

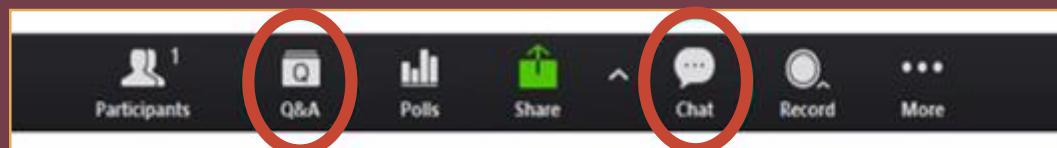
Mining Industry Solution

My name is Cedric and I am a part of the Oracle cross Global Business Units (xGBU) Sub-Sharan Africa team. Here to support you alongside my Regional Sales Team.

I am a recognized valiant foot solider offering a unique blend of more than 20 years progressive executive acumen, leadership and IT solution sales and development - putting Revolutionary Technology in the Hands of Great Business People to manage information & processes across projects and businesses. I am a member of PMI and have been at Oracle is 2016.

There are 8 autonomous Global Business Units inside Oracle. Each one is set up to solve industry specific problems and has expert DNA built in. You've got one for Retail, Communications, Food & Beverage, Hospitality and Utilities. And of course we're here today to talk about "Construction and Engineering".

**Do you have questions?
Please use the Q&A or Chat function**



Cedric Tsiga

GBU Africa Regional Manager, East Africa

 @ctcedric
@OracleConstEng



Safe harbor statement

The following is intended to outline our general product direction. It is intended for information purposes only, and may not be incorporated into any contract. It is not a commitment to deliver any material, code, or functionality, and should not be relied upon in making purchasing decisions. The development, release, timing, and pricing of any features or functionality described for Oracle's products may change and remains at the sole discretion of Oracle Corporation.

Session Roadmap

Support Across The Mining Value Chain

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Industry We Serve

State of the Market - Global Challenge: COVID-19

GlobalData predicts that global construction output will contract by 3.2% in 2020, a sharp downward revision compared to the forecast increase of 3.1% pre-COVID-19.

- Western Europe output will contract by 8.1%.
- North America output is expected to drop by 6.6%.
- North-East Asia output will grow by just 1.1%.

Source: Global Construction Output Growth (% Change), 2014-2020

Global Construction Output will fall 3.2% in 2020
Global Data Q2 2020

Global Economic Contraction of 4.9% in 2020
IMF

Infrastructure projects will be a priority for government investment as soon as normally returns, to reinvigorate the industry. With interest rates at record lows, borrowing costs will be at a minimum, but success will depend in part on the financial standing of governments post COVID-19.

Q3 2020 Update

Industry Status

Rapid Digital Innovation

Technology Shapes every aspect of project delivery

Oracle is focused on helping organizations navigate the changes on how and where we work in construction

The worksite of tomorrow is here today

Industry Trends

Monitor Performance Across the Project Lifecycle

Planning, Monitoring & Evaluation

Project Preparation & Selection Process

Project Execution

Ideation: Single Point of Entry

Scoping: Business Case

Pre-feasibility: Facility Design

Feasibility: Economic Plan

Construction: Log Proc, Cost

Hand-over: Site Handover

Operations: O&M

Funding Strategy Based on Bankable Study

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[Date]

Key Capabilities

Construction Management Software from Oracle

ORACLE Primavera

ORACLE Acumen

ORACLE Textura

Portfolio Management

Design Collaboration

Project Controls

Jobsite Mobility

Payments Management

Data Analytics

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Solution Components

Support Across The Mining Value Chain



Mining Operations



Mineral Process Plants



Related Services



Beneficiation



Greenfields Projects



Brownfields Projects



72% OF CEOS
IDENTIFY THE ABILITY TO
MANAGE PROJECTS AS CRITICAL
TO THE FUTURE GROWTH OF
THE BUSINESS...

...JUST 11% ARE VERY
CONFIDENT OF THEIR
ABILITY TO MANAGE
BUSINESS CRITICAL
PROJECTS

Source: IPMA Study Sept. 2010

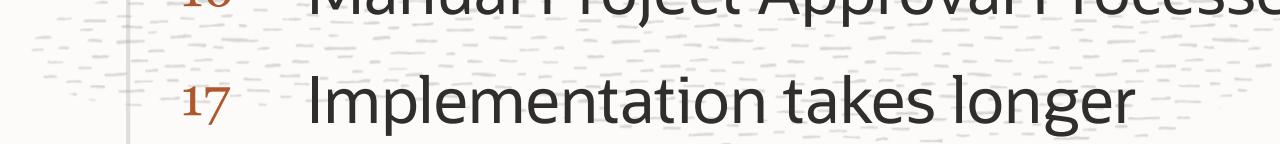


6%

of executives say their projects come in
on time and on budget consistently



WHY?

- 
- - 1 Conflicting Priorities
 - 2 Lack of Business Alignment
 - 3 Limited Enterprise Visibility
 - 4 Project Scoping
 - 5 Project Overruns
 - 6 No Accountability
 - 7 Slow Reaction Time
 - 8 Slow Project Delivery
 - 9 Loss of Project Big Picture
 - 10 Squandered Resources
 - 11 Escalating Costs
 - 12 Poor Risk Management
 - 13 No Contractor Collaboration
 - 14 Project Scoping
 - 15 Project Overruns
 - 16 Manual Project Approval Processes
 - 17 Implementation takes longer
 - 18 ...

10 Challenges for Mining

1. To remain competitive
2. To ensure legal compliance
3. To achieve operational efficiency
4. To achieve digital effectiveness
5. To ensure a balanced application of capital
6. To invest in transformative technologies
7. To contain rising costs
8. To become energy efficient
9. To build the workforce of tomorrow
10. To adapt to the green economy



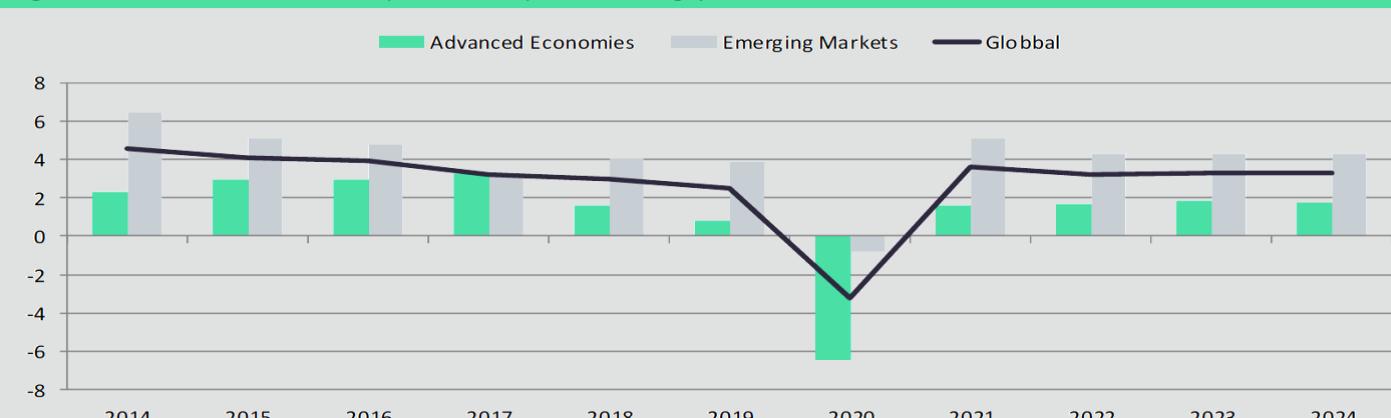
State of the Market - Global Challenge: COVID-19

Decrease in Global Construction Output

GlobalData predicts that global construction output will contract by 3.2% in 2020, a sharp downward revision compared to the forecast increase of 3.1% pre-COVID-19.

- Western Europe output will contract by 8.1%.
- North America output is expected to drop by 6.6%.
- North-East Asia output will grow by just 1.1%.

Figure 1: Global Construction Output Growth (Real, % change), 2014–2024



Source: GlobalData Q2 2020 Update

Infrastructure projects will be a priority for government investment as soon as normality returns, to reinvigorate the industry. With interest rates at record lows, borrowing costs will be at a minimum, but success will depend in part on the financial standing of governments post COVID-19.

Global Construction Output will fall 3.2% in 2020

Global Data Q2 2020

Global Economic Contraction of 4.9% in 2020

IMF

The impact of COVID-19 on Australian Construction Projects

Trades
Unable to
Reach
Project Sites

Supply
Chain
Disruptions

Exacerbated
Skills
Shortage

Liquidity
Issues

Contract
Reviews and
Negotiation

Split Shifts

New Onsite
Protocols
and Rules

Project
Funding
Risks

Employee
Health and
Safety
Concerns

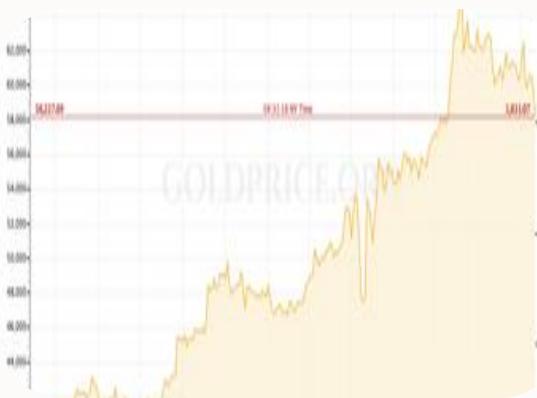
Cost
Overruns

Productivity
Decrease

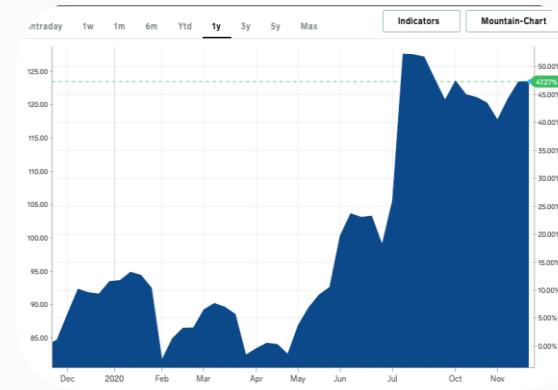
Delay
Claims and
EoT



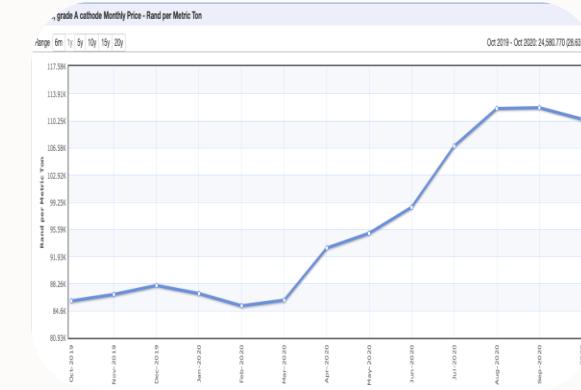
Market Trends – 12 months



Gold



Iron Ore



Copper



Platinum

Renewed Investment

Many mining companies are committing
to **new investment in mining**
infrastructure, renewable energy sources
and downstream beneficiation projects.
Following a period of low investment, new
capacity projects are required to
overcome production decline.



