



Principles of passive defense in redesign the points of entry to the cities

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ARTICLE INFO

Article history:

Received: 12 July 2013;

Received in revised form:

20 January 2014;

Accepted: 1 February 2014;

Keywords

Passive defense,

The points of entry to the cities (PoE),

Redesign.

ABSTRACT

According to the importance of Iran's position in the Middle East region and the constant presence of outside threats and also due to the geographical dimension and Establishment of earthquake faults, Defense and devise have a vital role in many aspects of normal and Procrustean.it's necessary to adopt various measures in order to protect vital installations and sites. The purpose of this study was to examine the principles and strategies of passive defense with an open approach to the points of entry to the cities. The analytical and descriptive methods are used in this study. Background of this issue in Iran, Successful experiences and ideas of experts in the field are reviewed after that the strategies of Passive defense in architecture design are studied, finally principles of Passive defense in redesign the points of entry to the cities are presented as a result. It's expected that the urban systems are maintained and the risk of disruption of transport system is reduced in crisis situations by usage of these principles.

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Introduction

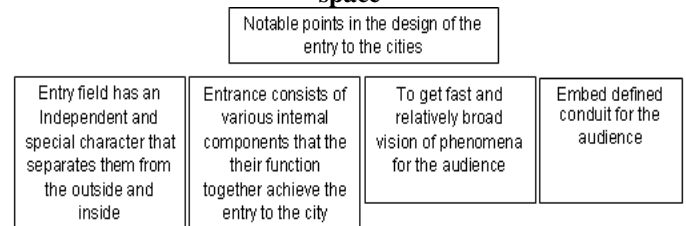
Protecting the residents of city is one of the basic principles in the Civilian and military power of society in crisis situations. It includes both active and passive defense. It's actually set of schemes, proceedings and projects that are using the tools and situations without weapons independently. In fact, passive defense plans are prepared before invasion and implemented in peacetime. Using of considerations of passive defense will reduce not only the cost but also increase Efficiency defense plans. The cost in crisis situations will be reduced by stimulation of these threats such as natural factors (floods, earthquakes, tornadoes, hurricanes, lightning, fire, etc.), human factors (enemy attacks), socio- economic factors (sanctions), political and cultural factors. The aim of this study is redesign the points of entry to the cities based on the principles of passive defense to reduce losses caused by natural disasters and unusual events. As the entrance to the city has the communication, physical, and visual performance potential, it can be used as misleading factor to identify important sites. In this study, at the first, an overview of the spatial organization is taken by reviewing of the theoretical studies then design alternatives have been evaluated after determining of passive defense's objectives. Finally, strategies in the field of passive defense have been offered. However, the points of entry to the cities are the first places to percept the characteristics of space, public and private space and other properties. They are joints for connecting two locations, not a blade to separate them. They can content various events and city's identity (Pakzad, 2006:5).

The points of entry to the cities

Influence to the city as a phenomenon through certain channels called the points of entry to the cities. They are the area leads flow direction from outside to inside. While the area that is between the natural and built environment of the city, it has the independent identity (Ablaghi & pour johari, 2007:68). The points of entry to the cities are not only a movement corridor but they have an area to access route into the city from outside to

inside (Ablaghi & pour johari, 2007:67). This is usually as a symbol of the city and represents city people's culture and customs. Since the majority of passengers who arrive to the city are not able to visit the city and only passing through outside, on both sides of this part of town is usually linear, there are service centers for passengers and other public (Gharib, 2004).

Fig (1): Points of consideration in the design of the input space



Types of The points of entry to the cities

Entrance and exit area to the city have different location based on users' images and perception. Since the creation of sense of enter the city completely is produced through conceptual stages, it cannot be assumed a definite beginning and end points of entry. The Entrance must create the sense of enter the city in moving person through interacting with mental, visual and physical entry. The meaning is developed in part of the point of entry to the city. It's dynamic in terms of location and don't follow certain boundaries. In order to avoid enter the city, it must occur as follows (Ablaghi & pour johari, 2007:68).

