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*The Development of
Industrial Design
in Ireland*

THE DEVELOPMENT OF INDUSTRIAL DESIGN
IN IRELAND

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TABLE OF CONTENTS

| | <u>Page No.</u> |
|---|-----------------|
| 1. INTRODUCTION | 1 |
| 2. HISTORICAL PERSPECTIVE | 3 |
| 2.1 Irish Attitude | |
| 2.2 Industry in the Free State | |
| 2.3 The Arts Council | |
| 2.4 Enter C.T.T. | |
| 3. INDUSTRIAL DESIGN IN IRELAND: THE EARLY YEARS | 6 |
| 3.1 The Scandinavian Report | |
| 3.2 C.T.T. Encourages Design | |
| 3.3 Birth of Kilkenny Design Workshops | |
| 3.4 Report of the Council of Design | |
| 3.5 Initial Results | |
| 3.6 1960 - 1970 Summary | |
| 4. DEVELOPING YEARS | 17 |
| 4.1 Economic Climate | |
| 4.2 Industrial Design Educational Seminar, 1970 | |
| 4.3 N.C.A.D. Act of 1971 | |
| 4.4 Private Initiative | |
| 4.5 The Society of Designers in Ireland | |
| 4.6 N.C.A.D. Industrial Design Course | |
| 4.7 Establishment of Industrial Design Consultancy | |
| 4.8 ICSID 10 - Ireland's Biggest Design Event in 1977 | |
| 4.9 Transfer of Statutory Responsibility | |
| 4.10 The K.D.W. Training Schemes | |
| 5. RECENT YEARS | 36 |
| 5.1 Private Consultancies | |
| 5.2 N.C.A.D. Graduates | |
| 5.3 Kilkenny Design Workshops | |
| 5.4 The Industrial Training Authority - AnCO | |
| 5.5 The Institute for Industrial Research and Standards | |
| 5.6 The National Board of Science and Technology (NBST) | |
| 6. DISCUSSION | 45 |
| 6.1 Industry/Economy | |
| 6.2 Attitude | |
| 6.3 Semi-State Bodies | |
| 6.4 Kilkenny Design Workshops | |
| 6.5 Education | |
| 6.6 Private Initiative | |
| 6.7 Society of Designers in Ireland | |
| REFERENCES | 63 |
| PERIODICALS | 65 |

1. INTRODUCTION

Excellence in the field of industrial design is not one of the qualities usually associated with the Irishman. Writing on Irish customs and manners usually dwell more on literature, the theatre and traditional culture generally than on the visual arts which are regarded as of relatively minor importance.

Fortunately, this situation is changing, however slowly, and in the last 20 years with the growth of Ireland's economy, the need has arisen for new and higher standards of performance in the visual arts and particularly in regard to industrial design.

The 'official' definition of industrial design, formulated by the International Council of Societies of Industrial Design (ICSID) is as follows:

"Industrial design is a creative activity whose aim is to determine the formal qualities of objects produced by industry. These formal qualities include the external features but are principally those structurally and functional relationships which convert a system to a coherent unity both from the view of the producer and user. Industrial design extends to embrace all aspects of human environment which are conditioned by industrial production".

Many people find this definition of industrial design inadequate in that it fails to describe the activity and is so broad as to admit of a variety of interpretations. Generally, writers on the subject endeavour to convey its essence by describing the design process. For the purpose of this thesis, and conscious of the fact that volumes have been written on "What is, and what is not industrial design", it is not the writer's intention to delve deeply into the subject. However, it is important to stress that the writer sees industrial design as more closely related to engineering, science and business studies than to painting, sculpture, and hand crafts.

The purpose of this thesis is to outline the various events relating to industrial design over the past two decades. It is also hoped to show the importance of industrial design to Ireland's developing manufacturing industry, providing references to companies that have benefited from the use of industrial design.

2. HISTORICAL PERSPECTIVE

2.1 Irish Attitude

Industrial Design is a very new activity which has only recently received professional recognition. The first University Degrees in Industrial Design were only offered in 1936. It is, moreover, a profession which is in a constant state of change as it adapts itself to new technologies and challenges. Current thinking sees the industrial designer's responsibility as extending to the whole product cycle from system of production to merchandising and promotion.

In Ireland, industrial design services have only been utilised by industry within the past two decades. The first native industrial design services were only established in the early 1970's and until recently industrial design was viewed in Ireland as a branch of fine art. This attitude was a cause of the delay in development of industrial design in Ireland and was reflected through Government policy, industry right down to the consumer.

2.2 Industry in the Free State

In 1920, the Irish Free State was established and the work of industrialisation commenced. There was little on which to build. A system of protective tariffs was instituted and behind this barrier Irish industry grew, generally based on the principle of import substitution. Due to the absence of both technical and craft tradition, and also of competition from outside the country, much of what was made was of indifferent quality standards. Original product design was almost completely lacking and designs were, in most cases,

simply copies of products which had formerly been imported. This situation crippled any development of industrial design and while it was perhaps a solution to short term problems, it made long term matters worse.

The Second World War, in which Ireland remained neutral, did not provide the stimulus to technical development in Ireland as was evident in many other countries. Ireland emerged from the war years in much the same shape as she went into it, a country with an economy based on agriculture and a small protected industrial sector.

2.3

The Arts Council

In 1949, the Bodkin Report on the Arts in Ireland resulted in the establishment of an Arts Council (1951 Arts Act) with responsibility for the promotion of fine and applied arts, painting, sculpture, architecture, music and design in industry. The Council's achievements with regard to design in industry were not of great value. They concentrated on making propaganda for good design and held a major exhibition in 1954, followed by two exhibitions in 1956. One of the later exhibitions, entitled "Irish Design Exhibition" was presented in Dublin on 26 March 1956, and in Waterford, Cork, Limerick and Galway and later in July at Sligo. The exhibition consisted of contemporary designs and Irish manufactured products. Furniture featured prominently but the "standard of industrial packaging of Irish goods was noted as being not up to contemporary standards". The Council hoped "to improve this situation by sponsoring, in co-operation with the Department of Industry and Commerce, a course in industrial packaging led by international experts". However, while making some impression on the general public, the Council never succeeded in establishing

contact with industry and was thus unable to influence events in particular companies.

2.4

Enter C.T.T.

In October 1960, Coras Trachtala, the Irish Export Board, generally referred to as C.T.T., was given the statutory responsibility by the Government for the improvement of the standard of industrial design; this responsibility was to include design for the home and the export market.

It was felt by the Government, under the leadership of Sean Lemass, that C.T.T.'s record of achievement and working contacts with industry might enable it to put across the concept of design where the Arts Council had failed. The 1959 Export Promotion Acts had given C.T.T. the responsibility for the improvement of standards of design in Irish industry. However, in 1960, the Government highlighted the special attention required for the promotion of industrial design by selecting C.T.T. for this responsibility.

3. INDUSTRIAL DESIGN IN IRELAND: THE EARLY YEARS

3.1 The Scandinavian Report

As an initial move, C.T.T. invited five eminent Scandinavian designers to make an assessment of Irish design performance on which future policies might be based. The Scandinavian Design Group visited Ireland in April 1961 and their report, published in February 1962, was entitled "Design in Ireland". The report consisted of a synopsis of the existing situation in Ireland, recognising a distinct leaning towards literature, theatre, the spoken word and abstract thinking, rather than creation by hand or machine and the visual arts.

3.1.1 This view was highlighted by the fact that the Irish schoolchild was exposed in a much lesser degree to drawing and the manipulation of materials than its Scandinavian counterpart. The lack of encouragement in schools was reflected throughout the whole social scale. If Ireland was to develop a home grown interest in design it must be started in the schools.

3.1.2 In general, the best designed products found in Ireland were those based on traditional craft industries. Outstanding examples were Donegal Tweeds and handknitted sweaters. At the other end of the scale, many products were found to be badly designed and executed, among these were farm machinery and furniture.

In most factories product design was not considered with the serious attention it demanded, and the designer, when he existed, was regarded as a "somewhat frivolous addition to the staff, rather than being a key member of the management".

(Quote from Scandinavian Report, 1962).

3.1.3 The Group of Designers also visited Art schools and colleges, none of which appeared to be capable of satisfying the need of the country with regard to design. The Scandinavian Report recommended the establishment of an Irish Design School to create "Home grown designers". It was understood that the school would require initial foreign input but gradually it would be infiltrated by Irish educationalists. However, in the beginning, it encouraged young craftsmen and students to be sent abroad for training. Industry might be invited to support such training schemes along with semi-state bodies and the Department of Education.

3.1.4 The most important area assessed was that of raising the standard of design in the country as a whole. It could not be expected to alter the design standard of Irish products if, at the same time, a home market was not created for the new quality products. To raise public interest in design it would be quite natural to use the ordinary channels of information: newspapers, magazines, radio, television, exhibitions in stores and museums, together with visiting exhibitions from abroad. This would all lead to the formation of a Government body, one of whose aims should be to promote public interest in matters of design.

While the setting up of a new Irish Art School was seen to be very important, it was felt that the school alone could not take on the responsibility of "creating interest". In order that the school might be set up it was felt, with the associated problems and administration, the solution to these and many other matters depended on the formation of an Irish Institute of Visual Arts. The institute would form

the core around which the interest in design might grow: it should be an independent body, with administrative powers directly to the Government.

The Group decided that since no existing body was equipped to cope with the problems involved in the development of design in Ireland, a new body should be created.

This Report acted as a quickening catalyst in Irish design thinking. It was critical of Irish design performance in almost every aspect and, predictably, aroused much controversy. In addition to making suggestions for the future, the Report more importantly helped to create a climate in which a design programme could function effectively.

3.2

C.T.T. Encourages Design

In 1962, C.T.T. formally established a Design Section to follow through the recommendation of the Scandinavian Design Group and to provide a continuing service to Irish Industry. The chief problems to be faced were:

- i. the general low level of design consciousness in the country, especially among those manufacturers who were best positioned to raise standards,
- ii. the almost total absence of skilled personnel, either on the management or design side.

This looked like a vicious circle which, until the setting up of the design programme by C.T.T., had

effectively halted any progress. Because of lack of interest in design, no opportunities had presented themselves for industrial designers and consequently the profession had not developed. Thus because there were no industrial designers there was no-one to initiate new design thinking.

3.2.1 Persuading Management

C.T.T.'s approach to this situation was to concentrate almost totally on one aspect of the problem - "management education" - in the hope that a breakthrough here would lead to a chain reaction, enabling the other aspects to be more easily solved.

Developing an understanding among manufacturers of the role of design and assisting them to become skilled in its management was named as a priority objective and this was tackled both directly and indirectly. By directly contacting as many manufacturers as possible in their factories, they were advised on how design could increase their profits, how design could be systematised and design projects programmed. This direct contact between C.T.T. and industry proved most productive.

Indirectly, design was presented to manufacturers through seminars, lectures and as part of formal marketing and production education programmes. The Irish Management Institute (I.M.I.) and the Institute for Industrial Research and Standards (I.I.R.S.) were also involved in the organisation of these seminars and programmes.

All this activity and the imminence of free trade with the U.K. and possibly with the E.E.C. was sufficient to generate the impetus

for the continuing and expanding C.T.T. design programme.

In assigning the national responsibility for design to the country's export authorities, the Government took an unusual step. In most countries, the design function is discharged either by official Councils of Design or by semi-private organisations both funded by the Government. Japan is similar to Ireland and the integration of design with the export marketing activity has been entirely beneficial as it has ensured that all design programmes have been commercial.

3.3 Birth of Kilkenny Design Workshops

In 1963, the Kilkenny Design Workshops (K.D.W.) were established on the initiative of C.T.T. as a centre where design could be developed in relation to principal Irish manufacturers. However, it was not until 1965 that the Workshops got under way. It was staffed by designers from Britain, Denmark, Sweden and Germany. Towards the end of 1966 K.D.W. established its own management and commenced an independent existence parallel to that of C.T.T.

The basic concept was that the design and techniques developed in the Workshops should feed existing industry who would pay for this service by a royalty on sales. The Workshops were also to be the starting point for new manufacturers. The Workshops were basically craft oriented, working mainly in ceramics, glass, woven and printed textiles and metal jewellery. Later it became involved in furniture, graphics and packaging. It was not until 1973 that K.D.W. first

employed an industrial designer.

K.D.W.'s immediate objectives were modest. They received a grant of £180,000, which in 1965 was regarded as a sizeable amount for the promotion of design. K.D.W. directed most of their efforts towards traditional industries (i.e. crafts) where 'good design' could easily be noticed by the consumer. This caused a detrimental effect to the importance of design in Irish manufacturing industries. Industrial design was seen as a craft and not as a technology.

3.4 Report of the Council of Design

3.4.1 Background

In September 1963, Dr. P.J. Hillery, then Minister for Education, commissioned a report to survey design activity, especially in relation to industrial design and to the training of designers; the report was to advise on future Government design policy and to establish close connections between the activities of C.T.T. and the establishment of an Industrial Design Course in the School of Design in the National College of Art. The Council had a 20-strong membership and was chaired by Dr. Michael ffrench O'Carroll. The report was submitted in 1965 to Mr. George Colley, Minister for Education.

3.4.2 Education

The report examined all levels of education. It drew conclusions which were along similar

lines as the Scandinavian report produced six years earlier. It stated,

"There should be a free approach to the teaching of art and the schoolchild should be encouraged to express himself spontaneously and to create with his hands".

At secondary and vocational school level,

"The Course in Art should be broadly based and should include design and craft work and appreciation both of the fine arts and the design of everyday objects".

The report suggested the establishment of a "National College of Art, Architecture and Design". The new College,

"should be built in the Bolton Street area of Dublin and be associated with, but not be part of, the College of Technology. The National College should have the maximum of academic independence compatible with integration into a national programme of design education and promotion".

3.4.3 National Design Council

The report recommended,

"the immediate establishment of a permanent, autonomous National Design Council to co-ordinate and develop design education, to promote good design generally and especially in industry. The Council should consist of a Board, a Chief Executive and an Advisory Body".

3.4.4 Regarding K.D.W.,

"K.D.W. should continue to develop under C.T.T. in close liaison with the Board (of the National Design Council) and the National College of Art, Architecture and Design".

3.4.5 Design Centre

The report recommended that the Board of the new National Design Council,

"should establish and operate a Design Centre in Dublin. It should exhibit successive displays of Irish products to attract interest from the public, manufacturing and retailing sectors".

The Centre should,

"afford a platform for visiting lecturers and organise seminars: It should also provide an information service for industry, designers and press. It should publish a 'Design and Crafts' journal at frequent intervals".

3.5 Initial Results

As C.T.T. was initially given the responsibility for raising design standards, and in some cases for introducing 'design', their efforts were aimed at exporting manufacturers. This responsibility was discharged through

- i. C.T.T. design advisory service and incentive grants
- ii. Kilkenny Design Workshops.

C.T.T.'s design advisory service carries out consultancy work with manufacturers, advising them on design policy. In implementing the design programmes, the Design Section provides a number of back-up services. Important among these is the register of professional designers. Frequently, C.T.T. would be asked to recommend designers for particular projects. In cases where the register is found lacking in suitable

expertise, design organisations in other countries are contacted and asked for their assistance and advice.

