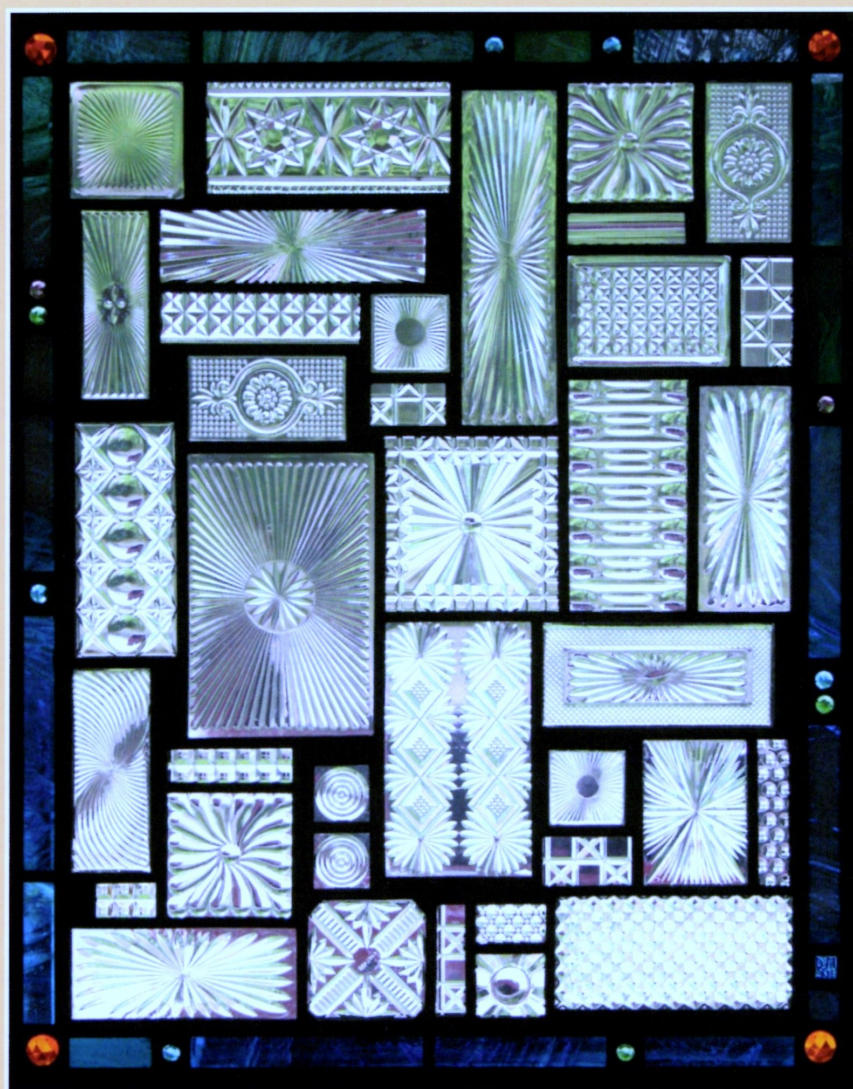




The Glass Cone

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The Attraction of Imperfection

Global creative uses for recycled glass

Part 2: Studio artists

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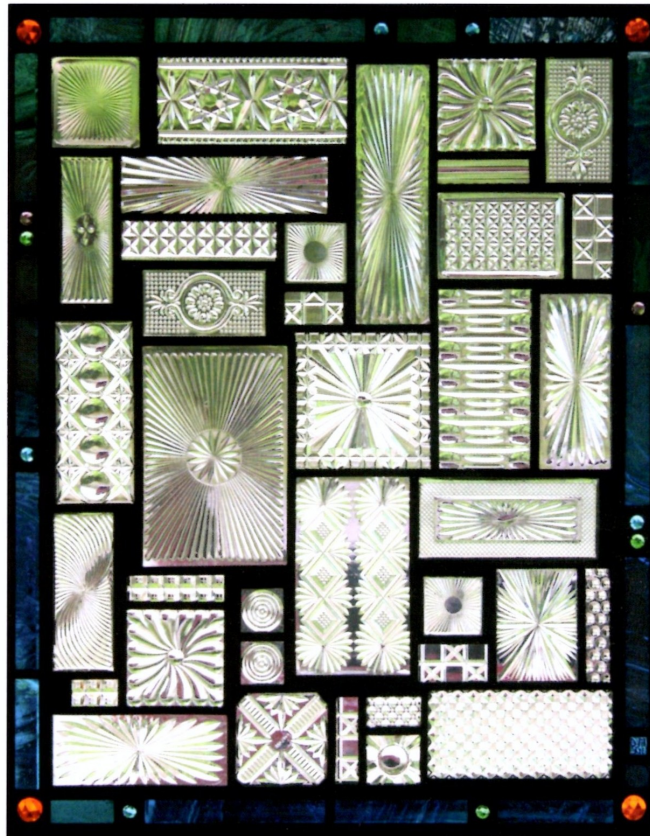
BEFORE the availability of equipment suitable for small studios, glass artists were attached to factories and glassworks and used the metal they made. The rise of historically important centres owed as much to their closely-guarded glass recipes as to their ground-breaking techniques. Maintaining and extending their signature colourways, textures and decoration depended on tight control of the glass composition and glass-working techniques. Further modifications were necessary due to mechanisation and the demands of 19th- and 20th-century designers for unique pieces and small batch prestige ranges. The coming of the studio glass artist prompted the development of materials compatible with their needs. So why choose to start with an empty bottle, a CRT television screen or a broken window pane?