Rapid Digital Innovation

Building Information Modelling	Internet of Things	Cloud	Data Analytics	Artificial Intelligence
Machine Learning	Virtual Reality	Augmented Reality	Drones	Sensors
Block Chain	Autonomous Vehicles	3D, 4D, 5D	5G	Workplace Safety
Reality Capture	Digital Twin	GIS	Supply Chain Visibility	Wearables
Predictive Analytics	Lean Construction	SaaS	Data Interoperability	Digital Twins

Technology Shapes every aspect of project delivery

Oracle is focused on helping organizations navigate the changes on how and where we work in construction

The worksite of tomorrow is here today

Construction Industry Institute – PDRI, Project Controls, Risk Management



Construction
Industry
Institute®

CII envisions an efficient capital projects industry that builds predictable value for member organizations, society, and stakeholders.

Many Infrastructure and Urban Development role players are members of the CII

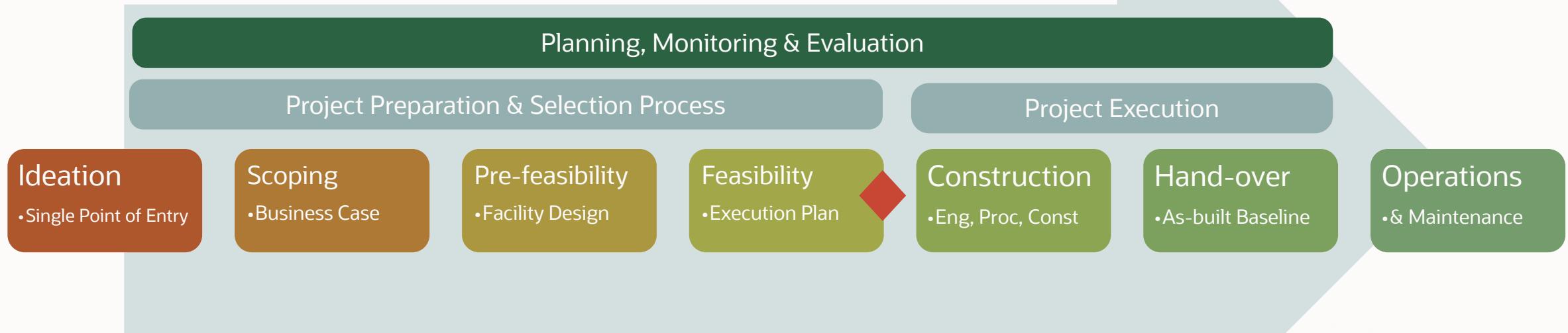
Focus Groups:

Power, Utilities and Infrastructure
Facilities & Healthcare

Areas of Interest:

Best Practices
Knowledge Areas
PDRI

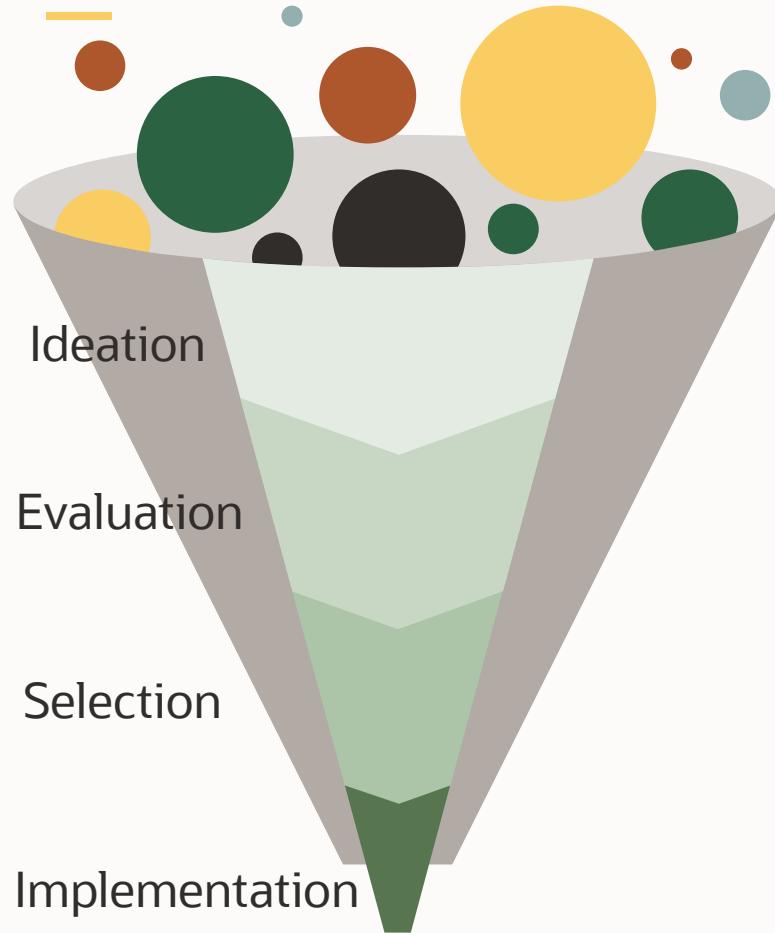
Monitor Performance Across the Project Lifecycle



◆ Funding Strategy Based on Bankable Study



Adopt a Portfolio Management Framework

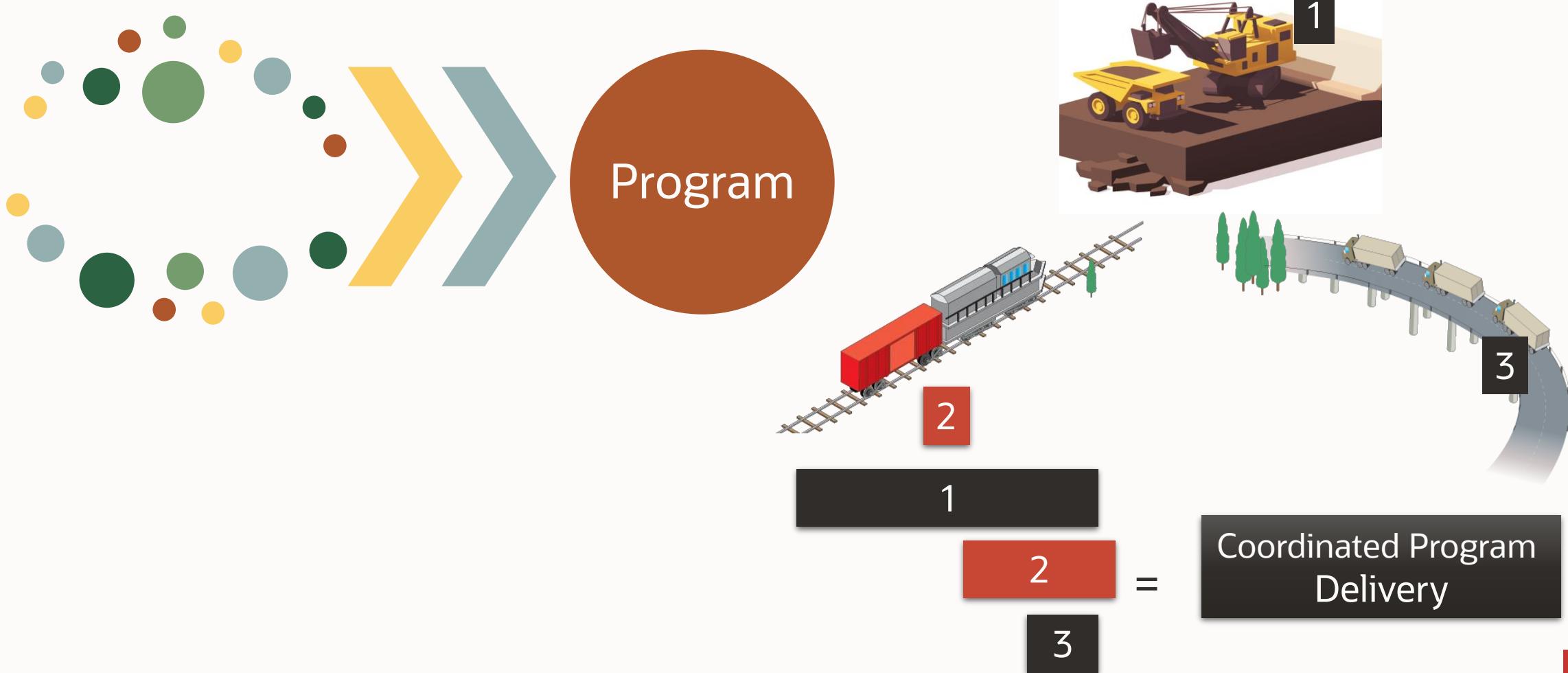


- Portfolio management is a key enabler of corporate strategy
- Enable conducive environment for project preparation and delivery
- Develop a consistent pipeline of projects aligned with strategic objectives
- Balance portfolio across brown-fields and green-fields projects
- Align portfolio across multiple operations and regions
- Identify potential funding gap

Adopt a Program Management Approach



Program Level Co-ordination of Delivery



Manage Extended Project Delivery Organization

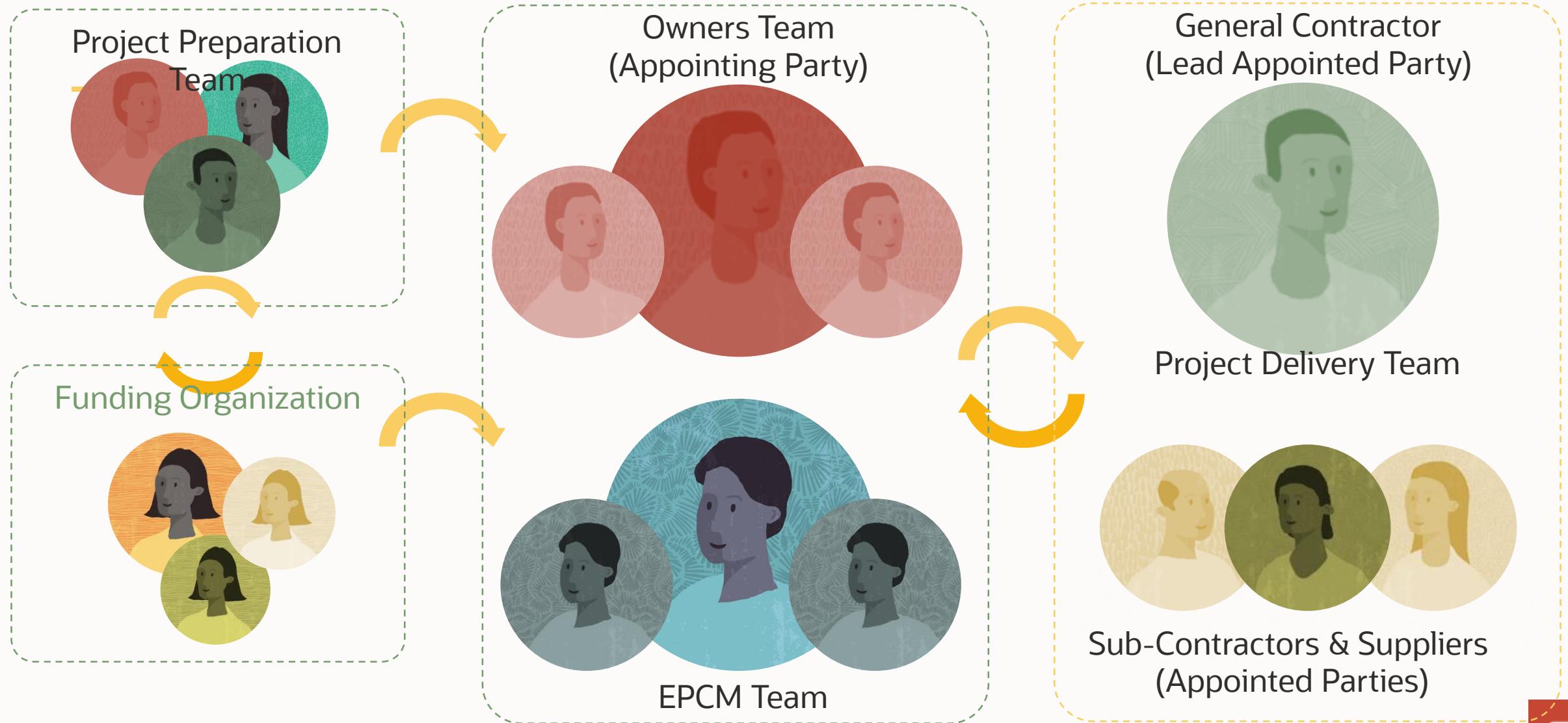


Manage Complex Supply Chains

- 1 Improve project related tendering processes
- 2 Ensure consistent application of contract terms and conditions
- 3 Handle a high volume of contractual correspondence
- 4 Ensure transparent project & contract change management
- 5 Promote timely payments to sub-contractors & suppliers



