



National Asset And Facility Management

2007
Asset and Facility
Management:
Coping with Future Challenges

RLB | Rider Levett Bucknall

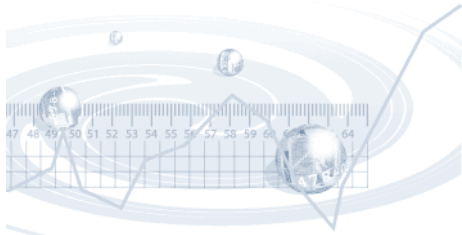
FM Exemplar Project: Sydney Opera House 'FM as a business enabler'

Stephen Ballesty

Managing Director | Advisory, Rider Levett Bucknall

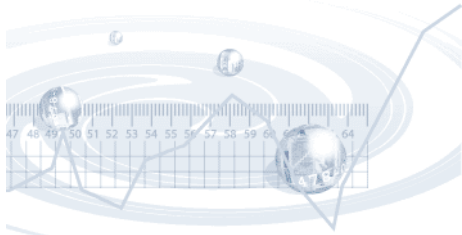
Immediate Past Chairman, FMA Australia

FM Exemplar Project Leader, CRC - CI



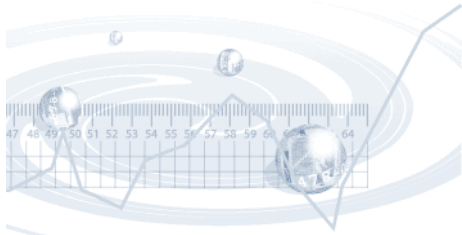
FM Exemplar Project





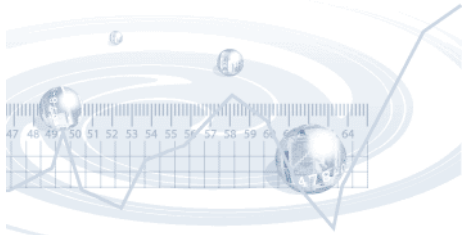
Makings of an ICON

- Commenced 1958
 - Opened 1973
 - Cost \$100 million
 - Value \$1.6 billion
 - 1,000+ rooms
 - 7 performance spaces
 - 60 dressing rooms
 - 5 restaurants & bars
 - Annual activity
 - 1,500 performances
 - 1,000 other events
 - 1,100,000 patrons
 - 4,500,000 visitors
 - \$85 mil business
 - \$21 mil FM budget
- all in year ...



FM Exemplar Objectives

- ***Investigate best / good practice*** across 3 research streams: digital modelling, procurement and benchmarking
- ***Develop a conceptual framework*** for future integrated FM solution
- ***Deliver guidelines*** in support of Sydney Opera House's Total Asset Management Plan
- ***Demonstrate FM practice*** in support of the FM Action Agenda

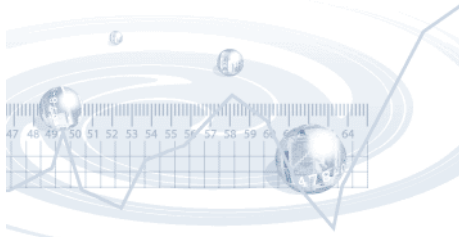


Digital Modelling

Defining Data Sets

- ✓ TAM plans
- ✓ energy consumption
- ✓ stock levels
- ✓ asset register
- ✓ safe work practices
- ✓ key register
- ✓ space management
- ✓ ops manuals
- ✓ room data sheets
- ✓ condition indices
- ✓ financial records
- ✓ maintenance schedules
- ✓ base building drawings





Digital Modelling

Industry Foundation Classes (IFC)

IFC Model

Content:

- Architecture
- Engineering
- Construction
- FM
- Etc.