Attraction to the artist

ALTHOUGH the intrinsic value of glass is low and only with large sculptures does it become a significant part of the final price of art pieces, studio artists with environmental concerns or who are fascinated by the uncertain characteristics of the source material use recycled glass in their work.

Like the artisans described in the first part of this article, some do work exclusively with recycled material and it is part of their environmentally friendly, low-impact way of life. Creating unique pieces without the constraints of regular production, they are adventurous in their source material and willing to experiment with technique and various combinations of glass. According to Cindy Ann Coldiron they freely share their technical experiences with like-minded artists and discuss the perils in obtaining the glass. They are frequently thought to be clandestine alcoholics because of their bottle collections; are the scourge of the health and safety

fig.1: Faceted container fragments in an art panel commissioned for a front door. Daniel Maher.



Illustrations are reproduced courtesy of the artist unless otherwise stated

police at dumps, skips and recycling collection centres; scavenge demolition sites and charity shops and acquire glass from locals, aware of their interests, on their doorsteps.

Glass artists use recycled glass as part of their repertoire when it is appropriate for a project or when exploring the textures and effects possible with a range of materials. They enjoy the challenge of its unpredictability and handling characteristics, in addition to fulfilling their environmental responsibilities. Anne Aridge, among others, reuses prestige glass factory waste.

Recently there has been meaningful interaction between artists, architects

and designers and some specialist recycling companies to find uses for mountains of industrial glass waste. Original, inventive and potentially commercial upcycling uses for waste glass have resulted from Matthew Durran's visionary 'Glass Heap Challenge' events. His previous upcycling projects have included sculpture, the windows of St Martins in the Fields, London and CRT glass block 'windows' for a canal boat. The International Festival of Glass, Stourbridge 2012, hosted a large Challenge event. International teams of three people (including one from Bulgaria via the internet) with a variety of glass working/designing skills were

presented with previously unseen piles of mixed glass and challenged to create original pieces. Visitors were even invited to take material home to make their own. The mind-boggling variety of creations can be seen in *The Glass Heap Challenge* eBook. A new technique to me was Bulgarian Lachezar Dochev's 'Kiln blowing'. Upturned jars are placed in the kiln over a substance which produces clouds of gas at high temperatures, so as the jar softens it expands to become a vase, a bowl or a lampshade. More experiments around the globe are planned.

fig.2: Astral fragment'—controlled devitrification of bottle glass. Bill Hess.



fig.3: 'Crevasse'. Dartington waste crystal cullet, coloured frit, cast on hot worked spun disc, multiple kiln reworking. Anne Arlidge.

Technical considerations

A Clean Washington Centre (CWC) report in 1996 discussed using post-consumer glass for blowing and casting. The same year, a second report on recycled glass for art glass applications described how to source reliable material, working practices, economics, and inconsistency of product. Several companies, especially in the USA, provide recycled cullet and powders specifically for studio artists. Some also supply compatible coloured frit.

The chemical composition and handling characteristics of glass designed for cheap, rapid, mechanised mass production are not ideal for complex hand-working by creative artists. Most glassworking techniques have been attempted using recycled cullet and powder, but many have required significant modification for each type of glass investigated, starting with cleaning to remove

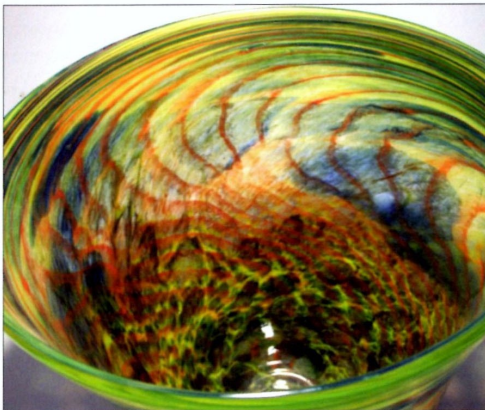
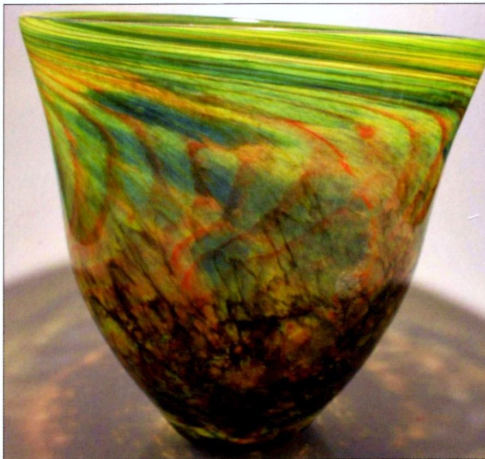
fig.4: 'Meltwater vase'. Dartington waste crystal cullet, blue, white and green frit, blown vase. Anne Arlidge.

contaminants such as tin from the surface of float glass and adding soda ash to the melt to improve handling. Batch to batch (even bottle to bottle) variation occurs and COE variations are larger than with 'artist' glass, leading to poor or failed fusing. The short time melted bottle glass remains flexible out of the furnace during blowing is no handicap for tableware makers, but James M. Magagula (Ngwenya Glass) highlights the need for frequent reheating and rapid manipulation when creating complex studio pieces. He also finds it challenging to source frit colours compatible with his glass.

