PAULO**PARRA**COLLECTION

BAUHAUS+ULM

TEACHING MODELS AND INDUSTRIAL DESIGN

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I dedicate this research to the design heroes who contributed to this discipline becoming a successful area in university education.

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INTRODUCTION

Paulo Parra

How did this book and exhibition on Bauhaus + Ulm come about?

Following the Bauhaus centenary celebrations, it makes to celebrate this event with an initiative in Portugal.

The University of Lisbon which celebrates its 10th anniversary this year, as well as the Faculty of Fine Arts and its CIEBA Research Centre, joined Bauhaus centenary celebrations and supported Paulo Parra Collection initiative to promote an exhibition and a book about the famous school and its legacy, which were so important for pedagogical development, and which enormously influenced artistic education in Portugal.

As a designer, teacher and collector, I am very familiar with the history and significance of the Bauhaus, its values and pedagogical proposals, as well as its industrial production models.

Concerning the Ulm School, for which I have great admiration and has had influenced me, especially after the publication in September 1984 of an excellent compilation by RASSEGNA entitled "Il contributo della scuola di Ulm / The legacy of the Ulm School", dedicated to this school, which I was able to acquire at that time.

This school is the legitimate successor of the Bauhaus evolution process, at that time was interrupted by the rise to the power of the Nazis and consequent war that followed.

Later, in 1990, while I was studying for my master's degree in Product Design in Porto, I was invited to work at NCS Design, a design studio in Brazil whose partners were the Brazilian designer Angela Carvalho and the German designer Alexander Neumeister, one of the most important designers to have graduated from the Ulm School and whose work has been widely illustrated in RASSEGNA.

This experience of working in an important studio with links to the Ulm School was very important for my future training.

I was responsible for designing an electronic control pedal for the SINGER sewing machine company. This was designed during my stay in Brazil in 1990 and commercialised in 1994, after a complex process of industrial implementation, safety tests such as the "finger test" and even the worldwide patent process.

In 1998, this pedal was named the best product in its category (HOUSEHOLD) at the Hanover Fair and won the BEST of IF award, one of the most prestigious prizes in German design.

With an innovative solution, it used only a third of the material of the previous pedal and, for the first time, it was a pedal produced with only one mould, where normally there were two or more moulds, simplifying the production process within the framework of the then emerging theories of sustainability and circular economy.

Figure 1 - **Pedalinho, Machine Sewing Pedal (1994). NCS Design-Singer. Paulo Parra. Plastic.**
First pedal made in one piece. Worlwide patented solution by Singer which uses a third of the material of the previous pedals.

That's why "Pedalinho" was awarded and had granted a world patent which promoted worldwide publicity. It is also a demonstration of the influence that these two schools have had on my career.

After about 30 years and after having met with Alexander Neumeister a few times when he travelled to Portugal, I thought it would be important an homage to the legacy of the Bauhaus and Ulm through the exhibition of a selection of products (from approximately 100) from Paulo Parra Collection.
As part of these celebrations, industrial products designed by the most influent authors who had close contact with these important schools will be present at the Bauhaus + Ulm exhibition.

The legacy of these schools has certainly influenced my training and that of thousands of designers around the world and deserves to be respected because we are not just talking about design schools, but also about new and very innovative pedagogical and educational approaches that have created a new world view. A world that needs to be reclaimed!

PAULO PARRA COLLECTION

Paulo Parra Collection is an attempt to preserve a history of the design of products that revolutionized humanity. Composed of around 5000 objects and 2500 books, it includes several sections, the largest of which is about Portuguese design, around 1000 objects and 600 books, with the remaining objects on the history and development of international industrial design.

Within the existing thematic nucleus we highlight, in addition to the Portuguese design nucleus, others such as authorial design, composed of pieces that were designed and signed by great masters of international design (and which currently includes at least 6 pieces from the 50 most important industrial designers), but also the nucleus of the origins of industrial design, where we find pieces from the beginnings of industrialization, or even the nucleus of Design Icons and Classics, composed of pieces that were a great reference in industrial production. But there is also nucleus on country-centred design, such as German design, which naturally gives rise to this Bauhaus + Ulm exhibition, illustrated in this book.

With around 100 pieces, designed by designers who were associated with the two great German schools, the Bauhaus + Ulm nucleus represents an important part of German best of industrial production. In this exhibition of selected pieces, we highlight the projects of the first two directors of the schools, Walter Gropius as the first director of the Bauhaus and Max Bill as the first director of the Ulm School.
Contributing as exemplary way to dignify the pedagogy and industrial models proposed by the Bauhaus and Ulm schools, through their teachings and their projects these two authors are well represented in the Paulo Parra Collection.

Also noteworthy is the work of Marianne Brandt, one of the first women to work as industrial designer and who is still today a reference as a woman, student, teacher, designer, and artist.

It is clear that all the others are great masters of design, such Wilhelm Wagenfeld, Hans Gugelot or Dieter Rams, just to name some of the best known to the general public. Its products have reached thousands of users significantly changing their quality of life.

To conclude we mention Peter Behrens with great emphasis, one of the fathers of the Modern Movement, master and a reference for all the other designers on display, and who enormously influenced everyone in this profession.

To all the great Masters of Design, a deep and deserved thank you, as they built this profession!

I did not want to end without thanking the young designers André Gouveia, João Rocha and Lúcia Buisel, as well as the authors of the texts Luís Jorge Gonçalves, Ilídio Salteiro, Sofia Rodrigues and Ana Mestre, and to the Rectory of the University of Lisbon, the Faculty of Fine Arts and CIEBA, for their commitment and contribution to making this book and exhibition a reality.

The Bauhaus + Ulm

TEACHING MODELS AND INDUSTRIAL DESIGN 10 MASTERS OF GERMAN DESIGN

Paulo Parra

TEACHING MODELS AND INDUSTRIAL DESIGN 10 MASTERS OF GERMAN DESIGN

1. Design and Industrial Design

Design and industrial design are different things, just as architecture and industrial architecture differ, a distinction which, as we know, the Ulm School was largely responsible for creating. The term “industrial” clearly relates to projects produced for an industrial context. They necessarily post-date the Industrial Revolution. It is important to clarify this point as it helps to explain the selection of items shown.

In the history of industrial design, there are many examples of pioneers who stood out in their own countries and even beyond, given the profession’s highly transversal nature. They overcame immense difficulties to implement design’s aesthetic and ethical values in an industrial context. This great effort, similar to what occurred in other areas, turned them into reverential figures. Of these, the first was a contemporary of the Industrial Revolution and the Great Exhibition of 1851 in London: Christopher Dresser (Britain, 1834–1904).[1] Considered by many to be the first ever industrial designer from a contemporary perspective, he was a consultant for many companies during the second half of the 19th century, a lecturer at the School of Design and a writer of several books on design and botany, in which he attained his PhD. By virtue of his long career and hundreds of projects, some even now commercialized by the company Alessi, Dresser was indisputably history’s first major industrial designer.[2]

However, others followed, especially Peter Behrens (Germany, 1868–1940),[3] the first “global” designer, in the sense of is the first to coordinate and plan an entire corporate image from logo, posters and products to industrial architecture. While Dresser’s work reveals a hugely diverse range of areas and products, as befitting a freelance designer, in Behrens it is the cohesiveness of his work, intrinsic to a corporate designer, that impresses, having designed everything from AEG’s logo to its factory. He even designed the numbers on the clocks and standardised components, using the same ones in various products. This coordination transformed AEG into the oldest case study on corporate identity.

Other examples of pioneers also exist, such as Marianne Brandt (Germany, 1893–1983). A student of the metal workshop, the most demanding at the Bauhaus, she later demonstrated her talent by teaching the same subject. She was the first major female industrial designer and the first to head a product development department at an industrial company, Ruppelwerk. This was a status that few designers of that era ever achieved and one that no woman had ever done so. Although less well known than some of those mentioned here, Brandt is one of the most deserving names on this list, since the difficulties of establishing herself in a world of men were certainly far greater but did not prevent her from attaining a high standard. The fact that her work is exhibited in some of the world’s most important design museums and several of her products are still sold industrially by Alessi, i.e in great quantity, only goes to prove the point.

Another major figure was Raymond Loewy (France, 1893–1986), who became the first “star designer” when he appeared on the cover of the famous magazine *TIME* in 1949. Hired by some of the world’s largest organisations, such as Coca-Cola, Shell and NASA, he was also a design consultant for the USSR and of the president’s office of the USA. The first designer of the globalised era, he had offices in the USA and Europe and was responsible for hundreds of commercially successful products.

I would also like to highlight Henry Dreyfuss (USA, 1904–1972) on this list of pioneers, as in addition to developing multiple products, his approach systematically included the quality of human interaction with his products, issues treated by the areas of ergonomics and anthropometry. His studies were so important that his books are still major references on these areas today. This short introduction serves merely to put into context some of the pioneering industrial designers who contributed decisively at the early stages to affirm and consolidate industrial design as a profession.

However, others have made major contributions to consolidate the profession, among which the following, all of whom are well represented in the Paulo Parra Collection:

Joseph Hofmann (Austria, 1870–1956), Walter Dorwin Teague (USA, 1883–1960), Marcello Nizzoli (Italy, 1887–1968), Walter Maria Kersting (Germany, 1889–1970), Norman Bel Guedes (USA, 1893–1958), Harold van Doren (USA, 1895–1957), Harley Earl (USA, 1895–1983), Max Braun (Germany, 1893–1951), Christian Barman (Britain, 1898–1980), John Vassos (Romania, 1898–1985), Lurelle Guild (USA, 1898–1985), Wilhelm Wagenfeld (Germany, 1900–1990), Jean Mantelet (France, 1900–1991), Peter Muller-Munk (USA, 1904–1967), Sigvard Bernadotte (Sweden, 1907–2002), Bruno Munari (Italy, 1907–1998), Max Bill (Switzerland, 1908–1994), David Chapman (USA, 1909–1978), Acton Bjorn (Denmark, 1910–1992), Eliot Noyes (USA, 1910–1977), Lívio, Pier and Achile Castiglioni (Italy, 1911–1979, 1913–1968, 1918–2000), Sixten Sason (Sweden, 1912–1967), Marco Zanuso (Italy, 1916–2001), Ettore Sotsass (Austria, 1917–2007),

Jean Parthenay (France, 1919–1997), Hans Gugelot (Indonesia, 1920–1965), Ghia Carrozieri (Italy, 1921), Norbert Schlagheck (Germany, 1925–2002), Jakob Jensen (Denmark, 1926–2015), Pierre Paulin (France, 1927–2009), Luigi Colani (Germany, 1928–2019), Kenneth Grange (Britain, 1929), Rodolfo Bonetto (Italy, 1929), Roger Tallon (France, 1929–2011), Joe Colombo (Italy, 1930–1971), Pininfarina Studio (Italy, 1930), Alessandro Mendini (Italy, 1931–2019), Enzo Mari (Italy, 1932–2020), Gerd Alfred Muller (Germany, 1932–1991), Dieter Rams (Germany, 1932), Richard Sapper (Germany, 1932–2015), Michael Graves (USA, 1934–2015), Porsche Design Studio (Germany, 1972), Marc Berthier (France, 1935), Mário Bellini (Italy, 1935), Dietrich Lubs (Germany, 1938), Herbert Schultes (Germany, 1938–2020), Giorgeto Giugiaro (Italy, 1938), Gaetano Pesce (Italy, 1939), Clive Sinclair (Britain, 1940–2021), Nick Butler (Britain, 1942), Bill Moggridge (Britain, 1943–2012), Geoff Hollington (Britain, 1949), Philippe Starck (France, 1949), Naoto Fukasawa (Japan, 1956), Ross Lovegrove (Britain, 1958), Jasper Morrison (Britain, 1959) and Jonathan Ive (Britain, 1967).

Just as with the great painters, the great designers are a source of inspiration for all those interested in this area. To paraphrase Denis Diderot (1713– 1784), author of the famous *Encyclopédie*, the importance of design can be summed up thus: "... since the men committed to making us believe that we are happy have always received far more praise than those who have endeavoured to ensure we actually are."

Of these designers, what stands out above all is the importance of their contribution to improving people's quality of life through the permanence of their work in our daily lives – in writing implements, radios, televisions and record players – in the professional sphere – in typewriters, calculators, printers and computers – and in the domestic realm, where kitchen, cleaning and hygiene utensils are veritable accoutrements of the intimate lives of their users.

Of the many objects in the Paulo Parra Collection, which comprises over 3,500 items, it was difficult to select from so many that have contributed to make our daily lives more technical, aesthetic and ethical, becoming icons and design classics, as well as vintage objects. Today, we can state with all certainty that industrial design is a profession with a past and one that is highly active in contemporary society.

2. 10 Designers

As mentioned, some of the most significant industrial designers either directly contributed to creating and divulging the ideals established by the Bauhaus or did so because they were its students and teachers, or even did so because they came into contact with them. It is their industrial projects, produced in large numbers, that we want to pay homage to, as they undoubtedly contributed to improve their users' quality of life and hugely influenced other industrial designers and users. The aim of this exhibition is not to show ideas or prototypes but, rather, to show the commercial products by companies who considered design a priority in the development of their products, enabling their users to improve their quality of life.

This exhibition is a tribute to these masters of design who contributed centrally to confirming this important area through their extraordinary industrial creations for companies as varied as AEG, Rupellwerk, Jenaer-Glas, Vereinigten Lansitser Glaswerke, Braun and Junghans, to mention just a few. The products shown are by some of the world's most important designers, such as Peter Behrens (1868–1940), Walter Gropius (1883–1969), Wilhelm Wagenfeld (1900–1990), Marianne Brandt (1893–1983), Max Bill (1908–1994), Hans Gugelot (1920–1965), Gerd Alfred Muller (1932–1991), Dieter Rams (1932), Reinhold Weiss (1934) and Robert Oberheim (1938). Their projects and products are the practical exemplification of the educational work started by the Bauhaus, whose aim was to train designers by combining art and technology.

Of this set of designers, the focus is primarily placed on the director of the famous school, as he was the main mentor and supporter of the ideas created at the Bauhaus, both as a designer and teacher. Indeed, Walter Gropius was the first director of the Bauhaus and the person most responsible for defining its educational and industrial model. His projects were and continue to be a universal benchmark. But the exhibition cannot forget to mention his great mentor Peter Behrens who, through his work as a "global" designer for AEG, created one of the first seminal manufacturers of high-standard industrial products, such as the first electric kettle, the first electric clock and also fans, heaters, lamps and many other first-generation appliances designed and commercialised by AEG from 1907 onwards.

That date marks the start of Behrens' stint at AEG, a period during which Gropius was an intern in Behrens's studio along with Le Corbusier and Mies van der Rohe. The latter was the last director of the famous school, signifying that two of the three directors of the Bauhaus were interns under Behrens, demonstrating the importance this designer had on their training, on industrial design and on the Bauhaus.

Also of note in this context are the students of the Bauhaus who were outstanding industrial designers, in particular Marianne Brandt, one of the first female designers. Starting out as a student, she rapidly became a teacher and was responsible for some of the school's most revolutionary concepts and prototypes.

Also prominent was her colleague Wilhelm Wagenfeld, one of the most distinguished of the school's students and later an important German industrial designer. He worked freelance for some of the best-known German companies, designing very successful products. Max Bill, a designer, architect, artist, educator and politician, responsible for designing the Ulm School of Design, where he was the first dean, stands out in this list. As we know, the Ulm School directly inherited the Bauhaus legacy after the war which Bill implemented, creating the "Ulm model" of industrial design based on this legacy.

Finally, a special mention for those designers who worked tremendously had in the post-war period and for whom the school was a major reference point. Of these, indispensable figures directly or indirectly associated with the Ulm School include Hans Gugelot and Dieter Rams, and the less well-known Gerd Alfred Muller, Reinhold Weiss and Robert Oberheim. Others could have been added to this list, but the 10 names included are considered the most distinguished in terms of the Bauhaus-Ulm relationship and their influence on industrial design.

As mentioned, the aim of this exhibition was not to show the work of the Bauhaus students per se, but rather to demonstrate, in an unprecedented exhibition of its real achievements through high-quality industrial products, the huge influence that this school had in practical terms on the future of industrial design and thus on the quality of life of the thousands of people who used these objects every day.

This show of seminal industrial products, as well as the teaching model developed by the Bauhaus that influenced numerous schools around the world, helped to train thousands of designers and artists, be it in the teaching model created or the legacy of countless industrial products made, all created to a very high aesthetic and functional standard.

It contributed decisively to the creation of an educational model intended to train future designers and artists, as well as a model that enormously enhanced industrial production, attaining quality standards until then rarely achieved. And when we observe the objects, especially in the post-war period, with the continued influences of the Ulm School, its direct descendant, we objectively realise the importance of the values espoused by the famous Bauhaus School.

3. Educational Model for the Teaching of Industrial Design

The Bauhaus manifested itself in many forms, altering the world and the way we see it. This was done by divulging and democratising certain legacies, amongst which the Educational Model and the Industrial Design Model, as mentioned. These two models were notable contributions to improving the quality of life of thousands of people, namely through art teaching, the training of young people by means of innovative educational methods and evidently through large-scale series industrial production, that which objectively affect the general public, since the design paradigms espoused by the famous school, applied above all in the post-war period to domestic products, enormously improved people's lives.

It is said that there is nothing new under the sun. This applies equally to Charles Darwin and his theory of evolution, Albert Einstein and his theory of relativity, and the Beatles and pop music, but the ability to unify trends and to transform them into something tangible and solid reveals huge mastery and a unique social and ethical sense that lies at the origins of design. This is what occurred with the famous school that became the unifying element for various trends in art and design, namely in the movements associated with them – such as Deutscher Werkbund, Expressionism, Neoplasticism and Russian Constructivism – but also in auto-didacticism, the medieval Bauhutte, action-based teaching and learning by building. All of them are an example of the decisive influences which contributed to the "Bauhaus model".

Its teaching model, based on the preparatory course (*Vorkurs*) and practical workshops, using ceramics, weaving, carpentry, printing, metal and stage design technologies, was a success and repeated more or less exactly around the world. In its initial manifesto, dating from its founding in 1919, Walter Gropius wrote: "The school is the servant of the workshop."

Another of the Bauhaus's major innovations was the union of artists and artisans, eliminating the difference between them, inaugurating a highly effective design education model that is still used today, creating a paradigm that is seen as highly applicable and necessary in contemporary society.

Amongst these institutions of learning is the Escola Superior de Belas-Artes, which immediately adopted this teaching model for its design courses. Originating in 1836, it gained autonomy in 1881 but it was only in 1975, following the Portuguese revolution, that the first higher design courses were created in Portugal. And its model was clearly influenced by the Bauhaus, like other design schools which had adopted it after the war with the support of former Bauhaus students and teachers. Prominent amongst these were The New Bauhaus in Chicago (1937, USA) and the Ulm School of Design (1953, Germany). And others followed, transforming this model into one of the most successful in the world of art education.

The preparatory course (more art based), workshop practice (more technical) and the internships were key stages in the training of students and future designers. But the school was also a unifying influence through people who, inside and out, contributed to a unique learning and project model. From Peter Behrens to Walter Gropius, Theo van Doesburg to El Lissitsky, Johannes Itten to Laszlo Moholy-Nagy,

Wassily Kandisky to Paul Klee, Marianne Brandt to Lilly Reich and Gunta Stolz to Anni Albers, to mention just a few, all contributed to mould what would come to be one of the most influential art schools of the 20th century, a status it continues to hold in the 21st. This exhibition aims to pay tribute to all of the people who contributed to ensure that the Bauhaus's legacy was not forgotten.

The New European Bauhaus initiative is like a contemporary tribute and a sign that the Bauhaus and its art and social teaching model remain a living reference point. Therefore, in this current context, it makes absolute sense that a work like this, accompanied by an exhibition of specific physical examples of the school's teachings, should be another element helping to divulge its important legacy.

4. Bauhaus and Ulm: Complementary Models

The development of German design in this era had an evolutionary continuity. An example of this are the theories of Hermann Muthesius, applied at Deutscher Werkbund, of which the work of Peter Behrens at AEG from 1907 to 1914 was of major importance, representing as it did, through the union of art and technology, the first major example of creating a company's overall corporate image.

Perhaps the closest equivalent to this in the interwar period at the Bauhaus was the work of Marianne Brandt, who at Ruppelwerk in the 1930s sought a cohesive language for the company's image and industrial products. Finally, in the post-war 1950s, Max Bill at Jughans and Gugelot-Rams at Braun are examples of trying to implement this model of a consistent corporate identity within the Ulm School of Design.

An interesting exercise in terms of similarity of product is to compare a Behrens clock for AEG with a Brandt one for Ruppelwerk, a Bill one for Jughans and a Rams one for Braun. It makes it easy to understand the natural evolution of the aesthetic elements, technologies, materials, social trends and especially the integration of industrial design. In an exercise of this kind, in addition to the temporal framework of each of these clocks, the different styles of each of the mentioned designers must also be considered. Nevertheless, a certain evolution in the rationality and objectivity of modern industrial design is easily detected.

Of course, these examples are all from the past. The examples of AEG, Ruppelwerk, Jughans and Braun are from half a century and two world wars ago, with all the consequent economic, technological and social developments that have taken place, but it is this industrial evolution that we intend to refer to in this exhibition.
And, in fact, we can sense the evolution of these four principal brands through a more concrete application of models of industrial design thought.

The educational legacies also reveal continuity, albeit with the breaks inherent to evolution, like the evolutionary theories of nature. The Arts and Crafts model was succeeded by the Bauhaus, which was later revised by the Ulm School, gradually building a heritage of educational experiences and ideas that would make design teaching more robust, rigorous and effective. From the experimental and artistic to the scientific and thorough, industrial design methods and practices greatly evolved in this half century.

This study cannot fail to include the important influence of Theo van Doesburg's Dutch Neoplasticism, which clearly influenced the Bauhaus and its students, among which Max Bill. A link between the Bauhaus and Ulm, Bill advocated the concrete and universal design evident in his creations, and those of Gropius, Gugelot and Rams.

5. Conclusion

Showing the works of great masters, whether of painting, architecture, or design, is always a major challenge, especially when in this specific case it is associated with the world's most famous design school, the Bauhaus, which in itself is already a highly complex theme. We could have used other criteria, many of which have already been debated and expounded, but the objective aims of this show are to highlight the industrial objects created by designers who influenced the teaching model that the Bauhaus introduced. In other words, products that were turned into reality by industry and that made the lives of thousands of people easier and more interesting, be it in the simple use of a film camera or preparing food, be it in the comfort provided by a heater or ventilator, or be it in easily reading a clock so that we can organise our time. From the individual electric shaver to the room clock, the exhibition contains objects of every kind and of the highest standard.

