

FINAL RECOMMENDATIONS FOR THE BOX DESIGN AND THE MANUSCRIPTS TO BE BOXED

INTRODUCTION

The need to protect a selection of the bound manuscripts and printed books in the monastery library was proposed in my initial report of February 1998 and confirmed at a meeting of the synaxis on 10 November 1999, which was attended by Professor Nicolopoulos, Petros Kufopoulos and myself. A selection of different traditional library box types was shown to the fathers and these were left in the monastery to see how they would behave in the dry conditions of the Sinai. None behaved satisfactorily and further research, carried out in conjunction with Stuart Welsh of Conservation by Design and Alan Lawson of PSJ Fabrications Ltd of Bedford has resulted in an all-stainless steel box which will be durable, non-damaging to the books contained within it and immune to the environmental conditions of the Sinai. This box has been quoted to us at £307 per box, a price directly comparable to the more traditional designs first suggested.

DESCRIPTION

The box is made from 1.2mm (18 gauge) 316L grade stainless steel sheet,* cut and formed by an Amada guillotine and CNC punch press. The corner seams will be TIG welded by hand and electro polished. The finish obtained by this process, as can be seen from the photographs, is highly impressive. The box is designed to present an unbroken facade, where the handle is fitted, to offer a clean uncluttered appearance when shelved.

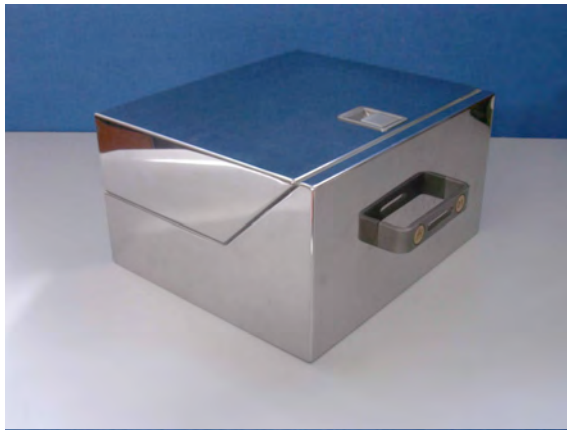


Fig. 1 Front view



Fig. 2 Back view

The base tray and lid of the box are made the same height, so that it will open fully to 180° and no further, and when open, the entire box will lie on a flat surface without risk of tipping. This opening is obtained by the use of stainless steel SOSS hinges



Fig. 3 Fully open



Fig. 4 SOSS hinge

The catch is flush-mounted on the lid of the box and we have modified the design of the catch to give a much slimmer fitting on the inside.



Fig. 5 Unmodified catch



Fig. 6 Modified catch

The books will be placed in the boxes with their spines against the side opposite to the handle, so that when the box is carried by the handle, the weight of the book will be taken on the spine, the edge of the book best able to sustain the pressure created by the weight without damage to the book. This will allow the boxes to be carried vertically in one hand when in transit from shelf to desk and back. The handle can also be designed to bear the shelfmark of the manuscript and other information as required. The current design of the handle is not final – it needs in any case to be modified to make it more comfortable to carry the heavier manuscripts – and the input of the Synaxis and Dimitri Porphyrion is invited in this aspect of the design of the box.



Fig. 7 Box in carrying position



Fig. 8 Carrying handle

The inside of the boxes will be lined with Plastazote (a chemically inert polyester foam) to the width of the folded flange which runs around the edges of the lower tray and the lid. Pieces of 3mm acid-free millboard will be placed between the Plastazote and the steel walls of the box to provide effective short-term heat insulation in the event of a fire, and the inserted linings have been designed so that they can be held in place without adhesive, thus allowing them to be replaced without difficulty, should this become necessary. This might be the case when a manuscript is repaired and the thickness in particular might be changed. Allowance has been made in the measurements for books which have lost one or both boards by adding extra layers of linings, so that if required the boards can be replaced during repair and the books will still fit into their boxes, though the thickness of the linings will have to be adjusted. The Plastazote lining in the base of the lower tray will have a cut-out on the side next to the hinges to allow whoever removes the book from the box to get their fingers under the book to pull it upwards and thus out of the box

The gap between the trays will be sealed against dust with a silicone gasket which will be specially manufactured for this purpose. Existing gaskets of the right design are made from rubber, which is chemically unstable and cannot be used.

