

The Hong Kong Construction Association

Submission to LegCo Panel on Housing Views on Measures to Improve Building Quality in Public Housing Flats

1. Standard of the Construction Industry

The overall quality standard of the construction industry in Hong Kong is ranked amongst the best in the region. Our construction industry has progressed with the advancement of our society, learning from the mistakes that it made in the past. Today, many recently completed projects such as the new airport at Chek Lap Kok, the Convention & Exhibition Centre and many other private and public constructions are proofs of the quality achievements of our construction industry. These are done by the construction industry using the world's best practices.

Quality constructions do not come easy. The criteria for quality construction include:

- a. Good design and well thought out detailing by the design professionals;
- b. Clear and reasonable contractual requirements and construction standard specified by the developers and design professionals;
- c. Sufficient construction period and adequate construction budget allowed by the developers;
- d. Good project management of the developers, the consultants and the contractors;
- e. Close supervision by contractors' and developers' site supervisors; and
- f. Sufficient skilful workers.

The HKCA believes that if some of the public housing constructions are sub-standard in quality they are only a small number. These small numbers of un-satisfactory constructions are done by a small number of poorly managed contractors, or dishonest individuals, whose performances do not reflect on the whole industry.

The quality of public housings today has in fact been greatly improved from the past. However, the public's expectations for quality housing have risen even higher. The following constraints are preventing the industry from making greater progress. If they are not addressed immediately the public will continue to complain even louder about poor public housing quality:

- a. Insufficient construction time, due to a deliberate shrinkage of contract periods by Housing Department in order to achieve the ambitious public housing development programme and the increasing constraints of the environmental control and safety legislation;
- b. Insufficiently well thought out design and detailing, and out-dated materials and workmanship specification of Housing Department contracts;
- c. Not enough skilful workers to meet the greatly up-surged construction work load of public housing;
- d. Insufficient experienced and competent supervisory staff of contractors and developers.

2. Beliefs of HKCA:

The HKCA agrees that the industry has a duty to build good quality public housings, free from significant defect at the time when the tenants first move in and with less frequent repairs in later years. It believes that construction contractors are willing to work with the Housing Department and the professionals to contribute to this objective by using their managerial skills and technical competence.

The HKCA has shown initiative in improving the construction industry many times in the past. For example, the construction industry's first site safety induction training scheme, which is commonly known as the "Green Card" scheme, is the brainchild of the HKCA. The scheme has improved the safety culture of the construction industry since its implementation. Because of the favourable result, government has now made the site safety induction training a legal requirement. The semiskilled workers' trade testing scheme was also first advocated by the HKCA and it is now a contract condition of government projects.

The HKCA believes that the recommended measures in the following sections will improve public housing construction quality. It offers itself to work with the industry, the design professionals, the Housing Department, and the government on these measures.

3. Constructing Quality Public Housings

3.1 Contract Period

Housing Department must allow reasonable contract time for contractors to produce quality works in a safe and environmentally acceptable manner. The present contract period of public housing buildings is several months shorter than a few years ago, and yet tougher legislation effectively reduce the working time of the contractors.

Short-term Solution:

- a. *Housing Department to re-assess the housing construction programme, allowing reasonable construction contract periods.*

3.2 Designs and Detailing

Designs and detailing has significant effects on the quality of a construction. For example, if the designer allows insufficient crack control reinforcements in a reinforced concrete structure, hair cracks may appear on the surface of the structure when the concrete shrinks as it dries up. Also, water leakage around window opening areas may be the result of under-designed window frames.

Good designs and detailing will also help making construction easier, and the finished construction may appear better. An example of this aspect is the allowance for tolerance at joints of external fair-faced concrete wall.

The HKCA has written to the Institute of Architects, suggesting that the industry should look into this area together.

Short-term Solution:

- a. *Housing Department, HKCA and the design profession to review the designs and detailing, and the quality specifications of material and workmanship.*

3.3 Quality Standard

Housing Department must give clear quality standard requirements to its contractors. It should immediately reject any poor quality construction not meeting this standard so that contractors, subcontractors and workers will understand that they cannot get by with sub-standard works. The building of undecorated (bare) “Central Sample Units” will assist contractors to know the acceptable standard.

Also, The opening up of site mock-up units to subcontractors and workers will help them to understand the required acceptable quality standard.

Short-term Solutions:

- a. *Housing Department to demonstrate clear quality standard requirements by rejecting immediately poor quality works.*
- b. *Housing Department to adopt a clearly defined acceptance standard to be implemented by one unified inspection body.*
- c. *Housing Department to build undecorated (bare) “Central Sample Units” for reference of contractors.*
- d. *Housing Department to allow contractor opening up the mock up units to subcontractors and workers.*

3.4 Supervision

The experience and technical competence of contractors’ supervisory staff is important to ensuring the works carried out by either subcontractors or direct workers are properly done and the quality standards are achieved.

The construction industry will recommend a desirable standard of experience and qualification for contractors’ supervisory staff. The HKCA will develop together with the Construction Industry Training Authority (CITA), Vocational Training Council (VTC) and other training institutions well-structured continuous development training for these staff. This improvement will strengthen construction contractors’ ability for managing and supervising subcontractors and labours.

