

Article

Design Glass Objects: The Portuguese Panorama

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Abstract: The aim of this study is to analyze the convergence of art, design and craftsmanship for the creation of glass objects within the context of the 20th and 21st centuries, in the Portuguese panorama. In the late 1920s and 1950s, Portuguese artists established a growing collaboration with the glass industry situated in the Marinha Grande region and started to produce their work alongside glassblowers. The relationship between artists and craftsmen progressively evolved, influencing the evolution of glass design in Portugal. In the last decades, glass factories have tried to enhance the excellence of their products by appointing designers to develop more elaborate concepts for glass pieces, as well as to improve the quality of the material. This essay will answer questions regarding the relationship and boundaries between design and craft in the creation of glass objects in the context of the state of the art of Portuguese glass design, related to the production of glassblowing glass and the region of Marinha Grande due to its historical importance. A case study will be presented regarding the brand MGlass and the new glass designers in the region.

Keywords: glass design history; glassblowing case studies; glass art/design; craft; new designers

1. Introduction

The invention of glass was one of the most important events in the history of mankind. In the book ‘Great Scientific Experiments: Twenty experiments that change our view of the world,’ Rom Harré refers to twenty scientific advances which were relevant to our civilization, sixteen of which would not have been possible without the use of glass (Macfarlane and Martin 2002). Some of the main features of glass, such as transparency, brightness and versatility, make it a vibrant material for artistic creation. Many innovative pieces of contemporary glass art result from years of investigation and experimentation with this material.

Portugal has a long history in glass tradition, especially in the glassblowing industry, which has existed since the middle of the 15th century (Barros [1969] 1998; Valente 1950). Nevertheless, artists (or designers as we nowadays consider them) were not included in this tradition. It was not until the 20th century that the specific field of ‘aesthetic’ art innovation (or design) started to be praised, and more artists who were working with glass opened up a path for designers into the glass industry.

Since working with glass requires a deep understanding of its properties, its potentials and limitations following a *modus operandis*, the industry has developed so as to accommodate both craftsmen and artists/designers, the former being skilled in the *modus operandis* and the latter in aesthetics. This has resulted in a harmonious relationship in which the designers/artists formulate the drawings and the glassblowers execute the pieces.

This paper provides a historical overview on the origins of glass design in Portugal, focusing on the Marinha Grande glassblowing industry with the case study of the MGlass brand. The relationship between craftsmen and designers will be discussed, as it took a particular path in Portugal during most the 20th and 21st century. Designers from Marinha Grande and those who work in the region will be presented identifying collections and events.

2. History and Tradition of Glassblowing in Portugal

The history of glassblowing in Portugal dates back to the 15th–16th centuries. At that time, one of the most important contributors towards the development of the glassblowing industry was the Covo Factory, located in Oliveira de Azeméis (Aveiro, central Portugal). This factory was the oldest of its kind and operated the first large-scale production in the North coast of Portugal (Coutinho 2016). The information available explains that the factory produced utilitarian objects and operated until 1924 (Medici 2014), although according to Coutinho: “No catalogue has been ever found depicting the objects produced in the Covo glass manufactory” (Coutinho 2016, p. 47). The most well-known center of the production of blown glass was the Coia Factory. It began its glass production in 1719 in Barreiro, near Lisbon, when the king, D. João V (1698–1750) ordered its installation (Coutinho 2016). Later, in 1748 it was moved to Marinha Grande (near Leiria) by John Beare, an Irishman. This relocation happened merely for economic reasons, as Marinha Grande is near the Leiria pine grove, a large area that could supply combustible materials that were essential for the glass furnaces. The region also has sand, and this allowed a new boost in the Portuguese glass production (Heras et al. 2012). In 1769 under the direction of Guilherme Stephens, the factory changed its name to ‘Real Fábrica do Vidro da Marinha Grande’ (Marinha Grande Royal Glass Factory). It was a time of great development and success, as the new location provided abundant fuel (wood/charcoal) necessary for the continuous toil of the glass furnaces. The privileges conceded by the state secretary, Marques de Pombal, such as authorization to use pine wood for free, contributed to the attainment of larger profits (Rocha 2003).

The increase in production allowed the region to become a center of industrial development. In 1919, after the implementation of the Republic in Portugal, the factory changed its name to Nacional Fábrica de Vidros (National Glass Factory). In 1954, it changed its name again, to Fábrica Escola Irmãos Stephens—F.E.I.S. (School Factory of the Stephens Brothers) and the factory combined its industrial production with a school for glassblowers. In 1992, the board of directors declared the factory bankrupt and closed down the glass production and school (Almeida 2011).