Manage an Extended Project Delivery Organization



Manage Extended Project Delivery Organization

Funding Organization



- Good Governance
- Reduced Investment Risk
- Clear Pipeline
- Funding Traceability

Owners Team



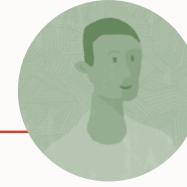
- Project Preparation
- Consistent Methodology
- Robust Project Pipeline
- Capital Plan
- Process Governance
- Portfolio Level Insight
- Performance Visibility
- Funding Traceability
- Project Assurance
- Information Management
- Reduced Risk

EPCM Team



- Visible Projects Pipeline
- Project Delivery Systems
- Open Procurement
- Contract Management
- Project Assurance
- Collaboration
- Timely Sub-contractor Payments
- Digital Handover

General Contractor



- Project Systems
- Collaboration
- Project Controls
- Contracts Management
- Change Management
- Issues & RFIs
- Inspections
- Timely Sub-Contractor Payments
- Digital Handover

Sub-Contractors



- Collaboration
- Project Controls
- Contracts Management
- Change Management
- Issues & RFIs
- Inspections
- Timely Payments
- Digital Handover
- Fewer Disputes



A Modern Cloud Solution for All Participants



Oracle Cloud Infrastructure Gen2 Cloud
Shift Critical Workloads to the Cloud

Manage Information As A Renewable Resource

Volume

Interoperability

Standards

Quality

Theft

Fair

Software Platform

Digital Handover

Access

Accurate

Timely

Coding

Intellectual Property

Security

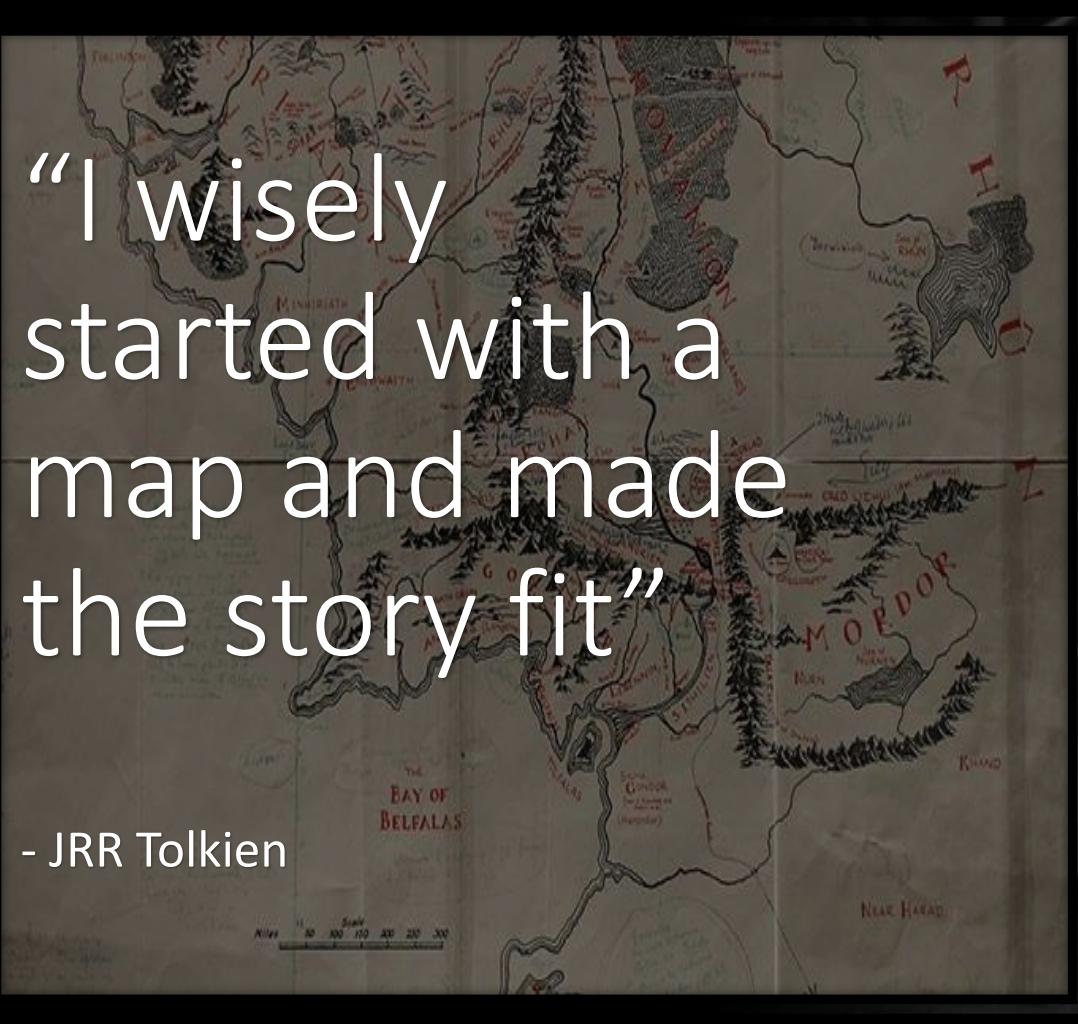
Lost

Archiving

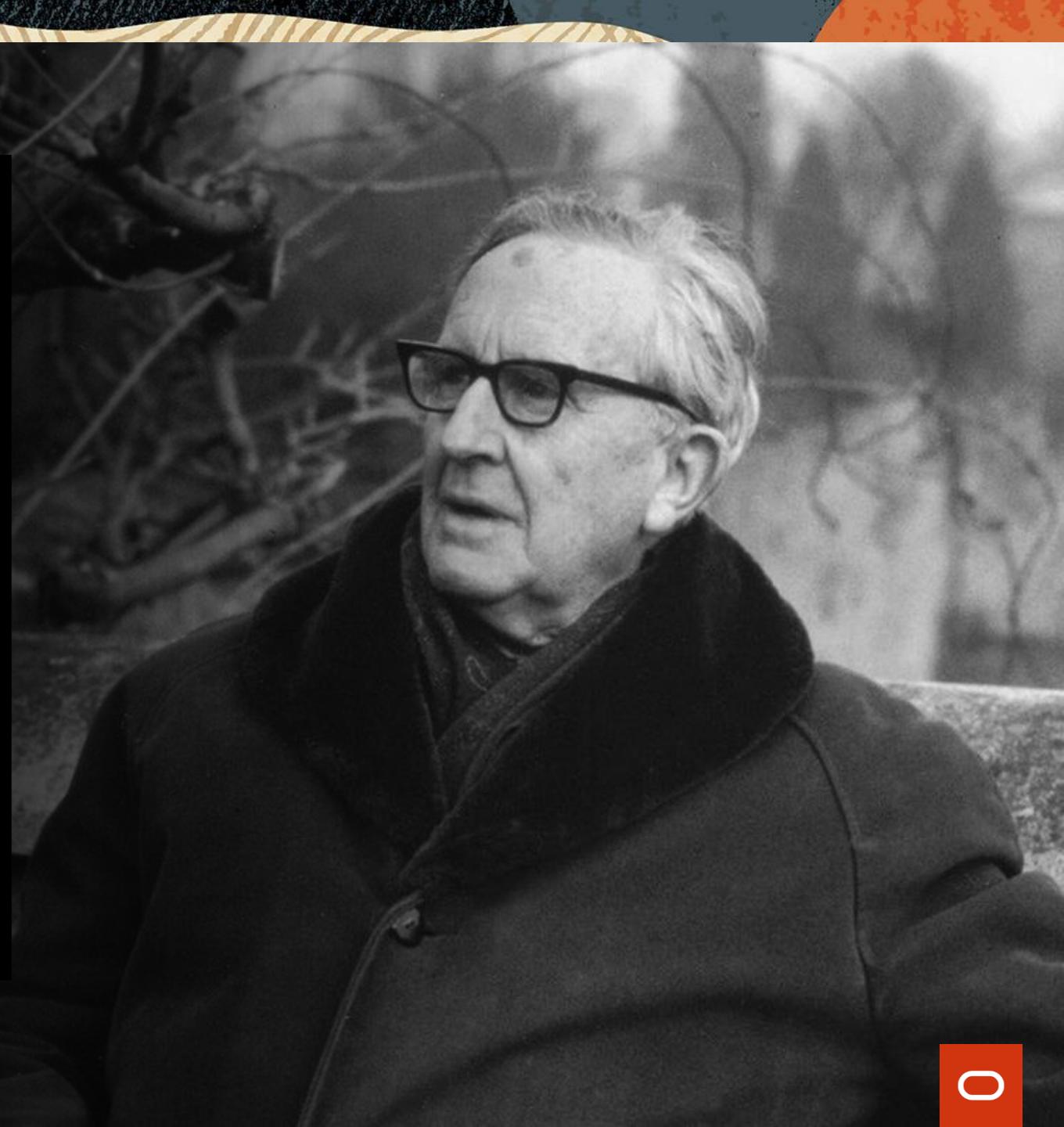
Improve Project Delivery Through Digital Transformation in Construction