The Design Section also administers a system of grants which has grown with the development of the design programme. C.T.T. contribute 50% of the cost to firms employing professional consultant designers. Among the companies who have used C.T.T.'s Design Section services is John Hogg & Company, who had their "Crannac" Chair designed in 1962 by Arthur Edwards, an English consultant. (See Fig. 1).

C.C.I (Lighting) Ltd. had N.J. Jenson design their "Ambassador" fluorescent light fitting. (See Fig. 2). Mr. Jenson, an English consultant, has spent some time living in Ireland while carrying out design work for companies through C.T.T.

Another furniture manufacturer, Gaeltaerra Eireann, of County Donegal, employed Geoffrey Harcourt to design their "Falcarragh Master Chair". (See Fig. 3). Mr. Harcourt, an English consultant, used fibreglass, steel and leather as materials for his chair.

James Winstanley Ltd., shoe manufacturers, employed John Hlustik to design their men's casual range. (See Fig. 4)

The work undertaken by K.D.W. in its early days was more or less craft-based. The products included the areas of ceramics, silver, wood and textiles. Figure 5 shows pieces from a K.D.W. designed dinner service produced by Arklow Pottery Ltd. Another company who co-operated with and used the facilities of K.D.W. to produce a range of high quality jewellery was Riofinex Ltd. (See Fig. 6).

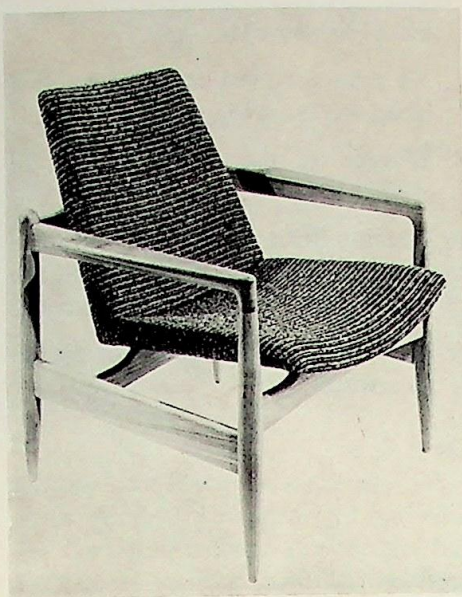


Fig. 1. Crannac Chair

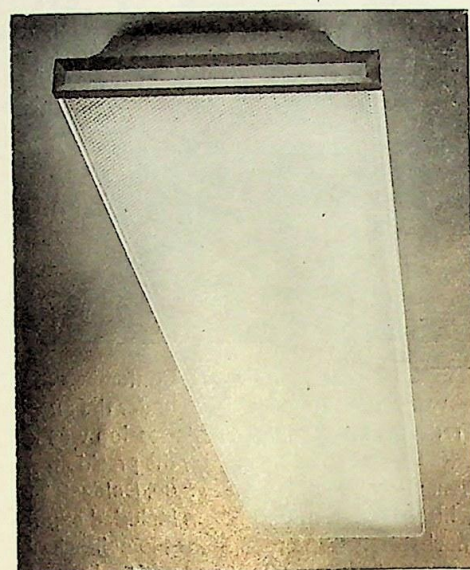


Fig. 2. Ambassador Light



Fig. 3. Falcarragh Master Chair



Fig. 4. Winstanley Shoe



Fig. 5. Arklow Pottery

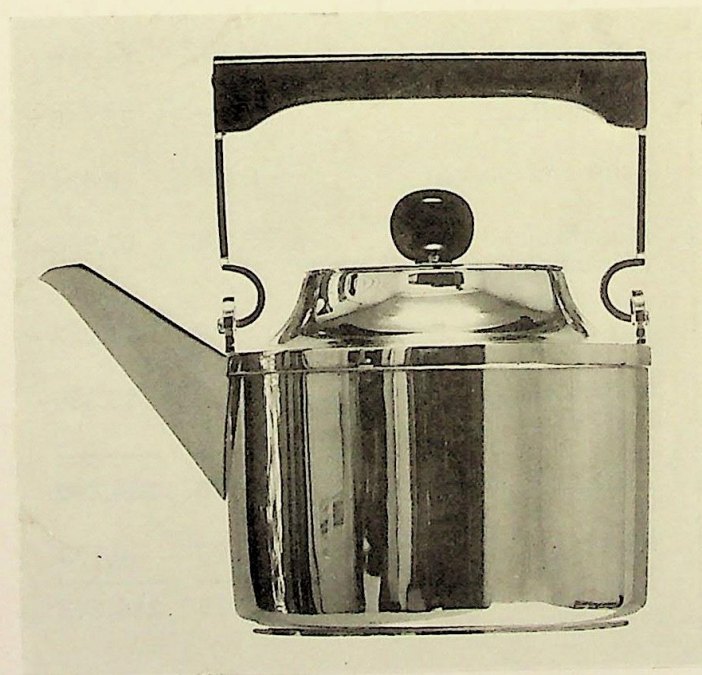


Fig. 6. Riofinex Teapot

The growth in state involvement at the beginning of the 1960's, combined with the assistance from the public sector in new industry, training, marketing etc. helped to strengthen industry facing a reduction in trade tariffs with England. C.T.T. was given the statutory responsibility of raising design standards, or, as was mostly the case, of introducing design standards.

C.T.T. demonstrated initial interest by commissioning the Scandinavian Report on Design, and following up some of its recommendations. However, the Department of Education totally failed to respond to any of the Scandinavian Report's proposals.

The creation of Kilkenny Design Workshops in 1963 gave a physical and practical dimension to the C.T.T. Design Programme. However, by 1966, K.D.W. had acquired its own independent management and was no longer an integral part of C.T.T.'s Design Section. Nevertheless, C.T.T. still retained the "statutory responsibility for advancing good design". There was one factor which C.T.T. had to face, namely the "EGO FACTOR": in a professional environment the problem of telling a manufacturer that his product is "out of date and old fashioned" is a delicate issue. This proved to be a minor problem though, according to Paul Hogan, then Design Manager of Coras Trachtala.

Industry began to change slowly from craft products to volume production. More durable consumer goods were being produced - trends moving away from crafts. This encouraged the introduction of industrial designers. Earlier, "the craft and appearance" had been the two main factors; these were expanded by "function and engineering". Redundancy and closure of textiles companies moved industry towards consumer goods.

A similar trend was seen with product development; even

though the output was modest, the movement away from craft products to innovation-conscious consumer products was marked. This trend away from craft and tradition did not come by choice but from a necessity to survive. However, the great weakness lay with management who had to be "won over". Their failure in long term planning, insufficient scrutiny of existing products and their profitability, lack of knowledge of international technology and market trends, lack of coherent planning for the development of new products - all of these factors highlighted that the weakness lay within manufacturing management. The problems within management had to be solved before industrial designers could be introduced to the structure.

Development in design education was very slow in the Sixties. The Department of Education failed to address itself to the "design question". Whilst accepting all the recommendations of the Scandinavian Report, including those of the Council of Design, the Department failed to act on this advice. All the initiative had been taken by C.T.T. and it would appear that the Department of Education at that time was not receptive to outside advice.

Thus, for the industrial designers of the Sixties there was very little work, the main reason being that the environment did not encourage it. However, in some areas the seed for its future development were being laid whilst in other areas the need for growth and expansion was not recognised.

4. DEVELOPING YEARS

4.1 Economic Climate

With the growth of state involvement, along with assistance from the Public Sector, industry began to strengthen. All this activity was necessary with the prospect of E.E.C. membership in 1973. The E.E.C. would encourage Irish manufacturers to export duty free across Europe; however, greater competition in home and U.K. markets would increase. This competition was necessary for Irish industry if it was to address itself for the future. Industry would have to raise its standards in all areas of design and production if it was to survive.

The E.E.C. membership increased the size of Irish imports. These ranged from cars, to domestic durables. It was therefore very important that the country increased its export capacity to minimize the trade gap. One way of increasing the country's exports was to raise the standards of its products in design and presentation; this was vital if Irish manufactured goods were to survive abroad against similar products produced by the Germans, the French, Italians, English and Dutch. This was especially true in the domestic and office furniture trade.

However, Government policy did not encourage investment in design. It is true there were a few grant systems available from C.T.T. but the main Government agency responsible for developing industry, the Industrial Development Authority (I.D.A.) did not address itself to the design needs of Irish industry. The I.D.A.'s sole interest was the encouragement of foreign investment to set up manufacturing plants in Ireland, thus providing immediate employment. Foreign companies were offered tax relief, cheap rent and assistance to build factories. Many of these factories

still remain idle today. The I.D.A. also encouraged Irish manufacturers with assistance for expansion or for setting up the companies.

Initially, the I.D.A. offered no assistance to any companies that wished to carry out research and development programmes, vital for any manufacturing company. This did not affect foreign firms who could rely on their parent companies for such development work. Unfortunately, the I.D.A. did not encourage foreign firms to utilize Irish design services and as a result, all research and development work was carried out outside the country. The policy of the I.D.A. was to increase wealth by increasing employment, i.e. to attract foreign industry, particularly companies requiring a large number of employees, at all costs. This was a short-term solution which later was self-defeating with the resulting mass unemployment.

This policy of the I.D.A. left the direction of Irish industry in the hands of foreigners. If Ireland was to establish any kind of design standard it had to come from within the country and not be imported through the big foreign employers.

4.2

Industrial Design Educational Seminar, 1970

One of the most important design projects ever held in Ireland, a seminar on Industrial Design Education, took place in the Great Southern Hotel, Killarney in November 1970. Co-sponsored by Coras Trachtala and the Department of Education, it was opened by the Minister for Industry and Commerce, P.J. Lalor T.D. Over 150 people attended with educational or industrial design interests.

The Seminar marked the first occasion in which a team of international design experts was brought together in Ireland for a project of this nature. It was also the first time that Irish industry and the educational

authorities came together with world authorities on design. The main objective was to "review international developments in industrial design education and examine their application to the Irish situation". The programme ranged over the design needs of industry, and, and in the future, the designer's role and the lessons to be learned from the experience of other countries.

The Seminar was very critical of the educational system with its poor contribution to the needs of industry in the design field:

"a liberal approach was applied, by the Department, with much reference to marketing, value engineering, cost accountancy etc."

The Seminar's conclusions were:

- 1) *Industrial design education should be at university level.*
- 2) *There was an urgent need for proper programmes of visual education in primary and secondary schools.*
- 3) *Irish industry required the services of industrial designers.*
- 4) *The Government should establish a co-ordinated policy for comprehensive student-centred art and design education as soon as possible.*
- 5) *Subject to the principle of co-ordination proclaimed in conclusion No. 4, the new autonomous College of Art and Design should be elevated to university level.*
- 6) *Subject to the principle of co-ordination proclaimed in Conclusion No. 4, a post-graduate course in Industrial Design (Engineering) should be established in the Faculty of Architecture and Engineering at University College, Dublin. This course would eventually be part of an industrial design education programme at university level.*
- 7) *C.T.T. and the Department of Education are asked to urgently progress the conclusions of the Seminar.*

The Seminar's immediate objective was to provide a forum for discussion of ways and means of producing in Ireland trained professional designers, required if there was to be a reduction in the use of foreign expertise and evolution of a national design expertise was to be achieved.

4.3

N.C.A.D. Act of 1971

The National College of Art and Design Act of 1971 was concerned with laying down of a new structure for the existing National College of Art (N.C.A.). The Act was mainly concerned with the establishment of "An Bord", whose responsibilities were the management and administration of the College.

The Minister for Education was to be responsible for the selection of "An Bord" members, which, similar to the National Gallery of Ireland Act of 1963, and later the Arts Council Act of 1973, caused political controversy. It was felt by many politicians and observers that the Minister should not be given total responsibility of such institutions as they would then become political appointments. However, even today, the Minister still has total control over the selection of "An Bord". If institutions are to function to their full capacity, they should be autonomous in their management and selection of immediate governing body. One alternative to the existing system would be to have a combination committee of the Royal Hibernian Academy, K.D.W. and the Society of Designers in Ireland who would elect An Bord of N.C.A.D. This combination of organisations would have representatives on An Bord and would be for a four-yearly term. Co-options could be provided when a suitable An Bord came from outside the named organisations.

4.4

Private Initiative

4.4.1 Private Design Consultants

The year 1970 saw the birth of the first private product design consultancy. Manus Coffey and Associates, specialised in engineering design and design of heavy machinery. The company saw there was a portion of the market they could fill and along with close marketing produced well designed products which were aimed directly at a selected market. Part of the Company's early work included the redesign of a concrete mixer produced by Surewayte Ltd., Carrickmacross, Co. Monaghan (See Fig. 7). By using a systematic analysis approach they produced a new design which reduced production, material and transport costs and significantly improved the product's appearance. As a result, sales increased to over four times their original figure, with major markets established in the U.K., France and Sweden.

This example perfectly demonstrates the great advantage it is to the Irish manufacturer to employ its own designer. Manus Coffey and Associates has grown from strength to strength and is still providing a most valuable service to Irish industry.

However, there was still a great deal of design work going out of the country. For example, chairs manufactured by Metalwood Ltd., Ireland (See Fig. 8) were designed by a Colin Marsh of Planning Unit, London, this contact being gained through the services of C.T.T.

