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HOW TO DIGITIZE AND PERMANENTLY PRESERVE THE PLANNING DOCUMENTATION: THE COLLECTION OF PLANS AND THE ARCHITECTURAL DEPARTMENT OF THE MINISTRY OF CONSTRUCTION OF THE KINGDOM OF YUGOSLAVIA (PRECONDITIONS, PRIORITIES, CRITERIA, PRIMARY AND FINAL GOALS AND NEW TECHNOLOGIES)

Đurđija BOROVNJAK
Archives of Yugoslavia, Belgrade, Serbia
borovnjak@arhivyu.rs

Abstract:

Digitization of large format archives, in this case architectural plans, is a great challenge, not only in technical terms due to their dimensions and the nature and sensitivity of the materials, but also because of the choice of digitization equipment. As a problem of particular importance, the harmonization of archival standards is also imposed as necessary as well as the information standards, the creation of valid digital platforms and the standards prescribed in the formation of the content. Based on modern examples of practice, the study will address and explain the improved analogue technology in the form of microfilming, as well as the possibilities that it offers in the field of protection and conservation of urban documentation today in the form of manipulation of the digital record of information with analogue technologies and their mutual relationship. An example of this will be given through the presentation of the Piql program and its role in storing data that strive for authenticity and durability on media that provide the security without the possibility of losing the metadata within the network and energy consumption. The presentation will briefly show the state of analogue technologies in archival practice in Serbia and the perspectives of their future technological improvement.

Key words:

architecture, planning documentation, Architectural Department of the Ministry of Construction of the Kingdom of Yugoslavia, digitization, software example Piql

Izvleček:

Kako digitalizirati in trajno ohraniti projektno dokumentacijo: Zbirka načrtov arhitekturnega oddelka Ministrstva za gradnje Kraljevine Jugoslavije (predpogoji, prioritete, kriteriji, osnovni in končni cilji ter nove tehnologije)

Digitalizacija arhivskega gradiva velikih formatov, v konkretnem primeru arhitekturnih načrtov, predstavlja zaradi dimenzij ter občutljivosti materialov velik izziv ne samo v tehničnem smislu, temveč tudi pri izbiri opreme za digitalizacijo. Potrebno je izpostaviti tudi problem harmonizacije arhivskih standardov s standardi na področju informacijskih tehnologij. Na osnovi modernih primerov iz prakse bo raziskava predstavila izboljšano analogno tehnologijo in možnosti, ki jih ta prinaša na področju varstva in hrambe dokumentacije danes. Gre za mikrofilmanje oz. rokovanje z digitalnimi zapisi z analogno tehnologijo in odnos med njima. Podan bo primer programa Piql

oziroma njegova vloga pri hrambi podatkov, ki ohranja avtentičnost in trajnost na nosilcih, s katerimi je zagotovljena varnost pred izgubo podatkov. Raziskava bo na kratko predstavila stanje glede analognih tehnologij v arhivski praksi v Srbiji in perspektive njihovega prihodnjega razvoja.

Ključne besede:

arhitektura, gradbena dokumentacija, Oddelek za arhitekturo Ministrstva za gradnje Kraljevine Jugoslavije, digitizacija, Piql

1. The Collection of plans and the planning documentation of the Architectural Department of the Ministry of Construction of the Kingdom of Yugoslavia

The architectural department of the Ministry of Construction was the largest design bureau in the Kingdom of Yugoslavia, which gathered the most eminent construction experts. Through its activities and leading construction projects, this state institution directly influenced the architectural and urban development of the Kingdom as a whole, from the development of central cities to the smaller settlements across the country, and contributed to the work of its officials, state architects (Toševa, 1999; Toševa 2018).

The technical documentation of the Architectural Department, with its Collection of Plans, is indispensable in understanding the importance of the development of Serbian architecture of recent times: both in architectural and urban design in the Kingdom of Yugoslavia and the attribution and valorization of fruitful opuses of an entire constellation of builders who paved the way for the development of modern national architecture.

