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Hong Kong Police Force

防止罪案科
Crime Prevention Bureau



Construction Site Security



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1. Introduction

- 1.1 Management of construction sites now realise that good site security can be financially rewarding, as reduced losses ensure that deadlines are met this in turn improves the prospect for bonus payments and decreases the risk of financial penalties from not meeting deadlines. This can also result in a reduction in insurance premiums that can contribute substantially to a company's overall net profit.
- 1.2 It is necessary to gain management appreciation, involvement and cooperation in security from the very beginning. Crime Prevention Officers are able to assist in the following matters :-
 - (i) provide information by means of a Crime Profile when a site has been selected;
 - (ii) provide comment on the overall design after the general layout has been decided;
 - (iii) supply a Security Survey Report from plans provided and/or meet the site manager to discuss them; and
 - (iv) provide security provisions on subsequent schedules such as doors, windows, etc.
- 1.3 Local crime prevention officers are encouraged to contact site management in the first instance to offer security advice.

2. Site Development

2.1 A construction site can, to all intents and purposes be subdivided into three stages and each of which can present the criminal fraternity with potential targets. These can be summarised as follows:-

Phase I - Site Establishment

2.2 The perceived threats at this stage may include criminal damage or vandalism to plant, worker intimidation and blackmail in an attempt to secure certain franchises, such as haulage contracting, supply of labour, etc.

Phase II - Construction/Installation

2.3 Theft of materials on a large scale, short deliveries, and 'employment' of a non-existent workforce are most prevalent.

Phase III - Marketing / Selling of Units

2.4 Unscrupulous selling practices by commissioned agents, unauthorised 'Decoration' companies and queue controlling are predominant at this stage.

2.5 If management takes positive action from the outset and liaison with police ensues, much of the adverse publicity and financial losses associated with these various stages can be avoided.

3. Security Considerations

- 3.1 All invited tenders should include and outline requirements for site security. It should be made clear to all parties involved that security must be re-appraised on a regular basis to coincide where necessary with changes on site. Concerned parties must be informed of any changes.
- 3.2 A Security Officer or other supervisory member of staff must be nominated to oversee all aspects of site security and ensure that company policies are strictly adhered to. This person will be solely responsible for investigations, police liaison and the processing of subsequent insurance claims.
- 3.3 All staff need to be continually reminded that individual crimes or losses are not their only concerns, as the resultant delays could necessitate re-scheduling and subsequent financial penalties.

4. Thefts and Short Deliveries

- 4.1 Small thefts, if ignored, can accumulate to become a sizeable financial problem over a prolonged period of time. A casual or indifferent approach to security by relying on insurance claims to cover costs is bad management and such attitudes must be discouraged or else high premiums may result. It cannot be over-emphasized that stolen materials take time to be replaced, and subsequent re-scheduling may invoke financial penalties.
- 4.2 Short Deliveries are one method through which losses occur and it is not suggested that suppliers are totally responsible for these, but it is necessary for all materials going to and from the site to be checked and accounted for by a responsible person.
- 4.3 Another way in which materials disappear from the site is through the dishonest actions of site employees who take materials or equipment for their own use, this is 'Theft' . To combat this it is essential that site management have specific policies to deal with such problems; arrest and prosecution of offenders will deter others.
- 4.4 Damage to material whether accidental or otherwise can often be attributed to poor storage or site inefficiency, as can theft to a great extent. Loss can usually be prevented by designating a responsible person to supervise stock.

5. Vandalism and Damage

5.1 Blackmail, implied threats and asking for 'tea-money' may become prevalent in some areas. In such cases, the police should be immediately informed or else damage to plant or worker intimidation may result for non-compliance to demands. Site management should be informed that every Police District has its own dedicated Anti-Triad Unit to deal with such matters, and all reports are handled in the strictest confidence.

6. Fraudulent Workforce

6.1 If itinerant or casual labour is utilised, care must be taken to ensure that workers deemed to be on the payroll actually exist. Spot checks by management are encouraged to prevent potential fraud.

7. Site Offices

7.1 These should be suitably marked and near the entrance. They should also be elevated. Height gives checkers a psychological advantage over drivers with high cabs etc., who may try to intimidate the checker or try to deliver short.

