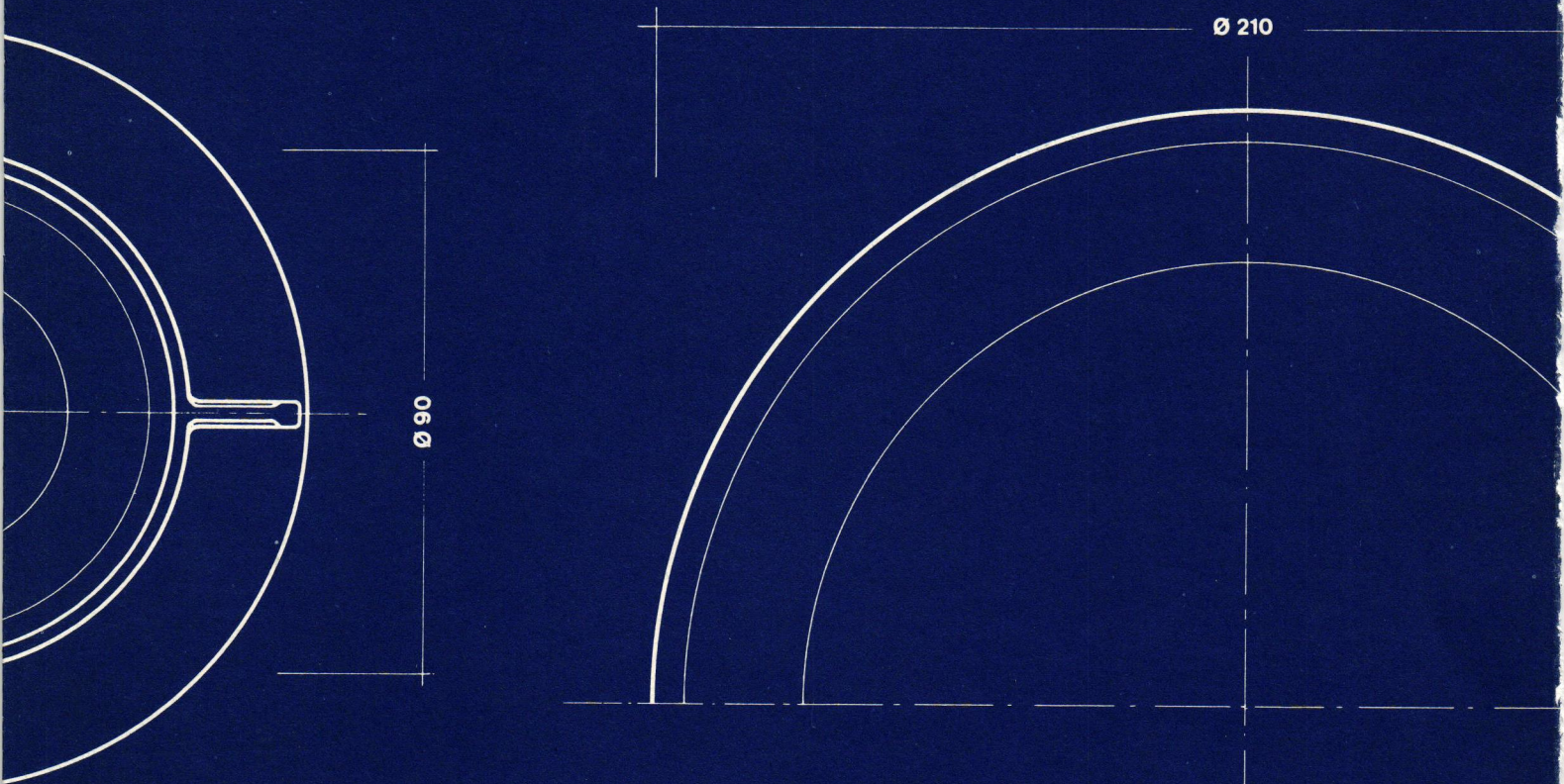
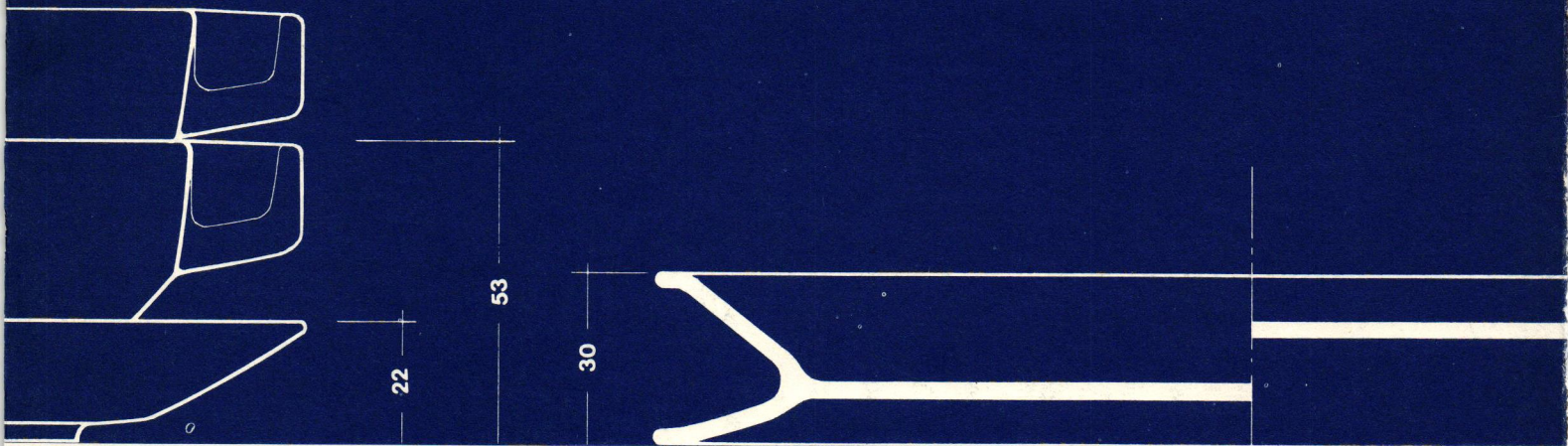


# Design Quarterly 59



## Explanation

### Teapot.

The teapot consists of two parts:

- a. The pot with the lower half of the handle.
- b. The lid, sieve and the upper half of the handle, which form a whole.

The pot can also be used as a pouring jug for milk, water, fruit juices etc., or as a measuring jug. For this purpose graduations are provided on the inside of the pot.

The sieve, being part of the lid, can easily be cleaned.

### Cup and saucer.

Both cup and saucer can easily be stacked.

### Breakfast plate.

- a. Use.

The flat side of the plate can be used for solid food, such as bread, fried eggs, meat, etc., whilst the deep side makes it suitable for liquid and semi-liquid food, such as porridge, cereals, yoghurt. This multi-purpose plate increases the usefulness, and the duration of life considering the material; this is important as the plate is the most vulnerable part of a breakfast service.
- b. Storing.

The plate can be stored vertically or stacked horizontally, which makes it very practical for all types of storing space. A flat rim facilitates horizontal stacking. Vertical storing may save a lot of space. Thanks to the design and the material used, the plate can be put down independently in a vertical position.
- c. Cleaning.

The side groove has been designed to facilitate cleaning (with a towel or small brush) to a maximum. The vertical position is a great advantage when washing up, because drying with a dish-towel can be completely dispensed with.
- d. General.

After a meal, remnants of food are often left on the plate; the double plate when stacked, will leave sufficient space between two plates, to keep the bottoms clean. Moreover, plates with food on them, can often be carried stacked on each other. By putting the fingers in the grooves, a stack of four to five plates can be carried safely.

### Technical remarks.

The matrix for the breakfast plate must contain some moving parts for the groove on the side. The point of injection is projected on the deepest part of the groove.



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Pieter Brattinga, formerly Head of the Visual Communication Department of Pratt Institute, lives in New York City and is currently lecturing at Yale University.

# **Industrial Design in the Netherlands**

## Introduction

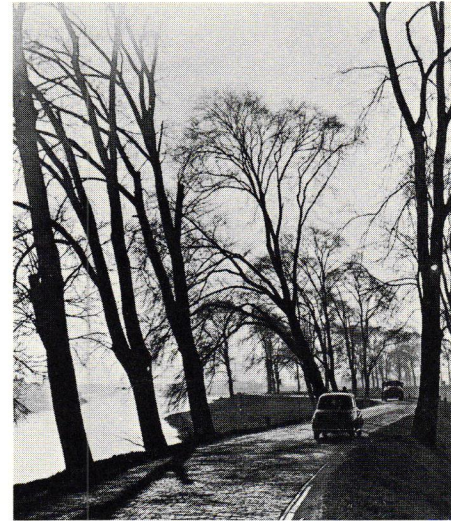
The Netherlands, with a population of 13 million as compared to the United States' population of 180 million, divides its industrial products into two categories: those for export and those for home consumption. A limited home market and the comparatively high investment in the development of a design, including re-tooling machinery and the actual production costs, result in a strict financial consideration on the part of Dutch management. The status of a designer is a major point of difference between the United States and the Netherlands. Because the designer belongs to the intellectual community within the Netherlands and enjoys a more prestigious position than his American colleague, it is easier for a Dutch designer to consult with the highest level of management.

Still another distinction between an American and a Dutch designer is the inherent Dutch spirit. In his 1956 thesis on De Stijl, Dr. Hans Jaffé expands on this spirit: "Precision is a traditionally Dutch virtue, so is neatness and cleanliness. The art of De Stijl has often been decried as 'aseptic', 'clinically hygienic' or 'sterile'. These features are nothing but the manifestations of a complete spiritual cleanliness...so deeply rooted in Dutch cultural heritage, that there is but one word, 'schoon', to define both the notion of clean and beautiful." Dr. Jaffé relates this to Protestantism's rejection of exterior materialism and proposes that "these similar trends in Calvinism and De Stijl are not due to incidental parallelism, but to the fact that Calvinism is part of the spiritual heritage of every Dutchman and makes its influence felt even in spheres not closely related to theology, and even on persons who no longer have ties with the church or with the Protestant community in their practical lives." Dr. Jaffé's observations, made in regard to De Stijl members, can be applied to most native Dutch designers and architects.

In the Netherlands, as in most northern countries, the family is the strongest unit in forming public pressure, frequently translating the opinions of elders into unwritten law. Through this persistent bourgeois pressure the Netherlands has lost many valuable specialists and has suppressed a number of visionaries who are afraid to risk their careers.

All these points, the cleanliness, Calvinism and public opinion, have had considerable, if subconscious, influence on the shaping of Dutch design. The climate of contemporary Dutch design can also be understood in relation to the roles schools and organizations play in furthering education of designers and propagating good design. The Institute for Industrial Design in the Netherlands, founded in 1950, is a member of the International Council of Societies of Industrial Design. Subsidized by the Netherlands Ministry for Economics Affairs, the Institute promotes good design among manufacturers through its file of available Dutch designers, and its publications explaining the proper function of an industrial designer. The Institute also educates the general public through its exhibitions program and its research library. Another organization, the Foundation for Good Living, has significantly contributed to good design by exhibiting well-designed interior furniture. Presently, there are four schools in the Netherlands devoting part of their curricula to teaching industrial design. The Academy of Fine Arts in the Hague has weekend courses for advanced students, the Department of Architecture at the University of Delft began a series of courses this year under the direction of Dr. Joost van der Grinten, and the Institute of Applied Arts in Amsterdam has a newly begun design program. Only the Academy of Industrial Design at Eindhoven presents a regular five year course and grants a certificate.

The following pages describe the history and development of industrial design in the Netherlands. I would like to make an initial distinction between



1. Road-topped dike near Rotterdam.



4. Symbol for the Netherlands Institute for Industrial Design. Design: L. Frank.



2. Shipping in the North Sea Canal near Amsterdam.



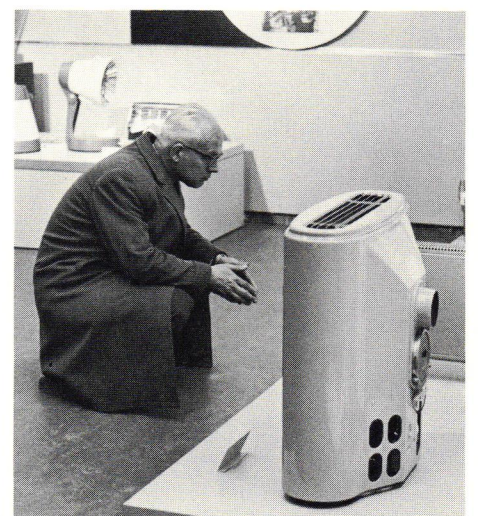
3. Lettering for cheese. Design: Jaap Penraat.