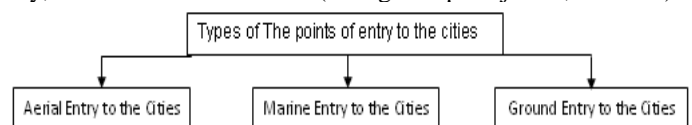


Fig (2): Types of The points of entry to the cities Ground Entry to the Cities

Person traveling by express transportation, experiences in the world like a movie that scenes and aspects intersect each other sequentially. It's necessary a kind of perspective to percept in high-speed motion.

Aerial Entry to the Cities

There is a region includes industrial users, traffic levels and destroyed nature, beside airport. As the plane supplies overall image of city clearly and can give observer a multi-layer structure consisting of city streets, housing and open spaces, every passenger is traveling on an airplane, gets more information about destination city by aerial perspective (Sadeghi, 2009:10-11).

Contacts	Services	Economic	Defensive and Security	Social and Cultural
•the inside and outside access	•Construction of places to meet the needs of passengers such as Car washes, gas stations	•shopping centers •Craft Stores	•Police Centres	•Construction of cultural and entertainment venues around town

Fig (3): Function of the points of entry to the cities Inductor Concepts of City Entry

Mental Entrance: In the primary points of entry, the passenger perceives the change of the environmental quality around of the path. It's created by appearance signs, guide symptoms and building that is normally located in the surrounding cities such as silage, plant and changing pace of moving vehicles. The passenger is waiting to enter the city mentally by this quality change. At this stage, there is no visual sign of the city.

Visual Entrance: the visual entrance begins by first visual signs. Sometimes this visual sign is the city silhouettes especially in cities have been located in height or hollow. In some cases this visual sign is caused of the ongoing transformation relation between built and unbound surrounding areas (the full and empty spaces).

Physical Entrance: Gradually in duration of movement, sense of close to the city exchange to sense of presence in city. Exit the city is a result of the interaction of the three concepts of psychological, visual and physical exit. Psychological sense of exit happens where the passenger expects to leave the city. In duration of movement, the person finds himself outside of the city by strengthening of visual signs. The change of the relationship between the built and natural environments is effective in enhancing this sense. The sense is so strong that person can find himself outside of the city completely (Sadeghi, 2009:12).

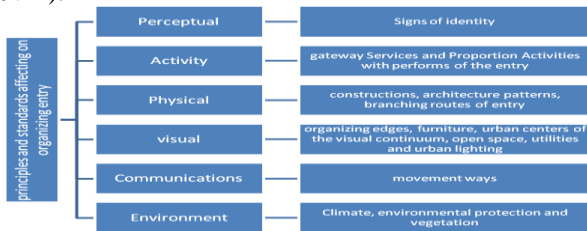


Fig (4): Principles and standards affecting on organizing entry

Principles and considerations of passive defense in cities

Passive defense is measures taken to reduce the probability of and to minimize the effects of damage caused by hostile action without the intention of taking the initiative. Active defense is the reaction, but passive defense should be accountable naturally and keep people safe from invasion and attack shock. Active defense includes all planning scheme and defensive actions that involve the use of weapons and military equipment. Based on law, this is armed forces' duty inherently (leylian, 2012:5). The general policies of passive defense are announced by the Islamic Revolution Leader. These as a guide

to the executive, legislative and regulatory authorities, are defined as following:

- 1.Emphasis on passive defense
- 2.Regarding to principles and criteria of passive defense such as safe area Selection, aggregation or interspersion in essential cases, desensitization, concealment, camouflage, deception of enemy and immunization against population area and important centers in future developments.
- 3.Sorting centers, facilities and places of importance to critical, sensitive and update them in necessary cases.
- 4.Providing passive defense projects (In compliance with the principle of cost-benefit) of great important centers and utilities (military and civilian) based on preferences, facilities and also funding requirements.
- 5.Providing comprehensive plan of passive defense against unconventional weapons such as Nuclear, biological and chemical
- 6.Operating multi- purpose buildings, utilities and traffic networks to employ projects in view of the passive defense especially in the sensitive border areas.
- 7.Making culture and public education about employing passive defenses' principles in governmental and non- governmental sections, predicting educational references at deferent levels and also developing researches on it.
- 8.Compliance with data classification of passive defense planning.
- 9.Prevention of hazardous utilities in population centers and removing them from cities and predict safety considerations for essential utilities and avoid from developing population centers around hazardous utilities.
10. Supporting the development of IT and related industries, with emphasis on the design requirements of the passive defense and domestic production.