Structure:

- IFC objects
- IFC properties
- IFC relationships

IFC Views

- Architectural

- HVAC

- Fire Safety

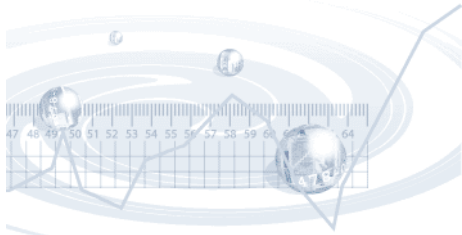
- FM

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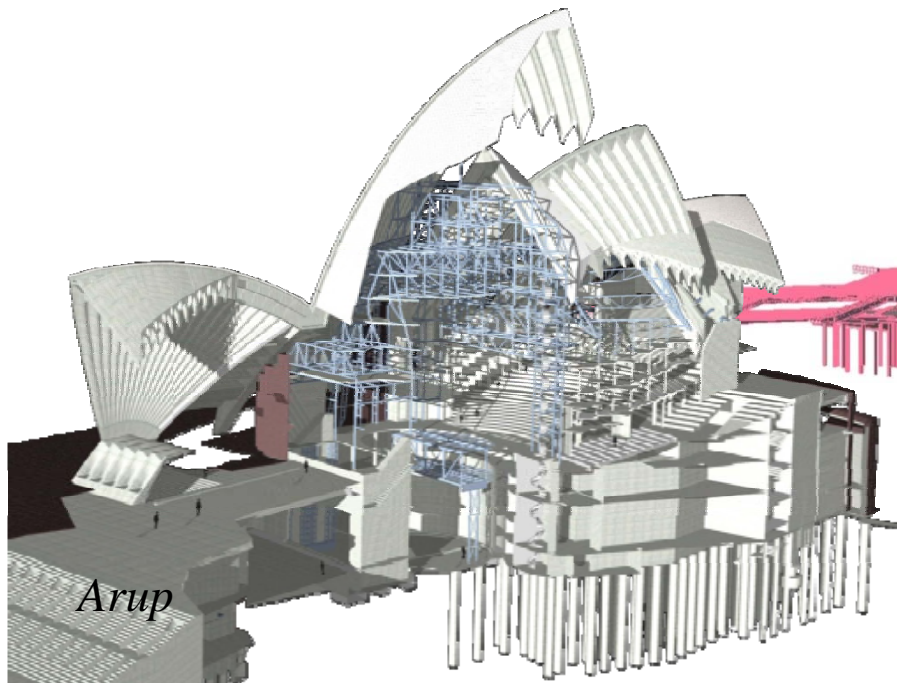
IFC Object Hierarchy

```

└ IfcProject
  └ IfcSite
    └ IfcBuilding
      └ IfcBuildingStory
        └ IfcSpace
          --- ---
    
```



