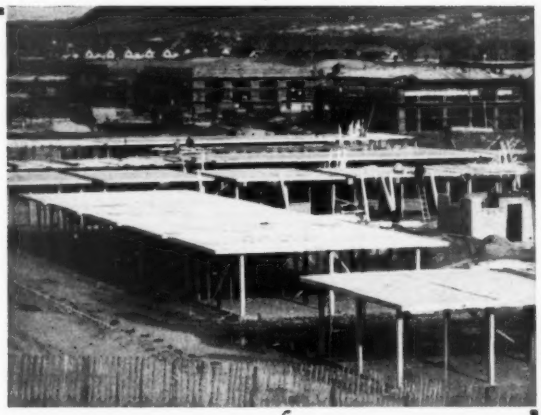
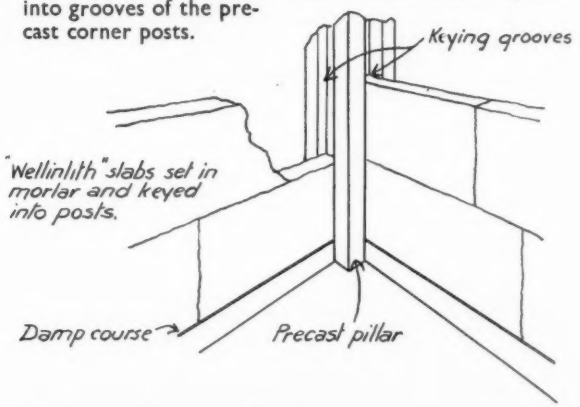
Methods adopted at PRESTATYN in the use of WELLINLITH

LIGHTWEIGHT BUILDING SLAB



In order to speed up erection of the chalets two methods were used thus illustrating the adaptability of Wellinlith Slabs. Above we see one section in which the roofing was completed first whilst on the left the Wellinlith walls were built up and the roofing added.

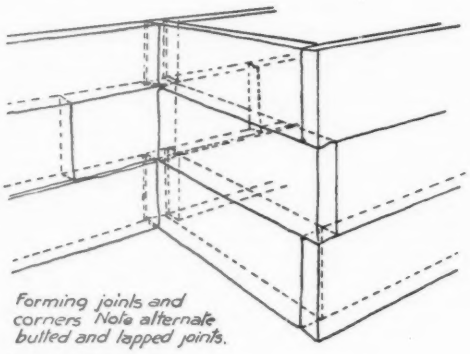
By this means the various trades had no need to wait upon each other. The slabs are set in mortar with broken joint and in this instance were keyed into grooves of the pre-cast corner posts.



Main Buildings

All the internal walls of the main buildings are, with minor exceptions, built of 4 in. Wellinlith slabs reinforced at the joints where the wall is of cavity form.

The speed and ease of erection is readily perceived when you appreciate the size of the slabs shown on the lower right-hand photograph. The lightness of the material enables these large sizes to be easily handled.

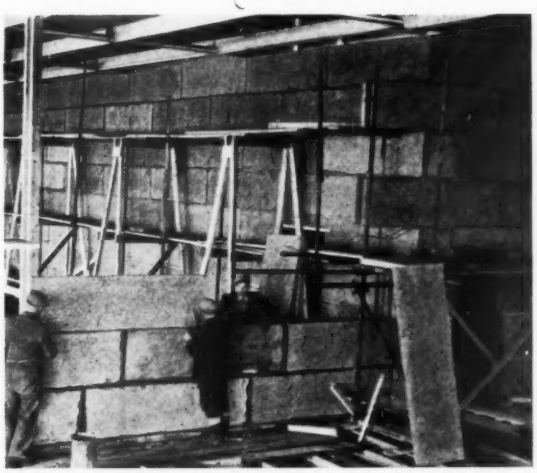


Forming joints and corners. Note alternate butted and lapped joints.

Wellinth slabs supplied in following sizes :—

7′ 0″ × 1′ 11⅛″ × ⅝″, 1″, 1½″, 2″, 2½″, 3″ & 4″

Full particulars and prices from



Note interlocking of slabs on corner above

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THE ARCHITECTS' JOURNAL

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WITH WHICH IS INCORPORATED THE BUILDERS' JOURNAL AND THE ARCHITECTURAL ENGINEER IS PUBLISHED EVERY THURSDAY BY THE ARCHITECTURAL PRESS (PUBLISHERS OF THE ARCHITECTS' JOURNAL, THE ARCHITECTURAL REVIEW, SPECIFICATION, AND WHO'S WHO IN ARCHITECTURE) FROM 9 QUEEN ANNE'S GATE, WESTMINSTER, S.W.1

*

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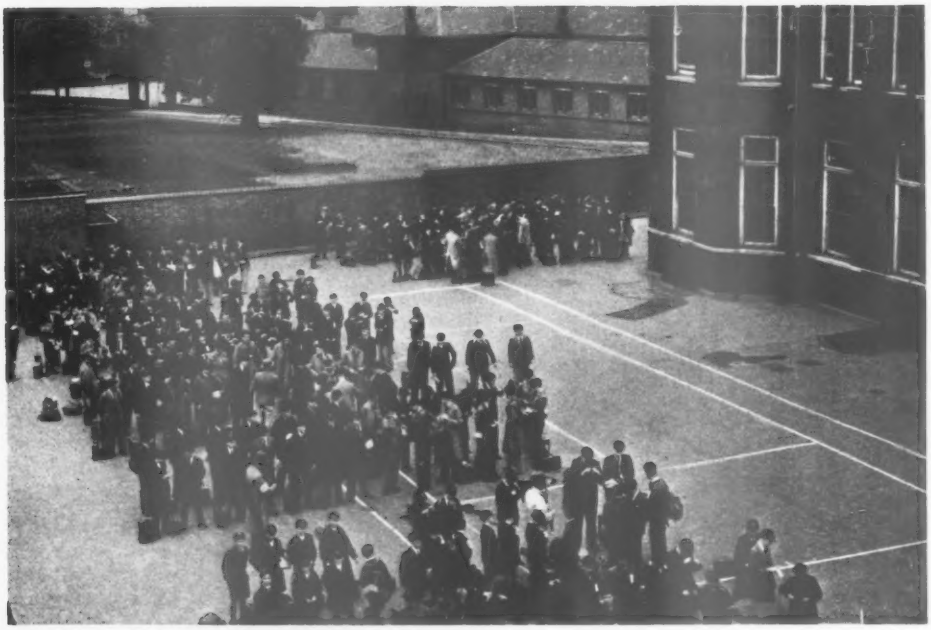
The Editor will be glad to receive MS. articles and also illustrations of current architecture in this country and abroad with a view to publication. Though every care will be taken, the Editor cannot hold himself responsible for material sent him.

THURSDAY, JULY 13, 1939 NUMBER 2321 : VOLUME 90

PRINCIPAL CONTENTS

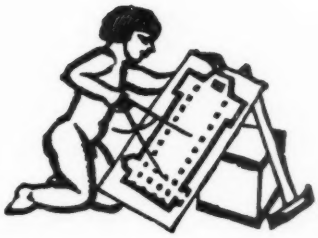
THE PROBLEM OF POPULARITY

Campers, either young people or whole families, were once few in number and scenes like that in the top picture raised no problems.
A very large growth in the popularity of camping has, however, made common the congestion shown in the lower photograph, and considerable protest has been raised against the damage and unsightliness caused by campers. The present problem is to create camps which will keep some of the original attractions of camping, but for much larger numbers, and at the same time be available for evacuated population in time of war.



EVACUATION

The most obvious usefulness of all types of camp at present is the accommodation they would provide for evacuated people in war time. In these photographs the boys of a Chelsea school are shown during a practice for evacuation. Top, examining the hand luggage which the boys suggested taking; centre, preparing to move off; left, the end of the procession.



CAMPS

ALL that has been written and talked about camps in the past two years has left the whole subject in great confusion. The cause of this is that the word "camp" means practically anything according to its context, and though a few phrases to describe particular kinds of camps are commonly used, they are phrases which describe the people who go to the camps and not the camps themselves.

At present we have Holiday Camps, Evacuation Camps, School Camps and several other main types, all of them important ; but there is no general agreement over the siting, layout, accommodation, construction and services which would be the best for each type. And until agreement is reached on all major points confusion will continue.

It is therefore worth recalling the principal developments in camps since 1920.

