GROPIUS, THE BAUHAUS AND THE FUTURE

A paper by

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read to the Society on Wednesday 13th November 1968, with Mrs. Mary Adams, O.B.E., M.Sc., in the Chair

THE CHAIRMAN: It is a pleasure to welcome my old friend Jack Pritchard, and his wife Dr. Molly Pritchard, who is here in the audience tonight. I first met them in 1930 when Jack was talking to everyone he met, with the persuasive vivacity for which he is noted, about the Modern Movement, about new techniques, new materials and the Bauhaus. He was particularly interested, too, in plywood, a new material with exciting manufacturing possibilities in the furniture trade. He helped to make known and popularize phrases like industrial design, machines for living, functional architecture, environmental unity. These new ideas were celebrated in a significant series of radio programmes on the theme of *Design of Everyday Things*. Jack also introduced me to Bauhaus disciples, to Moholy-Nagy, Marcel Breuer, to Max Fry, Wells Coates, Lubetkin, Chermayeff, and to Walter Gropius when he arrived in London. I remember going with Gropius to St. Anne's Hill, Windsor, which was to be the site of a beautiful building resting like a silver bird on the top of the hill. Never built, alas. It is worth while remembering, however, that Chermayeff was among those chosen to design studios at the new Broadcasting House in Portland Place.

Tonight we shall enjoy, I am sure, a personal as well as an historical account of a movement of great social significance, and in addition, a view of what benefits drawn from it the future could have in store.

The following paper, which was illustrated with lantern slides, was then read.

THE PAPER

ENGLAND, EUROPE AND THE UNITED STATES IN THE NINETEENTH CENTURY

It was in England that the first industrial revolution started. The great names that are especially associated with it were essentially engineers of great imagination and practical enterprise. The names that immediately spring to mind are Brunel, Stevenson and Paxton. Their work had already taken place by the middle of the nineteenth century. Their enterprise and the enterprise of other innovators of the period helped to provide the basis for the great economic expansion in Great Britain. But from then on, while the growth rate continued, there was a relative decline in British economic ascendancy. Paxton's great building for the 1851 Exhibition in Hyde Park might almost, with some exaggeration, be regarded as a memorial to British imaginative enterprise.

Although the Prince Consort, who did so much to inspire the 1851 Exhibition, did his best to encourage a progressive attitude to the arts and to technical education

and training, Oxford and Cambridge and Arnold's public schools based on classicism and amateurism had the greater influence.*

Smug, self-satisfied respectability was on the way. *The Forsyte Saga* gives a good picture of what was happening in upper-class England at that time. Instead of forging ahead and investing in higher education for the masses and the building of new universities, she let other countries catch up and overtake her. It has been estimated that in 1870 the British standard of living was the highest in the world, and taking the standard of living in the United Kingdom as 100, the estimate for the United States of America in 1870 would be only 84, Canada 74 and Germany 61.† By 1900 America was already in the lead and by 1922 Canada had overtaken Britain, France was almost level and Germany not far behind.

Taking the U.K. standard of living as 100 (real product per head):

	1871-5	1900-14	1909-13	1922
United Kingdom	100	100	100	100
U.S.A.	84	116	126	153
Canada	74	89	101	104
Germany	61	68	73	72
France	...	...	91	94

National Institute Economic Review (Miss Debora Page) 1961

The industrial revolution brought with it misery and ugliness. When the inevitable reaction came there were plenty of evils to react against. The reactions that concern us here are those exemplified by William Morris and the Arts and Crafts Movement. Their reaction was to call for a return to the past, when art, morality, politics and religion all formed one living whole and where artists joined together in the rôle of craftsmen.

Although William Morris in his *News from Nowhere* envisaged 'force-barges' as he called them (a new and silent means of driving barges on the Thames), he shrank from applying his ideas to industrial production, and the next development in the movement that he himself had sparked off in England was to be taken up elsewhere.

It was in Europe and in the U.S.A. that the Arts and Crafts Movement was to take a positive attitude to technology and industry. Before the turn of the century, for example, the Belgian architect Henry van der Velde, who was later to be head

*As late as 1913, according to E. J. Hobsbawm, Fellow of King's College, Cambridge, there were in Great Britain 9,000 university students compared with 60,000 in Germany. There they were producing 3,000 graduate engineers a year, while England and Wales at that time produced only 350 in all branches of science, technology and mathematics.

†Not till the Act of 1870 was there in England a system of public education and compulsary elementary schooling. In the 19th century, beside Oxford and Cambridge the only universities in England were Durham, which was started in 1832, London, Newcastle and Manchester.

of the Weimar Academy of Art, proclaimed the engineer as the architect of the future. The Deutsche Werkbund which was formed in 1907 had the aim 'to raise the standard of manufactured products by the joint efforts of art, industry and craftsmanship'. It was not until 1915 in England that Lethaby and his friends formed the Design and Industry Association with similar aims.

GROPIUS AND THE REACTION AGAINST THE EVILS OF THE NINETEENTH CENTURY

The move to harness the efforts of artists, craftsmen and engineers to the manufacture of industrial products gradually crystallized around a man in Germany who was deeply involved in a constructive reaction against the events of the industrial revolution. This man was Walter Gropius.

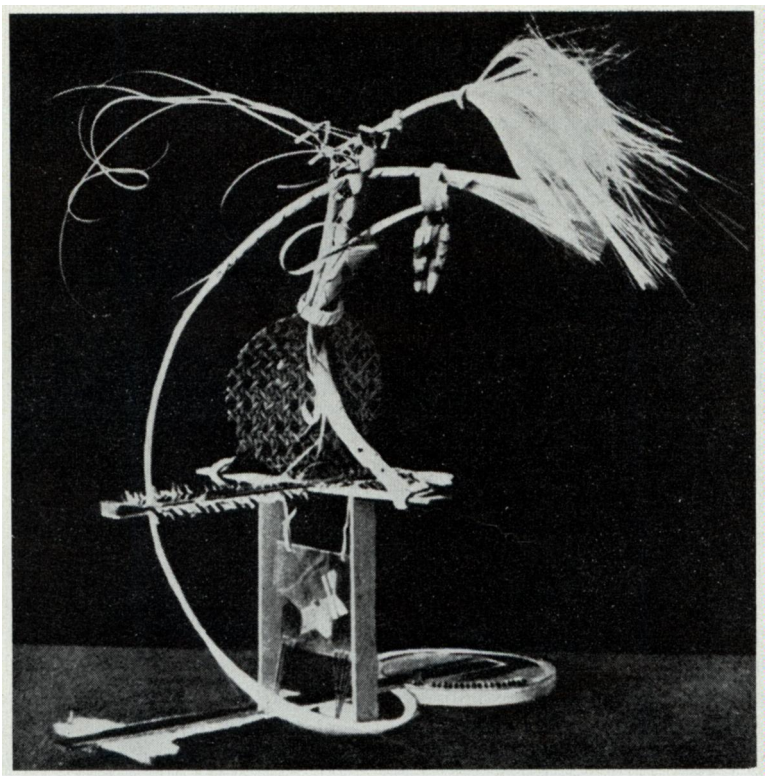
Gropius's father was an architect and a state official, and his great uncle, Martin Gropius, was at one time Principal of the Arts and Crafts School in Berlin and had been the Director of Art Education in Prussia. Another great-uncle, Paul Gropius was a manufacturer and had exhibited at the 1851 Exhibition in Hyde Park, and had received a prize medal.

