



**Concrete Heritage Protection in the Czech Republic**  
**Conservation and re-use: actors, tasks and approach**

**Project: CONSECH20**

**Working Package 1**

**Date: February 27, 2020**

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## 1. Introduction

This report aims to give an overview of the legislation for cultural heritage protection in the Czech Republic, actors involved and approaches for re-use, focusing on historic concrete buildings. In the Czech heritage protection system, there are no particular law specifications in the process of listing regarding the age of the buildings or their materiality. There are several 20th-century concrete structures in the Czech Republic classified as cultural heritage. However, their protection in practice faces specific issues related to history and culture, but also gaps in legislation and supervision.

The most important historical developments in Heritage Protection in the region are detailed in Section 2. The fundamentals of the Czech legislation system concerning heritage protection are described in Section 3. The most important actors involved in heritage protection are addressed in Section 4. In Section 5, the most important problems in the practice of heritage protection and their sources are outlined. In Section 6, it is described how the heritage protection system addresses material authenticity during the licensing process of an intervention project. In Section 7, issues related to energy efficiency upgrading are highlighted.

## 2. Brief History of Heritage Protection in the region of the Czech Republic

The origins of the Heritage Protection in the region of the Czech Countries date back to the turn of the 18th and 19th centuries to the times of the Austro-Hungarian Empire. It is linked to the movements of romanticism and nationalism (German, Hungarian, and Czech). The implementation of the Heritage Protection into the legislative and executive system began with the foundation of the so-called Central Commission for Heritage in Vienna in 1850, under the Ministry of Commerce, Industry and Public Works. In each country of the Empire, the position of Conservator of Monuments was established to promote the aims of the commission at the local level. In this period, different theoretical concepts of heritage protection were defined, the restoration on the one hand, and the conservation on the other. The Viennese School of Art History and art historians such as Alois Riegl and Max Dvořák had a strong influence in the region up to the next era.<sup>1</sup> During the times of the Empire, the state organized Heritage Protection in a system of institutions, and the first legislative act was created (in 1881, only for the Hungarian part of the empire).

The proclamation of the First Czechoslovak Republic in 1918 initiated a new system of Heritage Protection, and new institutions such as the National Heritage Institute (NPÚ) and the Archeological Institute were founded. The interwar period brought progress to the field, with prominent personalities such as Zdeněk Wirth or Josef Wagner, but it did not develop specific legislation. A legislative act was created much later in 1958, during the communist regime, and was entitled the Cultural Heritage Act (Act 22/1958 Coll.). The system of institutions of Heritage Protection was reformed several times during the communist era. The current legislation on Heritage Protection is based on the Heritage Protection Act issued in 1987, and its content is presented in the following section.

## 3. Cultural Heritage Protection in the Czech Legislation

The primary intention of protecting cultural values is found at the highest constitutional level, as Michaela Matečková points out in her work<sup>2</sup>. In the 1992's constitution of the Czech

Republic, the will “to guard and develop together the natural and cultural, material and spiritual wealth (...)” is declared. Another essential principle declared in the Charter of Fundamental Rights, which is a part of the constitutional law, states that “ownership entails obligations” (art.11 par.3).

There is a special law in the Czech legislation dedicated just to this topic, *The National Heritage Protection Act* (Act no. 20/1987 Coll.), created in 1987 and revised several times, defines the fundamentals of the system of cultural Heritage Protection and addresses the mentioned principles. This law is followed by the *Implementing Decrees* and is linked with the *Construction and Urban Planning Act* (Act 183/2006 Coll.), which defines the general legal framework of all the urban planning and construction activities. The terms defined by the Heritage Protection Act, such as Cultural Monument, National Cultural Monument, Historic Reservation, etc. are addressed in the *Construction and Urban Planning Act*. There are special requirements for the built heritage defined in this Act in the licensing process as well as during the construction itself. Both Acts also address the relation between heritage protection and urban planning.

In the following are the leading principles defined by The Heritage Protection Act and related documents:

### 3.1. Types of Protection

The Heritage Protection Act defines two levels of protection: (1) *Immovable Cultural Monument* (ICM) as the primary level and (2) *National Cultural Monument* (NCM) as the highest. The latter includes the most important monuments of the country such as castles, palaces, cathedrals, and also some 20th-century structures, e.g. the Wenke house in Jaroměř, the hydroelectric power station in Poděbrady, the tower and hotel at the mount Ještěd in Liberec Region as the youngest one).