5. Information Booth, Centre of Industrial Design in Amsterdam.



6. Exhibition, Centre of Industrial Design in Amsterdam.

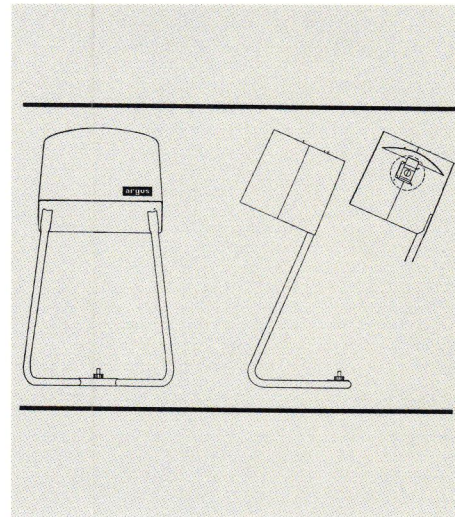


7. Exhibition, Centre of Industrial Design in Amsterdam.

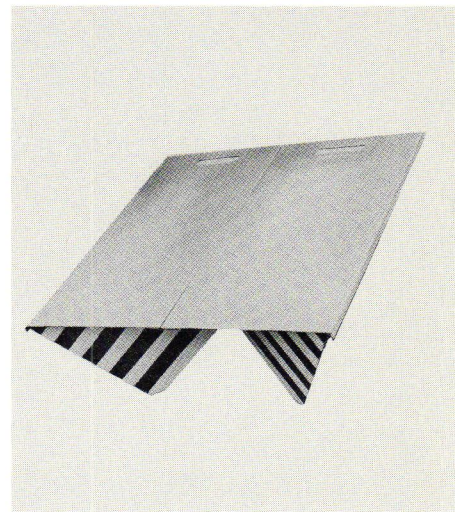
## Student work

industrial design and design for industrial manufacturing. The first term is to be regarded as the profession as we know it today and the second as incidental assignments for architect, engineer or craftsman. The history of design in the Netherlands is an evolutionary progression toward the total process of industrial design.

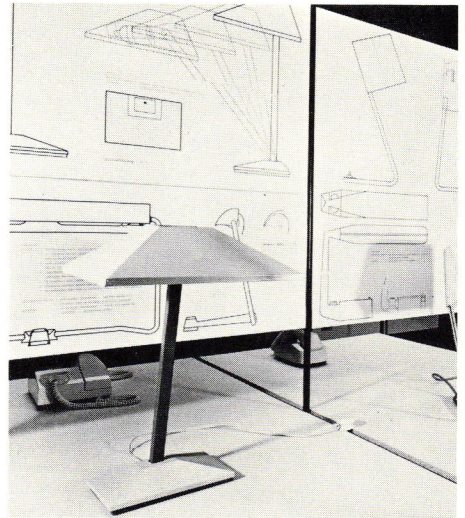
Pieter Brattinga, New York, December 1963



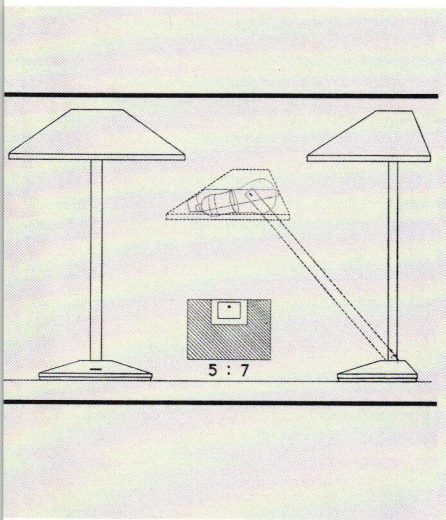
9. Model for lamp. Design: W. Anema, Royal Academy in the Hague.



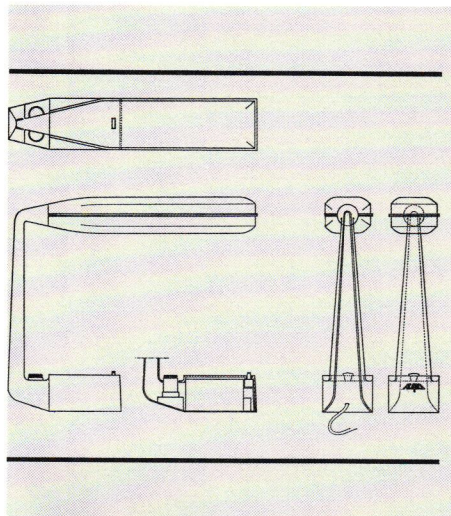
13. Pedestal for traffic policeman. Design: van den Wildenberg, Academy for Industrial Design in Eindhoven.



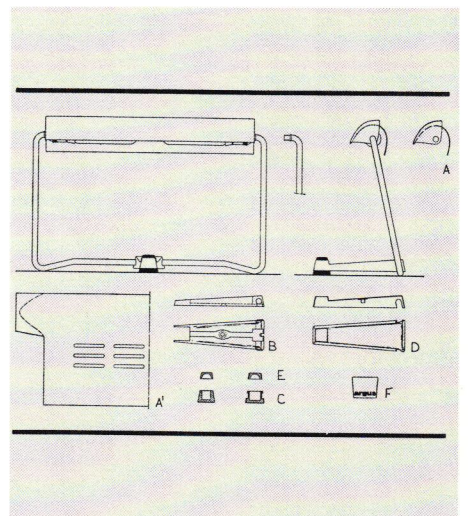
8. Student work, Royal Academy in the Hague.



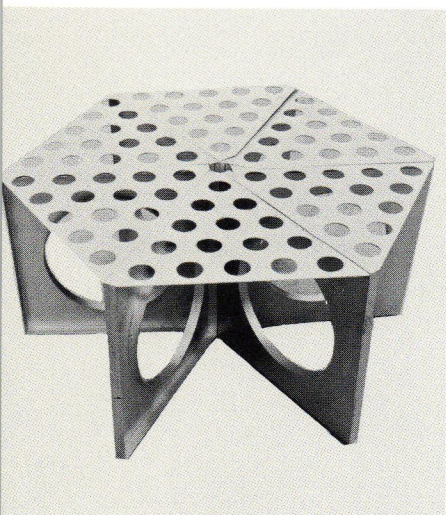
10. Model for lamp. Design: B. Lodder, Royal Academy in the Hague.



11. Model for lamp. Design: M. Tabor, Royal Academy in the Hague.



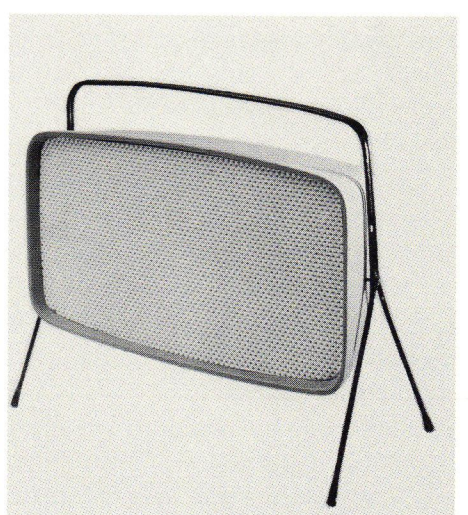
12. Model for lamp. Design: J. Vogels, Royal Academy in the Hague.



14. Pedestal for traffic policeman. Design: Verspaget, Academy for Industrial Design in Eindhoven.



15. Model for washer and dryer. Design: D. Schellens, Academy for Industrial Design in Eindhoven.



16. Model for loudspeaker. Design: J. Huyboom, Academy for Industrial Design in Eindhoven.

## Art Nouveau

Despite the machine's widespread introduction, and its possibilities for mass production within its technological capabilities, the earliest machine-made products were sentimental copies of the individual craftsman's forms and designs. This fixation with historical forms was a result of the inability of industry, and its architects and artists, to realize that the machine should produce forms designed originally for the machine's possibilities. By the late nineteenth century, so many old styles had been revived that around 1890 a revolt took place in all the arts. Groups of architects and artists in Europe were searching for a new style. Their brief period of experiment, now called Art Nouveau, was intended to clear the air by halting the tendency to copy earlier forms and was a factor in introducing 'the first machine age.' Although Art Nouveau was more important in other countries as a period of pure decoration, its influence in the Netherlands spurred research into materials and production methods and inspired the development of design for industrial manufacturing.

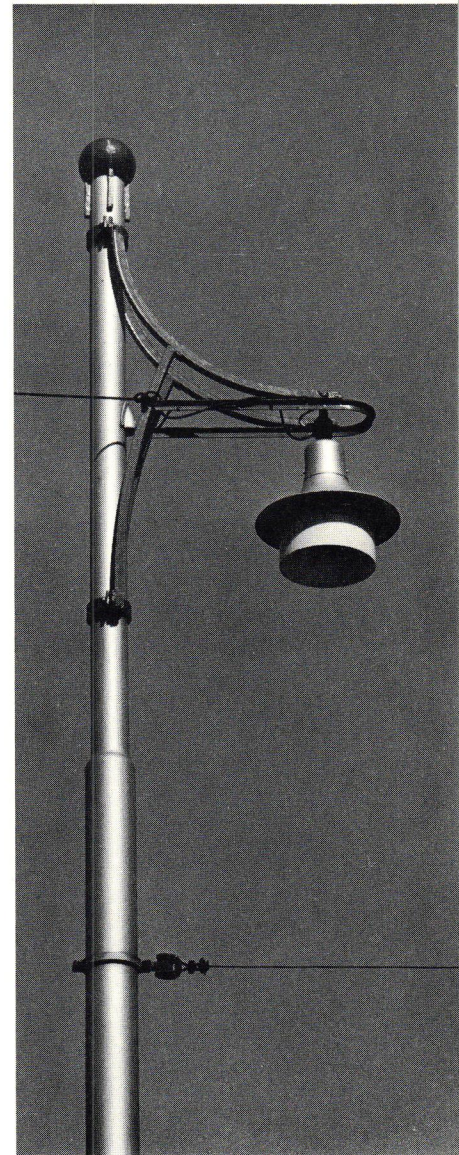
Art Nouveau, the new art, used motifs abstracted from growing forms in nature. The twisting, whip-lash lines of Art Nouveau decoration led the Netherlands burghers to classify it as 'Eel-style' and 'Salad-dressing-style.' Employing the style's organic vocabulary, architects and artists interested themselves in producing designs for books, ceramics, wallpaper, clothing and furniture in their search for stylistically unified interiors. Because Art Nouveau served as a liberation from the imitation of borrowed styles, it inevitably led to an examination of new possibilities of the machine.

## Berlage

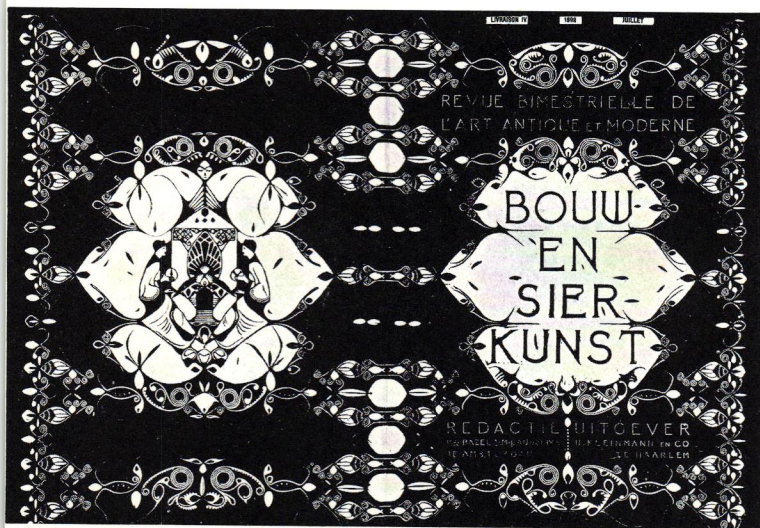
In the Netherlands during Art Nouveau, architects enjoyed particular status within the arts. As the ephemeral Art Nouveau declined, many architects turned for new inspiration to the philosophy of Hendrikus Petrus Berlage. In the Netherlands and the United States, Berlage's contribution is not yet held in proper perspective. Mies van de Rohe, in Conversations Regarding the Future of Architecture, paid homage to Berlage as a teacher: "I was lucky enough, you know, when I came to the Netherlands and was confronted with Berlage's works...the construction was what made the strongest impression on me, the use of brick, the honesty of materials and so on. I never forgot the lesson I learned there."

