

Project Russell Street, Adelaide  
 Client Adelaide City Council  
 Project Number

**Preliminary Pavement Design**

Calculations are based on the Austroads Pavement Design Guide  
 "A Guide to the Structural Design of Road Pavements"

**TRAFFIC ESTIMATE**

Number of ESA's per day is based on the number of ESA's per commercial vehicle

No. of Allotments	0	
Vehicle trips per day	0	vehicle trips per day, Refer to Land Use Traffic Guides
AADT	545	
% Commercial Vehicles	3.70%	
Class of Road	6	Refer Table A2, Austroads Pavement Design, "A Guide to the Structural Design of Road Pavements" Note: Class 1 (main hwy) to 5 (minor) are rural roads, 6 (main) to 9 (minor) are urban.
Factor F	1.0	Refer Table E5, Austroads Pavement Design, "A guide to the Structural Design of Road Pavements".
ESA's per day, $N_e$	10	= L.F * AADT * Factor F * %CV Refer Appendix E, Austroads Pavement Design, "A guide to the Structural Design of Road Pavements".
Design Life (Years)	20	Note: must be a multiple of 5 up to 40 years.
Growth Rate (%pa)	1.5%	
Growth Factor	23.1	Refer Table 7.2, in Section 7, Austroads Pavement Design, "A Guide to the Structural Design of Road Pavements".

Reduced to 1, as this is and will continue to be a one way road.

<b>Total Traffic ESA's</b>		=365 * ESA's per day * Growth Factor, Refer Clause 7.6, Austroads Pavement Design, "A guide to the Structural Design of Road Pavements".
	<b>8.5E+04</b>	

**(ESA's < 10^5, Therefore use Figure 13.8.2(A) Ref: APRG Report 21 1998, Refer Pavement Template 1998 before commencing further Thickness Calculations)**

**PAVEMENT THICKNESS CALCULATION FOR AC**

Pavement thickness is based on the Pavement Design Guide Section 8 "Design of New Flexible Pavements".  
 Refer to Figure 8.4 "Design Chart for Granular Pavements with Thin Bituminous Surface".

<b>Design CBR</b>		Average CBR result from Geotech Report
Subgrade Strength (CBR)	4	Note: use only 2, 3, 4, 5, 7, 10, 15, 20 or 30
Subbase Strength (CBR)	30	Note: use only 2, 3, 4, 5, 7, 10, 15, 20 or 30.
AC Thickness	40mm	
Minimum Base Thickness	98mm	
Minimum Subbase Thickness	235mm	
<b>Total Granular Pavement Thickness</b>	<b>332mm</b>	

**PAVEMENT ALTERNATIVES (AC)**

Pavement Type 1 - Thin Bituminous Seal on Granular Base		Total Pavement Thickness
AC14 Wearing Course	50	350mm
Base course (CBR>30 or 350MPa)	100mm	
Subbase (CBR=30)	200mm	