Walter Gropius was born on 18th May 1883. He studied architecture at the Technical High Schools in Berlin-Charlottenberg and in Munich. In 1906 when he was 23 he designed a group of agricultural workers' cottages; a year later he was apprenticed to Peter Behrens in Berlin and he set up his own practice in 1910 when he was 27. By this time his attitude to the problems of the individual in an industrial society was well developed, and in 1909 he wrote that 'for economic production it was only by standardization of component parts as distinct from the standardization of complete houses that the architect could avoid monotony, provide variety and use factory production to the fullest extent'. This foreshadows the housing in Dessau in 1926, and later the more sophisticated system for the Panel Corporation in the United States of America, which he devised with Conrad Wachsmann in 1943. As we shall see, this principle was applied to the school building programme in the United Kingdom after the war.

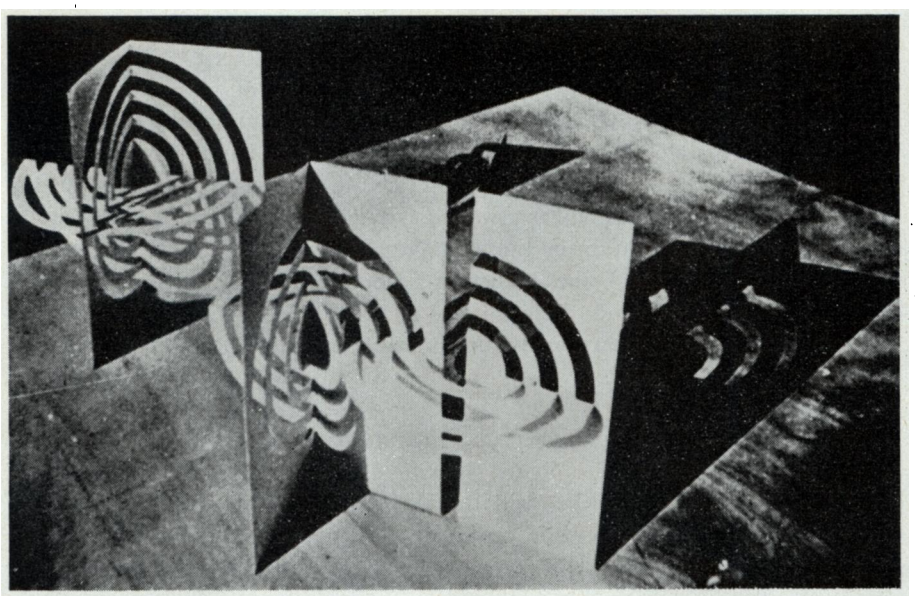
While the Crystal Palace was essentially a building of glass, Gropius was probably the first to grasp and to put into practice the significance of transparency in contemporary architecture. This is exemplified in the Fagus factory of 1911. Mies van der Rohe, speaking at a party to celebrate Gropius's 70th birthday, said of the Fagus factory: 'This building was so excellent that he became at one stroke one of the leading architects in Europe'. Gropius was then 28. Thus by 1914, when he was director of the industrial section of the Deutsche Werkbund exhibition in Cologne and designed the Hall of Machines, he was already recognized as a powerful personality, firmly based on practical achievement.

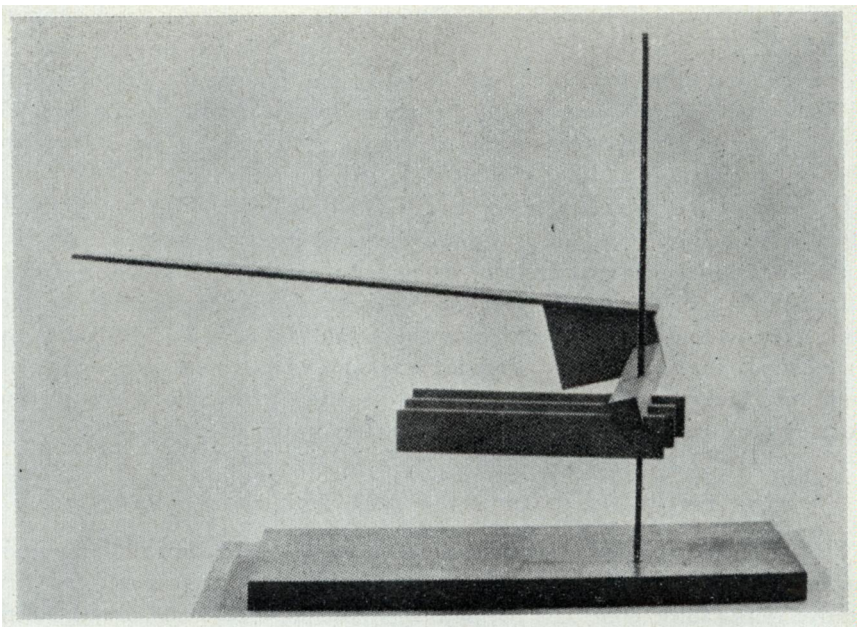
GROPIUS TAKES THE CENTRE OF THE STAGE: HIS IDEAS FOR THE BAUHAUS

However, it was in 1918, when the Grand Duke of Saxe-Weimar, on the suggestion of Henry van der Velde, appointed Walter Gropius as Director of both the Weimar Art Academy and the Weimar Arts and Crafts School, that Gropius really began to take the centre of the stage. He immediately made a significant decision. In April 1919 he amalgamated the two bodies under the name



'To set free the students' own originality': (above) *under the influence of Johannes Itten;* (below) *under that of Joseph Albers, and* (facing page) *that of Moholy-Nagy*





State Bauhaus, his aim being to create a 'consulting arts centre for industry and trade'. It is perhaps interesting that his appointment by the Grand Duke was made with the formal agreement of the Provisional Republican Government of Saxe-Weimar—it will be remembered that there was then the blossoming of a highly civilized social democracy in Germany, which was so soon to collapse.

Mies van der Rohe, speaking on the same occasion, referred to a few moments ago, said: 'The Bauhaus was not an institution with a clear programme, it was an idea, and Gropius formulated the idea with great precision'. Mies van der Rohe went on: 'The fact that it was an idea, I think, is the cause of its enormous influence. . . . You cannot do that with an organization, you cannot do that with propaganda. Only an idea speaks so far . . .'.