There does not seem to exist any uncertainty that much of this process is down to the teaching models, the basis of the educational institutions that form industrial designers. True design has always concerned itself with ethical, social and even environmental matters, summed up by the famous slogan "less is more". And this in fact is a good example of the maxim, which would appear to be German in origin.[4] Indeed, in the chronological evolution and rationalisation of forms and materials, we can add functions to products, enabling more versatility and performance, in a process that has certainly led to the maturing of industrial design so that it is ready to respond to the new challenges of the New European Bauhaus. Design thinking, environmentalism, sustainability and the circular economy are crucial to the development of societies and are intrinsic to current design processes, albeit in embryonic form, and always have been, since from the very beginning they were part of the methodologies of design teaching.

Knowledge of history is essential for any cultural programme and even, dare I say it, scientific. This show traverses 50 years of the best in industrial objects that, among other things, reveal the history of mindsets, technology, materials, aesthetics and design. Exploring the 21st century also means really discovering the 20th, and the history of design and how it was taught are crucial in knowing the century in which democracies developed and design objects were democratised. And this process is in part described in this exhibition.

Endnotes

1 Paulo Parra, "Metodologias Biomórficas: Streamlining e Biodesign", Design Simbiótico (2005), 88.
2 The term "industrial designer" denotes a professional designer whose projects are usually put into mass-scale industrial production. This explains why some designers prior to, or contemporaries of Christopher Dresser have been omitted.
3 Paulo Parra, "Le Corbusier e o Deuscher Werkbund", Design Simbiótico (2005), 151.
4 Friedrich Weinbrenner, Architektonisches Lehrbuch. Uber Form und Schonheit, 3 vols., Johann-Georg Cottaischen, Tubingen, 1810-1819, citado em: Tomás Maldonado, El Diseño Industrial Reconsiderado, Barcelona, Ed. Gustavo Gili, 1993, p.22.

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The Bauhaus + Ulm

THE BAUHAUS: A PEDAGOGICAL PROJECT

Luís Jorge Gonçalves

The Bauhaus was an iconic 20th-century art project. “Bauhaus”, meaning teaching and innovation, was a school that explored processes of dialogue between different artistic expressions, knowledge and technologies. It created new images and artefacts that still influence life today. A victim of conservative prejudice and National Socialist dystopia, it symbolises some of the key concepts of what art represents: freedom, creativity, innovation, a product of its age, emotion, sensibility, intuition and technique.

Charles Baudelaire (1821–67) was the first thinker to reflect on the relationship between art and modernity. In The Painter of Modern Life, he wrote: “What is modern is not defined by the present – not all art from the modern era is modern – but by a new attitude and awareness of modernity.” He also added: “Modernity is the transient, the fleeting, the contingent; it is one half of art, the other being the – eternal and the immovable.” These words were written in the aim that artists should accept the idea of progress without denying tradition: “No doubt it is an excellent discipline, in order to learn how to paint, but it can be no more than a superfluous exercise if your aim is to understand the beauty of the present day.” Peter Gay considered Modernism “far easier to exemplify than to define” (Gay, 2009), but if we look at the Bauhaus in terms of its artistic and pedagogical purpose, it is possible to see things differently.

Modernism is the assumption of a dialogue between tradition and the spirit of research on new artistic forms in literature, painting and sculpture, music, architecture and design. Modernism sought to impact daily life through close social interaction. Different art movements arose, sometimes ideologically opposed, in the last quarter of the 19th century which shared a search for new paths, gazes, criticism and social self-criticism. The breaking of tradition was urged, as a provocation, but based on a knowledge of classical works and authors.

One of the central themes of Modernism was the concept of beauty and its redefinition. The classical concept was re-examined, with a major contribution by Baudelaire in Les Fleurs du mal. In western culture, the idea of beauty was based on the Graeco-Roman paradigm, adopted by the Renaissance, in addition to medieval models in the 19th century. These continued to thrive during the age of industrialisation, when new materials and mass production emerged.

Daily items, such as chairs, tables, sideboards and sofas, reflected these models of historicist beauty. Objects were marked by their lavish decoration and the façades of buildings were still strikingly decorative. Even avantgarde artists in the early 20th century sat on chairs that adhered to these patterns and wore clothes that remained barely unchanged. Moreover, there was no place for avantgarde movements and their visual language within art education, where the pattern of beauty was conceived and cemented.

In the wake of World War I and all of the human trauma it led to, Walter Gropius founded the Staatliche Bauhaus (State House of Building), commonly known as “the Bauhaus”, in Weimar, Germany, on 12 April 1919. It opened as a school and was the result of merging the Großherzoglich-Sächsischen Kunstschule Weimar (Grand-Ducal Saxon Art School, Weimar) with the Großherzoglich-Sächsischen Kunstgewerbeschule (School of Arts and Crafts or School of Applied Arts).

THE BAUHAUS: A PEDAGOGICAL PROJECT

1. Bauhaus as an artistic expression and school

Gropius recognised the need for the Bauhaus as an art movement associated with a school. But his vision was broader. He saw that the political context in Germany would allow institutional structures to be modified so that a fine arts school could be merged with an arts and crafts school. He saw the social need to apply new forms of artistic expression to everyday objects and architecture, and he argued that technical rigour, technology and the visual arts had to be combined, promoting dialogue between the different fields of the visual arts and crafts to build a new and thorough visual system. He saw the need for a training school to convey knowledge and technology, to create a new generation and to institutionalise a new artistic expression. He strove to ensure that education was taught through dialogue between teachers and students, realising that everyone was a potential artist, irrespective of their technical field. He also noticed that it was necessary to teach good taste.

He was not alone in this ambitious project. His ideological partner was Henry van de Velde, the Belgian architect from Antwerp who had spent a long career studying, reflecting and practising dialogue with avantgarde art movements and artisans.

What motivated these two people was the desire to associate the visual arts with design, to revive artisanal artistic and functional knowledge and to connect with industry. They sought to move beyond the preference for historicism in the art tastes of the economic and political elites. An alternative aesthetic was sought, one without ornamentation that capitalised on technological advances in the field of materials. There was a desire to explore pure forms, far removed from historicist adornment.

The central concept of the Bauhaus was to unite the fields of art, removing the differences between artists from the fine arts and artisans from the applied, secondary and mechanical arts. A working team was formed in which no national and social differences existed. Bauhaus was a social project which sought to democratise design and architecture.

The Bauhaus manifesto clearly reveals Gropius's guiding principles:

The ultimate goal of all art is the building! The ornamentation of the building was once the main purpose of the visual arts, and they were considered indispensable parts of the great building. Today, they exist in complacent isolation, from which they can only be salvaged by the purposeful and cooperative endeavours of all artisans. Architects, painters and sculptors must learn a new way of seeing and understanding the composite character of the building, both as a totality and in terms of its parts. Their work will then re-imbue itself with the spirit of architecture, which it lost in salon art.

The art schools of old were incapable of producing this unity – for art may not be taught. They must return to the workshop. This world of mere drawing and painting of draughtsmen and applied artists must at long last become a world that builds. When a young person senses within himself a love for creative endeavour begins his career, as in the past, by learning a trade, the unproductive "artist" will no longer be condemned to the imperfect practice of art because his skill is now preserved in craftsmanship, where he may achieve excellence.

Architects, sculptors, painters – we all must return to craftsmanship! For there is no such thing as "art by profession". There is no essential difference between the artist and the artisan. The artist is an exalted artisan. Merciful heaven, in rare moments of illumination beyond man's will, may allow art to blossom from the work of his hand, but the foundations of proficiency are indispensable to every artist. This is the original source of creative design.

So let us therefore create a new guild of craftsmen, free of the divisive class pretensions that endeavoured to raise a prideful banner between craftsmen and artists! Let us strive for, conceive and create the new building of the future that will unite every discipline, architecture and sculpture and painting, and which will one day rise heavenwards from the million hands of craftsmen as a clear symbol of a new belief to come.

On 12 April 1919, Gropius institutionalised the Bauhaus in Weimar by merging the aforementioned schools. Van de Velde suggested that Gropius became the director.

2. The Bauhaus and its nomadic nature

The Bauhaus was a victim of political extremism in the inter-war period and due to National Socialist dystopia. Political decisions caused the school to be itinerant, passing through three phases based on the cities where it resided: Weimar from 1919 to 1925, Dessau from 1925 to 1932 and Berlin from 1932 to 1933. The Bauhaus project, bearing in mind the political context, was looked upon negatively by conservative society which could not understand the constant human need for the renewal of social values (particularly in western culture). Nazism in particular considered Bauhaus an ideological enemy, given that it defended creative liberty, wanted to move beyond the historicism of art and proposed new visions for education and new images as part of a break with the past.

After Bauhaus's creation, Gropius began the work of attracting teachers who identified with the project. In the first phase, from 1919 to 1923, the teachers consisted of artists, artisans and theorists, prominent among which, as early as 1919, was the German architect Adolf Meyer, who created the department of architecture in 1920. Other artists hired were Gerhard Marcks, a Modernist German sculptor, Johannes Itten, a Swiss painter and art theory teacher who held a performance workshop for new students to release their creative potential, and Lyonel Feininger, a German-American painter, graphic artist and caricaturist. In 1921, he brought two avantgarde German visual artists to the Bauhaus: Paul Klee, a painter and graphic artist, and Oskar Schlemmer, a painter, sculptor, graphic artist and scenographer who designed the Bauhaus logo in 1922. In 1923, the Russian Wassily Kandinsky, a painter, graphic artist and art theorist, the German Josef Albers, a painter and theorist, and the Hungarian László Moholy-Nagy, a painter, photographer, typographer and scenographer, all joined.

In this first installation period, the educational project was centred on research, training and creation of teams. In 1922, the Thuringian regional government, where Weimar was located, requested the first exhibition of the Bauhaus's results. Gropius grasped the chance to display its achievements and planned a "Bauhaus Week" spread around different points of the city of Weimar between 15 August and 30 September 1923 including conferences, exhibitions and shows.

The programme included Gropius's lectures on art and technology, Kandinsky's on synthetic art and Dutch architect Jacobus Johannes Pieter Oud's on the development of Dutch architecture. An exhibition was held which presented the experimental "Am Horn" model house designed by Georg Muche and built by Walter March and Adolf Meyer from Gropius's architecture firm, while the furniture was produced by the Bauhaus workshops (Wingler, 1980). Schlemmer staged his *Triadic Ballet*, with music by Paul Hindemith, at the German National Theatre, painter Kurt Schmidt's presented *Mechanical Ballet* at the Jena Theatre, and Hermann Scherchen conducted Igor Stravinsky's *The Soldier's Tale*. Performance artist Ludwig Hirschfeld-Mack presented a lantern festival, fireworks, dance and the Reflective Colored Light Show. This was accompanied by the publication of *STAATliches BAUHAUS IN WEIMAR 1919–1923*, a manifesto on the Bauhaus project with a cover design by Herbert Bayer. A total of 2,600 copies were printed, 2,000 in German, 300 in English and 300 in Russian.

Despite this event, the political changes in the Thuringian regional government led to a cut in the Bauhaus budget by around 50%. The loss of political support and financial difficulties led to the decision by the masters' council to move headquarters.

Various invitations were received, but the decision was taken to move to Dessau, where the majority social democratic government and the industrialist Hugo Junkers supported the project, and a new headquarters building was constructed.

In 1925, Bauhaus entered its second phase. This change led some teachers to leave for other positions, among whom the graphic artist Karl Peter Röhl and the architect Adolf Meyer. On 4 December 1926, the new Gropius-designed school building was opened and the quarterly Bauhaus review launched.

The building reflected the school's Modernist image. Pedagogical and political, the project aimed to demonstrate transparency, with the façade's long glass windows, where the workshops were located, showing this strategy of openness and focus on experimentation allied with theory and reflection. The lamps were designed by Marianne Brandt. This new phase revealed Bauhaus's relationship with new materials and industry, tubular steel being used on the B3 armchairs and cantilever chairs.

On 1st May 1928, Gropius handed over his position as director to the Swiss architect Hannes Meyer, who strengthened cooperation with industry. His motto was "The people's needs instead of the need for luxury!" He remained in post until 1st August 1930, when he resigned.

He was replaced by the architect Ludwig Mies van der Rohe. In 1931, the Nazis won the elections in Dessau and pushed for the closure of Bauhaus. In municipal voting, the Nazis voted in favour, the communists against and the social democrats abstained (Wingler, 1980; Lupton & Miller, 2008).

The third phase of the Bauhaus took place in Berlin from 1932 to 1933, where it became a private institution. However, the rise of National Socialism to power in Germany led to the persecution of teachers and students through house searches and imprisonment. The Bauhaus was closed, and its disciples emigrated to countless countries, spreading its artistic ideas and technical knowledge around the world.

3. The triumph of the Bauhaus

During World War II, the Bauhaus building in Dessau was partly destroyed, but its ideas returned, along with its disciples, after the war. In 1953, Max Bill, a Bauhaus student in 1928, created the Ulme School of Design. In 1961, it presented the exhibition "Bauhaus" at the Kunsthalle Darmstadt in Hesse. In 1976, the Dessau building was rebuilt and in 1986 became home to the Bauhaus-Dessau – Design Centre. In 1994, the building became the headquarters for the Bauhaus-Dessau Foundation, and, in 1996, it was added to the UNESCO World Heritage List. Today, the Bauhaus heritage lives on in

Dessau (the school), Berlin (the archive), Weimar (the museum) and Tel Aviv, where the Bauhaus Centre was established in the White City in 2008. This neighbourhood, built in the 1930s by Jewish and non-Jewish Bauhaus architects from Dessau in particular who fled Germany with the rise of Nazism, was designed in the Bauhaus style for a Mediterranean climate. It has been a UNESCO World Heritage Site since 2003 (Droste, 2017).

4. Bauhaus pedagogical project

The Bauhaus pedagogical project has been explored in numerous books, including by those closely involved in the school who have written about their experience as Bauhaus teachers, and in studies by researchers on the school's educational methods.

Kandinsky is one of those who wrote about his teaching experiences at the Bauhaus. As a teacher, he wrote the theoretical text *Point and line to plane: contribution to the analysis of the pictorial elements* published by the Bauhaus in 1926. After its closure by the National Socialists, he left an important written testimony of his pedagogical experiences in "Lições na Bauhaus. Palestras, seminários, exercícios 1923 –1933", published in 1933. Kandinsky looked back at his classes at the school and reflected on his approach to painting, form and colour in art and its applications. It is an important document written in the first person that reveals an inclusive approach and contains thoughts about the experimental side of art, one of the trademarks of the Bauhaus (Kandinsky, 1996).

The group of researchers who have reflected on Bauhaus pedagogy is vast. The first was the French-Swiss architect Claude Schnaidt (1931–2007), linked to the Ulme School of Design, who was part of the team that founded the Bauhaus-Dessau association, which later became the Bauhaus-Dessau Foundation. Through his knowledge of the Bauhaus and closeness to its protagonists, he showed that it was an institution with educational ends whose members proposed alternative methods. He published a key text in 1976 entitled *Was man über das Bauhaus weiß, zu wissen glaubt und ignoriert* ("What we know, think and ignore about the Bauhaus") (WZHABQ/6, 1976, 496–502).

The question of pedagogy was central to the Bauhaus, according to Schnaidt. Similarly, in 1982, Rainer K. Wick, a teacher and researcher of art and art education at the universities of Essen and Wuppertal, published *Teaching at the Bauhaus* in which he analysed the pedagogical experiences of seven of its teachers: Johannes Itten, Laszlo Moholy-Nagy, Josef Albers, Wassily Kandinsky, Paul Klee, Oskar Schlemmer and Joost Schmidt. Wick examined the Bauhaus project and how myth and pedagogy were associated. Bauhaus was built upon the concept of "total art". The idea of the medieval past where there was unity between arts and crafts was crucial (Wick, 1982).

In the initial phase, under Gropius, the Bauhaus was inspired by Expressionism. Under Hannes Mayer, that changed to Constructivism and under Mies van der Rohe to rationalism. The aim was to create unity between the arts and crafts, reviving the values of the medieval guilds. The essence of the school could be seen in Johannes Itten's introductory atelier whose aim was to release students' creative potential.

In general, how was the teaching at the Bauhaus organised? Students attended three segments, split into three stages, that varied under the direction of Gropius, Mayer or van der Rohe. The three segments were as follows: a foundation or preliminary course; an internship; and planning and construction theory and practice.

Under Gropius, there were four core aims: dialogue between the visual arts and crafts; functional analysis of crafts and their pedagogical practices; theoretical training; and students' own free expression. In the first segment, i.e. in the preliminary studies, students studied form, material and theory for six months. This segment also included a formal lessons component and also the first contact with materials. It was a "study of forms and preliminary study of materials in the workshops".

The second segment was dedicated to the wood, stone, clay, metal, glass, colour and fabric workshops for three years. It was called an internship or technical education. Students studied nature, materials, space, colour and composition, structures and representations, and materials and tools.

The third segment, whose duration depended on the student, included further training in architectural planning and practical workshop practices, also called local and field construction, with practice in engineering and building blueprints.

Under Mayer, the emphasis was placed on formalising the model, a technical component, with connections to industry, the separation of art from crafts, greater study of the exact sciences and the inclusion of the social and human sciences like psychology. The model was still split into three segments. In the first, extended to one year, students took basic workshop studies and an elementary study of form, with a theory component. In the second, lasting for three years, they took a materials course, with the addition of artistic-typographic printing, and a theory component. In the third, which was made into a year and a half, the focus was on construction and planning.

Mies van der Rohe sought greater uniformity and specialisation, emphasising architecture and pushing the visual arts to the margins. There were still three segments, but the contents changed. In the first segment, lasting a year, there were more standardised preliminary studies. In the second, lasting three years, training included architecture and building, visual arts, photography, weaving and publicity. In the third, lasting a year and a half, the focus was placed on students' own projects rather than internships in construction.

This educational model emphasised the trilogy of training in the humanities /sciences/theory, art and technology. There was theory and social preparation which was one of the reasons for the political persecution of the Bauhaus. The art training involved classes in handling various components, such as colour and materials. This practical side was held in the workshops, where students learnt to master the basic properties of materials (Wick, 1982).

With regard to the art ateliers, there were a vast number. In 1920, Itten created the metals atelier. He was replaced in 1923 by Noholy-Nagy who increased the number of students experimenting and associating other materials with metal. In 1921, a host of ateliers were created: bookbinding, originally with master Otto Dorfner and later with Paul Klee; typography, with Lyonel Feininger; furniture, one of the key ateliers, created by Gropius; weaving, established by the weaver Helena Börner who formalised the atelier with a programme for "artisanal training in textile techniques"; and theatre and scenography, with Lothar Schreyer. A style atelier operated from March to June 1922 that incorporated practical and theory components and which addressed principles of artistic composition. The wooden and stone sculpture atelier was created in 1922 by master Josef Hartwig. Mural and stained glass/glass ateliers were created in 1924 and later merged (Costa, 2018).

A highlight was the teaching of colour by the grand master Kandinsky. The Bauhaus accompanied the colour trends of the different painting movements. Analysing contemporary society was crucial to this educational model. In their daily practice, students varied between theoretical reflection and workshop, or atelier, experimentation. Discussion and problem-solving were also used as a way of appealing to creativity.

5. Conclusion

The Bauhaus is an example of how art is far from innocent. It was a liberated art and pedagogical project that upset people and organisations with its totalitarian vision of society, art and politics. Its great merit is in having institutionalised Modernism through its teaching.

It was a total art project. The performing arts, painting, sculpture, design, architecture and decorative arts were studied through dialogue between teachers, masters, students, professionals from different areas and industry, and it created new ideas that marked the 20th century.

The Bauhaus had problems stemming from the mindset of the age, such as the sidelining of women, who were given increasingly limited access to certain areas of work. With time and a willingness to work, women were able to rise up, most notably Marianne Brandt, who became one of the greatest designers of the 20th-century. Those involved in the Bauhaus were disciples of their time: inclusive and aware of change.

In 1795, Friedrich Schiller wrote, "No doubt the artist is the child of his time; but woe to him if he is also its disciple, or even its favourite" (Pereira, 2018). The Bauhaus generation is the ultimate example of this comment by Schiller. The Bauhaus, as a school, formed a generation of artists who marked the 20th century and refused to bend to the will of despots. They were children of their time both in terms of how they were persecuted and what they built. To cite Baudelaire, they represented "a new attitude and awareness of modernity". They marked our daily lives in the smallest ways – such as how we sit, make and drink coffee or tea, listen to music and cook – through design objects and the architecture of the spaces we inhabit. They left their mark on how society thinks about design. In the field of education and the arts, they created new paradigms, and these paradigms spread across the western world.

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The Bauhaus + Ulm

BAUHAUS PAINTING: FROM CRAFT TO AESTHETICS AND FROM REPRESENTATION TO FORMALISM – OR, ABOVE ALL, FORM

Ilídio Salteiro

BAUHAUS PAINTING: FROM CRAFT TO AESTHETICS AND FROM REPRESENTATION TO FORMALISM – OR, ABOVE ALL, FORM

1. Functionality and paralysis

The Bauhaus emerged during a period that we now know separated two horrific wars: World War I from 1914 to 1918 and World War II from 1940 (1939) to 1945. We are aware of this today because time has passed, and it has enabled us to see this strange window of time where the joy of peace brought progress and well-being, and where it was hard to consciously imagine the anguish of uncertainty about the future. This anguish exacerbates the belief in the here and now, as if we could renounce the future. It leads, therefore, to a belief in modernity – the very essence of new truths – substantiated in countless manifestos (Danchev, 2011). Time is emphasised because the ideas are all around, fluttering intangibly, regardless of their originators, and materialising where the circumstances allow. It is a time of the dichotomy of truth, where certainties take hold as space frees itself, spread by countless small groups who attempt to impose order on a generalised chaos.

It was in this context that artists, engineers and artisans came together to found a different art school where their knowledge and processes could unite forces to create objects that contributed, in their functional and aesthetic qualities, to everyone's quality of life. The engineer provides the artist with the technology, and the artist imbues that technology with a rich aesthetic quality which touches the five senses that dominate our sensibility.

A new production process for objects and works was thus pioneered that gave humankind functionally and aesthetically versatile tools which guaranteed a truly democratic quality of life. It was truly democratic because the system of mass, serial and assembly-line production ensured that the creative inventions of artists, designers, architects, artisans and engineers could reach an unlimited number of people with an immeasurably vast number of consumer objects. These objects were the result of studies, research and experimentation undertaken by art schools, which adopted the spirit of the Bauhaus, shared between the scientific guidance of teachers-researchers-artists and students willing to discover new solutions for daily life. The artistic process embraced the methods of industrial production.

The philosophy of design, providing everyone with access to the highest quality in performance and lifestyle, also shows that design makes a notable contribution to democracy. However, knowing that design has an indefinitely high number of fields, aiding as it does the construction of epic buildings and the invention of machines of global destruction, ethics must preside over the search for solutions (Flusser, 1999) or risk the chance of things becoming more complex in the future. I refer here to the new environmental problems, recycling, mobility and sustainability as some of the many issues that must be pondered, discussed and resolved prior to production.