Reusing IFC data



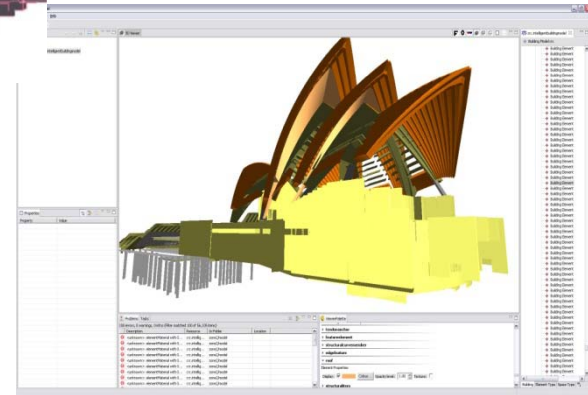
IFC

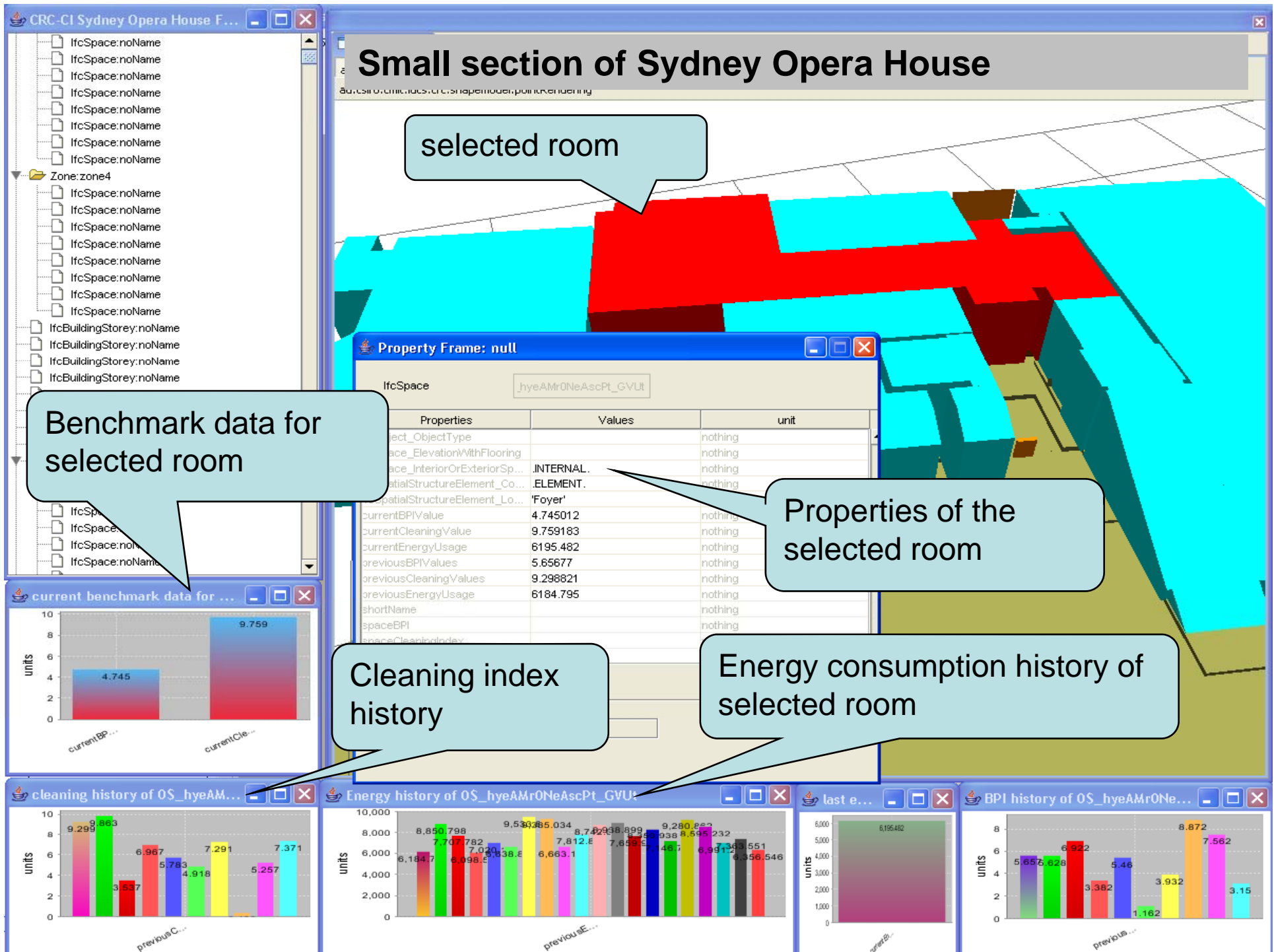
Bentley Structural

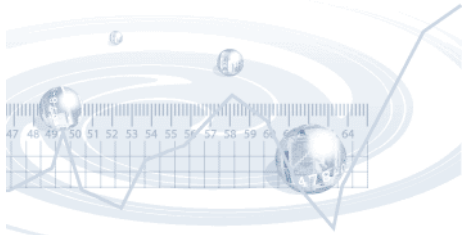
ArchiCAD

IFC

IFC Viewer





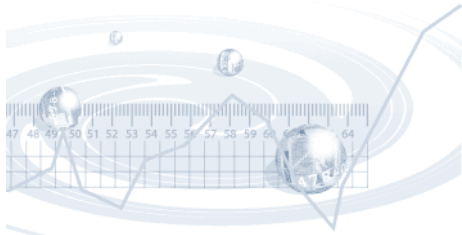


Services Procurement

Defining Service Levels

- ✓ quality
- ✓ quantity
- ✓ safety
- ✓ capacity
- ✓ functionality
- ✓ flexibility
- ✓ responsiveness
- ✓ environmental
- ✓ aesthetics
- ✓ reliability
- ✓ capital costs
- ✓ life costs



