PLAYGROUND EQUIPMENT: Design and Development

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REFERENCE



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INTRODUCTION

INTRODUCTION

Play equipment designs have been developing at a rapidly increasing rate since the forties. Though in production since 1920 their design remained stagnant for approximately twenty years before any innovation and experimentation really began.

Therefore the main concern of this dissertation is with events of the last forty seven years. But to add perspective to these events short summaries of both the historical and theoretical background to playgrounds and play psychology have been included.

It would be unrealistic to include all play equipment innovations occurring during this period, so only examples which typify the design trends of a particular time, or were themselves responsible for initiating them, have been included for discussion. Unfortunately these trends do not occur in neat ten year cycles nor do they follow one after the other, for example, independant influences can simultaneously effect entirely seperate changes. Also certain influences were accepted at different times in different places, some places developed them more rapidly than others. Therefore to avoid total confusion, and give the reader a concise understanding of the developments in the design of play equipment only the main trends which had lasting effects have been included.

CHAPTER 1. Pre 1940

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HISTORICAL BACKGROUND

In the reign of Elizabeth I four-fifths of England was still rural and the total population of England and Wales was probably around four million - the peasant would have been able to find space and countryside within easy access of his home. But gradually he was to lose this freedom. Encroachment upon the open fields and common lands which had been going on for several centuries, grew more rapidly and to an alarming degree, and was confirmed by successive Enclosure Acts of Parliament. Thus the people were deprived of their rightful access to the commons for healthy exercise and recreation. Describing a small town north of Nottingham in their book "The Bleak Age", J.L. & B. Hammond quote: "Before 1793 the inhabitants took their playgrounds as a matter of course. After 1793 there were no playgrounds to think about for an Enclosure Act swept the whole area into private hands". In Blackburn 1833 the Committee on Public Walks asked: "Is there any place to which the children of the humbler classes may resort for any game or exercise?" The answer was "None whatever".

In 1883 Dr. Kaye wrote: "The entire labouring population of Manchester is without any season of recreation" - ten years later there were still "no public walks or resorts, either for the young or adult portion of the community to snatch an hour's enjoyment".

Five years later on (1837), Hume proposed a resolution in the House of Commons that in all Enclosure Bills provision be made for leaving an open space in the most appropriate situation, sufficient for purposes of exercise and recreation of the neighbouring population. The motion was passed. The amount, unfortunately, was far from adequate.

With the onset of Industrialisation in the 19th Century, the

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huge demands for labour forced women and children into factory and coal mines -

"The children of the poor worked as soon as they could walk...Hardly anything above four years old, but its hands were sufficient for its support."

Children were employed at such a young age that they had neither time for play or education. However Robert Owen (1771-1858) brought about major improvement's to their plight when he opened a school for the children of his workers in his New Lanark Cotton Mills. He employed no children under ten years. Greatly influenced by his work David Stow (1793-1864) and Samual Wilderspon (1792-1866) founded the Glasgow Infant School Society. Samual Wilderspon attached great importance to the educational value of the playground, "the uncovered schoolroom" as well as the beneficial effects on health. "It should be planted with trees and flowers and supplied with apparatus for games".

But for the first seventy years of the Nineteenth Century no schools were provided by any public authority; private persons or endowments providing them. Grants voted by Parliament were given through the Committee of the Privy Council set up in 1839 - the fore runner of the Board of Education. Frequent reference was made in the early reports of the Council's Inspectors to the health of the pupils in 1839-40.

> "What extent of enclosed ground will be provided for the recreation of children?"

Advice was given on planning the site to avoid losing exercise space by placing buildings in the centre of the plot.

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"Indeed the value of playground is not yet sufficiently appreciated nor its use as an instrument of education completely understood." For children's characters develop themselves under new and unexpected form in the playground."²

Nothing is worse, says one authority, than schools where children never play. Towards the end the Century public opinion in Great Britain was becomming increasingly aware of the serious neglect, not only of children's education but of their health and welfare in general. By degrees, the voices of the reformers were beginning to be heard; ideas about education through play were becomming better known and the need of State assistance in educational development for all children increasingly recognised. In 1870 the first Education Act was passed making it compulsory for all children to attend school. Many of these early elementary schools had small playgrounds which were used for drill and free play in 'break' periods.

THE DEVELOPMENT OF PLAY THEORY

Even though, from the earliest times it was recognised that play was essential to children's development it is only in more recent years that philosophers and educationalists have tried to understand the reasons why children have this need. In the 19th Century, Herbert Spenser, the English philosopher proposed the 'Surplus Energy' theory. This suggested that play was a natural method of dissipating unused energy. The fact that play appears to be structured and purposeful and not merely a disordered and random expenditure of energy suggests that the Surplus Energy theory is inadequate.

Charles Darwin's 'Origin of Species" which appeared in 1859 prompted a number of theories based on the apparent purposeful nature of play. Karl Gross, a professor of philosophy at Basle, based his

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play theory on Darwin's principle of natural selection, which held that animals which survive are those best adapted to their environment. Play as he saw it was an activity through which children practiced and perfected adult survival skills.³

Freud in the present century believed that children used play to relieve psychological stress. Tension associated with unpleasant experiences could be removed by repeating them symbolically and thus coming to terms with them. The work of modern play theropists has its origins in Freud's work.

The most influential modern voice on play has been that of Jean Piaget, a swiss psychologist, Piaget links play with cognitive development (gaining knowledge through the process of sensory information). Play, he suggests, forms an essential part of a complex process through which the child gathers information about himself and his world and uses it to develop physical and sensory co-ordination followed, at a later stage, by sophisticated thinking skills.

Development psychology leads to a number of conclusions as to how development of children proceeds - making it possible to highlight areas in which current approaches to play equipment design affect the nature and quality of play. The rapidly altering environmental and social changes of the 20th Century mean that children today, unlike past generations, need a special 'Contrived' place to play.

CONVENTIONAL EQUIPMENT

Play equipment prior to 1940 was designed to be durable, easily-erected and required minimal maintenance, neither play valve nor safety were considered. As a result a lot of it looked like lime green (popular at the time) scaffolding. The oldest play equipment

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included the tower slide, sets of one or more swings, seesaws and roundabouts. These were all designed to provide 'mono-functional' motor activity, that is, one could only swing on the swings, slide down the slides and so on. Wicksteed, the oldest of the British play equipment manufacturers were producing all these designs in the early 1920's.

Variations on these basic designs began to appear over the next ten years. Wicksteed invented the Witch's Hat or Ocean Wave - a type of roundabout, developed the Rocking Horse or Boat - a multi fulcrum seesaw - (Fig. 1) - and a variation of the Tower Slide, the Spiral Slide, which provide a drop from a similar height but took up much less space making it more suitable for smaller play areas - (Fig. 2).

