

RENOVATING HISTORIC AND OLD BUILDINGS

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INTRODUCTION

Just as a library catalogue attempts to classify and order all knowledge, different kinds of library architecture try to address the desire to disguise, with geometric order, the irregularity of the collections, organised on different media and intended for diverse publics.

This can be seen in cases ranging from the parallelepiped to geometric volumes attached to other forms, as well as buildings that were formerly hospitals, factories and palaces. This relative liberty in architectural form benefits from the diversity and flexibility of modern materials and construction methods.

Architecture has a lot to say and the influence of the architect on the building is of key importance. The proposals are based on functional requirements but they are also based on an architectural choice that can be approached from two, very different, angles.

- One is to produce a building that stands in its own right, is indifferent to its surroundings and lacks visual dialogue with the exterior.
The idea that dominates is that of a route, and this affects the entire building as a unit and in such a way that it has an exterior-interior, top-to-bottom, noise-silence structure.
- The other is based on transparency, the interior-exterior relationship and large access areas. The dominant features of the interior are the view of the different areas and the fact that the collections are located where space allows rather than on a sequential route through the various sorts of information. The library has a vocation as a social space that invites as many users as possible to enter.

Although at the present time there are many doubts concerning what libraries should be like, the final result has to be a building in which the organisation of space can respond to needs that are constantly changing. A number of considerations must therefore be borne in mind.

- The presence of different sorts of users, each with different requirements for information, means that the reading area needs to be more clearly demarcated than in the past.
- The speed of use requires a distribution that enables easier orientation, clear itineraries and adequate signage.
- The flexibility demanded by possible variations in both the number of users and their needs requires a typology of building that is structured less rigidly and one that is adaptable to predetermined functional hypotheses.
- These functional modalities are valid for libraries large and small, but in the case of small libraries they require a greater emphasis on function and the variety of functions.

Library architecture is very complex. When the starting point is a building site what is required is sufficient surface area, a good orientation and an absence of changes in level. When what is available is an already existing building it is helpful if it is of a typology that facilitates conversion. Heritage buildings with their special characteristics are an added handicap to the complexity and peculiarity of library architecture.

INTERVENTION ON THE ARCHITECTURAL HERITAGE

The standard conception of heritage concerns the body of things left as a legacy, things of value preserved by one generation for future ones.

In parallel to this there is a tendency to attribute added value to all that which, in a given context, identifies a culture or a place.

With regard to architectural heritage there has been, over recent years, a consolidation of a culture oriented towards restoration and re-use and this has been echoed by public opinion which has demanded re-use for social purposes.

Because of its condition as a territorial cultural service, the library has become a main focus of attention within this conservation policy.

ADVANTAGES AND DISADVANTAGES

Refurbishing architectural heritage entails many advantages but it also involves many technical, functional, financial, and sometimes aesthetic hindrances and these vary according to the nature of the building and acquire greater or lesser importance according to the criteria used to evaluate the final result.

Advantages

In general terms the main attractions or factors in favour of heritage buildings are:

- Location.
The library is a fundamental part of urban design and it constitutes a very important centre of attention. A well-chosen location is a boost to all aspects of its influence on the community, a poor choice limits its capacity to serve the community.
Many heritage buildings are located in especially valuable locations such as town centres, areas where land is not available or is exorbitant in price.
- Symbolic value.
The historical prestige with which the community regards the building.
- Architectural interest.

Suitable refurbishment may incorporate the following positive features:

- Recovery of the municipality's identity.
- Conservation and maintenance of built heritage.
- Enhancement of the building by providing it with a new use.
- Urban renewal:
In some cases it can be the starting point for the refurbishment of the surrounding area.
- Final cost:
Depending on the condition of the building and the magnitude of the intervention, the costs can be lower than those of a new building.

Disadvantages

The following are the main hindrances to converting a heritage building into a library:

- Typology of building.
 - Distribution of space:
Fragmented distribution does not lend itself to the rational organisation of the service and leads to the expected standards being lowered considerably.
The opposite case is posed by buildings which are over dimensioned with a conception of space that hinders the creation of differentiated ambiances required by the library programme.
 - Changes in level:

These are an obstacle to flexibility and are a disadvantage with regard to compliance with regulations concerning the elimination of architectural barriers.