What was Gropius's idea? It was nothing less than setting out to find specific ways to break down preconceived ideas and set free originality based on a deep understanding of materials and how to use them.

Up to 1914 art students had in the main been taught simply to study existing art forms and no special steps were taken either to encourage or set free originality. Art was spelt with a capital A and had little or nothing to do with craft. The teaching of craft was similar and had little or nothing to do with technology, science or industry. Gropius's aim was to bring together the teaching of these subjects. In his mind the fatal fallacy at that time was the view that art is a profession which can be mastered by study, whereas he would say that art is a quality which cannot be taught; but he went on to explain that 'on the other hand, manual dexterity and the thorough knowledge which is a necessary foundation for all creative effort, whether the workman's art or the artist's, can

be taught and learned'. In saying this, Gropius was to some extent picking up the thoughts of William Morris fifty years before, except that for Gropius there was no shying away from industrial production. In his opinion, the aloofness of the architect from industry was one of the causes for the decline in the design of everyday things. Industry was able to design products that were reasonably efficient but then had to call in the 'artist' to style them up.

It became clear, therefore, that there was a need to establish a training for gifted individuals that would provide 'a thorough practical, manual training in workshop activity engaged in production, coupled with a sound theoretical instruction in the laws of design'. The first part of this requirement was comparatively easy and students were given courses in various crafts and had to pass examinations controlled by an outside body somewhat similar to the City and Guilds of London Institute. It was Gropius's solution to the second part that had the mark of genius: 'Sound theoretical instruction in the laws of design'.

THE IMPORTANCE OF ART AND SCIENCE IN CLOSE ASSOCIATION

This meant in Gropius's mind the basic theories of colour, form and proportion, and had nothing to do with a study of accepted art forms. He asserted that 'true creative work can be done only by the man whose knowledge and mastery of the physical laws of statics, dynamics, optics, acoustics, equip him to give life and shape to his inner vision. In a work of art the laws of the physical world, the intellectual world and the world of the spirit function and are expressed simultaneously . . .'.

Gropius believed that the influence of imaginative artists combined with a very thorough training in the crafts would help first to get rid of preconceived ideas, and then to set free the students' own originality.

When the Bauhaus started in 1919 it was arranged therefore that the first-year students should attend courses by such important and imaginative modern artists as Klee, Kandinsky, Feininger and Oskar Schlemmer, as well as courses in the various crafts.

JOHANNES ITTEN AND THE BASIC COURSE

Gropius's ideas were first put into practice when he appointed Johannes Itten in 1919 to be in charge of the basic course. Itten had been a school teacher, and had seen that if young children were left alone they could be amazingly creative and inventive. This lesson he applied in the Bauhaus. In this respect his method was not unlike that of A. S. Niell at Summerhill, Curry at Dartington, and Bertrand and Dora Russell at Beacon Hill School. It is interesting that these experimental ideas are now being applied in the state primary schools in England.

In his book on the basic course, Itten writes: 'As an introduction, long lists of different materials, like wood, glass, textiles, barks, furs, metals and stones, were written down.' Then, he went on: 'I had the students add the optical and tactile qualities of these materials. But it was not enough to know the words for these qualities, the characters of the materials had to be experienced and represented.

Contrasts like smooth-rough, hard-soft, and light-heavy had not only to be seen but felt.'

Itten encouraged the students to make three-dimensional abstract objects combining these contrasting materials, avoiding studies of existing art forms.

When discussing problems of space, Johannes Itten was fond of quoting from Lao-Tse, who in the sixth century B.C. wrote:

> Thirty spokes meet at the hub,
> But the void between them creates
> the essence of the wheel.
>
> Clay forms pots,
> but the void within creates the
> essence of the pot.
>
> Walls with windows and doors make the house
> but the void within them makes the
> essence of the house.
>
> Fundamentally:
> The material contains utility
> The immaterial contains the essence.

George Adams, who was a student at Weimar, and who is now living and working in London, speaking at an Architecture Association seminar at the Royal Academy in September 1968 described Itten as having a powerful and all-pervading influence but that he was evidently something of a mystic; in 1923 he resigned on ideological grounds.

ALBERS AND MOHOLY-NAGY TAKE OVER FROM ITTEN

Meanwhile it seems clear that Gropius wished to strengthen the constructivist side and when Albers took over the preliminary course from Itten, and Moholy-Nagy took on the second-year course, the results were very interesting and the contrast is clear. The greater emphasis on constructivist and objective ideas helped to give the students a deeper understanding of the technical limits of different materials in construction.

Too often art schools to-day, trying to copy the Bauhaus, have seen these fascinating abstract designs as an end rather than as a means.

'NO LONGER CAN ANYTHING EXIST IN ISOLATION'

Another essential principle which formed the basis for the Bauhaus is expressed in a few words taken from Gropius's statement in 1923: '. . . the old dualistic world-concept which envisaged the ego in opposition to the universe is rapidly losing ground. In its place is the rising idea of a universal unity in which all opposing forces exist in a state of absolute balance. This dawning recognition of the essential oneness of all things and their appearance endows creative effort with a fundamental inner meaning. No longer can anything exist in isolation . . .'.

From this follows the importance he attached to team work in architecture as against the Beaux Arts attitude which assigned the architect to his ivory tower aloof from technology. We see here the development of his views on the totality of all aspects of the visual scene. The artist was not someone with no concern for the community. Gropius would agree that the individual has the greater opportunity to express himself to the fullest extent when he recognizes and feels himself as a social being as well as an individual.

SIEGFRIED GIDEON REPORTS FROM WEIMAR

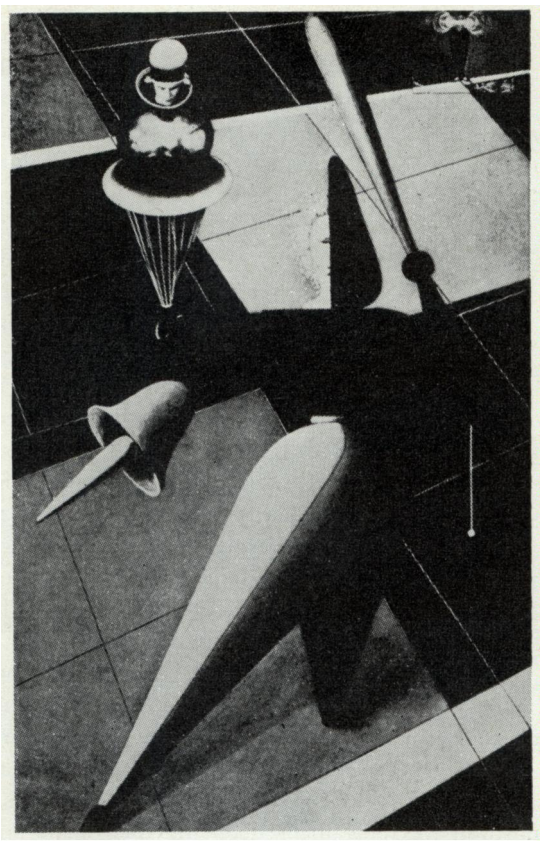
In August 1923, an exhibition of students' work was held at Weimar. This exhibition caused a great stir both in favour and the reverse. Fortunately Siegfried Gideon, the Swiss architectural historian, was present during the exhibition and in an article in the Swiss journal *Das Werk* he wrote: 'The State School of Building in Weimar as it was called had only been running under Walter Gropius for three-and-a-half years. Germany had suffered a terrible defeat, her currency was running away and food was scarce, and yet here was something of great and lasting importance.' He continued: 'The school . . . makes an appeal to the contemporary world, to accept the justification of its existence on the basis of its aims and its accomplishment. It is in any case entitled to respect for its unswerving pursuit of its objectives, in spite of the present situation in Germany, which makes her the slave of immediate necessity; in spite of paucity of funds; in spite of cheap ridicule, in spite of malicious attacks from reactionaries and, not least, in spite of internal difficulties.'

