CIOB's Contribution
to the
Effective Management of Time
in
Construction Projects

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1   **Managing Time**

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Outline

- The state of scheduling world-wide
- ***The CIOB Guide***
  – Innovative ideas to avoid delay
- The new CIOB Contract
  – Implements ***The Guide***
- New CIOB Education Framework
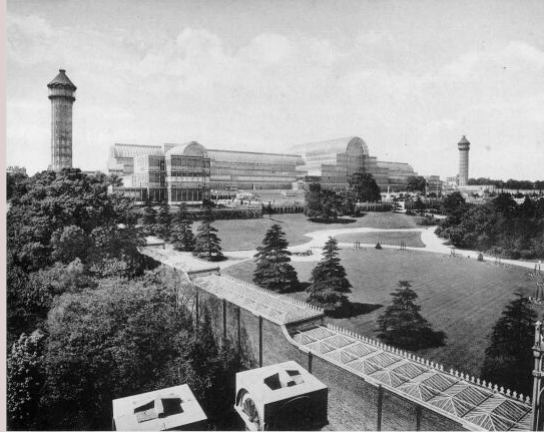 – Qualify people in Time Management
- Discussion

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Crystal Palace

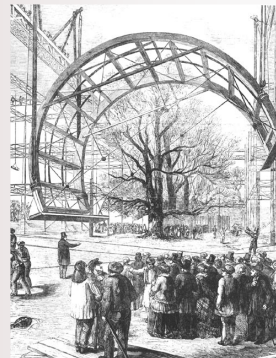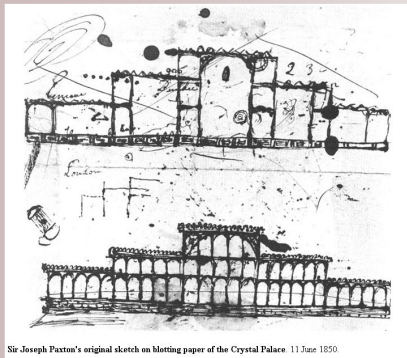- We are not so good!
- Crystal Palace……

- Built in 1851

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Crystal Palace

Sir Joseph Paxton's original sketch on blotting paper of the Crystal Palace. 11 June 1850.

The Crystal Palace, was a building the size of a modern shopping mall:
1848 feet [563.3 meters] long, 408 ft [124.4 m] wide and 108 ft [32.9 m] high.

New technology - Prefabricated cast iron was used extensively.

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Crystal Palace

From a rough sketch on blotting paper to the Great Exhibition of 1851 –

How long?

Royal patronage probably helped!!

The Crystal Palace was built in eight and a half months starting on 15 July 1850, opening on 1st May 1851

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Burj Khalifa -v- Empire State Building

Burj Khalifa Dubai

208 floors built in 5+ years

Empire State Bldg. completed in 1931

102 Floors built in 410 days

The steel frame rose at the rate of four and a half floors per week

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Burj Khalifa -v- Empire State Building

208 floors

102 Floors

years

410 days

If the Burj Khalifa in Dubai had been built at the same speed as the Empire State Building it would have opened two years earlier!

The steel frame rose at the rate of four and a half floors per week

Burj Khalifa Dubai

Empire State Bldg.
completed in 1931

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Time -v- Money

- Money – keep until you spend
  - Symptom of other successes or failures

- Time – 60 seconds lost every minute
  - Can't change the past
  - Now is too late to change
  - Manage the future

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Time -v- Money

- Things that don't work!
    - Contract terms and conditions / penalties
        - CIOB Report
        - UK Government metrics (Constructing Excellence)
    - Static contract programs
        - Measure failure
        - Used for claims and court actions after the event

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Time -v- Money

- CIOB – Construction projects
    - *Managing the Risk of Delayed Completion in the 21st Century*
      https://mosaicprojects.com.au/PDF-Gen/CIOB_TM_report_full.pdf

- Gartner ICT projects

- Both show around 50% failure rate!

