THE ADAPTIVE REUSE OF HISTORIC INDUSTRIAL BUILDINGS IN APPROACH OF PRESERVATION

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ABSTRACT

Increasing the number of cities which planned to preserve and save their old industrial buildings that abandoned or going to lose their function shows that strong demand started to save these buildings that someday were the city's or location's industry heart and in some cases where the reason for creation of the city. It shows that culturally or historically or any reasons, nowadays, these industrial buildings worth is much more than abandoned or bad looking buildings, they are live history tellers, maybe specially because of this reason society strongly wants to preserve them. During the preservation, governors or designers thinks widely and makes their decision that would be affected in long term process by adaptive reuse plan for these abandoned and going to demolished industrial buildings, also these efforts placed in their city or location's development plan. Opportunity of adaptive reuse plan accompany with designing the urban development plan, makes city's growth more sustainable and characteristic by keeping and preserving the city or location's industry history. Adaptive reuse of old industrial buildings is the process to find a new proper function for industrial buildings. This process structurally should profitable with the old building and should define culture and character of the location beside financial aid for the location. Furthermore, this process aimed to protect the old industrial buildings from abandonment and demolitions, also by finding new functions in adaptive reuse, the process should be long term use because some of these industrial buildings had experienced temporary use, shortly this is long term preservation by calling adaptive reuse of old industrial buildings and option of adaptive reuse must be preferred strongly from demolition. Preserved old industrial buildings will help to recognize the community's character by making relation with the past. Nowadays preserving of these buildings is important, they are cultural and historical monuments, in past time, and they were the wheels of development process. Preservation and finding proper function in adaptive reuse process beside the financial problems are not such obstacles that community and governments and designers do not challenge themselves to path it. Also by making proper adaptive reuse of old industrial buildings, financial problems can be solved.

KEYWORDS: industrial buildings, adaptive (context-oriented) reuse, preservation, abandoned

INTRODUCTION

During first and second world war that lots of industrial buildings destroyed or some parts of them remained safe and after a war, some of them have chance to repairing and reconstruction, beside of them, there were some industrial buildings that remained safe but after a second world war in Europe and other countries, until 1970, most of the countries that made their efforts to developing and had programs to build new and progressive cities, caused a immigrations from villages and small towns to these expended cities. It makes a great effort to construct new buildings and making plan but these high speed improvements and necessity of making home and transportations for new comers affected the industrial buildings. The efforts that come to reutilize these industrial buildings with new functions should be appropriate for the 21 century. Most of the industrial buildings destroyed during road and subway station construction and some of them changed to apartments in expansion period but there were some industrial buildings that safe even if without function (abandoned). It is so important that new function of abandoned industrial buildings in which percent were rightly accompanied the areas and environment needs or better to say with alternative uses. From the building with broken windows, dirty façade, leaking roof to the building which most accepted reuse from society view, it is long way.
"What we need is continuity . . . historic preservation is not sentimentality but a psychological necessity. We must learn to cherish history and to preserve worthy old buildings... we must learn how to preserve them, not as pathetic museum pieces, but by giving them new uses’ (Louise Huxtable. A).

Adaptive reuse of old industrial buildings is the process to find a new proper function for industrial buildings. This process structurally should profitable with the old building and should define culture and character of the location beside financial aid for the location. Furthermore, this process aimed to protect the old industrial buildings from abandonment and demolitions, also by finding new functions in adaptive reuse, the process should be long term use because some of these industrial buildings had experienced temporary use, shortly this is long term preservation by calling adaptive reuse of old industrial buildings and option of adaptive reuse must be preferred strongly from demolition. For understanding the importance of preservation of these historic buildings, Jane Jacobs stated in her book named “The Death and Life of Great American Cities” in 1961: "Cities need old buildings so badly it is probably impossible for vigorous streets and districts to grow without them .By old buildings I mean not museum-piece old buildings „not old buildings in an excellent and expensive state of rehabilitation—although these make fine ingredients—but also a good lot of plain, ordinary, low-value old buildings, including some rundown old buildings” (Jacobs, 2002). Preservation of monumental industrial buildings is as important as saving the character of city, location and society. From the 1950s that factories started to losing their function and manufacturing started to move to developing countries with cheaper prices like Asia countries, their buildings became vacant and other factories affected by the rise of a post-industrial age where "electronic circuitry silently replace the hiss and clank of moving parts”(Niesewand, 1988).

As a result of these movements, there are large number of abandoned industrial buildings in western countries, in similarity it happens in US, in the last decades of twenties century, factories movement starts from north to south for example "In 2001, 62 mills closed in North Carolina, many in small towns”(Bergsman, S). Because of all these, lots of abandoned and vacant industrial buildings can be fined around industrial countries landscapes.

