PROJECT PLANNING & CONTROLS
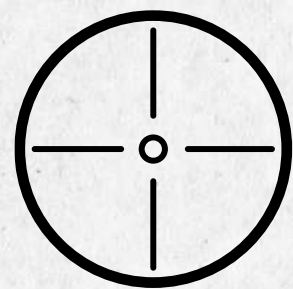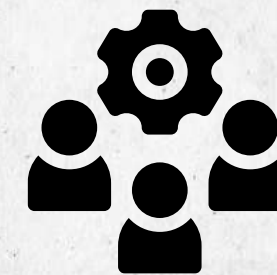
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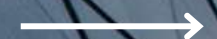
Learning Objectives

The Classical Triple Constraint

Development Chain

What is Project Controls & its Functions?

Time & cost management processes
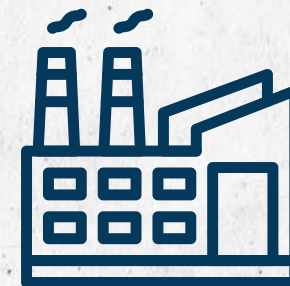
Highlights of Project Management Information System (PMIS) & Executive Reports
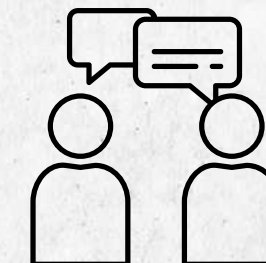
Take Away Points

Project Management Triangle

The Classical Triple Constraint

Development Chain/Life Cycle

Phases:

| PROJECT IDEA | FEASIBILITY & BUSINESS PLANNING | PROJECT STRUCTURING | DESIGN PHASE | TENDER & NEGOTIIATION | CONSTRUCTION & COMMISIONING | OPERATION (FM/AM/PM) |

Stages:

1. Project Idea Approval
2. Feasibility & Business Plan Approval
3. Project Structure and Initiation Approval
4. Design & Cost Review Approval
5. Construction Contact Approval
6. Project Closing & Operation /Asset Managment

Cost Estimate accuracy and cost of changes

What is Project Controls?

PROJECT CONTROLS

ARE PROCCES USED TO UNDERSTAND AND INFLUENCE THE TIME AND MONEY SPENT ON A PROJECT
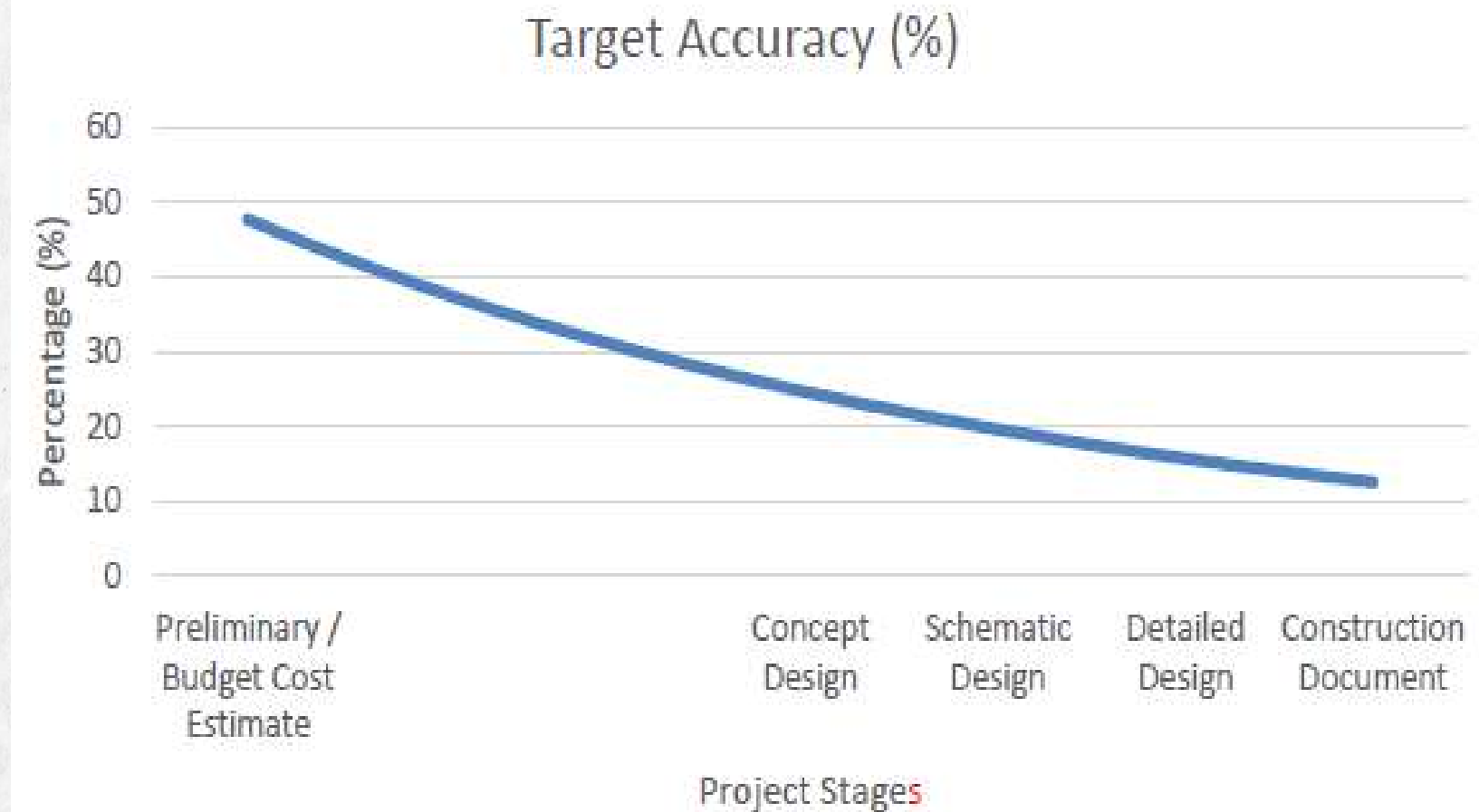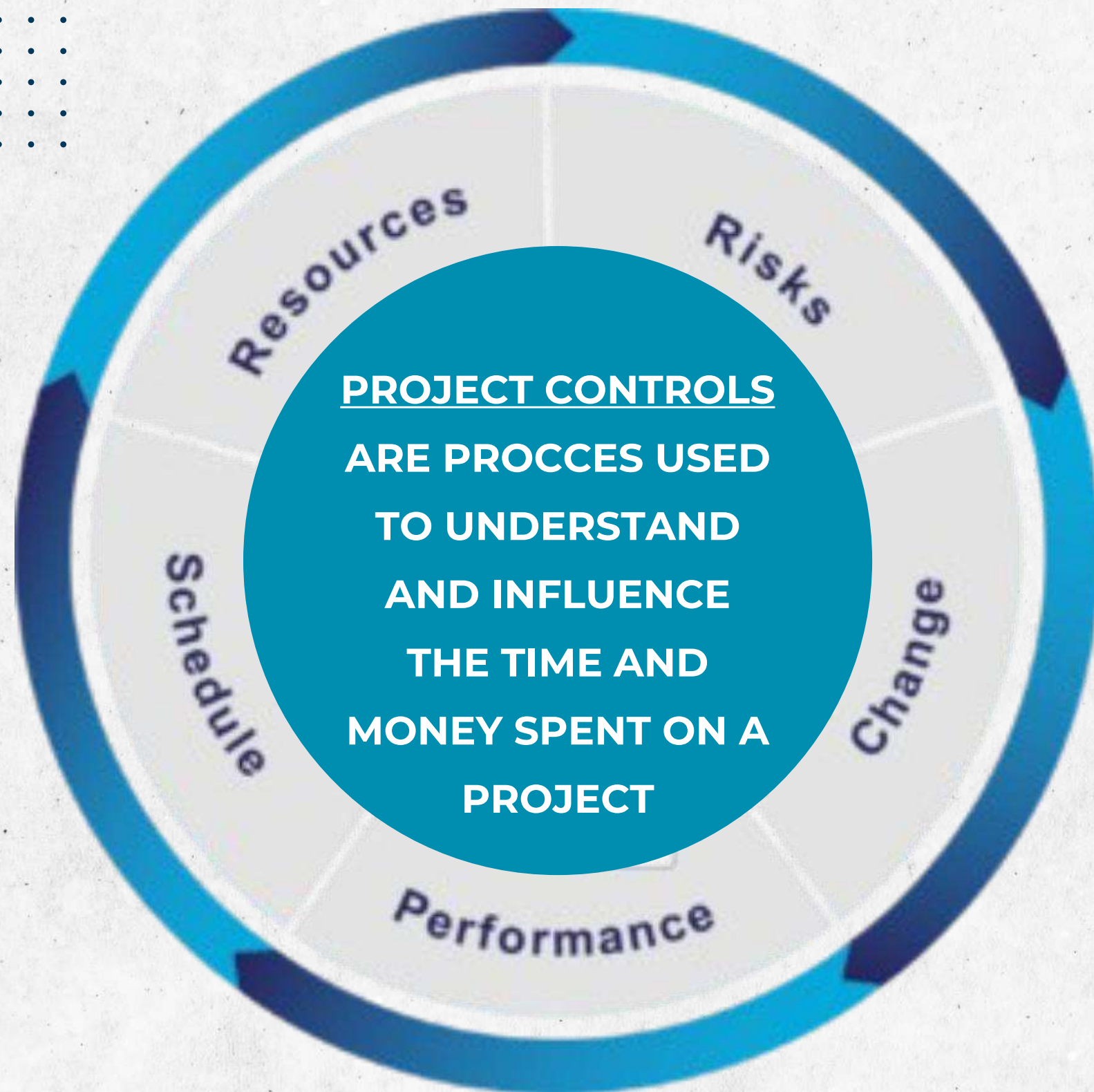
Core:

- Time Management
- Cost Management
- Executive Report

Optional:

- Risk Management
- Document Management
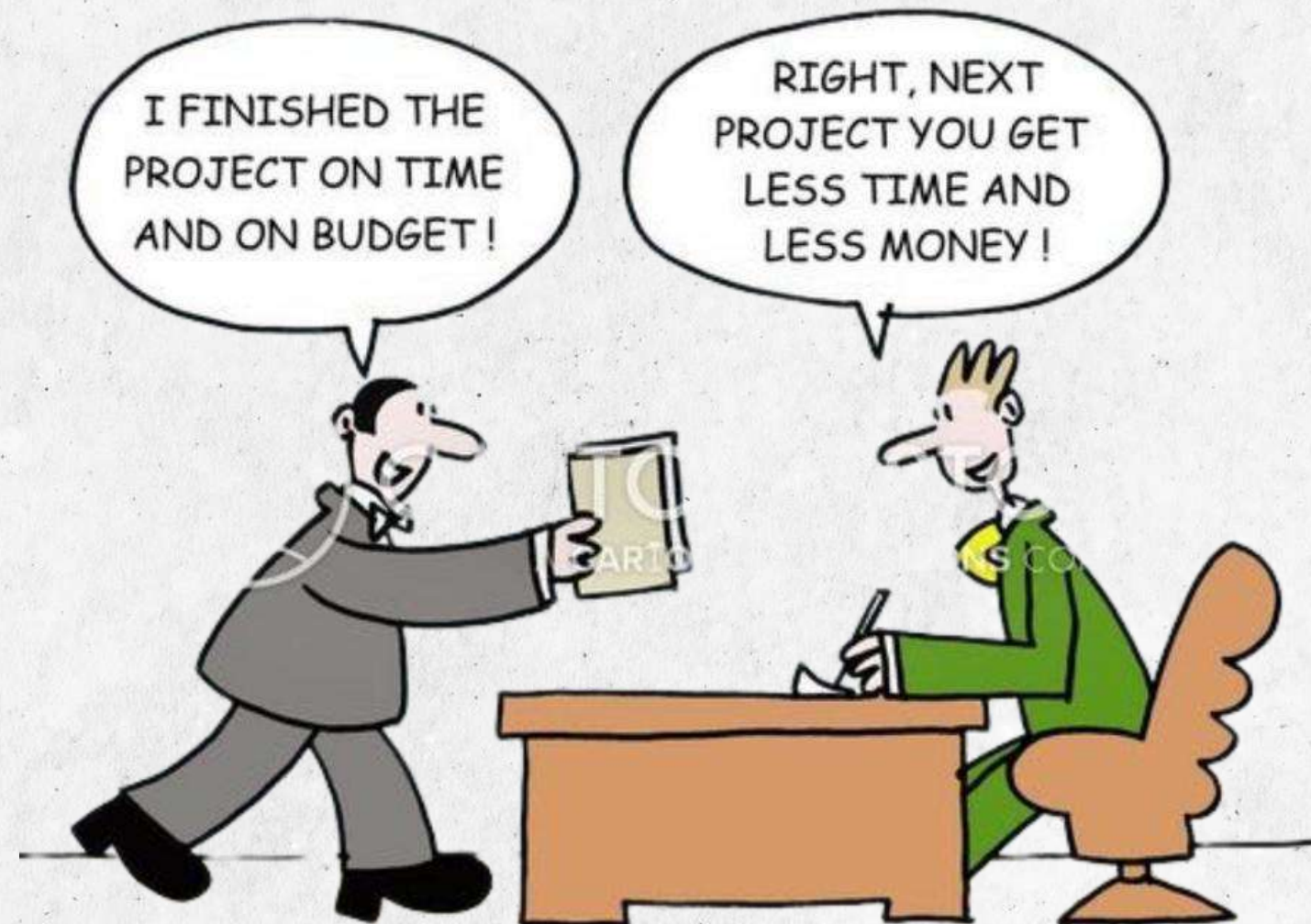
NEXT SLIDE →