THE RISE OF POLITICAL REACTION AND THE MOVE TO DESSAU

By this time the Social Democratic government that had shown such promise and had supported the Bauhaus at Weimar was giving way to the reactionary pressure of the People's Party, the forerunner of the Nazis. This situation was described in a note to Gropius at the end of March 1924 by the business manager of the Bauhaus as follows: ' . . . since October 1922 I have done my best to further the development of the Bauhaus. Co-operation which should have been a matter of course on the part of the government officials . . . has not been forthcoming, the attitude of superior government officials is malevolent, obtuse and so inflexible as constantly to endanger the growth of the institution. . . .'

In December 1924 Gropius and his staff wrote to the new government that because of the obstructions they would close the Bauhaus. The students wrote a similar letter in January of the next year. So ended the first phase. Fortunately at that time the Socialist Mayor of the city of Dessau, Dr. Fritz Hesse, offered generous facilities, including the finance for the fine new building which we all now recognize as the real Bauhaus. The buildings, to Gropius's design, included a residential wing for students and houses for staff. The buildings were ready for occupation by the end of 1926.

The basic ideas were of course the same, but while the constructivist side was strengthened Gropius did not dispense with the imaginative inspiration of the



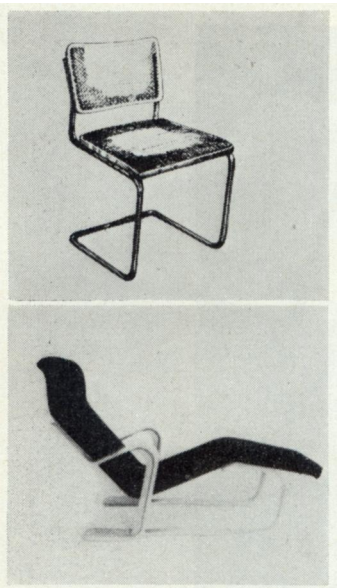
'Oskar Schlemmer . . . particularly with his triadic ballet, must have had a tremendous impact'

painters Kandinsky, Klee and Schlemmer. Oskar Schlemmer at that time particularly with his triadic ballet, must have had a tremendous impact. With all Schlemmer's individuality, he was at the same time dedicated to Gropius's idea of team work.

The close collaboration with industry that Walter Gropius had always aimed at was quickly developed. Students spent time in factories and factory representatives spent time in the Bauhaus. A system of royalties for both students' and teachers' work was organized, so that the income from this source was divided between the school and the designer. The move to the new building was a tremendous achievement, especially when we remember the financial difficulties on the one hand and the problems of coping with an inexperienced democracy on the other.

GROPIUS RESIGNS IN 1928

Already the Bauhaus was beginning to have a powerful influence, but early in 1928 Walter Gropius decided to leave. On 13th January he wrote that he wanted



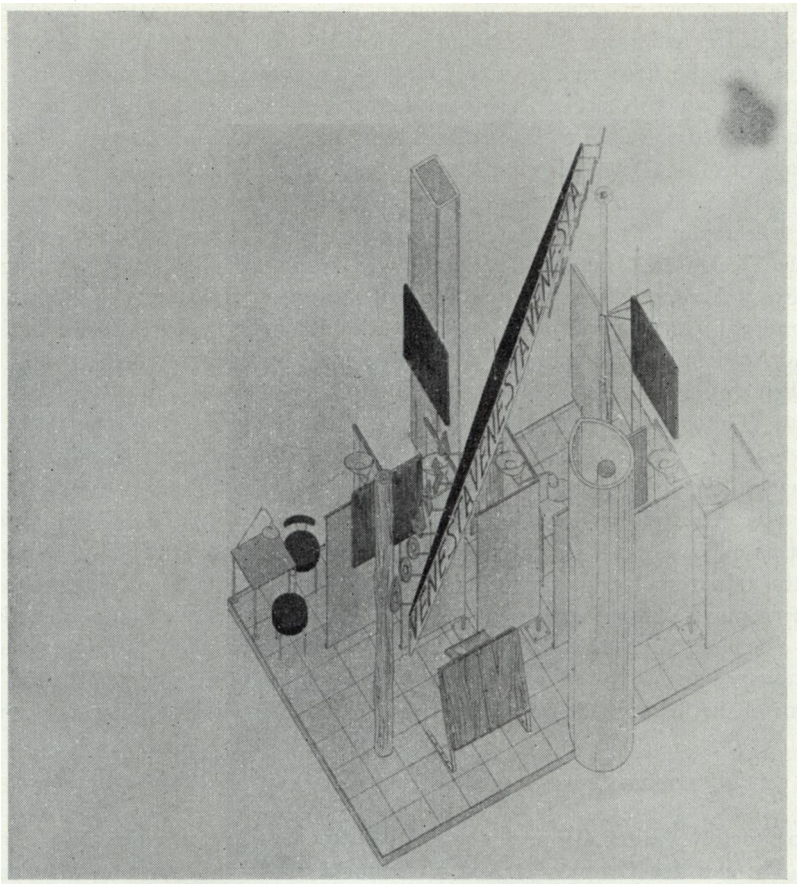
Above: *Breuer's tubular chair of the early* 1920s *at the Bauhaus;* below: *Breuer's laminated wood chair of the mid-*1930s *designed in England. Both chairs still in production*

to devote more of his time to work where he would not be cramped by official duties. He wrote that the Bauhaus was well founded, it was gaining influence and there were increasing numbers of students. The Bauhaus was certainly gaining influence. Products designed by Bauhäuslers were going into production. It is perhaps interesting that Arthur Korn in a recent letter wrote: 'If ever the aim of the Bauhaus to blend technical knowledge with creative ability was fulfilled it was in the furniture designed by Breuer'—typical examples being the Breuer cantilever tube chair of the early 1920s and the Long chair in laminated wood of the mid 1930s. Both chairs are still in production.

