

Sub-Contracting Management:

by

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Topics Covered

Sub-Contracting Management

Sub-contracting

- The definition
- Characteristics of construction and relationship with sub-contracting

Types of sub-contractor.

- Process and procedure for the procurement of sub-contractors/specialist contractors

Procurement planning for sub-contractor;

- identify work packages and their trades;
- selection process of sub-contractor;
- preparation documents and tender.
- coordination of sub-contractors
- Planning, organising and control of sub-contractors

Characteristics of construction

- Constructing a building is a process of organising and combining resources
- ...to produce building products according to the defined performance, scope, time and cost, involving temporary organisation

What is Resources?

A resource may be defined as **the machine or person who will perform the scope of work**

TYPES OF RESOURCES

Materials

Manpower

Machinery

Methods

Money

Market

Why resources are important?

T5 faces delay due to limited materials storage

- Cost £2.5B
- Opening 2007 to 2015
- T5 main contractor Laing/O'Rourke has to pay £150,000 /day for programme delays



Rush for Resources

- Two ice centre built 6 months apart (Nottingham and Sheffield)



Construction project planning and execution

In the planning and execution of the construction of building project, it is necessary to ask these basic questions:

- What needs to be done ?
- Who will carry out what must be done ?
- By when must it be done ?
- How should it be done ?
- How much will it cost ?
- How good does it has to be ?

What needs to be done?

- site clearance
- earthworks and excavation
- cutting, constructing and erecting of formwork,
- bar bending,
- concreting,
- steel fabrication and assembly,
- bricklaying,
- paving, plastering and painting
- floor tiling
- Carpentry to build roof structure
- Laying of roof tiles
- laying of water supply pipes, soil and waste pipes
- and many others



So, who are going to carry out all these works?

Relationship with sub-contracting

- In the normal practice, it is very seldom for the Main Contractor to undertake all the works by themselves. It is considered economically, technically and organizationally impractical for the main contractor to carry all these works alone.
- Very often, they are *outsourced* or *let out* to many different groups of individuals or teams with *different skills, know-how and capabilities*.
- These groups are called the Trade Contractors or Sub-contractors or as the Specialist Contractors

Subcontracting Management

Definition:

...transaction by one enterprise, called the **'subcontractor'** is commissioned by another enterprise, called the **'main contractor'**, to provide the latter with **goods or services** that he will use for his own commercial purposes, often, but not always, by incorporating these goods or services into a whole.

An individual or **company hired by** a general or **main contractor** to **perform** a specific task as part of the **overall project**.

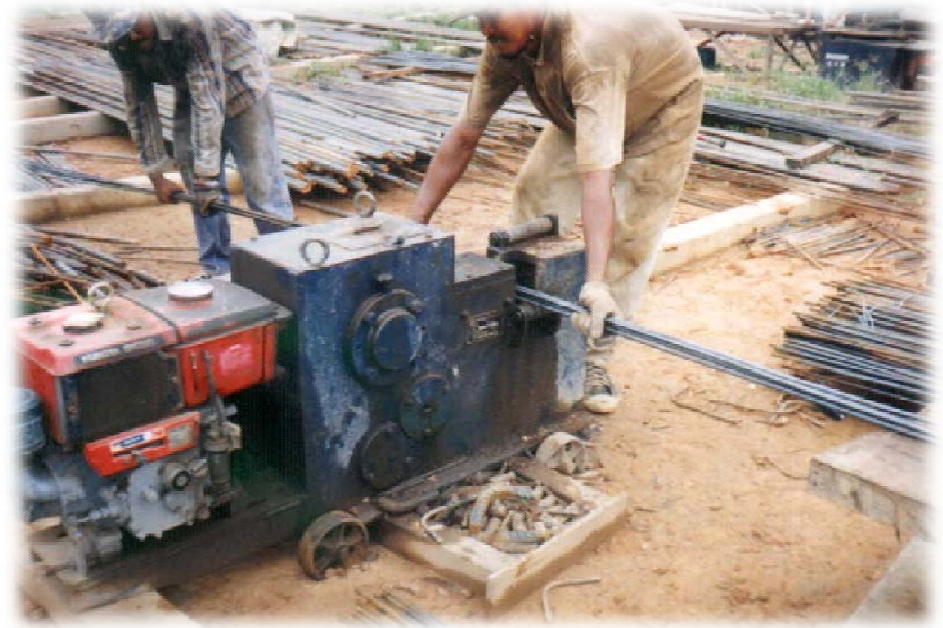
Subcontracting Management

Subcontracting agreements can be made relating to:

- Products
- Equipments
- Services

TRADE CONTRACTOR

1. Concreter
2. Bar bender
3. Bricklayer
4. Carpenter
5. Joiner
6. Steel workers
7. Plasterer
8. Painter
9. Electrician
10. Air-conditioning works
11. Telephone works
12. Plumber
13. Drainlayer
14. Road worker



Work Packages

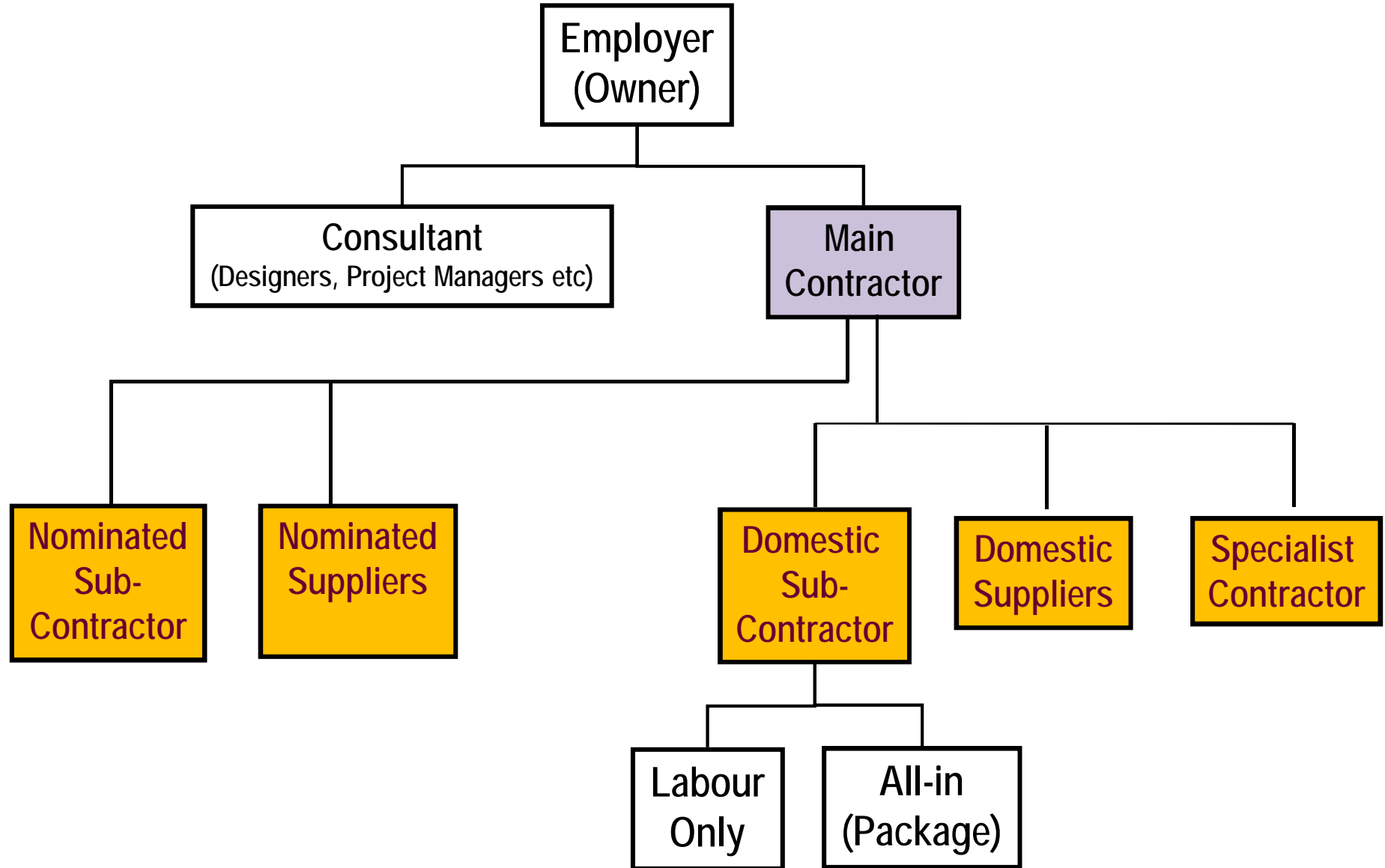
1. Concreter, bar benders & formwork sub-contractor
2. Bricklaying and plastering and painting sub-contractor
3. Joiner – doors, windows
4. Aluminium works sub-contractor
5. Electrician
6. Air-conditioning works
7. Telephone works
8. Plumber – water supply and soil and waste
9. Drainlayer
10. Road worker