Berlage is perhaps best known for his design of De Beurs, the Amsterdam exchange. His early designs for this project reflect influences from past styles but in the final version Berlage showed his intention to make De Beurs a truly functional structure. Berlage's philosophy of architecture is stated in his Studies over Bouwkunst, Stijl en Samenleving (Architecture, Style and Community): "...reality is the great happiness which we have lost...We want reality again, and no fakes. Reality is the essence of architecture! It is the truth and only the truth, which we want; since even in the arts the lie is the rule nowadays, the truth has become the exception. That is the reason why architects have to try to get close to reality, to understand the reasoning of architecture."

While Berlage advanced his ideas on honesty in architecture, his insistence upon the supremacy of the architect met with opposition. His uncompromising dictum that "architecture shall be the creative art of the twentieth century, as it was 600 years ago; painting and sculpture shall advance together as its servants, and in that employment, reach their highest development" stirred groups of artists into dissention around 1910-1925 and caused a continuing re-evaluation of the architect's role in the post World War I era.



18. Street lighting for the Hague. Design: Piet Zwart (1924).



17. Periodical cover. Design: K.C.P. de Bazel.



19. De Beurs, the Amsterdam Exchange. Architect: Berlage.

## De Stijl

One of the most important art groups after World War I, De Stijl, gathered around a Dutchman, Theo van Doesburg (C. E. M. Küpper), who regarded the machine neither as an enemy nor merely as a production tool, but as a beneficial instrument with a role in the arts. The aftermath of war, with its corresponding social and political revolutions, generated new ideas in all the arts and De Stijl was a germinal source of these theories.

The first issue of the publication *De Stijl* contained contributions by Anthony Kok, J. J. P. Oud, Bart van der Leek, Piet Mondrian and Vilmos Huszar. On production and the use of machines van Doesburg later wrote: "Under the supremacy of materialism, handicraft reduced men to the level of machines; the proper tendency for the machine, (in the sense of cultural development) is as the unique medium of the very opposite—social liberation." Those involved in the publication were soon called *Stijl-leden*, or *Stijl-members*, and their influence spread across the borders of the Netherlands in the early Twenties. By 1927, De Stijl lost most of its Dutch touch and became an international movement. De Stijl existed only through the vigorous discipline and energy of van Doesburg, who maintained contact with members across Europe and kept the magazine within the boundaries of his own beliefs at that time.

Alfred H. Barr, Jr., in his publication *De Stijl* (1952), traces van Doesburg's still controversial influence on Walter Gropius' Bauhaus from Mies van der Rohe's plan for a country house in 1922 to Bauhaus typography and furniture.

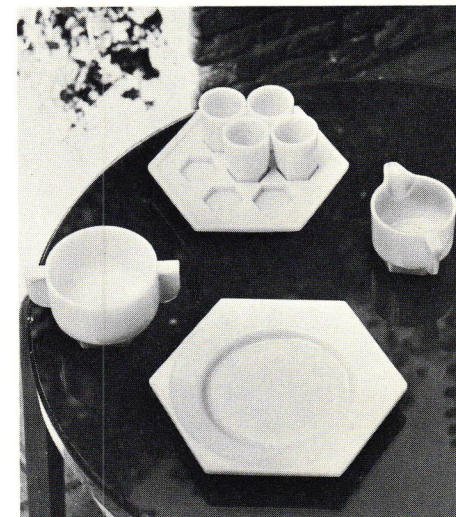
### Functional Architects

'Zakelijkheid,' a Dutch term for functional objectivity, represented another emerging philosophy that came to the forefront in architectural discussion between the Wars. Two groups of functional architects, *de Opbouw*, or 'Construction,' situated in Rotterdam, and *de 8*, centered in Amsterdam, declared in the first issue of their magazine *De 8 en De Opbouw*: "We must promote the science of building rather than the art of architecture." The groups involved in the functional movement regarded themselves as 'anti-esthetical' and chose the machine as their symbol for the creation of a better world. Since their professional philosophy was strongly injected with social conscience, it is not surprising that city-planning was one of the first points on their program. Their concern for mechanical production was to open the way for Dutch industrial manufacturing as it is today.

The functional architects, as well as De Stijl members, influenced the Bauhaus program. Two of these, Mart Stam and Piet Zwart, taught at that educational institution and championed a strong functional philosophy. Stam became known through his participation in the 1927 Stuttgart exhibition 'Weisenhofsiedlung,' where such internationally known architects as Corbusier, Mies van der Rohe, Gropius and Oud showed designs for apartment buildings. Stam, heading a team of designers in the office of Brinkman and van der Vlugt, had previously designed several buildings in Germany by the time he designed the van Nelle factory in Rotterdam in 1929. His famous series of chrome bent-pipe chairs were designed in 1928. Piet Zwart, a controversial Dutch typographer, photographer, designer and architect, came to the Bauhaus in 1929. Zwart taught typography and his creative ideas greatly stimulated his students, many of whom later remained in close touch with Zwart in Holland. That year Zwart gave a memorable lecture in Amsterdam before an association of applied artists, the V.A.N.K. He said: "If we wish to perform fruitful work in a cultural sense, then our task cannot consist of thinking out shapes made suitable for machines. Machines are preemptory.



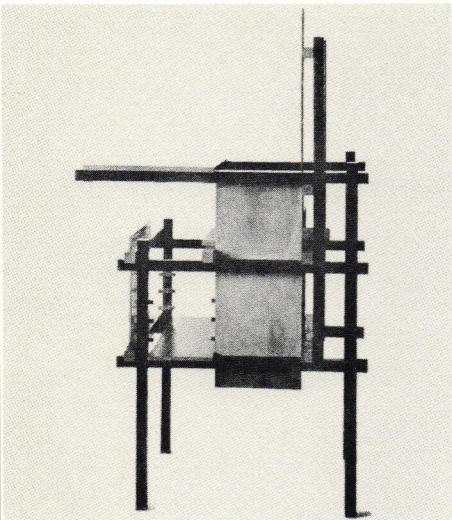
20. Red and blue chair. Design: Gerrit Thomas Rietveld (1903).



24. Set of yellow pressurized glassware. Design: Piet Zwart (1921).



27. Telephone. Design: G. Kiljan. Manufacturer: Heemaf.



21. Baby chair. Design: Gerrit Thomas Rietveld (1919).



22. Table lamp. Design: Gerrit Thomas Rietveld (1925).



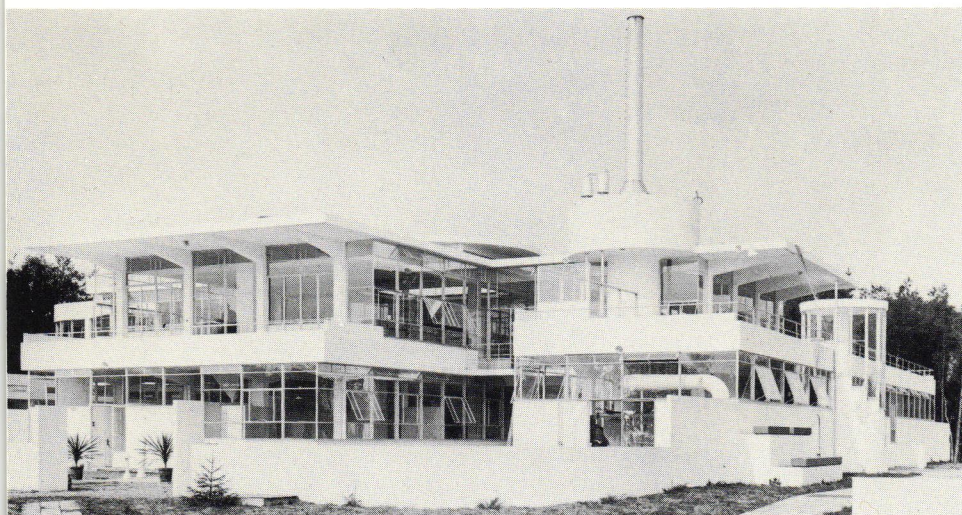
23. Model of one-piece stamped chair. Design: Gerrit Thomas Rietveld (1924).



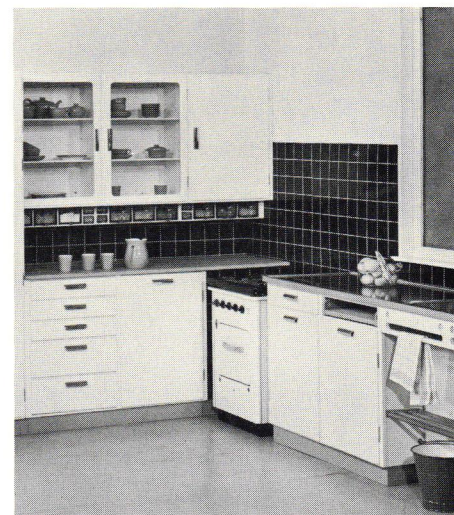
25. Chrome bent-pipe furniture. Design: Mart Stam (1928).



26. Van Nelle factory. Architects: Brinkman and van der Vlugt. Design: Mart Stam (1929).



28. Sanatorium Zonnestraal. Architects: Duiker and Bijvoet (1929).



29. Kitchen in separate units. Design: Piet Zwart (1938). Manufacturer: Bruynzeel.

The forms we give objects are not a matter of taste but an expression of our mental outlook, as dictated by the meta-cosmos. Designing and the choice of materials are not matters of individual inclination but factors of responsibility toward the community. One of the moral forces emanating from the technical world forces us to acknowledge that we have no right to available matter (materials) for the satisfaction of individualistic pleasures. In this respect, too, we have a responsibility toward the community which is growing into a world-wide service organization. On the strength of these factors it would seem to me that the task of those persons carrying out applied arts, and that of the leaders of this expression of human activity, is accurately determined. Thus: they can be no more than organizers of the possibilities technical production methods have to offer. Their task must be to determine a synthesis of the use of material and production method. Anything they do in excess of this is make-up."

Few were in agreement with Zwart and typical criticism came from Paul Bromberg, a designer: "Today it is a new fashion among architects to 'play engineer.' Everything has to look machine-made, even if the machine has no part in the actual production; everything has to look functional (zakelijk) even if functionalism is not the goal."

### **Prewar Designs**

The Netherlands, immediately before World War II, revealed increasing activity in the design field, evidenced by new solutions to functional problems and a valid approach to the process of industrial design. In 1938 Zwart's prefabricated kitchen consisting of independent units was brought out on the Dutch market, revolutionizing kitchen interiors in the Netherlands, and illustrating imaginative mass-production of useful objects. The designer Gispen raised the level of design through well designed, functional furniture and lamps. Copier produced his remarkable glassware. At the same time, other designers worked anonymously in state and municipal drafting rooms on products such as mailboxes and overhead wire supports for the Amsterdam tram, and diesel engines for the Netherlands Railways. With war approaching, the mobilization of the armed forces and the subsequent occupation of the Netherlands from 1940 to 1945, this brief florescence in design came to a complete standstill.





