumber's Assistants
9917 Concreters
9918 Electrical and Telecommunications Trades Assistants
9919 Other Mining, Construction and Related Labourers
0998 Inadequately described
&&&& Not stated
@@@ Not applicable
VVVV Overseas visitor

APPENDIX 2

2001 Census - Employed Persons Born in Australia – Industry by Detailed Occupation (Part 1 of 3)

Occupation	Construction	Other Industries	Total*
10 Managers and Administrators, nfd	2,071	26,404	29,024
1191 Building and Construction Managers	28,536	3,770	32,623
11 Generalist managers, nec	3,834	85,792	89,897
12 Specialist Managers	5,528	253,095	259,148
13 Farmers and Farm Managers	302	170,446	172,633
20 Professionals, nfd	128	12,966	13,156
2100 Science, Building and Engineering Professionals, nfd	15	308	326
2110 Natural and Physical Science Professionals, nfd	5	2,710	2,729
2111 Chemists	7	3,398	3,427
2112 Geologists and Geophysicists	29	3,221	3,254
2113 Life Scientists	0	3,611	3,621
2114 Environmental and Agricultural Science Professionals	116	13,690	13,849
2115 Medical Scientists	0	7,407	7,418
2119 Other Natural and Physical Science Professionals	3	2,100	2,107
2120 Building and Engineering Professionals, nfd	596	10,759	11,432
2121 Architects and Landscape Architects	551	8,519	9,105
2122 Quantity Surveyors	200	577	781
2123 Cartographers and Surveyors	373	5,993	6,395
2124 Civil Engineers	2,126	8,600	10,750
2125 Electrical and Electronics Engineers	426	8,656	9,106
2126 Mechanical, Production and Plant Engineers	278	5,975	6,274
2127 Mining and Materials Engineers	50	2,028	2,083
2128 Engineering Technologists	11	264	275
2129 Other Building and Engineering Professionals	75	3,847	3,932
22 Business and Information Professionals	4,268	292,286	297,535
23 Health Professionals	87	203,149	204,307
24 Education Professionals	103	284,202	285,299
25 Social, Arts and Miscellaneous Professionals	1,126	193,374	195,634
30 Associate Professionals, nfd	120	2,282	2,415
3100 Science, Engineering and Related Associate Professionals, nfd	69	2,998	3,085
3110 Medical and Science Technical Officers, nfd	43	2,403	2,463
3111 Medical Technical Officers	3	9,842	9,873
3112 Science Technical Officers	110	11,288	11,427
3120 Building and Engineering Associate Professionals, nfd	562	5,878	6,470
3121 Building, Architectural and Surveying Associate Professionals	12,195	12,492	24,754
3122 Civil Engineering Associate Professionals	621	3,266	3,898
3123 Electrical Engineering Associate Professionals	734	3,638	4,384
3124 Electronics Engineering Associate Professionals	554	9,743	10,327
3125 Mechanical Engineering Associate Professionals	104	2,220	2,330
3129 Other Building and Engineering Associate Professionals	160	5,182	5,355
32 Business and Administration Associate Professionals	11,485	246,901	259,442
33 Managing Supervisors (Sales and Service)	2,249	256,523	259,824
34 Health and Welfare Associate Professionals	27	43,189	43,552
39 Other Associate Professionals	631	72,923	74,096
40 Tradespersons and Related Workers, nfd	1,257	8,435	9,864
4121 General Fabrication Engineering Tradespersons	55	1,005	1,065
4122 Structural Steel and Welding Tradespersons	3,180	32,363	35,811
4124 Sheetmetal Tradespersons	273	5,116	5,436
41 Mechanical and Fabrication Engineering Tradespersons, nec	3,457	77,336	81,224
42 Automotive Tradespersons	1,255	89,326	91,384

