

簡介安全角色及責任參考資料初稿

Introduction of Draft Reference Materials
Focusing on Safety Roles and
Responsibilities

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Reference Materials

on

Safety Roles and Responsibilities of Key Stakeholders in HK Construction Industry

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Purpose of Reference Materials

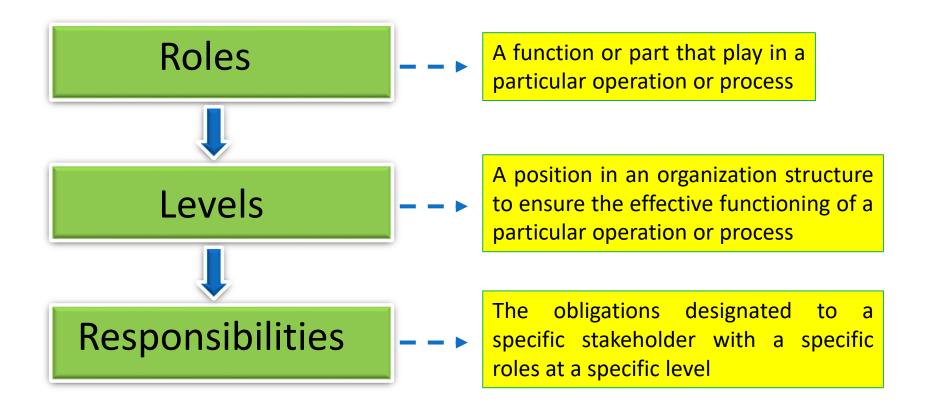
- 1. Revitalize the maxim "Safety is Everybody Business"
- 2. Defines roles and responsibilities to reduce behavioral-based errors at work
- 3. Fulfillment of possible legal duties which is implicit in nature
- 4. For reference by stakeholders at project planning stage

Stakeholders

Adopts definition of **Stanford Research Institute** as:

"Those group of people without whose support the organization would cease to exist"

Relationship of Roles, Levels and Responsibilities



Roles of Client / Developer

A project controller that has an ultimate objective to have the project completed timely and smoothly in the perspective of environmental, safety and quality issues



Roles of Client's Representative

 A person or firm who acts on behalf of the client under a lease or contract to ensure that client's business goal and objectives are achieved

May or may not exist depending on client /

developer



Roles of Designer

- A person or firm who by applying collective expertise in matter of their professional knowledge to give advice to those who engaged him
- Designer varies with scopes of work (Guidance Notes of Design for Safety, DevB 2013), can be:
 - 1. Architect for project design
 - 2. Engineer for temporary work design
 - 3. Register electrical worker for circuit design

Roles of Main Contractor

- a person or firm who entered into contract with client or developer to carry out construction work in pursuant to a contract
- Normally play the roles of project management



Roles of Subcontractor

- A person or firm who entered into a contract with upstream clients to carry out specific tasks in a construction project in pursuant to a contract
- Upstream clients can be a main contractor or a subcontractor



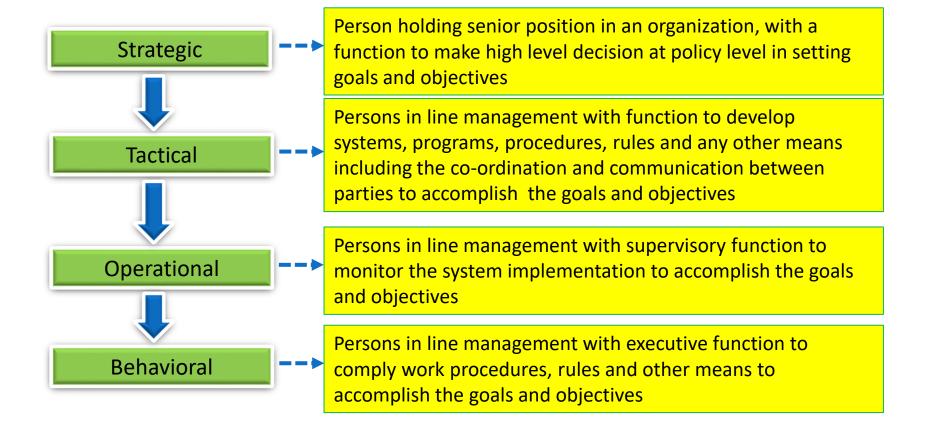
Roles of Workers

 A person employed either by main contractor or subcontractor in carrying out designated task of

