

Large holograms in traveling exhibitions

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Abstract

The presentation of large holograms in travelling exhibitions has always posed problems, mainly due to lack of space. Since 1980, the Museum of Holography has presented many large holograms produced according to all techniques, including a reconstruction by argon laser.

After the acquisition of the entire production of AP-Holography, nearly 80 holograms 1 mx1 m, 22 of these holograms were exposed in the first room of the museum at the Forum des Halles, the other turned in traveling exhibitions, as in France and abroad. Thanks to the modular structure designed by architect Fabien Vienne, this roaming is easy in the most diverse places.

Introduction

In 1981, we presented the international exhibition "Ukrainian Cultural Treasures" that came to be exposed to the UNESCO Conference to illustrate the uses of holography in museums. Dr. Vladimir Markov and his colleagues came with fifty holograms in their briefcases. The reflection holograms of an average size, 28x40 cm, are very easy to install: simply to illuminate the front, with a halogen spot at an angle of 45 °. Even with large-format, the presentation is not a problem. It is much more complex for transmission holograms which need light from behind and even more critical with large format holograms. The 45 ° angle typically used for restitution induces significant height and distance to the spot.

Modular structure



Photography of the large holograms
here in the Palace of Discovery Paris

Thanks to the modular structure acquired in 1991 along with the entire collection of giant hologram, (nearly 80 holograms 1mx1m, including doubles), produced by AP Holography, become IDHOL, a French company specialized in the production giant holograms of large format, visible transmission according to a method discovered by Dr. Steve Benton in 1968, we can offer exhibitions with a large number of holograms visible large format transmission in a room without any infrastructure, such as a shed with a height greater than 3 m, column dimensions of stainless steel.

Each square module measures 1.22 x 1.22 m, height 3.04 m. The modules are contiguous or separated depending on the configuration of the site. Thus, the same exhibition on the theme of space with 10 giant holograms was made of 150 m² at the French Institute in Prague Planetarium 400 m² in Madrid and 900 m² at the City of Sciences in Tunis.

Description of the Fabien Vienne structure

Presentation of the material

1- General characteristics

This structure was designed by architect Fabien Vienne for the presentation of holograms in an exhibition entirely autonomous and modular which adapts to locations of varying conformations.

Fig 1 : perspective

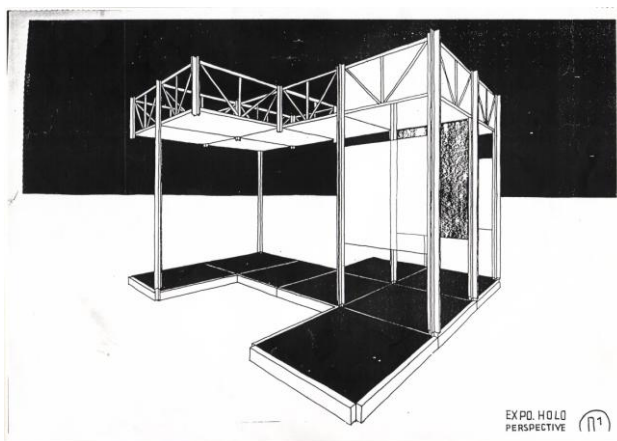


Fig 2 : View of the lighting system

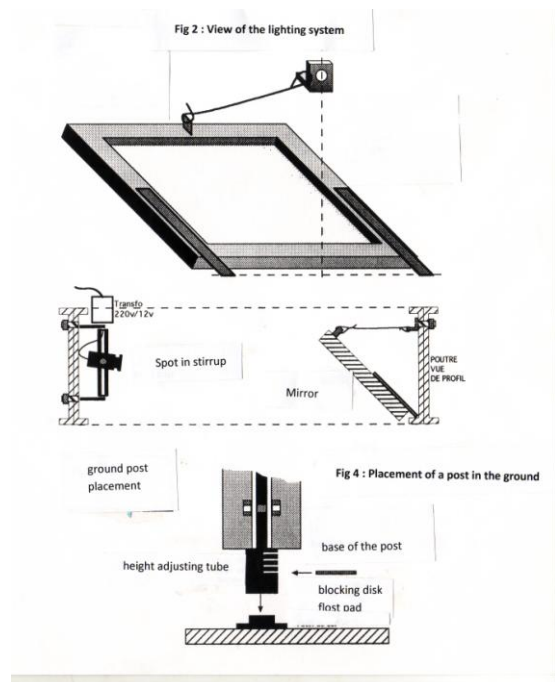


Fig 4 : placement of a post in the ground

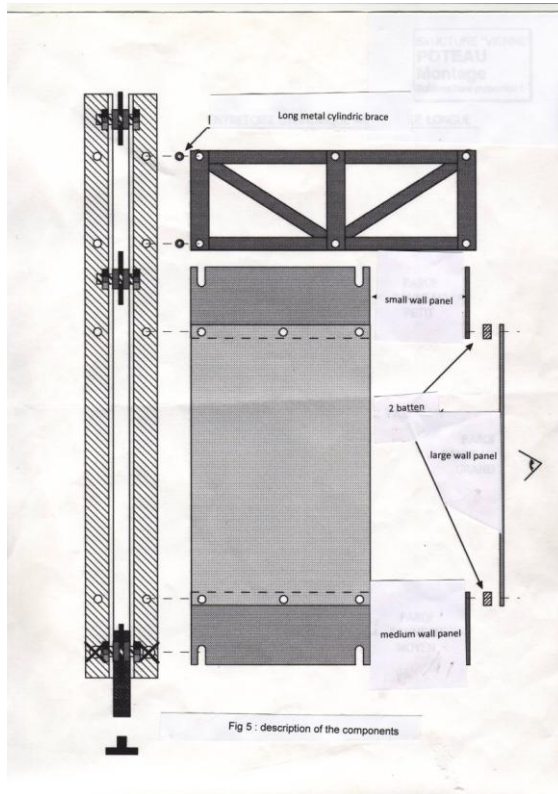


Fig 3 : description of the components



Fig 5 : photography during the mounting

2 – Components

The frame is composed of :