The declaration of a structure or set of structures (e.g., a monastery or a square) as ICM or NCM implies their protection, but there are other tools to protect more extensive areas such as historical rural or urban settlements, city centres, and other districts. Again, two levels are distinguished in this large-scale blanket coverage protection, the *Heritage Zones*, and the *Heritage Reservations*. The law describes all the activities (restoration, repair, new construction) that require special permission. In the case of large-scale protection, attention is focused on building exteriors. The demands on the existing and new construction in such areas are specified in the so-called Protection Plan. The Plan describes which interventions are acceptable and which are not (e.g., type of materials allowed in the restoration of specific structures). This protection has been put in practice in some 20th-century settlements, e.g., on the modernist Baba Housing Estate in Prague, on the so-called “functionalist city” of Zlín, and the Poruba Housing Estate in Ostrava.

Another form of secondary protection defines rules that concern the area surrounding the declared monument: the *Area of Protection of a National Cultural Monument* and the *Area of Protection of a Heritage Reservation*, e.g., height limitation for new construction, requirements for the exterior of new construction, on greenery adjustments, pavement materials, etc. In Prague, this type of protection has an impact on the construction of high rise buildings, even in areas far from the city centre.

### 3.2. Declaration of Assets as Cultural Monuments

The declaration of a building, structure, area, or object as a Cultural Monument is processed by the Heritage Protection Department of the Ministry of Culture. Any citizen or organisation can propose the declaration. The proposal can be submitted by the Ministry or by other institutions (e.g., The National Heritage Institute). Any asset can be declared as a Cultural Monument (listed in the Monument Registry) independently from its age, structure or ownership. A fundamental rule concerning this process is that the building is considered a protected monument from the moment the Ministry receives the proposal for classification until the moment of the Ministry's decision. This rule is often used to stop imminent demolition and recently has been used mostly by citizens requesting the protection of modern buildings (e.g., Ještěd shopping mall in Liberec, Transgas Building in Prague, Department Store Máj in Prague, Havířov railway station).

### 3.3. Cultural Heritage: Usage and Interventions

The Cultural Heritage Act defines the duties and rights of the owner of the building:

- (i) The owner is obliged to inform by submitting a project to the authorities about any action he intends to do in the object (repair, restore, or convert). The Heritage Protection bodies assess the project and issue a so-called binding protocol (ruling). The Heritage Protection bodies usually also define the conditions of the intervention. In the case of a restoration intervention, the executive body can prescribe special treatment of existing structures and define materials suitable to be applied.
- (ii) The owner is obliged to inform the authorities about the state of conservation of the structure. If the owner does not keep the monument in a satisfying condition, the heritage protection authorities can enforce the owner to perform an intervention. If the owner does not comply with the order, the local authorities can implement the intervention themselves and charge the costs to the owner of the monument.
- (iii) The Heritage Protection Act defines sanctions for cases of malpractice. A fine can be issued if the owner of the building does not keep the monument in a satisfactory state, if he causes damage, performs inappropriate interventions, or starts a project without the agreement of the authorities. These sanctions can be applied in case of a protected monument but also in case of a building that is not protected itself but which is located in a protected area. The same fines can also be imposed in the case of buildings proposed to be declared as a monument. The maximal amount of the fine is 2 million Czech crowns for Immovable Cultural Monuments and buildings in protected areas, and the double in case of a National Cultural Monument.
- (iv) The law defines the Right of Pre-Emption of monuments by the state in case the owner intends to sell it.
- (v) Expropriation is imposed in severe cases of the owner's failure. Cases of expropriation are rare and, to the author's knowledge, there have been no cases of

expropriation of monuments in the last three decades. This measure has many negative connotations related to the communist era. However, there is a recent proposal by UNESCO to apply this measure in the case of the dilapidated neo-gothic railway station Praha-Vyšehrad.<sup>3</sup>

- (vi) The Heritage Protection Act also defines the rights of the owner of a protected monument. The owner can apply for financial support for the conservation of the monument. The application is processed by the Municipal and Regional Councils and, in exceptional cases, by the Ministry of Culture (there are also other support programs run by the Ministry of Regional Development, the Ministry of Environment, etc.). The heritage protection institutions also offer the owners free consultation with their experts.

