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Safeguarding and conservation of Gelati Monastery World Heritage Property, Georgia - Church of the Virgin: Supplementary note on the hygrometric condition of structures

As indicated in the reports of December 2021 and June 2022, the hygrometric condition of the structures of the west wing vault of the church is extremely uneven. This difference is also reflected in the different level of degradation of the decorative apparatus. In particular, the southern portion of the vault was noticeably wetter than the northern portion during both missions. The cause of this difference was identified in the abundant infiltrations through the glazed tile roofing, which affected (before the temporary metal sheet covering was installed) the southern portion of the vault but not the northern portion (any modest infiltrations left no evident traces). The removal of the old roofing and the modern layers underneath (and the simultaneous construction of a "ventilated roof") was proposed to allow the evaporation of the water, which had entered the structures through infiltration, towards the outside of the church (through the extrados of the vault) and not through the internal support surfaces of the painted plasters. This drying process will obviously be faster in the case of the slightly damp structures on the north side of the room, and significantly slower in the case of the extremely wet structures on the south side.

Both portions of the vault were also found to be plagued by high humidity of a hygroscopic nature. However, the measures to eliminate this pathology differ, at least in part, from those for drying out the structures and fall within those typical of conservative restoration (removal of salts with compresses, mechanical removal, etc.) and microclimate control.

Considering the above, in view of the forthcoming start of restoration work on the paintings of the west wing of the church, it is advisable to start from the north side, which is mainly afflicted by hygroscopic dampness, allowing the southern structures more time to dry out and stabilise hygrometrically. Please refer to the evaluations of the team of restorers that will be working on the paintings for the intervention methods and times.

Lastly, given the abundant presence of hygroscopic salts (nitrates, sulphates, etc.), it is not advisable to alter the microclimate in the intervention area with abundant and sudden air exchanges with the outside (for example, by opening doors and windows), the use of unsuitable equipment or the excessive presence of people inside the restoration site. Any alterations, whether intentional or not, to the internal microclimate must, in fact, be constantly monitored and assessed in relation to the precarious state of conservation of the decorative apparatus.

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