The Witch's Hat consisted of a central cast iron pole, embedded in the ground, on which the top point of a chronical metal frame rested, the lower rim of the cone providing the seating. The cone could be both pushed around in a circle, and because it rested on a point rocked over and back to produce a wave motion. It could seat up to twenty children at one time and depending on the number and strength of the children pushing it, achieve enormous speeds. Because of its construction, children also tended to use it as a moving climbing frame.

The Rocking Horse or Boat was a long bench, originally built of wood, resting on two cast iron legs. The bench was attached to these legs by means of two heavy 'spring-loaded' levers or arms. The arms allowed the bench to swing over and back rising up away from its supports at the beginning and end of each swinging motion. Though great fun it had the unfortunate side effect of exposing all the moving parts.

Swings were originally made from wooden frames, rope suspension and had wooden seats. However, for increased weather resistance and





Fig. 1 Witches Hat, Seesaw, Roundabout





durability manufacturers gradually introduced a steel frame and steel chain suspension. The wooden seat remained in use until the 1950's when it was replaced by plastic - more durable and weather resistant.

The oldest tower slides were produced from a timber frame with narrow sections of sheet steel bent and rivited together to give the slide - (Fig. 3). Later models used a steel frame and a similar slide construction. Tower slides ranged in height from a two storey building to approximately two meters at their highest point. Gradient varied enormously. There were no standards or regulations restructing steepness. However, each slide was generally given two gradients, beginning with a steep section which flattened out at the bottom for two to four meters (depending on overall length) to slow children down and prevent them shooting off the end.

Other than these few alterations play equipment remained basically the same until the beginning of the forty's.



Fig. 3 Slide Design, 1920 by Wicksteed





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1. Rowland Owen, Statutes and Constitutions, 28

2. Rowland Owen, Statutes and Constitutions, 40

3. Wilkinson, Paul F. ed Innovation in Play Environments

4. Dettner, Richard Design for Play

CHAPTER 2. 1943 - 1960

THE ADVENTURE PLAYGROUND

The first notable changes in play equipment were influenced by an experiment carried out around the time of World War Two. This was a new approach to play known as the "Adventure Playground" and though affecting the design of conventional play apparatus it is more notable as the original inspiration for a new generation of equipment. As far as is known the world's first planned Adventure Playground was stated in Emdrup outside Copenhagen during the German occupation in 1943. It was initiated by the worker's co-operative Housing Association and the landscape architect C. Th Sorensen, who twelve years earlier, had first mentioned the idea of junk playgrounds in his book 'Open Spaces for Town and Country'

A central area of 7000m was available for the 'playground' and in order to reduce noise and to overcome possible criticism of the untidiness of the scene, earth was excavated from other parts of the site and used to build a six foot high bank around the playground. A strong wire fence was placed on top of the bank, shielded on the outside by wild roses, hawthorn and accicia which soon formed an impenetrable thicket. Times were difficult during its first years of existence, with an extreme shortage of all kinds of material, waste included.

The experiment could have easily ended in failure, and few people today would ever have heard of it. What we do know about Emdrup is largely du e to its first leader, John Bertelsen, who gave the playground a philosophy and keep it going long enough to attract attention. His diary from the early days of Emdrup is still valuable reading. The Adventure Playground attempted to create a play environment to cope with children's educational, physical and psychological development in an urban context. It departed from the traditionally planned urban playground, which simply provided 'motor activity' while ignoring play's influence on the child's emotional development - (Fig. 4).

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John Bertelsen's diary entitled 'Early Experiences from Emdrup' gives an idea of what its aims were.

"Children's play development is closely related to their environment - the physical and the psychial to adults and society's attitudes towards play. The children's behaviour and play at the adventure playground demonstrated this, and the influence of various conditions was clearly reflected. It is not sufficient for adults and society merely to provide facilities for play- they must offer a positive, individual attitude towards it, so that the psychial climate for the child's growth, through play, is created. Today, we create a somewhat better physical environment for children's well being and development through play, but we nevertheless have difficulty in accepting that a pro-child physical environment also needs a pro-play physical background if the children are to use the possibilities afford in a positive and appropriate way.

We tend to let new forms enshrine outmoded concepts; something acceptable for adults as well as for society, ingeneral; something respectable, because our inner sense cannot always keep abreast of the latest ideas - although we, of course, pretend that we are very must 'with it'.

It is vital for the child that there should be a link between the physical environment and the psychical: that facilities for play be accompanied by an appropriate psychological environment and a positive attitude towards the whole concept of play.

No one can claim that adults, and society, have any monopolý of truth. It is only convention which makes our physical and psychical arteriosclerosis acceptable.

Play has something to do with attacking life in an unconventional manner. The experiment in Emdrup, which I directed in 1943-47, was very gratifying. There, all activities were accepted as normal and matter of course.

.....Finally, let me emphasise that adventure playgrounds are no panacea or patent solution to the town child's need of outdoor space for play, but it has been proved that the formula of the adventure playground affords conditions for play which the town child, cannot find in any other way".

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The Adventure Playground encouraged unconventional play. Children dug holes, built cabins, climbed trees, or did whatever they wanted to. They played alone, in groups, among themselves or with adults. Fredshallsparken a playpark by Lake Malaren in Sweden was designed and equipped in 1944 on the assumption "that children are persons whose activities it is a pleasure to watch" - (Fig. 5).

Stockholm's playpark designed in 1947 also kept these principles in mind. It was fitted with a sandpit, paddling pool and loose play equipment including footballs, stilts, skittles and miscellaneous oddments for making things - (Fig. 6).

PLAY SCULPTURE

The Adventure Playground had a far reaching influence on play equipment design, although its initial response was confined to Scandinavian countries. It was not until the early 60's that other European countries, England and the States showed its influences in their designs. At that time they were more influenced by another contemporary development, Swedish in origin, known as Play Sculpture.

An article published in 1954 commenting on the respectful attitude of the average child towards public monuments

"always having been tempered with a practical awareness of their potentialities as the framework of athletic feats and as points of vantage in a crowd" ³

the author went on to say that because an attitude of respect had been institutionalized and enforced by public opinion, the police and iron railings. The other 'ambivalent half' of children's attitude (i.e. to climb and clamber about) has had to be institutionalised by the provision of climbing frames, jungle gyms and ultimately by the creation of sculpture specifically designed for playing in - (Fig. 7). The idea of a work of art deliberately placed on the ground for

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Fig. 5 Left: Bathing and paddling pool in the Fredshallsparken by Lalse Malaren Top: Climbing blocks in a playpark.





Fig. 6

Fig. 6 Left: Children's playpark in Stockholm with fitted playground, sandpit, paddling pool etc. Top: play equipment including miscellaneous oddments for making things





Fig. 7 Children playing on public monuments in the Piazza della Signoria, Florence





Fig. 8(a) "machine a jouer" in Stockholm, designed by Egon Moller - Nielsen. juvenile accessibility, not raised on a pedestal was one which became increasingly fashionable in the 1950's in Sweden, Denmark, Germany and France, though not catching on as quickly in England.