8. Stock Controls

- 8.1 If materials arrive on site too early, the resultant stockpiling can produce an additional security and storage hazard, yet if the goods are late, the project could be held up. A Stock Controller should therefore be appointed to ensure that planned deliveries are made, and that procedures exist for recording and checking the quality and quantity of the deliveries.
- 8.2 It is important to note that the responsibility for ordering and paying should be removed from that of checking goods received. Any sloppiness in this area will only serve to encourage theft, and may tempt suppliers to deliver lesser amounts than those specified.
- 8.3 The main contractor should therefore ask himself the following questions;
- (i) Is there secure storage?
 - (ii) Who has the keys and/or access to stores?
 - (iii) Who receives the materials on site?
 - (iv) Who checks deliveries?
 - (v) Who is responsible for security?
- 8.4 There are two main rules relating to this area that should be mandatory on all sites. These are :-
- (i) Sub-Contractors' employees must never be allowed to sign for anything other than their own supplies; and
 - (ii) A delivery note should be provided with each delivery.

9. Storerooms

- 9.1 A secure storeroom should be constructed for the storage of valuable goods/materials/equipments. The storeroom should be physically secure and should comprise 9inch brick walls or equivalent and a mild steel door fitted with a thief resistant lock conforming to an International Standard. There should be no other apertures.
- 9.2 If there are any window openings, these should be protected by mild steel anti-burglar bars. Anti-burglar bars should be fitted internally and should be at least 2cm thick and no more than 12cm apart. Bars should be securely fitted into the surrounding masonry and where they exceed 50cm in length, flat mild steel tie-bars should be used. Anti-burglar bars should pass through tie bars but where this is not feasible and tie bars are welded to the anti-burglar bars, they should be fillet welded and not spot-welded.
- 9.3 If storerooms are of the sectional type, ensure that the securing nuts are on the inside. Hasp and staple-type fastenings should not be used on offices and storerooms. 5 lever Mortice Locks (British Standard BS3621) or draw bolts with closed-shackle padlocks are recommended. Locks of BS3621 standard can be locked on both sides with a key, and provided that the key is removed, this type of lock is secure against operation by intruders reaching through a hole or breaking glass near the lock. They are best used where emergency escape is not required or where other means of escape exist.

- 9.4 In addition to the physical security measures outlined above, the storeroom should be located near to the watchman's hut (i.e. the site office) and must be checked on a regular basis, by site management or security personnel.
- 9.5 As a more effective alternative, the storeroom may be fitted with an intruder alarm system linked either to the watchman's hut or to a civilian control room. It is important that the alarm system is designed to give full protection of the storeroom including doors, walls and other apertures. Any alarm system installed should conform to International Standards.

Burglary Alarms

- 9.6 Two schools of thought exist in respect of the publicity aspect :-
- (i) its existence should be kept secret; or
 - (ii) it should be publicised by the prominent display of alarms etc.
- 9.7 Whichever method is adopted, care should be taken to ensure that details of the specific type of installation should not be revealed.



10. Security of Plant and Tools

10.1 Serial numbers, descriptions and photographs of valuable equipment, from manufacturers' illustrated brochures, should be recorded. Such records will provide the police with positive means to assist in identification of stolen equipment. Where individual marks or serial numbers do not exist, the company should put their own serial number in a conspicuous place and keep a record.

10.2 This can be done in several ways :-

- (i) stamping with a metal dye;
- (ii) engraving;
- (iii) burning wooden parts with a branding iron; or
- (iv) painting (e.g. electrical switches).

10.3 The majority of tool theft cases occur during lunch breaks when tools are left unattended. Tools left lying about in this manner can also be used by thieves to forcibly enter storage sheds and offices.

10.4 It is important to ensure that plant and equipment is returned to stores or the plant yard when no longer required for use. Returns should be recorded.

11. Perimeter Fences

- 11.1 Many types of fence are available, and it is possible to have chain link fencing or wooden hoardings, with or without barbed wire. Where possible, perimeter fences should conform to a standard or be equivalent to BS EN 1722-10: This is the standard specification for anti intruder fences which are chain link and welded mesh as is 3.6m high. If there are budget restraints on perimeter fencing then any fence that is erected should be at least 2.5 metres high. In the event of wooden hoardings being used, ‘peep-holes’ should be cut at frequent intervals, to ensure that anyone inside can be seen by passing police/public.
- 11.2 It is essential that the fence is kept in good repair and checked regularly. Where the site is large and the security personnel are unable to see the entire perimeter fence from their static post, then it is essential that regular patrols are conducted (i.e. at least once per hour). This is particularly important at night-time and holiday periods when no work is being done on site.
- 11.3 Under no circumstances should materials be stacked against the inside or outside of a perimeter/compound fence. This will prevent easy access/egress over the fence itself.

