

How Things Have Changed – A 10 Year Comparison of Three Iconic Australian Hospital Developments

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"Children's Health Partnership"







Key Consultants BATESSMART...











The New Royal Children's Hospital (RCH), Melbourne Australia Norman Disney&



Key Consultants

















New Children's Hospital (NCH), **Perth Australia**



"Exemplar Health"







SIEMENS

Key Consultants



BATESSMART,



"irwinconsult



Bendigo Hospital Project (BHP), Bendigo, Victoria Australia































Procurement & Briefing





Procurement & Briefing - RCH

New Royal Children's Hospital, Melbourne

Balance Performance vs Prescriptive

Functional brief focussed on EDB & FFP

Consultants encouraged to challenge Brief

Iconic world class children's hospital central focus

Client vision unified design focus

New Children's Hospital, Perth

New Bendigo Hospital, Victoria



Procurement & Briefing - NCH

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Balance Performance vs Prescriptive

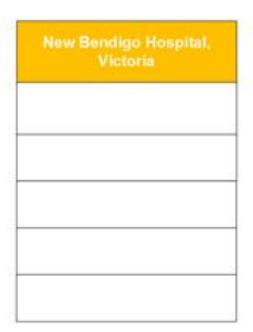
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Strict ac	dherence to Brief
Enhan	ce RCH solution
Clier	nt vision clear





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New Children's Hospital, Perth

Both performance & prescriptive

Brief informed by RCH

Strict adherence to Brief

Enhance RCH solution

Client vision clear

New Bendigo Hospital, Victoria

Non Prescriptive Priority based

Winner able to include most wishlist into scope

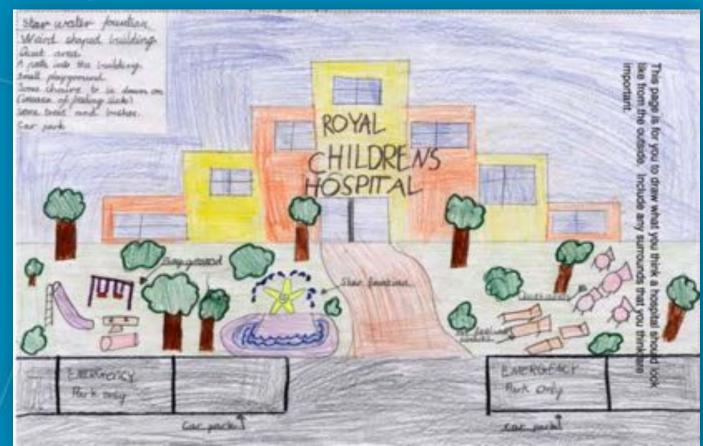
Innovation welcomed even if non-conforming

Affordability and Value for Money

Client vision clear with precision-like pragmatism



Project Overview





Project Overview - RCH

New Roya	l Children's
Hospital,	Melbourne

\$1.1bn

Start: 2006

Complete: 2011 (on schedule)

299 inpatient beds

58 same day beds

15 operating theatres

Helipad (In-situ Concrete)

2500 car parks

Total redevelop – two buildings retained & refurbished

New Children's Hospital, Perth

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New Children's Hospital, Perth

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Start: 2010 Complete: 2016 (2015)

256 inpatient beds

42 same day beds

11 operating theatres

Helipad (Pre-fab Aluminium)

330 UG & 3000+ multi-storey car park

New CEP developed & old CEP & stack demolished

New Bendigo Hospital, Victoria



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New Bendigo Hospital, Victoria

\$630m

Start: 2012 Complete: 2016

372 inpatient beds + 80 integrated Mental H

72 same day beds

11 operating theatres

Helipad (In-situ Concrete)

