

[← Back to book](#)

Chapter 77

Stone biodegradation and mitigation—the case of Convent of Christ, Portugal

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Pages 3

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Convent of Christ (UNESCO's World Heritage Monument, Tomar-Portugal) is one of the most expressive testimonies of Portuguese architecture, whose huge structure include seven cloisters, different monastic constructions and the emblematic Chapter Window (or Manueline Window). Unfortunately, over the years the stone materials have been subjected to several damages, which have modified the appearance of the surfaces and their integrity. Attending to the negative effects of the microbial population on the rock surfaces, our research is actively pursuing the microorganisms responsible for biodeterioration/biodegradation and attempting signalise the biodeteriogenic agents. Furthermore, the development of mitigation strategies based on alternative green solutions, have been successfully tested in simulation assays, for promoting the safeguard of these stone materials. Natural biocompounds produced in our laboratory (Bevotech) reveal effective inhibition capacity (in vitro and in situ assays) and do not induce alterations on the rock materials. These compounds seem to be a green/ecofriendly solution for Cultural Heritage