Although Gropius wrote optimistically, a clue to what was really going on may perhaps be found in the coincidence of his departure with that of Marcel Breuer, Herbert Bayer, Moholy-Nagy and Xanti Schawinsky. The fact that these four key members resigned at the same time suggests that the growing power of the reactionary element in Germany combined with the technocrats' demand for more emphasis on vocational training was at least a partial cause of Gropius's resignation. He also believed that much of the opposition was now focused on him personally and that therefore it would be helpful to the Bauhaus if he resigned.

A few days after Gropius's formal statement Moholy-Nagy wrote a very moving letter. He wrote that he recognized that the Bauhaus was, of course, concerned with industry and trade, but not to the extent of a vocational training school. 'There must be room', he wrote, 'for teaching the basic ideas which keep human content alert and vital.' And he continued: 'I can no longer keep up with the stronger and stronger tendency toward trade specialization in the workshops. We are now in danger of becoming what we as revolutionaries opposed: a vocational training school which evaluates only the final achievement and overlooks the development of the whole man. For him there remains no time, no money, no space, no concession. . . .' Moholy-Nagy went on: 'The question arises whether the existence of a creative group is only possible on the basis of opposition to the *status quo*. It remains to be seen how efficient will be the decision to work only for efficient results. Perhaps there will be a new fruitful period. Perhaps it is the beginning of the end.'

The end of the Bauhaus was now approaching. Hannes Meyer, who was then in charge of the architectural department, became the director, but in June 1930 he had trouble with the municipal authority and resigned. Mies van der Rohe



'Moreover, actual examples of modern design were beginning to appear in England. . . . In 1930 *Le Corbusier, Janneret and Perriand designed for Venesta a stand for the Building Trade Exhibition at Olympia.'* [*Believed to be the only example of their work executed in England.*—Ed.]

was appointed in his place and tried to save the Bauhaus, and did so, until it was closed by the Nazis in 1933.

ENGLAND TAKES NOTICE

Meanwhile in England Bauhaus ideas were beginning to be noticed. One British journalist describing the 1927 Leipzig Fair wrote: 'We do not understand the modern movement and we do not like it', but added a recommendation to study 'what goes on at Dessau'. Morton Shand, however, was writing excellent and well-informed articles on modern architecture, and the German Werkbund Exhibit at Paris in 1930, designed by Gropius, with Breuer, Moholy-Nagy and Herbert Bayer, had a profound effect.

Moreover, actual examples of modern design were beginning to appear in England. In 1928 Serge Chermayeff designed an exhibition for Waring's in Oxford Street, and the Frederick Etchells building for Crawfords in Holborn was completed by 1929. In 1930 Le Corbusier, Janneret and Perriand designed for Venesta a stand for the Building Trade Exhibition at Olympia and Joseph Emberton's Royal Corinthian Yacht Club was completed in 1931.

In 1933 Wells Coates designed the Lawn Road Flats and in the same year a full-scale replica of one of the small flats was shown in the Exhibition organized by the Design and Industries Association in Dorland Hall. In the following year the Royal Academy tried to go modern with its Interior Design Exhibition—what a wonderful contrast with the enterprise in holding the Bauhaus exhibition at the Royal Academy in September 1968! But it must also be remembered that in 1930 the British Government Exhibit in Buenos Aires was housed in a Norman Castle with a Tudor Barn, and the main hall of the Union Castle's new ship, the *Winchester Castle*, was designed in the Flemish Renaissance style. Wells Coates, however, designed an exhibit for Buenos Aires of a very different character.

It was a frustrating time. On the one hand there was for a few the vision of great possibilities, in the arts, in architecture, and in a new attitude to living. But on the other, to the government and in commerce, the manifestations of the modern movement were regarded as being all very well for the Continentals but not, of course, for England; nor did they seem to appreciate the full significance of the close association of a reactionary attitude to art and design with the cruel horror of the ideological and racial persecution that was taking place in Germany.

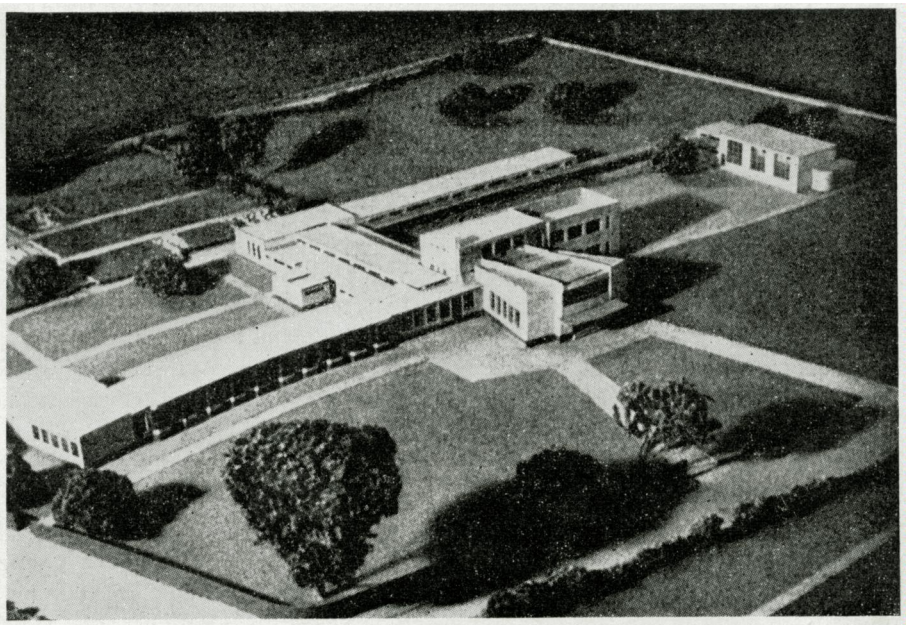
GROPIUS LEAVES GERMANY, BUT ENGLAND NOT YET READY

Fortunately Walter Gropius was invited to go into partnership with Maxwell Fry. He and Ise Gropius arrived at Victoria Station via Italy at 3.20 on the afternoon of Thursday 18th October 1934, and came to live in the new Lawn Road Flats. The few enthusiasts of the time had hopefully expected that once it was known that he was in England important projects would flow into Gropius's and Fry's office; but did they? Not a bit of it.

Not a bit of it; all England could do to take advantage of Gropius's presence for three years was a private house in Chelsea and Impington Village College in Cambridgeshire.

According to rumour, the acceptance of Gropius and Fry as the designers of Impington had little to do with a knowledge of their works or their reputation and more to do with the fact that money was raised privately to pay the architects' fees, and that the offer was made under the signature of such distinguished men as John Maynard Keynes, Professor Constable and Sir Charles Reilly and even Cambridge dons—who might have known better—rejected Gropius.

