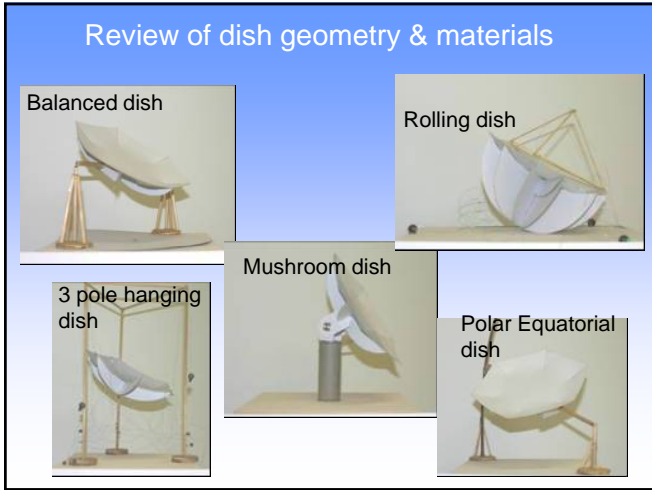
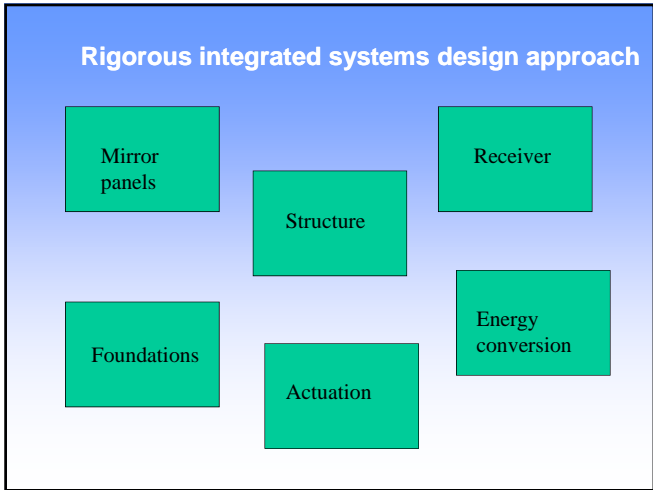
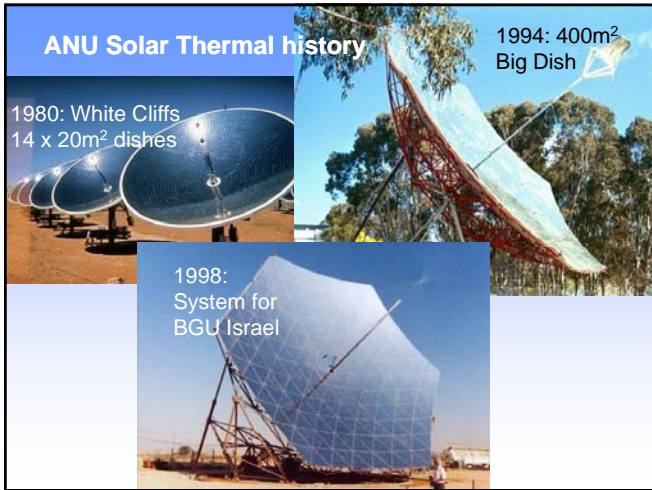





### Why Solar Thermal?

- Large scale efficiency
- Energy storage
- High temperature processes




### Optimisation process

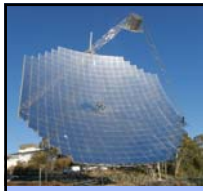
<u>Design criteria</u>	<u>Software tools</u>
• Wind loads	• Microtran
• Self weight load	• Strand7
• Dish stiffness & optical accuracy	• Coldsteel
	• Opticad



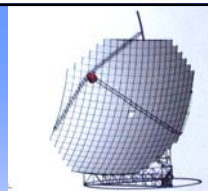
**The Gen II Big Dish**  
(the slightly bigger dish)




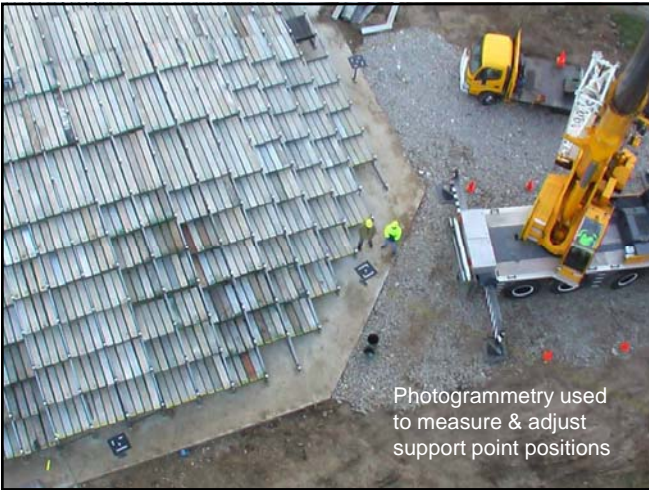
- Completely re-engineered for mass production
- Identical spherical mirror panels
- Formed on an accurate jig
- Spaceframe based on circular pipe with simple welded joints




**Details**




- Aperture 494 m<sup>2</sup>
- Focal length 13.4 m
- Average diameter 25 m
- Number of mirrors 380
- Total mass of dish 19.1 t
- Total mass of base and supports 7.3 t
- Mass per unit area ~ 40 kg/m<sup>2</sup>
- Electrical output > 100 kW


**On site containerised section rolling machine**



Coils of sheet steel in....