Another industrial design consultancy, Michal Ozmin Designs, a Dublin-based design group, was established in 1971. Part of the consultancy's early work was done for Midland Industries Ltd. of Baileborough,

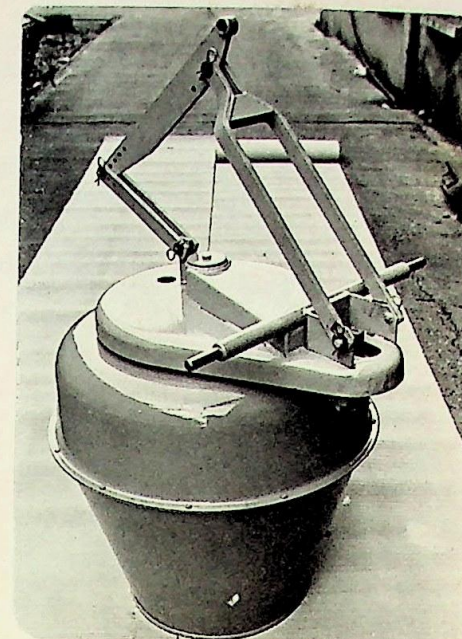
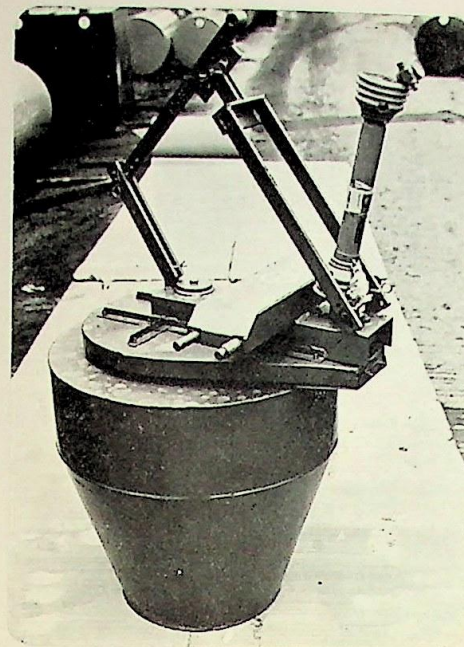


Fig. 7. Concrete Mixer: Before and After

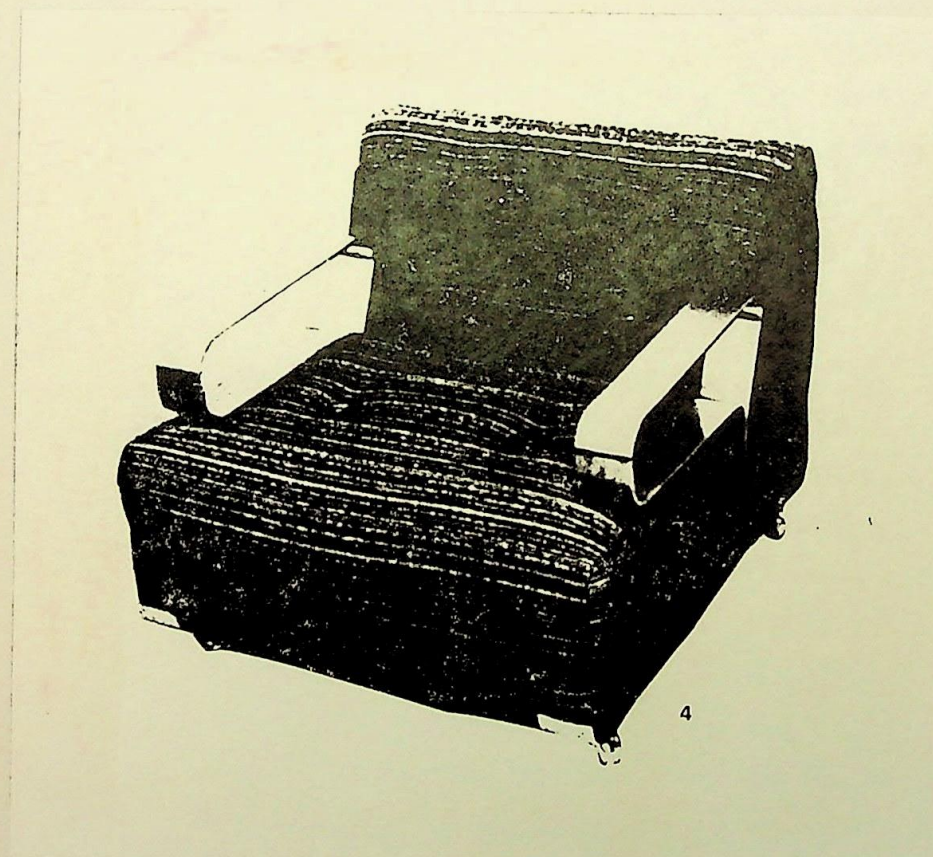


Fig. 8. Metalwood Chair

on the design of vacuum formed bathroom fittings. (See Fig. 9, which shows a 'Splash-back'). Midland Industries first approached C.T.T. who in turn contacted Michal Ozmin Designs. In 1975, Michal Ozmin was appointed Professor of Design at the National College of Art and Design, a position which he still holds.

Another company that used the services of an industrial designer was Basta Ltd., hardware manufacturers in Sligo. Barry Dipper, an English designer settled in Ireland, was retained to design a new range of entrance door locks (See Fig. 10, showing a lock made from a zinc die cast and Fig. 11, which shows one made from pressed steel with injection-moulded nylon knob).

Donnelly Mirrors Ltd., Co. Kildare, recognised for their research and development, also employed Barry Dipper on their injection-moulded day/night mirror (See Fig. 12).

4.4.2 Thinking about Industrial Design

K.D.W.'s big development in the industrial design field was the employment of an Englishman, Nick Marchant, in 1973. Having spent the first eight years directing its energy mainly into crafts and textiles, K.D.W. finally saw the potential of establishing its own industrial design interest. Nick Marchant's first brief was to submit a report entitled "Industrial Design for Engineering Based Manufacturers", which was then submitted to the Department of Industry in 1975. The report was a desk-top survey of manufacturing industries in engineering who could have a design requirement. The report gave some idea of the scope for industrial design services and paid special attention to indigenous industries, who, by European standards, were very small, and thus who could not afford to carry out their own required research and development work. The report suggested the concept of subsidising industrial

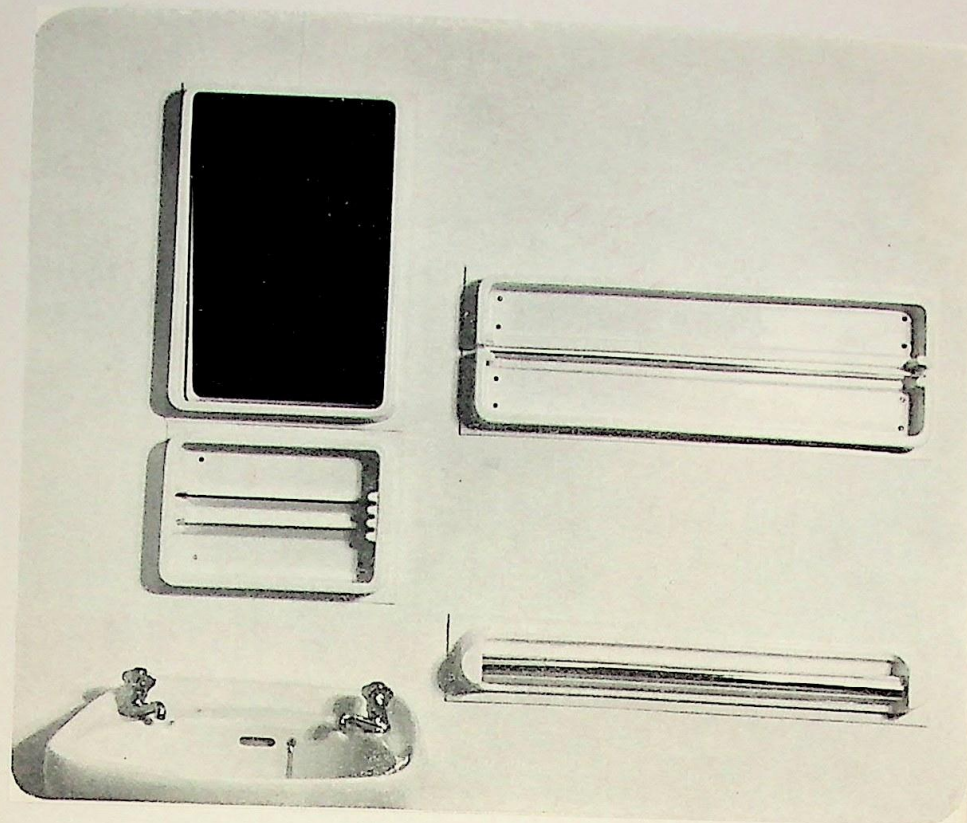


Fig. 9. Bathroom Splashback

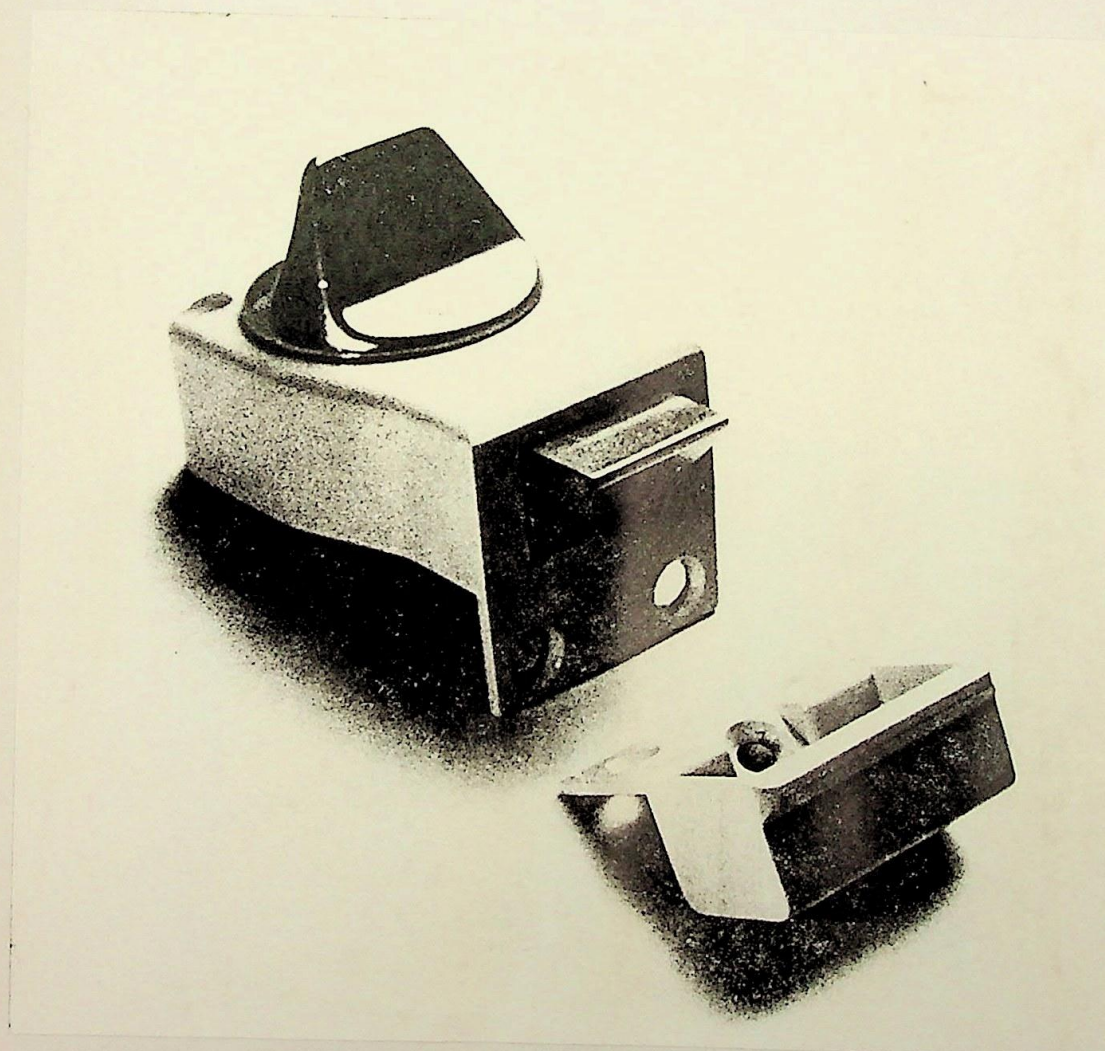


Fig. 10. Zinc Die-cast Door Lock

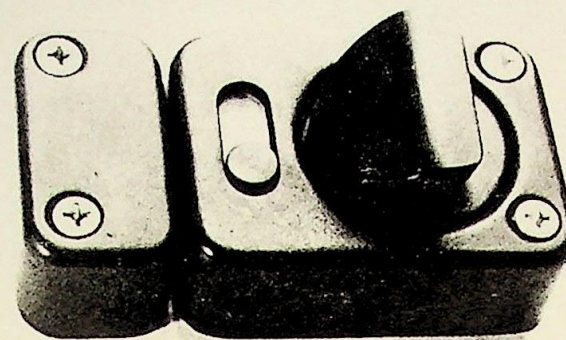


Fig. 11. Pressed Steel/Injection Moulded Door Lock

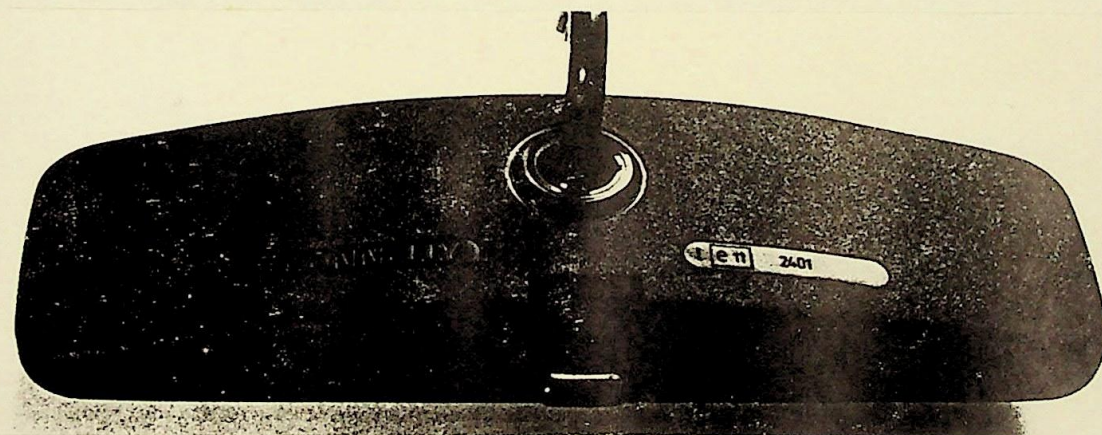


Fig. 12. Day/Night Car Mirror

design services to these industries. However, initially the report was set on one side due to the fact that the Department's interests were directed elsewhere because of the oil crisis.

Nevertheless, private initiative was now being matched by K.D.W. Through C.T.T. they were carrying out design work for exporting manufacturers. Two such companies were Hanson Ltd., of Sligo, whose battery-operated clocks (See Fig. 13) and bathroom scales were designed by K.D.W., and Metal Spinners Ltd., who produced a range of teflon coated saucepans (See Fig. 14).

The main bulk of development work was being done by engineering consultancies/manufacturers. The Irish Sugar Company's Engineering Section designed and manufactured a sugar-beet harvester (See Fig. 15), which was sold all over Europe.

P.F. Doggett (Engineering) Ltd. of Slane, Co. Meath, designed and manufactured a stone collector for land reclamation (See Fig. 16). It was shown at the Public Works Congress and Exhibition in Olympia, London, in 1974.

Thus while manufacturers and people generally began to be aware of industrial design, its acceptance as a source for any manufacturing company was very slow. The majority of Irish manufacturing companies made "under licence" or pirated designs from other countries. Since very little product development took place and without Government policies encouraging such development in the form of tax reliefs and grants, there was little incentive to invest in industry through research and development.