At that time campers were rare. Apart from Boy Scouts and similar organizations, one or two bell tents might be found in a Welsh valley or beside a Devonshire stream. These tents were occupied by young people, or elderly eccentrics, to whom the isolation, primitive cooking appliances and questionable weather were all part of the fun.

The next development was a great increase in the number of campers. Still mostly young, the newcomers enjoyed everything about the old style camping except the isolation. They liked to be together ; and by not being conscientious in cleaning up when they left their rather crowded sites they caused the first outcries about the damage camping did in rural districts.

The third stage in camping development was when it became popular with the whole family ; this was the beginning of the modern idea of a camp. The cheapness of camping, its complete change from everyday life, and its romance was what appealed to the family. What did *not* appeal was being three miles from shops, handling canvas in wet weather, and cooking on queer appliances. Amateur remedies for these drawbacks—old railway coaches, insanitary huts, and crowded camp sites—led to more protests and repressive action by local councils. But camping still increased in popularity.

In this issue there is illustrated the most recent of several large-scale attempts to give the new type of camping family what it wants. Prestatyn and its well-known predecessors are camps which are weatherproof, gay, and have admirable services. There are plenty of people, lots going on : every reasonable demand can be satisfied on the premises, and no camper is bothered with cooking.

As regards camps for those who can afford about £3 a week per head, Prestatyn and its predecessors have solved the problem.

But this is not the whole story. There are this year 7,750,000 people who will get holidays with pay who cannot possibly afford to pay more than £1 a week per head—if as much. There are school camps to which elementary school children might with great benefit go for a month each year. And there are evacuation camps—most urgent of all.

From the point of view of layout and siting these camps appear to fall into four main groups : the large closely-grouped seaside holiday camp which would not be well suited for any other purpose ; similar smaller camps, not necessarily at the seaside, which could be used both as holidays-with-pay camps and as evacuation camps ; much more informally planned school and evacuation camps (which could also be used by scouts and similar associations) ; and, lastly, informally planned camps of national park type for those families, individuals and hikers who like everything about old-style camping except the tents and the Primus stoves.

The biggest architectural problems involved in camp design hang upon layout and siting. The owners of commercial camps (and in all probability most of their clients) prefer compact layouts for 1,000 people and upwards. And it is obvious that for evacuation camps compactness must, on the whole, have more advantages than disadvantages. But for school and national park camps so much of the meaning of camping would be lost by tight planning that it should be avoided at all costs. How much can be retained in a weatherproof, sanitary and attractive manner for a given sum of money is what architects have now to find out.

But far more important even than layout is the question of *where the new camps are going to be put*. Camps can wreck the appearance of the land quite as easily as any other kind of housing. And they certainly will do so unless their placing is regulated from the start by two rules : camps should never be sited on arable land ; and wherever possible they should be put among trees.

In this issue there are illustrated a large number of camps from many countries. And the JOURNAL hopes this picture-book will help architects to tackle a problem which the need for evacuation is likely to make a matter of first-class importance in the next two years.

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NOTES & TOPICS

CAMPS . . .

THE Camps Question, judged from the proofs of this issue, boils down to two points :—

*

One is the large, compact camp *v.* the small open one. Compact camps for two thousand people and upwards are cheaper to build and to run, can have more of the attractions most visitors seem to love, have several advantages from the point of view of evacuation, and keep a large number of people in one place. But they are, of course, not camps.

*

On the other hand, the small, informally planned camp will not be appreciated by the majority and if badly done will ruin a larger area of countryside. This is a difficult problem.

*

Point *two* is not so difficult but much more urgent. *Where are the camps to be put?* Instantly one decides that —large or small—they should be put among trees and, wherever possible, among hills and beside streams or lakes. As a last resort they can be put in sand dunes ; but *never* on flat, open arable land. And that is just where they will be put if no one makes a fuss.

*

One hopes that the first schools of the Camps Corporation will set an example in siting which can be used as a precedent for all other camps. The " Grow More Food " section of the Commons ought to be easily recruited as allies of amenity in this matter at least.

. . . AND MORE CAMPS

Doubts as to the progress of the Government evacuation camp schemes, and fears as to the possible appearance of the camps themselves should be set at rest by an announcement made last week by the Minister of Health. In this he states that the camps have been designed by Mr. Thomas Tait, of Sir John Burnet, Tait and Lorne, and will be built of standardized units of Canadian cedar, roofed with cedar shingles. Each camp will be laid out on its site by an architect appointed from a panel drawn up in conjunction with the R.I.B.A.

*

As regards progress, over 150 sites have been inspected, and 30 definitely approved. Construction has already started on four, in Hampshire, Buckinghamshire and Oxfordshire, and the first camp will be completed next month.

HOUSES

Those of us who think we know best about what the public ought to like must by now be used to being often disconcerted.

*

If, for instance, we had our way, all domestic living rooms would be planned to face the gardens at the rear, road traffic would be canalized beyond sight and hearing, hospitals would face on to quiet squares instead of busy streets. This sort of planning is of course correct, sane, and logical, but is always being proved as not to the liking of the average man. Houses planned like this do not sell as quickly as the conventional road-facing type. Villages deserted by traffic will be also deserted at weekends by the inhabitants, who will walk miles to the nearest arterial road to spend a day in blissful contemplation of the hurtling automobiles. Remoteness and quiet are pleasures confined as yet to the intellectual. The average man likes an animated scene outside his window. He prefers buses to buttercups and neon signs to glow-worms.

*

In his address last week at the Housing Centre, Sir Charles Bressey once more emphasized this point, which is a perpetual worry to town planners and social reformers alike. The solution, in his view, is for housing authorities and their advisers " *to combat the attraction of the highway by powerful counter-attractions elsewhere.*" Surely one of the most extraordinary remarks that our epoch has given birth to.

Architecture as a Career

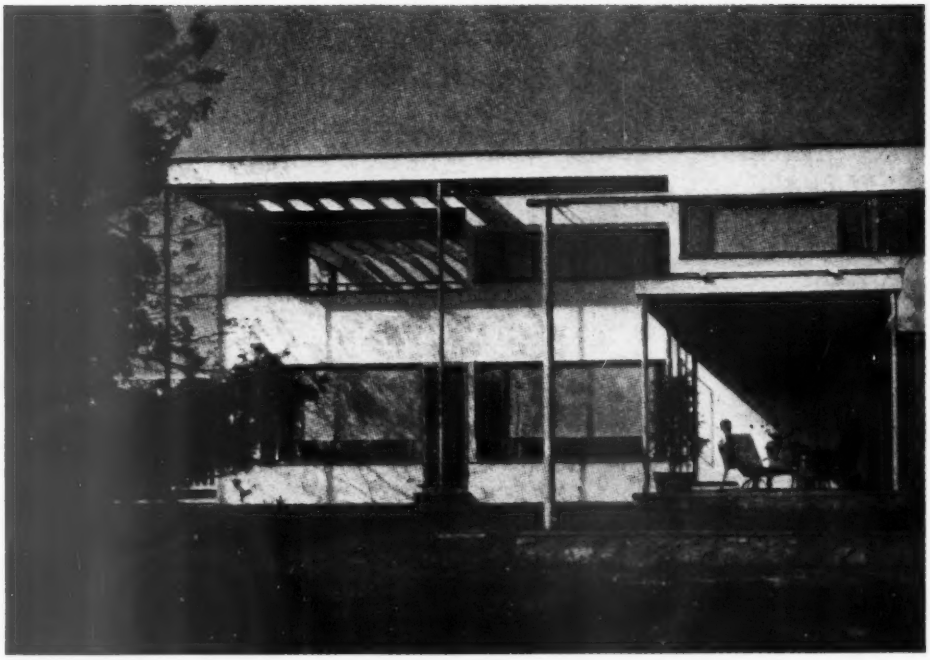
I have just been sent an elaborate *brochure*, bound in imitation morocco, describing architecture as a career. It is published by the Chicago Institute for Research. Though the Institute has a highly qualified editorial board, bristling with PH.D.S, LL.D.S and SC.D.S, their document strikes me as full of dangerous thoughts for intending architects.

*

First, each of the historic styles is described in some fifteen or twenty lines. Samples : " *Gothic* . . . Its chief characteristic is the pointed arch and the subordination of all other features to this. It is therefore an organic architecture." " *Renaissance* . . . was not so much the creation of a new style as the modification of old styles so as to allow more space for decorations." " *Modern* . . . It is impossible to define or set up a style of modern architecture. It cannot be called Greek nor Roman, Gothic nor Renaissance. Modern architecture has combined and used so many different principles that it is a mere waste of time to consider them . . . The new type of architecture is the ' skyscraper.' "

*

Then there is an account of the architect's training.