Since 1769, with the installation of the first glass factory in Marinha Grande, the region had become famous as “the land of glass”, due to the abundance and relevance of the glass industries gathered in this area. This reputation has remained until this day. During the 18th–20th centuries, many factories were built, most of which were family-owned businesses, but sadly partly due to the lack of investment in new equipment and technologies and partly as a consequence of the global market/economy, very few still prevail.¹

3. Artists/Designers in the Glass Factories

Portugal has had a long tradition in glass, especially based upon the glassblowing industry in the Marinha Grande area since the 18th century. The relationship between glass and craft has always existed, as glassblowers have always produced craft glass (Barros [1969] 1998). However, artists did not become more directly involved in this tradition until the 1920s.

In 1929, the painter Jorge Barradas started to design glass objects that were later to be made by the glassblowers of the glass factory Companhia Industrial Portuguesa (Portuguese Industrial Company), in Marinha Grande. One of the objects produced through this collaboration was a vase with Portuguese folk motives for Hotel Palace in Estoril (Santos 2004; Ferreira 2002), a very well-known hotel situated on the Lisbon–Cascais coast, inaugurated in 1930, that hosted the upper class. In the 1950s, more artists, such as Alice Jorge, Júlio Pomar, Sá Nogueira and Lagoa Henriques started to work with the glassblowers of the Marinha Grande factories, thus beginning a continuous ‘design-made’ production. Lagoa Henriques, a sculptor, enjoyed the experience of working with glass craftsmen so much that he returned to the factory more than once for further collaborations. Two names stood out

¹ Historians such as Vasco Valente in 1950 and José Amado Mendes in 2002 have contributed greatly towards the study of the history of glass in Portugal (Valente 1950; Mendes 2002).

in glass design: Carmo Valente and Maria Helena Matos. Carmo Valente, worked as a designer from 1958–1959 at F.E.I.S., Marinha Grande ([Ferreira 2002](#)); this later allowed her to explore new lines in the Venini factory, Murano, Italy, and Orrefors and Kosta Boda in Sweden and Arabia in Finland ([Santos 2001](#)), supported by a grant from the Calouste Gulbenkian Foundation in 1961 (Portugal). Some of the pieces made by this artist were later exhibited at the Rampa Gallery in Lisbon, and influenced future national creations. Her piece *Burma* was made with acid-etching, a technique adopted with great success at Marinha Grande that consists of using abrasive materials such as hydrofluoric acid which allows the glass surface to be matte and also textured ([Carvalho 2019](#)) (Figure 1).



Figure 1. *Burma*, Carmo Valente, Fábrica Escola Irmãos Stephens (F.E.I.S), 1974. Photo credit: photographer Jorge Soares. Arquivo do Museu do Vidro—Câmara Municipal da Marinha Grande. Private collection of Pedro Moura Carvalho.

Another artist who went to Marinha Grande and worked very systematically with the glassblowers was Maria Helena Matos. Her work was developed mainly in the factories Vidro Santo Galo (Santo Galo Glass) and F.E.I.S. In 1969, she worked at F.E.I.S as a full-time designer and planned a series of pieces as a tribute to the bicentenary of the factory ([Santos 2004](#)). According to Pedro [Carvalho \(2019, p. 39\)](#), Maria Helena Matos “became one of the glass industry’s major figures, through organizing events and exhibitions related to industrial design”. In her utilitarian pieces, such as the set of glasses *Luna* (Figure 2), she demonstrates a simplicity of forms using clear glass. She also explored other methods with glassblowing pieces using decorative techniques, such as engraving and doublé (Figures 3 and 4).



Figure 2. *Luna*, Maria Helena Matos, Fábrica Escola Irmãos Stephens (F.E.I.S), 1969. Photo credit: photographer Jorge Soares. Arquivo do Museu do Vidro—Câmara Municipal da Marinha Grande. Private collection of Pedro Moura Carvalho.



Figure 3. Maria Helena Matos, Fábrica Escola Irmãos Stephens (F.E.I.S), 1960. Photo credit: Arquivo do Museu do Vidro—Câmara Municipal da Marinha Grande.



Figure 4. Maria Helena Matos, Fábrica Escola Irmãos Stephens (F.E.I.S), 1960. Photo credit: Arquivo do Museu do Vidro—Câmara Municipal da Marinha Grande.

