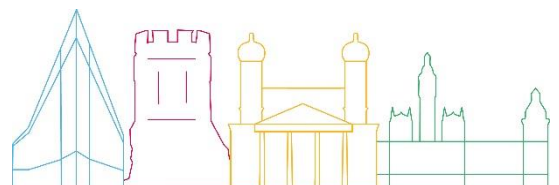




Local partnership and work plan for Bratislava

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Local work plan: Bratislava

1. Where are we?

In general terms, the cultural heritage of Bratislava, as considered for ARCH project, covers architectural heritage (buildings and structures), monumental, archaeological resources, moveable heritage as well as cultural landscapes. Its built-up area is characterised by complex settlement arrangements with a high density of cultural monuments. These significant heritage assets are at risk from hazards that are primarily climate-related: mainly pluvial flooding, erosion, heatwaves and other extreme weather events.

After carrying out their first quantitative vulnerability assessment, as part of the H2020 project RESIN Climate Resilient Cities and Infrastructures (www.resin-cities.eu), the Bratislava city team aims to take a further step with focusing on historical areas and cultural heritage protection, to be able to adapt the historical centre and other valuable (tangible) cultural heritage sites to the impacts of future scenarios of climate change. The current city-level *Action Plan for Climate Change Adaptation* reaches the end of its term in 2020 and a new action plan is already under preparation - a *Sustainable Energy and Climate Action Plan* (SECAP). The SECAP offers itself as a good opportunity for testing and co-creating the tools of the ARCH project.

In order to achieve this, Bratislava City needs to gather relevant stakeholders from the fields of cultural heritage, climate change and disaster risk management around the table, to gain understanding of the issues which the stakeholders are facing in everyday work and life, provide them with tools that will help address these issues, and in the end provide solutions that will make the city's cultural heritage more resilient to the impacts of climate change.

1.1. Target historic areas

The target historic areas that will be addressed by the ARCH research team are: the medieval town centre (monument preservation reserve), the Devin Castle located on the dolomite cliff above the Danube River, and Celto-Roman structures on the Bratislava Castle hill.

Bratislava's historical centre is situated within the former city walls in the Old Town city borough. Based on the terrain and the character of development, the Old Town can be divided into four areas: the western part, the northern part, the eastern part and the historical centre adjacent to the Bratislava riverfront (on the left bank of the Danube River). From the point of view of heritage protection zoning, the area is divided into a central historical monument preservation zone and a monument reserve (the medieval core of Bratislava). The monument preservation zone is further divided into smaller areas called sectors, based on the character of the built-up area: its architecture, terrain and landscape. The monument reserve contains many historical buildings, fountains and historical gardens, as well as other elements of tangible cultural heritage. Inside and below the buildings in situ preserved heritage can be

found, such as the Celtic kiln and mint; Celto-roman structures (masonry and floors) which belonged to the different manufacturing workshops in the Celtic oppidum that once spread across the centre of today's Bratislava; remains of the city's medieval fortification; and the St. James chapel and charnel house. These monuments, as well as other (unknown) underground monuments, are vulnerable to changes in permeability of the surrounding surfaces, as well as to intense precipitation and rising groundwater levels, which are driven or made worse by climate change and urban development in the surrounding areas. Most of these monuments are under the protection of the Bratislava City Museum and City Gallery. Archaeological research on these sites has been undertaken by the Bratislava Municipal Monument Preservation Institute (MUOP).

The Devín city borough is situated in the western part of the cadastral territory of Bratislava City at the confluence of the rivers Morava and Danube. It is well known for the Devín Castle national monument, the ruins of which are one of the most visited monuments in Bratislava. Despite its small size, the Devín Castle Hill is surprisingly rich in rock variety and geological history dating back to the Early Palaeozoic to Late Tertiary period. Twelve open fissures with narrow karst and pseudo-karst caves (16 – 13 million years old) lie beneath the castle in the rock cliff, where a permanent exhibition of finds such as ceramics, coins, weapons etc. was reopened in 2017. The castle is a historical monument of national and European importance and is under the administration of the City Museum of Bratislava. Currently, there is ongoing archaeological and geological research in the area as well as plans for the reconstruction of ruins (the walls) and buildings at site. The caves, as well as other areas with permanent exhibitions and the middle castle, are threatened by humidity from precipitation. The dolomite cliff on which the castle stands is experiencing erosion and rockfall.

1.2. Governance framework for cultural heritage management, disaster risk reduction and climate change adaptation

Bratislava's *City Baseline Report* (D3.3) gives a very detailed overview of the governance framework for cultural heritage management, disaster risk reduction (DRR) and climate change adaptation. At present, all of these are being dealt with at different ministries in a "silo"-like fashion. The *City Baseline Report* concludes that there is an absence of direct links between cultural heritage resilience and climate change adaptation in urban areas and disaster risk management. The updated national strategy for adaptation to climate change and the forthcoming SECAP (mentioned above) open up the topic of cultural heritage protection as well as revealing the absence of relevant legal tools for local authorities to enforce implementation of adaptation measures. One possible solution to this would be a new act on climate change adaptation and mitigation of impacts, which would also to a certain extent amend existing legislation on building and construction, spatial planning, cultural heritage protection, DRR and other relevant sectors.

1.3. Expected impacts of climate change and environmental hazards

In Bratislava exposed cultural heritage elements include: archaeological resources, such as archaeological finds and archaeological sites (i.e. Celtic acropolis with Roman architecture, Celtic Metal casting and coin minting workshop, Celtic kiln); buildings and architectural structures (i.e. Devín Castle, St. James's chapel) and groups of separate or connected buildings (i.e. Monument preservation zone); cultural landscapes, such as combined works of nature and humankind (i.e. Monument preservation reserve). The climate change related hazards, especially due to the atmospheric moisture change (e.g., intense rainfall, change in humidity cycles, etc.) and temperature change (e.g., diurnal and seasonal extreme events), produce physical, social and cultural impacts on the heritage of the city. The historic assets and archaeological finds, in fact, are strongly exposed to damage due to moisture and erosion in the construction materials, attacks by fungi, local instability, with consequent loss of value and a potential decrease in visitor safety. Moreover, the consequences of these impacts result in loss of tourism revenue due to decreasing visitors.

