



INTERVIEW

Nicolò Marchetti

Professor of Archaeology and the History of Middle Eastern Antique Art at the University of Bologna, Italy.

Mapei and Archaeology, a Successful Partnership

The dig mission directed by Nicolò Marchetti in Turkey is ongoing with successes in the face of adversity

«The wonders we are now able to see represent less than five percent of what is buried beneath the surface». This is how Nicolò Marchetti, Professor of Archaeology and the History of Middle Eastern Antique Art at the University of Bologna, in Italy, opened his meeting with Adriana Spazzoli, Mapei Operational Marketing & Communication Director in charge of the magazine Realtà Mapei, and with the Mapei Product Managers Davide Bandera (Mapei-Antique range) and Pasquale Zaffaroni (Building Products range). According to Marchetti, only a very small part of the Karkemish site in Turkey has been brought to the light of day, and his aim and that of his team is to work even more intensely - if funds permit - to carry out new, important discoveries.

In the wake of the sites at Tilmen Höyük and Tasli Geçit Höyük which we already know about (see Realtà Mapei International edition 28/2009 for an article on the first site), it seems that Karkemish is also destined to become an archaeologi-

cal park.

The Karkemish area has been off limits for a long time since it became one of the bases of the Turkish army in 1920. Only once all the mines had been removed in March 2011 was it handed back to the archaeologists. At the end of 2011, digs by the joint Turkish-Italian mission recommenced, with members from the Universities of Bologna, Gaziantep and Istanbul under my direction. The aim of the new research project is to bring the important monuments of this grand neo-Hittite city from the start of the first millennium to the light of day and initiate a new study of the remains below this imposing town from the previous millennium. And all this with a view to create an archaeological park that will have to be integrated with the nature reserve that will be created in the adjacent Euphrates Valley. The schedule set by the local Turkish authorities is particularly tight, given that the inauguration will be held in October 2014. The province of İslahiye, which is also the home of the Tilmen and Tasli Geçit parks (see article on the previous pages), has had, more accurate road signs installed in parallel with the extraordinary growth in the number of visitors, for now mainly Turkish. At Karkemish, apart from the new digs and the conservation project for the monuments, I am convinced that the development of cultural tourism will strengthen the economy of the surrounding rural communities.

The interest shown for Karkemish is recent, or does it date back to a long time ago? Is it correct to say that it is known as the "Pompey of the Orient"?

The “modern” history of the site that, 5,000 years ago, was a city with probably around 12,000 to 15,000 inhabitants, started in 1911, when a mission from the British Museum started systematic digs in an area that had already been identified in 1876 by the famous English Assyriologist George Smith. The mission was directed by Leonard Woolley with Thomas E. Lawrence, who a few years later entered the history books under the name of Lawrence of Arabia. Numerous famous relics were discovered, including basalt and limestone slabs with carv-



ings of warriors, carriages, animals and kings, and that today are mainly on display in the Museum of Anatolian Civilization in Ankara. What is left of the digs by Woolley and Lawrence is still visible today at the site and is one of the monuments that we have started to restore. The little information we have managed to find about the city is mostly from the Iron Age (between the XII and III centuries BC), a period in which Karkemish had been a very important neo-Hittite state, and the monuments that remain have led to some defining it, a little exaggeratedly, as the "Pompey of the Orient". The archaeological team has set up seven dig sites in the area where the antique city stood and has discovered some extraordinary objects and architecture, and in particular exceptionally well-crafted colossal sculptures and bronzes from the 10th century BC, and even objects for daily use and documents from the British mission. A bronze statuette representing the God of Storms with a tiara adorned with four horns and a small silver sword was found in the cell of the temple to the God, where we also found fragments of other sculptures and hieroglyphic inscriptions. We hope that with the new digs it will be possible to also pass through the Roman and neo-Hittite eras, and then reach the Bronze Age. This overlap of layers promises to reveal important surprises in the reconstruction of the history of a site that is crucial for the entire Eastern Mediterranean. At the moment, on the sites we have open, apart from the numerous remains and fragments of sculptures and Luwian hieroglyphic inscriptions, enormous carved buildings have also been unearthed within the walls of the city, with tombs with rich décor for the urban elite. At a depth of around 3 metres we have reached layers with ashes, burnt remains and arrowheads that document the conquest of Sargon II of Assyria in 717 BC and the pillage of the city. But what makes me particularly enthusiastic was to find a large basalt memorial stone from 975 BC that I found on the first day of the dig on the 1st of October 2011, once we had received the go-ahead from the military authorities. The memorial stone, dedicated to the Great King Urtarhunta by Suhi I "the Lord of the City of Karkemish", had been removed and tossed aside by the military during building work on the base and is covered by a royal inscription

