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Editorial

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Sodobne družbe so kompleksni sistemi, ki vključujejo tudi osebe s posebnimi potrebami. Različni načini doživljanja arheologije, preteklosti in dediščine so kontekstualne narave, ker jih lahko vsi različno vrednotimo, dojemamo in razumemo. Zato je tudi upravljanje in varstvo arheološke dediščine danes nepredstavljivo brez aktivnega sodelovanja javnosti v celoti. Časi, ko je bila arheologija disciplina razumljiva in dostopna samo ozkemu akademskemu krogu, so preteklost. Po drugi strani, pa je ti. *inkluzivna arheologija* precej nov arheološki pristop, ki se, za razliko od arheologije za javnost, osredotoča na specifične skupine ljudi in jih obravnava individualno, ter omogoča da v celoti izkusijo in doživijo svojo preteklost.

Premisa dosegljive in/ali dostopne arheološke dediščine je v zadnjih nekaj letih močno povečala prepoznavnost vprašanj vključevanja oseb s posebnimi potrebami. To je posledično pripeljalo do množice projektov, ki zajemajo širok spekter dejavnosti in ustvarjajo nove smernice v arheologiji. V tem kontekstu je bil osmišljen in izpeljan tudi mednarodni visokošolski projekt ERASMUS+ *Accessible and Digitalized Cultural Heritage for Persons with Disabilities / Dosegljiva in digitalizirana kulturna dediščina za osebe s posebnimi potrebami* (AD HOC 92019-1-MK-01-KA203-060269), ki je vključeval partnerje iz Severne Makedonije (Univerza Sv. Cirila in Metoda, Filozofska fakulteta, Skopje), Grčije (Artifactory, Chios), Italije (Univerza Tor Vergata v Rimu) in Slovenije (Univerza na Primorskem,

Fakulteta za humanistične študije) (https://adhoc.ireason.mk/). Namen tega projekta je bil ustvariti strateško partnerstvo na področju visokega šolstva z ciljem ustvarjanja inovativnih praks pri digitalizaciji arheološke dediščine in njeni dostopnosti za osebe s posebnimi potrebami. Z drugimi besedami, projekt je bil usmerjen na približanje arheološke dediščine ne samo širši javnosti, temveč specifičnim skupinam ljudi s posebnimi potrebami (osebe z okvarami vida ali sluha in motnjami v duševnem razvoju) z digitalizacijo te dediščine v formatih, ki so dostopni vsem in s tem omogočajo spletno učenje, učenje na daljavo ter vseživljenjsko učenje.

V okviru projekta je bila aprila 2022, v organizaciji Fakultete za humanistične študije in Oddelka za arheologijo in dediščino izpeljana mednarodna konferenca *Accessible and Digitalized Cultural Heritage for Persons with Disabilities – Ad HoC* katere so se udeležili vsi partnerji in povabljeni predavatelji. Izbrani prispevki kolegov iz Severne Makedonije, Grčije, Italije, Hrvaške in Slovenije pa so zbrani v tej tematski številki revije *Studia universitatis hereditati (10/2)*, ki je pred nami.

Pričujoča številka je zbir sedmih razprav, razporejenih v dva sklopa. Najprej so uvrščeni prispevki teoretičnih razprav, nato pa sledijo članki predstavitev primerov iz specifičnih področji dostopnosti in/ali digitalizacije arheološke dediščine dosegljive v muzejih, na najdiščih, oziroma predstavitve zaradi različnih okoliščin popolnoma nedostopne arheološke dediščine.

Prvo razpravo, *Uporaba interpretativne enačbe za omogočanje kulturnih izkušenj za občinstvo s posebnimi potrebami v digitalnem okolju,* sta pripravila Dorotha Papathanasiou in Aldo Di Russo (Artifactory, Grčija). Predstavljata vlogo in vrednote multimedijsko podprte digitalne pripovedi in digitalne izkušnje, ki ne uresničujejo le kulturnih odkritij na mestih, v muzejih in zbirkah, temveč izpolnjujejo izobraževalne cilje in mentalno usposabljanje ter obiskovalcem s posebnimi potrebami omogočajo interakcijo s (ponovno) predstavljeno dediščino.

Sledi prispevek, ki je prav tako osredotočen na rabo in izkoriščanje novih tehnologij v kontekstu univerzalnega oblikovanja v učenju, naslova *Univerzalno oblikovanje in kulturna dediščina.* Aleksandra Karovska Ristovska in Nikola Minov z Univerze Sv. Cirila in Metoda v Skopju predstavljata možnosti in dosežke interoperabilne digitalne spletne platforme, razvite v okviru projekta *Accessible and Digitalized Cultural Heritage for Persons with Disabilites.* Slednja, ki predlaga vključevanje in razširitev načinov predstavljanja, več načinov izražanja in vrsto interakcij za angažiranje, omogoča osebam s posebnimi potrebami zaznavno dostopnost inkluzivnem učenju arheologije, arheološke in kulturne dediščine.

Tretji članek prvega sklopa, *Kaj zares želite?,* podpisujeta Boris Kavur in Martina Blečić Kavur z Univerze na Primorskem. Prispevek nagovarja avtentičnosti arheološke dediščine in novih perspektiv njene predstavitve, ki z uporabo IKT naprav, širijo vidik dediščinskega turizma in ga selijo v svet virtualne resničnosti. Zaključita kako se s tem omogoča, pri obravnavi o vključevanju oseb s posebnimi potrebami, premik od razprave o minoriziranih identitetah k skupni izkušnji, hkrati pa se zmanjšajo razlike med zmožnostmi potrošnje med različnimi člani sodobne in kompleksne družbe.

Drugi sklop prispevkov odpira članek *Muzejska dostopnost: razvoj dobre prakse za promocijo arheološke dediščine* v soavtorstvu Zrinke Mileusnić (Univerze na Primorskem) in Aleksandre Bugar (Muzej grada Zagreba). Na primeru do-sedanjih aktivnosti Mestnega muzeja Zagreb, ki ima dolgo zgodovino dela z obiskovalci s posebnimi potrebami in je prejel oznako COME-IN, razpravljata o pomenu in dostopnosti arheološke dediščine vsem tipom muzejskih obiskovalcev. Poudarek je na skupnem principu vzajemnega učenja, ki uvaja vse več različnih prilagoditev v muzeje za vse obiskovalce, obenem pa rednim obiskovalcem omogoča, da se seznanijo z inkluzijo.

Iz muzejsko dostopne arheološke dediščine, nas naslednji članek privede do popolnoma nedostopne arheološke dediščine, oziroma do možnosti sodobnega načina njene prezentacije na primeru grobnice v Ohridu. Ivan Malezanov iz Nacionalnega zavoda za varstvo kulturnih spomenikov in muzeja v Ohridu in Martina Blečić Kavur z Univerze na Primorskem, predstavljata izdelavo digitalne dokumentacije za virtualno rekonstrukcijo, vizualno restavracijo in 3D model zgodovinsko zelo pomembne grobnice makedonskega tipa. S tem nam predstavita kako se lahko popolnoma izoliranem najdišču omogoči *vizualni dostop* v okvirju dediščinskega turizma in/ali inkluzivne arheologije.

Naslednji članek *Rimski tempelj – heroon iz Gramadja, Barovo – Demir Kapija* je tudi primer iz prakse. Viktor Lilchik Adamsen, Antonio Jakimovski in Marjan Jovanov z Univerze Sv. Cirila in Metoda v Skopju, predstavljajo rezultate arheološke raziskave templja – *heroona* iz rimskega obdobja, izdelave tridimenzionalne digitalne rekonstrukcije, vizualne restavracije in 3D modela templja, oziroma njegove uporabe v različnih izobraževalnih dejavnostih za občinstvo s posebnimi potrebami.

Številko zaključuje obsežen članek Katharine Zanier z Univerze v Ljubljani, ki v soavtorstvu s Tajdo Senica in Nejcem Dolinarjem iz Zavoda za varstvo kulturne dediščine Slovenije, obravnava prezentacijo in interpretacijo arheoloških najdišč glede na njihovo entiteto, stanje ohranjenosti in potencialne možnosti razvoja ter širši dostopnosti najdišč v konceptu trajnosti in inkluzije. Predstavljeni so različni predlogi prezentacije in interpretacije arheoloških najdi-

šč za obiskovalce z vidnimi in z nevidnimi oviranostmi v namen zagotavljanja čim širše inkluzije in kvalitetne interpretacije arheološke dediščine.

Razprave v tej tematski številki predstavljajo le del potencialov arheološke dediščine z vidika širjenja sposobnosti njene interpretacije, možnosti prilagajanja in dinamike angažiranja z namenom večje interaktivnosti in s tem celovitejšega vključevanja. Od teoretičnih okvirov in novih platform, ki se uresničujejo z vsakim novim projektom, do konkretnih primerov na dostopnih ali nedostopnih najdiščih, muzejskih zbirk ali razstav, pa vse do virtualne resničnosti, inkluzivna arheologija zavzema vse pomembnejše mesto pri vrednotenju, dojemanju in razumevanju preteklosti, odražajoč našo sedanjost, *kakor zgoraj, tako spodaj* in *kakor zunaj, tako znotraj*.

Želimo vam prijetno branje!

Applying the Interpretive Equation to facilitating cultural experiences for audiences with special needs in the digital environment
Uporaba interpretativne enačbe za omogočanje kulturnih izkušenj za občinstvo s posebnimi potrebami v digitalnem okolju

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Abstract

The ERASMUS+ Higher Education Project AD HOC (92019-1-MK01-KA203-060269) introduced a new cultural heritage infrastructure for audiences with special needs. The main aim is to make accessible places of cultural significance by facilitating cognitive-emotional experiences in the digital domain. A cognitive driven communication pattern has been developed and adapted to the conditions regulating learning in the informal environment. The pattern employs storytelling to decongest working memory from irrelevant cognitive loads, enabling new cognitive content to relate to prior knowledge. A mixed methodology has been applied merging the principles of hermeneutics, human cognitive architecture, instructional design and digital storytelling to effectively address the needs of audiences with special needs.

Keywords: hermeneutics, human cognitive architecture, audiences with special needs, heritage interpretation, digital storytelling

Izvleček

Visokošolski projekt ERASMUS+ AD HOC (92019-1-MK01-KA203-060269) je uvedel novo infrastrukturo kulturne dediščine za občinstvo s posebnimi potrebami. Glavni cilj je bil narediti dostopne kraje kulturnega pomena s spodbujanjem kognitivno-čustvenih izkušenj v digitalni domeni. Razvit je bil kognitivno usmerjen komunikacijski vzorec prilagojen razmeram, ki urejajo učenje v neformalnem okolju. Vzorec uporablja pripovedovanje zgodb za razbremenitev delovnega spomina pred nepomembnimi kognitivnimi obremenitvami, kar omogoča, da se nova kognitivna vsebina poveže s predhodnim znanjem. Uporabljena je bila mešana metodologija, ki združuje načela hermenevtike, človeške kognitivne arhitekture, zasnove poučevanja in digitalnega pripovedovanja zgodb za učinkovito obravnavanje potreb občinstva s posebnimi potrebami.

Ključne besede: hermenevtika, človekova kognitivna arhitektura, osebe s posebnimi potrebami, interpretacija dediščine, digitalno pripovedovanje zgodb

Introduction

In the common perception, objects that have survived the flow of history are linked to the past. However, not everyone is aware of the influence they exert. Whether they are objects, myths, stories, values or beliefs, it is society that makes them understandable and interpretable. Culture exists if it is contextualized, meaning that the focus of any interpretation should be on

the community that has created the object, the story and the legend. In order to be appreciated every artefact that has survived its time must return to being a "making" rather than a "made". In this sense, the new digital media must be able to articulate themselves in a language of their own and not be colonized from the non-digital form, merely becoming tools for dissemination. It is not about spreading already constructed interpretations, or artefacts separated from their historical context, but about providing, in the most capillary way, the tools to interpret their life *at the time of their life* considering the complexity of the relationships that exist in a society with respect to the very representation that art has created.

Despite the fact that 84% of the EU citizens declare cultural heritage as personally important and 90% important for their country, much too often the possibility for the (co) creation of a participatory cultural space with cognitive-emotional access to the values of heritage, that promotes self-reflective and critical thinking, remains unattended from the supply side, e.g., cultural heritage agencies and institutions. Even less opportunities exist for audiences with visual, auditory and intellectual impairments: due to a range of limitations, these publics are a less attractive audience for the cultural sector (Pasikowska-Schnass 2019; Matos et al. 2015). Thus, it is important to adopt a pedagogically effective solution that may motivate audiences with special needs to engage in a *learning in disguise* process. In this vein, the ongoing ADHOC project "Accessible and Digitalized Cultural Heritage for Persons with Disabilities" builds a first attempt to create and share innovative practices in making cultural heritage accessible and enjoyable through the development of a *Cultural Narrative* supported with audio-visual media to audiences with special needs.

Literature review

The ICOMOS Ename Charter on Interpretation of Cultural Heritage Sites defines the basic objectives and principles of interpretation in re-

lation to authenticity, intellectual integrity, social responsibility, and respect for cultural significance and context. According to Silberman "the constellation of communicative techniques that attempt to convey the public values, significance and meanings of a heritage site, object or tradition – is central to understanding the wider characteristics of heritage itself" (Silberman 2013, 21). Since Tilden's seminal book on interpretation, there is a consensus among scholars that the latter reveals meanings and relationships rather than providing mere data and unrelated facts (Tilden 1957; Uzzell 1989; Moscardo 1996; 1998; Ham 1999; Babić, Papathanasiou and Vasile 2014). However, despite the fact that the philosophical term interpretation is defining the concept, the value and the process of understanding, little attention has been given to the history and development of interpretation, a fact that is making the Tildenian monologue seem problematic in the era of the creative crowds. *Interpretation* is the Latin equivalent of the ancient Greek word ἑρμηνεία as introduced by Aristotle in the Book of Organon, where the categories of human perception are defined as a human phenomenon (Knowlton 1999, 123–124; Μανδηλαράς 1994; Whitaker 1996). The Aristotelian logical grammar analyses language and speech, rejecting any expression that cannot be verified as true. This leads to the fact that hermeneutics are governed by cognition and not by "understanding". The Greek term ἑρμηνεύειν signifies the notions of expressing oneself, analysing language and other facts and translate, making hermeneutics is also the art of analysis, interpretation, technique to perception. Between 1500 and 1800 was developed the notion of the hermeneutical spiral e.g., the relationship between the ensemble of the meaning and the meaning of its parts, defining each other (Grondin 2001). In the 19th century with Schleiermacher and Dilthey hermeneutics, emerge as a reinforcement of human historicity in the secular world, as the factor of analysing conditions of human expressing, such as language and art within the human horizon. To understand and perceive,

means to (re-) cognize, to distinguish a notion or a meaning from the explanation, this is the means that enlightens the reasons through the relationship of cause and effect (Vedder 2000). In the 20th century Heidegger and Gadamer define the hermeneutical spiral on the basis of the relationship of partial and holistic components of a creation e.g., text, expression, work of art. Gadamer introduces the concept of the holistic understanding (Verstehensganzheit/Sinnhorizont) of a creation, the historic horizon, which includes also the analysis (Gadamer 1990, 493). In order for a creation to be understood, the interpreter has to pre-understand the connections, interdependencies and cohesion of the parts, within any creation lies. In order to understand the cohesion and interdependencies of a given work of art one should have perceived first the relationships among their parts, the factors defining the ensemble (Momente). In Heidegger and Gadamer, the hermeneutic spiral consists in the relation between the concrete partial interpretation of something and the totality of understanding (the horizon of meaning) in which the interpretation is always already located. Heidegger demonstrates the fundamental spiral structure of understanding, where understanding belongs to the existential constitution of human existence (*Dasein)*, which is always an understanding being-in-the-world (Skolud 2008). Gadamer ties the hermeneutic spiral to the positive and productive prejudice, preconception. The understanding of meaning (*Sinn*) with the living and the understanding of meaning of the past are integrated into a history of effects that encompasses both the life and cognitive horizon of the one who understands and the object's horizon. Therefore, they have their starting point in judgments and opinions shaped by the history of effects already implying prejudices and preconceptions, so that every interpretation includes the distinctive appropriation of one's own prejudices and preconceptions. Understanding interpretation takes place only through factual examination of the prejudices as preconceptions and their modification, deepening and revi-

sion. Thus, only in the light of a pre-understanding (pre-conceptions and prejudices) we do gain new experiences and insights that change the individual horizon. In essence, Gadamer is interested in what he calls "hermeneutic experience", i.e., multiple possibilities of the hermeneutic experience of truth, not only in the pure upper field of philosophy, but also in the field of historical sciences and, above all, of art (Δημητρακόπουλος 2001; Bricker 2020, 1). Follow Gadamer, we regard the condition between *perception and understanding*, as two different components: we relate *perception* to the neuro-physiological ability to perceive without social meaning, while we regard *understanding* as imbued with social meaning, prejudices, prior knowledge and potential insights. To defeat time-distance decay, e.g., to offer contemporary visitors the chance to understand the remote past, we apply hermeneutics not as method for understanding but an attempt to clarify the conditions in which understanding takes place. Among these conditions are, crucially, prejudices and fore-meanings in the mind of the interpreter. Understanding is therefore interpretation, which uses one's own preconceptions so that the meaning of the object can really be made to speak to us. One of the main problems is with is how to distinguish 'true prejudices', by which we understand, from the "false" ones, by which we misunderstand. Gadamer suggests as a solution to develop a "historical" self-awareness which makes conscious one's own prejudices and allows one to isolate and evaluate an object on its own. Another important condition in which understanding takes place is temporal distance. For Gadamer, present and past are firmly connected and the past is not something that has to be painfully regained in each present, if the interpreter has the tool to decode it. We argue that visitors exploring heritage are linked in the same fashion with pre-understanding and prejudice as Gadamer defines these terms. Not being able to decode cultural content has a proven consequence for the aspect of the heritage engagement: meaning fusion and misunderstanding (Horizontverschmelzung).

Appreciating heritage becomes more complex when dealing with special audiences. According to the European Blind Union, 30.000,000 visually impaired individuals and 4.4 million adults with a disabling hearing loss live in the EU and these audiences are often excluded from experiencing arts and culture due to the barrier's society places on them (EBU 2022a, EBU 2022b, hear-it 2022). Disabled people still face preventable barriers in accessing arts and cultural events, including transportation issues, price of tickets, lack of information and support at venues. People with disabilities can face particular barriers owing to the inaccessibility of cultural premises, venues or content. People in wheelchairs cannot attend a concert if the only way into the hall is the staircase; blind people cannot appreciate exhibits in a museum if there are no descriptions in accessible audio or electronic format or in Braille print; and a deaf person cannot enjoy a film in a cinema if there is no subtitling or sign language interpretation. According to the last Eurostat survey conducted in 2011, one in seven people between the ages of 15 and 64 has difficulties with basic activities, such as walking (4.2 % of women, 3.4 % of men), seeing (2.1 % of women, 1.8 % of men) or hearing (1 % of women, 1.3 % of men and just 1 %-5 % of literature is accessible to blind and visually impaired people (Pasikowska-Schnass 2019, 2). These three categories (blind and partially sighted people (estimated at 30 million); wheelchair users (estimated at 5 million) and deaf people (750 000 sign-language users according to the European Union of the Deaf) constitute almost half the whole population of people with disabilities. In sum, the cultural needs of audiences with special needs are often considered separately from other groups of people and often after organizations launch their events to the public (Shape Institute 2013). The European Blind Union (EBU) conducted a survey on access to culture in 2012: the results revealed that people with visual disabilities have poor access to culture and that little had been done across the EU to facilitate museum access for the blind, partially-sighted, deaf or hard of hearing, or for

people with learning difficulties (EBU 2012, 16; EFHU 2010). The barriers aforementioned persist even though the EU is signatory to the UN Convention on the Rights of People with Disabilities in force since 2011, according to which the EU shall ensure the implementation of all rights for all people with disabilities through the adoption of new legislation, policies and programmers and the review of existing ones (United Nations 2022). Article 30 enshrines the right of people with special needs to participate in cultural life and have access to cultural materials in accessible formats, AV productions and services, as well as performances, films, theatre and other cultural activities in accessible formats; as well as libraries and tourism services. Article 30 encourages signatories to take all appropriate measures to ensure that persons with disabilities enjoy a) access to cultural materials in accessible formats; b) TV programmes, films, theatre and other cultural activities, in accessible formats and c) access places for cultural performances or services, such as theatres, museums, cinemas, libraries and tourism services, and, as far as possible, enjoy access to monuments and sites of national cultural importance. To this end, it is necessary to ensure that laws protecting intellectual property rights do not constitute an unreasonable or discriminatory barrier to access by persons with disabilities to cultural materials. The Marrakesh Treaty, in force since 2019 in the EU, sets mandatory limitations and exceptions to intellectual property rights for the benefit of the blind, visually impaired and otherwise print disabled (World Intellectual Property Organization 2016). Following the trends, in March 2019 was launched the European Accessibility Act, an EU directive, which sets out rules on products and services accessible to people with disabilities and functional limitations, including electronic devices, websites and audio-visual media services. The European Federation of Hard Hearing People (EFHOH) has produced accessibility guidelines and the European Blind Union (EBU) has produced a good practice guide for the accessibility in sites and museums; both documents are considered by the AD HOC Project in its uni-

versal design for cultural offers (EFHU 2010; EBU 2022b).

Research methodology

Addressing audiences with visual, auditory and intellectual impairments in digital culture requires a new approach. The aim is to link audience needs with the delivery of a rewarding experience in the digital environment respecting special needs.

Research Objectives

The knowledge acquisition pattern in the digital environment for audiences with special remains an under-researched topic. The main objective is to consider the conditions regulating informal learning and suggest a framework to bridge the existing spatiotemporal gap between heritage assets and target publics with visual, auditory and cognitive impairments.

The Spatio-Temporal Gap

Aligned with hermeneutical principles, a hypothesis is formulated, that heritage generates often a spatiotemporal gap between items and the audience: while the tangible form is perceivable by the eye, the intangible dimension needs to be revealed. We further argue that *the* spatiotemporal gap in heritage settings is of *cognitive nature* impacting both the onsite experience as the digital representation of heritage. To appreciate heritage values and effectively bridge the gap between the item and the audience, the latter needs to be linked to the intangible dimension of the item: symbols, meanings and social values. Presentations of cultural heritage to the public, as authored by the supply side, usually disregards HCA mechanisms, such as the eye scan path movement, general cognitive ability *g*, category learning, the ability to perceive and process information, retain and evoke mental representation, WM and LTM capacity and interactions (Prasada 2000). Learning, visual and auditory disabilities are conditions, which dictate an alternative experience design that relates to:

- the particularities of informal learning in cultural settings esp. the short time-budget and knowledge gaps of non-captive audiences;

- the rising desire for storytelling in audio-visual media formats in the cultural sector

- the need to restructure the learning paradigm and the methodological approach to make cultural offers accessible for audiences with special needs (visual, hearing, mobility and cognitive impairments)

Learning in disguise

Humans acquire, store, recall, code and decode information about the relative locations and attributes of phenomena in their everyday life using perception and memory to create cognitive maps. Genetically intrinsic only to humans, memory is the collective function of the human ability to perceive, learn and cognize. Memory is not only the information storage place, but also the information processor, with memory functions distributed in the cortex and sub-cortex (Waxman 1996, 281). The human memory processor consists of Sensory Memory (SM), Short-Term Memory (STM), Working Memory (WM) and Long-Term Memory (LTM). Human Cognitive Architecture (HCA) offers an unlimited LTM able to hold mental representations of varied automaticity degrees, but a limited capacity WM with independent sub-components to deal with auditory and visual material (Robinson 1998, 306). Despite the fact that we are addressing audiences with special needs, those are at the same time non-captive audiences engaging potentially with culture and heritage in their leisure time. As such, they are linked with their own pre-understandings and prior knowledge, to follow Gadamer's main principle. Moreover, a very particular condition regulates the scene: the main difference between learners in formal settings and non-captive audiences is the possibility to rehearse material. As the WM is limited in capacity with respect to the number of elements it can handle simultaneously, rehearsal is necessary to prevent information loss (Cow-

an 2010, 4). This condition cannot be met with time-scarce and non-captive audiences, whether this is happening onsite or in the digital environment. In order to create a mental bridge to selected phenomena, and make the novel seem familiar by relating it to prior knowledge and/or universal concepts in a much shorter time period and more entertaining way, we presuppose a limited WM capacity to deal with visual, auditory and verbal material and an almost unlimited LTM, capable of retaining retain schemas i.e., mental representations that vary in their degree of automation (Sweller, van Merrienboer and Paas 1998). This condition applies for the target publics with visual and auditory impairments, the latter are also supported by sign language visitors. The target publics with intellectual disabilities (ID) are offered a separate text version following the rules of text simplification both at the lexical as at the syntactical level (Chen et al. 2017; Saggion 2017; Change 2019).

Whoever is familiar with Homer, Dante, Shakespeare or any saga, knows that humans are captivated by storytelling. It is through storytelling that we make sense of the world, of the self and the other. Bruner maintains that children construct a story about their actions when they desire integrate their own desires with the family rules. This push to construct narrative shapes how children acquire language. Moreover, the habit persists into adulthood as a primary instrument for making meaning. These storytelling skills ensure our place within human society, and probably imply that information not structured, as a narrative is more likely to be forgotten. Since Aesop and the Bible, every story includes a moral stance, and many stories deal with the norm or its violations according to Bruner, while according to Egan anyone, even very young children, can acquire historical knowledge if it is presented at the developmentally appropriate level (Bruner 1990; Egan 1983; 1989). According to Kirk and Pitches storytelling can promotes deep learning by prompting reflection on practice, whereas Dewey argues that humans learn best by reflecting on their experiences and on the experiences of the others (Kirk and Pitch-

es 2013; Dewey 1963). In this vein 10 stories have been developed and tested in relation to software, graphic design, ease of navigation, story content and multimedia (Saridaki and Meimaris 2018).

Experience design

"Experience" is a term often used with little attention to meaning, mostly interpreted as a sensation. It generally indicates the 'complex of all which it is distinctively human' and stands at the centre of educational endeavour. Education per se might be defined as an emancipation and enlargement of experience. Experience implies process and content: it includes *what* we do, and *how* we act and are acted upon, the ways in which we do and suffer, desire and enjoy, see, believe, imagine, love. The process of experiencing has two meanings: "having an experience" and "knowing an experience". *Primary experience* is what occurs as through a minimum of incidental reflection, and secondary *reflective experience* through the intervention of systematic thinking. Experience has within it judgment, thought and connectedness with other experiences, it is a hermeneutical act: "experiencing" and "what is experienced" stand to one another in the most complete interdependence, comprising a whole (Dewey 1963; 1966). In every society, there are traces of another time, of other cultures, of a way of thinking different from our own, signs of a culture, documents of the invisible. The collective place for reflection on what is not seen, what is not real, has always been the theatre. Therefore, understanding the symbolism of a work of art leads to reflection on what the theatre can teach us for the experience design. The theatre is not just a place with chairs, a stage and a curtain; it is also the dramaturgy that transports to the audience a hidden meaning within a story. It is like a magic box that each of us opens and explores it during the performance and which disappears the moment the lights come back on. At the exit, we may seem empty-handed, but if one looks carefully in the pocket, as in a magic trick, something has remained. Within this vein, we used theatrical dramaturgy to give a body of her-

itage to the signs and symbolism of the works, to frame them in the history of time, the rationale, the emotion. The digital tools are built on these principles, so that the selected target publics experience the topic with an aesthetic enjoyment that completes the most fascinating human experience: crossing time, space, and acquiring new knowledge. The effort is focused in generating clues for the individual revelation of hidden meanings within historically validated stories, whose narratives intend to affect users in a cognitive-emotional way. Universal concepts are used to present socio-cultural phenomena and recreate the past. Prior and expert knowledge about heritage assets is set to zero. The digital heritage presentation is adjusted to visual, auditory and intellectual needs, reducing extraneous cognitive loads using the principles of both HCA and hermeneutics; universal concepts are exploited to generate familiarity and facilitate an effortless understanding and the grasping of a meaningful content; learning objectives are defined and an audio-visually supported cultural narrative has been developed.