Industrial buildings from architectural views have a huge potential, their structure are large and big in size and space also specific decoration. They were constructed in purpose of function and production of that time, especially it is more obvious in cases that remained from 18th and 19th centuries but there are some industrial buildings that designed theoretically. Some factories in 19s century were designed and constructed by Craftsman that nowadays preservation and protection of them is essential, they carry specific value. Later in 20th century, some other factories designed by famous architects like Frank Lloyd Wright, Walter Gropius, and Albert Kahn that would be exceptions (Bergsman, S). By the association of these famous architects and their attempts in functional design, architecturally and historically they should be protected and preserved. When industrial buildings decided to reused as preservation, it is opportunity to use from industrial buildings facilities beside keeping the architectural and historical values, they are memorial of people who worked in that buildings to turn the economic wheels of city and location. By searching in in these buildings that what they have been and giving results to government and society, they will ask what this building could be in future without hiding the building's past?

The most adaptive reuse plan can accompany the locations development, also can be defined as tourism factor and bring new life to location and society. By looking the opportunity of this feature, it is proved that abandoned buildings can attract criminals, drug dealers, homeless people, etc. abandoned buildings because of social costs to community. The Pennsylvania Horticultural Society, in a study of vacant and abandoned properties both nationally and within the City of Philadelphia, summarizes the reasons for vacant properties: The problems created by abandoned lots and structures cannot be contained within property boundaries or city limits or stopped at county lines; they spillover to affect surrounding communities. As abandonment increases in a neighborhood, property values decline and owners become less willing, and perhaps less able, to maintain their real estate. In turn, more and more properties fall into disrepair and eventual abandonment. It is this self-perpetuating dynamic that makes the word “blight,” with its association of disease and contagion, an apt metaphor for neighborhood distress. In the worst cases, the downward spiral of deterioration and abandonment continues until entire blocks and neighborhoods are rendered virtually uninhabited (The Pennsylvania Horticultural Society, 1995). For the proper adaptive reuse of industrial buildings, there are some standards that called modernization standards that announced by the secretary of the interiors and they are ten principles that created to identify preservation of special characters of historic buildings and their locations in process
of changes to find appropriate function in adaptive reuse. These ten principles applied to both interior and exterior of historic buildings, involved landscapes in use and additions in new construction parts. Principles defined by technical and economic possibilities considered on each cases. The principles are:

- Property should be used for its historic value or find appropriate function with minimum change for explaining the character of the buildings, locations, environments.
- The historic value of the property should be remained and preserved and removing of sections, materials and spaces that are related with historic value should be avoided.
- The property should be defined as a physical history of its own time, places and usage, any adding or cutting that cause changes and create false sense of historic expansion should not be assume.
- Properties changes during time. If there are changes that happened, historic importance should be preserved.
- Construction techniques, specific features or craftsmanship examples that recognize historic value should be preserved.
- Historic parts that have been deteriorated should be repaired instead of replacing, in cases that deterioration parts should be replaced, the new parts should match with the original design and color and materials and visual qualities. Missing parts should be replaced by the same figure based on history documentary, design methods.
- Any repairing process that causes damages to historic buildings like chemical and physical treatment should be avoided.
- Specific archeological resources which affected by the project should be preserved, in such cases with dames reduction should be assume.
- New additions, exterior changes or related new constructions should not demolish historic materials that define the property. The new additions should be distinctive from the old and should be compatible with the massing, size, scale and architectural design to protect the historic entirety of the building and its environment.
- New additional parts or related new constructions should be assume in condition that even if they removed in future the original form and entirety of the historic building and its environment would be undisturbed (http://www.nps.gov).

Knowing the location and understanding the environment is important to find the most possible uses and also what kind of demands should be noticed, so it is important to start with searching about environment and neighbor in historical and geographical scale beside political and economic views of city governors instead of just focusing on what the neighbor needs. Based on the lack of local instruction, knowing the type of places which deals with what means researching and understanding the character of environment for distinguishing among capital cities, historic cities and etc. in future efforts, these classifying will help in understanding the location's priorities and which kind of demands that comes from extra uses that wished to apply. Recognizing the area, will help to understand how many buildings have been used had been in same condition (characteristic view). By looking at the types of industrial buildings like mills, warehouses, railway stations, factory buildings, etc. the obvious difference between factors such as size and location (for example, the position of water mill should be beside water) in their future function and potential of the same other situations.

FACTORS WHICH CONSIDER THE FUNCTION OF INDUSTRIAL BUILDINGS TO BE FINISHED
In lots of cases the preservation of old industrial building are not possible and profitable, it is often possible by reusing. The original function had stopped ago and the building did not have long term function. In these cases, their future after losing their function can be shown in this figure.