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Skills and Knowledge

- Skills and Knowledge
  - Very few skilled planners and schedulers
  - Not used or respected by management
  - Except for the fights after the event

- A Brief History of Scheduling

https://mosaicprojects.com.au/PDF_Papers/P042_History_of_Scheduing.pdf

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Skills and Knowledge

- Solutions are being developed
  - Definition of good practices
  - Development training and certification
  - Education of management

- **These elements are the focus of the balance of this paper**
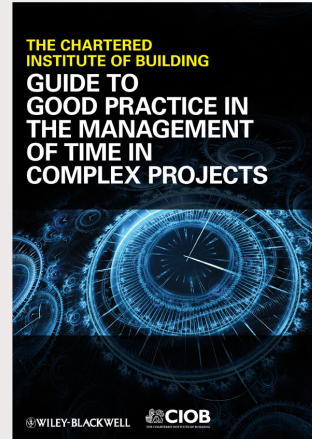
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The Guide

- *Guide to Good Practice in the Management of Time in Complex Projects*
- CIOB Initiative
- 2nd Edition now published

THE CHARTERED
INSTITUTE OF BUILDING
GUIDE TO
GOOD PRACTICE IN
THE MANAGEMENT
OF TIME IN
COMPLEX PROJECTS

WILEY-BLACKWELL   CIOB

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The Guide

- Planning -v- Scheduling
- Schedule design
- Schedule Density
- Updating & Maintaining the schedule
- Reporting & Communicating

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Planning -v- Scheduling

- Project Planning
  - Strategic process
  - Focus on objectives and methods
  - Foundation for scheduling
- Project Scheduling
  - Develop and maintain an effective schedule
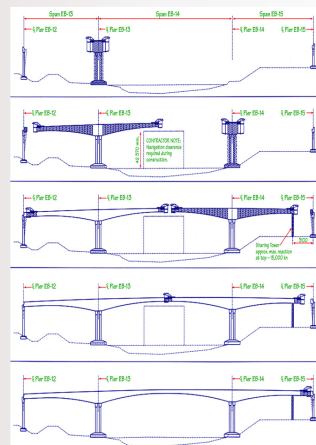
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Project Planning

- Precedes Scheduling
- Focuses on methods and Strategy
- Creative - requires skill and knowledge of the project

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Project Scheduling

- Requires good knowledge of scheduling
- Understanding of the scheduling tool
- Involves:
  - Designing the schedule
  - Developing the schedule
  - Maintaining the Schedule

See also: Core Papers @
https://mosaicprojects.com.au/PMKI-SCH-010.php#Overview

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Designing the schedule

- Schedule Levels & Schedule Density

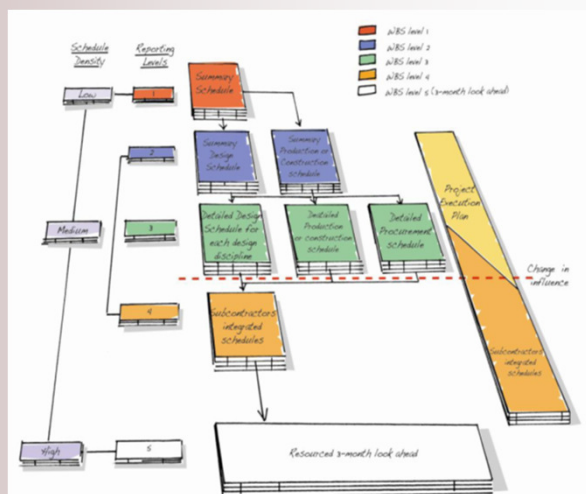Figure © Guide to Good Practice in the Management of Time in Complex Projects

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Schedule Density

- Schedule Density
    - Overall framework is essential for Time Management….. But
    - Detail planning requires the people doing the work to be involved
    - Therefore, add detail when appropriate