Project Controls Functions

- **Pre-Contract Functions**
  - Budgeting / cashflow
  - Cost Planning – Design Development Stages (Concept, Schematic & Detailed Design stages).
  - Cost Estimation – Tendering / Award stages
  - Technical & Commercial Evaluations
  - Contract document Reviews / Award

- **Post Contract Functions**
  - Project Planning and Scheduling
  - Progress Payments Certifications (Advance, Interim and Final Account)
  - Change Management (Change Requests and Variation Orders)
  - Claims and disputes
  - Executive reports and analysis

Time Management
(Planning & Scheduling)

There are multiple processes within the Time Management which are carried out according to the following systematic steps:

- Development of Master Programme
- Master Programme – Update
- Contractor / Consultant (Baseline) Programme of Works
- Contractor / Consultant Programme Update & Recovery
- Time Impact of Proposed Changes
- Extension of Time Claims

Project Name_Country - Master Schedule

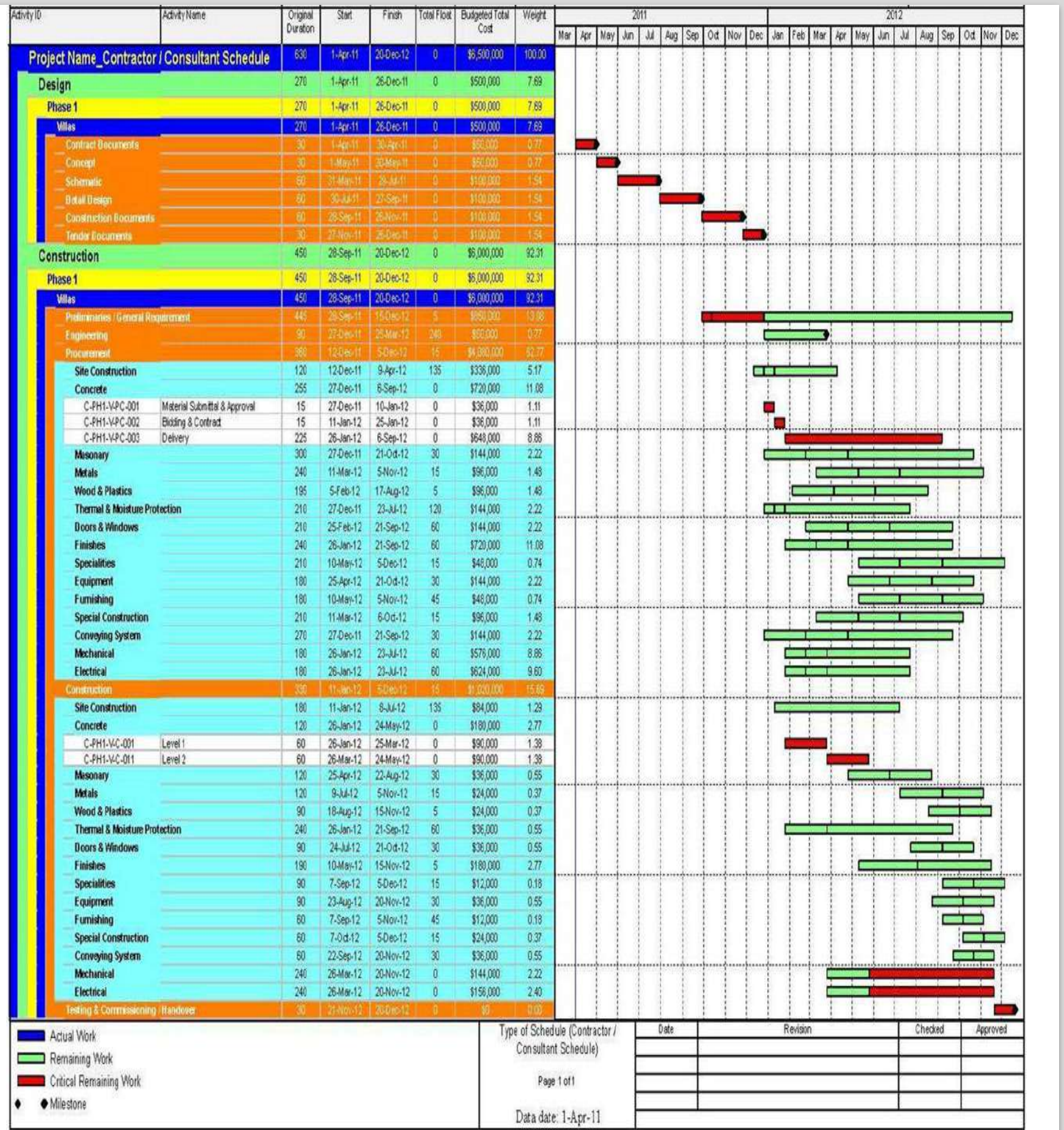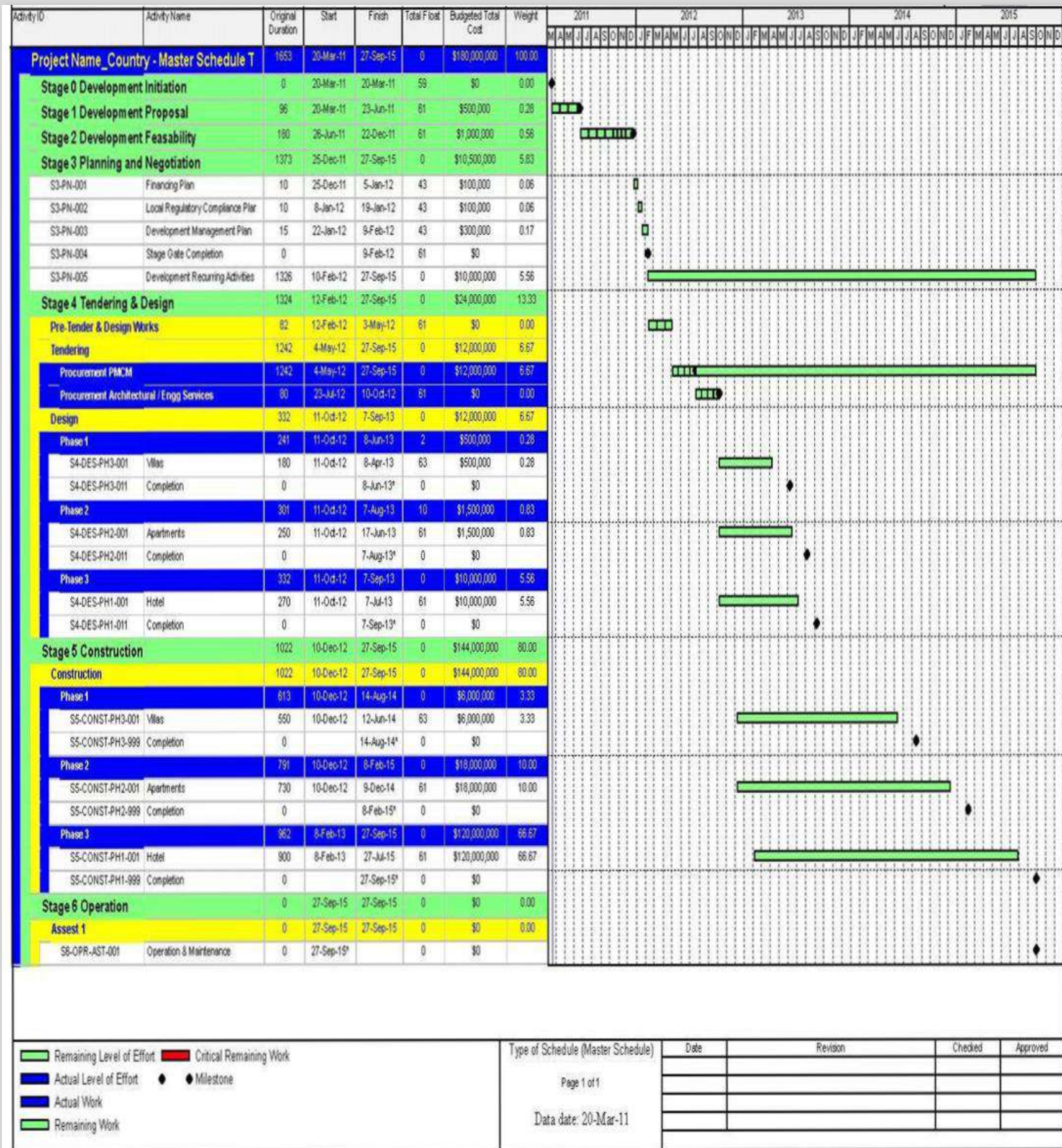| Activity ID	Activity Name	Original Duration	Start	Finish	Total Float	Budgeted Total Cost	Weight
Project Name_Country - Master Schedule T		1653	20-Mar-11	27-Sep-15	0	$180,000,000	100.00
Stage 0 Development Initiation		0	20-Mar-11	20-Mar-11	59	$0	0.00
Stage 1 Development Proposal		96	20-Mar-11	23-Jun-11	61	$500,000	0.28
Stage 2 Development Feasability		180	26-Jun-11	22-Dec-11	61	$1,000,000	0.56
Stage 3 Planning and Negotiation		1373	25-Dec-11	27-Sep-15	0	$10,500,000	5.83
S3-PN-001	Financing Plan	10	25-Dec-11	5-Jan-12	43	$100,000	0.06
S3-PN-002	Local Regulatory Compliance Plan	10	8-Jan-12	19-Jan-12	43	$100,000	0.06
S3-PN-003	Development Management Plan	15	22-Jan-12	9-Feb-12	43	$300,000	0.17