### **3.4. Actors in Heritage Protection Defined by Law: Executive Organs and Heritage Protection Expert Institutions**

#### ***Ministry of Culture***

Generally, the Heritage Protection agenda is under the responsibility of the Heritage Protection Department of the Ministry of Culture. There are some exceptional cases directly in the management of the government as the Declaration of the National Cultural Monuments and Heritage Reservations (the higher level of protection of a wider area). The ministry defines the general principles of Heritage Protection and sets the agenda of the Declaration of Monuments, distributes the subsidies for the conservation, and also for the research.

A significant part of the agenda lies in the regional and local bodies. A common and often criticized aspect in the Czech Heritage Protection system is its dichotomy. There are two parallel branches from the centre to the regional and local level: the Executive Organs of Heritage Protection on the one hand and the structure of the expert Heritage Protection Institutions on the other.

#### ***Executive Organs: Regional and Local Heritage Protection Departments***

The system of Executive Organs of Heritage Protection is structured on two levels: the Heritage Protection Departments of the Regional Council Offices and the Heritage Protection Departments of the Municipal Council Offices with Delegated Power.<sup>4</sup>

The agenda of these bodies are focused on all the activities concerning objects under any level of heritage protection (listed heritage structures as well as structures in protected areas). The Heritage Protection Act describes the types of activities requiring a binding protocol (maintenance, repair, restoration, conversions, additions etc.). The requirements differ according to the level of protection. For example, in the case of a building that is not protected but which is situated in a protected area, special requirements are only applied to alteration in the exterior of the building, whereas changes in the interior structures are not.

The demands of the Heritage Protection Department are articulated in a binding protocol (ruling). The local authorities elaborating on the building license must respect this ruling and involve its conditions into the building license. The requirements of the Heritage Protection Executive Organ are mandatory.

The Regional Executive Organs are in charge of administrating the most important cases (National Cultural Monuments), and they also serve as bodies of appeal for the lower instance (the Municipal Council Office). The executive bodies of heritage protection are also involved in the process of urban planning and elaboration of the director plans for municipalities and regions.

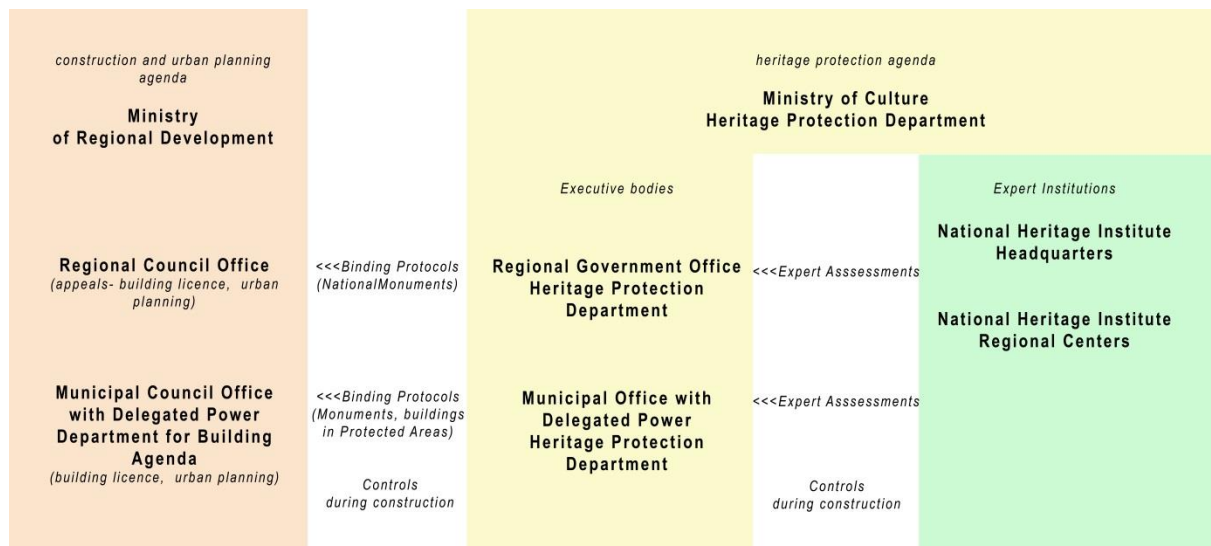
In practice, the Heritage Protection Executive Organs systematically collaborate with expert institutions: e.g., the National Heritage Institute.