According to the 'Atlas of risk-based vulnerability assessment of Bratislava city' done under the H2020 RESIN project, the Old town is the city borough at most at risk from heatwaves and pluvial flooding, due to its high ratio of impermeable surfaces, terrain morphology and critical infrastructure concentration and population density.

1.4. Resilience of historic areas and the larger urban system

Bratislava's larger urban system is in general prepared for emergencies (see Bratislava's *City Baseline Report* - Chapter 7). 'Preliminary resilience assessment'). However, there is room to improve the existing institutional capacity at the local level which would focus on increasing the resilience of historic areas in particular and minimising their risk to hazards related to climate change. Specific assessment of the risks faced by the target historic areas has not been undertaken to date, and there is great potential for defining, planning and incorporating measures to improve resilience, e.g. an early warning system, citizen awareness building campaigns, or interventions in the form of green, blue and grey infrastructure).

2. Who are we?

The Office of the Chief City Architect has been the department responsible for supervising climate change adaptation projects in Bratislava City and currently is also supervising the implementation of ARCH project. This department falls directly under the Office of the Mayor of Bratislava City, which is a separate organisational sub-unit from the City Hall. At the City Hall, all other operational departments are hosted (for example, environment, social services, culture, sport, transport, infrastructure, management and maintenance of public property, management and maintenance of rented property, finances, etc.

The core team consists of one part-time senior environmental manager (project manager), two part-time assistants (one senior and one junior). Support in financial administration is provided by the Department of Strategy and Projects, City Hall of Bratislava (part-time). The team is supervised by the Chief City Architect.

The Bratislava City team is supported in the ARCH project tasks by two local research partners: the Municipal Monument Preservation Institute (MUOP) – a research organisation of the city (archaeological research) and the Department of Landscape Ecology at the Faculty of Natural Sciences, Comenius University in Bratislava (UNIBA).

The MUOP team consists of two full-time senior assistants (project managers), who are responsible for implementation of different assignments and (currently) two part time assistants. Support in other expert matters (e.g. archival research, methodology, etc.) and financial issues is provided by full-time employees of MUOP.

The Faculty of Natural Sciences, Comenius University has been systematically developing molecular-biological, biotechnological and environmental research and teaching since 1919 when it was founded. In 1992, the fifth basic field of study at the Faculty of Natural Sciences became environmental science and new departments were established among which the Department of Landscape Ecology (involved in ARCH project) was formed. Bratislava City has an ongoing cooperation with this Faculty, especially in terms of data provision, analyses and co-creation in projects funded by EEA Grants and the European Commission's Horizon 2020 programme.

2.1. Existing capacity

Ing. Arch. Ingrid Konrad, Chief City Architect of Bratislava City, supervises the Bratislava project team for ARCH. A chief architect is the expert guarantor for urbanism and architecture according to Slovak legislation. Among other things, the Chief City Architect actively participates in the creation of spatial planning documents, such as the master plan and is a key component of the decision making process on building permissions for investment activities, is a member of the City Assembly and a member of the City Parliament. Mrs. Konrad has been supervising projects for climate change adaptation, mitigation, sustainable housing, and cross-border cooperation since her entry in 2011. She has also supervised the development of strategic documents that deal with climate change adaptation such as the Strategy and Action plan for adaptation to negative impacts of climate change in Bratislava.

Mgr. Eva Streberová, PhD. is an environmental manager working currently at the Office of the Chief City Architect of Bratislava City. Among other tasks, she is responsible for implementation of international projects on climate change adaptation in which Bratislava is involved. She was the leading author of the city's 'Action Plan for Adaptation to Climate Change' and the 'Atlas of vulnerability and risk assessment of adverse climate change impacts in Bratislava City'.

Ing. et Ing. Monika Šteflovíčová is an external employee of the Office of the Chief City Architect of the City of Bratislava and has experience in climate change adaptation projects done in Bratislava in the past and providing consultancy services for municipalities. By profession she is a landscape and spatial planner.

Mgr. Stanislava Brnkaľáková, PhD. is an environmental and landscape manager and an external employee of the Department of the Chief Architect of the City of Bratislava. She is active in the fields of research and academia and has long-term experience with H2020 projects on adaptation to climate change and its impacts on natural ecosystems.

Jana Danielová is graphic designer. Her contribution to the local ARCH team is in creating dissemination materials.

2.2. Capacity gaps

Climate change adaptation projects have been carried out under the auspices of the Chief City Architect's office since 2012. Until today, adaptation to climate change does not have its own unit in the organisational structure of the municipality. The topic is partly dealt with by separate departments, such as the environmental or urban planning departments (in operational terms), but in terms of strategies and projects, the thematic of climate change adaptation is based at the Office of the Chief City Architect (one person full-time). To a certain extent, this topic is also part of the portfolio of the Metropolitan Institute of Bratislava, a budgetary organisation of the city. At borough level, the topic of climate change adaptation is mostly covered by the environmental or urban planning departments, or the investment and project implementation departments at each of the **17 city borough municipalities** (the latter is only the case for boroughs that have external funding for project implementation).

For the reason that pluvial flooding, due to intense rainfall represents a rising concern of local authorities, the city has identified the need to improve the surface runoff and monitoring of underground water levels. The quality, quantity and composition of the pluvial water are currently monitored by state-owned Slovak Hydrometeorological Institute and State Geological Institute of Dionýz Štúr. Nevertheless, the city does not have direct access to any raw data (but mostly access to publicly available documents such as reports, journal articles, web map services, etc.).

Historical data and records of the built environment, including cultural heritage (such as plans of buildings, etc.) in the monument preservation reserve are available mostly in the archives of the City of Bratislava in forms that need to be collected and pre-processed (or digitalised) in order to be compatible with the tools developed in ARCH.

Since MUOP is developing a 'Pavement handbook' dealing with quite a large area (that covers the whole monument preservation zone) and also areas with an entirely different character (e.g. street level urbanism, in situ heritage sites), a certain capacity gap is filled by outsourcing some necessary services that cannot be performed by its research staff (e.g. digitalisation, field research, technical services, etc.). The research team consists mainly of archaeologists (six), art-historians (three) and one architect. The rest is administration staff (two).

