

# WAYS OF USING GLASS IN URBAN ARRANGEMENTS

## MODALITĂȚI DE FOLOSIRE A STICLEI ÎN AMENAJĂRILE URBANE

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**Abstract.** *The study focuses on the ways of using glass when arranging green urban spaces. It can be used as different forms in both constructive and ornamental elements like pavements, glasshouses, ornaments in public squares or private yards, etc. Through shape and colour, glass allows creating the desired effects in the space in which it sits .*

**Key words:** glass, constructive element, decorative element, urban arrangement.

**Rezumat.** *În acest studiu sunt dezbătute modalitățile de utilizare a sticlei în amenajările urbane. Sticla poate fi folosită atât în elemnte constructive, cât și în cele cu caracter decorativ fiind întâlnită sub diferite forme: pavimente, sere, pasarele, obiecte ornamentale în cadrul spațiilor publice urbane sau grădinilor particulare, ș.a. În mod special, prin formă și culoare, acest material permite realizarea efectului dorit în spațiul în care este amplasat.*

**Cuvinte cheie:** sticlă, element constructiv, element decorativ, amenajare urbană.

### INTRODUCTION

The process of obtaining glass through melting a mixture of sand, lime, sodium carbonate or potasium, seems to have been discovered by the egyptitians or fenicians at least 1000 years B.C. In the beginning they made various decorative items, marbles, many opaque or transparent glass vials of different colours. The romans are thought to be the first to have used glass for windows, many pieces of glass having been found among the ruins of roman edifices. This sustains the claim that glass was moderately being used at the beginning of our era. The middle ages see glass being used mainly in gothic architecture (the famous stained glass windows in cathedrals), and later, during the XVII and XVIII centuries, the use of glass broadens.

The XIX and XX centuries bring considerable improvements in the process of making glass, reducing it's cost cosiderably and thus making it largely spread.

The purpose of this paper is that of bringing to attention the many uses that glass has nowadays in urban arrangements, both public and private.

### MATERIAL AND METHOD

The method of research used in this paper is based on an extensive documentation of modern landscape arrangements publications, after which a selection was made of the materials that highlight the distinct ways of using glass in

different compositions: pavements, walls, certain glass & metal structures and various decorative items in parks, public or private yards and urban public squares.

Glass has many uses in modern urban arrangements: from pavements, walls, different glass and metal constructions, to decorative items in parks, public or private gardens, squares, etc.

Glass is a complex mix of silica and silicon dioxide which, by sudden cooling, becomes an amorphous solid, without crystalizing. Glass is very resilient to pressure, impermeable and doesn't burn or freeze. On the down side, it handles stretching very poorly, it's not elastic and is very brittle.

This material is very resilient to common chemical agents and to the destructive nature of atmospherical elements (wind, sun, frost, rain etc.), making it extremely resistant in time.

Due to these traits glass is a favored material in landscape arrangements (parks and gardens) or urban public spaces (squares, resting places etc.)

The main glass types are:

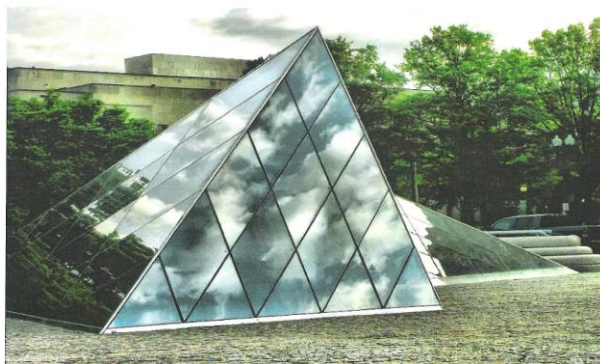
- soda glass, prepared by fusing soda ash, sand and limestone. It is the regular glass used for windows and has a slight greenish tint.
- hard glass, obtained by fusing potassium carbonate and limestone. It is a colorless glass of a superior nature, also known as a Bohemian crystal.
- lead glass, is made from potassium carbonate, lead oxide & sand. This is the highest quality glass, also known as crystal.

To improve the qualities of ordinary glass, certain elemnts are added in the composition (to purify, add colour etc.).

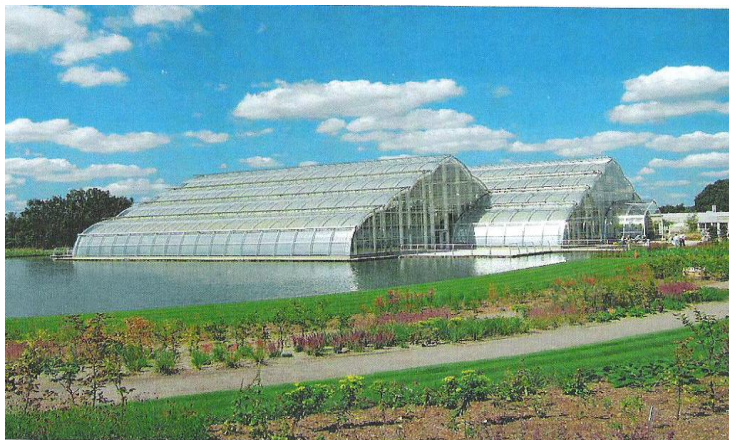
## RESULTS AND DISCUSSIONS

My attempt to classify the ways of using glass in landscape arrangements is as follows.

