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## ARCHIVAL BUILDING - THE BASIC CONDITION FOR PROPER FUNCTIONING OF THE ARCHIVES

### Izvleček:

#### **Arhivska stavba - osnovni pogoj za normalno delovanje arhiva**

Arhivska stavba je osnovni pogoj za normalno delovanje kateregakoli arhiva. Predstavlja stavbo za dolgoročno hrambo arhivskih dokumentov, njihovo zaščito in obdelavo, vse vrste potrebnih del ter omogoča varen dostop do njih. Gradnja nove stavbe je zelo zapletena naloga, ki zahteva izpolnitev različnih pogojev. Zato je tesno sodelovanje med arhivisti, konservatorji, arhitekti, inženirji in vsemi drugimi strokovnjaki, ki lahko pomagajo že pri načrtovanju nove stavbe ali rekonstrukcije, zelo pomembno. Samo s trajnim, kreativnim in spoštljivim dialogom med njimi se lahko najdejo primerne rešitve za željene rezultate na tem področju. Ta dialog pa naj ne bi izključeval ostalih strokovnjakov ali uporabnikov, ki lahko dodajo svoja dragocena mnenja. Arhivisti in konservatorji naj podajo tiste zahteve, za katere mislijo, da so nujne za normalno delo arhiva, šele potem naj arhitekt opravi študijo in poda najboljše rešitve, da na podlagi tehnične ocene, kritičnega pregleda in analize izkušenj drugih arhivov tem zahtevam zadosti.

### Ključne besede:

arhiv, stavba, hramba, dostop do arhivskega gradiva, arhivska služba, zaščita, varnost, standardi.

### Abstract:

#### **Archival Building - the Basic Condition for Proper Functioning of the Archives**

Archival building is the basic condition for proper functioning of any archives. It provides facilities for long-term storage of archival documents, their preservation and processing, all kinds of necessary treatment and enables and ensures proper and safe access to them. This is a very complex task and requires also different necessary conditions for archival buildings, which must be accomplished and fulfilled. This is the reason why close co-operation between archivists, conservators, architects, engineers and all experienced experts who can help already in planning either a new building or a reconstruction of adapted premises for archives purposes is unavoidable. Only through a creative, continuing, respectful and enriching dialogue among all these experts the appropriate solutions can be found for desirable effects and results in this field. This dialogue should not exclude other professionals or users, who may make valuable contributions. The archivist and the conservator should propose those requirements that they consider necessary for the archives to function correctly and only then will the architect study and propose the best solutions to meet these needs, based on technical appraisal, critical observation and analyses of experiences of other archives.

### Key words:

archives, building, storage, access to archives, archival service, preservation, safety, security, standards.

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Information boom and a massive introduction of information and communication technology in every field of human activities have a very serious and significant impact also on archives, archivists and their work. Many organizations and companies transfer their originally paper records into electronic / digital forms and thus “electronically born” records are created. It seems that transfer of these records to the archives, their use and long term preservation, represent main problems for archives. Sometimes we can even hear opinions that digitization of archives solves all the problems concerning access and preservation of archival documents at the same time and that they are the only actual problems of archives nowadays.

However, we have to keep in mind that one of the principal tasks of all archives is to preserve original documents also in classical formats on different types of materials and mostly paper documents. Therefore building proper storage facilities must be considered as a crucial point in functioning of archives all over the world.

Archival building is the basic condition for proper functioning of any archives. It provides facilities for long-term storage of archival documents, their preservation and processing, all kinds of necessary treatment and enables and ensures proper and safe access to them. This is a very complex task and therefore also different requirements for archival buildings, which must be accomplished and fulfilled. This is the reason why close co-operation is unavoidable between archivists, architects, engineers, conservators and all experienced experts who can help already in planning either new buildings or reconstruction of adapted premises for archives purposes.

Problems of new buildings or reconstructions of adapted premises for archives' purposes is considered also by the International Council of Archives as principal for proper development and function of archives. Creation and activities of the ICA Committee on Archival Buildings confirm the ICA effort in this field. In this connection I would like to mention at least works of Michel Duchein<sup>1</sup> and Chris Kitching.<sup>2</sup>

One of the main tasks of the committee was the preparation of a bibliography which provides a comprehensive list of sources about archival buildings and can be used by anyone seeking information on this topic. The bibliography formed one of the tasks set by the Committee on Archival Buildings in Temperate Climates (ICA-CBTE) during the period 1996-2000.