### **Post War Era**

The slow revival of one of the hardest-hit European countries was only possible after 1947 through accelerated industrialization, a direction intensified by the loss of the Netherlands East Indies. The term industrial design was virtually unknown to Dutch designers until around 1950, when tremendous influence from the United States was felt in many fields of technical specialization and references to industrial design appeared more frequently in foreign publications. Since there was no clear understanding of the term's meaning, most manufacturers thought that this new idea referred to the outer form of objects. Subsequently, a number of industries simply hired artists to develop a different form around an existing product. Confusion resulting from this 'styling' made it difficult for designers to educate manu-

facturers to the real meaning of industrial design. Designers such as Kalff, Penraat, Zwart, Gilles and the theoretician Sanders attempted to correct this misconception by founding, in 1955, an organization called the K. I. O., the 'Kring van Industriële Ontwerpers' and the association soon accumulated 40 to 50 members. After the first congress of the International Council of Societies of Industrial Design in Stockholm in 1959, a crisis occurred in the K. I. O. when several members objected to the 'kaffeeklatch' atmosphere of their meetings. They protested that actual cases were never discussed, arguing that because the industrial designer's position was so new to the Netherlands, procedure should be developed to enable members to deal with management and benefit from each other's experience. A small group broke with the K. I. O. and formed its own association, calling itself the '7' and consisting of Friso Kramer, Wim Rietveld, Kho liang li, Coen de Vries, Wim de Vries, Teunissen van Manen and myself as coordinator. the '7' was expanded in 1961 and subsequently named the Netherlands Industrial Designers within the Applied Arts Federation (N.I.D.f.). This minor revolution is characteristically Dutch in its insistence on serious discussion and exchange of ideas.

### **The Revolt Chair**

De Cirkel, a Dutch furniture factory, was founded by J. Schröfer in 1934, when he switched from engineering to manufacturing bent-pipe furniture. The demand was so great that by 1938 De Cirkel had grown to a plant with 60 workers, but when the post-World War II market became saturated with bent-pipe furniture, De Cirkel began sheet metal production. Friso Kramer, one of the original '7', moved in 1951 from the drafting room at De Cirkel to the plant's research division and with Schröfer's encouragement, explored new materials and investigated manufacturing processes in order to develop a product not readily imitated by competitors. Around 1956 Kramer completed his research, approved the manufacturing methods and detailing of his design, and De Cirkel produced the 'revolt' chair.

This unique product was turned over for marketing to Ahrend, an office furniture company. Evidently, the sales department of Ahrend did not think the 'revolt' chair would sell and only because of considerable pressure the chair was finally introduced in some of the display windows of the Ahrend affiliates. Then the incredible happened. The chair, originally intended for office use, was so popular in price and so agreeable in form that not only offices but also the general public bought Kramer's design. Suddenly, De Cirkel could not manufacture enough 'revolt' chairs.

Other manufacturers watched this strange phenomenon with great interest and many of them engaged industrial designers, hoping to acquire similar successes. However, the easiest method was to copy the 'revolt' chair for their own production. Even now there is no law in the Netherlands protecting an industry from having its products copied. Consequently, De Cirkel entered a number of lawsuits, one of which they won, while others are still pending.

Imitation may well be the highest form of flattery, but if industries as far away from Holland as Canada are copying the 'revolt' chair, this design will become a milestone not only in the status rise of the industrial designer in the Netherlands but also in the history of plagiarism. With the introduction of the 'revolt' chair, the initial gains of industrial design in the Netherlands were consolidated and from that event forward, industrial design could develop as a recognized field of specialization.



## Rietveld's Definition of Industrial Design

A theoretical counterpart to the pioneering efforts of Kramer was written in 1959 by Wim Rietveld, son of the famous architect, as a definition of industrial design for the Encyclopedia Winkler Prins. This definition, given here in summary form, has great relevance to the Dutch spirit and epitomizes the evolution of Dutch industrial design.

**Industrial design is:** design for mass production to insure maximum use and minimum price.

**Industrial design is not:** a superficial change of the form or shell of a product. Industrial design means: improvement of the total product. This includes function, form, cost and color.

**Function:** The object must serve the purpose for which it was developed.

**Form:** The function, choice of materials, construction and process of design should determine the form of a product. The product should possess 'schoonheid', industrial beauty, and it should not give the impression of being different than it really is.

**Cost:** A minimum cost is a necessary condition for mass production. To insure a minimum cost, an appropriate choice and proper use of materials as well as a thoroughly conceived construction must be considered.

**Color:** To determine the color of a product, the environment within which it will exist must be considered. The finish of a product must be developed for maximum durability.

**Industrial design teamwork:** In order to arrive at the best design solution, the Industrial Designer must be in regular contact with the technicians and specialists in the industry developing the product. Consultation must take place on a high level in order that the right decisions may be made immediately. This teamwork is necessary to fully explore the potentialities of industry.

**Systematic Development of a product:** It is necessary to follow a systematic development of a product in order to eliminate unnecessary cost. Experience in the field of Industrial Design reveals that it is advantageous to divide the development into a number of phases. Upon the completion of a phase, the designer should consider whether it is wise to continue the development of the product, to begin again, or even to halt the development of the design.

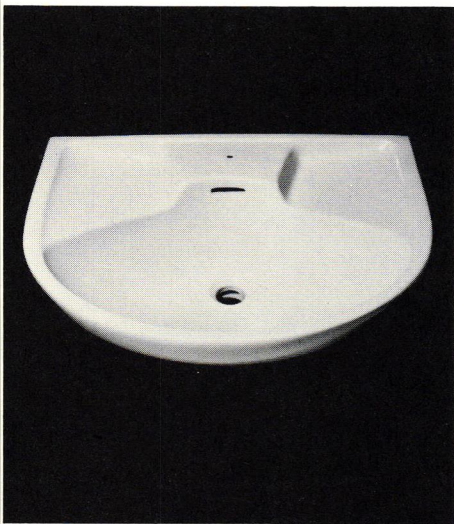
An example of a number of phases in their proper order:

1. Market Analysis: should determine the need for a new product.
2. Product Analysis: should reveal what characteristics are necessary in order to create a demand for the new product.
3. Choice of materials: will provide a basis for the choice of function, form, color and cost.
4. Sketch of construction and form: at this point, all previous phases will contribute to the design.
5. Preliminary pre-calculations: will reveal an estimate of consumer price. It is possible that the product will prove too expensive, causing the development to begin again.
6. The Model: at this point it is possible to modify the visual aspects of the design inexpensively.
7. Estimate of total costs: it must be decided if the new product can be produced with the existing tools and machinery or if new machinery must be purchased.
8. The Prototype: by experimenting with the actual prototype the most advantageous means of production may be determined. This offers another opportunity for design modification.
9. Definite pre-calculation: it is now possible to determine the consumer price.
10. Final decision: the product may now be mass-produced.





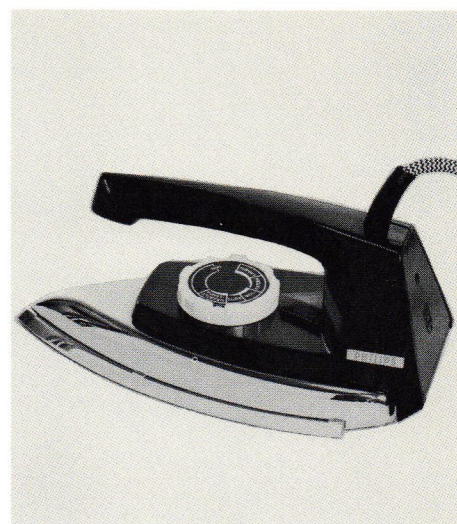
## Appliances



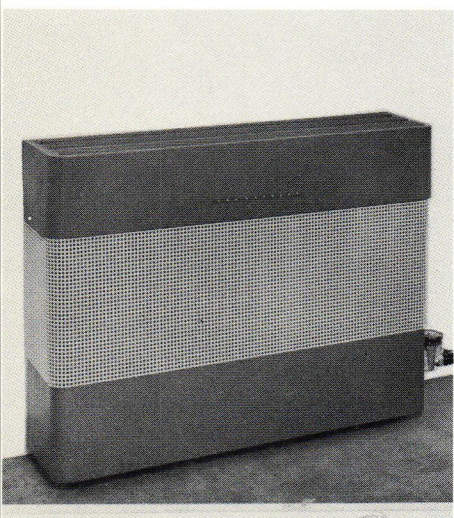
30. Washbasin 'Paris'. Design: J. Lucassen. Manufacturer: Royal Sphinx.



31. Pressure cooker. Design: Manufacturer's team, Tomado.



32. Iron. Design: Manufacturer's team, Philips Electrical Works.

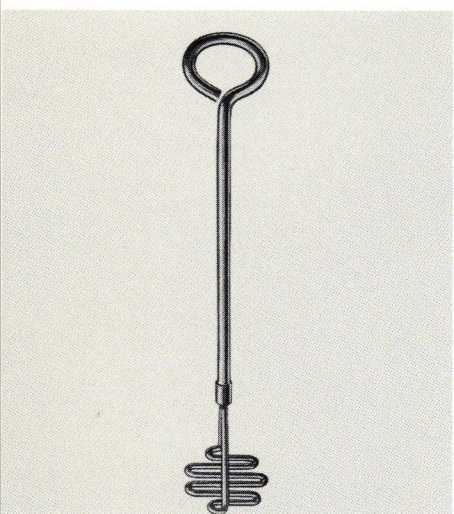


33. Balanced flue heater 'Drugasar'. Design: W. Gilles. Manufacturer: Dru.

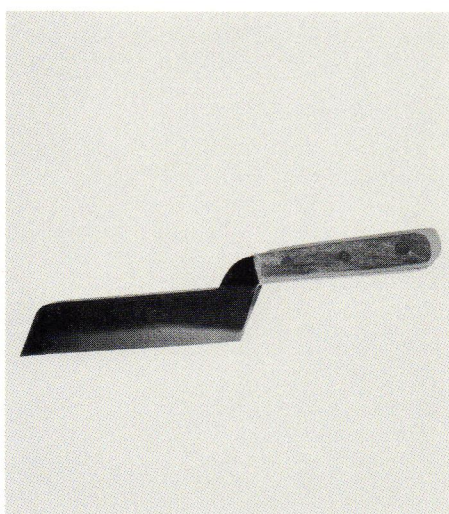


34. Washer and dryer combination. Design: Berkhey and Itha. Manufacturer: R. S. Stokvis.

## Tools



35. Restaurant kitchen tool. Manufacturer: Gero.



36. Kitchen knife. Manufacturer: Stroink.

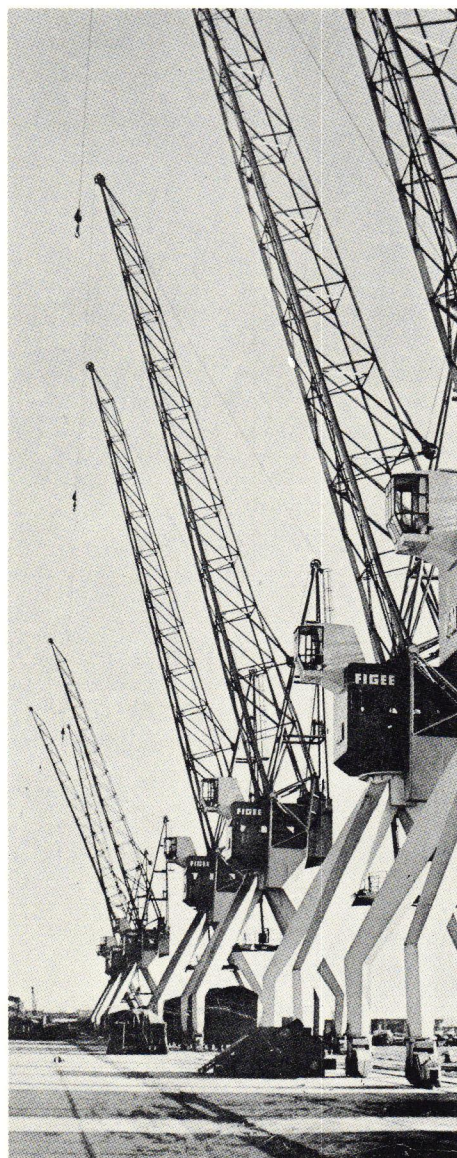
## Transportation and Heavy Machinery



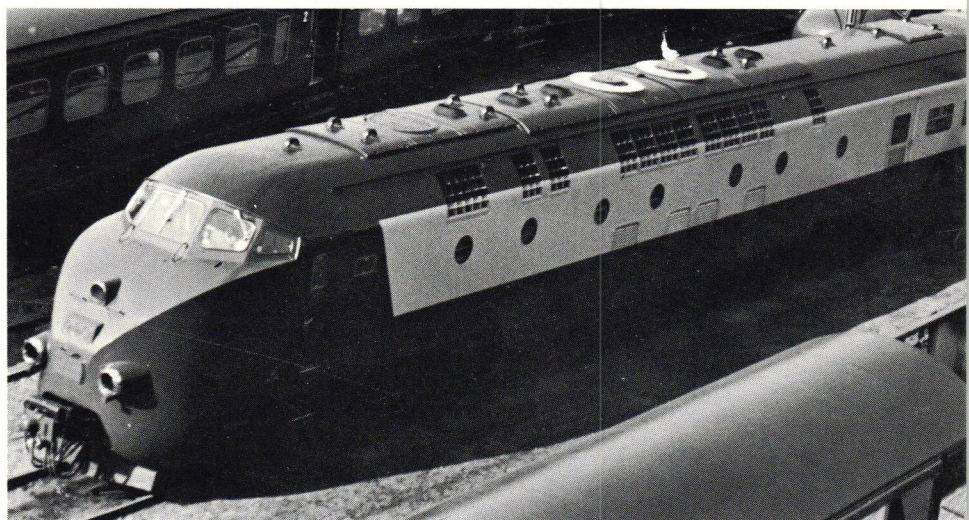
37. Fokker-Fairchild Friendship F. 27. Design: Manufacturer's team, Fokker.