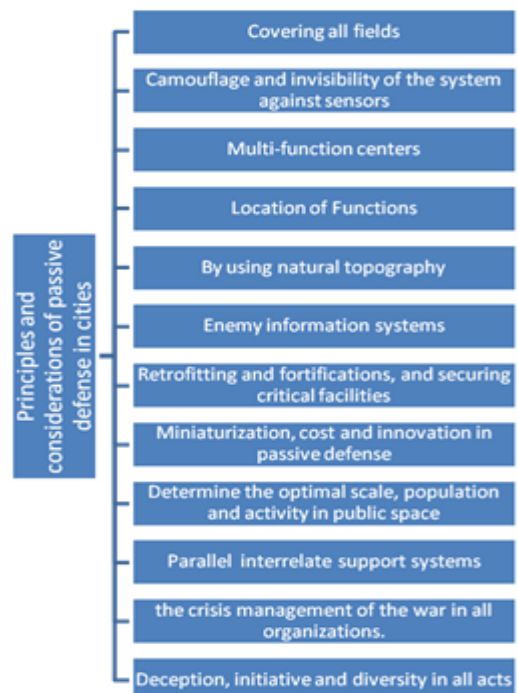


Fig (5): Principles and considerations of passive defense in cities

11. Applying the principles and criteria of passive defense against software and electronic threats and other new enemy threat to save data networks.

12. Predicting necessary process to prepare securing planning and Coordination with other plans and management of responsible organizations in both passive defense and disasters in order to increase efficiency and cost reduction.

13. Developing a center for design, planning and approval of principles, standards Criteria, disciplines and technical regulations of passive defense and monitoring their applications.

Table (1): Contemporary perspectives on passive defense

Contemporary view of the world about passive defense	Thomas Hobbes (De Cive)	Supply Security of citizens is introduced as the most important task of government	No attention to it is an act against the peace and nature laws
	U.S.A.	The main emphasis on increase defensive power and deterrence measures and arrangements to deal with situations during and after attacks - mainly nuclear attack	Passive defense measures, including action at all stages of preparation (warning), control (vertical or horizontal discharge location) deal (saving and reduction of damage) and strengthen after attack
	Switzerland	Defend civilians against military aggression	Providing shelters against nuclear attack for both Swiss citizens and key industry personnel (pre-crisis)
			Providing underground hospital resistant nuclear attack (pre-crisis)
			Alert and Warning Stage proportional to the peak of international tensions (during the crisis).
			establishment in the shelter Permanently (during and post crisis)
Former Soviet Union	As nuclear war would surely happen someday, very extensive measures have been forecasted to protect civilians	deterrence strategy and argument of Preservation and conservation have been put simultaneously	
Zionist regime	Passive defense is integral part of all programs and it has spread all across the land.	There are no clear boundaries between passive and active defense from view of the time and space. All of land use at various scales, population areas particularly the residential environment have military applications in addition to the common use necessarily.	

