

**PECRE funded exchange to the *Norwegian University of Science and Technology* of
Throndeim in Norway.**



(City of Throndeim)

An academic visit to the Norwegian University of Science and Technology (NTNU) located in Trondheim, Norway, took place between September 5 and October 1 2017. The objectives of the visit were to:

- Collaborate with NTNU, one of the few European groups performing climatic studies for the built environment and for the preservation of cultural heritage from a geoscience perspective. In particular, to exchange ideas and get feedbacks on the development of my research project.
- Pursue the PhD project and the writing of a publication in the area of adaptation of cultural heritage to climate change in collaboration with Dr Chiara Bertolin.
- Learn new adaptation strategies to mitigate climate change in the field of cultural heritage,
- Cooperate with the Rjukan-Notodden Industrial Heritage site in mainstreaming climate change in the management of cultural heritage and, through this process, identify opportunities, barriers and the need for information from stakeholders.



(Norwegian University of Science and Technology in Trondheim)

Achievements during the exchange:

- During the time passed at NTNU I had the pleasure to meet, interview and get feedback on my research from my host, Dr Bertolin, whose work focuses on the assessment of climate change risks on cultural heritage and adapting cultural heritage to those risks. The feedback received improved my research, particularly it helped me better structure the work related to the last two objectives of my PhD and gave me ideas for future research. The exchange also gave me the opportunity to meet other researchers working with Dr Bertolin to exchange knowledge, ideas and discuss future collaborations. Since one of Dr Bertolin's projects focuses on adapting cultural heritage to mitigate climate change by sustainable restoration of historical buildings, there is the opportunity for joint publications.
- We (Dr Bertolin, my supervisory team and I) are currently collaborating on the writing of a paper on adapting cultural heritage to climate change. The writing of the paper is on-going and follows the structure that was agreed during the exchange with both my supervisors and the Norwegian host. The communication with Dr Bertolin continues via e-mail and Skype.
- During my time in Norway, I also interviewed academics working in the area of cultural heritage preservation. These interviews allowed me to understand the impacts that climate change poses to the Norwegian built heritage and how such impacts are dealt with by site managers. The visit was also valuable to gain awareness on the challenges encountered in adapting heritage to mitigate climate change versus the preservation of the values and authenticity of the historical buildings in the Norwegian context. I found out that different countries, and so different cultures, have a different perception on how the adaptation should consider the values of cultural heritage. The benefits of this exchange were also significant in terms of networking and deepening of knowledge on issues related to my research.

- Prior to the visit to NTNU, I spent time at the Rjukan-Notodden UNESCO World Heritage Site. The collaboration with the stakeholders involved with the preservation of the site was successful. During the visit I interviewed site managers and coordinators working on the preservation of the built heritage as well as the planner of the municipality. The data obtained from the interviews will be used to understand the implications of climate change impacts in the management of the heritage site. The outcome of the interviews are being analysed with those made at New Lanark UNESCO World Heritage Site in Scotland and Crespi d'Adda UNESCO World Heritage Site in Italy, which I previously visited and where data have already been collected. The interviews were conducted following the interview framework previously applied in Scotland and Italy. I was also able to gather documentation regarding the management of the site.



(Rjukan-Notodden UNESCO World Heritage Site)

In summary, the collaboration with NTNU and the Rjukan-Notodden UNESCO World Heritage Site was successful. The following were achieved during the visit:

- The exchange of knowledge and ideas with the visited research groups, the feedback on my project and the development of network for collaborations.
- The work on a joint paper with Chiara is on-going.
- The understanding of the issues on adaptation of cultural heritage to climate change in Norway through interviews with academics working on cultural heritage preservation.
- The understanding of how climate change is considered in the management of the Rjukan-Notodden UNESCO World Heritage Site in Norway.