It is also important to reflect on whether objectualism, i.e. formalism per se, should be the absolute gauge by which to assess things and actions or whether, on the contrary, we ought to pay more attention to function and expression, i.e. the response to the problems raised and the communicative dynamics of the object proposed. It should also be made clear, pedagogically, that the concept as a form of rhetoric to influence the other in the present day, superimposing the opinions of some over those of others as surreptitious, sometimes even subliminary, modes of communication, forces us to question whether we are not subject to a dictatorship of forms, products and unsustainable consumption. A dictatorship in which only two of the three 'R's of sustainability – recycle and reuse – are applied, pushing the third – reduce – into the background, as the one that least nurtures our insatiable economic system.

Combining artisanal know-how with industrial expertise, functionality with aesthetics, thus ensuring our quality of life today to overcome anthropometric, psychological, social and cultural constraints, was the contribution made by all those who worked to ensure the success of the Bauhaus teaching methods.

As this new method took hold, research began to filter into art schools, which went from being exclusively places of learning to places of creative thinking where questions were asked to obtain formal answers to the new problems raised by contemporary society.

Workshops became laboratories. Irene Rice Pereira, a painter who embraced the spirit of the Bauhaus from the beginning, established a Design Laboratory in the USA in 1935 after visiting Europe in the early 1930s. This spirit of the Bauhaus spread to many places and infiltrated all art schools, in a variety of ways, but all accepted that technical expertise and the needs of modern industrial society required the aesthetic knowledge of sculptors, painters, designers and architects. The Bauhaus of the Weimar Republic was an art school that had aesthetic, cultural and civilisational ramifications for all art schools everywhere and for universal artistic and cultural heritage when the know-how of the crafts, such as graphics, textiles, glass and steel, were added to

the curricula of art academies and art schools (Argan, 1992).

The names of schools of fine arts clashed with those of the plastic arts, more from the conceptual point of view of a curricular clash than in the sense that they changed their names. These names show the importance of form and the manner in which materials are rendered both in physical/chemical and formal terms, where the composition is the theme itself. In Portugal, the reforms of the 1950s brought technology into the Escola Superior de Belas-Artes de Lisboa – painting, sculpture, plaster, metals, stone and textile technologies – but design, divided into two courses on communication and equipment, only entered at the end of the 1970s.

2. From representation to formalism

There is nothing new in the idea that before it becomes an artwork a painting is merely an object whose form is the result of a thought. But when this begins to take the shape of an assessment process, a new modernity at variance with that of 15th-century western modernity begins to emerge. Decorative functionality, side by side with the "non-decorative" functionality of painting, intertwines with and revitalises other ways of seeing and contributing resolutely to the quality of thought on human values, along with things done on its behalf and placed at its disposal.

Se rappeler qu'un tableau, avant d'être un cheval de bataille, une femme nue ou une quelconque anecdote, est essentiellement une surface plane recouverte de couleurs en un certain ordre assemblées.
(Denis, 2022)

When Maurice Denis (1870–1943) described a painting in 1890 as essentially a flat surface covered in colours that had been assembled in a certain order before being a war horse, a naked woman or a story of any kind, he established a formalist, objectualist vision of painting.
The issue raised by this statement is the form of the object-painting and how each of its parts are structured and relate to the whole (Vallier, 1970).

A horse, a nude woman or a story are just elements used to compose the final form.

Form reduces the artwork to an object, to a formalist objectualism detached from representation, which is then seen as an unmodern and academic process. What matters in formalism is the formal quality of the artwork itself freed of the obligation to respect genres such as portraiture, landscape or still life. This corresponds to an aesthetic approach that is universally socially accepted but highly complex for audiences accustomed to assessing an artwork based on its mimetic and technical qualities (Cruzeiro, 2014).

In painting, the need to create Albertian space, with complicated optical illusions and great depths of field and space, was completely replaced by the purely two-dimensional product of a Cézannian and, Cézanne-inspired, Cubist understanding of the world centred on the realisation that time and space coincide and overlap in the artwork, which is transformed it into an objectual reality.

After five consecutive centuries of study, research and production, understandably on the new ways of perceiving the world by the sciences and humanities, representation lost its value as the focus moved more towards the things that are truly close to us – physics, chemistry, biology – in the form of matter: formless matter, structured by molecules and cells which not only give our bodies substance but also art in general and painting in particular. The substance of a painting was seen as having expressive meaning as much for the wavelength it emitted as its textural values.

As such, representation as a factor in the qualitative assessment of an artwork's genius declined as the compositional aspects of the structural elements of the plastic language grew in importance in an artwork's final construction, highlighting the importance of the compositional values as a whole. The composition overrode representation as a factor in assessing the quality of the forms.

Les Demoiselles d'Avignon by Pablo Picasso (1881–1973), painted in 1908 (1907), is merely an object that announces the break with representational criteria and experiments with new structural ways of composing materials on a plane. Picasso and George Braque (1882–1963) later used direct observation at L'Estaque in Provence as a pretext for building, structuring and composing – in other words, for exhibiting the essential formal aspects of an image, such as colour, plane and line, in a painting. This constituted the victory of form and its composition over representation, i.e. over the criteria of assessment based on similarity, likeness and illusionism.

The structural elements of plastic language triumphed as the only ones capable of removing representation as an avoidable distraction, as an element that diverted the gaze from the artwork itself. With Cubism, the doors were thrown wide open to a vast array of paintings in the 20th century whose underlying principle was abstraction.

The abstract art of Wassily Kandinsky (1866–1944) is heavily underpinned by the spiritual dimension of music – on the scales, values, rhythms, spaces, i.e. on the composition – as a methodology to organise the space of the painting and art in general.

In 1910, Kandinsky published *Concerning the Spiritual in Art* (1977), a reflection on the art of his age which emphasised that it is both the product of its time and the seed of future times, emphasising the conceptual dimensions arising from the idea of visual and musical composition. In 1926, while working full time as a professor at the Bauhaus, he reinforced the idea of the physical quality of the artwork and the way in which its elements are ordered within it in *Point and Line to Plane* (1979).

Between these two books, Kandinsky effectively projected the two-dimensional in art: one dimension reserved for the dynamics of the different levels of awareness of the feelings and emotions and the other reserved for the pure physicality of things and objects. Together, they create the form, whose aim is to become a work of art.

In 1929, when René Magritte (1898–1967) asserted that a pipe was not a pipe, he was poking a finger at art itself. The idea was to provoke, compelling us to ignore the figurative meaning and instead focus on the meaning of the assertion. The work examines formal values, and even if we can see the evidence of a form of pipe, what we really see is a relationship between the figure and the background, a contrast between the figurative and the abstract, an unsettling denial, and then the outlines, contrasts and total and accepted absence of depth of field.

When a pipe is not a pipe (Magritte, *La trahison des images – Ceci n'est pas une pipe*, 1929) and when Denis says a horse is not a horse, a nude woman not a nude woman or a story not a story, the compositional aspects and structural elements of visual art are reinforced. These concepts form the pretext for the countless radical compositional adventures in which the free and individual expression of thought on nature and art triumphed.
An individual expression that was exalted in the 20th century, when democracy led us to believe that we could all be artists, when it gave us the chance to sign or mark our cultural or artistic work, via the now institutionally established means of copyright, regardless of the commissions or acquisitions process. We inherited a high degree of democracy from the 20th century that turned us all into artists, as people capable of being in the realm of sensibility (the five senses).

In addition to the mechanisms intrinsic to an object's functioning, its form possesses an aesthetic dimension that ensures and cultivates collective sensibility while also asking to be used, characterising and defining the profile of its patrons-cum-users.

3. Place of research

Motivated by the ancient science of anthropometry (from the Greek ἄνθρωπος, *anthropos*, or "human", and μέτρον, *metron*, or "measurement"), and the myriad tracts attempting to establish standard anatomical proportions, and by the need to make objects on a human scale, at a time when architectural and urban reconstruction was essential, architecture had much to contribute in this field. The Modulor by Le Corbusier (1887–1965), from 1948 and 1953, stands out as an example of this objective and the active attempt to solve construction problems, amid the political circumstances and new modernist technologies, through the study and research of human needs.

Just as art must be human, so too design, both of which celebrate the humanist influence. In this post-Bauhaus, post-World War II period, victory belonged to the humanist values that came to the fore in the 15th century and were carried through to the 20th. Art and design was for everyone, in the aim of a better life, both from a practical and functional perspective and an aesthetic, poetic and ethical one too.

Work undertaken in the fields of art and design are always research for, on or via art. The artwork itself, as form, is the conclusive result of the research conducted before it existed.
The artwork is the question asked anew, the question constantly re-examined.

There are stages of gathering, cataloguing, testing and executing in each of the countless areas of artistic activity. This activity always requires a workshop, atelier, studio, lab, factory or company – similar, very special spaces where creative and/or artistic activity is celebrated through the "appearance" of things, objects, forms and artworks undergoing constant renewal.

The founders-artists of the Bauhaus realised the importance of research and created a school that was like a "house under construction" which was openly receptive to new paradigms of thinking (Droste, 2006). A space for experimenting with solutions was created to respond to the questions/needs of the spirit of ideas, of the common everyday needs ranging from a simple chair to a simple painting, with no end in view except that of formal speculation.

The Bauhaus (Weimar, Dessau, Berlin, 1919–1922–1932–1933) was a place of research where formalism was at the fore, seeking to instill objects with the spirit of universality. This was achieved by combining technology and art via technical and artisanal know-how allied to an aesthetic sensibility that was simultaneously rational and intuitive.

... ART and DESIGN are concepts profoundly linked to human existence. ART and DESIGN assume the production of artefacts and the intervention of INSTINCT and REASON...
(Silva, 1979)

The Bauhaus was a school and a project created by Walter Groupius to which many artists contributed, prominent among which were painters such as Wassily Kandisky, Paul Klee and Oscar Schlemmer.

A movement developed around the school which many other artists who became universal cultural reference points participated in. The Bauhaus school continues to be important today and to impact upon many architects, designers, painters and sculptors trained in the principles of the 1919 manifesto (Gropius, 1919). They tied their art and design work to these principles, as a

mission and pedagogical structure, located far outside the academic system. Lying between design and manufacture, concept and mastery of execution, it juxtaposed aspiring architects, urbanists and decorators with artisans wishing to ennoble the work of manipulating and transforming materials into objects of functional use.

To achieve its goals, the visionary spirit of the school's founders was important. Their work was based on the expression of rational and formalist thought that directly interlinked form and function with aesthetics in a context of creative freedom and individuality, where their conclusions can only be perceived through the plasticity of the lines, textures and colours.

The 1919 manifesto set out the considerations on art and the studio, and how those involved – artists and artisans – ought to be exclusively focused on social progress and adapted to the productive processes of the modern economic system.

... Architects, sculptors, painters, we must all turn to the crafts! Art is not a profession. There is no essential difference between the artist and the craftsman. The artist is an exalted craftsman ...
(Gropius, 1919)

Most of the work produced by the Bauhaus was architecture, furniture and product design, alongside painting, sculpture and drawing. But in the case of these latter categories, it was in the field of pure research, in terms of experiments with purely aesthetic solutions.

However, the school's curriculum focused on resolving the problems of the new forms of everyday life.

The Bauhaus arose out of an idea to merge a school of fine arts with a school of arts and crafts, both struggling due to the difficulties of the immediate post-World War I period. The initiative was headed by Walter Gropius (1883–1969), author of the 1919 Bauhaus Manifesto and the first of its founders. **Gropius** was a German architect who left an indelible mark on the arts in the first half of the 20th century.

However, many others became emblematic figures in this important project as co-founders and contributors. **Marcel Breuer** (1902–1981) was a Hungarian designer and architect who heavily influenced the modern art movement and was known for a style that emphasised the modesty of modular structures and simple forms. **Dörte Helm** (1898–1941) was a German painter of graphics and textiles, and one of the few women in this group whose knowledge impacted on the decorative (applied) and graphic arts. **Theodor Bogler** (1897–1968) was a German designer and ceramicist. **Wilhelm Wagenfeld** (1900–1990) was an industrial designer who heavily influenced modernism. **Benita Koch-Otte** (1892–1976) was a German textile painter. **Josef Albers** (1888–1976) was a German painter who influenced the art world as a researcher and teacher, distinguishing himself very particularly for his study on colour and painting techniques and his emphasis on optical effects, for which he became regarded as one of the founders of Optical art, or Op art. **Lotte Stam-Beese** (1903–1988) was a Dutch architect and urbanist who made a major contribution to the design of residential areas in Rotterdam in the post-war era. **Anni Albers** (1899–1994) was a painter who specialised in textiles and a researcher of art and lithography who marked the decorative arts and design through her creations and teaching, particularly post-Bauhaus at the Black Mountain College, founded in the same year (1933) that the Bauhaus was closed in Berlin by the Nazi regime. **Alma Siedhoff-Buscher** (1899–1944) was a German designer who stood out for creating furniture and children's toys in geometric forms. **Mart Stam** (1899–1986) was a Dutch architect and urbanist. **Ludwig Mies van der Rohe** (1886–1969) was a German architect who founded modern architecture and was known for his emblematic architectural structures, such as the German Pavilion at the 1929 International Exposition in Barcelona and the Seagram Building in New York.

4. The Painters of the Bauhaus

Many "artists and artisans" worked at the Bauhaus on the production side. Among those who worked on the painting side, I will mention some of those I consider most important for the impact their work and thinking had on the deeper art world.

The painters of the Bauhaus were extremely influential, entrenching their aims and educational methods in art schools all around the world for decades. Of the painters who had the greatest influence, Wassily Kandinsky and Paul Klee stand out, in addition to Lyonel Feininger, Oskar Schlemmer and Georg Muche.

These painters, representatives of modernism, were assumedly formalist, focusing on the plasticity of the materials for the benefit of modern living, a fact that had been foreseen in sociological and expressive circles since the 19th century as a natural consequence of the paradigm shift ushered in by the industrial revolution. In 1863, Baudelaire published the essay "The Painter of Modern Life" about Monsieur G. (Constantin Guys), a seminal work for modern approaches to literature and art
(Baudelaire, 1941)

Klee (1879–1940) taught glass and textile painting while producing notebooks on art pedagogy, focusing his methodology on exercises based on simple forms and systematised colours according to the colour wheel. These planners and other theoretical texts were published in a book containing his notes on the key elements of the theory of forms and the constructing of planes from his classes and exercises at the Bauhaus between 1921 and 1922. These include pedagogical explanations, analyses of charts, sketches and schematic visual and graphic descriptions that accompany the text and contribute to the absolute clarity of the book as a whole, demonstrating a close relationship between theoretical and creative thought. Painting, in his view, was about developing pure forms on a canvas and establishing Constructivist relationships that unified them into a whole through colour.

Les arts plastiques ne commencent jamais avec un sentiment poétique ou une idée, mais avec la construction d'une ou plusieurs figures, avec l'action d'accorder quelques couleurs et quelques valeurs.
(Klee, 1980)

Klee's work centred on drawing and painting, and traversed many of the modernist concepts of the first half of the century, from Expressionism and Cubism to Surrealism.

The work of Kandinsky (1866–1944) at the Bauhaus (1922–1933) included a system of art production, the teaching of analytical drawing and the writing, based on his experiences, of important books such as *Point and Line to Plane* and *Concerning the Spiritual in Art*. Both remain benchmarks for art students today and part of any reading list aimed at understanding what transpires in the space where art is produced: the studio.

In *Concerning the Spiritual in Art*, Kandinsky notes that the artist is the hand that, through the expression of touch, calls forth the vibrations of the soul in response to an inner need. These principles were and continue to be essential for the development of a person's self-identity and the space for it to express itself in. In 1910, the spiritual in art helped to identify a work's conceptual dimension that was an essential component in all art when speaking of spirituality, or non-physical things. In 1926, *Point and Line to Plane* emphasised the artwork's physicality and constructive dimension. These two publications structured the Bauhaus based around the artistic experience, education and research, providing a constant contribution to the understanding of art and design

Schlemmer (1888–1943) was the coordinator of the mural painting, sculpture and theatre studio. As a master of form, his own painting adhered to a geometrically synthesised human and spatial figuration with Cubist overtones and a clear formalist layout based around the golden number.
In performance and theatre, one of his most important works was *Triadisches Ballett* (Stuttgart, 1922), a ballet which defined its era and splendidly expressed the spirit of the Bauhaus. The way in which the geometric forms, represented by real people, perform this ballet of 3 acts and 3 dancers make it very similar to a living painting, structured by the number 3, based upon the convergence of painting, sculpture, music and dance.

In addition to being a painter, Feininger (1871–1956) was also a draughtsman, comic book designer, teacher, graphic artist, photographer and illustrator.
He was appointed a member of the Bauhaus by Walter Gropius in 1919, where he remained until 1932 and where he ran printing workshops. A Futurist – his art work was considered degenerate by the Nazis – his paintings were highly Expressionist, marked by lines of tension that engender a spatial and urban figuration, emphasising movement through the constant use of repetition and angled forms.

Itten (1888–1967) was a painter, professor and researcher who was highly active in the early stages of the Bauhaus. He was one of its most important figures, directly influencing the workshops, organisation and structure of the courses. His book *The Art of Colour*, which was published later in 1960, was the product of a great deal of research and experimentation with his students. It is still a universal reference book today for anyone wishing to study colour from a theoretical and compositional perspective (Itten, 1973).

Moholy-Nagy (1895–1946) was a Hungarian painter who allied a highly Constructivist style with a Futurist receptiveness of the relationship between art and technology. His artworks predominantly consist of simple, regular or irregular geometric forms (lines, points and polygons) with luminous effects of light and shadow created by glazing or overlapping.
His work, based on graphic and pictorial compositions, is highly diverse, using various modes of expression in painting, drawing, photography, sculpture, theatre and films created with the shadows cast by his Light Space Modulator (1922–1930)

Muche (1895–1987) was above all a painter of abstract compositional forms consisting of overlapping and intertwining planes, in a style also common to Futurism. The tension, energy and weight, and the almost rending supporting plane are characteristics glimpsed in his paintings. This way of seeing art in terms of its relationship with technology and the modern way of life was the reason why Gropius invited him to teach at the Weimar Bauhaus in 1919.

Klee, Kandinsky, Schlemmer, Feininger, Itten, Moholy-Nagy and Muche are just some of the many painters who worked at the Bauhaus as professors/artists/researchers and thus made an extraordinary contribution to turning art academies into universities. In other words, they made a contribution to removing the lingering conventional paradigms and thus transformed the educational space at the higher level into a place for debate and constant questioning.

The work of these painters indelibly marked the panorama of universal culture. In addition to corresponding to the "form" these artists aimed for, it also corresponded to constant experiments on the relations of balance between proportion and harmony in nature and life.

5. Sustainability

The number of objects produced by humans is immeasurable. When we

compare the remains of objects from past civilisations with those of today, the difference is enormous. People three thousand years ago lived with very few “things” compared to the “products” that we now see and have at our disposal in any store or supermarket.

This immense quantity of objects facilitates our lives and satisfies the desires and needs of democratic society in which the goal is to protect the quality of everyone’s life.

The quality of these objects merges with need, utility and functionality. Form merges with function, as if one were text and the other context, or as if one were form and the other content; or even as if one were figure and the other background. All of this fulfils the greater goal of being a harmonious, balanced and beautiful whole.

Objects made today are fascinating for their beauty and formal balance in a context of design-led industrial production. Today, in the 21st century, industry is being rethought by applying new principles such as sustainability and the re-using, recycling and reducing of waste.

Industrial activity disciplined by design’s creative processes exists to fulfil the goal of reproducibility. This is very different from artistic activity which aims to create unique objects.

In this aspect, what came after the Bauhaus, such as the Ulm School of Design, also helped to democratise design, particularly with more technical methods and subjects with more scientific content. The initial team of professors was practically all drawn from the Bauhaus: Josef Albers, Walter Peterhans, Helene Nonné-Schmidt and, of course, Max Bill, its first director. Heavily art-based at first, these influences soon changed in favour of more technical training.

This issue was addressed by Walter Benjamin in “The Work of Art in the Age of its Technological Reproducibility”. In this essay, he talks about the cult value associated with the aura of the art object and the exhibition value associated with an idea of cultural industry, originating in the 1920s, which due to a near-infinite reproducibility – more so today than in the era in which this essay was written – dilutes the uniqueness of the artwork (Benjamin, 2008).

In fact, almost one hundred years after Benjamin wrote his essay, we can see, within the contemporary art world, that despite the uniqueness of the unique art object, it adheres to production processes that use multiplying technology and industrial resources. Very rational and objective behaviour – the contemporary way of producing art – is accepted in which the exhibition value, i.e. the value of money, is the only judge of quality.

After Giotto, determining the value of an artwork was based on the Aristotelian idea of mimesis, grounded on the capacity to copy, reproduce or represent nature. In the 20th century, and very specifically within this framework of the Bauhaus painters, the triumph of form over representation resulted in the value of art becoming dependent on its aura, plus its critical, aesthetic or philosophical contextualisation. But in the 21st century, neither representation nor the plastic quality of the form are regarded as sufficient to define the value of art, as this value is reduced to the financial value itself or, in other words, to the value of the brands as a factor in social prestige and the power of some over others. The use or possession of an expensive brand confers prestige and corresponds to a social validation commonly accepted by all.

At the start of the 20th century, when abstraction came to the fore, the Bauhaus marked this triumph of form over representation. And its painters, through their artworks, accentuated this extremely positive and enriching aspect in the context of their contemporary era. In that arena, research into the forms which explicitly simplify and show the possible syntheses of nature pushed art academies into becoming schools, universities and research centres. The responsibility and merit of the founders of this modern principle affected all art education, be it the works produced or the research and thought published. Kandinsky’s work, both pictorial and written, is on all art students’ reading lists. At the Escola superior de Belas Artes de Lisboa, the design courses first emerged officially in 1979, but had been widely discussed since 1975, as seen in essays in the magazine *Arte Opinião* (Silva, 1979).

In conclusion, because of the Bauhaus, industry could no longer exclude design as an essential resource, while also incentivising the use of new art methodologies. Conceptually, when representation succumbed to the primacy of objectualism, formalism and the plasticity of the materials and instruments, it was a triumph for aesthetics, philosophy and thought – i.e. sensibility. Attributing value to an artwork became more about its expressive value than technical dexterity. But, above all, the Bauhaus and design made a major contribution to our well-being and, subsequently, to democracy as we have known it since 1945.

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The Bauhaus + Ulm

THE “NEW TYPOGRAPHY” AND GRAPHIC DESIGN AT THE BAUHAUS (WEIMAR-DESSAU)

Sofia Rodrigues

THE “NEW TYPOGRAPHY” AND GRAPHIC DESIGN AT THE BAUHAUS (WEIMAR-DESSAU)

1. Introduction

Founded in 1919 by the architect Walter Gropius, in the Weimar Republic, the *Staatliche Bauhaus Weimar* is the result of the union of the “Grand -Ducal Saxon Academy of Art with the former Grand-Ducal Saxon School of Arts and Crafts in conjunction with a newly affiliated department of architecture” (Gropius [1919] 1969, 32).

