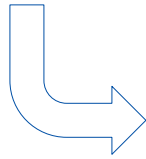# lanico.com
Facility Management & Workplace Strategy

Construction Management - V1

How to manage a construction project
(Building related project)

Main steps in Project Management:
- ✓ Define project team, roles and responsibilities (internal & external)
- ✓ Define scope of works, practices, needs, Design & Concept
- ✓ Manage Budget & Planning
- ✓ Manage site works
- ✓ Change Management

THE PERFECT OFFICE
Want to know what a perfect office is about? Please *click here* to read more how to create a
High Performance Workplace

Revision	Initials	Date	Version
Prepared by:	LD	18.02.2016	1.0
Checked by:			
Note:			

Contents

Main phases in Project Management for construction projects

General Project Management - Phases

Introduction: Below and on following pages, a general overview and approach on project management for buildings construction.

Internal project team
- Set-up internal project team to define the pre-project and the project

Pre-project (preparatory phase)
- Understand background of buildings and surroundings, buildings expansions, etc.
- Understand policies, regulations, standards and future vision for buildings and surroundings.
- Understand the operations that refer to all aspects within the company that makes it function and operate on a daily basis.
- Define needs, practices; actual and future of the organization (general strategy, space, features, infrastructure, technical, IT, HSE, BCM)
- Understand existing infrastructures, undertake surveys, risk assessments of actual set-up, Identify issues/problems - Get proposals, options and measures of corrective actions.
- Define general aspect/image for the new premises (basis and functional, nice to have, luxury, Green building; MINERGIE® standards,…)
- Develop overall project strategy (mechanism, temporary relocation, demolition, construction)
- Develop scopes of works, general ideas (high level design)

Project
- Set-up external project team (architects, engineers, contractors,…)
- Develop the pre-project into a project (feasibility, options, constraints, authorities first approach…)
- Develop project with internal and external project teams, with main steps:
  1) Brief & concept design - 2) Project & design, budget, planning proposal - 3) Tenders & offers
  4) Authorization and other procedures - 5) Coordination with consultants - 6) Demolition & Construction - full site supervising - 7) Finishing, commissioning, and handover - 8) Full financial control

Past-Project
- Document & Monitor- Assess project success, improve
- Develop general Facility Management for the day to day operations (security, operational, maintenance,…)

Main steps in project management
1) Define project team, roles and responsibilities (internal & external)
2) Define scope of works, practices, needs, Design & Concept
3) Manage Budget & Planning
4) Manage site works
5) Change Management

Main steps in construction
1) Develop concept, design
2) Approval (concept and financial)
3) Ordering period
4) Installation period, commissioning

CCPM – Critical Chain Project Management

for F&RE projects, the use of CCPM can really help achieving projects 10% to 50% faster and/or cheaper than the traditional methods.

CCPM
Save Time &
Money

Reducing lead time with CCPM

CCPM – Quick Overview:

Critical chain project management (CCPM) is a method of planning and managing projects that emphasizes the resources (people, equipment, physical space) required to execute project tasks.

It was developed by Eliyahu M. Goldratt. It differs from more traditional methods that derive from critical path and PERT algorithms derived from Theory of Constraints, which emphasize task order and rigid scheduling.

A critical chain project network strives to keep resources levelled, and requires that they be flexible in start times. Application of CCPM has been credited with achieving projects 10% to 50% faster and/or cheaper than the traditional methods.

Standard Project Schedule
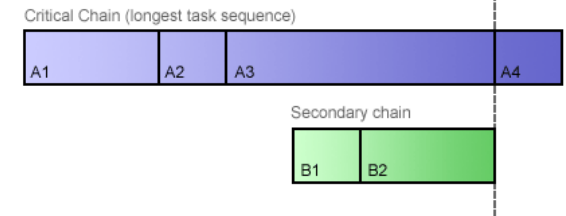
CCPM Project Schedule
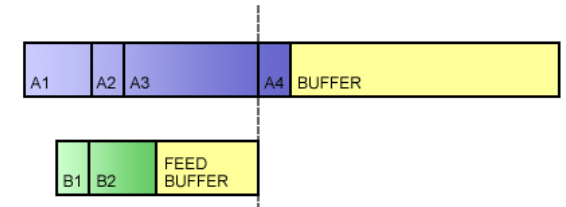
Main points in CCPM