The manuscripts will be given custom-made internal wrappers of acid-free card, blocked out with Plastazote to protect the raised endbands, edge pins and metal furniture found on many of the bindings. The wrapper can be made by Conservation by Design on the Kasemake computer-based design and box-making machine at a low unit cost. Only the blocking out of the wrapper and of the lower tray of the box to fit the individual book in its wrapper will need to be done in the monastery. The internal wrapper will allow a book to be taken out of its box and replaced without direct handling contact, which is an important consideration given the fragile condition of many of the manuscripts.

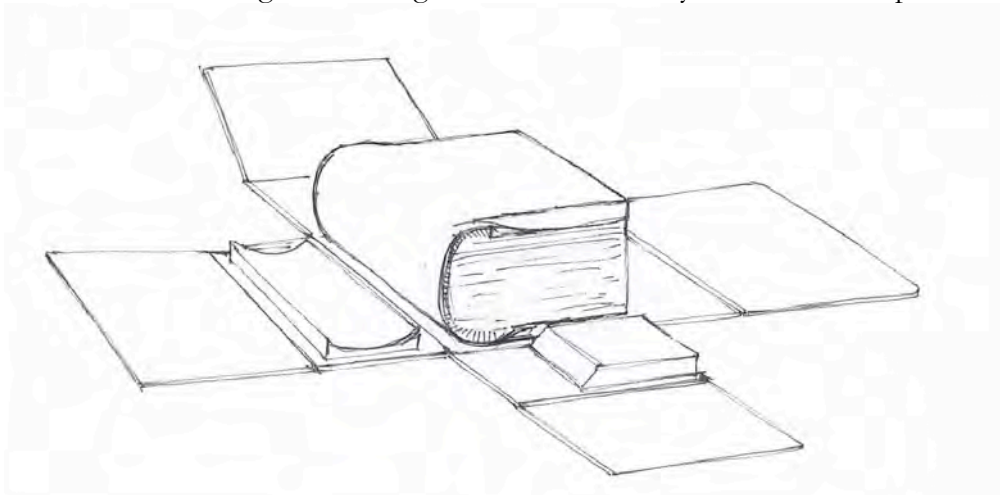


Fig. 9 A book with the internal wrapper

The book in its wrapper will be located in the box, which will already have been lined with Plastazote, with pairs of blocks of Plasazote in each corner, which will not only prevent the book in its wrapper from moving around inside the box, but will act as spacers to prevent the book coming into contact with the box edges, and as shock absorbers in the event of the box being dropped or receiving some other sharp impact.

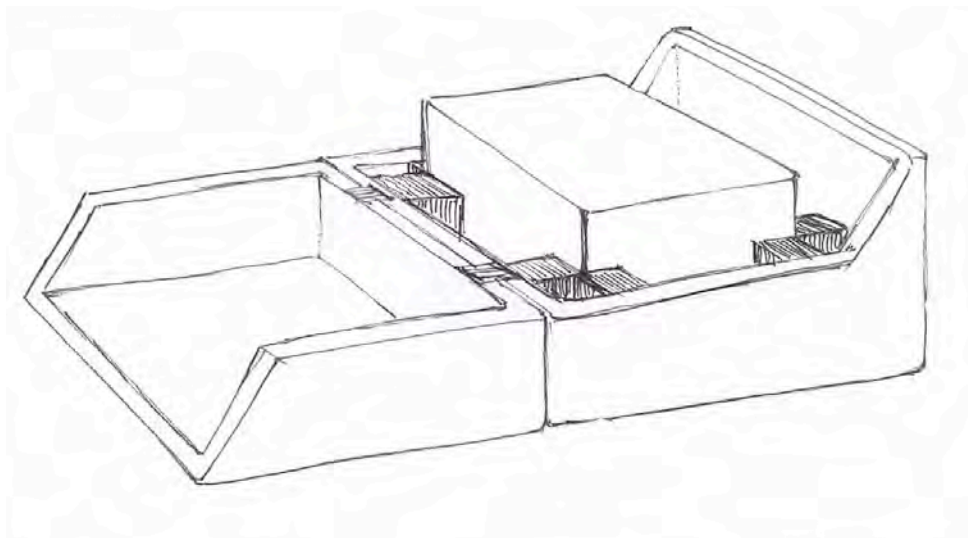


Fig. 10 The book in the internal wrapper placed in the open box

The final design of the racking has not yet been discussed and must of course involve the input and final decision of both Dimitri Porphyrios and the Synaxis. The drawings given below are therefore only suggestions on which to base further discussion, but they include the basic design features that will be required. Some form of locking, both for security but more importantly for prevention of damage during earthquakes, will also be required.

