Article: A Novel Non-Adhesive Housing Mat for the Display and Storage of Broken Glass Plates
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A novel non-adhesive and high-quality storage and display enclosure was developed for two broken photographic glass plates (both negative and positive). The housing mat was created in the following way:

First, using a sample of the cardboard in water, the pH of the cardboard was measured with pH indicator strips.

![Fig. 1. Measuring the pH of the cardboard](image)

a) weighing 1 gm. of the cardboard, b) stirring the cardboard in the water for 45 minutes, c) measuring the pH with pH strips. The result was about 7.

The dimensions of the broken sections were accurately measured. The measurements were then used to cut an archival cardboard to exactly fit the broken parts.

![Fig. 2. Measuring the broken glass plate](image)

(length, width, and thickness).
Two more archival cardboards were cut with opening slightly smaller than the plates, to work as window mats. This enables the plates to be studied from both sides. This was especially desirable for the negative, so that it could be clearly seen with transmitted light.

![Fig. 3. Cutting the cardboard to fit the parts of the broken plate.](image)

Those three layers of cardboard were adhered together with archival adhesive tape at the top, so that the package could be opened if necessary.

Before taping everything together, a layer of thin, white acid-free paper was inserted between the glass plate and the bottom window. The paper extended slightly beyond the edges of the object, enabling lifting of the glass without touching it, avoiding fingerprints even on the glass side.

Finally, two sheets of transparent acrylic glazing (Perspex) were placed over the housing to protect the plates from dust and pollutants, and to avoid fingerprints and scratching.

![Fig. 4. All the three layers of cardboard used to hold the plate.](image)
Fig. 5. The fragments of the negative are placed into the custom-cut window mat. The emulsion layer is towards the back of the housing to help preserve the image.

Fig. 6. The extensions of the thin, white acid-free paper can be used to remove the glass fragments from the housing. This makes for easy and secure removal of the fragment when needed.
To secure the housing system, two locks were created using the same transparent acrylic material (Perspex). The lower lock was modified to function as a stand, so the plates could be displayed vertically. The lock could be removed easily for horizontal storage.

Fig. 7. The broken glass plate after matting a, b) front, and c) back.
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