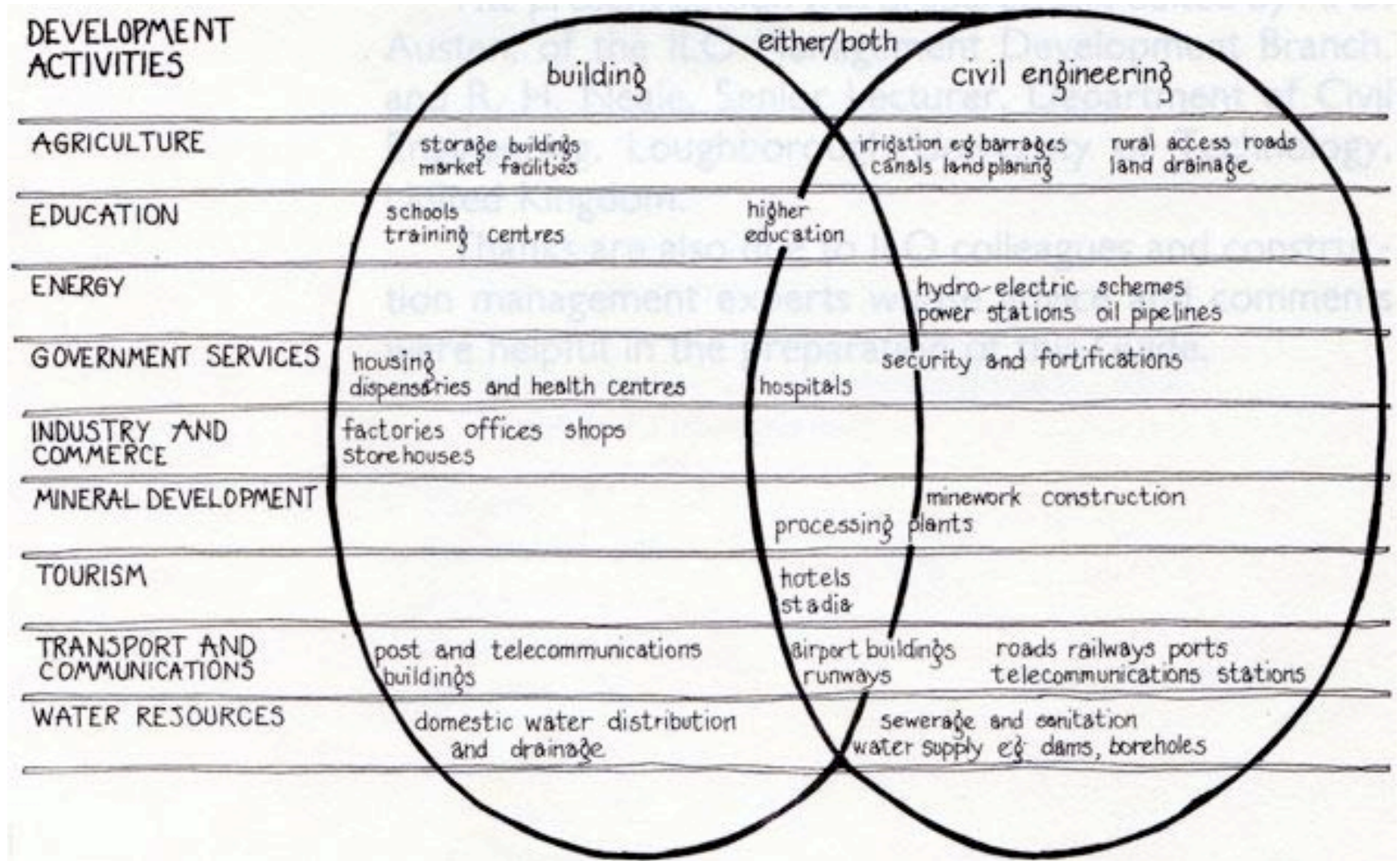


Construction OS&H

Principles of safe project management

Summary

Project organisation and management functions
Stages of construction projects
Creating a good preventative OS&H culture
Enforcing good OS&H through procurement and contracts



The construction industry makes a big contribution to national development, so good project management is very important.

Project organisation and management functions

General principles of management

We define *management* as the process of designing and maintaining an environment in which individuals, working together in groups, accomplish efficiently selected aims.