Subcontracting Management

TYPE OF SUB-CONTRACTORS

1. Domestic sub-contractors
2. Nominated sub-contractors
3. Domestic suppliers
4. Nominated suppliers
5. Specialist contractors

Types of Sub-contractors/suppliers



- **Domestic subcontracting** – the main contractor **is overloaded / insufficient resources, and has to obtain additional capacity** from another source.

‘Domestic’ subcontracts are contracts where the Main Contractors contract with subcontractors of their own choice.

- ***Model Terms of Construction Contract for Subcontract Work by CIDB (2007)***
 - *The use of the model terms as part of a 'stand alone' subcontract with any main contract document*



- **Specialist subcontracting** – when the main contractor obtains goods or services which **he does not produce or is not able to produce himself /** or no expertise in a specific area

Clause 28 - Nominated Sub-contractors and/or Nominated Suppliers

Definition

- (a) All specialists, merchants, tradesmen and others executing any work or services, or supplying any materials or goods
- i. for which **Prime Cost Sums (or P.C. Sums) are included in the Bills of Quantities** or ;
 - ii. for which the S.O. has given written instructions in regard to the **expenditure of Provisional Sums**, or;
 - iii. who may be **nominated by the S.O.**

are hereby declared to be *sub-contractors or suppliers* employed by the Contractor and are herein referred to as "Nominated Sub-contractors" or "Nominated Suppliers", as the case may be.

Works normally carried out by **Nominated Sub-contractors or Specialist Contractors**

1. **Aluminium works**
2. **Electrical Installation with fittings and accessories**
3. **Air-conditioning works**
4. **Telephone works**
5. **Plumbing – water supply and soil and waste piping**
6. **Sanitary fittings and accessories**
7. **Built in fitments and furniture**
8. **Lift and escalator**
9. **Fire fighting installation**

Content of a contract document on Nominated sub-contractor

Prime Cost Sums (or P.C. Sums)

No	Description	Unit	Qty	Rates	Amount
a	Allow a Prime Cost Sum of Ringgit Malaysia Six Hundred and Fifty Thousand (RM650,000.00) only for <u>Electrical Installation and Fittings and Accessories</u> to be carried out by Nominated sub-contractor				650,000.00
b	Allow for attendance 6%				
c	Allow for profit 3%				

Subcontracting Management

Procurement planning for sub-contractor;

It is the question of : **What needs to be done?**
 Who are going to do?
 How are they going to do?

An efficient and effective sub-contractors management requires an integrated (combine or form into one) and well coordinated approach.

It involves the process of : **planning,**
 executing (implementation)
 and controlling

Subcontracting Management

Planning is one of the key function in sub-contractors management.

Planning includes:

1. Identifying the work packages or tasks
2. Estimating the volume (quantity) of each of the work package
3. Estimating the productivity
4. Establishing the teams or groups for each work packages
5. Estimating the cost for each work package (refer to master plan)
6. Determining the time available (refer to master programme)
7. Planning the procurement of sub-contractors
8. Allocation of sub-contractors on site in term of time and work area

Subcontracting Management

Implementation includes:

1. Prepare tender/bidding documents
2. Invite sub-contractors to submit quotations
3. Evaluate quotations or negotiate with sub-contractors
4. Award sub-contract work (supply only, labour only or package)
5. Sub-contractor to submit work programme
6. Allocate time and work area to sub-contractors
7. Planning the procurement of sub-contractors
8. Allocation of sub-contractors on site in term of time and work area