2001 Census - Employed Persons Born in Australia – Industry by Detailed Occupation (Continued – Part 2 of 3)

Occupation	Construction		Other		Total*
	Construction	Other	Construction	Other	
4311 Electricians	33,775	26,711	61,005		
4312 Refrigeration and Airconditioning Mechanics	5,500	3,964	9,520		
4316 Communications Tradespersons	1,429	14,576	16,078		
43 Electrical and Electronics Tradespersons, nec	2,519	20,167	22,799		
4400 Construction Tradespersons, nfd	643	183	834		
4410 Structural Construction Tradespersons, nfd	1,473	223	1,705		
4411 Carpentry and Joinery Tradespersons	41,002	13,794	55,391		
4412 Fibrous Plasterers	11,387	675	12,270		
4413 Roof Slaters and Tilers	4,304	390	4,777		
4414 Bricklayers	12,661	536	13,407		
4415 Solid Plasterers	1,343	83	1,445		
4416 Wall and Floor Tilers and Stonemasons	6,235	1,768	8,129		
4420 Final Finishes Construction Tradespersons, nfd	38	47	85		
4421 Painters and Decorators	18,016	2,622	21,033		
4422 Signwriters	73	4,425	4,513		
4423 Floor Finishers	3,890	1,436	5,396		
4431 Plumbers	33,847	5,811	40,133		
45 Food Tradespersons	66	59,766	60,354		
46 Skilled Agricultural and Horticultural Workers	8,968	48,951	58,731		
4982 Glass Tradespersons	1,776	3,107	4,914		
49 Other Tradespersons and Related Workers, nec	2,262	133,055	136,282		
50 Advanced Clerical and Service Workers, nfd	45	563	611		
51 Secretaries and Personal Assistants	11,996	119,409	132,343		
59 Other Advanced Clerical and Service Workers	8,116	96,916	105,889		
60 Intermediate Clerical, Sales and Service Workers, nfd	47	3,299	3,363		
61 Intermediate Clerical Workers	17,406	539,623	560,381		
62 Intermediate Sales and Related Workers	1,521	121,055	123,009		
63 Intermediate Service Workers	370	350,371	354,926		
70 Intermediate Production and Transport Workers, nfd	830	5,285	6,163		
7110 Mobile Plant Operators, nfd	69	240	309		
7111 Mobile Construction Plant Operators	17,591	10,009	27,812		
7112 Forklift Drivers	252	19,967	20,364		
7119 Other Mobile Plant Operators	694	11,533	12,324		
7122 Crane, Hoist and Lift Operators	1,328	3,865	5,223		
7129 Other Intermediate Stationary Plant Operators	957	8,445	9,447		
71 Intermediate Plant Operators, nec	1,447	17,329	18,935		
72 Intermediate Machine Operators	2,480	43,839	46,755		
73 Road and Rail Transport Drivers	6,376	169,686	177,766		
7912 Blasting Workers	69	484	556		
7913 Structural Steel Construction Workers	3,473	2,451	5,997		
7914 Insulation and Home Improvements Installers	3,687	3,474	7,236		
79 Other Intermediate Production and Transport Workers, nec	1,620	138,749	141,401		
80 Elementary Clerical, Sales and Service Workers, nfd	13	1,551	1,581		
81 Elementary Clerks	745	54,684	55,907		
82 Elementary Sales Workers	2,041	482,977	488,503		
83 Elementary Service Workers	963	66,997	68,990		
90 Labourers and Related Workers, nfd	2,145	16,919	20,015		
91 Cleaners	1,466	116,332	120,273		
92 Factory Labourers	1,331	112,335	114,551		
9910 Mining, Construction and Related Labourers, nfd	273	213	492		
9911 Mining Support Workers and Driller's Assistants	224	1,739	1,978		

2001 Census - Employed Persons Born in Australia – Industry by Detailed Occupation (Continued – Part 3 of 3)

Occupation	Other		Total*
	Construction	Industries	
9912 Earthmoving Labourers	1,047	834	1,915
9913 Paving and Surfacing Labourers	2,670	1,666	4,390
9914 Survey Hands	126	1,373	1,508
9915 Railway Labourers	795	2,194	3,033
9916 Construction and Plumber's Assistants	13,475	4,528	18,182
9917 Concreters	11,909	3,014	15,135
9918 Electrical and Telecommunications Trades Assistants	770	640	1,415
9919 Other Mining, Construction and Related Labourers	3,382	3,137	6,620
99 Other Labourers and Related Workers, nec	8,205	184,538	194,902
0 Inadequately described	2,736	42,430	47,733
& Not stated	983	16,446	67,167
Total	416,868	5,644,925	6,158,500