In France there was a play sculpture on the roof of the Unite at Marseilles. In Sweden, where the idea first originated in the mind of the sculptor Egon Moller-Nielsen there was both realization and further development of the concept.

The proposition that modern sculpture should be physically, as well as visually experienced is at the least as old as the Bauhaus, but Nielsen was the first sculptor to try to make this experience an integral part of the fantasy worlds of children, and introduce direct tactile knowledge of texture, form and interior space into the imaginative realities of the growing mind. Examples of his work include the "machine a jouer" in Stockholm and the Gothenburg sculpture - (Fig. 8) - completed in 1952.⁴

As well as marking the introduction of play sculpture these also marked the transition from the concept of the isolated sculptural object towards that of 'Terrain sculpture'. An example of which is E. Moller-Nielsen's playground-monument - (Fig. 9) - dedicated to "The Unknown Political Prisoner" which was related in origin to the sculptured 'game-boards' of Alberto Giacommetti, but enlarged to form a habitable landscape functioning physically as a multi-purpose playground and recreation area.

Topographically it was laid out as a system of answering hills and hollows, surrounded by grass covered slopes, to give a sense of enclosed security and to provide space for sitting out. The forms of the terrain were given the permanent features of the scheme, the various play uses were transient, depending on season and circumstance. Some permanent machines were provided, a wind-mobile, a

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Fig. 8 Gothenburg sculpture of 1952 by Moller-Nielson



Fig. 9 The Unknown Political Prisoner Playground - Monument





Fig. 10 Saddle-Slide by Mitzi Conliffe

water-mobile, and a jumping sheet, but otherwise the slopes and peaks were to be used for winter sports, or dancing, or amphitheatre dramatic performances or any other spontaneous or organized activity that an occasion required.

Play sculpture designed in the fifties was aimed at giving maximum support to the infant imagination. Topologically, to achieve this they were typically required to have no dead surfaces and no dead spaces inaccessible to the child. From both the didactic and the recreative points of view every part was to be accessible, in order that the user could fully experience the designer's intentions, and the sculptures, in return, offer the maximum opportunities for imaginative exploitation.

The "Saddle-Slide" - (Fig. 10) - designed by Mitzi Cunliffe for the Sarah Lawrence College, Bronxville, New York , showed an appreciation for the need for maximum topological visability.⁵ It was cast in concrete and took the form of a thick sheet, bent into a sway-backed tent like form. Like a tent it functioned as a shelter and the space under it was fully usable while it's upper surface was also completely accessible. Being grounded at only four point-supports, the shell offered no dead surfaces (a fault found, at the time, with Moller-Nielsen's earlier play sculptures).

The perforations also extended it's topological potentialities, those on one side offering toe holds for climbing and peep holes for viewing, while the larger hole on the other side served demonstrably to unite the other and dinner spaces of the Saddle-Slide in a way which did not occur in earlier play equipment of the drail-pipe type.

In the States, Saul Bass was designing play sculpture for use in low cost housing - (Fig. 11). In this he began exploring the possibilities of the use of symbols which "identified and celebrated the living spaces,"⁶by developing modular structured components. The

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Fig. ll(a) Composite scheme treating the play space as a whole. The equipment was designed as part of a pattern which stemmed from a conception of a play situation: e.g. (a) the stimulation of urban space and (b) a more open plan allowing for easy supervision by parents of younger children.

DESIGNER Saul Bass.



Fig. ll(b) One of the few British products which was a well designed, robust structure.

DESIGNER J. Cluer MAKER Furniture Associated Products Ltd.



The same structure seen installed in a rooftop nursery playground.

Fig. 11(c)

Rectilinear structures do not compare very well with this tubular tower from Switzerland, which thought it is still a poor substitute for a tree, nevertheless has the advantage that it provides a wider choice of possibilities for play than a square crisscross of poles. Colour, often ignored, can supply added attraction.

MAKER Jakob Scherrer Sohne



Fig. 11(d)

Also from Switzerland is this one-off playground, designed for the particular housing area it serves. Developed in the late fifties it is far in advance of the usual asphalt jungle.

CO-ORDINATING DESIGNER A. Trachsel







Fig. ll(e) Said to be among the best action equipment of its time - it depended partly for its value on the fact that the children were called upon to exercise their own ingenuity in using it.

DESIGNER MAKERS J. Kimpel Hertner Schloserei (crawling spiral) and A. Grunsig (swinging tower).



designs, which were illustrated in the American Magazine "Art and Architecture" in the 40's were designed as basic solutions which could be modified to suit the requirements of a particular site and were flexible enough to cater for the varying needs of different children. But Bass designs were considered, then, to show an undue preoccupation with two dimensions and also the results were often thought of as self-consciously sculpturesque. This in no way detracting from their novel and exciting experimental qualities, play sculpture though simply, an extension of the rational design of equipment, was indeed exciting. The danger was always there, that, despite careful consideration of practical dimensions relating to children, play sculpture tended to appeal more to the eye of the adult than to the play instincts of the child. Any contemporary criticism's of Bass design's were coloured by thinking on this level.

In Sweden, Old Lindstand was also designing play sculpture. Her individual pieces succeeded in making the distinction between a piece of sculpture and a piece of equipment more obscure. Her climbing frames, first produced in Sweden in 1957, showed that industrially produced equipment could provide considerable scope for children's individual or collective imagination - (Fig. 12).

Britain, conspicious by its lack of contributions, atoned by later producing impressive eclectic designs.

INTEGRATED PLAY EQUIPMENT

The 1950's saw a steady increase in the number of estates containing high blocks of flats, 10 storeys or more in England and the rest of Europe.

The question of family life and of bringing up children in

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Fig. 12

These climbing frames are essentially a substitute for trees and can be augmented with planks or covered to represent huts. They were made of electricially welded steel tubes, painted and fastened to the ground by screw connected to a concrete foundation. Tube diameters are 1 inch and 3/4 inch and heights can be either 150 or 180cm.

It is interesting to note that some of this equipment was used in a Swedish institute for blind children and was considered successful.

DESIGNER Ola Lindstrand.

these flats attracted much more attention and interest since their development. Play facilities for children were seen as one of the major problems of flat life for the family. Planners, architects, housing authorities, child welfare workers and sociologists were among those who, at conferences and in publications stressed the needs of children when high density housing was discussed. As early as 1953, a British sociologist writing in the 'Housing Centre Review' said :

> "One aspect of designing flats which has hitherto not been given sufficient attention is that of providing adequately and imaginatively for children's play. Very many comments have been made as to the undesirability of bringing up children in flats and general regrets are expressed that this should occur at all, nevertheless, with the present density standards...large numbers of children will inevitably be spending the most formative years on flatted estates. It is therefore of urgent importance that a suitable environment should be planned for them".⁷

Seven years later a planning officer at a Conference on Residential Development Densities held by the Town Planning Institute echoed these views :

> "The higher the density, the more complete should be the provision of communal amenities. Whereas in densities of up to 50 children per acre perhaps an occasional playground will do, in densities of 150 per acre, the full provision of toddlers and fitted playgrounds will be essential".