The Interpretive Equation

Extensively used by the National Park Service and other interpretive facilities in the United States, the Interpretive Equation (KR + KA) x AT = IO   is a metaphor for understanding the foundational elements of the interpretation of heritage and provides a memorable way to visualize, analyze, articulate and balance interpretive services.

(KR + KA) x AT = IO	
KR	Knowledge of the Resource (Natural, Cultural, Intangible Asset)
KA	Knowledge of the Audience
AT	Appropriate Implementation Technique or/and Media Selection
IO	Interpretive Opportunity

Figure 1: The Interpretive Equation Table. Modified from NPS

KR – Knowledge of the Resource

Knowledge of the Resource (KR) documents the asset history, past and present uses and issues, current conditions, potential threats and opportunities; however, we argue that the process should include an understanding of hermeneutics. We have embedded within the body of knowledge the asset significance, e.g., all the reasons why each selected asset has been deemed important and relevant enough to be safeguarded and communicated. The KR knowledge base concludes with a statement of significance for each asset expressed in the learning objectives that make the asset relevant, significant and unique to the selected target publics.

KA – Knowledge of the Audience

Any meaning that is not relevant to the audience is ignored, thus *Knowledge of the Audience* is equally important to KR. KA implies a variety of data like visitation, demographic information, group identity, culture, ethnicity, learning styles, motivations, expectations, interests. Within this spirit ADHOC address the particularities of the selected target publics and offer multiple opportunities for them to find their own personal connections with the meanings of heritage assets presented.
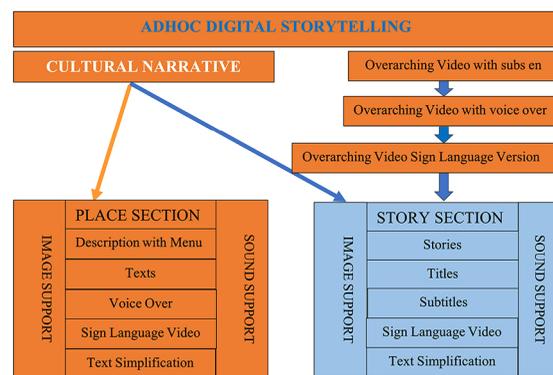

Figure 2: AD HOC Digital Storytelling Structure.

AT – Appropriate Technique

Not much is known, if agencies and interpreters do apply the principles of HCA to make interpretive offers educationally relevant, as there is a dearth in research in regards to a) certifications, b) HE curricula and c) evaluation of services. ADHOC has made an effort to link causal mechanisms of HCA and instructional design in order to facilitate higher cognitive results in the informal setting, with less challenge for audiences with special needs (Berninger and Corinna 1998) and employ narratives of theatrical dramaturgy in digital storytelling. The digital narrative is the main medium applied to engage and involve the selected target publics and respond to their individual needs (sound, image, video, text simplification, sign language video).

IO – Interpretive Opportunity

An Interpretive Opportunity (IO) is an output that provides the audience with rewarding experiences. The IO presents a favourable set of circumstances for a meaningful moment of connection between the audience and the selected assets, giving birth to a customized, personal experience. Since the connection happens within the individual audience members, who retains the sovereignty of their own mind and emotions, the mission of the IO – is to offer the opportunity, which the audience may or may not take. During the frond evaluation stage, 10 heritage assets have been selected, out of which 6 IOs have been designed to pursue learning and behavioural objectives and impact the audience. Linking the IO to the principles of hermeneutics, which presupposes the understanding of the parts, prior to the understanding of the whole, the latter becomes a driver for the delivery of a well-designed cognitive-emotional experience

The Audio-visual Narrative

Given that language is the most complex of the human cognitive functions, the audio-visual story content is chunked with one novel concept per unit-, below the limit proposed by Miller, Baddeley, Hitch and Baddeley and Cowan

(Miller 1956; Baddeley and Hitch 1974, Baddeley 2003; Perconti and Plebe 2020, 8; Cowan 2010, 8). Visitors with intellectual impairments are attracted by binary opposites – good and bad, big and little, love and hate – and they derive meaning from affective association with one of the pairs: as Egan points out, these discrete stages build on each other and thus never completely disappear: "Affective orientations to binary opposites ... are not simply childish and inadequate ways of thinking. They will later be controlled by more sophisticated 'paradigms' but they will remain absolutely basic and essential" (Egan 1983, 76). Graphic design is aligned with the eye scan path movement, whereas information layering follows international standards for the interpretation of heritage (ICOMOS 2004; Papathanasiou-Zuhrt 2015, 62). In order to decongest the WM and redirect attention, metaphors, associations and universal concepts have been extensively utilized, while meanings communicated through the use of universal concepts differ substantially from transmitting formal knowledge (Papathanasiou-Zuhrt 2012, 36). However, the use of procedures to reduce cognitive loads is not at the expense of understanding and the latter is further supported by the theatrical dramaturgy and historical contextualization using historic or fictious personage to support empathy (Mc Kinney et al. 2018, 185; Papathanasiou-Zuhrt 2020, 290). Heritage builds a strong motive for cultural consumption across a wide range of varied audiences and the advent of digital technology has impacted the cultural heritage sector world-wide. Still, the mere digital representation of heritage, where the distant past is beyond the contemporary individual memory and as such beyond the process of understanding, builds a barrier for all audiences, especially those with special needs. By creating a balance between novelty and familiarity, authenticity and the stories told, we can offer exceptional heritage experiences and link the audience to a cultural continuum, considering a) the restrictions of human WM and the mechanisms of acquiring and retaining information adapted to audi-

ences with special needs; b) the adaptation of expert knowledge through hermeneutics in order to decongest WM and facilitate understanding through dramaturgy; c) the UNESCO criteria for assessing heritage and select the places of cultural significance; d) a methodology is developed for critical issues in interpretation.

To serve this purpose ten (10) heritage items have been assigned to six (6) learning objectives, which are at the same time interpretive opportunities (IO):

1) Unesco Designations: Nea Moni; Mastic Cultivation,

2) Medieval Fortifications: Anavatos, Avgonima,

3) Genoese Dominion and the Maona Company: Seaward Castle of Chios,

4) Medieval Mastic Villages: Pyrgi, Mesta, Olympoi, and Unesco-listed Mastic Cultivation: PIOP Mastic Museum,

5) Biocultural Ecosystem of Citrus Groves: Kampos,

6) The Enlightenment: Historic Public Library "A. Korais".

Conclusion

The vital consideration for the design of the AD HOC storytelling is

1) how humans acquire and retain information,

2) how human memory processes data, taking into account the particularities of the selected target groups (visual, hearing, mobility and cognitive impairments),

3) how to create interactions between the audience and the cultural resources;

4) how the use of dramaturgy to augment the cognitive-emotional interactivity for the selected target publics.

The outcome of this hermeneutical process is a framework of contents, which is made up by: (a) a central message, which describes "the essence" of the heritage object and its in-

tangible values, by facilitating information retention, (b) a storyline that holds the audience's attention, reinforcing the association chain; c) a new text and media version suitable for physical and cognitive disabilities; e.g., voice over for visual impairments; d) sign language videos for hearing impairments; e) appropriate software and navigation. However, there are several restrictions faced by this research: firstly the correlation of cultural significance and the heritage experience per se is an under-researched topic; secondly despite the fact that heritage interpretation is included in curricula related to heritage management, museology and humanities, is usually offered as an independent degree, has little relation to the human cognitive architecture and does relate philosophically to its actual origins. Moreover as there is not yet put in place an EU-wide, recognizable and validated certification for the skills of interpreters, despite the various training offered, the profession remains unrecognized and the various good practices are scarce. At the same time, very few interpretive offers can follow the light speed tempo of the audio-visual industry. The latter has been profoundly affected by the impact of digital technologies, but it is applying them in stages, gradually discovering all the opportunities, possibilities and new fields of application. It started from the signal distribution: no more analogue, no more heavy pallets of films to be transported, no more tapes to be shipped, but files, which can travel around the world in a few seconds and populate rooms, which until the day before were used in other ways. The last phase is that of digital thinking, where audio-visuals are conceived for a digital and meta-disciplinary environment. In a few words, what falls at the third stage of development is the boundary between cinema, theatre, documentary, television, museum, trade fair, large company, digital network aggregator, gaming and where audio-visuals specialize and become a tool for the construction of knowledge and where interpretation has not yet started to gain benefits or to play a significant role. The enormous possibility of manipu-

lation that digital images possess, must open the door to the narrative, to a structure of its components in an increasingly specific language at the service of culture and articulated, to sparkle a cognitive-emotional experience without fossilizing in the search for suggestive effect, devoid of internal logic. These are unmissable opportunities for the development of knowledge, of the audience's cultural capital. Today we risk being in the presence of a spontaneous literacy offered by the possibilities of technology, disordered in its methods, rhapsodic and still tied to the default procedures offered by the seller. We still do not know where this process will take us, so precarious is the balance between constructing new procedures for the elaboration of meaning, and remaining anchored to the babble and repetition of low-profile models that are essentially self-referential. What is certain is that these possibilities have considerable weight in the experimentation of processes, to create abstractions and propose new skills, and are of crucial interest for those who wish to narrate art. The articulation of these languages could be a solution to engaging the audience. Conveying enthusiasm attracts, produces identification; this is how the encounter between the public and art in a museum should work. The digital revolution offers, produces and researches tools that cannot but be based on considerations such as this one to address and solve the problem of its full inclusion in cultural production. The forms created by the language of audio-visuals are the best basis for constructing sense and meaning in the context that the non-expert visitor lacks for understanding a work of art. There is a widespread idea that 'digital' is a technology and not a way of investigating and celebrating the relationships between things and ideas, this aspect is addressed by AD HOC as much from the point of view of the philosophy of approach as from the opportunities that such an environment brings, without excluding the dangers and pitfalls.

When seeking to promote the inclusion of audiences with special needs, a visitor-cantered interpretation model, able to transform the tan-

gible intangible form of a resource into powerful experience is needed. Without suitable presentation and appreciation of what is being valued, cultural heritage remains meaningless and the understanding is lost. The basic idea is that social cohesion takes place around the intrinsic values that culture carries with it, such as traditions, myths, legends are the source of much of our behaviour. We need to be aware that there are different readings and prejudices, and to avoid the simplification of the so-called 'cancel culture movement', which in the name of a supposed 'fairness for inclusiveness' risks eliminating the legacy of history. The ability to transform every contradiction into a matter for discussion and research that will provide the inclusive materials, meaning to remove the obstacles that prevent dialogue instead of reducing everything to the "common denominator" and that means to ensure access to cultural heritage also to audiences with special needs. If the aim is to present the ways of telling a story which stimulates the curiosity and interest of the audience and, at the same time, leaves a tangible trace in the consciousness, then it is not necessary to describe the forms and rules of the story but to act on it and overturn the rules of traditional historical and scientific narration by reconstructing a path in the opposite direction. Respecting scientific accuracy, the material evidence of the past is not used to document historical facts, but historical facts are used to affirm the function that these elements have had, exploring, where necessary, the social and anthropological context that generated them. In this way, objects (stories, ideas) become instruments of a narrative that transfers to the observer the set of values on which the civil society of which he is a member is based. In a word: it educates and contributes to generating the chain reaction that the art public needs to expand its catchment area. In this sense, the audio-visually supported storytelling becomes the best example to design in order to build together "Le Rendez-Vous des Arts" where knowing how to hide in order to reveal is the illusionistic ability of each artist. The audience sees what

she wants them to see. However, the illusion is only reality in the moment, a voluntary act, in which they themselves become tangible proof of the truthfulness of the tale. As in the theatre, where everything is fictitious but nothing is fake.

Summary

The ERASMUS + AD HOC (2019-1-MK01-KA203-060269) is an experiment towards solutions for audiences with special needs in the cultural domain. AD HOC suggests that auditory, visual, mobility and other impairments should not impede individuals discover the heritage places and the stories these have to tell. Thus, AD HOC is committed to make a contribution to enhance access to cultural heritage for people with special needs by creating the enabling environment for digital and physical experiences at places of cultural significance. AD HOC introduces a new cultural heritage infrastructure, taking into account the needs of visitors with visual, auditory and mental impairments. The interpretive equation, e.g., knowledge of the resource, knowledge of the audience and appropriate mediation techniques provide for interpretive opportunities to connect the audience to the meanings and values of heritage. A constant consideration that is guiding the design of the cultural heritage infrastructure, is how humans and in particular those with special needs acquire and retain information and how the human memory processes data. In an effort to establish interactions between visitors, phenomena, and tangible and intangible heritage resources, a hermeneutical process has been utilized which describes "the essence" of the work of art and its tangible and intangible values, while at the same time it manages cognitive loads by facilitating information retention through storylines that holds the visitors' attention, reinforcing the association chain. The digital experiences adapted to the visual, auditory and intellectual needs of the target audiences not only realize cultural discoveries at sites, museums and collections but also satisfy educational goals and mental training. Such digital experiences are not lectures, but cognitive-emotional opportunities they allow visitors with special needs to interact with the heritage (re)presented. The experience design strives to provide for fun and curiosity, insights and meanings, participation and entertainment for a neglected audience. The multimedia supported digital narrative is encouraging interaction, allows the audience to familiarize with novelties, and varies the visual, auditory and narrative content to support immersion and reflection.

Povzetek

Projekt ERASMUS + AD HOC (2019-1-MK01-KA-203-060269) je eksperiment, ki je namenjen iskanju rešitev za občinstvo s posebnimi potrebami na področju kulture. AD HOC predlaga, da slušne, vidne, gibalne in druge ovire ne bi smele ovirati posameznikov pri odkrivanju krajev kulturne dediščine in zgodb, ki jih ti pripovedujejo. AD HOC je tako zavezan prispevati k izboljšanju dostopa do kulturne dediščine za ljudi s posebnimi potrebami z ustvarjanjem ugodnega okolja za digitalna in fizična doživetja na krajih, ki so pomembni za kulturo. AD HOC uvaja novo infrastrukturo kulturne dediščine ob upoštevanju potreb obiskovalcev z okvarami vida, sluha in duševnega zdravja. Interpretacijska enačba, npr. poznavanje vira, poznavanje občinstva in ustrezne tehnike posredovanja, zagotavljajo interpretativne priložnosti za povezovanje občinstva s pomeni in vrednotami dediščine. Stalni premislek, ki usmerja načrtovanje infrastrukture kulturne dediščine, je, kako ljudje, zlasti tisti s posebnimi potrebami, pridobivajo in ohranjajo informacije ter kako človeški spomin obdeluje podatke. V prizadevanju za vzpostavitev interakcij med obiskovalci, snovnimi in nesnovnimi viri dediščine je bil uporabljen hermenevtični postopek, ki opisuje "bistvo" umetniškega dela ter njegove snovne in nesnovne vrednosti, hkrati pa obvladuje kognitivne obremenitve, saj omogoča lažje ohranjanje informacij s pomočjo zgodb, ki zadržujejo pozornost obiskovalcev in krepijo verigo asociacij. Digitalne izkušnje, prilagojene vizualnim, slušnim in intelektualnim potrebam ciljnega občinstva, ne uresničujejo le kulturnih odkritij na mestih, v muzejih in zbirkah, temveč izpolnjujejo tudi izobraževalne cilje in mentalno usposabljanje. Takšna digitalna doživetja niso predavanja, temveč kognitivno-čustvene priložnosti, ki obiskovalcem s posebnimi potrebami omogočajo interakcijo s (ponovno) predstavljeno dediščino. Oblikovanje doživetja si prizadeva zagotoviti zabavo in radovednost, spoznanja in pomene, sodelovanje in razvedrilo za zapostavljeno občinstvo. Multimedijsko podprta digitalna pripoved spodbuja interakcijo, občinstvu omogoča, da se seznani z novostmi, ter spreminja vizualne, zvoč-

ne in pripovedne vsebine, s čimer podpira potopitev in razmislek.

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Universal Design and Cultural Heritage
Univerzalno oblikovanje in kulturna dediščina

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Abstract
New technologies are vehicles for dissemination of cultural values. They also enlarge the number of persons that have access to heritage. This paper presents a web-based platform, developed within the Erasmus+ AD HOC (Accessible and Digitized Cultural Heritage for Persons with Disabilities) project that enables perceptual accessibility of such content for persons with disabilities. The main principle followed during the entire project duration was the principle of Universal Design – including accessibility for persons with disabilities from the very beginning and thus creating a generic model of an accessible platform for some important aspects of the cultural heritage of Macedonia, Slovenia, Greece and Italy.
Key words: cultural heritage, accessibility, platform, persons with disabilities

Izvleček
Nove tehnologije so sredstva za širjenje kulturnih vrednot. Prav tako povečujejo število ljudi, ki imajo dostop do dediščine. Prispevek predstavlja spletno platformo, razvito v okviru projekta Erasmus+ AD HOC (Accessible and Digitalized Cultural Heritage), ki osebam s posebnimi potrebami omogoča zaznavno dostopnost tovrstnih vsebin. Glavno načelo, ki smo ga upoštevali ves čas trajanja projekta, je bilo načelo univerzalnega oblikovanja – vključno z dostopnostjo za osebe s posebnimi potrebami že od samega začetka in s tem ustvarjanje generičnega modela dostopne platforme za nekatere pomembne vidike kulturne dediščine Makedonije, Slovenije, Grčije in Italije.
Ključne besede: kulturna dediščina, dostopnost, platforma, osebe s posebnimi potrebami

Introduction

Before we discuss Universal Design in Learning (UDL) in museums and archaeological areas and connect this design to interoperable digital platforms we need to answer the question, what do we mean by "Universal Design/Design for all"? Universal Design is the designing of different products, information technology and/or environments with the goal to make them easy and convenient to use by all people-particularly persons with disabilities, to the greatest extent possible (Ginnerup 2009). This precludes the need to make additional adaptations, accommodations or other specialized designs.

The principles of UD need to be implemented from the early generic stages of planning. Although UD was initially envisioned to tackle issues in accessibility of buildings (architecture), it now converges to cover different societal issues and it is becoming an integral part of policy planning. When it comes to persons with disabilities, UD is used to make accessible solu-

tions with the purpose to include them in different aspects of society life.

In many countries in Europe and the world, there has been a strong shift from the medical model where persons with disabilities are seen as persons with diagnoses (biomedical perception of disability) to the social model and model of human rights. The social model recognizes that disability is created by society and persons with disabilities face many barriers that prevent them from inclusion in society life. Universal design is the bridge and connector between these two models.

It should be noted that the difficulties associated with different types of disabilities are individual (each case is a case of its own), and the deficiencies are not static (they are evolutionary and may have positive or negative evolution). In general, the solutions that are placed are always tailor-made, and the system should be sufficiently intelligent or flexible enough to adapt to the user, not the other way around. The idea of the tools dynamically adapting to the user profile is something that has been pursued for many years. The goal is to have a solution that reads the user profile and return an entire adapted interface. However, given the difficulty of finding Universal solutions, relying on tools where the learning curve for its full utilization (including its personalization) is low, seems more realistic. So, the alternative is to create a solution that allows to respond in a global way, but it must also be adaptable to the specific needs of different target groups, not something typified, static and immutable in time. Solutions need to be developed that could simplify the use of the tools, through the design option that allows simplified customization according to needs (including colours, font, menus and their order of presentation), and / or contextual needs.

Discussion

In the past years, many researchers call for inclusive museums, not only in regard to physical access but also to intellectual access (Giusti 2008; Rappolt-Schlichtmann and Daley 2013;

Salmen 1998). Although there has been a movement towards making museums more accessible, persons with disabilities lag behind in the experience of museum exhibitions (Rappolt-Schlichtmann and Daley 2013). Universal Design in Learning (UDL) gives an alternative for museums and exhibitions, in line with the progressive view of disability, not only focusing on the physical aspects and physical accessibility but also access to learning options. Universal Design for Learning (UDL) is a framework for developing and delivering content that is accessible to all learners (Hall, Meyer and Rose 2012). The UDL framework incorporates the following principles: 1. Provision of multiple means of representation (to activate the what, or the recognition networks of the brain); 2. Provision of multiple means of expression (to activate the how, or the strategic networks of the brain); and 3. Provision of multiple means of engagement (to activate the why, or the affective networks of the brain) (CAST 2008; Hall et al. 2012; King-Sears 2014).

UDL is a good fit for museums. It focuses on multiplying the modalities in which we present exhibits and the types of interaction they elicit from visitors. Virtual reality and augmented reality technology offer close-up experiences of heritage assets. Universal Design is not mutually excluded with assistive technology. Assistive technology is and will remain a very important aspect of everyday life of persons with disabilities. Universal Design solutions should be integrated with modern assistive technologies. One example of the interaction between UD and assistive technology is the development of a platform, which complies with accessibility requirements.

Having all of this in mind, researchers from four European countries worked jointly on the Erasmus+ AD HOC project: Accessible and digitized cultural heritage. The aim of the project was to create a strategic partnership in the field of higher education with the purpose to create and share innovative practices in the digitization of the cultural heritage and its accessibility
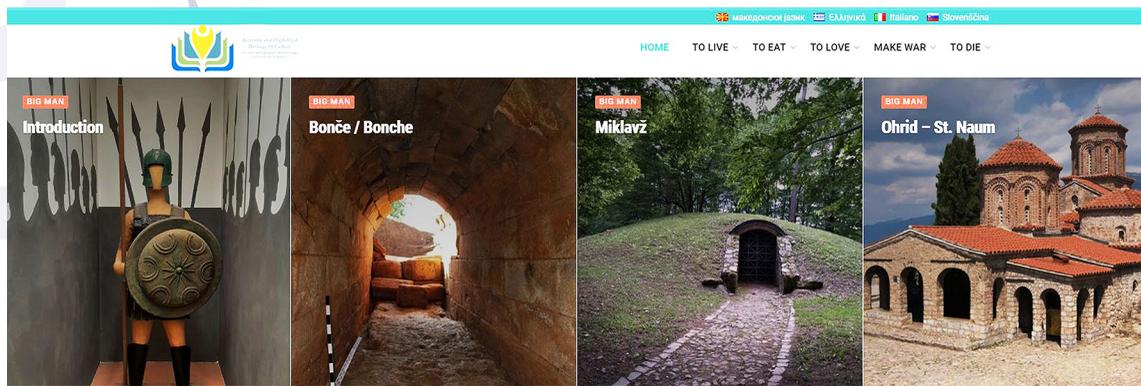
Figure 1: AD HOC home page (https://adhoc.ireason.mk/).

for persons with disabilities. The general goal of this project was to bring archaeological cultural heritage closer to the public, including different categories of the population, preferably through on-line courses. The project objectives were related to: Digitization of the cultural heritage in formats accessible to all and hence enabling on-line and distance learning as well as long life learning: Fostering quality improvements and excellence in innovation at the high education institution level through enhanced transnational cooperation between education and training providers and other stakeholders; Promoting the cultural heritage and its values among persons with disabilities and improve their level of key competences and skills, in particular with relevance to the labour market and their contribution to a cohesive society; Creating innovative ways for sharing effective methods in learning and recognizing culture and history for people with fewer opportunities (visual problems, hearing problems and intellectual problems), addressing the opportunities and implications of digitalization; Fostering the inclusion of people with fewer opportunities; Fostering equality in learning culture and history and foster the inclusion of people with fewer opportunities; Fostering social and educational value of European cultural heritage, its contribution to job creation, economic growth and social cohesion; Promote and strengthen knowledge and acceptance of diversity in society.

Within this project, a platform was created. This platform is a web-based platform that allows quick access to information related to archaeological sites and cultural heritage in Macedonia, Greece, Slovenia and Italy. It increases the level of knowledge in terms of flexibility, perception and simplicity for the visitors that are deaf, blind or intellectually disabled (Karovska Ristovska et al. 2021). This software is an open source system for building and presenting information collections. It builds collections of effective full-text search objects and metadata-based, attractive and easy-to-use search objects. In addition, they are easily maintained and can be enlarged and restored completely automatically. The system is extensible: software plugins contain different types of documents and metadata. The software includes an interface that makes it easy for people to create their own library collections. Collections can be built and serviced locally from the user's own web server, or (subject to appropriate permissions) remotely shared by a digital library host. This software allows incorporation of additional plug-ins. Hence, two plug-ins were added for: Persons with impaired vision (by using text-to-speech which is different for different languages); Persons with impaired hearing (by adding videos on sign language for each narrative or story). A simplified web-page was created for persons with intellectual disability (Stanojkovska-Trajkovska et al. 2017).

Over the past ten years, rapid innovations in text-to-speech (TTS) technologies have creat-

ed new and affordable ways to help students read print-based or digital texts that have no audio equivalents. TTS technologies provide students with the ability to hear virtually any text read aloud with a synthesized voice. TTS software is one example of assistive technology that has become a more common tool for struggling readers in schools and colleges, and has been widely accepted as a form of accommodation for students with disabilities (Mishev et al. 2020).

TTS has also been effective in improving reading skills of struggling readers. A study conducted by Robert Stodden and colleagues (Stodden et al. 2012) showed that readers that use TTS had improved reading rates, vocabulary and comprehension. This was also shown in another study conducted by Sarah Wood and colleagues (Wood et al. 2018). The authors confirmed that Text-to-speech/read aloud presentation positively impacts reading comprehension for individuals with reading disabilities.

Sign languages of deaf communities all around the globe are complete human languages with full expressive power. Sign was once viewed as nothing more than a system of pictorial gestures without linguistic structure (Каровска Ристовска 2014). In the past, sign languages have been disputed in linguistic research and haven't been defined as real languages. This was due to the differences in sentence production in sign and spoken languages. Like spoken languages, sign languages have their own grammatical rules and linguistic structures. Sign languages do not follow the same grammatical patterns as spoken languages and there is a need for a substantially different conception of grammar (Mishev et al. 2022). This makes the task of translating between spoken and signed languages a complex problem, as it is not simply an exercise of mapping text to gestures word-by-word.

Sign language apps used for museum exhibitions and accessible web-platforms have been thriving as well (such as Signly and ARCHES), and many museums in different countries, such as the Van Gogh Museum and the Metropolitan Museum of Modern Art, have made exhibitions for visitors with hearing loss.

This platform was completely designed following the Web Content Accessibility Guidelines (WCAG) 2.1, which promotes accessible web content. The UNESCO basic and advanced guidelines for the preparation for an accessible Digital Documentary Heritage (UNESCO, 2020) were also followed. Accessibility was considered at every step of the document digitization, sufficient funds for disability were allocated, persons with disabilities and experts in disability were included in every step of the process, and the content was described using simple, understandable language. The entire platform was created having accessibility in minds and accessibility awareness training was organized for different stakeholders. Digital images are accompanied by a text descriptor for the key features and in the highest resolution possible, PDF documents are screen-readable, videos are accompanied by captions in sign language and an audio description by using TTS. The content is provided in five languages: Macedonian, English, Greek, Slovenian and Italian.

Conclusion

Heritage is always associated with living, cultural, museum, national, local, and ritual practices. Accessibility of cultural heritage would mean that every individual, regardless of his/hers limitations can experience cultural heritage sites.

How can we improve the experience and learning of persons with disabilities in terms of archaeological sites and cultural heritage? 3D scanning, 3D printing and carving technology has made it possible to recreate objects and architecture with a high degree of precision and in a form that allows visitors to have a tactile experience of these materials. Some suggestions for accessible museums and accessible cultural heritage include: 3D modelling; Promoting tactile exhibits, complete with braille, large print, and audio exhibition guides; Use of digital technologies to guide visitors with different access needs; Creation of iOS and Android apps that chart

routes through the museum galleries, or game that invites users to create their own collages from collection highlights; Personalized experiences and many more. The combined application of the principles of Universal Design and the use of an interoperable digital platform leads to the improvement of accessibility.

