

## **Chapter Five – Conclusion and Recommendation**

### **5.1 General**

This chapter serves to summarize all the findings of this study, and based on the study, recommendations would be made for possible actions to be carried out future research to plan for implementation of CDM regulation in Hong Kong.

### **5.2 Conclusion**

Conclusion can be drawn from the literature review plus the interview findings and from the results of the questionnaire survey as follows:

#### **5.2.1 Conclusion from the literature review**

It can be summarized as follows:

1. The general duties clause of employers and employee alone can not improve construction safety in Hong Kong;
2. Addition safety regulations are needed to provide the scope and the basic requirements on the areas of attention;
3. The success of safety management system is subjected to various management factors in particularly the determination of the management of the organization;
4. Hong Kong is behind in legislating of safety management regulations;
5. The construction industry has its generic and organic nature so that a delicate safety management regulation is needed to resolve this fundamental problem;
6. Implementation of CDM regulation would have be an serious impact to the Hong Kong construction industry may lead to reform of the industry;
7. CDM regulation can be concluded from the United Kingdom's experience that the regulation fulfils its design objectives but a clearer result of the cost

and benefit is still to be determined ;

8. CDM regulation has demonstrated advantages in comparison with the Work Bureau Safety Management system;
9. The Works Bureau's present construction management should be further improved, and it can not provide a global safety system to improve construction safety;

### **5.2.2. Conclusion from Questionnaire Results**

The questionnaire survey reveals the civil engineers opinion on CDM as follows:

#### **Respondents Background and Their View on Works Bureau Safety Management System**

1. 95% of the respondents did not know about CDM regulations and without safety qualification;
2. 74% of the respondents recognized that there were co-ordination and communication problem on construction safety under the present Work Bureau Safety Management system;
3. All the respondents believed that Works Bureau safety management system should be further improved on a continuous basis;
4. 85% of the respondents recognized that the amount of resources devote to construction safety was not adequate;

#### **The Basic Requirements of CDM regulations**

5. 95% of the respondents agreed with CDM requirements that safety responsibility should be shared among clients, designers and contractors;
6. All of the respondents agreed that a new profession, planning supervisor, should be created to administrate construction safety starting form the project planning stage;

7. 93% of the respondents confirmed that risk analysis should be carried out at the design stage to eliminate any potential hazard areas of the design;
8. 93% of the respondents agreed that safety plan should be prepared and available to the contractors at the tender stage to highlight all the hazardous areas or operation;
9. 93% of the respondents supported that planning supervisor should also vet the design from the designers and method of construction from the contractors;
10. 90% of the respondents backed to set up safety file to record all the information regarding safety of the project;
11. 93% of the respondents answered that planning supervisor should prepare safety plan at the tender stage and keeps the safety file;
12. 88% of the respondents abetted that principal contractor previous safety record should be taken into account during the contractor selection process;
13. All the respondents agreed that principal contractor should be responsible for implementation of all the safety measures on site;
14. 95% of the respondents favored that principal contractor should regulate sub-contractor on their compliance with safety plan requirements;
15. 88% of the respondents answered that planning supervisor should have the power to request client for additional construction time and resource for the project;

#### Specific Requirements of Planning Supervisor

16. 95% of the respondents endorsed that planning supervisor should be individually appointed by the client and should also be an impartial party in the project;
17. 90% of the respondents seconded that planning supervisor should be a professional engineer with construction and safety experience;
18. 90% of the respondents favored that planning supervisor should have graduate academic qualification on safety; and

## Support for Legislation

19. All of the respondents agreed to support legislation of CDM regulations in Hong Kong;

### **5.3 Recommendation**

Based on above conclusions, Hong Kong civil engineers agreed on every aspect of CDM regulation but there are still quite a lot of unknown factors to be determined. It is very surprising that there were very high percent of support of the CDM Regulations and its legislation. It might be due to the fact that the author has personal knowledge of most of the respondents so that they concur with the author's view. Despite the above limitation, the questionnaire conclusions were drawn on one round of questionnaire results; therefore, it might subject to variance. Thus, another round of questionnaire should be carried out to determine the variance and test the severity of the results.

On the other hand, most of the respondents were still did not know about the CDM Regulations so that their agreement to support for the legislation were on a very weak ground. Hence, introduction courses have to be carried out to market and consolidate the concept of CDM Regulations is needed. This is because for the consultation approach of legislation, a long lead-time to train the affected classes is needed. Also, the public has to be convincing that CDM Regulations would improve the well being of the society.

Other preparation works have to be carried out for the new profession, planning supervisor. This is because the questionnaire results indicated that engineers perfected the planning supervisor to be impartial and independently appointed by the client so that the professional status so as to the qualification and experience requirements to become a planning supervisor should also be defined. In this connection, creation of a professional institution for the

planning supervisor should also be resolved. Whether it would be possible to set up an institution for the planning supervisors or attaching this class of profession to an existing professional institution. Therefore, further investigation should be carried out.

The results of statements 16 to 19 indicated that the respondents disagreed to current requirements of CDM Regulations. In the current CDM Regulations, it only calls for competent person to act as planning supervisor and other project party can also act as planning supervisor. From these findings, it implied that a local version of CDM Regulations should be developed to suit Hong Kong conditions. Thus, a further study in this area has to be carried out.

Also in Hong Kong there are well over 2000 well qualified civil engineers in Hong Kong, the sample size of this survey is only 42 which is less than 5 percent of the total population. Thus, a more representative survey should be carried out in order to get a larger sample size survey and the survey should include the local engineers' institutions including the relevant department of local universities. On the other hand, others construction professionals such as architects, surveyors, building services engineers, structural engineers, electrical and mechanical engineers, contractors, safety officers should be consulted.

Also, in this survey, the Works Bureau Safety Management System was used as the basis of comparison. However, the Works Bureau System is only applied to Government civil engineering projects. In Hong Kong, there are also the safety management system of the Housing Authority and the safety management system under the Building Regulations administrated by the Buildings Department. Therefore, additional study should be carried out on how to incorporate the CDM regulations with these existing safety management systems.

In the United Kingdom, the HSE 's construction wing is enforcing the CDM

regulations. In Hong Kong, the Labour Department is the only Government to enforce health and safety legislation. But the Labour Department has only a qualified construction professional therefore investigation should be carried out whether an additional branch should be set up for the construction safety or another agency should taking up this task.

In view of above regulations, a working group within the Government should be set up to co-ordinate the views within all bureaus and departments. A Bureau should be appointed as the leader of the working group, and a department should also be appointed as work agent for the working group. An experience CDM regulation consultant together with a local multi disciplines consultant firm should be appointed to carry a comprehensive study that should include to carry out public consultation with all the parties as identified, to investigate on the legal aspect of CDM regulations implementation, to determine all the constraints for CDM regulations implementation, to develop a local version of CDM regulations for Hong Kong. The recommendation above is for global implement CDM regulation in Hong Kong once and for all.