

ADOPTING DIGITAL ENGINEERING ON MAJOR PROJECTS

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Principal – Digital Engineering

integrity
accountability
innovation
delivery

SAFETY

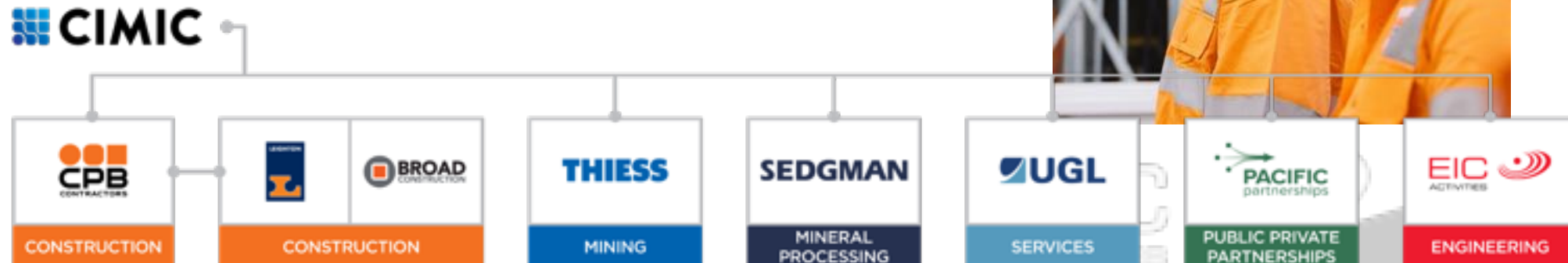


EIC ACTIVITIES

EIC Activities is CIMIC Group's engineering and technical services business.

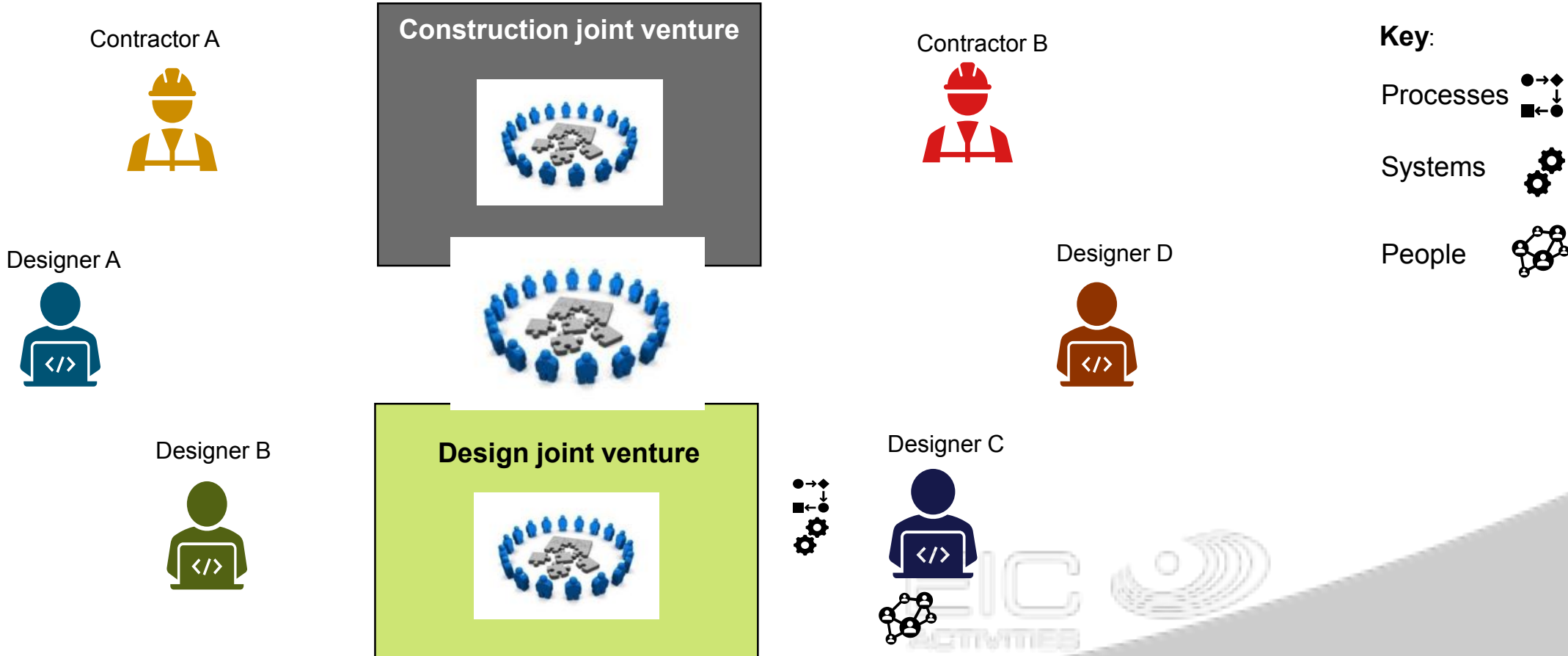
Our engineering and risk mitigation expertise provides CIMIC Group with a competitive advantage for winning and delivering profitable projects that also generate value for clients.