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Summary

Universal design is an approach to design that incorporates products as well as building features that, to the greatest extent possible, can be used by everyone. Universal design in learning (UDL) incorporates multiple means of representation (to allow various ways of acquiring information and knowledge), multiple means of expression (to allow alternatives for demonstrating knowledge), and multiple means of engagement (to challenge appropriately, to motivate, and to allow learners to express and participate in their interests). UDL is a good fit for museums because it suggests a focus on broadening the ways we present exhibit components and the kinds of interaction they elicit from visitors. The combined application of the principles of Universal Design and the use of an interoperable digital platform leads to the improvement of accessibility.

A group of international researchers from four European countries worked jointly on the Erasmus+ AD HOC project (Accessible and digitized cultural heritage). The aim of the project was to create a strategic partnership in the field of higher education with the purpose to create and share innovative practices in the digitization of the cultural heritage and its accessibility for persons with disabilities. The platform developed within this project is a web-based platform that allows quick access to information related to archaeological sites and cultural heritage in Macedonia, Slovenia, Greece and Italy. It increases the level of knowledge in terms of flexibility, perception and simplicity for the visitors that are deaf, blind or intellectually disabled. This software is an open source system for building and presenting information collections. Two plug-ins were added for: Persons with impaired vision (by using text-to-speech which is different for different languages); Persons with impaired hearing (by adding videos on sign language for each narrative or story). A simplified web-page was created for persons with intellectual disability. This platform was completely designed following the Web Content Accessibility Guidelines (WCAG) 2.1, which promotes accessible web content. The UNESCO basic and advanced guidelines for the preparation for an accessible Digital Documentary Heritage (UNESCO 2020) were also followed. Accessibility was considered at every step of the document digitization, sufficient funds for disability were allocated, persons with disabilities and experts in disability were included in every step of the process, the content was described using simple, understandable language. The entire platform was created having accessibility in minds and accessibility awareness training was organized for different stakeholders.

Povzetek

Univerzalno oblikovanje je pristop k oblikovanju, ki vključuje izdelke in gradbene lastnosti, ki jih lahko v največji možni meri uporablja vsakdo. Univerzalno oblikovanje v učenju (UDL) vključuje več načinov predstavljanja (za omogočanje različnih načinov pridobivanja informacij in znanja), več načinov izražanja (za omogočanje alternativ za dokazovanje znanja) in več načinov angažiranja (za ustrezen izziv, za motiviranje ter omogočiti učencem, da izrazijo in sodelujejo pri svojih interesih). UDL je primeren za muzeje, ker predlaga osredotočenost na razširitev načinov predstavitve razstavnih komponent in vrst interakcij, ki jih izzovejo pri obiskovalcih. Kombinirana uporaba načel univerzalnega oblikovanja in uporaba interoperabilne digitalne platforme vodi k izboljšanju dostopnosti.

Skupina mednarodnih raziskovalcev iz štirih evropskih držav je skupaj delala na projektu Erasmus+ AD HOC (Dostopna in digitalizirana kulturna dediščina). Namen projekta je bil ustvariti strateško partnerstvo na področju visokega šolstva z namenom ustvarjanja in deljenja inovativnih praks pri digitalizaciji kulturne dediščine in njeni dostopnosti za osebe s posebnimi potrebami. Platforma, razvita v okviru tega projekta, je spletna platforma, ki omogoča hiter dostop do informacij v zvezi z arheološkimi najdišči in kulturno dediščino v Makedoniji, Sloveniji, Grčiji in Italiji. Za obiskovalce, ki so gluhi, slepi ali intelektualno ovirani, poveča

raven znanja v smislu fleksibilnosti, zaznave in enostavnosti. Ta programska oprema je odprtokodni sistem za gradnjo in predstavitev zbirk informacij. Dodana sta bila dva vtičnika za: Osebe s slabšim vidom (z uporabo pretvorbe besedila v govor, ki je različna za različne jezike); Osebe z okvarjenim sluhom (z dodajanjem videov v znakovnem jeziku za vsako pripoved ali zgodbo). Izdelana je poenostavljena spletna stran za osebe z motnjo v duševnem razvoju. Ta platforma je bila v celoti zasnovana v skladu s smernicami za dostopnost spletne vsebine (WCAG) 2.1, ki spodbuja dostopno spletno vsebino. Upoštevane so bile tudi osnovne in napredne smernice Unesca za pripravo na dostopno digitalno dokumentarno dediščino (UNESCO 2020). Na vsakem koraku digitalizacije dokumentov smo upoštevali dostopnost, namenili smo dovolj sredstev za invalidnost, v vsak korak smo vključili invalide in strokovnjake s področja invalidnosti, vsebino smo opisali v preprostem in razumljivem jeziku. Celotna platforma je bila ustvarjena z mislijo na dostopnost, za različne zainteresirane strani pa je bilo organizirano usposabljanje za ozaveščanje o dostopnosti.

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What do you really want?
Kaj zares želite?

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Abstract

In the period of last 50 years, the discussion of what authenticity really means changed from questions about realism, representation and reality in aesthetics and media studies, to "authenticity as idea" related to national identity and cultural heritage, as well as "authenticity as strategy" in marketing and place branding. Consequently, we can today define heritage tourism more narrowly as a phenomenon based on visitors' motivations and perceptions rather than on specific site attributes. New perspectives of presentations, including the use of ICT devices are broadening the perspective of heritage tourism shifting it in to the world of virtual reality. Currently the presentation, this is the consumption of cultural heritage, is shifting from "authentic" material environments and experiences in to the hyper-realistic digital ones the differences between the capacities for consumption between different members of the society become reduced.

Key words: authenticity, cultural tourism, cultural heritage, archaeology, ICT, disabilities

Izvleček

V obdobju zadnjih 50 let se je razprava o tem, kaj avtentičnost v resnici pomeni, premaknila od vprašanj o realizmu, reprezentaciji in realnosti v estetiki in medijskih študijah do »avtentičnosti kot ideje«, povezane z nacionalno identiteto in kulturno dediščino, pa tudi »avtentičnosti kot strategije« pri trženju in blagovni znamki krajev. Posledično lahko danes dediščinski turizem opredelimo ožje kot pojav, ki temelji na motivaciji in percepciji obiskovalcev, ne pa na posebnih lastnostih območja. Nove perspektive predstavitev, vključno z uporabo IKT naprav, širijo perspektivo dediščinskega turizma in ga selijo v svet virtualne resničnosti. Trenutno se prezentacija, to je potrošnja kulturne dediščine, premakne iz »avtentičnih« materialnih okolij in izkušenj v hiperrealistična digitalna, se zmanjšajo razlike med zmožnostmi potrošnje med različnimi člani družbe.

Ključne besede: avtentičnost, kulturni turizem, kulturna dediščina, ICT, posebne potrebe

Introduction: *Seeing THE past*

Archaeology, when not trying to be an academic discipline and disseminate the results of research only within the academic community, it has an aspiration to present to the public as accurate as possible authentic illustration of the past – it reconstructs the au-thentic landscapes, rebuilds the authentic architecture, exhibits the authentic items and at least but not at last, presents the authentic archaeological interpretation. The main problem arising is the academic archaeological systematic failure of any form of social responsibility towards the public hiding behind an unimpregnable wall of arguments defining the imaginary no-

tion of authenticity in archaeological interpretation. Limping behind lesson philosophy learned in the beginning of the 20th century when it became obvious that authentic visions, no matter how deeply felt, may be damaging when they do not sufficiently account for our responsibility toward others (Gardiner 2015, 99), or in the case of archaeology the interested public. With other words – in the 20th century the scientifically vaguely but legally all-encompassing principle of authenticity is at least on the rhetorical level the basic and primary principle of the protection of historical and cultural heritage. Although it is mostly employed as an argument without real economic measurable background, it is legally considered being the key to the standard for ascribing value to heritage and consequently creating the basis for its 3P – preservation, presentation and promotion.

In the last decade numerous authors saw the peril of destroying the authenticity of cultural heritage as the initial stage of a process that will lead to the disappearance of important historical information and the lack of awareness of authenticity (Mi and Wang 2021). They noted that:

- At the material level, the protection and repair behavior to often damages the authenticity of the structures it was intended to protect. A failure to restore the original structure or the material selection, different from the original material, functionally change the original functional purpose of the heritage.

- At the material level, too often the unfavorable supervision of the government institutions, ignoration of the investors and owners as well as the weak protection awareness of the general public, make the authenticity of cultural heritage lost in the development process.

- At the non-material level, the lack of authenticity protection for culture and perception will result in the loss of the subject of cultural authenticity, the dislocation of cultural display in time and space, the lack of cultu-

ral integrity, and the simplification of cultural diversity.

- At the environmental level on which history depends, the historical space environment, surrounding residents and natural environment considerations on which historical heritage relies, have led to the destruction of the surrounding environment of cultural relics and historic sites. These processes made the original distinctive spaces lose their authenticity.

Looking through the arguments, we realize that today a museum or an archaeological site is a place of total iconism – an allegory of the modern consumer society glorifying total passivity in the observation of the past. Its visitors must behave like dehumanized – access to each attraction is regulated by means that discourage any individual initiative. The gaze upon the monument is defined, prescribed... and it is not only the real thing, but institutionally mediated abundance of reconstructed truth, if the visitor obeys the regulations. And it is the role of archaeologists, the scientists, to reconstruct a credible and "objective" past, to present the authentic archaeological heritage.

But here it seems that that the foundations of the archaeological idea of authenticity were shaken by the theoretical discussions (based on practical practices) in tourism studies, and more recently by the inclusion of modern technologies in to the process of presenting the past. Everything enhanced and virtual became the new reality, reality distancing itself from the basic archaeological notion of authenticity based on material remains, and shifting slowly towards the authenticity based on information as such, based on knowledge about the past.

Selling the experience

Although not in the field, in the academic literature the contemporary tourist has been ridiculed for his manner of, motivation for, and achievement in travel. Basically, numerous authors describing the quest of tourists for authenticity in (cultural) tourism in the last 50 years have evi-

dently underestimated the potential of cultural tourism and the potential of the interested tourists to influence the development of the tourist sector. Especially in regard to the role of cultural tourism based in the presentation of cultural heritage and its role in the sustainable development.

It was Daniel J. Boorstin that already in 1961 mentioned that the Americans suffer from extravagant expectations (Boorstin 2002) and that members of a modern society individually provide the market and create demands for the illusions that flood our experiences, illusions that deceive ourselves. Derived from his perception of the modern society was also the conclusion that modern tourists do not seek authenticity at all – in their search of only entertainment and enjoyment they are easily satisfied by an inauthentic tourism experience. In the past, he claimed, the traveler was active and traveling required much planning, time and money. In modern times the tourist expects all planning to be done for him with no risk involved. Even when not being part of mass-tourism, the tourist has guidebooks to tell him what to see, with a star system so he knows what is most important. Based more on his perception of the American society, he assumed that people were no longer experiencing reality in their lives; in their quest for the unfamiliar they were being presented a series of pseudo-events. Tourism, especially large scale, mass tourism, was seen as being just another example of how American life had become overpowered by pseudo-events and contrived experiences. He concluded that the tourists only seldom liked authenticity of to them often unintelligible foreign cultures, but instead preferred their own provincial expectations. Translated in to the language of archaeology we could observe that the public presentations were focused on the "modern" aspects of the past, archaeology was pushing the limits of modern behavior, modern practices and modern relations back in to the past. The past was being appropriated in the basic sense of the word.

A decade later it was Dean MacCannell, that presented a revised view of tourism and tourist motivation. His tourist was not a victim of a contrived and illusory culture, but instead on a quest for authenticity that involved paying homage to the symbols of modernity. Still it was the first time that he introduced the concept of staged authenticity in tourism (MacCannell 1973). The term "staged authenticity" is one used by tourism and cultural resource management researchers to define a way that traditional, or in the case of archaeology past, cultures are presented (i.e. staged) to outsiders. It can be manufactured by tourism professionals (in theme parks, performances and such), but it can be the way that locals perceive what tourists want to see and experience. Consequently, tourists are not allowed to see real life as lived by the natives, to see the original archaeological heritage since these "back regions" are hidden from tourists and reserved only for the indigenous populations or for professional specialists. At best, tourists are shown "front regions" that are designed to look like the real thing. The industry specialized in the efforts providing the tourist with the feeling he had an authentic tourist experience, and prohibiting him to realize he has failed in his quest.

But how was the motivation for tourism perceived at the end of the seventies. John Compton (1979) suggested several motives, including: escape (from the drudgery of everyday life), relaxation, prestige, especially among those who do not travel, regression (i.e., being able to act immaturely without being judged by one's reference groups), education and novelty. Actually, with the notion of novelty he turned the whole narrative upside down – novelty was a relative concept without any semantic relation to authenticity. Everything goes – everything was a novelty for the tourist. The past was slowly conquering it's grandeur.

But in the beginning of eighties Umberto Eco (1983) published a series of essays with a hypercritical description of the contemporary tourist industry. Discussing mostly American postmodern tourist attraction, he described them as being hyper-real. Their deliberate creation was

a process where the American imagination demanded the real thing but the market fabricated the absolute fake. Derived from the American concept of prosperity, which is focused on having more than is needed, it produced artificial tourist attractions that try to be extravagant and better than the original. He concluded that it is certain that tourists prefer hyper-realism to real sites. And archaeology was actually following if not even creating the trend – it was the period of reconstructions and reenactments, where the past, to be presented crated anew following the demands and expectations of the consumers (Barker 2010; Hartford 2016).

However, tourists may simply be satisfying different types of utility – of form, time and place (Cohen 2002). While seeing a real prehistoric painted cave in a real setting might be preferred, it may simply not be possible, given time and place constraints. Also, it must be admitted, the tourist may not wish to suffer the travails of a trip to a remote locale. Seeing a real Roman city has a major constraint – since the best preserved are in the remotest regions of the today "civilized" world visiting them poses to the average tourist a major problem directly addressing the time, money and efforts the tourists are able (and willing) to invest. And since there are no time machines to take travelers back to the "real thing," with the help of hyper-realism the tourist satisfices his experience, while perhaps actually learning something about the "real thing." The end of century, with the development of technology and with the introduction of practices that explained and promoted archaeological heritage, enabled experiences that were better than real, authentic in their own way.

But it was John Urry (2002) that described the trends in the new millennium, claiming that the post-tourist knows that they are a tourist and that tourism is a game, or rather a whole series of games with multiple texts and no single, authentic tourist experience. Further he noted that the post-tourist takes pleasure in the fact that so many tourist experiences are available so all of these motivations can be satisfied. It was

all based or actually adapted to the notion that the modern or actually post-modern (post-tourist) is a critical consumer that embraces openly the increasingly inauthentic, commercialized and simulated experiences offered by the tourism industry. And the presentations of the past – including museums, archaeological parks and reenactment events, are a constituent element of cultural tourism. Although developed still in the eighties these concepts make more sense in the last two decades when the post-modern world is characterized by globalization, hyper-consumerism, the experience economy and new developments in technology. Consumers have numerous choices and possibilities, and often undertake seemingly incompatible activities simultaneously in order to capitalize on this array of opportunities. Cultural tourism is no exception (Kobiałka 2013).

It was in 2007 that in the monumental volume *Tourism and Politics*, Debbie Lisle described the rise of dark tourism as the last real experience in the post-tourist world (Lisle 2007). She demonstrated that the myth of modern tourism is centered on the possibility of encountering authentic difference, a claim actually less possible if we take into consideration the fact that tourism is a global industry from the 1990s. She claimed that the only "real" places in the world are conflict areas and war zones affiliated with death and violence and that the Dark tourism tell us a great deal about the relationship between tourism and conflict. They illustrate that places of conflict are not excised by the tourist gaze, but are instead integral to it.

In the same year James Gilmore and Joseph Pine published the book *Authenticity: What Consumers Really Want* – they were not only thinking of tourism, but of consumer culture in general (Gilomre and Pine 2007). They claimed that people increasingly see the world in terms of real and fake, and because of the shift to the experience economy want to buy something real from someone genuine. Today goods and services are no longer enough – what consumers want today are experiences described as memo-

rable events that engage them in an inherently personal way. As paid-for experiences proliferate, people now decide where and when to spend their money and their time. But in a world increasingly filled with deliberately and sensationally staged experiences, in an increasingly unreal world, consumers choose to buy or not buy based on how real they perceive an offering to be. They claim that business today, therefore, is all about being real. Original. Genuine. Sincere. Authentic. Presenting the real past. And of course, this brings us back to the objects of dark tourism, elements of archaeological heritage linked to conflicts and death as the optimal places to present the authentic reconstruction of the past.

Anticipating the future one might argue that as long as the tourist thinks a fantasy-laden tourist site or experience is real, then this is simply inauthentic – if the tourist knows the site is fake, and still likes it, perhaps even more than seeing the real thing, then this is hyper-reality. However, this taxonomy condemns as merely inauthentic many tourist sites and experiences that are so fantastic that the traveler should have realized they were fake, and perhaps did so on at least some level of consciousness (Cohen 2002).

Conclusion:
Participating – a dialogue with authenticity
For tourism studies, allegations of inauthenticity generally relate to staged events and touristic experience that fail the objective authenticity test – it assumes that there is an undistorted standard to determine what is or is not genuine (Umbach and Humphrey 2018). But is it really so? Here we can come to assess the appropriateness of authenticity, not in terms of the appropriateness of its explanatory and constitutive beliefs but instead in terms of whether an instance of authenticity successfully plays the functional role that it is "meant" to play. And archaeology has a problem with that – as a discipline it has a problem in defining what is it meant to do. To preserve the authentic landscape, feature, item... or to explain? It is easy to hide behind the preservation of the authentic but hard to explain it.

In this period of nearly 50 years, the discussion of what authenticity really means has been going on in many different academic fields, from questions about realism, representation and reality in aesthetics and media studies, to "authenticity as idea" related to national identity and cultural heritage, as well as "authenticity as strategy" in marketing and place branding. All these discussions influenced the question of authenticity as a cultural concept in tourism and consumer culture from different analytical views, and related the discussions of authenticity in tourism studies to other theoretical and academic fields – in our case archaeology as a specific constitutional element of cultural heritage.

In the last two decades it was argued that authenticity is a spent issue in tourism – that it is no longer relevant to tourists, a redundant concept which they no longer concern themselves with. However, the fact that authenticity lacks a universal definition does not prove its redundancy. It simply shows that the concept has not reached "basic concept status," but then, it does not have to. As long as tourists continue to concern themselves with evaluating authenticity of cultural objects and experiences by whatever criteria they apply, then authenticity should remain firmly embedded in the development of tourism theory (Mkono 2012).

But is it still credible to consider and analyze consumer behavior as an expression of false consciousness? If we accept that authenticity is never objective, but always constructed, then we should take seriously accounts whereby consumers themselves perceive their experience as authentic. Empirical studies have explored consumers' own voices, and uncovered processes whereby consumers experience acts of consumption as helping them achieve moments, or subjective states, of authenticity. They see themselves not as duped victims of false consciousness, but as active agents capable of framing and pursuing life-goals with a degree of autonomy. Numerous authors suggested that we ought to take such positions seriously and treat consumers (in this case tourists) as active agents in the production

and performance of authenticity (Umbach and Humphrey 2018).

Consequently, we can define heritage tourism more narrowly as a phenomenon based on visitors' motivations and perceptions rather than on specific site attributes. This means that heritage tourism is not only tourism in places categorized as heritage or historic places based purely on the fact that they present history, but history featured is part of the experience and partially links it with motivations for the trip (Poria, Butler and Airey 2003). In this sense, authenticity is actually performed, and through the term performative authenticity authors linked the two positions that have emerged in tourism studies with respect to the concept of authenticity – on one side object related (authenticity synonymous to original and trace) and subject related modes of authenticity (existential authenticity covering bodily feelings, emotional ties, identity construction and narration related to place) (Knudsen and Waade 2010). The later corresponding to the evolution of the modern cultural tourist that was transformed from consuming the vision about past history, passing to consuming past cultural, historical and natural resources as well as intangible heritage and attractions to finally actively performing a structured decision-making process based on criteria of desirable leisure experiences such as engaging in social interaction, doing something worthwhile, feeling comfortable and at ease in one's surrounding, being challenged by new experiences, having the opportunity to learn and participating actively (Sheng and Chen 2012; Di Pietro et al. 2014). Especially the young generation asked for a different cultural consumption model – knowledge-based activities that are participative *in situ* (Papathanasiou-Zuhrt and Weiss-Ibáñez 2014). Especially in this population the use of modern ICT devices, included in to the daily activities, enabled the changes in cultural consumptions. Not that the only facilitated the broad information remotely but also facilitated the access and consumption for categories of assets that were previously considered being less accessible (Vasile et al. 2015). And further they stimulated all the senses allowing the consumption of the information in both terms of education and entertainment (Addis 2005).

It is exactly the ICT devices that in a specific area of cultural heritage consumption, in our focus in the case of archaeology, can enable, when discussing the involvement of persons with disabilities the shift form the discussion about minorized identities towards a common experience. Since disability is not a personal trait that an individual possesses but a way of seeing things, consuming information, that includes the whole of society (Fraser 2018, 12–20). And in the moment when the presentation, this is the consumption of cultural heritage is transformed from "authentic" material environments in to the hyper-realistic digital ones the differences between the capacities for consumption between different members of the society become reduced. Modernizing the presentation of cultural heritage becomes "normalization" of the consuming society.

Implementing virtual heritage technologies can, beside advertising the archaeological sites and promoting the events on them, be used as means documenting the heritage and reducing its vulnerability, caused by exposure of access. But most important it allows to resurrect the complexity of destroyed or not accessible sites and items (Farid and Ezzat 2018). Information and communication technology in the role of assistive technologies forms a collective and interactive support for knowledge and performs different roles pursuant to the type of disability to enable the consumption of cultural information and to address the question of authenticity of information provided.

Summary

In the period of last 50 years, the discussion of what authenticity really means changed from questions about realism, representation and reality in aesthetics and media studies, to "authenticity as idea" related to national identity and cultural heritage, as well as "authenticity as strategy" in marketing and place branding. All these dis-

cussions influenced the role of promotion of cultural heritage and especially archaeology in cultural tourism and consumer culture.

Consequently, we can today define heritage tourism more narrowly as a phenomenon based on visitors' motivations and perceptions rather than on specific site attributes. This means that heritage tourism is not only tourism in places categorized as heritage or historic places based purely on the fact that they present history, but history featured is part of the experience and partially links it with motivations for the trip. New perspectives of presentations, including the use of ICT devices are broadening the perspective of heritage tourism shifting it in to the world of virtual reality.

It is exactly the ICT devices that in a specific area of cultural heritage consumption, in our focus in the case of archaeology, can enable, when discussing the involvement of persons with special needs the shift form the discussion about minorized identities towards a common experience. And in the moment when the presentation, this is the consumption of cultural heritage, is shifting from "authentic" material environments and experiences in to the hyper-realistic digital ones the differences between the capacities for consumption between different members of the society become reduced.

Povzetek

V obdobju zadnjih 50 let se je razprava o tem, kaj avtentičnost v resnici pomeni, premaknila od vprašanj o realizmu, reprezentaciji in realnosti v estetiki in medijskih študijah do »avtentičnosti kot ideje«, povezane z nacionalno identiteto in kulturno dediščino, pa tudi »avtentičnosti kot strategije« pri trženju in blagovni znamki krajev. Vse te razprave so vplivale na vlogo promocije kulturne dediščine in predvsem arheologije v kulturnem turizmu in potrošniški kulturi.

Posledično lahko danes dediščinski turizem opredelimo ožje kot pojav, ki temelji na motivaciji in percepciji obiskovalcev, ne pa na posebnih lastnostih območja. To pomeni, da dediščinski turizem ni samo turizem na krajih, ki so kategorizirani kot dediščina ali zgodovinski kraji zgolj na podlagi dejstva, da predstavljajo zgodovino, ampak je predstavljena zgodovina del izkušnje in jo delno povezuje z motivacijo za potovanje. Nove perspektive predstavitev, vključno z uporabo IKT naprav,

širijo perspektivo dediščinskega turizma in ga selijo v svet virtualne resničnosti.

Ravno IKT naprave lahko na določenem področju potrošnje kulturne dediščine, v našem fokusu v primeru arheologije, omogočijo, da se pri razpravi o vključevanju oseb s posebnimi potrebami premik od razprave o minoriziranih identitetah k skupni izkušnji. In v trenutku, ko se prezentacija, to je potrošnja kulturne dediščine, premakne iz »avtentičnih« materialnih okolij in izkušenj v hiperrealistična digitalna, se zmanjšajo razlike med zmožnostmi potrošnje med različnimi člani družbe.

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Museum accessibility: development of good practice for the promotion of archaeological heritage
Muzejska dostopnost: razvoj dobre prakse za promocijo arheološke dediščine

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Abstract
In the article, we present the importance of accessibility of archaeological heritage to all types of museum visitors. Through the example of the previous activities of the Zagreb City Museum, we will focus on good practices of promotion and cooperation between the museum and certain groups of visitors with special needs, i.e. people with disabilities. We will focus on the exhibition project's design concept to promote archaeology for the entire public and the possibility of its upgrade. In doing so, we will look back at the effects of completed activities so far but also warn about potential challenges and possible ways to solve them.
Key words: archaeology, promotion, exhibition, people with disabilities, accessibility, inclusion

Izvleček
V članku predstavljamo pomen dostopnosti arheološke dediščine vsem tipom muzejskih obiskovalcev. Na primeru dosedanjih aktivnosti Mestnega muzeja Zagreb se bomo osredotočili na dobre prakse promocije in sodelovanja med muzejem in določenimi skupinami obiskovalcev s posebnimi potrebami, tj. invalidi. Posebno pozornost bomo namenili zasnovi razstavnega projekta z namenom promocije arheologije za celotno javnost in možnosti njene nadgradnje. Pri tem se bomo ozrli na učinke dosedanjih opravljenih aktivnosti, hkrati pa opozorili na morebitne izzive in načine njihovega reševanja.
Ključne besede: arheologija, promocija, razstava, osebe s posebnimi potrebami, dostopnost, vključenost

Introduction

The new museum definition[1] was approved the Extraordinary General Assembly of ICOM in Prague on 24 August 2022:

"A museum is a not-for-profit, permanent institution in the service of society that researches, collects, conserves, interprets and exhibits tangible and intangible heritage. Open to the public, accessible and inclusive, museums foster diversity and sustainability. They operate and communicate ethically, professionally and with the participation of communities, offering varied experiences for education, enjoyment, reflection, and knowledge sharing."

We must be aware that the new museum definition is not an initial step, suggesting what museums must become in the future. However, it is a reflection of the changes and adaptations museums have undergone and the definition of their purpose and role in contemporary society. Its importance also arises from the fact that the process of defining a contemporary museum was

[1] https://icom.museum/wp-content/uploads/2022/07/EN_EGA2022_MuseumDefinition_WDoc_Final-2.pdf

complex. Since 2019 it has been organised by developing and implementing the specific methodology, including the response and needs of museums worldwide. The long process that led to the new definition included open communication with the museum society and visibility of the specific phases of this research to society in general. The process was inclusive, and by its previously mentioned accessibility to the public, we might conclude that it depicted one of the essential features of museums – inclusion and accessibility.

The idea and development of museums as inclusive and accessible can be traced for several decades, and both terms can be understood as complementary. If the museum works towards inclusiveness, it must respond to the needs of society and work on adaptations to become accessible. On the other hand, working on accessibility means that the museum must be responsive to the needs of society and, by a participatory approach, learn about the adaptations that should be done.