S3-PN-004	Stage Gate Completion	0		9-Feb-12	61	$0	
S3-PN-005	Development Recurring Activities	1326	10-Feb-12	27-Sep-15	0	$10,000,000	5.56
Stage 4 Tendering & Design		1324	12-Feb-11	27-Sep-15	0	$24,000,000	13.33
Pre-Tender & Design Works		82	12-Feb-12	3-May-12	61	$0	0.00
Tendering		1242	4-May-12	27-Sep-15	0	$12,000,000	6.67
Procurement PMCM		1242	4-May-12	27-Sep-15	0	$12,000,000	6.67
Procurement Architectural / Engg Services		80	23-Jul-12	10-Oct-12	61	$0	0.00
Design		332	11-Oct-12	7-Sep-13	0	$12,000,000	6.67
Phase 1		241	11-Oct-12	8-Jun-13	2	$500,000	0.28
S4-DES-PH3-001	Villas	180	11-Oct-12	8-Apr-13	63	$500,000	0.28
S4-DES-PH3-011	Completion	0		8-Jun-13*	0	$0	
Phase 2		301	11-Oct-12	7-Aug-13	10	$1,500,000	0.83
S4-DES-PH2-001	Apartments	250	11-Oct-12	17-Jun-13	61	$1,500,000	0.83
S4-DES-PH2-011	Completion	0		7-Aug-13*	0	$0	
Phase 3		332	11-Oct-12	7-Sep-13	0	$10,000,000	5.56
S4-DES-PH1-001	Hotel	270	11-Oct-12	7-Jul-13	61	$10,000,000	5.56
S4-DES-PH1-011	Completion	0		7-Sep-13*	0	$0	
Stage 5 Construction		1022	10-Dec-12	27-Sep-15	0	$144,000,000	80.00
Construction		1022	10-Dec-12	27-Sep-15	0	$144,000,000	80.00
Phase 1		613	10-Dec-12	14-Aug-14	0	$6,000,000	3.33
S5-CONST-PH3-001	Villas	550	10-Dec-12	12-Jun-14	63	$6,000,000	3.33
S5-CONST-PH3-999	Completion	0		14-Aug-14*	0	$0	
Phase 2		791	10-Dec-12	8-Feb-15	0	$18,000,000	10.00
S5-CONST-PH2-001	Apartments	730	10-Dec-12	9-Dec-14	61	$18,000,000	10.00
S5-CONST-PH2-999	Completion	0		8-Feb-15*	0	$0	
Phase 3		962	8-Feb-13	27-Sep-15	0	$120,000,000	66.67
S5-CONST-PH1-001	Hotel	900	8-Feb-13	27-Jul-15	61	$120,000,000	66.67
S5-CONST-PH1-999	Completion	0		27-Sep-15*	0	$0	
Stage 6 Operation		0	27-Sep-15	27-Sep-15	0	$0	0.00
Assest 1		0	27-Sep-15	27-Sep-15	0	$0	0.00
S6-OPR-AST-001	Operation & Maintenance	0	27-Sep-15*		0	$0	