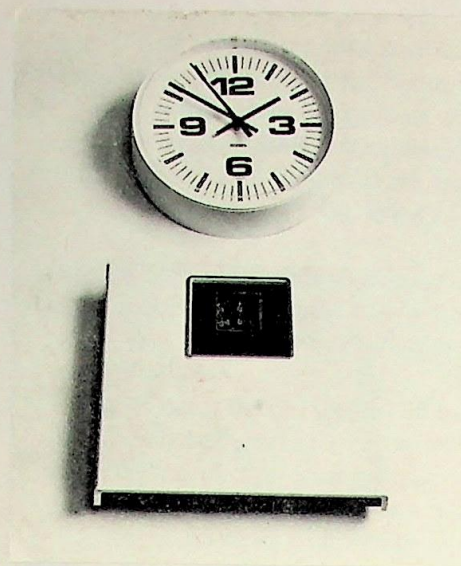


Fig. 13. Clock and Bathroom Scales

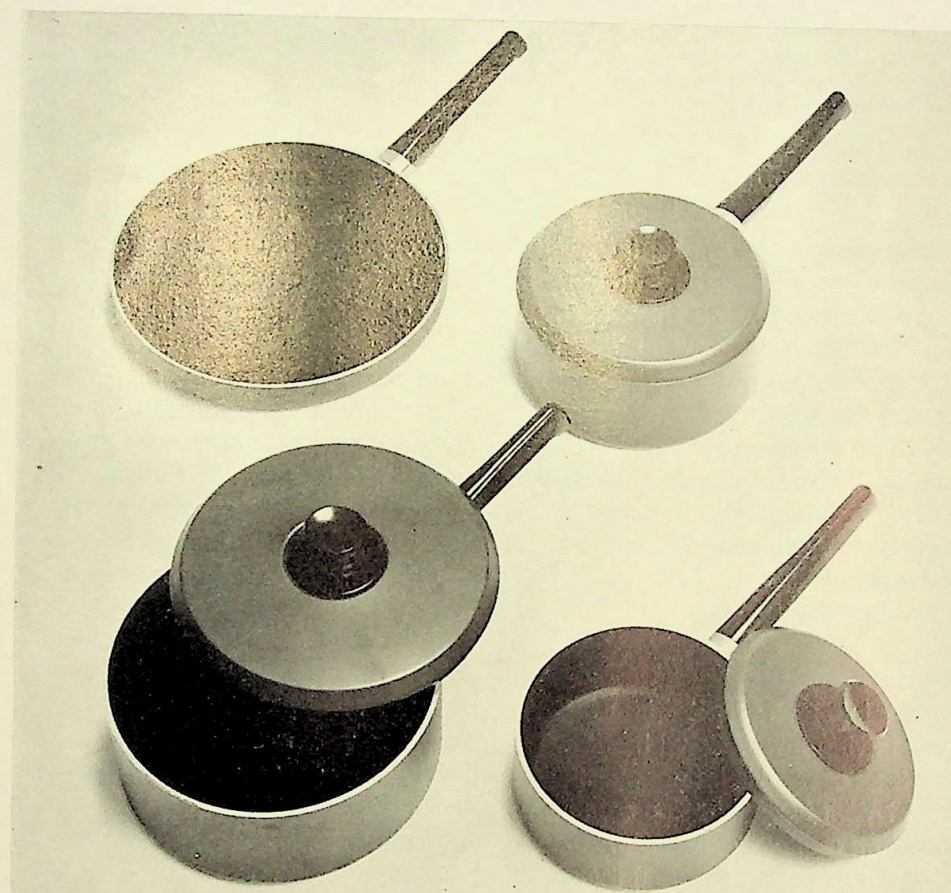


Fig. 14. Teflon-coated Saucepans

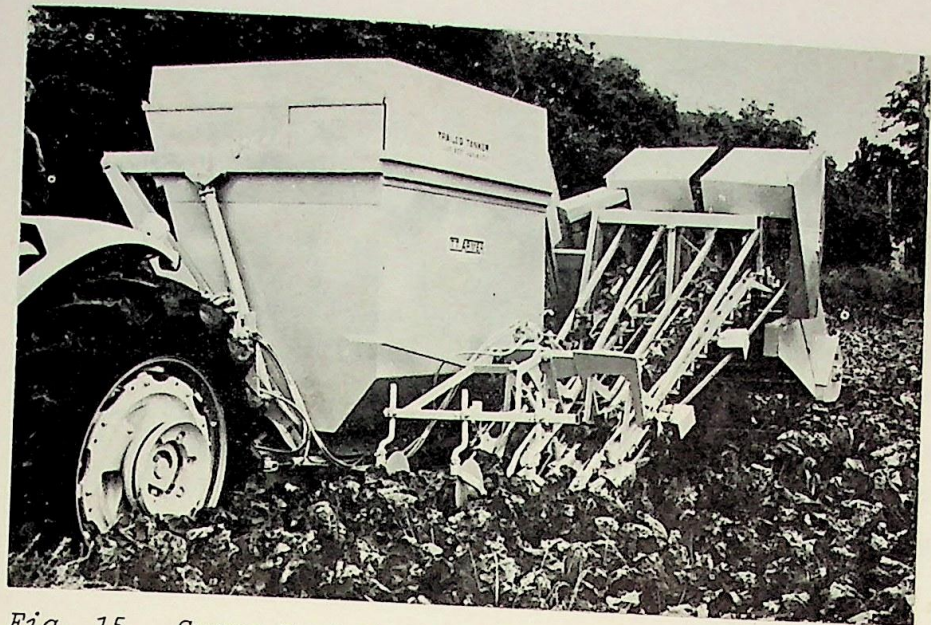


Fig. 15. Sugar Beet Harvester



Fig. 16. Stone Collector

4.5

The Society of Designers in Ireland (S.D.I.)

In 1972, the President of the Society of Industrial Artists and Designers (S.I.A.D.), the English professional body of designers, suggested to its increasing number of Irish members that they might form their own Irish Branch of S.I.A.D. This sparked off thinking by the Irish designers, who rejected the English proposal in favour of creating a Society of Irish Designers, without having any constitutional links with S.I.A.D.

The Society of Designers in Ireland (S.D.I) as it was to be called, was mainly set up by four practising designers in Ireland: Raymond McGrath, Raymond Kyne, Barry Dipper and Paul Hogan. Raymond McGrath, who agreed to be the Society's first president, undertook to write to 100 designers, practising in Ireland, asking them to attend a meeting in the National Gallery in September 1972. The meeting was fully attended and the Society came into being, adapting a constitution and code of conduct.

Today, the Society has a membership of about 181: 133 full members and 41 licentiate members and 7 from overseas.

4.6

N.C.A.D. Industrial Design Course

In 1976, 15 years after the recommendations of the Scandinavian Report, the National College of Art and Design established a four-year Industrial Design Degree Course. It was to be a sandwich course, run jointly with the National Institute for Higher Education in Limerick (N.I.H.E.).

The Report of the Council of Design of 1965 had suggested that the course should be run from University College, Dublin's Architectural Department or through Bolton St. College of Technology. However, the N.C.A.D./N.I.H.E. were given the responsibility by the Department of Education for producing Irish industrial designers.

Professor Michal Ozmin, Head of the Faculty of Design in N.C.A.D. has played a major role in the development of the Industrial Design Department. The first Head of the Industrial Design Department was Barry Dipper, who later left to take a post with Cardiff University. However, it was not until 1983 that a new Head of Department, Mr. Guy Briggs, was appointed. Guy Briggs came from the Ulster Polytechnic, where he had been Head of 3-D Design Department for 10 years.

The course had its first graduates in June 1980 and, to date, there has been a total of 22 graduates with the Bachelor of Science in Industrial Design (Engineering) Degree. Graduates have gone on to form their own consultancies, joined existing design consultancies, to work as in-house designers with companies and semi-state bodies such as K.D.W. and the Innovation Centre in Limerick.

production using automated mould-making equipment and complying with U.L. safety standards. This airtight cast iron stove has achieved impressive export sales.

These early years proved to be very successful for the consultancy. With the opening of the 1400m² Kilkenny Shop in Dublin, K.D.W. had the opportunity to promote its own designs. However, the shop was craft-oriented though it does specialise in furniture. Thus much of the work undertaken by the Industrial Design Department cannot be displayed in the shop.

4.7

Establishment of Industrial Design Consultancy

With its entry to the E.E.C. , Ireland had established itself as an excellent low-cost manufacturing base from which to export into Europe. Many countries, especially the United States, took full advantage of these facilities.

Nevertheless, there existed profound weaknesses in Ireland's industrial structure. Most of the new sectors of production remained foreign-owned: U.S. firms alone were the source of a quarter of total exports. The productivity of indigenous Irish enterprise was still low. The exporting industries were still highly import-dependent on specialised services and components. Ireland's export-based economy was dependent on world market growth to keep its foreign investors going. Thus, with the down-turn of the years 1974-5 the position looked uncertain.

The time now seemed ripe to attempt to improve the design of Irish products across a wider spectrum away from the craft tradition and towards the needs of manufacturing industry. Irish products had to become competitive to survive. This meant the reorganisation of Kilkenny Design Workshops. Their first step was to establish an Industrial Design Consultancy under the direction of Nick Marchant. The consultancy soon acquired clients from indigenous and foreign-owned industries. The re-direction of the Workshops into consultancies became the general trend in K.D.W. There was a greater requirement for "consultant designers" than for craftsmen. In 1976, K.D.W. undertook a project for Waterford Iron Foundry Ltd. The brief was to produce a range of solid fuel room heaters. One of the range was the Waterford 103 (See Fig. 17), which sells very well abroad, especially in the United States. It was designed for high volume

See P 22

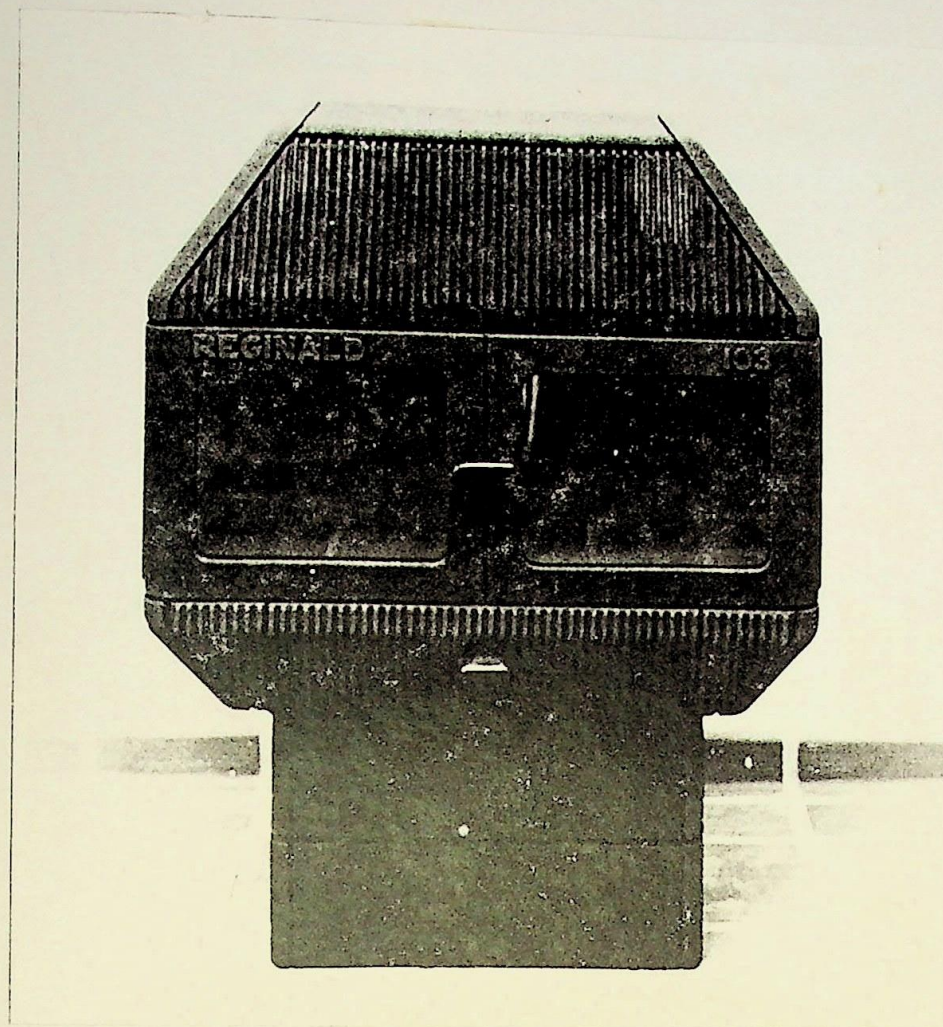


Fig. 17. Solid Fuel Stove

production using automated mould making equipment and complied with U.L. safety standards. This air tight cast iron stove has achieved impressive export sales.

ICSID 10 - Ireland's Biggest Design Event in 1977

"Over 1,000 design experts from 36 countries will come to Dublin next September for the Tenth International Congress and Assembly of the International Council of the Societies of Industrial Design (ICSID)".

This was the statement of Mr. Sean Condon, then Chief Executive of Coras Trachtala.

ICSID 10 was jointly sponsored by the three Irish ICSID member organisations: K.D.W., the S.D.I. and C.T.T. All previous ICSID congresses had been held in countries noted for recent outstanding design achievements, namely, Sweden, France, Italy and Russia. Ireland was thus ICSID's first "non big-league" choice. The choice of Ireland for the venue gave recognition to the rapid development in the design field after such a late start. This was particularly the case between design and export industry.

Speaking of the possible outcome of the Dublin congress, Arthur Gibney, Chairman of the ICSID 10 Committee, said that,

"The presence of a world body of design interests in Ireland should provide the stimulus necessary to bridge the gap between talent and capability, and between the manufacturer and the practising designer".

On the same theme, Raymond Kyne, President of the S.D.I. said,

"ICSID 10 will give Irish designers and educators an opportunity to discuss mutual priorities and ideas".

The twin themes of ICSID 10 were 'Identity and Development as they confront man and society in today's world'. Thirty nine speakers from five continents considered the broad questions of identity and development as they related to national and

political considerations, economic and industrial development, urban and regional planning, minority groups and so on.

The Congress had a three-fold significance:

- 1) It was the recognition of Ireland's efforts over previous years to raise her standards of industrial design.
- 2) It was a unique occasion for Ireland to meet with and learn from the leaders of the international design profession.
- 3) It gave Irish designers and design interests generally an opportunity to trigger international awareness of Ireland, Irish design and Irish products.

The ICSID 10 Congress was the one major international industrial design event which has taken place in Ireland.

Transfer of Statutory Responsibility

On Wednesday, 28 June 1978, the Minister of State at the Department of Industry, Commerce and Energy, Mr. Raphael Burke T.D., held a reception in the Kilkenny Shop in Nassau Street to announce the Government's decision to grant Kilkenny Design Workshops, a limited company, the statutory responsibility for the promotion of industrial design in Ireland.

In his speech, the Minister of State referred to the fact that,

"Some time ago the Board of Coras Trachtala recommended to me that it should now be relieved of the overall responsibility for the promotion of Irish industrial design in order to concentrate solely on export promotion, which is its primary responsibility".

After careful consideration I have decided that the appropriate organisation to undertake the responsibility, which Coras Trachtala wish to be relieved of, is Kilkenny Design Workshops".

Mr. Burke summed up by saying,

"I am quite confident that all those concerned with industrial design in Ireland will continue to co-operate with one another in the best interests of everybody".

The decision by the Minister of State caused great anxiety among designers in Ireland. The Society of Designers in Ireland felt very strongly about the decision especially since they had not been consulted prior to the decision being made. As the S.D.I. represented practising designers in Ireland, the Society felt it might have been consulted as to where statutory responsibility for design in Ireland was to be placed.

In January 1978, six months before the Minister of State

made his decision, the S.D.I. had formed a Working Party, under the Chairmanship of S.D.I. member, Dr. Michael Scott. The Working Party had a single purpose:

"Within the general aim of effecting the establishment of a national Design Council, to assist the Society of Designers in Ireland in serving the widest possible range of opinions on the subject and to prepare a recommendation for submission to Government".