* Total includes Not Stated, etc

APPENDIX 3

2001 Census - Employed Persons Born Overseas – Industry by Detailed Occupation (Part 1 of 3)

Occupation	Construction	Industries		Total*
		Other	Other	
10 Managers and Administrators, nfd	850	10,881	11,979	
1191 Building and Construction Managers	9,029	1,241	10,376	
11 Generalist managers, nec	1,475	36,660	38,283	
12 Specialist Managers	2,070	90,290	92,577	
13 Farmers and Farm Managers	55	18,807	19,183	
20 Professionals, nfd	31	6,002	6,073	
2100 Science, Building and Engineering Professionals, nfd	0	162	162	
2110 Natural and Physical Science Professionals, nfd	0	1,965	1,983	
2111 Chemists	9	1,902	1,923	
2112 Geologists and Geophysicists	6	1,790	1,799	
2113 Life Scientists	0	1,567	1,567	
2114 Environmental and Agricultural Science Professionals	21	2,705	2,732	
2115 Medical Scientists	3	3,569	3,585	
2119 Other Natural and Physical Science Professionals	3	912	918	
2120 Building and Engineering Professionals, nfd	327	6,618	7,024	
2121 Architects and Landscape Architects	264	3,603	3,876	
2122 Quantity Surveyors	146	640	789	
2123 Cartographers and Surveyors	106	1,182	1,291	
2124 Civil Engineers	851	3,559	4,422	
2125 Electrical and Electronics Engineers	239	5,001	5,263	
2126 Mechanical, Production and Plant Engineers	173	3,194	3,374	
2127 Mining and Materials Engineers	28	1,058	1,092	
2128 Engineering Technologists	3	160	163	
2129 Other Building and Engineering Professionals	40	1,786	1,829	
22 Business and Information Professionals	1,869	132,178	134,660	
23 Health Professionals	40	83,169	83,927	
24 Education Professionals	25	72,521	72,949	
25 Social, Arts and Miscellaneous Professionals	403	62,962	63,890	
30 Associate Professionals, nfd	29	736	771	
3100 Science, Engineering and Related Associate Professionals, nfd	23	1,188	1,211	
3110 Medical and Science Technical Officers, nfd	18	1,145	1,184	
3111 Medical Technical Officers	0	3,859	3,880	
3112 Science Technical Officers	22	3,727	3,758	
3120 Building and Engineering Associate Professionals, nfd	259	2,674	2,960	
3121 Building, Architectural and Surveying Associate Professionals	4,077	3,903	7,992	
3122 Civil Engineering Associate Professionals	173	964	1,140	
3123 Electrical Engineering Associate Professionals	234	1,104	1,350	
3124 Electronics Engineering Associate Professionals	229	4,085	4,335	
3125 Mechanical Engineering Associate Professionals	70	1,152	1,222	
3129 Other Building and Engineering Associate Professionals	47	1,689	1,740	
32 Business and Administration Associate Professionals	3,456	77,463	81,371	
33 Managing Supervisors (Sales and Service)	660	99,633	101,017	
34 Health and Welfare Associate Professionals	12	11,123	11,229	
39 Other Associate Professionals	247	13,464	13,792	
40 Tradespersons and Related Workers, nfd	370	2,883	3,312	
4121 General Fabrication Engineering Tradespersons	19	269	291	
4122 Structural Steel and Welding Tradespersons	1,190	10,537	11,907	
4124 Sheetmetal Tradespersons	141	1,536	1,686	
41 Mechanical and Fabrication Engineering Tradespersons, nec	1,002	27,662	28,849	
42 Automotive Tradespersons	338	21,277	21,908	

