Submission from the EU Open Method of Coordination expert group (OMC)
"Strengthening Cultural Heritage Resilience for Climate Change"

Reference: Presentation by DG ENER "Proposals for the Energy Performance of Buildings Directive (EPBD) and the Energy Efficiency Directive (EED)" at the 6th meeting of the OMC expert group, 3 February 2022

Introduction

The OMC group members, set up in accordance with the Work-plan for Culture 2019-2022, welcome the increased ambition of these Directives and efforts to achieve climate neutrality in Europe by 2050. The OMC expert group is convinced and can demonstrate by various **best practice examples** from different Member States that the **built cultural heritage** can actively contribute to reach **climate neutrality by decreasing the CO_2 footprint**. Some aspects of these Directives, however, need to be enlarged taking into account a holistic approach, otherwise they pose a risk for Europe's built heritage. As a consequence further measures are required to ensure that the contribution of these buildings to climate action is fully appreciated and taken into account in these and future energy and climate-related Directives.

Importance of Cultural Heritage

First of all, it is clear that **cultural heritage** as an important part of society is involved in the fight against climate change. As such, due to its nature, its thermal behaviour and the cultural values it conveys, it must be considered to **be a part of the solution** rather than a problem. Heritage represents a common European base for historical and cultural development. This value, shared by all, must be preserved from **irreparable loss or damage**. The vast majority of Europe's historic building stock does not have statutory protection yet these buildings are **central** to the character of **our cities, towns and rural settlements and of great value to communities**. These buildings, because of their materials and traditional construction, are vulnerable to damaging alterations which fail to take account of their hygrothermal properties, and their real rather than assumed, thermal transmission levels.

The modification of **building performance obligations** in its evolution is both a great **opportunity** to **ensure the enduring use of a building** but at the same time presents a risk of loss of heritage qualities. In fact, when deciding on energy-saving interventions, it is essential to define in advance the heritage values to be preserved. In this way the balance can be established between **energy gains** and **heritage importance**. To this equation can then be added the calculation of the **grey energy and the payback time of the investments**.

In order to obtain the most appropriate interventions, it will certainly be necessary to encourage Member States to initiate or pursue research programmes, technological solutions and methods that contribute to a more efficient use of energy in cultural and historical buildings without destroying or distorting their historical values, decoration, furniture or installations.

The specificity of built heritage

It is essential that a **holistic approach is taken to the assessment of the energy quality of a building** and the considerations of the interventions to be carried out, take more into account the intrinsic thermal inertia of the building. It is known by climate predictions that in the coming years, the **cooling demand** in most parts of Europe will be **more energy intensive than the heating needs**. On this point, heritage properties have undeniable qualities which are sometimes lost by a reduction in access to thermal inertia when insulating from the inside to achieve prescribed energy standards.

With regard to energy performance certificates, we propose that the energy improvement measures suggested for historical buildings could take into account both their cultural values and well as their technological performance. This will make the recommendations more relevant and the energy **certificate will gain in quality and completeness**. Current software assessment systems which concentrate on the notional energy performance of the building fabric **fail** to include an assessment of the **actual energy used**, the contribution of the embodied, or grey, energy in an existing building and the **whole-life-cycle assessment** of the building's performance. Furthermore, the results of the certificate could integrate the possible access to public transport or green mobility as part of an overall energy balance.

It is also important to underline that the software for the energy label should better take into account the constructional specificities of old buildings which are generally of vapour-permeable, mass-walled (earth, stone, brick) or thin-walled (wood) construction. Indeed, it can be seen in the results on energy performance that **static simulation calculations**, as currently used in the certificates, give energy expenditure values between 10 and 20% (and sometimes 30%) higher than **dynamic calculation simulations**, which are **closer to reality**. It could therefore be important to obtain the most realistic models possible for assets of heritage interest in order to avoid proposing inappropriate works to these buildings which could be damaging to the building and its contents the health and well-being of its occupantsdue to the creation of an unsuitable microclimate.