These two artists were responsible for increasing the development of direct collaborations among designers and glassblowers, and thus for the establishment of a new and profitable relationship between designers and craft makers. Glass design was finally to become consolidated and to prosper in the Portuguese artistic panorama. This cooperative flow between designers and glassblowers introduced the dichotomy between design and craft, and the collaboration between the two “specialists” was crucial for the development of a new design approach, and as Yair says: “It demonstrated the new potential offered by integrating others’ specialist expertise with the designer’s vision, and the importance of communication in achieving the mutual understanding crucial to success” (Yair et al. 1999, p. 499).

In the next decades, Carmo Valente and Maria Helena Matos continued to design pieces, using different techniques and materials. Carmo Valente experimented with other materials and developed work for furniture, using Galé style (a monobloc in polyester resin reinforced with glass fiber) (Curralo and Barbosa 2018). Maria Helena Matos did not only work with the glassblowing technique but also researched other methods, such as collage and laminated glass. The pieces of the collection *Ruínas no meu sono* (Ruins in my sleep) created in 1989, are an example of this later glass work. In this set of pieces, Maria Helena Matos created an architectural landscape, where the parts

look unstable, but still maintain their balance. During the 1980s, Maria Helena Matos had her work publicly recognized, as the Curtius Museum in Liège acquired three of her pieces to become part of their permanent collection.

In 1987 another woman, Niza de Melo Falcão, a resident designer in F.E.I.S. after spending some time with glassblowers in the factory after her work hours, designed the pieces that were to be produced using the blowing technique. In 1989, she decided to quit her job at F.E.I.S. and dedicate herself to her own work with the help of Joaquim Veloso and José Veloso, both talented and skilled master glassblowers (*mestres vidreiros*—a very prestigious title given to the most experienced glassblowers of a particular factory, normally during the last stage of their career). Niza wanted to explore the traditional techniques from a contemporary perspective, create designer pieces in lead crystal glass and continue to work with these two skilled glassblowers. This project was an example of close collaborative work between designer and craftsmen without the involvement of an established factory. This required Niza to innovate more, so, she traveled to Murano, Italy in 1991, to further explore traditional techniques in the field of contemporary glass design.

The Take-Off of Glass Design in Portugal: Events in Glass Design

The first exhibition of Portuguese design was held in Lisbon in 1971 at Feira Internacional de Lisboa (FIL—International Fair of Lisbon) and also in Porto at Palácio da Bolsa (Stock Exchange Palace). This was organized by Maria Helena Matos, the Instituto Nacional de Investigação Industrial (INII) (National Institute of Industrial Research) and Interforma (a national chain of furniture crated by Cruz de Carvalho in 1967 (Coelho 2013)). Many designers² took part in the event by presenting pieces made in the Marinha Grande factories.

In 1972, the Exposição Internacional de Vidro Manual (International Exhibition of Manufactured Glass), was organized at the Calouste Gulbenkian Foundation in Lisbon. The goal of this international exhibition was to promote and raise interest in glass objects among Portuguese cultural communities and to promote Portuguese production worldwide.³

In 1973, the second exhibition of Portuguese design took place, again in Lisbon.⁴ This exhibition, in which participated ninety-one designers and nine technical offices and departments, brought together a great variety of designer pieces. In the opinion of the Portuguese historian Rui Afonso Santos (2003), it was the most significant event in the field of Portuguese design to date. Adams Jr., the president of the Portuguese Association for Industrial Quality, spoke at the event, highlighting the importance of quality and design in the competitiveness of national products (Júnior 1973). The set *Orion* of João Eduardo Marinho (Figure 5) was one of the pieces presented in this exhibition.

In the 1950s and 1970s, as artists started to work with factories and more international design exhibitions were being held, glass began to be seen in a different perspective, and through the 1960s and 1970s the industrial panorama of Portuguese design changed as a result of significant investment in companies such as F.E.I.S., Ivima and Crisal, which translated into a growing number of international orders (Carvalho 2019).

² Such as João Eduardo Marinho, Luís Filipe de Oliveira, Maria Helena Matos, Carmo Valente, José Santa Bárbara and Ascenso Belmonte.

³ The event included an International Design Competition, in which Portugal was represented by the factories Centro Vidreiro do Norte de Portugal (Glass Centre of the North of Portugal) with the designer Evaristo da Silva Ferreira, Crisal-Cristais de Alcobaça (Crisal-Alcobaça Crystals) with the designer G. Guluta, and F.E.I.S. with the designers Maria Helena Matos, Pedro Alvarez and Eduardo Marinho (George 1971).

⁴ José Manuel Aurélio, Maria Helena Matos, Armando Melo, João Eduardo Marinho, Maria Amélia Serra, Maria Teresa Saporiti, Abel Agostinho, Margarida de Ávila, José Barros Gomes, João Paulo Bento de Almeida and Victor Manaças were the Portuguese designers who participated, along with the Portuguese factories Crisal, F.E.I.S. and IVIMA (Industrial Glass Company of Marinha Grande).