- Make Smarter Decision
- Reduce Risk
- Finish on Time & Budget





- JRR Tolkien



Verify the Problems you are trying to Solve

Delayed Projects

Cost Blow Outs
 Poor Margins

Poor Estimates

Ineffective Contracts

Poor Quality
 Rework

Incidents
 Near-miss

Identification
 Mitigation
 Response



Eliminate Silos of Information & Disparate Systems

Multiple, expensive legacy systems

Disconnected silos of processes and data

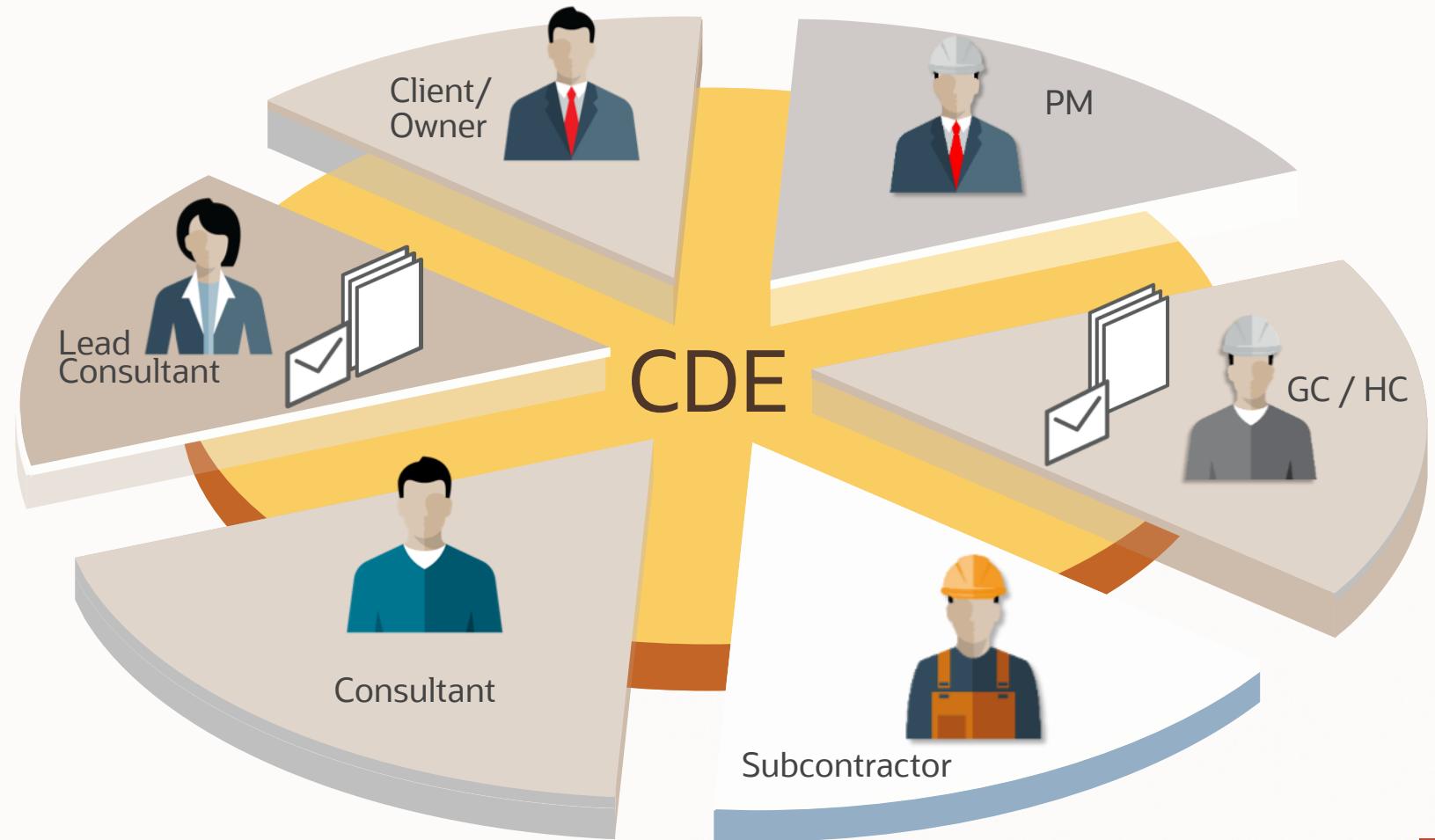
No “single source of truth” across projects & contracts

Lack of standard methodology across departments

A True Common Data Environment from Oracle

We define neutrality as universal fairness when applied to project collaboration platforms.

All stakeholders have control over their data, and no stakeholder has an advantage over another.

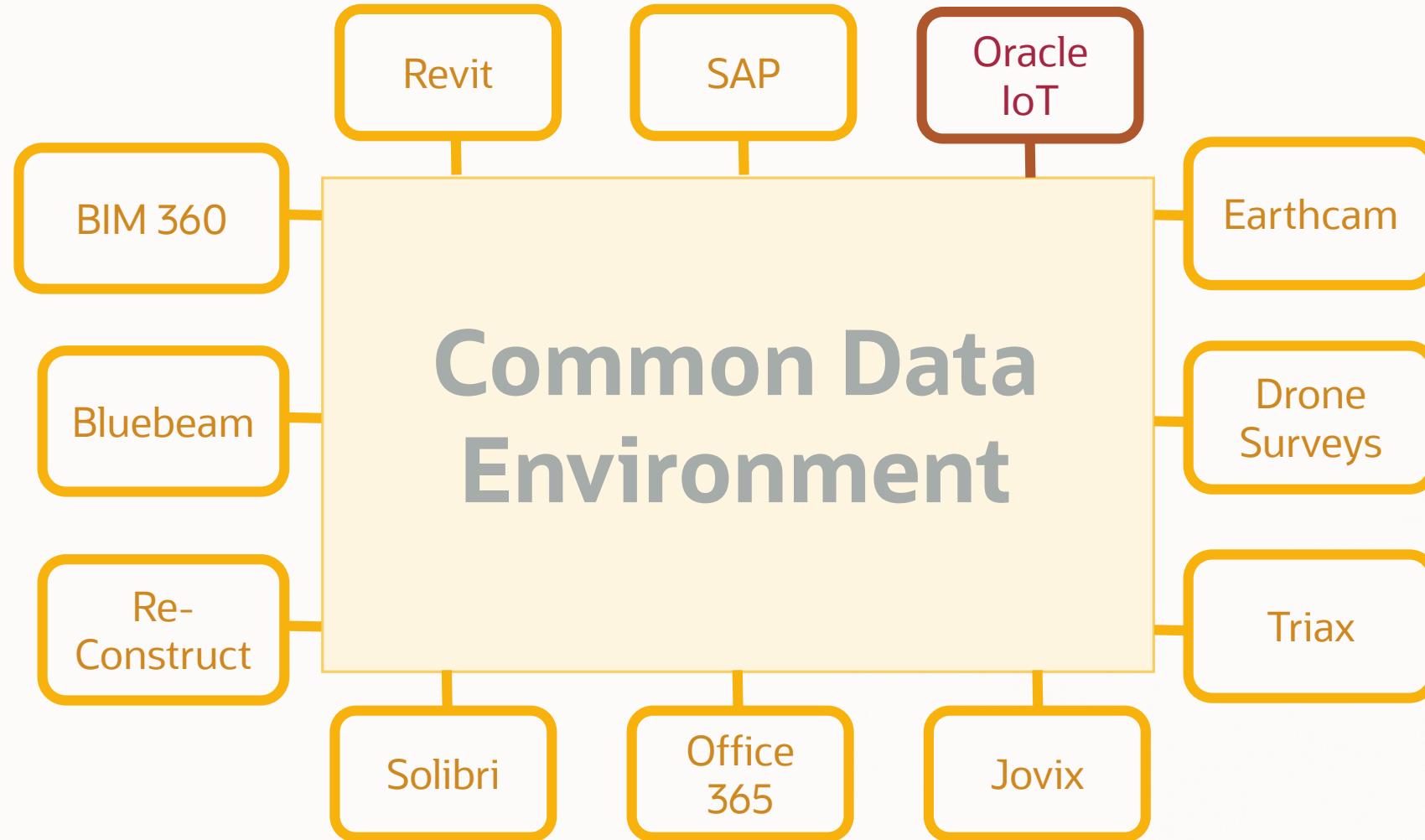


Customers Are Using Many Systems

Design	Design & Coordination	ERP	Schedule	Site cams	Progress Control
Revit	Aconex	SAP	Primavera P6	Earthcam	Re-Construct
Model Mgt Work in Progress	Drawing Review	IoT	Supply Chain Finance	Drone surveys	Worker Tracking
BIM 360	Bluebeam	Oracle IoT	Textura	Drone Surveys	Triax
Portfolio Mgt	Document authoring	Internal Processes & FM	Reporting	Model Quality	Material Tracking
Primavera Cloud	Office 365	Unifier	Oracle BI	Solibri	Jovix



An Integrated Platform for a TRUE CDE



Construction Management Software from Oracle



Portfolio Management

Focus on the projects that matter most

- Control, visibility and insights are critical to the effective management of large project portfolios
- Optimize investment mix and maximize ROI
- Propose, inventory, prioritize and select projects
- Visualize portfolio-level capital planning and budgeting



Portfolio Management

Design and Construction Coordination

Model coordination in a common data environment

- Simplify BIM model coordination, connecting teams, models and project data in a neutral and secure collaborative environment
- Seamlessly share, review and coordinate 3D models without specialized software
- A complete set of linked hardware, information and full audit trail of all interactions and changes made to the model
- Stay in control of project document management and keep processes running, including reviews, submittals and RFI's



Design Collaboration

Project Controls & Contract Management

Cost management and contract control across the entire project supply chain

- Ensure trusted collaboration and integrated process management across the lifecycle, with fast access to insights
- Streamline BIM model coordination, connecting teams, models and project data in a neutral and secure collaborative environment
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Project Controls

ORACLE
Primavera

ORACLE
Aconex

ORACLE
Textura

Jobsite and Mobility

Real-time collaboration and control of jobsite processes with easy-to-use mobile apps

- Track and share project information, manage inspections, and access models, anywhere, anytime
- Fast and easy access to the latest set of drawings directly from mobile device
- Automate and standardize inspection processes
- Less time on administration allows you to focus on high-value activities, including quality management and prevention of safety incidents



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Jobsite Mobility

Payments Management

Protect the project supply chain

- Closed based, collaborative payment management and supply chain financing
- Increase efficiency: eliminate paper and electronic gridlock by providing a single source of truth to the supply chain
- Mitigate Risk: automate and streamline collection of compliance and payment data
- Strengthen Supply Chain: close the finance gap to the supply chain and reduce risk



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Payments Management

Data Analytics and Reporting

Make better decisions

- Real-time Management Information to reduce project risk
- Dashboard Configurable: in application dashboards to visualize performance information in real-time
- BI Reporting: leverage the business intelligence reporting feature on-premises, leveraging reports required by the business
- Data Analytics: Leverage data analytics to extract the value hidden in a sea of data across the organization. Improve business decisions through predictive analysis
- Predictive Analytics: Leverage AI with project performance data to make better decisions and reduce risk



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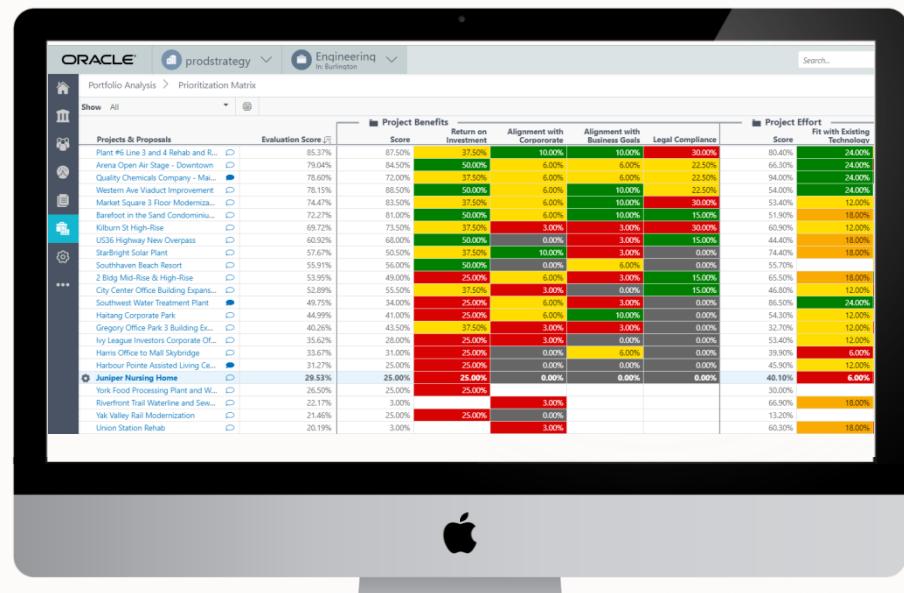
Data Analytics

