

건축물 범죄 안전 디자인 성능에 관한 연구

– 다세대 · 다가구 주택의 범죄안전 평가방법을 중심으로 –

Study on Crime Prevention Design Performance for Built Environment

– Focusing on Development of Crime Prevention Evaluation Criteria for a Flat or Multiple Dwelling House –

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Chapter 1. Introduction

Built environment is considered to have major places susceptible to violent crimes such as rape or forced indecent act. To deal with such criminal acts, relevant research and institutional framework for the prevention of potential crime on Built environment has been under preparation domestically focused on apartment. While a flat or multiple dwelling house forming 17% of the total of residential structures as of 2015 is prone to crime in its nature of architectural feature, those have been subject to low consideration in the field of crime prevention environmental design in comparison. This study is carried out to develop performance evaluation criteria of crime prevention design on a flat or multiple dwelling house steadily increasing in construction since 2010, and seeks to suggest activated application of the criteria.

This study has been proceeded focused into 3 stages. First, most of available criteria applicable to a flat or multiple dwelling house have been brought up together through domestic and foreign case analyses of policy and

authorization associated with crime prevention design of buildings. Second, evaluation criteria of crime prevention design fit for a flat or multiple dwelling house has been selected through site examination and expert interviews. Third, weight value for each evaluation criteria has been calculated applying AHP analysis on expert questionnaire. Forth, final evaluation criteria of crime prevention design has been established through case application. Fifth, scheme to activate the application of crime prevention design on a flat or multiple dwelling house is proposed for public sector and commercial sector respectively.

Chapter 2. Case Analyses of Performance Criteria on Crime Prevention Design of Building

With recent growing of awareness level on crime prevention environmental design around countries in the world, the application of policies and institutional arrangements boosting crime prevention design and security alarm system have been extended. This study covered 4 cases of British SBD (Secured by Design), Quality Security Mansion System of Japan, CPTED Authorization by Korea CPTED Society and Outstanding Crime Prevention Building Authorization by City Government of Seoul. British SBD Homes Authorization Program initiated by police organization is primarily comprised of Architecture Design, Security System and more for other areas. Quality Security Mansion System of Japan, Integrated National Certification System, distinguishes mandatories and recommendations for certification, and individual requirement of which lays out certification items for common use and exclusive spaces in separation. The CPTED authorization items, applied for the evaluation depending on 'Regulation and Manual for Crime Prevention Environmental Design Authorization' governed by Authorization Committee under Korea CPTED Society, are consisted of 5 evaluation areas covering common use space, half-common user space, half-private space,

common facility criteria, specialization strategy and design. The authorization items prepared by Seoul City to be applied for outstanding crime prevention building authorization to foster secure architectural city environment against criminal invasion are consisted of external environment, architectural structure, crime prevention facility, operation & maintenance and residential activities.

Chapter 3. Development of Crime Prevention Design Performance Evaluation Criteria for a Flat or Multiple Dwelling House

The selection process of crime prevention design performance evaluation criteria is following 3 stages. First, the items contained in 3 or more categories out of the 4 domestic and foreign crime prevention design performance evaluation criteria are selected in separation for common use space and exclusive use space. Second, crime prevention design performance evaluation criteria has been drawn up through field survey and expert questionnaire, which is applied to calculate weight value for each evaluation item depending on AHP. Third, crime prevention design performance evaluation criteria has been finalized after adjustment incorporating the experiences of applying exiting criteria into the multiple dwelling house located in Garibong-dong, Kuro-gu of Seoul.

〈Crime Prevention Design Performance Evaluation Criteria for a Multiple Dwelling House〉

Classification		
Common Space	Common Use Entrance	Locating in the place securing view from road and public footpath, or adjacent building
		Installing entrance door equipped with automatic locking system
		Installing security camera
		Installing motion sensitive light
		Removing recessed area near common use entrance not to be used for hiding by people around

Classification		
	Separating Space and Outdoor Piping System	Installing access control system in the separating space between buildings
		Installing lighting system in the boundary of wall and buildings facing road or public footpath
		Installing outdoor piping adjacent to dwelling window or common use window in the place securing clear view from road and public footpath
		Outdoor piping to be burried or put with cover
		Installing meter of electricity and gas in the common use space external of dwelling
	Common Use Hallway and Stairway	Designed to prevent invasion from common use hallway and stairway into each dwelling (balcony etc.)
		Installing motion sensitive light
		Installing window securing observation of inside/outside
	Car Parking and Piloti	Locating in the place securing view from road and public footpath, or from adjacent building
		Installing security camera
		Installing motion sensitive light
	Landscaping and Green Area	Constructing in the place securing view from road and public footpath, common use entrance, or adjacent building
		Spacing to prevent invasion from dwelling's window etc.
		Securing 50–70cm for shrub and more than 2m for tree beneath ground
		Spacing tree crown more than 1,5m from building
Exclusive Space	Front Door of Dwelling	Installing door and locking system compatible with security test standard
		Installing door guard and auxiliary locking system
		Installing no milk drop slot in the low of dwelling front door
	Intercom	Installing intercom securing outside view of dwelling entrance and communication on the line
	Window of Dwelling	Installing sash, window, grille or locking system tested in security performance standard
	Balcony	Locating in the place not accessible using stairway handrail
	Roof Top and Basement	Installing access control system such as emergency automatic door control system

* Evaluation criteria items in bold color belong to top 10 priority items.

Chapter 4. Activation Plan of Applying Crime Prevention Design for a Flat/Multiple Dwelling House

The activation plan of applying crime prevention design is suggested in separation for publicly led pilot project and associated project, and regulatory reorganization and promotion to encourage private sector participation. Out of public sector perspective, networking strategy to associate central government controlled projects and local government controlled projects to facilitate pilot project focused on priority area for crime prevention is suggested, which would involve regulatory reorganization, leasing project for remodelling LH dwelling, supporting project for dwelling poor class and urban restoration project. Furthermore, quality class system of multiple dwelling house is presented to reinforce design performance for crime prevention of multiple dwelling house.

Out of private sector perspective, various systematic arrangements to apply crime prevention design criteria for multiple dwelling house located in the area prone to crime are proposed, which would involve improvement of legislation for mandatory application of the criteria, incentive mechanisms on administrative and financial terms, excellence housing award and reinforcement of security contents contained in the quality class system of multiple dwelling house.

Chapter 5. Conclusion

This study should have significance in the development of objective criteria to evaluate crime prevention design performance through domestic and foreign policy effectiveness analysis on crime prevention environmental design, interview and survey on experts in architecture, urban and CTPED, and particularly

through field survey and assessment on concentrated area. In addition, the practical suggestions of networking strategy to associate public project and associated ones and activation plan to facilitate private sector participation to secure practical effectiveness in implementing the design improvement project for crime prevention.

Natural benefits from this study would come as follows. First, The result and suggestions would be considered out of central government as background to improve relevant law and regulations associated with building crime prevention. Second, the result of this study would be contributable to local government in terms of reasonable background for ordinance reorganization and securing required budget to implement the policy to connect central and local projects. Third, private sector would expect improvement of sense of security, increase in estate value and rental rate and accessibility to administrative and financial support from adopting crime prevention design and improved security systems.

This study identified the necessity of further research such as study on maintenance of law and regulations on crime prevention for multiple dwelling house, development of design manual of crime prevention for each type of multiple dwelling house, application of crime prevention environmental design in the licensing process of multiple dwelling house construction and performance analysis of crime prevention environmental design projects.