This idea of establishing a National Design Council, with responsibility for design promotion was not new. It had been recommended in Report, published in 1965, by the Council of Design established by the Minister for Education. It was again noted in a statement, issued in 1971, by the Confederation of Irish Industry,

"The most effective solution to the problem is the establishment of a National Design Council. The purpose of the Council would be, firstly, to formulate a national design policy and, secondly, to undertake the role of co-ordinating its implementation".

In May 1975, an address of the Minister for Industry and Commerce to the first meeting of the Council of Industrial Design stated,

"... the absence of a permanent body to take a comprehensive view of the problem and to make recommendations on all relevant aspects has been an obstacle to progress".

Finally, in an unpublished 1975 Report of the Council of Industrial Design, set up by the Minister for Industry and Commerce to "undertake a broad examination of industrial design needs in Ireland", it was stated that,

"During our work we have been struck by the need for a more permanent Council of Industrial Design. We have felt this because of the continuing need to provide an effective forum for discussion and co-ordination of fairly diverse views and interests".

These statements formed the background to the setting up of the Working Party, which, at its first meeting on 3 May, appointed a small committee: Michael Scott, Chairman, Sean Condon, Chief Executive of C.T.T. and Frank Ryan, President of the S.D.I., to collect information and prepare a draft document for the Working Party's consideration and approval.

In mid May, members of the staff of C.T.T., who were also members of the S.D.I., informed the President that the Board of C.T.T. had requested the Minister for Industry, Commerce and Energy to be relieved of its statutory responsibility for industrial design. At the first meeting of the Committee on 23 May, Sean Condon confirmed this information. It was agreed that the President of S.D.I. should write to the Minister, requesting an early opportunity to "discuss the implications prior to any decision being taken". Sean Condon claimed his continuing participation was incompatible with his position in C.T.T. and he resigned from the Committee, assuring his assistance where possible.

On 9 June the Minister for State at the Department of Industry, Commerce and Energy, Mr. Burke, replied to the President, noting the Society's concern but regretting that

"because of official commitments in the immediate future, it would not be possible for me to receive a deputation from your Society. I would, however, be glad to receive a memorandum setting out your Society's views in this regard and to take them into consideration in arriving at my decision".

A memorandum was prepared and sent to Mr. Burke on 22 June: an accompanying letter from the Society's President drew attention to the work already in progress and requested a delay in a final decision being reached in order to allow for completion of the Working Party's research.

On June 28, Mr. Burke replied, underlying his decision to transfer the statutory responsibility for industrial design from C.T.T. to K.D.W. In respect of the Working Party formed by the S.D.I. he had this to say,

"I am sure you will realise that the reallocation of responsibilities between these organisations will not inhibit the research being carried out by your organisation's Working Party".

The Working Party received very few replies from its initial enquiries which were directed at previous members of the Council of Design, Government Departments, semi state and representative bodies, industry and commerce, educational interests, the design profession and other interested institutions. The Working Party was dissolved soon after the Minister of State's announcement.

Today, K.D.W. is still holder of the statutory responsibility for industrial design and it continues to run an industrial design consultancy.

The K.D.W. Training Schemes

In 1978, when K.D.W. gained statutory responsibility, it also took over the running of the C.T.T Design Scholarships. Today, K.D.W. offer two forms of training for young design students and graduates.

The Butler House Project is a scheme in which K.D.W. takes in young graduate designers to all design disciplines in K.D.W. The programme lasts for six months and is funded from the Government Grant-in-Aid and by some income from European Social Funds. Between 15 and 20 graduates are taken on the scheme each year. To date there has been a total of 7 young designers working the Industrial Design Department.

The second scheme run by K.D.W. is the Kilkenny Design Awards. Registered students are eligible to enter a design competition with awards being offered for travel, work experience and further study. Up to £10,000 is allocated to these awards, in which about 8 winners are selected under the categories of graphics, crafts, product, fashion and textiles design, and they are given the opportunity to carry out the award of their choice.

It has also happened on occasions that the awards have been withheld in a particular category where the standard has not been reached.

5. RECENT YEARS

5.1 Private Consultancies

In 1976, and English design consultancy, Total Concept and Design Management Ltd., opened its practice in Dublin under the direction of Peter Metcalf, who was a previous employee of Total Concept but who had spent four years working within C.T.T.'s Design Advisory Service. In 1978, Total Concept discontinued their practice and Peter Metcalf continued the practice under the name of Metcalf and Associates.

With his work in C.T.T. Peter Metcalf had established an understanding of the industrial design situation in Ireland and used his knowledge to progress his own consultancy. Among the company's early work was a 'Dec Scanner' (See Fig.18) for Tramex Ltd., Sandyford, Dublin. The scanner is a non-destructive screening method for the detection of excess moisture on large-area roofs, constructed from glass-reinforced plastic. Another company to use Metcalf & Associates was Total Sigma Measurements Ltd. They used industrial design to develop their Sigma 770 (See Fig. 19), a micro computer system for automatic width control of blown film.

In 1983, Peter Metcalf was elected President of the S.D.I. However, he was only able to serve for eight months as President, due to ill health which forced him to give up his consultancy and to return to the U.K. for medical attention. Subsequently, one of the consultancy's employees continued the running of the practice and Richard Delaney is now Managing Director of Metcalf, Delaney and Associates. Richard Delaney, who trained both in Holland and in Wales, sees a positive future for industrial designers in Ireland.

The company's recent work includes a free-standing

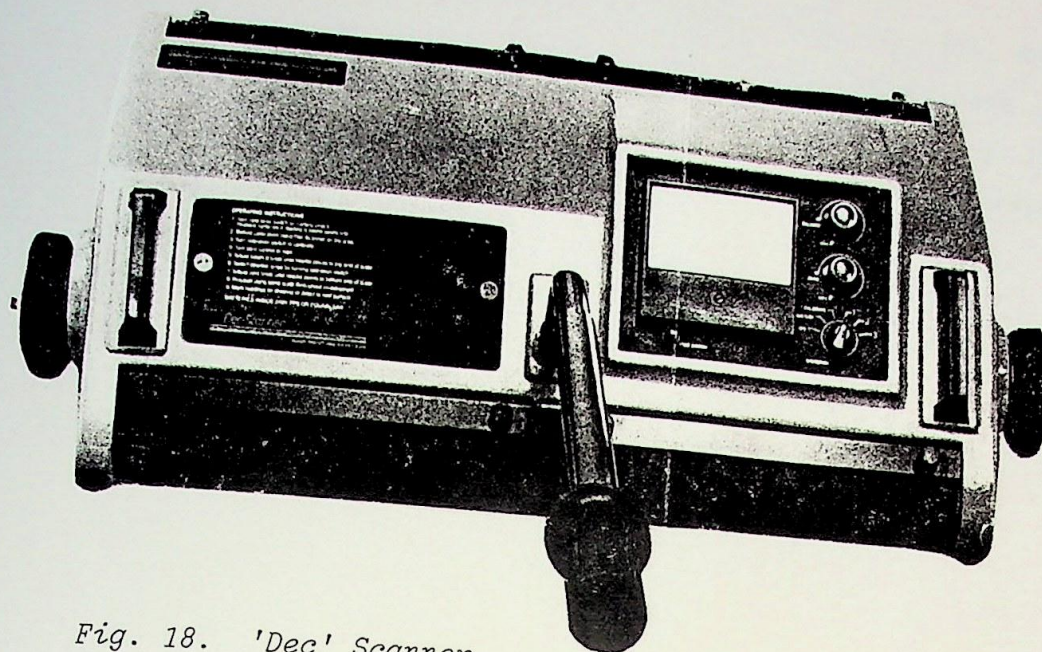


Fig. 18. 'Dec' Scanner

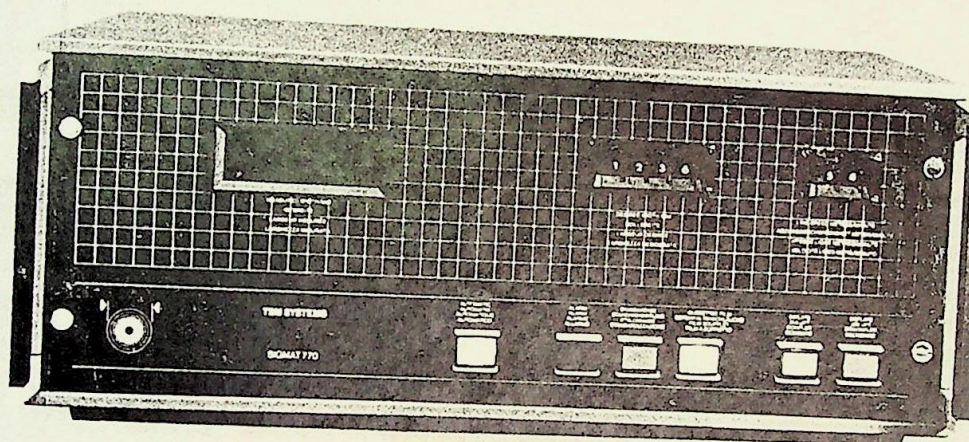


Fig. 19. Sigma 770

butane gas domestic heater (See Fig. 20), designed for Allied Heaters Ltd. Tramex Ltd. have used the company for a second project (See Fig. 21), the design of a 'leak seeker' to locate trapped moisture in fully waterproofed roofs.

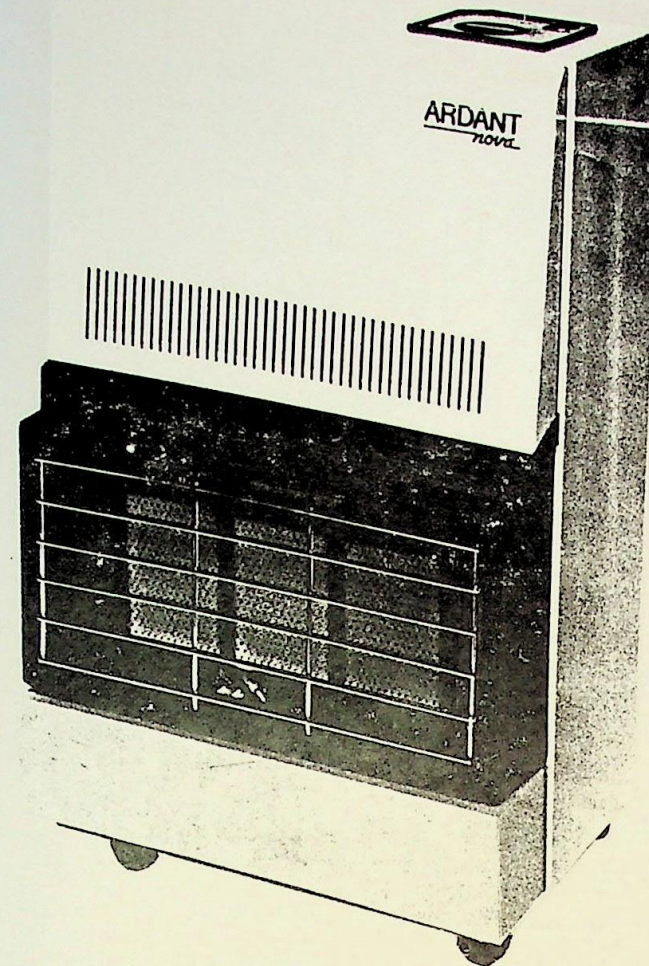


Fig. 20. Domestic Heater

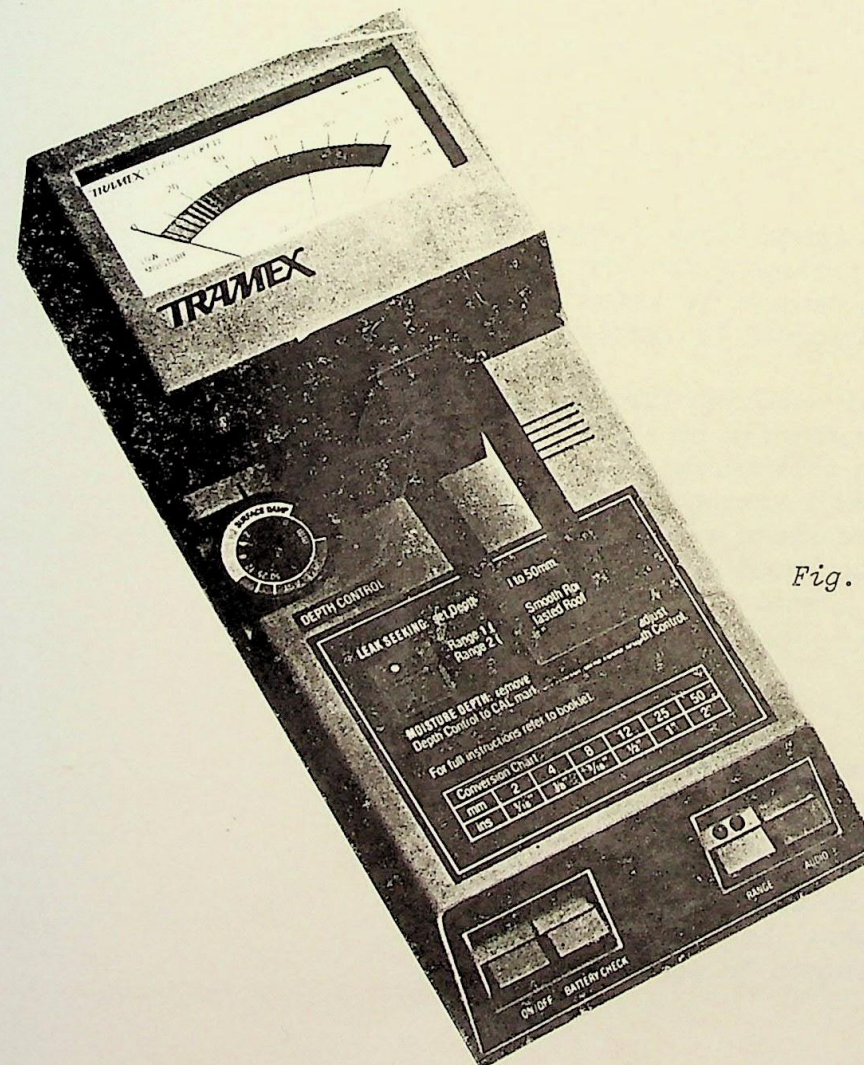


Fig. 21. Leak Seeker

In October 1982, Design, Innovation and Development Ltd. was set up by Denis O'Connell, Managing Director. Following his graduation from the NCAD/NIHE Degree Course in Industrial Design, Denis O'Connell worked on a One-Year Product Development Fellowship at the Innovation Centre in Limerick. From this period at the Innovation Centre, he realized the potential of setting up his own design consultancy and he now employs six people including two other design consultants, also graduates of NCAD/NIHE Industrial Design Degree Course.

Their work to date has included the development of a viscometer measuring equipment for Brookfield Instruments, Shannon, (See Fig. 22) and a video juke box, developed for Video Sound International, Dublin (See Fig. 23). It is Mr. O'Connell's view that the future of industrial design in Ireland is greatly dependent on how it is marketed. He would like to see more state initiative in the promotion of design, say through national exhibitions. Mr. O'Connell also appreciates that,

"New product development is an expensive complex and risky activity, yet as the primary means of company growth and profitability, it cannot be avoided.