In the manifesto-programme signed by Gropius, the school’s eminently practical character and the united spirit of the arts and crafts that would guide it stands out. One of the fundamental principles of the Bauhaus was the focus on workshop training as the basis of the artistic production process: “The school is the servant of the workshop, and will one day be absorbed in it” (Gropius [1919] 1969, 32). Therefore, experimentation, creativity and the individual freedom associated with the development of manual skills and the “strict study discipline” (Gropius [1919] 1969, 32) was privileged.

The school's teaching included architecture, painting, sculpture and “all branches of the crafts”. Students studied a craft, drawing and painting, as well as science and theory. From the range of available crafts, the most oriented to the graphic arts (or to a graphic proto-design), were intended for the training of “etchers, wood engravers, lithographers, art printers, enchasers”. Training in drawing and painting covered activities as varied as freehand drawing, model and landscape drawing, construction and projection drawing, composition, *lettering*, execution of murals and, in a more project-oriented direction, the design of ornaments, exteriors and interiors, furniture and practical articles. Training in science and theory extended to art history, anatomy, science of materials, physics, chemistry, and colour theory, among other subject areas.

Teaching was divided into three levels of learning: courses for apprentices, journeymen and junior masters.

In January 1921, the Bauhaus published a pamphlet with its statutes, from which a summarised version of its teaching plan stands out, and which would remain unchanged until 1925. This document provides some relevant information about the organization and operation of the school. In particular, it clarifies that apprentices of any age or gender were admitted, “whose talent and previous education are deemed sufficient by the Council of Masters, and as far as space permits.” (*Statutes* [1921] 1969, 44) The analysis of the portfolio and the Curriculum Vitae were two essential criteria in the ranking of candidates. Candidates were admitted in a 6-month trial period, which could be avoided “only in exceptional cases of special talent, artistic maturity, and personal knowledge.” (*Statutes* [1921] 1969, 44) During this period, candidates were required to attend the Preliminary Course, dedicated to the elementary teaching of form, and a craft workshop, for the study and exploration of materials. Final admission to the school was dependent on the completion of this training and the quality of the results obtained. After the approval of the Council of Masters (the school’s scientific and educational council, consisting of the Director and elected masters) the student could finally choose a workshop of his choice and a master who would play the role of artistic tutor. Thus, one of the main teaching foundations of the school would be established: “every apprentice and journeyman studies with two masters at one and the same time: one master craftsman and one master of form.” (*Statutes* [1921] 1969, 45)

The Bauhaus curriculum presents few changes compared to that of the founding manifesto. The choice of graphic crafts is now directed to two distinct areas: art printers (etchers, wood engravers, lithographers) and bookbinders, demonstrating that the means of reproduction, especially regarding image, and the most decorative elements of the book, were enforced on the school's graphic teaching concerns. The education aimed at the principles of form dealt with: “a) study of elementary materials; b) nature study; c) instruction in design (drawing, painting, modelling, building), study of elementary forms, design of surface, body and space, instruction in composition; d) technical drawing (instruction in projection and construction drawing) and building of models of all three-dimensional structures (objects of daily use, furniture, rooms, buildings).” (*Statutes* [1921] 1969, 45) The curriculum also envisaged the teaching of complementary themes, such as the “study of materials and tools”, the “physical and chemical theory of colour”, management principles (“basic elements of bookkeeping, contract making, price calculating”) and lectures in the most varied artistic and scientific subjects.

After the painter Lyonel Feininger and the sculptor Gerhard Marcks, the painter Johannes Itten would be the third teacher to enter the Bauhaus in 1919. In the book *Design and Form*, Itten recounts his educational strategies in the Preliminary Course, intended essentially to “liberate the creative forces and, thereby, the artistic talents of the students.” (Itten 1975, 8) Itten proposed to develop the students' imagination, creativity, and expressiveness in search of original and “genuine” results. The teaching consisted in learning the most fundamental principles

of visual communication, such as the study of colour theory and composition, and practical exercises in exploring forms, textures and materials.
Influenced by eastern philosophy and Persian Zoroastrianism, Itten began his classes with breathing, relaxation and concentration exercises designed to prepare the body and mind for the creative process.
The unusual and bizarre character of his educational methods, the bet on an expressionist orientation marked by artisanal know-how and a firm defence of "art for art's sake" began to create a gap between Itten and Gropius, approximately, from 1922.

2. The change in educational guidance at Bauhaus

At the time, in Germany, the influence of the first vanguards' movements took on an increasing preponderance. Its capital, Berlin, was an bustling centre of Dadaism and Constructivism in Europe. The economic, social and political crisis that hit the post-World War I Weimar Republic catalysed the Dadaist subversive spirit, evident in publications such as *Der Dada*, published by Raoul Hausmann, John Heartfield and George Grosz or *Dada Almanach*, edited by Richard Huelsenbeck, founder of the *Club Dada*.

The accession of certain Dadaists, such as Heartfield and Grosz, to the German Communist Party aroused interest in the 1917 Bolshevik revolution and Russian Constructivism. One of the authors responsible for spreading the constructivist idea in Germany would be Theo van Doesburg, founder of the *De Stijl* movement. With the intention of spreading *De Stijl*'s philosophy throughout Europe, van Doesburg travels to Berlin in 1920, where he becomes acquainted with Walter Gropius. Probably expecting to be invited to teach at the Bauhaus – which never came to fruition – van Doesburg settles in Weimar in April 1921 and establishes several activities: he creates a *studio*, gives lectures, teaches a course on the foundations of *De Stijl*, between March and July 1922, and organizes the Congress of Constructivists and Dadaists, which took place on 25 and 26 September.

The dissemination of *De Stijl*'s ideals, based on the creation of a universal art, with a purist aesthetic, guided by abstract geometry and integrating the potentialities of mechanized production, had its effects on the Bauhaus community. Thus, Van Doesburg began a real propaganda campaign against "the romantic and nostalgic tendencies" (Margolin 1997, 47) that he had observed at the Bauhaus, undermining the spirit of support and cohesion which had been established between Gropius and Itten and between Itten and his students.

In an official circular addressed to the masters of the Bauhaus, in February 1922, Gropius tried to justify his vision for the school, founded, increasingly, on an approximation of art to industry, in clear contrast to Itten's ideas:

Recently, Master Itten demanded from us a decision to produce individual pieces of work in complete contrast to the economically oriented outside world or to seek contact with industry. It is here, in this method of formulating the question I believe, that the big unknown that needs to be solved is hidden. Let me at once clarify this: I seek unity in the fusion, not in the separation of these ways of life.
(Gropius [1922] 1969, 51)

Gropius moved away from a certain medieval guild spirit that involved advocating the union of arts and crafts in the founding Bauhaus manifesto, by stating that the "creative process of design as an indivisible whole" (Gropius [1922] 1969, 51) is not incompatible with mechanized production. The future of the Bauhaus was to create prototypes in its workshops that could be produced industrially, which would also be a way to creatively feed the industry.

One of the clear signs of the upcoming change that would come to the educational orientation of the school was the transformation that its logo underwent. In 1922, Oscar Schlemmer drew a logo with geometric lines and a *lettering* of purified forms that established a definitive cut with the graphic symbol of a medieval tone, hardly legible, which was in force until then, a "probable creation of the students J. Auerbach and Y. Blüther" (Rodrigues 1989, 57).

2.1 László Moholy-Nagy and the "new typography"

Born in Bácsborsód, Hungary, Moholy-Nagy settles in Berlin in the early 1920s at the age of 25. His stay in Berlin would be marked, essentially, by the adoption of Dadaist and constructivist influences in search of an abstract language and formal purification. Although his work is mainly pictorial, Moholy-Nagy also develops several metal sculptures, such as the *Nikel Construction*, which assimilates the principles of the "The Realistic Manifesto", by Naum Gabo and Antoine Pevsner. Exhibited in the collective exhibition he holds alongside László Péri in the gallery of *Der Sturm* magazine in Berlin, in 1922, it would be precisely these sculptures that would grant Moholy-Nagy the invitation by Walter Gropius to direct the Bauhaus Metal Workshop (Passuth 1985, 30).

The differences between Gropius and Itten regarding the school's educational orientation led Itten to leave the Bauhaus in March 1923.
The "universalist" period, as the painter would designate his time at the Bauhaus, had come to an end. With Itten's resignation, Moholy-Nagy takes over the management of the Preliminary Course and the Metal Workshop when he joins the Bauhaus in April 1923.
Moholy-Nagy's entry in the Bauhaus coincides with the organizational period of an exhibition of the school's results, since its foundation, requested by the Thuringian state government, which would take place in Weimar between August 15 and September 30 of that year. Despite his fledgling experience in the field of graphic design, Moholy-Nagy will develop several objects for the exhibition that would dictate the graphic orientation of the Bauhaus and establish a significant milestone in the history of design.

2.1.1 *Staatliches Bauhaus in Weimar 1919-1923*

One of these objects would be the book-album, *Staatliches Bauhaus in Weimar 1919-1923* (State Bauhaus in Weimar 1919-1923), published during the course of the exhibition (Bähr 2019, 29), in an edition of 2600 copies: 2000 in German, 300 in English and 300 in Russian. The book opens with Gropius' text "Idee und Aufbau des Staatlichen Bauhauses" (Idea and Structure of the State Bauhaus) which explains the school's philosophy and its curriculum in detail. Gropius illustrates the text with a circular diagram that summarises the school's structural curriculum. On the outer ring is the Preliminary Course (Vorlehre or Vorkurs) where the basic principles of the three-year workshop course are addressed, followed by the study of materials and form (Formlehre) – until the centre is reached – Building (Bau) –, which Gropius describes in these terms: "The ultimate, if distant, goal of the Bauhaus is the collective work of art – the Building – in which no barriers exist between the structural and the decorative arts." Gropius [1923] 2019, 12) However, the Bauhaus would only have a course in architecture in 1927 (Droste 1994, 134).

In the text, Gropius emphasizes the importance of "training in a craft", clearly assuming what will become the future educational orientation of the school:

The workshop teaching of the Bauhaus is meant to prepare the apprentice for designing for mass production. Starting with the simplest tools and the least complicated jobs, he gradually acquires the ability to master more intricate problems and to work with machinery while, at the same time, retaining an overview of the entire production process from start to finish, unlike the factory worker who never gets beyond the knowledge of his particular phase of the process.
(Gropius [1923] 2019, 14)

Moholy-Nagy, in turn, signed a short manifesto which had nothing to do with his role in the Preliminary Course or the Metal Workshop, entitled "The New Typography", where he lays the groundwork for a true graphic renewal.

The author begins by stating that typography, in contrast to our own handwriting, should aim at communicational clarity. In this sense, the typographic composition of a given message should not be subordinated "into a preconceived framework – for instance, a square." (Moholy-Nagy [1923] 2019, 23) Consequently, Moholy-Nagy appealed to the abandonment of certain conventions of the "classical model", such as the composition of text in quadrangular layouts and the systematic adoption of a symmetrical balance, in favour of a compositional freedom in which the visual form is dictated by its content. This "new language of typography", for its "elasticity" and "variability", required "an *uninhibited* use of all linear directions (therefore not only horizontal articulation)", "all typefaces, type sizes, geometric forms, colours, etc." (Moholy-Nagy [1923] 2019, 23). Moholy-Nagy equally defended the importance of including the objectivity of photography in typographic work.

The design of the book constituted a good rehearsal of the principles of the new typography. The cover, designed by the student, Herbert Bayer, under the guidance of Moholy-Nagy, explored the visual effect of asymmetric colour contrasts, in a composition of sans-serif fonts. Inside, Moholy-Nagy developed a series of strategies aimed at guiding the reader's gaze and optimising the reading process, such as the use of colour contrasts, impactful sans-serif fonts for titles, and visual elements such as bars, lines and dots to emphasize and hierarchize information.
The book was equally converted into a photo-album, by the reduction of the text to the initial notebooks and by the predominance of pages that included photographic images.

2.1.2 *Bauhausbücher*

The 1923 exhibition did not pacify the mounting criticism against the Bauhaus. With the rise of National Socialism, the epithets of "degenerate art" also grew to classify the production of the Bauhaus. In defence of the school, a "Circle of Friends of the Bauhaus" was created in 1924, and which included names such as Peter Behrens, Marc Chagall, Albert Einstein or Josef Hoffmann, among other prominent figures of German, Swiss, Austrian and Polish culture. Moholy-Nagy designs the first brochure for the "Circle" (Rodrigues 1989, 98), using the principles of the new typography, with a structure clearly influenced by *De Stijl*'s modularity, to achieve a clear and functional object in communicational terms.

With the decrease in state financial support, Gropius and all the masters sign a letter of resignation on 26 December 1924 and on 1 April 1925 their contracts were effectively terminated.
After negotiations with the director of the Frankfurt Art School, Dr. Fritz Wichert, who wanted to integrate the Bauhaus into the existing school, Gropius receives a more favourable proposal from the Mayor of Dessau, Dr. Fritz Hesse, who guaranteed that the independence of the Bauhaus would be maintained. From April 1925 onwards, the Bauhaus began its move to Dessau, a quiet, industrialised city in east-central Germany.

In 1923, Gropius and Moholy-Nagy create the *Bauhausbücher* (Bauhaus Books), “a comprehensive series, covering all aspects of intellectual life” (Stein 1969, 130). Although the initial project foresaw the edition of 54 books, 14 volumes were published in total, the last one in 1930. The first eight books, including number eight, *Malerei Photographie Film* (Painting Photography Film) by Lászlo Moholy-Nagy, were published in 1925 by a Munich publisher, Albert Langen Verlag. With the exception of number 5, Piet Mondrian's *Neue Grundbegriffe der Neue Gestaltenden Kunst* (Principles of Neo-Plastic Art), all books were illustrated, some with images in colour. Their prices varied between 3 and 7 RM (Reichsmarks) in the hardcover edition, and between 5 and 9 RM in the clothbound edition. Piet Mondrian's book was the cheapest in both editions and Moholy-Nagy's was the most expensive.

Moholy-Nagy would be responsible for the design of 12 books and 9 *Bauhausbücher* dust jackets (Rodrigues 2022, 102).

Compiled in the summer of 1924 but only published in 1925, Moholy -Nagy's book expands the notion of new typography due to its textual content and design. As the title of the book states, photography is one of the themes addressed throughout the book. For the author, the photographic image conveyed an objective vision, which was opposed to the subjective imaginary perpetrated in pictorial representation. For Moholy-Nagy, photography, through the plasticity of its multiple effects (points of view, magnifications, distortions, etc.) had the potential to “make visible” what escapes the human eye: “i.e., the photographic camera can either complete or supplement our optical instrument, the eye.” (Moholy-Nagy [1925] 1969a, 28)

The book also featured a sub-chapter dedicated to what Moholy-Nagy calls “typophoto,” an important concept to understand the new typography. For Moholy-Nagy, the typophoto, or the articulation of typography with the photographic image, “is the visually most exact rendering of communication” (Moholy-Nagy, [1925] 1969a, 39). According to the author, the association of photography with typography was an absolutely modern strategy to optimize the process of visual communication, in an era marked by the acceleration of the transmission of information and the rise of means that simultaneously stimulate several senses. Common in illustrated newspapers and advertising, the articulation of typography with photography in a design object required photomechanical means of production, such as zincography or electrotype which allowed a compositional freedom that was not in line with the “classical model”, nor with the limitations imposed by the *letterpress*.

In the article “Zeitgemässe Typographie – Ziele, Praxis, Kritik” (Contemporary Typography – Aims, Practice, Criticism), written in 1924 (Stein 1969, 80) and published in January 1925 in the *Gutenberg Festschrift zur Feier des 25 Jährigen Bestehens des Gutenbergmuseum in Mainz* (Gutenberg Festschrift for the Celebration of the 25 Year Existence of the Gutenberg Museum in Mainz), Moholy-Nagy completes the notion of new typography or the “new vision” he proposes for graphic design. Regarding typographic choices, the author makes the following suggestion:

We need, for instance, a standard way of writing, without lower-case and capital letters; letters standard not only in size but also in form. At present time we do not even possess a type-face that is correct in size, is clearly legible and lacking in individual features and that is based on a functional form of visual appearance without distortions and curlicues.
(Moholy-Nagy, [1925] 1985, 295)

Moholy-Nagy laid the groundwork for the creation of an alphabet of simple, standardizable, and with a fewer number of characters, a goal Herbert Bayer would achieve with his Universal Alphabet in 1925.
The ideas advocated by Moholy-Nagy, expressed in the creation of objects such as Bayer's, would lead authors such as Jan Tschichold to defend the hegemony of sans-serif letters in the context of the new typography.

To battle the monotony of contemporary graphic objects, Moholy-Nagy left a series of guidelines for the new typography. In compositional terms, the author bet on the defence of typographic contrasts (empty-full, light-dark, multicoloured-grey, vertical-horizontal, upright-oblique) to structure the layout of information. In order to make the design more legible and objective, other reading aids could be used, such as points, lines and geometric shapes. Finally, in a clear break with the static, centripetal character of the “classical model”, Moholy-Nagy proposed the realisation of a “dynamic-eccentric state of balance”, in which “the eye is gradually led from one point to another, without losing sight of the interdependence of the details” (Moholy-Nagy, [1925] 1985, 295).

All *Bauhausbüchers* exploit, with greater or lesser intensity, the norms established by Moholy-Nagy. As with the photo book *Staatliches Bauhaus in Weimar 1919-1923*, Moholy-Nagy gives the smaller and more portable format of these books the character of a book-album, or a book that is essentially visual, due to the predominance of notebooks dedicated to images. And so, with rare exceptions, the books are divided into two distinct parts: the first with the text and the second with images, in a read-view binomial.

The author's book, *Malerei Photographie Film*, represents a good paradigm of the remaining volumes of the series. Here, the text introduces and guides the interpretation of images. The chapters dedicated to the text also gain a visual quality by adding elements intended to speed up the reading (fonts with different weights and values of black, dots, lines, bars and arrows).

In the final part of the book, Moholy-Nagy puts the materialization of the concept of typophoto into practice in the “Dynamik der Gross-Stadt” (Dynamic of the Metropolis).
The action of this “sketch of a manuscript for a film” takes place in a neoplasticist orthogonal grid, with a simultaneity of episodes, which articulate a panoply of graphic elements of contrasting visual effect (text, images, words, letters, numbers, arrows, etc.). The author thus achieved one of the objectives of the typophoto and the new typography: a balance and an equivalence between text and image, compatible with contemporary means of production, such as photoengraving. By integrating the challenges of technological progress, the new typography met the creative model that Bauhaus intended to establish and disseminate.

3. Dessau and the consolidation of the new typography

With the move to Dessau, the Bauhaus begins a campaign to disseminate its curriculum in local newspapers or printed sheets that preserve the language of the new typography developed by Moholy-Nagy in other advertising objects, such as those made for the dissemination of the *Bauhausbücher*.

In a pamphlet dated November 1925, it is possible to see some differences in the curricular structure of the Dessau school, compared to that which was in force in Weimar. In accordance with a decision made by the Council of Masters, after the departure of Itten (Droste 1994, 140), the Preliminary Course (Vorlehere) would have a duration of 2 semesters. The areas of instruction, now reduced to 5 – wood, metal, colour, fabrics and printing – included the maintenance of a workshop generically dedicated to the production of “books and art prints” (*Bauhaus* [1925] 1969, 107).

When it was founded in 1919, the Bauhaus had the possibility to integrate the printing house of Weimar's former Academy of Fine Arts into its facilities, which allowed it to take advantage of this perfectly equipped workshop, from its origin (Gabet and Monier 2018, 141). The workshop was used to develop students' projects and other marketable work. Under the direction of Lyonel Feininger, who favoured the expressionist way in the Bauhaus, the printing workshop was distinguished by the quality of its prints, in wood engraving, copper plate and lithography, essentially in the production and promotion of the teachers' work, such as Feininger himself, Wassily Kandinsky, Johannes Itten and Oscar Schlemmer, among others.

In Dessau, the workshop takes the direction of a former student, now designated “young master”, Herbert Bayer, who requests the assembly of a fully equipped typographic workshop, which would have a large flatbed press and two small platen presses (Cohen 1984, 200). The workshop that would definitively adopt the designation of “Typography and Publicity Workshop” in 1927 (Gabet and Monier 2018, 141) responded to internal requests from the Bauhaus as well as external orders from customers. The creation, in November 1925, of “Bauhaus GmbH”, a limited company, “to handle the sale of workshop prototypes to industry” (Meggs 1998, 282), would seal the desired connection of the school with the industrial sphere.

After Moholy-Nagy launched the idea in the text “Zeitgemässe Typographie – Ziele, Praxis, Kritik” (Contemporary Typography – Aims, Practice, Criticism), in 1925, at Bayer's suggestion (Bayer [1967] 1984, 353), the Bauhaus began to compose its printed material in non-serif typefaces and in lowercase letters. For Bayer, the defence of the lowercase, in addition to allowing greater speed and economy in the use of characters, was a way to free the typography of an orthographic convention inherited from medieval calligraphy. In his view, the truly functional alphabet is that which reduces the Roman letter to the essence and simplicity of its paradigmatic form.

In September 1925, in the text “bauhaus und typografie” (bauhaus and typography), published in the journal, *Anhaltische Rundschau*, Moholy-Nagy argued that the simplification introduced by the correspondence of a sign to a sound “has consequences in the construction of typewriters and typesetting machines, it saves type and shift keys”. (Moholy-Nagy 1969b, 114-115) Thus, in the graphic production of the Bauhaus, it became usual to find the following explanatory note:

Why do we not capitalize? Because it is an inconsistent use of language to write differently than one speaks. We don't speak any uppercase sounds, which is why we also do not write them. Why use two alphabets to say what you can with just one? Why do we meld two alphabets of completely different characters into one word or sentence and make the text unharmonious? (...)
Also: when it comes to working with typewriters, only using lowercase letters saves us a great deal of time and trouble. The next logical step from here would be to simplify everything further by doing without uppercase letters entirely.
(Gropius and Nagy [1926] 2019, 16).

The measure, seen as an eccentricity, would generate criticism and would later be abandoned. Nevertheless, Bayer took it literally in his proposed Universal Alphabet. As advocated by the spirit of the new typography, Bayer's alphabet was perfectly suited to typesetting machines and new production technologies, due to the standardizable modularity of its geometric elements.

3.1 Bauhaus journal

The *bauhaus* journal was published quarterly between December 1926

and October 1931, in a total of 11 issues. The publication of the first issue coincided with the inauguration of the Dessau Bauhaus building on December 4, 1926. Gropius and Moholy-Nagy share the edition of the first five issues. The first 4 issues are shaped like a folding triptych that, when opened, is 126x297 cm in size. They were free for members of the "Circle of Friends of the Bauhaus" and could be purchased at 60 pfennig each, or in an annual subscription of 2 RM.