The HKCA will also study the requirement for a registration system similar to the TCP (Technically Competent Persons) system of the Buildings Department to control the competency standard of these supervisors.

Short-term Solution:

- a. *HKCA to recommend desirable standard of experience and qualification for contractors’ supervisory staff.*
- b. *HKCA to continue develop well-structured continuous development training’s for contractors’ supervisory staff.*

Medium-term Solution:

- c. *HKCA to study the requirement for a registration system for contractors’ supervisory staff.*

3.5 Skilled Workers

Skill standard of workers is one of the most important criteria for quality construction. Hence, a quality assurance system must be set up for workers' skill levels. Registration of construction workers is one such system. At the initiation of HKCA the Construction Advisory Board (CAB) has set up a sub-committee to study the setting up of the system. The Sub-committee has so far made good progress.

The registration system will enable the skill levels of construction workers easier to measure by means of trade testing. It will also enable a continuous skill improvement-training programme to be developed for the workers.

The HKCA believes that direct employment of workers is not an issue that the industry should focus their attention on, because it will not bring automatic improvement to construction quality. The skill level of workers and the quality of supervision are two most important factors since a contractor cannot produce quality construction with poorly skilled workers, even if they are directly employed, and with poor supervision.

Short-term Solution:

a. The industry to set up Construction Industry Workers Registration System.

3.6 Sub-contracting System

The role of construction contractors is managing resources, including labours, materials, and plant & equipment etc., to achieve the programme and quality targets set out in the contracts. They also develop technologies to improve the efficiency of construction. The constraints on construction contractors in Hong Kong are huge when the short construction period and labour shortage situation are taken together. Hong Kong contractors, same as their counterparts in all developed countries, use the subcontracting system to ensure that labour resources are efficiently allocated to meet the cyclical and highly fluctuating demand for labour. It is, therefore, not advisable for any project developer to dictate the scopes and number of tiers of subcontracting by its contractor.

However, it is not right that a construction contractor gives up its responsibility in management and supervision by passing it down totally to a subcontractor. Total assignment of contract, commonly known as "clean subcontracting" or "agent subcontracting", is not acceptable and must be banned.

The HKCA has begun to study, in consultation with some developers and subcontractor associations, the so-called "Organised Specialist Subcontractors" (OSSC) scheme. It believes the scheme may improve the quality standard of subcontractors. The OSSC scheme may also remove the "broker" subcontractors from the industry and reduce the number of subcontracting tiers. However, it is the consensus of the HKCA and these associations that the workers registration system is a prerequisite for the OSSC scheme to start.

Short-term Solution

a. The industry to ban "agent subcontracting".

Long-term Solution

b. The industry to study the "Organised Specialist Subcontractor" scheme.

3.7 ISO 9000 Systems

Most contractors in Hong Kong use the ISO 9000 system to help them managing their contracts. However, the system is not a guarantee of construction quality, because its effectiveness is influenced by other factors. To begin with, contractors' quality systems are not all the same, some are more effective than the others. The ISO 9000 audit only serves to check whether a contractor follows its own quality system or not. Secondly, the standard and quality of contractors' managers and supervisor is important ensuring effective implementation of the quality system. Thirdly, most auditors do not have enough construction experience to understand the operations of contractors, hence to carry out in-depth audits of the operations.

Therefore, the developers and their consultants must assess the quality plans of their contractors to ensure they are of acceptable standard and check frequently that the contractors adhere to the plans. They must not rely only on the ISO 9000 audit reports.

Short-term Solution:

- a. *Housing Department must check the quality plans of its contractors and ensure that they adhere to the plan strictly.*
- b. *Contractors should be reminded to adhere to their quality systems and ensure their effective implementation.*

4. Long-term Vision

Reasonable construction contract period, high quality design and detailing, clear and consistent quality standard requirements, close supervision by high standard supervisory staff, and sufficient skilful workers are basic conditions for ensuring quality public housing construction. However, the methods to ensuring continuous performance improvements of the construction industry are by encouraging the construction industry to self-regulate, and by promoting partnership of the contractors and the developers. Both measures will require significant culture change of the construction industry and its clients: Housing Department in the case of public housing construction. This can be done by:

4.1 Encouraging and assisting the HKCA to regulate the industry

Government authorities and developers organizations must support HKCA's improvement efforts, which can range from issuing of codes of practice or guidelines to taking disciplinary actions against the contractors, who fail to meet the standards of these documents.

4.2 Promoting partnering culture

Partnering culture changes the confrontational relationships between contractors and developers, making them to work towards common objectives and to seek for mutually beneficial solutions for a problem. This concept is quite well accepted in the some advance countries, including USA and the UK. Several organisations in Hong Kong, for example the MTRC, are beginning to practise a partnership approach.

Housing Department and the construction industry have a common objective of producing quality public housings. They can achieve this objective by adopting a partnering approach.

4.3 Setting up of statutory body to supervise and co-ordinate construction industry issues

The HKCA proposes that Hong Kong should establish a body to supervise and co-ordinate the issues of construction industry. The body should be a statutory one, which is to be formed through legislation. It should have the responsibility of supporting the industry's development through strategic planning, labour skills training, new technologies development, management skills developments, as well as licensing construction workers and possibly subcontractors. It believes that the setting up of the body will set a milestone for the quality improvement and management of the construction industry.