Theory of constraints: emphasize task order and rigid scheduling
Flow: improving flow is the primary objective of the system
Multitasking: avoid bad multitasking, #1 killer of flow in a project environment
Full kit: Define Full Kit for every task in a project
Time estimation: Bad multitasking, Student Syndrome, Parkinson's Law, Time Dependency
Critical Chain Buffering: reduce buffer time in every task and put some buffer time at the end of the project
**Feeding chains:** Identify all feedings elements to be inserted in the chain at the right time
Relay race culture: Behaviors that drive focus and flow of projects
Elevate barriers to flow: as soon as a they are evident—don't wait for the next meeting.
CCPM Software: Use MS Project and the add on Concerto to optimize projects
Update: Be disciplined in spending ~5 minutes per day to update tasks or projects

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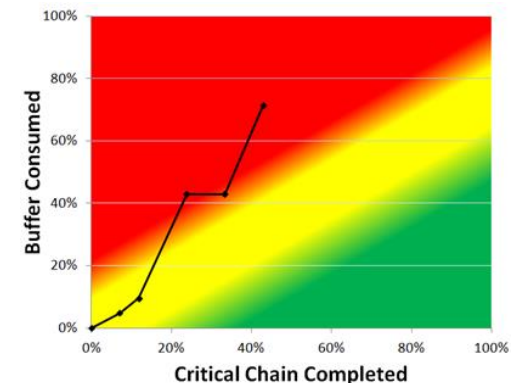
General Project Management - Project Team/Structure

Project Team /Structure to ensure the right team to deliver a successful project
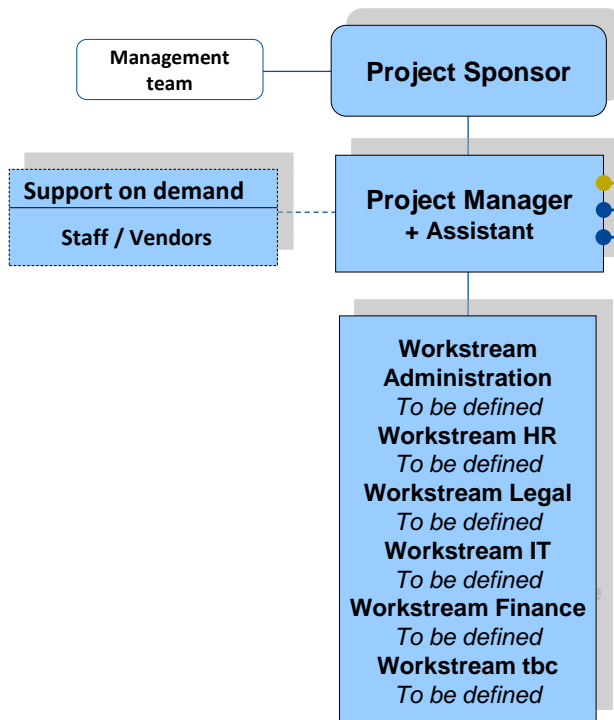
Project team / Structure

To ensure a smooth project development and completion, having a good project structure will be a key element for delivering the project. With an internal project manager, probably a standard setup with an Architect and Engineers would give better control and flexibility for the project.
- *See below a setup example.*

Internal Project team

- Management team
- **Project Sponsor**
- **Support on demand**
- **Staff / Vendors**
- **Project Manager + Assistant**
- **Workstream Administration**
  To be defined
  Workstream HR
  To be defined
  Workstream Legal
  To be defined
  Workstream IT
  To be defined
  Workstream Finance
  To be defined
  Workstream tbc
  To be defined

External Project team

ARCHITECTS
Architects
Engineers
Consultants
...

CONTRACTORS
Contractor 1
Contractor 2
Contractor 3
...

- Administration, coordination, execution
- Contractual

Architect/Engineers services (as per SIA standards)

- Brief & general concept
  - *Meetings, discussions*
- Project & design, budget, planning proposal
  - *Proposal, discussions*
- Tenders & offers
  - *Preparing tenders, offers, contractors comparison*
- Authorization and other procedures
  - *City, landlord approval*
- Coordination with consultants
  - *Technical coordination with specialists*
- Demolition & Construction - full site supervising
  - *Coordination with contractors*
  - *Site meeting, minutes*
- Finishing, commissioning and handover
  - *Finishing details*
  - *Test and commissioning*
  - *Handover and snag list*
- Full financial control
  - *Quantity surveyor*
  - *Financial status and invoices control*

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General Project Management - Planning

Planning to keep track and ensure deliveries on time

Planning

To ensure a smooth project development and completion, having a planning with key listed steps, elements and to identify long lead items will ensure deliveries are according to planning.