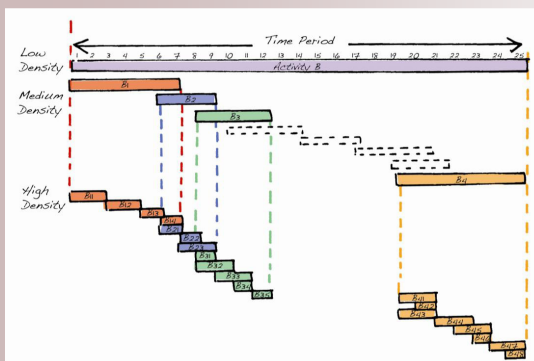19   Managing Time   mosaic

Schedule Density

Figures © Guide to Good Practice in the Management of Time in Complex Projects

Activities are progressively expanded to greater levels of 'density' as more information becomes available
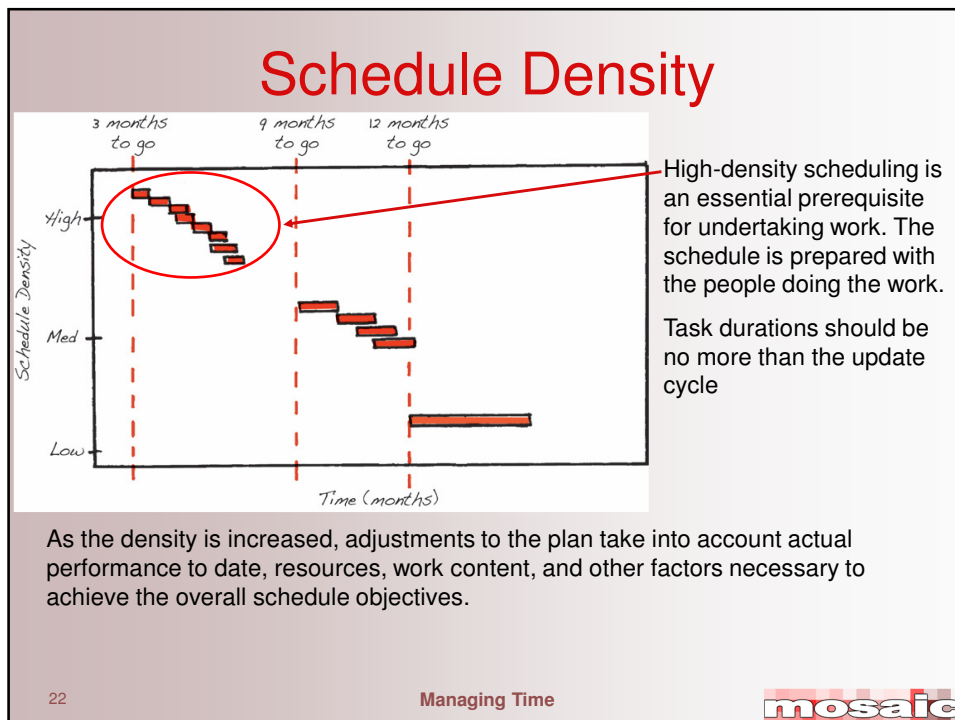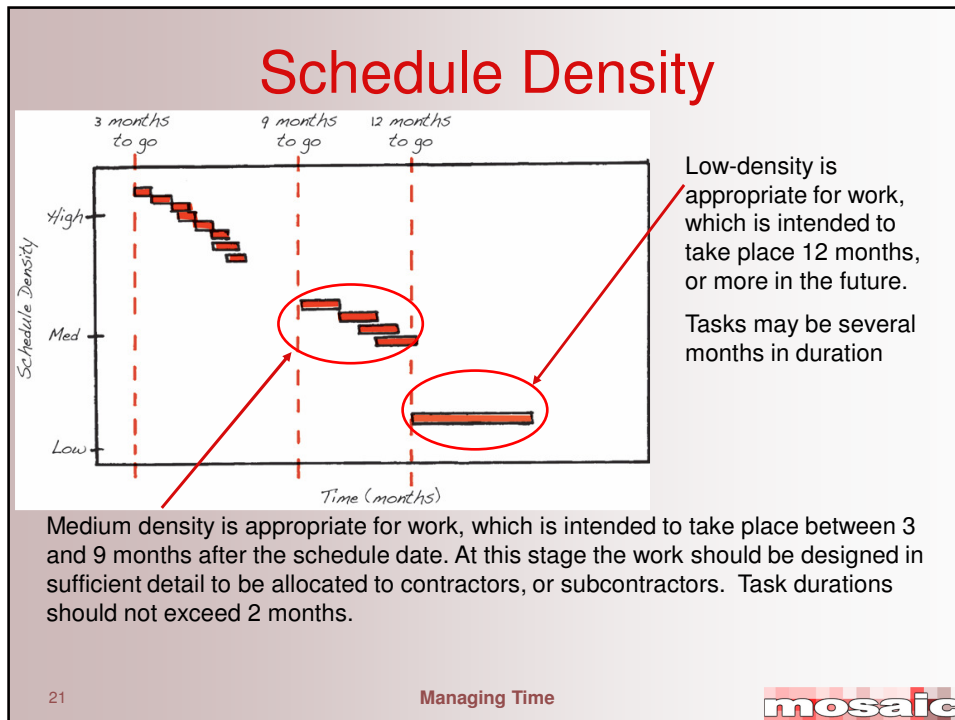
Unless the work is designed in its entirety and all subcontractors and specialists appointed before any work commences, it is impossible to plan the work in its entirety, in detail at the beginning of a project.

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Schedule Density

Low-density is appropriate for work, which is intended to take place 12 months, or more in the future.