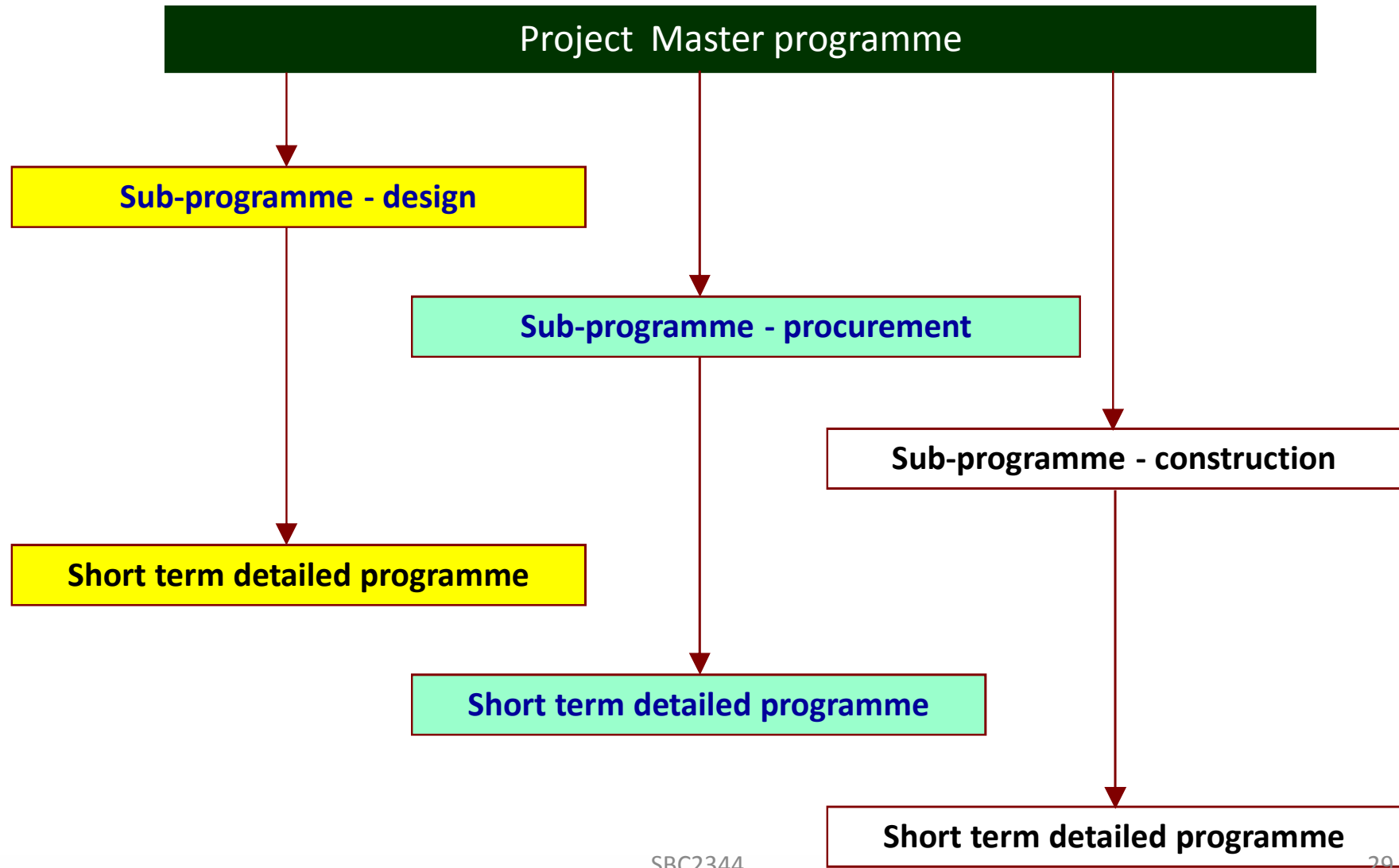
Subcontracting Management

Monitoring and Controlling includes:

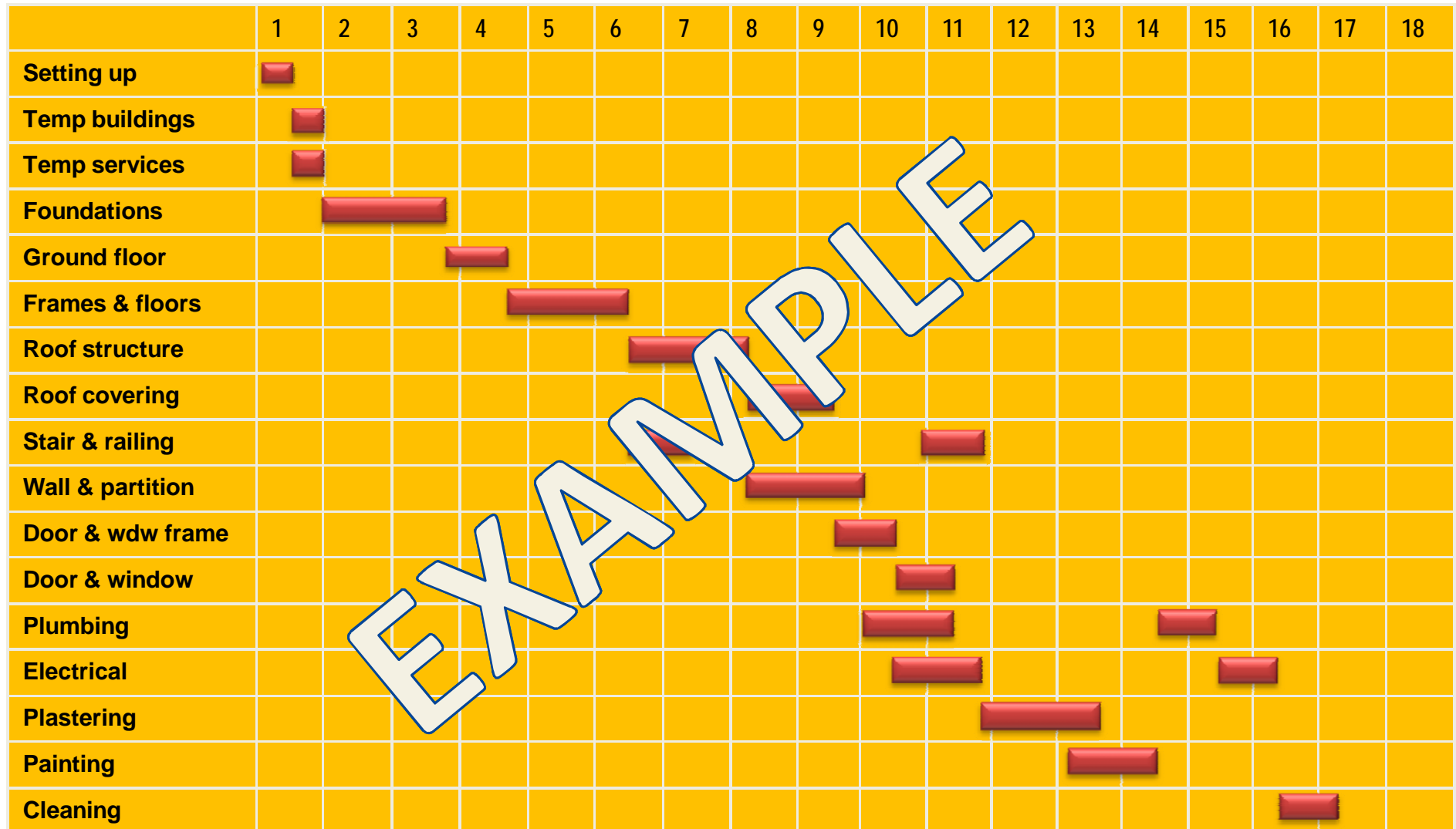
1. Monitoring and measure performance – productivity, time, cost
2. Compare planned performance to actual performance
3. Take action

Subcontracting Management

Procurement planning for sub-contractor;