Additionally, there is a centralized control body of the Ministry (the *Heritage Inspection*), whose objective is to monitor the work of the Executive Organs of Heritage Protection.

### **Expert Institution- National Heritage Institute**

The National Heritage Institute (NPÚ) also has a structure of regional centres and central headquarters. The institute itself does not have any executive competence. Its mission is the administration of the Monument Registry (both movable and immovable), undertaking research about the heritage objects, and giving expert support to the Heritage Protection Executive Organs. NPÚ is also responsible for managing state-owned historical monuments such as castles and palaces.

Besides the research and publishing activities, the NPÚ regional offices also run a vast agenda related to quotidian building activities such as monitoring the state of conservation of the monuments and consulting for the monuments' owners. Moreover, NPÚ performs expert assessments for the Executive Organs of Heritage Protection (the local and the regional Departments of Heritage Protection). The expert assessments serve as a basis for the binding protocol (ruling) of the mentioned executive bodies. However, the final mandatory statement often differs from the statement of the expert organisation; this problem is addressed in Section 5.



### **The Process and Involvement of Actors**

All the eventualities and requirements of the process are described in the Construction and Urban Planning Act. In the following, there is the description of the process chronologically from the perspective of the investor/owner:

- The owner of the building checks if his intended action requires a licence (a binding protocol from the Heritage Protection Executive Organs or also a building licence). The owner can consult directly with the Heritage Protection Department or the Department for the Construction Agenda of the Municipal Council Office.
- In case the intended action requires a building licence, the owner should consult the project (for free) in the Regional Centre of the National Heritage Institute.
- The owner can submit the project to the Heritage Protection Department to receive its binding protocol.
- When the binding protocol is issued, the owner submits the request for the building licence at the Department for the Construction Agenda of the Municipal Council Office.
- When the permit is issued, the owner can begin to build/restore. During the construction, the authorities may require controls on the construction site. The officers of the Heritage Protection Department and NPÚ usually participate in these controls.

#### 4. Other Actors Involved in Cultural Heritage Protection

##### *State Institutions and Universities*

Besides the actors and processes defined directly by the Heritage Protection Act, there are many activities in the field of the heritage protection promoted by other actors, including both academic institutions and non-governmental organisations. Their work encompasses research studies and actions for the broad public; many of them are active in struggles for the protection of historic structures under threat.

As described, the proposal for declaration of an asset as a cultural monument can be submitted by any Czech citizen or organization. The proposal has to contain an expert analysis reasoning the classification. Many times it is an expert institution (a research centre or university department) who submits the proposal. Some of the important actors are listed in the following.

The Regional Centre of NPÚ elaborate and collect structural-history surveys (SHP) and the archeologic surveys of the historic structures. This systematic activity has created an extensive archive. The institute also issues many materials such as guidelines and methodology for its officers, theoretical texts on the heritage science as well as monographies, concerning also the modern heritage (e.g., a series of three publications on buildings of the 1960s and 1970s<sup>5</sup>).

There are other important research cents such as the **Institute of Art History** of the Czech Academy of Sciences, the **Departments of Art History** at different Czech Universities, the **Department of Theory and History of Architecture** at the Czech Technical University. Besides the research and publication work, these institutions also have initiated the process of the declaration of new cultural monuments many times, defended the protection of modern heritage in media, etc.

The **Research Centre of the Industrial Heritage**, which is also part of the Czech Technical University, has created a database of historical industrial structures<sup>6</sup> all over the country and has drawn attention for their protection.

Concerning the technical and material aspects of the heritage buildings, there are several prestigious institutions such as the **Klokner Institute** at the Czech Technical University, a research and experimental institute for building materials and structures. Recently they



elaborate a methodology of diagnostics for testing the historic reinforced concrete bridges, as many of Prague's bridges are in an impoverished state (e.g., Libeňský bridge). There are other specialised departments at the Faculties of Civil Engineering of the Technical Universities in Prague, Brno and Ostrava.

There is a non-governmental organization uniting the professionals both from the academic field and from practice, the **Society for the Technologies of the Heritage Protection (STOP)**<sup>7</sup>. This Society organizes seminars and publishes brochures on particular topics (e.g., the Hard Cement-Based Plasters, Restoration of Concrete Structures with Cultural Value etc.). The Society for Technologies of Heritage Protection is strongly tied with the National Heritage Institute, and heritage protection officers use the knowledge it produces in their fieldwork.