Legend: Remaining Level of Effort · Actual Level of Effort · Actual Work · Remaining Work · Critical Remaining Work · Milestone

Type of Schedule (Master Schedule) — Page 1 of 1 — Data date: 20-Mar-11

Project Name_Contractor / Consultant Schedule

Activity ID	Activity Name	Original Duration	Start	Finish	Total Float	Budgeted Total Cost	Weight
Project Name_Contractor / Consultant Schedule		630	1-Apr-11	20-Dec-12	0	$6,500,000	100.00
Design		270	1-Apr-11	26-Dec-11	0	$500,000	7.69
Phase 1		270	1-Apr-11	26-Dec-11	0	$500,000	7.69
Villas		270	1-Apr-11	26-Dec-11	0	$500,000	7.69
Contract Documents		30	1-Apr-11	30-Apr-11	0	$50,000	0.77
Concept		30	1-May-11	30-May-11	0	$50,000	0.77
Schematic		60	31-May-11	29-Jul-11	0	$100,000	1.54
Detail Design		60	30-Jul-11	27-Sep-11	0	$100,000	1.54
Construction Documents		60	28-Sep-11	26-Nov-11	0	$100,000	1.54
Tender Documents		30	27-Nov-11	26-Dec-11	0	$100,000	1.54
Construction		450	28-Sep-11	20-Dec-12	0	$6,000,000	92.31
Phase 1		450	28-Sep-11	20-Dec-12	0	$6,000,000	92.31
Villas		450	28-Sep-11	20-Dec-12	0	$6,000,000	92.31
Preliminaries / General Requirement		445	28-Sep-11	15-Dec-12	5	$950,000	13.08
Engineering		90	27-Dec-11	25-Mar-12	240	$50,000	0.77
Procurement		360	12-Dec-11	5-Dec-12	15	$4,000,000	52.77
Site Construction		120	12-Dec-11	9-Apr-12	135	$336,000	5.17
Concrete		255	27-Dec-11	6-Sep-12	0	$720,000	11.08
C-PH1-V-PC-001	Material Submittal & Approval	15	27-Dec-11	10-Jan-12	0	$36,000	1.11
C-PH1-V-PC-002	Bidding & Contract	15	11-Jan-12	25-Jan-12	0	$36,000	1.11
C-PH1-V-PC-003	Delivery	225	26-Jan-12	6-Sep-12	0	$648,000	8.86
Masonary		300	27-Dec-11	21-Oct-12	30	$144,000	2.22
Metals		240	11-Mar-12	5-Nov-12	15	$96,000	1.48
Wood & Plastics		195	5-Feb-12	17-Aug-12	5	$96,000	1.48
Thermal & Moisture Protection		210	27-Dec-11	23-Jul-12	120	$144,000	2.22
Doors & Windows		210	25-Feb-12	21-Sep-12	60	$144,000	2.22
Finishes		240	26-Jan-12	21-Sep-12	60	$720,000	11.08
Specialities		210	10-May-12	5-Dec-12	15	$48,000	0.74
Equipment		180	25-Apr-12	21-Oct-12	30	$144,000	2.22
Furnishing		180	10-May-12	5-Nov-12	45	$48,000	0.74
Special Construction		210	11-Mar-12	6-Oct-12	15	$96,000	1.48
Conveying System		270	27-Dec-11	21-Sep-12	30	$144,000	2.22
Mechanical		180	26-Jan-12	23-Jul-12	60	$576,000	8.86
Electrical		180	26-Jan-12	23-Jul-12	60	$624,000	9.60
Construction		330	17-Jan-12	5-Dec-12	15	$1,020,000	15.69
Site Construction		180	11-Jan-12	8-Jul-12	136	$84,000	1.29
Concrete		120	26-Jan-12	24-May-12	0	$180,000	2.77
C-PH1-V-C-001	Level 1	60	26-Jan-12	25-Mar-12	0	$90,000	1.38
C-PH1-V-C-011	Level 2	60	26-Mar-12	24-May-12	0	$90,000	1.38
Masonary		120	25-Apr-12	22-Aug-12	30	$36,000	0.55
Metals		120	9-Jul-12	5-Nov-12	15	$24,000	0.37
Wood & Plastics		90	18-Aug-12	15-Nov-12	5	$24,000	0.37
Thermal & Moisture Protection		240	26-Jan-12	21-Sep-12	60	$36,000	0.55
Doors & Windows		90	24-Jul-12	21-Oct-12	30	$36,000	0.55
Finishes		190	10-May-12	15-Nov-12	5	$180,000	2.77
Specialities		90	7-Sep-12	5-Dec-12	15	$12,000	0.18
Equipment		90	23-Aug-12	20-Nov-12	30	$36,000	0.55
Furnishing		60	7-Sep-12	5-Nov-12	45	$12,000	0.13
Special Construction		60	7-Oct-12	5-Dec-12	15	$24,000	0.37
Conveying System		60	22-Sep-12	20-Nov-12	30	$36,000	0.55
Mechanical		240	26-Mar-12	20-Nov-12	0	$144,000	2.22
Electrical		240	26-Mar-12	20-Nov-12	0	$156,000	2.40
Testing & Commissioning / Handover		30	21-Nov-12	20-Dec-12	0	$0	0.00