[Koontz and Weihrich (See the ILO Overview, p11)].

Management functions

There is general agreement, developed and maintained over a long period of time, that there are six ‘functions of management’:

Planning functions

Planning: setting objectives and deciding on future courses of action

Organising: establishing an intentional structure of roles for people to fill in an organisation

Staffing: filling, and keeping filled, the positions in the organisation structure

Management functions

Executive functions

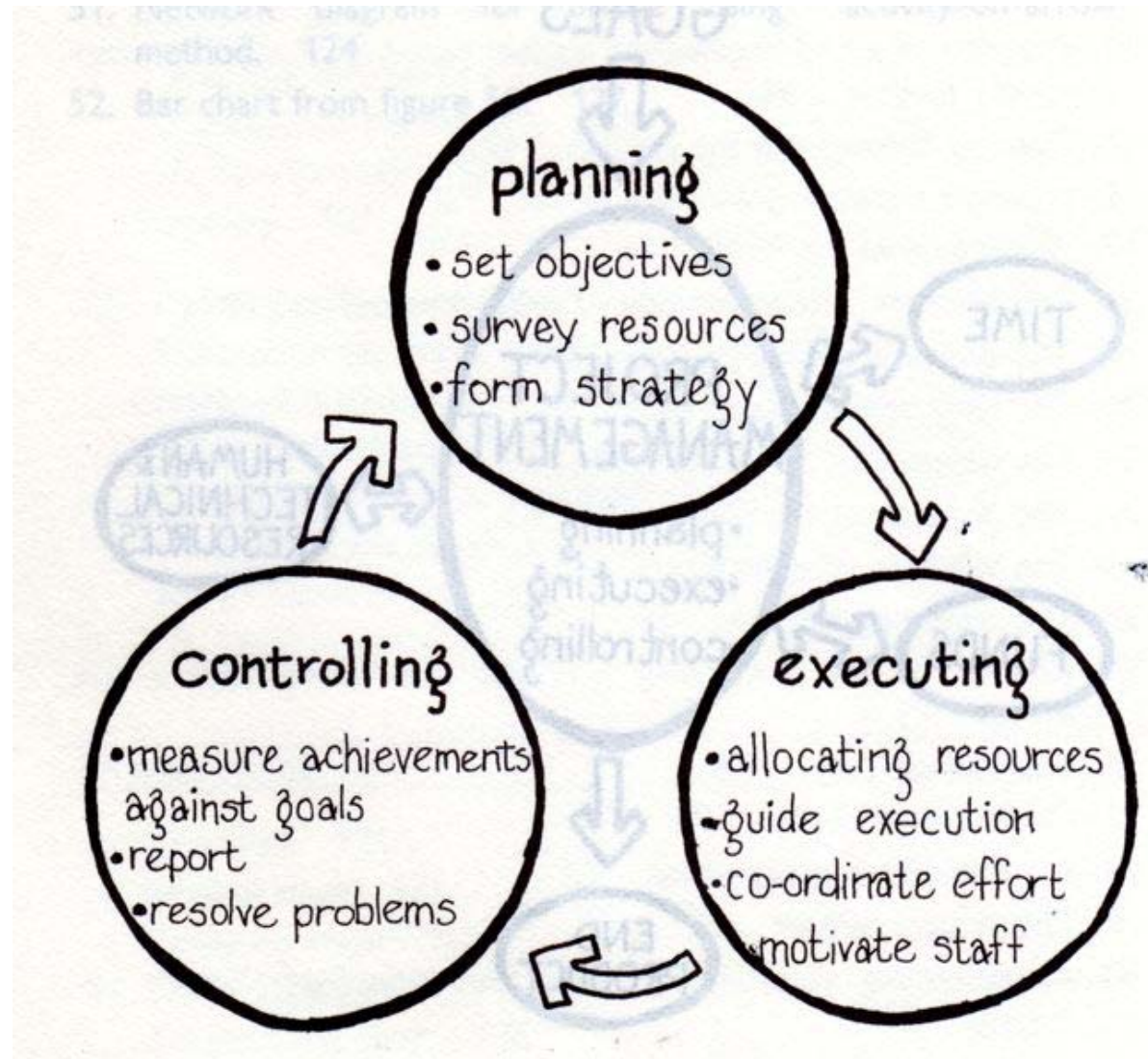
Leading: influencing people so that they will contribute to organisation and group goals

Coordinating: “the essence of management”; the achievement of harmony of individual efforts towards the accomplishment of group goals

Controlling: measuring and correcting the actions of subordinates

The *process* of managing has three fundamental elements

These elements form a continuous 'managerial cycle', driving forward towards an agreed goal. It is important to understand that management is not a static function, and that all managers have to be involved in this continuous process.