The planning documentation covers the period from 1918 to 1944 and represents an important segment of archival cultural and monumental heritage for this period. The collection of plans includes technical documentation of various types - from situational regulation and leveling plans, bases and sections, detailed exterior and interior architectural finishes, sketches, details and perspective views related to projects intended for supreme state administration facilities, public monumental buildings, school and sacral facilities, hospital and medical buildings, economic and industrial facilities, spa complexes to a significant number of standard projects related to the construction of primary schools, church buildings and parish homes and postal facilities that vividly testify to the great architectural production that existed throughout this young newly created state. It is also an indirect source for supplementing the author's holdings of a work by less researched builders, as well as women architects, who have made a special contribution with their work and design.

It is also diverse in the type of substrate on which the projects were made. For the most part, the Collection contains projects on tracing paper as well as ozalid copies. A number of blueprints are also preserved, and projects have also been made on large-format hammers in the pen and ink technique, whether colored or monochrome. The archival fonds of the Ministry of Construction of the Kingdom of Yugoslavia (62) with the corresponding Collection of Plans is partially arranged and contains a list of archival materials structured by objects. The total planning documentation of the fonds with the Collection of Plans contains about eight thousand architectural plans.

Figure 1: Ministry of Finance of the Kingdom of Yugoslavia, facade detail, ink technique on tracing paper, shaded, 1926 (AJ – 62, Collection of Plans)

Figure 2: Conceptual sketch for the memorial ossuary to the fallen Serbian soldiers at the cemetery in Tirana, Albania, ozalid, colored, 1937 (AJ-62, Collection of Plans)

During 2015, an attempt was made to digitize this planning documentation, when an application was created but did not come to life in its final form. The application was custom made and was to be used exclusively for planning documentation of the Ministry of Construction of the Kingdom of Yugoslavia. It is structured in such a way as to describe and make the Collection of Plans of the Ministry of Construction and other architectural plans of the fonds available. It is designed to provide data on plans and drawings with a digital representation of the plan. Within the application, a search could be performed on various parameters such as the author of the plan, type of object, location, name of the plan... Descriptive, structural metadata has been developed for this purpose. For now, projects are only available as scanned files although scanning is not performed uniformly.