Portfolio Management

Focus on the projects that matter most

Control, visibility and insights are critical to the effective management of large project portfolios

- Optimize investment mix and maximize ROI
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Design and Construction Coordination

Model coordination in a common data environment

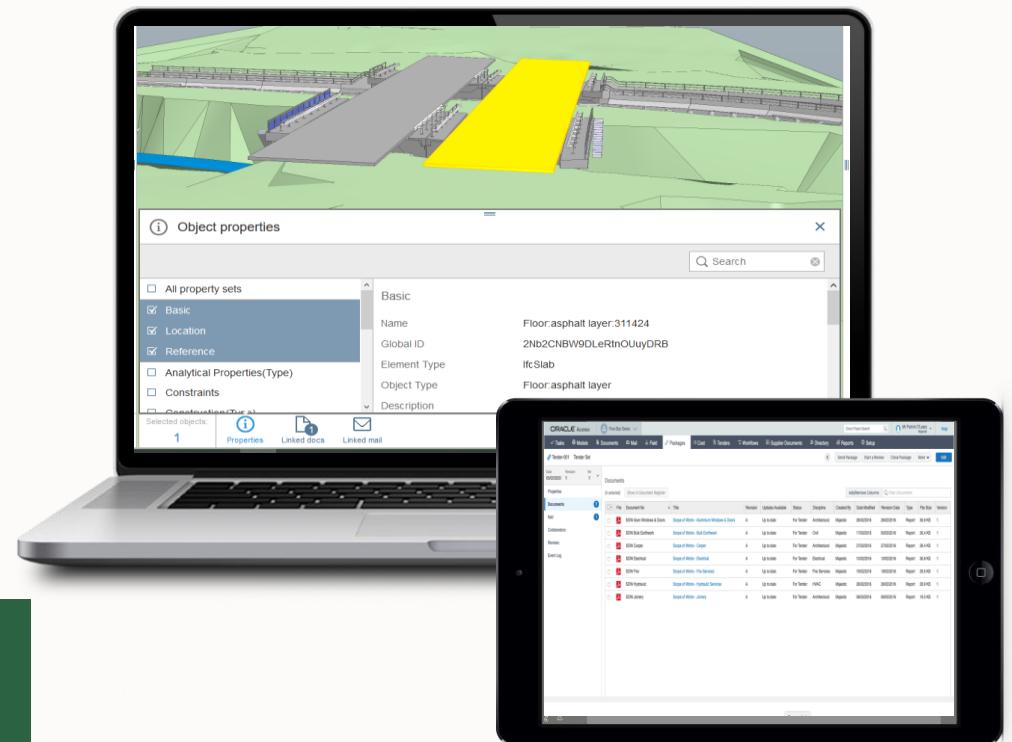
Ensure trusted collaboration and integrated process management across the lifecycle, with fast access to insights

Simplify BIM model coordination, connecting teams, models and project data in a neutral and secure collaborative environment

Seamlessly share, review and contribute to models without specialized software

A complete set of linked handover information and full audit trail of all decisions at project completion

Stay in control of project document management and keep processes moving, including reviews, submittals and RFIs

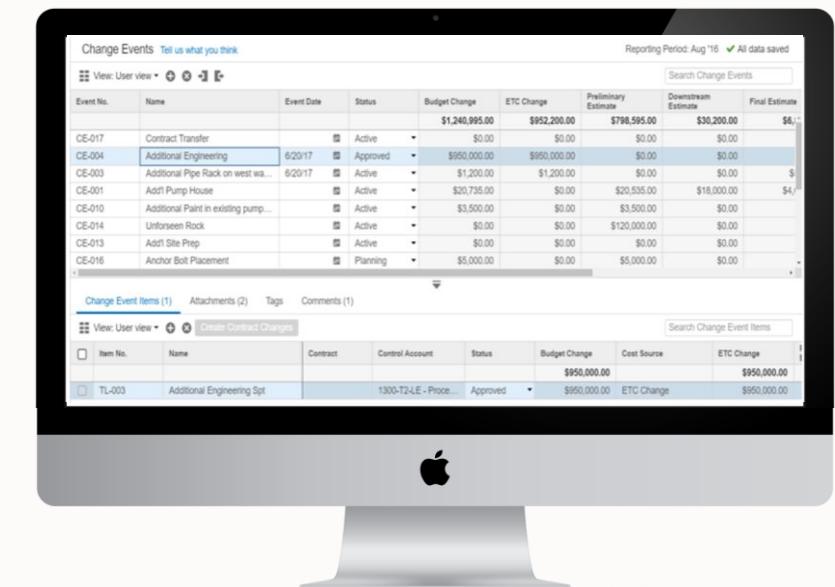


Project Controls & Contract Management

Cost management and contract control across the entire project supply chain

Gain visibility of project performance across cost and schedule

- Manage project changes, budget and contingency drawdown
- Streamline contract change management
- Proactively monitor project performance in real-time

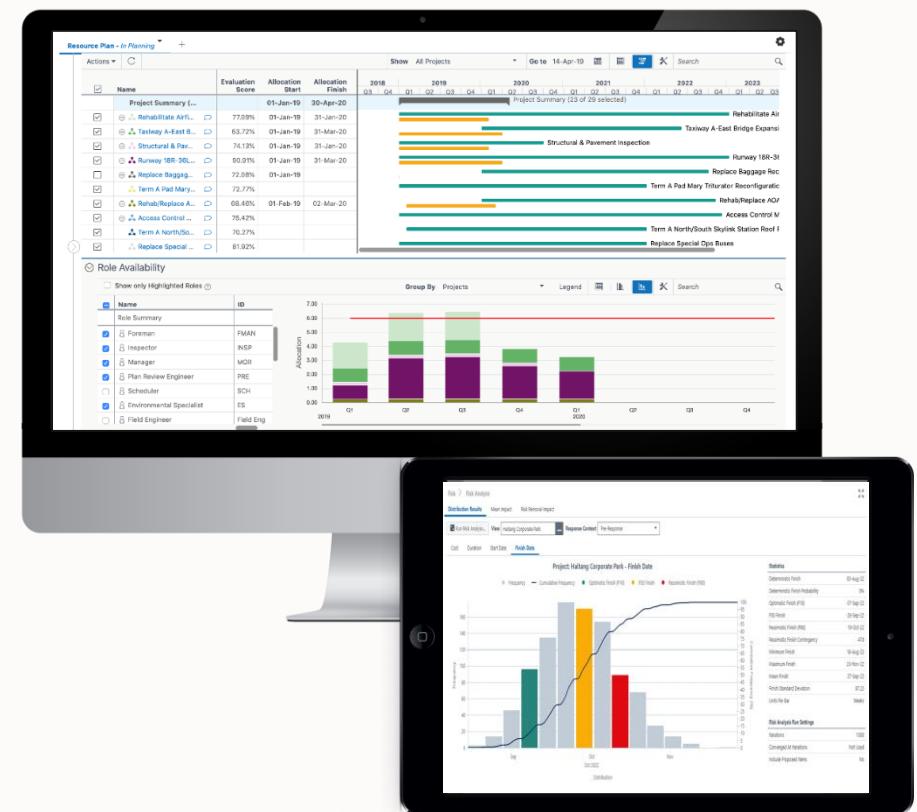


Project Scheduling

Comprehensive scheduling, resource planning and risk management

Efficiently plan, schedule, and control programs and individual projects.

- Cloud based, delivering fast time to value
- Critical Path Method and Lean Scheduling
- Total coordination and collaboration around tasks, due dates and completion plans
- Plan, optimize and manage resource capacity across programs and projects
- Enhanced risk mitigation, avoid delays and cost overruns
- Track potential risks and opportunities at both project and activity levels

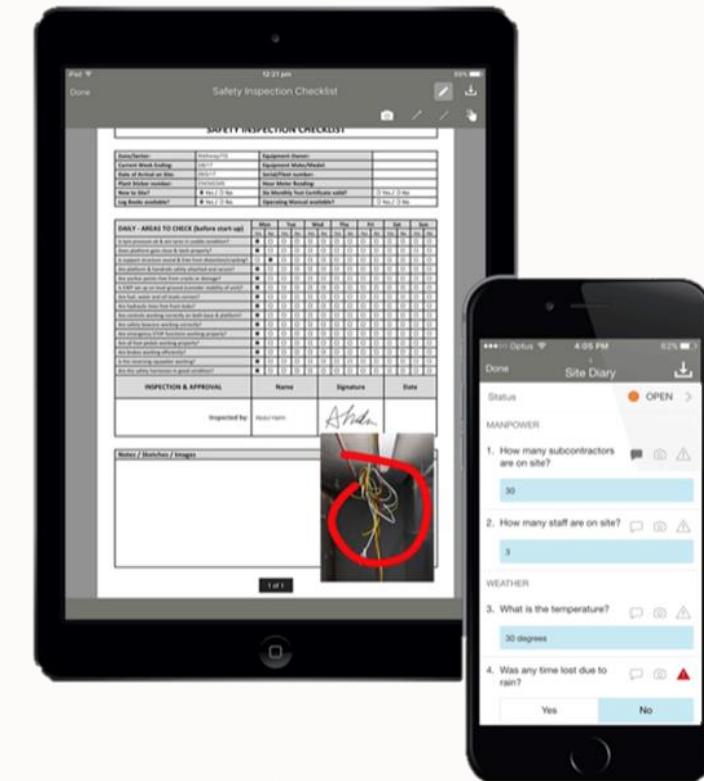


Jobsite and Mobility

Real-time collaboration and control of jobsite processes with easy-to-use mobile apps

Track and share project information, manage inspections, and access models, anywhere, anytime

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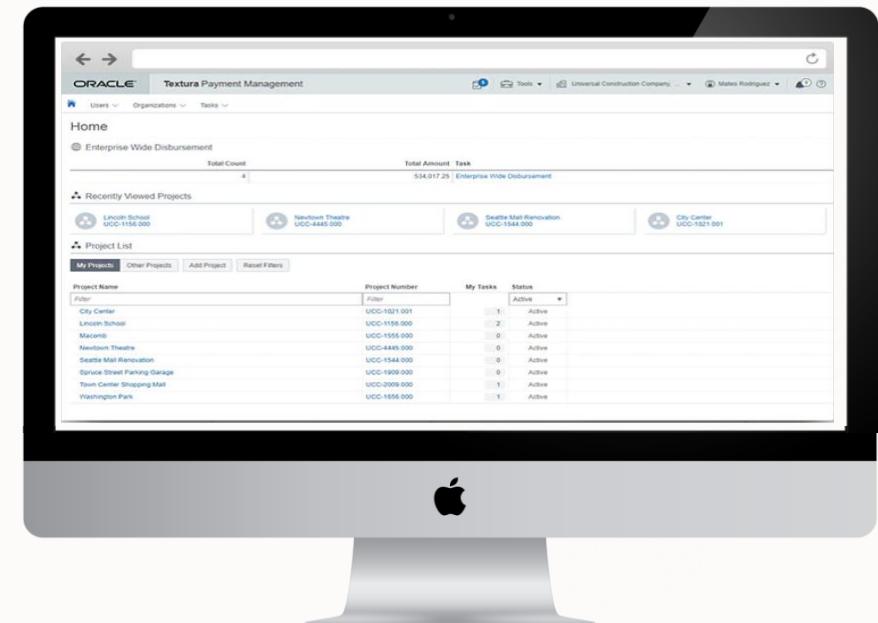