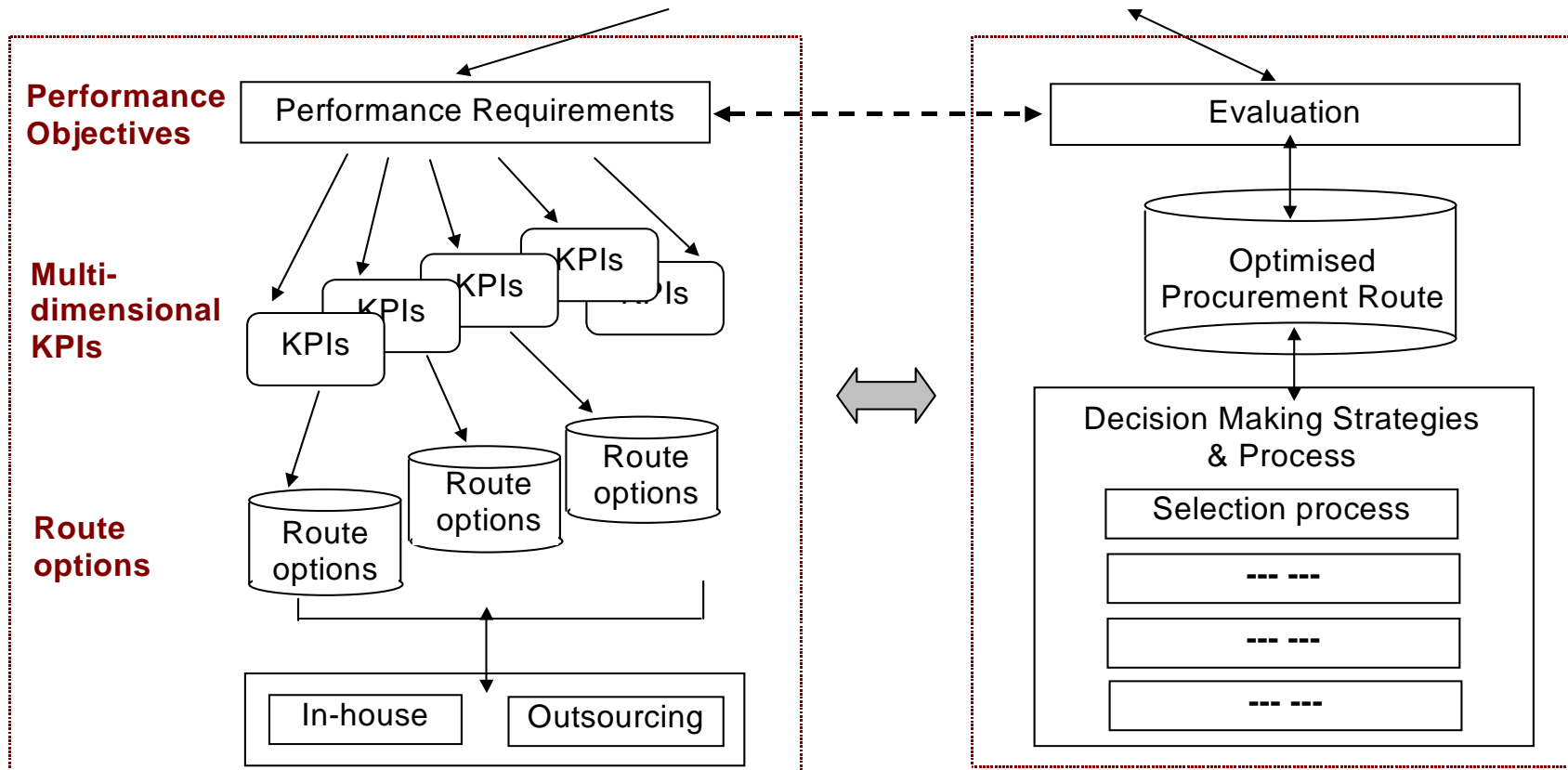


Services Procurement

Generic

Services Procurement

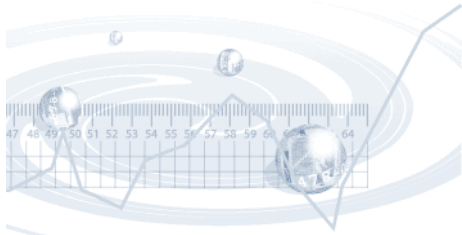
ORGANISATIONAL OBJECTIVES



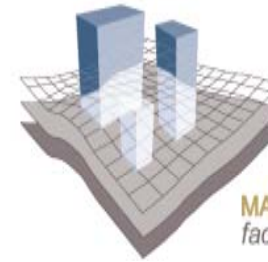


Mapping





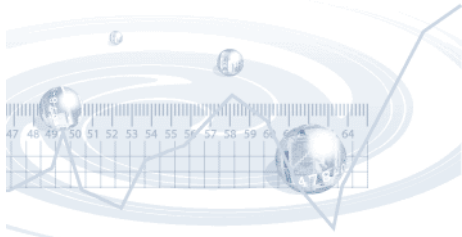
FM Benchmarking



MANAGING THE BUILT ENVIRONMENT
facilities management action agenda

- Function (attributes, risks, performance)
 - Condition (priorities, lifecycles, liabilities)
 - Maintenance (practices, obligations, presentation)
 - Utilisation (targets, restrictions, opportunities)
-
- Metrics (/ m2, / rise, / period, / task, / user)
-

Further responses identified the high level drivers specific to icons as; functionality, landmark status, operational efficiency & cultural heritage



Integrated FM Solution

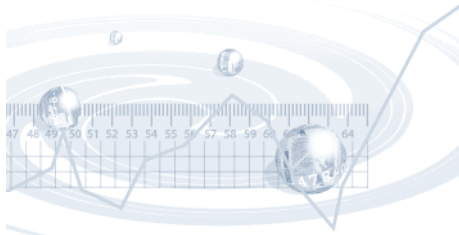
**FM Exemplar Project:
Sydney Opera House**

**3D Digital
Modelling**

**Services
Procurement**

**Performance
Benchmarking**

Integrated FM Solution Framework



Integrated FM Solution

Asset strategy

Alignment between business drivers, services provided and asset dependency

Management and collaboration