The industrial designer is not someone brought in as an afterthought to put the product in an attractive package. He is a profit-earning expert who should be a key member of the production team and play as big a part in the boardroom as the finance and marketing directors".

Mr. O'Connell claims that,

"Irish industry is just as capable as the Germans or Japanese of producing good designs in terms of form, function and commercial viability, but the proportion of companies dedicated to doing this is still tiny and until this is changed, industry will not achieve that edge of competitiveness that

the country needs so much".

Another new consultancy, DESIGN 4 Associates Ltd., Dublin, was established in March 1982 by three graduates of the NCAD/NIHE Industrial Design Degree Course. All three had taken part in an AnCO Product Development Programme after graduation, from which the forming of the consultancy seemed a natural step.

The company has experienced relative success and work has included the development and design of a model train controller for Garrard Engineering Ltd. Dublin, (See Fig. 24). The product was developed over six intensive weeks, in order to meet the deadline of the Paris Toy Fair, held in January 1983: Garrard were able to secure large orders on the strength of wooden and plastic prototypes. Mr. John Moore, Managing Director of Garrard Engineering, is delighted with the success of the new transformer, and attributes this to the design input. Says David Roberts, one of the partners in DESIGN 4,

"It must say something for the importance of design in industry when a project like this can result in initial orders for the company concerned of over £½ million".

Other work carried out by the company includes boat fenders (See Fig. 25), blown moulded from marine grade P.V.C. for Bellco Sports Ltd., Co. Mayo. This company successfully makes footballs and sought a new product using existing materials.

Later, in July 1983, two of the partners resigned to form their own consultancy, Beaver Design. According to Stephen Lennon, co-partner,

"Beaver Design is very much in business. Most of our work is for indigenous industry, who are exporting what they produce".

It is expected that some of the consultancy's projects will soon be in production.

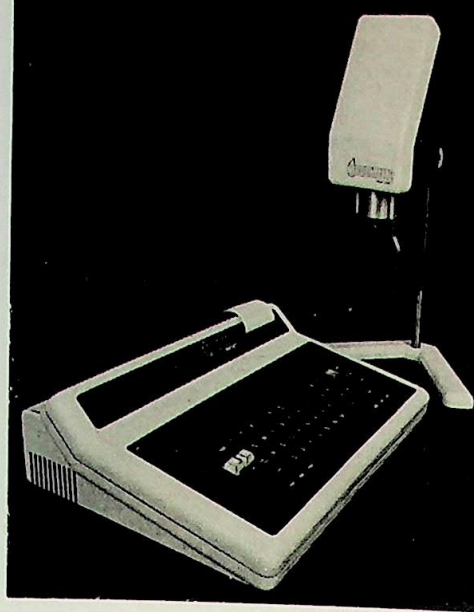


Fig. 22. Viscometer

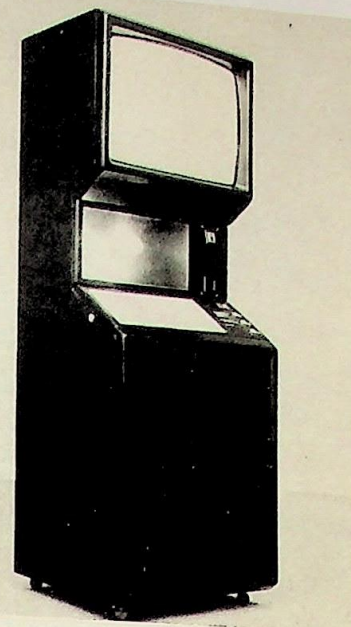


Fig. 23. Video Juke Box

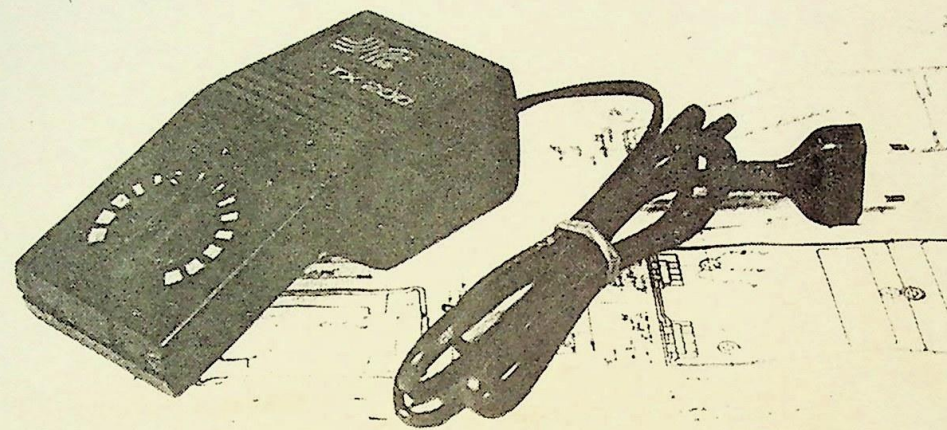


Fig. 24. Toy Train Controller

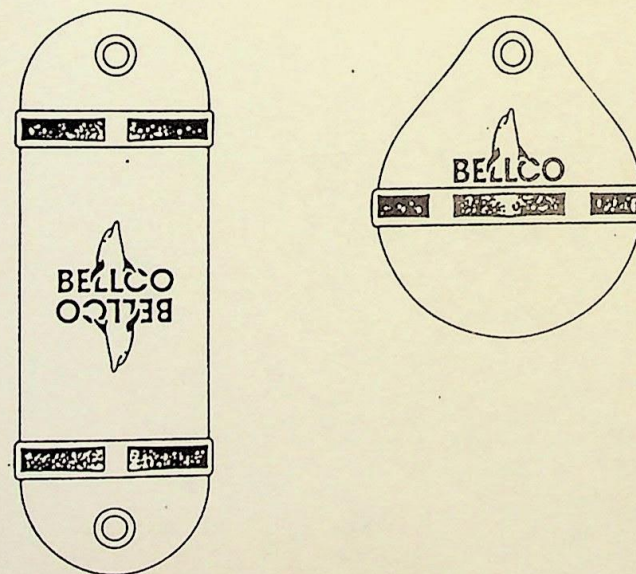


Fig. 25. Boat Fenders

Over the years the industrial design consultancy within K.D.W. has built up an impressive portfolio of work completed for companies in Ireland.

In May 1977, K.D.W. took on a brief for Astra Pump Hire Ltd., to design a high-pressure building site test pump. (See Fig. 26). A number of component layout changes were made which increased the efficiency and reduced the production cost: channel steel and fibreglass made up the chassis and covering panels.

K.D.W. were approached by Telectron Ltd. in September 1978, to update the design on their telephone switchboard. Ergonomic considerations were the priority with this electronic switchboard (See Fig. 27) - not only in terms of user-efficiency and comfort, but also for ease of access for circuit testing and replacement of parts. The product was made from expanded polyurethane.

Hanson Ltd., Co. Sligo, manufacturers of different types of scales have long been users of industrial design as a major part of their product development. In May 1980, the company contracted K.D.W. to carry an updating of the design of their bathroom scales (See Fig. 13). Launching of the production model took place in February 1981 and the scales were made from injection moulded plastic, which increased profitability over the old pressed steel model. (See Fig.28).

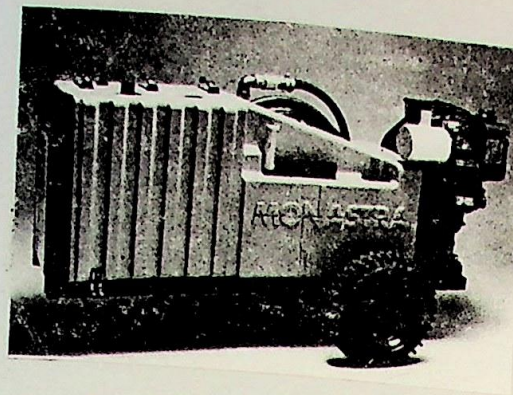


Fig. 26. High Pressure Pump



Fig. 28. Bathroom Scales

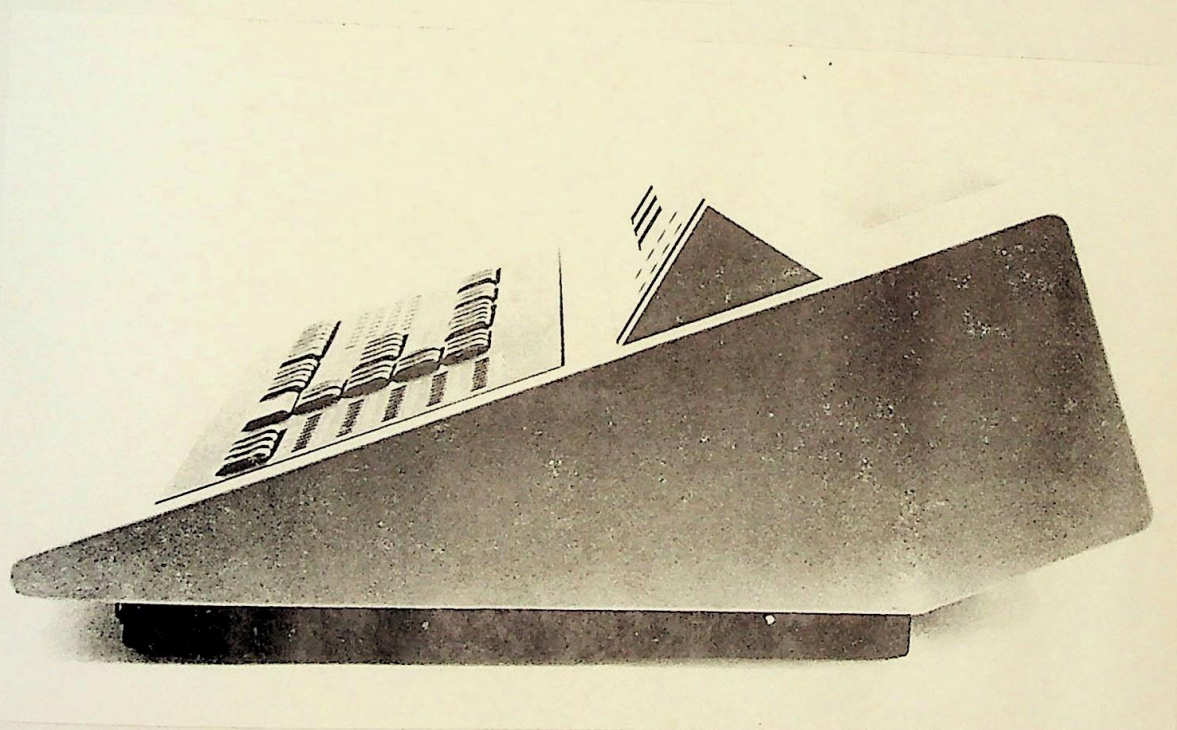
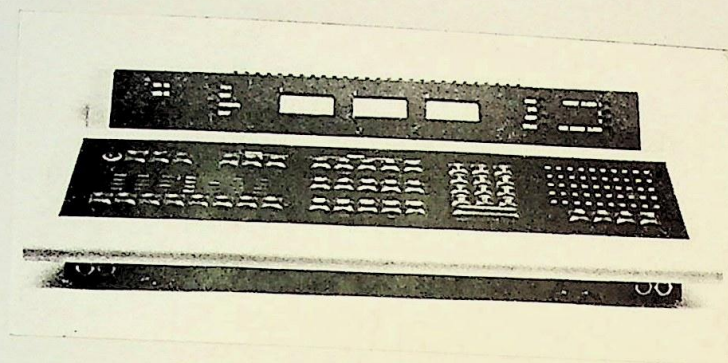


Fig. 27. Telephone Switchboard

5.4 The Industrial Training Authority - AnCO

The Industrial Training Authority (AnCO) run a number of training courses, the aim of which is to give young people basic skills that are not obtainable in Third level institutions, i.e. fitters, plumbers, electricians etc. AnCO also provide courses which are management and business oriented. These courses attract engineering or design graduates, who require knowledge of the "business" side of their profession.

Two such courses: "Product Development Programme" and "Design for Industry" were established by AnCO early in 1982 and are run by private management consultants. The Product Development Programme takes on young people from any profession to develop any type of new product for a company. Typical products have been for manufacturing electronics, pharmaceutical and engineering-based industries. The AnCO course offers a project based training, giving students a basic business knowledge. The course is of six months' duration, in which AnCO pays the student a basic wage. As a result about 33% of students are taken on by the company, for which they worked during the training programme; about 13% become self-employed; 5% opt for further education and 40% find employment elsewhere.

The Design for Industry Course aims at taking graphic design graduates to give them a basic business knowledge. According to Robert Rohan, Trainer Adviser of AnCO,

"AnCO sees design as a very important aspect of product development: not only in the appearance of the product but in all other related spin-offs such as presentation packages, corporate identity and product information".

Some of the students gain employment with design consultancies and the remainder are encouraged to establish their own practices. AnCO presently have plans to expand their Product Development Programme in their Cork training centre.

5.5. The Institute for Industrial Research & Standards (IIRS)

The Institute for Industrial Research and Standards (I.I.R.S.) was established by the Government in the early Sixties to provide basic technical services for industry. In 1968, it produced a five year plan which outlined that substantial research and development services would be offered to industry. In 1971, another five year plan was outlined with the following as its main aims:

1. *To provide technical advisory services to support the continued efficient operation to industry.*
2. *To provide technological support to industrial firms attempting to grow or introduce radical change.*
3. *To provide viable investment opportunities in technology to firms committed to growth in Ireland.*

While having interest in research and development, the I.I.R.S. is also involved in the application of science and technology in industry. Rory Broderick, Head of I.I.R.S. Design and Development Department, is concerned about Irish industries' attitude to industrial design.

"The old idea of bringing in an industrial designer to "pretty" up a product when it is not selling well must be supplanted by a more aggressive attitude.. The sort of engineering design we are carrying out here at the I.I.R.S. on new products and machinery means we are very conscious of the need for good industrial design, and for that reason, on many products we have brought in consultants to work with us from an early stage".

Rory Broderick explains,

"With engineering products, there can be a tendency to concentrate on function and performance only and neglect of things such as appearance and ergonomics. The industrial designer can ensure that this does not happen and their main skills can complement that of the machine designers to evolve an engineering product which is excellent in all respects".

In 1978, the I.I.R.S. worked with K.D.W. on the development of a new overhead projector for Bell & Howell Ltd., Dublin (See Fig. 29). Both worked closely together to integrate the technical, marketing and user requirements for this new product which was launched at the 1980 Photokino Exhibition in Cologne, Germany. Pilot production in 1980 was followed with full production in 1981, when 5,000 projectors were exported.

The I.I.R.S have also worked with Metcalf and Associates.