One can define different groups of visitors on the level of society and inclusive aspects of museums. Most adaptations focus on groups of people such as the socially impaired, minorities, and people with disabilities. The basic idea of identification of these groups and the need for their inclusion into museums lies in the fact that they do not visit museums regularly for different reasons. To name some, they are unaware of what museums offer them, and they are not convinced that museums represent them, or they might feel their presence in the museum is not wanted. Suppose we sum up these potential doubts that these groups of potential visitors might have and the possible lack of adaptations in the museums for their needs. In that case, they become excluded groups of visitors.

Additional challenges for inclusive and accessible museums arise from the different needs of the society in which museums are situated, the different goals of museums' contents and strategies, and the different physical aspects of museum architecture. In some cases, museum buildings are protected as cultural monuments that do not allow the complete freedom of implementing adaptations. The digitalisation and possibilities of using different new technologies and tools can ease the process of these adaptations. However, the fast growth and changes in technological development can also mean implementing new and expensive digital infrastructure that becomes outdated and sometimes useless in a short period. Another challenge is the museum's strategy for inclusion and accessibility, which must address all the museum employees and train them for the adaptations. At the same time, it has to educate the general public and the standard types of visitors to understand the adaptations and accept specific groups of visitors.

Considering all these facts, challenges for all museums in becoming inclusive and accessible are immense and complex. Museums should make adaptations because, in this way, they can collaborate to create an inclusive and equitable society. Based on their specifics, many museums have developed different toolkits with solutions for implementing inclusiveness and accessibility to help other museums with their adaptations. These processes are slow and must follow the persistent goal and strategy. In this article, we present examples of good practice and adaptation for the visitors with special needs that satisfy and incorporate the museum's primary goals to become inclusive and accessible, focusing on promoting archaeological heritage.

For many years, the Zagreb City Museum has been working on adapting its permanent exhibition to disabled people, especially blind and partially sighted people. It has introduced the *Info Tactile Points* program and the *Dialogue through Touch* program. A series of activities take place – workshops, occasional exhibitions, campaigns, and publications aimed at people with disabilities. However, none of the programs is intended only for people with disabilities, and instead, efforts are made to make the programs, at least in part, interesting for everyone. The goal is to sensitize the public to the needs of people with disabilities, their visibility
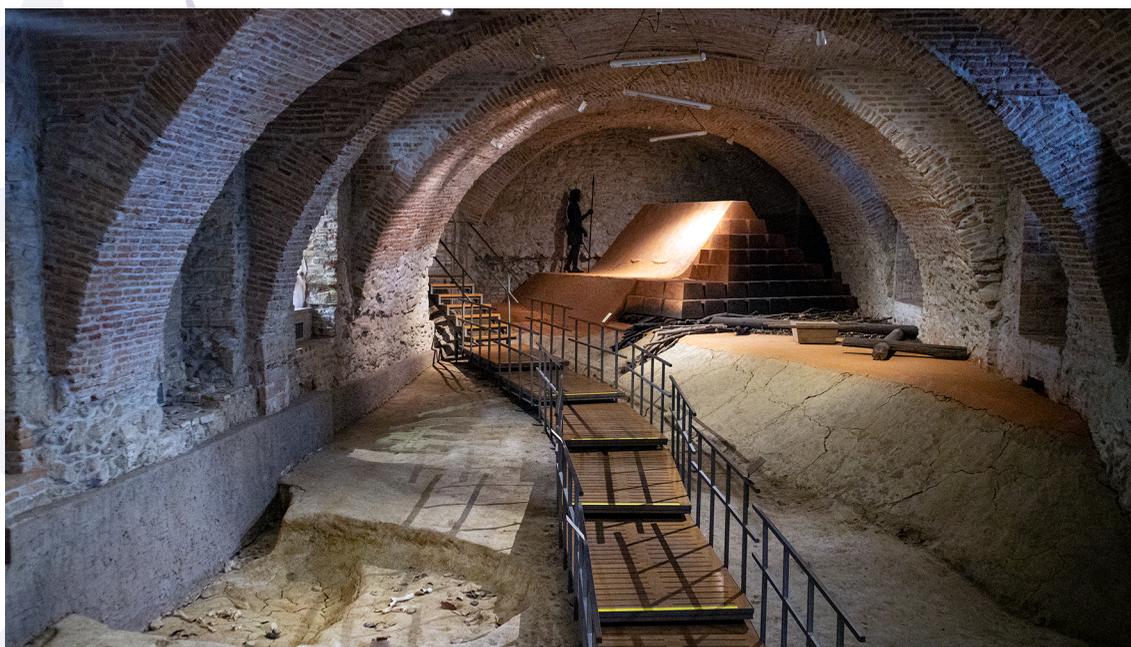
Figure 1: Parts of the Zagreb City Museum – Poor Clares' Monastery Site in situ within the permanent display of the Zagreb City Museum (photo: Miljenko Gregl, Zagreb City Museum).

and real inclusion in society. As a place open to all social groups, which cooperates with various associations and constantly promotes accessibility for people with disabilities, the Zagreb City Museum is also recognized by the international museum community COME-IN![2] and at the end of 2020 was awarded the COME-IN! Label – an innovative promotional tool awarded to museums that have reached notable improvements in the field of accessibility. After that, the museum intensified its work on the adaptation of temporary showcases and museum spaces and continued with the adaptation of the permanent exhibition to meet contemporary societal demands and create a museum which is a place for everyone!

The Zagreb City Museum and work models with people with disabilities

As a complex cultural and historical museum, the Zagreb City Museum has changed four locations and was situated in six permanent struc-

tures during its 115 years, the last one in 1997. A year later, the archaeological part of the permanent exhibition was open. On 2,223 m² there are 4,500 exhibited objects, organized through 45 themes, ranging from archaeology to the 20th century.[3] It includes a part of the archaeological site presented in situ, explored from 1989 to 1997. This part of the museum is a unique place in the town's historic core where visitors can see original parts of the archaeological site and related objects. Archaeological remains are partly on the ground floor, but about 300 m² are *in situ* (fig. 1; Mašić 2007, 310–311). Because of this combined kind of presentation of archaeological heritage, the museum's permanent exhibition is unique in the Zagreb area. Display of parts of the prehistoric settlement, pre-medieval rampart, and part of the late medieval settlement have immeasurably enriched the interpretation of the city's oldest history.

2   https://www.interreg-central.eu/Content.Node/COME-IN.html

3   The Zagreb City Museum has 30 collections, 8 collections-donations to the City of Zagreb, a documentation department, an IT department, a pedagogical-andragogical department, conservation-restoration workshops and a library.

The museum has the unique task of stimulating visitors' interest in Zagreb. Key points of the development of the capital of Croatia, including some peculiarities, are included in different contexts and interpretation and presentation methods, following the expectations and needs of contemporary society (Premerl 1994, 10–18; ibid 2007, 29–71; Kolveshi 2007, 7–9).

For more than 25 years, the Zagreb City Museum has been working on quality communication with its visitors and taking special care of people with disabilities. However, programs are not designed only for one group of visitors - people with disabilities - precisely to avoid ghettoization - but all programs strive to be designed so that everyone uses them, that they are acceptable and valuable to everyone in a certain way (Leiner 2016, 49–50).

In 2005, the *Guide for the Blind and Visually Impaired* was created in Croatian Braille and enlarged print with maps and photos of museum objects printed in colour and raised print (fig. 2; Leiner 2005). It was the first museum guide intended for blind and deaf-blind people in Croatia (Leiner 2016, 50). The same guide received its English edition in 2010 (Leiner 2010). The impetus for the creation of the guide were workshops with blind and deaf-blind people and the realization that most had rarely visited a museum until then because they did not feel welcome (Leiner 2016, 51). Created in intensive cooperation with experts and users in the Croatian Association of the Blind, this guide became the basis for the further intensive cooperation between the Museum and Associations of Persons with Disabilities.[4]

4   MGZ cooperates with numerous associations of people with disabilities (Croatian Association of the Blind, Croatian Association of Deaf-Blind Persons "Dodir", Theater of the Blind and Visually Impaired "Novi Život", Association of the Blind Zagreb, UGsO - Association of Deaf-Blind Persons of the City of Zagreb, Society for the Promotion of Inclusion Zagreb), with associations for children's rights and gender equality and other institutions (Zagreb elementary schools, cultural centres, homes for the elderly and infirm, children's hospital in Klaićeva, Goljak - hospital for the protection of children with mobility and neurodevelopmental disabilities, Suvag Polyclinic, Center for Education and education Slava Raškaj Zagreb, and other museums).
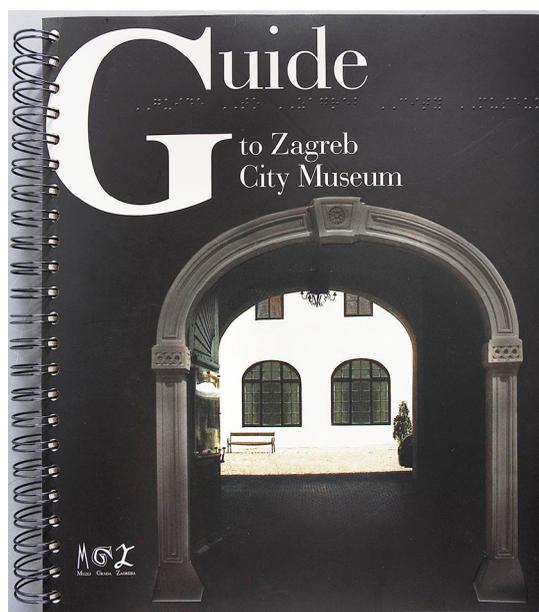
Figure 2: Guide to Zagreb City Museum for the blind, partially sighted, deaf-blind and all those who have difficulties with seeing (photo: Miljenko Gregl, Zagreb City Museum).

In 2010, the Zagreb City Museum began adapting its permanent exhibition to people with disabilities, especially blind and visually impaired and deaf-blind people, through the *Info Tactile Points* program (fig. 3, 4).[5] The adaptation began precisely in the archaeological part of the permanent exhibition, where the first main texts and texts in Braille were placed. Replicas of archaeological objects were made – three ceramic vessels from the Zagreb City Museum – Poor Clare monastery, a stone axe made of crystal, an accidental find from the Zagreb area and a metal helmet from the Budinjak site.

The concept of adaptation is essentially simple – in each theme of the permanent exhibition, the main texts are in enlarged print in Croatian and smaller font in English and German. Beneath the main texts of the 1 x 1 m format, bevelled surfaces are placed for the abbreviated texts in Croatian Braille and in enlarged print. Below,

5   The Info Tactile Points program was designed and led by Vesna Leiner, a museum consultant - pedagogue, until her retirement in 2022.

Figure 3: Tactile representation from Guide to Zagreb City Museum - photo of a portable hearth from Early Iron Age (photo: Miljenko Gregl, Zagreb City Museum).

Figure 4: Special guide through the permanent exhibition of the Zagreb City Museum for a blind and deaf-blind persons (photo: Miljenko Gregl, Zagreb City Museum).

on the right, on the same slope, tactile displays are applied - interpretations of floor plans or pictures or graphics (at first on paper), or a smaller shelf is installed on the right, on which is attached a replica of an object or a tactile display that interprets a picture, graphic, floor plan, and the like. The objects are made of original materials or similar – examples of ceramic and metal. The creation of these replicas went through the fingers of collaborators in the Croatian Association of the Blind. They learned from their mistakes, and the abundance of details decreased over time. They tried to find the most efficient way of presentation that would be clear to a blind person and most legible with fingers.

Over time, many objects were replaced by displays in more durable material because tactile displays on paper wore out and did not always meet all the needs of blind people. Almost all tactile displays on paper are gradually being replaced by tactile displays performed in acrystal. Replicas are also made in acrystal, and with the touch and feel under the fingers, and the reproduced details, it mostly meets the needs of blind and partially sighted people. The author of the replicas and 3D renderings is professor Mladen Mikulin, an academic sculptor who intensively collaborated and consulted with blind people in the Croatian Association of the Blind. Following their descriptions, remarks and wishes, he creates objects that aesthetically meet high criteria, are functionally legible to blind people and provide information that helps them create an idea about the object.

In essence, tactile info points are not intended only for people with disabilities (Fig. 5). The main descriptions are intended for all visitors, and the fact that the adaptation for blind people takes place in the same position is just the way to equality and sensitizing the public to the needs of all people, sighted and blind. Everyone, not only blind people, can feel replicas. In this way, the sighted person touches the object in the museum. At the same time, they realise that there is also a text in Braille. This combination develops into meaningful communication with

Figure 5: Example of Info tactile point within a permanent display of the Zagreb City Museum (photo: Miljenko Gregl, Zagreb City Museum).

heritage, the museum as a communicator of heritage and with all users.

It is a slow but straightforward way to think about equality and the needs of those who need help. Children are educated this way from a young age, and the Zagreb City Museum, as part of the primary school curriculum, is an excellent place for the presentation and sensitizing of all ages for the needs of people with disabilities. One of the more recent works is the picture book *The mole Talpa explores* by the Museum of the City of Zagreb, intended for preschool children and children in the lower elementary grades. Namely, the blind mole, as a museum guide, takes sighted children on a tour of the museum and teaches them not only about the heritage and history of Zagreb but also about how the museum is experienced and interpreted by the blind and visually impaired (Leiner 2021). Talpa, the mole (fig. 6), has become the mascot,

Figure 6: Talpa (Mole) – mascot of adaptation of permanent display to blind and visually impaired people at the Zagreb City Museum (photo: Miljenko Gregl, Zagreb City Museum).

the protected sign of the adaptation for people with disabilities. The explanation is in the lobby in front of the entrance to the permanent exhibition. It includes essential explanations about the adaptation of the museum, in enlarged print, with the description in Croatian Braille and the sculpture of the mole Talpa by Mladen Mikulin, which blind and partially sighted people, as well as everyone else, can feel.

The museum's permanent exhibition is replenished yearly with new Braille replicas and texts. Currently, 42 replicas and 49 texts in Braille are installed in the permanent display, which means that the adaptation, as mentioned above, covers approximately 90% of the permanent display. Work on adaptation continues. Likewise, although controversial, we decided to offer some original objects in the permanent exhibition, which are in good condition, conserved and preserved, to blind people to feel them: parts of architectural plastic, metal doors of shops, stone crowns of wells, metal parts of old bicycles, baby carriages, bells and the like and several museographic aids such as old models of the city. For blind people, the experience of touching originals that are not particularly fragile is invaluable.

Dialogue through touch is a program that includes various educational actions - creative workshops, lectures, exhibitions, events, humanitarian campaigns and plays. If necessary, leaflets, catalogues of inclusive exhibitions in enlarged print and exhibition texts are printed in Braille. International White Cane Day is regularly celebrated on October 15, and in 2022 we started celebrating the International Day of Persons with Disabilities on December 3rd. A Croatian sign language translator is hired at all exhibition openings and major events and at the Open Day for people with disabilities on the first Tuesday of every month.

An audio guide for blind and partially sighted visitors was introduced in 2012, and due to outdated technology, it will be replaced by more modern devices. As of 2020, the museum website is digitally accessible.

The Zagreb City Museum is part of the international community of small and medium-sized museums COME-IN! The goal of COME-IN! project was to valorise the cultural heritage of Central Europe, with the desire to make small and medium-sized museums accessible to visitors with disabilities. The project also encouraged these goals through the manual for museum employees COME-IN! Guide / Guidelines (in 6 languages), followed by seven pilot actions and educational training for museum employees.

Based on the experiences in the project, an innovative promotional tool was created – COME-IN! label awarded to museums that have done a lot in the field of accessibility was also awarded to the Zagreb City Museum at the end of 2020. The museum is recognised as a place open to all social groups and cooperates with various associations, and constantly promotes accessibility for people with disabilities. After that, the Zagreb City Museum intensified its work on adaptations of occasional exhibitions and museum spaces. Moreover, it continued with adaptations of the permanent exhibition and the demands that this community promotes – a museum is a place for everyone! This started the further evaluation process because the status is temporary.

In the same year, the museum hosted the exhibition *Stone on stone – Roman architecture of northwestern Istria* of the Maritime Museum Sergej Mašera from Piran, an archaeological-themed exhibition, which was adjusted to the height of the pedestals, texts in Braille, and enlarged print, replicas of objects and tactile representations (floor plans) and to persons with disabilities. It incentivised the Zagreb City Museum to design two exhibitions suitable for all and accessible to persons with disabilities.

The first art exhibition of busts, *Touching art – Mladen Mikulin*[6], opened in the summer of 2021 due to the height of the pedestals, texts in Braille and enlarged print, and the fact that

6   The authors of the exhibition concept were Vesna Leiner, museum consultant pedagogue and Aleksandra Bugar, senior curator of the Zagreb City Museum.

Figure 7: A view of the setting of the exhibition Zagreb in spe / Small Items – Great Stories at the Zagreb City Museum (photo: Miljenko Gregl, Zagreb City Museum).

all the sculptures – busts of famous people from the world of culture, sports and politics, in plaster or cast in bronze, they can be touched, adapted to people with disabilities and intended for just about everyone (Leiner 2021). In 2021, the exhibition was hosted in the Vukovar City Museum, and in 2022 in Opatija, in the Juraj Šporer gallery (Leiner and Bugar 2022).

The second exhibition is *Zagreb in spe / Small objects – big stories*.[7]

Concept and model of exhibition for all

The Exhibition *Small Items — Great Stories* is the first in a series of *Zagreb in spe* exhibitions.[8] The intention is to regularly present to the Zagreb City Museum audience various aspects of

7   The author of the exhibition is Aleksandra Bugar, senior curator of the Zagreb City Museum.

8   https://mgz.hr/en/exhibitions/%e2%80%9ezagreb-in-spe%e2%80%9c-_--mali-predmeti---velike-pri%c4%8de,1603.html

people's lives in the past who lived in the area now occupied by Zagreb and Zagreb County through future archaeological exhibitions (Bugar 2022).

The starting point of this reflection is that only by understanding the past through learning about different archaeological sites across the city, we try to sensitise the viewing public to the need for more active preservation and affirmation of the archaeological cultural heritage present in the area we live in (Fig. 7).

In short, the exhibition *Zagreb in spe / Small Items — Great Stories* is smaller, but complex archaeological exhibition, designed to be accessible for all visitors and adapted for people with disabilities.

Although almost every major city hides strata from prehistory, antiquity and the Medieval Era in its foundations, Zagreb City Museum's Permanent Exhibition, and parts of the

Figure 8: Exhibition Zagreb in spe / Small Items – Great Stories – display cases with original exhibits, replicas of objects that blind people can touch, and abbreviated texts in braille (photo: Miljenko Gregl, Zagreb City Museum).

City before the City presented at the site of discovery in situ have long been telling the story of the complex archaeological and historical changes of the city of Zagreb. With every new piece of archaeological research Zagreb reveals new items and stories. Which new story to choose to interest visitors and point them to the archaeological potential and Zagreb's ancient past?

It was the starting point for creation of the exhibition *Zagreb in spe / Small Items – Great Stories* – it was conceived as an insight into the roots and development of the city. But not only that - making the exhibition accessible for all visitors and adapted for people with disabilities also guided the exhibition design and selection of items. Therefore, it is compressed as much as possible – from the large quantity of archaeological materials held in Zagreb City Museum, those selected for this occasion were – only six. Six original items and six replicas.

Blind people experience world tactilely, and by feeling replicas they can create an idea of what the object looks like, what materials it is made from and what its surface and shape are like. Therefore, the chosen subjects, due to practicality, were relatively small in format but are ideal for tactile exploration. Aesthetically they may seem imperfect because they are only consolidated, but they were chosen for other reasons that are important to archaeologists and museologists – each of these objects tells a unique story. They introduce us to a period that spans several thousand years, from prehistory to the Early Middle Ages. These are the periods that precede our traditional understanding of the emergence of the City as we know, namely the founding of the Zagreb Diocese in 1094 and the *Golden Bula* charter of Bela IV to Gradec in 1242. This is Zagreb in spe' – a story less known for which written sources are scarce or missing entirely. We are
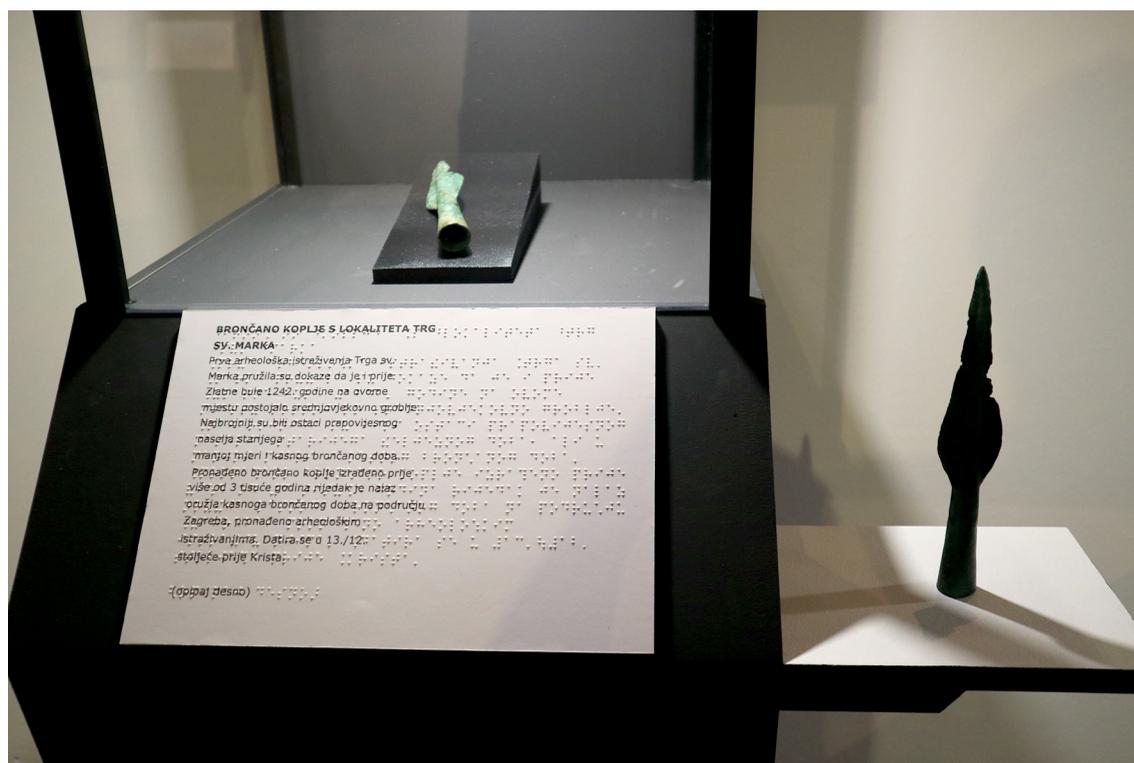
Figure 9: Exhibition Zagreb in spe / Small Items – Great Stories – a detail of display cases with original object, replica and abbreviated texts in braille (photo: Miljenko Gregl, Zagreb City Museum).

introduced to these objects from the five sites in which they were found, so in many ways they are like small portraits of the City itself. A tactile map of the location of these archaeological sites was also created for the exhibition.

The preparation of this exhibition considered certain technical adaptation standards - six identical display cases were designed for six items and their replicas. The height of display cases for example, i.e., the position of the original item, is slightly lower – most people will notice that they have to bend down to get a good look at an exhibit, but for children and wheelchair users this height is ideal. The original item is housed in a plexiglas cube. Below, on the inclined surface, abbreviated texts are applied in Braille and in enlarged print, following the example of the Info tactile points in the permanent display. Smaller shelves with attached replicas that blind people, but also all other visitors, can touch are po-

sitioned on the right side. Textual descriptions about sites and objects are placed right next to the showcases. They are bilingual (Croatian and English) and the font size and line spacing are legible for visually impaired people. All texts were also translated into Croatian sign language and were played on a nearby display (fig. 8, 9).[9]

The exhibition was well-received by all visitors and sparked interest in guest appearances in other museums. After the Zagreb City Museum, the exhibition was opened in the Vučedol culture museum in Vukovar, on the eve of the International White Cane Day, which is celebrated on October 15 (Bugar and Hutinec 2022).[10]

9   Due to limited funds, as usual, some ideas could not be realized. It would be ideal if the entire exhibition was accompanied by relief floor strips for blind people with a white cane. This was not possible, so they were placed in a smaller format only in front of the showcases, as a kind of marker.

10   https://mgz.hr/hr/izlozbe/izlozba/gostovanje-izlozbe-%e2%80%9ezagreb-in-spe-_mali-predmeti---velike-pri%c4%8de%e2%80%9c-u-muzeju,3478.html

The educational program accompanying the exhibition included jewellery-making workshops based on prehistoric jewellery, and three guest lectures by archaeologists[11] inspired by the theme of the exhibition – small objects that tell great and interesting stories.

Conclusion

The presented examples of adaptations at the Zagreb City Museum were chosen because of their specifics and tackle many of the challenges we have mentioned in the introductory chapter. Its main challenge is the museum's location in the city's historical part, including the building itself. The open physical access, including the accessible public or private transportation to the museum, and more extensive adaptations in the museum building must include several minor adaptive interventions in space, which will probably never satisfy the needs of all the groups of visitors with special needs. However, this lack of physical adaptations might be lessened by using new technological and digital devices that will benefit visitors most of the museum experience.

The long-lasting adaptive works have proven that making a museum inclusive and accessible takes a long time. They must include several aspects of museum work, including communication, workshops, and organised programmes for potential visitors with special needs and their societies. As was shown, this communication and final products must go through different stages, including the constant evaluation processes, to make necessary improvements. It is also clear that the museum must take these steps towards being inclusive and accessible based on the existing strategy. It works well if it focuses on the development of adaptations for the specific type of visitors with special needs that can be later used for the strategy or even the beginning of other adaptations. The positive approach shown by the presented examples is the inclusion and development of minor adaptations of the permanent exhibition. This way museum can also

11 Professor emeritus ddr. Mitja Guštin, Mirela Hutinec, the director of the Vučedol culture museum and dr. Zrinka Mileusnić from University of Primorska.

quickly improve adaptations without more significant impacts on the exhibition itself or any greater financial burden. Another positive aspect of the gradual introduction of adaptations to the permanent exhibition is the establishment of communication with regular visitors, who are educated and learn to accept the presence of visitors with special needs through the experience of the tactile info points, Braille and similar presentations.

During our research, we found out that to attract visitors with special needs, the museum offers organised guided visits and other adapted activities, primarily for free and in collaboration with different societies of people with special needs. As free admittance is not included in the final sum of all visitors, we could not gain an insight into the number of visits. We find that this is the main current challenge to be solved. Even though visitors with special needs are visiting the museum, and their awareness of the adapted museum programmes and accessibility has probably changed over time, this could not be measured by the possible increase in the number of their visits. We are also unable to recognise which types of visitors with special needs have accepted all the changes and have also become regular visitors. This information would also be valuable for the future planning and upgrades of adaptations for the specific types of visitors with special needs that still do not recognise that a museum is also a place for them.

The positive side of the presented examples shows that the process of becoming inclusive and accessible must be wholly integrated with the museum's primary purpose and goals in society. Zagreb City Museum mainly aims to promote the city's history from its earliest beginnings to its recent history. A significant part of the city's history and development can be recognised and interpreted only through archaeological finds. Finds in the museum have been excavated throughout the city and removed from their original context. As such, their interpretive potential is smaller than seeing them *in situ*, but it offers the museum curators the possibili-

ty of applying the creative ways of their interpretation. By using only six archaeological objects as the basis for the interpretation of six historical periods of the city of Zagreb and implementation of adaptations for the physically, visually impaired, and deaf visitors, the exhibition *Zagreb in spe* shows an excellent example of the inventive way of communicating heritage inclusively. We believe the exhibition is an example of good practice in adapting an occasional exhibition for people with disabilities. Its value is formed in the museological concept in service of the archaeological story. Affirming the archaeological heritage is, in this example, also sensitising the regular public to the needs of people with disabilities. This exhibition can now serve as an excellent example for other curators and museums. Inclusive exhibitions will become the standard in some ideal times in the future.

