

## ICCROM 19<sup>th</sup> International Stone Conservation Course Report

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It was a real pleasure and a privilege to be one of the twenty international participants of the 19<sup>th</sup> International Course on Stone Conservation –SC15, jointly organized by ICCROM, the Getty Conservation Institute (GCI) and the Non Catholic Cemetery, that was held in Rome from 15 April to 3 July 2015.

During twelve weeks I attended to different lectures from renowned international art historians, geologists, conservators, architects, engineers, archaeologists, and conservation scientists. Every lecture was very different from each other but they were all focused on stone as a material and how it reacts in different environments or contexts.

There were also laboratory sessions: microscopy, petrography, porosity/capillarity tests, mortar analysis, salt analysis, and identification of bio organisms found on stone.



Laboratory sessions. From left to right: Aslan Çakir, Albert Traby, Lela Ninoshvili and Hidayat Jaffar Ali

On the practical side there were different exercises carried out in the Non Catholic Cemetery in Rome: documentation and recording on site, mapping exercises, and conservation treatment of different monuments in the cemetery. For the conservation of one monument at the cemetery I formed part of a four people team. My colleagues were from Georgia, Turkey and Tanzania. Together we managed to complete a difficult conservation intervention of the Wallace tomb, a very interesting monument composed of three different stones: Travertine, Marmo Rosso, and Nero Portoro.



Field work at the Non-Catholic Cemetery in Rome

We also had different guided tours around Rome and one week study tour around Italy. These study tours were really interesting as we had the opportunity to see hands on conservation in monuments like the Fontana di Trevi, Santa Maria Antigua in Rome, the Vatican conservation studios, the Pisa Cathedral, or the Rialto bridge in Venice among others. On these tours I had the opportunity to discuss different, and sometimes new, conservation treatments.



Study tour at the Roman Forum.

Another very important aspect was sharing time with the other participants from different countries: Finland, Austria, Serbia, Italy, Poland, Palestine, Malta, Turkey, Egypt, Georgia, Colombia, Perú, México, Canada, Zimbabwe, Tanzania, Philippines, Japan and Hong Kong. During three months we have made very good friendships and a professional network that I hope will last for many years to come. During the course we discussed different approaches and conservation problems that each one have in our own country and now we have online forums were if someone has a question each

of us gives their opinion. So I feel that the course has somehow not finished and I still learning from my other colleagues.

All these lectures, laboratory exercises, and field practical work have broaden my knowledge in stone conservation. Now that I completed the course I feel enriched by the whole experience but time will have to pass until I process all the information gathered during the three months.

I am really looking forward to meet my students on the next academic year so I can share with them some of the new topics I learned, especially on the conservation of outdoors monuments. This is especially relevant for the project I have been coordinating at the Kensal Green Cemetery in London. For more than two years now City & Guilds of London Art School and the Friends of Kensal Green cemetery have been collaborating together to conserve some of the listed monuments and other stone objects. The monuments in Kensal Green have very similar problems as the ones in the Non-Catholic Cemetery in Rome and my experience in ICCROM has definitely met my expectations.

I am very thankful to the Icon/Tru Vue funding scheme to pay for the course fees and I will definitely promote the scholarship to my other colleagues at work. The ICCROM course has been a stepping stone in my career and now I feel ready to start the ICON accreditation process.



Closing ceremony. Jeanne Marie Teutonico (associate director of Getty Conservation Institute) , Albert Traby, and Joseph King (ICCROM director of the Sites Unit)

## The Wallace monument

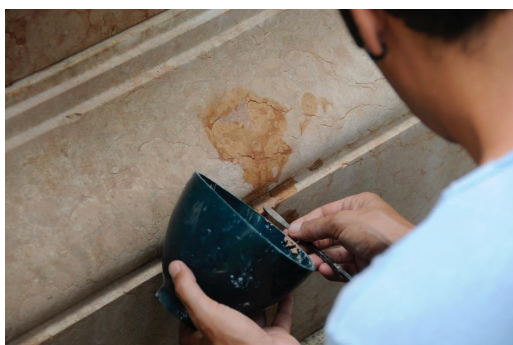
The monument is constructed in two main parts, a sarcophagus and a plinth. These two elements can be subdivided according to its construction as they were carved in separate blocks of stone. The sarcophagus has separate elements all carved in Nero Portoro: a cross, a lid with two scrolls on each side, the main body and two legs. The plinth is made of three sections: the lower and middle part with simple mouldings and the upper part, which is a large square block of Marmo Rosso.

The conservation treatment carried out was the cleaning of the bio film which covered almost the entire monument and the consolidation of the Marmo Rosso and the Nero Portoro.

For the cleaning a biocide was used (quaternary ammonium salts) and left for two weeks. After this time the thick layer of dust and exogenic deposits were cleaned using dry cleaning methods with soft brushes followed by wet cleaning using water and soft brushes. Special attention was taken when cleaning on the soft yellow veins of the Portoro. For the dendritic black crust mechanical methods were used using a scalpel. For the primary gypsum layer chemical cleaning was used with a saturated solution of ammonium carbonate during an hour. The gypsum layer proved to be very hard and micro blasting with aluminium oxide was used to remove it successfully.



**Fig. 1 Injecting the NHL 3.5 grout**



**Fig. 2. Applying the nanosilica**

Consolidation took place in three stages: micropointing using nanosilica, hydraulic lime grouting and application of ethyl silicate. The reason to apply the ethyl silicate at the end of the process was to avoid a chemical reaction with the nanosilica.

On this monument with very fine and shallow cracks a lime mortar fill was not considered suitable as lime mortars need good surface preparation and some good depth. The use of nanosilica was chosen then because of its better performance when used in very shallow cracks and for its quick drying (Fig. 2). Also a good colour matching can be achieved, as the colour does not change as much as lime mortar based fills.

Hydraulic lime grouting with super ventilated pozzolana (1:1) was applied by injection in the crack of the south west side. (Fig.1)

Ethyl silicate 300 was chosen for its higher penetration depth and because the lower porosity of both stones. One application with a brush was carried out on the whole monument.



Allen Wallace's tomb. Before treatment



Allen Wallace's tomb. After treatment.