This process is consistent with good OS&H practices.

From the definition of management, one of the ‘selected aims’ should be to preserve the safety, health and general well-being of all the people involved. This relates closely to ‘policy’ as explained in the module “Processes and systems”.

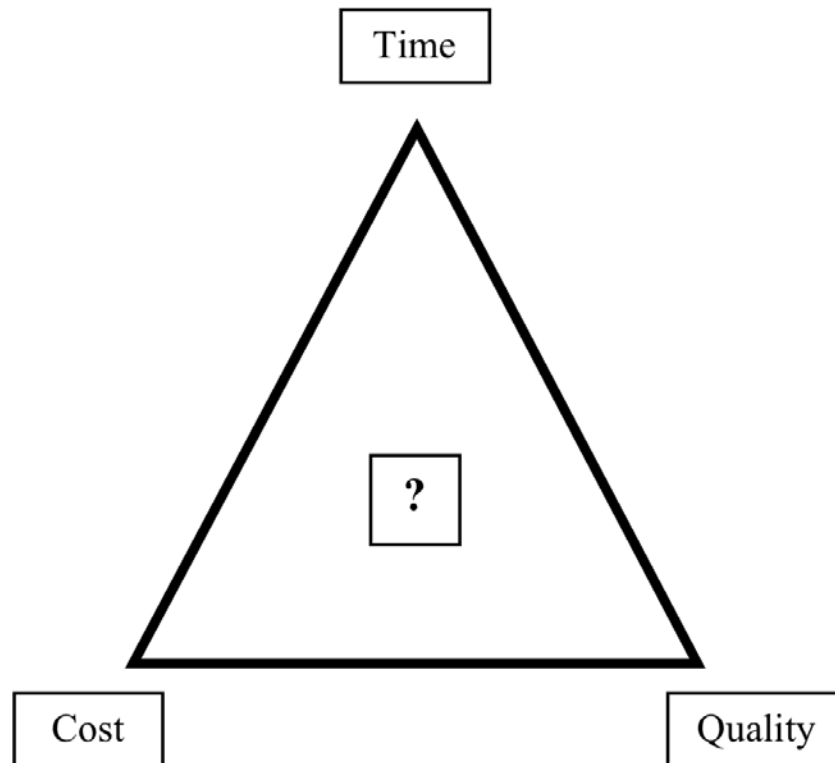
All six managerial functions should embrace effective OS&H.

All three elements of the managerial process should be employed to ensure effective OS&H performance.

Construction project management

Unlike the management of a factory, which runs at a ‘steady state’ for much of its existence, projects are essentially managed by transitory organisations. Projects have a distinct start and end, often with some very intensive activity in between. This is especially true of most construction projects.

The 'basic view' of the key goals of a construction project



Limitations of the ‘basic view’

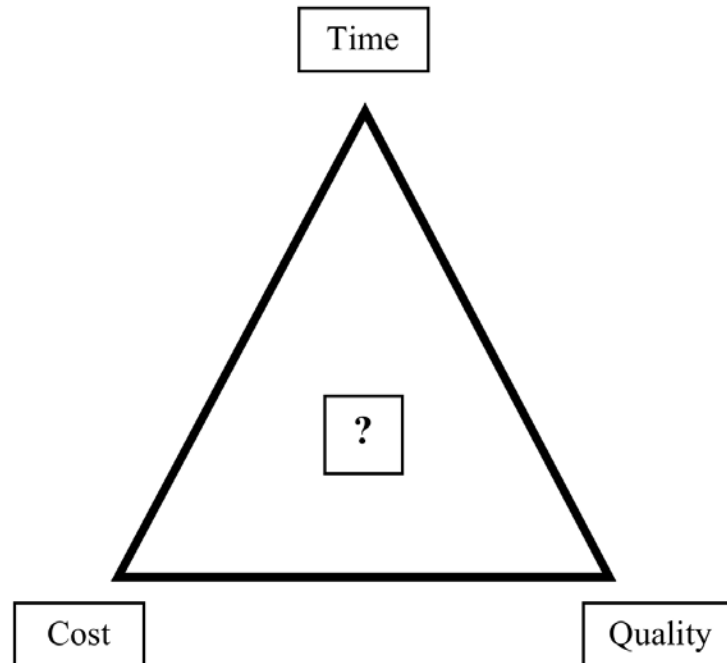
Reality: when the project is complete, time and cost are forgotten; only quality matters

Modern management methods reduce the degree of compromise required (the project triangle is smaller).