Experiences about applying passive defense principles in architecture

Early humans took refuge in the caves, trees and other natural shelters to be protected from the attacks of animals and their enemies and also to alleviate their concerns. Creating a moat around the city and fortified gates was common in all parts of the world to prevent on the enemy surprise attacks. The Prophet of Islam saved from the Quraish infidels by concealment and deception techniques. The Prophets of Islam-Muhammad (SAW) Another example of passive defense is measures and defensive trench warfare of Islam Prophet Muhammad (SAW) by the military council and the decision to build a moat around city (Heidari, 2011). As Iran has a geographical situation between the plains of Punjab Sindh and Mesopotamia, it has always been as a bridge that the invading tribes had to pass it in order to receive the East or the West. Topology and secure environment, forced the Iranians to build their houses in form of a small fort in order to be safe from intruders' attack. Castle, Fort, Citadel, imprisoned, ditches and gates, indicate the insecurity of environment Iran's defense and security considerations. Construction of fortified buildings in the various plans has begun three thousand years ago. Boulevard abad castle in the city of Khoy, Cetyl fence in Kashan, Castle Hasanlu Urmia, Toorang in Gorgan, cover fence villain, villain Nooshijan between Hamedan and malayer and ... (Heidari, 2011). Before the Iran revolution, there was an organization as civil defense organization that was responsible for three sections; First, Guidance, control and support of the people during natural disasters, second, aid and rescue operation in accidents, third, reduce the vulnerabilities of the country against external threats. After the revolution, the organization was dissolved and its mission was entrusted to Basij. After the revolution, the three missions were transferred to several groups and organizations. At some point of time, they were given to the Management and Planning Organization. After two years of failing to do missions, so the matter was referred to the National Security Council. Then the missions were entrusted the army with the command of the Supreme Leader. After that, the duty is awarded air defense camp and an organization providing air cover. The Permanent Committee for Passive Defense was formed under the command of the Supreme Leader. The main target of Iran's Passive Defense Organization is, reducing the vulnerability of the infrastructure against external threats and increased national consistency.

Fourth generation warfare: After the revolution in science and technology, especially in information, communications, electronics and computers in recent years, fourth generation warfare has been designed and experienced in the recent wars. Fourth generation wars are characterized by emphasis on the software war (such as information, psychological and cyber warfare), the use of local and sectional hardware war to promote and support the software war, relying on intelligent and advanced precision weapons and equipment, develop capabilities and complete superiority in the air, expanding the war into space, avoiding a decisive battle in the wars, before the confidence to victory of the software war, starting battle at the close and deep lines, focus on national infrastructures and vital, sensitive and important centers, Shorten the duration of the war (The design of flash war, low risk). Iran's Passive Defense Organization aims to reduce the vulnerabilities of the critical infrastructure of the country, has started its operations from 1382 (Heidari, 2011).

Table (2): Legislative history of defensive architecture in the cities of other countries

Defense experiences in cities of other countries	Germany	Laws, regulations and necessary support passive defense
		the shelter in housing environment and public Refuge
		Production of prefabricated shelters
		Dual use of facilities and shelters
		Planning of urban development to equitable distribution of small and medium cities
	Switzerland	The equipped shelter for 90% of the population
		Building safe places such as hospitals and etc.
		Strong and coherent organization of people in cities
		building a secure subway in suitable depth with function of shelter and urban life
		All being equal to access a shelter
		Need for public and multi- function shelters in appropriate parts of the country
		Being forced to build shelters in private units by public participation, government financial encourage
		Forbiddance evacuation of civilians during attacks
	Former Soviet Union	Use of shelters and evacuation plans from target areas to a safe place before enemy attack
		building simple shelters for people
		Development of resistant shelter to protect industrial facilities and workers.
		Provide very deep heavy shelter close to sensitive areas to protect government and military officials
		Deep subway to be used as a shelter for people
		Construction of cellar Shelter (basement) apartment buildings in general, resistant to chemical and biological agents and nuclear detonation wave
		Mobile command and control centers
	U.S.A.	Division and the distribution of similar military stations
		To fortify Intercontinental ballistic missiles and command facilities and control communications centers
		To build several shelters for rockets and repeated displacement of missiles from one shelter to other shelter
		Anti-nuclear fallout shelters to protect the population and the depletion of populated areas
	Swedish	Shelter construction in residential buildings and use as a parking lot, warehouse and ... in peacetime
		Construction of electrical power facilities, fuel supplies, and essential supplies below ground level
		People evacuated plans from threatened areas to safer areas
	Denmark	Shelter construction in private buildings and factories.
		Construction of public shelters by government
	Finland	Construction of public shelters from reinforced concrete or dug shelter into the rock
Pakistan	Public education, especially against the effects of nuclear explosions	
	Safety measures such as lighting control, camouflage, concealment, dispersion	
North Korea	Decentralization policies aimed at	