It was largely compiled by Arnold den Teuling, provincial inspector of records and archives in the Dutch provinces of Drenthe, Friesland (Fryslân) and Groningen. It has been continued by Ted Ling, from the National Archives of Australia, during the period 2000-2004. It has been decided that, as far as possible, the bibliography will adhere to the ICA's principal languages of English and French, though clearly the titles of some articles are in other languages. It was intended to add to the bibliography from time to time, with the prospect of additions from Chinese, Slavic, Hispanic and German colleagues.<sup>3</sup>

Similar activities were suggested in a project for archival buildings in a tropical climate proposed by the Latin American Archive Association. The proposal sought to

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<sup>1</sup> Duchein, *Les bâtiments d'archives: construction et équipements*; Duchein, *Archive Buildings and Equipment*.

<sup>2</sup> Kitching, *Archive Buildings in the United Kingdom 1977-1992*.

<sup>3</sup> *ICA Bibliography 2*.

constitute a committee of Ibero-American experts, including archivists, architects and conservators, who would be responsible for carrying out an exhaustive study on the special characteristics of archival installations and buildings in such areas. The study was to take into account the specific needs and problems arising from the climatic conditions with regard to the organization, conservation and dissemination of documents on any medium, in order to find solutions based on low-cost technologies.

The ALA would assume responsibility for coordinating the project and providing ICA with a final text in Spanish, which the latter would then translate into other languages to disseminate to archivists throughout the world.<sup>4</sup>

Original activities of the International Institute for Archival Science (IIAS) Maribor - nowadays IIAS Trieste-Maribor - were also oriented in archival buildings by publishing of *Modern Archives*, later on by *Atlanti*.<sup>5</sup> Especially many of the first numbers of *Atlanti* publication - which was celebrating its 20<sup>th</sup> anniversary last year - are completely devoted to archival buildings and technical equipment.<sup>6</sup>

However, it should be mentioned that the predecessors of these activities were annual conferences of archivists of the former Yugoslavia countries with foreign participation at which also technical problems of archival buildings were presented. I remember my first written contribution at those conferences in 1982 - in Radenci - about the new building of the Slovak National Archives (at that time the State Central Archives of the Slovak Socialist Republic).<sup>7</sup>

The building of the Slovak National Archives was officially opened and started its functioning on August 30, 1983. At the time of its opening, it ranked among 10 the most appreciated archival buildings in Europe.<sup>8</sup> For the State Central Archives of the Slovak Republic (at that time the name of the Archives), with its depots and stacks scattered in more than 10 different premises and spaces mostly in unsuitable, dirty, dusty and humid cellars at that time, this event meant a real breakthrough for its further development.

The new building provided excellent possibility to move and concentrate diffused archival documents under "one roof" and to renew the acquisition activities of the archives, which were stopped because of the lack of space. And after some years I had a chance to share the experience with running of the same building - again in Radenci.<sup>9</sup>

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<sup>4</sup> *ICA Study 17.*

<sup>5</sup> *Klasinc, The Activities of the International Institute for Archival Science of Trieste and Maribor (IIAS T/M) in 2008 and 2009. pp. 25-31.*

<sup>6</sup> *Klasinc, The Activities of the IIAS T/M 2009-2010 and Presentation of Atlanti. pp. 27-40.*

<sup>7</sup> *Hanus, K niektorým otázkam technického vybavenia. p. 116-122.*

<sup>8</sup> *Kartous, Neubau des Staatlichen Zentralarchivs der Slowakischen Sozialistischen Republik. p. 272-276.*

<sup>9</sup> *Hanus, Some experience with purpose-built archives building. p. 140-144.*



*Picture 1: Building of the Slovak National Archives in Bratislava*

It should be kept in mind that archival buildings are usually not uniformed and in most of the cases they are remarkable and significant architectonic constructions. Of course, the decisive aspects are needs of respective archival institutions. Despite the diversity of archival buildings there are common principles and rules which should be kept in their construction.

Archives and Record Storage Buildings are facilities that provide a proper environment for the purpose of storing records and materials that require permanent protection for historic and lifetime storage, upkeep, and preservation. Archives and Record Storage Buildings must be high-performance buildings whose systems must be designed to operate permanently at a very high level with zero tolerance for failure. The often irreplaceable nature of the materials to be permanently stored and preserved in this type of buildings requires a life-cycle analysis and approach to its design and construction, with extensive redundancy in its building systems.