in hieroglyphic Luwian, deciphered by David Hawkins of the British Academy with the help of Hasan Peker of the University of Istanbul, vice-director of the Mission.

Difficulties in carrying the materials and products required for the dig or also because of the current situation in Syria, because the dig is literally on the border. What problems have you had and how do you overcome them?

The legendary Hittite city of Karkemish is a mythical place in oriental archaeology and its history has been interspersed constantly with antique and modern conflicts. And the current conflict is just the latest, and the city finds itself in the front line due to its geographical position on the border between Turkey and Syria. Various types of problem are the order of the day. We just have to remember that, for years, the site was off limits because it had become militarised and because it had been mined. A

BELOW LEFT. A bronze statuette representing the God of Storms with a small silver sword was found in the Karkemish area.

BELOW RIGHT. The first diggings were carried at Karkemish in 1911 by L. Woolley and T. Lawrence, who a few years later entered the history books under the name of Lawrence of Arabia.



part of the site (35 hectares out of a total of 90) is in Syrian territory and, for obvious reasons, is off limits to us. Last year was a particularly difficult one, with Turkish soldiers keeping the area and the nearby border with Syria under tight surveillance. However, even though the ruins have been cleared of anti-tank and anti-man mines, according to international standards there is still a certain risk that cannot be completely eliminated, in that statistically 4 mines out of 1,000 remain undetected: and that is why mine-sweeping is still being carried out while we are digging and why tourists visiting the site are only allowed to enter certain protected areas.

During an interview published in the New York Times on the 16th of January, you talked about a project to create a large archaeological “park”, but the work is difficult, long and costly. Who is sponsoring the dig?

Apart from the contribution we receive from the Italian Ministry for Overseas Affairs and the Ministry of Education, Universities and Research, the University of Bologna and from our historical technical partner Mapei, who supplied excellent products for the Karkemish site we have also had support from the Global Heritage Fund (GHF), a

non-profit foundation from the United States that offers support to projects aimed at conservation and the development of tourism). In total, we have a budget of around 100,000 Euro per year.

The support given by Mapei Technical Services has been decisive in the choice of products and how they are used? The Mapei products that were recommended and then utilised answered your request to carry out interventions based on full respect of the antique structures?

As I said previously, after the excellent collaboration implemented during the dig in Jericho, Mapei decided once again to get involved in a technical research partnership involving the restoration of Tilmen Höyük and Tasli Geçit. For the work carried out in the past, and again for the work currently being done at Karkemish, we have carried out only minimal interventions that do not have a significant impact on the site, but rather guarantee its state of preservation. As far as the methodological approach is concerned, after cataloguing all the problems encountered in the field, the most efficient, and at the same time least invasive, operational techniques to overcome them were identified, and they can be summed up in three words: disinfection, cleaning and consolidation. The first step is to remove all the vegetation present followed by consolidation, using only materials that are highly compatible with the substrates in question, but always limiting as much as possible the integration of any “external” bodies to the structures and avoiding any intervention that was purely constructive. We have had enormous help from Mapei Technical Services during these interventions, and they always recommended and supplied the most suitable materials for our needs. Products that we also use for periodic maintenance work on the sites, and that in the overall budget of the archaeological missions is a very important item. Amongst the products that were recommended and used, with complete satisfaction by the way, I would like to highlight the Mapei-Antique system that we applied in both archaeological parks at Tilmen and Tasli. Its physical and mechanical characteristics make it really similar to the masonry and rendering mortars used in the past and is, therefore, particularly compatible with the original structures.