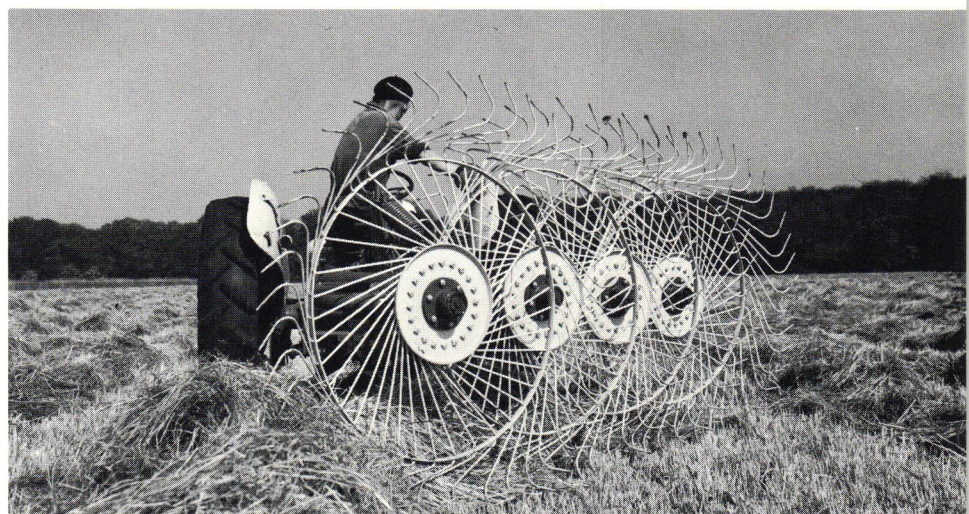
38. Interior of Fokker-Fairchild Friendship F. 27. Design: Manufacturer's team, Fokker.



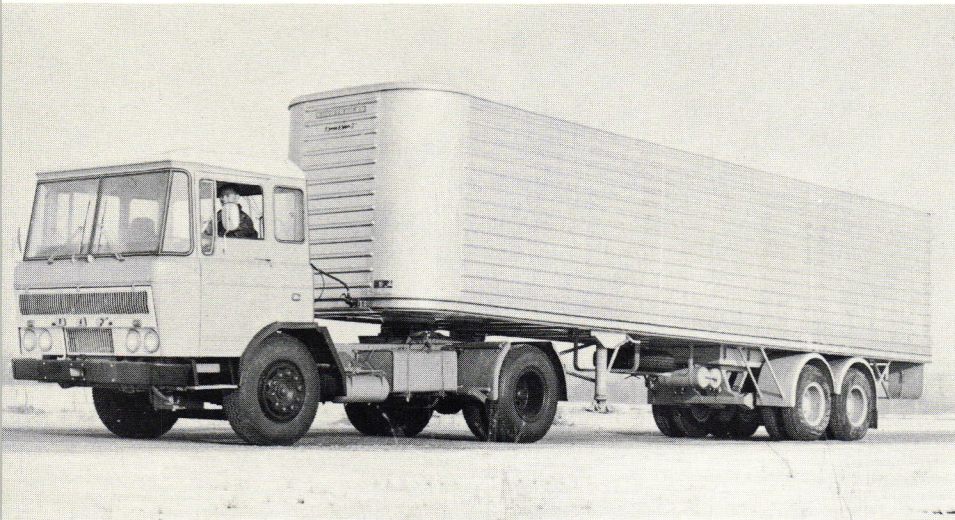
44. Automatic harbor crane. Design: Ir. J. H. Brandenburg. Manufacturer: Figee.



41. Trans-Europe train engine. Manufacturer: Werkspoor.



45. Automatic raker. Design: Wim Rietveld and manufacturer's team, H. Vissers.



39. Truck and trailer T. 2600. Design: Manufacturer's team, van Doorne Automobielfabriek.



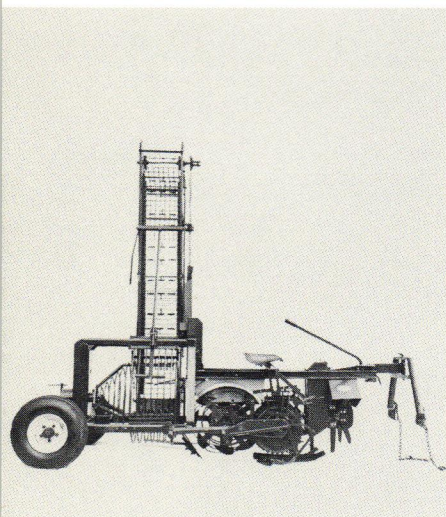
40. Amsterdam tram. Design: Jaap Penraat and Friso Kramer. Manufacturer: Werkspoor.



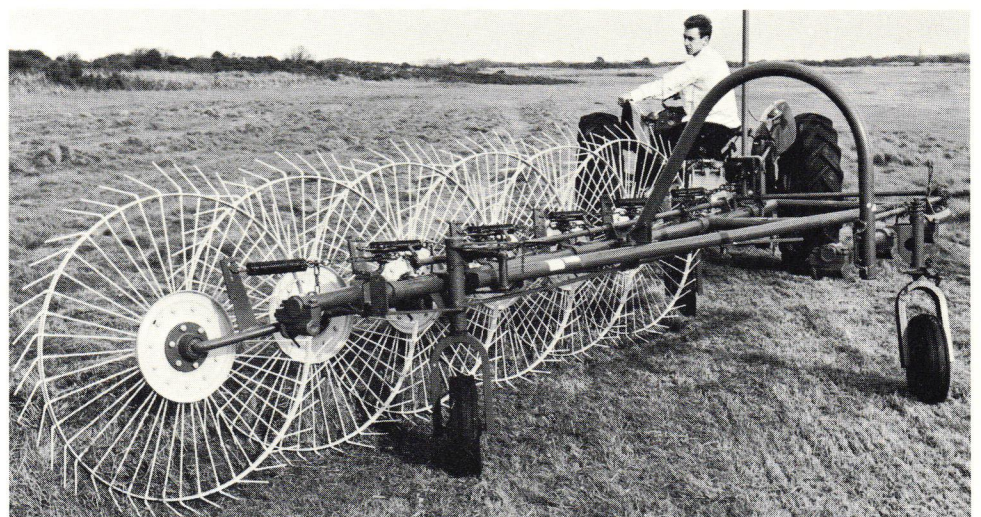
42. Automatic seeder. Design: Wim Rietveld and manufacturer's team, H. Vissers.



43. Automatic seeder. Design: Wim Rietveld and manufacturer's team, H. Vissers.



46. Sugar beet harvester. Design: Wim Rietveld. Manufacturer: H. Vissers.



47. H.K.W. combination. Design: Wim Rietveld. Manufacturer: H. Vissers.

## Professional Equipment, Phonographs and Tape Recorders



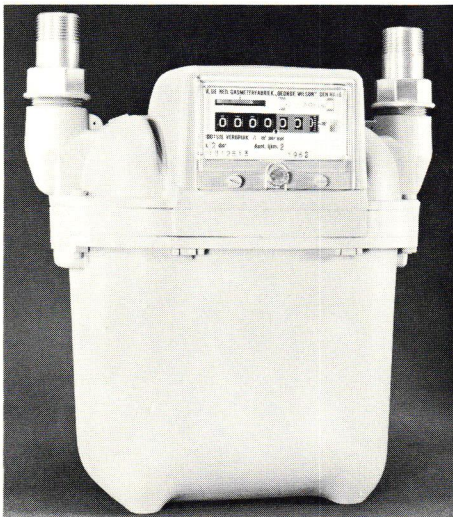
48. Compact closed circuit T.V. camera. Design: Manufacturer's team, Philips Electrical Works.



49. Telecuring medical equipment with radioactive cobalt 60. Design: Manufacturer's team, Philips Electrical Works.



50. 'Revolt' drawing table. Design: Friso Kramer. Manufacturer: de Cirkel.



54. Gas meter. Design: Manufacturer's team, George Wilson.

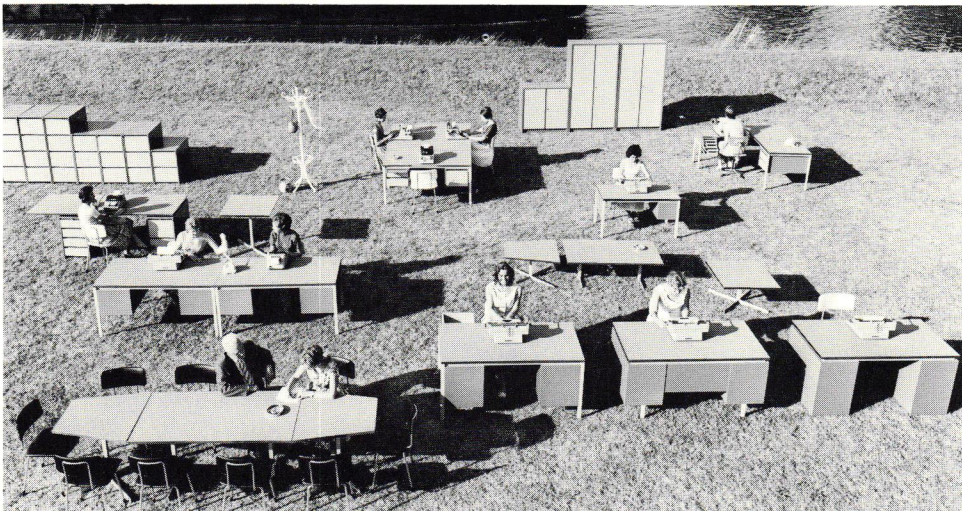


55. Twin mailbox. Design: Emile Truyen and Rob Parry. Manufacturer: P.T.T.

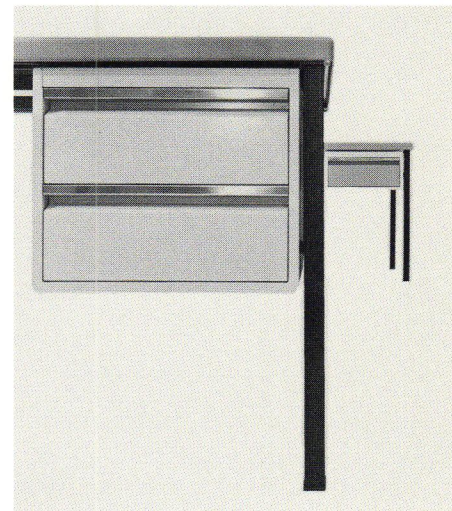


56. 'Reply' drawing table. Design: Wim Rietveld. Manufacturer: de Cirkel.