201 Census - Employed Persons Born Overseas – Industry by Detailed Occupation (Continued – Part 2 of 3)

Occupation	Construction		Other Industries		Total*
	Construction	Industries	Other Industries	Other Industries	
4311 Electricians	7,082	7,136		14,369	
4312 Refrigeration and Airconditioning Mechanics	1,324	1,076		2,421	
4316 Communications Tradespersons	402	3,981		4,404	
43 Electrical and Electronics Tradespersons, nec	831	8,016		8,889	
4400 Construction Tradespersons, nfd	238	52		293	
4410 Structural Construction Tradespersons, nfd	363	60		429	
4411 Carpentry and Joinery Tradespersons	11,909	4,451		16,622	
4412 Fibrous Plasterers	4,511	258		4,881	
4413 Roof Slaters and Tilers	1,049	116		1,184	
4414 Bricklayers	5,845	195		6,144	
4415 Solid Plasterers	1,139	32		1,198	
4416 Wall and Floor Tilers and Stonemasons	4,251	1,082		5,472	
4420 Final Finishes Construction Tradespersons, nfd	41	26		67	
4421 Painters and Decorators	11,737	1,232		13,304	
4422 Signwriters	9	876		888	
4423 Floor Finishers	1,318	403		1,745	
4431 Plumbers	5,240	1,480		6,810	
45 Food Tradespersons	48	22,168		22,597	
46 Skilled Agricultural and Horticultural Workers	1,514	8,513		10,214	
4982 Glass Tradespersons	495	791		1,300	
49 Other Tradespersons and Related Workers, nec	630	43,348		44,454	
50 Advanced Clerical and Service Workers, nfd	9	201		210	
51 Secretaries and Personal Assistants	3,575	33,109		37,030	
59 Other Advanced Clerical and Service Workers	2,156	27,777		30,171	
60 Intermediate Clerical, Sales and Service Workers, nfd	18	895		916	
61 Intermediate Clerical Workers	4,646	157,097		162,864	
62 Intermediate Sales and Related Workers	458	33,159		33,758	
63 Intermediate Service Workers	117	105,014		106,789	
70 Intermediate Production and Transport Workers, nfd	191	3,219		3,516	
7110 Mobile Plant Operators, nfd	21	47		71	
7111 Mobile Construction Plant Operators	2,915	1,498		4,447	
7112 Forklift Drivers	110	8,389		8,585	
7119 Other Mobile Plant Operators	145	1,779		1,933	
7122 Crane, Hoist and Lift Operators	454	1,469		1,944	
7129 Other Intermediate Stationary Plant Operators	215	1,319		1,540	
71 Intermediate Plant Operators, nec	502	8,633		9,197	
72 Intermediate Machine Operators	1,035	42,258		44,087	
73 Road and Rail Transport Drivers	1,290	52,450		54,647	
7912 Blasting Workers	13	92		105	
7913 Structural Steel Construction Workers	2,198	963		3,206	
7914 Insulation and Home Improvements Installers	1,361	1,232		2,611	
79 Other Intermediate Production and Transport Workers, nec	491	40,144		41,028	
80 Elementary Clerical, Sales and Service Workers, nfd	3	380		389	
81 Elementary Clerks	211	17,990		18,397	
82 Elementary Sales Workers	581	108,241		109,920	
83 Elementary Service Workers	373	31,522		32,608	
90 Labourers and Related Workers, nfd	592	4,636		5,577	
91 Cleaners	722	54,753		57,025	
92 Factory Labourers	724	65,041		66,953	
9910 Mining, Construction and Related Labourers, nfd	80	56		139	
9911 Mining Support Workers and Driller's Assistants	51	299		350	

2001 Census - Employed Persons Born Overseas – Industry by Detailed Occupation (Continued - Part 3 of 3)

Occupation	Other		Total*
	Construction	Industries	
9912 Earthmoving Labourers	215	121	342
9913 Paving and Surfacing Labourers	460	279	754
9914 Survey Hands	25	222	250
9915 Railway Labourers	148	389	543
9916 Construction and Plumber's Assistants	5,177	1,086	6,334
9917 Concreters	4,241	836	5,177
9918 Electrical and Telecommunications Trades Assistants	147	146	296
9919 Other Mining, Construction and Related Labourers	822	419	1,262
99 Other Labourers and Related Workers, nec	2,889	47,614	51,349
0 Inadequately described	1,149	16,942	19,453
& Not stated	435	7,017	26,169
Total	131,623	1,832,182	2,004,222