According to the US Whole Building Design Guide WBDG an Archives and Record Storage Building must have working environments that are safe, secure, healthy, comfortable, durable, aesthetically pleasing and be accessible. Administrative office space, archival and preservation office space, and permanent storage space for the stored archival and record materials must be accommodated. Important design issues for Archives and Record Storage Buildings are:

- storage of archived materials to maximize efficiency, utilize building cubic space,
- flexibility for change of mission, new materials to be stored, and archival technologies,
- provision for archives expansion - vertically, horizontally,
- protection of the archived materials is a principal design driver for this building type,

- compartmentalization of storage areas to limit involved area of catastrophic loss in case of fire or system failure,
- fire protection of the stored materials,
- safety of staff and visitor occupants,
- temperature and humidity requirements that might vary for different types of materials stored in archival areas and in the archival/preservation office areas,
- day lighting for employee amenity, but not that would harm archival materials or adversely affect sensitive indoor environmental conditions,
- controlled access to archive storage areas,
- secure and safe loading and receiving areas,
- secure and controlled public/researcher access.

This material contains a lot of interesting information as well as useful relevant codes, standards and references.<sup>10</sup>

In this connection I would like to refer at least to several useful standards in this field. The first one is the British Standard 5454 which provides relevant information for storage facilities.<sup>11</sup>

US National Archives and Records Administration adopted a new regulation in this filed in 2002.<sup>12</sup> This transmits a new policy directive establishing the internal NARA structural, environmental control, fire safety, preservation, and security standards for appropriate archival storage conditions in NARA archival facilities. Additional facility specifications that are not directly related to appropriate storage conditions for archival records may be included in supplements to this directive (John W. Carlin, Archivist of the United States).

ISO 11799:2003 specifies the characteristics of general-purpose repositories used for the long-term storage of archival and library materials. It covers the sitting and construction of the building and the installation and equipment to be used. It applies to all archival and library materials held in general-purpose repositories, where mixed media may be stored together. It does not preclude the establishment of separate areas or compartments within individual repositories where the environment can be controlled to create conditions suiting the needs of specific archive materials. It does not cover special requirements for the long-term storage of not or not fully paper-based documents such as parchment or vellum, photographic documents or machine-readable documents. It also does not cover repository management procedures.<sup>13</sup>

Archives and libraries are the same institutions from the point of their needs for quality storage conditions for keeping and long-term preservation of valuable archival and library fonds and collections. Remarkable approach and an extraordinary solution using low-oxygen level atmosphere in new storage facilities of the British Library provides not only fire protection precautions but can considerably reduce the rate of degradation of materials - e.g. paper - by oxidation.

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<sup>10</sup> Acker, O'Connell, *Archives and Record Storage Building*.

<sup>11</sup> *British Standard Institution: BS 5454*.

<sup>12</sup> *National Archives and Records Administration. NARA 1571*.

<sup>13</sup> *ISO 11799:2003*.

The British Library's £26m Additional Storage Building (ASB) at Boston Spa in West Yorkshire was officially opened on December 3, 2009 by Rosie Winterton, MP Minister for Yorkshire and The Humber (Start/Completion 2003-2009). It provides the British Library with additional storage capacity for seven million items from the UK national collection. The fully-automated facility comprises 262 linear km of extra shelf space for the collection which is currently expanding at a rate of 12.5km of linear shelf space per year.

The project is also the first of its kind in the world to incorporate automated storage and retrieval systems, optimum environmental controls, and pioneering low-oxygen fire prevention technology in a single building. Although sprinklers are (usually) the preferred solution for libraries (wet books can be freeze dried), the British Library has adopted a low-oxygen system of fire prevention which sees oxygen levels kept to just 14.8% (fires can only break out if oxygen levels are at 17% and above). To support this, the building is also one of the most air-tight in the UK - the leakage rate specification is not more than 0.5 cubic meter of air per square meter of wall area per hour ( $0.5\text{m}^3/\text{m}^2/\text{hr}$ ). The ASB building will house low-use material including patent specifications, books, serials and newspapers in 144,000 storage containers.

The air conditioning system maintains a controlled, microbe-free climate at a constant temperature of  $16^\circ\text{C}$  (+/- 1%) and constant humidity of 52% (+/- 5%). The storage repository itself features insulated vertical walls with a four hour fire resistance rating and a double-sealed, thermally efficient roof. These collection items form a substantial part of the memory of the nation and since now will be stored in environmental conditions that will ensure their long-term survival.<sup>14</sup>



**Picture 2: The British Library's Additional Storage Building (ASB) at Boston Spa, West Yorkshire**

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<sup>14</sup> [http://www.capitasymonds.co.uk/news\\_\\_events/news/worlds\\_leading\\_library\\_storag.aspx](http://www.capitasymonds.co.uk/news__events/news/worlds_leading_library_storag.aspx).