According to Catarina Carvalho,⁵ due to the social and economic situation that the country went through in 1974, and during the post-revolution, it made it impossible to continue the great majority of these projects regarding glass design in Portugal. This activity only started again in the 1980s (Carvalho 2004) with the organization of events at F.E.I.S.

In 1988, the American artist Dale Chihuly conducted a workshop at F.E.I.S.; he worked with the glassblowers of the factory in order to create glass pieces. After the workshop, an exhibition called *Objetos de Vidro* (Glass Objects) was held at F.E.I.S in Marinha Grande, and also at the Calouste Gulbenkian Foundation in Lisbon. The Glass Museum of Marinha Grande still owns three pieces made by Chihuly during this workshop.

In the same year, F.E.I.S. organized a workshop with fifteen international artists who were living in France. These artists worked together with glassblowers from the factory. At the same time, there was an exhibition at F.E.I.S museum (now the Portuguese glass museum) called *Transparences, Verre Contemporain* (Transparences, contemporary glass), in collaboration with the *Museu Chateau d'Annecy*, France.⁶

Because of these exhibitions and events, the presence of design in the glass industry was finally being recognized by Portuguese communities. The close relationship between artists and glassblowers, where the glassblower is the expert in the technique and the artist is the creator of original ideas, established a superior state of quality.



Figure 5. *Orion Por*, João Eduardo Marinho, Fábrica Escola Irmãos Stephens (F.E.I.S). 1971, 1970. Photo credit: photographer Jorge Soares. Arquivo do Museu do Vidro—Câmara Municipal da Marinha Grande. Private collection of Pedro Moura Carvalho.

4. An Yclept Project: Marinha Grande MGlass

In 1992 the associação industrial de cristalaria (glass industry association) was founded and, according to Carla Rocha in 1994, it was the beginning of the restructuring of the glass industry in Portugal (Rocha 2003). In the same year, Vitrocristal was created consisting of a complementary group of companies set up to restructure the glassware sector and also promote the MGlass label. In 1999, due to changes in international markets and with Asia and Eastern Europe offering more attractive prices, a governmental program was created to help the glass factories that started to face difficulties.

⁵ Catarina Carvalho was the former director of the Glass Museum and responsible for the start-up of the organized events. In an interview she conducted with Maria Helena Matos, Helena told her that some of the events were connected to the old political regime. Portugal had a dictatorship (fascism) until 1974 and after this date, the new government did not want to have anything associated with the old regime.

⁶ The artists that participated in this exhibition were Bernard Dejonghe, Antoine e Etienne Leperlier, Isabel Monod, Jean-Paul Van Lith, Matei Negreanu, Raymond Martinez, Czeslaw Zuber, and Yan Zoritchak. The exhibition had pieces that were made with the glassblowing technique, but also with other techniques such as *pâte de verre* and fusing.

This program aimed to enable the factories to change the way they were operating and manufacturing glass, from mass production to high-added value production in order to increase the quality of their products. Thus, the first industrial protected region of Europe was created—the Glass Region of Marinha Grande (law decree, n° 154/99 published in Republic Diary n°125/99; n° 108/99). One of the most original and well-promoted endeavors within this mindset of collective product design was the creation of the Marinha Grande MGlass label, whose aim was to promote Portuguese design across borders, as well as to create employment for young designers in the glass factories. New human resources and qualifications were required, and various designers, commercial technicians, quality engineers and management technicians were employed to increase the prestige of the company. In the year 2000, twenty-four designers were hired and in 2002 another twenty-seven (Santos 2004) and the first collection was launched in 2000 (Rocha 2003).

The promotion strategy concerning this project was to align innovation, design and high quality of glass design pieces. The novelty of the project was not only the incorporation of the designers' work in the factories, but also the development of a deeper understanding of the relationship between design and craft, similarly to what had happened in other companies around the globe, such as A.R. Wentworth Ltd in Sheffield, UK, where in 1989, the company started to accept commissions from craft-base designers. According to Yair:

Crafts-based designers tended to actively seek local knowledge with which to inform design development. Such an integrated approach to design and making had clear potential to overcome the problems usually encountered in manufacturing designs specified without understanding of manufacturing materials and processes. (Yair et al. 2001, p. 381)

The same philosophy was applied to the MGlass project; the new designers learned the secrets of working with glass and the craftsmen were educated on how to work with a specific design.