- glass constructions present on site, with landscape or architectural functions: piramids (fig.1), glass houses (fig. 2), covering structures usually made out of glass and metal.



**Fig. 1.** National Art Gallery, Washington DC.



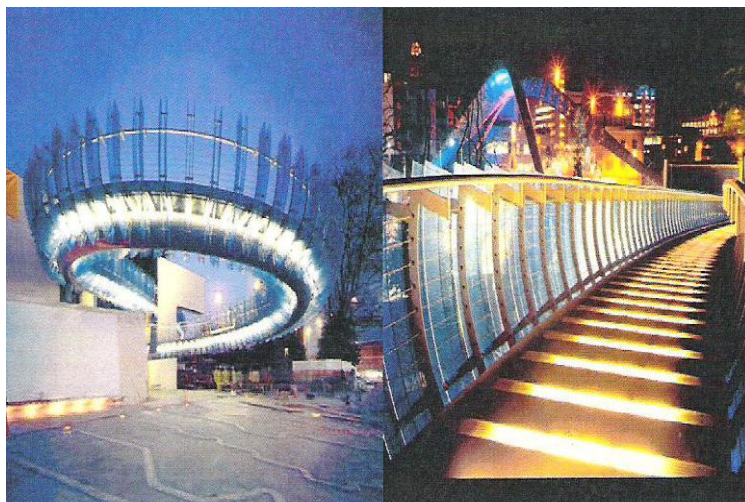
**Fig. 2.** Modern glass house, Wisley Garden, England

- bridges or gangways in urban arrangements or natural sites. A good example is the cantilever structure of the Grand Canyon Skywalk, Colorado – S.U.A. (fig. 3).



**Fig. 3.** Skywalk –Grand Canyon - Colorado – S.U.A.

Some structures constructed in the urban landscaping of the past few years benefit from the glass qualities (mainly transparency) and the ability to showcase it through artificial lighting (fig. 4) which creates spectacular effects at night time.



**Fig. 4.** Artificially lit glass bridge - Coventry

- alleys, access ways, pavements in private gardens or public urban spaces. Pieces of broken glass are also used to create stunning visual effects (fig.5).



**Fig. 5.** Exterior arrangement with pieces of broken glass

Glass can also be adjusted in urban squares (Moughtin, Cliff, 1999) through furniture or space separations, using artificial light. (fig.6)



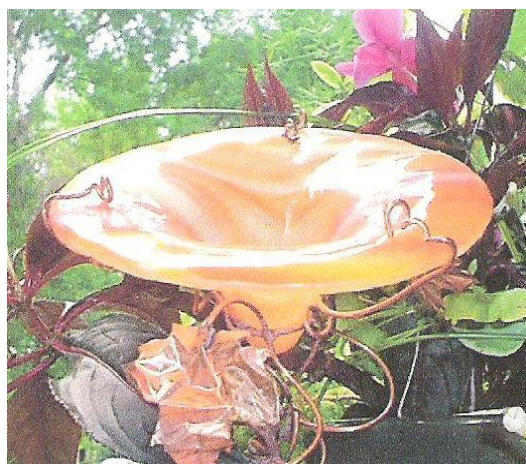


**Fig. 6.** Broadgate square - Finsbury - London

- monuments, sculptures, fountains, glass waterfalls, decorative objects in parks, gardens and urban public spaces, urban furniture etc. (fig.7,8.9)



**Fig. 7.** Glass bench – private yard – Germany



**Fig. 8.** Glass decorative object – Kew Gardens – London



**Fig. 9.** Fountain – Toronto, Canada

The colors, shapes and the modern character of the elements previously mentioned are a perfect example of the endless possibilities when using this material, creating the desired effects for the space in which it is placed. (Mostaedi, A., 2004)

Considering that there is a broad range of materials that glass can be combined with and many different processing methods, we can safely say that this material is successfully being used in today's urban landscaping.

## CONCLUSIONS

1. Glass is a relatively cheap material which offers a wide range of possibilities when using it in all sorts of urban landscape arrangements.

2. It's visual and esthetic properties make glass especially appropriate for modern arrangements, but also for decorative objects or even practical – functional objects, where the artistic creation involves subtlety or fantasy.

3. Through it's functional and esthetic properties, it can bring a measure of elegance, refinement and colour in the actual urban environment.

4. This study highlights the use of the various shapes of glass which can be harmoniously integrated in landscape arrangements.

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