

PROJECT MANAGEMENT

Cornerstones of Project Management

The management of a project is the key aspect to being successful in the construction contracting industry.

The Project Manager's role has evolved over the last 15 years into what it is today. Novel has developed seven key cornerstones describing what contractors currently expect their project managers to manage. These include:



These cornerstones are key to successful project management and most current project managers are not specialised in all aspects.

For Novel Group, **Cost Control** is the most important aspect of good project management. All other cornerstones can influence COST in one way or another. Some examples are listed below:

- Planning/Productivity – if a project finishes early, overhead costs are reduced and the company can look for new work opportunities
- Stakeholder relationships – clients can award additional work creating additional revenue
- Safety – incidents costs money (eg delays, investigations, etc)
- Quality – rework costs money and can affect client relationships/future tendering
- Environmental – remediation through poor environmental controls costs money
- Human Resources – must have the right people in the right job with the right skills or will cost money

I once asked a question of a number of Supervisors and Project Managers, **“What does a construction business do?”**

I received answers including “we build stuff” and “we manage subcontractors” which is a typical response for a construction supervisor/engineer.

For me, a business is established to make a profit for the shareholders (unless it is a not-for-profit organisation of course), not to “build stuff and manage subcontractors” nor “do stuff for fun”. A **construction business** has been established to make a profit by constructing projects. If a project is managed well and clients are happy, the profits should come.

My observations over the past 15 years have shown that many small to medium-sized construction companies do not fully understand how financially successful (or more concerning, unsuccessful) a project is likely to be at completion (ie the final financial result). There is a gut feeling through instinct and experience but it is common that not until the end of the project that the actual final financial result is known.

Early financial warning signs gives management the opportunity to “recover” if required by adding resources, reviewing the contract conditions, preparing variation claims, discussing the project position with clients, having discussions with banks, etc. It is all too late to discover, at the end of a project, that the project ended in financial turmoil or opportunities are lost when something could have been done at various earlier stages throughout the project’s duration.

Some of the controls that I have successfully implemented in the past to assist in good project management include:

Cost Control:

- Extracting budget from Estimates: Allocating the budget from the estimate into a format to allow effective management on site
- Progress Claims - Ensuring progress claims are issued in a timely manner and with the target to be cash positive. Understanding the over and under claim position
- Variations: maximising variation opportunities outside the contract scope of works/conditions but ensuring client relationships are intact
- Subcontractor Progress Claims: to be reviewed and approved for payment
- Daily / Weekly costs: Excel spreadsheets prepared to extract productivity rates and graphs to visually show costs/progress (budget vs actual)
- Forecasting projects at completion: Cost/Commitment to Date (CTD) + Forecast to Complete (FTC) = Forecast at Completion (FAC) and compare with budgets, looking at gains and losses. Ensure monthly fluctuations are minimised (ie gains/losses)
- R&O: Assessing risk and opportunities and the cost impacts of each

Planning / Productivity:

- Supervision in the field to understand what is included in the estimate (eg scope of works, budgets, man hours, etc).
- Daily diaries implemented, as they are the most important record for site supervision to complete. Assists in the preparation of variations and progress claims.
- Coordination of subcontractors/trades – implement 345 meetings (a 10min planning meeting at 3.45pm each day to discuss a five point agenda for the following day's activities). Also have fortnightly/monthly meetings with key subcontractors
- Daily pre-starts – now common in the construction industry, prior to starting work, these meetings discuss what each work group will be doing for the day (include toolbox talk once a week)
- Work Activity Briefings – planning for a specific/specialised work activity prior to undertaking the work...a key aspect to good project management and planning
- Critical Path Network Diagrams/Gaant Charts – used to develop a Master Construction Plan using MS Project (or other) and monitor progress weekly
- 3-week lookahead programs – extracting activities from the Master Program, use spreadsheet to further detail those activities. Monitor progress weekly, update fortnightly
- Procurement planning – develop a matrix to show when trades/subcontractors need to be on-site, when packages need to be awarded/materials orders and tender documents issued

Stakeholder (Client) Relationships:

- My motto is to make the clients life "easy"
- Gaining further work with an existing client is far easier than establishing a relationship with a new client. Relationship management between client and contractor is important for this reason
- Relationship Management Workshops implemented to collaboratively align client and contractor's key drivers and outcomes.
- Monthly Relationship Management meetings with questionnaires developed and reviewed to assess project health and client/contractor perceptions against each key driver. This is important when client relationships are poor.
- Contract management – understand the terms, conditions and scope of work associated with the contract. Prepare a Rights and Obligations summary of the contract. I have developed a Project Managers Pack including all key documents, contacts, etc in the past to assist with the contract handover from Estimator to Project Manager
- Services Authorities are another key stakeholder to manage and could affect the project outcome. One of the key aspects is finding the right person within the organisation to make decisions and hold regular coordination meetings to discuss the work activity. Use the client to assist if necessary

Safety:

- One of the key aspects to a safety culture within a company is the importance and focus senior management has with safety issues.
- Preparation of risk assessments in a practical manner, develop and implement controls with consultation with workforce
- Plant inspections (including subcontractors) are important
- Safety inspections (Daily/Weekly/Monthly)
- Incentive schemes can be developed using various mechanisms
- Statistical analysis using lag indicators – Frequency rates (LTIFR, MTIFR), incidents (LTI's, MTI's, RWI's, FAI's, Near Hits)
- Lead indicators – Hazard reporting, inspections undertaken, drug/alcohol testing, training, etc
- Undertaking pre-audits prior to accreditation assessment auditors

Quality:

- The key aspect to quality control is traceability. Knowing where/when what material is placed and by whom.
- Good record keeping is required to ensure good quality control
- Inspection and Test Plans (ITP's) should be developed from Specification requirements and completed during project
- Incoming goods should be inspected using a checklist
- Non-conformance reports (NCR's) to be prepared when works are not completed to the specified requirements. This shows a good quality system is in place, although client perception does need to be managed
- Hold points to be developed for client/designer inspections based on specification.
- Document control
- Undertaking pre-audits prior to accreditation assessment auditors

Environmental Controls:

- Sediment control measures – one of the key aspects to construction (especially earthworks) is controlling sediment on site. It is very difficult to find a person that understands the temporary nature of a construction project and can implement practical controls for the short/medium term. Novel Group has the experience in implementing such controls and developing plans after working on numerous earthworks project in Victoria, Tasmania and New Zealand.
- Carbon reporting – this is going to be a huge issue in the construction industry in the near future.
- Undertaking pre-audits checks prior to accreditation assessment auditors

Human Resources:

- Training is a key aspect to project management. One needs to assess the skills of employees and find and implement the training needs required to improve the employee.
- Finding the right person for the work activity is also important.
- Performance Reviews should be developed and reviewed on an annual basis (as a minimum or as required) to give feedback on the employee's performance.
- Given the fluctuating nature of the workload within construction, there may be a requirement to retrench employees. I have used a rating scale to determine which employees are retrenched based on employee attributes and skillsets
- Training – I have prepared many training presentations for employees (from Project Managers to labourers). These have included:
 - Cost control
 - Safety
 - Environmental
 - Planning and construction programming
 - Project management skills

Examples of these controls can be viewed upon request.

The above controls may seem overwhelming and exhaustive (especially for a small company with small projects), however implementation of some of these key controls will help in cost control and ensure the final financial position can be determined more accurately.

Project Health Checks:

Assessing a project at various stages throughout its progress is a way to ensure the seven Novel cornerstones of good Project Management are being implemented successfully.

There are four key stages at which these checks can be done. These include:

Startup:

- This is the busiest and most important time to ensure the project is setup the correct way.
- It typically needs additional 'horsepower' to ensure the:
 - budget is allocated correctly
 - bank guarantees requested
 - master program prepared
 - QA system established
 - filing system implemented
 - procurement register developed and key materials ordered
 - site is established once possession is gained

30% Complete:

- Review controls in place based on the cornerstones. Modify if required.
- Assess and update the Master Program as necessary
- The budgets from the estimate should be confirmed/reviewed and a FAC developed

60% Complete:

- Typically this is the time when the "skeletons" come out of the "closet", especially for small to medium-sized businesses.
- Implement controls (if required) to mitigate problem areas eg. add/change plant and labour resources as necessary, review contract and prepare a strategy, discuss with client, review and modify Master Program

90% Complete:

- Final position of project should be accurately known (time and cost)
- QA records to be collated
- Finalise and settle outstanding variations
- Notify client of Practical Completion date