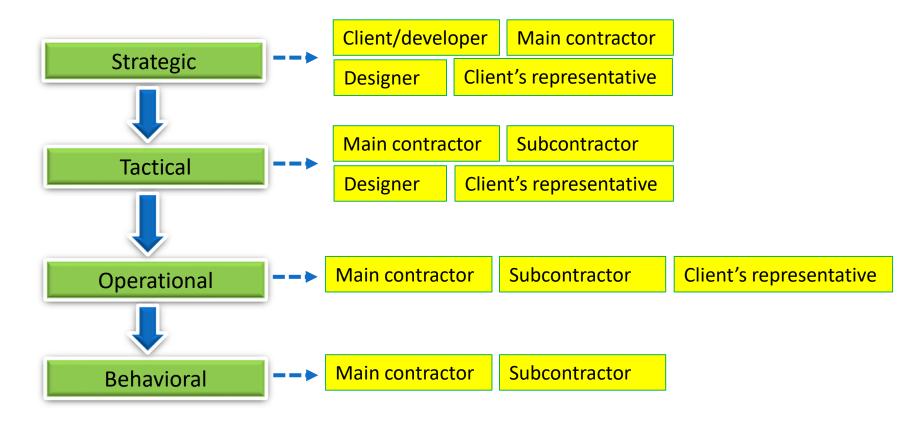
construction work



Levels in Organizational Structure



Levels vs Roles in a Project



Multi-functions at different levels

- Emerging complex organization structure and high division of work
- A person with specific role may be assigned with different functions at different levels
- e.g. a Resident site staff (RSS)
 - At tactical level to participate in development of SWP
 - At operational level to monitor the adherence of SWP

Shared functions at same level (I)

- Different persons bearing different roles may share same function
- e.g. function to monitor the adherence of SWP by front lines
 - 1. RSS of client's representative
 - Safety personnel of main contractor/ subcontractor

Shared functions at same level (II)

- Each stakeholder must comply with assigned duty even others have the same
- Unless arrangement has been made for the work done on his behalf
- Work can be delegated while responsibilities cannot (HCMA 511/1985)

Post /titles at different levels (I)

- Difficult to capture all titles in current complex organizational structure
- Differentiating the functions that are playing is best fit by the current title that are holding
- At different levels, different stakeholders may have different titles
- That depends on the functions they need to perform

Post /titles at different levels (II)

- In project design a designer can be an architects at strategic level to give professional advice to client/developer
- In structural design a designer can be an engineer at tactical level to prepare temporary works design for structural support
- In minor work design a designer even can be an REW at tactical level to prepare a wiring diagram for a switch room

Responsibilities

- Roles, levels and responsibilities are inter-related
- Research on OSH legislation, codes of practice, guidance notes, contractual specifications currently practicing
- Holistic rather than task specific for wider application
- Stakeholder Model

Stakeholder Model

Plan and manage pre-construction design and

Design out risk for the entire project life cycle, including construction, maintenance and demolition stage

arrangement

Advise on selection and appointment of main contractors and nominated subcontractors Inform client and main contractor about significant risks in design

Advise client on time impact due to subsequent changes in design

DESIGNER

Examples of Stakeholders: Architect, Engineer or other persons holding similar office/function Formulate policy for project development

Select and appoint competent main contractors and nominated subcontractors

Establish performance targets

Specify "Design for Safety" during planning and allocate sufficient resources and time Specify safety requirements for contractors Maintain performance database of contractors

Review time impact due to subsequent changes in design

Take regulating actions against poor performer

CLIENT

Examples of Stakeholders: Developer, Works Departments or other persons holding similar office/function

Safety Roles and Responsibilities at STRATEGIC Level (High-level Decision Making)

Participate in "Design for Safety" process

Advise on instructions, requirements and standards set in contract

Advise on selection and appointment of main contractors and nominated subcontractors

Overall control of work and safety

Monitor and appraise contractor's safety performance

Communicate with client and designer on work progress

CLIENT'S REPRESENTATIVE

Examples of Stakeholders: Consultant, Principal Resident Engineer, Chief Resident Engineer or other persons holding similar office/function Formulate company safety policy and standards