Payments Management

Protect the project supply chain

Cloud based, collaborative payment management and supply chain financing:

- **Increase efficiency:** eliminate paper and electronic gridlock by providing a single source of truth to the supply chain
- **Mitigate Risk:** automate and streamline collection of compliance materials
- **Strengthen Supply Chain:** close the finance gap to the supply chain and reduce risk

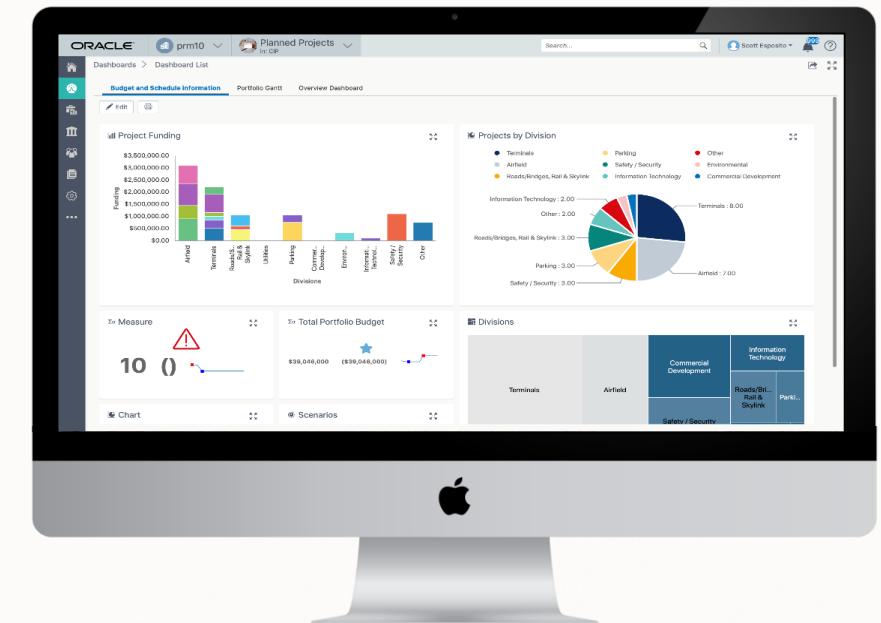


Data Analytics and Reporting

Make better decisions

Real-time Management Information to reduce project risk

- **Dashboards:** Configurable, in-application dashboards to indicate performance information in real-time
- **BI Reports:** Configurable Business Intelligence reporting based on parameters, formatting and layouts required by the business
- **Data Analytics:** Leverage data analytics to unlock the value hidden in a sea of data across the organization. Improve business decisions through data insight.
- **Predictive Analytics:** Leverage AI with project performance data to make better decisions and reduce risk



Dashboards

BI Reports

Data Analytics

Predictive
Analytics

ORACLE

Managing Uncertainty: Planning Scenarios

Oracle Construction and Engineering Global Business Unit
November 25, 2020

Project Schedule, Cost & Risk

Well, I have my plan in P6.
I have a Risk Register with
30 risks, 10 of which are
red.

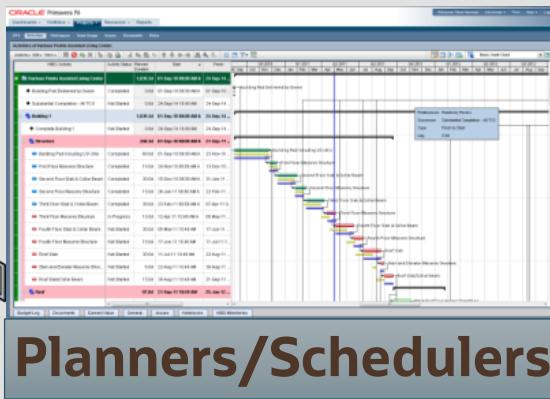


Project Manager

What's the chance of this
project still finishing on time?



Planners/Schedulers



Estimators

Description	Estimate	%	Contingency	Total
1 PROJECT MANAGEMENT	\$ 4,710,270	5%	\$ 235,984	\$ 4,955,242
2 ENGINEERING MANAGEMENT	\$ 1,344,500	8%	\$ 167,567	\$ 1,452,151
3 DESIGN	\$ 1,000,000	10%	\$ 100,000	\$ 1,100,000
23 DEFINITIVE DESIGN	\$ 10,515,671	8%	\$ 645,000	\$ 11,421,077
24 ENGINEERING RELOCATION	\$ 5,067,519	8%	\$ 400,632	\$ 5,468,549
25 FACILITY DESIGN/ASSEMBLY DESIGN	\$ 2,000,000	10%	\$ 200,000	\$ 2,200,000
2 ENGINEERING	\$ 19,664,407	7%	\$ 1,448,296	\$ 21,514,698
31 GEOMETRIC DEFINITIVE DESIGN	\$ 668,890	5%	\$ 33,450	\$ 702,448
32 GEOMETRIC PROCUREMENT	\$ 600,000	5%	\$ 30,000	\$ 630,000
33 GEOMETRIC ASSEMBLY	\$ 300,449	4%	\$ 15,224	\$ 315,673
3 CONFCTC	\$ 2,064,249	7%	\$ 149,221	\$ 2,314,458
41 INC CONSTRUCTION MANAGEMENT	\$ 4,076,867	10%	\$ 467,969	\$ 4,547,836
42 INC CONSTRUCTION SERVICES	\$ 1,000,000	10%	\$ 100,000	\$ 1,100,000
43 C/PARM MODIFICATIONS	\$ 6,002,694	25%	\$ 1,653,721	\$ 8,253,005
44 AT/PARM MODIFICATIONS	\$ 1,656,429	38%	\$ 498,829	\$ 2,127,358
25 FACILITY DESIGN	\$ 1,000,000	10%	\$ 100,000	\$ 1,100,000
22 FACILITY PREP	\$ 953,968	35%	\$ 337,656	\$ 12,873,624
46 FACILITY SUPPORT SERVICES	\$ 1,000,000	10%	\$ 100,000	\$ 1,100,000
4 CONSTRUCTION	\$ 36,168,232	24%	\$ 8,372,496	\$ 43,520,528
51 STARTUP ADMINISTRATION	\$ 1,678,400	15%	\$ 251,453	\$ 1,927,808
52 STARTUP SUPPORT	\$ 1,944,881	15%	\$ 281,699	\$ 2,236,580
53 OPERATIONAL REVIEW	\$ 1,000,000	10%	\$ 100,000	\$ 1,100,000
54 OTHER PROJECT COST	\$ 4,663,237	10%	\$ 698,521	\$ 5,360,000
61 ENVIRONMENTAL MANAGEMENT	\$ 404,613	10%	\$ 42,401	\$ 446,414
62 SAFETY	\$ 3,979,477	10%	\$ 367,949	\$ 3,977,425
63 SECURITY	\$ 1,000,000	10%	\$ 100,000	\$ 1,100,000
64 R&D	\$ 11,474	10%	\$ 1,721	\$ 13,195
65 FACILITY	\$ 1,000,000	10%	\$ 100,000	\$ 1,100,000
66 SAFETY & ENVIRONMENTAL	\$ 4,358,339	10%	\$ 436,986	\$ 4,882,007
PROJECT TOTAL	\$ 70,967,279	10%	\$ 11,281,629	\$ 82,359,008



Risk Managers

ID	Type	Title	Pre-mitigation					Response
			Probability	Schedule	Cost	Performance	Score	
3	Threat	Poor understanding and detail in specification	L	H	M	VL	12	Reduce introduce penalties for design changes
4	Threat	Guidance System Failure	VL	VH	VH	VH	8	Reduce Improve initial specification
5	Threat	Contract Delay	H	M	L	H	28	Reduce Change form of contract
6	Threat	Key Personnel Unavailable	H	L	L	VH	20	Reduce Change resource assignment policy
7	Threat	Delivery overruns	M	H	N	N	10	Source alternative delivery company
8	Threat	Fabrication contractor goes bust	N	M	M	M	6	Reduce
9	Threat	Rework required for assembly and integration	M	M	M	L	10	Check manufacturing tolerances
10	Threat	Testing fails	L	L	L	N	3	Reduce
11	Threat	Design changes	H	M	M	N	14	Reduce
12	Opportunity	Reuse previous design work	H	M	H	N	28	Enhance



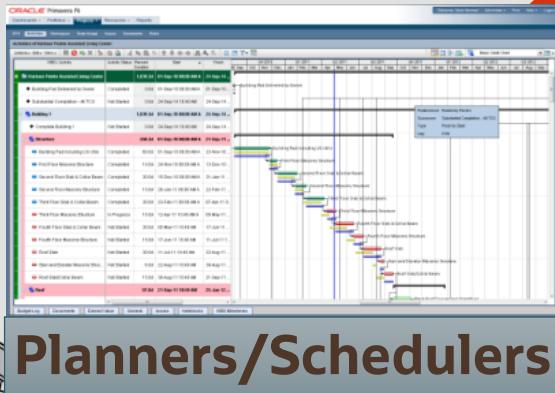
Project Schedule, Cost & Risk

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Project Manager
Oracle Primavera Cloud

What's the chances of
this project still finishing
on time?