The importance of siting, layout and equipment of childrens playgrounds, as part of the general consideration of space between building was becomming a recognised factor in the planning of housing areas. Several books discussing this topic were published. "Playgrounds and Recreation Areas" published in 1959 suggested a

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number of ways the problems associated with the overall design of children's playgrounds might be tackled.

This book outlined what the authors considered to be important prerequisities for satisfactory recreation facilities and discussed the social and planning implications of their provision. These ranged from the special needs of the under-five's to the sophisticated requirements of teenagers. These basic criteria are as follows: first, play space must always be designed with the play function foremost in mind - it should not be considered either from a purely aesthetic point of view (which play sculpture tended to do) or, necessarily, as a means of education second, it should be essential to encourage creative play; third, more valuable than mechanical equipment should be half finished components, materials and natural features - in other words, a tree is of more value than a roundabout; fourth, there should be a variety of possibilities for play; and fifth, equipment must be easy to assemble an maintain - (Fig. 13).

While it is easy to accept these points and to agree substantially with the other aspects of design which the book covered, particulary the emphasis on the value of a natural environment, it was obvious that there will always remain a need for industrially produced play equipment. Until the end of the 1950's British equipment designer's limited themselves to producing a number of basic items, with definite functions, like the swings, roundabouts and slides described earlier. It now became obvious that play equipment would always remain a necessary part of playground environments and that its design was badly in need of updating and rethinking.

In 1962 another booklet "Design for Play" stressing the need to consider play spaces at the earliest stages of planning was published. In it Lady Allen of Hurtwood offered advice on siting, planning and various methods of reconciling natural materials and

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mechanical devices. She pointed out that earth mounding more effectively met a childs instinct to climb than any of the more usual clumsy ironmongery. She went on to say that reliance on manufactured products was not necessarily an adequate substitute for a natural environment. In fact it could be detrimental to the healthy development of children unless it was fully developed as a total design, as those of Saul Bass and others or could be so integrated that the natural and artificial elements together provided an interesting and lively background to play.

Though not producing any noteworthy play sculpture Britain instead began amalgamating the, until then, seperately designed landscape and play equipment into one complete design. Whereas Moller Nielsen's earlier playground-monument to "The Unknown Political Prisoner" merely placed equipment on top of the landscaped terrain, Britain attempted to use manmade equipment as part of the landscaping.

The Playground at Kingshurst Hall Flats, Birmingham, designed by city architect A.G. Sheppard Fidler and landscape architect Mary Mitchell in 1955 is an example of this type of design - (Fig. 14). Mary Mitchell like Lady Allen, believed that "manufactured products carefully planned and detailed, could with advantage supplement the semi-natural environment of a man made landscape."

Where Ola Linkstand had earlier succeeded in making the distinction between a piece of sculpture and a piece of equipment more obscure, British designers, like Mary Mitchell succeeded in blurring the distinction between equipment and terrain.

In 1958 Mary Mitchell designed a 35m contour slide, set in a brick embankment for Blackburn public park - (Fig. 15). Contour slides, though not gaining in popularity until safety restrictions were introduced in the late seventies are further examples of

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DESIGNER A.G. Sheppard Fidler & Mary Mitchell. (Completed in 1955).



integrated play equipment. The origins of the contour slide are ambiguous, however, what is certain is that "Wagner Biro and Baumgartner" of Austria first produced a slide very similar in appearance, called the "Switchback" from designs by Edy Meier, a Zurick fairground operator in the early fifties -⁹ (Fig. 16). (The word switchback originally referred to a short length of undulating railway, along which a car ran by its own weight). Though originated for fairground use Wagner Biro and Baumgartner also began making them for permanent installation in playgrounds.

Large scale terrain design remained popular in Britain and grew in influence elsewhere as an acceptable compromise to the lack of natural environment in high density areas. Playgrounds continue to be designed this way - (Fig. 17) - however this did not slow down or hamper developments in other areas. Design having meanwhile returned to the past to find further inspiration for newer play equipment.

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Fig. 15 Contour slide, set in a brick embankment in Blackburn public park.



Fig. 16 An example of a switchback slide.



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The Yard before change.



The Yard in 1976, after change.

Fig. 17 An example of the more recent use of landscaping in the 1.5 acre grounds of Washington Elementary School, Berkeley.



Footnotes

1. Benhamin, Joe <u>In Search of Adventure: A</u> <u>Study of the Junk Playground</u>, p.151-152

2. Architectural Review, December 1947, p.8

3. 4. "Play Sculpture" Architectural Review, August 1954 p.122

5. "Saddle-slide" Architectural Review, August 1955 p.122

6. "Equipping children's Playgrounds" Design, 159 p. 65

7. 8. Housing Centre Review, 1953 p.43

9. <u>Design</u>, January 1979 p.28

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CHAPTER 3. 1960 - 1970



CONSTRUCTION TOYS

"All children need sand, water clay wood and simple tools with which to make things." - The Parker Morris Report, 1961

Adventure Playgrounds were places where children could build, demolish and rebuild to their hearts content. Scandinavian countries open to its influence were prompt in providing building equipment, tools and other loose playthings, together with fixed equipment in public playgrounds - (Fig. 18).

Elsewhere, accepting in theory what Scandinavia put into practice, were both too preoccupied and reluctant to provide playgrounds with loose play things until the 1960's. The freerer attitudes and informal outlook of that period making experimentation of this kind more acceptable.

Of the Sixties, Ken Baynes observed :

"The direction for design should surely be related to the central theme of the present, to the growing concern with the individual and the expression of his individuality in the context of society. If this means more decoration, more colour, more flamboyance, a closer link between entertainment and everyday life design has no brief to impose its own limited morality." 1

The Sixties saw enthusiasm for play sculpture replaced by a growing interest and return to basic Adventure Playground designs. Some of these first designs were so basic as to appear undesigned.

In Italy, Adriano Calderisis 1963 "Construction Furniture" then hailed as "a completely new approach to children's equipment" is one

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example, - (Fig. 19). Undo the screws, reassemble the pieces, and they become constructional toys - a go-cart, a cradle, a wheelbarrow, a scooter or a dolls pram - the list was endless. The table top was approximately 16 X 24 inches and the chair seat 16 X 11 inches; both were 3/4 inch deep with holes for screws at 1.5 inch intervals. The legs were used for the two supports and wheels were incorporated in the chair seat. Adjustable seat and table heights completed the versatility of the equipment.