"For the outstanding student there is the coveted *Prix de Rome*." It will be gathered that the course outlined is more or less the antithesis of the kind of training which the progressive schools in the United States (like Columbia, Harvard, M.I.T.) are now putting into action with increasing vigour.

GROPIUS OF MASSACHUSETTS

The famous head of the Harvard School, Walter Gropius, has recently built a house for himself and his family on a high hill overlooking the broad, tree-covered stretches of the Massachusetts countryside (see above). Among the white-boarded farms and homesteads it no doubt looks unusual to begin with ; but Gropius's increasing followers in the U.S.A. find in it more than rational simplicity.

ART LIES BLEEDING

It is reported that "Adam," Epstein's latest sculpture, is to join "Dr. Buck Ruxton's Dining Room Suite" and "The Human Gasometer" as an exhibit in a Blackpool sideshow. Apparently the news has caused the artist great and understandable distress, though it might be argued that there is fundamentally little difference between a side-show and an art gallery, except in the way the exhibits are "handled." It might also be argued that if art is to reach the public at all, it must do so on the public's own ground, and this is not a soft-carpeted room guarded by a sibilant youth in suede shoes and horn-rimmed spectacles pretending to read Cahiers D'Art.

*

Although the sideshow method is wrong in that it inevitably emphasizes the irrelevant, at least it should help to dispel the inky cloud of suspicion and self-consciousness with which the average man, squid-like, surrounds himself at the sight of anything that might be called ART.

*

The reaction of the Blackpool public to "Adam" should be worth the attention of the Mass Observers.

MR. J. BRADSHAW GASS

Many generations of architects have been filled with awe at mention of Bradshaw Gass and Hope—the famous firm of Bolton, Lancs. So it is sad to record the death, at 84 years of age, of Mr. John Bradshaw Gass, which took place a fortnight after the opening of his most important work in his home town, the Bolton Civic Centre.

*

Not many architects will have realized that, apart from his architectural achievements, Mr. Gass had been a J.P. since 1910, an Income Tax Commissioner since 1912, had been active in the development of technical education in Bolton, was responsible for the organization of University Extension lectures, was for some time chairman of the Turton Education Committee, and way back in '79 won the Cobden prize for political economy from Cambridge University. He was also a painter of considerable powers.

LET ME TELL YOU ABOUT MY OPERATION

Almost you didn't have any Astragal this week, for I was taken for a sailing week-end, and my first duty seemed to be putting some grease into something or other while my host rowed ashore again to get some empty bottles changed. The thing was at the back end underneath a lot of other things and behind pipes and very dark, and when I had finally crawled in and done the job I found I was trapped from the knees upwards. *Really* trapped—so that I couldn't move a single limb either way more than an inch or so without coming up against something solid. And call it claustrophobia if you like, but I was seized with panic and a desire to kick like a high-school girl even if I left my ears behind and all the skin off my elbows.

Taken slowly it was, of course, quite simple in the end ; but a piece of human flotsam confronted the owner when he came back, whistling, at the end of an interminable half-hour. He was tersely ribald over the affair : a sub-human type. I'd tell you who my host was only it would be silly to have a libel action between the two ends of this paper.

ASTRAGAL

NEWS

POINTS FROM THIS ISSUE

SCHOOL CAMPS

Mr. Elliot, the Minister of Health, states in a written Parliamentary answer that the National Camps Corporation, Limited, which has been recognized as the operative company for England and Wales under the Camps Act, 1939, has considered 155 sites for camps, all of which have been inspected by either the chairman or the managing director, and the majority also by departmental officers.

Between thirty and forty camps are likely to be constructed in England and Wales for use as school camps in peace time and evacuation camps in time of war. Thirty sites have so far been found suitable. Two have been given to the Corporation and the others have either been purchased or are the subject of negotiations for purchase.

The camps are being built of standardized units which have been designed by Mr. Tait, of Sir John Burnet, Tait and Lorne, consulting architects to the Corporation. All the buildings are of Canadian cedar, with cedar shingle roofs. Each camp will be laid out on the site by an architect chosen from a panel drawn up in conjunction with the R.I.B.A.

The contracts for making the woodwork for thirty camps were let on May 22 to four different firms. Delivery of these units has already begun and will be spread over some four months. The construction of four camps has been started : one in Hampshire, one in Buckinghamshire, and two in Oxfordshire. It is hoped that seven more will be begun in the course of the next fortnight, and that the first camp will be completed by the end of August.

R.I.B.A.

The R.I.B.A. Intermediate Examination was held in London, Belfast, Edinburgh, Manchester, Newcastle and Plymouth, from May 19 to 25, 1939.

Of the 290 candidates examined 124 passed and 166 were relegated. The successful candidates are as follows :—

Adams, J. T.
Arnold, G. W.
Bailey, H.
Balkwill, R. L.
Bates, J.
Begbey, D. C.
Boagey, (Miss) A. D.
Bowden, C.
Boxall, R. A.
Boyce, B. W.
Bremner, A.
Brewins, C. D.
Brock, J. C.
Brocklesby, P. W.
Brown, A. O.
Butler-Bowdon, A. W.
Claridge, B.
Clark, F.
Clarke, J. E.
Closs, E. R. S.
Clothier, L. E.
Cole, E. G.
Cork, H.
Cox, N. H.
Cripps, A. I.
Curry, H. W.
Dahl, J. B. S.
Darley, E. A.
Davison, T. J. M.
Dovey, G. C.
Dyer, A. J.
Filby, E. T.
French, F. W.
Gainsford, A. P.
Gardner, R.
Gibbins, W. L.
Gloag, H. L.
Goad, L. R.

THE ARCHITECTS' DIARY

Friday, July 14
ROYAL COLLEGE OF ART, *Exhibition Road, South Kensington, S.W.7. Annual Exhibition of Students' Work. Until July 29.* 10 *a.m. to* 5 *p.m.*

Tuesday, July 18
HOUSING CENTRE, 13 *Suffolk Street, S.W.1. Luncheon. "Housing Densities," by Mr. F. J. Osborn.* 1 *p.m.*

Thursday, July 20
FURZEHILL ROAD, *Boreham Wood. Cricket Match. Royal Institute of British Architects and Architectural Association.* 11.30 *a.m.*

Friday, July 21
ARCHITECTURAL ASSOCIATION, 34 *Bedford Square. Annual Exhibition of Work by Students. Opening Ceremony by Lord Sempill on Friday, July* 21, 8.30 *p.m. Until July* 29. 10 *a.m. to* 6 *p.m.*

Saturday, July 22
ARCHITECTURAL ASSOCIATION. *Excursion to Switzerland. Until August* 3.

Tuesday, July 25
HOUSING CENTRE. *Luncheon. "Can We Economize in Building Technique?" by Mr. C. E. Hartland.* 1 *p.m.*

Goody, D. G.
Gordon, A. J.
Greaves, R. A.
Green, D. W.
Grimes, J. W. P.
Ham, A. J. L.
Harrison, J. P.
Harvey, E. G.
Hemingway, R.
Hemmings, L. G.
Hill, D. J.
Hodnett, A. E.
Horlock, L. E.
Houlder, G. T.
Howell, O. J.
Howles, L. A.
Janes, S. E.
Jordan, E. R.
Judges, A. C.
Kennedy, J. F.
King, W. A.
Kirk, S. L.
Kitching, P.
Knight, R. J.
Laing, A. R.
Leach, B. F.
Le Clerc, W. P.
Leggatt, R. W.
Leonard, H. H. A.
Loring, F. D.
Lowden, D. J.
Ludlow, B. G.
Malkin, H. F.
Manning-Sanders, D.
Marriott, D. H.
Marsh, F. H.
Martin, P. H. C.
Moate, F.
Moore, R. I.
Morgan, R. C.
Morris, I. E.
Moulin, L. C.
Murgatroyd, H. I.
Osgood. F. F.
Page, S. G.
Panter, P. J. H.
Paton, A. G.
Pitt, H. S.
Pitt, R. A.
Poore, M. V. F.
Potter, J. E.
Read, J. W.
Reynolds, D. A. R.
Robinson, B.
Rostron, J.
Rushworth, J. N
Scadding, E. F.
Schutte, C. H. T.
Searles, D. F.
Simpson, M. J.
Slater, J. M.
Sturdy, J. F.
Suter, R. E.
Sutton, R. W.
Tancock, B. J.
Tate, J. W.
Thirsk, J.
Thompson, L.
Tunstill, J. B.
Turner, R. W.
Twist, K. C.
Versino, A. G.
Wakefield-Brand, C. P.
Walker, D. E.
Ward, B. V.
Wardley, J. A.
Waring, A. S.
Warner, J. W.
Watson-Smith, E.
Wells, R. P. B.
Westaway, R. J.
White, K. C.
Whitehouse, J. D.
Wilkins, J. P.
Williams, C. L.
Williams, F. C.