The opportunity to have Gropius at the Cambridge School of Architecture was missed. He and Fry also made a fine proposal for Christ's College, recently illustrated in an excellent guide by students. Rumour has it that it was turned down because it had a flat roof.



Impington Village College, by Gropius and Fry, 1937

It is also a sad reflection that even as late as the 1950s Nikolaus Pevsner in his guide to Cambridgeshire had to refer to a chair designed by David Pye for the Master of Pembroke College as 'the first example of the mid-20th century style in offlcial Cambridge Furnishing, and as such it had considerable historic interest'.

UNITED STATES MORE RESPONSIVE TO NEW IDEAS

Unresponsive England lost Gropius in 1937 to a more responsive United States. Not only Gropius but Breuer and Moholy-Nagy and others all found greater opportunities there than in stodgy England. It was not so much because the pay in the United States was higher, but because of the lack in the United Kingdom of either commercial or government enterprise between the wars.

When it was known that Walter Gropius was leaving England he was given a great send-off. Famous people said how sorry they were at his departure—but one could not help sensing a sigh of relief that this man would no longer trouble the British *status quo*.

Other countries more ready to accept new ideas seized the opportunity. Walter Gropius, Moholy-Nagy, Breuer, Herbert Bayer and many other Bauhäuslers settled in America and invigorated that country, and indeed many other countries, with fresh and stimulating ideas.

NEW SPIRIT IN BRITAIN AFTER THE WAR

After the war, however, the situation in Britain was entirely different. She was no longer rich but there was a growing demand for new ideas and a break from dependence on past glories.

Ise and Walter Gropius writing after their visit in September 1968 confirmed that something had happened, at least to London. 'We both sound', they wrote, 'like discoverers of a jewel of a town which had been hidden under layers of grime and respectability, only to emerge now radiant and young in spirit.'

There have been many changes but one particularly interesting development has been a change in the public sector. Instead of a negative attitude towards development there is now evidence of imagination and drive in some departments. The Government, for example, has set up the Council of Industrial Design and the Arts Council. More recently the Ministry of Public Building and Works has started a study in depth of office activity which may lead to entirely new kinds of equipment for government offices. The establishment of the National Research and Development Council and its achievement with the Hovercraft is a particularly good example, but the drive shown by the Department of Education and Science is nearer to the subject of this paper. The new universities which should have been built years ago while the country was rich are now being rapidly established, although the country can hardly afford them.

The Department of Education has established a world-wide reputation in two other directions: in the first place the Department's successful and imaginative experiments in primary education, very much on the lines that A. S. Niell and others were using in the '30s, are now being developed on a national scale. The new Evelyn Lowe school in Bermondsey is a good example of new educational ideas housed in architecture to match.

The other concerns school buildings. In the mid-1940s, Charles Herbert Aslin, a local government official and county architect of Hertfordshire, appointed a young and progressive team. They began to apply industrialized building methods for their new schools very much on the lines advocated by Walter Gropius in 1909. The Ministry of Education then took over this initiative on a national scale to considerable effect. Already industrialized school buildings to the value of £20 million have been completed by one method only, and there are of course other systems.

PROPOSALS FOR FUTURE ACTION

And now as regards the future; the proposals that follow are based on the assumption that this kind of initiative and drive can be used to promote a more dynamic attitude to design training.

There should be at least one design school outside the educational 'System' based on Bauhaus principles, but using them as a launching pad for future experiment. It is important that the talented art student should be deeply involved with the dynamics of designing for new and changing needs, and new and changing production methods—not to mention new materials. The training available must be on a sound basis of science. All forms of dogmatism must be avoided and originality encouraged. In other words, ways must be found to keep the student's head above the clouds while his feet must be kept firmly on the ground.

THE ARTIST AS FORECASTER

The importance of the artist in society is recognized but the importance of the artist as an essential part of industry is often missed. It must be remembered that the artist sometimes sees through to future possibilities.

In Santa Maria Novella in Florence there is a painting by Masaccio. It was painted in 1425. Siegfried Gideon in his *Time, Space and Architecture* writes about this picture: 'The longitudinal barrel vault that Masaccio painted was to prove the great solution to the vaulting problem that confronted the architects of the full Renaissance and Baroque periods.' Gideon goes on to point out that this particular architectural form did not appear in construction until nearly five decades later, when Leon Battista Alberti designed and built San Andrea at Mantua in 1472. There is also the old and well-known story of how the great scientist, Kelvin, refused to join the Royal Aeronautical Society on the grounds that he had 'no faith in aerial navigation whatsoever, except perhaps ballooning'. And how Byron, the poet, sixty years earlier, had supposed that one day we would all be travelling in air machines and eventually reach the moon.

Gropius saw clearly enough the need to bring the artist and the scientist into close association when he pointed out that the finest creative work can only be by the man who fully understands the laws of statics and dynamics, which, as he wrote, 'equip him to give life and shape to his inner vision'. Gropius, speaking at University College London on 17th October 1967, said that there must be: 'A passionate search for an answer in which all relevant factors, social, visual, technical and economic have been brought into balance . . . it takes a long and systematic training to get into the habit of seeing all factors simultaneously . . . the conscious attempt to recognize opposites—the solid and the void, unity and diversity . . .' He went on: 'Whether the design result will later be considered as a work of art depends on the architect's innate poetic gifts . . . The order arrived at by the extra-ordinary artist does not present a closed, logical system as it is, for instance, found in mathematics; it remains rather an open process . . . a paradox in suspense, eternally unfathomable, forever fascinating.'

One further point: the importance of student and staff responsibility in the control of their own problems. Students at the Bauhaus were taught to know their materials through the experience of trial and error. The same methods should be used in administration. A vital democracy is more likely to emerge if as students we have had the opportunity to practise democracy, make mistakes and profit from those mistakes at school and university rather than making mistakes on the larger national and world scale. It would have been better to have taken the initiative and given to students a share in control and responsibility rather than to be forced to do so as a result of revolt.

Too often Bauhaus ideas are criticized as being old-fashioned, crazy, irrelevant or impracticable. Lord Butler, essentially a realist, speaking at Bassingbourn Village College in 1954 of another great innovator, Henry Morris, said: 'If there is an excess of idealism in this project, let us be thankful for it.' The same may be said of Gropius and the Bauhaus—but don't let the matter stop there. The Bauhaus experience should be used as a jumping-off point.

Perhaps Moholy-Nagy was right when he wrote: 'The question arises whether the existence of a creative group is only possible on the basis of opposition to the *status quo*.' What a splendid thing it would be to set up such a creative agency. It might have remarkable results—results comparable with the astonishing burst of imaginative enterprise of the early pioneers of the industrial revolution which put Britain so far ahead.