Figure 3: Interface of the Application of the Archives of Yugoslavia for the Collection of Plans of the Ministry of Construction of the Kingdom of Yugoslavia (AJ-64), Archives of Yugoslavia
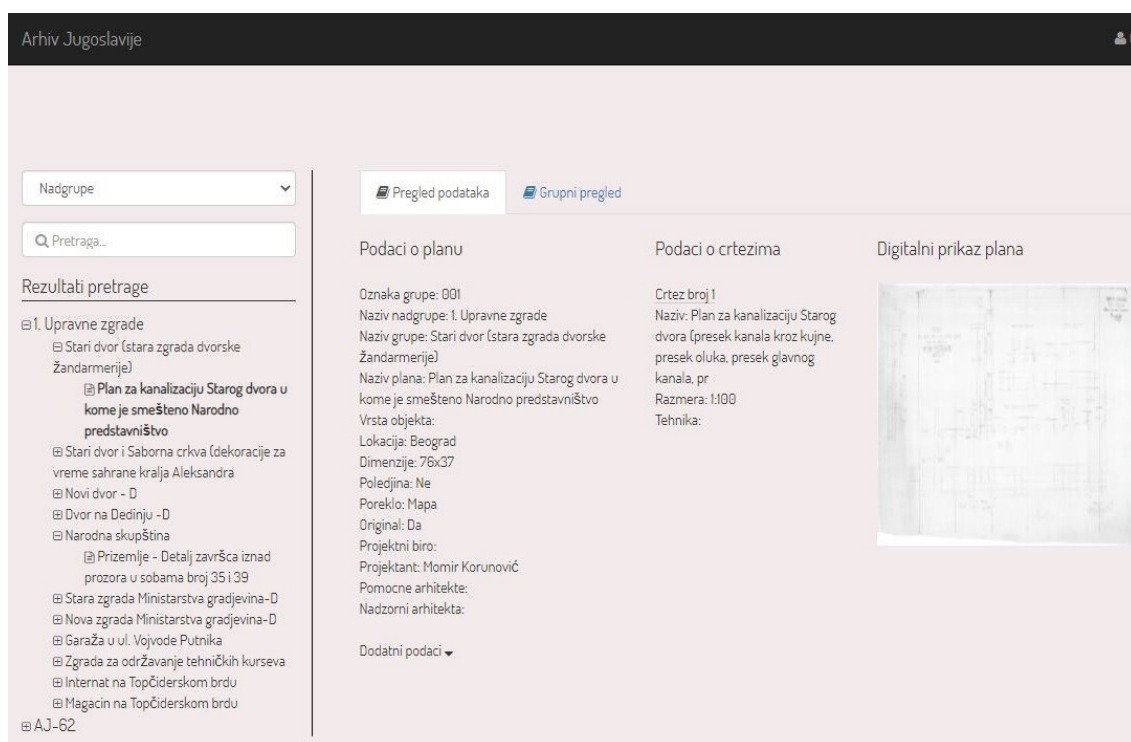
Figure 4: Interface of the Application of the Archives of Yugoslavia for the Collection of Plans of the Ministry of Construction of the Kingdom of Yugoslavia (AJ-64), Archives of Yugoslavia
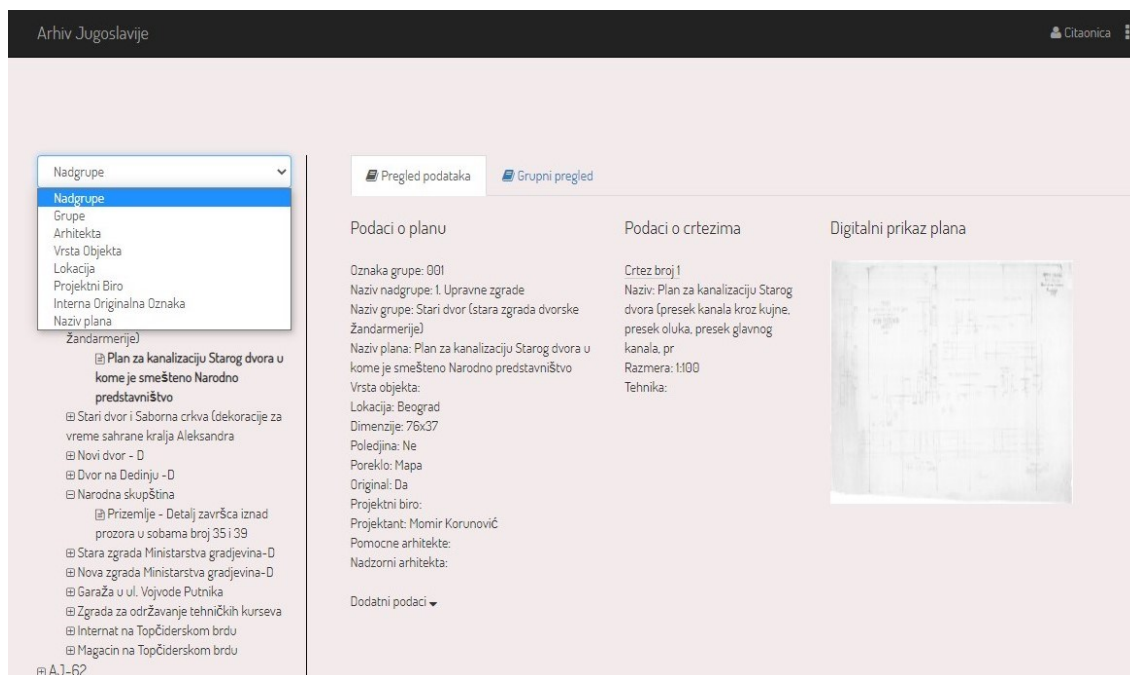
The planning documentation of the Collection is a first-class source for related institutions in the field of protection. It is also authentic and credible material for the academic, scientific and general public, which makes their valid protection and availability unquestionable.

The works of leading builders, collected in the fonds of the Ministry of Construction of the Kingdom of Yugoslavia, were mostly researched and valorized, partly authors whose work has not been processed, but the importance of the planning documentation and its place in the field of archival information standards and valid digital platforms in which it would be stored remained in full. Their fruitful activity remains curtailed if the original projects on which the monumental works of interwar architecture were erected remain unprotected. The Serbian interwar architecture reached its peak under the auspices of this Department, which collects eminent names of domestic architecture and nurtures current stylistic trends, academic and national, whose full affirmation is seen in the construction of capital, profane and sacral buildings in the country.