The UNIBA team is represented by an environmental senior researcher, two junior environmental researchers, and a hydrogeologist, while individual tasks are performed by experts such as microbiologists. UNIBA is consistently building its own network of monitoring devices (meteorological variables). The team undertakes microbiological sampling and analyses, supports Bratislava City with various data sets and is able to support also with pre-processing of data needed later on by technical work packages in the co-creation process.

2.3. Stakeholder analysis process and results

Stakeholders were mapped following a simple four step structure: 1) identify, 2) assess/analyse, 3) prioritise, and 4) understand. The stakeholders were mapped visually using an interest/influence matrix. Three areas of competence were considered – cultural heritage preservation, climate change monitoring and adaptation, disaster risk monitoring and management. Besides areas of competence, stakeholders were considered in terms of their relative importance (primary, secondary, tertiary).

On one hand, the concentration of state authorities and public administration in Bratislava is high, as the city is the capital of the country. On the other hand, Bratislava City’s cadastral territory is a rather small area and its population is just roughly 470,000 inhabitants.

The completed analysis matrix can be found in Annex 1. Based on this analysis, 24 stakeholders at local, regional and national level were selected to form the local partnership. These are shown in the simplified matrix below, along with an indication of their competence (cultural heritage management, climate change adaptation, disaster risk management, or other).

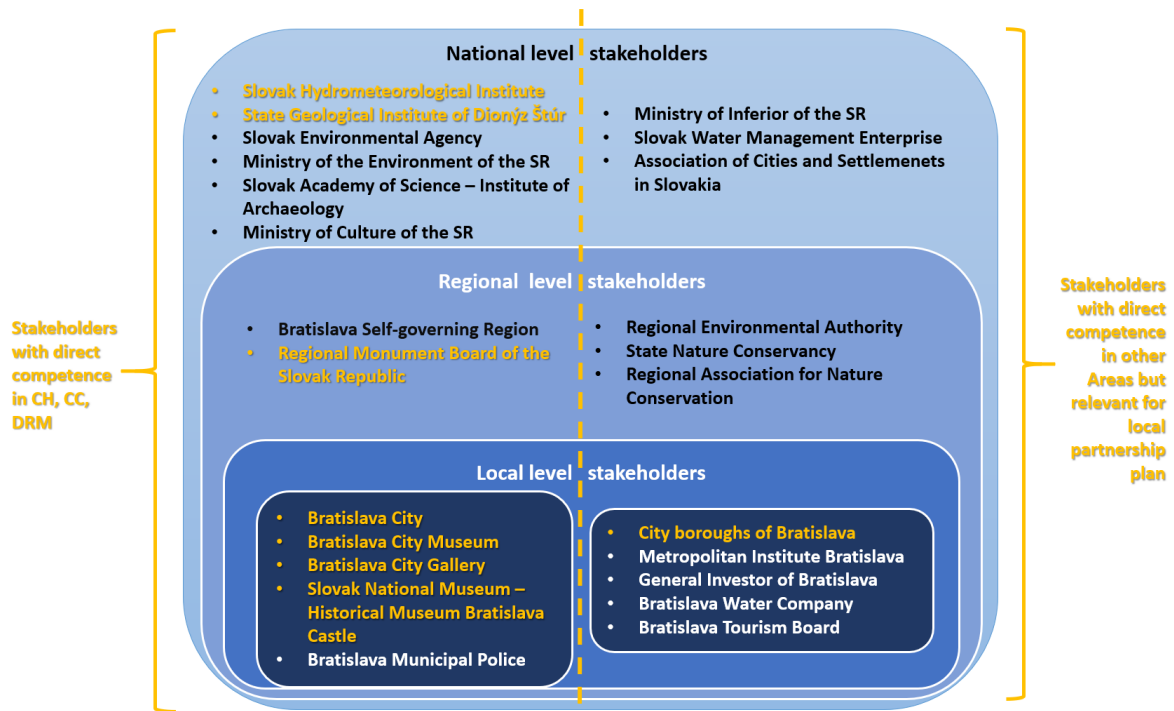


Figure 1: Stakeholders at local, regional and national level and their competences.

As the ARCH project is currently in the middle of its lifespan, new stakeholders might be added to the matrix as the project becomes more known in academic circles and other stakeholder forums (especially stakeholders from the third sector).

2.4. Existing groups and initiatives

In terms of international networks, **Bratislava City** is a member of the Covenant of Mayors and EUROCITIES. Internally, the city has several working groups, focused around different topics, such as clean air, water security, management of greenery, geographical information systems, etc. These groups have been established by different decision-making bodies, such as the City Parliament, the director of the City Hall, the Mayor, and the director of a unit of the City Hall etc. Other decision-making bodies, which might play an important role future, e.g. in adopting the tools developed in the ARCH project, are the different committees of the City Parliament (such as the cultural committee, committee for strategic and urban planning and environment, etc.). Bratislava also has memoranda of cooperation with several universities and research organisations – such as the Slovak Technical University, Comenius University, University of Economics in Bratislava, Academy of Fine Arts and Design, Slovak Academy of Sciences (consists of many institutes on individual disciplines).

MUOP, working in the field of cultural heritage protection, is close to organisations operating within this field on the international (ICOM, ICOMOS, ICAMT, etc.) and regional level (Monument Board of the Slovak Republic, Slovak Archaeological Society at the Slovak Academy of Sciences). MUOP is also an active member of several working groups established by the city (mentioned in the paragraph above) regarding cultural heritage. In addition, MUOP is part of an Interreg EU project 'Living Danube Limes' (2020-2022), which is a continuing cooperation with partners from the former 'Danube Limes Brand' project (2012-2014) focused on Roman monuments along the Danube river. Within the city network, MUOP cooperates with City Museum Bratislava and BKIS, the Tourist Board and Bratislava region (BSK), as well as the Niederösterreichische Landesregierung (Austria). Together with Bratislava City, these organisations organise events such as the Roman Games and Limes day every year in autumn. On the scientific level, MUOP cooperates with the Slovak Academy of Sciences – Archaeological Institute, Geological Institute, Institute of Earth Sciences, the Slovak National Museum – Historical Museum, Archaeological and Natural Sciences Museum. MUOP also cooperates with other foreign partners, namely: Archaeological Park Carnuntum (Austria), Stadtarchäologie Wien (Austria), BIBRACTE – Center of European Archaeology (France), Archäologisches Museum Frankfurt (Germany), ARCHAIA Brno (Czech republic), Museo Nazionale Archeologico d'Umbria a Perugia (Italy), Museo Mercati di Traiano Roma (Italy), Tatabánya múzeum (Hungary), Budapest Historical Museum (Hungary), Podunajské múzeum Komárno (Slovakia), G. Klapka Múzeum (Hungary), Hansági Múzeum (Hungary), Masarykova Univerzita Brno (Czech republic).