After Karkemish, have you already made plans for another archaeological adventure?

I think that, because of the sheer size of the digs and importance of the finds, we will be staying on this site for a number of years to come. Of course, I certainly have other projects in mind before I start drawing my pension, but for now we will have to see. (*Professor Marchetti just smiles. Editor's note.*)



IN THESE PAGES. Two basalt memorial stones were found in the Karkemish area.



The Archaeological Site of Tasli Geçit Höyük

Cutting-edge products to consolidate the monuments
of an antique city in Southern Turkey





ON THE PREVIOUS PAGE. Iron Age storage jars.

PHOTO 1. Picture of a phase of restoration work in area B.

PHOTO 2. The cobbled street that led from the lower city to the Acropolis.

PHOTO 3. A view of Taslı Geçit Höyük at the end of the summer season when the artificial lake is dried up.

Since 2003, the joint Turkish-Italian mission directed by Professor Nicolò Marchetti, on behalf of the Department of Archaeology from the University of Bologna (Italy) in collaboration with the University of Istanbul and the Museum of Gaziantep, has been carrying out digs in the cities of Tilmen Höyük and Taslı Geçit Höyük in the Turkish region of Gaziantep in south-east Anatolia. These are important archaeological sites to re-construct the contact between Anatolia and Syria during the most antique eras. In the 1960's, the University of Istanbul started off a series of archaeological digs that brought a small portion of this site to the light of day. The more recent discoveries are thanks to a research project in the field promoted by Nicolò Marchetti at Tilmen Höyük: after just five digs, a number of important monuments and relics dating back to 1700 BC have been unearthed, including temples, fortresses and a royal palace. What had originally started as an ambitious excavation project in the area in the province of Gaziantep evolved into a joint Euro-Mediterranean project with the aim of safeguarding and improving the territory, not only from

an archaeological point of view, but also from an environmental point of view. The joint Turkish-Italian archaeological mission directed by Marchetti and the collaboration between the Italian and Turkish universities and a number of Italian companies, including Mapei Group (see *Realtà Mapei International* edition 28/2009 to find out more), led to a large-scale, multi-disciplinary project: the creation of an archaeological and environmental park to improve and manage the site inaugurated in 2007 which now is visited by thousands of tourists every year.

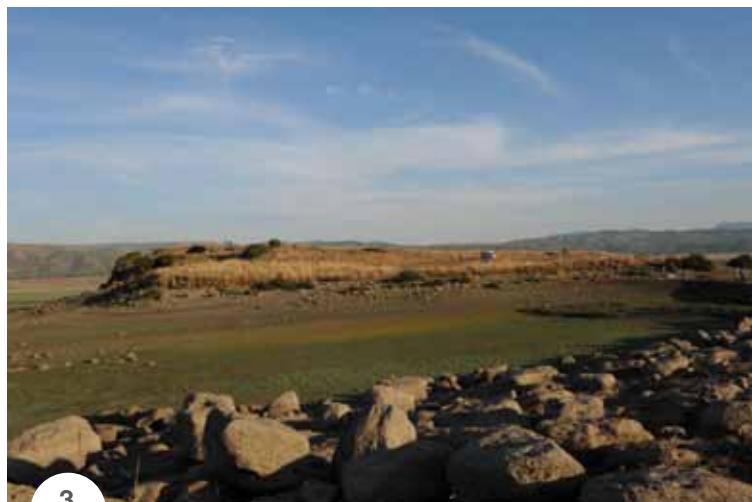
The Excavations and Archaeological Park of Taslı Geçit

In the autumn of 2009 the site of Taslı Geçit Höyük was under threat from an artificial lake: emergency excavation work has to be carried out and, in just two dig campaigns, highly interesting results were achieved. The city of Taslı had been inhabited until 1800 BC and was abandoned when the nearby city of Tilmen Höyük became more important. After the destruction of Tilmen in around 1600 BC, Taslı Geçit took over as the capital city of the