### ***Non- Governmental Organizations***

Besides the state institutions, there are many non-governmental entities active in the field, such as the Czech branches of the international organisations DOCOMOMO and ICOMOS.

Among the local non-governmental organisations, there is at least one with a very long tradition, the Club for Old Prague, founded in 1900 in reaction to the demolition of a significant part of Prague's Jewish Quarter. Its history and presence are connected with many notable names of the Czech heritage protection; it takes part in local struggles for the preservation of historic areas in Prague and its particular architectures, including modern and the late modern structures.

To understand the way non-governmental organisations operate, it is necessary to point out another measure of the licencing process. The Construction and Urban Planning Act link the framework of the licensing process of construction, restoration, or demolition. From the 1990s until 2017, the local organisations had the right to enter into the licencing process, they were allowed to present an objection and the authorities had to assess it. Since 2017 this right is restricted only to projects of a large scale: those requiring the Environmental Impact Assessment (EIA). Many cases have also shown that the protection coverage of the Reservation Zones is not a strong enough tool. So many actors involved in the heritage protection seek other measures to protect the building, above all declaration of the building as a Cultural Monument.

Concerning the documentation of the architecture of the interwar period, it is necessary to mention the activities of **Obecní dům Brno**, an association of architects and historians of architecture from Brno, the second largest city of the Czech Republic. Their work on documentation of the modernist architecture of Brno is vast and issued in a series of exhibitions followed by publications of high-quality content and aesthetic level.<sup>6</sup>

Among the activities focused on the post-war period, the project **Aliens and Heron** (Vetřelci a volavky)<sup>8</sup> was a pioneer project, focused on the art of the 70s and 80s in public space. It was launched in the times of the general refusal of the artifacts of this era and it helped saving many of them.

The project **Architektura 489** (1948- 89) promotes the architecture of the post-war period. They run an online database of buildings of this period in Prague<sup>9</sup>, and in 2017 they published an architectural guide titled **Brutální Praha**<sup>10</sup>. In general, the post-war period has gained attention, and it is recently presented in several new books, exhibitions etc.<sup>11</sup>

*Appreciation of the Interwar and the Post-War Architecture*

The appreciation of modern architecture is linked with the history of the region. There is a dramatic difference in the perception of the interwar and post-war architecture. The period between the two World Wars marks the era of independent Czechoslovakia, one of the most successful periods of our history, when our culture and economy reached its highest development. The functionalist architecture became the elected style of this era.

In contrast, the architecture of the second half of the century still faces negative connotations as it is still being connected with the totalitarian communist regime. In many cases, this judgment seems to be a bitter irony when we look more in-depth on the history of the particular buildings. Many of the structures were innovative in the context of the general conformity, and their authors reached creative solutions in conditions of uniformity and standardization. The negative perception of the post-war architecture was the most active in the first decades after 1989, both from the general public as well as from many architects and academics. A significant change came during the last decades. At first, it was the architecture of the sixties, a slightly more liberal period that came after the darkest Stalinist era of the 1950s and which was interrupted by the invasion of the Soviet Block armies in 1968. Later on, the architecture of the following period gained its popularity. The term “brutalism” is now almost over-used. Currently, many constructions of late modernism have become iconic, but still, some of them are under threat, and others have been recently demolished. Concerning the appreciation of postmodern architecture, compared with the popularity of the late modern structures, they are still to be appreciated by the wider public.

## 5. Practice

Despite the long history of heritage protection, the architectural heritage in the Czech Republic faces many problems. Besides the issues which are common for heritage buildings all over the world, some specific reasons are stemming from history and subsequently addressed.

The changes in ownership during the Second World War and in the following decade had a dramatic impact on the state of the built heritage. Several assets were “nationalised, “i.e., expropriated. In general, the communist era meant a significant rupture. It brought repressions against the Catholic church, the religious orders were extinct and their assets were expropriated. The regime did not take enough care of many historical monuments. Its priorities were far from the preservation of the heritage of the church and aristocracy. The lack of interest caused the deterioration of many structures and led to their demolition or collapse<sup>12</sup>. Other historical monuments were used for inappropriate functions (e.g., military bases), which led to their fast degradation.