Estimators

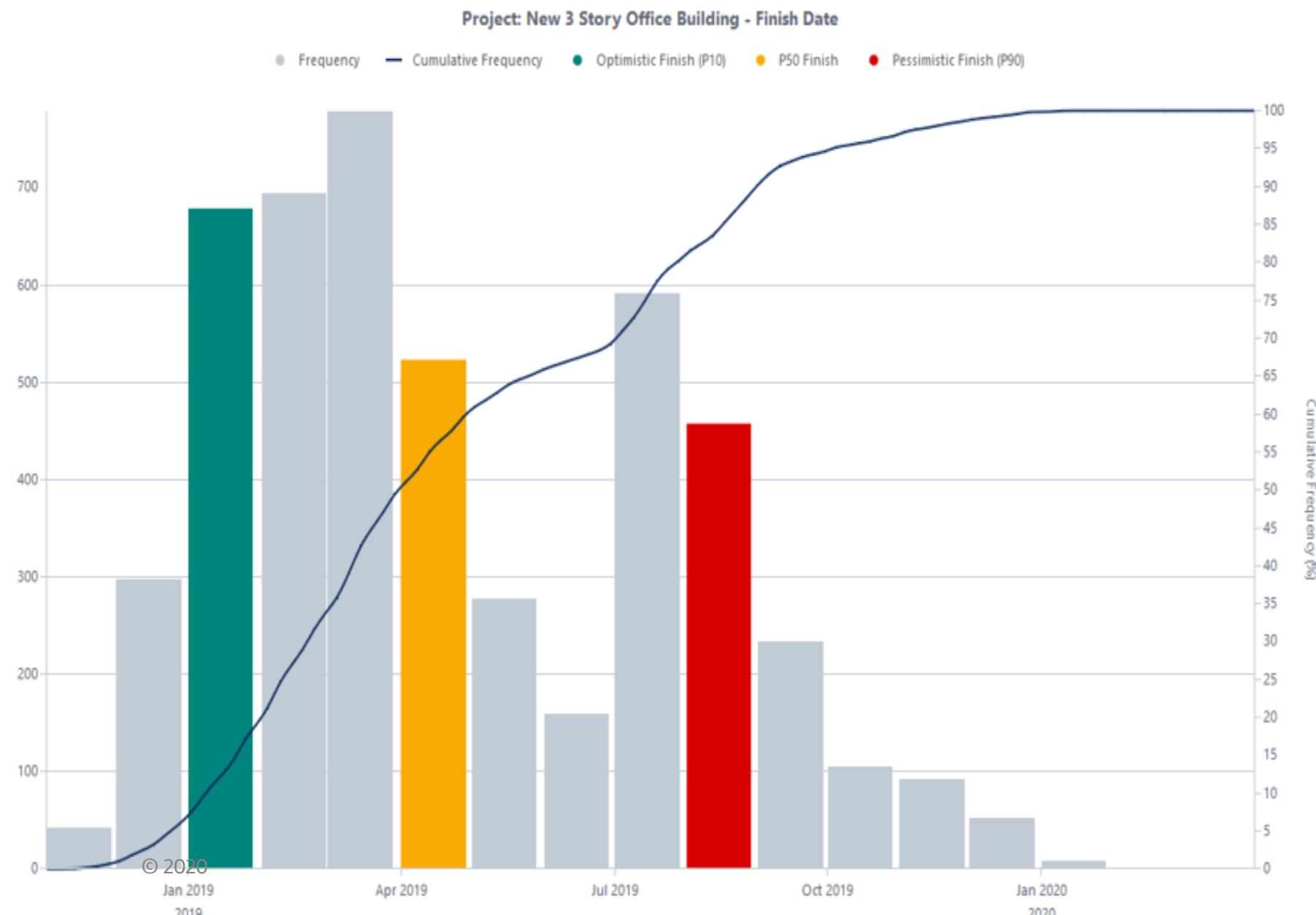
Description	Estimate	Subtotal	% Contingency	Total
11 BB CIVIL ENGINEERING	\$ 4,715,270	5%	\$ 235,764	\$ 4,950,424
1 PROJECT MANAGEMENT	\$ 1,744,588	8%	\$ 139,647	\$ 1,882,151
22 TECHNICAL STUDIES	\$ 479,725	8%	\$ 38,776	\$ 518,103
23 DEFITIVE DESIGN	\$ 10,575,671	8%	\$ 845,208	\$ 11,421,077
24 EQUIPMENT INSPECTION	\$ 5,067,916	8%	\$ 405,832	\$ 5,473,548
25 EQUIPMENT REMOVAL DESIGN	\$ 2,000,000	8%	\$ 160,000	\$ 2,160,000
11 ENGINEERING	\$ 19,068,670	8%	\$ 1,540,696	\$ 21,609,366
31 GEOMETRIC DESIGN	\$ 668,980	5%	\$ 33,450	\$ 702,448
32 GEOMETRIC PROCUREMENT	\$ 652,731	5%	\$ 31,857	\$ 684,588
33 GEOMETRIC FABRICATION	\$ 962,496	5%	\$ 45,125	\$ 947,621
34 GEOMETRIC INSPECTION	\$ 1,000,000	5%	\$ 50,000	\$ 1,050,000
41 MINE CONSTRUCTION MANAGEMENT	\$ 4,975,437	15%	\$ 447,066	\$ 5,472,503
42 MINE FARM OPERATIONS	\$ 1,367,591	25%	\$ 336,998	\$ 1,653,591
43 CIVIL FABRICATION	\$ 6,602,884	25%	\$ 1,650,721	\$ 8,253,605
44 ALUMINUM MODIFICATIONS	\$ 1,826,429	18%	\$ 491,928	\$ 2,127,256
45 EQUIPMENT PROCUREMENT	\$ 1,000,000	15%	\$ 150,000	\$ 1,150,000
46 EQUIPMENT FABRICATION	\$ 9,538,166	16%	\$ 1,537,946	\$ 12,876,004
47 FACILITY PREP	\$ 7,041,973	15%	\$ 1,056,296	\$ 8,098,269
48 CONSTRUCTION SERVICES	\$ 36,168,833	24%	\$ 8,752,004	\$ 43,920,836
49 CONSTRUCTION	\$ 1,000,000	15%	\$ 25,453	\$ 1,025,453
51 STAFF ADMINISTRATION	\$ 1,000,000	15%	\$ 25,453	\$ 1,025,453
52 STAFFING REPORT	\$ 1,044,661	15%	\$ 25,616	\$ 1,070,277
54 STAFFING READINESS REVIEW	\$ 1,042,521	15%	\$ 156,375	\$ 1,198,896
56 OTHER PROJECT COST	\$ 4,663,337	10%	\$ 696,531	\$ 5,360,000
57				
61 ENVIRONMENTAL MANAGEMENT	\$ 424,810	15%	\$ 42,401	\$ 466,414
62 SAFETY	\$ 3,000,000	15%	\$ 450,000	\$ 3,450,000
63 PER	\$ 64,159	15%	\$ 9,623	\$ 73,781
64 RCR	\$ 11,474	15%	\$ 1,721	\$ 13,196
65 CAA	\$ 176,989	15%	\$ 17,597	\$ 194,586
66 SAFETY & ENVIRONMENTAL	\$ 4,268,330	10%	\$ 426,968	\$ 4,695,300
PROJECT TOTAL	\$ 70,962,376	10%	\$ 11,381,829	\$ 82,300,000

Risk ID Type	Title	Pre-mitigation				Response
		Probability	Schedule	Cost	Performance	
3 Threat	Poor understanding and detail in specification	L	H	M	VL	12 Reduce
4 Threat	Guidance System Failure	VL	VH	VH	VH	8 Reduce
5 Threat	Contract Delay	H	M	L	VH	28 Reduce
6 Threat	Key personnel unavailable	H	L	N	VH	20 Reduce
7 Threat	Delivery overruns	M	H	N	N	16 Change resource assignment policy
8 Threat	Fabrication contractor goes bust	N	M	M	M	10 Reduce
9 Threat	Rework required for assembly and integration	M	M	M	L	14 Reduce
10 Threat	Testing fails	L	L	L	N	3 Reduce
11 Threat	Design changes	H	M	M	N	14 Reduce
12 Opportunity	Reuse previous design work	H	M	H	N	28 Enhance

Risk Managers

Run Risk Analysis... View New 3 Story Office Building ... Response Context Post-Response

Cost Duration Start Date **Finish Date**

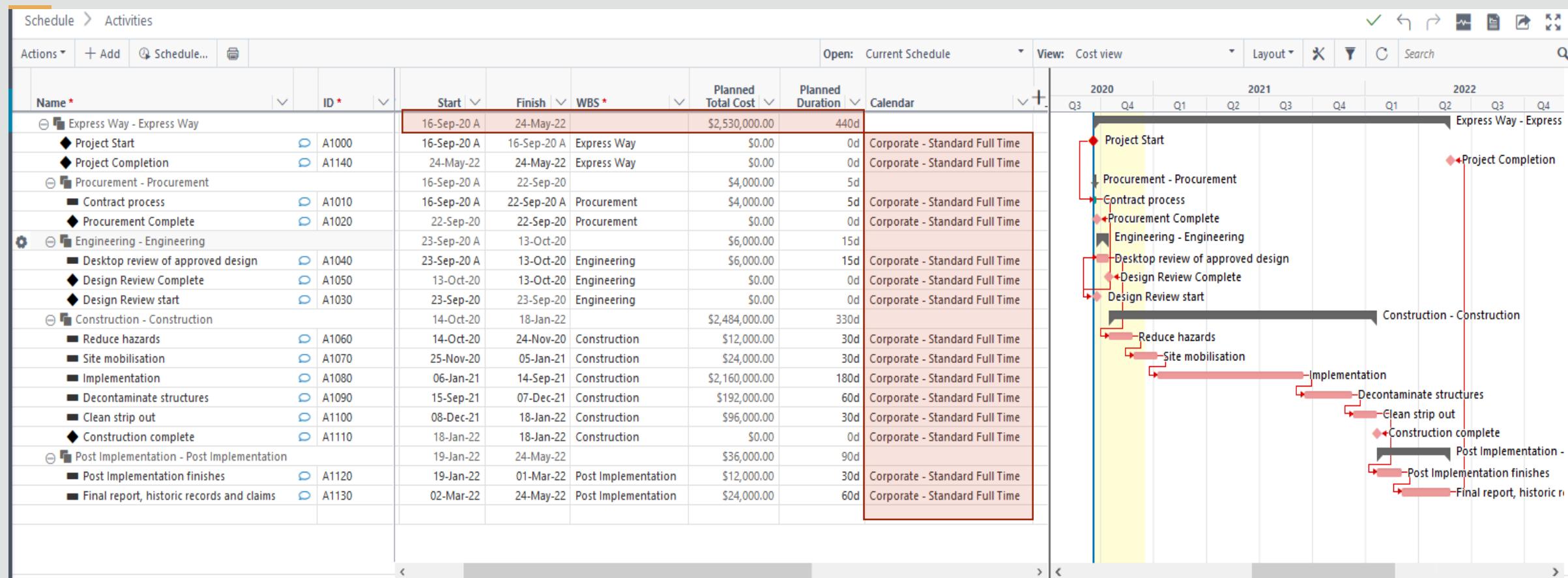


Statistics	
Deterministic Finish	06-Jun-19
Deterministic Finish Probability	67%
Optimistic Finish (P10)	09-Jan-19
P50 Finish	01-Apr-19
Pessimistic Finish (P90)	30-Aug-19
Pessimistic Finish Contingency	61d
Minimum Finish	16-Nov-18
Maximum Finish	16-Mar-20
Mean Finish	21-Feb-19
Finish Standard Deviation	529.98
Units Per Bar	Months
Risk Analysis Run Settings	
Iterations	5000
Converged At Iterations	Not Used
Include Proposed Items	Yes



Schedule “before Covid-19 disruption”

Full Working Hours



Schedule “During Covid-19 Disruption”

Reduced Working Hours

You are working in a scenario.