Twenty companies joined this initiative,⁷ and in 2002, they were all operating and hiring young designers who had recently finished their degrees, as well as inviting well-established Portuguese designers to join in. In order to promote their products, MGlass also invited famous international designers, such as Karim Rashid (Egyptian-born and Canadian-raised), Americans Jonathan Alder and the corporation Klein Reid (a collaboration between James Klein and David Reid, founded in Brooklyn in 1993), whose pieces would be a major attraction in international fairs. Considerable advertising campaigns were held in the USA, France, England, Spain, Italy, Germany and Brazil to promote these products. In addition to these marketing strategies, a showroom was opened in New York as one of the first steps to confirm the brand's international position. Located at 42 Madison Avenue, it was the center of leading shows of glassware and decorative objects in New York. The Marinha Grande MGlass project developed several initiatives and collections, such as the exhibition "Standards" held in 2002, for which nine designers, namely, Bjorn Dahlstrom, Christophe Pillet, Elder Gomes, Fernando Brizio, James Irvine, José Viana, Uwe Ficher, and Vogt & Weizenegger (the design company founded in 1993 by Oliver Vogt and Hermann Weizenegger), were invited to participate and redesign the line of the shapes of cups, glasses and jars. MGlass organized other exhibitions, one of which was "Women in Glass". It presented three women, three generations and three cultures, and was held in the premises of the United Nations building in New York City in 2005. Paula Lomelino represented Portugal and the youngest generation, whereas Marianne Buus from Denmark the middle generation and Eva Zeisel from Austria the oldest generation.

The MGlass project progressively allowed several young designers to create freely without conceptual boundaries, as it simultaneously contributed to improving the quality and relevance of glass design. Rita Melo was a young designer who integrated the project when completing her internship at

⁷ The companies were: Aberto Martins e Filhos, Artefosco, Atlantis, Canividro, Cristalide, Cristul, Dâmaso, Favicri, F. Ferreira da Silva, Ifavidro, In-fusão, Ivo Neto, Marividros, Matadeco, Montra de Vidro, Rodrigues and Francisco, Vetricor, Vicriarte, and Vicrimag.

Marividro. She had to develop ideas for new glass collections that would integrate design, organizing the catalogues and new logotypes for the company. Constant meetings were made at Vitrocrystal to discuss new products that should present a very specific theme and with increased quality, a strong and differentiated aesthetic language in the lines and shapes of the objects was created. Rita designed the collection *Sexto Sentido* (Sixth Sense) in 2003 inspired by the concept of ‘sensitivity and gesture memory’, a collection that aimed to enhance handmade glass and the importance of the glassblower’s craft. Her work featured in international magazines, such as *Design 100* and *Metropolitan Home*, and was recognized and granted by the Design Plus award in Frankfurt in 2004 (Figure 6).



Figure 6. Rita Melo, *6 sence* collection, Design Plus award, 2004. Photo credit: Rita Melo, designer; piece from Vitrocrystal; catalogue image from Ambiente (Frankfurt)—Messe Frankfurt.

The creation of the MGlass project was paramount for the development of glass product design in Portugal. It allowed for the creation of new contemporary products which were connected not only to the national industry but also with the created special region (Ferreira 2002), contributing to adding value to produced design pieces. The mission of the project was to intervene in the restructuring of the glass sector, as most of the industry was still rudimentary. In the beginning of the 20th century, most of the glass factories did not have a designer. The brand MGlass revolutionized this situation and placed a designer in every factory in order to conceive quality products that would integrate tradition, art, innovation and design.

Even though when creating a new product, designers were taking into consideration multiple factors, such as the choice of the material, the manufacturing method, how the product is marketed, its cost, practicality and usability requirements (Norman 2004) and creating high-quality designs, these design products did not always achieve the commercial success that was expected (Rocha 2003).

In its first years, the MGlass project flourished, and in 2003 the integration of designers was identified as the source of the main benefits that these factories derive from the project (Rocha 2003). However, most of the designers who were hired did not get their contracts renewed, and the ones who stayed in the factories only stayed long enough to see it go bankrupt. With all of the challenges threatening the Portuguese economy, the glass industry and design in general, the MGlass project became stagnant, and waited for better days to come. In 2004, the newspaper *PUBLICO* wrote about the crises in the label. CRISFORM attempted to revive it, and in 2007, several designers were invited to design a new collection for MGlass with pieces made in their facilities. CRISFORM was a non-profit training center with administrative and financial autonomy, created in 2000, which operated from 2005 to 2011 in the industrial area of Marinha Grande near the glass factories. It provided exceptional training and complementary activities for the glass sector. Collaborations between glassblowers and designers were developed; CRISFORM provided training in glass for the MGlass designers before they were posted in the factories. The project in 2007 was entitled ‘Visibilities—Different approaches to

glass taken by the new generation of Designers'.⁸ Regarding the failure of the project, Avelino Sousa Lopes, director of CRISFORM, said at the European Glass Context 2008 conference:

Most of the industrials never understood the goal of the program, and those who did, not only never believed that their partners would ever be able to reach it, but also felt menaced by the opportunities that the program could open to their competitors. (Lopes 2008)

Although this project was largely financed, some of the factories were already in a crisis situation and it was not enough to restore their internal production.