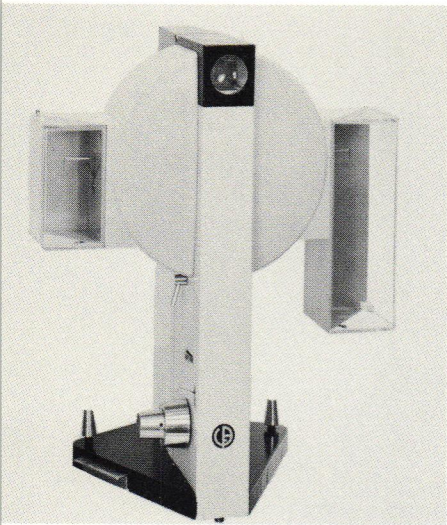
## Office Furniture



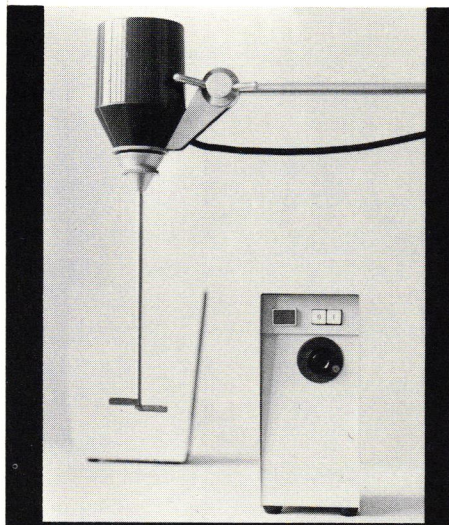
60. Furniture exhibition. Design: Coen de Vries. Manufacturer: Lips.



61. 'Revolt' desk. Design: Friso Kramer. Manufacturer: Oda.



51. Torsion balance. Design: Karel Suyling. Manufacturer: Ver. Draad Fabriek.



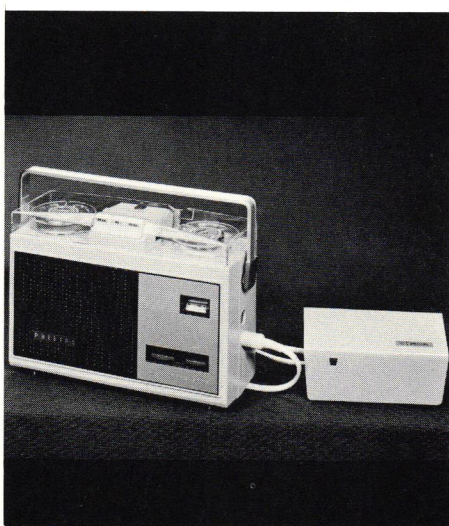
52. Industrial mixer. Design: Charles Jongelans. Manufacturer: Homef.



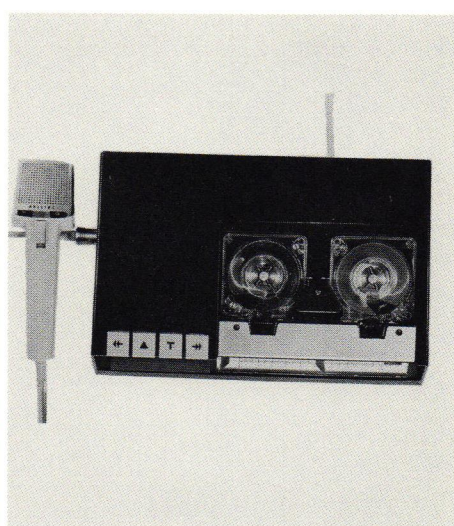
53. Weighing scales. Design: A. J. C. van Westrenen. Manufacturer: Olland.



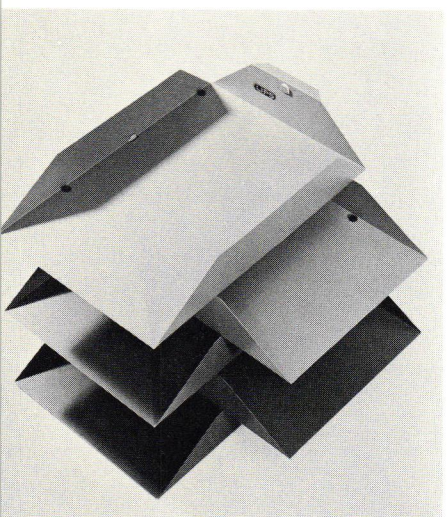
57. Record player. Design: Isha. Manufacturer: R. S. Stokvis.



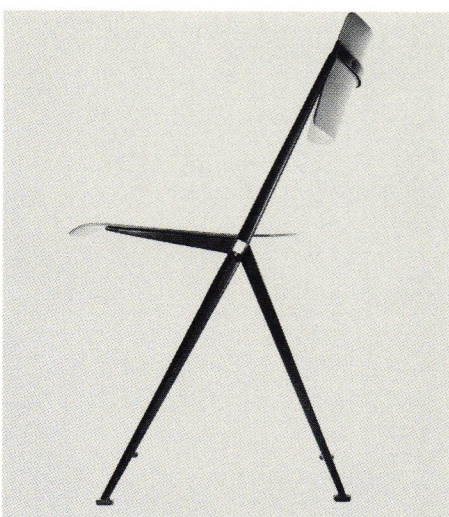
58. Transistor tape recorder. Design: Manufacturer's team, Philips Electrical Works.



59. Dictating machine. Design: Friso Kramer. Manufacturer: Oda.



62. Desk baskets. Design: Coen de Vries. Manufacturer: Lips.

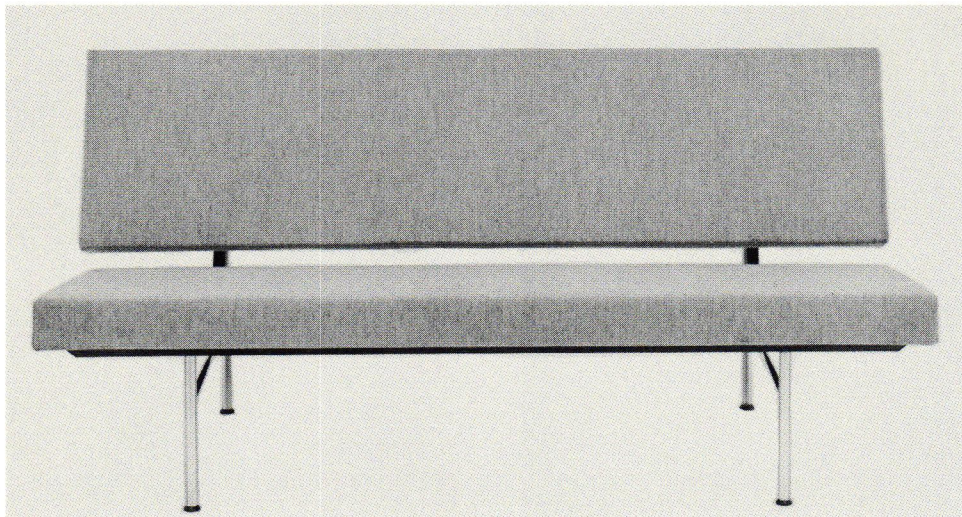


63. Pyramid chair. Design: Wim Rietveld. Manufacturer: de Cirkel.

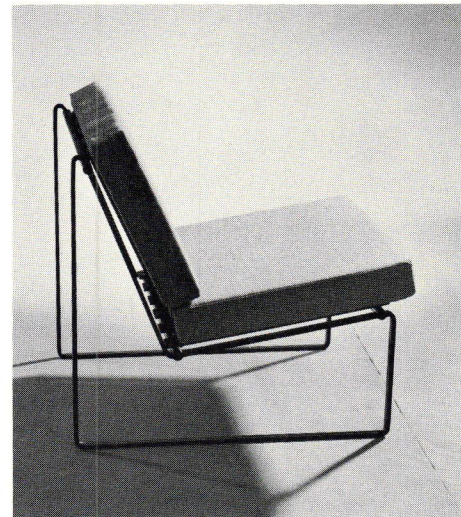


64. Drawing stool. Design: Manufacturer's team, de Cirkel.

## Residence Furniture



65. Setee. Design: A. R. Cordemeyer. Manufacturer: Gispen.



66. Chair. Design: Kho Liang Ie. Manufacturer: Wagemans and van Tuinen.



69. Chair Beta II. Design: Rudolf Wolf. Manufacturer: Meander.



70. Setee and lounge chairs. Manufacturer: Gispen.



73. Dining room with unit furniture. Design: C. Braakman. Manufacturer: U.M.S. Pastoe.



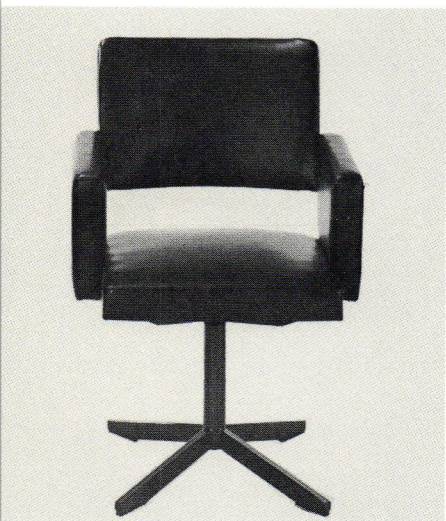
74. Cleopatra couch. Manufacturer: Auping.



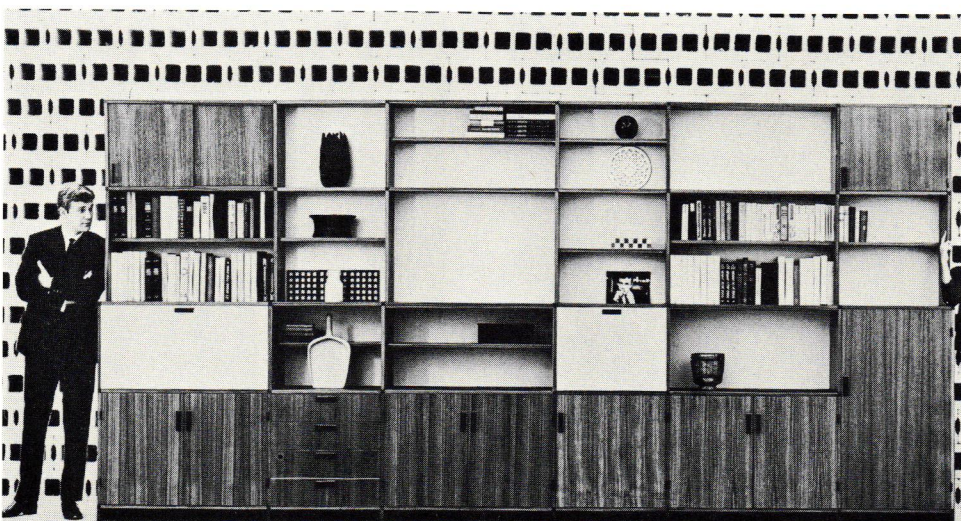
67. Resort chair. Design: Friso Kramer. Manufacturer: De Cirkel.



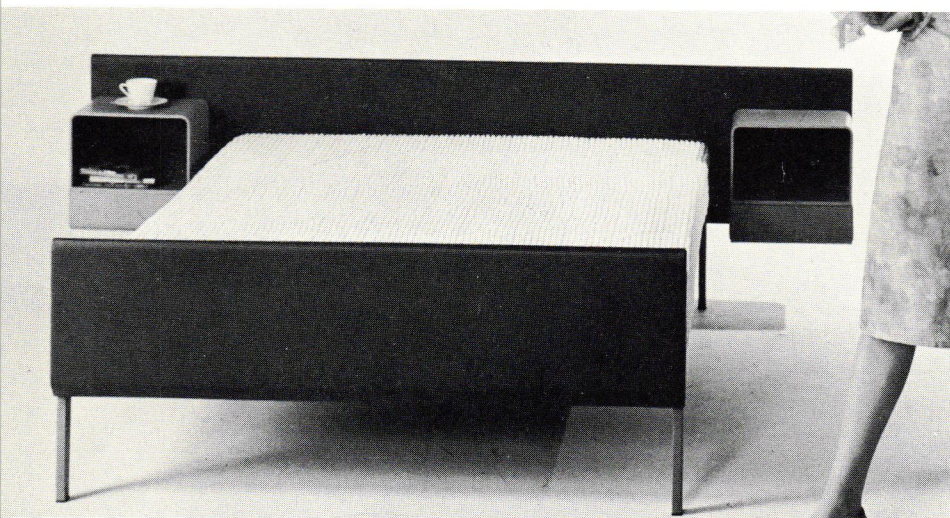
68. Furniture set. Design: Kho Liang Ie. Manufacturer: Kempkes.