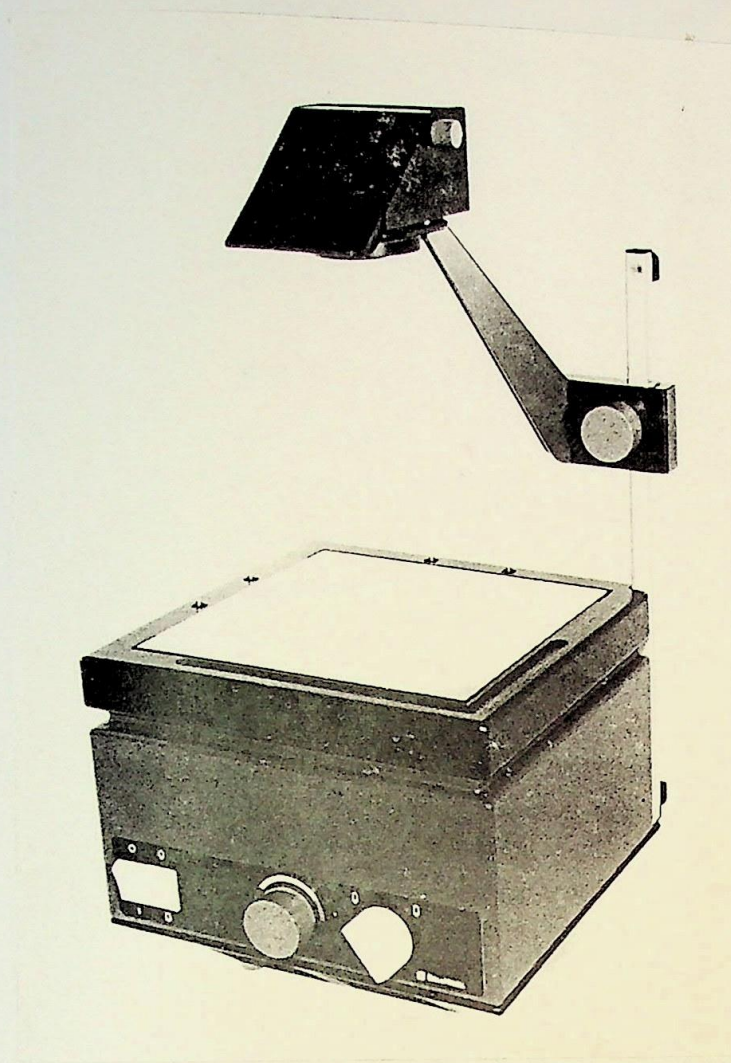


Fig. 29. Overhead Projector

The National Board of Science & Technology (NBST)

The services of this semi-state body include the provision of an analysis of state investment in science and technology, and the preparation of a National Programme for science and technology. This programme relates to the scientific and technical work being undertaken in public and private sectors and is to broaden economic policy objectives.

The N.B.S.T. views industrial design as a technology and therefore they provide analyses to the Government concerning state aid to design. Their main interest in industrial design is through what research and development takes place in Ireland. The N.B.S.T. place a very high value on research and development, which is seen as being very much under-utilized by Irish industry. They have recommended to the Government increased investment into innovation and research work to raise the level of science and technology in manufacturing industry resulting in increased profitability.

According to Dr. Martin Lyes, of the N.B.S.T.,

"We are in the process of conducting an unofficial survey into industrial design in Ireland".

This survey is part of the N.B.S.T.'s overall interest into design in Ireland.

6. DISCUSSION

6.1 Industry/Economy

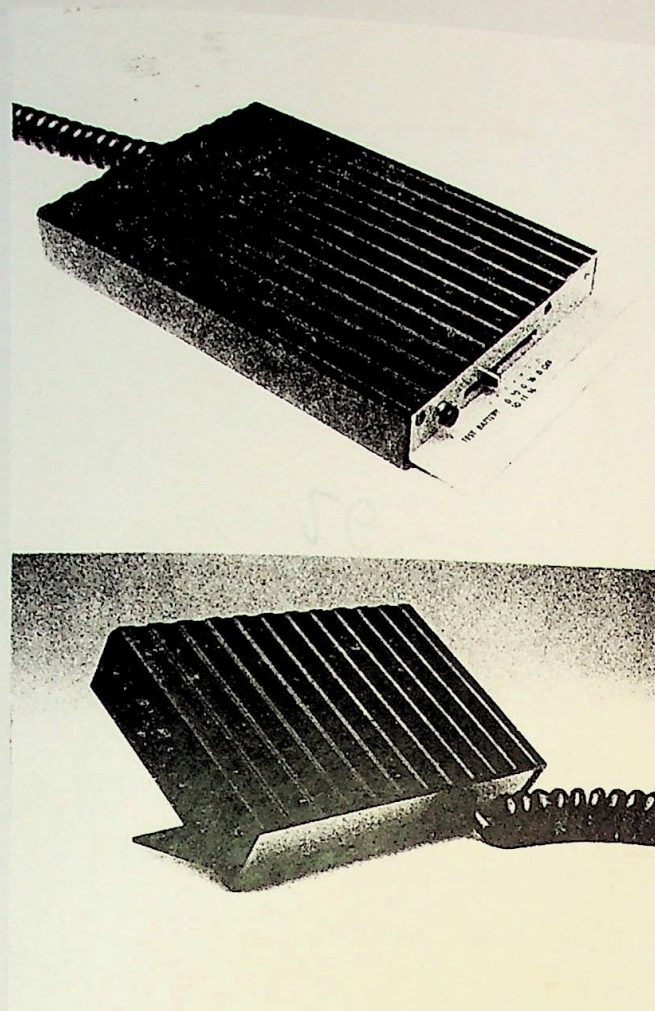
Over the past 20 years Ireland has been trying to develop itself as an industrialised nation whereas previously it was totally agriculture orientated. Agriculture is still, and probably always will be, vital to the country's economy but it does not provide a source for new jobs. However, it is a widely held view among designers that both industry and governments are slow to see industrial design as an integral part of any production process.

6.1.1 Management

Designers are employed by management and it is of little use to hope for high standards of design without high standards of management and marketing. It is no coincidence that design improvements in industry have been matched by a growing competence in all aspects of business. Generally successful design is compatible with successful business.

In Ireland and the rest of the world, companies that are leaders in design tend also to be the most progressive and profitable. One only has to look at such international companies such as Philips, Braun, Krupps, Sinclair, and in Ireland there is Lake Electronics and Donnelly Mirrors. The benefits of design in these cases are clearly stated.

Lake Electronics of Ballymount, Co. Dublin, are Ireland's biggest electronic manufacturers. According to the Managing Director, Shea Loftus, they carry "a massive research and development budget which covers electronics, mechanical and design development". They have used the services of K.D.W. on numerous occasions to design a package for their electronic circuit boards and controls (See Fig. 30). Such products include a "Subscriber



*Fig. 30. Subscriber Telephone Meter
Call Barring Unit*

Telephone Meter" and a "Call Barring Unit". Mr. Loftus feels that Lake Electronics are one of a few companies in Ireland with a progressive research and development programme: the programme is the backbone of the company's success, which now employs 140 people, very large by Irish standards.

Donnelly Mirrors Ltd., Naas, Co. Kildare, have been manufacturing car "Day/Night" mirrors for about 14 years. They supply most European and Japanese car manufacturers. They are constantly using the services of industrial designers to develop new products as the car industry is highly competitive and very much styling oriented.

Thus management in the final analysis, is concerned with increasing profitability: in order to achieve this, it must utilize the latest manufacturing and marketing techniques. There are many other areas available to management, among them is design.

Thus when a company wishes to create a new product, promote an existing product or simply make existing products more financially viable, the effective management of the design input will result in the optimum use of all available skills and resources and will lead to higher profitability.

6.1.2 Research and Development

In order that companies might utilise design they must run a continuous programme of research and development. The results of such a programme inform management of competition, new technologies and new markets. It is vital in today's economy that companies practice research and development in order to survive. This type of programme does not lead to immediate profits but is regarded as an investment for the company's future - a reinvestment in the company. However,

in Ireland, Government promotion of a realistic programme of research and development as an investment for the future, has been slow. There are better financial returns to be gained from private investments such as property and Government bonds rather than the investment of funds in research and development, ultimately leading to employment. Thus in Ireland in these circumstances, research and development work has to come from the company's profits.

The Industrial Development Authority (I.D.A.) has recently begun to give research and development grants to selected industries. However, this system of free 'handouts' has discouraged the companies which have failed to obtain a grant from continuing with a research and development programme.

Few manufacturing companies have adequate profits to support the required research and development work necessary for their survival. It becomes a vicious circle. Research and development work should be able to be written off against profit tax. This is the view held by Mr. Peter Hogarth, Projects Manager at the Innovation Centre, Limerick.

It is vital that other incentives are made available to Irish industry to encourage manufacturers to make more use of research and development work to assure progress in the future.

6.1.3

Foreign Companies in Ireland

It has continuously been the Government's policy to opt for short-term solutions. Through the I.D.A. high tax relief is offered to foreign companies to encourage them to establish a manufacturing outlet in Ireland. This has been used by many non-E.E.C. countries, especially Japan and the United States,

and allows them access to European markets. The country's Corporation Tax at 10% is one of the lowest levies in the world and little wonder it attracts foreign companies.

However, where the Government has erred is by not encouraging these new firms to use Irish consultants in the companies' research and development work. Marketing and design work is thus carried out of the country.

The Government was primarily concerned in finding a short term solution by establishing more jobs. However, it has been the case that these jobs sometimes did not last and one has only to look at the list of foreign companies that have pulled out of Ireland, or never got as far as setting up here: Black and Decker received a grant to make their "Workmate" in Kildare; Polaroid received a grant to build a factory in Naas but they never moved into the premises.

Slowly, the I.D.A. has begun to direct its energies towards indigenous industry encouraging Irish initiative. This is a major step in the right direction but it should have been taken 15 - 20 years ago. Today, the I.D.A. has an important role to play in promoting industrial design as a service technology to manufacturing industries.

When setting out to assess the contribution of a profession, one must first investigate the attitude of that profession among the general public and those who use the services of the profession. Therefore, the contribution of the any profession depends on how much people know and understand of it.

In Ireland twenty years ago, if one mentioned industrial design only a handful of people would know what it was: these handful of people tended to be designers in different disciplines. Thus when one is faced with almost total public unawareness of industrial design, it is no wonder that changes and progress takes time.

Public awareness and appreciation is probably one of the most difficult things to change: in a conservative, agriculturally oriented society, the change becomes even more difficult. However, over the past two decades, Ireland has been building towards a more industrial-oriented society. This objective has not yet been reached but the ideas have taken root.

Today most people in Ireland understand what is meant by design and ultimately they will understand industrial design. Nevertheless, the majority of people see it as an extension of "Art". K.D.W. has accomplished much in the promotion of the Crafts in Ireland as is obvious by the success of their Workshops in Kilkenny and the Kilkenny Shop in Dublin. However, industrial design cannot be marketed through these shops since many of the products designed are unsuitable for shop promotion. The financial success of the shops depends on sales of craft products, furniture and textiles but to promote industrial design as a craft would damage the profession. The roots of industrial design are in science and technology and Ireland, through K.D.W., needs to be more technology conscious

in its efforts to raise the standards of industrial design.

6.2.1

Attitude of Industry

The attitude of Irish industry also has not helped the growth of industrial design. In Ireland, there has tended to be an attitude of *laissez faire*, especially with regard to competitors from other countries. There are exceptions to the rule however.

Unfortunately this attitude exists among politicians, educationalists and administrators and while Ireland cannot be the leader in every field, the country is traditionally associated with the neglect of its resources. This has resulted in the country being regarded as a relatively unproductive nation adopting a principle of "just doing enough to get by". With this traditional attitude, changes require a new generation of properly educated young designers and management. Therefore, the responsibility falls on the Government to implement progressive policies.

It is now well over 20 years since the Scandinavian "Design In Ireland" Report was published. Out of the many points it raised, one stands out as being vital to any development, namely, that "one cannot expect to alter the standard of Irish product design if, at the same time, a home market is not created for the new quality products. We readily appreciate the problem of Irish manufacturers who, while perhaps willing to experiment with new products, are deterred from doing so by the existence of an unresponsive public".

The Report did not recommend an adaptation of Scandinavian design but rather the development of an Irish "attitude". To raise the public interest in design,

"it would be quite natural to use the ordinary channels of information: newspapers, magazines, radio, television, exhibitions in stores and museums, visiting exhibitions from abroad etc."

It is vital that Ireland should develop its own standards of industrial design by training its own designers rather than importing them. However, it does not end with the training of the young designers, it is necessary to invest in them and all types of manufacturing industry by offering grants and tax reliefs.

The role of the various semi-state bodies concerned with design has been well documented in this thesis. However, it would seem that there is a duplication of resources: firstly, there is K.D.W. which has been given the primary responsibility for the advancement of design standards in industry. K.D.W. promote themselves as a

"company that will audit your design requirements, help find a designer, or undertake design and development themselves".

(As stated in Shannon Development Information Sheet No. 13). Then, the I.I.R.S. in their brochure, claims to provide a "total product design service to industry". Finally, C.T.T. will

"help you find a designer and help you with design management".

This body has details of several hundreds of designers on file. Yet they disclose only a small number of consultants which they feel would be suitable for any particular project and do not disclose the companies or designers involved in previous projects undertaken.

The credibility of these individual bodies is not in question but the fact that they are promoting similar interest and would appear to be in competition. The solution to this dilemma might be the setting up of a co-ordinating body which would have total responsibility over all design matters.

Kilkenny Design Workshops

Kilkenny Design Workshops was established by the Government with the purpose of "advancing good design in industry". (Quotes their brochure). But what constitutes a good design? Are they designs that are easy to produce, durable designs, profitable designs or are they designs which sell well in the shops?

Design is a word used to embrace many different disciplines and areas: electronic design, mechanical design, graphic design, craft design, industrial design, interior design and environmental design. The subject is so broad, covering a wide range of professions. The question might be posed as to whether K.D.W. is being somewhat ambitious in accepting "responsibility" for all these areas of design.

Originally K.D.W. was established to promote craft-orientated design. The success of their shop and the quality of goods sold there fully endorses this fact. This success has had many "spin offs" such as the Craft Trade Fairs in the R.D.S. and in the Mansion House. However, with this popularity for their craft products, K.D.W. has tended to neglect the needs of Irish industry, namely in the promotion of industrial design.

Craft products are easier to promote than industrially designed products because they sell well in the K.D.W. shops. The life cycle of a craft product is much shorter than that of an industrially designed product because the craftsman/designer is normally the sole producer. The industrial design process is more complex, involving many different skills from different professions. Take for example the production of a

typewriter as compared with the making of a ceramic vase. The typewriter requires input from industrial designers, mechanical engineers, toolmakers, production engineers whereas in the making of the vase there is the designer and perhaps a skilled potter/assistant. Industrial design is more a technology and must be promoted to industry as an investment.

K.D.W. also runs a design practice, offering its consultancy services to all levels of industry. Within each practice it provides young designer training with an average intake of one student per year. The consultant designers of K.D.W. are responsible for organising design exhibitions which are held in the shop in Dublin and around the country.

From these activities it would appear that there is a conflict of interest within K.D.W. On the one hand, they hold statutory responsibility for promoting design, while on the other hand they are a limited company, both in the design consultancy and in the retail shop.

In the U.K. the Government sponsors the "Design Council" whose brief is to promote good design in industry: in that respect it is similar to K.D.W. However, the Design Council does not have a design consultancy, it is purely concerned with promotion of design. The Design Council employs staff to go out and promote design nationally and it has five regional offices, all with permanent design exhibitions, explaining to the public, and especially to industry, what benefits are to be gained from designers.

