Producing Plaster Copies of the Late Bronze Age Pottery from Dugiš on the River Cetina

14th International Conference of Conservation Restoration Studies Zagreb, 20th - 22nd 2017
The Arts Academy, University of Split Conservation - Restoration Department

Introduction

Dugiš was a Late Bronze-Age settlement made of houses on stilts and located on the bank of the river Cetina in the vicinity of Sinj. The unearthed fragments of vessels from Dugiš were entrusted to the Arts Academy’s archaeological conservation studio by the Archaeological Museum at Split. It was pottery of everyday use, mainly kitchenware. Made of very durable and resistant material, pottery is the most common find on prehistoric site, providing unequivocal evidence of human occupation going back thousands of years. Samples of Dugiš pottery have been subject to laboratory analysis in order to determine the mineralogical composition of the clay used. 1

Copy and Replica

A “copy” and a “replica” are two different things. The difference lies in the material used as well as in the production technology. While a copy only imitates the physical characteristics of the original, a replica is made of authentic materials and using the authentic production technology. Consequently, it also provides an authentic visual appearance. Making a replica of a Bronze Age ceramic vessel would include using clay from the same site from which the original clay came from. The process of shaping the vessel should also be authentic, which in this case means that the clay is shaped into a vessel on a potter’s wheel. After having dried for several days, the newly produced vessels are fired. The replica must be fired in a furnace which is as similar as possible to the type of furnace used in the production of the original vessels. Also, in order to achieve the correct shape and size of the original vessels, this should be preceded by calculations, as during the process of drying water evaporates leaving clay dry and reducing its volume by 4-6%. These percentages must be taken into consideration when calculating the final dimensions of a replica. A copy is a vessel which looks true to the original under the aspects of shape, size and color. Various materials can be used in producing a copy. This makes it possible to choose from a variety of reconstruction materials. In the present case, the choice fell on gyspum plaster, which was subsequently colored with white wall paint, tempera, charcoal, white chalk, powdered pigment, and coated with the 10% solution of Paraloid B-64 in acetone. 1

Making the Copies

The thickness of the copies was determined by measuring the thickness along the edges of the sherd. The external and internal profiles were taken using metal indentation comb. These measurements were subsequently used for drawing the vessels profiles on a template fixed to the potter’s wheel and used in shaping plaster into the correct shape. First the interior profile was used to shape plasticine, after which plaster was applied on top of it to shape the external profile. After plaster had set, plasticine was removed. The plaster vessels were left to dry for several days, after which the process of painting the surface began.

The vessels were coated with white wall paint, followed by a layer of gray tempera. The decision has been made to choose a shade of gray which would match that of the original vessels. An additional darker tone was achieved by tapping charcoal, white chalk and pigment powder where needed. The vessels were consolidated with a 10% solution of Paraloid B-64 in acetone applied by spraying.

Conclusion

Producing plaster copies is an elegant and cost effective way of presenting ancient pottery, especially in cases of major original material loss. The process of making plaster copies requires a lesser amount of time than making a historically correct replica. It also saves the time required for additional calculations relative to the loss of volume once the vessels are shaped, since plaster, unlike clay, doesn’t change dimensions when dried. Hence, the entire process is simple and promptly brought to an end. Producing copies of vessels enabled sherds of the original pottery to remain intact and available for future generations to inherit and explore.

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The authors of the poster would like to thank their mentors dr. sc. Mina Mišić, dr. sc. Ivana Vukadin and her assistant, for all the help, ideas and knowledge which they’ve generously shared.