Although Moholy-Nagy appears as the "compiler" (the one who brings together the elements and conjugates them) of the first issue, the design of *bauhaus 1* follows the graphic language of the publications he previously designed for the Bauhaus. In the text that introduces the publication, Gropius announces the Bauhaus as an "institute for design" (Gropius [1926] 2019, 13), underlining its connection with industry and commerce. In the spirit of an "artist-engineer", Moholy-Nagy adapts the new typography to the newspaper format to conceive a sober, readable object, structured by the use of a grid of two or three columns, which evokes, albeit in a restrained way, some of the experiences of his typophoto proposal, "Dynamik der Gross-Stadt". The journal is all composed in non-serif fonts and in lowercase letters. Moholy-Nagy also puts into practice his theory of contrasts: the contrast of "empty-full", in the relationship between graphic elements and white space; the contrast of "light-dark" (and various gradations of grey), through the use of various black and white images and fonts with different weights and densities of black; and the contrast of "vertical-horizontal" explored, for example, in the use of bars and the placement of short texts vertically, especially advertising and subtitles, in a purified reminiscence of a common strategy in Dadaist publications.

The fifth volume of the *bauhaus* journal, the last that was edited by Gropius and Moholy-Nagy, is published on February 15, 1928, and adopts, again, the number 1. This issue, compiled by Herbert Bayer, is in the format of a DIN A4-size saddle stitched single volume, which will be maintained until the end of the publication. The use of standardizable formats (DIN) was another of the ambitions of the new typography. Each number now had a cost of 1.20 RM and the annual subscription, 4 RM.

The cover, one of the most paradigmatic of the *bauhaus* journal, features a photomontage signed by Herbert Bayer with an image of *bauhaus 2*, from 1927, with overlapping drawing tools (a set-square and a pencil) and three geometric solids (a pyramid, a sphere and a cube). Symbolically, this image launches the logo Moholy-Nagy created for the *Bauhausverlag*, the publisher of the *Staatliches*, with the three elementary geometric figures – the triangle, the circle and the square – for the three-dimensional space, the central dimension of the Bauhaus: Building (Bau).

Bayer introduces an index, devotes the final pages and the back cover to advertising, abandons the superfluous and proposes a more rigorous use of the grid, for the sake of clarity and functionality, a graphic orientation that would last throughout the publication. The interior, dedicated to the theme of advertising, is practically dominated by Moholy-Nagy's article "fotographie ist lichtgestaltung" (photography is light design), an extension of the *Malerei Photographie Film*, duly illustrated by photographs, photograms and photomontages, which Bayer articulates in a montage that introduces rhythm and dynamism to the pages of the publication.

In the article "typografie und werbsachengestaltung" (typography and advertising design), which closes this issue of the *bauhaus* journal, Bayer showed concern for the proliferation of the "Bauhaus style", a design style that replicates the aesthetics of Bauhaus graphic creations, without meeting the "purposeful use of elements" (Bayer [1928] 2019, 34), or the modernist premise: "form follows function".

With the resignation of Walter Gropius, Moholy-Nagy and Herbert Bayer from the Bauhaus at the end of March 1928, the journal was published by the school's new director, Hannes Mayer, and edited by the Hungarian journalist Ernst Kállai. Joost Schmidt ensures the pagination, maintaining Bayer's heritage. The novelty of Schmidt's design will be the redesign of the cover and the lettering of the publication's name, from volume number 1, of 1929. When architect Ludwig Mies van der Rohe takes over as the school's headmaster, the newspaper loses volume and substance. In 1931, the last three issues were published, each with its distinct editor: *bauhaus 1*, edited by Ludwig Hilberseimer, *bauhaus 2*, by Josef Albers and, finally, *bauhaus 3* by Wassily Kandinsky.

4. Final considerations: the Bauhaus legacy and the new typography

In issue 2/3 of 1928 of the *bauhaus* journal, the first that results from the partnership between Hannes Meyer and Ernst Kállai, the answers given by students to a questionnaire launched by the editors are published in the article "interview mit bauhäuslern" (interview with bauhausians). Max Bill, who joined Dessau's Bauhaus in 1927, is one of the students to answer questions such as: "How did you come to Bauhaus? What was your first impression? Were you disappointed or were your expectations exceeded?/ (...) Where did you learn to see the importance of Bauhaus?/ (...)". To which Max Bill responds:

My impression of Bauhaus was not what I expected, I was disappointed at the beginning, but over time I realized that it gave me exactly what was promised: clarity. (...) I experienced the Bauhaus as larger than in reality: Picasso, Jacobi, Chaplin, Eiffel, Freud, Stravinski, Edison, etc., also belong to Bauhaus in a way. Bauhaus is a spiritual, progressive direction, conviction that could be called religion.
(Bill [1928] 2019, 45-46)

Returning to Zurich, Switzerland, in 1929, and despite his multidisciplinary artistic side, Bill would be one of the designers responsible for the dissemination of the filter of the new Bauhausian typography, which would give rise to the "Swiss Style" or "International Typographic Style". Through the use of the potentialities of the grid (essential to structure the arrangement of information in the three languages spoken in Switzerland) and the exploration of the typophoto suggested by Moholy-Nagy (which translates into a preference for the use of photography, articulated with fonts without serifs and of great formal simplicity, such as Akzidenz Grotesk), the "Swiss Style" would be associated with notions of clarity, objectivity, visual depuration and functionality.

In 1946, when Jan Tschichold began to question the content of his own work, *Die Neue Typographie* (1928), in favour of a return to the traditional "classical model", Max Bill launched an authentic defense of the legitimacy of the new typography as the basis of modern graphic design in the text "Über Typografie" (On Typography). The foundations of the new typography, such as compositions in dynamic equilibrium, gave rise to a "functional" or "organic" typography, as described:

The transformation from the "neue typografie" in 1930 to the functional typography of our day can be seen through a variety of factors: the disappearance of thick rules and lines, large dots, over-sized page numbers and similar attributes – all characteristic and fashionable ornaments of the past. These attributes later proved themselves useful for a time as fine lines in order to order and accent the typeface. All of these elements are unnecessary and superfluous today when the text itself is correctly organized and when the word groups work together with the right proportions. This is not to say that such ornamentation should, in principle, be eliminated. It is generally just as necessary as any other form of ornament and by its omission the typographic text gains in simple spatial excitement and quiet self-same clarity.
(Bill [1946] 1999, 165)

Max Bill would deepen the themes of functionalism and functionalist aesthetics in the "Die gute Form" (Good Design) campaign, which would give rise to a travelling exhibition, inaugurated in 1949, at the Basle Trade Fair. Conceived, designed and organized by Bill, the exhibition followed the "Swiss Style" in its 80 asymmetrical layout panels, with photographic images, essentially of common use objects, associated with short captions.

Max Bill's ideas, especially with regard to product design, would lead Otl Aicher and Inge Schooll to invite him to join the team that would plan the foundation of Hochschule für Gestaltung Ulm (The Ulm School of Design), also known as the acronym HFG. Max Bill "personified the Bauhaus and brought it to Ulm." (Spitz 2002, 77). At its heart was the creation of a "new Bauhaus", not with the intention of mimetically reproducing the Bauhaus model, but to give continuity and development to its legacy. The implementation of design courses and the dedication of the first year of the curricular structure, called *Grundlehre* (fundamentals), to the teaching of "basic concepts of design (...) including model making and techniques of visual rendering, enhancement of visual sensitivity, and experimentation with the basic materials of formal creation" (Lindinger 1991, 33), with objectives very similar to those of the Preliminary Course, were clear examples of the approach to the Bauhaus. Max Bill's invitation, as the first Rector of HFG, to Walter Peterhans, Josef Albers and Helene Nonné-Schmidt, former Bauhaus professors, to teach in the Introductory Course, reiterates the affinity with Bauhaus.

The relationship between art and design, which had always been present at the Bauhaus, and which Max Bill defended, would eventually dictate his departure from HFG in 1956, three years after the school opened. As Otl Aicher justifies, the philosophical and educational orientation of the HFG was intended to be distanced outright from the Bauhaus workshop spirit and to bet on a close connection between design, science and technology:

But Bill had another world of experience as well, for him, art remained what it was, while we began to see it as something endangering design. Design should develop its results from the object. The danger lay in design becoming an applied art and borrowing its solutions from art. Charles Eames's chairs had just become familiar, convincing models for the unity of technology, functionality, and aesthetics. This was design on the basis of the task set, design without formal borrowings from art. Conversely, Rietveld's constructivist chairs were unmasked as Mondrians to sit on, unsuitable art objects with the handicap of trying to be useful.
(Aicher [1987] 2015, 86-87)

At the HFG, the themes inherent to graphic/communication design were addressed in the Visual Communication department, initially named as Visual Design. The department was divided into two distinct nuclei: one that brought together graphic design, typography, photography and exhibition design and another, complementary, aimed at motion pictures and television. The department's functioning assumed the dynamics of a design studio, through the development of projects for external clients:

The department is organized like a graphic studio and undertakes practical commissions. In working with corporations, the aim is to give the corporation an appropriate external image through the design of its forms of communication, from the letterhead and the logo to the stand at a trade fair. Research within the department is directed towards fitting visual statements as closely as possible to what they have to say and giving precision to their meaning. Use is made of recent scientific advances

in perceptual and semantic theory.
(*HFG-Info* [1955] 1991, 134)

The HFG Visual Communication department would be essentially marked for carrying out work oriented towards advertising, corporate image and information design. The rapprochement between design and science was consummated through a pioneering adoption of design methodology, complemented by theoretical notions from a wide range of disciplines, such as semiotics, perception theory and communication theories. The graphic production of the HFG is characterized by a refinement of the functionalism of the "International Typographic Style" in objects of an immaculate depuration and with a universalizing communicational propensity. In practical terms, the works developed at the HFG bet on the application of a fundamental element of the graphic design of the "Swiss Style", inherited from the new typography: the grid. By way of a system of grids, it was possible to achieve the organization, systematization and visual coherence that guided the graphic ideology of the school, as Aicher justifies:

For every possible makeup situation, a system has had to be devised that defines all the elements of the page – line, column, picture, headline, caption, marginals – with such precision that they fit together as interchangeable and endlessly permutable units. The grid format is the framework, and in any combination the individual elements must fill that framework. The arrangement thus defined has economic advantages (rationalization) and provides the basis for a more closely defined aesthetic formulation. First and foremost, the functional requirements of legibility, ease of orientation, and clarity must be satisfied.
(Aicher [1962] 1991, 151)

In a curious note regarding the influence of the Bauhaus in Ulm, one of the "initial rites" of admission of students to the school was the abandonment of capital letters: "Capital letters are a distraction to the hand and the eye. At Ulm they write in lowercase." (Rübenach [1959] 1991, 44) Max Bill and Otl Aicher would perpetuate this option in their writings.

The influence of the Bauhaus and the Ulm school is also noticeable in educational institutions, such as the former School of Fine Arts of Lisbon itself. With the restructuring of artistic education after April 25, 1974, the department of Fine Arts and Design was created, which includes the old Painting and Sculpture Courses and the newly created Communication Design and Equipment Design courses.
In the same way as the Bauhaus and was in force in Ulm until 1962, all courses had a common introductory year, with a similar spirit to that of the *Vorlehre* or the *Grundlehre*. That year included subject areas such as Introduction to Plastic Arts and Design, Drawing, Visual Communication, Descriptive Geometry and Art History.

In terms of design, the example of the need to develop the theoretical dimension of design, evident in the insertion of subject areas such as Design and Project Methodology, Visual Form, Sociology or Psychology stemmed from the HFG. From the Ulm school, a comprehensive concern with communication (and its *modus operandi*) also remains. A concept that, incidentally, will designate the Communication Design course itself.

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The Bauhaus + Ulm

FORM FOLLOWS FUNCTION AND BEYOND – A HUNDRED YEARS' JOURNEY FROM EFFICIENT DESIGN TO DESIGN ECO-EFFICIENCY

Ana Mestre

FORM FOLLOWS FUNCTION AND BEYOND – A HUNDRED YEARS' JOURNEY FROM EFFICIENT DESIGN TO DESIGN ECO-EFFICIENCY

1. Introduction

Arguably, one of the most influential movements in design history was the Staatliches Bauhaus. Founded in 1919 in Weimar, Germany, by architect Walter Gropious, and riding on the culminating wave of dramatic shifts in the socio-cultural, economic, and industry contexts arising from the 2nd Industrial Revolution, the Russian Revolution, and the end of the Great War, the Bauhaus art school provided a holistic approach to the arts and crafts – shifting away from the traditional apprenticeship-based pedagogical perspective to creating professionals who were competent and with comprehensive knowledge in a wide range of artistic disciplines.

This interaction of various disciplines and the exploration of creativity within the scope of rationalism and industrial mass production resulted in the eventual establishment of various principles, which to this day remain fundamental elements of multidisciplinary applied arts fields such as architecture, industrial design, and interior design.

Bauhaus was essentially an embodiment of the modernist principles, building upon the international fine and applied arts contexts that were prevalent in the late 19th and early 20th centuries, including William Morris' Arts & Crafts, Constructivism, and the new Machine Age. One of its fundamental tenets was that artistic vision and the rationality of mass production were not mutually exclusive but could be reconciled and generate a new aesthetic. Yet, functionality took precedence over form, defining the physical characteristics of products, artwork, or buildings.

The new "form follows function" norm widely incorporated then new materials like steel, glass, bakelite, and plywood, and the industry-oriented designs were relatively easy and cheap to manufacture – thereby making them accessible to the public. The clean lines and simple non-ornate forms used in buildings and products make Bauhaus designs recognisable to this day, timeless, and long lasting.

Largely influencing the material culture of the 20th century, and despite disbanding under pressure from the NSDAP in 1933 for not conforming with the new regime's conservative ideals and the left leaning sympathies of its faculty, the early Bauhausian principles survived beyond the 2nd World War, as its ex-faculty spread its functionalist design principles around the globe. The quote "Less is more," adopted in 1947 by architect Ludwig Mies van der Rohe (the last director of Bauhaus) gained prominence, synthesizing not only the late Modernism movement, but also a design philosophy and aesthetics.

In the following decades, in light of new material and production technologies (which democratized design), the rebuilding of the world's economies (which created demand), and the proliferation of globalization (which multiplied demand), a culture of consumerism slowly began to take shape in the Western World, leading to the rise of productivism and commodification, which idealized economic growth above all else.

As successor to Bauhaus, and counting former Bauhaus instructors and students within its faculty, the Hochschule für Gestaltung Ulm (Ulm school of Design), founded in 1953 in Ulm, Germany, by Inge Scholl, Otl Aicher, and Max Bill (first rector and former Bauhaus student), rose to prominence in continuing to develop the holistic pedagogical approach that Bauhaus had laid the foundations of. 'Design' as a field of study was further defined (as opposed to fine arts), but also maintained its multidisciplinary approach, with the designer in the role of coordinator, bridging the gap between scientists, researchers, technicians and engineers, as well as salespeople etc., towards a socially responsible vision of the environment. In this role, and with links to science and technology, awareness, and debate on the environmental responsibilities of the designer also began to proliferate.

While terms like 'sustainability' and 'design for sustainability' were not yet defined in the world of the 1950s and 1960s, Ulm's pedagogical approach – inherited from Bauhaus, integrated concerns about society, optimization of resources and materials in the design, and awareness of the environmental consequences of the contemporary mass production-based economic paradigm.

Ulm´s multidisciplinary and holistic approach remains to this day a core principle of contemporary design thinking, very much necessary to rethink the current (make-use–dispose) production-consumption paradigm, transforming it into one that is inclusive of social needs and social diversity, and one that addresses systemic perspectives on how to build planetary resilience and sustainable future scenarios. Ulm´s multidisciplinary perspective builds on the Bauhausian pluri-artistic fields on art, design, culture and architecture, and which undoubtedly resulted in the very rich and creative cross-disciplinary dialogue, well known characteristics from these two pioneering design schools.

Ulm´s design discourse also served as the very first approach to the "good

design" from the 70's, still seen today as a major design philosophy.

The 1970s coincided with one of the largest energy crises of the 20th century, as well as public acknowledgement of the impacts of greenhouse gas pollution, ozone layer depletion, and the impact of nuclear bomb testing on humans and natural ecosystems such as the oceans. This was the "Pop Culture" decade where consumption was being popularized, but also the decade where concerns with the environmental and societal impacts of the ever growing productivism, commodification, and consumption culture, to which design was significantly contributing, were growing.

Dieter Rams, one of the most influential industrial designers of the second half of the 20th century, and a protégé of the Ulm School of Design, pointed out the "impenetrable confusion of forms, colors, and noises" of modern design. Aware of his role as a designer in the world he was creating, Rams asked, and tentatively answered the question, "Is my design, good design?", proposing ten principles, which he believed to be the most important for design:

Good design is innovative.
Good design makes a product useful.
Good design is aesthetic.
Good design makes a product understandable.
Good design is unobtrusive.
Good design is honest.
Good design is long-lasting.
Good design is thorough down to the last detail.
Good design is environmentally-friendly.
Good design is as little design as possible.

"Good design" could easily be translated to today's concerns as "Design that does good '' – good for the environment, good for the planet, good for society.

With Rams's major contributions to industrial design practice and his growing popularity through the years working for German Braun, these principles became iconic, and have inspired designers across the world, an example of which is arguably the Apple Inc. computer designs.

Founded in 1921 by engineer Max Braun, it was from the 1950s onward that Braun gained worldwide recognition with a great contribution from Dieter Rams, hired as an architect and interior designer for the brand. Two of Braun´s iconic product designs that are "simple, beautiful and built to last" and that changed the way electrical appliances were perceived are the SK 4 Record Player (figure 1) and BRAUN / LE 1 Hi-Fi System (figure 2). Both products are essentialist and designed to last, and are characterized by optimization of materials, optimization of production processes, with modular identifiable components and distinguished materials that facilitate recycling, if desired. These are some of the criteria of a contemporary sustainable design product.

Figure 2 - Braun / Sk 4 Record Player (1956)

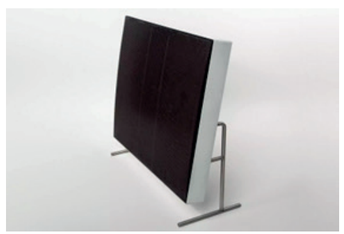

Figure 3 - Braun / Le 1 Hi-Fi System (1959)

One hundred years since its foundation, perhaps the most recognizable attribute of Bauhaus and its successor Ulm, is its revolutionary stance in assimilating the high cultural and industrial zeitgeist. In combination with its rational, function-oriented attitude towards design, and its attempts to reconcile art and mass production, future iterations of the movement will undoubtedly reflect the same revolutionary stance in facing the contemporary challenges of sustainability, and the balance between its economic, social, and environmental pillars.

2. Designing "more from Less" – the urgency of increasing design eco-efficiency

The emerging environmental issues and the energy crises of the 1970s brought with them an increased awareness of and concern with the topic, at the time recognized mostly in the form of the greenhouse effect, plastic pollution, and the hole in the ozone layer.

A century after philosopher Karl Marx predicted the impacts that industrialization would have on the environment, and scientists such as Eunice Foote, John Tyndall, and Svante Arrhenius wrote about the impacts of CO2 on global warming, authors such as Richard Buckminster Fuller, Victor Papanek, and Gui Bonsiepe alluded to design's responsibility in environmental degradation stemming from the design and mass production of products in an ever-increasingly consumption-oriented society.

In the 1987 report Our Common Future, the World Commission on Environment and Development, a sub-organization of the United Nations, presented the eponymous definition of Sustainable Development: development that considers the balance between economic prosperity, environmental protection, and social equity, without compromising the ability of future generations to meet their own needs.

As a consequence, and since the 1980s, researchers in the field of environmental sciences, engineering, and design have proposed strategies to 'dematerialize' the consumer society in order to direct it towards the objectives of Sustainable Development.

Of the various concepts and strategies developed over the years, the eco-efficiency concept stands out, which presupposes a simple idea: 'to produce more from less', where less means the rational use of resources, less production of emissions and waste, and lower production costs – echoing the famous "less is more" quote of the last Bauhaus director, Mies van Der Rohe, albeit reflecting the different concerns of a different age.

It became clear that design could make an essential contribution to decreasing the environmental impact of products, accompanied by an increase in its social value, in a context where it is estimated that 75% of the environmental impacts of a product over the course of its entire lifecycle is determined in the design and product development phase. This is the stage in which materials are chosen, production methods are considered, how much energy the product will consume, and which strategies will facilitate recycling or disposal are determined.

Over the last four decades, the terminology related to the incorporation of environmental considerations in design have proliferated: 'green design', 'design for environment', 'life cycle design', 'ecodesign', 'design for sustainability' and 'circular design'. The transition from 'eco' to 'sustainable' to 'circular' presents an evolutionary perspective of the concepts considered – or even differences in the approach to the problem by the different disciplines involved in this discussion, namely environmental sciences, environmental engineering, and design.

In recent years, three concepts have become more prominent over the others: 'ecodesign', 'design for sustainability' and 'circular design', with the latter two having broader goals compared to the first.

Ecodesign has been largely tested and implemented since the 1990s, with large industrial design multinationals such as Koninklijke Philips N.V. adopting its win-win perspective. Here 'eco' relates to both ecological and economic terms, through the search for options that reduce the environmental impacts of products throughout their life cycle, while offering opportunities for economic and financial benefit, mostly derived from cost reductions.

Ecodesign considers that all design decisions have implications for the entire life cycle of a product, from 'cradle' to 'grave', or ideally, from 'cradle' to 'cradle' (where materials that constitute a product can be disassembled and recycled/reused) and proposes several life cycle design strategies, that follow the 'product life cycle' phases of a product and improve their eco-efficiency.

The 'product life cycle assessment' is indispensable to ecodesign, analyzing the environmental problems related to the product, making it possible, for example, to determine at which stage energy consumption could be more significant (e.g. during the production process or during the use stage), or whether material recycling at the end of the product's life is possible or impossible due to design and dismantling difficulties and the separability of materials into their basic components.

Design for sustainability embodies not only the Ecodesign strategies but develops further the 'dematerialization' scenarios of sustainability through the development of integrated product-service solutions that promote and generalize sustainable lifestyles and behavioral patterns, while considering their environmental, economic, and social aspects. It regards individual products as part of a larger product-service system, which overall has an impact on the environment, the economy, and the social context, and proposes strategies to further increase the level of eco-efficiency through consideration for the whole context in which the product-services will be developed and used.

In this context there is an urgent need to find technological and material solutions that are characterized by their beneficial aspects for society – cleaner technologies that integrate local and global environmental issues, are socially more fair, and favor local economies, where the sustainable technologies emerge as determinants with regard to the 17 United Nations Sustainable Development goals.

In recent years, the circular economy has become a high priority discussion in business, academic, and political contexts, especially in Europe; aiming the transition from a traditional linear to a circular economy.