DISCUSSION

THE CHAIRMAN: I can see in the audience a number of people who have played a part in the Bauhaus movement. And also a lot of young people. I hope there will be plenty of questions and comments.

MR. JEAN STRAKER: I have been a Member of this Society since I was a student. Recently I have been talking to some of the students at the universities and I find there is still a fragmentation of disciplines in the creative world in spite of the desire to break down the barriers which exist. At Warwick I gave a talk on the importance of establishing, within each university, an arts academy so that all the disciplines could come together there, so that the biologist could come into conflict with the physicist, the historian into conflict with the psychologist and so forth, and by creative endeavour make every form of artistic construction within the university part of an inter-disciplinary project. We could carry forward this concept of experimentation, which societies constantly seem to have a down upon. It was not only Gropius who was faced with the bureaucratic rigidity which every creative artist finds in all societies. It seems to me that it is within our grasp, in England at this time of student revolt, to devise some institutional means for using principles of education and of learning and of originality and creativity to look into the future, so that young people can have their heads.

THE CHAIRMAN: The Royal Society of Arts might well change its name to the 'Royal Society of Art and Innovation'! One of our present needs is for inter-disciplinary relationship and our search is for action based on changing needs. I am glad this important matter has been brought before us at an early stage in the discussion.

MR. A. B. ROBERTS: As a young person who did not experience what was going on in modern thought before the war, I think it is easy to look back and see the Bauhaus as a second Renaissance, a revulsion against stuffy conservatism and an expression of faith in the thought of creating something new. There is a place in modern society for perhaps a third Renaissance—or an extension of the Bauhaus Renaissance. What concerns me is whether there truly can be a place in our modern society, with its enormously complex technologies, for a student seeking to amalgamate in his mind so many different disciplines and cultures? It is difficult to see how students can take the broader Bauhaus view and yet be successful nowadays; young architects, for example.

THE LECTURER: Yes, an architect has got to understand an awful lot of different things; he cannot be a good architect unless he does. I think there is much too much specialization in every profession. Nevertheless there is a growing need for those who can see the whole problem—unity and diversity.

MR. MAURICE GOLDSMITH (Science of Science Foundation): I am associated with a group called the Science of Science Foundation which is attempting, in a sense, to foster the very kind of thing that the lecturer has been suggesting—to secure a many-disciplines approach, which embraces not only the natural sciences but also the social sciences and the arts and humanities, to current problems. It seems to us that

without this cross-fertilization we shall not be able to develop the kind of thing which the Bauhaus was able to initiate. It is quite clear that we cannot mechanically imitate the Bauhaus. Conditions now are quite different. I suggest that we need some quantitative assessment of what might be required to set up 'a creative agency' and to find the creative *entrepreneur*. I am reminded of this because there are some studies going on at the moment at Harvard on the technical *entrepreneur*. The Americans are interested in the remarkable qualities that the *entrepreneur* possesses, and they have decided to study this in a systematic way. Preliminary researches have revealed, for instance, that Route 128 around Boston, where many of the new technological enterprises have sprung up, essentially is based upon young people aged between 25 and 35 who have been able to translate their laboratory ideas into immediate commercial practice. Beyond the age of 35 there seems to set in some crucial falling away in the ability to do this. They have discovered, also, that one of the reasons why large-scale enterprises which attempt to do this kind of thing by and large fail rather miserably, is that such enterprises tend to frown upon anyone below the age of 40.

Although these studies have only just begun, there are already indications that it may be possible to spot the technical *entrepreneur* at a very early stage. One of the suggestions which has been made is that very large organizations should not only go around spotting young people at university and bringing them in, but also should have somebody within the organization who does the kind of thing the lecturer mentioned—spot likely young people within the organization itself. From this follows another approach to status within the organization; that is, instead of a 'pyramid approach' develop a 'flat approach' to the distribution of responsibility. With a pyramid you get usually an age structure, with a flat approach you do not.

THE LECTURER: I am surprised that 40 is an age barrier in America. If that is the case, I suppose it is about 70 in England! It is appalling to find in England that a man of 30 or 35 is thought to be too young for the responsibility of certain jobs. Those are the people who matter, and I believe they could be spotted earlier. Your comments are most important and there should be more time to discuss them.

THE CHAIRMAN: I would remind the audience that a whole army of establishment officers goes to the universities at the end of each year in order to seek *entrepreneurs* who will go into Advertising. Surely it would be possible to broaden that search?

MR. ANTHONY HARRIS: I was tempted to shout out to the lecturer, 'What about the workers?' While the Bauhaus didn't face what William Morris did, which is the quality of the lives of ordinary working men, it was very obvious in France this year that the ideas the students had were not particularly acceptable to the workers. Does Mr. Pritchard feel that a new group of the sort he was discussing could learn from the Bauhaus, and might study what goes on inside the factories—not merely what is produced, but how it is produced? Or was the Bauhaus from this point of view, let us say, hopelessly managerial?

THE LECTURER: I would not have said it was 'hopelessly managerial'. I would probably agree that it had not very much to do with 'labour relations'; but I think the general principle of approach is right. We must deal not with workers, or any particular group of workers, because we are all, if I may say so, workers. What do you mean by worker? The operative at the bench or machine?

MR. HARRIS: I mean that somebody who takes the responsibility for the design of products ought also to feel a similar responsibility towards the design in production.

THE LECTURER: Of course you are right. I have no doubt whatsoever that given suitable conditions most people in a factory can make an important contribution. It is certainly nonsense to say that, for example, trade unionists can't do that. My own

personal experience on the Furniture Development Council showed clearly that there were as many, if not more, progressive, exciting, practical, technical ideas coming up from trade union representatives as there were from management. But I don't think Gropius, while he would, I am sure, appreciate your point, had very much time to deal with factory relations while at the Bauhaus. He would now, but I don't think he did then. That is why I said we mustn't just copy the Bauhaus, but use it as a jumping-off place for future experiment, and your point must certainly be included on the agenda.

PROFESSOR E. MAXWELL FRY, C.B.E., A.R.A., F.R.I.B.A.: When the lecturer was talking about inter-disciplinary relationships it occurred to me that in architecture we find no difficulty at all in combining various disciplines. Everyone has his allotted place because the end is clearly in view, and I don't think it needs a great deal of research to tell you that if you have a sufficiently good end in view you have your inter-disciplinary harmony; which means that somebody must have idealistic views of how life should be led in the last half of this century. Until somebody has this, and can carry a group of people with him, as Gropius did, then you will still be researching and measuring instead of combining in a general movement. Each movement from Morris onwards has presented society with a new vision of how to live, and it is only that which we are lacking now.

MR. DENNIS KELLY: I was a little concerned to hear a suggestion that there should be one high-level design institute set up. I think the way the Bauhaus happened was a happy accident similar to, say, fifteenth-century Florence, and I would not expect that these happy accidents will be repeated, but rather that there should be a great number of institutes of design in this country. The recent further education cuts seem against this. It seems that the country cannot afford education. If it cannot afford education, what on earth can it afford?