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IN THE SPOTLIGHT

MAPE-ANTIQUE MC

It is a ready-to-use, cement-free mortar made from a sulphate-resistant hydraulic binder (aerated lime and Eco-Pozzolan), special additives, porogenic agents and suitably-sized aggregates. When mixed with water, it forms a render with physical and mechanical characteristics similar to mortar used in the past and, as such, is more compatible with any type of original structure. Thanks to its macro-porous structure, MAPE-ANTIQUE MC is highly transpirant and porous with a much higher capacity to encourage the evaporation of water from masonry compared with traditional cementitious or lime-cement rendering mortar. MAPE-ANTIQUE MC can contribute up to **4 points** to obtain the LEED certification.





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region and a fortress and walls were built on and around it, along with a residence and numerous houses. In 1400 BC an earthquake raised the city to the ground. A prosperous agricultural village was established on the site of the city around 700 BC.

In October 2010, in the presence of the Italian ambassador to Turkey Gianpaolo Scarante and all the leading local authorities, the Taslı Geçit Höyük archaeological park was inaugurated. The team of archaeologists guided by Professor Nicolò Marchetti who, after two years of digs, discovered a town of particular scientific interest dating back to the Middle-Bronze, Late-Bronze and the Early Iron Ages (2000-1800, 1600-1400 and 720-550 BC respectively) extending over an area of more than 3.5 hectares. Thanks to the constant dedication and work of restorers, geo-physicists, architects and typographers from other Italian universities (Bologna, Tuscia, Genoa and Rome Sapienza) and Turkish universities (Ankara and Adana), the imposing remains of this archaic city saw the light of day once again, such as the fortifications made up of walls and fortresses and an acropolis, as well as domestic buildings and some that may have even been sacred. The project extends over a highly important site of natural beauty and involves the use of new, experimental techniques to safeguard the site from erosion, thanks also to the important support of specialised Italian companies (Abet Laminati for the signage and Maccaferri for the containment cages) as well as Mapei, who never fails to miss out on such an occasion. All the work on this site was carried out with the highest respect for the antique structures, with small-scale interventions being preferred so as not to damage the image of the site while guaranteeing its state of preservation over the years.

After the preliminary phase in which the most common problems of the antique remains were documented and registered, the most efficient, long-lasting interventions required were identified using low-invasive technical solutions, such as disinfections work and cleaning up of the vegetation followed by consolidation work. The consolidation work

was carried out using materials suitable for each particular type of substrate, avoid having to carry out any type of construction work.