12. Lighting

- 12.1 Good lighting is essential and is necessary to assist in the protection of the perimeter fencing, site offices and storerooms. BS EN 12464-2 is the standard that specifies the requirements for lighting of tasks in most outdoor work places and their associated areas in terms of quantity and quality of illumination.
- 12.2 During the hours of darkness the site should be illuminated, particularly in the vicinity of storerooms. This is normally considered to be an excellent deterrent for obvious reason. There are two methods which can be adopted, either :-
- (i) lights on high central poles in the middle of the compound facing outwards; or
 - (ii) lights on high poles on the perimeter facing inwards.
- 12.3 No matter which method is adopted, the lights must be protected by barbed wire to prevent climbing. Three additional points are also worthy of note :-
- (i) the lamps themselves should be covered in protective wire to protect against stones, etc;
 - (ii) an automatic time switch is necessary in case someone forgets to switch the lights on; and
 - (iii) Low pressure sodium lighting is generally suitable for this purpose.

13. Access Control

- 13.1 Entrances to the site/compound must be as few as possible. The main entrance should ideally be adjacent to the checker's office, which should be suitably identified.
- 13.2 Notices directing all visitors to report to the site office should also be prominently displayed. All entrances/exits should be locked during non-operational hours. The display of notices giving warning of guard dogs, or prosecution of trespassers, or rewards for apprehending or reporting thieves, should be considered.
- 13.3 Control of workers on site is essential and large construction companies now install turnstiles and biometric readers to control site access. In Hong Kong the requirements of the Construction Workers Registration Authority ensure that all site personnel are registered and carry their various permits showing what work they are qualified to carry out. This system is very useful for access control on smaller, short term sites where costs need to be minimised.



14. Keys

- 14.1 Only the minimum number of keys should be kept, and should be entrusted only to selected staff using a secure key management system. Should any of these keys be lost or entrusted members of staff leave it may be necessary to install new locks.



15. Safes, Cash and Wages

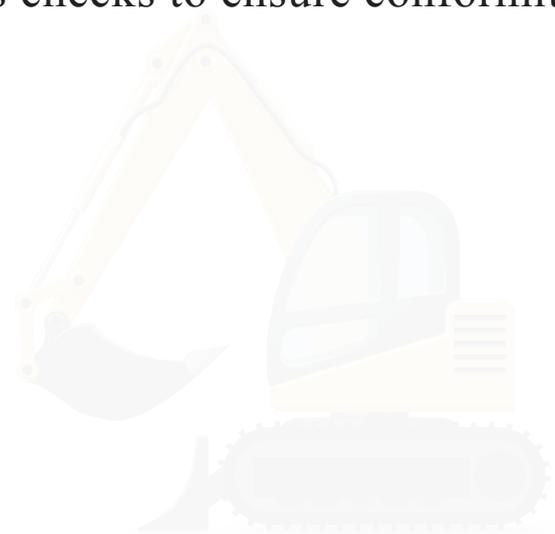
- 15.1 The presence of a safe on site suggests that there is plenty to protect and thieves may therefore be attracted. Generally speaking, safes are not recommended.
- 15.2 In the event that there is a need for petty cash, a small holding limit should be established and should not be exceeded. Secure storage and strict administrative procedures must be implemented.
- 15.3 In respect of wages, sub-contractors should be advised to pay their staff off-site or better still directly into their bank accounts. This can be included in contracts as a matter of policy. If wages are to be paid in cash, main contractors must ensure the cash is transported to the site and ready for distribution.
- 15.4 If a central pay-out office is in operation, the office must be substantially secure with only one pay-out window open. A telephone/alarm must be easily available. Care must be taken to identify employees who come to collect their wages.