Structural sections out





Installation of front surface members



Clinching of front surface members



Welding of spaceframe



31 March  
2009

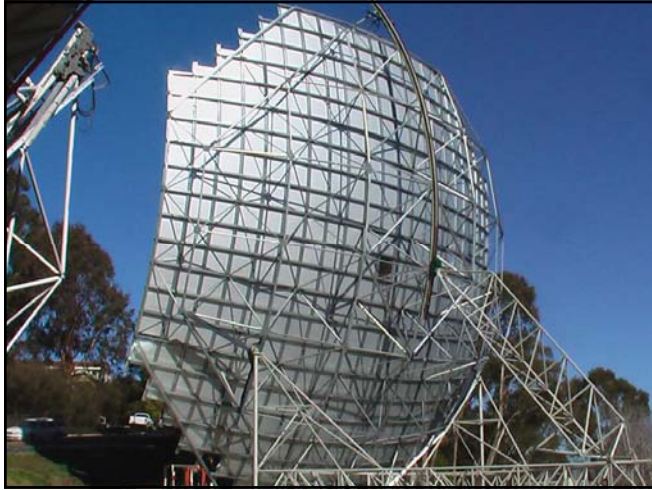
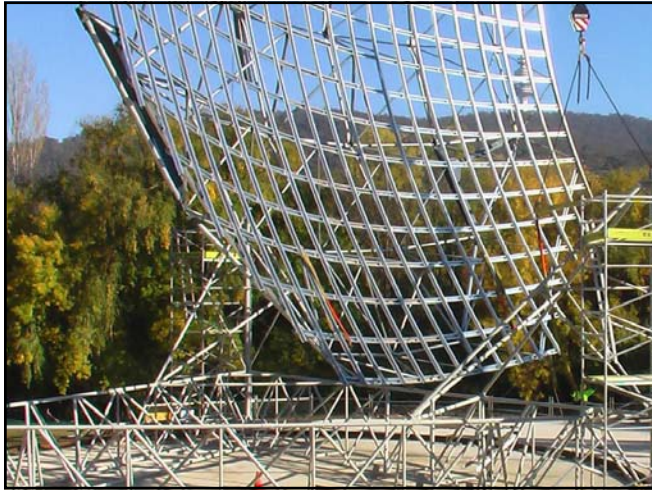


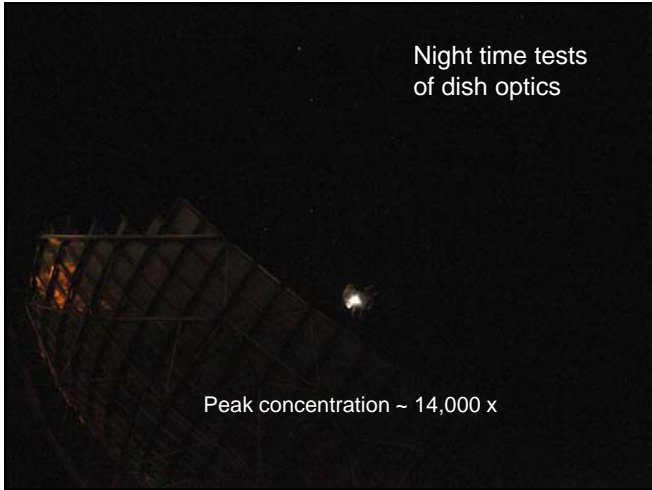














### Electric motor drives



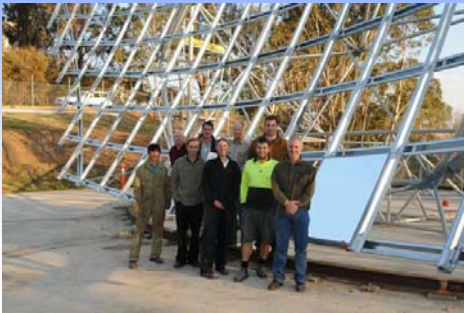
### Conclusions

- System design for manufacture of a Gen II Big Dish successfully completed
- The design is ready for large scale commercial roll out
- Identical non adjustable mirrors give excellent optical performance
- The design is suitable for driving a range of energy conversion processes including those needing high levels of concentration



### Acknowledgements

Many thanks to all the ANU staff & students, and Wizard Power personnel, who contributed to the design and construction of the dish



### Acknowledgements

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