		reducing the vulnerability of critical and sensitive resources
		Transmit the critical and sensitive facilities (military and civilian) to earth and rocks
		Subway of Pyongyang with a depth of over 100 meters to counter the threat of American military
	India	Use people's voluntary organization in Defense operations
	Italy	Use professional services for the civilians protection such as Mountaineering Federation
		Holding passive defense courses in Schools
	Former Yugoslavia	Having sufficient food stocks in the country and control of market and also rationing sensitive items such as gasoline and etc.
		Closing of schools and universities during the war to use of military
		Using simulation and models to deceive NATO
		A complete underground city with all the infrastructure and services that were discovered after the battle of Kosovo by NATO forces.
	China	Construction of fortified underground shelters that are resistant to nuclear bomb
		Construction of military and nuclear facilities in the mountainous and forested areas
		Building the defensive wall of China as one of the most important of human history in the field of passive defense
	Iraq	Construction of shelters, hospitals, communication centers and etc. in the depths of the earth
		Use of deceptive models of aircraft, tanks, missiles, cannons and etc.
		Installation air balloons anchored around the crucial military and economic centers
	France	construction of shelter resistant to nuclear rain
		Educate people against the dangers of passive defense to protect life
		Construction of Mazyn wall as an important passive defense

Conclusion

Immune idea is result of the country's defense policy. To present the defense solutions and apply it as defense and engineer structures should be separated idea from defense section by converting to engineering and urban design Criteria then they are established in national development. With an overview of principles such as announcement, retrofitting and fortifications, division and dispersion, deception, cover, concealment and camouflage, passive defense can be classified in three major sections; Confusion in view, informing and also security and protection. The consequences of passive defense are as follows:

- Reducing the vulnerability of country in result of increasing failure threshold, capability for crisis management, security and safety factor, deterrence coefficient, stability and continuing operations to keep public calm.
- Promoting popular resistance threshold, ineffective or less effective operations of the enemy, creating doubts in aggressor, promoting the security coefficient in the national sustainable development.

However, the primary points of entry are one of the major areas in environmental sustainability and security protection in crisis. Thinking of Preset contrivances as appropriate contrivances is

the most important responsibilities of conservation organizations, should be paid attention specially. Finally, in Figure 6, the role of passive defense in redesign of the primary points of entry as summary and conclusions are presented.

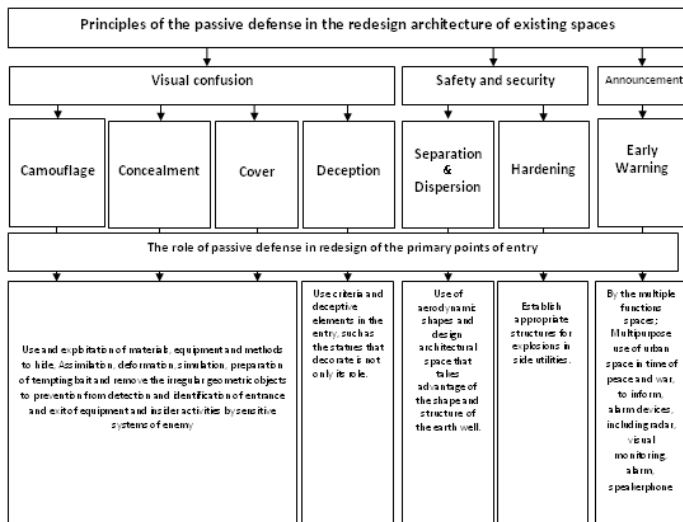


Fig (6): The Role of Passive Defense in Redesign the Points of Entry to the Cities

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