

Acrylic Bubble Wrapping

The concept of the project is to create a new skin, one you can see through, but what is seen is filtered by colour and light refraction. The wrapping is playful and dynamic; like a chameleon skin it changes according to the environment surrounding it. The old building still exists, but its image is covered by a veil, you cannot see exactly what is beneath that skin that tricks the sight to get lost in the endless, continuous bubble surface.

Text & image : courtesy Nathalia Mussi Weidlich

The Acrylic Bubble Wrapping is not related to a specific building, it is a façade wrapping system that can be applied to any existing building façade. The acrylic bubble layer is made of 1.20 x 1.20 meters of acrylic modules with four half spheres. The gap between the building and the façade should be 0.8 to 1.2 meters and is supported by a metal mesh that is connected to the building façade. The metal mesh is suspended from the roof by additions to the roofing structure and is also supported by metal support brackets connected to the building façade, welded to the vertical metal tubes structure.

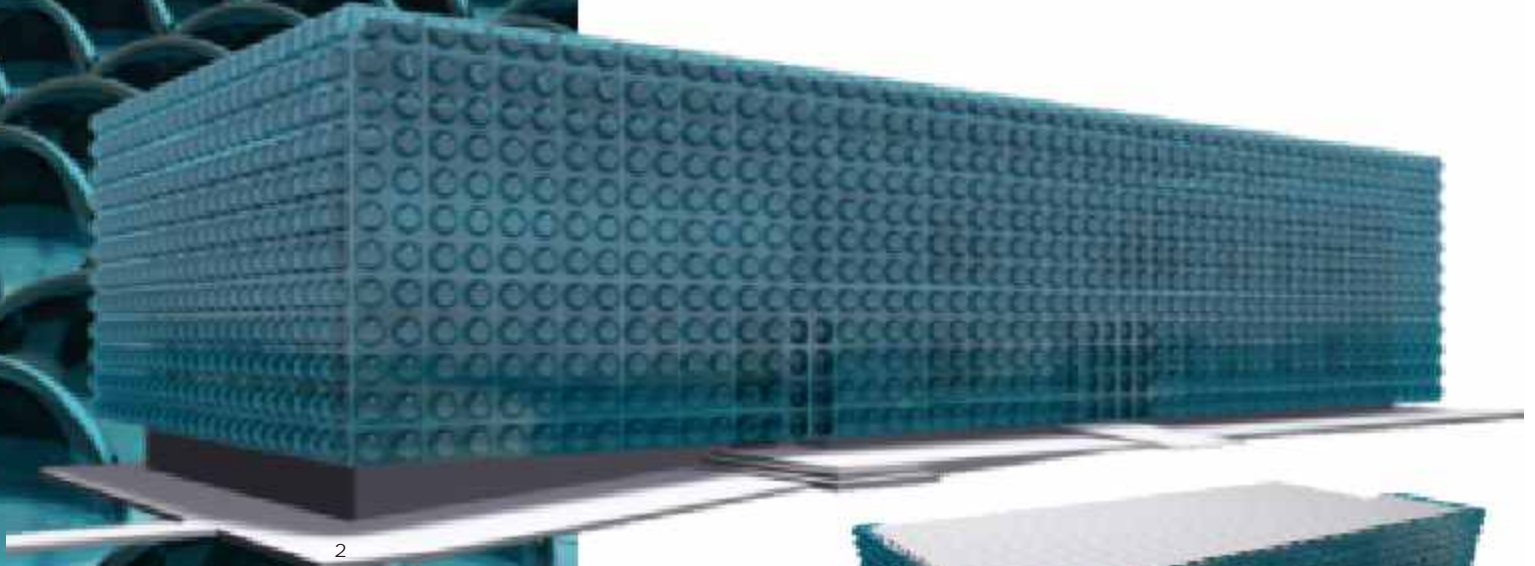
The Acrylic Bubble Wrapping never touches the ground as it is meant to be a floating layer of bubbles, enhancing the lightness of the material. It also grows higher than the roofing, hiding it. The free space in between the existing building and the bubble layer is very important for air circulation, preventing the interior from excessive heating. The gap also works as a maintenance corridor, allowing the acrylic surface to be cleaned from the inside.

Metallic Grid Platforms rest on the support brackets. Instead of using support brackets, close to the door ways the metal mesh holding the Acrylic Bubble Wrapping forms a stairway up, that way a person standing on the maintenance corridor can reach any one of the acrylic modules. The acrylic bubble layers are fixed from one level of horizontal structure to the next one.