NEWS IN BRIEF

● The City of Edinburgh Education Committee's competition for a new primary school at Tanfield has resulted as follows :—1, Carr and Howard, A.R.I.B.A., 30 Rutland Square, Edinburgh ; 2, Reid and Forbes, FF.R.I.A.S., 17 Great Stuart Street, Edinburgh.

The designs are on exhibition in the City Education Department Library, St. Giles Street, Edinburgh, until July 14, 10 a.m. to 4 p.m.

● Doncaster Town Council have submitted plans to the Board of Education for a £250,000 scheme for extensions to Doncaster Technical College.

LETTERS

"Houses We Live In"

SIR,—Your leading article of July 6 is of particular interest to me owing to the recent efforts of the Housing Centre in the direction which you advocate in your last paragraph.

The book, "Houses We Live In," was made the basis of two posters which we have used in our present exhibition, "Housing in Great Britain," This exhibition was organized to interest school children, some 300 of whom are visiting the Centre after their summer examinations.

When we come to explain the two posters in question, we ask the children first, which set of photographs shows the houses they prefer. So far the large majority have replied immediately that they prefer those described as bad. An interesting argument has followed, and as there was not time to follow it up, the master or mistress in charge has been persuaded to buy a copy of the book so that further discussion can take place with the teachers in school.

The replies we receive from the children bear out the argument made by many builders that they must build houses like this if they wish to sell them. These children from our secondary schools are their future purchasers. The objection to the plain house in a terrace or row is not always based on its similarity to the "council house," but this is undoubtedly a fundamental consideration among those who like to feel that their independence is expressed in their home. Other arguments put forward are often based on taste alone, a preference for "variety" as against "monotony," "decoration" against "plainness."

I feel that the improvement which we hope to see in our domestic building will come only as a result of education. The Minister of Health can do much. He has already done something by the publication of this book. The Board of Education should also be able to co-operate. The final verdict rests with the individual householder, so long as he remains free to choose what he wants. It is our aim at the Housing Centre to develop an informed public opinion on this and other housing problems, which will secure the best results for the nation without interfering with the freedom of choice of the individual.

A. M. LUPTON,
Vice-Chairman,
The Housing Centre.

A CORRECTION

We regret that in our issue for July 6 we omitted to state that Messrs. Chas. P. Kinnell were subcontractors for high-pressure heating in Messrs. Johnson & Phillips's factory at Charlton.

The Architects' Journal Library of Planned Information

INFORMATION SHEET

SUPPLEMENT

SHEETS IN THIS ISSUE

745 Structural Steelwork

746 Metalwork

All the Information Sheets published in The Architects' Journal Library of Planned Information since the inception of the series to the end of 1938 have been reprinted and are available in five volumes. Price 21s. each.

Sheets issued since index :

701 : Tile Hanging
702 (420 revised) : Fixing Insulating Board
703 : Sheet Metals
704 : Plan Elements
705 : Metal Work
706 : Plan Elements
707 : Furniture Layout
708 : Plan Elements
709 : Flue Construction
710 : Natural Lighting
711 : Glass and Glazing
712 (109 revised) : Quarry Tiles
713 : Glass and Glazing
714 : Metalwork
715 (106 revised) : Hot Water Radiators (Pressed Steel)
716 : Furniture Layout
717 : Metalwork
718 : Flooring Materials
719 : Plumbing
720 : Water Heating
721 : Wall Facing Materials and Wallboards
722 : Roofing
723 : Metalwork
724 : Timber Construction
725 : Sanitary Fittings
726 : Metalwork
727 : Waterproof Jointing and Bedding
728 : Timber Construction
729 : Steelwork
730 : Wall Facing Materials and Wallboards
731 : Metalwork
732 : Concrete Construction
733 : Structural Steelwork
734 : Metalwork
735 : Plumbing
736 : Structural Steelwork
737 : Structural Steelwork
738 : Metalwork
739 : Plan Elements
740 : Timber Construction
741 : Structural Steelwork
742 : Metalwork
743 : Wall Finishes
744 : Waterproofing and Damp-proofing

THE USE OF JOISTS & CHANNEL SECTIONS AS BEAMS:

Joists are primarily intended to be used as beams, and the standard sections can be used for this purpose up to the following limits when uniformly loaded on simply supported spans and when fully stressed.

TABLE 1.

MAXIMUM BENDING MOMENT.		MAX. SPAN.
Ton. Ft.	lb. ins.	Ft.
141.	$3{\cdot}79 \times 10^6$	48.

Greater spans can be used if either:

(a.) the stress is reduced so that the deflection does not exceed 1/325 of the span;

or (b.) instead of being free the ends are restrained, provided again that the deflection does not exceed that given under (a).

The required section modulus can be found from:

TABLE 2.

BENDING MOMENT M, in	REQUIRED SECTION MODULUS FOR SPANS not greater than 24 times the depth.	REQUIRED SECTION MODULUS FOR SPANS greater than 24 times the depth.
TON. FT.	1·5 M	$\frac{M\,l}{16\,d}$
TON. In.	·125 M	$\frac{M\,l}{192\,d}$
lb. In.	$\frac{M}{18\,000}$	$\frac{M\,l}{430{,}000\,d}$

l = span
d = depth of joist } in the same units.

TABLES SHOWING COMPARATIVE ECONOMIC EFFICIENCY OF BS. JOISTS & CHANNELS:

TABLE 3, I JOISTS: *

JOIST SIZE, Ins. x Ins.	SECTION MODULUS.	EFFICIENCY COEFFICIENT.
3 x 1½	1·11	0·278
3 x 3	2·54	0·299
4 x 1¾	1·83	0·366
4 x 3	3·89	0·389
4¾ x 1¾	2·83	0·435
5 x 3	5·47	0·496
5 x 4½	10·01	0·500
6 x 3	7·00	0·584
6 x 4½	11·57	0·579
6 x 5	14·57	0·582
7 x 4	11·29	0·708
8 x 4	13·91	0·774
8 x 5	22·42	0·800
8 x 6	28·76	0·821
9 x 4	18·03	0·859
9 x 7	46·25	0·925
10 x 4½	24·47	0·978
10 x 5	29·25	0·976
10 x 6	40·96	1·02
10 x 8	57·74	1·05
12 x 5	36·84	1·15
12 x 6 L.	52·79	1·20
12 x 6 H.	62·63	1·16
12 x 8	81·30	1·25
13 x 5	43·62	1·25
14 x 6 L.	63·22	1·38
14 x 6 H.	76·19	1·34
14 x 8	100·80	1·44
15 x 5	57·13	1·36
15 x 6	65·59	1·46
16 x 6 L.	77·26	1·55
16 x 6 H.	90·63	1·46
16 x 8	121·74	1·62
18 x 6	93·53	1·70
18 x 7	127·91	1·70
18 x 8	143·56	1·79
20 x 6½	122·62	1·89
20 x 7½	167·29	1·88
22 x 7	152·44	2·04
24 x 7½	211·09	2·23

* See note 1 (a) on back of this Sheet.