Critics of K.D.W. have argued that it is wrong for them to be in the retail trade for designs for which it receives a grant to promote. In fact, the Kilkenny Shop is used more for promoting the products of Kilkenny Design Workshops than Irish design in general.

As a design practice K.D.W. has produced a high standard of work: one has only to look at their case studies. But up to a couple of years ago, they had an almost total monopoly on industrial design work. They could not but improve on the existing situation. However, by Irish standards, K.D.W.'s industrial design consultancy is a very large practice employing six full time designers. In many cases, it has proved to be beyond the means of some small Irish companies, who could not afford the consultancy fees, which are caused by the K.D.W.'s large overheads.

Perhaps there is a need for the structure of K.D.W. to be re-assessed. It has become too institutionalised, maintaining the status quo. K.D.W. should be a developing and changing institution, with its designers being encouraged to move on to set up their own practices. It should engage more and more in the development and co-ordination of design in Ireland rather than limiting itself to textile printing and making attractive logos and trademarks.

One solution might be to split K.D.W. up into a number of small companies, which would act independently of each other. Initially, the shop might be separated from the design consultancy: the next stage would be to divide the design consultancy to consultancies.

It is important that K.D.W. should put more pressure on the Department of Education and become more involved in all levels of education, especially at third level. K.D.W. designers should provide the time, funded by the colleges, to visit students for block periods of one to two weeks. As it is, many colleges pay high fees for foreign designers to come to Ireland to do just this and they should be encouraged to use the services of Irish designers.

In summary, it must be said that Kilkenny Design has done an excellent job in promoting Irish hand made products. However, with the success of the shops and through no fault of the designers employed by K.D.W., industrial design has not been promoted as much as it might have been. By looking at the small number of private industrial design consultancies in the country, it is obvious that, in the main, Irish industry is still unaware of the advantages to be gained from the services of an industrial designer. K.D.W, with the statutory responsibility for promoting design in Ireland, can remedy the situation by making industry more aware of what industrial design expertise exists in the country.

In 1961, The Scandinavian Report underlined the importance of education with regards to developing industrial design in Ireland not just at third level, where no course existed, but right through the whole system beginning with the primary schools. Irish children were not "encouraged to express themselves with pens and paint". Since that time some changes have been effected within the educational system but art is still regarded by many parents and teachers as a subject for girls. Even today, in the National College of Art and Design there are twice as many female as male students.

Of all the Government departments, the Department of Education is regarded as the most conservative. Education is something which should evolve and change along with the advancement in technology. It is only recently that some changes have been made at secondary level and these were the first to be made for a number of years: new subjects were added to the curriculum and some out of date subjects were removed.

At the present time, the Government does not have an art and design education policy. The present Minister for Education, Gemma Hussey published a "Programme for Action in Education 1984 - 1987" in January 1984, in which N.C.A.D. is only mentioned in the Appendix. In fact there is no mention of any Government initiative which has been taken to establish a policy on art and design education.

One of the many problems facing the National College of Art & Design is the control by the Minister over the selection of its governing body, "An Bord". As a result it could be said that some selections to An Bord have been political favours. Choice of

members to serve on An Bord should be made by a committee of combined interests, say from the Royal Hibernian Institute, K.D.W. and the S.D.I. with the Minister supervising procedures.

One aspect which highlights the Department of Education's lack of interest in design education is the length of time it took to establish an industrial design course: 15 years after the recommendations of the Scandinavian Report and the Report of the Council of Design. In fact, all initiative in the advancement of industrial design education was taken in the Sixties and Seventies by C.T.T. under the direction of Paul Hogan. It is Mr. Hogan's belief that,

"education is a vital part of developing industrial design in Ireland: we must breed our own designers".

So much so that Mr. Hogan was the backbone behind the 1970 Seminar on Industrial Design Education.

In summary, it would appear that over the years the Department of Education was totally indifferent to any outside advice or initiative. However, the Department's attitude is only reflected by the Government's view towards art and design. The time is now ripe for a fresh initiative to be taken by the Department of Education, along with the Royal Hibernian Institute, Kilkenny Design and the Society of Designers in Ireland, to look into present educational methods and to plan for the future. It is vital that art and design education should provide for the needs of tomorrow's industry.

In 1980, the first graduages from the NCAD/NIHE Industrial Design Course received their Degrees. One graduate, a participant of the Butler House Project, was employed by K.D.W., another joined the consultancy, Total Concept, and another joined the Innovation Centre in Limerick.

With the more recent graduates, there little sign of offers of employment for these young designers with consultancies, in particular K.D.W., so their only option was to establish their own companies. D.I.D. and DESIGN 4 are two such consultancies formed by graduates. K.D.W. showed little interest in these ambitious young designers who had to promote themselves individually and persuade industry to use their services. While K.D.W. is sponsored by the Government to promote industrial design, in reality it does not promote what appears to be competitive. In fact, no state agency is prepared to invest funds in these consultancies to help them become established. Much is said about the promotion of design but it is difficult to see any positive evidence of this promotion. If K.D.W. loses its monopoly over industrial design it will be because of these new consultancies. Perhaps this development would be best for all concerned especially for Irish industry. It is early days yet, but these consultancies have already made their mark. More private initiative such as this should be encouraged by the Government through its semi-state organisations.

Had the NCAD/NIHE Industrial Design Course been set up in the late Sixties as recommended by the Scandinavian Report and the Council of Design Report in 1965, the situation today might have been entirely different. Successive Government policies can be blamed for the late development of industrial design in Ireland. Also to blame is the

lack of initiative shown by K.D.W. in encouraging the Government to establish industrial design education in Ireland for the training of its own qualified industrial designers to meet the needs of Irish industry.

So far, the work being carried out by these private consultancies has been very impressive. They have gone out and sought their own clients and they are gradually building up an impressive client file. It would be important that these consultancies do not strive to become as big an organisation at K.D.W. where they could price themselves out of the market. Industrial design must remain within consultancies employing no more than a few designers so that it can cater for even the smallest manufacturing industry. It would be much healthier to see many smaller consultancies in operation than a few large organisations.

Since its inception in 1972, the Society of Designers in Ireland has had a mixed history. It has enjoyed great success in private matters such as the ICSID 10 Conference in Ireland in 1977 and more recently, the ICOGRADA Congress in 1983 (the International Council of Graphic Design Associations Congress, held in Trinity College). However on a national level the S.D.I. has made little, if any, impression.

The prime example of this was when, in 1978, the statutory responsibility for industrial design was transferred from C.T.T. to K.D.W. by the Minister of State, Mr. R. Burke, without any negotiation with the S.D.I., the largest collective group of designers in the country. Every attempt by the President of the S.D.I. to meet with Mr. Burke to discuss the matter, had been refused. This was a serious blow to the S.D.I. who prides itself on being the professional body of designers in Ireland.

Moreover, to become a member of the S.D.I. one must be the holder of a degree or diploma in Design, or one must preserve a portfolio proving one's capability as a designer or design manager. This indicates the S.D.I. is only interested in those who have qualified or are experienced as design managers.

Today, the S.D.I. plays no part in a national structure of design. For it to make any impression on a national scale it must open its membership to anyone with an interest in design, whether on a professional, legal, educational or private level. The S.D.I. newsletter should be circulated with the purpose of spreading knowledge of design progress, rather than restricting it to its membership.

REFERENCES:

Interviews

Conrad Trautman

The Irish Export Board

Alex Parnell, Public and
Development Officer

Paul Woods, Manager

Technical Assistance Programme

Kilkenny Design Workshops

Nick Macdonald, Assistant

Chief Executive Officer

Institute for Industrial
Research & Standards

Davy Bordenick, Head of
Design and Development

National Board for Science
and Technology

Dr. Martin Ross

The Arts Council

David McConnell, Finance Officer

National College of Art &
Design

Professor Michael O'Brien

Head of Faculty of Design

Innovation Centre, Limerick

Peter Whelan, Projects Manager

AIPO

Robert Allen, Head of Product
Development

Metzall, Delaney &
Associates Ltd.

Richard Delaney,
Managing Director

Design, Innovation &
Development Ltd.

David McConnell, Managing
Director

DESIGN & Associates Ltd.

David Roberts,
Managing Director

Beaver Design Ltd.

Stephen Jones, Director

Mark Coffey, Artist

Mark Coffey, Creative Director

Interviews

Coras Trachtala/
The Irish Export Board

Alec Pamplin, Design and
Development Manager.
Paul Hogan, Manager,
Technical Assistance Programme.

Kilkenny Design Workshops

Nick Marchant, Assistant
Chief Executive: Design

Institute for Industrial
Research & Standards

Rory Broderick, Head of
Design and Development.

National Board for Science
and Technology

Dr. Martin Lyes

The Arts Council

David McConnell, Finance Officer.

National College of Art &
Design

Professor Michal Ozmin,
Head of Faculty of Design.

Innovation Centre, Limerick

Peter Hogarth, Projects Manager.

AnCO

Robert Rowan, Head of Product
Development

Metcalf, Delaney &
Associates Ltd.

Richard Delaney,
Managing Director

Design, Innovation &
Development Ltd.

Denis O'Connell, Managing
Managing Director

DESIGN 4 Associates Ltd.

David Roberts,
Managing Director

Beaver Design Ltd.

Stephen Lennon, Director

Manus Coffey Assoc. Ltd.

Manus Coffey, Managing Director

An example of some interested parties who have been unable to join the S.D.I. has been the N.B.S.T. and the I.I.R.S. Both these institutions are intested in the future of design: the N.B.S.T. are advisors to the Government in the area of finance for science and technology and the I.I.R.S. as practising product developers.

It is vital, if the S.D.I. is to make any real impression on design in Ireland in the future, that it carries more external activities and encourages members from different fields to join the Society. For far too long the S.D.I. has existed as a social club for designers in Ireland.

Krupps Engineering Ltd.

Lake Electronics Design Ltd.

Donnelly Mirrors Ltd.

Society of Designers in
Ireland

64.

Duncan McInnes

Shea Loftus, Managing Director.

Brendan Moreland.

Frank Ryan (President, 1978)

Carainn Davies, Executive Officer.

Arts Council Annual Report, 1957

"Design in Ireland", 1961, Report of the Scandinavian Design Group in Ireland.

Report of the Council of Design, 1965, Chairman, Dr. Michael ffrench O'Carroll.

Export, Vol. 1, No. 1, 1967, C.T.T. Publication:
"Kilkenny Design Workshops", P.16.

Export Vol. 1, No. 2, 1967, C.T.T. Publication:
"Kilkenny Design Workshops" P.26.

Export Vol. 1, No. 3, 1967, C.T.T. Publication:
"Design Management" P.31.

Export Vol. 3, No. 2, 1969, C.T.T. Publication:
"Design Policy Review", P.2.

Export Vol. 4, No. 3, 1970, C.T.T. Publication:
"Industrial Design Education Seminar", P.2.

Confederation of Irish Industry, Oct. 1970, Newsletter.

Business and Finance, Vol. 7, No. 7, Nov. 1970,
"Design is Thought", Bruce Arnold.

The Irish Press, 27 Nov. 1970,
"Designer's Role in Industry", Michael Kirke.

Speech by Mr. P.J. Lalor T.D., Minister for Industry and Commerce,
26 Nov. 1970, at the Opening of Seminar on Industrial Design Education.

Higher Education Authority Act, 1971, Government Publication.

National College of Art & Design Act of 1971, Government Publication.

Export, Vol.6, No. 3, 1972, C.T.T. Publication:
"Problems in Design Education", P.2
"Design in the Engineering Industry", P.8.

Council of Industrial Design, June 1973, Statement of Objectives and Strategies.

Export, Vol. 7, No. 2, 1973, C.T.T. Publication:
"New Products and Packaging", P. 24.

Export, Vol. 8, No. 1, 1974, C.T.T. Publication:
"Trade Notes", P. 33.

Export, 1974, C.T.T. Publication:
"State Role in Design", P. 21.

Export, Winter 1974/5, C.T.T. Publication:
"New Product Development", P.1.

Export, No. 1, 1977, C.T.T. Publication:
"ICSID 10", P.8.

ICSID 10, Sept. 1977, S.D.I. Publication:
"Proceedings of Congress".

Export, No. 2, 1977, C.T.T. Publication:
"World Design Comes to Ireland".

Mobilia, No. 264, 1977, Danish Design Magazine.

Society of Designers in Ireland, July 1978, Newsletter.

Business and Finance, August 23, 1979:
"Kilkenny has Designs on World Markets", Ronnie Hoffman.

Business and Finance, December 1979:
"The Unharnessed Potential", James King.

Design Magazine, March 1981:
"K.D.W. Make it, Sell It", James Woudhuysen.

Kilkenny Design Workshops, 1981, "Report and Accounts".

AnCO Report, 1981, "Engineering Product Design Preparing for the Future".

N.B.S.T., 1981, "Innovation in Small Manufacturing Firms", An Irish
Research Study.

Technology Ireland, Feb. 1982, PP. 34 - 38.

Electronics Report, Sept. 1982, "Kilkenny Design and the Electronic
Industry", Joe McCool.

Kilkenny Design Workshops, 1982, Report and Accounts.

Unequal Achievement, 1982, "Politics and the Arts in Ireland",
Dail Debates, 1957-1982, PP. 281 - 297, Bruce Arnold.

Management, March 1983, Published by Irish Management Institute,
"Designs on the Toy Market Led to £1m. Order", P. 8.

Business and Finance Special Supplement, May 1983,
"Twenty Years of Kilkenny Design".

N.I.H.E. News, Sept. 1983, "N.I.H.E. Graduate Wins Major Design
Contracts".

Management, Feb. 1984, "Why Good Design is Vital for Today's Products,
Aileen Orpen.

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| Fig. 1 | Crannac Chair |
| Fig. 2 | Ambassador Light |
| Fig. 3 | Falcarragh Master Chair |
| Fig. 4 | Winstanley Shoe |
| Fig. 5 | Arklow Pottery |
| Fig. 6 | Riofinex Teapot |
| Fig. 7 | Concrete Mixer: Before and After |
| Fig. 8 | Metalwood Chair |
| Fig. 9 | Bathroom Splashback |
| Fig. 10 | Zinc Die-Cast Door Lock |
| Fig. 11 | Pressed Steel/Injection Moulded Door Lock |
| Fig. 12 | Day/Night Car Mirror |
| Fig. 13 | Clock and Bathroom Sfales |
| Fig. 14 | Teflon-coated Saucepans |
| Fig. 15 | Sugar Beet Harvester |
| Fig. 16 | Stone Collector |
| Fig. 17 | Solid Fuel Stove |
| Fig. 18 | 'Dec' Scanner |
| Fig. 19 | Sigma 770 |
| Fig. 20 | Domestic Heater |
| Fig. 21 | Leak Seeker |
| Fig. 22 | Viscometer |
| Fig. 23 | Video Juke Box |
| Fig. 24 | Toy Train Controller |
| Fig. 25 | Boat Fenders |
| Fig. 26 | High Pressure Pump |
| Fig. 27 | Telephone Switchboard |
| Fig. 28 | Bathroom Scales |
| Fig. 29 | Overhead Projector |
| Fig. 30 | Subscriber Telephone Meter |
| | Call Barring Unit |