- 2 types of cruciform poles of rustproof sheet steel folded and bolted down,
- 2 types of stainless steel beams,
- 3 types of panels and 2 types of cross-pieces in stratified solid dark grey, 5mm in thickness.

3 – Assemblies

The poles receive:

- the beams which link the poles and cover all the surface of exhibition,
- the crosspieces high and low in stratified two sides which support the large holograms at about 85 cm from the ground (cf dimension in Fig.3),

The beams making up a technical ceiling recovering entirely the exhibition and in the middle of which is found :

- Halogen lighting apparatus 70 w mounted on stirrups (for rulings in height and laterally), each equipped with transformers emerging above and thus benefitting from natural ventilation,
- Reversing mirrors of the restitutions bundles.

4- Nominal dimensions

The entire exhibition is set up on a square screen of 122,5 x122,5 cm. Its overall height is 304 cm.

The height under the low ceiling is 240 cm.

The cross pieces supporting the large holograms are placed at 85 cm from the ground at the low and at 200 cm from the ground at the high end.

The visible surface of the large holograms is 112 x 112 cm (holograms on film) or 92 x 97 cm (holograms on plate AGFA). The placement of all the holograms takes into account the average height of the eyes of the spectators in relation to the ground of 160 cm. The feet of the adjustable poles absorbs the fault in the evenness of the ground up to 15 cm and assure the perfect flatness of the entire exhibition.

5 - Mounting

Mounting takes place on a sketch prior to the implantation permitting the positioning and the initial adjusting of the feet of the poles.

The assembly of the components is achieved by screwing with one size bolts (13°. It is the same procedure for installing the mirrors and lighting stirrups

6 – Security

The exhibition conforms to rigorous security rules in public places. Material uses are the following:

- Rustproof steel for the structure and oven-shellacked paint for the lighting stirrups,
- Stratified mass of 5 mm in thickness fireproofed in the body (classification M1) for all the panels and cross-pieces,
- Interior Milament coating (classification M0) for the interior of the ceilings,
- Electrical feeds with connecting boxes and isolated connections, linked to a central panel equipped with thermic fuses by circuit.

Particular case of « Space Shuttle »

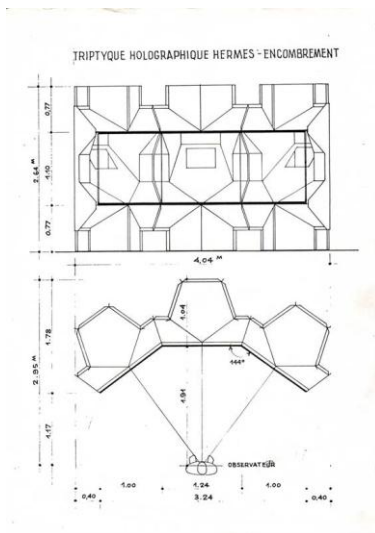


Fig 6 Diagram of the bulkiness

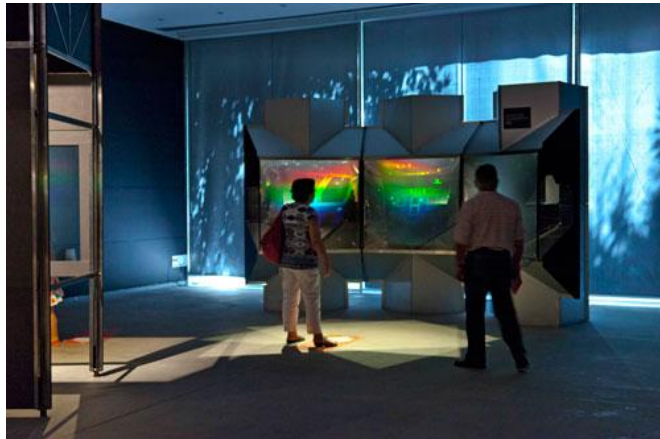


Fig 7 Photography of the three holograms together
International Fair of Asturias, Gijon (Spain)

Three juxtaposed holograms together represent the interior of the cockpit of a space shuttle.

This triptych, 1,1m x 3,75m of visible support, also conceived of by Fabien Vienne, constitutes the biggest hologram created in the world to date. It is presented in its own particular structure, completely independent. Its permits a view without a discontinuous image. We exhibited it in many countries.

Conclusion

The Museum of Holography has in its collection more than 100 large holograms of different techniques; but thanks to the tools of presentation, with which it is equipped, is able to respond to more significant requests for exhibitions throughout the world.

Drawings "Perspective" and "Space Shuttle" are made by Fabien Vienne, other by J.François Moreau.

Acknowledgements

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References

SPIE Vol.2043 Holographic Imaging and Materials 1993 p 112/122

SPIE 2333.Fifth International Symposium on Display Holography 3358 Lake Forest College 1994 p 245/246