* Total includes Not Stated, etc

APPENDIX 4

1986 Census - Employed Persons Born in Australia – Industry by Detailed Occupation (Part 1 of 2)				
Occupation	Construction	Other Industries	Total	
10 Managers & administrators nfd	366	7,208	8,179	
11, 12, 16 Legislators & Govt. officials, Gen. Managers, etc.	22,088	65,761	89,047	
13 Specialist managers	4,055	128,709	133,767	
14 Farmers & farm managers	709	220,514	226,454	
20 Professionals nfd	74	5,013	5,203	
21 Natural scientists nfd	0	82	82	
2101 Chemists	26	4,879	4,939	
2103 Geologists & geophysicists	46	2,661	2,726	
2107 Life scientists (incl. Agricultural scientists)	18	7,130	7,201	
2109 Medical testing professns	4	5,438	5,467	
2105, 2199 Physicists, Other natural scientists	20	1,652	1,679	
2200 Building professionals & engineers nfd	251	5,656	5,996	
2201 Architects & landscape architects	808	5,720	6,600	
2203 Quantity surveyors	243	502	748	
2205 Cartographers & surveyors	660	5,184	5,892	
2209 Civil engineers	2,952	10,273	13,312	
2211 Electrical & electronic engineers	404	12,474	12,977	
2213 Mechanical engineers	513	7,066	7,646	
2215, 2217 Mining engineers, Metallurgists & Mat. scientists	26	2,976	3,021	
2207,2219 Engineers nec	64	2,947	3,038	
27 Business professionals	1,468	102,879	105,464	
23 Health diagnosis & treatment practitioners	37	52,826	53,459	
24, 25 School teachers and Other Teachers & instructors	207	230,393	232,789	
26, 28, 29, 33 Social professionals, Artists & related prof.	509	109,088	111,662	
3000 Para-professionals nfd	152	4,916	5,152	
3100 Medical & science technical officers/technicians nfd	0	85	88	
3101 Medical technical officers & technicians	14	5,596	5,647	
3103 Science technical officers & technicians	100	7,427	7,573	
3200 Engineering & building associates/technicians nfd	528	5,768	6,402	
3207 Building, architectural & surveyng associates & tech.	6,732	11,130	18,007	
3203 Civil engineerng associates & technicians	1,241	4,643	5,924	
3201 Electrical & electronic engineering associates & tech.	823	24,971	25,947	
3205 Mechanical engineering associates & technicians	224	3,338	3,585	
3299 Other engineering & building associates & technicians	150	4,863	5,061	
15 Managing supervisors (sales & service)	929	138,492	140,783	
34 Registered nurses	104	104,431	106,030	
35, 39 Para-professionals nec	1,827	115,944	119,107	
40 Tradespersons nfd	920	10,019	11,375	
4201, 4207, 4209 Forging trades, Metal casting trades etc.	44	4,407	4,542	
4205 Structural steel, boilermaking and welding trades	3,304	32,029	36,221	
4203 Sheet metal tradespersons	1,723	9,214	11,185	
41, 42 Metal fitting & machining, Oth. metal trades nec	3,132	80,075	84,526	
46 Vehicle tradespersons	1,390	86,808	89,700	
4303, 4309 Electrical fitters, Electrical mechanics	21,156	34,251	56,270	
4307 Refrigeration & air-conditioning mechanics	1,671	4,502	6,275	
4311 Communications equipment tradespersons	465	28,262	28,891	
43 Electrical & electronics tradespersons nec	816	23,747	24,910	
4400 Building tradespersons nfd	213	76	304	
4401 Carpenters and joiners	34,328	18,935	55,112	