UNIBA – the Department of Landscape Ecology is member of scientific networks and research groups, such as IALE – International Association for Landscape Ecology, SURE – Society for urban ecology and Slovak ecological society – SECOS. Furthermore, the researchers involved in ARCH project have a long-term and ongoing cooperation with the Institute of Landscape Ecology and Geography of Slovak Academy of Sciences, Slovak Hydrometeorological Institute, BROZ, Bratislava Water Company, and has experience with cooperation with local stakeholders coming from the public sector, such as the city boroughs of Bratislava City or the Bratislava self-governing region.

2.5. Our local partnership

For Bratislava City, the key stakeholders (local partners) of primary importance are mostly its own organisations that have the delegated competence by the City in areas such as the management of cultural heritage. This is the case of the Bratislava City Museum with its different offices around the city and the Bratislava City Gallery. Bratislava City is also the seat of the Slovak national museum which has extremely valuable *in situ* preserved archaeological finds at the Bratislava Castle. Of secondary importance are the 17 city boroughs are also very important, as administrative units with their own decision-making power, budget and competence. Finally, the different regional and state level authorities with competence in the different topics covered by the project – cultural heritage preservation, climate change monitoring, and disaster risk management – are of tertiary importance. The stakeholders of primary importance are, for the purpose of this local partnership plan, referenced as core stakeholders and they are going to be invited to participate in the co-creation process of the ARCH project tools.

Bratislava City has been closely cooperating with its local research partners in the ARCH project also prior to the project. With UNIBA, the cooperation has been mostly on the topic of climate change adaptation in previous projects such as the H2020 project 'RESIN' (Climate Resilient Cities and Infrastructures), 'Bratislava is preparing for climate change – application of pilot adaptation measures for sustainable management of rain water' and 'EU Cities Adapt'. MUOP traditionally nurtures connections with the organisations, involved in cultural heritage protection at different levels. This happens at the local level (city organisations - Bratislava City Museum, Bratislava City Gallery, Bratislava Tourist Board, cultural section of the Old Town municipality etc.), regional level (Regional Monuments Board) and state level (Ministry of Culture, Ministry of Foreign and European Affairs, Monuments Board of the Slovak Republic, Slovak National Museum, Bratislava region). The ARCH co-creation process with local partners also benefits from partnerships established in the city's past collaboration with several universities based in Bratislava (Faculty of Architecture of Slovak Technical University, Comenius University, Comenius University-Philosophical Faculty, and Faculty of Natural Sciences). Via ARCH local research partner – Faculty of Natural Sciences of Comenius University in Bratislava (UNIBA) – more local stakeholders from the research arena can be engaged, who can be relevant in terms of providing knowledge or data.

The overall aim of the Bratislava team in the context of the ARCH project is to bring together stakeholders, that might not have necessarily interacted before, and in doing so to create the capacity to face (and act in response to) climate change impacts and other hazards that put cultural heritage in Bratislava at risk. Many of the members of the core stakeholder group (local partnership) have already cooperated closely because of the character of their area of competence, administrative tasks, procedures and routines. However, some stakeholders are new in the organisational structure of the city (such as the Metropolitan institute of Bratislava) or have not yet had the chance to cooperate on the themes of the project. For others, cultural heritage resilience is a relatively new focus area.

So far, the city of Bratislava does not have a working group that would focus on supporting resilience to the impacts on climate change on cultural heritage. The city, its local research partners and relevant stakeholders related to the project ARCH or any other projects can later in the process (around the last year of the project) form a working group or task force, which

will deal with the issues of urban resilience and potentially act as an advisory body to support local stakeholders.

3. Where are we going?

3.1. Our overall aim

The overall long-term goal of Bratislava's local work plan, but also the ARCH project in general, is to increase the resilience of selected cultural heritage sites in Bratislava, at local level. The city needs to provide space where stakeholders from different backgrounds or areas of competence can interact, that might not necessarily have interacted before, and create new capacity to deal with climate change issues and their impacts not only on cultural heritage but also on other city assets (such as the creation of an advisory body to support local decision-makers).

The city also needs to align its adaptation and mitigation goals within climate change scenarios to be able to define what actions need to be taken to preserve cultural heritage, while also integrating these with its municipal policies (e.g., the sustainable energy and adaptation action plan).

3.2. Objectives

In order to protect cultural heritage in Bratislava and increase its resilience to climate change impacts, the city needs to be able to assess the impacts of climate change hazards and understand the level vulnerability of its cultural heritage to these impacts. In order to provide what is necessary for undertaking such an assessment and to design appropriate resilience options the city also needs active participations of its stakeholders.

Thus, to reach the above-mentioned aims, the objectives can be summarised as follows:

Objective 1: Stimulate engagement of stakeholders from different background and possibly institutionalise a new working group. In this objective the following activities are envisaged:

- a) Create a core group of local partners (stakeholders) – this group will participate in an intensive co-creation and knowledge transfer process between the local partners, Bratislava City and its local research partners in ARCH – MUOP and UNIBA. This is essential in order to create tools that will be tested, accepted and later used in local conditions;
- b) Create a supporting advisory group to support local decision-makers - e.g. a task force for resilience and risk management (long-term objective). The members of the core group of local partners should be also represented in this task force.

Objective 2: Select and implement the optimal measures to make cultural heritage more resilient to climate change impacts by co-creating tools with support of local research partners and core local stakeholders. The core local stakeholders will be

consulted and invited to larger meetings and/or workshops, in order to verify the results of the co-creation process and get informed about ARCH outcomes that they can use and ways in which they might be useful for them. Their insights on the political-administrative, societal, legal, and financial barriers for the implementation of ARCH tools is extremely relevant so that the tools and the outputs can be adapted to deal with such barriers.