EIC Activities ensures the Group's collective experience, technical capabilities, innovations and leading edge technology applications are leveraged to deliver our client's objectives.



IMPROVEMENT OPPORTUNITIES

ASSEMBLING THE TEAM



CULTURE



Image source: <https://www.flickr.com/photos/clement127/19093561751/>

TECHNOLOGY



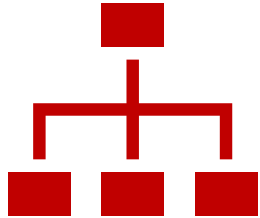
APPROACH



STRATEGY

STRATEGY

Leadership



Expression of interest

Tender

Project

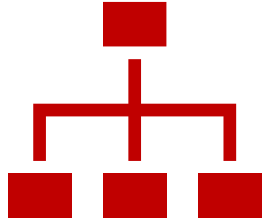
Systems



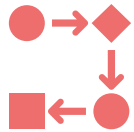
- Project data structure established
- Minimum rules of entry applied for any system selected
- Deployment, configuration and support model in place for all systems
- Systems setup on day 1 that can live through all phases
- Systems that can talk to each other
- An information ecosystem rather than individual systems

STRATEGY

Leadership



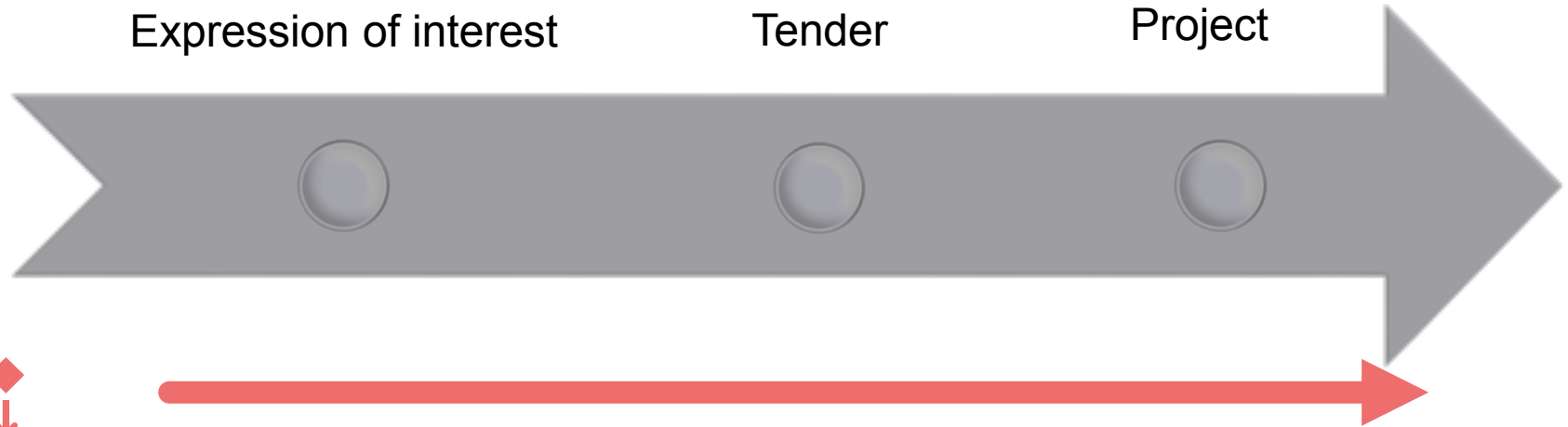
Processes



Expression of interest

Tender

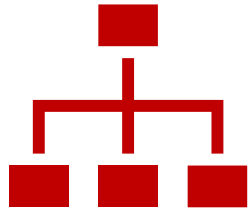
Project



- Well documented processes sent to all parties prior, outlining the 'rules of engagement'
- Systems selected that enable the documented processes
- Processes aligned with ISO-19650
- Processes part of the engagement contracts
- Building Information Modelling (BIM) structured for construction and handover