It is a narrow, economic view of a project.

‘Performance’ and CSR

‘Performance’ is a better term because it can include the ‘triple bottom line’ of ‘people, planet, profit’, based on economic, ecological and social measures

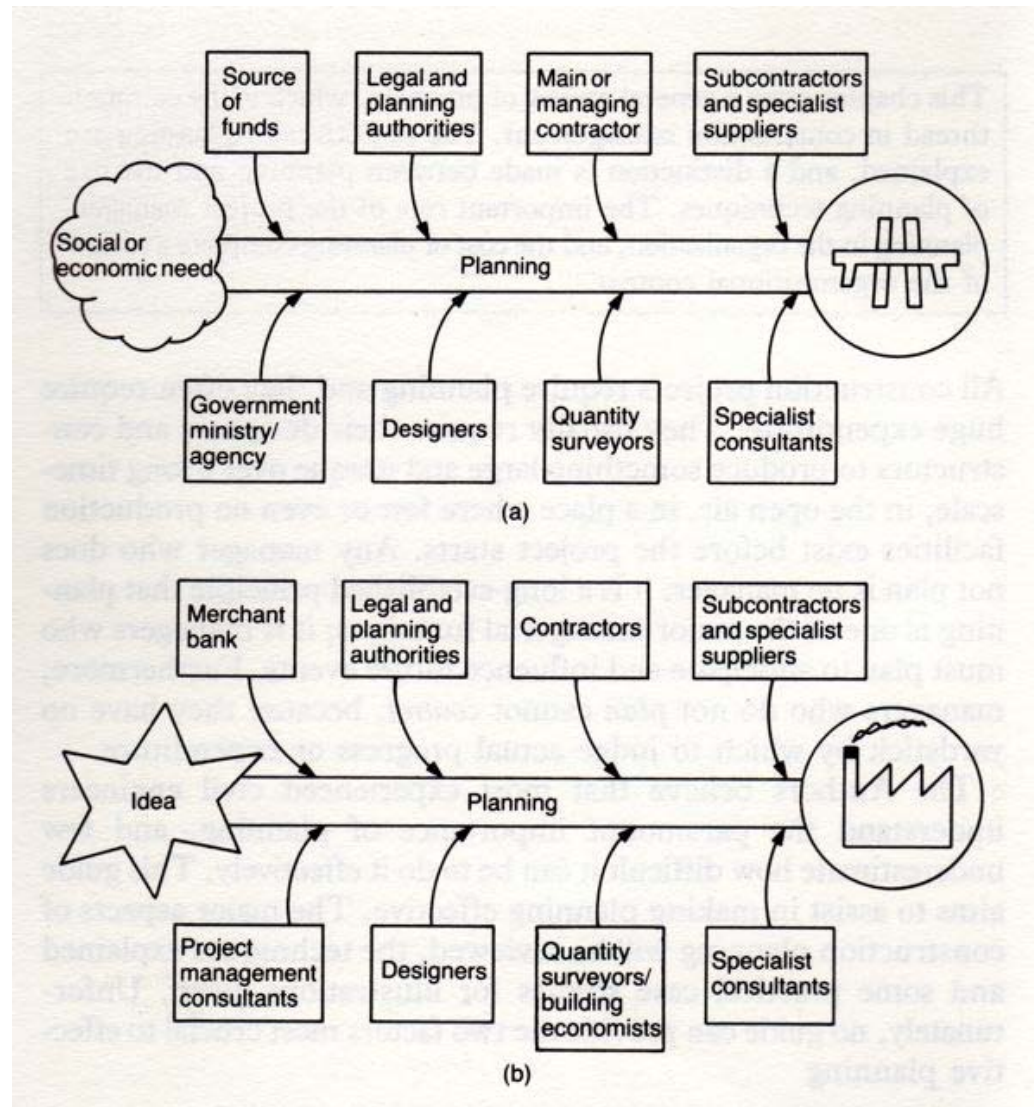


The fundamental philosophy of **Construction OS&H** is that ‘Performance’ must include effective measures of good OS&H; often it does not, and this is what **Construction OS&H** is intended to change.