Objective 3: Integrate cultural heritage resilience and risk management into policies and strategies (new SECAP). Resilience planning and specifically cultural heritage resilience planning is set to become part of the city's future policy documents and strategies, such as the sustainable energy and climate action plan.

4. How will we get there?

4.1. Work plan

A detailed work plan, outlining strategies, actions and indicators to support the overall aim and objective defined above, is attached at Annex 2.

4.2. Activities to develop and implement your work plan

Throughout the project, Bratislava City is planning to organise several meetings, sessions and workshops with the support of its local research partners and ICLEI. Each of these events will be followed by a press release published on the city's website. In addition, smaller operative ad-hoc meetings with local partners and local research partners depending on the nature of the tasks carried out in the project.

The launch event for the local partnership plan was the **kick-off meeting** on the 3rd March 2020, where the presence of the core stakeholder group was important. The goal was to familiarise the core local partners with ARCH project objectives and validate the research problem for Bratislava City and case study sites at an early stage.

A **'match-making' online consultation (or workshop)** was organised with the ARCH scientific partners to provide detailed information to the technical work packages and create space for defining specific activities within the local work plan of Bratislava, its local research partners and partners. The project partners of the technical work packages consulted related needs and interests of local partners in the process of tool co-creation. The event was planned as a two-day online consultation workshop and was organised by Bratislava City on May 25 and May 28, 2020.

The first face-to-face consultation session on the ARCH tools will be focused on requirements for the hazard and object information management system. A consultation meeting with the core local partner group will be organised to discuss the functionalities of the information systems. The session will provide an opportunity to discuss requirements and identify new tools / modules, as well as to validate those already implemented for the information systems. The local research partners and Bratislava City have already held two

four such meetings – three of these with the Bratislava City Museum at Devin Castle and one with the Slovak National Museum – Historical Museum at the Bratislava Castle.

The **second consultation** session will be focused on the findings of the impact and risk assessment. The aim of the consultation meeting is to validate the synthetic scenario for pluvial flooding of the area of the historical monument reserve and erosion scenario at the Devin castle and provide feedback for D3.7. Participation of the core local partners group is needed, while attendance of the larger stakeholder group is welcome.

Two workshops will be co-organised by Bratislava City on **defining the resilience options and pathways**. These workshops will be organised with the aim to validate the usage of the vulnerability, hazard and risk data (from WP4 and WP5) in the pathway approach, ii) to define the acceptable threshold (T6.4), iii) to validate the initial resilience option list (T6.1); iv) to set the criteria to re-organise the resilience options in groups (T6.2); v) to analyse the best funding opportunities (T6.3); vi) to validate the pathway alternatives (T6.4); vii) to discuss the step-by step methodology, the usability and the adjustments of the resilient pathway approach (T6.4). Participation of the core local partners groups is needed, attendance of the larger stakeholder group is welcome. The first workshop will be in 2021 and the second in 2022.

Relevant local partners will be also invited to the **Mutual Learning Framework**, face-to-face event that will be organised in Bratislava. The idea is to have local partners further involved in the project and experience the exchange of knowledge and experience with the keystone cities.

During the final year of the project, Bratislava City is aiming to have gathered enough input on increasing the resilience of cultural heritage for its new SECAP. This policy document is to undergo a process of public participation and review by all the city's local partners and relevant stakeholders (as it will cover also other sectors such as citizen health and wellbeing, transport, energy and heat, urban biodiversity, etc.) before final adoption by the City Parliament.

One of the local partners of Bratislava City is the Faculty of Architecture at the Slovak Technical University and the Institute of management at the Slovak Technical University which are both enrolled in the MUNISS student competition¹.

Throughout the project Bratislava city will prepare **press releases** to inform the general public about the overall progress of the project as well as the local work plan. The press releases are to be published after each public consultation session or workshop. Press conferences will also be held after each consultation to inform external organisations as well as the general public about the progress of the local working group.

¹ The City of Bratislava is supporting the MUNISS competition by providing professional consultations and workshops from the practice of public administration, but also by financial means, to support an urban intervention, which could be implemented after the competition and would act as a pilot project for the overall regeneration of the area. The idea is to involve students of spatial planning, urban planning and architecture at the level of an international university competition for solving specific tasks of city development.

Year	Milestone type	Objective	When	Target audience	Public or invitation only
2020	Kick off meeting with local partners	Familiarise local partners with ARCH project objectives, validate research problem for Bratislava City and case study sites	March 3, 2020	All local partners, relevant departments	Invitation
2020	Online consultation session/webinar	Discuss local work plan and consult on related needs and interests.	May 25 and 28, 2020	Core local partners and departments	Invitation
2020-2022	Press releases	Inform external organisations and local community about local plan and consult on related needs and interests.	Press releases will be published after each meeting with consultation session with local partners	Public	Public
2020	Consultation session	Define user needs for hazard and object information management inventory	To be agreed with scientific partners	Core local partners (end users)	Invitation
2020	Consultation session	Define user needs for risk and impact assessment tool, validate the impact scenarios	To be agreed with scientific partners	Core local partners (end users)	Invitation
2020	Conference AMPS	Presenting the ARCH project and "Pavement Handbook"	6/2020	General and professional public	Public