Legend: Actual Work · Remaining Work · Critical Remaining Work · Milestone

Type of Schedule (Contractor / Consultant Schedule) — Page 1 of 1 — Data date: 1-Apr-11
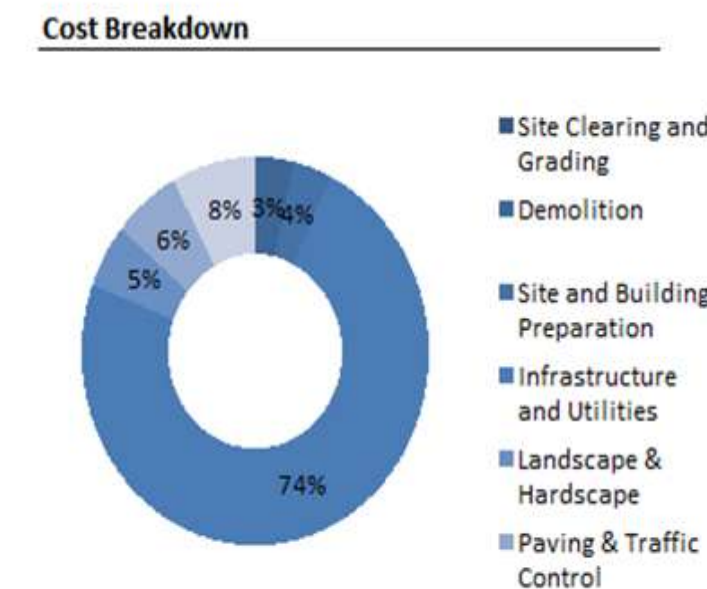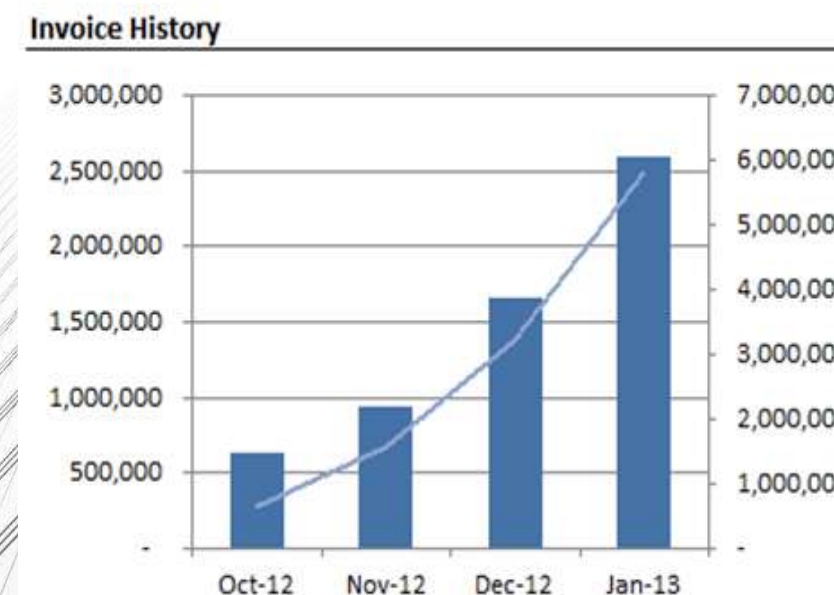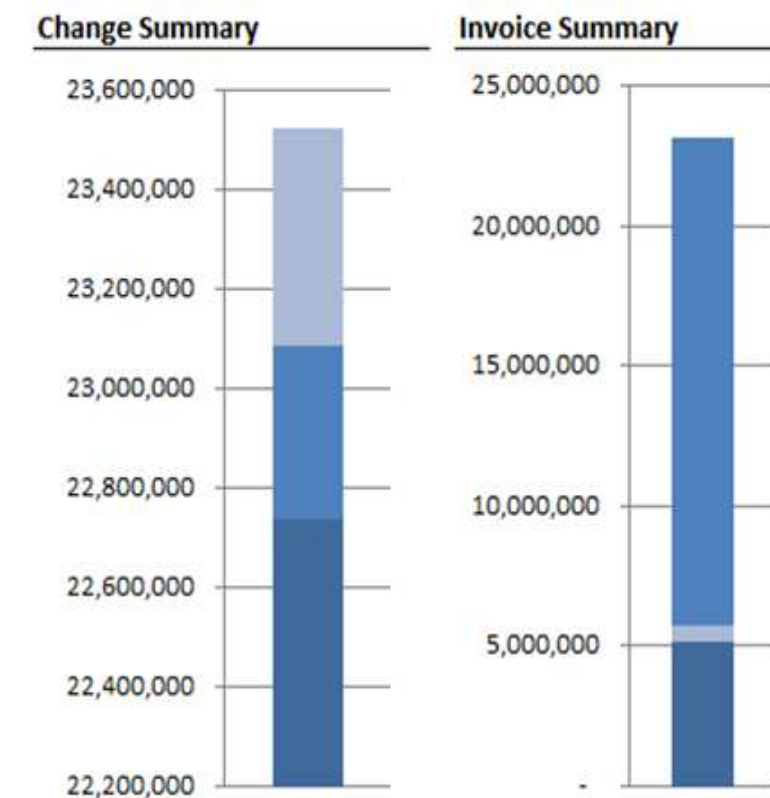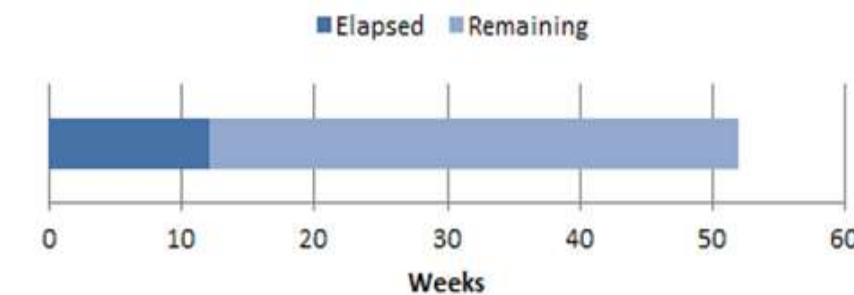
Cost Management

There are multiple processes within the Cost Management which are carried out according to the following systematic steps:

- Update project Budget & Cash flow
- Prepare Tender / Cost Estimates Commercial evaluations
- Contracts drafts and award for Consultants and Contractor(s).
- Prepare and issue / review (as applicable) CPC, CR/VO, PR/PO, progress monitoring, EoT, claims, etc.
- Issue Statement of Final Account (SoFA)

Contract	Construction Contract
Contract Detail	
Vendor	Silvin General Contractors
Issued Date:	Jan-15-2012
Original cointract value	$ 22,738,000
Total approved changes	$ 350,000
Current contract value	**$ 23,088,000**
Pending Changes	$ 435,000
Invoiced to date	$ 5,815,000
Retainage	
General Work	$ 581,500
Stored Materials	$ -
Total less retainage	$ 5,233,500
Balance to complete	**$ 17,854,500**