Project managers and project teams

Examples of people and organisations whose activities must be planned and co-ordinated during a project.

The examples are for a possible public sector project and also for a new private manufacturing facility.



Project managers and project teams

Project managers are essential to the Executive Functions of management, especially *Leading*. Most construction projects will require a number of project managers, who must work together effectively. The main project managers will be:

Client's project manager, who will manage the whole project on behalf of the client, from start to finish.

Design team project manager, who will work with the client's project manager and manage the whole design team and its specialist advisors.

Contractor's project manager, who will manage the whole project within the constructor's contract, including all the sub-contractors and suppliers.

Project managers have a very significant responsibility for the implementation of effective measures for OS&H.

Discussion on effective project managers

What are the key qualities of a successful construction project manager?

Discuss this in groups of three or four and list at least five key qualities.

Some key qualities of effective project managers

- Good team leader, builds good relationships
- Has an open and honest management style
- Good communicator - “management as a performing art”
- Focuses on results, has a ‘sense of mission’
- Technically competent - understands the construction process
- Financially competent - understands project income and costs
- Confident and resilient “when the going gets tough, the tough get going”
- Understands management systems and uses them effectively

What about the effective project manager's job?

Needs to have real authority

.... But should only use it when absolutely necessary

Can only be effective if all parties agree on the aims and objectives of the project - client, designers, contractors must all share the same view of the project.

Most medium to large projects require a project manager and four immediate sub-ordinate managers.

Project manager has the overall responsibility for managing and leading the project. Must lead on good OS&H.

Production manager is responsible for the practical delivery and physical production of the project, and so will have a very direct influence on OS&H.

Finance and contractual manager. Contract documents should contain robust requirements for OS&H so this manager can have a very powerful influence over OS&H.

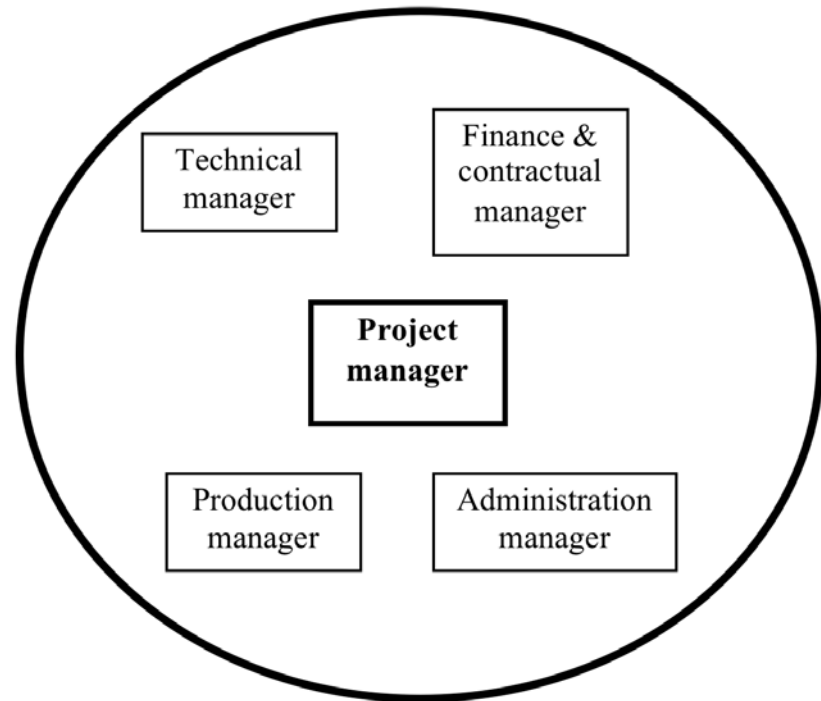
Technical manager will have responsibility for the technical aspects of hazard and risk analysis and method statements.

Administration manager has prime responsibility for implementing and maintaining all OS&H policies and systems.