There are many examples of excellent, functional, well-designed and properly equipped archival buildings all over the world - new and historical ones - which can serve as good examples and patterns for those who intend to build new archives. Among them should be ranked also the buildings of the National Archives in Prague<sup>15</sup> and the Moravian Regional Archive in Brno (completed 2007)<sup>16</sup> both in Czech Republic.



*Picture 3: The Moravian Regional Archives in Brno*



*Picture 4: The National Archives in Prague*

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<sup>15</sup> <http://www.nacr.cz/index.htm>.

<sup>16</sup> <http://www.mza.cz/>.

One of the latest and most significant current projects of archives is the new building of the French National Archives in Pierrefitte-sur-Seine. The corner-stone of the building was laid down by François Fillon, the French Prime Minister and Frédéric Mitterrand, Minister of Culture and Communication.<sup>17</sup>

The two current National Archives centers, located in Paris and in Fontainebleau, both reached saturation point (100 and 200 linear kilometers). To relieve this situation, the French Government decided to build a new centre at Pierrefitte-sur-Seine with a capacity of about 320 linear kilometers which will be open to the public in 2013. A building of huge capacity will have some parameters as follows:

- 320 km of storage capacity (75% of the building) for 4-6 km increasing /year,
- 2.500 m<sup>2</sup> for reading room for 300 readers/day,
- 800 m<sup>2</sup> hall and auditorium,
- 500 m<sup>2</sup> exhibition hall,
- 500 m<sup>2</sup> educational workshop,
- 1.050 m<sup>2</sup> transfer, appraisal, etc.
- Site : 45.000 m<sup>2</sup>, 60.000 m<sup>2</sup> useful areas
- Building size: 163 meters length, 48 meters width, 40 meters height

The building will be equipped with a permanent fire protection system and will use a new automatic fire suppression system: a water mist system with high pressure of 100 bars containing ten times less water than a traditional sprinkler (each droplet is split into 800 particles of diameter of 50 microns).

Special attention is devoted to very rational organization of internal traffic and transport (records and people movement): traffic straight, horizontal and vertical; special attention to the lines of communication with automatic doors operated by remote control badges and careful study of the flows of records through the building.

Climatic conditions for repositories (storage areas of 200 m<sup>2</sup>) are based on thermal inertia which is ensured by the very compact building; external walls are composed of insulation and concrete associated with a waterproof barrier.

Climatic conditions will be based on the control of the air intake and constant air circulation. Conditions of temperature and relative humidity will be maintained within acceptable limits - less strict but highly controlled (for example, simulation of a heat wave type 2003: 21,8°C). Air conditioning will be provided only for special documents (photos, audiovisual, films, etc.).<sup>18</sup>

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<sup>17</sup> <http://www.archivesnationales.culture.gouv.fr/pierrefitte/historique.html>.

<sup>18</sup> Delmas, *A new endeavour for French National Archives*.



*Picture 5: Project of the National Archives of France in Pierrefitte sur Seine*

## CONCLUSION

Archival building is the basic condition for proper functioning of any archives. It provides facilities for long-term storage of archival documents, their preservation and processing, all kinds of necessary treatment and enables and ensures proper and safe access to them. This is a very complex task and therefore also the different requirements for archival building which must be accomplished and fulfilled. It should be kept in mind that archival buildings are usually not uniformed and in most of the cases they are remarkable and significant architectonic constructions.

They are built mostly once in a long period of time - and hardly can be changed as often as computers or many IT systems. Of course, the decisive aspects are needs of respective archival institutions. Despite the diversity of archival buildings there are common principles and rules which should be kept in their construction. This is the reason why close co-operation is unavoidable between archivists, architects, engineers, conservators and all experienced experts who can help already in planning either a new building or reconstruction of adapted premises for archives' purposes. Only through a creative, continuing, respectful and enriching dialogue among all these experts the appropriate solutions can be found for desirable effects and results in this field. This dialogue should not exclude other professionals or users, who may make valuable contributions.

The archivist and the conservator should propose those requirements that they consider necessary for the archive to function correctly and only then will the architect study and propose the best solutions to meet these needs, based on technical appraisal and critical observation and analyses of the experience of other archives.

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