While Adventure Playthings of Scotland, a firm concentrating in the production for construction equipment produced more examples. Among the 1963 additions to their range was the VTI Variplay trolley, measuring 38.5 X 20 X 17.5 inches designed to be used in conjunction with other elements in their catalogue. The FT3 forklift truck measured 33.5 X 12 X 32 inches and had a carriage section which could be raised or lowered by the driver. The D2 dumper had a sturdily detailed safety hook on the tipping bucket. All three toys were constructed of solid beech and birch plywood with industrial quality wheels and casters - (Fig. 20).

Michael Wason's design 'Ruperts Roads' was an outdoor construction toy for four to eight year olds. The pieces linked together with ball, spring and socket and eight large parts made a storage box for the set. The toy was manufactured by P. & M. Abbatt Ltd. - (Fig. 21).

While in Germany, a construction kit also manipulated the appeal of construction toys and playhouses to children - (Fig. 22). The German building kit combined the attraction of both and could be built and rebuilt for many different games. The planks were made of pine and were light enough for children to carry easily. They were fitted together by a tongued and grooved system which eliminated the need of earlier designs for screws or nails, and had been treated with

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Fig. 19 Construction furniture designed by Adriano Calderisi

















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Fig. 21 "Ruperts Roads" designed by Michael Wavon







Fig. 22 The components can be built and rebuilt into a whole range of different structures. Shown here are a Punch & Judy theatre, (bottom left) a ship and a shop (on next page).



a non-poisonous waterproof finish. Each plank was 5cm thick by 9cm wide and lengths came in increments of 55cm. Short connecting pieces joined the longer lengths and strengthened the structure. There were red-painted planks for use as floor boards and green ones for the roof. Windows and doors were made by omitting a part of the wall and for the more sophisticated matching doors and 'Plexiglas' windows were available. The system, which could be bought complete or as single pieces, was designed by W. Dressler and made by Homatex of Steinhagen, Westfalen.

PLASTICS

Indicative to the sixties was a love of colour, flamboyance and an ever increasing use of plastics, all inevitably influencing play equipment. 'Tri-ang' brought out a colourful plastic play unit which incorporated two swings, a seesaw, rings and a trapeze bar, and a lightweight glass fibre slide, 'Galt' made a trestle slide which could be used in different ways and a red and white striped PVC tunnel which could concertina up for storage. Fun, entertainment and flamboyance were the incentives behind sixties design.

Building blocks were no longer made from stained woods, instead light weight and colourful foams and plastics were employed. In Sweden, Suante Schoblom made giant building blocks of expanded polystyrene. The blocks had circular recesses to enable children to grip them more easily, they measure 13 X 9.5 X 6 inch, weighed only 6oz each and were made by the Swedish firm of Overman - (Fig. 24).

In England Allan Fuller of Anderson Manson Designs must have dreamt of Liquorice Allsorts when he produced his great blocks of foam with removable, washable, coloured covers in acrylic fur and also in nylon - (Fig. 25). He made everything in large and small sizes.

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Fig. 23 Early 60's plastic designs







Fig. 24 Giant building blocks by Srante Schoblom

In 1968 the Dow Chemical Company sponsored a design competition at the Italian Government Institute for the Industrial Arts in Florence. the students had to work with Voraspring, a new foam just developed. The prief was to use its physical properties. First Prize went to Clare priet went to Clare Mantica for her play equipment - (Fig. 26). Interlocking wave-shaped Mantice Mantice Voraspring foam, covered in brightly coloured fabrics formed a 'pool' inviting strenuous bouncing with mimimal potential for damage either to the children or the structure.

Inflatable play sculpture also became trendy towards the end of the sixties. The Eventstructure Research Group (Theo Botshuiver and Jeffrey Shaw) based in Ovderkerk ad Amstel, Holland designed several large structures between 1966 and 1970."

The 'tube' on Lake Machsee, designed for the city of Hannover, was 250 meters long, 3 meters in diameter and made of transparent PVC with a floor panel of Van Besovw reinforced PVC. It had water filled compartments in the base to prevent the whole thing from twisting. The tube was tied at 4 meter intervals to concrete blocks sunk in the lake and a blower was used to keep it inflated. When in position it was to be used as a play structure and passage way across the lake.

They also designed an experimental pavilion, on a base of 25ft square supported by air-inflated PVC ribs and covered by a 0.3mm transparent or translucent PVC skin. The Pavilion was exhibited in Forrestdale Estate, New Addington, near Croyden from July to October 1969.12

A series of inflatable events were organised by the Arts Council at the Serpentine Gallery in Hyde Park in 1969 as the "send off" for a touring exhibition of blow-up sculpture that would eventually visit twelve provinces that summer - (Fig. 27). Among the designs, were a "Play Mattress" by Maruice Agis of the Space Structure Work Shop - (Fig. 28) and a 'Play Tunnel' by Ken Turner from Action Space - (Fig. 29).

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Fig. 25 Liquorice Allsorts designed by Allan Fuller



Fig. 26 Interlocking wave-shaped chunks of Voraspring designed by Clare Mantica





Fig. 27 Polythene tube sculpture by Maruice Agis





Fig. 28 Play Mattress designed by Maurice Agis/Space Structure Workshop





Fig. 29 Play tunnel designed by Ken Turner/Action Space



Fig. 30 "Snap Wall" designed by Monsanto (Play eqn) Ltd.

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Equipment, constructed by the child himself, continued to increase in popularity and in size up through the sixties and into the increase in 1 early seventies. In 1970 "monsanto" developed a range of products for early seven "designed to encourage the childs imagination and sense of participation", all the components were made from moulded plastic. of participation (Fig. 30) - enabled children to make relatively large crawl through structures, each panel measured 30 X 30 X 2 inches. The press-in button joints on the edges could be swung open like door hinges.

In Japan M. Ebinhara designed a playground consisting of enormous L-shaped polythene building blocks - (Fig. 31). This was about as big as construction toys were to get.

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"Late 60's: giant leap forward?" <u>Design</u>, 1970, p.97

"Tube on the Machsee Hannover" AD, February 1971, p.73

3. "see-throught-shelter" AD, October 1969, p.531

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CHAPTER 4. 1970 - Present Day

PLAY SYSTEMS

The beginning of the seventies saw Construction Toys begin to outgrow children's capacity to construct, in size and complexity. They became modular, were sold in lots and constructed by corporations, housing authorities or playpark designers. The play valve of construction was dropped and play sculpture made its return, but in modular plastic from known as "Play Systems".

In 1971 in America Richard Dattner designed Play Cubes -(Fig. 32). They were 34 inch GRP cuboctahedra and coloured blue, red, vellow or green, which interlocked in clusters to make pyramids, houses, tunnels or what ever you liked. They were sold in lots of 4,5,7,10,19 and 47 complete with all the necessary fastners, assembly tools, slides or tubes and instructions.

In Germany there was a similar though more versatile play system, the "Baukiste" - (Fig. 33) - by 3H Design. Made of 8mm proofed boarding blue, yellow or red, it came in 135 X 45cm panels, some with circular openings, and could be assembled (with nuts and bolts) in innumerable ways.