Designer and Craftsman

Maria Helena Matos is known for having fostered the Portuguese glass design and for establishing the relationship between design and craftsman glassblower. The MGlass project boosted this relationship, creating a young generation that worked with the old generation of glassblowers. When questioned, the glassblowers from Marinha Grande claimed that their knowledge was transmitted by their forefathers. When their forefathers thought the apprentice was ready and worthy, they would reveal the secrets of glassblowing. The goal was to be a master glassblower—*mestre vidreiro*. The glassblowers from Marinha Grande were a very respected class until the 1920s. They earned a good salary and had privileged place in the factory hierarchy (Mónica 1981). Nevertheless, in the beginning of this century and with the crises in the industry, their power decreased (Silva 2018). When speaking with the designers and the glassblowers from the MGlass project, most of them described having an excellent relationship. As Rita Melo stated—she woke up at dawn to be able to work directly with the glassmakers, who had enough patience with her to carry out the prototypes until the desired results were achieved. Victor Agostinho (another designer with MGlass awards), who was also working directly with the glassblowers, stated that experimentations were constant and that these helped to increase the know-how of all parties. However, problems occurred when some of the glassblowers of the older generation wanted to continue doing what they always did, having difficulties in following orders from the younger generation that could be their grandchildren.

Sylvia Petrová, a world-renowned curator who has curated international glass exhibitions and has several publications on glass art, argues that: “glass as an artistic material and medium is equal to the classical ones such as stone, bronze, oil on canvas” (Petrová 2001, p. 13). Glass is one of the many materials that can be used in design and should not be immediately or exclusively associated with craft, although this association is not necessarily pejorative, because there is undeniably excellent glass craft work. Any preconceived notions about the function of glass as a simple craft material may limit the capacity of the viewer to consider any other conceptual possibilities. A design object should be judged and taken into consideration based upon the ideas, context, aesthetics and philosophical explanations underlying its creation, rather than its material.

As design gained a more relevant status in Portuguese factories, the production of glass objects also expanded into a whole new dimension. According to David Pye, a designer relates to what can be conveyed in words and drawing. He even gives a definition for craftsmanship saying it is a: “workmanship using any kind of technique or apparatus, in which the quality of the result is not predetermined, but depends on the judgement, dexterity and care which the maker exercises as he works” (Pye 1988, p. 4). Bruce Metcalf said that the word “craft” suggests a skillful labor and a work of fabrication (in Domer 1997). The quality of the result may not be predetermined, but is always part on the outcome of the piece and the technique domain is extremely important for the glassblowers, as they need to prove their value.

⁸ This project also had the collaboration of the company Mideia—Product Design and Implementation, in partnership with the Municipality of Marinha Grande, AIC—Associação Industrial da Cristalaria and OPEN—Association for Specific Business Opportunities.

JulioLiberato⁹ was considered a great examples of a glassblower and craftsman. In his objects, he paid a lot of attention to the technique used on the glass object, applying the old Italian technique *filigrana*, a “decorative Venetian technique developed at the beginning of the 16th century” (Coutinho 2016). His main characteristic was to work alone in the studio to accomplish pieces that are made by two craftsmen—he wanted to worked solo.

According to Ezra Shales, most crafts are not a solo task; he calls it a collated craft or multihanded-crafts (Shales 2017). This is the case for glass craft. It is extremely difficult for only one person to be able to make a single glass piece. The relationship between glassblowers and their craftsmanship fosters a constant creative learning process, as described in this particular research. With their tacit knowledge, they know the secrets of this material and how it can be worked. We witness an evolution in the making process of the pieces as the glassblowers maintains a permanent dialogue with the designers. The visions and culture of the former are appreciated. If the glassblowing piece is to be decorated through a coldworking process, such as engraving or lapidation, then another craftsman is asked to collaborate. Currently, when visiting a glass design exhibition in Portugal, it is common to see both the name of the designer and the craftsman that executed the glass piece, as it is considered a collaborative work.