Summary

The new definition of the museum depicts its role and impact in contemporary society as inclusive and accessible institutions. The path to becoming such a museum presents several challenges, ranging from the overall open access to the museum on the level of transportation, adaptations of the museum architecture that can be challenging by their status as cultural monuments, recognising the groups of visitors with special needs in the society, communication with these groups to learn about their needs and make the adaptations, motivation of visitors with special needs to visit the museums, building strategies with a coordinated approach to the museum's main goals and the goals of inclusion and accessibility and education of regular visitors, including children, about the inclusion.

Zagreb City Museum has a long history of working with visitors with disabilities. In 25 years, it has chosen the approach of the introduction of adaptations, mainly for the blind and sight-impaired people, into the permanent exhibition. In time, additional adaptations, tools and programmes have been developed and have influenced the learning process of the regular visitors and raised their awareness about visitors with disabilities and their needs. This approach has enabled museum employees to learn and improve adaptations and has been awarded the COME-IN label. The long-lasting working and learning process has inspired the museum curators to create a temporary exhibition with included adaptations for several groups of visitors with special needs that communicates the story of the oldest history of Zagreb through six objects equally with all visitors and enables the regular visitors to learn about the inclusion. The exhibition presents an excellent example of an inclusive exhibition. Its simple form enables easy transport and greater dissemination of the city's history and inclusive approach in the museum.

Povzetek

Nova definicija muzeja kaže na njegovo vlogo in vpliv v sodobni družbi kot vključujoče in dostopne institucije. Pot do takšnega muzeja predstavlja več izzivov, od vsesplošnega odprtega dostopa do muzeja na ravni transporta; prilagoditev muzejske arhitekture, ki je zaradi statusa kulturnih spomenikov lahko zahtevna; prepoznavanja skupin obiskovalcev s posebnimi potrebami v družbi; komunikacija s temi skupinami za spoznavanje njihovih potreb; motivacija obiskovalcev s posebnimi potrebami za obisk muzejev; oblikovanje strategij z usklajenim pristopom k ciljem muzeja in ciljem vključevanja in dostopnosti ter izobraževanje rednih obiskovalcev, tudi otrok, o inkluziji.

Zagrebški mestni muzej ima dolgo zgodovino dela z obiskovalci s posebnimi potrebami. V 25 letih se je odločil za pristop uvajanja prilagoditev v stalno razstavo, predvsem za slepe in slabovidne. Sčasoma so se razvile dodatne prilagoditve, orodja in programi, ki so vplivali na učni proces rednih obiskovalcev in dvignili njihovo zavest o obiskovalcih invalidih in njihovih potrebah. Ta pristop je zaposlenim v muzeju omogočil učenje o prilagoditvah in njihovo izboljšanje in je muzej prejel oznako COME-IN.

Dolgotrajen proces dela in učenja je navdihnil muzejske kustose, da so ustvarili začasno razstavo z vključenimi prilagoditvami za več skupin obiskovalcev s posebnimi potrebami, ki zgodbo o najstarejši zgodovini Zagreba preko šestih predmetov enakovredno posreduje vsem obiskovalcem, obenem pa rednim obiskovalcem omogoča, da se seznanijo z inkluzijo. Razstava predstavlja odličen primer inkluzivne razstave. Njegova preprosta oblika omogoča enostaven transport in večjo disemina-

cijo zgodbe o zgodovini mesta ter o vključujočem pris-
topu v muzejih.

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Virtual accessibility of the Macedonian tomb in Ohrid
Virtualna dostopnost grobnice makedonskega tipa v Ohridu

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Abstract
The paper presents activities that were carried out in the framework of the project "Virtual reconstruction and making a model of a Macedonian tomb in Ohrid" with the main aim of promoting and presenting archaeological cultural heritage inaccessible to the broader public. Creating the virtual reconstruction and digital 3D model gave the Macedonian tomb in Ohrid "visual access". Thus, despite being completely isolated, the tomb is now accessible to everyone for inclusive learning and acquiring new knowledge or simply as a tourist attraction of exceptional regional cultural and historical significance.
Key words: Ohrid, Macedonian tomb, virtual reconstruction, 3D Model

Izvleček
V prispevku so predstavljene aktivnosti, ki so bile izvedene v okviru projekta »Virtualna rekonstrukcija in izdelava makete grobnice makedonskega tipa v Ohridu« z glavnim ciljem promocije in predstavitve širši javnosti nedostopne arheološke kulturne dediščine. Ustvarjanje konceptualne virtualne rekonstrukcije in digitalnega 3D modela je makedonski grobnici v Ohridu omogočilo »vizualni dostop«. Tako je grobnica kljub popolni izoliranosti postala dostopna vsakomur za inkluzivno učenje in pridobivanje novih znanj ter preprosto tudi kot lokalna turistična zanimivost posebnega kulturno-zgodovinskega pomena.
Ključne besede: Ohrid, grobnica makedonskega tipa, virtualna rekonstrukcija, 3D model

Introduction

Ohrid is a region of outstanding cultural and historical value, dating back to prehistoric times. Classical antiquity was a period when the area was of great importance. Perhaps the main reason for this is the fact that the historic *Candavian* road and the later Roman *Via Egnatia* passed through the territory, connecting the western Adriatic with the eastern Aegean and the southern Balkans (Битракова Грозданова 1988, 37–52; Митревски 2013, 234; Bitrakova Grozdanova 2021). Consequent-

ly, many archaeological sites reflect the status of the place and the importance of the people who lived there during the Macedonian rule and the flourishing of Hellenistic art. The monumental tomb of the Macedonian type in Ohrid is an excellent example of this hypothesis.

The tomb was found on the hill Varosh above the Ohrid Lake, at the site "Karagjulevci" (fig. 1), directly above the ancient theatre. For many years, this tomb was forgotten and inaccessible to the public, probably due to the impossibility of its physical presentation since the structure is located on private property (Битракова Грозданова and Кузман 1999; 2017; Kuzman
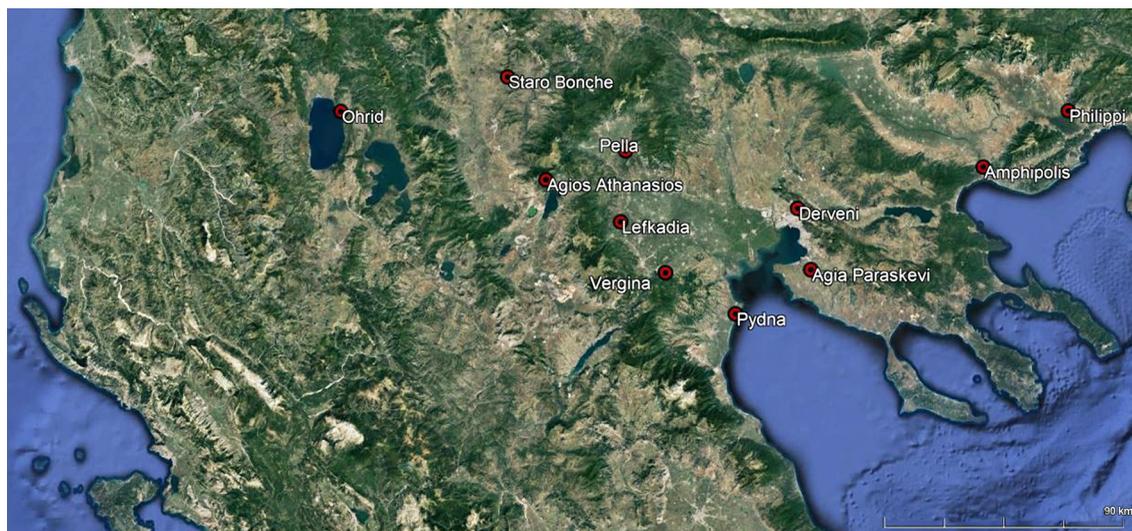
Figure 1. The distribution of the Macedonian tomb sites mentioned in the text (on the basis of Google Earth 2022; elaborated by M. Blečić Kavur).

2009; cf. Guštin and Kuzman 2016). Therefore, a detailed and systematic archaeological investigation of the area is almost impossible under these circumstances. This gave rise to the idea of producing a modern documentation, presentation, and promotion of the Ohrid archaeological monument, which is physically inaccessible to the general public but is crucial for understanding the ancient cultural heritage of this region.

Another Macedonian tomb is located quite far from Ohrid (66 km), in Staro Bonche, in the northern Pelagonian plain (Jakimovski 2011; 2015, 32–41; cf. Guštin and Kuzman 2016). Despite their distance and architectural differences, according to the current state of research, they are the only examples of this type of preserved funerary architecture in Northern Macedonia (fig. 1).

In this study, an introductory overview of the funerary architecture of the Macedonian tombs is presented, as well as a history of research and previous findings interpreting the Macedonian tomb at Ohrid. The architecture, technical description and state of preservation of this building are then discussed. The virtual reconstruction, visual restoration and 3D digital model of the tomb are described in detail. Finally, we emphasize how persons with disabilities and all types of special needs can make full use of virtual reconstructions and 3D models. Thus, these results support the main goal and perspective of the international project *Accessible and Digitized Cultural Heritage for persons with disabilities* (Lilcikj et al. 2022; cf. Karovska and Minov *in this publication*), to which this issue of *Studia universitatis hereditati* is dedicated.

Macedonian tomb in Ohrid

Macedonian tombs appear in the Late Classical and Hellenistic periods, from the 4th to the 2nd century BCE as a type of burial, first of kings and then of the upper classes. In the areas that were under Macedonian influence or under Macedonian occupation, numerous tombs are known. The best known are the tombs near the great centres of that time e.g. at Vergina, Lefkadia, Derveni, Amphipolis, or Philippi in northern Greece (fig. 1; Tomlinson 1977; Miller 1982; Andronikos 1993; Tsimbidou-Avlonitou 2005; Borza and Palagia 2007; D'Angelo 2010; Schmidt-Dounas 2016). Most Macedonian tombs were plundered, so that especially the unlooted tombs at Vergina and Derveni are important sources of information on burial customs and social organisation in ancient Macedonia (Sismanidis 1997; Tsimbidou-Avlonitou 2005;

Figure 2. The survey and documentation of the Ohrid tomb (photo I. Malezanov, D. Angjelkovski).

cf. Palagia 2022). The emergence and development of such Hellenistic funerary architecture is associated with the wealth and expansion of the Macedonian kingdom (D'Angelo 2010; Stampouloglou et al. 2019; cf. Palagia 2022). Macedonian tombs were constructed underground and covered by an artificial tumulus. They have the following architectural elements: a rectangular burial chamber and/or one or two antechambers, a *dromos*, a passage leading to the entrance of the main chamber where the funerary rites are performed, and a monumental façade (Miller 1982; Schmidt-Dounas 2016; Stampouloglou et al. 2019; Stampouloglou et al. 2020; Palagia 2022).

The first detailed analysis of the Macedonian tomb at Ohrid was conducted in 1996 and subsequently published by Vera Bitrakova Grozdanova and Pasko Kuzman (Битракова Грозданова and Кузман 1999; 2017; Kuzman 2009). They presented the history of the research and its use during World War I, when it was a hiding place for Bulgarian soldiers. The first research was carried out in the 1950s by Vasil Lahtov, who reopened the tomb and installed an iron gate in the *dromos* for protection. In 1984 Vlado Malenko started an excavation in the antechamber. No small finds of material culture were found, so it is assumed that the tomb was plundered in the past. Based on its characteristic architectural elements and solid construction, it has been dated to the late 4th or early 3rd century BCE (Битракова Грозданова and Кузман 1999; Kuzman 2009; Bitrakova Grozdanova 2022). As far as the architectural and decorative elements are concerned, the tomb at Pydna is the most similar (Sismanidis 1997; Stampouloglou et al. 2019; Stampouloglou et al. 2020), which has already been presented and argumented in the interpretation of the Ohrid tomb (Битракова Грозданова and Кузман 1999; 2017).

Architecture and state of preservation

In 2021, a group of young archaeologists, students, civil engineers and expert archaeologists conducted the project entitled "Virtual reconstruction and model of a Macedonian tomb in Ohrid" (fig. 2). The project promoter was the *Association for the Protection and Sustainable Development of the Environment Regional Green Centre Ohrid*, in cooperation with the *NI Institute for the Protection of Cultural Monuments and Museum Ohrid* with the support of the Ministry of Culture of the Republic of Northern Macedonia. It was divided into three phases – field documentation, analysis and digitization of technical documentation, and virtual reconstruction, restoration and modelling of the tomb.

During the first activity, the tomb was technically recorded and digitally photographed with modern technology (fig. 2). A total station could not be used for the technical documenta-
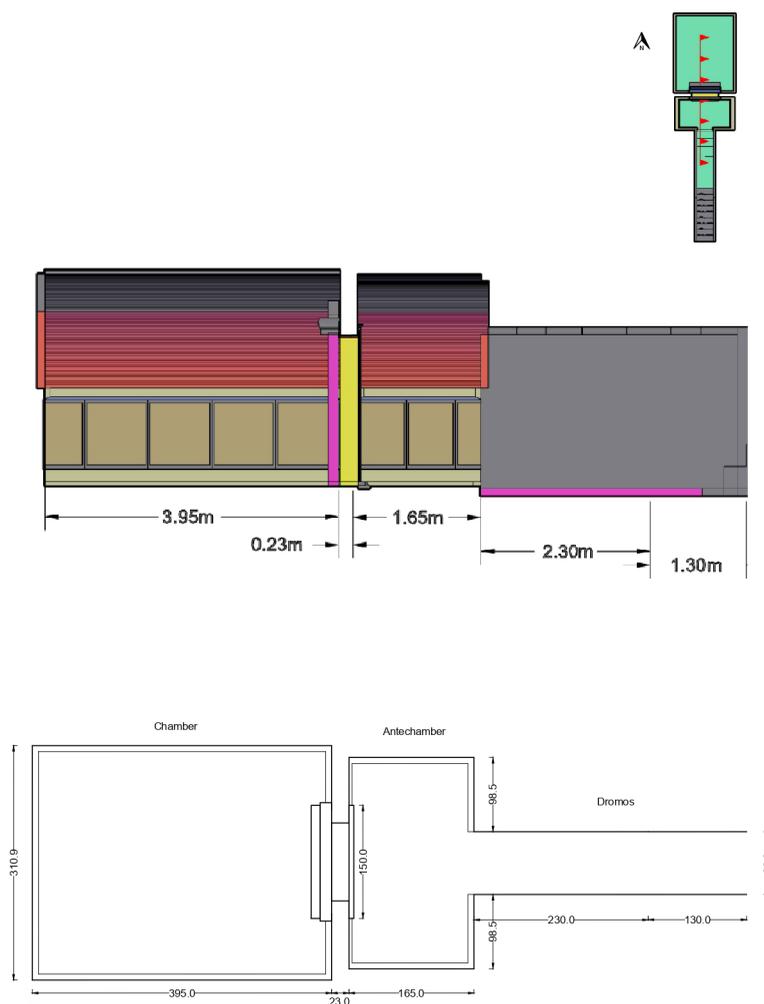
Figure 3. Ground plan and cross-section of the Macedonian tomb in Ohrid (produced by A. Boyadzieva and K. Denkovski, elaborated by M. Blečić Kavur).

tion due to time constraints and the difficult terrain. Therefore, a laser distance measurer was employed to determine the dimensions of the tomb. In addition, numerous photographs were taken with a DSLR camera, which were necessary for the creation of 2D drawings and 3D models of detailed geometric documentation.

The last analysis in 2021 documented that the ground plan of the tomb consisted of a *dromos* (2.3×0.83 m), an antechamber (1.65×2.8 m) and a chamber (3.95×3.11 m) (fig. 3). The antechamber and the main chamber are covered by a continuous barrel-vaulted roof. In the cham-

ber there are traces of two burial beds (*klinai*) on which the deceased were placed. The tomb was built from massive hewn limestone blocks, and no binding material was used in its construction. The limestone blocks are arranged in four rows in the *opus quadratum* technique, while the fifth row of stone slabs is slightly inclined towards the *dromos* to support the roof beams (fig. 3–6). Between the antechamber and the chamber there is a trapezoidal door with typically made stone jambs rising diagonally and supporting a lintel that overhangs them (fig. 5, 6; Битракова Грозданова and Кузман 1999). The floor of the

Figure 4. View of the northwestern wall of the chamber (photo by I. Malezanov; virtual reconstruction produced by K. Denkovski).
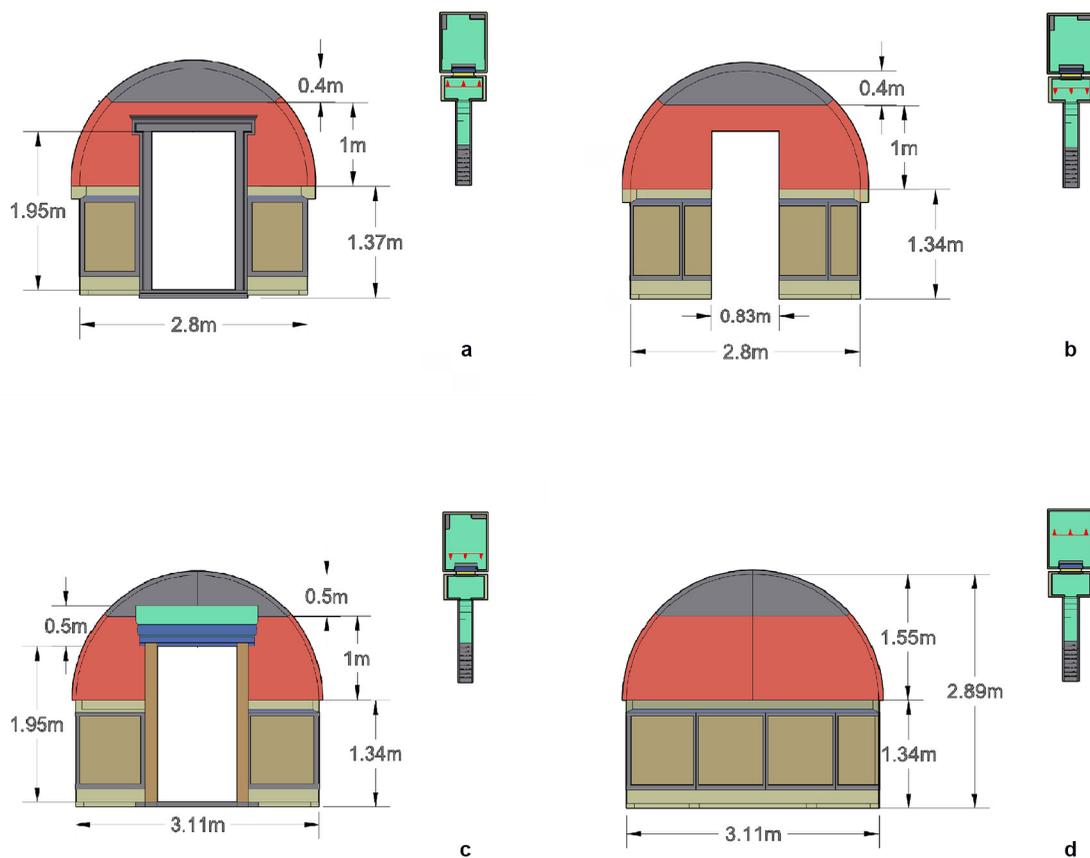
Figure 5. View of a) the entrance from the antechamber to the chamber, b) the exit from the antechamber to the *dromos*, c) the exit from the chamber, and d) the northeastern wall of the chamber (produced by K. Denkovski, elaborated M. Blečić Kavur).

tomb is made of hydraulic mortar, which is still preserved in the chamber. In the antechamber, unfortunately, the floor has not been preserved due to the contemporary use of the tomb or due to earlier research. The wall decoration in the antechamber and in the chamber consists of stucco and mortar painted different colours, of which the *Pompeian-red* predominates (fig. 4–6).

On the 2.89 m high northwest wall of the chamber are a 10 cm high plinth and a 1.24 m high stucco orthostat imitating marble slabs. The area above the 1 m high orthostat is painted red (fig. 5). In previous researches, the highest part of the wall was depicted with blue paint (Битракова Грозданова and Кузман 1999, 13; 2017), which was not confirmed during the field documentation, as the last 55 cm do not have any painted surface.

The exit wall of the chamber has the same dimensions. The door is 80 cm wide and the stone structure on which the door was installed has an interesting detail on the side of the chamber, which tells us that one of the stone blocks broke during installation, so it was fixed with iron, that is, a kind of clamp. On the other hand, the entrance from the antechamber to the chamber has a 1.27 m high orthostat, identical to the one in the chamber. The red paint covered the same height, while the unpainted part is only 40 cm high. Finally, the exit wall from the antechamber to the dromos, similar to the northwestern wall, has a 10 cm high base, an orthostat of 1.24 m, a 1 m band paint red and an unpainted part of 40 cm (fig. 5).

On the southwest side of the chamber, the floor and wall show traces of destruction, probably by illegal excavators. At the entrance itself, above the antechamber, the roof is also badly destroyed. This probably happened during the First World War, as evidenced by the inscriptions on the southwestern wall of the chamber.

It is interesting to note that during this activity the temperature inside the tomb was measured regularly and indicated a constant temperature of 14°C. However, in the presence of three people, the temperature inside the tomb increased by 4°C, which means that it reached 18°C in only 10 minutes. Since the temperature inside the tomb fluctuates, daily visits would affect the humidity and damage the wall paintings. This is another reason why the tomb should be conserved and presented in a virtual edition, such as a 3D model based on visualizations.

Virtual reconstruction and 3D model

The next phase was the creation of a virtual reconstruction of the tomb, i.e. the analysis and digitization of the technical geometric documentation. Besides digital documentation, virtual reconstruction is very important because it is the only way to visualize the tomb under the currently available conditions. The aim of this activity was to present the documented tomb to a wider public. Thus, an information board with a short description of the tomb and a QR code to access the virtual reconstruction was placed near the site.

The third activity, also aimed at the public presentation of the tomb, was the creation of an ideal reconstruction, virtual restoration and model of the tomb, for which the textured 3D models are necessary. Three-dimensional digitization has become an integral part of cultural heritage documentation and brings significant benefits to studies of reconstruction and restoration of architectural structures, archaeological sites, and historical monuments (Stampouloglou et al. 2019). Thus, a model of the Ohrid Tomb was produced using a 3D printer and later artistically painted (fig. 7). In this way, researchers and visitors can now better understand the original appearance of the monument, even though safety reasons prohibit actual physical restoration of the tomb. With the 3D model, we also wanted to show how the tomb looked in three dimensions so that people with different types of disabilities could see and touch it. We can now touch and feel the tomb in detail, especially its construction and the architecture. This result allowed equal participation in the broader cultural activities of Ohrid. It therefore provides an excellent opportunity to involve different audiences (chil-

Figure 6. Ideal virtual reconstruction and visual restoration of the entrance from antechamber to the chamber and the exit from the chamber (produced by K. Denkovski).

dren, persons with disabilities, seniors...) in the promotion of the common quality of life associated with our social and cultural values.

Figure 7. 3D model of the Macedonian tomb in Ohrid (produced by I. Malezanov).

Conclusion

Macedonian tombs were luxurious funerary monuments for the Macedonian elite and aristocracy. In addition to ancient Macedonia, these tombs have been found in Thrace, Thessaly, Asia Minor, and Euboea (Miller 1993; D'Angelo 2010; Schmidt-Dounas 2016; Palagia 2022). In contrast to the magnificent Macedonian tombs with attractive facades, such as those at Vergina, Pella, Agia Paraskevi, Agios Athanasios, etc. (Andronikos 1993; Sismanidis 1997; Tsimbidou-Avlonitou 2005; Stampouloglou et al. 2020; cf.

Palagia 2022), the tomb of Ohrid has a simple facade. Nevertheless, due to its solid construction, the techniques of interior decoration and the use of colours and stucco, it undoubtedly belongs to the Macedonian tombs with the nearest example, the tomb of Pydna (Битракова Грозданова and Кузман 1999; cf. Stampouloglou et al. 2020). Consequently, an exceptional dignitary and his wife were most likely buried in it (Кузман 2010, 58–59). Therefore, the interpretation that it is the burial of a historical figure *Aeropos*, depicted in ancient written sources as the ruler of Lychnidos in the 3rd century BCE, has also been offered (Битракова Грозданова and Кузман 1999; Блажевска 2013, 677; Bitrakova Grozdanova 2021, 426). However, the so-called provinciality of the building, the reduction of the architectural and decorative elements as well as the simplicity of the facade speak for a dating of the tomb into the 3rd century BCE, which could be confirmed at least hypothetically by the assumption of lavish burial of *Aeropos* at this place.

For many years this Macedonian tomb in Ohrid was forgotten or neglected because it was not accessible to the public. With the production of the virtual reconstruction, a visual restoration and the 3D model of the tomb, we wanted to present to a wider public why this tomb is so important for the whole Ohrid region. The fact is the elite of Lychnidos were buried in the Macedonian way in the 3rd century BCE, adopting

the innovations of Hellenistic monumental funerary architecture.

Archaeological heritage belongs to all, and access to it should be guaranteed to all. The European Commission (2003) sees accessibility and inclusion as key to sustainable development and believes that it enhances the quality of life and makes the environment more liveable (Kajda, Michalik and Kobiałka 2015). Therefore, it is necessary to provide people with disabilities with various opportunities to participate in economic, social and cultural life (UNESCO 2020). Not only people with disabilities, but also the entire population is affected by accessibility: Parents of young children, the elderly, people with temporary mobility limitations, etc. The lack of accessibility prevents them from experiencing and understanding their own heritage. With the aim of increasing accessibility and making changes in this regard, we have succeeded in presenting the significant archaeological heritage of Ohrid to a wide audience and tourists through virtual reconstruction and visual restoration. We believe that such an approach is our future standard, both in the profession and in the promotion of the (in)accessible heritage.

Summary

The Macedonian tomb in Ohrid symbolises one of the most important architectural representations of the tomb buildings from the Hellenistic period in the territory of Northern Macedonia. Architecturally, the tomb consists of a *dromos*, an antechamber and a chamber. The entire tomb is made of stone blocks without binding material and is decorated with stucco decoration and mortar. The largest area is covered by Pompeian red paint, which was found in the middle zone of the tomb's walls. The tomb is dated to the 3rd century BCE and was probably commissioned by a resident of Lychnidos who belonged to the aristocracy or rulers of the city at that time. Traces of two *klinai* were found inside, which means that two people were buried in the chamber.

For many years this Macedonian tomb in Ohrid was forgotten and/or neglected because it was not accessible to the public. With the realization of the virtual reconstruction, a visual restoration and the 3D model of the tomb, we wanted to present to a wider public, especially to persons with different types of disabilities, why this tomb is so historically important for the whole Ohrid region. The tomb is now accessible to everyone for inclusive learning and acquiring new knowledge about archaeology, or simply as a tourist attraction of cultural and historical significance.

Povzetek

Makedonska grobnica na Ohridu je eden najpomembnejših arhitekturnih predstavnikov grobnih stavb iz helenističnega obdobja na ozemlju Severne Makedonije. Arhitekturno je sestavljena iz dromosa (hodnika), preddverja in komore. Celotna grobnica je izdelana iz kamnitih blokov brez veziva in je okrašena s štukaturnim okrasjem in ometom. Največjo površino pokriva pompejanska rdeča barva, ki je bila najdena v srednjem pasu sten grobnice. Datirana je v 3. stoletje pr. n. št. in jo je verjetno naročil prebivalec Lihnida, ki je pripadal takratni aristokraciji ali vladarjem mesta. V notranjosti so bili najdeni sledovi dveh klinei, kar pomeni, da sta bili v grobni komori pokopani dve osebi.