The concept of the circular economy builds upon the sustainability principles of industry and design, and brings them to a macro systems level – an economy. Renewable energy, decreasing transport distances and volumes and weight, eschewing (where possible) adhesives and harmful chemicals, and designing with maintenance and recyclability in mind are fundamental. Materials are categorized into nutrients: biological and technical – the former able to be absorbed by the biosphere, and the latter needing to be recycled/reused as much and as cost effective as possible. Eventually, the notion of the 'product' is assumed as a 'function' – a service to fulfill a need, and the responsibility at the end-of-life of a product lies with the producer, rather than the consumer.

In 2015, the European Commission launched its first Action Plan for the Circular Economy policy package, which approaches the transition to a circular economy through four strategic levels: (i) *production*, (ii) *consumption*, (iii) *waste management*, (iv) *secondary raw materials*, building on previous policy tools like the EC Ecodesign Directive, and indicating a revival in political will

concerning a systematic shift towards sustainable development, however, practical approaches and applied cases to support the required change in the existing economic paradigm are needed in order to succeed in the transition from a linear to a circular economy.

In 2020, the European Green Deal was approved by the European Parliament, comprising a roadmap of policies and legislative changes towards making the European Union carbon neutral by 2050, decoupling economic growth from resource use, and supporting all regions and peoples within the union. A second New Circular Economy Action plan was also initiated in 2020, aiming to expand upon the previous Action Plan's initiatives, including expanding the Ecodesign Directive beyond energy efficiency, and addressing other dimensions of product life cycles including distribution, production and design (including longevity, extended user responsibility and new business models), and consumer behavior.

In addition to legal frameworks, the development of practical methods and tools to support design professionals in addressing the requirements for a circular economy are essential. Such methods would need to integrate and build upon both the life cycle design perspective and design for sustainability strategies. The "Circular Product Design.
A Multiple Loops Life Cycle Design Approach for the Circular Economy" framework developed by Mestre and Cooper in 2017, is such an example.

Built upon earlier life cycle design principles, the "Multiple Loops Life Cycle Design Approach for the Circular Economy" approaches design from two levels – 'technical' and 'biological' cycles, based upon the circular economy's technical and biological nutrients, and proposes four complementary strategy groups within these two cycles, addressing the eight stages of a product's life.

Strategies/design for technical cycles comprise slowing and closing material loops. While both strategies share some aspects fundamental to sustainability (e.g. utilizing cleaner materials, reduction in weight and volume, lower energy production), the former concerns slowing material flows in each life cycle phase, and includes material considerations such as 'design for durability', 'product life extension', as well as the user added-value perspective, including 'emotionally durable design'. The latter, on the other hand, ultimately seeks to eliminate the flow of waste from the life cycle – as in nature – by careful consideration of materials (e.g. biodegradable, clean, and reusable) and consideration of post end-of-life disposal (e.g. designing with disassembly and recycling in mind).

Strategies/design for biological cycles are design solutions that occur in, or are inspired by natural systems of the earth, comprising 'bio-inspired loop strategies' and 'bio-based loop strategies.
The first adopts a biomimetic approach, exploring, analyzing, and replicating the ecologically perfect systems found in nature at the micro (e.g. materials inspired by organic structures) and macro (symbiosis between industries) levels. The second, meanwhile, seeks to directly utilize biological materials as, individually, they are the least impactful to the ecosystem (though landfilling organic materials on an industrial scale remains significantly impactful).

With the aim of addressing the complex industrial, environmental, and societal problems of our age in a creative and interdisciplinary way, in 2020 the European Commission launched the New European Bauhaus initiative, making an open call to European society – citizens, experts, businesses and institutions – to come together and collaborate, to build together our living spaces and experiences, and reimagine our common sustainable living in Europe and beyond.
The initiative intends to achieve this by creating and promoting a platform for experimentation, connection, and inspiration, as well as providing access to EU funding for projects.

In the words of Ursula Von der Leyen, President of the European Commission, the New European Bauhaus envisions "to be a driving force to bring the European Green Deal to life in an attractive, and innovative and human-centered way. It will be a movement based on sustainability, accessibility and aesthetics to bring the European Green Deal closer to people and make recycling, renewable energies and biodiversity natural."

The European Commission's timely appropriation of the "Bauhaus" name and reputation – on its centenary – as the title for a new multidisciplinary participatory initiative aiming to co-create and build our common sustainable future, can lead to the conclusion that it took a hundred years journey for European political institutions to actively employ design as a strategy, both as an approach and an inspiration, undoubtedly revealing that the spirit from which the "Bauhaus" movement emerged still inspires and shapes the present and the future discourse of design.

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10 MASTERS OF GERMAN DESIGN

Paulo Parra

Texto de introdução (?)

PETER BEHRENS

WALTER GROPIUS

MARIANNE BRANDT

WILHELM WAGENFELD

MAX BILL

HANS GUGELOT

DIETER RAMS

GERD ALFRED MULLER

REINHOLD WEISS

ROBERT OBERHEIM

PETER BEHRENS

Peter Behrens was one of the most important disciples of Modernism in design and architecture. Walter Gropius (1883–1969), Mies Van Der Rohe (1886–1969) and Le Corbusier (1887–1965) all spent time at his studio. He was also the first designer to design the “corporate identity” for a company – AEG – by applying the theories of the Deutscher Werkbund. He designed everything from the “logo” on the buildings to its industrial products, standardising the components of objects such as fans, heaters, kettles, and clocks, emphasising their functional aspects and designing the first wide range of electric appliances for the company AEG. His development of a cohesive company image extended to designing the buildings, an approach that later influenced other companies, amongst which Braun in particular.

1868
Born in Hamburg, Germany.

1886
Studies art in Karlsruhe and Dusseldorf.

1890
Works in Munich as a painter and graphic artist.

1897
Co-founds Vereinigten Werkstatten [United Workshops]. Designs lines of Art Nouveau-inspired glasses (1898), plates (1900) and cutlery (1902).

1901
Designs his first building – Behrens House – and the lettering for Klingspohr.

1907
Founds his design and architecture studio in Potsdam. Co-founds Deutscher Werkbund. Invited to work as art consultant for AEG (Allgemeine Elektricitats-Gesellschaft) where he is responsible for the company’s corporate identity.

1908
Designs the AEG SW 1 fan and the company logo. Becomes director of the Dusseldorf School of Applied Arts.

1909
Designs a line of kettles for AEG with standardised components and a turbine factory.

1910
Designs a line of clocks for AEG and a sewing machine for Pfaff.

1911
Designs a line of heaters for AEG.

1922
Becomes director of the architecture department at the Akademie der Bildenden Kunste in Vienna.

1926
Designs an office building in Frankfurt.

1936
Becomes director of the architecture department at the Preubische Akademie der Kunste in Berlin.

1940
Dies in Berlin, Germany.

PETER BEHRENS (1868–1940)
GERMANY

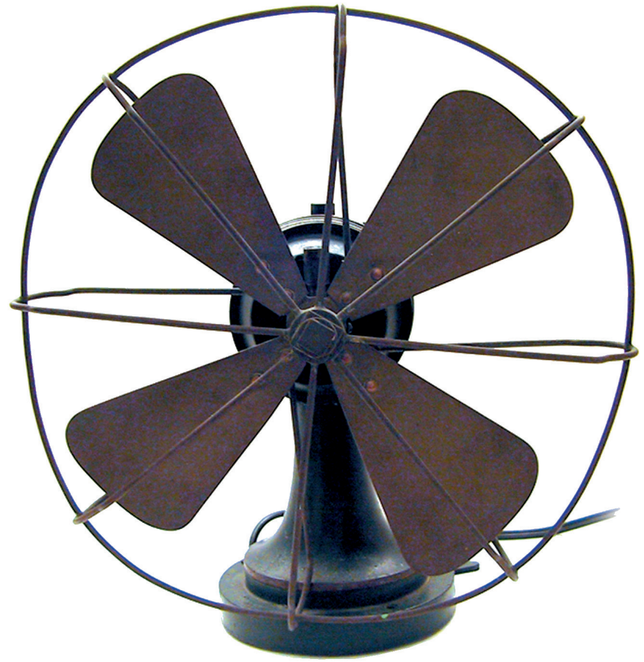


Figure 4 - **SW 1 Fan (1908). AEG.**
Peter Behrens.
Metal.
Designed by Behrens in 1908, the AEG SW 1 fan was one of the first products in a vast programme by the company to create the first ever complete corporate image after Behrens joined the firm in 1907. He thus became the first designer in the modern sense of the term, i.e. as the creator of a company’s “corporate identity” by applying the theories of Deutscher Werkbund. He designed everything from the “logo” on the buildings to its industrial products, applying processes of standardisation to the components of objects such as fans, hair dryers and toasters, emphasising their functional aspects. The SW 1 was one of the first products designed by Behrens for AEG, a fact attested to by its very classical styling, with a stand that looks more like a column. It includes geometric elements in the middle of the propeller guard with no AEG logo as on later models as a result of the gradual introduction of the design processes. These products, among the first appliances to apply these concepts, became benchmarks at the start of the 20th century due to their importance in modernising the domestic sphere.

PETER BEHRENS (1868–1940)

Figure 6 - **P 138 Kettle (1909). AEG.**
Peter Behrens.
Metal, wicker, plastic.
This electric kettle, the world's first, was design ed by Behrens in 1909. It is an evident example of the use of standardised components that he advocated with a view to rationalising production at Deutscher Werkbund. Buyers were offered three different shapes – hexagonal, semi-oval and cylindrical – in three different sizes: 0.75 L, 1.25 L and 1.75 L. Made in brass or copper, with the possibility of being nickel-plated that gave it a chromed and more modernist appearance, it also came with different surface finishes: striped, chased and smooth. The components and accessories were the same for all models and included a handle, lid knob, heating element and socket. This set of parts permitted a total of 81 combinations, of which 30 were commercialised. The design language is neoclassical in influence (like the 1907 fans), with simple geometric forms of which the chrome octagonal kettle is the finest example. What makes the object truly innovative is less the design language and more the rationalisation of the production process and use of components. Hence why the AEG kettle is unanimously considered one of the most important pieces of 20th-century industrial design.

Figure 5 - **BEW Model R Thermometer (1908). AEG. Peter Behrens.**
Metal, Thermometer.
This very rare object made by AEG was amongst the first designed by Behrens for the brand. Rare for its inclusion of the initials AEG-BEW – the latter referring to the AEG subsidiary Berliner Elektricitatswerke – this desk item comprises a thermometer, hygrometer, barometer, and calendar. The hygrometer uses a dial that pre-dates Behrens and displays Jugendstil influences, perhaps designed by Otto Eckmann, one of the brand's first designers. All of the measuring instruments, as well as the frame, clearly show the Behrens style.

Figure 7 - **Synchron Clock (1910). AEG.**
Peter Behrens.
Metal and glass.
The AEG Synchron clock, on sale from 1910, is a very interesting piece of design in the context of Behrens's work at AEG and a sign of the maturing of their relationship initiated in 1907. There is a holistic aspect to its design, covering the numbers, brand logo and the different variants of case, made of metal or wood in circular or rectangular form. Like the kettles, countless configurations were possible due to the standardisation of components.

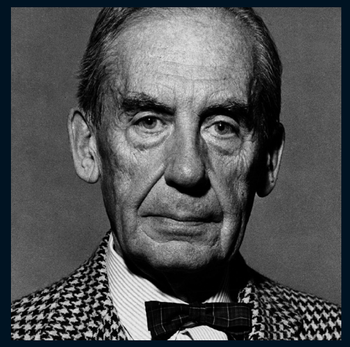
GERMANY

Figure 8 - **P 116 Heater (1910). AEG.**
Peter Behrens.
Metal, ceramic.
This heater is part of a series of products developed by Behrens for AEG. It consists of simple geometric forms, with elements of the decorative arts visible in the sheet metal finish. Very rare, this piece is one of the most unusual of Behrens's designs for AEG and perhaps links most clearly with ideas developed by the decorative arts.

Figure 9 - **L. Nr. 44610 Samovar (1920). AEG.**
Peter Behrens (assigned to).
Metal, plastic, wicker.
The samovar, a Russian device for boiling water for tea or coffee, was the inspiration for this percolator, designed to stand in the centre of the table. Although made after World War I, this AEG product is attributed to Behrens, since several of his projects were halted due to the outbreak of war and were naturally produced after it finished. Characterised by a design that uses geometric elements combined with more expressive motifs, it has great aesthetic quality, a facet necessary for it to be a fitting table centrepiece.

Figure 10 - **L. Nr. 70450 Toaster (1920). AEG.**
Peter Behrens (assigned to).
Metal, ceramic.
Albeit from 1920, the AEG L. Nr. 70450 toaster is attributed, like other products, to Behrens. It is part of a set of first-generation German appliances such as toasters, kettles, heaters, fans, irons and vacuum cleaners intended to electrify the domestic environment. While being sold with various decorative finishes in the aim of easier incorporation into a household setting, its geometric design was perfectly integrated into the spirit of AEG and the standardisation of Behrens. Made from sheets of metal formed using simple technologies like cutting, bending and stamping, it is an excellent example of the company's productive rationalisation, applying the theories advocated by Deutscher Werkbund. Using a very simple system that pushes the toast outwards when the side covers are opened (to avoid burning), in addition to the aforementioned rationalisation and standardisation processes, this toaster demonstrates a care with regard to its use, a concern distinct to Behrens' integrated design processes.

WALTER GROPIUS



Director of Bauhaus from 1919 to 1928, Walter Gropius was one of Modernism's foremost architects. Prominent amongst his work were the Fagus Factory of 1911 and the Bauhaus School in Weimar dating from 1926. His best-known piece of design is the TAC 1 tea service for Rosenthal from 1969.
His car project for Fagus also stands out for its uniqueness, since it was rare for architects and designers to style cars at the time. He had a multifaceted career that included stints as an educator, politician, essayist, writer, architect and designer. He published a series of very important educational books including "Bauhaus Manifesto and Programme" in 1919, "Pedagogical Sketchbook", with Paul Klee in 1925, "Bauhaus Weimar 1919–25/Dessau 1925–28" with Ise Gropius and Herbert Bayer in 1938, "Pelnia Architektury" with Karolina Kopczynska in 1956, and "The New Architecture and The Bauhaus" in 1965.

1883
Born in Berlin, Germany.

1908
Works at Peter Behrens's studio.

1911
Designs the Fagus Factory, one of the key examples of modern architecture.

1919
Co-founds and directs the Bauhaus School.

1920
Designs the F 51 sofa.

1926
Designs the Bauhaus building in Dessau.

1930
Designs a car for Adler.

1936
Designs a plywood chair and table for the British company Isokon.

1937
Lectures on architecture at Harvard University.

1969
Co-designs the TAC 1 tea service for Rosenthal with Louis MacMillan and Katherine de Sousa.

1969
Dies in Boston, USA.

+

WALTER GROPIUS (1883–1969)
GERMANY

Figure 11 - **TAC1 Teapot (1969). Rosenthal. Walter Gropius, Louis MacMillen, Katherine de Sousa. Ceramic.**
One of Gropius's most important projects, the TAC1 tea set was co-designed with Louis MacMillen and Katherine de Sousa in 1969 and has been very successfully produced ever since. The design language includes forms that are pure Bauhaus, such as the flattened dome, and American influences in the streamlined shape of the handle.

WALTER GROPIUS (1883–1969)

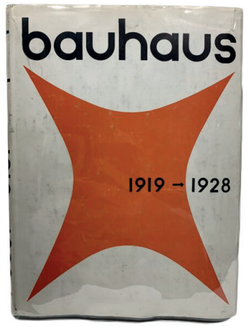


Figure 12 - **Bauhaus 1919–1929 Book (1938). Museum of Modern Art, New York. Walter Gropius, Ise Gropius, Herbert Bayer. Paper.**
It would not make sense to present the work of Gropius without including a book. This is the third edition of the book that Walter Gropius, Ise Gropius and Herbert Bayer first published in 1938 through the New York Museum of Modern Art. Suggestively entitled Bauhaus 1919-1928, the book presents a view of the Bauhaus with the help of his wife and the graphic designer Herbert Bayer, a student and teacher at the Bauhaus, and it is a retrospective of the period when Gropius was the famous school's director.

Figure 13 - **Door Handles (1923). S.A. Loewy. Walter Gropius, Adolf Meyer. Metal.**
Co-designed in 1923 with Adolf Meyer for the company S.A. Loewy, these door handles have been used in thousands of buildings ever since and still remain in production today. Using very simple geometry, a characteristic of modern design language, they are a timeless classic. Originally produced industrially but finished by hand, as can be seen in this example, today they are mass produced in their thousands, as the Modernist designers hoped for.

Figure 14 - **Standard 8 Car (1931). Adler. Walter Gropius, Adolf Meyer. Metal, fabric, rubber.**
The Adler Standard 8 is one of Gropius's oddest projects. Produced on a small scale by Neuss, the chassis (by Adler) was made by a different company to that of the bodywork, as was still common for luxury cars at that time. Only 50 exclusive examples of this miniature were produced in Europe by a famous brand of model cars at 1:43 scale, and is peculiar for having been Gropius's own car. This was recognisable for its engine bonnet side panels tied down by leather straps. Also of note was the fact that the Adler eagle symbol on the engine grille was redesigned by Gropius and, due to its success, remained the company symbol until very recently. No original example now exists.

GERMANY

Figure 16 - **Red Glass Wine TAC (1969). Rosenthal. Walter Gropius. Glass.**
Inspired by the Rosenthal studio-line TAC1 tableware, designed by Walter Gropius in 1969, the Rosenthal studio-line TAC crystal glassware seeks to complement it with the elegance and formal simplicity that characterises it. The conical shapes of the famous TAC01 teapot create the formal unity of the entire TAC tableware and glassware set.

Figure 15 - **TAC2 Model 1290 Coffee Pot (1969). Rosenthal. Walter Gropius, Louis MacMillen, Katherine de Sousa. Ceramic.**
Like the TAC1, the TAC2 coffee set was also co-designed with Louis MacMillen and Katherine de Sousa in the same year of 1969. Organic and modernist in design, characterised by its enormous, suspended handles, the set is very rare and formally distinct from the TAC1.

Figure 17 - **Globo Tea Pot (1963). Bolzano. Walter Gropius. Metal.**
Attributed to Gropius, the Globo tea pot was designed at the same time as the Rosenthal set, towards the end of his life. Influenced by Modernism, its large, flattened dome denotes its pure geometric form. It has an interesting spiral metal handle to improve the prehensile qualities and heat dissipation.

10 Masters

MARIANNE BRANDT

The first female industrial designer, Brandt occupies a unique place in the history of design. She was the first woman to study metalwork at the Bauhaus, later teaching at the same workshop. Her work as a student contributed to the Bauhaus's mythical design spirit. She worked at Gropius's studio until being invited to head the design office at Ruppelwerk, a major metal engineering company.
This historic event allowed Brandt to produce hundreds of simply manufactured items of great aesthetic and functional quality. She later worked as a freelance designer in the former GDR but died without receiving the recognition she deserved. While her work is found in some of the world's main museums, it is still not included in many publications.

1893
Born in Chemnitz, Germany.

1923
Studies metalwork at the Bauhaus.

1924
Designs a kettle and tea and coffee sets.

1926
Co-designs an ashtray and adjustable ceiling lamp with Hans Przyrembel.

1927
Designs the spherical ceiling lamp.

1928
Becomes head teacher of metalwork at the Bauhaus.

1928
Co-designs the 756 desk lamp, 702 bedside lamp for Kanden with Hin Bredendieck and a creamer and sugar bowl set with Helmut Schulze.

1930
Becomes design director at Ruppelwerk.

1955
Works as a freelance designer for firms in East Germany, including VEB Zeisswerk.

1951
Teaches at the Institut fur Angewandte Kunst in Berlin.

1983
Dies in Kirchberg, Germany.

MARIANNE BRANDT (1893–1983)
GERMANY

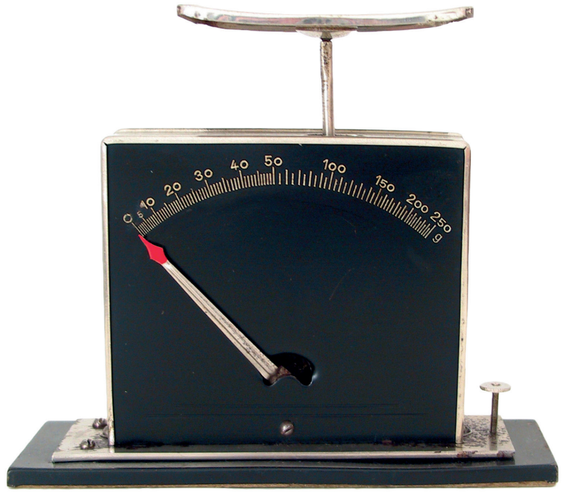


Figure 18 - **Letter Scale (1930). Ruppelwerk. Marianne Brandt.**
Metal.
Brandt, Wilhelm Wagenfeld and Marcel Breuer were prodigious students at the Bauhaus who later became teachers at the school. Brandt entered in 1924, worked at Gropius's studio in 1928 and was appointed director of the metal workshop at the Bauhaus in 1929. From 1929 to 1932, she was a designer at Ruppelwerk. Notable among the objects she designed for Ruppelwerk was the letter scale from 1930 which, in the balance between its pure geometric forms and the relationship between light and dark, is one of the finest examples of 1930s' industrial design. In fact, its formal simplicity, harmonious proportions and the interplay between the black surfaces and the shiny chromed metal make this item a unique synthesis of the Constructivist influences in industrial design. Initially, our eyes focus on the chrome-framed central black rectangle from which only the scale and red pointer stand out, contrasting functional elements that indicate the object's instrument-like character. It sits on a chrome base which frames the object like a mirror. At the top, the asymmetrically positioned rectangular and slightly curved plate suggests a relationship of forces visible in several Constructivist-influenced exercises undertaken at the Bauhaus under Moholy-Nagy. A fusion of influences from various areas – design, sculpture, and architecture – it represents the unity always espoused by the Bauhaus in the slogan "Art and Technology – A New Unity".

Figure 20 - **Table Dustpan (1930). Ruppelwerk.**
Marianne Brandt.
Metal, wood.
Table dustpan and brush set, also first-generation Bauhaus, stands out for its decorative style, with the huge spherical brush handle prominent.

Figure 19 - **Napkin Holder (1930). Ruppelwerk.**
Marianne Brandt.
Metal.
The napkin holder designed by Brandt fits into the first generation of “Bauhaus design language” that is more decorative and Expressionist, emphasising geometrical forms and bright colours. It is part of a set including a table dustpan and brush in similar colours.

Figure 21 - **Table Dustpan (1932). Ruppelwerk.**
Marianne Brandt.
Metal.
A second-generation table dustpan and brush set whose style strongly influenced Bauhaus design, exploring the contrast between black and silver aesthetics. Truly exemplary in its simplicity, this is in one of Brandt’s most rational and functional designs. The dustpan adjusts to the brush, which acts as a hanging ring.