5. A New Generation of Glass

Nowadays, there is a young generation of Portuguese designers working with glass. These new glass designers and design studios started to appear before the MGlass project, when in 1992 atelier Prodesign was created, and the designer Marco Sousa Santos also developed several international projects. In 1999, a project named SRW aimed to develop design projects using revolutionary glassblowing techniques. In 1999, the Atlantis factory (founded in 1944) developed a new product called Think Tank, which intended to create new objects made with innovative techniques (Santos 2004).

The Marinha Grande Glass museum opened in 1998 in the house of Guilherme Stephens (Figure 7) with the exhibition of mestre vidreiro Júlio Liberato. The Museum has been a relevant promoter of modern Portuguese glass, namely by hosting the exhibition *Contemporâneos—vidro artístico português* (Contemporary—Portuguese artistic glass) since 2001. For this exhibition, the director of the museum invites prominent artists and designers from the fine art field and other designers and artists who for some reason have experimented with glass (Almeida 2011). In 2004, the museum organized an exhibition entitled ‘Vidro de design contemporâneo—marinha grande’ (contemporary glass design—Marinha Grande), where pieces from MGlass were exhibited. This exhibition took place in other locations such as Angra do Herorismo, Azores. On the 19th of October 2013, a new space for contemporary art opened in the Marinha Grande Glass Museum (Figure 8) with the exhibition ‘Glass seen through feminine eyes’, where 15 artists from different countries participated.¹⁰ In 2019, the museum organized the exhibition ‘Pop & Tutti Frutti: Portuguese Glass in the 60s & 70s—Pedro Moura Carvalho Collection’, presenting several pieces owned by this collector (Carvalho 2019) that exhibit a specific period of the Portuguese glass design.

During the period that Crisform was operating, it hosted workshops with international artists and established protocols with the Faculty of Fine Arts in Porto, allowing the students from this university to attend glass courses in their facilities.

CRISFROM supported many designers with innovate projects, among which were Susana Soares and her “Bee” design. In this work, executed by mestre vidreiro Mateus in 2007, Susana created unusual diagnostic tools using trained bees to perform a health checkup.

⁹ He started working in the factory at an early age, doing some commercial work. However, he had his own studio in Australia where he worked alone. He taught at the University of Newcastle, the College of Advanced Education and Monash University, Caulfield Institute of Technology, Australia.

¹⁰ The artists came from: Netherlands, Argentina, Poland, Turkey, United States, Brazil, Estonia, Australia, England, Ireland, Mexico, Estonia, Latvia, and Norway.



Figure 7. Portuguese Glass Museum, history of glass in Portugal exhibition. House of Guilherme Stephens: Photo credit: Câmara Municipal da Marinha Grande.

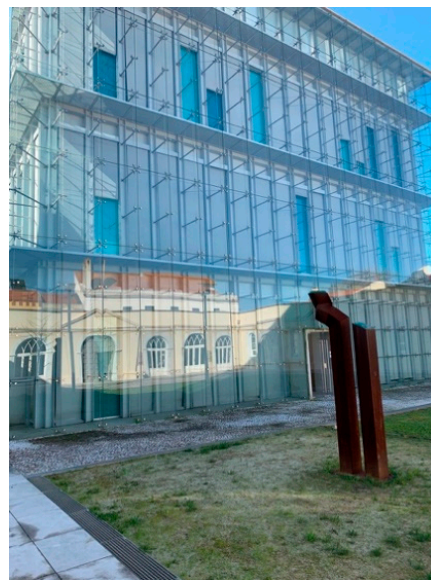


Figure 8. Portuguese Glass Museum (Contemporary Art). Photo credits: the author.

João Silva, an architect who also worked with glassblowers from CRISFORM, personified the relationship between designer and craftsman. The objects from 2008 shown in Figure 9 are among the many examples created within this creative collaboration, as the pieces were performed together with the glassblower Jorge Mateus. João was not only observing but also using shears to cut the glass and jacks to give shape.

In 2008, Crisform provided assistance to the European Glass Context exhibition, supporting the selected artists and designers. Sara Paiva and Hugo Amado were two of the designers selected to participate in the European Glass Context exhibition in the industrial design category. At that time, Sara Paiva was working at the Jasmim Glass Studio (in Marinha Grande) as a designer, where she created new collections for both the national and the international markets. Jasmim was a studio and company that appeared in 1996 (Mendes 2002), maintaining collaboration with Portuguese and foreign designers. Jasmim closed its door to glass production in 2010. Hugo Amado created his pieces in lead crystal glass, and for this exhibition, he conceived an object meant for daily use. At the moment he is a designer at Vista Alegre—Atlantis.



