

# Construction Clients Group

## Collaborative Working

Spring Hill – A Case Study

22<sup>nd</sup> April 2008

# The Spring Hill Experience

- Background
- A CWA?
- Timeline
- Project Constraints
- Design
- Target Outturn Cost
- Risk and Opportunities
- Gain Share/Pain Share
- Best Practice
- Project Success
- Lesson Learnt
- Questions and Answers

# Background

- RPDP: Regional Prison Development Programme valued at some \$1 billion
- Four separate facilities Northland, Wiri, Otago, and North Waikato (Spring Hill)
- The CWA model replaces traditional procurement in Northland the first project
- Programme driven by rapidly increasing prison muster, ageing existing facilities, and the desire to have inmates close to their community, family, and friends.

# A CWA?

- Collaborative Working Agreement – Project Framework
- A collaboration model developed by CMS Ltd.
- Key Philosophies;
  - Integrated team, Client, Designer, and Constructors
  - All decisions ‘Best for Project’
  - Selection based on Capability = Capacity + Ability
  - A unity of purpose – One Single Team
  - No man marking or layered management
  - Risk/Opportunities managed/owned by the Team
  - Payment of actual costs and normal profit
  - Share of pain or gain by all members
  - A behavioural and culture change required

# Timeline

- Aug 2004: Environment Court Ruling.
- Oct 2004: CWA Principals selected
- 29<sup>th</sup> Nov 2004: Project Office mobilised
- Dec 04 -Feb 05: Supply Chain selected
- 4<sup>th</sup> July 2005: Site possession
- 31<sup>st</sup> July 2007: Full turnkey handover.

# Project Constraints

- A heated market with spiralling material and labour costs
- Resource shortage, skill and quantum, both design and delivery.
- Absolute end dates driven by larger programme.
- Site situated some 70km from Auckland and Hamilton no public transport or accommodation available.
- Site had zero infrastructure; power, phones, water, sewer and access.
- A peak workforce of 1000 required to deliver some 2.0 million man-hours
- Iwi & Community Relations
- RMA requirements

# Design

- Designers integrated in the project team.
- Single programme
- Starting point an approved concept design
- Design Brief based on Facilities Standard, Energy Brief, RMA, & consenting process
- Value management undertaken as design is developed with supply chain involvement.
- Supply Chain design and detailing expertise utilised as part of design team.
- Continual construction and custodial review
- Key design staff based on the site.

# Target Outturn Cost

- First principle estimating.
- Cost based not price based.
- Peer review & constant challenge to validate assumptions
- Vigorous review of waste & non-productive activities
- TOC provides exit cost certainty
- Quantitative Risk Analysis (QRA)
- Use supply chain's procurement power.
- Burdened labour and plant rates.
- Normalised profit paid.



# Risk & Opportunity Management

- Identified by integrated project team.
- Shared management of these risks & opportunities by the Team
- Certain risks retained by the Client
- Likelihood and consequence model.
- Fiscal model 1.75% of target cost
- Risk champions allocated across the risk matrix who is best person to manage a particular risk.

# Gain Share – Pain Share

- CWA members incentivised to produce “upside”.
- CWA members take a share of any “downside”.
- ...Such that risks/rewards are fairly and appropriately calibrated and monitored

# Best Practice

- Project mission statement
  - ‘Set a new benchmark for construction excellence’
- A regime of continual improvement & Lessons Learnt
- Involved project teams from the other 3 facilities in knowledge share and loop learning.
- Key performance Indicators measured;
  - Health and Safety; LTI, injury frequency, medical attention
  - Environmental audits by Environment Waikato
  - Planned versus actual time
  - Financial; planned vs actual spend, probity, upside/downside
  - Quality; NCR’s and cost of quality, zero defects at completion
  - Supply Chain satisfaction survey’s
  - Site Culture surveyed.
  - Client/Community/Neighbour Complaints measured
  - Visitor surveys

# Project Success

- Every project delivery milestone achieved.
- \$7 million of VM delivered during TOC development
- A project upside of some 2.7% has been generated
- Significant Department management savings
- Up to a \$1 million of work per day achieved.
- Workforce peaked at 970
- All KPI targets achieved or bettered.
- Self-certification process has produced outstanding Built and documented Quality.
- Employment initiative with Work and Income/TEC
- Trade Apprenticeships established
- Schools gateway programme
- No Community or Neighbour complaints

# Lessons Learnt

- Lack of first principle estimating skill in the commercial construction industry.
- Only use supply chain members who can add value.
- Would use an integrated system for estimate, wages, cost reporting and planning.
- Don't start construction until the TOC is agreed.

# Site Layout



# Site Photos

August 2005



# Site Photos

December 2005





# Site Photos



# Site Photos



# Site Photos

**January 2007**



# Site Photos

**April 2007**



# Site Photos



June 2007

# Questions

- From the floor