2. The collection of plans of the Architectural Department of the Ministry of Construction and its consideration within the digital transformation

The collection of plans and planning documentation of the Architectural Department of the Ministry of Construction of the Kingdom of Yugoslavia contains the technical documentation of first-class importance of this central construction institution, which was in charge of building the entire Kingdom. Unequivocally testifying to the professional achievements of the Serbian urban environment and its protagonists of construction, as an imperative imposes both their professional processing and thinking about permanent and improved protection of valorized plans, thus implementing new technologies, whether digital or advanced analog technology, while preserving knowledge about one's own past, becomes essential for its future existence.

Before the digitization process, it is necessary to conserve documents, which is the first step in their further preservation. Since these types of documents are often large in structure, they must not be stored in rolls, tubes or folded in folders. They must be stored developed and placed in special metal cassettes and folders, and stored in controlled climatic conditions. Immediately before the beginning of the procedure of the digital processing of planning documentation, it is necessary to perform their careful unwinding and straightening, which is also done by the competent conservation service. On that occasion, cleaning dirt and possibly mold is done. As, by the nature of their material, such documents are very sensitive (for example, vellum paper is brittle and subject to breaking, improper bending and creasing), they also require special handling. In fact, they should not be available to researchers until they have undergone the complete conservation treatment and idgitization. Otherwise, the valuable information that they carry, in this case the activities of the Architectural Department of the Ministry of Construction of the Kingdom of Yugoslavia and the development of Serbian architecture and urbanism of the interwar period, could be lost forever.

The complex process of digitization actually represents the finest degree of their protection, and the result of their digitization is protected history. The original projects are thus protected permanently and are no longer manipulated except in special cases of public exposure and the digitized material becomes available for further work - for publishing and exhibition activities. Certainly, the goal is digital transformation, which would be indispensable in further daily work and would improve the protection of these documents. Digital transformation of this type of material becomes of primary importance for different types of users: primarily researchers of architectural history, universities and departments of art history and architecture, scientific institutes and also other specialized protection institutions, like the competent institutes for the protection of cultural monuments, which cannot start their basic work of apprisal and renewal on the project of protection of buildings and urban units as well as work on buildings *in situ* without the insight into the original planning documentation kept by archives.

As a precondition for digitization, special equipment for this work process is required. The digitization of large format archives, in this case architectural plans, is a great challenge, primarily in technical terms, because their dimensions mainly include formats larger than A3 to A0 + (over 1500 mm), and of course, less derived formats. They are used primarily due to the nature of the sensitivity of the material, such as flimsy paper, tracing paper, etc. whose structure is by nature very brittle and fragile and must be handled in a special way in order to avoid damage. The choice of the equipment is of particular importance so as to not cause damage. Therefore, the special equipment is crucial for secure digitization. The secondary equipment, in the form of technical protection, such as the use of cotton gloves, is also mandatory, especially on ozalid and

canvas projects, in order to avoid contact, as these materials suffer from high absorption power.

It is necessary to respect the standards of the professional equipment. The financial moment can often be an obstacle in the procurement of such equipment, but state specialized institutions are by nature obliged to preserve cultural property, and presenting plans outside the parent facility is not desirable, as people outside the institutions are often not trained to handle them properly, perhaps without awareness of the importance of the documents themselves. Usually, this will be one of the tasks for them, unless the digitization of appraised documentation is not part of a protection project in which national highly specialized institutions take digitization into their resources and perform protection of this type for related parent institutions according to established digitization standards.[1]

If digitization is prepared and performed in the home institution, the ideal conditions in this phase of planning documentation protection would be the use of professional standard equipment, complete with proper support, lighting (lamps) that do not produce heat and DSLR (Digital Single LensReflex) cameras (with adjustable camera height and color calibration) or the procurement of large format flatbed scanners and possibly suitable desktop scanners for smaller project parts and formats. The formats in which the obtained digital records are stored are uncompressed BMP (bitmap) format, i.e. compressed tiff, a raw file if digital cameras are used, in a resolution of 300 or 600 dpi, with 24-bit color depth with a surrogate in other formats for review and further presentation.