Following the draft proposals of the Energy Performance of Buildings Directive and the Energy Efficiency Directive, it seems important to insist on the possibility to keep exceptions for buildings with heritage value and this also for properties owned by public authorities, whatever the percentage targeted by the legislation. Many of Europe's most significant cultural heritage buildings are in public ownership such as government buildings, palaces, courthouses, museums and many others. The application of a **standardised measures** to such buildings risks causing **irreparable damage**. As mentioned above, it is important to take a holistic view of the situation in the energy approach. The presence of scientifically based exceptions is in no way a weakness of the legislation, but on the contrary demonstrates the ability of a standard to adapt to the realities on the ground and thus obtain the most effective results possible.

Recognising the specificity of built heritage in legislation is the best way to insure against the risk of cultural loss as a result of the application of standardised measures designed primarily for new

buildings. The **historical building stock worth preserving requires a holistic and interdisciplinary approach that goes far beyond the search for purely technical solutions**. In the future, in order to determine the most suitable intervention for the old building stock, it will be necessary to promote further research programmes for innovative technical solutions. There is no doubt that **heritage is fully involved in the fight against climate change**. It will be able to do so thanks to its intrinsic qualities and its unifying cultural values.

We **note that Art. 5(3) of the draft EPBD removes the possibility** for EU Member States to exempt buildings that are officially protected as part of a designated environment or because of their special architectural or historical value. While it is accepted that all buildings are capable of some form of energy upgrading, this **proposed deletion must be accompanied by a balanced approach to buildings of cultural heritage significance**, correct assessment of their performance and the application of retrofitting techniques appropriate to their construction characteristics.

The **OMC group welcomes the fact that Directive 2018/844 EU**, especially with paragraph 15, does not focus solely on the energy retrofitting of the building envelope, but includes in the **consideration all relevant elements and technical installations** in a building that are involved in **passive techniques** with which the demand for energy in the use phase can be reduced an thus the **thermal and visual comfort** is to be improved. In this context, we point out the special potentials with regard to indoor climate and room temperature control in monuments. Here, it can be shown how, by means of adapted utilisation scenarios and comfort requirements through e.g. buffering or the installation of unheated areas, regulators, heat recovery etc. **efficient basic concepts are already in place**. We recommend that such utilisation concepts aiming at **sufficiency** should also be taken into account in a **life cycle assessment**.

<u>Recommendations</u>

We **strongly recommend** that Articles 22 and 23 of the draft EPBD should recognise that there is a need for **targeted training** and a recognition of the **skills required to retrofit buildings of traditional** construction to ensure that there are no unintended consequences for the building such as would prejudice its cultural heritage values, risk long-term deterioration of the building fabric and contents, or jeopardise the health and well-being of occupants. Proposed one-stop shops (Article 26) should be equipped to provide the necessary advice on built heritage protection to those proposing works to traditional buildings.

In conclusion, **we recommend** that there should be a **holistic approach taken to the energy performance** of the built environment in order to reach Europe's **climate targets**, including actions such as:

- Promoting the continued appropriate **use and reuse of the building stock** as a priority over **demolition and new construction**. This avoids the green house gas emissions created by demolition and rebuilding and reduces waste and landfill;
- Developing **skilled and sympathetic retrofitting measures** which will prevent unintended consequences for the buildings and their occupants as a result of maladaptation;
- **EU Directives and grant aid** should prioritise assessment of **measured energy** use rather than **calculated energy** use to ensure that emissions reductions are actually achieved and that

occupants are incentivised to reduce their energy usage through low-impact, everyday actions rather than invasive and carbon-intensive retrofitting works;

- Developing more **robust accounting methods, data**, etc. to assess the contribution of the historic building stock to climate action;
- Demanding and **enabling longer lifespans for buildings** and building elements. The historic building stock has proven **durability** which must be credited in assessments;
- Quantifying monuments always in terms of their evaluation, taking into account the **system boundary of the neighbourhood**. Many of the measures to increase energy efficiency can be realised simply by focusing on the potentials and networking of the energy supply in the neighbourhood;
- **Building capacity** through **training and upskilling** to ensure the construction industry is equipped to undertake upgrading works to the historic building stock.

Signed 24 February 2022 on behalf of members of the OMC group: 

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