THE LECTURER: I did not say there should be only one, I said at least one.

Following up the point you made about further education: last weekend I put on a gramophone record of Henry Morris speaking on further education and the importance of educational facilities being continually available for adults. He was most forthright in his demand for adult education. I entirely agree that adult education is one of the most important things for our country at this stage. Personally I would willingly pay a higher income-tax to see this was done.

MR. GUY MORGAN, F.R.I.B.A.: Seven or eight years ago Winchester College appointed as new art master, Graham Drew. My son was particularly interested in that subject and so I talked with Graham Drew. He said he was going to try and create an environment for his pupils—to which end he spent quite a lot of money in his house and garden, both on contemporary lines. At Winchester, art is still not a recognized subject, so the boys are losing time if they go to Graham's lectures and paint. Nevertheless, Winchester won the Schools award last year, which was entirely due to Drew's enthusiasm in creating the right environment, which I gather really is a little Bauhaus in its way. His garden has been recently exhibited in, I believe, *Homes and Gardens* and is quite a daring and brilliant piece of work; an indoor-outdoor swimming pool (heated) is incorporated.

MR. L. J. PRECHNER: There are strange periods of flowering in the arts, but it is an open question whether you can induce them artificially. Think of Athens five centuries B.C., of Renaissance Florence, or of Vienna in the 1890s or Berlin in the 1920s. Far more than art institutes and liberal attitudes are required. How can we induce such flowering?

My other point is the increasing complexity of modern art, design and architecture. The artist is now flooded by art examples, not only from all ages, but also from the

whole world geographically, right from the most primitive to the most modern. He is being flooded all the time with ideas. He has not got much time therefore to develop his own ideas. We are living in the modern world, not in the age of Leonardo da Vinci, who, as one person, could still encompass so many disciplines, and I wonder whether it is not far-fetched to imagine a whole team of specialists and artists working together. A single team is too small to digest all this information. Perhaps I sound ridiculous, but I wonder whether the aid of computers (of a much more advanced generation than at present) would not also be necessary in modern conditions?

THE LECTURER: First: how to induce such a flowering? All one can do is to lay down conditions that would make it possible. The Bauhaus principles are not a bad basis for experiment.

So far as all the multiplicity of disciplines is concerned, the first essential is the ability to think clearly and apply a scientific or logical approach to our problems. It is not the problems themselves but the way one approaches them. As to computers, it must be remembered that they are simply very high-speed and efficient morons. They will do what you tell them, and unless you tell them what to do accurately, you get the wrong answers. But they might very well help.

MR. JACQUES PAUL: I understand we have a lot of ex-Bauhaus students here tonight. I wonder if one of them could answer a question which has worried me for some time. I understand that Gropius did not actually teach the study of architecture at the Weimar Bauhaus and did not do so until after he founded the Dessau Bauhaus?

MR. GEORGE A. ADAMS, F.S.I.A.: We actually complained of this to Gropius, I think, saying, 'Here you are, Director of the Bauhaus and an architect. The whole school is conditioned towards building, towards architecture, and you don't give us any lessons.' He replied that, 'Until we have really mastered the crafts properly we should not embark on architecture. First we ought to be good craftsmen.'

MR. J. AUSTEN BROWN: I suggest that rationalization, standardization and technicological advances will tend to make it more economical for individual and separate manufacturers to produce parts of a product, while the 'design function' remains with what will become merely the 'assembly' side of production. Thus there is a danger of design in industry becoming a selecting process rather than an inventive one.

A manufacturer producing an upholstered chair, for example, obtains a shell, designed by a plastics man, a stretch cover from another source and designed by a fabrics man, and an underframe developed by an engineering works. He merely selects the items and assembles them.

Gropius knew, and could place the artist in relation to manufacture following the industrial revolution. Will it not require at least as great a man to relate his function to industry following a technological revolution?

THE LECTURER: If you are going to tackle these problems from the word 'go' as you should do in any kind of progressive business, you will solve them. It doesn't matter whether the products are made from different bits and pieces and then assembled. The significant point is whether they are good products in the end. It does not matter where they are made as long as they are made under decent conditions and that the end product is designed to the last detail and there is effectivs production control.

MR. DENNIS KELLY: A characteristic of the Bauhaus was that it broke things down into very small elements, and studied these elements and reassembled them. One of the very good things so far as furniture is concerned is that there continues to be a very wide market for what I think this audience would consider badly designed pieces! The point is people want something extra. They don't just want four legs and a top for a table, which is what the modern designer is giving them, so the manufacturer has to give it to them instead. I think this is one of the characteristics of those

who follow the Bauhaus aesthetic, to reduce elements to a simplicity which is an austere style, and to disregard 'that little bit extra'.

THE LECTURER: It is a mistake to assume that only austerity came from Bauhaus teaching. On the contrary, I can remember a particular flat that was austere and which Gropius made an exceedingly warm and charming background for human living. There was 'something extra', and I think you will find that with the work of Moholy-Nagy and other Bauhäuslers.

MR. G. M. DE MAY: The lecturer mentioned by implication that he favoured a design team of innovators, preferably under the leadership of an arts graduate or an arts-trained man. I venture to suggest that this has been explored before in many places, notably in Birmingham at the College of Advanced Technology. It has also been done on a smaller scale, again in Birmingham, by the School of Industrial Design, which is noted for its superb and technically competent leadership, and in other places, such as Sevenoaks School, where they train the very young in creativity, technical advance and the projection of their ideas. This disturbs many engineers, architects and scientists. If you want arts people rather than engineers to lead a technological society I am afraid you are asking for small centres of chaos rather than productive results.

THE LECTURER: I hope I did not imply that nothing was being done at present. My paper was on Gropius and the Bauhaus. Of course lessons have been learnt since then. I hope they will be learnt very much faster. I don't mind if engineers and architects are disturbed. The more disturbed we are, the better it will be for opening our minds.

As regards team work, I don't think you can specify that this or that discipline should lead the team. I think it is the mixture that matters, the hard, tough scientist and the imaginative artist together are what we need.

THE CHAIRMAN: Someone spoke about 'flowering periods'. There was a kind of flowering period in Britain in 1951, when Gerald Barry made people excited by carrying out his great enterprise for the Festival of Britain. Let us remember that—and him. But perhaps this is the real moment of flowering, because nowadays everyone can share in communication, can profit by these excitements. Think what television can do; think what it *could* do if you insist on it. If David Frost had interviewed Gropius on television he might have remained here instead of going to America!

May I now ask you to express with great warmth the pleasure that this lecture has given us.

The vote of thanks was carried with acclamation and, another having been accorded to the Chairman upon the proposal of Miss Jane Drew, the meeting ended.