TABLE 4, [CHANNELS: *

CHANNEL SIZE, Ins. x Ins.	SECTION MODULUS.	EFFICIENCY COEFFICIENT.
3 x 1½ L.	1·22	0·26
3 x 1½ H.	1·29	0·25
4 x 2 L.	2·53	0·36
4 x 2 H.	2·69	0·34
5 x 2½ L.	4·75	0·46
5 x 2½ H.	5·00	0·44
6 x 3 x 12·41 lb.	7·09	0·57
6 x 3 x 13·64 lb.	7·45	0·55
6 x 3 x 16·51 lb.	8·76	0·53
6 x 3 x 17·53 lb.	9·06	0·52
6 x 3½ L.	9·63	0·58
6 x 3½ H.	10·23	0·55
7 x 3 L.	9·36	0·66
7 x 3 H.	10·34	0·61
7 x 3½ L.	12·24	0·67
7 x 3½ H.	12·89	0·64
8 x 3 L.	11·68	0·73
8 x 3 H.	12·75	0·68
8 x 3½ L.	15·14	0·75
8 x 3½ H.	16·32	0·70
9 x 3 L.	13·89	0·80
9 x 3 H.	14·97	0·75
9 x 3½ L.	18·36	0·82
9 x 3½ M.	18·90	0·80
9 x 3½ H.	19·84	0·78
10 x 3 L.	16·53	0·86
10 x 3 H.	17·53	0·82
10 x 3½ L.	21·90	0·89
10 x 3½ H.	23·90	0·84
11 x 3½ L.	25·80	0·96
11 x 3½ H.	27·81	0·91
12 x 3½ L.	26·62	1·01
12 x 3½ H.	29·02	0·95
12 x 4 L.	33·35	1·06
12 x 4 H.	36·47	0·99
13 x 4 L.	37·98	1·14
13 x 4 H.	41·64	1·07
15 x 4 L.	46·55	1·28
15 x 4 H.	51·05	1·21
17 x 4 L.	61·20	1·38
17 x 4 H.	66·98	1·31

* See note 1 (b) on back of this Sheet.

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INFORMATION SHEET

• 745 •

STRUCTURAL STEELWORK

Subject : Economical Beam Sections

General :

This series of Sheets on steel construction is not intended to cover the field of engineering design in steel, but to deal with those general principles governing economical design which affect or are affected by the general planning of the building. It also deals with a number of details of steel construction which have an important effect upon the design of the steelwork.

Both principles and details are considered in relation to the adjoining masonry or concrete construction, and are intended to serve as a guide in the preliminary design of a building, so that maximum economy may be obtained in the design of the steel framing.

This is the sixth Sheet of the series, and sets out in tabular form the comparative economic efficiency of joist and channel beam sections for given sets of conditions.

Beam Sections :

Practically every rolled steel section may be used as a beam, although certain sections, specially produced for that purpose, are more efficient than others.

1. The simple sections are :
   - (*a*) Joists.
   - (*b*) Channels.
   - (*c*) Angles (equal and unequal).
   - (*d*) Tees.
   - (*e*) Plates.
   - (*f*) Troughs.
   - (*g*) Flange rails.
   - (*h*) Bridge rails.
   - (*i*) Z sections.
2. Common compound sections are :
   - (*a*) Plated joists.
   - (*b*) Plated channels.
   - (*c*) Plate girders.

Special asymmetrical sections are usually of advantage when beams are subjected to longitudinal forces in addition to the transverse forces causing bending, and also when axially loaded members are subjected to bending.

1 (*a*) (Joist sections). Of joists having the same section moduli, the most economical will be the deepest—provided, of course, that the depth can be accommodated without increasing the head room and consequently the cube of the building.

The efficiencies of various joist sections for beams on spans not exceeding 24 times their depths can be compared by means of the coefficients in Table 3 on the front of this Sheet, in which the coefficients are the section moduli divided by the weights per ft. run. The higher the efficiency coefficient the more economical will be the section. For different sections working in combination the average of the individual efficiency coefficients should be taken.

1 (*b*) (Channel sections). Being asymmetrical, channels as beam sections are inferior to joists. Due to the one-sided flanges the section modulus for a given depth is smaller in proportion to the weight than in the case of joists.

Under certain conditions, however, channels are frequently of advantage, namely :

(i) As purlins (ease of attachment by angle cleats).

(ii) In pairs as continuous or cantilever beams passing one on either side of a column.

(iii) As curved beams.

Channels can also be used back to back forming the equivalent of a joist section, but affording usually a heavier web.

Table 4 on the front of this Sheet gives the efficiency coefficients for channels as beams on spans not exceeding 24 times the depths.

Other Conditions :

Joist and channel sections as beams having a span greater than 24 times their depths, as well as all the other sections 1 (*c*) to 2 (*c*), must be investigated individually for the actual conditions obtaining. General criteria for their efficiencies, therefore, cannot be given.

Previous Sheets :

No. 729—Basic Steel Sections.
No. 733—Mechanics of Sections, 1.
No. 736—Mechanics of Sections, 2.
No. 737—Economical Framing, 1.
No. 741—Economical Framing, 2.

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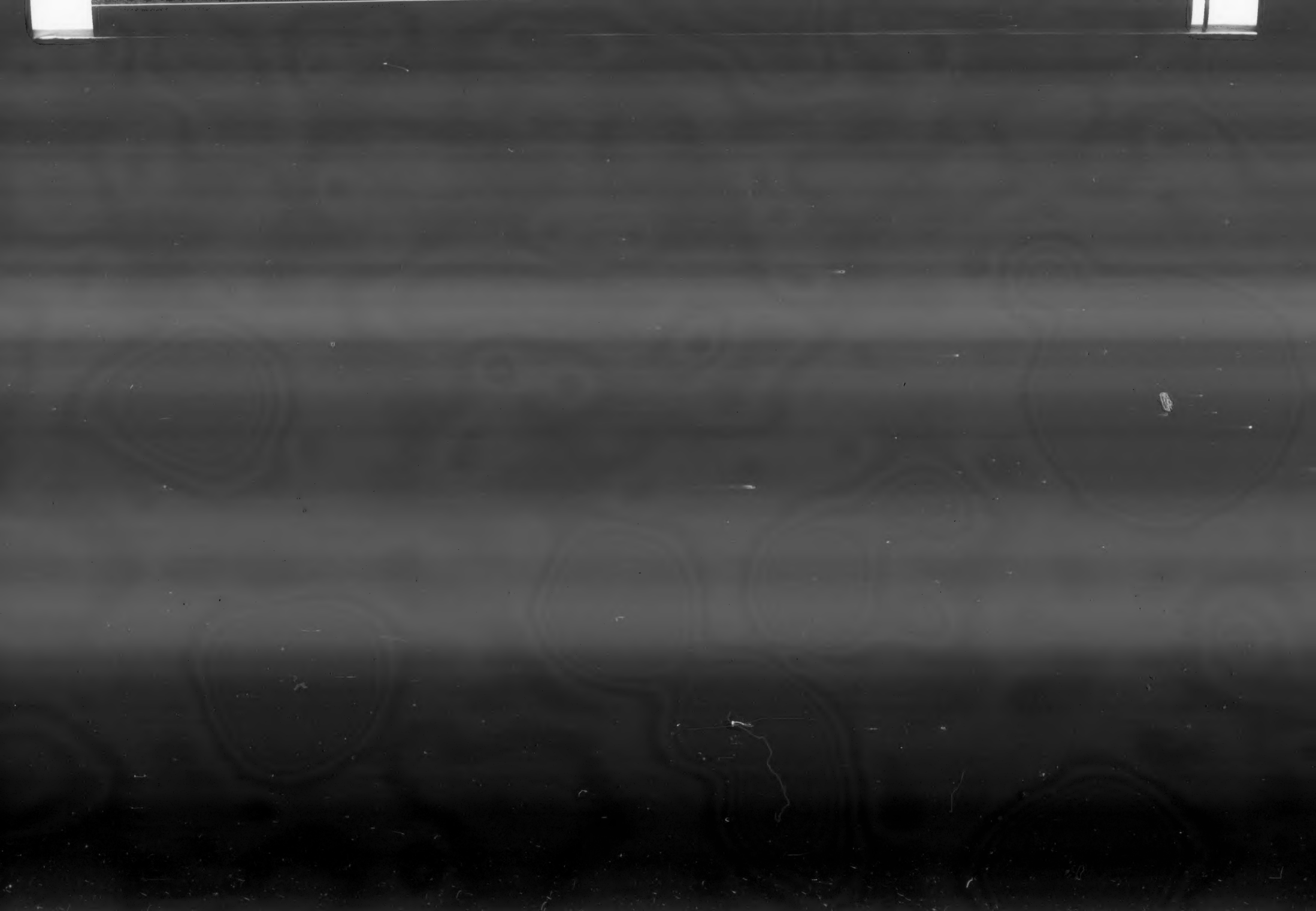
Telephone : Victoria 8571



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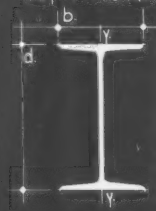
COMMERCIAL SIZES OF ALUMINIUM STRUCTURAL SECTIONS. CONDENSED LISTS GIVING DIMENSIONS & LOADINGS OF I's, E's & T's USED AS STRUTS:

FABRICATION : These sections are produced by extrusion, & sections falling entirely within a circle of 12" diameter can be produced. Almost all the alloys used develop their maximum physical properties after appropriate heat treatment.