1. The Bubble surface. The image briefs the skin texture used in the project. The main idea was to put together a sophisticated system using existing materials, and the cost wouldn't increase much, and they turn into exclusive designer pieces. The acrylic modules consists of a square 1.20 x 1.20 meters plaque with four half spheres, each with a 25 centimetre radius. The acrylic used is an injectable material, and the mould is the same as the one used for acrylic domes. All the metal pieces are regular tubular columns, welded steel plates and metallic corners.

2. Wrapped building: There is no intention of showing any of the original building's features. The bubbles overlap the existing structure, but there is also no intention of pretending there is anything beneath the bubbles. In fact, the building can be seen, but with the strong image of the continuous bubbles it is impossible to realise completely what is behind it.

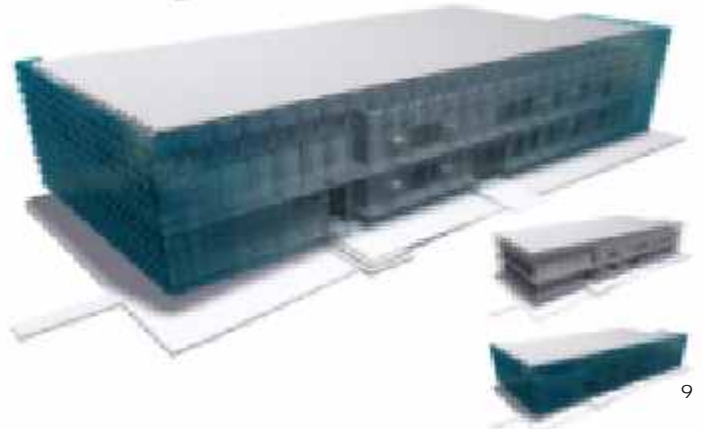
3. Concave bubbles on the closed door. The entrances became a contradictory issue on the development of the project. Being the entrances to the building they had to be distinguished. But, at the same time it should not hinder the flow of the bubble surface. The solution to that was turning the bubbles that compose the doors inwards on the facade, this way the doors are easily noticed and they did not interrupt the bubble surface.



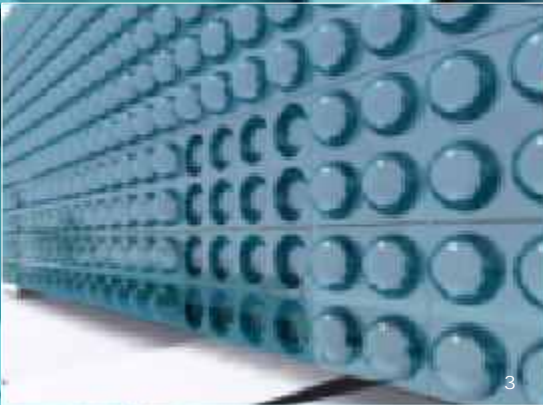
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4. Convex bubbles on the opened door: The modules on the doors have their half spheres slightly bigger than the other bubbles on the whole of the wrapping. When opened, the bubbles on the door notch on the ones next to them.

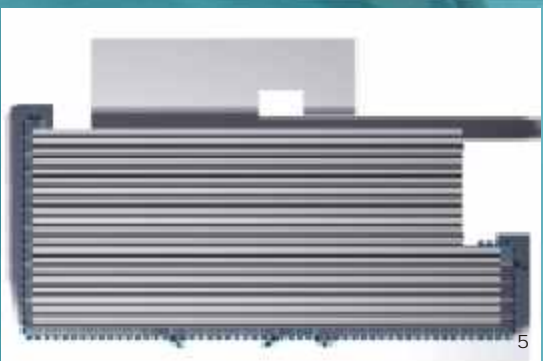
5. Top view of the wrapped building. The image shows the space in between the building and the new bubble facade.

6. The door area revealing the structural mesh. This image enables closer look at the structure mesh and how the maintenance corridor works. The stairs located on the frame close to the doors allows the cleaner to cross the doorways and reach all levels of horizontal structure.

7. Another view of the door area. The bubble surface successfully hides all structures, equipment and windows.

8. An aerial view. The bubble skin is built slightly above the ground and in level with the roofing. The roof cannot be seen when observed from the ground level (example: image 2). It is important to enhance the lightness of the material, as it appears to be floating.

9. Aerial view showing the structure of the mesh. All air conditioning equipment is hidden by the new facade. Metal Grid Platforms placed on the support brackets set the maintenance corridor, allowing people circulation without blocking the light or air circulation.