2020	PAESTUM, Italy	BMTA- Mediterranean Archaeological Fair	19. – 22.11.2020	General and professional public, tourism	Public
2020	SOLIN, Croatia	International Congress of Historic Cities	23.- 27.11.2020	Archeological tourism	Public
2021	FIRENZE	Salone Archaeologia e turismo	26.- 28.3.2021	Archaeological Tourism	Public
2021	Student workshop	Transfer of knowledge to students enrolled in the MUNISS student competition	Second half of 2021	Core local partners - university	Invitation by the local partners (university)
2021- 22	Mutual learning workshops between the foundation and keystone cities of ARCH	Involve relevant local partners into the workshops organized as part of the WP3 task 3.6.	To be agreed with scientific partners	2-3 relevant local partners	Invitation
2021	Stakeholder workshop on resilience options	Validate preliminary outputs of two previous consultations, define user needs of resilience options	To be agreed with scientific partners	LNV, Bratislava, MUOP, UNIBA, Tecnalia, ICLEI, ENEA, UNICAM, RFSAT; possibly also core local partners (end users)	Invitation
2021	Metropolitan forum	Present preliminary outcomes to general public and wider group of stakeholders	To be determined by the MIB (organizers)	General public	Invitation
2021	Co-creation workshop involving keystone cities of ARCH	Involve relevant local partners into the workshops organized as	Late 2021 - To be agreed with scientific partners	2-3 relevant local partners	Invitation

		part of the WP3 task 3.6.			
2022	Stakeholder workshop on pathway approach	Validate preliminary outputs of two previous consultations, define user needs for designing pathways	To be agreed with scientific partners	Bratislava, MUOP, UNIBA, LNV, Bratislava, and Tecnalía, SOGESCA Core local partners (end users)	Invitation
2022	Student workshop	Transfer of knowledge to students enrolled in the MUNISS student competition	Second half of 2022	Core local partners - university	Invitation by the local partners (university)

Table 1: Calendar of activities by Bratislava and local research partners - MUOP and UNIBA throughout the duration of the project.

4.3. Strategy to collaborate with local partners

The strategy for the local work plan is based on the principles of mutual benefits and co-benefits. For the time involved in the project, it is key to explain to local partners the mutual benefits of such a partnership. Their local knowledge and experience are valuable to the co-creation process and can influence the development of tools or other outputs that will later support local stakeholders in carrying out daily tasks or in decision-making processes. The input of local partners (stakeholders) is important for creating tools that can be used at different stages of resilience planning: at the stage of planning (for example, land-use planning, planning and designing public space at the local scale, strategic planning), systematic recovery of cultural heritage, assessment of investment projects and support of other activities related to mitigation and adaptation to climate change and erosion hazards.

Secondly, Bratislava City’s strategy is to interact with stakeholders from early on as well as during the project, at the stage of testing the tools developed by the technical WPs 4 – 6 and providing feedback for relevant deliverables. Bratislava City is linked with its stakeholders either via decision-making and different approval processes (between sectoral authorities on local and other levels of governance). Some stakeholders are its own contributory organisations – such as the Bratislava City Museum, Gallery of Bratislava City responsible for the management of cultural heritage and planning of its preservation, or play an important role in strategic urban planning (Metropolitan institute of Bratislava) and approval of investment activities (departments at City council, city boroughs and its departments and authorities). In order to have enough opportunities for interaction, we have listed a number of relevant public events in the work plan as well as project workshops where we see opportunities for co-creation with our local stakeholders.

Last, but not least, the strategy is also to explain the co-benefits to local stakeholders (partners) from applying resilience options for minimising the risk that climate change poses for cultural heritage resilience. Such co-benefits might be either economic (such as savings on resources), may enhance public space, but can also support local communities.

4.4. Checking and reporting on progress

Progress monitoring will be done in various ways. First of all, the progress will be monitored quantitatively – as for example the total number of press releases, meetings/workshops held or public presentations held. Secondly, minutes will be produced from meetings and shared among to the participants to ensure that the tasks distributed are going to be adhered to. General summaries of progress achieved will be published in the Bratislava City Annual Report. Also, the Office of the Chief City Architect provides reporting on a biannual basis also on the implementation of adaptation measures (including resilience options) for the City Parliament and the Covenant of Mayors for Climate and Energy.

Annex 1: Stakeholder analysis table

Sector	Organisation	Relationship with municipality (if any)	Information (what useful information can they provide?)	Impacts (how, if at all, are they impacted by the issue?)
Public - tertiary	Old Town City Borough (municipality)	One of the 17 city boroughs of Bratislava city, the mayor of city borough has a mandate in the city council, (https://www.staremesto.sk)	Management of the immovable assets of BA, administrates and maintains historical sites, issues permits to sale and manages opening hours of stores... info about the municipality itself, list of the deputies	The municipality is responsible for carrying out preventive measures to prevent damage to property in its territory, especially regarding pluvial and fluvial flooding, droughts and heatwaves. Possible damage to the historical monuments in the centre can also lead to a decrease of quality of tourism, deterioration of provided services, more difficult fulfilment of strategies due to higher costs (maintenance, mitigation measures) or as a result of unexpected complications caused by climate change
Public - Tertiary	Devin City Borough (municipality)	One of the 17 city boroughs of Bratislava city, the mayor of city borough has a mandate in the city council, (https://www.devin.sk)	Provides info about the historical sites and the municipality itself, its location near by natural reserves (the riparian forests of Danube and Devinska Kobyla mountain) creates and healthy conditions and a healthy way of life and work of the inhabitants of the city district, maintains historical monuments and buildings of local importance entrusted to the administration of the borough, builds and maintains the communication within the municipality	The municipality is responsible for carrying out preventive measures to prevent damage to property in its territory, especially regarding pluvial and fluvial flooding, droughts and heatwaves. Possible damage to the historical monuments can also lead to a decrease of quality of tourism, deterioration of provided services, more difficult fulfilment of strategies due to higher costs (maintenance, mitigation measures) or as a result of unexpected complications caused by climate change
Public - Quaternary	Bratislava metropolitan institute	Bratislava's contributory organization (https://www.bratislava.sk/sk/sprava/metropolitny-institut-bratislavy)	Dealing with urban planning and development, urban transport, architectural development – creating public spaces of better quality	-
Public – Tertiary State administration	General investor of Bratislava	Contributory organization for investment projects, construction & maintenance (founded by the Mayor of Bratislava after approval by the municipal council) (http://www.gib.bratislava.sk)	Dealing with preparation and realization of building and transport constructions, rescue and restoration of immovable cultural monuments, administration, operation, maintenance, restoration and construction of fountains, monuments and plaques, maintenance and care of greenery	Existing monuments which are in areas prone to pluvial flooding or other climate-change related hazards are vulnerable and their maintenance/reconstruction may require additional financial resources
Public - Quaternary	Bratislava city museum	http://www.muzeum.bratislava.sk/en/	Research institution and organization belonging to Bratislava City. It is the oldest museum in Slovakia conserving and presenting the history of the city (movable assets such as collections and immovable assets such as heritage buildings), the activities of the museum are aimed at documenting and presenting the history of the city, which are offer to its visitors at nine permanent displays situated mainly in the historical old-town center	Existing monuments which are in areas prone to pluvial flooding or other climate-change related hazards are vulnerable and their maintenance/reconstruction may require additional financial resources