Another rupture came after 1989 when the ownership of many assets changed again. In some cases, the buildings returned to the hands of the original owners (the church, the private owners or their descendants), while the state sold others. Many structures were repaired and brought to life again; others remained neglected, sometimes due to economic issues.

Negligence and lack of care were characteristic of the communist era, but the new regime brought other issues such as the “commercial pressure.” Many historical buildings had undergone radical adaptations (e.g., Baroque palaces converted into hotels). The abandonment took place when the assets could not generate sufficient profit.

The main problem of heritage protection is the weakness of its executive bodies; their measures of law enforcement are insufficient. NPÚ runs the online Registry of Monuments

under Threat<sup>4</sup>. The maximal amounts of the fines are low, thus opening the way for the owners to willingly act against the law because it is more effective for them to pay the fine than to follow the restrictive demands of the heritage protection. There were cases of buildings demolished without permission according to this logic (e.g., Svolinského vila v Bubenci<sup>13</sup>, vila Na Šafránci 1760<sup>14</sup>).

Apart from that, the heritage protection system has internal problems such as the previously mentioned dichotomy: the heritage protection executive bodies on the one hand and the expert institutions on the other. The suggestions of the expert branch are not always incorporated in the final ruling of the executive branch. The executive bodies are part of the structure of the Municipal and Regional Council Offices, which can be influenced by the local authorities. There is extreme pressure from the commercial sector, especially in the capital. Other measures of the urban planning are often too vague, so it is the heritage protection which creates limits for transformations of the city (e.g., maximum buildings' height in the inner districts of the city)

Another weak point is that the Ministry of Culture is very slow in processing the proposals for declaration of new monuments. The proposals often come from external subjects, from academic and civil society organisations, and there is no systematic approach in surveying the valuable structures which should be listed. In contrast, there are many cases in which the proposal is submitted to avoid or postpone the demolition of the building.

For a long time, there has been a controversy between the heritage protection authorities and the actors with conflicting interests: investors and, sometimes, also architects. Often, the heritage protection officers have been criticised for being too strict and unwilling to reach a compromise. Their demands are often regarded as unbearable for the owners. According to the critics, this opens the way for the owner to decide to not carry out the demanded maintenance plans and let the building degrade to the point of irreversibility. In contrast, the investor awaits until his plans for renovation, extension or addition are accepted. An example is the railway station Praha-Vyšehrad (listed monument) in which the owner did not receive the licence to carry out his plan, thus letting it degrade for decades. Recently, the UNESCO commission suggested expropriation of this building.

## 6. Materiality

The adequate approach to the materiality of historic concrete heritage is described in guidelines issued by the National Heritage Institute<sup>15</sup>, though there are other systematic approaches to help in the assessment of the material values. However, the repair of historic concrete as a final surface exposing architectural (raw) concrete is still rare. Since there are not so many protected monuments with concrete elements exposed, its repair is still in an experimental phase (e.g., restoration of the Crematorium Svitavy<sup>16</sup>, Vila Zikmund<sup>17</sup>). In contrast, conventional techniques such as cast stone and hard cement-based plasters are reasonably well studied and practiced by several specialized companies and craftsmen.

In general, architectural concrete (exposed raw concrete) appeared in the Czechoslovakian architecture in the 1960s. In the precedent period, its use was uncommon and limited mostly to the interiors of the industrial buildings, where it was often painted<sup>18</sup>.

Material authenticity is addressed in the guidelines for the heritage protection officers issued by the National Heritage Institute. The treatment of materials is briefly addressed in the following:

The issue of material authenticity is present in the guidelines for the heritage protection officers issued by the National Heritage Institute. The assessment of any planned interventions is a precisely defined process, briefly addressed in the following:

- (i) Every cultural monument restoration project should take into account a *structural-history survey* of the building. If such a survey is lacking or outdated, a new one should be processed. The structural-history survey also has its precise methodology defined by the guidelines of NPÚ and can be done only by expert personnel. The survey contains the list of valuable elements of the building, distinguishing different phases in the development of the structure and also defining the object-matter of the protection. Besides the project of the intervention, the structural-history survey is an indispensable source of information for the heritage protection expert in the assessment process.
- (ii) Besides the suggestions of the structural-history survey, there is a general methodology defining the priorities of the heritage protection practice. Preservation of the original structure is one of the priorities. Other options are viable in case preservation is no longer possible: e.g., copy of the original (made with the original technique), new elements in case the form of the original is unknown. The use of the original techniques is preferred. The guideline states which contemporary industrial products and techniques are unsuitable<sup>19</sup>. In the licensing phase of the project, the expert can demand the use of a particular technique and material and also explicitly forbid another one. There are several contemporary technologies, materials, and elements which the bodies of heritage protection often explicitly forbid in their assessments, such as acrylate and silicate plasters and paints, application of the paint on the cement-based plaster or cast stone etc.
- (iii) There are other measures the expert can suggest, and the executive heritage protection officer prescribes. They can demand the treatment of the valuable parts of the structure by a licensed conservator (usual demand in case of valuable sculptures and other decorative elements of the facade). This particular process of conservation also has its formal requirements described by law.
- (iv) Monitoring during the intervention is a formalised measure described by the Heritage Protection Act and by the Construction and Urban Planning Act. The material qualities should be presented on samples and approved by the heritage protection officer. Also, there are several guidelines of NPÚ and other institutions focused on particular techniques or elements of the historic buildings<sup>20</sup>. NPÚ workers can consult particular questions with the technology experts of the Institute. In public commissions, the company is selected in a public tender. Usually, it is that one which fulfils the conditions of the tender and offers the lowest price. The lowest price is not the best criterion to reach a good quality of the restoration. However, there are other measures on how to reach satisfactory results. In the conditions of tender, the investor can demand several types of certification and also experience with the restoration of the cultural monument. This is supposed to be presented on examples of executed restorations. However, the process is often complicated as in the case of the modernist tram stop shelter in Brno which was half destroyed during the intervention.<sup>21</sup>

Theoretically, the system is well defined, but its application in practice often faces difficulties, especially in the case of buildings without protection but inside protected areas. Concerning this level of protection, the law demands the licensing process in case of restoration or other extensive intervention, but not in the case of a repair or maintenance action, which results in e.g., application of inadequate surface materials.

## 7. Energy Efficiency

The improvement of the energy efficiency of historic buildings is a topic of high importance. The last decade brought many problematic interventions but also some good lessons.

The first massive campaign on the improvement of buildings' energy efficiency was launched more than ten years ago. It included subsidies both for the public and private sectors. In practice the program led to the application of the following measures:

- 1) Modernisation of the technical installations, e.g., heating and water boilers, heat pumps; and
- 2) Upgrading of the thermal performance of the building envelope:
  - a) Additive insulation; and
  - b) Installation of windows with double or triple glazing.

The application of this program initiative was processed very fast, and the heritage sector legislative did not encompass such type of intervention. In the initial phase, there was no coordination of the program with the heritage protection authorities. There were no guidelines on how to deal with these measures on historic buildings. It resulted in many problematic interventions, both from the technical and aesthetic point of view. Concerning modernist buildings, the situation was probably even more complicated, because their particular values are not so clearly appreciated.

After this harsh lesson, several materials have been published showing executed projects of improvement of energy efficiency of the heritage buildings, including modernist architecture (e.g., the Manual of the Energetically Efficient Architecture<sup>22</sup>, Green Monuments<sup>23</sup>). In the case of modernist structures, the need for improvement is sometimes even more urgent than in the case of the older buildings, because of the specific aesthetic of lightweight volumes, big openings, simple glazing in steel frames. These problems are often directly tied with the use of reinforced concrete frame which permits the thickness of the envelope.

Several successful restorations show how to deal with these problems, even if the result is a compromise between the aims of the improvement of the technical aspects and the goals of the heritage protection, such as authenticity of the materials and shapes, including examples of reinforced concrete frame structures (e.g., Paličkova vila, Housing U Průhonu, Husův sbor Vinohrady.)

The situation remains problematic especially in the case of historical buildings that are not under any level of protection. As mentioned, there is no systematic mapping and classification of valuable buildings and, for this reason, many valuable 19<sup>th</sup> and 20<sup>th</sup> century structures remain unprotected. In these cases, the law<sup>24</sup> requires improvement of the energy performance in case of any intervention (adaptation, renovation). A level of energy efficiency defined by the law must be accomplished. The ICM or NCM and the buildings in Heritage

Reservations and Heritage Zones can be exempted from this duty. This exemption must be justified by the assessment of the Heritage Protection Organs.