The digitization consists of metadata and it is in them that the key to digitizing large format documents is. The documents become easily accessible and with the help of metadata we can easily reach the required content. The National Information Standards Organization (NISO) defines the metadata as "structured" information that describes, explains, and locates the retrieval and use of an information resource. (Riley, 2017) The metadata are in the function of content, in our case the Collection of Plans of the Ministry of Construction of the Kingdom of Yugoslavia, and with basic concepts must follow the context of the Collection: the name of the object, the project title and scale, the date of creation, designer name, signature. Of the additional terms, they can have the type of material, ie. the background on which the project was made, the technique in which it was made, the dimensions, and the language. The metadata are especially important because they make it easier to access digital resources.

The entire digitization process depends on the quality of metadata, as well as whether and how successful it will be. If you have a control term that you cannot find, you have not done anything. Special attention should be paid to the so-called common metadata, that is, to spelling mistakes, empty fields, bad punctuation, duplication of records, because otherwise the search field remains permanently out of function and use. Finally, if an error is made at the time the metadata is created, the search term will never be found later. Bad metadata thus makes content permanently inaccessible. Good metadata is the basis of digitization. If you have items you can never find it is the same as not having them.

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[1] *A good example in the Republic of Serbia is the work of the newly established Audiovisual Archives and Center for Digitization of SANU (Serbian Academy of Sciences and Arts), which through its digital archives develops and protects the digitized cultural, artistic, scientific and natural heritage of Serbia and the Serbian people.*

Therefore, adhering to the rules of importance of quality metadata and prescribed standards in content design is imposed as an imperative. The metadata are determined initially, at an early stage of the project. For further work, it is necessary to follow the guidelines for processing archival material, design an interface with clearly defined fields to fill in and import relevant indexes and thesauri. Each document should be individually clickable with the option to print, send and share.

It is recommended that computer scientists perform a metadata quality audit, for which they will take the responsibility and decide to what extent the errors observed during the audit can be eliminated in the database *online*. With this in mind, it is desirable to make quarterly or semi-annual samples with records in the software application in order to record and identify errors, bad spelling, identify empty cells on the basis of which documentation is prepared, monitored and updated over time in order to improve the work and quality of the project. It is also importat to monitor changes in work guidelines in parallel adn be up to date with new instructions and their practical application.

3. Possible potential considerations

3.1 Piql as a hybrid of digital-to-analog technology and the advent of analog computing

Today, specialized institutions that preserve cultural heritage, such as museums, archives, libraries and institutes for the protection of cultural monuments, are increasingly turning to digital technology and its application to digital heritage preservation. It is increasingly used to describe, protect and present their artifacts, archives and library materials through a series of digital projects aimed at a digital transformation of institutions that want to preserve the cultural treasures they possess. At the heart of archives lies the information as its most important resource and that is why archives are increasingly being talked about as institutions dealing with information and archiving is increasingly becoming a science of the same, abandoning its main activity that it had in the past, and that is to be an auxiliary historical science where historians have given pace, model and significance to the fonds' units that carry that information.

In the Republic of Serbia at the beginning of the 1990's, the development of archival science as an information science has in fact stopped considerably. With the introduction of new technologies and the technological development of the fourth digital revolution in archival institutions one stage was skipped to answer the extent to which analog technology has yielded results, as well as to what extent, and whether analog technology can be improved and become an equal competitor to digital technology in the archival profession and practice.

We will try to point out the advantages and disadvantages of both technologies, precisely on the example of architectural plans which, with their complex structure, with their format and type of material, open the field of valid protection and its implementation in the future without significant and unforeseen costs and losses in information, especially the metadata. To the archivists is also given the task of a very complex reflection on how software and certain software tools were developed in their initial stages, because in the future we may be left without all this information if we keep in mind that the digital technology is changing rapidly, giving way to new solutions, not caring much about the information that is lost on that occasion. We have a fact for this claim at every step, starting with the example of a floppy disk that can rarely be opened or read by a computer today. Flash memory has already replaced CD/DVD roms and flash memory is greatly suppressed by cloud storage. It is clear that in the field of storage of digitized material, one big problem opens up in the future. Namely, if only one plan of

larger dimensions is saved in the resolution of 600dpi, with 24-bit color depth, it will take up to 100 Mb of data on the selected platform, thus entering a vicious circle into which we are so skillfully drawn by advanced digital technology.[2]