Base Contract Amount	Invoiced	Changes
$ 23,088,000	25%	2%

Contract Start	Contract End	Duration	Elapsed
1-Sep-12	31-Aug-13	52 (w)	16 (w)
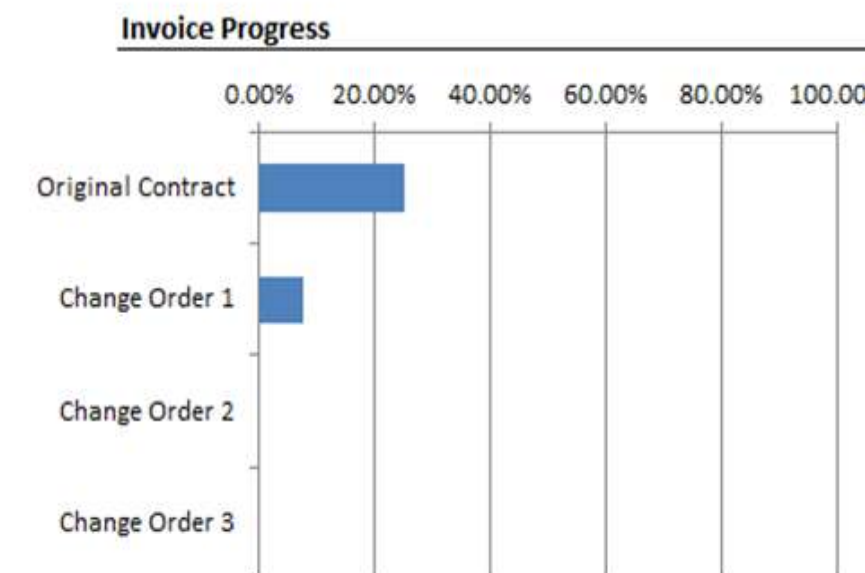
Highlights of PMIS - ERP Interface

- G/L
- A/P
- A/R
- B/S
- Asset Management
- Fund management

- Staff management & recruitment
- Payroll
- TMS
- Career Development

Finance Module

HR Module

Project Cost Module

| Budget Revisions & Control | CV, SV, KPIs | FAC Analysis, Historical data |

Contract Module

PMIS Interface

- RFPs & RFQs
- Contracts / POs
- Contractors, Consultant performance
- Payment Certificates
- Material delivery tracking and receiving

- WBS/CBS
- Actual & Expected Cost & Completion
- Cash flow
- Resource loading
- S-curves and histograms

Development Dashboard
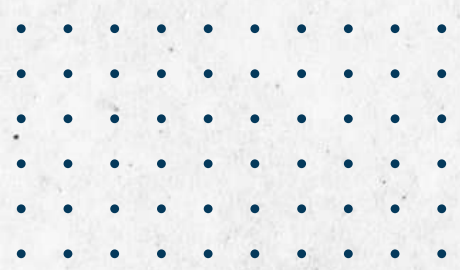
Project Overview

Project Name	The Big Golf and Hotel Club	Project code	#####	Location	

Stage 1 Development Idea → Stage 2 Development Feasibility → Stage 3 Planning and Negotiation → Stage 4 Design and Tendering (Phase 1) → Stage 5 Construction (Phase 2, Phase #) → Stage 6 Operation

Navigation tabs: Performance Summary, Project Overview, Benefits, Finance, Revenues, Costs, Development Progress, Risk & Control, Contractual Arrangements, Human Capital, Regulation, H&S, Quality, Variations

Project Name	The Big Golf and Hotel Club	Location	
Project Owner/Director	John Smith		
Description	Mixed use leisure and residential	SPV	
Contract type		Client	
Ownership Structure	QD (%) / Partner (%)	Asset class BUA	Retail (10%), Residential (90%)
Built-Up Area (BUA) / Land Area	600,000m2 800,000 m2	Current Status	Construction
Total Cost (QAR) (baseline)		Paid to Date (M QAR)	
Debt : Equity Ratio	65:35	Project IRR	12.6%
Start Date (baseline)	January 2008	Finish Date (baseline)	December 2013

Asset Class Composition, by Area
Asset Class 5 10%, Asset Class 1 15%, Asset Class 2 25%, Asset Class 3 30%, Asset Class 4 20%

Asset Class Composition, by Cost
Asset Class 5 15%, Asset Class 1 40%, Asset Class 2 22%, Asset Class 3 13%, Asset Class 4 10%

Project : The Big Golf and Hotel Club

Period Under Review
June 2011

Click to Drill to Full
Project Dashboards

Key Project Summary Status

Net Cash Flow Status		Equity Injection		Debt Covenants	Equity Returns	
Baseline YTD Actual YTD Variance	Baseline (comp) Forecast Variance	Baseline YTD Actual YTD Variance	Baseline Forecast Variance		Baseline (Equity) IRR	Forecast (Equity) IRR
50m 40m -10m	200m 190m -10m	130m 140m -10m	350m 360m -10m		10.2%	9.9%

Key Comments and Issues:
- Negative are due to lower than expected sales – the Marketing Manager has been fired and new one hired
- The main contractor has suffered a major loss on another project and this has effected their cash flow. This is a major risk to viability of this contractor. Please see the risk schedule for full details.

Schedule
45
Completion to date
Baseline completion 100
0
Baseline completion to date
Forecast completion 105
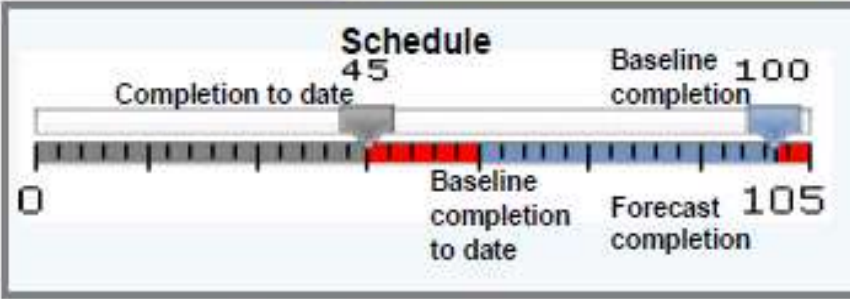
Project Finance (QAR m)

	Current Status	Future Outlook
Loan to Value	OK	OK
Interest Coverage Ratio / Debt-Service Coverage Ratio	OK	OK

Key Risks & Issues (Current)

Revenue	Behind target	36M / %
Cost	Behind Target	10m / %
Cash Flow	On Target	0

Forecast vs Baseline (To Complete)