MAX. LENGTHS : (a.) Heat treated sections : 70 ft. (b.) Other sections : any lengths - generally determined by transport difficulties.

TABLE 1: GIVING TOTAL AXIAL LOADS IN TONS ON I-SECTS. USED AS COLUMNS OR STRUTS FOR DIFFERENT LENGTHS.

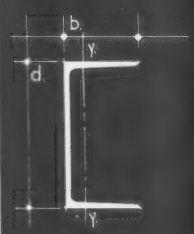
I - sections, Alloy : N A.13 SQA.



SIZE d. x b. inches.	THICKNESS t. inches.	HEIGHT IN FEET. * 2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.
3 x 1½	•	4·65	2·96	1·90	1·29	•	•	•	•	•	•	•	•	•
3 x 3	•	12·80	11·80	10·40	8·59	6·90	5·49	4·51	3·64	3·01	2·54	•	•	•
4 x 1¾	•	6·11	4·19	2·76	1·73	1·32	•	•	•	•	•	•	•	•
4 x 3	•	14·80	13·50	11·70	9·50	7·50	6·00	4·80	3·92	3·33	2·71	•	•	•
4¾ x 1¾	•	8·10	5·88	3·72	2·52	1·80	•	•	•	•	•	•	•	•
5 x 3	•	16·40	15·00	13·00	10·60	8·34	6·67	5·34	4·35	3·70	3·02	•	•	•
5 x 4½	•	31·40	29·90	28·50	26·50	24·20	21·80	18·80	16·30	14·00	12·10	10·60	9·20	8·01
6 x 3	•	17·60	16·00	13·60	10·80	8·53	6·71	5·30	4·34	3·55	•	•	•	•
6 x 4½	•	31·10	29·50	27·90	25·40	22·70	19·50	16·80	14·00	12·10	10·40	8·83	7·78	6·80
6 x 5	•	39·50	37·70	36·00	34·00	31·40	28·20	25·10	21·60	18·80	16·20	14·40	12·70	10·80
7 x 4	•	24·70	23·30	21·50	18·90	16·10	13·50	11·20	9·39	7·89	6·62	5·62	4·92	4·27

TABLE 2: GIVING TOTAL AXIAL LOADS IN TONS ON E-SECTS. USED AS COLUMNS OR STRUTS FOR DIFFERENT LENGTHS.

E - sections, Alloy : N A.13 SQA.



3 x 1½ x 1·64 lb	6·18	4·84	3·39	2·45	1·74	1·30	•	•	•	•	•	•	•
3 x 1½ x 1·82 lb	6·85	5·37	3·75	2·72	1·93	1·44	•	•	•	•	•	•	•
4 x 2 x 2·53 lb	10·20	9·09	7·39	5·63	4·35	3·41	2·62	2·16	•	•	•	•	•
4 x 2 x 2·82 lb	11·40	10·10	8·25	6·30	4·86	3·81	2·93	2·41	•	•	•	•	•
5 x 2½ x 3·64 lb	15·40	14·30	12·80	10·90	8·90	7·09	5·87	4·79	3·96	3·44	2·84	•	•
5 x 2½ x 4·01 lb	16·90	15·70	14·10	12·00	9·80	7·79	6·47	5·27	4·35	3·78	3·13	•	•
6 x 3 x 4·42 lb	19·10	18·00	16·70	15·00	13·10	10·00	9·19	7·70	6·62	5·49	4·71	4·16	3·54
6 x 3 x 4·86 lb	21·00	19·80	18·40	16·50	14·40	11·00	10·10	8·49	7·30	6·03	5·20	4·59	3·90
6 x 3 x 5·88 lb	25·40	23·90	22·30	19·80	17·20	14·40	12·00	10·10	8·61	7·15	6·12	5·48	4·62
6 x 3 x 6·25 lb	27·00	25·40	23·60	21·20	18·70	14·10	12·90	10·90	9·40	7·76	6·67	5·90	5·00
6 x 3½ x 5·87 lb	25·90	24·60	23·40	21·90	19·80	17·80	15·40	13·30	11·40	9·90	8·69	7·50	6·54
6 x 3½ x 6·60 lb	29·00	27·60	26·30	24·60	22·20	20·00	17·30	14·90	12·80	11·10	9·75	8·42	7·35
7 x 3 x 5·07 lb	21·90	20·60	19·10	17·10	15·00	11·40	10·50	8·80	7·60	6·28	5·40	4·76	4·05
7 x 3 x 6·08 lb	26·30	24·90	23·00	20·70	18·00	13·80	12·60	10·60	9·12	7·55	6·50	5·74	4·87
7 x 3½ x 6·50 lb	28·60	27·20	25·90	24·00	22·00	19·40	16·90	14·50	12·50	10·80	9·40	8·07	7·10
7 x 3½ x 7·19 lb	31·70	30·10	28·60	26·80	24·20	21·80	18·80	16·20	13·90	12·10	10·60	9·20	8·00

TABLE 3: GIVING TOTAL AXIAL LOADS IN TONS ON T-SECTS. USED AS COLUMNS OR STRUTS FOR DIFFERENT LENGTHS.

T - sections, Alloy : NA.13 SQA.

1½ x 1½	¼	2·59	1·59	0·98	0·65	•	•	•	•	•	•	•	•	•
2 x 2	¼	4·21	3·12	2·13	1·50	1·09	•	•	•	•	•	•	•	•
2½ x 2½	¼	5·71	4·76	3·60	2·61	1·96	1·48	1·15	•	•	•	•	•	•
2½ x 2½	⅜	8·40	7·05	5·49	4·00	3·04	2·30	1·83	•	•	•	•	•	•
3 x 3	⅜	10·60	9·50	7·95	6·29	4·86	3·85	3·02	2·48	2·00	•	•	•	•
4 x 3	⅜	13·10	12·30	11·40	10·10	8·79	7·32	6·05	5·11	4·31	3·41	3·08	2·78	2·33
4 x 3	½	17·00	16·10	14·90	13·10	11·30	9·44	7·80	6·60	5·56	4·65	3·92	3·53	2·99
4 x 4	⅜	14·90	13·90	12·80	11·20	9·40	7·76	6·32	5·40	4·44	3·75	3·27	2·75	•
4 x 4	½	19·60	18·40	16·90	14·90	12·60	10·60	8·64	7·34	6·14	5·12	4·43	3·77	•
5 x 3	⅜	15·00	14·10	12·90	11·40	9·62	8·10	6·60	5·61	4·70	3·92	3·39	2·89	•
5 x 3	½	19·60	18·40	16·90	14·90	12·60	10·60	8·64	7·34	6·14	5·12	4·43	3·77	•
5 x 4	⅜	17·40	16·40	15·70	14·80	13·50	12·20	10·50	9·12	7·85	6·85	6·03	5·18	4·58
5 x 4	½	22·90	21·80	20·70	19·50	17·90	16·20	14·20	12·50	10·60	8·88	8·10	7·09	6·14
6 x 3	⅜	16·90	15·80	14·40	12·60	10·50	8·70	7·10	6·00	4·90	4·16	3·67	3·06	•
6 x 3	½	22·00	20·60	18·60	16·20	13·50	10·90	9·00	7·58	6·15	5·20	4·55	3·85	•
6 x 4	½	25·60	24·50	23·40	22·10	20·40	18·40	16·20	14·30	12·50	10·80	9·52	8·45	7·28
6 x 4	⅝	31·50	30·10	28·80	27·10	25·10	22·60	19·90	17·60	15·40	13·30	11·70	10·40	8·94
6 x 6	½	31·10	29·90	28·70	27·40	25·70	23·60	21·40	19·10	16·90	14·70	12·90	11·50	10·20
6 x 6	⅝	38·50	37·00	35·50	33·40	31·90	29·30	26·50	23·60	21·00	18·20	16·00	14·20	12·60

*(A.) The loads are based on the 'effective length' specified in the L.C.C. Building Bylaw N°86 for proper positional restraint at each end but imperfect rotational restraint. for other conditions of end fixing the loads must be modified accordingly.