Tasks may be several months in duration

Medium density is appropriate for work, which is intended to take place between 3 and 9 months after the schedule date. At this stage the work should be designed in sufficient detail to be allocated to contractors, or subcontractors. Task durations should not exceed 2 months.

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Schedule Density

High-density scheduling is an essential prerequisite for undertaking work. The schedule is prepared with the people doing the work.

Task durations should be no more than the update cycle

As the density is increased, adjustments to the plan take into account actual performance to date, resources, work content, and other factors necessary to achieve the overall schedule objectives.

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Schedule Density

Location	Zone	Area	Section	Item	Description	Activity ID
Low Density A	B	A			Substructures	ABAZZ00010
Medium Density A	B	A	A		Excavations	ABAAZ00010
A	B	A	B		Piling	ABABZ00010
A	B	A	C		Ground beams	ABACZ00010
A	B	A	D		Floor slabs	ABADZ00010
High Density A	B	A	C		Ground beams	ABACZ00010
A	B	A	C	A	Formwork	ABACA00010
A	B	A	C	B	Reinforcement	ABACB00010
A	B	A	C	C	Placing concrete	ABACC00010
A	B	A	C	D	Curing	ABACD00010
A	B	A	C	E	Strike formwork	ABACE00010
A	B	A	C	F	Backfill	ABACF00010

The activity coding structure (ID) maps high to medium to low density
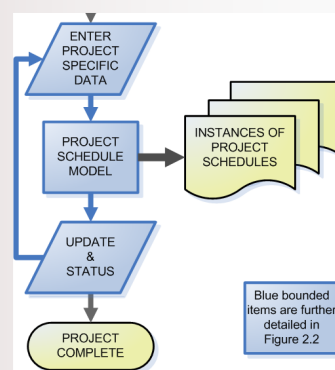
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Maintaining the Schedule

- Maintain the High Density Schedule
- Record actual progress
- Reschedule from 'data date' (or Time Now)
- Roll up progress to Medium and Low Density Schedules

ENTER PROJECT SPECIFIC DATA

PROJECT SCHEDULE MODEL → INSTANCES OF PROJECT SCHEDULES

UPDATE & STATUS

PROJECT COMPLETE

Blue bounded items are further detailed in Figure 2.2

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Maintaining the Schedule

- Edit for accuracy
  - No tool accurately manages all of the issues around partially complete tasks
- Focus on success – adapt the work
- Involve both task owners and managers
  - Use 'their data' not yours!

See: Managing for Success - The power of regular updates-
https://mosaicprojects.com.au/PDF_Papers/P002_MFS_Full.pdf

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Reporting Options

Data is not information, information is not knowledge, knowledge is not understanding, understanding is not wisdom.

Clifford Stoll

See: Beyond Reporting - The Communication Strategy
https://mosaicprojects.com.au/PDF_Papers/P094_Beyond_Reporting.pdf

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Reporting Options

- The major challenge with scheduling is communicating complex data effectively
- This is achieved by effective reporting

See: Seeing the Road Ahead –
the challenge of communicating schedule data
https://mosaicprojects.com.au/PDF_Papers/P106_Seeing_The_Road_Ahead_PMOZ.pdf

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Reporting Options

Which map is more useful
If you are looking for the Dojo

AIKIKUNREN DOJO

'Useful', 'Accurate' and 'Fully Detailed' are not synonymous and may be contradictory!
Ask for what you need……

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The Guide

- Summary
  - Developed by CIOB
  - International team
  - Focuses on practical time management
  - Designed to achieve on-time completion

- **Plan what you know!**

- **Adapt to changing circumstances!**

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CIOB Complex Projects Contract

- CIOB's first major contract form in 140 years CIOB-CPC

- Designed to to put the CIOB's *Guide to Good Practice in the Management of Time in Complex Projects* into practice

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CIOB Complex Projects Contract

- CIOB-CPC can be used:
  - With **BIM**, Building Information Modelling (or without BIM)
  - In any country
  - Under any legal jurisdiction

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CIOB Complex Projects Contract

- CIOB-CPC can be used for most types of project:
  - Both building and engineering projects
  - Traditional construction only
  - Turnkey
  - Design and build
  - Part contractors design

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CIOB Complex Projects Contract

- CIOB-CPC Documents include:
  - The Contract Agreement, the Conditions of Contract and the Contract Appendices.
  - Standard Forms:
    - Subcontract,
    - Agreements for the appointment of Contract Administrator, Project Time Manager and Design Coordination Manager
    - Collaborative services agreement for use with Building Information Modelling

CIOB Complex Projects Contract

- Key elements:
  - Detailed requirements for the identification and use of time contingencies
  - Detailed requirements for the identification and use of cost contingencies
  - Requires a collaborative, and competent, approach to how risks are managed
  - Uses transparent systems of data exchange

CIOB Complex Projects Contract

- Major innovations:
  - The contractor may keep the benefit of any time it saves by improved progress as its own contingency, which cannot be taken away
  - Claims must be processed promptly
  - The schedule is a tool for managing the use of time, not a tool for developing claims!