Intentional Planning

Project: New office Fit-out - Preliminary planning V1

Date: 4 Februay 2105 - Made by: LD

DRAFT

Description	Feb-15	Mar-15	Apr-15	May-15	Jun-15	Jul-15	Aug-15	Sep-15	Oct-15	Nov-15
Define office needs (size, location, features, technical)	████									
Office search, survey, short list		█████								
Visits, recommandation final choice			██							
Develop budget, planning			████							
Set-up Construction/project team			████							
Landlord negotiation (lease terms)			███							
Legal review - Signatories			█							
Lease start - Premises ready for fit-out				●						
Office + IT concept design				█████						
Office fit-out					████████████████ - - ->					
IT room delivery							●			
IT room set-up							███			
Testing, commisioning - Hand over								███		
Move-in									●	
Snagging									████	

Today

34/38 weeks from identified office to move-in, could vary depending on the scope of works

General Project Management - Budget

Budget

To ensure a smooth project development and completion, having a comprehensive budget with all costs listed will ensure a project delivery within the approved cost.

Budget to deliver the project within the approved cost

Intentional Budget

New York - 1040 Ave of the Americas Floor 15 - Budget Tenant's work - Phase I : 46 desks

Prepared by : LD	Version: 1	Drawing: V1 Floor 15	Date: 03.12.2013

Summary: New space for 46 desks, one large meeting room, two medium meeting rooms, one break-out area, one pantry, one UPS room, one IT room
Standard building works by the landlord
Security: Access control, Alarm, CCTV
IT Room: Included: cabling to desks, AC, UPS, Racks - Excluded: IT room equipments nor end user's equipment (PC's, monitors, phones, printers)

Description	Lot	Budget A V1	Budget/ Committed B	Estimate to complete C	Current budget/offers D	Total expected final E	€ F
IT/UPS		*105,000*	*81,500*	*0.00*	*0.00*	*81,500.00*	*€ 61,940*
Cabling to users + 3 IT racks	tbc	65,000	43,000	0	0	43,000	*€ 32,680*
Incoming lines	tbc	40,000	38,500	0	0	38,500	*€ 29,260*
Office area		*706,000.00*	*706,000.00*	*0.00*	*0.00*	*706,000.00*	*€ 536,560*
Standard fit-out	tbc	456,000	456,000	0	0	456,000	*€ 346,560*
Furniture,	tbc	250,000	250,000	0	0	250,000	*€ 190,000*
Break-out, kitchen		*85,000.00*	*85,000.00*	*0.00*	*0.00*	*85,000.00*	*€ 64,600*
break-out (included in furniture)		85,000	85,000	0	0	85,000	*€ 64,600*
Security		*31,000.00*	*29,552.00*	*0.00*	*0.00*	*29,552.00*	*€ 22,460*
Access control system, CCTV	tbc	22,000	20,552	0	0	20,552	*€ 15,620*
PC equipement, services, various	tbc	9,000	9,000	0	0	9,000	*€ 6,840*
AV system		*55,000.00*	*55,000.00*	*0.00*	*0.00*	*55,000.00*	*€ 41,800*
AV system, TV's (all monitors to 58")	tbc	55,000	55,000	0	0	55,000	*€ 41,800*
Fees		*48,626.00*	*48,625.00*	*0.00*	*0.00*	*48,625.00*	*€ 36,955*
Project management		35,000	35,000	0	0	35,000	*€ 26,600*
Architect		0	0	0	0	0	*€ 0*
Engineer		6,000	6,000	0	0	6,000	*€ 4,560*
IT consultant		7,626	7,625	0	0	7,625	*€ 5,795*
Estimated Reimbursables		0	0	0	0	0	*€ 0*
Change rate $/€: .76 **Total Gross VAT $**		$1,030,626	$1,005,677		$0	$1,005,677	*€ 764,315*
Contingency		51,531			0	0	*€ 0*
Net excl. VAT $		**$1,082,157**	$1,005,677		**$0**	**$1,005,677**	*€ 764,315*

Contractors — *Cost Control, $ VAT not incl.* — *€*