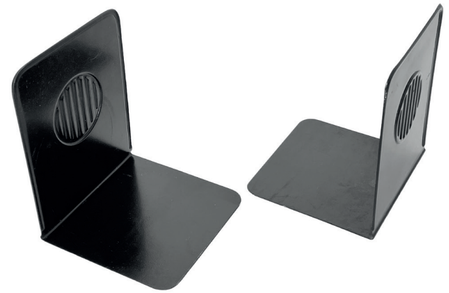


Figure 22 - **Bookends (1930). Ruppelwerk.**
Marianne Brandt.
Metal.
Truly minimalist in style, these bookends are the epitome of the Bauhaus’s long-espoused minimalist design: absolute simplicity, pure geometric forms and absence of colour. The absolute essence of minimalism.

Figure 23 - **Box (1930). Ruppelwerk.**
Marianne Brandt.
Metal.
Ruppelwerk’s little box designed to hold small items is a very simple green parallelepiped with a distinctive chrome frame around its lid and a stylised decorative flower. The design is influenced by Art Deco.

Figure 24 - **Trioplan Camera (1959). VEB Kamera und Kinowerke Dresden.**
Marianne Brandt (assigned to).
Metal, glass.
With great clarity of form and design sophistication, this camera appears very contemporary in style. Its functional construction is notable in the central element supporting the two vertical planes, previously trialled with success in the Ruppelwerk letter scale. Its functional innovation stands out, characterised by an original rewinding system activated by a side lever. Attributed by this author to Brandt, it is a logical evolution of her post-war work, especially if compared with her scale for Ruppelwerk.

WILHELM WAGENFELD

A brilliant Bauhaus student, W. Wagenfeld rapidly began working with German industry, producing a series of objects in the interwar period, above all in glass, of huge technical quality and innovative in form. Highlights include the Pelikan ink pot, better known as the Bauhaus ink pot, the fabulous 100% glass tea pot, in which you can see the tea brewing, and the rational line of Kubus containers, each unique and innovative. In the post-war period, he began work again as a freelancer, standing out again for simple products like Max & Moritz for WMF, the famous cruet set found in most German homes. He was one of the first designers to work with Braun for whom he designed some of the boldest and most contemporary objects, in a style that was more international in taste. Given his achievements, he can be considered one of the pioneers of German industrial design.

1900
Born in Bremen, Germany.

1923
Studies metalwork at the Bauhaus.

1924
Designs the WS 24 lamp better known as the “Bauhaus Lamp”.

1926
Teaches at the Staatliche Banhochschule de Weimar.

1932
Designs the Jenaer-Glas tea set.

1938
Designs the Pelikan ink pot and Kubus stacking container for Vereinigten Lansitser Glaswerke.

1952
Designs the Max und Moritz cruet set for WMF to great commercial success.

1955
Designs the ABC typewriter for Kochs Adlernahmaschinem and the Combi radio/record-player for Braun.

(Max)
1958
Founds and edits the magazine Form.

1990
Dies in Stuttgart.

+

WILHELM WAGENFELD (1900–1990)
GERMANY

Figure 25 - **Combi Radio/Record-Player (1955). Braun. Wilhelm Wagenfeld. Metal, plastic.**
Designed by the famous Bauhaus teacher Wilhelm Wagenfeld in 1955, the Braun Combi radio/record-player is the product of one of the first joint projects the well-known company undertook with designers after the death of its founder Max Braun, the person responsible for the brand’s design up until 1951. Included in the radio/record-player combination range, designed by the engineer Max Braun since the 1930s and which Braun was one of the first to produce, the Braun Combi is unique in that it represents the transition between the designs of Max Braun and Dieter Rams. It was one of the first portable examples and the first in plastic, but within the Braun fold it has a special place in that it was one of the few if not the only polychromatic example made, given that one of the characteristics of the future “Braun style” was the absence of colour. With its highly visible white dial and its unusually expressive forms for the brand, it appears surprisingly modern. The overall effect is a product with a toy-like look and one of the few designed by Wagenfeld for Braun. If the Braun style is characterised by Ulm School influences, then this is a rare example of one of the company’s products inspired by the Bauhaus.

WILHELM WAGENFELD (1900–1990)

Figure 26 - **Teapot (1931). Schott & Gen./Jena.**
Wilhelm Wagenfeld.
Glass.
This is one of the objects that confirmed Wagenfeld's status as a brilliant industrial designer. The inside of the teapot can be seen in an interesting interplay of transparent forms. The object takes its colour from the tea inside. Characteristically Bauhausian in style, it also has clear Constructivist influences. CPP-ID43.

Figure 28 - **PC 3 SV Record Player (1956).**
Braun.
Wilhelm Wagenfeld, Dieter Rams.
Metal, plastic.
The Braun design language used here is a transitional one, between the organic Combi style and the "Ulmian design language" of the SK4. Compact in size and geometric in form with a light and dark colour palette, this was one of the first projects to use the new Braun design language. The turntable was used in the Braun SK4, considered the first modern hi-fi system.

Figure 27 - **Last Drop Bottle Ink Pot (1938).**
Pelikan.
Wilhelm Wagenfeld.
Glass, plastic.
With its essentially functional style, this ink pot created a new typology of object in which form follows function. Compact in size and using colourless materials, it was designed to be placed in a display case or on a desk.

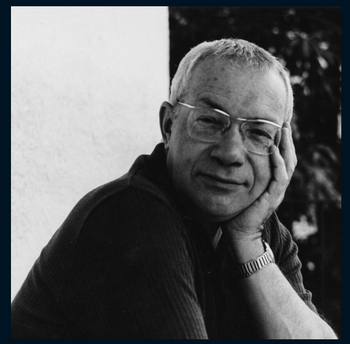
GERMANY

Figure 30 - **Max & Moritz Cruet Set (1954).**
WMF. Wilhelm Wagenfeld.
Metal, glass.
The Max & Moritz cruet set needs no introduction. A feature of most German dining tables, it became one of Wagenfeld's biggest sales successes. Very simply made, comprising glass containers sealed with metal tops, the salt and pepper shakers form a set with the small tray, also made of metal, on which they sit.

Figure 29 - **Smoothy Massager (1956). Braun.**
Wilhelm Wagenfeld.
Plastic, metal.
Massagers were very popular in the USA and amongst the country's first industrially made electrical appliances. Braun commissioned Wagenfeld to design his first product of this type to complement the brand's range of electric shavers for the American market. Very rare.

Figure 31 - **ABC Typewriter (1955). Kochs Adlernahmaschinen.**
Wilhelm Wagenfeld.
Metal, plastic.
This sophisticated product has a pragmatic and compact design, revealing a clarity of form and use of colour that make it highly expressive. The ABC logo and other visual symbols are influenced by the "Bauhaus style", notable amongst which are the keys and the letters and signs written on them.

MAX BILL



Artist, designer, architect, teacher and politician, Max Bill was a Bauhaus student and creator of the concept of “die gute form”, the idea that objects should have honest and simple forms, a philosophy that was later adopted by Braun. One of the founders and the first director of the Ulm School of Design, the successor to the Bauhaus, he was also responsible for the architecture and facilities at the school, which created the new post-war educational model. As a designer, he created an important range of clocks and watches for the Junghans company that reveal his philosophical principles: clear, universal, honest, and simple design. This was Bill’s greatest legacy to us and successfully applied by his Dutch disciple Hans Gugelot and, later, by Gugelot’s German disciple Dieter Rams, establishing an inter-generational continuity that deeply influenced German post-war design.

1908
Born in Winterthur, Switzerland.

1927
Studies at the Bauhaus.

1936
Designs the Swiss pavilion for the Milan Triennale.

1949
Designs the “Die Gute Form” exhibition for Schweizer Werkbund.

1950
Co-designs the Ulm stool with Hans Gugelot and Paul Hilbinger.

1951
Co-founds and heads the Ulm School of Design.

1953
Designs the Ulm School of Design building.

1957
Designs the Kitchen Clock for Junghans.

1959
Designs the Wall Clock for Junghans.

1962
Member of the Swiss parliament in 1962.
Designs the Wristwatch for Junghans.

1994
Dies in Berlin, Germany.

+

MAX BILL (1908–1994)
SWITZERLAND

Figure 32 - **Kitchen Wall Clock (1957).**
Junghans.
Max Bill.
Ceramic, glass, metal.
The Junghans Kitchen Wall Clock designed by Bill in 1956 is the first in a series of timepieces he styled for this renowned brand including the 1957 Wall Clock and the 1962 Wristwatch. Characterised by clean and simple forms and great geometric rigour, the Kitchen Clock is the most original and unexpected of them all, both for its oval shape, with a clock dial at the top and timer at the bottom, and for its unusual use of ceramics as the main material. Like Peter Behrens’ clock for AEG in 1910, Bill also designed the dial, hands and lettering along with the product itself, making it totally his own design. The colours are above all white and light blue with gold- or silver-plated metal, and the hands can be moved by opening the glass front, one of the technical details. The clock is characterised by its ease of manufacture, use and reading. It is minimalist in style, thus achieving the goal of total clarity espoused by Concrete art and die gute form. It can therefore be regarded as one of their finest examples. CPP-ID56.

MAX BILL (1908–1994)

Figure 34 - **Table Clock (1957). Junghans.**
Max Bill.
Wood, glass, metal.
This project again shows the clarity and universality of Bill's design language. The minimalist aesthetic is endowed with great quality and formal unity, key features to ensure its efficiency and precision and features that characterise all of his work. CPP-ID57.

Figure 33 - **Typewriter (1944). Patria.**
Max Bill.
Metal, plastic.
Considered Bill's first industrial product, this typewriter already shows the simplicity that would characterise his main projects in the future. The round keys and flush oval return lever, which is very smooth and painted in neutral tones, stand out. All of these features contributed to make it a manifesto for the simplicity and functionality that epitomised Bill's later designs.

Figure 35 - **Pocket Watch (1960s). Junghans.**
Max Bill.
Metal, glass.
Another example of Bill's design essence but in the shape of a pocket watch. With a clear and universal design language, and quality and unity of form, this very rare piece is innovative and evokes an image of efficiency and precision. CPP-ID58.

SWITZERLAND

Figure 36 - **Design Wristwatch (1962).**
Junghans.
Max Bill.
Leather, metal, glass.
An example of design essence in a wristwatch. The standardised components allowed for multiple variations of the original model. This bestseller is still sold today. CPP-ID59.

Figure 37 - **Design Wristwatch (1962).**
Junghans.
Max Bill.
Leather, metal, glass.
A ladies' watch, this very rare Junghans is an excellent example of the clarity Bill advocated. Small in size, this little piece of jewellery has a simplicity of design that is still very modern today.

Figure 38 - **ATO-MAT Wall Clock (1962).**
Junghans.
Max Bill (assigned to).
Metal, glass.
A natural evolution of Bill's earlier work, the synthetic and universal design of this clock, attributed to him, can be seen in full here, a sign of his huge influence at Junghans.

HANS GUGELOT

Hans Gugelot, together with Joe Colombo (1930–1971), was part of a very small group of designers who despite dying early (at little more than 40 years of age) will remain in the annals of design history for the standard and profusion of his work. His minimalist and monochromatic style and simple geometric forms were the purest of the time, and occasionally even austere. The quality of his ideas can be found in products such as the Braun SK 4 Radio-Phonograph and Braun Sixtante, the latter of which introduced the black & silver style that later became so popular in German and Japanese products in particular. Highlights of his work also include the Kodak Carousel, a classroom mainstay, and the Pfaff 80 sewing machine, which is almost military in style. This design purity does not imply however that the mark of one of the greatest designers of the 20th century is not evident in the details of his designs.

1920
Born in Celebes, Indonesia.

1940
Studies engineering and architecture in Switzerland.

1948
Works with Max Bill.

1950
Founds his own design and architecture studio and develops the M 125, the first modular furniture system.

1954
Invited to teach at the Ulm School of Design where he was also director.

1954
Starts working for Braun where he was a major contributor to the company's future design direction.

1955
Designs his first Braun products.

1959
Starts working for the Hamburg Metro.

1962
Designs the Braun Sixtant – one of the most important electric shavers in history – that launched the black & silver design language.

1963
Designs the Kodak Carousel.

1965
Dies in Ulm, Germany.

+

HANS GUGELOT (1920–1965)
INDONESIA

Figure 39 - **SK4 Radio-Phonograph (1956). Braun.**
Hans Gugelot, Dieter Rams, Wilhelm Wagenfeld.
Plastic, metal, wood.
Designed in 1956 by a team led by Gugelot, the SK4 has a minimalist design, characteristic of Braun, with a recognisable clarity of form in the rectangular white casing with grilles where the speakers are located and quadrangular wooden panels at each end, a clear reference to Max Bill's Ulmer Stool on which Gugelot also worked. The influence of the "clarity and universality" proposed by the Concrete art of Theo van Doesburg, of the De Stijl group, can be clearly felt throughout. Nicknamed "Snow White's Coffin", its rectangular casing and transparent lid made of a single layer of perspex were used on a hi-fi system for the first time and inaugurated the modern form of these products. Developed by a team, the differences in design approach can be seen: the minimalist style and very geometric box by Gugelot; the radio buttons and ventilation grilles by Dieter Rams; and the plastic turntable by Wilhelm Wagenfeld, a mixture of rational and organic forms, namely the tone arm. This is one of the most iconic examples of 20th-century industrial design.

HANS GUGELOT (1920–1965)

Figure 41 - **Carousel Slide Projector (1961). Eastman Kodak Co.. Hans Gugelot. Metal, plastic.**
The Carousel Projector is one of Gugelot's best-known designs. Everything about its minimalist grey and black form reflects functionality. Gugelot was one of post-war Germany's leading Neo-Rationalists and the Pfaff 80 sewing machine and Kodak Carousel are good examples of this. The highly geometric appearance, in monochrome tones, is characteristic of his purest projects. The Kodak Carousel S was one of the first projectors to incorporate Kodak's carousel system allowing a larger number of slides to be stored due to its circular format. Considered one of the best projectors on the market, it was used above all professionally. A benchmark for many students, for whom it was a standard piece of classroom furniture, it became a design icon and was sold for decades.

Figure 40 - **80 Sewing Machine (1959). Pfaff. Hans Gugelot. Metal.**
Together with Max Bill, Gugelot was one of the founding fathers of German Neo-Rationalism, as clearly illustrated by Braun products from the 1960s. This sewing machine is a good example of this synthesis, both in terms of form, by using a very geometric style, and colour, in using grey, white and metallic tones. It presents a new typology in a balanced design that fits into a very characteristic scheme of *die gute form*.

Figure 42 - **Diskus Torch (1970). Braun. Hans Gugelot. Plastic.**
The Diskus torch, designed by Hans Gugelot in 1970 for Braun, is innovative for its disc-like form, allowing the widest diameter of mirror possible and therefore a brighter light. The design is more compact and easy to use, fitting perfectly into the palm of your hand, enhancing its practicality. The shape's compactness also makes it easier to carry in the pocket.
This innovative design is another demonstration of Gugelot's creativity, a designer who despite dying at 45, left a seminal body of work on the international stage. This torch won the iF Product Design Award in 1970. CPP-ID77.

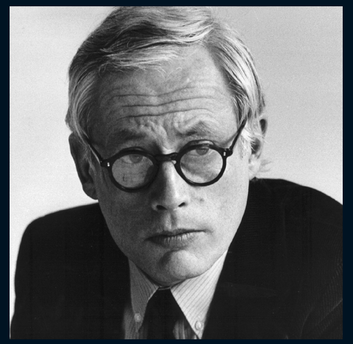
INDONESIA

Figure 43 - **Sixtant SM 31 Electric Shaver (1962). Braun. Hans Gugelot, Gerd Alfred Muller. Plastic, metal.**
Much has already been said about the Sixtant electric shaver, as it is regarded as an outstanding piece of 20th-century design, introducing the black & silver language that would influence many future high-tech products. The balanced and innovative quadrangular shape, an iconic design, created history in electric shavers.

Figure 44 - **Party Lights (1970). Varta. Hans Gugelot Institute. Plastic.**
Made after Gugelot's premature death in 1965 and based on a design by the Gugelot Institute, these round party lamps are also synonymous with how Gugelot's designs were evolving to incorporate colour. They were sold in various colours at the start of the 1970s and won the IF Product Design Award in 1971 and the "Die Gute Form" Prize in 1972.

Figure 45 - **Electric/Contour Lighter (1972). Braun. Hans Gugelot Institute. Metal.**
Another Gugelot Institute project for Braun, this lighter went on sale in 1972, furthered like some other projects by the institute after Gugelot's premature death. It stands out for Gugelot's trademark design language based on simple and minimalist forms, and monochrome and polished surfaces – an extremely minimalist vision of industrial design.

DIETER RAMS



Following on from Max Bill and Hans Gugelot, Rams applied their rationalist theories for decades at Braun, where, after Gugelot's departure, he became Director of Product Design in 1961. He continued to design products in a clean and monochrome style characteristic of the "Ulm concept" and Braun, where he created some of the brand's most iconic products during his more than 40-year career at the company, helping to build its robust corporate image. His designs include the Braun T1 and TP1 radios to which he applied the modular "building blocks" concept initially developed by Gugelot and Lindinger that allowed various applications. His work at Braun made him a key figure in the history of industrial design.

1923
Born in Wiesbaden, Germany.

1947
Studies architecture at the Academy of Applied Arts in Wiesbaden.

1954
Joins Braun.

1956
Co-designs the Braun SK 4 Radio-Phonograph with Hans Gugelot and Wilhelm Wagenfeld.

1960
Designs the 606 Universal Shelving System for Vitsoe.

1961
Becomes Director of Product Design at Braun.

1968
Designs the Braun TRG 2 cylindric table lighter.

1977
Co-designs the Braun ET 44 calculator with com Dietrich Lubs.

1981
Becomes a professor at the Academy of Fine Arts in Hamburg.

1987
Becomes chair of the German Design Council.

1995
Retires from Braun.

+

DIETER RAMS (1932)
GERMANY

Figure 46 - **T1 Radio (1957). Braun.**
Dieter Rams.
Plastic, leather.
The Braun Transistor 1, designed by Rams in 1956, is one of the first products he designed completely by himself and one of the most important in terms of defining the brand's design direction after the death of Max Braun. As the name suggests, the T1 was the first transistor radio made by Braun and in Europe. Its sophisticated technical features and rigorous monochrome geometry is only broken by its natural leather handle, the first thing the hand touches. The bright white dial, on which only the Braun brand name appears in red, also contributes to its image of design rigour. All of this makes the T1 one of the brand's most representative products and one of the most iconic designs of the last century.

DIETER RAMS (1932)

Figure 48 - **H1 Heater-Ventilator (1959). Braun.**
Dieter Rams.
Plastic, metal.
Extremely simple in design, this heater-ventilator is notable for its outstanding use of light and dark. Its height can be adjusted very easily, but effectively, by moving a metal leg. Simple and efficient, everything is reduced to the bare essentials. The only touch of colour is found in the huge control button.

Figure 47 - **TFG 2 Cylindric Table Lighter (1968). Braun.**
Dieter Rams.
Metal, plastic.
The T2 is Braun's second and more charismatic lighter, easily recognisable by its cylindrical shape. Designed in 1968 by Rams, it developed the brand's heavily geometric design language and came in one of two finishes: metallic or black. This version, with a metallic finish, stands out for its sculptural form, broken only by the oval cut allowing this unique lighter to work via an "electromagnetic ignition system". It won the Federal German "Die Gute Form" Prize in 1970 for the high standard of its design.

Figure 49 - **D5 Slide Projector (1962). Braun.**
Dieter Rams.
Plastic, glass.
Innovative for its height adjustment system, activated simply by holding and turning one of the front corners, using the same principle as the H1 heater-ventilator. Equally simple and innovative, this is one of the products that most epitomises the minimalist spirit of die gute form.

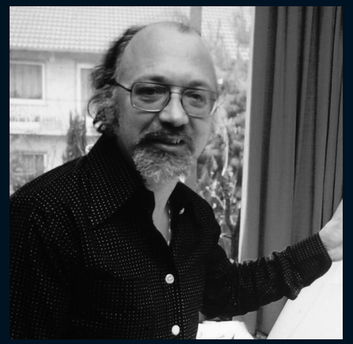
GERMANY

Figure 50 - **T530 Radio (1962). Braun.**
Dieter Rams.
Plastic, metal.
Following on from the T1 radio, the T530 has a clear yet more evolved and complex design, characteristic of a more mature stage at Braun. Styled to be used in various positions, it is very compact in size, with a handle that doubles as a stand, once again applying concepts from the D5 projector and H1 heater-ventilator. CPP-ID113.

Figure 52 - **HLD 4 Hair Dryer (1970). Braun.**
Dieter Rams.
Plastic.
Launched in 1970, the HLD 4 hair dryer's design is characterised by the typically Braun-style front grille, but makes a few concessions to space age design and pop, such as the use of bright colours. With its very compact size, perhaps the most compact on the market, it follows the era's trend towards miniaturisation. It introduced Rams' round switch that became famous on Braun products.

Figure 51 - **Mach 2 (1971). Braun.**
Dieter Rams, Florian Seiffert.
Metal, plastic.
With the Black & silver language, so important to Braun since the Sixtant shaver, the Braun Mach 2 is a good example of this practice, as it combines miniaturization with alternating light and dark values in a markedly minimalist way.

GERD ALFRED MULLER



Though less well-known than Dieter Rams, Gerd Alfred Muller was responsible for a series of successful Braun products, especially in food preparation, in which he was the greater innovator of the 1950s. The Braun KM3 is his quintessential design, consolidating Braun as a benchmark in kitchen appliances. In fact, the kitchen mixer as we know it today, owes its typology to this object. He only worked for Braun from 1955 to 1960 but many of his designs are Braun and international design icons. Also of note was his work for Lamy, for whom he created a series of very well-designed pens, among which the Lamy 2000. This bestseller is still in production today as one of German design's most iconic writing implements.

1932
Born in Frankfurt, Germany.

1950
Studies interior design at Werkkunstschule in Wiesbaden.

1955
Joins the Braun design department.

1957
Designs the Braun MP 32 Multipress and Braun KM 3/31 Mixer.

1960
Founds his own studio in Eschborn and co-designs the Braun SM3 shaver with Hans Gugelot.

1965
Designs the Braun MX 32 Mixer.

1965
Works for Lamy as a freelance designer.

1966
Designers the Lamy 2000.

1974
Designs the Lamy Twin pencil.

1984
Designs the Unic ballpoint pen.

1991
Dies in Eschborn, Germany.

+

GERD ALFRED MULLER (1932–1991)
GERMANY

Figure 53 - **KM3/31 Mixer (1957). Braun.**
Gerd Alfred Muller.
Plastics, metal.
Muller joined Braun in 1955 as a result of the company's new design policy. Though less well-known than Dieter Rams, he was responsible for a series of successful Braun products, especially in food preparation, such as the Braun 31 Mixer of 1962 and the MP 32 Multipress of 1965. But it is the KM3 that is his greatest work, consolidating Braun's position as a leader in kitchen appliances. In fact, the kitchen mixer as we know it today owes its typology to it. The column-based arrangement with polished forms that allows it to mechanically cut, crush, blend or mix via a series of included accessories was first introduced by the Braun KM3 in 1957. Its characteristics ensured that it was an immediate success. Its versatility led to the use of the word "robot", as if it were a mechanical kitchen aid that could replace many other small machines. Other brands had certainly launched similar products, such as Electrolux with its fantastic Assistant from 1940, but Braun's vision of efficiency, hygiene and versatility was innovative, to the extent that it could be left on the kitchen counter rather than stored away after use. Copied by all rivals, this product became a design icon. Muller represented Braun's spirit in the kitchen and the KM3 was his signature design.