1986 Census - Employed Persons Born in Australia – Industry by Detailed Occupation (Part 2 of 2)				
Occupation	Construction	Other Industries	Total	
4407 Plasterers (all types)	7,364	1,074	8,866	
4411 Roof slaters and tilers	2,679	519	3,339	
4403 Bricklayers	11,001	954	12,645	
4413 Wall and floor tilers	2,315	303	2,770	
4405 Painters, decorators & signwriters	11,185	9,650	21,668	
4919 Floor coverers	2,058	1,141	3,336	
4409 Plumbers	25,687	7,985	34,484	
47 Food tradespersons	161	63,355	64,870	
48 Amenity horticultural tradespersons	3,471	28,005	32,529	
4921 Glass tradespersons	156	3,440	3,675	
45, 49 (balance) Tradespersons nec	1,227	105,117	108,769	
5101 Office secretaries & stenographers	9,535	119,954	132,450	
5 Clerks nec	26,168	701,438	739,987	
6000 Salespersons & personal service workers nfd	294	9,779	10,876	
61, 62, 63, 64, 65 Salespersons	2,821	530,563	543,231	
66 Personal service workers	99	74,092	76,463	
70 Plant & machine operators & drivers nfd	2,776	33,267	37,845	
7201 Excavating & earthmoving plant operator	11,730	20,652	33,036	
7203 Forklift & related drivers	209	16,034	16,631	
72 Mobile plant operator nec	3,443	19,308	23,092	
7311, 7313 Crane operators, Hoist, winch & lift operators	939	6,219	7,297	
73 Stationary plant operators nec	1,155	30,147	31,657	
74 Machine operators	551	56,771	58,223	
71 Road and trail transport drivers	6,896	148,222	159,188	
4909 Blasting tradespersons	102	508	619	
8405 Structural steel & related labourers	2,560	2,537	5,275	
8401 Installation workers	1,720	2,260	4,120	
8301 Cleaners	1,211	99,177	104,141	
81 Trades assistants & factory hands	7,113	129,940	140,582	
8400 Construction & mining labourers nfd	189	239	436	
8415 Mining & mineral ore treatment labourers	112	7,705	8,051	
8407 Earthmoving labourers	982	1,287	2,384	
8409 Paving & surfacing labourers	3,224	3,456	6,808	
8411 Survey hands	551	2,487	3,092	
8413 Railway labourers	175	6,818	7,127	
8403 Concrete workers	6,247	3,494	10,089	
8499 Other construction & mining labourers	9,415	6,321	16,425	
8 Labourers and related workers nec	7,450	309,612	328,527	
9101 Inadequately described	3,129	59,480	69,523	
9102 Not stated	2,117	27,524	52,702	
Total	297,751	4,411,794	4,832,793	

APPENDIX 5

1986 Census - Employed Persons Born Overseas – Industry by Detailed Occupation (Part 1 of 2)				
Occupation	Construction	Other Industries	Total	
10 Managers & administrators nfd	131	2,492	2,833	
11, 12, 16 Legislators & Govt. officials, Gen. Managers, etc.	8,842	25,142	34,579	
13 Specialist managers	1,843	46,434	48,705	
14 Farmers & farm managers	95	23,807	24,639	
20 Professionals nfd	34	2,208	2,288	
21 Natural scientists nfd	-	60	60	
2101 Chemists	6	2,145	2,179	
2103 Geologists & geophysicists	12	1,636	1,663	
2107 Life scientists (incl. Agricultural scientists)	10	2,108	2,139	
2109 Medical testing professns	-	2,270	2,273	
2105, 2199 Physicists, Other natural scientists	-	627	639	
2200 Building professionals & engineers nfd	158	3,082	3,305	
2201 Architects & landscape architects	391	2,339	2,738	
2203 Quantity surveyors	264	592	859	
2205 Cartographers & surveyors	186	1,034	1,235	
2209 Civil engineers	1,244	3,911	5,208	
2211 Electrical & electronic engineers	285	6,115	6,474	
2213 Mechanical engineers	306	3,660	4,018	
2215, 2217 Mining engineers, Metallurgists & Mat. scientists	12	1,268	1,289	
2207,2219 Engineers nec	55	1,493	1,560	
27 Business professionals	608	38,428	39,528	
23 Health diagnosis & treatment practitioners	15	20,500	20,799	
24, 25 School teachers and Other Teachers & instructors	68	54,910	55,566	
26, 28, 29, 33 Social professionals, Artists & related prof.	215	36,330	37,411	
3000 Para-professionals nfd	54	1,993	2,077	
3100 Medical & science technical officers/technicians nfd	3	44	47	
3101 Medical technical officers & technicians	3	1,865	1,880	
3103 Science technical officers & technicians	19	2,642	2,673	
3200 Engineering & building associates/technicians nfd	268	3,006	3,339	
3207 Building, architectural & surveyng associates & tech.	2,767	3,495	6,313	
3203 Civil engineerng associates & technicians	318	1,632	1,969	
3201 Electrical & electronic engineering associates & tech.	389	8,002	8,458	
3205 Mechanical engineering associates & technicians	129	2,323	2,464	
3299 Other engineering & building associates & technicians	73	1,938	2,044	
15 Managing supervisors (sales & service)	272	47,824	48,689	
34 Registered nurses	34	30,782	31,265	
35, 39 Para-professionals nec	569	31,336	32,303	
40 Tradespersons nfd	581	3,958	4,726	
4201, 4207, 4209 Forging trades, Metal casting trades etc.	26	2,260	2,330	
4205 Structural steel, boilermaking and welding trades	2,219	16,692	19,552	
4203 Sheet metal tradespersons	1,019	4,042	5,168	
41, 42 Metal fitting & machining, Oth. metal trades nec	1,379	39,046	41,247	
46 Vehicle tradespersons	448	24,174	25,029	
4303, 4309 Electrical fitters, Electrical mechanics	5,329	9,987	15,582	
4307 Refrigeration & air-conditioning mechanics	491	1,371	1,908	
4311 Communications equipment tradespersons	244	7,382	7,681	
43 Electrical & electronics tradespersons nec	293	7,922	8,341	
4400 Building tradespersons nfd	194	60	277	
4401 Carpenters and joiners	15,367	7,942	24,301	