(B.) In the above 3 tables the values given to the right of or above the zig-zag lines may be applied to secondary compressive members but they should not be applied to main structural struts or columns. for the latter the values lie to the left of the zig-zag lines, the criterion being a slenderness ratio of 150.

Information from the Northern Aluminium Company Limited.

INFORMATION SHEET : ALUMINIUM : N° 19, STRUCTURAL SECTIONS, 3.

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INFORMATION SHEET

• 746 •

METALWORK

Subject : Aluminium Alloy Structural Sections, 3

General :

This is the third of four Sheets listing the dimensions and loading of the commercial sizes of aluminium alloy structural sections, and deals with I beams, channels and tees of regular section, used as struts.

Loading :

The tabulated values are the total axial loads in tons based on the effective length specified for proper positional restraint at each end but imperfect rotational restraint. For other conditions of end fixing the loads must be modified accordingly. It will be noted that considerations of buckling have determined most of these loads.

Section Types :

Many of the sizes enumerated are obtainable from stock dies in several different flange and web thicknesses, with and without taper flanges. Other stock types are extruded with roots and toes square and not rounded. Others again have the heel, toe and other radii variously placed in relation to the front and back faces.

In addition to the regular sections shown, a wide range of irregular shapes is produced in each of the three basic forms given. These non-standard sections can be extruded at slight extra cost to almost any degree of complexity.

After extrusion, the shapes may be heat treated to develop their maximum mechanical properties.

A full classification is given in the Noral Handbook, Section C.

Fabrication and Use :

For a description of the alloys used for structural sections, the uses of these, and the methods of insulation and fabrication, see Sheet No. 738, Aluminium Structural Sections, 1.

Mechanical Properties :

The comparative strengths of the alloys most widely used for structural purposes are given on Sheet 738. Clauses related to assembly, cutting, machining, riveting and welding of wrought aluminium alloys are given on Sheet 501.

Resistance to Corrosion :

For notes on insulation and the resistance of aluminium alloys to galvanic corrosion, see remarks on the reverse side of the first and second Sheets of this series.

Finishing :

For a brief description of surface finishes see Sheet No. 505.

Previous Sheets :

Previous Sheets of this series dealing with the architectural uses of aluminium are Nos. 492, 501, 504, 505, 510, 661, 669, 673, 680, 686, 714, 717, 723, 726, 731, 734, 738, and 742.

Issued by : The Northern Aluminium Company, Limited

Address : Bush House, Aldwych, London, W.C.

Telephone : Temple Bar 8844

CAMPS

Evacuation. A girls' school passing an adjoining boys' school during a practice evacuation in London.

IN the event of war it has been estimated that between two and eight million persons should be removed from urban to rural areas. And it is as accommodation for these evacuated children and adults that the building of camps on a considerable scale is now being advocated. Such camps present a problem which no high-speed erection of military hutments can solve; for camps of this type would be very unsuitable for children and elderly people in bad weather and they would have no alternative civilian use.

On the other hand, well-equipped holiday camps have now become very popular and under the holidays-with-pay scheme some seven million people will be wondering this year where to spend a cheap, healthy holiday, and no doubt larger numbers in future years. At the same time 18 local authorities have adopted the idea of school camps at which children from urban areas can spend a fortnight or so each summer in a rural area. There is little doubt that this movement will also increase.

These three camping requirements point to the building of two main types of permanent camp—Holiday and Evacuation Camps for either individual adults or families, and School and Evacuation Camps of a more openly planned and informal type.

In its review of camps on the following pages the JOURNAL first illustrates the latest of the large holiday camps to be built in Britain; it then describes many types of camp in this country and abroad and finally outlines the problems of planning and construction involved in camp design with special reference to the recent Building Centre Competition.

The original holiday camp. From these beginnings the holiday camp has grown in popularity. . .

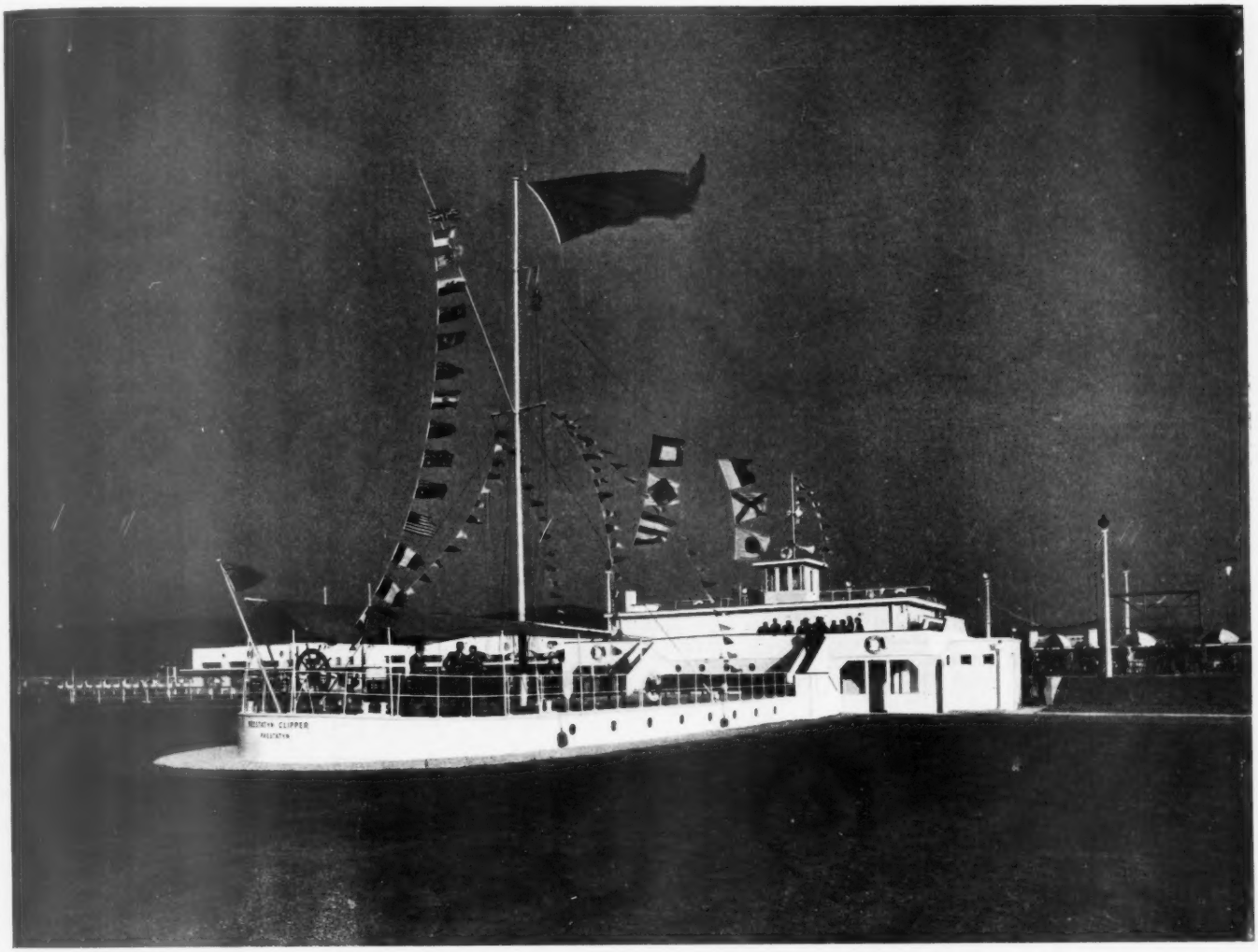
. . . Until it has reached the huge size and many conveniences and attractions of the modern holiday camp.

PRESTATYN HOLIDAY CAMP

DESIGNED BY WILLIAM H. HAMLYN

The central court from the covered way between Dining and Recreation and Reception blocks. The Dining Room is in the background.