GERD ALFRED MULLER (1932–1991)

Figure 55 - **2000 Pen (1966). Lamy.**
Gerd Alfred Muller.
Plastic, metal.
The Lamy 2000 is one of the brand's biggest sales successes. Using a black & silver design language, as already seen on the Braun Sixtant, the Lamy 2000 clearly reflects Muller's experience with Braun shavers. Functional and timeless design mark the aesthetics of this true writing classic.

Figure 54 - **Combi DL5 Shaver (1957). Braun.**
Gerd Alfred Muller, Dieter Rams.
Plastic, metal.
The Combi DL 5 is an innovative Braun design. Lighter in the hand, combined with fewer striations, it also has a smaller logo placed at the side rather than centrally. It introduces a technical innovation for the first time – a side trimmer – combining (hence the Combi name) shaving with moustache and sideburn trimming.

Figure 56 - **MX 32 Mixer (1962). Braun.**
Gerd Alfred Muller.
Plaster, metal.
Responsible among others for renewing Braun design, Muller is associated with its kitchen appliances and shavers, and the 31 Multimix is one of his best-known examples. Its neutral and logical lines, pre-announced by the KM 3 Multimix, are remarkable. Notably, the only element of colour is on the main switch, an olive green that interferes in no way with the clean forms. The design's quality is reflected in the influence that it had within the company and also on the competition.

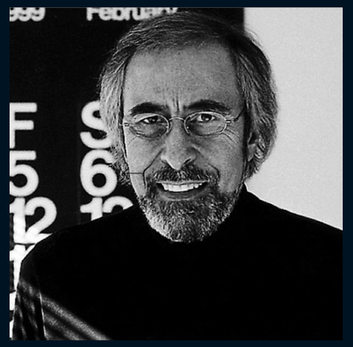
GERMANY

Figure 57 - **MP 32 Multipress (1965). Braun.**
Gerd Alfred Muller.
Plastics, metal.
The MP 32 Multipress updated the range of juicers. Designed by Muller, it has the same neutral a nd logical lines that characterise the other kitchen appliances designed by him, clearly showing the Braun principle of design continuity.

Figure 58 - **SM3 Shaver (1960). Braun.**
Gerd Alfred Muller.
Plastic, metal.
The jump from the Combi DL 5 to the SM3 was huge, foreseeing Braun's most popular shaver – the 1962 Sixtant. Minimalist and simpler in design, with no striations on the casing and more elegant and sexy forms, for the first time it could run on 110V or 220V just by pressing the switch on the bottom. Designed for the intercontinental traveller.

Figure 59 - **Cp1 Pen (1974). Lamy.**
Gerd Alfred Muller.
Plastic, metal.
The Lamy cp1 (cylindrical pen) was designed to normal pen thickness, totally contrary to the Lamy 2000 of 1966. This delicacy of design obliged the creation of a new, thinner ink cartridge, but which therefore competed with the latest more elegant and minimalist pen designs. Its box was especially styled, since its cylindrical form allowed the inside to be rotated so that the pen could be exposed or protected. This is the first-generation brushed metal version.

REINHOLD WEISS



Together with Dieter Rams and Gerd Alfred Muller, Reinhold Weiss was one Braun's greatest designers, where he worked for just 8 years but created some of its iconic designs. A student of the Ulm School, he started working with Gugelot in 1959, the year that he joined Braun at just 25 years of age. He rapidly stood out for several innovative pieces like the HL 1 fan and HLD hair dryer, both winners of design awards. In 1967, he left Braun for the USA where he pursued his design career, first at Unimark, co-founded by Massimo Vignelli and based in Chicago, at the time the world's largest design company, and later freelance. During this freelance phase, he was notable for his work with major hi-fi companies such as NAD, Panasonic and Blaupunkt, an area he specialised in.

1934
Born in Germany.

1950
Studies at Hochschule fur Gestaltung in Ulm.

1959
Works with Hans Gugelot.

1959
Joins the Braun design department.

1961
Designs the Braun HL
1 fan and HT 1 toaster.

1962
Designs the HE 1 kettle.

1964
Designs the HLD 2 hair dryer.

1967
Designs the KSM 1 coffee machine. Emigrates to the USA where he works for Unimark, co-founded by Massimo Vignelli and based in Chicago, the world's largest design company at the time.

1970
Creates his own design studio. Works with major hi-fi companies, one of his specialities.

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REINHOLD WEISS (1934)
GERMANY

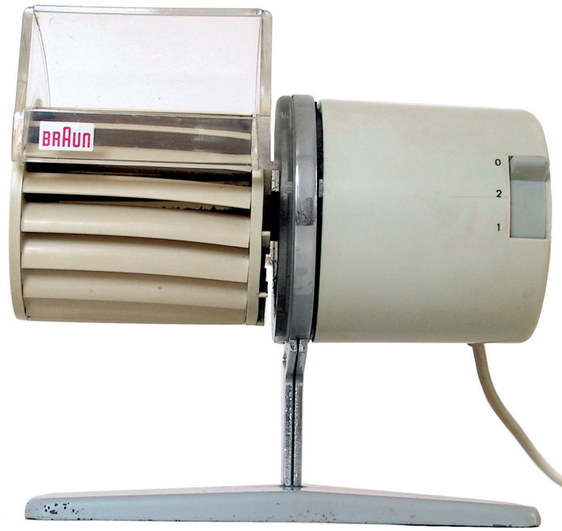

Figure 60 - **HL 1 Fan (1961). Braun.**
Reinhold Weiss.
Plastic, metal.
The HL 1 was the first Braun fan, introducing a new typology for portable fans. Its perfectly cylindrical form is a fine example of the design principles of the Ulm School. Used by J. F. Kennedy on his presidential trips, it combines functionalism, portability and sophistication. It won the Federal German "Die Gute Form" Prize in 1970.

REINHOLD WEISS (1934)

Figure 61 - **KMM 1 Coffee Grinder (1963). Braun.**
Reinhold Weiss.
Plastic, metal.
In Braun's first ever coffee grinder, Weiss uses very simple forms: a cylinder and a cube.
The transparent plastic means that you can watch the beans being ground into powder.

Figure 63 - **KSM 1 Coffee Grinder (1967). Braun.**
Reinhold Weiss.
Plastic, metal.
The KSM 1 was Braun's second coffee grinder. Very simple, elegant and minimalist in design, it shows the level of purity that Braun aimed for in its products. More compact than its previous model, it was so easy to use that anyone could do so without making mistakes.

Figure 62 - **TFG 1 Permanent Lighter (1968). Braun.**
Reinhold Weiss.
Plastic, metal.
The Braun TFG 1 is called "permanent" because unlike other lighters on the market it had a battery-free ignition system. "Endowed with infinite life", as described in its instruction manual, the TFG 1 revolutionised users' relationship with the lighter since it worker permanently.

GERMANY

Figure 64 - **HL 70 Heater (1971). Braun.**
Reinhold Weiss, Jurgen Greubel.
Plastic, metal.
The Braun HL 70 was a redesign of the HL1, launched 10 years earlier, with an even purer cylindrical form and simplified controls. The stand was changed to transparent perspex, creating the illusion that the fan is floating.

Figure 65 - **HLD 3/31 Type 4425 Hair Dryer (1972). Braun.**
Reinhold Weiss.
Plastic, metal.
The successor to the HLD 2, also designed by Weiss, the HLD 3 won the IF Product Design Award at the 1972 Hanover Fair, one of the world's foremost distinctions. It was one of the most innovative hair dryers of its time. In fact, Weiss did not follow the traditional pistol-style format but a more compact form, more reminiscent of a small heater, confirming the great tradition of innovation that characterises Braun.

Figure 66 - **HLD 5/50/51 Type 4402 Hair Dryer (1972). Braun.**
Reinhold Weiss, Jurgen Greubel.
Plastic, metal.
The HLD 5 is a continuation of the HLD 3's design language, but it introduces a major improvement: the handgrip. This improves the ergonomics but significantly increases its size. Unlike the HLD 2/3, the HLD 5 is not a unisex product. It also won the IF Product Design Award at the 1974 Hanover Fair.

ROBERT OBERHEIM

Born in Gerdern, in Germany, he initially trained as a craftsman. He studied at the Werkkunstschule in Wiesbaden, a prestigious German arts and crafts school, that was open from 1949 to1970. He was awarded the Berlin Young Artists' Prize by the city of Berlin and joined Braun in 1960, where he specialised in film cameras, electric shavers hair dryers. He designed some of the company's most distinctive products, including the KM 32 Kitchen Machine with Gerd Alfred Muller, the first Braun Nizo film camera (the FA 3), the UNO hair dryer and the Intercontinental Shaver, all milestones for Braun and German design. His commitment and responsibility to developing the industrial products of the well-known brand were recognised, for which he was appointed deputy head of product design at Braun in 1972, a position he occupied until 1994 when he retired.

1938
Born in Gerdern/Hessen, Germany.

1956
Studies at the Werkkunstschule in Wiesbaden.

1960
Joins Braun's design department.

1972-1994
Becomes deputy head of product design at Braun.

1963
Designs the Braun Nizo FA 3 film camera and D25 projector.

1972
Co-designs the Braun Intercontinental Shaver with Florian Steifert.

1985
Designs the UNO HLH 18 hair dryer.

1994
Retires from his position as deputy head of product design at Braun.

+

ROBERT OBERHEIM (1938)
GERMANY

Figure 67 - **Nizo FA 3 Film Camera (1963). Braun. Robert Oberheim, Dieter Rams, Richard Fisher.**
Plastic, metal.
The Nizo FA 3 was Braun's first camera, launched in 1963. Based on the inner workings of the Nizo Allmar Mod. 2, a brand bought by Braun, this is a perfect example of what good design can do for a product at the aesthetic, ergonomic and even technical level. The two cameras are completely different and a unique example of applying Braun's aesthetic principals and die gute form to another brand's product, one very characteristic of the age. Its design language is clear and universal, with its pure geometric forms and flat surfaces the key to defining its volumes. It is a rare example of a redesign of another brand's product. For more than 10 years, Oberheim was responsible for the design of Braun's film camaras.

ROBERT OBERHEIM (1938)

Figure 68 - **D25 Projector (1963). Braun.**
Robert Oberheim.
Plastic, metal.
The Braun D25 Projector is the version of the D15 with remote control, both designed by Oberheim. In regard to earlier projectors designed solely by Dieter Rams or jointly with Oberheim, what has changed is the use of two tones of grey rather than grey and aluminium. But above all, this projector has the look of a mature, compact and multifunctional product. The black remote control with a big, green central button to change slides is the highlight.

Figure 69 - **Sixtant 660 Shaver (1973). Braun.**
Robert Oberheim, Dieter Rams, Florian Seiffert.
Plastic, metal.
The Braun Sixtant 660 is the last of the classic striated grip Braun shavers prior to the appearance of rubber hand grips that were easier to hold. Its central slider button is also more complex, foreseeing the large central buttons on future models. It won the IF Product Design Award at the 1974 Hanover Fair.

Figure 70 - **Intercontinental Shaver (1972).**
Braun.
Robert Oberheim, Florian Seifert.
Plastic, metal.
Awarded the IF Product Design Award at the 1973 Hanover Fair, this is one of Braun's best designed shavers. For the first time, the plastic body had a metal frame giving it a very distinctive and sophisticated appearance. The clear image is complemented by the concealed screws attaching the shaver head, a new innovation, fully emphasising the purity of the forms. An absolute classic among shavers.

GERMANY

Figure 71 - **PS 450 Turntable (1973). Braun.**
Robert Oberheim, Dieter Rams.
Plastic, metal.
The Braun PS 450 turntable is the more technically complex version of the PS 350. Totally new for 1973, they had a fully plastic casing that formed the basis of Braun's new hi-fi systems. Technically sophisticated, the speed can be finely adjusted and there is an anti-slip device. Unusually for the time, the stylus had an innovative braking system allowing unlimited height adjustment. The design is very minimalist.

Figure 72 - **Mini BP 1000 Type 4579 Compact Travelair Hair Dryer (1983). Braun.**
Robert Oberheim.
Plastic, metal.
The Compact 1000 was Braun's most compact hair dryer. Small and affordable, a particular feature was the ability to conceal the cord in the hollow handle. As the handle was movable, it could be folded tight against the main body. Allied to its small size, this made it Braun's most compact hair dryer, allowing it to be carried easily in in a small travel bag.

Figure 73 - **UNO HLH 18 Type 4544 Hair Dryer (1984) 1985 IF Award Winner. Braun.**
Robert Oberheim.
Plastic, metal.
A descendant of the famous Braun Astronette from the 1970s, the Braun UNO looks more compact but follows the same principles as its predecessor. Amongst these is the ability of users to dry their hair while doing other tasks, since it leaves the hands free. As the marketing at the time mentioned, it worked like a hovercraft. It won the IF Product Design Award at the 1985 Hanover Fair.

PAULO PARRA DESIGN COLLECTION

Paulo Parra

Collecting is an art! A sampling exercise where each element has a different flavor and accumulated knowledge. The challenge is to design the collection! Paulo Parra Collection covers a very wide universe of objects. The oldest piece is a “chopper” dated 15,000 BC and the most recent is an Apple iPod, from 2001. Objects of the written word, sound and image, appliances and consumer electronics, tables and seating objects are some of the main types represented. The collection is representative of the main authors, as well as the most important moments in the history of national and international design.

All existing works in the collection are “of the time“, i.e., original editions. Made up of 3500 items and 2000 books and other documents, in total the collection comprises nearly 6000 pieces. These are divided into two main groups: International Design and Portuguese Design, and the latter is subdivided into Industrial Design, Furniture Design, Craft Design and Communication Design. Research and scientific methodologies were applied when putting the collection together.

Icons and Classics of Industrial Design
Paulo Parra Collection is made up of many of Icons and Classics of International Design, as well as a huge core of pieces from the world’s top 50 designers.
It incorporates types of Communication Objects (writing, sound, image, multimedia), Household Appliances, Luxury Objects, Technical, Leisure Objects and even Games and Toys, in a universe of more than 3500 objects which tell much of the industrial design world history.

Portuguese Industrial Design
Paulo Parra Collection’s national nucleus is a vast and unique collection about the history of Portugal, which includes Glass, Crystal and Porcelain Tableware Objects, Metallurgical Production, Household Appliances, Technical Objects, Consumables and even Games and Toys. The Paulo Parra Collection of National Furniture comprises varied typologies, ranging from Traditional Chairs, Tubular Chairs, Designers Chair and New Author Design, a singular collection of Portuguese qualitative production.

ICONS AND CLASSICS OF INDUSTRIAL DESIGN

Figure 74 - **Jicky Perfume (1889).**
Guerlain. Aimé Guerlain.

Figure 78 - **51 Pen (1939).**
Parker. Kenneth Parker.

Figure 82 - **Pocket Watch (1925).**
Omega. Omega.

Figure 75 - **BS Lighter (1959).**
S.T. Dupont. Lucien Dupont.

Figure 79 - **2531 Radio (1930).**
Philips. Louis Kalff.

Figure 83 - **Algol TV (1964).**
Brionvega. Marco Zanuso.

Figure 76 - **TX 90 Jim Nature TV (1994).**
Thompson Brand. Philippe Starck.

Figure 80 - **Valentine Typewriter (1969).**
Olivetti. Ettore Sottsass.

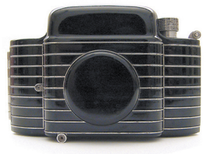

Figure 84 - **Bantam Camera (1936).**
Kodak. Walter Dorwin Teague.

Figure 77 - **Jar (1870's).**
Watcombe. Christopher Dresser.

Figure 81 - **Sodaking Syphon (1938).**
Walter Kidde. Norman Bel Geddes.

Figure 85 - **Moto 6.5 (1996).**
Aprilia. Philippe Starck.

PORTUGUESE INDUSTRIAL DESIGN

Figure 86 - **Côvo. Candy Box (XVII).**
Côvo Design.

Figure 90 - **Vista Alegre (1856).**
Tableware. Vista Alegre.

Figure 94 - **Leitão & Irmão (1930's).**
Cruet. Leitão & Irmão.

Figure 87 - **José Rosas (1950's).**
Ashtray. José Rosas.

Figure 91 - **Cive (1957).**
Astray. Ascenso Belmonte.

Figure 95 - **Vista Alegre (1950's).**
Tableware. Vista Alegre.

Figure 88 - **A Boa Reguladora (1930's).**
Clock. A Boa Reguladora.

Figure 92 - **Telequipo (1985).**
8 Pq Phone. Jorge Pacheco.

Figure 96 - **Olaio (1972).**
Chair. Sena Da Silva.

Figure 89 - **Interforma (1970).**
Chair. José Cruz De Carvalho.

Figure 93 - **Metalúrgica Longra (1962).**
Chair. Daciano Da Costa.

Figure 97 - **Sousa Braga (1970).**
Chair. António Garcia.

CURATOR AND EXHIBITION DESIGN

Exhibiting Design is a complex process, it is Design on Design! Of the many exhibitions we have staged, some deserve special mention for the challenge they posed. Firstly, the “Paulo Parra Design Essencial” exhibition, because showcasing our own work is doubly complex. Also, “Icons and Classics of Design”, an exhibition of the Paulo Parra Collection at the St. Vicente Church, in which design icons replaced religious icons on the altar; an intervention that is not without its responsibilities.
Producing an installation with books for the Presidency of the European Commission was also a challenge, as was the “Design Naturale” installation. And lastly the challenge of exhibiting at an emblematic Lisbon building, such as the Roca Lisbon Gallery, peppering it with hints of design as if it were a “Cabinet de Curiosités” from a design perspective!

Figure 98 - **ANTÓNIO GARCIA DESIGNER GLOBAL (2014). Galeria da Faculdade de Belas-Artes da Universidade de Lisboa.**
Exhibition with works by Designer António Garcia belonging to the Paulo Parra Collection, exhibited at the Gallery of the FBAUL, to mark his honorary doctorate.

Figure 100 - **ÍCONES E CLÁSSICOS DO DESIGN NA COLECÇÃO PAULO PARRA (2009). Igreja de S. Vicente. C. M. Évora**
Installation/exhibition at the St. Vicente Church in Évora. A selection of the most important Icons and Classics of Industrial Design, in a space that once exhibited religious icons.

Figure 99 - **MODERNISMO ALEMÃO NA COLECÇÃO PAULO PARRA (2010). Universidade de Coimbra.**
Exhibition of Masters of German Design - Peter Behrens, Bauhaus and Ulm, at the University of Coimbra. A selection of the most important masters of German Industrial Design.

Figure 101 - **SENTAR PORTUGAL NA COLECÇÃO PAULO PARRA (2013). Faculdade de Belas-Artes da Universidade de Lisboa.**
Selection of some of the most important Portuguese Designers' chairs of the Paulo Parra Collection. Exhibition at the Gallery of the Faculty of Fine Arts from the Lisbon University.

CURATOR AND EXHIBITION DESIGN

Figure 102 - **COLECÇÃO PAULO PARRA (2011). MADE – Museu do Artesanato e do Design de Évora.**
Permanent exhibition of Paulo Parra Collection, located in the historic center of Évora city in the Royal Barn building, an excellent example of functional architecture from the 18th century.

Figure 104 - **BOA MESA PORTUGUESA, COM CERTEZA! - COLECÇÃO PAULO PARRA (2019). Câmara Municipal de Barcelos.**
Exhibition of selected Portuguese national production of tableware products in ceramics, cristal, metal, and silver.

Figure 106 - **SENTAR PORTUGAL, CADEIRAS DE DESIGN NACIONAL - COLECÇÃO PAULO PARRA (2019). Câmara Municipal de Barcelos.**
Selection of some of the most important Portuguese Designers' chairs.

Figure 103 - **BEST OF 25 DESIGNERS NA COLECÇÃO PAULO PARRA (2009). Lisbon ID Expo. Feira Internacional de Lisboa.**
Exhibition of 25 Masters of Industrial Design at FIL - Lisbon International Fair. Selection of some of the most important masters of Industrial Design.

Figure 105 - **DESIGN A BRINCAR EM PORTUGUÊS - COLECÇÃO PAULO PARRA (2022). Casa do Vinho. Barcelos.**
Exhibition of selected Portuguese national production of toys and games.

Figure 107 - **AMBIENTES COM DESIGN – SENTAR E ILUMINAR PORTUGAL (2023). Casa do Vinho. Câmara Municipal de Barcelos.**
Exhibition of Portuguese rest and lighting pieces. It shows some of the most charismatic Portuguese design objects from the 20th century in the Paulo Parra Collection.

CURATOR AND EXHIBITION DESIGN

Figure 108 - **PAULO PARRA DESIGN ESSENCIAL (2017). Oficina Cultural. Instituto Politécnico de Viana do Castelo.**
Installation/exhibition at Oficina Cultural in Viana do Castelo, dating from the 18th century.
A retrospective exhibition of Paulo Parra Essential Design and Design Natural installation.

Figure 110 - **DESIGN NATURALE (2016). Galeria das Tapeçarias de Portalegre. Lisboa.**
Design Natural installation at the Tapeçarias de Portalegre gallery, with cork and leather objects on a carpet of grass, curated with tapestries by the artists José de Guimarães, Graça Morais, Menez, Charrua, Resende, Vítor Pomar and Joana Vasconcelos.

Figure 112 - **PAULO PARRA DESIGN ESSENCIAL (2018). Roca Lisboa Gallery. Lisboa.**
A retrospective exhibition of Paulo Parra Essential Design products.

Figure 109 - **DESIGN NATURALE (2016). Galeria da Faculdade de Belas-Artes da Universidade de Lisboa.**
Presentation of the Design Natural collection from Oficinas de Lisboa at the Gallery of the Faculty of Fine Arts from the Lisbon University.

Figure 111 - **DESIGN MINIMAL NATURAL (2009). Lisbon ID Expo. Feira Internacional de Lisboa.**
Minimal Natural is a fusion of two core elements of Mediterranean culture: resting and bathing. Natural and organic materials blend for a functional and aesthetic union.

Figure 113 - **WATERANDLIFE INSTALLATION (2018). Roca Lisboa Gallery. Lisboa.**
Installation/exhibition with subaquatic creatures “medusas”, whose constructive elements are made from an assemblage of Roca products, creating a visually theatrical installation.