"Kubi Mobile" was a type of soft play system, designed in 1975 by Esser Design, of the Institute for product Innovation, also in Germany -(Fig. 34). The various pieces were moulded from high pressure polyethylene which gave them both durability and a degree of elasticity. They came in yellow, orange, green and blue. They were fitted either as a stacked structure in outdoor playgrounds or could be used individually as floats in pools etc.

PLAY WITH A PURPOSE

During the late sixties a lot of research in the field of child

development throught play was carried out, but nearly always with regard to handicapped children, for instance, Victor Papanek, the popular advocate of sixties design produced play environments for the United cerebral Palsey Association.

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In the seventies designers began to consider how play systems could be used not only to provide play but, to help normal children adapt to urban life, in a similar manner to which earlier designers had helped handicapped children adapt to their surroundings. Child development through play became an increasingly popular study topic and a recurrent student project. In Britain, designers like Kenneth Bayes, jim Sandhu and Roger Haydon working for the Child Development Research unit at Nottingham University designed multi-purpose constructional units. These units were designed for the specific purpose of helping ordinary children to cope with city life.

The theme was taken up by many countries including, for instance, Japan where sociologists and designers, alarmed at the high percentage of accidents to pedestrian children in cities like Tokyo, developed a range of moulded polyethelene play units to teach children spatial awareness. These play units were the result of a research programme carried out by five Japanese designers (Koseki, Seki, Ebihara, Amaro and Kituchi) for the Industrial Products Research Institute, Tokyo.² The units, moulded in polyethelene were each L-shaped, hollow and with large circular holes on two faces. They could be sat on, sat in, climbed over, pushed, pulled and crawled through. The end of each unit fitted into the next and together could be built up into any number of shapes with exits and entrances at random - (Fig. 35). More simplify, they could be just used for playing trains - (Fig. 36).

The researchers believed that by actively helping a child's spatial awareness from an early age, through specially designed play apparatus, tensions could be reduced, reactions quickened and children made less accident-prone - (Fig. 37). Through studies of play behaviour

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Fig. 31 L-Shaped polythene building blocks by E. Ebihara



Fig. 32 Play Cubes designed by Richard Dettner



Fig. 33 "Bauliste" play system designed by 3H design









Pig. 35 Japanese play equipment "designed for a purpose."



Fig. 36 Japanese Play Equipment



Fig. 37 Japanese Play Equipment



and both mental and physical development they found that the majority of under-fives tended to play with things that were static - either personal objects (building blocks, dolls, etc.) or set down statically (playsculpture, climbing frames etc.) - but that children of five and over were developing spatial consciousness and preferred (and needed) over were playthings to relate the personal with the environmental.

SAFETY IN PLAY EQUIPMENT

While Child Development Research Units were trying to make children less accident prone outside the playground many concerned bodies particularly in the United Kingdom (where safety standards were especially low) had begun campaigning for improved safety inside the playground. The British campaign, under the guidance of the NPFA, Fair Play for Children and the Design Council was launched in 1972 and by 1979 had achieved obvious results.

Firstly, the Department of the Environment instructed all local authorities to review safety in playground, the type and condition of existing equipment and surfaces, and the procedures for their inspection and maintenance - (Fig. 38).

Secondly, parts of an entirely new British Standard (BS 569) on permanent outdoor playground equipment were published in February of that year. These, for the first time, identified potential hazards and layed down minimum safety standards, while freeing designers from the anomalies and design limitations of the old standards.³

Finally the Department of Prices and Consumer Protection ^{extended} its accidents survey system to cover playgrounds and analyse the scale and cause of playground accidents. Sample studies had at the

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time suggested that at least 20,000 children were treated in hospital every year as a result of injuries receive on playgrounds - (Fig. 39).

It took the British Standards Institute nearly eight years to produce a standard for outdoor play equipment. When published in rebruary 1979 the report was still incomplete: only two of the three projected parts were finished. It took another two years for the first part, which covered performance requirements and methods of testing, to be completed.

In 1962 'Design' while referring to British design made the following comments on the state of BS standards for playgrounds.

"...the majority of these products do conform to British Standard specificiations - their one redeeming feature. The published standards are however very minimal."

The new standards improved on the existing one but part 3 was not considered to be well drafted. Part 2, though producing substantial steps forward also came under severe criticism. It was mainly concerned with construction of playground equipment, giving recommendations on ways to mimimise hazards and was very much a manufacturers' document. Although outside bodies such as the Departments of Education and Science, Health and Social Security, the Royal Society for the Prevention of Accidents and the British Society Were represented on the committee, most members were manufacturers.

One notable absentee, on moral grounds, was SMP (landscapes) Ltd. Graham McNair chairman and managing director, who complained bitterly about the manner in which British Standards were established. McNair put it :

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Fig. 38 & 39 Dangerous play equipment and causes of accidents.

"I don't believe the constitution of this committee was right. I don't think manufacturers should be permanent members of a committee writing standards for the products that their companies produce. It would seem sensible for manufacturers to be consulted if major changes are to be

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Indeed, although the Institution claimed that the impetus to provide new Standards came from the Department of the Environment, the fact is Government funds to set up a Standard were met pound for pound by the manufacturers. However, there was no doubt that Part Two removed some dangerous features from equipment and improved stress resistance in products. But its weakness was, as one of the committee's most influential manufacturers pointed out, the new Standards required very few changes to most equipment. A careful reading of the report suggests a bias towards one or two particular brands.

Considerations of commercial viability had their effects on the play equipment report. One of the Institute's officers admitted that because one piece of equipment was "commercially successful", (a roundabout) it had not categorically been stated to be dangerous. Conversely, a supplier not represented on the committee had to alter substantially its most popular (and perfectly safe) piece of equipment (a set of swings) to meet the new requirements. Still, Part Two's benefits eminently out weighed its flaws.

While keeping in mind that any place where children run around, climb and play on moving equipment cannot be completely safe certain types of equipment still furnish more hazards than others. Moving equipment like swings, roundabouts and seesaws are expensive to maintain and broken equipment whether from lack of maintenance or Vandalism is clearly a potential source of accidents - (Fig. 40).

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Fig. 40 Vandalised Swings

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subsequently this type of equipment suffered the most severe subsequences (and in some cases complete withdrawal) under the new standards.

The Tower Slide, produced by Wicksteed since the 1920's and three items of equipment dating from before 1930 - the Witch's Hat or Ocean Wave, the Rocking Horse and the Plank Swing, no longer comply with British Standards. Fair Play for Children had previously recommended their removal from playgrounds having carried out their own independant survey.

The main problem with these items, aside from maintenance, is that not only can they deliver a shattering blow when operated at speed, but they are not necessarily under the direct control of the individual child using them. If the equipment is running too fast, or is being pushed by others, a child who becomes afraid may have difficulty in stopping the equipment or alighting without injury. Also, in the case of the Rocking Horse exposed working parts provided a perfect trap for young limbs.