Sector	Organisation	Relationship with municipality (if any)	Information (what useful information can they provide?)	Impacts (how, if at all, are they impacted by the issue?)
Public – tertiary sector	The monuments board of the Slovak Republic	https://www.pamiatky.sk/sk/page/pamiatkovy-fond	The Monuments Board is a state budget organization founded by the Ministry of Culture of the Slovak Republic, mainly dealing with protection of historical monuments, they can provide the list of historical and cultural monuments (movable and immovable), manages and supervises the performance of state administration in the area of the protection of the heritage fund carried out by the Regional Monuments Offices, which perform it in their territorial district, which is the territorial district of the region	-
Public - Quaternary	The institute of Archaeology of the SAV	http://archeol.sav.sk/index.php/en/about-us/	The Institute conducts scientific and research activities in the scientific discipline of Archaeology and in related scientific disciplines. It effectively and creatively contributes to the resolution of theoretically challenging and in practice current scientific issues, it is as well training institute in archaeology	
Public - Quaternary	Slovak national museum – Historical museum	https://www.snm.sk/?poslanie-a-historia	Research main activity – research authority, The Slovak National Museum is the top state institution responsible for preparing museum collections, facilitating scientific research and organizing cultural and educational events in this field in the Slovak Republic, it creates, documents, processes, evaluations, protects and makes various collections of artistic, historical or scientific objects accessible to the general public	Existing monuments which are in areas prone to pluvial flooding or other climate-change related hazards are vulnerable and their maintenance/reconstruction may require additional
Public, Tertiary, Tourism, Culture, Culture,	Bratislava tourism board	Direct – promotion of tourism, including promotion of city tourism, including services provided by municipal organisations	basic information in the field of tourism, events, transport, accommodation, gastronomy and others, provides information through a wide range of promotional materials, cycling maps, publications, etc.	weather fluctuations have a negative impact on tourism and the quality of services provided, excessive rainfall can cause flooding or other degradation of cultural monuments and hiking / biking trails, which may affect negatively the quality and quantity of provided services, heatwaves may affect the provision of outdoor tourist activities and services during the summer months
Public, Tertiary, Tourism, Culture, Education Environment	UNESCO Secretariat	Direct - protection of monuments belonging to the world cultural heritage, support of regional cooperation in the area of monument protection, environment, sustainable development and others. Indirect - Enlightenment in the field of protection of cultural monuments, the environment, etc., work on the creation of international conventions and treaties	provides information, education in the fields of social and natural sciences, the environment, culture, etc.,	the World Heritage sites may be endangered/damaged, climate change and related hazards (esp. erosion)

Sector	Organisation	Relationship with municipality (if any)	Information (what useful information can they provide?)	Impacts (how, if at all, are they impacted by the issue?)
Public, Tertiary sector, Culture	The Ministry of Culture	Direct - Subsidiarity principle (delegated performance of state administration in the field of culture and tourism) Indirect - Creation of laws and strategies in the area of culture and tourism development, which the municipalities must fulfil through local strategic documents, concepts and so on.	provides information, provides cultural and educational activities, provides presentation of Slovak culture, manages activities of Slovak institutes abroad in the field of their cultural activities, creating strategic documents, methodological assistance, providing grants, providing information in the field of legislation, provides consultations and methodological assistance	cultural monuments can be damaged and higher expenditures for their reconstruction / restoration, eventually total degradation of cultural heritage, decrease of quality of tourism, deterioration of provided services, more difficult fulfilment of strategies due to higher costs of maintenance and mitigation/adaptation measures or as a result of unexpected impacts caused by climate change
Public, Tertiary sector, Environmental protection	Ministry of the Environment of SR	Direct - central state administration body, respects the principle of subsidiarity (delegated performance of state administration in the field of environmental protection) Indirect - creation of laws and strategies in the field of environmental protection, which municipalities must fulfil through local strategic documents, concepts, activities, etc.	providing information on environmental creation and protection, providing grants, creating laws and strategic documents informing and identifying environmental protection activities and adapting and mitigating the negative impacts of climate change, providing information on legislation, providing consultations and methodological assistance, provides a unified information system on the environment, area monitoring, research and research, provides information on the environmental aspects of land-use planning	increased expenditure on disaster removal
Public, Tertiary sector, Environmental protection	Slovak Environmental Agency	professional organization of the Ministry of Environment of the Slovak Republic Indirect - development of environmental reports and documents prevention and control of pollution, contributory organization in the field of culture and tourism, assesses the impact of activities on the environment	provides information in the field of landscape care and environmental protection, providing contributions in the field of culture and tourism, providing education	Greater demands on resources (personnel and financial) in the area of prevention and control in case of worsening of the negative impacts of climate change
Public, Tertiary sector, Environmental protection	State nature conservancy	Direct- Providing support in the area of monitoring, review of protected areas/species Indirect - project preparation and implementation	information on the status through reporting, information on current legislation, strategies and projects implemented, information on the effectiveness of implemented measures, information on territorial scope, information on funding opportunities for projects from grants	degradation of nature due to the effects of climate change and unexpected phenomena; impossible implementation of strategies as a result of previous phenomena, which caused a change in the original conditions under which the strategies could be fulfilled, material (?) damage, biodiversity loss (urban natural areas)
Public, Tertiary sector, environment,	Slovak Hydrometeorological institute	Direct – partnership with Bratislava city – support in monitoring water/air quality and climate change impacts and early warning systems Indirect - analysing the hydrological/climatological conditions in the country, which influence the creation of strategies and implementation of specific activities in the municipality to avoid damage to the environment and property, respectively.	information on current weather conditions and possible occurrences of floods and worsened wind conditions, informs on current warnings, provides data, information and results of studies in the field of hydrology, meteorology, climatology, phenology, emissions and air purity, provides information from the information system and environmental monitoring , information from the National Pollution Register, provides information on legislation, consultations, informs on projects implemented by SHMI	Need for more advanced monitoring and early warning systems (jointly with the city)