The importance and complex process of digitization of documents and their future protection in this field is very clear to Leslie Johnston (2020), Director of Digital Conservation and Protection at the US National Archives (NARA), who in her text *Challenges in preservation and archiving digital materials*, opens questions that unequivocally indicate that the basic meaning of a digitized collection is actually its context that must be monitored, as well as any change that must be recorded, which implies the origin of files (and digital objects within them), their layout and structure should show the metadata on material preservation and the descriptive metadata. It also raises two key questions that are not only technical but also ethical in the approach to the profession, and that is how we will serve the community in the future, because if collections are not made available in the future, they are not stored, and the most important segment of the whole process is that we today cannot really know how communities will use those collections and compilations that we have digitized today.

Therefore, in the field of protection, there is an increasing preference for advanced analog technology over digital. In such a reflection, one model stood out, that is, the process, which opens the eternal question and that is whether it is worth to especially improve analog technology in the archival profession? The Piql program is one such response where analog and digital technologies have merged into one hybrid technology that aims to preserve information for as long as possible. As the process of digitization is accelerating in the world, information is becoming increasingly difficult to store in the long run, the data centers are consuming more and more energy for their storage and warehousing, and monetary expenditures are significantly increasing.

The data centers, which store more and more informations, thus generate high consumption of electricity and other types of energy on which the stability and sustainability of the entire system depends. In the field of archiving, the Republic of Serbia still does not have an elaborated plan on how and in what way to store its information, and only depositing information in data centers will not solve the problem in long term. Some countries that have made great progress in the IT sector, such as the Republic of Ireland, also face serious energy risks.[3] The analog technology, which was thought to have been rejected in archiving, especially in the field of processing, storage and preservation of the data and information for archives and archival institutions, is gaining more and more importance. Here we mean the advanced analog technology which, with the help of new data processing tools, is gaining more and more in competitiveness in relation to the binary digital system. An example of this claim is a company from Austin (Texas) called MYTHIC, which specializes in the development of "high-end analog processors based on analog memory computing.[4] For the analogue technology, this is a revolutionary advance as it was considered that it could not be significantly improved to match digital technology, especially since it was considered that the digital signal bandwidth is smaller and therefore more compact for information transmission, whereby analog technology had noise and interference in the transmission of information, which excluded it as a valid competitor. The archivists are aware of the

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[2]   *Such, although small collections or compilations, can take up several terabytes of data. For larger collections, the files must be compressed, which initially loses their authenticity and credibility.*

[3]   *Ireland has over 70 data centers that use over 900 megawatts of electricity, which is estimated in individual reports that this is over 11% of the total electricity consumption in the entire country of Ireland, which is already seriously threatening its energy potential.More Andrew (2021).*

[4]   *See more about this: https://mythic.ai/company.*

fact that the archival material, whether on paperor in electronic form in the form of e-records, digitization, digitalization and finally digital transformation, by mere storage on certain platforms takes up more and more memory and energy, which proportionally affects the material cost of its storage, protection and transmission of such information. The analog technology and its improvement, especially in the field of conservation and protection of archives, can offer good and optimal solutions about which archivists and the science of archiving primarily as a science of information can give some of its own considerations.

Figure 5: Analog mother processor that delivers analog computing for artificial intelligence that is comparable to a digital device with precision and power, MYTHIC, Austin, Texas, 2012, (https://mythic.ai/)

In the Republic of Serbia, the analog technology in the form of protection and archival data storage has not been abandoned. There are numerous examples where archives, as institutions that protect and preserve their holdings, continue to microfilm their documents, giving them an advantage over digitization, that is, digitalization. An example of good practice is the Inter-Municipal Historical Archives in Čačak, which received new microfilming equipment. (Mladenović, 2020). Although most archival institutions in the Republic of Serbia have not abandoned the option of microfilming archival holdings, there is a lot of room in this field to improve microfilm as an analog technology and become competitive with digital in the field of speed and savings.