Casting, fusing and slumping tech-

niques are pillars of studio glass-working and have been equally fruitful for the recycle artist. From jewellery to monumental sculpture, recycled glass has found its way into horizontal kilns, sand, plaster and other moulds. Apart from fusing problems, prolonged or frequent reheating of 'industrial' glass at higher temperatures can lead to colour changes, devitrification, degradation and collapse. Some artists control this to produce crystalline rock effects and opaque glass (figs 2 and 3); others stress how this contributes to the uniqueness of individual units in a limited run. Mark Wotherspoon has catalogued his tribulations in learning to cast CRT glass.





Representative artists whose work illustrate a variety of techniques THE most comprehensive review to date of sources of glass, satisfactory ways of working with it and artists using it, is to be found in *Sculpture and Design with Recycled Glass* (Cindy Ann Coldiron, 2011). Thirty artists, mainly sculptors and mostly American, are discussed in detail and more are mentioned in other chapters, especially those whom she categorises as 'craft artists'. In the chapter with detailed descriptions of the installation of public art works by her, Aaron Scales and Mark Wotherspoon illustrate the practicalities of working with recycled glass on the grand scale.

The Transformers Exhibition, held as part of the 2009 London Design Festival at Zest Gallery, offers a British perspective. Adam Aaronson combined bottle vases with silver foil decoration; Helene Uffren cut moulded and glued bottles into new containers; Jude Stoll exhibited pieces using upcycled bottles and containers; Brett Manley

fig.5 (above):
Blown bottle glass/
coloured frit bowl
(a) and inside (b).
Sibusiso D. Mhlanga.
Courtesy Ngwenya
Glass.

fig.6 (right):
(a) 'Patchwork
blanket'; (b) detail.
Sandblasted bottle
glass tiles.
Max Jacquard.

made casts of natural garden objects and Xiaou Zhong was also inspired by nature.

Another exhibitor was Anne Arledge whose portfolio centres on blown, cast, cut and polished recycled crystal and pane glass. It includes glass panels, sculpture, frivolous coloured jellybean pots, robust pane-glass tableware and a variety of public commissions. Her 'lost vegetable' technique is intriguing. A vegetable or fruit is encased in plaster and heated in a kiln. After the ash is removed, the resultant mould is returned to the kiln with a chunk of crystal placed above it. On heating, the molten glass fills the cavity. After suitable cooling, the plaster is shattered to reveal the glass replica which is then polished. Her statement that there can be beauty in changes to the natural world is reflected in her complex multi-stage disc sculpture 'Crevasse' (fig.3) and in her Meltwater series which explores the affinity of glass with water and ice (fig.4).

Blown vases and bowls of the highest quality have been created by two artists who were among the earliest to exploit the possibilities of recycled glass. Japanese artist Shuro Kasai took up glassblowing using recycled materials in 1983. In 2001 he held his first European exhibition of soft and warm-to-touch vases with opaque rock crystal effects, in Brussels. Examples are illustrated in the 1999 exhibition archive of Galley East in Australia.

Sibusiso D. Mhlanda started at Kosta Boda in Sweden and, since 1987, when the factory reopened using recycled glass, has become an internationally-renowned studio glass artist. He has collaborated with Jan Eric Ritzman and Peter Bremers. An example of his work, which often has an African theme, is shown in figs 5a and 5b. His colleague, James M. Magagula, has gained an equally impressive reputation. They interact with other artists during the international workshops run by the factory.

Bottles and panes

TWO of the best known and longest-established artists/engineers/designers in the USA who use recycled glass in their work are Bill Hess in Virginia and



Erwin Timmers at the Washington Glass Studio and School, Maryland. Both have used bottles and panes in their diverse portfolios. While Bill favours bottle glass for most of his projects, Erwin has been particularly successful with panes destined for the dumper truck.

In England, Max Jacquard, inspired by traditional quilting, has expanded his Glass Patch sculptures to include panels of bottle glass tiles. For 'Patchwork blanket' (figs 6a and 6b), recycled net curtain fabric was glued to the central cylinders of the bottles and sandblasted to create a pattern on the surface. Tiles were then cut from the cylinders and, after having holes drilled in them, were 'stitched' with wire to transform them into a 'glass fabric' blanket. Together with Jon Lewis (Orbic Glass Design), who demonstrates hot working techniques, he runs annual upcycling workshops at Kestle Barton, in Helston, Cornwall.