71. Armchair AP10. Design: H. Salomonson. Manufacturer: A. Polak Meubel-Industrie.



72. Combination wall units 'Pas Toe'. Design: C. Braakman. Manufacturer: U.M.S. Pastoe.



75. Eroika bedstand. Manufacturer: Auping.

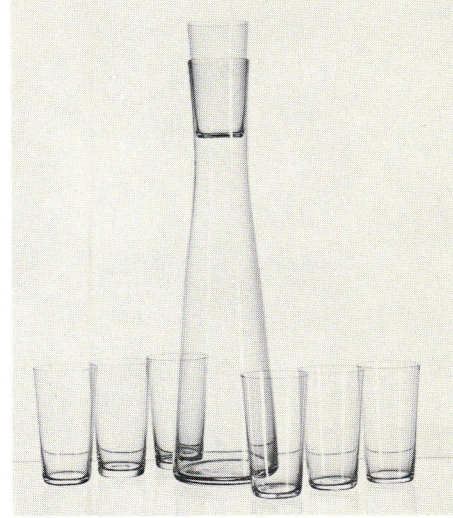


76. Bed. Design: C. Neyenhuis. Manufacturer: Avek.

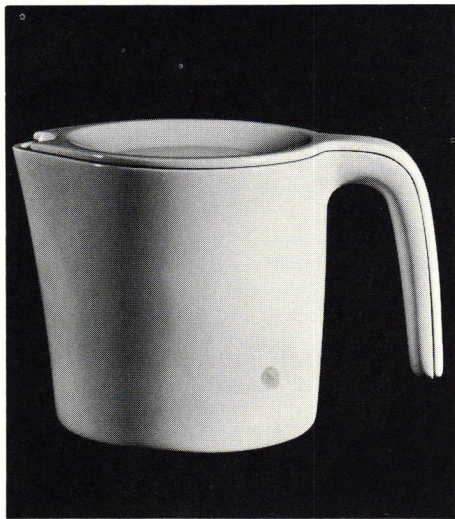
## Housewares



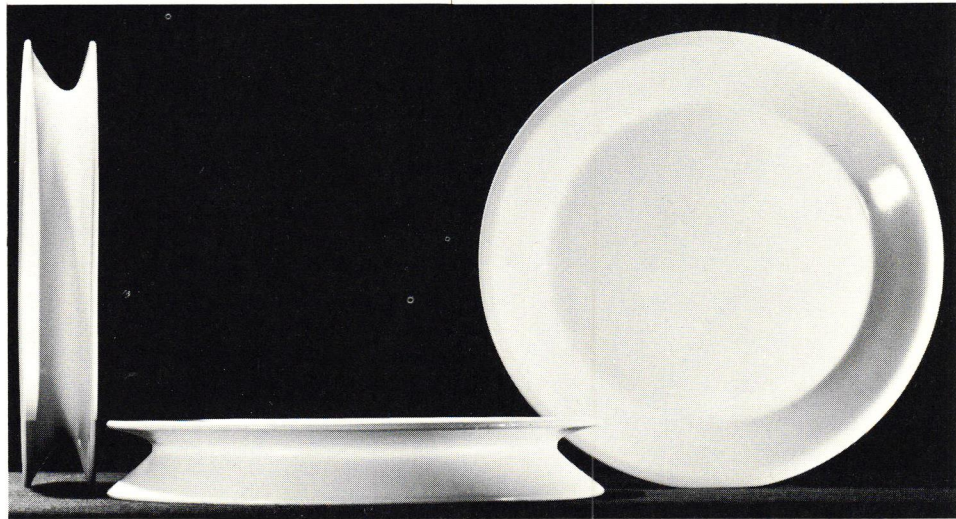
77. Glass 'Gilde'. Design: A. D. Copier. Manufacturer: Royal Leerdam.



78. Milano sherry glass set. Design: F. Meydam. Manufacturer: Royal Leerdam.



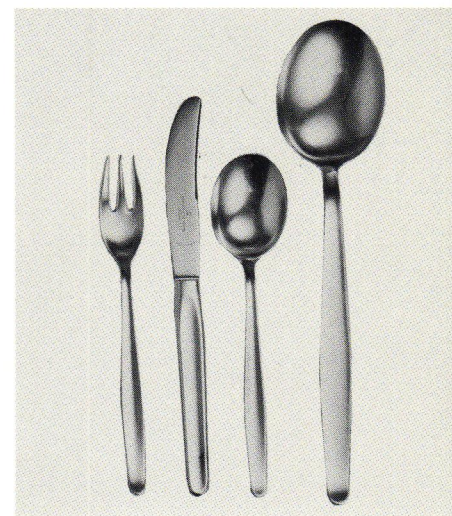
81. Plastic tableware. Design: Friso Kramer (see cover).



82. Plastic tableware. Design: Friso Kramer.



85. Tea set. Design: W. H. de Vries. Manufacturer: Fris.



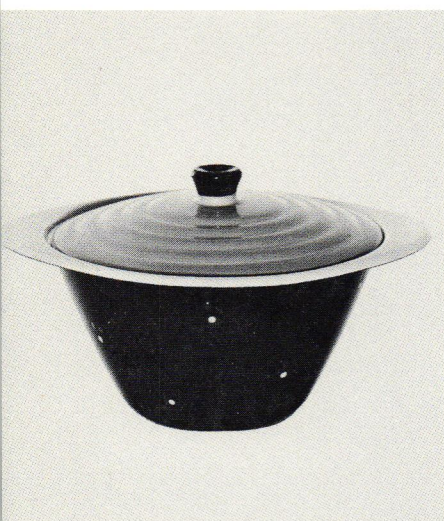
86. 'Jeunesse' flatware set. Design: Gustav Beran. Manufacturer: van Kempen and Begeer.



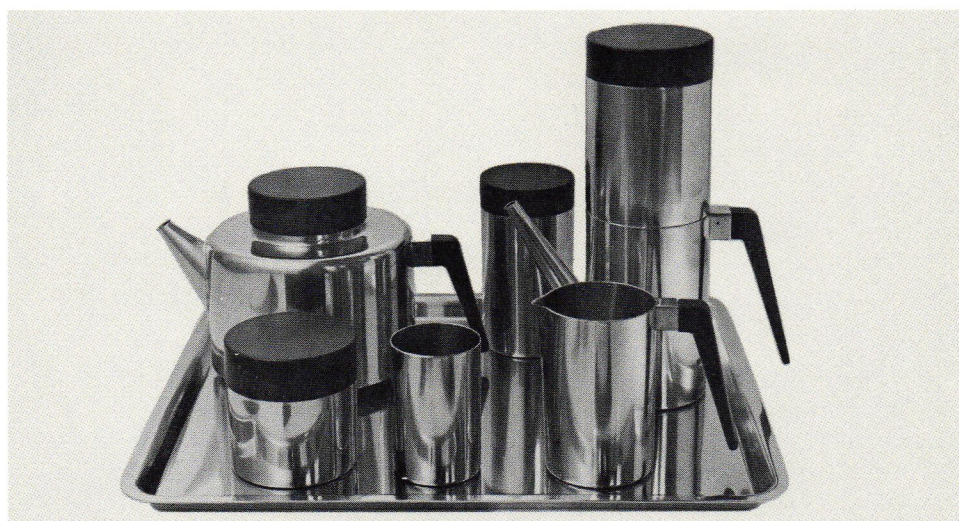
79. Vases. Design: I. Valkema. Manufacturer: Royal Leerdam.



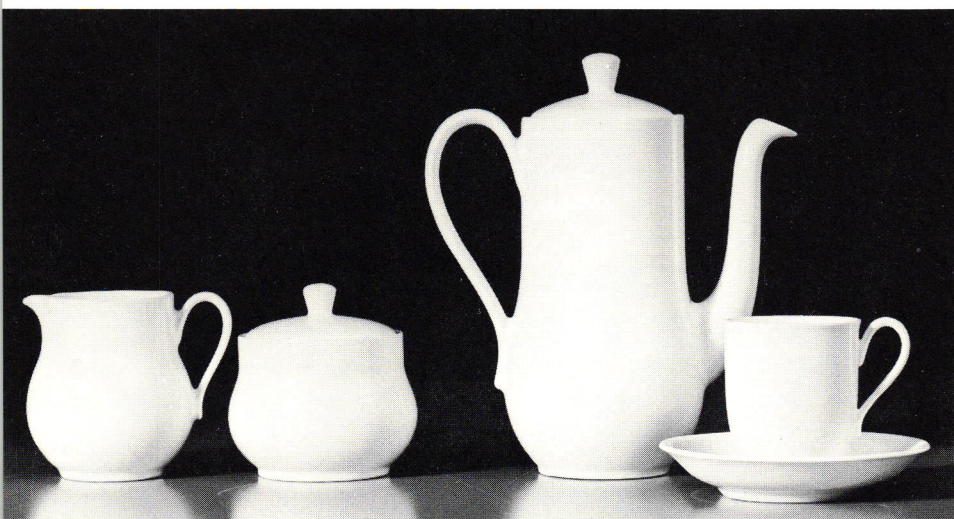
80. 'Sapphire' vases. Design: L. J. F. Linsen. Manufacturer: Royal Leerdam.



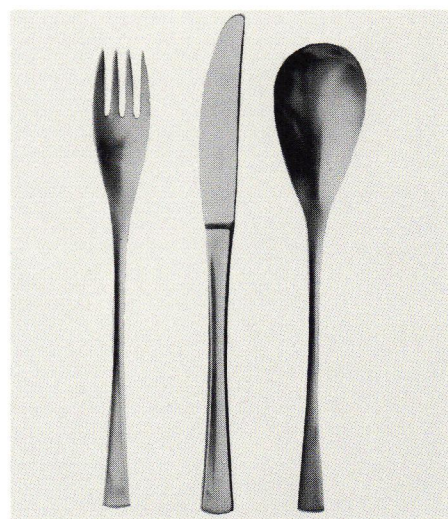
83. 'Cook and Serve' ware. Design: W. Gilles. Manufacturer: Royal Dru.