STRATEGY

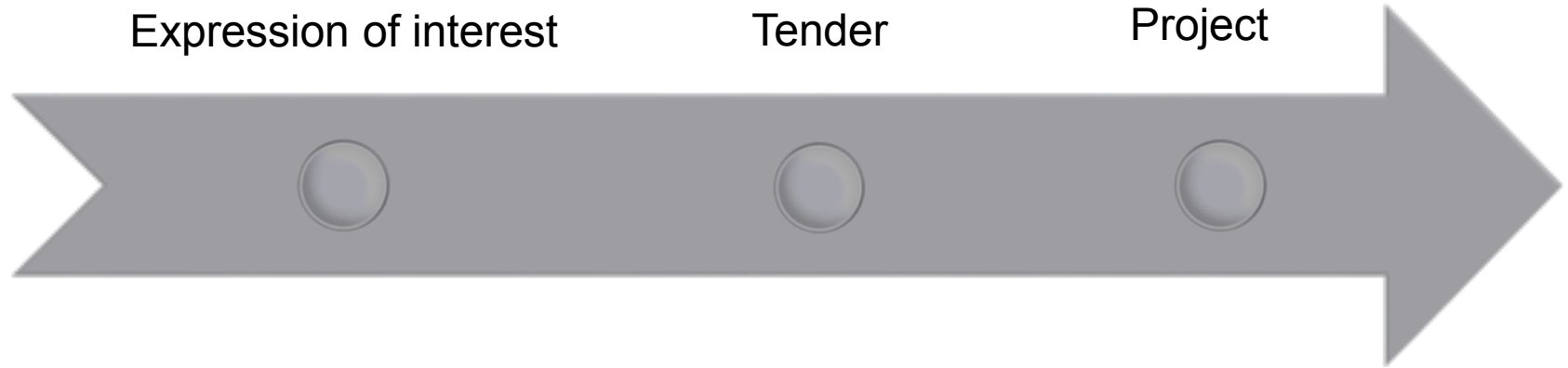
Leadership



Expression of interest

Tender

Project



People



- Early allocation of dedicated information management lead
- Knowledge handover between stages
- Digital engineering embedded as the single source of truth and part of project culture
- Induction process and training process aligns all project members