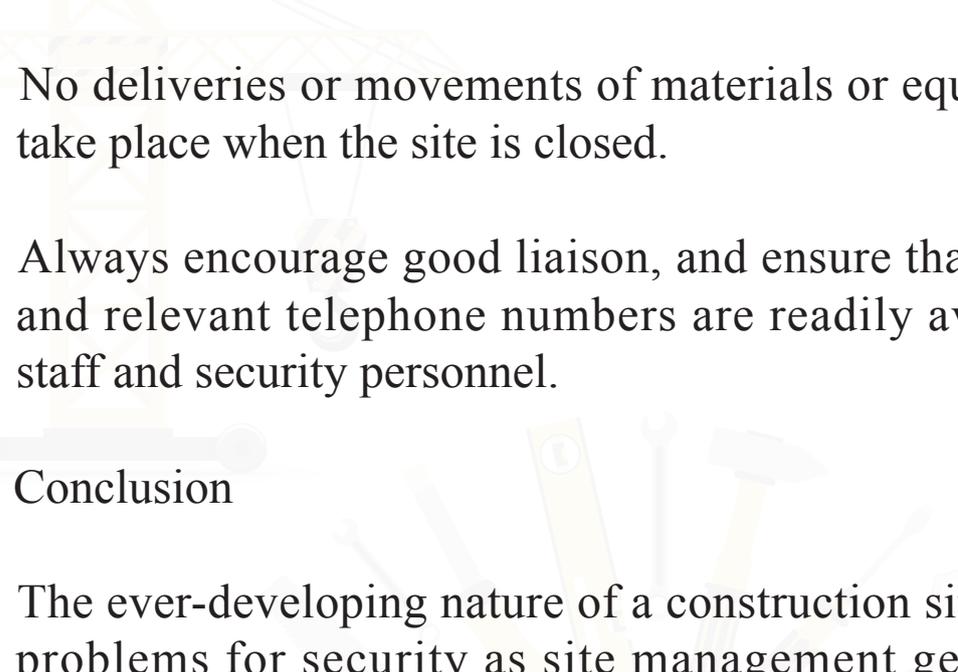
16. Security Personnel

- 16.1 It is recommended that security personnel are hired from a reputable, professional security company.
- 16.2 In addition to this, and in order to prevent security personnel being overpowered by criminals prior to theft of property from the site, it is advised that they be provided with a secure hut or room, with a good view of the site, lockable from the inside, with a direct exchange line telephone installed. In the event of trouble, they can then telephone for assistance from a position of safety.
- 16.3 It is essential that arrangements are made for telephone checks with the security personnel on the site at least once per hour during non-operational hours. These checks can be made by a security company or a member of the management staff. In the unlikely absence of a telephone, a mobile patrol from a security firm should be employed to check the security personnel and site once every hour.
- 16.4 To assist with the above, site management should consider the use of watchman's clocks or other electronic monitoring equipment for security personnel and alarm systems of storerooms. However, it is particularly important to note that visiting books are not always an effective way of ensuring that checks/patrols are carried out. Security personnel deployed at static posts are generally ineffective, and although specific duties can vary, the following should always be considered necessary :-

- (i) perimeter fence patrol/inspection at least once per hour;
- (ii) storeroom inspection at least once per hour and preferably twice per hour during non-operational hours;
- (iii) checking and recording registration numbers of all incoming and outgoing vehicles, and details of any goods/materials being removed from the site;
- (iv) goods vehicles' registrations and details should be cross-checked against the particulars on the side of the cab); and
- (v) regular checks of bags/equipment being taken from the site by workers should be carried out.

16.5 Many thefts on construction sites occur near the completion stage of the building when expensive fittings are already in place in individual units. This period is particularly vulnerable and the only effective viable security measure at this stage is increased patrols of the building. It is advisable that during this final phase of construction, additional security personnel are employed for this purpose. It is also essential to ensure that site management frequently conducts checks to ensure conformity with contractual obligation.



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- 16.6 A list of any staff authorised to return to the site during a holiday should be given to the security personnel for reference.
- 16.7 No deliveries or movements of materials or equipment should take place when the site is closed.
- 16.8 Always encourage good liaison, and ensure that all up to date and relevant telephone numbers are readily available to site staff and security personnel.

17. Conclusion

- 17.1 The ever-developing nature of a construction site causes many problems for security as site management generally do not reassess their security plan regularly when construction stages change. Professional advice from a Crime Prevention Officer at the early stages of the project is essential in alerting site management to the specific problems relating to them. Further visits to the site when the project enters different stages will also ensure that the changing needs of security at that specific time can be addressed.
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