Multi-dimensional asset management; business alignment, performance alignment and information alignment

Business Drivers

Results and services

Asset service dependency

Asset Performance

Building Information

Condition Index

Functional Brief

Asset management

Maintenance management

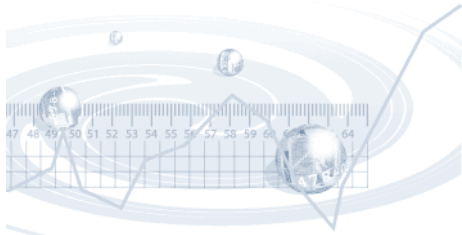
Financial measures

Integrated FM solution

Information – Services – Benchmarking

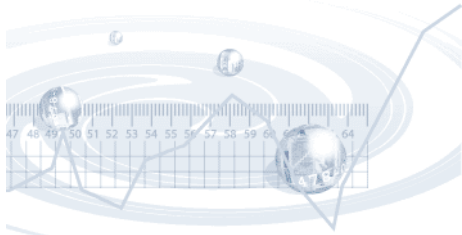
Total Asset Management plan

- Three research themes:
 - Digital modelling
 - Services procurement
 - Performance benchmarking
- Integrated FM solution



Research Findings & Outputs

- **Data** is “king” in pursuing FM excellence and supporting Total Asset Management
- **Digital Modelling** – building information models with open system architecture (IFC based interoperability)
- **Procurement** – aligning FM deliverables with organisational culture
- **Benchmarking** – identify KPI’s and align targets to reflect business drivers
- Research papers and ***‘FM as a business enabler’*** published



Publications & Links

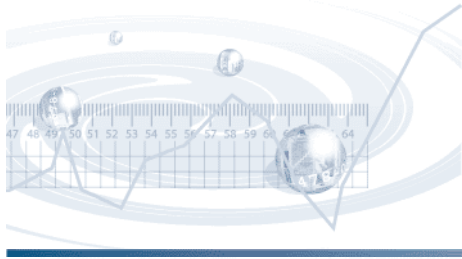
FM Exemplar Project research report(s) in printed and PDF formats are available