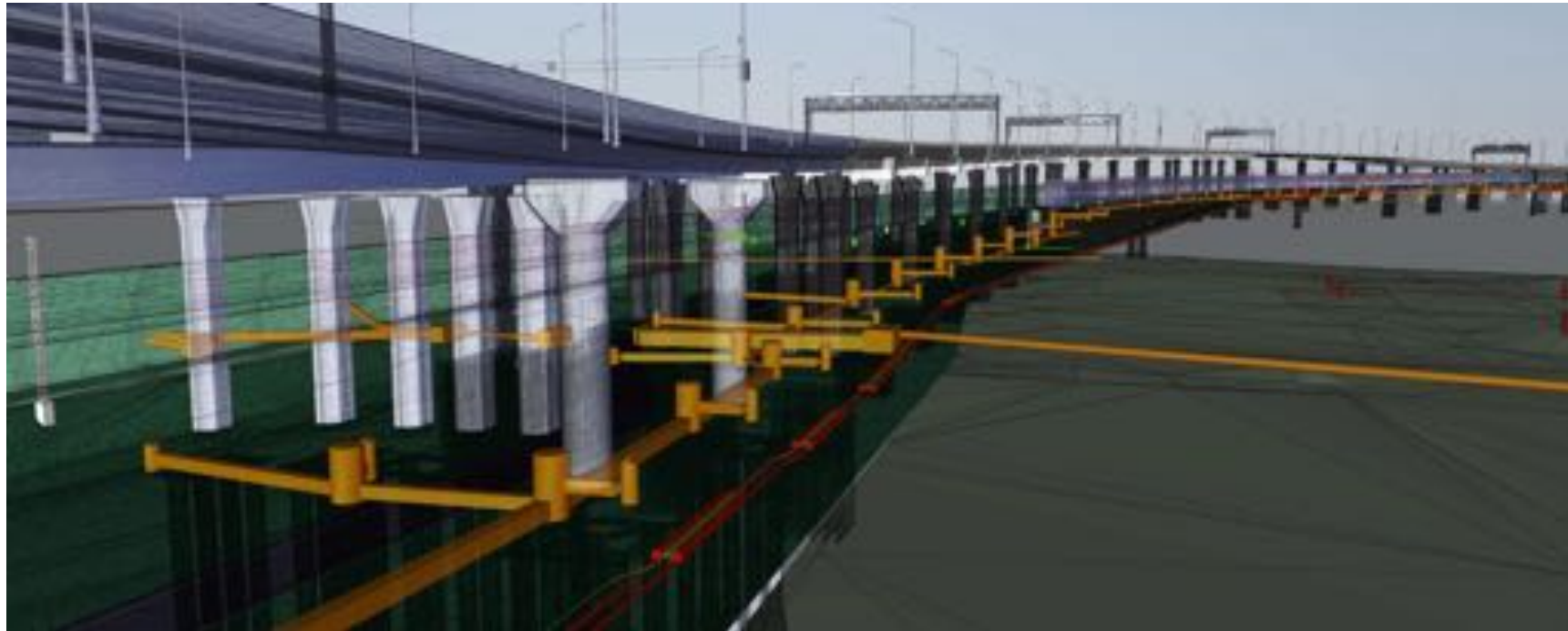
EIC
ACTIVITIES

EIC
ACTIVITIES

IMPLEMENTATION

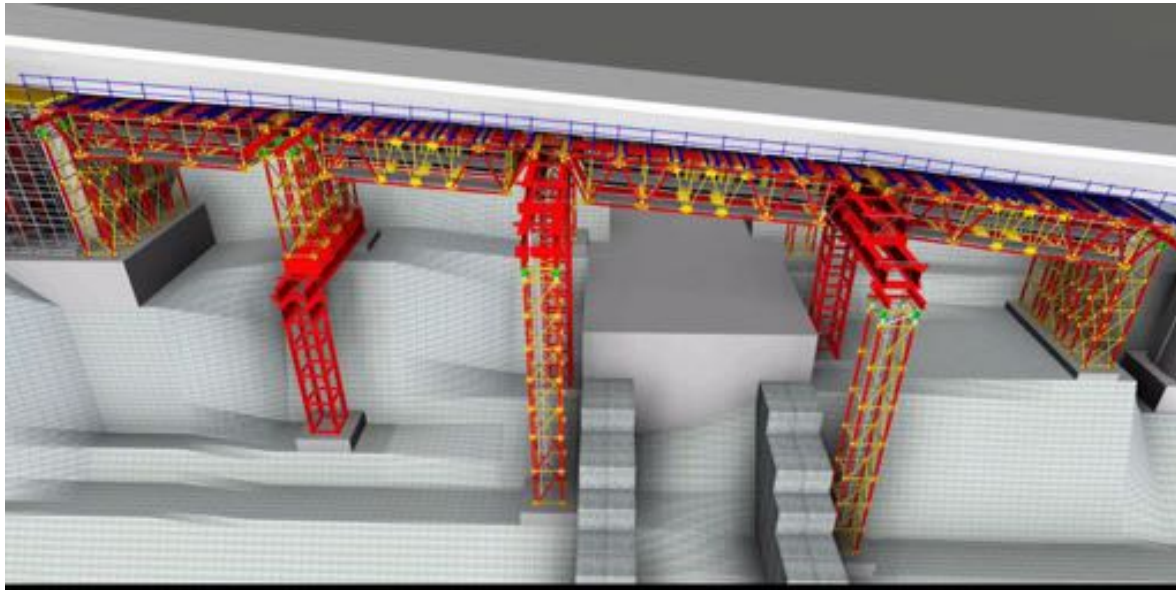
TYPICAL BIM USES

- 3D coordination and clash detection
- 4D planning and construction sequencing
- 5D quantity take off
- 6D asset information handover



OTHER BENEFITS

The challenging dismantling sequence, where access to the falsework for the crane was blocked by the completed bridge, was planned using BIM for better communication with the work crew.



Tseung Kwan O-Lam Tunnel, Hong Kong



ACTIVITIES

AUGMENTED REALITY

Below ground



Parramatta Light Rail – CPB Contractors/Downer
Client: TfNSW

Above ground



Gunyama Park Aquatic and Recreation Centre – CPB Contractors
Client: City of Sydney

OTHER BENEFITS



Logistics access



Cranes and laydown



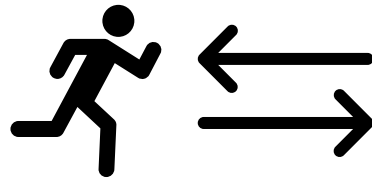
Emergency services training



Construction progress visualisation



Code compliance



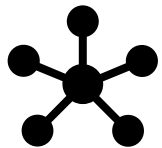
Access and Egress checks



Maintenance access



Safety in design



Stakeholder engagement

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MAJOR PROJECT ESSENTIALS

BUILDING SUCCESS



You can never start too early



Equip Leadership to drive the culture



Establish knowledgeable information management team from project start



Align the team through induction, training and ongoing awarenesssss



Documented requirements