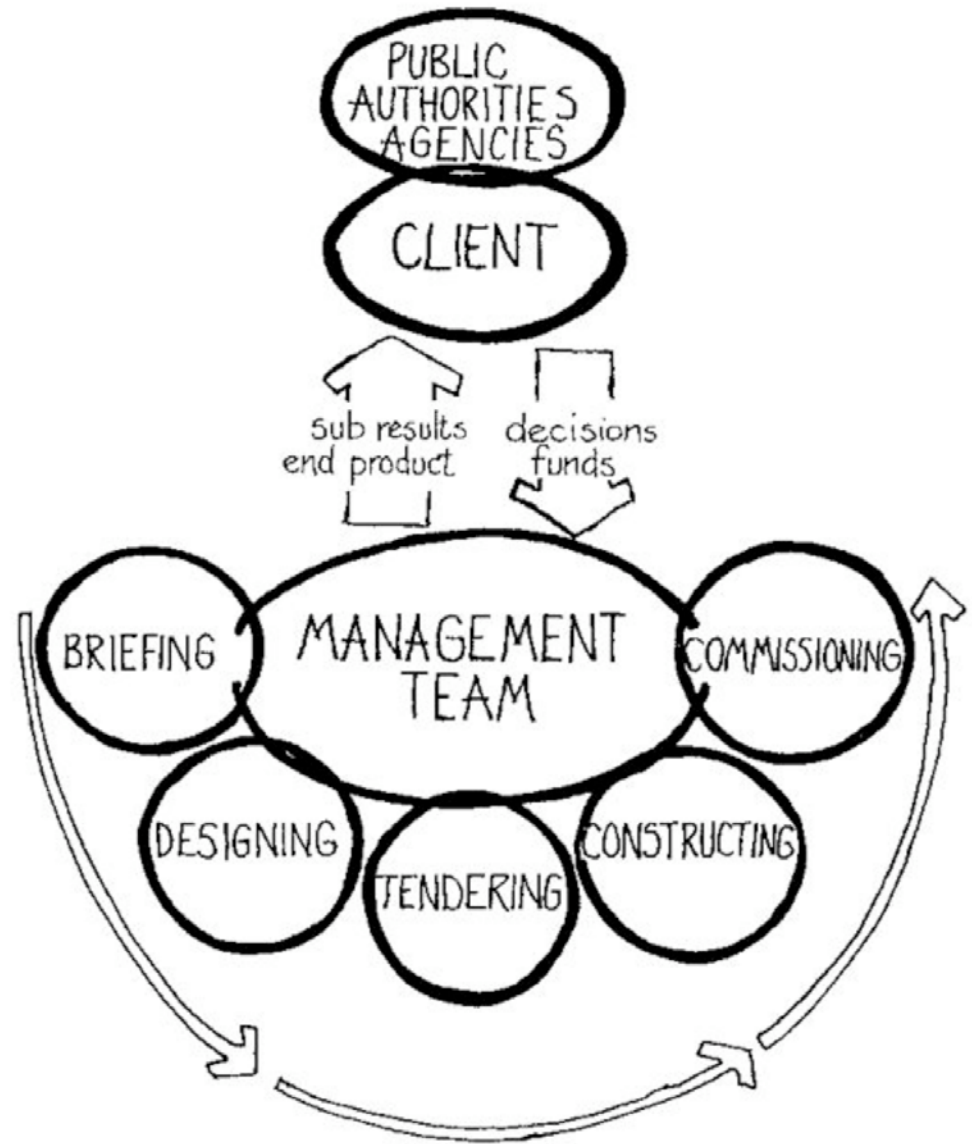
Project management team

The diagram shows the five managers in the form of a team, in which the project manager is the senior member and leader, and the others have equal authority and responsibility.

Each manager will have a supporting team.



ILO team structure: ILO Guide, 1984



Typical project matrix

Project teams	Stages				
	Briefing	Design	Procurement	Construction	Commission
Client					
Designers					
Contractors					
Consultants					
Sub-contractors					
Suppliers					

Managing the project matrix

The typical matrix shows how complex a project manager's job can be. Good management and good systems are very important.

The project matrix will be discussed in more detail in the course module “Planning and control for OS&H”.