Define standards for safety performance

Set up and implement accountability system

Provide sufficient support and resources

MAIN CONTRACTOR

Examples of Stakeholders: Director, CEO, Project Director, Contract Manager or other persons holding similar office/function



Stakeholder Model

Formulate Project wide safety system

Setup Project wide accountability system

Suspend works that can cause imminent danger/ situation

Supervise and direct the execution of works

Monitor works are adhered to requirements and standards set in contract

Monitor works are carried out according to endorsed safe work procedures and design

Monitor adequacy of safety training

Conduct safety inspection and monitor corrective actions

Review and approve safety plan, safe work procedures. temporary work design and material submission

Compile statistics and report contractor's safety performance

CLIENT'S REPRESENTATIVE

Examples of Stakeholders: Resident Engineer or other persons holding similar office/function

Assist development and implementation of safety program Suspend works that can cause imminent danger/ situation Report irregularities on safety system

Assist to identify hazards and recommend controls

Conduct safety inspection & recommend corrective actions Investigate incident and suggest remedial actions

Monitor behaviours of workers and foremen

Communicate workplace hazards to affected workers

Report contractor's and subcontractors' safety performance Organize safety training for staff, workers and subcontractors

MAIN CONTRACTOR - Safety Personnel

Examples of Stakeholders: Safety Manager, Safety Officer or other persons holding similar office/function Assist development and implementation of safety program Suspend works that can cause imminent danger/ situation Assist to identify hazards and recommend controls

Conduct safety inspection & recommend corrective actions

Investigate incident and suggest remedial actions Monitor behaviours of workers and foremen

Communicate workplace hazards to affected workers

Report workers' safety performance to subcontractor

Organize safety training for staff & workers of subcontractors

SUBCONTRACTOR of ANY TIERS - Safety Personnel

Examples of Stakeholders: Safety Officer or other persons holding similar office/function

Safety Roles and Responsibilities at **TACTICAL** Level (Line Management Function)



Establish system to ensure safe and healthy workplace

Incorporate inputs from client, designer, architect & safety officer in project safety

Allocate sufficient and adequate resources for safe execution of works, such as manpower, PPE, plant and equipment

Prepare safety plan and working procedures Prepare temporary work design

Define imminent danger/ situation and empower respective site staff for suspension of work

Develop incentive policy to encourage workers and subcontractors to follow safe work procedures

Establish system to identify hazards and develop controls

Ensure safety in-house rules, procedures and methods are developed, maintained & reviewed

Develop pre-qualification criteria for new subcontractor

Select & appoint competent subcontractors Suspend works that can cause imminent danger/ situation

Setup accountability system for contractor and subcontractor

Continue to review safety plan and working procedures

Ensure works are carried out according to endorsed safe work procedures and design Conduct safety inspection and follow up corrective actions

Ensure reported hazards are promptly responded and rectified

Ensure works are properly planned, coordinated and monitored among project teams and subcontractors

Ensure safe work procedures down reach to operational level

Ensure subcontractors understand requirements and hazards of works

Train up site staff for necessary competence Ensure proper execution of temporary work | Ensure the competence of workforce of subcontractors

Develop disciplinary policy to penalize workers and subcontractors for not following safe work procedures

MAIN CONTRACTOR

Examples of Stakeholders: Project Manager, Construction Manager, Site Agent, Engineer or other persons holding similar office/function

Secure prior approval from main contractor before commencement of work

Maintain coordination & communication with main contractor

Comply with all in-house safety rules

Provide site specific safety plan

Ensure works are carried out according to endorsed safe work procedures, design and statutory requirements

Ensure proper supervision of work

Suspend works that can cause imminent danger/ situation Ensure reported hazards are promptly responded and rectified

Delegate power to operational level to remove workers from site who repeatedly violate safety of works

Ensure the provision of necessary PPE

Ensure provision of safe plant and equipment

Provide necessary training to own staff for competence at work

SUBCONTRACTOR of ANY TIERS

Examples of Stakeholders: Site Agent, Engineer or other persons holding similar office/function



Stakeholder Model

Suspend works that can cause imminent danger/ situation

Require contractor and subcontractor for prompt rectification

Supervise and inspect project work

Ensure works are carried out according to specification, drawings and contract and statutory requirements