- www.construction-innovation.info

Other important links

- www.fma.com.au
- www.fmactionagenda.org
- www.industry.gov.au
- www.rlb.com



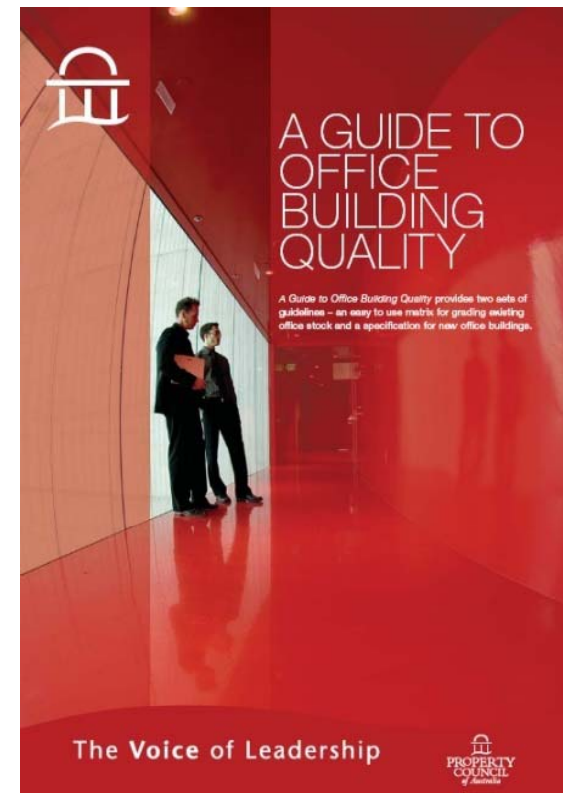
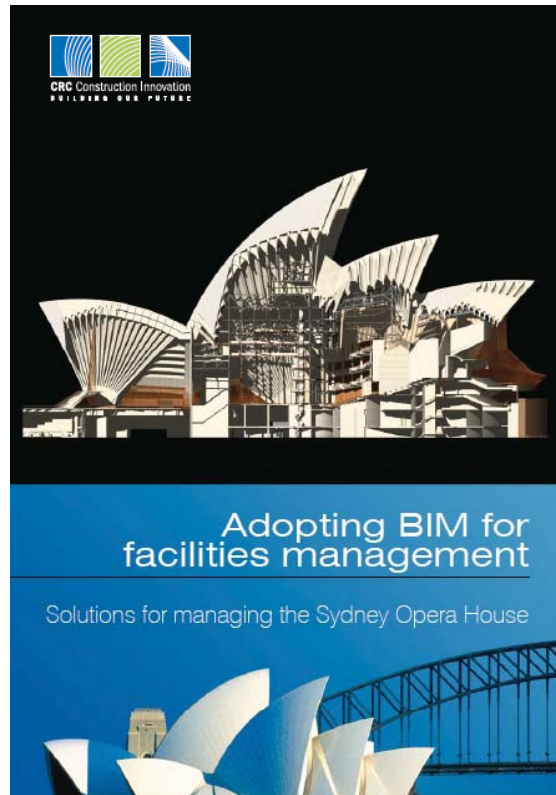
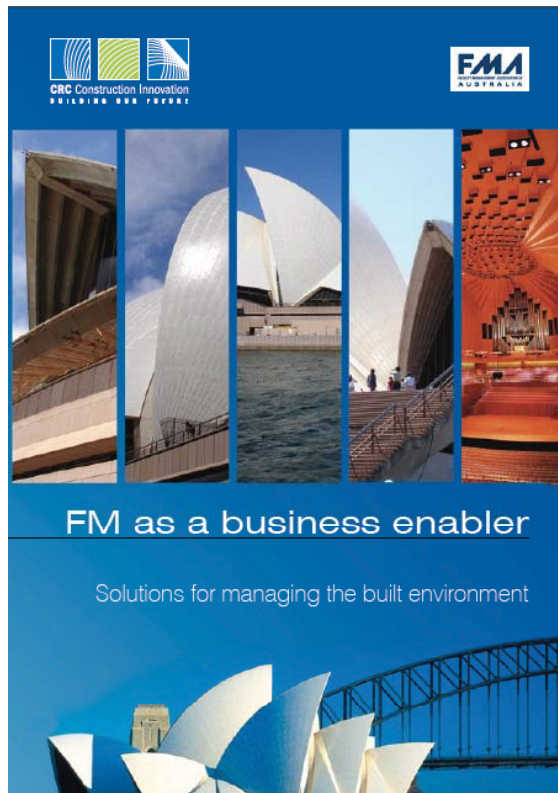


Want more information ?

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stephen.ballesty@au.rlb.com