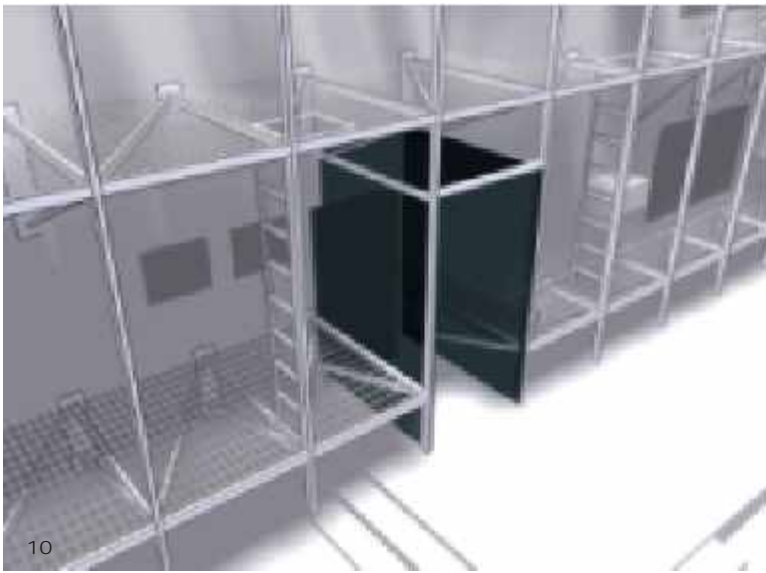
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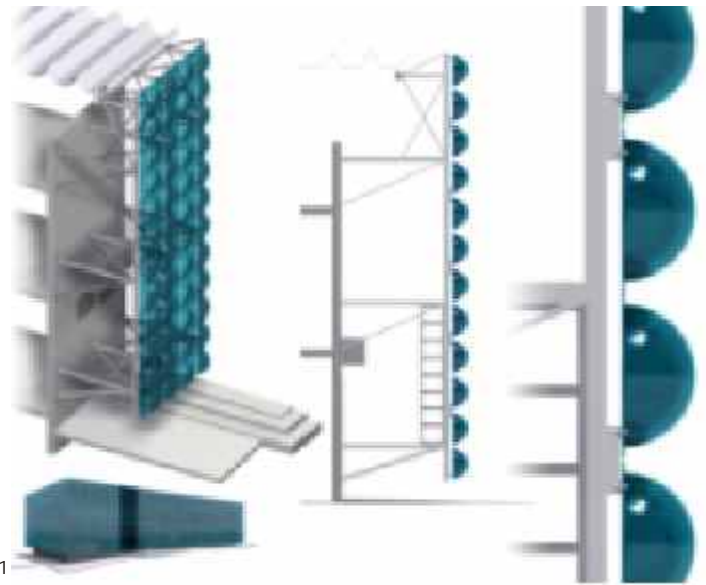
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- 10. Naked metal mesh on the door area.
- 11. Structural mesh - technical references.
- 12. Module's section.
- 13-15. Connector details. A Steel fin (steel plate) is welded to the vertical tubular column. To the fin, the corners are screwed and then the acrylic modules are screwed to these corners. There is a 1 centimetre gap between the acrylic modules.

The 1.20 x 1.20 meters acrylic modules are connected to the vertical tubes by the metal corners that are screwed to metal fins welded to the tubes. In order to maintain the continuous bubble image on the façade and also to mark the entrances, the doors in the bubble layer have their bubbles turned inwards, when closed the continuity is kept, but the different refraction of light on the concave or convex surfaces reveal the doors. When opened, the bubbles on the door fit the bubbles next to them.

Clients brief: The project was designed as a solution to refurbish the appearance of buildings façades. At first its goal was to renew the façade of a technology research building inside a university campus in Rio de Janeiro, as its original exterior was inexpressive and the client wanted a high tech look without interfering in the actual building operation.

Materials used: Acrylic and Steel

FACT FILES

Project : Acrylic Bubble Wrapping
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 Architect : Nathalia Mussi Weidlich
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 Approximate cost : U\$250- U\$300/m² (based on the calculation by Brazilian providers).
 Other details : This is a project for a façade renewal system, it is still in a prototype stage and it is not related to a specific building or area.

To get more information on the product, contact natmussi@hotmail.com.



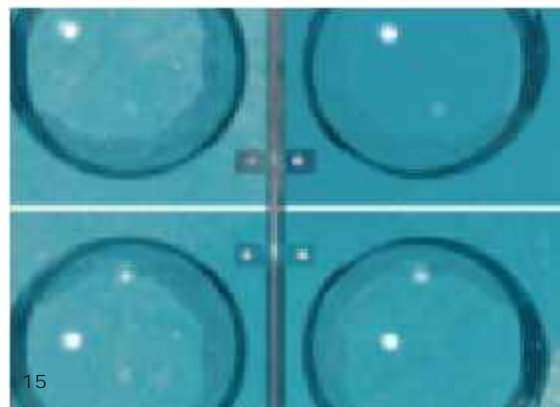
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