- Vertical communication cores:
When regulations require the original stairs to be maintained, their location and dimensions can have a negative effect on the organisation of interior circulation.
On the other hand, the new facilities will require compliance with fire and access regulations with the incorporation of new stairways and lifts.
- Facades:
Buildings with blind facades, or with a very rigorous composition of the openings, can make it difficult to incorporate the elements necessary to enhance the relationship between the interior and the exterior of the library.
- Type of construction.
 - Load-bearing elements:
As a general rule it is recommended to calculate the entire structure to bear a uniform live-load of 500 kg/m².
Heritage buildings, however, demand more accurate study since most historic buildings will not bear such a load and require consolidation, or the substitution of the original structure.
The load borne influences the floor-slabs, columns and foundations and that means each element should be analysed to decide correctly which of them should be acted upon.
From a very generic point of view, the following recommendations can be made:
 - A real uniform live-load for all structural elements of 300 kg/m².
 - Additional live-load for each linear element of the uni-directional floor-slabs: 500 kg per linear metre.
 - Reinforcement in compression in the floor-slabs: 5 cm thick.Spaces intended for high-density shelving require specific study given that the load is much greater.
 - Installations:
The need to install all the services.
With regard to air conditioning, the volume of some spaces, the kind of materials used for the facade and the kind of roofing may hinder the insulation of the building and the calculations for, and location of, the equipment.

When a building is converted into a library, the negative features of the facility tend to be related to:

- The rigid organisation of space.
In many cases, the poor dimensional optimisation of the space results in inefficient use of the surface area and this has financial consequences for both construction and efficiency of use.
- The difficulty of extension.
The reorganisation and extension needs of current library systems are in conflict with the rigidity of most heritage buildings.
- The building's identity.
Some heritage buildings are of a typology that does not admit conversion into library facilities and a building sacrificed to its new function is as undesirable as having the library service subordinated to the buildings original style of construction.
- Complexity of the operation.
To the architectural difficulties inherent to any library project must be added the technical, spatial and financial complications, amongst others, involved in the conversion of a pre-existing building.
- Costs.
In the vast majority of cases the final cost of a converted building is far greater than that for a new building so it is unadvisable to propose the conversion of heritage buildings on the basis of some supposed financial saving.

BUILDINGS THAT LEND THEMSELVES TO CONVERSION

The advantages and disadvantages of the most usual kinds of buildings can be listed:

Family houses

- In general these are buildings that cover little area and they have fragmented spaces distributed over two or three floors.
- They may be suitable for specialised libraries with few visitors.
- Nevertheless, they present problems of circulation, access and staff monitoring.

Palaces and castles

These kinds of buildings tend to be located in town centres or in peripheral areas associated with parks or development areas. Such a location can be ideal for certain kinds of library.

- Large interior spaces make it possible to create large areas that are suitable for collective use while ensuring a certain flexibility in use.

Churches

Positive aspects:

- Central location in residential areas.
- Availability of large spaces without internal subdivisions.

Disadvantages:

- Lack of natural light.
- Disproportion of the spaces:
The height presents an obstacle for air conditioning and makes it difficult to create an atmosphere suitable for concentration and study.

Markets and other such buildings

Positive aspects:

- Central, urban location.
- Availability of large spaces without internal subdivisions.
- Internal heights that enable more floors to be added.
- Structures suited to the load-bearing and flexibility requirements of a library.
- Good, natural illumination, generally through the roof.

Schools, hospitals and convents

- These are, in many cases, located in urban areas and are provided with open spaces, sometimes cloisters and large courtyards, making outdoor activities possible.
- They are large buildings having spaces with different characteristics, many of which are perfectly adaptable to library use as archives, study rooms, etc.
- They have good natural light and the regular composition of their facades enables openings to be made to enhance certain relationships with the building's exterior.
- With regard to the volume occupied by classrooms or wards, the determining factors are the type of organisation and the structural solution. Distributions with large central passages and rooms on either side enable large spaces to be opened up. In contrast, organisations with lateral passageways, separated from the rooms by structural walls, create elongated spaces which are difficult to convert.