Dolga leta je bila ta ohridska grobnica pozabljena in/ali zanemarjena, saj ni bila dostopna javnosti. Z izvedbo virtualne rekonstrukcije, vizualne obnove in 3D-modela smo želeli širši javnosti, zlasti osebam z različnimi vrstami invalidnosti, predstaviti, zakaj je ta grobnica tako zagodovinsko pomembna za celotno ohridsko regijo. Grobnica je zdaj dostopna vsem za vključujoče učenje in pridobivanje novih znanj ali preprosto kot turistična znamenitost kulturnega in zgodovinskega pomena.

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The Roman temple – heroon of Gramadje, Barovo – Demir Kapija
Rimski tempelj – heroon iz Gramadja, Barovo – Demir Kapija

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Abstract

The article presents the results of the archaeological research of a temple – heroon from the Roman period in Barovo (Demir Kapija, Northern Macedonia). Based on the research carried out, and the architectural elements found, we have managed to create an ideal reconstruction of the temple with the roof, or rather, to get an impression of how the temple probably looked before its destruction. Within the framework of the Erasmus+ AD HOC project (Accessible and Digitised Cultural Heritage for Persons with Disabilities), a three-dimensional digital reconstruction, a visual restoration and a 3D model of the temple were created. This model will be used in a variety of educational activities for audiences with all types of disabilities.

Key words: temple – heroon, Roman period, 3D digital reconstruction

Izvleček

Članek predstavlja rezultate arheološke raziskave templja – heroona iz rimskega obdobja v Barovu (Demir Kapija, Severna Makedonija). Na podlagi opravljenih raziskav in najdenih arhitekturnih elementov nam je uspelo ustvariti idealno rekonstrukcijo templja s streho, oziroma pridobiti vpogled, kako je tempelj verjetno izgledal pred uničenjem. V okviru projekta Erasmus+ AD HOC (Dostopna in digitalizirana kulturna dediščina za osebe s posebnimi potrebami) je bila izdelana tridimenzionalna digitalna rekonstrukcija, vizualna restavracija in 3D model templja. Ta model se bo uporabljal v različnih izobraževalnih dejavnostih za občinstvo z vsemi vrstami posebnih potreb.

Ključne besede: tempelj-heroon, rimsko obdobje, 3D digitalna rekonstrukcija

Introduction

The village of Barovo is located in the valley of the gold-bearing river Boshava, which rises from the mountain Kozhuv. It is located 17 km from the town of Negotino and 12 km southwest of Demir Kapija. Along the river valley there are several ancient settlements near the villages of Gorna Boshava, Kula, Konopishte, Gradishte, Koprishnica and others.

Two archaeological sites were discovered in the immediate vicinity of Barovo – Ridot, an ancient village from the early Roman period of the 1st – 2nd century, and Gramadje, a temple-heroon with a necropolis (Лилчиќ 2001, 319). The second one is located 1 km south of the village.

The first information about discoveries of stone remains of a temple was mentioned by Vojislav Radovanović (Радовановић 1924, 318) and later by Nikola Vulić (Вулић 1933, 101–103; ibid 1941-48, 54). Years later, Viktor Lilchikj
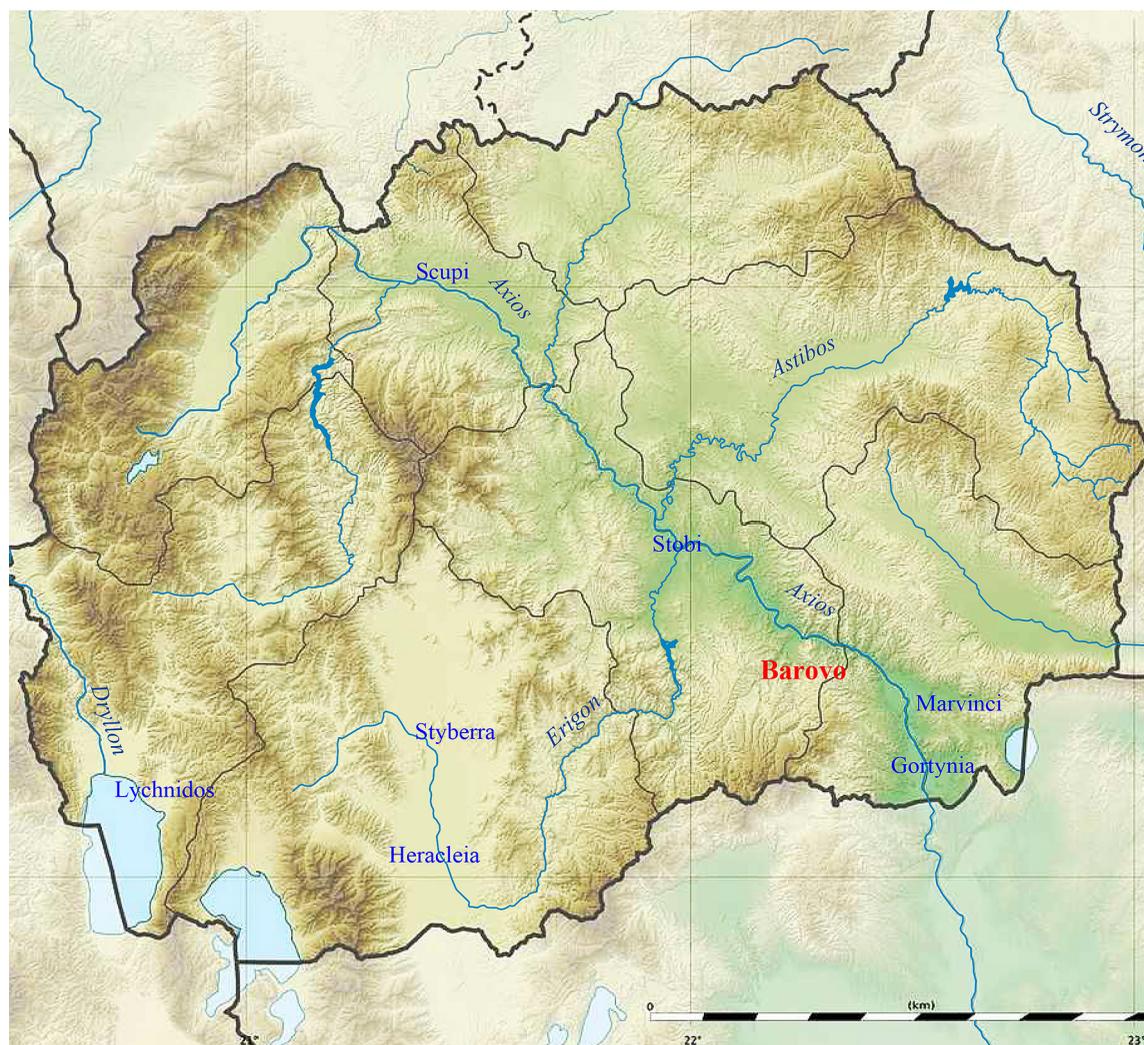
Figure 1: Geographical location of the archaeological site of Gramadje – Barovo.

conducted a survey of the site (Лилчиќ 1986; ibid 1987, 135–148; Lilčić 1988). He assumed the location of the heroon, illustrated the present stone architectural remains of the temple, and proposed a reconstruction of the roof area of the building. Documented were approximately twenty stone architectural elements - profiled and decorated stone slabs with portraits, animal figures, lion heads on the vertical zones of the gesims/gaison, architraves, cornices, parts of marble statues and others (Лилчиќ 1987, 135–148; ibid 2001, 319–338).

However, he was unable to locate the architecture itself. Its remains were scattered over a large area around Gramadje hill and were particularly badly preserved. Decades ago, they had been pulled out of the field with metal ropes by workers of the local agricultural cooperative to clear the ground for deep ploughing. According to information from local residents, the largest blocks were even blown up with explosives.

Archaeological excavations in 2012 and 2016

The ancient site considered one of the most important cultural heritage sites in the Tikvesh

Figure 2: Uncovering the base of the temple-heroon with architectural elements and marble sculptures (archaeological campaign 2012; photo A. Jakimovski).

Figure 3: Surface findings of architectural elements and stone sculptures (archaeological campaign 2012; photo V. Lilchikj Adamsen).

region due to its architectural remains was archaeologically explored and excavated in 2012 to determine the exact location of the architecture and discover additional architectural elements that would allow for reconstruction. Several test trenches were excavated on the larger area, where the architectural elements were scattered. On the western plateau of the hill called Gramadje, three control trenches of 10 m in length did not produce any results.

Two trenches were excavated on the hill where the location of the architecture was assumed. In both of them were discovered foundations of architecture that was interpreted as being secular. The foundations and crepidoma of the heroon as well as several stone architectural elements were discovered in 2012 at a third location.

Most of the architectural elements were located towards the west from the foundations – several of them were discovered not far from the place of their fall. For the reconstruction were of special importance fragments of the ceiling cassette with a representation of the claws of an eagle or a griffin, a part of a cornice with a denticula and a sima with reliefs of lion heads that served as spouts for rainwater from the roof. Further, was discovered massive frontal acroteria with acanthus leaf decoration superimposed with a towering central palmette, a decoration unknown until now in Northern Macedonia.

Research continued in 2016 and the goal was to complete the excavations of the interior of the temple. The discovered architectural elements and the foundation enabled the reconstruction of the temple with its roof.
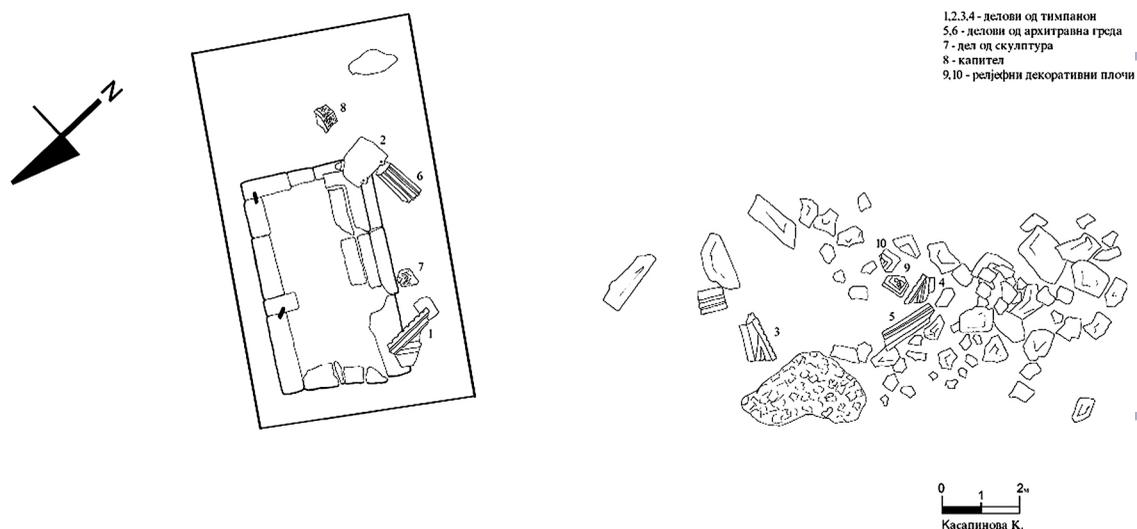
Figure 4: The base of the temple-heroon with architectural elements (archaeological campaign 2012, M. 1: 50; archive of the UKIM).

Architecture and architectural elements

Tympanum of the temple: Four corner elements originating from the front and back of the temple have been preserved. The tympanum is composed of a horizontal wreath without a sima,

which is consisted of five continuous bands and the total height of the entire zone is 0.19 m. The lowest is the toothed zone (denticula) with depressions (imersecriones) that have an oblique profile. Followed by a narrow cymatium over

which a gaison is placed – it has a flat front side and is rounded at the bottom. In the recessed zone of the gaison, at the corners between the pediment and the side façade, we see small apple-shaped rosettes, of which only one was preserved. Above the gaison there is a kyma with a rounded profile, and another rectangular profiled zone (plinth).

Figure 5: Monumental parts of the tympanum in situ (archaeological campaign 2012; photo V. Lilchikj Adamsen).

All four lower corners of the tympanums are more or less preserved. They are covered by a simplified crown profile at an angle of 26 degrees. The central elements, most probably decorated, were not discovered. Oblique tympanum crowns with the raking sima. They framed the upper, gable side of the tympanum. Small fragments of the very lower parts were preserved. Their profile is similar to that of the horizontal parts of the wreath.

Figure 6: Fragment of an architrave with a frieze from the front (archaeological campaign 2012; photo A. Jakimovski).

Architrave with frieze: Recognised was a single left corner element that was with the usual epistyle profile divided into five horizontal, banded zones with a total height is 0.26 m. The lower three zones are flat and with alternating graded outcrops and are followed by a cymatium-cornice with a rounded profile and a flat plinth.

The frieze zone is located above the architrave and it consists of three basic surfaces and has a height of 0.18 m. A flat belt below, retracted by 20 mm inwards, followed by a vertical flat belt with an oblique profile towards the outside and a flat belt projecting above in line with the plinth of the architrave. Along the inner sides, at the height of the frieze, the epistyle beam was gradually cut by about 0.12 m. This incision served for the support mounting of the horizontal plates from the ceiling above the front portico of the temple. The same profiling as on the front side continues on the left side of the block. On the upper side towards the ends, the block has two rectangular holes, for metal joints with the extended stone elements.

Cornice: Eight fragments of the cornice above the sidewalls were preserved. Four of them were incorporated into the aforementioned corner cusped blocks. The profile of the cornice consists of the following zones: denticula, narrow cymatium, then projecting, internally hollowed gaison, rounded cymatium, straight sima

and a plinth. In the sima on all four-corner dentils we see sculptured lions' heads. Three heads were preserved, one of which because it was broken off, was transferred to the National Museum of Negotino. The tops of the cornice blocks have rectangular holes for metal joints. The average height of the profiled zone of the wreath is 0.297 m., which is exactly one Roman foot (pes).

Ceiling panels: five parts of these plates were discovered. They allow the reconstruction of the size of the roof. Namely, the porch would be covered with five such plates and their total area measured 3.10 x 1.20 m. or 10.5 x 3 feet. Only parts of five plates gave been preserved.

Figure 7: Part of the cornice above the sidewalls (archaeological campaign 2012; photo A. Jakimovski).

Figure 8: Fragments of ceiling plates with portraits (archaeological campaign 2012; V. Lilchikj Adamsen).
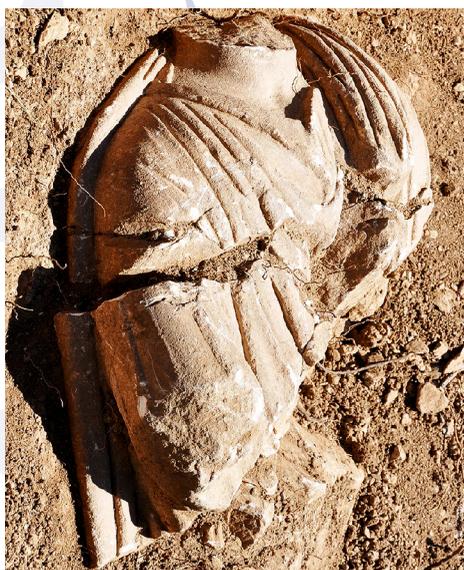
Figure 9: Fragment of the torso of a male marble sculpture (archaeological campaign 2012; photo A. Jakimovski).

On the middle, two are portraits of a man and a woman. The woman is young, dressed in a robe with folds. She has neatly combed hair, parted in the middle and gathered at the back. This hairstyle is common on early Roman tombstones, dated mainly from the 2nd – 3rd century (Вулић 1941-1948, 34, no. 82, 112, no. 143, 375, 177, no. 373, 179, no. 333; Соколовска 1987, 50–51, no. 35–38). The man has a slightly longer and wider neck, but part of the head was broken off. On the third plate, we see a dolphin. Perhaps it is the plate noted by Vulić, writing of "*a fish on the left and above it a leaf*" (Вулић 1933, 101). On the fourth plate, we see an ara – altar.

In the ceiling cassettes, we see portraits of ordinary people, according to which we could conclude that it is a posthumous object – a mausoleum. It seems that the custom of building mausoleums for the wealthiest families or individuals in Macedonia became popular during the Roman imperial period since more and more such buildings are being discovered.

Columns and capitals: Although columns were mentioned by Radovanović (Радовановић 1924, 318) only a single capitel was discovered in 2012.

Stylobate: During the excavations were discovered 15 stone elements forming the substructure of the temple.

Fragments of marble statues: Discovered were an upper part of a male torso (Bitrakova Grozdanova and Nikoloska 2022, no. 92, 81), and four smaller fragments. Three of them are the lower parts of the body, covered by a folded dress, while the fourth represents a muscle – a triceps. The torso of the sculpture was discovered on the outer side of the southern wall of the architecture.

Conclusion

The discovered architecture was most probably erected by or for a prominent citizen in the 2nd or 3rd century AD. It is the first excavated example of such a building that contains almost all the architectural elements enabling a complete reconstruction. Its importance is accentuated by the representative architecture and the fragmented marble statue of a man discovered most likely belonging to the owner. It was the positioning of statues of individuals and not deities in such a prominent place in the temple that points to a posthumous character of the building or, in our terms, a heroon.

Figure 10: 3D digital reconstruction and restoration of the temple-heroon in Gramadje – Barovo (produced by K. Denkovski).

During the Erasmus+ AD HOC project (Accessible and Digitised Cultural Heritage for persons with disabilities) a complete three-dimensional digital reconstruction, visual restoration and 3D model of the temple was made.

Summary

The temple-heroon in Gramadje (Barovo) was erected on a gentle slope with a wide panoramic view towards the Barovo plateau in the south. It was a rectangular building with a northwest-southwest orientation and 5.40 to 3.50 meters in size.

The form of the architecture - its characteristic functional and decorative details, enable us to reconstruct the purpose as well as the dating of the building. Not only the architecture but mostly the preserved fragments of sculpture and the portraits from the plates in the celing suggest a dating of the temple-heroon from Barovo into the second half of the 2nd and early 3rd century.

In the framework of the Erasmus+ AD HOC project (Accessible and Digitised Cultural Heritage for persons with disabilities) a complete three-dimensional digital reconstruction, visual restoration and 3D model of the temple was created. This model will be used in a variety of educational activities for persons with all kinds of disabilities, especially for the children with visual impairments from the state school for blind DUCOR "Dimitar Vlahov" from Skopje.

Povzetek

Tempelj-heroon (mavzolej) v Gramadju (Barovo) je bil zgrajen na položnem pobočju s širokim panoramskim razgledom proti Barovski planoti na jugu. Gre za pravokotno stavbo z orientacijo severozahod-jugozahod velikosti 5,40 x 3,50 metrov.

Oblika arhitekture - njeni značilni funkcionalni in dekorativni detajli nam omogočajo rekonstrukcijo namembnosti in datacije objekta. Ne samo arhitektura, predvsem ohranjeni fragmenti kiparstva in portreti s plošč v stropu nakazujejo na datacijo templja-heroona iz Barova v drugo polovico 2. in začetek 3. stoletja.

V okviru projekta Erasmus+ AD HOC (Dostopna in digitalizirana kulturna dediščina za osebe s posebnimi potrebami) je bila narejena tridimenzionalna digitalna rekonstrukcija, vizualna restavracija in 3D model templja. Ta model se bo uporabljal v različnih izobraževalnih dejavnostih za osebe z vsemi vrstami oviranosti, še posebej za otroke z motnjami vida iz šole za slepe DUCOR "Dimitar Vlahov" iz Skopja.

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Presentation and interpretation of public archaeological sites looking towards sustainability and inclusion
Prezentacija in interpretacija javnih arheoloških najdišč s pogledom na trajnost in inkluzijo

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Abstract
The paper presents two aspects crucial for a sustainable and inclusive development of public archaeological sites: how to display and interpret archaeological remains, based on their entity, state of conservation, potentials and possibilities of investors, and how to make them accessible also to people with disabilities. For the first task we developed a new digital tool, which guides the user through a detailed questionnaire about the specifics of the archaeological site and the user's wishes. Based on the given answers, the tool provides the most suitable solutions for presenting archaeological remains. Some of the suggested solutions also fit people with disabilities, some can be adapted to them and in many cases the combination of different approaches provides a sufficient grade of inclusion, ensuring a shared fruition of the remains by different target groups. Concerning accessibility of archaeological sites to people with disabilities we will highlight main principles and fields of intervention.
Key words: archaeological park, digital tool, presentation, inclusion, people with disabilities

Izvleček
Članek predstavlja dva ključna vidika za trajnostni in inkluziven razvoj javnih arheoloških najdišč: kako prikazati in interpretirati arheološke ostaline glede na njihovo entiteto, stanje ohranjenosti, potenciale in možnosti investitorjev ter kako jih narediti dostopne za osebe z oviranostmi. Prvi vidik predstavlja novo digitalno orodje, ki uporabnika vodi skozi natančen vprašalnik o posebnostih arheološkega najdišča in uporabnikovih željah. Na podlagi podanih odgovorov orodje ponuja najprimernejše rešitve za prezentacijo arheoloških ostalin. Nekatere od predlaganih rešitev so ustrezne za osebe z različnimi oviranostmi, nekatere je mogoče prilagoditi. V mnogih primerih pa kombinacija različnih pristopov zagotavlja zadostno stopnjo inkluzije, katere rezultat je skupna prezentacija ostalin, ki je primerna za različne ciljne skupine. V zvezi z dostopnostjo arheoloških najdišč osebam z oviranostmi izpostavljamo glavna načela in področja ukrepanja.
Ključne besede: arheološki park, digitalno orodje, prezentacija, inkluzija, osebe z oviranostmi

Introduction

Archaeological parks[1] are one of the more popular types of archaeological tourism products (Egri 2022; Zanier and Senica forthcoming). Nevertheless, the high-quality presentation and at the same time, high-quality preservation and protection of both movable and immovable archaeological remains in archaeological parks and other archaeological areas are quite complex. Because of the different specifics of the archaeological sites such as different budget disponibility or the condition of the remains, not every presentation is suitable for every archaeological site. To help choose the most suitable presentation for archaeological park or similar areas at the Institute for the Protection of Cultural Heritage of Slovenia in the cooperation with the company 3APPES we developed the ArcheoDanube's archaeological park tool Yesterday-today-tomorrow that is a complete novelty on a global scale, as there is no comparable tool on the market yet (Institute for the Protection of Cultural Heritage of Slovenia 2022).

The tool can be used by all managers of archaeological parks or other interested stakeholders, especially municipal or regional administrations, national agencies, museums, specific management authorities, associations, SMEs, and similar. The tool can also be used by the general public in order to understand conditions that influence decisions in the presentation of archaeological heritage, but also in the perspective of local participatory projects. Its user-friendly structure and graphics can attract new audiences to the topic of archaeological presentations and its use within archeotourism.

1   The term is often used in different ways, to define any kind of open-air archaeological site. In the Archeodanube project (Zanier and Ratej 2021, 153–154; Egri 2021, 7; Zanier and Ratej forthcoming) we decided to adopt the definition which is in use in Croatian legislation: "An archaeological park is a researched, protected and presented archaeological site or its part that includes informative and didactic components of presentation and interpretation in order to raise awareness of the importance of archaeological heritage" (Zakon 2020).

In the process of development of archaeological parks and similar sites, visitors with different disabilities are often forgotten and as a result, they are excluded from society because they are not offered equal opportunities. Some of the solutions suggested by the tool are also suitable for people with different disabilities, some can be adapted to them and in many cases, the combination of different approaches provides a sufficient grade of inclusion, ensuring shared fruition of the remains by different target groups.

The tool is available for free and was developed within the ArcheoDanube project (*Archaeological Park in urban areas as a tool for Local Sustainable Development*). The project connects 15 project partners from 11 countries. It is implemented within the Interreg Danube Transnational Programme and is co-funded by the European Union (ERDF, IPA, ENI funds). Among the main goals of the project are improving the management and experience of archaeological heritage based on the creation of archaeological parks, involving the local community in the management and promotion of their archaeological heritage and increasing the visibility of archaeological parks and cities of the Danube Region in the form of a transnational sustainable tourism product.

Yesterday-Today-Tomorrow tool

The new digital tool (fig. 1) is suitable for anyone who wants to establish a new archaeological park or modernise an existing one or simply wants to present archaeological remains in other archaeologically relevant areas. The tool guides the user through a detailed questionnaire that includes the specifics of the archaeological site and additional infrastructure that the user may wish to have in their archaeological park or site. In the end, based on the given answers, the tool suggests most suitable solutions for presenting archaeological remains.

The tool does not specifically focus on people with disabilities, as it is aimed to assist users in finding solutions for presentation and interpretation, which are appropriate for different
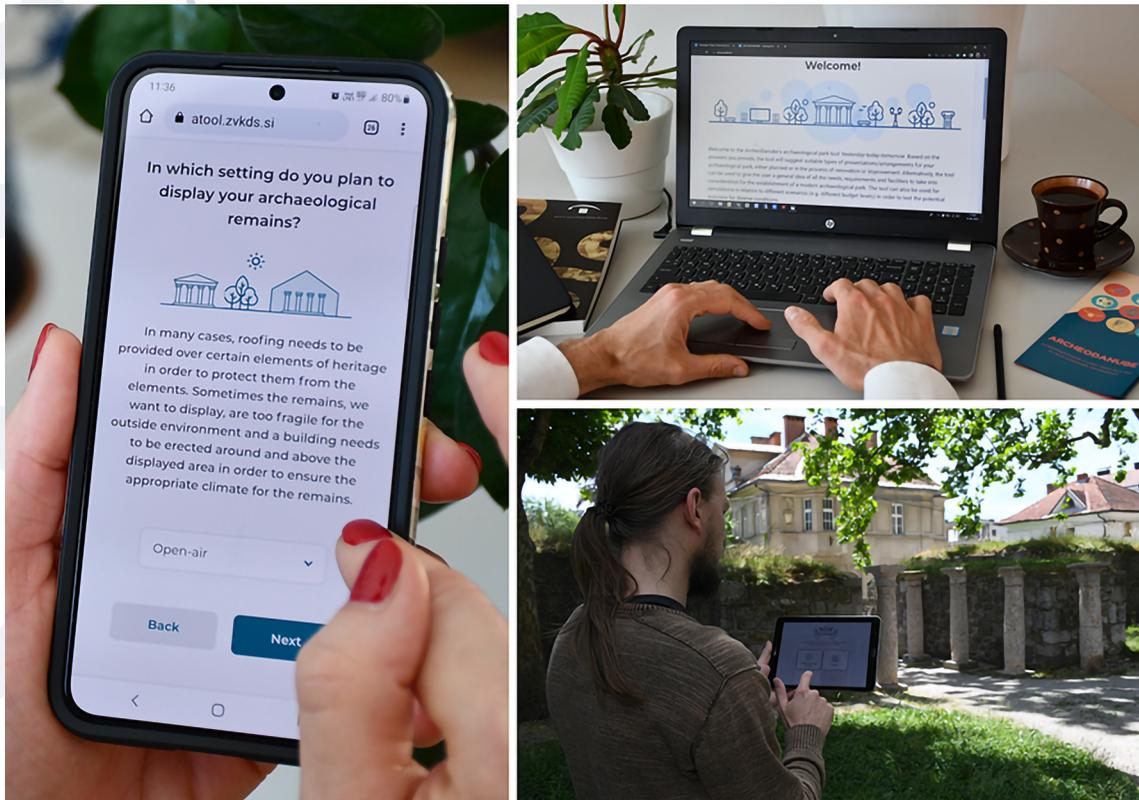
Figure 1: Yesterday-Today-Tomorrow tool in use (photo Tajda Senica).

target groups, with and without disabilities. The ultimate goal of inclusion should namely be to equally engage mentioned different audiences, as well as encourage shared fruition and mutual learning processes. Users should therefore actively adapt the solutions suggested by the tool to different target groups taking into consideration different categories (age, nationality, disability, etc.).