The Master Work Programme for a Proposed Project



The sub-work programme for Carpenter and Joiner – Domestic Sub-contractor

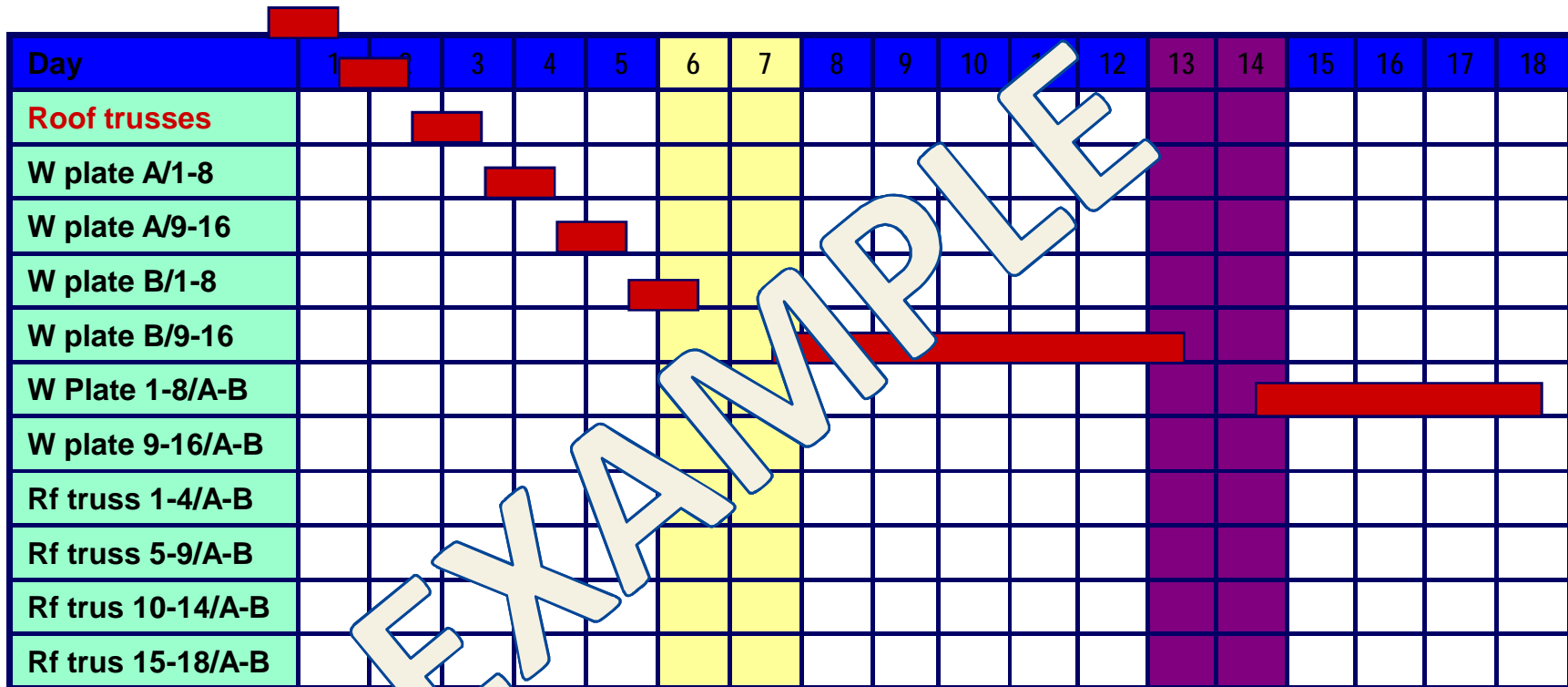
Activities	July	Aug	Sept	Nov	Dec
CARPENTER & JOINER					
1 Fix wall plate on beam	■				
2 Build roof trusses		■			
3 Fix door frames – 1 st fixing				■	
4 Fix window frames – 1 st fixing					■
5 Install door leaves etc. – 2 nd fixing					■
6 Install window panels etc. – 2 nd fixing					■
7 Fix ironmongery					■