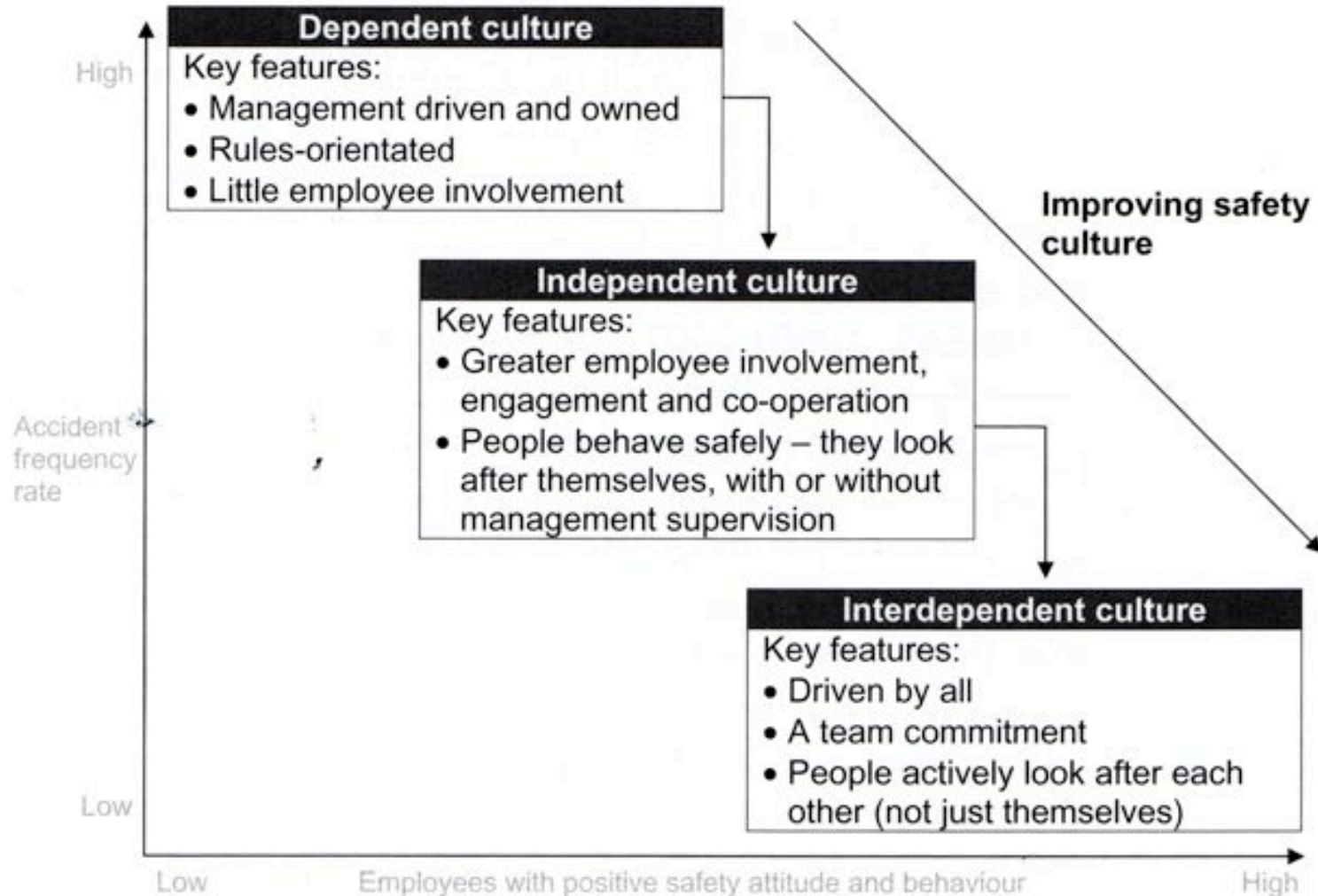
An OS&H culture

“Culture is a combination of an organization's: attitudes, behaviors, beliefs, values, ways of doing things, and other shared characteristics of a particular group of people.”

*U.S. Department of Labor, Occupational Safety & Health Administration
(osha.gov)*

“Care must be taken when using the term ‘OS&H culture’. The term is considered to be closely linked with the concept of ‘behavioural safety’ which shifts responsibility for OSH away from the employer onto the worker. Although this inference was not intended by the Office, the proposed Conclusions use the term ‘preventative safety and health culture’ instead.”
(International Labour Conference, 93rd Session, 2005.)