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CIOB Complex Projects Contract

- CIOB-CPC Development:
  - Industry review process completed 30 July 2012
- Publication late 2013

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Qualification Framework

This section:

- Current certifications
- Planning Planet

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Qualification Framework

- Current Qualification Framework
  - Association for the Advancement of Cost Engineering International (AACE) PSP
  - PMI Scheduling Professional (PMI-SP)
- Both focused on highly experienced schedulers 3 to 5+ years

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Qualification Framework

- Limited training for PMI-SP or AACE
  - Assumed self study by experts
  - Mosaic's PMI-SP course one of the few available (and in low demand)
- Relatively low numbers of credentials awarded
  - Both less than 1000 after many years

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GPC – 'The Guild'

- **International Guild of Project Controls** (GPC)
  - Centre of excellence for developing the skills, expertise and capability of professionals in the field of project controls
  - Launched 11/11/2011
  - Sponsored by Planning Planet and major corporate employers

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GPC – 'The Guild'

- The Guild is designed to support companies and individuals with:
  - Career Path / Professional development
  - Training
  - Certifications to Prove Competency
  - Mentoring
  - Project Controls Systems Resources

GPC – 'The Guild'

- **Career Path & Membership levels defined**
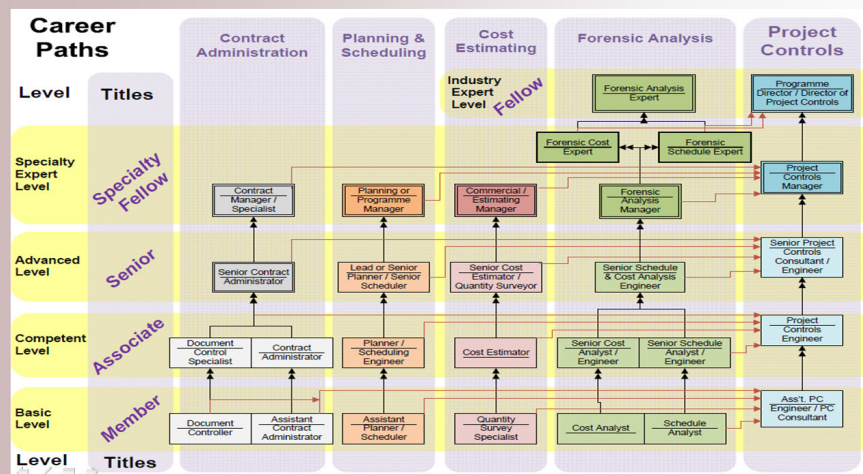
GPC – 'The Guild'

- **Key elements. The Guild will:**
  - Stay independent / not for profit / open book
  - Use / recognise existing standards
  - Use independent examination providers
  - Use knowledge AND capability benchmarks
  - Offers a point of harmonization
  - See: http://www.planningplanet.com/

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What's Mosaic doing?

- We are developing a free resource at
  https://mosaicprojects.com.au/PMKI-SCH.php

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Conclusion

- Definite trend towards:
  - Improving Time Management
  - Standardising planning and scheduling
  - Developing training frameworks
  - Accrediting Planners and Schedulers

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Conclusions

- We need a management re-education program
  - SOX, etc mandate the need for predictive process like scheduling
  - So why do so many projects have time 'set in stone' before anyone looks at a realistic schedule?
  - Senior managers need to understand the value of skilled schedulers

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Conclusions

- International credentials will help
  - Focused on new planners and schedulers
  - CIOB is leading the development of practical credentials
- *The Guide*
- We have the opportunity to reinvigorate the role of time management

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Conclusion

- Challenges:
  - Keep training and credentials aligned globally, CIOB, PP, PMI, AACEi, etc.
  - Gain respect of management

- CIOB is making a difference!

  Useful schedule are useful because they are used!

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Discussion

- Questions please
- Contact details:
  – Free planning and scheduling resources:
    https://mosaicprojects.com.au/PMKI-SCH.php
  – Email: patw@mosaicprojects.com.au

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