

Project: Inert Atmosphere Cases

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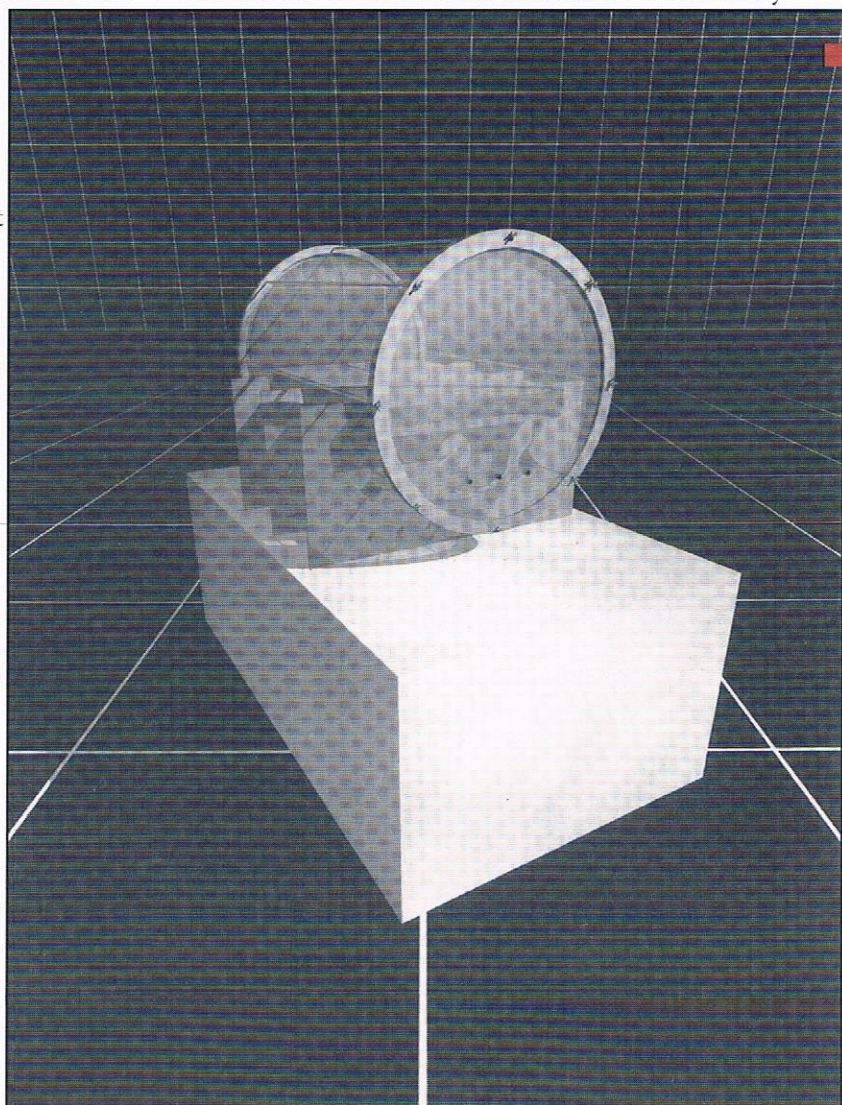
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20

As anticipated in the first issue of *NMNews*, the project for the conservation of the naturally mummified Mameluke human remains has finally been launched. Our goal is to have the first prototype of the Inert Atmosphere Cases fabricated and tested in the coming months so that the "mummies" of the Beirut National Museum can eventually be placed in a non-toxic environment. These cases consist of a hermetically sealed volume flushed with an inert gas, such as nitrogen, so as to control and abate any possible deterioration. Guidelines for the cases were provided by the Getty Conservation Institute (1) and are ideal for the Beirut National Museum since they prescribe a static system that does not require external sources of power, could be left unattended for long periods of time (for about a decade), and should be easily manufactured in a standard machine shop (for more detailed information see *NMNews* 1 (1995):9).

The cases for the Beirut National Museum will differ from the one developed by the Getty Conservation Institute on the basis that the latter remains somewhat costly to fabricate in terms of the limited funds available to the National Museum (2). Some of the GCI Case's com-

ponents consist of aluminium extrusions that require industrial fabrication and its cost is justified because it compares to that of other "state of the art" display cases. This is due to the dual function the GCI case fulfills as it is designed to equally serve both exhibition and storage purposes. This means that it not only conserves the artifacts within it but is also meant to be permanently placed in a museum hall and be just as "tamper-proof" as any other display case. The Beirut National Museum Case is, in fact, a simplified variation on the GCI case and will primarily serve conservation functions for preserving the mummies. Its cost will be kept at a minimum since it will be made of a large Plexiglas cylinder, the form of which not only reduces the length of joints to be sealed but also does not require costly aluminium extrusions. The BNM Case will thus be hermetically



sealed with plates at both ends (fig 1-2) and its construction will be further simplified by having its various components separated into distinct and easily replaceable elements. Once all the analyses that are presently being undertaken yield their information (radiographic, tomographic and dental examinations, DNA analysis, etc.), the human remains will subsequently be sealed

inside the cases and placed on an anodized/perforated aluminum stretcher in which sensors and passive control agents will be housed. A bellows will also be fitted to the case in order to alleviate the case's joints. Input and output of the inert gas, will be performed via ports on the aluminum end plates, which will also be equipped with a pressure relief valve and a septum port.

Estimated cost for the prototype of the BNM case should not exceed \$5000 and the remaining five cases should cost \$3000 each. The prototype is to be fabricated at Rice University in Houston and later shipped to Beirut. Once it is tested at the Beirut National Museum, the remaining cases can then be produced in series. It should also be mentioned that this project is made possible through generous gifts from Mr. Mouhamad Safadi (for the prototype) and Mr. & Mrs. Said Ayas (for a subsequent first case) to whom the Lebanese British Friends of the National Museum remains very grateful.

1-2. The prototype "BNM Case" for the conservation of the naturally mummified Mameluke human remains, assembled and showing all its different components. (These images were rendered by Christopher Nichols at Rice University School of Architecture).

1. I am grateful to Mr. Shin Maekawa, Head of Environmental Sciences at the Getty Conservation Institute (and author of the GCI case) who kindly provided the information needed for this project.

2. The cost of the GCI case is between \$ 8,000 to \$ 10,000.