Losing the function
The reasons that cause industrial buildings lose their functions.
The location of industrial building had lost its profitable position based on purposes or production, also the other reasons such as environment, city development, and transportation and communicate or changes of establishment reasons can be mentioned.
Figure 1: Process of changing the function of industrial buildings

Size, construction form and its capacity needs to develop by the progressing and expansion of industry purposes and the original buildings capacity were inadequate.
By the financial problems or replacement of production destination.
Closing the industrial buildings for economic or personal reasons.

Abandoned
After disappearance of industrial buildings activity, the buildings would not be used officially for longer time, in this time process, the illegal use maybe without the owners announcement will happen. In these conditions and by careless usage the situation of deserted building becomes worse time by time. In these situations the owners can be changed but the building still abandoned.

Temporary use

After that the building lost the original function, in a short or long period it can be used for other functions depends on the potential of environment, reason of needs, new owners, financial problems but mostly in temporary reuse cases the industrial buildings which lost their original function will be the destination of reuse purposes without technical and construction change in its original situation but the functions and the owners can be changed. So the conditions of buildings which carried by temporary reuse can be better or it can be worse, depends on the owners, users in temporary reuse time, the preservation of the building and machines can be done but the latest condition of those buildings shows that it was not enough.

Demolition

After that the industrial buildings lost their function, demolition may took place also it happens in cases that continue their function for a long time, the reason can be structure conditions of the building or contamination financial problems in saving the old and weak structured building that caused owners makes their decisions on reconstructing the building, several valuable industrial buildings destroyed in development process.

REASONS FOR REUSING OF INDUSTRIAL BUILDING

Analysis and reasons for reuse of industrial buildings, the conditions of project and possible changes for demand function should be evaluated. Temporary reuse of the building should be evaluated and the buildings preservation must be done also the owners should find the most proper function that is compatible with the buildings and locations. In case of location reason (city) the buildings that should be developed and fear of demolition threatened them, by preservation and proper development plan should be planed.
The reason for the preservation of industrial buildings can be protection of values; the old buildings are live history, architectural values of the time and city which carry special form and concept, famous architect or first creation, unique cultural type also economic value in city or location's history.

FORM AND SPACE OF INDUSTRIAL BUILDING
Form and space and size of industrial buildings that available for reuse function will play important role that influence the changing of function. The function that needs specific spaces and forms with less change will evaluate in first aims, by this factor, buildings by their forms and spaces should be evaluated in groups for serving most adaptive reuse function.

HISTORIC AND ARCHITECTURAL VALUE OF INDUSTRIAL BUILDINGS
The function that decided to applied specifically, should be evaluated by historic and architectural values of industrial buildings, in buildings that count as monument, the function that determined for reuse project, should be specific, in these cases, mostly government's architectural departments are responsible, these specific architectural and historical buildings mainly reused for future reutilization like technical museums. This can be the accepted word that preservation of industrial buildings accompanied by reuse function but at first depends on the owners decisions then concerning about which function and the building future can be evaluated in several requirements like city planning, technical point, etc. that can be different by country, city, environment and function. Original structure and construction style, first use and function that was designed for a building and by passing time and change of conditions and functions, structure and building's self-situation became weak or unusable position. Technical preservation and refurbishment by financial support will be necessary. Important factor for finding function for reuse project is to find out the building itself is suitable and by its condition can serve the new function or not.

CONCLUSION
Changing the function of industrial building can be happened by city development process and necessity concept, specific location of industrial building in point of city developers or owner's proper conditions of structure and building for specific function or it can be government support for serving specific function.

The reasons that impediment the reuse process:
Location, transportation and accessibility
Development options
Financial problems
Building poor structure and construction condition- unusable
Contamination, illegal reuse- health
Government order- politic
Factors that affect the industrial buildings adaptive future function:

Adaptive reuse of industrial buildings can be affected by several factors:
Location of the industrial building:
Center of the city, downtown of the city that mostly are residential, institutions and city departments
Side of the city, industrial and residential areas between the center and out of the city
Out of the city, suburban areas with suburban residents
Culture
Industrial buildings historic evaluation
City or locations needs and necessities

Urban development plan
City developers, professional designers beside owners challenges with many regulative and financial obstacles in engaging the adaptive reuse of old industrial buildings. There is a range between abandoned/demolished industrial buildings and preserved/secured/adaptively reused industrial buildings. This range with lots of tools and available methods to catching and finding the most adaptive reuse and increasingly amount of industrial buildings that is going to find most appropriate function in their new purpose of life. The success of adaptive reuse of industrial buildings is in
result of which percent this project coincident with historic value, location's character, keeping culture, taking function in future view and acceptance of neighbor and people also exponential fit with developing process.

REFERENCES


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