Sector	Organisation	Relationship with municipality (if any)	Information (what useful information can they provide?)	Impacts (how, if at all, are they impacted by the issue?)
Public, Tertiary sector, water management	Slovak water management enterprise (State enterprise)	Indirect – as a state enterprise participates in water management proceedings concerning the authorization of wastewater discharges, participates in setting environmental objectives for surface water bodies, groundwater bodies and protected areas, in the preparation of programs, plans, concepts, decrees, etc. affected municipalities	organize excursions and exhibitions that inform people about the current state and planned activities, publishes water quality yearbooks, final report on the qualitative balance of produced and discharged wastewater, reports from surface water quality monitoring, press releases, water management periodicals	Fluctuations in water runoff ratios and water level fluctuations, because of which the investment activity is affected. e.g. placement of hydroelectric power stations and other objects on watercourses, urban sprawl and use of impermeable materials for surfaces, closing off the rivers into underground pipelines (leading into sewage system or directly into Danube river), deterioration of water quality due to pollution, loss of biodiversity and changes in the aquatic ecosystem, more frequent floods and damages caused by torrential rain,
Public, Tertiary sector,	Association of cities and settlements in Slovakia	Direct - Support for subsidiarity, fiscal decentralization, modernization, support and development of self-governing democracy in public administration Indirect - participates in law-making (?), Represents Slovak towns and municipalities in international relations and development cooperation, represents towns and municipalities as employers, solves problems of local territorial self-government interests and rights of member cities and municipalities in respect of their autonomous status in accordance with legislation and the European Charter of Local Self-Government based on the principles of sustainable development and social cohesion	legal advice, informs on grants, information on legislation, methodological assistance	-
Public, Tertiary sector, Environmental protection	Regional Association for Nature Conservation and Sustainable Development	Direct - nature conservation and sustainable development, Danube river restoration and its adjacent wetland, the organisation is engaged in increasing awareness of nature conservation in the region by working with public and schools, organizing excursions, presentations, lectures and seminars as well as preparing publications, exhibitions and documentary films.	Information and data collected in various interdisciplinary projects on adaptation of urban areas to climate change or conservation and biodiversity protection projects.	changes in water level fluctuations of the river Danube and changes of the nearby land and biotopes caused by the climate change, increased maintenance costs at project sites (additional personnel costs)
Public, tertiary sector, culture	Bratislava City Gallery	Direct - The Bratislava City Gallery is a cultural-educational and scientific-research organization founded by the city of Bratislava. Its basic mission is to collect, professionally process, restore, preserve and make works of art accessible to diverse audiences through exhibitions, publications and various activities. www.gmb.sk	Building plans and reconstruction/sanitation plans on work done in the past (relevant for creating 3D models of its buildings and suggesting resilience options)	The gallery displays its collections in two historical building located in the historical centre of Bratislava, namely at Mirbach Palace, situated in Františkánske square opposite the Franciscan Church, and at Pálffy Palace, situated in Panská Street opposite the British Embassy. The Pálffy palace is especially vulnerable to increased humidity in the ground floor and underground levels.

Sector	Organisation	Relationship with municipality (if any)	Information (what useful information can they provide?)	Impacts (how, if at all, are they impacted by the issue?)
Public, tertiary sector, civic protection?	Bratislava Municipal Police	Direct - is a law enforcement unit established on the basis of Act no. 564/1991 Coll. on the municipal police, as amended, and pursuant to this Act: ensures public order in the municipality, cooperates in the protection of its inhabitants and other persons in the municipality from threats to their lives and health, cooperates with the relevant departments of the Police Force in the protection of municipal property, citizens' property, as well as other property in the municipality from damage, destruction, loss or misuse, as well as with the use of control panels and other security systems (central security desks), and performs many other tasks in the field of monitoring, imposes and collects block fines, and performs other tasks for prevention within the scope established by this Act.	Information on damage and destruction to municipal and citizens' property by natural and climate change related hazards, experience and information useful for disaster risk monitoring and management	Might be involved in the works on disaster removal (created by climate change impacts and other natural hazards)
Public, Tertiary, Research	State Geological Institute of Dionýz Štúr SGIDS	Indirect - State Geological Institute of Dionýz Štúr, subordinated to the Ministry of Environment SR is a contributory organization which provides geological research and exploration at the territory of the Slovak Republic, creation of information system in geology as a component of the nation-wide information system, registration and evidence activities related to geological works performance, collecting, evidence and making available the geological works results carried out at the territory of the Slovak Republic, Central Geological Library performance, issuing and purchase of maps and professional geological publications.	The institute can provide data and information relevant for the scope of the project, as it has already done many times before	The institute research agenda might focus more towards climate change related impacts as these will manifest itself in a greater intensity in the coming years in Bratislava and its surroundings
Public, Tertiary, Civic protection	Ministry of Interior of the Slovak Republic	Direct - it is the authority in charge of the internal administration including the territorial and administrative structuring of the Slovak Republic, organisational assurance of elections to self-government elections (local elections), the organisational assurance of referendums, war graves and small entrepreneurship. Indirect – provides support and guidance for local governments and its citizens on protecting public order, security of persons and property, the safety and fluency of road traffic, by means of the Police Force and the Fire Fighting and Rescuing Corps.	Information on disaster risk management,	Increased costs on disaster risk removal as the impacts of climate change will manifest themselves in a greater intensity in the coming years in Bratislava and its surroundings

Sector	Organisation	Relationship with municipality (if any)	Information (what useful information can they provide?)	Impacts (how, if at all, are they impacted by the issue?)
Public, tertiary, Civic Protection	Regional Environmental Authority of the Ministry of Interior of the Slovak Republic	Direct - performs the state administration of care for the environment to the extent stipulated by Act no. 525/2003 Coll. on the state administration of environmental care and on the amendment of certain laws as amended and other generally binding legal regulations and legally binding acts of the European Union, which result in tasks for the field of environmental care, in its territorial district.	programs, plans, environmental concepts in the area of its competence and determining the decisive directions of environmental policy in individual sections of the state administration of environmental care at the regional level,	Impacts its tasks and responsibilities concerning expected climate change impacts and its effects on cultural heritage in extend of its competence given by Act no 525/2003.

Annex 2: Work plan matrix