Open: Covid 19 Reduced hours - ... View: Cost view Layout X Search

Name *	ID *	Activity Status *	Start	Finish	WBS *	Planned Total Cost	Planned Duration	Calendar
Express Way - Express Way		Completed	16-Sep-20 A	29-Jan-24	Express Way	\$2,986,000.00	878d	Covid-19 Calendar
Project Start	A1000	Not Started	29-Jan-24	29-Jan-24	Express Way	\$0.00	0d	Covid-19 Calendar
Project Completion	A1140	Completed	16-Sep-20 A	22-Sep-20		\$4,000.00	9d	Covid-19 Calendar
Procurement - Procurement		Completed	16-Sep-20 A	22-Sep-20 A	Procurement	\$4,000.00	5d	Covid-19 Calendar
Contract process	A1010	Not Started	16-Sep-20	16-Sep-20	Procurement	\$0.00	0d	Covid-19 Calendar
Procurement Complete	A1020	Completed	16-Sep-20 A	28-Oct-20		\$6,000.00	35d	Covid-19 Calendar
Engineering - Engineering		In Progress	23-Sep-20 A	28-Oct-20	Engineering	\$6,000.00	15d	Covid-19 Calendar
Desktop review of approved design	A1040	Not Started	28-Oct-20	28-Oct-20	Engineering	\$0.00	0d	Covid-19 Calendar
Design Review Complete	A1050	Completed	16-Sep-20 A	16-Sep-20 A	Engineering	\$0.00	0d	Covid-19 Calendar
Design Review start	A1030	Not Started	28-Oct-20	16-May-23		\$2,856,000.00	664d	Covid-19 Calendar
Construction - Construction		Not Started	28-Oct-20	25-Jan-21	Construction	\$48,000.00	30d	Covid-19 Calendar
Reduce hazards	A1060	Not Started	25-Jan-21	19-Apr-21	Construction	\$96,000.00	30d	Covid-19 Calendar
Site mobilisation	A1070	Not Started	19-Apr-21	06-Sep-22	Construction	\$2,160,000.00	180d	Covid-19 Calendar
Implementation	A1080	Not Started	06-Sep-22	23-Feb-23	Construction	\$384,000.00	60d	Covid-19 Calendar
Decontaminate structures	A1090	Not Started	23-Feb-23	16-May-23	Construction	\$168,000.00	30d	Covid-19 Calendar
Clean strip out	A1100	Not Started	16-May-23	16-May-23	Construction	\$0.00	0d	Covid-19 Calendar
Construction complete	A1110	Not Started	17-May-23	29-Jan-24		\$120,000.00	183d	Covid-19 Calendar
Post Implementation - Post Implementation		Not Started	17-May-23	09-Aug-23	Post Implementation	\$40,000.00	30d	Covid-19 Calendar
Post Implementation finishes	A1120	Not Started	09-Aug-23	29-Jan-24	Post Implementation	\$80,000.00	60d	Covid-19 Calendar
Final report, historic records and claims	A1130	Not Started	29-Jan-24	29-Jan-24	Post Implementation	\$0.00	0d	Covid-19 Calendar

2020 Q2 Q3 Q4 2021 Q1 Q2 Q3 Q4 2022 Q1 Q2 Q3 Q4 2023 Q1 Q2 Q3 Q4 2024 Q1 Q2 Q3 Q4 Express Way - E

Total: 15 Download Gant Settings

Comparison between Original Schedule and Covid-19 Impacted Schedule

Original: Current Schedule Revised: Covid 19 Reduced hours Compare

Name	ID	Critical			Finish		Planned Duration		Augu	2020	2021	Q1	
		Original	Revised	Variance	Original	Revised	Variance	Original					
Express Way	Express Way	<input type="checkbox"/>	<input type="checkbox"/>		16-Sep-20	16-Sep-20	0d	0d	0d	September	October	November	December
Project Start	A1000	<input checked="" type="checkbox"/>	<input type="checkbox"/>	✓	22-Sep-20	22-Sep-20	0d	5d	5d	October	November	December	January
Contract process	A1010	<input checked="" type="checkbox"/>	<input type="checkbox"/>	✓	22-Sep-20	16-Sep-20	-5d	0d	0d	November	December	January	February
Procurement Complete	A1020	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		23-Sep-20	16-Sep-20	-5d	0d	0d	December	January	February	March
Design Review start	A1030	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		13-Oct-20	28-Oct-20	10d	0d	0d				
Design Review Complete	A1050	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		13-Oct-20	28-Oct-20	10d	0d	0d				
Desktop review of approv...	A1040	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		24-Nov-20	25-Jan-21	44d	30d	30d				
Reduce hazards	A1060	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		05-Jan-21	19-Apr-21	73d	30d	30d				
Site mobilisation	A1070	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		14-Sep-21	06-Sep-22	254d	180d	180d				
Implementation	A1080	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		07-Dec-21	23-Feb-23	317d	60d	60d				
Decontaminate structures	A1090	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		18-Jan-22	16-May-23	345d	30d	30d				
Clean strip out	A1100	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		18-Jan-22	16-May-23	345d	0d	0d				
Construction complete	A1110	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		01-Mar-22	09-Aug-23	376d	30d	30d				
Post Implementation finishes	A1120	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		24-May-22	29-Jan-24	438d	60d	60d				
Final report, historic record...	A1130	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		24-May-22	29-Jan-24	438d	0d	0d				
Project Completion	A1140	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		24-May-22	29-Jan-24	438d	0d	0d				

Total: 15

Schedule “Covid-19 recovery”

Full Working Hours

You are working in a scenario.

Actions + Add Schedule... View: Covid Recovery Schedule - ... Cost view Layout X Search

Name *	ID *	Activity Status *	Start	Finish	VBS *	Planned Total Cost	Planned Duration	Calendar
Express Way - Express Way		Completed	16-Sep-20 A	08-Jun-22		\$2,706,000.00	450d	Covid-19 Calendar
◆ Project Start	A1000	Not Started	16-Sep-20 A	08-Jun-22	Express Way	\$0.00	0d	Covid-19 Calendar
◆ Project Completion	A1140		08-Jun-22	08-Jun-22	Express Way	\$0.00	0d	Covid-19 Calendar
Procurement - Procurement		Completed	16-Sep-20 A	22-Sep-20		\$4,000.00	9d	Covid-19 Calendar
■ Contract process	A1010	Not Started	16-Sep-20 A	22-Sep-20 A	Procurement	\$4,000.00	5d	Covid-19 Calendar
◆ Procurement Complete	A1020		16-Sep-20	16-Sep-20	Procurement	\$0.00	0d	Covid-19 Calendar
Engineering - Engineering		In Progress	16-Sep-20 A	28-Oct-20		\$6,000.00	35d	Covid-19 Calendar
■ Desktop review of approved design	A1040	Not Started	23-Sep-20 A	28-Oct-20	Engineering	\$6,000.00	15d	Covid-19 Calendar
◆ Design Review Complete	A1050		28-Oct-20	28-Oct-20	Engineering	\$0.00	0d	Covid-19 Calendar
◆ Design Review start	A1030	Completed	16-Sep-20 A	16-Sep-20 A	Engineering	\$0.00	0d	Covid-19 Calendar
Construction - Construction		Not Started	28-Oct-20	02-Feb-22		\$2,632,000.00	330d	Corporate - Standard Full Time
■ Reduce hazards	A1060		28-Oct-20	09-Dec-20	Construction	\$16,000.00	30d	Corporate - Standard Full Time
■ Site mobilisation	A1070	Not Started	09-Dec-20	20-Jan-21	Construction	\$32,000.00	30d	Corporate - Standard Full Time
■ Implementation	A1080	Not Started	20-Jan-21	29-Sep-21	Construction	\$2,160,000.00	180d	Corporate - Standard Full Time
■ Decontaminate structures	A1090	Not Started	29-Sep-21	22-Dec-21	Construction	\$320,000.00	60d	Corporate - Standard Full Time
■ Clean strip out	A1100	Not Started	22-Dec-21	02-Feb-22	Construction	\$104,000.00	30d	Corporate - Standard Full Time
◆ Construction complete	A1110	Not Started	02-Feb-22	02-Feb-22	Construction	\$0.00	0d	Corporate - Standard Full Time
Post Implementation - Post Implementation		Not Started	02-Feb-22	08-Jun-22		\$64,000.00	90d	Corporate - Standard Full Time
■ Post Implementation finishes	A1120		02-Feb-22	16-Mar-22	Post Implementation	\$24,000.00	30d	Corporate - Standard Full Time
■ Final report, historic records and claims	A1130	Not Started	16-Mar-22	08-Jun-22	Post Implementation	\$40,000.00	60d	Corporate - Standard Full Time

2020 2021 2022 2023 2024
Q2 Q3 Q4 Q1 Q2 Q3 Q4 Q1 Q2 Q3 Q4 Q1 Q2 Q3 Q4 Q1 Q2 Q3 Q4
Express Way - Express Way

Project Start → Procurement - Procurement → Contract process → Procurement Complete → Engineering - Engineering → Desktop review of approved design → Design Review Complete → Design Review start → Construction - Construction → Reduce hazards → Site mobilisation → Implementation → Decontaminate structures → Clean strip out → Construction complete → Post Implementation - Post Implementation → Post Implementation finishes → Final report, historic records and claims



Comparison between Original Schedule and Recovery Schedule

Schedule > Schedule Comparison

Original: Current Schedule Revised: Covid Recovery Schedule Compare

Name	ID	Critical			Finish		Planned Duration		2020						2021		
		Original	Revised	Variance	Original	Revised	Variance	Original	Revised	Q3	September	October	November	December	January	February	March
Express Way	Express Way	<input type="checkbox"/>	<input type="checkbox"/>		16-Sep-20	16-Sep-20	0d	0d	0d	Project Start	Project Start						2021 Q1
Project Start	A1000	<input checked="" type="checkbox"/>	<input type="checkbox"/>	✓	16-Sep-20	16-Sep-20	0d	0d	0d	Contract process	Contract process						
Contract process	A1010	<input checked="" type="checkbox"/>	<input type="checkbox"/>	✓	22-Sep-20	22-Sep-20	0d	5d	5d	Procurement Complete	Procurement Complete						
Procurement Complete	A1020	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		22-Sep-20	16-Sep-20	-5d	0d	0d	Design Review start	Design Review start						
Design Review start	A1030	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		23-Sep-20	16-Sep-20	-5d	0d	0d	Design Review Complete	Design Review Complete						
Design Review Complete	A1050	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		13-Oct-20	28-Oct-20	10d	0d	0d	Desktop review of approved design	Desktop review of approved design						
Desktop review of approved design	A1040	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		13-Oct-20	28-Oct-20	10d	15d	15d	Reduce hazards	Reduce hazards						
Reduce hazards	A1060	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		24-Nov-20	09-Dec-20	10d	30d	30d	Site mobilisation	Site mobilisation						
Site mobilisation	A1070	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		05-Jan-21	20-Jan-21	10d	30d	30d	Implementation	Implementation						
Implementation	A1080	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		14-Sep-21	29-Sep-21	10d	180d	180d	Decontaminate structures	Decontaminate structures						
Decontaminate structures	A1090	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		07-Dec-21	22-Dec-21	10d	60d	60d	Clean strip out	Clean strip out						
Clean strip out	A1100	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		18-Jan-22	02-Feb-22	10d	30d	30d	Construction complete	Construction complete						
Construction complete	A1110	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		18-Jan-22	02-Feb-22	10d	0d	0d	Post implementation finishes	Post implementation finishes						
Post implementation finishes	A1120	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		01-Mar-22	16-Mar-22	10d	30d	30d	Final report, historic record...	Final report, historic record...						
Final report, historic record...	A1130	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		24-May-22	08-Jun-22	10d	60d	60d	Project Completion	Project Completion						
Project Completion	A1140	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		24-May-22	08-Jun-22	10d	0d	0d	Total: 15							



How can the CEGBU help

— Help improve project performance by:

- *helping mining owners and operators*
- *deliver large, complex and innovative projects and programs*
- *through an integrated project delivery system*
- *leveraging the power of team collaboration, information management and technology for project delivery*
- *and develop data insights to enable assurance, governance, risk mitigation, project controls and decision support*





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