The sub-work programme for Electrical Works – Nominated Sub-contractor

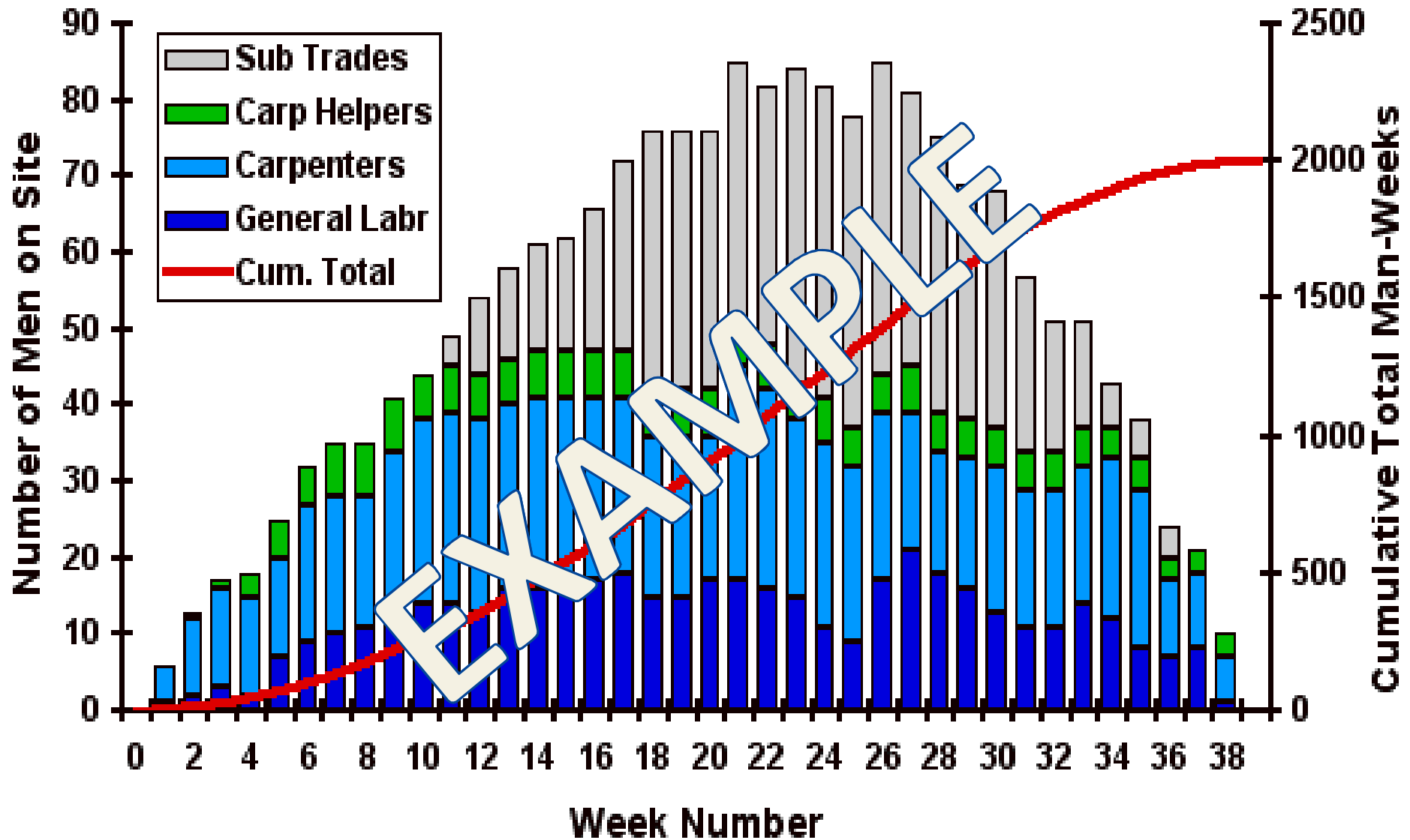
Activities	July	Aug	Sept	Nov	Dec
ELECTRICAL WORKS					
1 Conduit and trunking				■	
2 Cabling				■	
3 Control gear and equipment					■
4 Fittings and accessories					■

Short term Detail Work Programme (Normally weekly or Fortnightly)

Fig. 2: Example of Short Term Work Programme for Roof Trusses element in building



Resource Histogram



Reading list

Gould, Frederick E . (2000) – Construction Project Management – Prentice Hall, London

Levy, Sidney M (2000) – Project Management in Construction – 3rd. Edition, McGraw-Hill, New York

CIOB, Great Britain (1998) – Code of Practice for project Management for Construction and Development – Longman, Harlow Essex, England

Chitkara, KK (2005) – Construction Project Management – Planning, Scheduling and Controlling