Figure 9. Glassblowing pieces by João Pedro Silva (glassblower Jorge Mateus), 2008. Photo credit: the artist.

Due to economic challenges that the country faces, CRISFORM closed down in 2011. Luckily, in the same year, CENCAL (an institution for ceramic training) took over the facilities and carried on with some glass programs, maintaining the protocols and organizing workshops. Joana Silva has been the coordinator of the glass training course since 2011. With a background in glass and ceramic design, she knows how the material works. She produces her pieces in collaboration with Cláudio Duarte, a glassblower who has also collaborated with other designers such as Martinho Pinho at his workplace, the Infa-vidro factory. These collaborations do not take place during his normal work hours. The designers who wish to work alongside Cláudio meet him at the factory from 3–5 a.m. to have him develop their pieces. “Glass makes the labor of craft look easy even when it is not” (Shales 2017, p. 224). It is difficult for certain glassblowers to execute glass objects, as some do not have the craft to carry out the whole process, but this is not the case for Cláudio.

‘Off-Portugal’ is a project which aims to support young Portuguese designers. In 2017, a showcase called ‘Glass Care’ was exhibited at the London Design Fair. Ten designers participated, including Joana Silva and Vítor Agostinho, whose works were created at CENCAL with the glassblowers’ collaboration. Joana worked with color layers (Figure 10), whereas Vítor Agostinho developed a process which allowed him to create pieces with different shapes out of a single mold (Agostinho 2013) (Figure 11). He is one of the MGlass designers that still works with glass.

Today, there is a young generation investing physical and creative resources in the Marinha Grande region by creating new glass studios. Among which, I.glass and Glass studio & Gallery are examples. Glass studio is a designer glassblowing studio with a gallery placed near the glass museum. It is a new studio that has been focusing on enhancing the quality of blown glass objects. Being very well-equipped, it has been responsible for considerably revitalizing glass design in this region. Nelson Figueiredo, the manager, had learned about glass at Crisfrom and opened the studio in 2015 to develop his work (Figure 12) and also the work of other designers. At the moment, Nelson is both a designer and craftsman.



Figure 10. # Cor, Joana Silva, (glassblower: Cláudio Duarte) 2017. Photo credit: the designer.



Figure 11. Bronholm#, Vítor Agostinho (glassblowers: Alfredo Poeiras e Cláudio Duarte) 2016. Photo credit: the designer.



Figure 12. Multicolored, Nelson Figueiredo, 2018. Photo credit: the designer.

According to Pedro [Carvalho](#) (2019, p. 44), “the contemporary and innovative character—with a variable degree of external influence—of both the artistic and industrial glass made in Portugal then has yet to be recognized”.

6. Conclusions

Portugal began its industrial activities in glass in the 15th century ([Barros \[1969\] 1998](#); [Valente 1950](#)) with the Covo factory in Oliveira de Azeméis and later, in the 18th century, with the “Real Fábrica

do Vidro da Marinha Grande” in Marinha Grande. In the 1950s, with the collaboration between artists and craftsmen and the emergence of design glass in Portugal, a big improvement occurred. In the 20th century, with the development of science and technology, glass has become more versatile, more widely spread and inseparable from society. This paper confirmed the emergence of glass designers in the Portuguese panorama from the middle towards the end of the last century, as well as the consolidation of a professional relationship between designers and craftsmen, allowing for new collaborations and the exchange of knowledge, skills and ideas, which has enhanced the development of new products.

The MGlass project was an innovative initiative which prioritized the interactions between designers and craftsmen, as well as the improvement in quality of the products made in glass factories. Several young designers were hired to work in the factories and the products were shown at international fairs and exhibitions. However, the project did not have the expected positive outcome, and hardly any attempts have been made to revive the MGLASS design project. Nevertheless, glass design is gaining more and more followers and enthusiasts, with both students and designers becoming increasingly interested in this area. Furthermore, the Glass Museum and CENCAL in Marinha Grande have been supporting new projects, ideas and designers who are interested in working with glass. CENCAL organized a special workshop regarding the project ‘Off-Portugal’ for designers creating objects to be executed in collaboration with glassblowers.

When a demanding material is chosen for the conception of artistic pieces, numerous interactions occur, namely between the creative inventions, the constraints, and the possibilities of the chosen material. It is in the hand of the designer to choose the material which will more effectively produce the desired result. However, the material chosen should not by itself define the piece/object. In other words, it should not determine if the piece is craft, or if it is art.

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