Check, coordinate and report safety matters to line management

Monitor safety performance of contractor and subcontractors

CLIENT'S REPRESENTATIVE

Examples of Stakeholders: Inspectorates, Work Supervisors or other persons holding similar office/function Ensure understanding of and adherence to approved safe work procedures

Prompt rectification of unsafe condition

Suspend works that can cause imminent danger/ situation

Ensure unsafe plant & equipment are not used

Follow safe working procedures

Remove workers from site who repeatedly violate safe work procedures

Ensure proper use of PPE

Ensure subcontractors and workers understand requirements of hazards of works

MAIN CONTRACTOR

Examples of Stakeholders: Foreman, Safety Supervisor, CP, ICE, RPE or other persons holding similar office/function

Ensure understanding of and adherence to approved safe work procedures

Prompt rectification of unsafe condition

Suspend works that can cause imminent danger/ situation

Ensure unsafe plant & equipment are not used

Follow safe working procedures

Remove workers from site who repeatedly violate safe work procedures

Ensure proper use of PPE

Ensure workers understand requirements of hazards of works

SUBCONTRACTOR of ANY TIERS

Examples of Stakeholders: Foreman, Safety Supervisor, CP, RPE or other persons holding similar office/function



Safety Roles and Responsibilities at OPERATIONAL Level (Supervising Function) &

BEHAVIOURAL Level (Works Executing Function)



Adhere to safe work procedures, instructions, training materials and rules

Cooperate with employer

Participate in safety training

Report accident/ incident/ DO to supervisor

Report hazards to supervisor and warn co-workers

Make suggestions to improve safety

Give feedback on control measures

Wear PPE whenever necessary

Refuse to carry out work at unsafe environment or when others could be jeopardized

MAIN CONTRACTOR / SUBCONTRACTOR

Examples of Stakeholders: Workers, Operatives or other persons holding similar office/function

Application of Stakeholder Model

- A human-performance-based model
- Emphasizes the performance up to standard of a specific stakeholder
- If failures occur, model is able to find out the shortfalls such as non-conclusive, unclear and improper defined responsibilities
- Not fault finding but to facilitate review for improvement

Case Study

- ABC House was built in 1973
- Good Taste Restaurant operated in 1984
- A fish tank was installed on a non-load bearing canopy
- The overloading created cracks on canopy
- Rain water corroded the reinforcement bars further weakened the canopy
- Demolition of the canopy in 1994 finally caused the collapse of the canopy

Causes of the accident

1973 1984 1994 **Construction phase Renovation phase** Demolition phase **Underlying cause Indirect cause Direct cause** Injury

Application of Stakeholder Model

- In construction phase the uneven distribution of reinforcement bars supporting the canopy
- In renovation phase the failure to identify the uneven distribution of reinforcement bars and the overloading of the canopy by the fish tank
- In demolition phase the failure to identify the corrosion of the reinforcement bars and the vibration induced to the weakened canopy

Safe System of Work

- S.6A proprietor to provide and maintain a system of work
- S.6B every person in an IU take reasonable care of himself and others by his acts or omissions
- System of work needs collaboration and implementation by persons in an IU
- That correlates S. 6A and S. 6B together
- Needs to clarify legal duties of persons in an IU
- PRG provides practical guidance for reference by duty holders

Practical Reference Guidance

- CIC will publish Practical Reference Guidance in 4 series:
 - 1. Work above ground with inadequate protection
 - 2. Erecting or dismantling of scaffold or platform
 - 3. Lifting operation
 - 4. Electrical work

Practical Reference Guidance

- Refinement of system of work through practical steps
- List out responsibilities of respective duty holders in each step
- They are collective duties making reference with local legal instrument and overseas legislation
- Clarify duties of persons which is implicit under S. 6A
 & S. 6B

Practical Steps on Lifting as an Example

- 1. Preparation of lifting plan
- 2. Conduct of risk assessment to define safe method
- Establishment of safe lifting procedures
- 4. Selection of suitable lifting appliances and lifting gear (LALG)
- Inspection, test and examination of LALG

- 6. Assurance of competence of lifting team
- 7. Training of safe lifting procedures
- 8. Implementation of safe lifting procedures
- Monitoring on adherence of safe lifting procedures
- Review of safe lifting procedures

Safety is Everybody Business



謝謝 THANK YOU