Three types of 'safety culture'



This diagram emphasises that central principle of Construction OS&H – that close co-operation and real participation of all involved will result in improved OS&H performance.

The safety culture of a construction organisation is informed and shaped by the attitudes, values and behaviour of all people involved with the organisation or project.

Enforcing good OS&H through procurement and contracts

The inclusion of OS&H requirements in construction contracts, and enforcing these clauses with determination, will have a very positive effect on the health and safety of all involved.

This is a topic that requires detailed consideration. Course participants will be given a paper and are asked to read this carefully and then apply this knowledge to the case study described in the next slides.

OS&H in a contract for the construction of rural health centres in an African country

A large and sparsely populated African country has a programme to bring improved health care to the population by building rural health centres (RHCs) throughout the country. The basic principle is to provide health care as locally as possible. There have been several phases of this programme, and the latest phase, for 30 new RHCs, is in the procurement phase. The client is the Ministry of Health (MoH), and the project will be managed by the Ministry of Works (MoW).

RHC case study: clients objective and action

Although there have been no fatalities, there has been one serious incident and many small injuries, and this has been brought to the attention of the Minister of Health. She has taken the view that nobody's health should be damaged when working on a project designed to improve the health of the population and has agreed a 'zero incident policy' with the Minister of Works. This is a novel approach so the two ministers have agreed to employ a specialist OS&H consultant to draft the required clauses in the contract documents.

The consultant appointed is Ilobwi Associates, and your team has been allocated this assignment within the firm.

Design of the RHCs

The following photos are taken from the site of an RHC. They have been designed by a joint MoH and MoW team and are of straightforward construction. The building in this new phase will be of the same design.

RHC photo 1

Shows typical plateau countryside and access road



RHC photo 2

Some RHCs are to be built in mountainous country



RHC photo 3

General view of a completed RHC



RHC photo 4

Interior view of a nearly completed RHC



RHC photo 5

Staff houses



RHC assignment

Working in groups of three or four, you - the contract team of Ilobwi Associates - should study the paper “Enforcing good OS&H through procurement and contracts” and draft about six clauses for inclusion in the contract documents for this project. You should also make some recommendations for the specification and other contract documents, as appropriate.

Your submission to the Ministers should include an explanation of the need for these contract conditions and why you have written them in the way you have.

Your submission should be word processed (if possible) and should be between four and six pages in length.

RHC Case Study - additional information

- It is likely that the contract will be with a prime contractor and a standard lowest price, measurable basis.
- Most of the work will be sub-contracted to trades contractors
- The Ministry of Health will provide the medical equipment and all furniture and fittings, under separate contracts
- This is a contract for simple structures so many medium-sized local contractors will be eligible to bid, so it is likely that the prime contractor or the sub-contractors will have little understanding of modern OS&H, so will have no processes, procedures or equipment
- It is likely that the MoW staff who will supervise the work will also lack OS&H experience

RHC Case study

Outline suggestions for clauses (1)

- MoW must offer an OS&H policy and plan within the contract documents
- Bidding must be conducted carefully, contractors must demonstrate commitment to OS&H
- Preconstruction meetings and requirements should be in the contract
- This is a widespread project, often in remote areas, so enforcement will be a problem for the MoW
- Full, written, safety plans should be required from the prime contractor before any work is started
- Full safety plans should be required on all sub-contractors before they start work (these may be oral but recorded by MoW staff)

RHC Case study

Outline suggestions for clauses (2)

- All construction activities must have a work plan, giving full consideration to OS&H, agreed in advance (these can be oral but must be recorded by MoW staff)
- Detailed inspection and enforcement procedures must be established for the construction phase
- All contractors' and sub-contractors' plant and equipment to have valid inspection certification
- Working hours and conditions to be specified by the contractor
- Safety meetings and briefing to be scheduled
- Safety committee required with a representative from each site
- OS&H training to be required and proof provided

RHC Case study

Outline suggestions for clauses (3)

- Reporting of incidents required and ways of doing so to be specified
- Project induction to be mandatory, plus specific induction for each site
- All hazardous substances to be reported and authorized
- These are widespread sites so transport of people and materials must be given special attention
- Protection for local people to be specified, including transport measures