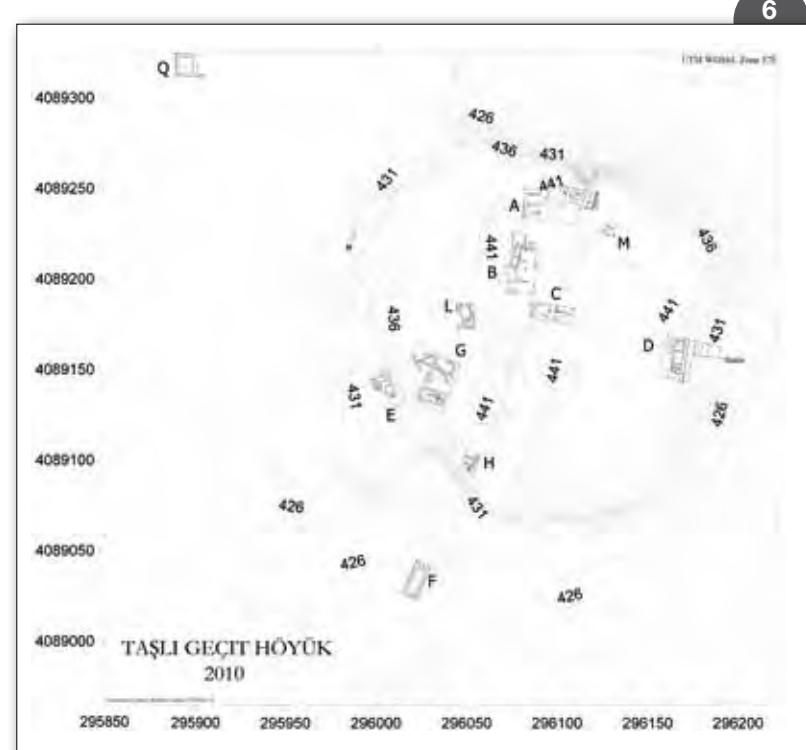
Modern Solutions for Antique Problems

The remains discovered had a series of problems due to the harmful action of atmospheric agents which made them particularly fragile and at risk of rapidly deteriorating even more. The interventions carried out by the team of archaeologists included cleaning the surface by hand using brushes and sponges, a disinfesting treatment using a bio-acid and then consolidation using ethyl silicate. This treatment is recommended for all silica-based absorbent materials (sandstone, tuff, peperino, etc.) and is applied on crumbly surfaces to stop them deteriorating even further (especially on rough brickwork and antique render). The restoration project of the structure included grouting irregularities and fixing detached fragments or those in danger of becoming detached in place. A composite product with

PHOTO 4. A courtyard and two small ovens were discovered during the dig.

PHOTO 5. A phase of the restoration work on the ovens dating back to 1500 BC consolidated using PRIMER 3296 resin diluted 1:2 with water.

PHOTO 6. A topographic view of Taslı and the monuments discovered on the site dating back to the I and II millennium BC.





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PHOTO 7. The guided visit during the inauguration of the site.

PHOTO 8. An aerial view of the site of the dig.



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an epoxy resin base was used, and where required, stainless steel dolly-rods were also inserted to provide even more reinforcement in the connections. The most antique levels reached are those dating back to the Middle Bronze Age (around 1900-1800 BC), identified in almost all the dig areas with the letters A, B, D, E, G, L and M (see photo 6).

Some portions of the walls in the storage areas situated in Area G were consolidated using the "tacking" technique for the more hazardous elements. To anchor and grout the sections that had become detached, ADESILEX PG2 thixotropic adhesive was used. It is a two-component epoxy resin-based product with selected, fine-grained aggregates and special additives. ADESILEX PG2 has extended workability which makes it particularly suitable at temperatures above 20°C, a characteristic which was particularly important for operations carried out in this area.

Two bread ovens dating back to 1500 BC in Area D were badly cracked following a fire caused by the earthquake that destroyed the city. The ovens needed to be consolidated, and PRIMER 3296 consolidating resin diluted at a rate of 1:2 with water was used. PRIMER 3296 is a primer made up of micro-particles of acrylic polymers with the capacity to penetrate deep down into the construction materials it is applied on, including those with low porosity. This property makes it an ideal primer for consolidating weak, crumbly substrates, such as old render and masonry work made from solid bricks or tuff.

To consolidate the edges of the floors from the same period located in Area B, a layer of MAPE-ANTIQUE RINZAFFO "salt-resistant" mortar was initially applied, a product specially tested for renovating old stone, tuff and brickwork buildings. After this operation, a layer of light-coloured MAPE-ANTIQUE MC de-humidifying mortar was applied on the area concerned.

Technical Data

Archaeological site of Tilmen Höyük, İslahiye Valley in the province of Gaziantep (Turkey)

Dig Campaign: 2009-2010

Period of Intervention: 2009-2010

Intervention by Mapei: supplying products for the restoration and consolidation of the antique structures on the site.

Mission Director: Nicolò Marchetti (Alma Mater Studiorum - University of Bologna, Department of Archaeology [now called DiSCI])

Design of Restoration Interventions: Stefano Francesco Musso, Maria Benedetta Spadolini (University of Genoa - Faculty of Architecture) and Chiara Davite (Archiéo srl)

Executive Coordinator of Restoration Work: Luciano Cuccui

Archaeological Park Design: Elena Rosa (University of Genoa - Faculty of Architecture)

Mapei Co-ordinators: Davide Bandera and Pasquale Zaffaroni, Mapei Spa.

Mapei Products

Consolidation of the structures: Adesilex PG2, Mape-Antique Rinzaffo, Mape-Antique MC, Primer 3296.

For further information see the websites
www.mapei.com