84. Tea and coffee set. Design: Dick Simonis. Manufacturer: Gero.



87. Coffee set. Design: Edmond Bellefroid. Manufacturer: Mosa.

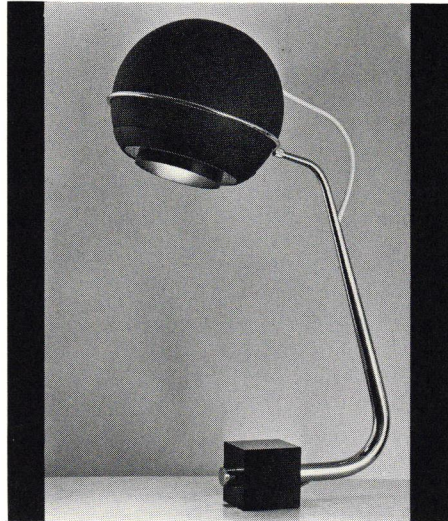


88. Flatware set 519. Design: Dick Simonis. Manufacturer: Gero.

## Lighting



89. Street lighting for the Hague. Design: Friso Kramer. (see illustration 18)

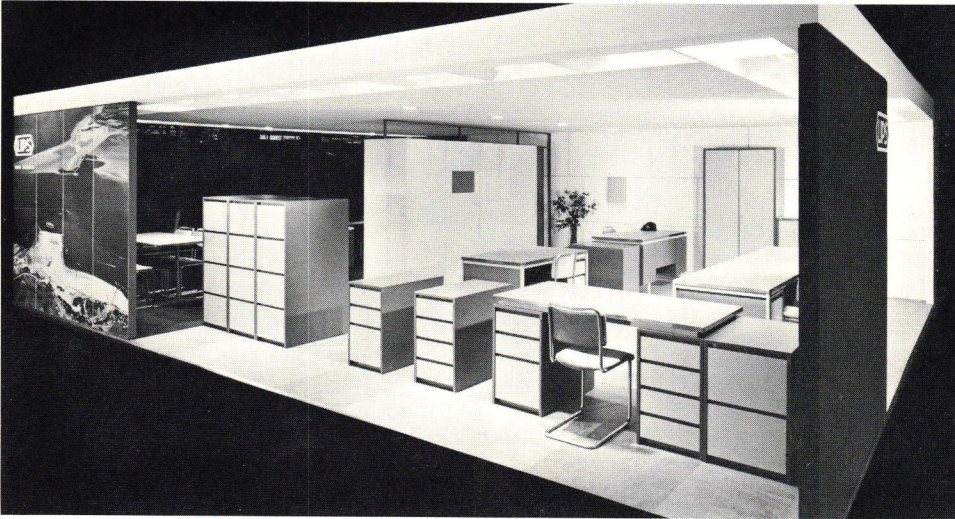


90. Table lamp. Design: N. J. Hiemstra. Manufacturer: Hiemstra.

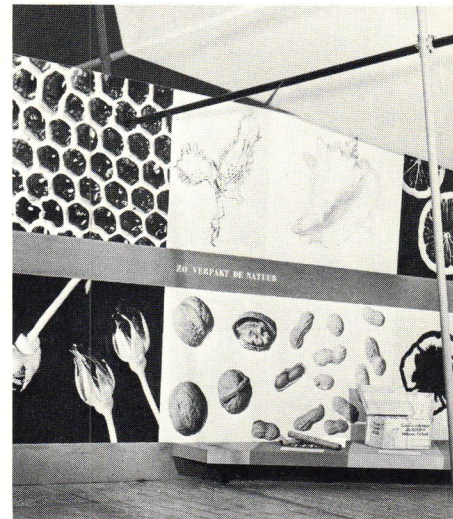


91. Hanging lamp. Design: N. J. Hiemstra. Manufacturer: Hiemstra.

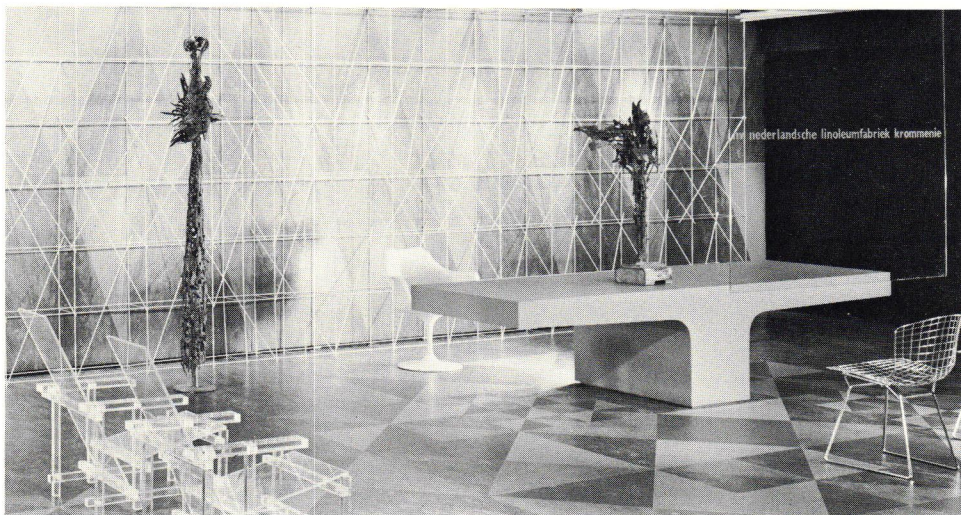
## Exhibitions (design for industry)



95. Lips' furniture exhibition. Design: Coen de Vries.

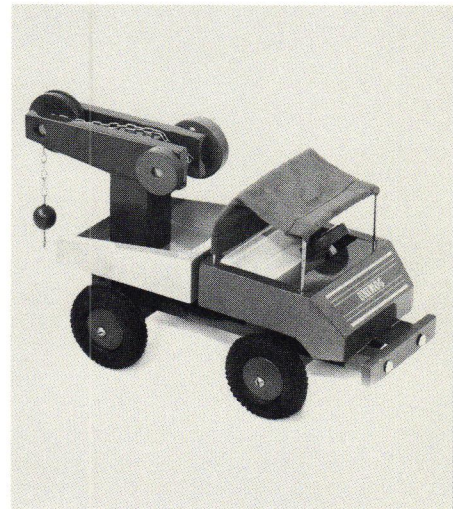


96. Exhibition 'Nature Packages'. Design: Jaap Penraat.

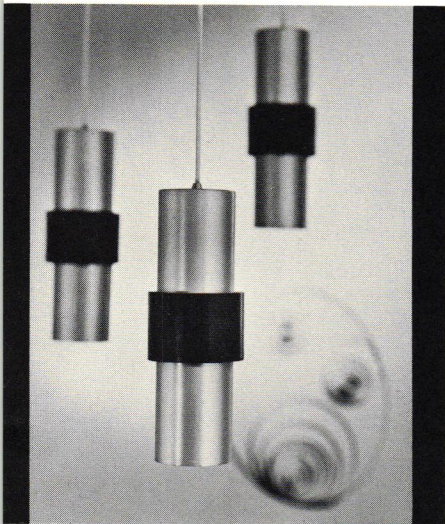


98. Krommenie linoleum exhibition. Design: Kho Liang le.

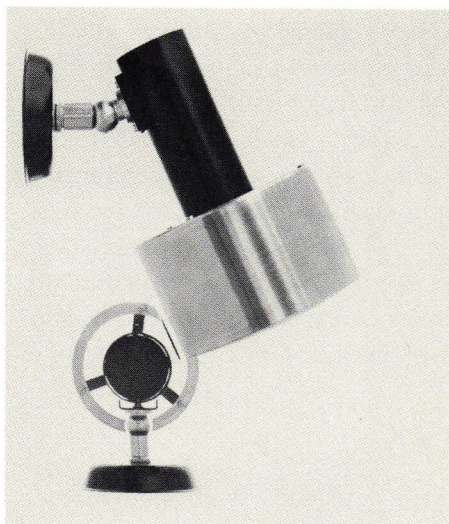
## Toys



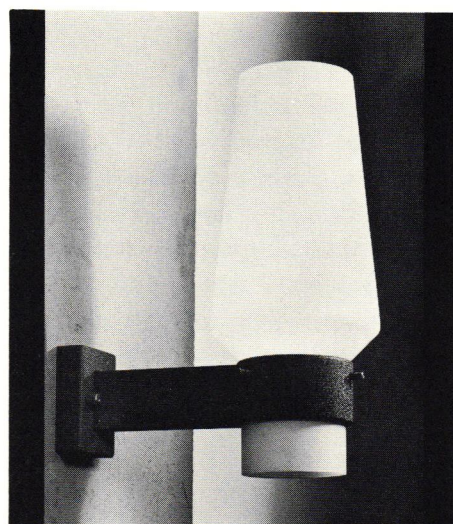
99. Toy. Design: Rocus van Blokland. Manufacturer: Sio.



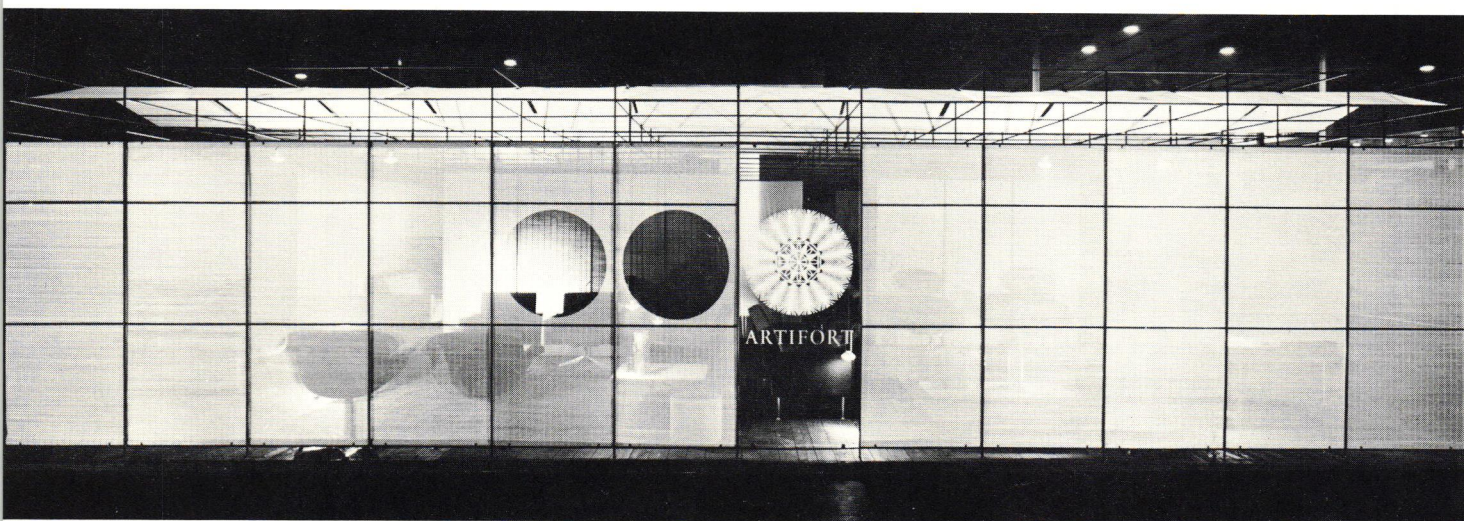
2. Lamps. Manufacturer: Raak.



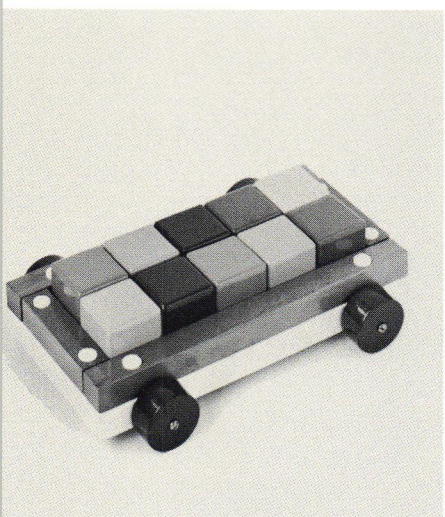
93. Lamp. Manufacturer: Raak.



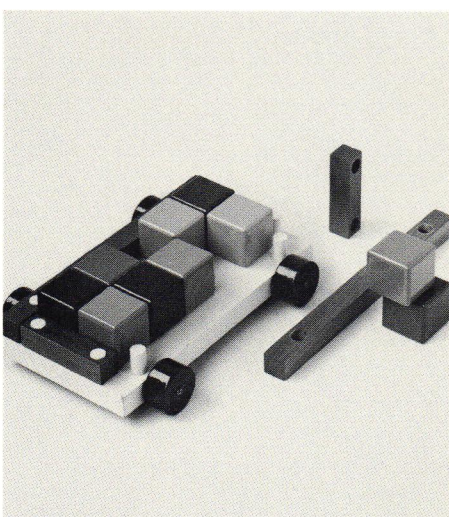
94. Wall light. Design: N. J. Hiemstra. Manufacturer: Hiemstra.



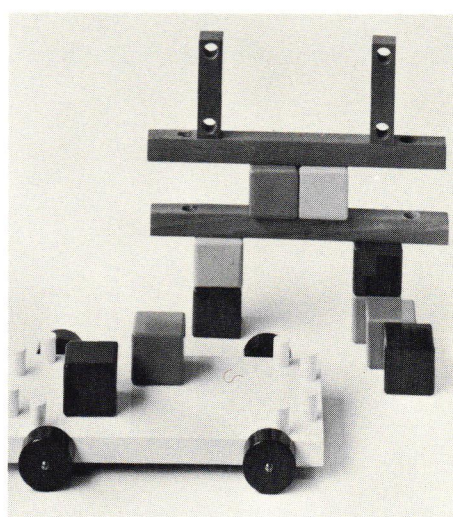
7. Artifort furniture exhibition. Design: Kho Liang Ie.



100. Toy. Design: Rocus van Blokland. Manufacturer: Sio.



101. Toy. Design: Rocus van Blokland. Manufacturer: Sio.



102. Toy. Design: Rocus van Blokland. Manufacturer: Sio.

## Credits

I wish to thank Mr. S. H. den Hartog of Hilversum, the Netherlands, for assistance in gathering documentation from industries and individuals. I had the valuable cooperation of Mr. N. H. Benninga of the Institute of Industrial Design in Amsterdam, Mr. A. P. Bruigom, Director of its Center, Dr. Ad Peterson, Curator of Design of the Stedelijk Museum in Amsterdam, designers W. Gilles and Ir. H. Batelaan for information and pictures, and Mr. Robert Malone, editor of 'Industrial Design', for help with selection of illustrations. Finally, I am grateful to Mr. Rob Roy Kelly who coordinated the production of this Design Quarterly, and to Mr. Aribert Munzner of the Minneapolis School of Art and Miss Mary Ann Michie for editorial assistance.  
P. B.

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Photo of 'Revolt' chair: Jan Versnel