Questions and answers

Through a set of questions (Table 1), answered by the user, the tool gets all information necessary for suggesting the most suitable solutions for the presentation and interpretation of archaeological heritage at a specific site.

Table 1: Questions of the Yesterday-Today-Tomorrow tool.

Questions relevant for in situ presentation and interpretation of archaeological remains
In which country is your archaeological park?
What is the budget you intend to invest in the presentation/arrangement of your archaeological park?
How big is the area you want to present?
In which setting do you plan to display your archaeological remains?
Is the archaeological park located in an urban or a rural area?
How will the archaeological remains you intend to display look like?
Will the archaeological remains be displayed *in situ*?
What materials are the elements you want to display made of?
What is the current state of conservation of the archaeological/architectural remains?

Questions relevant for in situ presentation and interpretation of archaeological remains
Do the remains you wish to display need to be consolidated, conserved and/or restored?
Is there sufficient archaeological data in order to reconstruct/interpret the original appearance of the building?
Will the displayed archaeological remains require additional protection measures?
Will the archaeological park be freely accessible to the public without fences and entrance fee?
If the archaeological park will not be freely accessible, does it already have the basic (required) security infrastructure (fencing, suitable entrance, security)?
Do you plan to erect a building for reception (ticket office and possibly other purposes - souvenir shop, cafe ...)
Do you plan to have sanitary buildings (toilets) in the archaeological park?
Do you plan to erect building(s) of any other purpose?
What regular maintenance will the archaeological park require?
Will you have an annual budget or other means for ensuring regular basic maintenance at the archaeological park (maintenance of the displayed archaeological remains, grass-mowing, maintenance of trails, disposal of litter ...)?
Do you have or intend to have a management plan?
Will you or another institution manage the archaeological park area after the initial investment?

The first question of the tool relates to the country in which the archaeological park is located which is mostly related to value and currency of budget levels[2]. In the case, partner countries of the Archeodanube project (Bulgaria, Bosnia and Herzegovina, Croatia, Czech Republic, Germany, Hungary, Moldova, Romania, Serbia, Slovenia) were included, as well as the option "other".

In all likelihood, the most important factor is the budget that is planned to be invested in the arrangement of the archaeological park, because with a low budget, we have very limited options regarding what we can achieve and how the site

2   Of course each country has its own national laws which concern archaeological heritage, especially protection, which have to be taken into account when planning enhancement works in archaeological sites: cf. Zanier and Ratej 2021, 66–106; Egri 2021, *passim*.

can be presented. Currency varies depending on the selected country, otherwise the possible answers in Euros are: up to 10.000, 10.000–50.000, 50.000–100.000 and more than 100.000.

A lot also depends on the size of the area that is planned to be presented because even if we have a smaller budget, we still have more options available in a smaller area to make a high-quality presentation with this budget versus in the large one. Possible answers are: small (up to 100 m²), medium (up to 500 m²) and large (over 500 m²).

The user then has to answer, in which setting the archaeological presentation is planned, possible answers are: open-air, with roofing, indoor, mixed (open-air, roofed and/or indoor), the existing *in situ* display of the remains is appropriate and investments in this field are not planned and physical display of archaeological remains and any other investment in this field are not planned. In many cases, roofing needs to be provided over certain elements of heritage in order to protect it. Sometimes the remains, we want to display, are too fragile for the outside environment and a building needs to be erected around the displayed area in order to ensure the appropriate climate for the remains.

The location itself is also important to be considered when establishing an archaeological park, because if the site is located in rural area it is usually more difficult to reach the target audience or a sufficient number of visitors with which the costs of operating the park can be at least partially or fully covered, especially if there are no other sources of income. In this case, it is necessary to consider whether it is even worth investing in the presentation of such a park. On the other hand in rural areas there is a bigger possibility that the archaeological park can be expanded and developed into an important tourist attraction if we compare it to the park in urban areas which faces many more obstacles since they are usually very limited in terms of space.

A lot also depends on how the archaeological remains are planned to be displayed. Will they be hidden underground and not visible to the public, or will they be seen as ruins, inte-

grated into modern/functional elements or fully reconstructed? The latter can be very complex from the point of view of preservation and protection but also from the perspective of correct interpretation of the archaeological heritage, especially if we do not have all the necessary information on how exactly the remains used to look in the past when they still served their original purpose. Relating to this issue it is also important if the archaeological remains will be displayed *in situ* or they will be relocated to some other location. Given this, it is necessary to remind: when possible, *in situ* presentations are preferred. However, when presentations in urban areas are planned, it is sometimes not possible to adapt current urban layout to the planned archaeological park, but vice-versa. In some cases, remains that are found under existing roads or houses cannot be displayed *in situ* for obvious reasons. In this case, relocation of the remains can be an option.

Conditions and restoration techniques implied for *in situ* presentation depend on the materials we want to display. Different materials also require different maintenance methods thus, it is essential to be informed on what materials are the elements that are planned to be displayed made off. Possible answers are stone or fired brick architecture, frescoes, mosaics, wooden architecture, earth or mud brick architecture, portable archaeological artefacts[3] and other or materials that are not known yet.

The question about the state of conservation of the archaeological/architectural remains has possible answers: remains are buried/underground, preserved at foundation level, standing architecture or elements integrated into modern architecture. If the remains are hidden underground we let visitors' imaginations run free, so it is especially important how we approach the

3   Portable archaeological artefacts are objects that people created, modified or used. These artefacts include things such as tools, weapons, vessels, clothing and decorative elements made out of stone, bone, metal, wood or some other organic materials. Their main characteristic is portability, which separates them from archaeological features, such as postholes, pits, walls, pillars and other architectural elements, which are non-portable (or immovable).

interpretation of such remains, about which we usually do not have much information ourselves. The following questions deal with the topic if the remains that are planned to be displayed need protection in form of conservation and/or restoration and if there is sufficient archaeological data in order to reconstruct/interpret the original appearance of the building.

In order for remains to be adequately protected some require additional protection measures like humidity control (water drainage), fencing or other measures such as walkways, and footbridges. Rarely no additional protection measures are needed if we want the archaeological remains to be properly protected. Another important question regards accessibility for the public. If the archaeological park is freely accessible without fences and entrance fee it is definitely more accessible to the general public, it does not need working hours and requires less staff. On the other hand, in this way the remains are more exposed to vandalism. If we have the site protected with basic security infrastructure such as fencing, additional security and suitable entrance the remains are more protected. With collecting the entrance fee we can cover part of the costs for the maintenance of the park. In the case of collecting an entrance fee, it is recommended to plan to erect a building for reception such as a ticket office that can also include a souvenir shop or a coffee shop. A very simple variant of a reception building can be built with a small budget, but it is advised that the attention is payed to the aesthetical suitability of such a building.

Sanitary facilities are almost mandatory, especially if we collect entrance fees because upon payment, a higher level of service is automatically expected. Building proper sanitation for the park can be expensive. It is advised that proper sanitary buildings are built with proper sanitation. Of course, portable toilets can be a budget-friendly or a temporary option, but they can have a repelling effect for the visitors who want to enjoy the presented heritage. If such portable toilets are planned, they should be ar-

ranged in a disguised setting with ensured regular cleaning.

To erect a building(s) of any other purpose such as a playground for children means higher investment and maintenance costs, but on the other hand it can attract more visitors and provide them with a better overall experience. For example, if the visitor urgently needs sanitary facilities and is not provided it is meaningless that he received a high-quality interpretation of archaeological remains because this additional need that was not satisfied spoils the overall experience.

Regular maintenance is required for the displayed remains, additional infrastructure and overall visitor experience. In the digital tool possible answers are maintenance of archaeological remains, grass-mowing, litter disposal, heating, maintenance of trails, signposts, panels and maintenance of complex visitor infrastructure such as sanitary facilities, interactive equipment, reception building or visitor interpretation centre. For example, we can't just place the litter disposal and then forget about them, as they would fill up quickly and consequently represent a negative experience for visitors. All such elements need to be maintained even the text on the interpretive panels may fade over time and need to be replaced.

That is why an annual budget or other means for ensuring regular basic maintenance at the archaeological park are required and the tool specifically asks users about this. If no budget is foreseen for this purpose, the tool will not suggest presentation and interpretation solutions which require demanding maintenance. Maintaining a good and desirable archaeological park for years after the opening/renovation is crucial in maintaining interest for the park. Depending on the size and complexity, regular maintenance can be more or less demanding, but it can be greatly simplified when we involve local municipalities in at least the basic tasks such as litter disposal, grass-mowing and similar tasks, for which it already has a well-organised service. In the case of a low budget, one of the solutions can also be voluntary work with a straightforward system, which has proven to be a very effective solution in many countries.

A well set management plan is essential if the archaeological park is planned to run successfully in the long term, because it helps all the people involved in the organisation to clearly follow the goals and vision that were set. If the management plan is good, everyone knows what his responsibilities and roles are. For example, it must be determined exactly who is in charge of mowing the grass so that there will be no waiting on who will do it and during this time the site can become overgrown and unsuitable for visitors.

Last but not least when establishing an archaeological park it should be appointed who will manage the park after the initial investment. Even though the site is open to the public and requires little maintenance, it is recommended that is properly managed to achieve sustainable results and that it will not become another of the many failed projects that can be traced in the field of cultural heritage and archaeology, which initially have enormous potential, but a problem arises with the further management of the site.

Results

Based on the given answers the Yesterday-To-day-Tomorrow tool calculates and provides the most suitable solutions for the foreseen budget and size of the archaeological park. Although the tool's suggestions are in no way obligatory, they can be seen as the most logical solution applicable to the specifics of the archaeological park that is described during the questionnaire. Possible solutions suggested by the tool are listed in table 2.

Table 2: Possible results of the Yesterday-Today-Tomorrow tool.

Possible solutions for in situ presentation and interpretation of archaeological remains
Establishment of trails with benches, signposts and ornamentation.

Possible solutions for in situ presentation and interpretation of archaeological remains
Placement of interpretative panels (only text and figures; not interactive).
Establishment of additional digital content available through QR codes (applied to interpretative panels, benches or signposts).
Establishment of a mobile app.
Publication of printed material (guidebooks, children books, brochures, leaflets, site plans ...).
Placement of fixed audio-visual, tactile and multimedia displays and tools (speakers, touch screens, stereoscopes, models, tactile reproductions, fixed didactic equipment ...).
Establishment of a visitor interpretation centre (a room or other place with digital presentations with TV, AR/VR equipment, models, didactic tools, tactile reproductions, replicas ...; also equipment or material that can be used on the site like audio-guide and AR/VR mobile equipment, guidebooks, brochures, site plans ...).
In situ display of consolidated or slightly integrated stone architectural elements (walls, stone pavements ...).
In situ display of restored wooden architectural elements.
In situ display of restored frescoes and mosaics.
Reconstruction of architectural elements (true to scale reconstruction of a destroyed building attempting to reproduce its original appearance and materials).
Anastylosis (restoration of a ruined building by reassembling fallen elements: original components are placed back into their original position).
Integration of original features by using alternative elements (replacement of missing parts by clearly different materials and stylized forms).
Substitution of original features by using alternative elements (display of ground plans of buried archaeological remains by using vegetation/shrubs or noticeable materials inserted into the paving).
Light projection and holograms of archaeological remains.

The establishment of trails with benches, signposts and ornamentation is the most standard solution when establishing an archaeological park and is classified within the process of landscaping. As described in Egri (2021, 41): "The main role of landscaping is to shape the area of an archaeological park in a way that the heritage is highlighted and the whole experience is enjoyable for the visitors. However, landscaping works must consider all requirements that ensure the integrity of the archaeological heritage, including the legal ones, and other elements that are important for the site development."

Placement of indoor or outdoor interpretive panels that include only text and figures and are not interactive can also be classified as one of more basic solutions which usually do not require such a large investment. Nevertheless not all information is suitable for display on interpretive panels. It is necessary to be aware of who the target audience is, which is important in the preparation of a good interpretation. Good communication throughout interpretive panels is achieved with a clear structure, emphasis on the main topic, with regard less is more and simple language. As Tilden (1977, 20) stated: "It is far better that the visitor to a preserved area, natural, historic or prehistoric, should leave with one or more whole pictures in his mind, than with a mélange of information that leaves him in doubt as to the essence of the place, and even in doubt as to why the area has been preserved at all." Precisely for this reason: "In presenting and interpreting the historical story of the heritage site, it is necessary to be selective and to decide which elements will be of most interest to the kind of people that the site will attract" (Feilden and Jokiletho 1998, 114). At the same time, a multilingual approach should be envisaged, in order to make the content available to different audiences, also with disabilities, by including at least some basic aids like relief images, Braille and easy read method.

Placement of interactive and tactile tools, such as stereoscopes (fig. 2), models, tactile reproductions, fixed didactic equipment, as well as audio-visual and multimedia displays that include speakers, touch screens, and other similar equipment with films, animations, games and 3D visualisations usually costs much more than the installation of basic interpretive panels without interactive features. Interactive displays are more memorable and stimulating for the visitors than regular displays. It can even include functions that provides different smells (for example of different fruits whose stones were find on the

archaeological site and could represent the food that the former inhabitants consumed) which can enrich the visitors' experience especially it is beneficial for the visitors with different disabilities, such as e.g. the visual impairment. Visitors with different disabilities are usually deprived and forgotten in the process of establishing archaeological parks and other archaeological relevant areas, because the site is not adapted to their needs. With the use of audio-visual and multimedia displays we can adapt and bring the story of the park closer to them. The Management Guidelines for World Cultural Heritage Sites advise that we must not forget that: "The media used to interpret the history of the site should be chosen to be as effective as possible for all visitors, without harming the appearance or ambience of the heritage site" (Feilden and Jokilehto 1998, 114). It is understandable that we probably cannot adapt the entire path beside the archaeological remains for visitors that use wheelchairs without affecting the remains. However, we can arrange areas or use other equipment to bring the experience closer to them. For example, in the time of the coronavirus lockdown, virtual tours of the sites became more popular, due to which this technology also began to develop more.
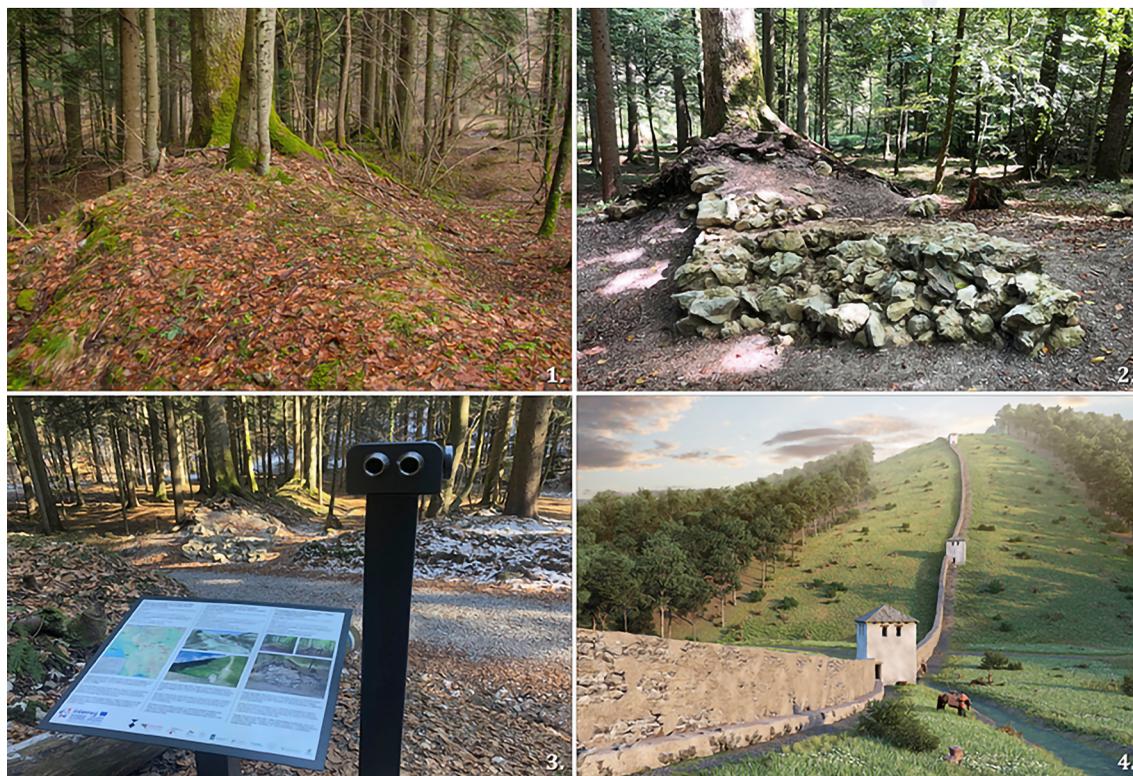
Figure 2: Different ways of displaying archaeological remains of the Late Roman defence system *Claustra Alpium Iuliarum* at the site of Gradišče near Rob (Slovenia). 1) The site before excavation (photo Andrej Blatnik). 2) Excavated and consolidated section of the barrier wall: as the course of the wall is clearly visible as a ridge, only its first part was unearthed and displayed (photo Tajda Senica). 3) Information and 3D reconstructions are provided by an interpretive panel and an archaeo-stereoscope (photo Tajda Senica). 4) Reconstructed view of the wall visible through the archaeo-stereoscope (made by Link 3D).

Additional digital content can be made available also through QR codes which are applied to interpretative panels, benches, signposts or printed materials. This solution is cost-effective and can be suitable for different target groups, also those with different disabilities, as the content connected to the QR codes can be designed in very diverse ways, but of course it presupposes the use of appropriate smartphones and internet disponibility.

Mobile apps are a popular solution for improving accessibility, presentation and interpretation of archaeological remains. They can be combined with aspects of gamification and they can also be easily adapted to visitors with different disabilities, involving different senses and offering different utilities. For example, in the project Claustra+ a mobile app was developed, that includes (besides many other utilities) also audio guides which are beneficial for users with visual impairment (Oxygen Tech 2020).

The publication of printed material (such as guidebooks, children books, brochures, leaflets, site plans, etc.) is a basic, but efficient way to mediate interpretation about archaeological sites to the audience. The solution is mostly cost-effective and can also be adapted for people with different disabilities, for example for visual impairment the material can be printed in Braille. For the information to be accessible for people with learning disability, elders, and hearing impairment or also for those whose content language is their second, the text should be written in easy read method. In the end it is also crucial to identify suitable places for the distribution of printed materials otherwise it can be difficult to reach the desired target groups.

The establishment of a visitor interpretation centre can especially if placed at the entrance of the site provide a good introduction or a basic insight into the story of the archaeological site. It is also beneficial for visitors with different disabilities which in this way can avoid potential dangers of the diverse terrain of the site itself, if that is not adapted to their needs. An interpretation centre can be a complex offering also other facil-ities (reception, sanitary, etc.) or simply a room with displays of digital presentations and reconstructions, AR/VR equipment, models, didactic tools, tactile reproductions, replicas, etc. It can also host equipment or material that can be used on the site like audio-guides and AR/VR mobile equipment, guidebooks, brochures and site plans. An advantage of interpretation centres is the fact that they are usually covered with a roof and contents are available over the whole year.

In situ presentation is the conservation and displaying of archaeological remains in their original location in order to maintain their significance and authenticity (Egri 2021, 153). Conditions and restoration techniques implied for *in situ* presentation depend on the materials of the remains, as defined by the user in the questionnaire. *In situ* display can be performed *sub divo* (without any shelter) or under a protective structure. Archaeological remains composed of fragile materials (organic materials, mosaics, plaster, etc.) have to be protected by buildings, shelters, glass walkways, seasonal removable coverings or other similar means (Stanley-Price and Jokilehto 2002; Aslan 2007). Frequently, archaeological remains don't only need to be consolidated, but also additionally protected from standing water or water folds. For this purpose, different kinds of drainage structures (channels, substrates, etc.) have to be planned, with minimal impact on the archaeological remains.

In situ display of archaeological remains is particularly demanding especially because of their fragmentary nature; principles developed by conservation and restoration science have to be respected (Stanley-Price and King 2009), but also parameters concerning the specific situation affect the decision on how to display *in situ* archaeological remains, as shown in Table 3.

Main procedures used for *in situ* display of archaeological remains are listed in Table 3 and have advantages and disadvantages, which are briefly discussed in the following paragraphs and Tables 4, 5 and 6.

Conservation or consolidation of the original substance (as it was unearthed) ensures a

Table 3: *In situ* display of archaeological remains: issues, principles, parameters and possible procedures.

Issues specifically related to in situ display of archaeological remains

- The state of conservation of archaeological remains is mostly fragmentary (in some cases only minimal parts of the original buildings or features survived – there are very few examples where the original substance is preserved almost in its entirety, like in Akrotiri or Pompeii and other sites of the Vesuvian area);
- In most cases there is no proper documentation showing the original appearance of the archaeological structures, i.e. building documentation or similar, which would allow a matching reconstruction of the original (there are several exceptions, for example more recently dated archaeological heritage for whom building documentation, including drawings and photographs, can be found in archives);
- Archaeological sites are often multi-period phenomena, where the layout and function of the structures and other features had changed from one period or phase to another;
- Original building materials have different conservation needs, and some cannot survive if exposed to air, rain, sunlight, temperature changes, etc.; besides different types of physical display, the possibility of additional protective structures should be considered.

Principles to be respected in conservation/restoration works

- Authenticity (authenticity of the remains has to be preserved);
- Compatibility (materials used for conservation and restoration works have to be compatible with the original ones);
- Reversibility (materials used for conservation and restoration works have to be reversible);
- Minimal intervention (conservation and restoration interventions have to be as limited as possible).

Parameters influencing the decision how to in situ display archaeological remains

- Type, size, materials and state of conservation of the archaeological remains;
- Quantity and quality of information about the archaeological remains;
- Maintenance capacities;
- Available budget.

Possible procedures for in situ display of archaeological remains

- Conservation, i.e. consolidation;
- Integration;
- Reconstruction;
- Anastylosis;
- Translocation;
- Integration of original features using alternative elements;
- Substitution of original features using alternative elements.

high level of authenticity, which has an intrinsic value for most visitors, as visitors stay in queues to see original art works, not their reproductions. However, it does not facilitate direct reading or interpretation of the remains, but this issue can be supported and solved by adopting proper interpretative media. It also leaves the original substance almost exposed to the effects of weather (Table 4; fig. 3), which can be overcome by applying protective structures.

Integration is normally performed by adding small parts to the original structure in order to provide stability (e.g. by filling in gaps within walls), better protection (e.g. by adding a wall topper to seal the original part of the wall), and improved water drainage (e.g. by adding a sloped

Figure 3: Rijeka (Croatia), display of the consolidated structures of the late Roman *principia* within the city centre (photo Petar Fabijan).

wall topper to eliminate excess water quickly). Integration has similar advantages and disadvantages to consolidation and can be regarded as a suitable compromise between safeguarding authenticity and implementing practical solutions intended for an easier conservation of archaeological remains, especially *sub divo*, i.e. without additional protective structures (Table 4; fig. 4).

Figure 4: Solin near Kostrena (Croatia), slightly integrated structures of a late Roman fortlet (photo Petar Fabijan).

Table 4: Advantages and disadvantages of conservation/consolidation and integration.

Conservation/consolidation	
• Ensures a high level of authenticity; • Maintenance requirements are affordable, but especially in the case of sub divo conservation continuous care is needed.	• Does not facilitate direct reading or interpretation of the remains; • Lets the original substance exposed to the effects of weather.

Integration	
• Ensures a high level of authenticity; • Maintenance requirements are affordable.	• Does not facilitate direct reading or interpretation of the remains; • In some cases, this solution is still not sufficient to safeguard specific fragile materials of the original structure and additional protective elements have to be foreseen.

In archaeology, a reconstruction normally represents the rebuilding of the hypothetical appearance of usually one phase of a building or feature of a site (fig. 5). Because of many disadvantages, listed also in Table 5, *in situ* reconstructions are generally not supported by international doctrinal documents and conventions – this is also the case of the *Convention Concerning the Protection of the World Cultural and Natural Heritage* (UNESCO 1972), for which authenticity is an indispensable value. Consequently, some UNESCO candidatures of reconstructed sites have been frequently amended or rejected. There are specific conditions for reconstructions to be admissible:

- Reliable and detailed data about the original appearance have to be available and used in order to correctly plan the reconstruction;
- Especially in the case of monuments destroyed during wars, their reconstruction is regarded as a way of healing open war wounds (which, if left open, would instigate hate – see for example the reconstruction of the Mostar Bridge as a symbol of reconciliation).

These conditions are rarely fulfilled in the case of archaeological heritage, so the choice to nevertheless reconstruct archaeological sites is at least controversial. If fragile materials of an archaeological site are going to be displayed and the reconstruction can at the same time help to protect them from weather conditions, then the reconstruction can be justified from the point of

view of protection. The process of reconstruction can be an educative process itself and the finished building can be an important didactic tool for visitors (Stanley-Price 2009, 36). Still, it would be preferable to place reconstructions outside the site perimeter, in order to prevent their disturbance and to give visitors the possibility to admire the original remains and compare them to the reconstructions.

Figure 5: Saalburg (Germany), *porta decumana* reconstruction (photo Gorinin, https://commons.wikimedia.org/wiki/File:Saalburg-Porta.Decumana.01.JPG).

Anastylosis is the restoration of a ruined building or monument by reassembling fallen original elements that have to be placed back into their original positions; new materials can also be incorporated in order to provide structural integrity and stability. The Venice Charter of 1964 has defined specific criteria for anastylosis, which are still valid: a) the original condition of the structure must be confirmed scientifically, b) the correct placement of each component must be determined, c) supplemental components must be limited to those necessary for stability and must be recognizable (ICOMOS 1964). It is therefore clear that anastylosis is conceivable especially in the case of structures made of specifically shaped building elements, where the original position of every component can be deduced from its form and dimensions (to other types of structures the technique cannot properly applied) (Table 5; fig. 6).

Figure 6: Šempeter (Slovenia), mausoleum of *Ennius* reassembled by anastylosis (photo Jacquesverlaeken, https://commons.wikimedia.org/wiki/File:Sempeter_v_Savinjski_dolini_Necropolis_Enius_1.JPG).

Anastylosis is sometimes used in combination with translocation (Kołakowski 2015), performed when a monument has to be moved from one location to another, by disassembling or cutting it into parts and then reassembling it by anastylosis at the new location (Table 5; fig. 7).

The integration of original features by using alternative elements foresees the replacement of missing parts by clearly different materials and forms, which can give an abstract idea of the original features. In this kind of project, modern building materials are frequently used, but also organic elements (Table 6; Figure 8). The replacement of missing parts can also be performed by providing an abrupt contrast, and in this case, it is called interpolation (Kandic 1990; Stamatović, Vučković and Kujundžić 2018).

Figure 7: Abu Simbel (Egypt), the Great Temple after translocation (photo Pepaserbio, https://commons.wikimedia.org/wiki/File:Abu_Simbel_main_temple.jpg).

Table 5: Advantages and disadvantages of reconstructions, anastylosis and translocation.