Revenue	Decrease	84m / %
Cost	Increase	23m / %
Equity IRR	Decrease	-2.7%
Debt Covenants	No Issue	

Actual vs Baseline (Current)

Equity Injection Reqd	Yes	USD 8m / %
Debt Covenants	OK	
Additional Debt Reqd	No	

Key Project Financial Views

Development Funding Requirements
Funding gap

Cash Flow Projections
Actual - Forecast
Revised Budget
Net CF Cumulative Forecast / Rev. Budget)
Net CF Baseline

Development IRR by Asset Class
7% 8% Total
6% 6% Commercial
12% 10% Retail
-3% 7% Hotel
IRR Actual   IRR Baseline

Project Cost Breakdown
Total forecasted costs
Revised budget
Baseline costs,
Non committed costs, 40,000
Committed not paid to date, 40,000
Non contract payments
Committed - paid to date,
Paid to date

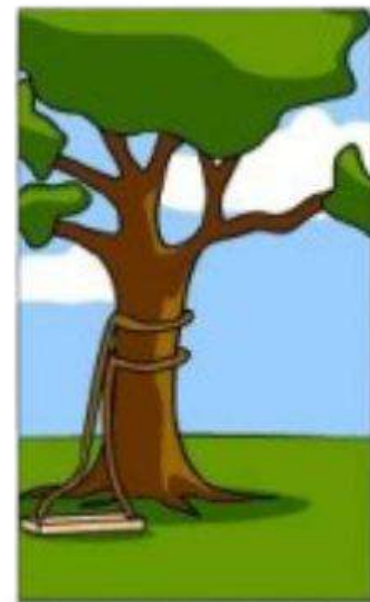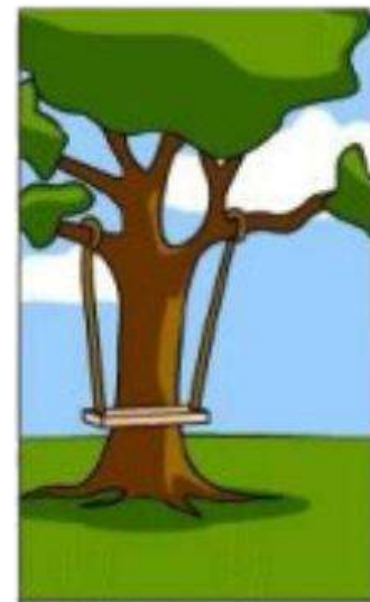
Development Dashboard (cont.)

TAKE AWAY POINTS

READ THE CONTRACT THROUROUGHLY BOQ IS NOT THE SCOPE

STRICTLY FOLLOW NOTICE CLAUSES STIPULATED IN THE CONTRACT

MAINTAIN YOUR RECORDS & DOCUMENTATIONS FOR CLAIMS/DISPUTES

COMMUNICATION KISS RULE

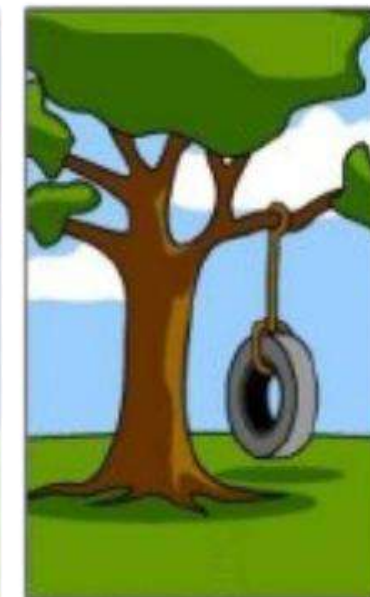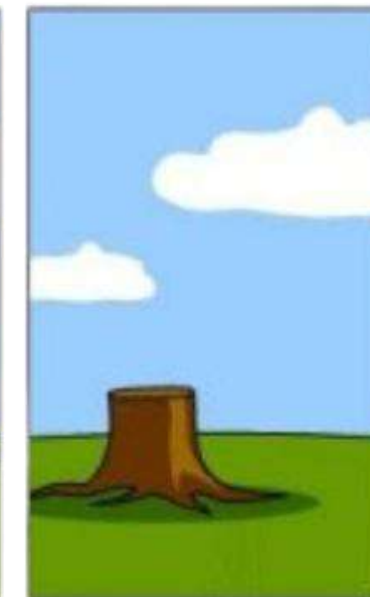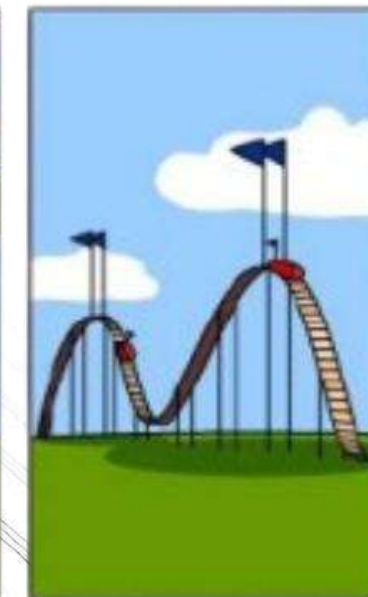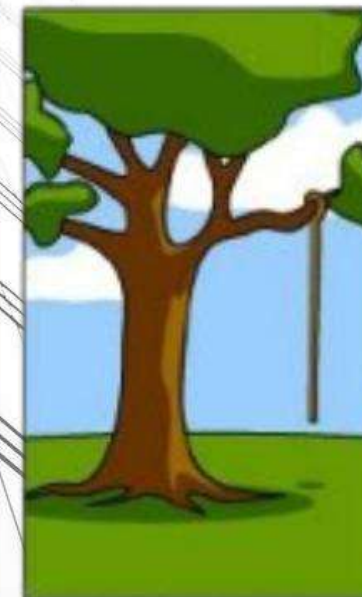**STAKEHOLDER'S COORDINATION**

HOW THE CUSTOMER EXPLAINED IT

HOW THE PROJECT LEADER UNDERSTOOD IT

HOW THE ENGINEER DESIGNED IT

HOW THE PROGRAMMER WROTE IT

HOW THE BUSINESS CONSULTANT DESCRIBED IT

HOW THE PROJECT WAS DOCUMENTED

WHAT OPERATIONS INSTALLED

HOW THE CUSTOMER WAS BILLED

HOW IT WAS SUPPORTED

WHAT THE CUSTOMER REALLY NEEDED