3.2 Piql as a possibility of long-term preservation of digital information offline and with minimum energy consumption

The preserving of information is becoming an increasing challenge for institutions, companies, cultural institutions and individuals. Piql is a Norwegian company that has offered a completely new approach to digital information protection on the market. It uses hybrid technology, and can store both digital and analog data. The goal of the program is to enable the preservation of the authenticity and credibility of the information.

Figure 6: Arctic North: the location of the Arctic World Archives (Artic World Archive, AWA) (https://arcticworldarchive.org/)

Figure 7: Entrance to the Arctic World Archives (Artic World Archive, AWA) (https://arcticworldarchive.org/)

The data storage itself takes place in the Artic World Archive (AWA), located in the Norwegian archipelago of Svalbard, between Norway and Greenland, 965 km south of the North Pole. Deep in the ground, below 300 meters of surface, in an old and abandoned coalmine, the metadata of the data stored in this way are protected from any atmospheric changes. In the current era of green conservation progress, this archive is also considered green because it can store large amounts of data without consuming electricity and maintenance. (Sablinski 2021) The process is based on storing digital data on photosensitive polyester film, creating a secure solution for long-term preservation without data migration. Piql uses a high-precision industrial data-recording device "piqlWritter" by dividing digital binary code files into QR codes. Piql has open source software and all the necessary informations to decode the data will be available to users in the future. The source code is stored on a polyester film (35mm) which represents the physical media, i.e. the analog medium on which the digital record is written.[5]

Figure 8: Entrance to the Artic World Archive (AWA), a former coalmine, Svalbard Geopolitically secure archive in the demilitarized zone of 42 nations - the safest place in the world for data storage that guarantees 1000 years of preservation (https://arcticworldarchive.org/)

Figure 9: Artic World Archive (AWA) - security vault Depot where Piql films are stored (https://arcticworldarchive.org/)

The first deposits in this former Norwegian coalmine, deep underground, were made by the national archives of Brazil and Mexico in 2017. Soon after, several institutions from fifteen different countries, including the Vatican Library, the National Museum of Norway, GitHab, and many others, stored their valuable data, works of art, artifacts and manuscripts. Today, the World Art Archive preserves valuable manuscripts of the Vatican Library, manuscripts of political history, the UNICEF Convention on the Rights of the Child, GitHub source code repositories, the Alinari collection, and masterpieces from various eras, including Rembrandt and Munch.[6]

Figure 10: Depositing world memory in the Arctic World Archives (Artic World Archive, AWA) (https://arcticworldarchive.org/)

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[6]   *See more at: https://arcticworldarchive.org/memories/.*

Such technology would be an optimal solution for already digitized material, especially valuable architectural plans and planning documentation, which due to its large formats, complexity of the digitization process and taking up memory space for protection institutions is a great challenge in the future. Constantly upgrading and preserving their credibility, as well as the authenticity of metadata due to migration to new platforms, requires quite large financial investments. The possibility of preserving such stored archives and important documents of world heritage for 1000 years, as offered by the Piql program, is a fact that speaks for itself. The archives, as carriers of information, and institutions that must take care of archival material that is in an electronic form, that is in electronic form, or in a record, but also on a hard surface, whether it is written on paper, magnetic tape or some other medium, must go to the solution as and how to protect and preserve its valuable material for generations to come. Today, the most important thing is to start the processes, even if there were mistakes in that procedure, because that is the only way we will reach the most optimal solutions, how and in what way to successfully evaluate and preserve our most valuable documents.

4.   Conclusion

As archivists, today we have to think about the directions of how and in what way we can preserve the valuable archival material we possess in the future. In this case, the example is the digitization of the Collection of Plans of the Ministry of Construction of the Kingdom of Yugoslavia.

The digital breakthrough has not provided all the answers in the field of storage and long-term storage. The Pickle program may be the answer to this topic, although we should not neglect or forget analog technology, which we must improve, since the tools for its refinement are easily available today, as shown by the Mythic program, which improves artificial intelligence with analog cars and not binary or digital.