Reconstruction	
• Reconstructions are immediately understood by the public (though the reconstruction represents just one possible interpretation of the site, so what the visitors will so easily perceive is not the original appearance itself, but a particular idea of that); • They offer protection to fragile types of materials which cannot be preserved sub divo; • They can host collections or other facilities, but the latter can severely affect the original substance; • A reconstructed building can be easily open to the public throughout the year; • The process of reconstruction can be an educative process itself and the finished building can be an important didactic tool for visitors, helping them to better understand the past of the site. Still, it is not necessary to do that in situ (thus affecting the remains), as there can be additional areas intended for reconstructions and experimental archaeology; • A reconstructed building can perhaps attract more visitors and thus generate more income for the public or private authorities that manage it (Stanley-Price, 2009, 36), though additional research has to be performed in order to verify this assumption.	• Reconstructions can inhibit the proper completion and viewing of the original substance of the site, and the respective structures can even damage the archaeological remains. Technically, it is possible to create less invasive and reversible reconstructions, but these are often raising the implementation costs; • Normally, several elements have to be reconstructed in a hypothetical way, so if the original substance of a building is, for example, preserved only at foundation level, frequently there is no information about the original location of the doors and windows, or the height of the ceiling etc. These are relevant architectural details that affect the internal communication, lighting and volume of the building, so there is the risk to recreate a building with erroneous characteristics as a hypothetical reconstruction. Authenticity is in this case curtailed due to using non-original materials and also wrong architectural features; • Just one hypothetical view of the original appearance will be shown (interpretive media allow to show different possible reconstructions), and that cannot be easily changed if additional research will indicate that the reconstruction is wrong; • Just one period or phase of the site will be privileged at the expenses of other phases (interpretive media allow to show reconstructions for different phases); • The maintenance of the reconstructed parts has to be considered alongside the original parts of the site.

Anastylosis	
• High level of authenticity, if the reassembling is made correctly; • Immediate and overall understanding of the building and its features.	• The material is usually left exposed to the effects of weather; this can be overcome by applying additional protective structures; • The process of reassembling and replacement can affect the original substance of the structure; • Some elements may have been reused in different buildings from different periods, so their use in one reassembled structure prevents their use in others; • There is always a risk of mistakes in reassembling the elements.

Translocation	
• Sometimes translocation is the only way to save a monument from destruction.	• High costs and technical difficulties.

Figure 8: Veii (Italy), Portonaccio temple with architectural elements indicated by stylized additions (photo Livioandronico2013, https://commons.wikimedia.org/wiki/File:Tempio_di_veio.JPG).

In some cases, archaeological remains themselves cannot be displayed directly, for example, because the area has to be used for other non-compatible purposes, or the type of materials of the original substance are not suitable for display. One option is the substitution of original features by using alternative elements which allows displaying ground plans of archaeological remains by using vegetation/shrubs or different building materials inserted into the paving. This kind of display could be appropriate for archaeological sites where the remains are mainly known from non-invasive research, especially geophysical surveys. In some cases, viewing platforms can be necessary in order to fully ap-

preciate such true to scale ground plans, as well as additional explanation by interpretive media (Table 6; fig. 9).

Figure 9: Künzing (Germany), visualisation of the Roman amphitheatre using a simple wooden structure (photo Katharina Zanier).

In situ integration of the missing parts and substitution of the whole can be performed also in an immaterial way, using light projections and holograms. These solutions are not invasive and surely represent appealing attractions due to their innovative character (Table 6; fig. 10).
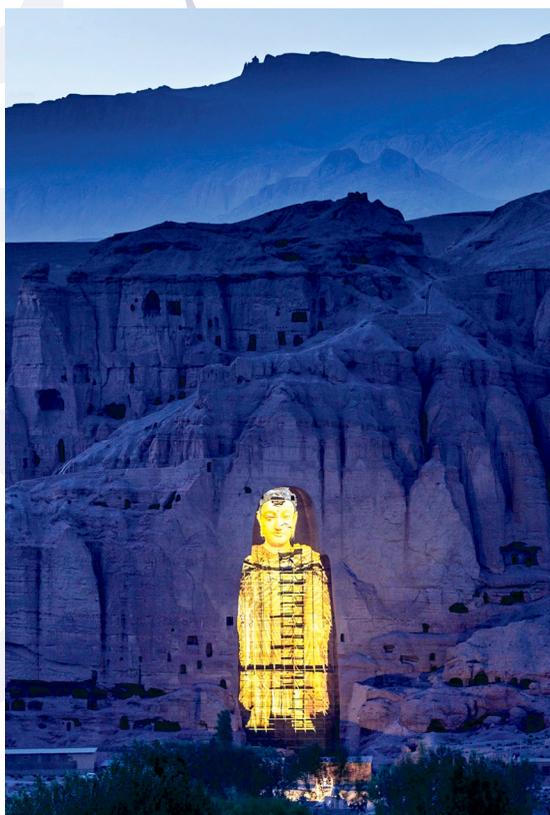
Figure 10: Bamyan Valley (Afghanistan), projection by Zhang Xinyu and Liang Hong of one of the two Buddhas destroyed by the Taliban in 2001 (photo Zhang Xinyu/Xinhua Press/Corbis, source: Marazuela Kim, 2015, 49).

Accessibility of archaeological sites for visitors with different disabilities

To provide accessibility of archaeological sites is an obligation to the society, however in reality that is not always guaranteed. Especially inclusion with accessibility of the archaeological remains for visitors with different disabilities, that represent a third of the total world population, is often forgotten in the process of establishing archaeological parks and similar sites which leads to repetitive discriminatory policies and practices (Masliković and Tomić 2015; Casiddu 2020, 186; United Nations Department of Economic and Social Affairs Disability 2022). Inclusion can be defined as the concept of ensuring equal rights and access to opportunities by creating the best possible conditions for people with different disabilities and members of other minority groups (Kobal Grum and Kobal 2009; Cambridge Dictionary 2022). Inclusion can also be described as a fight for the equality of all people and at the same time a battle against capitalism and its logic of exclusion (Rutar 2010, 40). For people with different disabilities to experience their fundamental rights and freedoms that provide equal opportunities, a number of national and international laws were written and should be taken into account in the process of establishing archaeological parks and similar sites (Çetiner 2018). In the document *Union of Equality:*

Table 6: Advantages and disadvantages of integration or substitution of original features using alternative elements, light projections and holograms.

Integration of original features using alternative elements	
• Can easily be adapted in order to minimise the impact on the archaeological remains; • By offering an abstract idea of the original features, the visitor can be stimulated to think about the site and interact with it; • The procedure allows to show different development phases of the site; • It can be easily combined with the installation of protective structures.	• Can be confusing for non-expert visitors; • Costs for design and implementation of such projects, including frequently used materials, are normally very high.

Substitution of original features using alternative elements		
• The original substance of the archaeological remains can be preserved intact and without disturbance underground; • Different development phases can be displayed; • The area can be easily used for other purposes; • It is a mostly cost-effective solution.		• If vegetation/shrubs are used for display, they will need continuous maintenance; • Visitors could have some problems understanding it, but they can be supported by higher viewpoints and additional interpretive media.
In situ integration or substitution of archaeological remains using light projections and holograms		
• No impact on the original substance of the archaeological remains; • Different development phases can be displayed; • Attractiveness due to the innovative character.		• Limited to specific light conditions/time in the day; • Especially for holograms, costs are high, and at the time being they are therefore used mostly for objects of limited dimensions like movable archaeological finds.

Strategy for the Rights of Persons with Disabilities 2021–2030 that was prepared by the European Union (2021, 20) is written: "Accessible and inclusive art and culture, sport, leisure, recreational activities, and tourism are essential for full participation in society. They increase wellbeing and give everyone, including persons with disabilities, the opportunity to develop and utilise their potential." Greater awareness in the field of accessible tourism, which also includes archaeological tourism with archaeological parks and similar sites, began in 1989, when a report by experts entitled "Tourism for all" was published (Raspor and Macuh 2021, 71). Accessible tourism can be described as: "Making efforts to cater for the needs of a wide range of consumers by removing institutional or attitudinal obstacles" (Sakarneh and Katanani 2021, 268).

On the other hand, archaeological remains represent a particularly sensitive category of heritage that requires special measures of preservation and protection and is in most cases, especially in Slovenia, located in difficult-to-access terrain, which represents a bigger challenge of how to ensure physical accessibility to such locations. In such cases, the use of digital technology and virtual tours can be a great alternative with the use of Virtual Reality (VR) systems or desktop computers (Kyrlitsias et al. 2020), which can also be adapted for users with different disabilities. When ensuring accessibility, it is necessary to take into account that visitors have different disabilities such as mobility, sensory, intellectual, learning disabilities and other disabilities such as diabetes, allergies, etc., which have dif-

ferent needs and require very different adaptations to be able to ensure inclusion for all potential visitors.

Visitors with physical and mobility disabilities

Visitors with physical and mobility disabilities are not only wheelchair users; visitors with reduced mobility and reduced dexterity (for example visitors with reduced mobility in their legs that use walking cane or with reduced mobility in their arms) also have physical limitations despite the differences in their positions. This group of visitors includes people with (Inclusive City Maker 2021a):

- Spinal cord injuries,
- Cerebral palsy,
- Spina bifida,
- Multiple sclerosis,
- Heart diseases,
- Arthritis,
- Parkinson's disease,
- Epilepsy,
- Respiratory disorders,
- Carpal tunnel syndrome,
- Dwarfism, etc.

For visitors with different physical and mobility disabilities ergonomic adaptations of the site should be included in the establishing process. Parking areas of archaeological sites should include reserved parking spaces near the main entrance. Entrances and information points should be adapted with large doors and lowered

counters. For example, placement of promotional material and information counters with staff should not be placed too high because in that case visitors that use wheelchairs and visitors with dwarfism cannot reach the promotional material, nor can they communicate properly with the staff if they cannot even see them. If turnstiles are used at the entrance with electronic ticket control, they should be lowered and include dedicated airlocks for visitors that use wheelchairs. Paths around archaeological sites should be adapted in such a way that archaeological remains are not endangered and are at the same time easily accessible for visitors that use wheelchairs or have other mobility disabilities. That means that paths around the site should be wide, even, with lower curbs, without obstacles, protected with fence and inclusion of several resting points. Benches, tables, drinking fountains and information panels around the site should also be adapted and accessible. Stairs should be nonslip and protected with handrails. Visitor interpretation centre with several floors should include suitable elevators. If the archaeological site provides sanitary building, it also should be adapted with the option to call for help if needed (Çetiner 2018, 56–57; Inclusive City Maker 2021a).

Visitors with invisible disabilities

Not all visitors with disabilities have visible disabilities, for example, visitors with sensorial disabilities such as hearing and visual impairments are less visible and obvious, but still require special adaptations to ensure equal opportunities. Of all people with disabilities, 80% have invisible disabilities. This group of visitors includes people with (Inclusive City Maker 2021b):

- Visual impairment,
- Hearing impairment,
- Voice disorder,
- Heart diseases,
- Bipolar disorders,
- Certain forms of autism,
- Dyslexia,

- Alzheimer's disease,
- Diabetes mellitus,
- Coeliac disease,
- Post-traumatic-disorders, etc.

When it comes to the accessibility of archaeological sites, we mostly have in mind physical and informational accessibility at the location of the archaeological site itself. Information about archaeological sites on mobile apps, printed materials and especially on official websites is rarely adapted for people with different disabilities. For example, an easy read method that adapts written information to make it easier to understand not only assists visitors with intellectual and learning disabilities, but also benefits elderly visitors or visitors whose language of information is not their native language. In Slovenia alone, more than half a million people need adaptation of information in an easy read method (Knapp 2019, 9). It is necessary to know who the target visitors are and always test the information with test readers. Easy read information should be written with (Haramija and Knapp 2019, 30):

- Non-serif letters,
- Minimum font size 14,
- Clear title,
- Use of easier words and explanation of difficult ones,
- Left alignment,
- Short sentences,
- Sufficiently large spacing between lines,
- Use of images that are clearly visible, etc.

As explained before, information can be adapted and made accessible in several formats and through diverse media (Egri 2021), which can be more or less appropriate for visitors with different disabilities and can be as such combined in order to meet their needs:

- Interpretive panels,
- Audio-guides on separate devices or apps that can be downloaded on mobile phones,

- Audio-visual and multimedia displays,
- Digital media (websites, apps, downloadable content, QR codes, etc.),
- Printed materials, etc.

Visitors with visual and hearing impairment are mainly facing communication barriers, as they need adapted forms and methods of communication and information. For visitors with visual impairment, the interpretation of the archaeological site can be adapted with audio, tactile, or olfactory equipment that will improve their experience. Paths around archaeological site should be even, without obstacles, adjusted in the tactile paving system and protected by fence in more dangerous areas. Printed material should also be written in Braille. Tactile method of interpretation should be used for better understanding of maps, objects and other models that are presented at site. Pictures can be vividly described in audio method. Video interpretations should include audio descriptions and other audio effects. For visitors with hearing impairment subtitles, sign language, or incorporation of a certified deaf interpreter should be included in interpretation. Vibration and light effects can also be included for better interpretation. Guided tours on the site can also be adapted in this way (Rebernik 2014; Naniopoulos and Tsalis 2015). The use of sign language is not only helpful for visitors with hearing impairment but is also beneficial for visitors with autism, aphasia, Down's syndrome and cerebral palsy (Berke 2021).

Organized lectures, workshops, guided tours and courses on the archaeological sites can all be adapted for visitors with different disabilities. Archaeological sites with restaurants and cafes should also take into considerations visitors with disabilities such as diabetes mellitus, coeliac disease or different food allergies who too often depend on pre-prepared food that they bring with them, because providers do not adjust their offer to them or they only have one dish on the menu to choose from.

Conclusions

In the process of establishing an archaeological park, it is necessary to think of all people including their diversity, as their disabilities can be very different (from movement, sight, and hearing to intellectual). Unfortunately, presentation and interpretation at archaeological sites frequently do not take into consideration people with disabilities. Therefore, for example, the ICOMOS Ename *Charter for the Interpretation and Presentation of Cultural Heritage Sites* does not mention disabilities with any word (ICOMOS 2008). The same applies to the Faro *Convention on the Value of Cultural Heritage for Society* (Council of Europe 2005). In general, this lack of consideration of people with disabilities is probably more evident in the fruition of immovable cultural heritage than in museums.

Immovable cultural heritage and especially archaeological sites represent on their own a category with special needs. It is important to bear in mind a basic, but crucial requirement, already mentioned in the Venice Charter for the Conservation and Restoration of Monuments and Sites: "The sites of monuments must be the object of special care in order to safeguard their integrity and ensure that they are cleared and presented in a seemly manner" (ICOMOS 1964). For this reason, every decision regarding the presentation of archaeological remains should be made in accordance with a long-term vision and with the actual disponibilities. In order to achieve sustainability it is also important to involve the local community and have its support (Egri 2021).

To choose between different possible solutions of presentation and interpretation can be very challenging and our tool can in this represent a valid support, but users of course have to actively shape proposed solutions. As already mentioned, the tool does not specifically focus on people with disabilities. It is aimed to assist users in finding solutions, which are appropriate for different target groups, with and without disabilities, encouraging shared fruition of archaeological sites and thorough inclusion.

An example of good practice in this field is the Archaeological and Landscape Park of the Valley of the Temples in Sicily, where the offer is adapted for visitors with different disabilities. For visitors with sensory disabilities information is provided through QR codes with videos and sign language and also Braille panels are installed. About 85% of the paths through the park are adapted to visitors with physical disabilities and their levels of difficulty are clearly indicated. Free shuttle service and free rental service of electric wheelchairs is also provided. For visitors with intellectual disabilities specifically adapted guided tours are offered. The café and restaurant of the archaeological park also offer a variety of gluten-free products for visitors with special diets (Parco Valle dei Templi Agrigento 2022). At the same time, the archaeological park offers contents and utilities of the highest quality also for visitors without disabilities.

We hope that our tool will in general help to improve presentation and interpretation at archaeological sites, which is frequently defective, not only for people with disabilities. New efforts aimed to improve this field should be seen as an opportunity for inclusive thinking and acting.

Summary

The paper highlights two essential aspects related to sustainability and inclusion, which should be taken into consideration in the process of establishing and further development of archaeological parks or other forms of public archaeological sites. The article addresses the topic of presentation and interpretation of archaeological sites depending on their entity, conservation status, and development potentials, as well as accessibility of the sites, contents and services for all kind of visitors. We explain the first aspect through a detailed presentation of the new digital tool *Yesterday-Today-Tomorrow* that was developed within the ArcheoDanube project and is a complete novelty on the world market. It guides the user through a detailed questionnaire about the specifics of the archaeological site and the user's preferences. At the end of the questionnaire, the tool (based on the given answers) suggests the most suitable solutions for presentation and interpretation of the archaeological remains. Proposed solutions provide inclusion aiming at accessibility for visitors without and with different disabilities, as they can be adapted for different target groups. Ensuring accessibility of the most relevant archaeological sites is an obligation to society, but mainly due to its complexity, this is not always fulfilled in practice. The presentation of archaeological remains is for its own demanding because of their fragile and fragmentary nature that requires special preservation and protection measures as well as particularly effective interpretation solutions. They are often located in areas that are physically difficult to access, which represents an even greater challenge in the process of ensuring accessibility, especially for visitors with different disabilities that require special adjustments in order to fulfil their needs. The second aspect of the article highlights precisely this issue on how to ensure inclusion and a quality interpretation of archaeological remains for visitors with different disabilities. Presented are different suggestions for the adaptation of the presentation and interpretation of archaeological sites for visitors with visible disabilities, such as mobility, as well as for visitors with different invisible disabilities.

Povzetek

Prispevek izpostavlja dva bistvena vidika, povezana s koncepti trajnosti in inkluzije, ki bi se morala upoštevati pri procesu ustanavljanja ali nadaljnjega razvoja arheoloških parkov oziroma drugih oblik javno dostopnih arheoloških najdišč. Članek obravnava prezentacijo in interpretacijo arheoloških najdišč glede na njihovo entiteto, stanje ohranjenosti in potencialne možnosti razvoja in hkrati tematiko dostopnosti najdišč, vsebin in storitev s strani vseh obiskovalcev. Prvi vidik predstavljamo s podrobno predstavitvijo novega digitalnega orodja *Yesterday-Today-Tomorrow*, ki je bilo razvito v okviru projekta ArcheoDanube in je popolna novost na svetovnem trgu. Uporabnika vodi skozi podroben vprašalnik o posebnostih arheološkega najdišča in uporabnikovih željah. Na koncu vprašalnika orodje na podlagi podanih odgovorov predlaga najprimernejše rešitve za prezentacijo in interpretacijo arheoloških ostalin. Rešitve zagotavljajo inkluzijo z vidika dostopnosti za obiskovalce brez in z različnimi oviranostmi, saj jih je mogoče prilagoditi različnim ciljnim skupinam. Zagotavljanje dostopnosti najpomembnejših arheoloških najdišč je

obveznost do družbe, ki pa predvsem zaradi svoje kompleksnosti v praksi ni vedno izpolnjena. Prezentacija arheoloških ostalin je sama po sebi zahtevna zaradi njihove krhke in fragmentarne narave, ki zahteva posebne ukrepe ohranjanja in varovanja ter še posebej učinkovite rešitve pri interpretaciji. Pogosto se arheološke ostaline nahajajo na fizično težje dostopnem terenu, kar predstavlja še večji izziv pri zagotavljanju dostopnosti, še posebej za obiskovalce z različnimi oviranostmi, ki potrebujejo posebne prilagoditve za zadovoljitev svojih potreb. Drugi del prispevka izpostavlja prav to problematiko, kako zagotoviti inkluzijo in kvalitetno interpretacijo arheoloških ostalin za obiskovalce z različnimi oviranostmi. Predstavljeni so različni predlogi prezentacije in interpretacije arheoloških najdišč za obiskovalce z vidnimi oviranostmi, kot so gibalne, ter za obiskovalce z nevidnimi oviranostmi.

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AD HOC – Accessible and Digitalized Heritage of Culture for Persons with Disabilities: a project and its results
AD HOC – Dostopna in digitalizirana kulturna dediščina za osebe s posebnimi potrebami: projekt in njegovi rezultati

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Management and protection of archaeological heritage nowadays is unthinkable without the active participation of the general public. Gone are the days when archaeology was a discipline and technique accessible only to a narrow academic circle and supported exclusively by national or international funding agencies. Archaeology and archaeological heritage should be accessible to different profiles, including persons with special needs: People with visual or hearing impairments and people with intellectual disabilities. These groups have been largely denied access to their archaeological heritage and deprived of the opportunity to fully experience their past.

The aim of the project AD HOC – *Accessible and Digitalized Heritage of Culture for Persons with Disabilities* was to create a strategic partnership in the field of higher education to develop and share innovative practices in the field of digitization of cultural heritage and its accessibility for persons with disabilities. The overall goal was to bring archaeological cultural heritage closer to the public, including diverse populations, preferably through the creation of a website and online courses developed by university educators that promote different approaches to presenting the topic. The project activities made archaeological heritage more visible to the general public and popularized conservation science. The main work in the project was organized in the form of 4 Intellectual Outputs – clusters of activities in which partners, contributing their specific experience based on their areas of expertise, participated in the creation of a common product.

IO1 – Field and desktop research was intended to define least accessible archaeological and cultural heritage in participant countries. It was conducted with the purpose to define which aspects of the archaeological cultural heritage can be digitalized and made accessible to the wider population including persons with disabilities. Within this activity, the parameters for digitalization of certain types of archaeological heritage were set.

IO2 – Digitalization of archaeological heritage will prepare the material for the creation of a web site used for the promotion and education about archaeological heritage. The main goal of this activity was the optimization of using modern technologies and testing possibilities of manipulation with data in order to present archaeological heritage.

IO3 – Accessibility of the digitalized archaeological heritage through a web site as adaptation of the digitalized archaeological and cultural heritage content for students with disabilities focusing on vision and hearing impairments and intellectual disabilities. The main goal of the activity was making archaeology and cultural heritage more accessible to marginalized groups.

IO4 – Creation of online courses for the promotion and interpretation of archaeological heritage. Developed by university teachers of different profiles it was intended for the wider public including persons with disabilities. Archaeological heritage presented in the form of basic concepts and case studies of topics relevant for the understanding of human societies in the past.

The researchers from the Faculty of Humanities of the University of Primorska, who participated in all the activities, invested most of their time and experience in the creation of the intellectual outputs 3 and 4 of the activities, organized a learning and training activity (LTTA 2), multiplier event (ME 4) and the final event of the project partners (TM4). They focused on the creation of a website, a platform with information about what archaeology is about, and online courses proposing how archaeology should be presented to the wider public, children, and especially people with special needs, creating an interwoven network of the content presenting archaeological heritage.

The main product of IO 3 was the creation of a website that enables learning about the past through archaeology. The website is structured to represent the past through concepts such as living, eating, loving, making war, and dying, and includes adapted text that is easily understood by both the public and people with intellectual disabilities. Although archaeological sites from all partner countries are presented, most of the cases featured are from Slovenia and Northern Macedonia. Some of the most internationally significant but sometimes difficult to access sites and finds are presented, such as the cave of Divje Babe, the Bronze Age settlements of Sodolek and Ormož and the cemetery of Zavrč, the Iron Age finds from the cemeteries of Brezje, Vače, Novo Mesto and Srednica, the Roman Age tombs from Miklavž and Zagonce, and the mediaeval city of Koper and the city walls of Piran. The visual design of the site and the necessary preparation of the visual material were also adapted to the needs and abilities of the various users. Supplemented by the created blocks and plug-ins that make sign language videos and text-to-speech applications easily accessible, it offers a number of additional features that make it exceptionally transparent and user-friendly.

The final activity of the project, IO 4, was the creation of a freely accessible educational platform. This platform was created by members of the Faculty of Humanities in Moodle programme and contains content from the website that has been transformed into educational material. With its accessibility features, it can easily be used to introduce archaeology to children and the public, as well as to persons with disabilities. The content of the website is presented in a visually enriched and textually reduced version of PowerPoint presentations, which have been translated into all languages of the participating countries and into English. Sign language videos interpreting key elements of the texts from the presentations were also added. The medium allowed us to enrich the content with additional videos introducing the sites discussed, as well as three-dimensional scans and videos presenting the digitized artefacts of these sites.

The April 2022 partners meeting was for the Learning Teaching Training Activity (LTTA 2). It was organized by the teachers and researchers of the Faculty of Humanities and the Faculty of Education of the University of Primorska in cooperation with other project partners. The activity had a wide reach as it was attended by numerous members of the University, students, and professionals working in various institutions in the region. The organized training activity was primarily aimed at presenting the development and implementation of online curricula in the field of cultural and archaeological heritage. In order to address the complexity of field-specific issues in the presentation of archaeological heritage, a broader range of programs was created. It included introductions to relevant topics in education, tourism, and historic preservation, with an emphasis on the potential for adaptations for persons with disabilities.
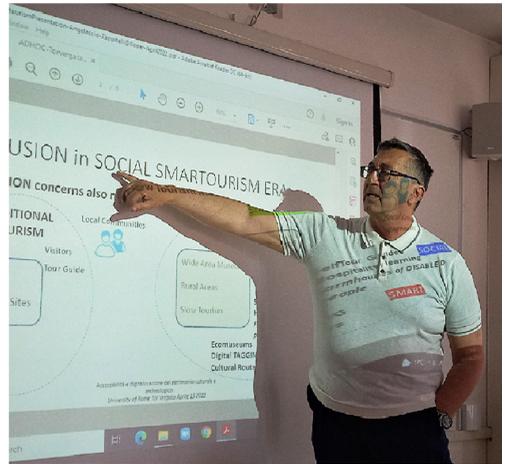
Participants gained valuable insights into the results and experiences of the host partner institution, both in the conference and in the practical field work. Various previous projects and project results related to the research and promotion of the cultural heritage of the University of Primorska were presented – starting in the city itself and slowly expanding to the surrounding area. Introducing Koper and its heritage was just the beginning, the Roman villa in Simonov zaliv (bay) was presented as an example of an archaeological park with a developed infrastructure and an organised programme of presentations for the public – with special attention to the people with disabilities. We also presented the infrastructure and activities of the Centre of Excellence InnoRenew CoE in Izola, as well as an example of a successful initiative of the University of Primorska, which in cooperation with regional and international partners has created a modern international research infrastructure. From the University led Aquarium to the park of freestanding monumental stone sculptures Forma Viva in Portorož, on the path of good practises was also presented The Rodik Mythical Park, as well as the potential of the surrounding area such as the Castle of Socerb and the Church of the Holy Trinity in Hrastovlje.

The fourth multiplier event (MP 4) of the project was included in the European Researchers Night, organized at the University during the last weekend of September. In the ART Laboratory of the Institute of Archaeology and Heritage, 2D and 3D technologies for the digitization of archaeological heritage and technologies for the preliminary analysis of archaeological finds were presented to the public (and especially to regional schools). The inclusion of an international event allowed us to increase the impact, as the organization provided additional promotional opportunities for the activities, not to mention the numerous visitors to the presentations.

The final event of the project, the Fourth Transnational Meeting (TM 4), was again organized at the Faculty of Humanities of the University of Primorska. At this final meeting, all participating organizations contributed to the visibility and sustainability of the project results so far. One of the outcomes of the project is the derivation of a framework for the creation of new approaches to the creation of accessible online materials in the field of cultural and archaeological heritage, new curricula for online courses and new open educational resources (OER) for people with special needs. The innovative value of the project lies in the accessibility of OER and the development of greater compatibility with special technology, easy connection to screen readers and speech recognition software for the visually impaired. In addition to concluding comments, project ideas and future collaboration opportunities between the partners were discussed during this meeting.

This issue of *Studia Universitatis Hereditati* is dedicated to presenting challenges we have encountered, case studies we have examined, and solutions we have proposed.
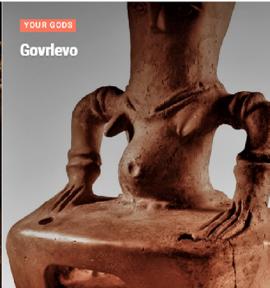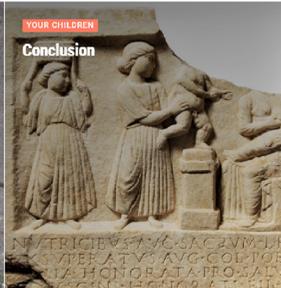
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