> "In Dublin there are no 'Plank Swings', but an abundance of 'Witch's Hats' and 'Rocking Horses'. The Corporation have no plans to remove these, although its officials are aware of the dangers and the pressure for their removal in Britain." - "Space for Play", Comchairdeas, 1980.

Both the Witch's hats and Rocking Horse have by now been completely removed from both English and Irish playgrounds. Surprisingly, despite such poor publicity Wicksteed (play equipment) Ltd. still manufacture Rocking Horses - (Fig. 41). (Wicksteed had earlier been cited, by Fair Play for Children and NPFA, as responsible

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for some of the most dangerous equipment available. Incidently, they were also members of the committee which drafted the updated British Standards).

Other equipment, because it was less dangerous or simply much too popular remained but had to be altered to meet the new safety standards. One survey carried out in three English playgrounds observed the following dangers :-

> "Swings seemed to be the type of equipment which were put to the most varied uses. Children stood, twisted and knelt on swings. Older children stood or sat on the bars or stood on the seat of cradle swings. Sometimes more than one child used a swing, and some children used a swing frame for climbing.

> Children were seen to walk, crawl and run up the chutes of slides and to play on the steps and platform of a slide provided with one.

> Up to six children were seen on one see-saw. Children often stood on the centre piece of a see-saw, rocking it from side to side.

> Other uses noted were: standing on a rocking horse and sliding down the central pole of a helter skelter...However, it seems natural that children should experiment with equipment as we saw them doing. It is unrealistic to expect them to use equipment only as the designer intended." - "The Swing is to Safety" 'Council' 1977

However, the most severe injuries were caused by falling off equipment onto a hard surface and also frequently by impact from rigid swing seats - children tending to run across in front of moving swings. The Country Side Commission of Scotland in 1975 recommended that

"Swings should have impact absorbing seats such as tyres or rubber straps."

since then motor car tyres have become popular as an alternative to older wooden, aluminium and plastic seats - (Fig. 42).

> "We saw a lot in Skelmersdale, New Town and some in Deptford. However, some of the children in Deptford dislike them - small children in particular felt they might fall through the middle." - 'Council' 1977.

Subsequently alternative seat types have become available, including a more conventional rigid flat seat with rubber cushioning around the edges and a flat 'strap' seat, or a cradle swing with cushioning around all the metal parts - more popular with younger children. .

"Recticel Sutcliffe" who claim to have "pioneered the science of safety in sports, gymnastic and playground equipment for more than twenty five years" have since 1980 developed a new safety seat - a "unique cellular construction....rubber compound." - (Fig. 43). Tests carried out by "Council" and the Rubber and Plastics Research Association of Great Britain have found that this seat does indeed have a lower impact valve than the tyre seat, a rubber edged aluminium seat and a one inch thick wooden seat.

An alternative to, or in addition to, redesigning the seat is to design a barrier into the actual structure, to prevent children crossing too near a moving swing - (Fig. 44).

Other improvements include attention to the chain and suspension system. "Rotating swing bearings" or "Anti-wrap round





The Recticel Safety Seat passed the original Eggs-periment To demonstrate the shock absorbing properties of the Recticel seat, an egg was set in the swing path at a horizontal distance of 36" from the axis of the swing. The Recticel rubber seat was allowed to swing from a horizontal distance of 42" from the axis, to collide with the egg. The egg did not break, or even crack!! All rigid seats tested under the same conditions shattered the eggs. Would the seats on your swings pass this test?

CONTOUR SEAT

The Contour seat (Ref. RE8) is new to the range and was developed in conjunction with a major European playground equipment manufacturer. Designed from first principles it features a specially contoured shape which is not only very comfortable but also encourages a correctly balanced seating position. This in turn helps to induce a greater feeling of security and so is ideal for young children who have just progressed from a cradle design.

SINGLE TIER CRADLE SEAT

This single tier cradle seat (Ref. RE31) embodies all the comfort and safety features inherent in the flat seat designs, plus the additional security of cushioned leg separator and rail. Carefully designed, this seat allows easy entry and exit for toddlers. With cadmium plated steel fittings and washable surfaces, it also offers a long maintenance free life.



TWO TIER CRADLE SEAT

A strong, secure cradle seat (Ref. RE32) designed for use by young supervised children. Ease of entry and exit is assured by the careful spacing of the reinforced, cushioned rails. Maintenance free, this durable two tier cradle benefits from all the Recticel Sutcliffe safety features and is capable of providing years of dependable, comfortable service.



Fig. 43





GATE **ENTRY SEAT**

The gated cradle seat (Ref. RE33) was specially designed to allow uninhibited entry and exit for children in supervised play areas. It is primarily for use by handicapped children and incorporates the strength, comfort, security and safety of the other models.



Safety Seats designed by Recticlel Sutcliffe Ltd.





Examples of barriers on swing structures

pars' are now used to prevent the swing becomming wrapped around the top bar. BS standards have also recommended a maximum size for chain links - 9mm, to prevent pinching or entrapment of fingers occuring. Some companies, Wicksteed for instance have developed their own chain to prevent pinching - (Fig. 46). Seesaws have had springs added to the fulcrum, to prevent the jolting motion of the simple lever design, and also allows for variations between children's weights.

There have also been pieces of equipment specially designed to cope with children's unorthodox use of equipment. These include two new swings which take into account children's use of the the swing as a climbing frame - (Fig. 47). A 'Multi-seesaw' has been designed by kompan to allow group participation on a piece of equipment rarely designed for more than two children at a time - (Fig. 48).

RECENT DESIGNS

Since the late seventies innovative new ideas in play equipment have been scarce, as opposed to alterations in existing designs.

This is with the exception of the "Space Net", a climbing frame with a differrence - (Fig. 49). It is constructed from interlocked nylon covered steel ropes, creating a honeycomb structure which can break a child's fall - even from the top most central mast point - 8.5 meters high. BS and Din Standard's recommended maximum height for all other types of climbing frames and slides is 2.5 meters. The Space Net is also exceptionally vandal proof. It was developed, independantly by two German companies, Kesel and Corocord Spielbau and first appeared on the marked in 1980.

In 1979 Rosemary Martin while still a student at the Central $^{\rm School}$ of Art and Design won the DIA Melchett Memorial Award for her

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Fig. 47 Designs for swing/climbing frames.









Fig. 48 Multi Seesaw designed by Kompon (Play eqn.) Ltd.

spinning Toy". Though originally designed for handicapped children it is now in production as a toy for normal children, as well (Fig. 50). The base of the toy which seats up to four children, forms a section of a sphere. This enables it to be moved effortlessly, through safety, in any direction in response to the slighest movement of the child. The "Rocking Spinning toy" is similar to a seesaw but more versatile because it is not permanently fixed to one spot. Also in Britain, Richard Baker has since 1981 been slighest from tunnels to giant banana's - (Fig. 51). The PVC structures use a permanent air blower to keep them in shape. In concept they are very similar to those produced by the Evenstruccture Research Group in the sixties.