1986 Census - Employed Persons Born Overseas – Industry by Detailed Occupation (Part 2 of 2)			
Occupation	Construction	Other Industries	Total
4407 Plasterers (all types)	4,091	623	4,992
4411 Roof slaters and tilers	883	134	1,082
4403 Bricklayers	8,885	664	10,194
4413 Wall and floor tilers	2,361	295	2,823
4405 Painters, decorators & signwriters	9,938	4,661	15,319
4919 Floor coverers	781	386	1,213
4409 Plumbers	5,729	2,301	8,231
47 Food tradespersons	51	28,975	29,722
48 Amenity horticultural tradespersons	953	7,214	8,472
4921 Glass tradespersons	65	1,184	1,265
45, 49 (balance) Tradespersons nec	730	41,525	43,223
5101 Office secretaries & stenographers	3,175	35,787	39,896
5 Clerks nec	7,401	184,391	195,230
6000 Salespersons & personal service workers nfd	121	3,293	3,698
61, 62, 63, 64, 65 Salespersons	983	145,422	149,100
66 Personal service workers	41	20,303	20,999
70 Plant & machine operators & drivers nfd	936	27,367	30,083
7201 Excavating & earthmoving plant operator	2,740	4,204	7,092
7203 Forklift & related drivers	102	8,412	8,790
72 Mobile plant operator nec	621	2,742	3,415
7311, 7313 Crane operators, Hoist, winch & lift operators	681	3,817	4,613
73 Stationary plant operators nec	414	10,953	11,501
74 Machine operators	346	54,351	56,156
71 Road and rail transport drivers	1,507	39,542	42,475
4909 Blasting tradespersons	38	137	178
8405 Structural steel & related labourers	2,467	1,716	4,365
8401 Installation workers	816	855	1,728
8301 Cleaners	708	51,641	54,535
81 Trades assistants & factory hands	2,912	80,416	86,166
8400 Construction & mining labourers nfd	79	89	174
8415 Mining & mineral ore treatment labourers	49	2,076	2,187
8407 Earthmoving labourers	353	674	1,073
8409 Paving & surfacing labourers	874	908	1,822
8411 Survey hands	103	576	682
8413 Railway labourers	65	1,496	1,581
8403 Concrete workers	6,082	1,621	8,077
8499 Other construction & mining labourers	5,083	2,807	8,146
8 Labourers and related workers nec	2,939	112,645	119,940
9101 Inadequately described	1,419	22,608	26,870
9102 Not stated	877	9,214	18,522
Total	125,667	1,462,334	1,637,300