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POVZETEK

KAKO DIGITALIZIRATI IN TRAJNO OHRANITI PROJEKTNO DOKUMENTACIJO: ZBIRKA NAČRTOV ARHITEKTURNEGA ODDELKA MINISTRSTVA ZA GRADNJE KRALJEVINE JUGOSLAVIJE (PREDPOGOJI, PRIORITETE, KRITERIJI, OSNOVNI IN KONČNI CILJI TER NOVE TEHNOLOGIJE)

Đurđija BOROVNJAK
Arhiv Jugoslavije, Beograd, Srbija
borovnjak@arhivyu.rs

Digitalizacija arhivskega gradiva velikih formatov, v konkretnem primeru arhitekturnih načrtov, predstavlja zaradi dimenzij ter občutljivosti materialov velik izziv ne samo v tehničnem smislu, temveč tudi pri izbiri opreme za digitalizacijo. Potrebno je izpostaviti tudi problem harmonizacije arhivskih standardov s standardi na področju informacijskih tehnologij.

Sodobni primeri iz prakse se navezujejo na napredno analogno tehnologijo v obliki mikrofilmanja in možnosti obdelave digitalnih informacij z analogno tehnologijo na področju zaščite in varovanja gradbene dokumentacije. Takšno zasnovo predstavlja program Piql, ki omogoča hrambo podatkov s poudarkom na avtentičnosti in trajnosti na takšnem mediju, ki zagotavlja varnost brez nevarnosti izgube metapodatkov in velike porabe energije.

Zbirka načrtov in gradbene dokumentacije Arhitekturnega oddelka Ministrstva za gradnje Kraljevine Jugoslavije vsebuje tehnično dokumentacijo ustanove, ki je bila zadolžena za izgradnjo v celotni kraljevini. Nedvomno priča o strokovnih dosežkih v srbskem urbanem okolju in protagonistih gradenj, zato je potrebno pri zaščiti gradiva razmišljati o trajni in izboljšani hrambi ter uvajati nove tehnologije, tako digitalne kot napredne analogne.

Zbirka vsebuje tehnično dokumentacijo različnih tipov, od situacijskih regulativ in izravnalnih načrtov, baz in sekcij do podrobnih zunanjih in notranjih arhitekturnih zaključkov, skic, perspektiv in ostalih dokumentov, povezanih s stavbami najvišje državne uprave ter javnih spomenikov. Zbirka vsebuje okoli 8.000 arhitekturnih načrtov na različnih medijih in v različnih tehnikah.

Digitalna zaščita teh dokumentov je pomembna za njihov nadaljnji obstoj, kar pomeni, da je digitalna pretvorba nepogrešljiva za nadaljnje dnevno delo.

Ključna vprašanja niso samo tehnična, ampak tudi strokovno etična, kajti če zbirke v prihodnje ne bodo dosegljive, je to enako, kot da ne bi bile ohranjene. Hkrati se pojavijo vprašanja o hrambi digitalizatov in njihovi predstavitvi. Napredne analogne tehnologije imajo v primerjavi z digitalnimi več prednosti – program Piql predstavlja hibridno tehnologijo, ki zagotavlja ohranjanje informacij, kolikor dolgo je to mogoče. Analogna tehnologija in njene izboljšave ponujajo dobre in optimalne rešitve. Piql ponuja izvrstno opremo za zajem, tj. »piqlWritter«, ki digitalne binarne kode spreminja v QR-kode. Prav tako ponuja odprtokodno programsko opremo in vse relevantne informacije za dekodiranje podatkov, ki jih potrebujejo uporabniki. Izorna koda je shranjena na poliestrskem filmu (35 mm), ki predstavlja fizični medij, tj. analogni medij, na katerem je zapisan digitalen zapis.

Takšna tehnologija je lahko oprimalna rešitev za že digitalizirano gradivo, še posebej pomembne arhitekturne načrte in gradbeno dokumentacijo, ki zaradi velikih formatov ter kompleksnosti procesa digitalizacije zavzemajo veliko prostora in predstavljajo ustanovam za varstvo dediščine velik izziv. Nenehno nadgrajevanje in ohranjanje njihove istovetnosti ter avtentičnosti metapodatkov zahteva velika finančna vlaganja.