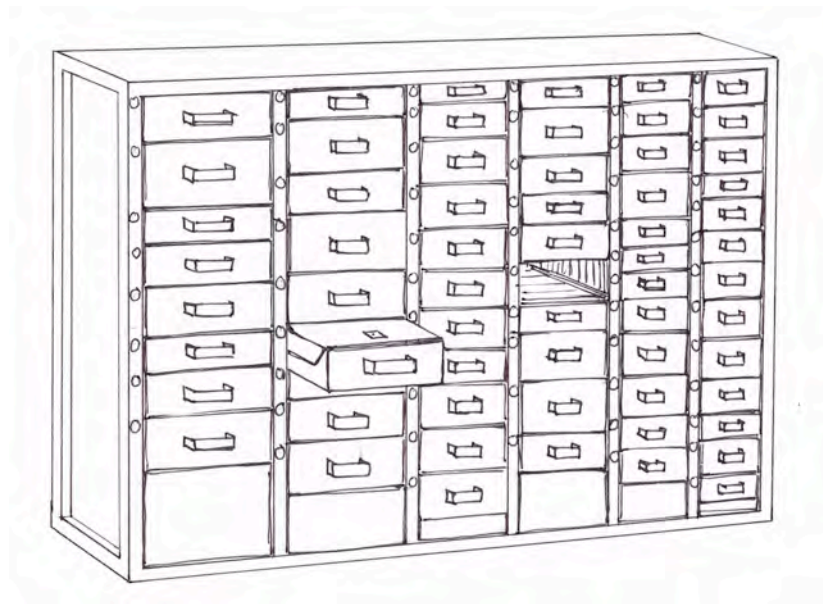


Fig. 11 Conjectural drawing of the manuscripts arranged horizontally in their boxes within a 6-bay press with bays of three different widths. At the bottom of each bay there may need to be blanking plates to fill any spaces for which there are no books of the right language group and/or size. To the left of each box there would be a small label with the relevant manuscript number. One box is shown half withdrawn from the racking and another is shown entirely removed. It would of course be possible to make single bay presses or in whatever number might fit the layout of the renovated library

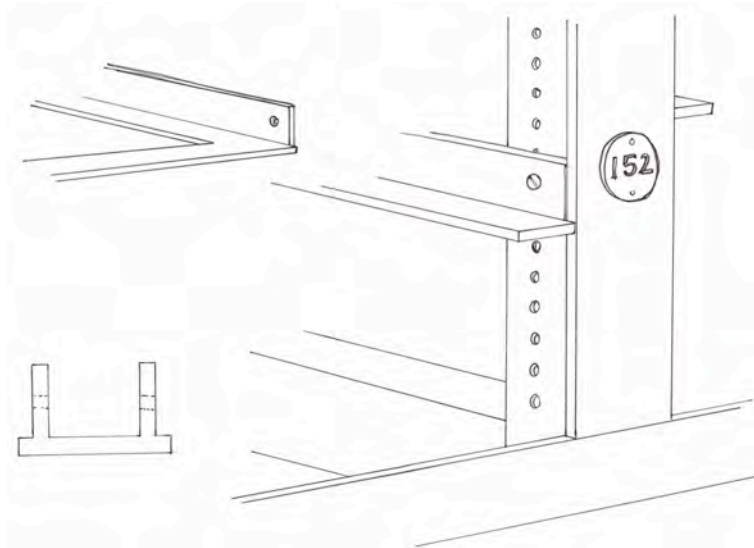


Fig 12 The boxes will not sit on shelves but on metal brackets fixed to the upright dividers between the bays. This will remove the need for shelves and save space. The brackets could come in pairs, one of which is shown on the right above, one fixed to each side, or as a frame (detail, upper left), which would fill the space along the front between each box. Pre-drilled holes at 10mm centres would allow the brackets to be adjusted without risk of their working loose and shifting. A possible cross section of the uprights is shown in the lower left, the facia a little wider than the sides, to accommodate the thickness of the upright part of the bracket so that it does not show on the front of the racking.

Prof. Nicholas Pickwood

*The following standards and analyses are given for the steel recommended for the boxes, taken from the tables published by AVESTA Steel of Sheffield:

| Corresponding International Standards | | | | Typical Analyses of Grades | | | | |
|---------------------------------------|---------|---------|------|----------------------------|---------|-------|------------------|-------|
| ALZ | EN10088 | DIN/SEW | ASTM | C | Cr | Ni | Mn | Mo |
| 316L | 1.4404 | 1.4462 | 316L | 0.020-0.030 | 16.5-18 | 10-12 | 2 _{max} | 2-2.5 |