Another innovative range of products which have the appearance of play sculpture and the play valve of some of the better designed motor equipment are collectively known as "Les Zudoks". The French designs began life in 1975 and the first production models were launched three years ago. The original inspiration for the range was based on ideas by French sculptor and mobile-maker Antoine Zuber. Zuber offered his ideas to ACNO, a Paris based company that specialised in product innovations. Jean-Francois Boissel, founder of ACNO fired with enthusiasm, decided to develop some prototypes. Boissel asked Roger Tallon to suggest product designers who might help. Tallon recommended two young French designers, Raymond Guider and Martine Lobjoy - Durel.^{θ}

Boissel and the designers envisaged the equipment in urban parks and playgrounds, areas where children get very little chance to let off steam. So they wanted to end up with a range that would encourage children to be adventurous and use it an any way they liked. Unfortunately this meant that some designs had to be modified as children devised more and more ingenious ways of abusing the equipment or damaging themselves. However, few of the modifications

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Fig. 50. Rocking Spinning Toy designed by Rosemary Martin. altered the first prototypes radically. Typically, a tree-ring 'cage' had to be added beneath the rim of the "Pastille Tournante" to stop a child who falls from trapping his arm or leg - (Fig. 52). In one case however, the children's boisterousness did defeat the designers' aim to keep the structure as simple as possible. The early version of the "Balancege" - a seesaw combined with a fairground 'octopus' - had a flag gondola with rails to protect the occupant. But the two seesaw riders could whip the gondola round the circuit fast enough to turn the gondola-jockey hysterical or even to extrude the victim through the rails. So the production model has been equipped with a rather ugly moulded gondola and brake - (Fig.53).

All the equipment has been designed for open-air use and most of it exploits sloping ground, like Mary Mitchell's designs had in the 50's. The Pastille Tournante, for example, which superficially looks like a cross between a trampoline and a roundabout, has to be fixed to a sloping surface to get the most out of it. The object is to climb across its 2m diameter from the 'bottom to the top'. On his own, a child can only do it by clambering accurately across the middle. A co-operative group of children can manage it by counter balancing each other: but the minute that strife and non co-operation breaks out, the "Pastille" will swing its unbalanced load back to the bottom again.

The "Zudoks" are made of tubular steel finished in brightly coloured epoxy paints: the gondola on the "Balancege" and the convex roundabout on the Yo-yo are made of grp. If any of the designs looks out of character with the rest, it is the single and double Yo-yo, and "ascenceur perpetual" -(Fig.54) It is the only design in which Guidot and Duel were not involved with.

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Fig. 52

The Pastille Tourante. Two or three fixed close together on a slope allow children to 'free-wheel' from top to bottom, or to try to climb to the top, without being constantly swung back to the starting point.



Fig. 52(a) The first version of the popular Chemin de Fer was only big enough for two.



Fig. 53 The Balencege is a see-saw which rises and falls causing the 'gondola' to whip round the circuit.



Fig. 53(a) The Bascule Tournante. A single child could make it revolve, but a co-ordinated group of children can produce a turn of speed that blurs movement.



Fig. 54 Single and double Yo-yo. In design terms, these 'perpetual lifts' were the least successful of the Audock range. The weight-cum-seat is wound up and down by propelling the platform like a scooter.

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2.	DESIGN, January 1972, p.58
3.4.5	. <u>DESIGN</u> 1979, p.63
6.	Andrews, Sean and O'Connor Ciaran, Space for Play 1980 p.25
7.	Design April 1980 p.15
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9.	"How to Turn a Sculpture into a Roller COaster" <u>Design</u> February 1979, p.56

SUMMARY

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SUMMARY

prior to 1940 play equipment was confined to ten or eleven basic designs. Very little effort was made to improve them or to develop alternatives. It was not until the forties that change became develop distinctive trends developed and influeced designs obvious. in Scandinavia, Europe, England and America. Both influences in Scandinavia, the "Adventure Playgorund" in Denmark and "play Sculpture" in Sweden. They were aimed at allowing children freedom to play, and both believed that play had a vital role in early

The Adventure Playground was an area put aside within whose boundries children were allowed to play with almost anything in any way they liked. Observations made in these playgrounds lead to the development of construction toys, loose play materials etc. and lead to increased ambiguity in the appearance of equipment i.e. designs began to be approached as spaces, volumes shapes and colours rather than definite objects.

Play sculpture was another development of the same thinking. Allowing children to explore and discover at their own pace in their own way. However, their approach was different. Sculptures were designed to provide maximum tactical knowledge of texture, form and interior space. Designers believing that this knowledge promoted children's development and helped them to come to terms with their surroundings.

The Adventure Playground believed that natural materials were the best form of play equipment. Play Sculpture claimed that man made equipment could, if properly designed, enhance the natural surroundings. In the next ten years, designers, especially in

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Britain, set about combining these beliefs to create an environment Britain, set where landscape and equipment worked together to enhance one another. where landscape of playground is still being built today, as is equipment This the landscape (slopes etc.) to function.

Having developed sculpture to such a degree designers, at the peginning of the sixties, again turned to loose materials, building beginning blocks etc. to provide inspiration. Foams and plastics popular in plocks furniture and interior design were incorporated into play equipment. Plastics were lightweight, mouldable, colourful and durable - ideal for play equipment. Designs originally in wood were repeated in foams and plastics becomming more ingenious and outrageous as the decade proceeded. Inflatable play structures became popular for a short time towards the end of the sixties. Plastic building blocks got bigger and became building structures and then 'modular' play structures.

The seventies descided that play structures should and could do more than provide mere play. Play equipment was developed to give children "spatial awareness" thereby helping them to adapt to city life more quickly and safely.

Also in the seventies accidents in playgrounds began to hit the headlines. People became consious of the dangers playgrounds posed to their children. Campaigns were started to improve safety standards. As a result several pieces of play equipment were banned from use both here and in Britain, restrictions were put on designs and a lot of existing equipment had to be modified.

The seventies ended and the eighties began with designers still Modifying older designs. As a result new designs are scarce but those that have appeared are both elaborate and highly finished (e.g. the "Space Nets" and "Les Zudoks"). Today "Static Structures" are by far the more popular, much less attention being payed to motor equipment.

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This is with the obvious exception of "Les Zudoks" (but, it must be remembered that this range of equipment was developed in France where there are no play equipment standards restricting design).

play equipment as an educational tool - as important as academic studies - is beginning to catch on. Concern for children's welfare is more topical today than it has ever been. As people are beginning to equate vandalism, depression, suicides etc. more often, with stresses caused by poor urban surroundings and the rapid pace of modern life. Therefore it seems obious that this is the way in which play equipment will continue to develop in the future.

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