<sup>1</sup> Vladimír Czumalo: Teoretická východiska a předpoklady památkové péče in Péče o architektonické dědictví. Vybrané kapitoly k tématu péče o stavební a umělecké památky, IDEA Servis, Praha 2008

<sup>2</sup> Mgr. Michaela Matečková, diplomová práce Ochrana přírodních a kulturních památek, Masarykova univerzita, Právnická fakulta 2006

<sup>3</sup> <https://ct24.ceskatelevize.cz/regiony/3035377-nadrazi-vysehrad-dal-chatra-podle-unesco-jej-zachrani-jen-vyvlastneni>

<sup>4</sup> Municipal Council Office with Delegated Power is an Office which concentrates Specialized Office of the State Administration for several Municipalities.

<sup>5</sup> Nádraží Ostrava-Vítkovice. Historie | architektura | památkový potenciál, Martin Strakoš a kol., Národní památkový ústav, 2017  
Obchodní dům Prior / Kotva. Historie | urbanismus | architektura, Petr Urlich (ed.) Národní památkový ústav, 2018

Hotel Intercontinental v Praze. Historie | urbanismus | architektura, Kateřina Houšková a kol, Národní památkový ústav, 2019

<sup>6</sup> <http://www.industrialnitopografie.cz/>

<sup>7</sup> <https://www.pamatky-stop.cz/>

<sup>8</sup> <http://www.vetrelciavolavky.cz/>

<sup>9</sup> <https://www.a489.cz/>

<sup>10</sup> Pavlína Karbanová Krásná, Veronika Vicherková, Pavel Hrubý: Brutální Praha, Kapesní průvodce po pražských stavbách z období 1948 – 1989, vydal Architektura 489 z.s. 2017

<sup>11</sup> Recent activities concerning the post- War architecture, e.g.: exhibitions:

Navzdory, Galerie Jaroslava Fragnera <https://www.gjf.cz/archiv/navzdory/>

Nebourat! Podoby brutalismu v Praze, Národní galerie <https://www.ngprague.cz/exposition-detail/nebourat-podoby-brutalismu-v-praze/>

Books:

Ondřej Horák (ed.): Praha brutálně krásná, Scholastika 2018

Petr Vorlík, Klára Brůhová: Beton, Břasy, Boletice. Praha na vlně brutalismu, ČVUT 2019

<sup>12</sup> web page documenting damaged and destroyed churches: <http://www.znicenekostely.cz/>

<sup>13</sup> <https://prazdnedomy.cz/domy/objekty/detail/3057-vila-na-zatorce-cp-1131>

<sup>14</sup> <https://prazdnedomy.cz/domy/objekty/detail/976-vila-na-safrance>

<sup>15</sup> List of the methodologies published by NPU:

<https://www.npu.cz/e-shop#category=8290&query=&issueYear=&publisher=&author=&sort=&formId=publicationsfilter&page=1>

<sup>16</sup> [http://www.betoniks.cz/sites/default/files/2011-3-30\\_0.pdf](http://www.betoniks.cz/sites/default/files/2011-3-30_0.pdf)

<sup>17</sup> [https://www.transat.cz/obnova\\_vybranych\\_casti\\_vily\\_ing\\_miroslava\\_zikmunda\\_ve\\_zline.php](https://www.transat.cz/obnova_vybranych_casti_vily_ing_miroslava_zikmunda_ve_zline.php)

<sup>18</sup> the chimney of the Hall no. 19 of Praga n.p. Automobile Factory in Praha- Vysočany

<sup>19</sup> E.g. Václav Gírsa, Josef Holeček: Ochrana a obnova vnitřní struktury nemovitých kulturních památek a staveb v památkově chráněných územích, NPU 2004

<sup>20</sup> <https://www.pamatky-stop.cz/publikace/46/>

<sup>21</sup> [https://www.idnes.cz/brno/zpravy/funkcionalisticka-zastavka-obilni-trh-brno.A170531\\_2329626\\_brno-zpravy\\_krut](https://www.idnes.cz/brno/zpravy/funkcionalisticka-zastavka-obilni-trh-brno.A170531_2329626_brno-zpravy_krut)

<sup>22</sup> Manuál energetická úsporné architektury, Státní fond životního prostředí ve spolupráci s Českou komorou architektů rok: 2010

<sup>23</sup> Mahulena Svobodová (ed.) Zelené památky, Slavonická renesanční, o.p.s. 2011

<sup>24</sup> Act No. 406/2000 Coll., about energy performance