Industrial buildings

Positive aspects:

- They are buildings intended to be used simultaneously by many people.
- They cover large areas without changes in level.
- Internal heights that enable more floors to be added.
- Structures suited to the load-bearing and flexibility requirements of a library.
- Facades and roofs with large apertures to allow the flow of natural light.

- Technical installations that lend themselves to conversion such as goods lifts and air conditioning.

Disadvantages:

- Fire regulations often require the cast-iron columns many of these buildings have to be covered with the consequent loss of one of their most attractive features.

WORKING METHODOLOGY

When plans are being made to convert a heritage building into a library, it is advisable to analyse all the historic, architectural, technical and financial aspects to evaluate the scope of the intervention. This information will provide an overall view that will make it easier to decide on the kind of intervention and apply financial rigour.

The diversity of factors makes it difficult to define a working methodology, nevertheless, the evaluation of the issues involved should include the following phases:

- Definition of the aims of the new facilities.
- Detailed study of the building.
- Diagnosis.

Definition of the aims of the new facilities

The drawing up of a qualitative and quantitative library programme without considering the characteristics of the building to be converted.

Detailed study of the building

A heritage building needs to be viewed in two ways: as a historic document and as an architectural object.

Prior reading:

- Location and basic features regarding accessibility.
- General state of conservation and most characteristic pathologies.
- Possibilities for adaptation to the library programme.
- Analysis of the legal issues concerning the building as a historic monument and the regulations concerning the possibilities for conversion (extension, addition of floors, incorporation of openings, etc.).

Historical and archaeological analysis:

- Chronology of the various construction phases.
- The logic of the construction used during each intervention, be it as a consequence of pathologies or of conversion for new uses.
- Determining the elements to be conserved.

Physical examination:

- Architectural characteristics:
 - Available area.
 - Dimensions of the main spaces and their location on the various levels of the building.
 - Free height between floor-slabs.
 - Horizontal and vertical accessibility.
 - Problems concerning the choice of the installations necessary for the new use (lighting, heating, lavatories, complying with fire regulations, etc.).
- Construction characteristics:
 - Facades and roof.
 - Foundations, floor-slabs, load-bearing walls and structure, with a calculation of acceptable live-load.
 - Infrastructures and facilities.

- Building materials and finishes.

Diagnosis

- Comparative study of the requirements defined for the new facility and the building's possibilities for conversion.
- Evaluation of the complexity of different types of intervention.
- Approximate cost of the intervention.

CONCLUSIONS

Conversion can be recommended when the following factors coincide:

- Satisfactory location.
- Typology of building suited to the new use.
- Area available enables the programme to be put into effect over few levels.
- Favourable diagnosis on the state of the building, its capacity for conversion, and the urban, architectural and social interest of the reuse.
- Professionals specialised in the various disciplines.
- Appropriate budget.

Even so, sometimes the decision is made to convert unsuitable buildings. This is generally for two reasons:

- Lack of building space.
- Political and social will. The facts on the ground are a determining factor in evaluating the heritage interest and viability of the project.

In general, librarians tend to emphasise problems concerning the use of the new facilities rather than the systems to resolve specific aspects affecting the conservation and adaptation of the building.

It is a dangerous choice to give priority to considerations of historical conservation in preference to requirements concerning the organisation of space.

In this kind of intervention it is not realistic to expect the same level of efficiency as would be expected from a new building. No matter how much a building is transformed, the result is never optimally organised and dimensioned spaces. It is not the building that has to adapt to the new functions but the new functions that have to be compatible with the existing building which, of course, must be suitably resolved.

When the decision is made to convert a heritage building the architect must enjoy creative freedom and the architectural and historical reasoning employed in the design of the project will provide solutions that can range from imitative reconstruction to the use of the formal language applicable at the historical moment of the intervention, while providing new elements to reinforce the use and significance of the heritage building.

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