1350 car parks on grade

Campus three divided adjoining sites with heritage



Master Planning





Master Planning - RCH

New Royal Children's Hospital, Melbourne

Site plant options limited by park on 3 sides & arterial road

Providing parkland views to all patient accommodation

Residential area opposite – noise restrictions

Traffic access to/from hospital onto Flemington Road

Engineering infrastructure totally renewed – business continuity challenging

Location defined & boundaries by bidders maintained < 4.1Ha

New Children's Hospital, Perth

New Bendigo Hospital, Victoria

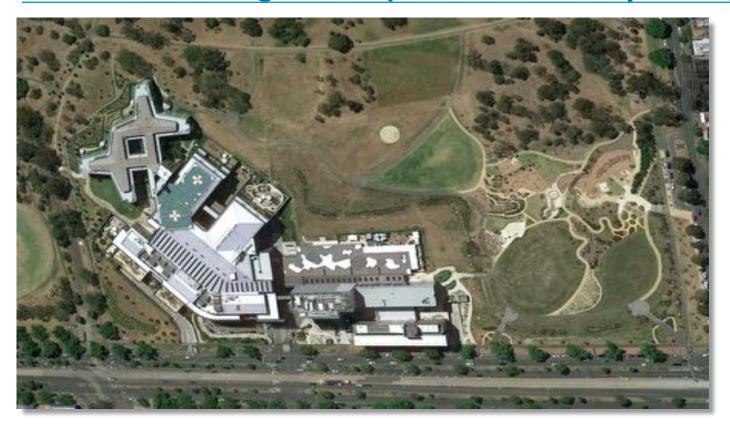


Master Planning – RCH (Before Redevelopment)





Master Planning – RCH (After Redevelopment)





Master Planning - NCH

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New Children's Hospital, Perth

New NCH site boundaries well defined

Kings Park directly opposite provides excellent views

CEP needed relocation/ demolition prior to construction

Service traffic access in/out of new building was challenging

Close coordination needed to interface with new CEP/tunnel

New build boundaries fully defined

New Bendigo Hospital, Victoria



Master Planning - NCH





Master Planning - NCH





Master Planning - BHP

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New Bendigo Hospital, Victoria

Dispersed facilities needed integration for limited budget

Roof plant & aesthetics managed to maintain views

Electrical supply to the site limited in capacity

Limited project budget needed to refurbish heritage buildings

Site was divided by two roads, one main arterial.

Major demolition. New hospital site selection by bidders



Plant Space Negotiation





Plant Space Negotiation - BHP

	l Children's Melbourne
	tire RCH Site Utility Plant)
	I GFA 969m2
	t GFA 27,714m2
Central Plant 40.7%	Risers & AHU 59.3%

	en's Hospital, erth
Serves: Nev	v Building only
100000000000000000000000000000000000000	al GFA 737m2
	nt GFA r 18,200m2
Central Plant 0% (Remote CP)	Risers & AHU 100%





Design & Documentation





Design & Documentation - RCH

New Royal Children's Hospital, Melbourne

Documented in 2D Autocad (Level 6 Plant in 3D)

Coordination manual lightbox overlays – complex & costly

Major trades well able to develop "As Builts" in Autocad

Bid phase documentation limited by late resolution of MP

Design & documentation software tools largely separate

New Children's Hospital, Perth

New Bendigo Hospital, Victoria



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New Children's Hospital, Perth

Documented with 3D Revit/ "Drofus/Codebook" integrated

Excellent coordination using Revit 3D clash detection

Local trades unskilled in 3D Revit for "As Builts"

Stage 1 documentation to 80% to facilitate GCS (1 year!)

Some integration of design & documentation software tools.

New Bendigo Hospital, Victoria



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New Bendigo Hospital, Victoria

Documented in 3D but 2D colour mapping for schematics

High level of coordination achieved

Major trades able to develop "As Builts" in 3D Revit

Bid phase documents vastly more detailed than RCH

New levels of integration in design & documentation tools.



Construction





Construction - BHP

New Royal Children's Hospital, Melbourne

Large basement excavation provided more time for design

Conventional in-situ reinforced concrete construction.

Multi-stage with 8 to 9 cranes at peak (Cranes named)

Flat slab, concrete columns & band beams (8.4m grid)

Delivered on time

New Children's Hospital, Perth

Fast tracking placed significant pressure on design program

Conventional in-situ reinforced concrete with prefab risers

Multi-stage required with 5 cranes at peak (Named)

Post tensioned concrete with 9,0m grid

Completion delayed (circa 8 months)

New Bendigo Hospital, Victoria

Sloping site and initial excavation in rock costly

Both conventional and prefabricated used

Multi-staged requiring 4 cranes
Cranes all named

Flat slab, concrete columns & band beams (8.3m grid)

Will be delivered on time