PROBLEM—*Holiday camp for British Holiday Estates, Ltd. (L.M.S. Railway and Thomas Cook and Son, Ltd.) at Prestatyn, Flintshire, about two miles from Rhyl. The site, 58 acres in extent, runs along the coast for nearly one-third of a mile. There are 900 chalets, accommodating 1,700 persons, with buildings for dining, recreation and administration, swimming pool, tennis courts, bowling greens, running track, roller-skating rink, and children's playground. In the dining block all the visitors can take meals at one sitting. In the dining block also is a ballroom and concert hall with maple floor, enabling 600 couples to dance at one time. The ballroom has a fully-equipped stage and dressing-rooms and a lounge bar. The reception block includes a reception hall with enquiry and travel bureau, administrative offices, banking facilities, main lounge and bar, gymnasium and billiard-room, and a shopping centre.*

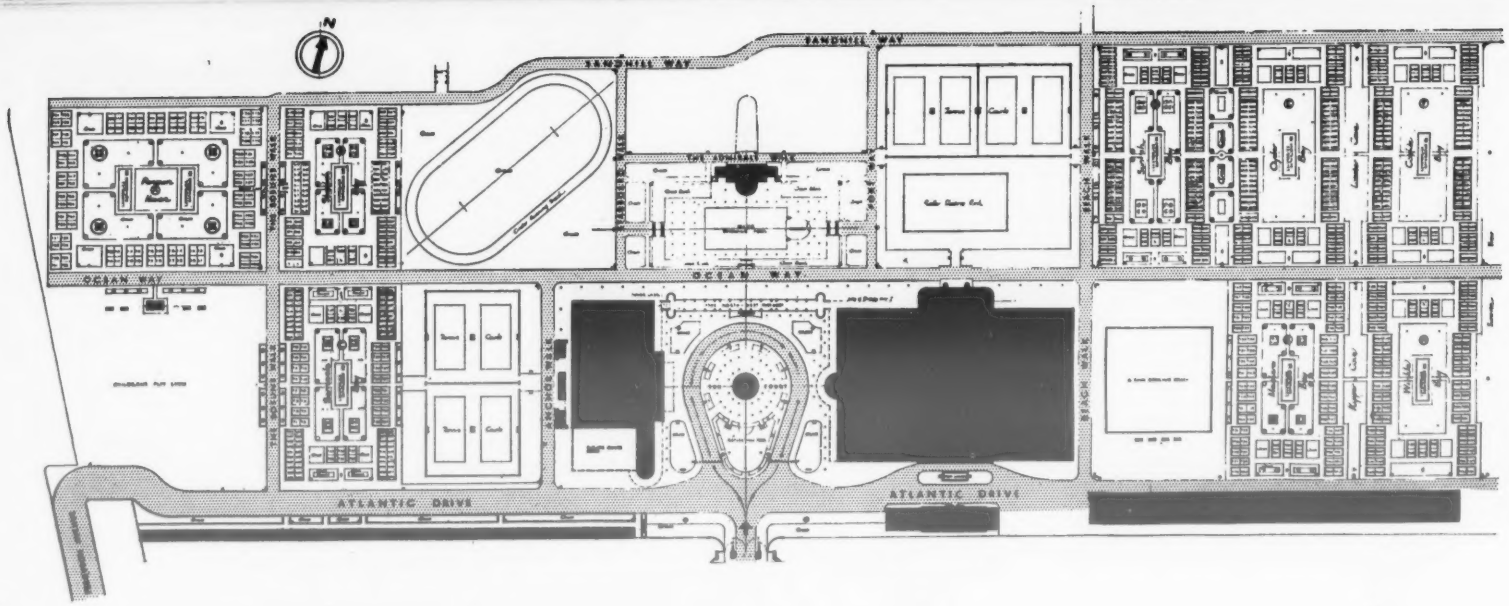


The "Clipper": the representation of a ship complete from wheelhouse to stern. The afterdeck, 100 ft. by 30 ft., is used for deck games and the upper bridge as a control tower and judges' stand for competitions.

CONSTRUCTION—MAIN BUILDINGS—*The reception block and dining block are similar in construction. Steel stanchions carrying longitudinal steel beams and cross beams support the roof trusses. These are designed with exceptionally long spans and a low rise, the dining room, 186 ft. long and 96 ft. wide, having only two supporting columns on the longitudinal axis. The whole of the brickwork for these buildings was completed in five weeks—approximately a fortnight after the steelworkers had finished. The roof was carried out in a similar sequence; working from one side of the building after the steel erectors, carpenters fixed the purlins at one side of the job, and were followed by the roof boarding. The whole of the timber work in the roof is whitewashed two coats to resist fire. Roof covering, patent bituminous felt and screeding. Asbestos ceiling boards 6 ft. by 2 ft. are used as filling for the panels, which are fixed with wood or metal wedges into the 1½-in by ¾-in. pressed steel tees which in turn are hung from the ceiling joists laid at 6 ft. centres. The cross tees, with a small piece of flange cut away at the ends, are laid across the longitudinal tees and are held in position by the wedging of the boards.*

Entrance to one of the two lounge bars.

PRESTATYN HOLIDAY CAMP • By William H. Hamlyn

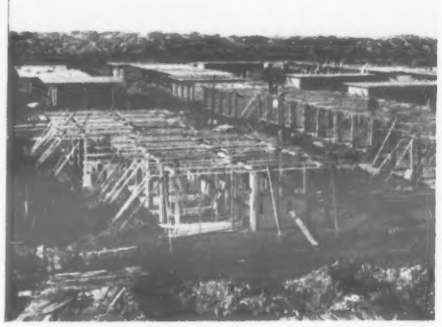


Lay-out Plan. The administration, dining and recreation buildings are in the centre surrounded by games fields, and the chalets and lavatory accommodation are grouped around courts on either side.

1

2

3



4

In order to cut down labour costs, chalets were grouped into two halves for erection purposes. In one half the timber posts and roof timbering were completed first and the wood-wool fibre wall-slabs were added later (1 and 2). In the other half the wall-slabs were built in rough wood guides and the permanent timber posts and roof timbering were added later (3 and 4).

CONSTRUCTION—CHALETS—*On the site of each chalet a 4-in. concrete raft was laid reinforced with R. C. fabric supplied in flat sheets to the size required. Concrete posts 6 in. by 6 in. having grooves 2½ in. by 1 in. were erected at the angles of the chalets and at intermediate points. Where the posts rest on the concrete the raft was thickened to form a footing and a hole left to take a dowel at the foot. At the top each post is carried through a 6 in. by 3 in. timber plate to support the roof, the plate being braced at angles and intersections by a steel angle gusset screwed to the timber. The wood-wool fibre building slabs are bedded in three to one cement mortar and carried into the grooves of the concrete posts. Roofs are 3 in. by 2 in. rafters notched on to a central ridge to give the necessary fall without the use of fillets, covered with ¾ in. sawn boarding and two layers of bituminous sheeting. The plaster rendering to the slabs is finished with the wood float, except behind the wash basins where a panel is smooth rendered to take enamel paint. Windows are standard cottage section rustproofed steel sashes with horizontal bars. The disposal of rainwater from the roofs is by 2 in. asbestos cement pipes.*

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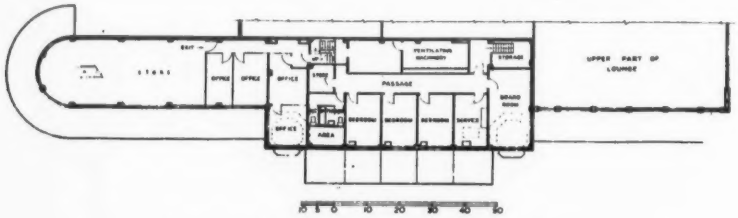
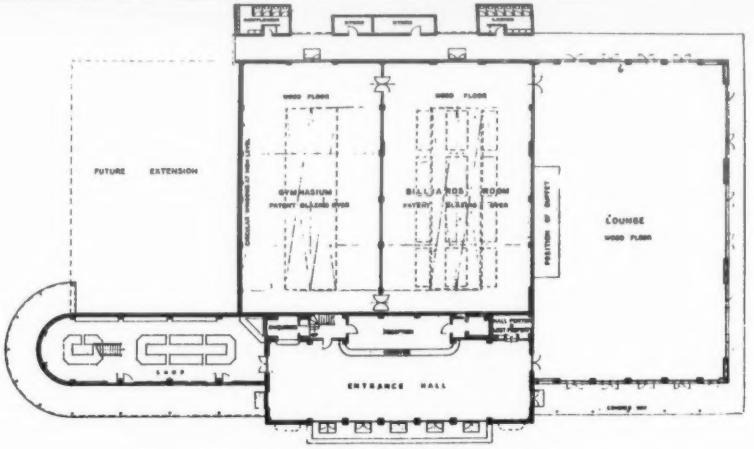
Dining Block: Section

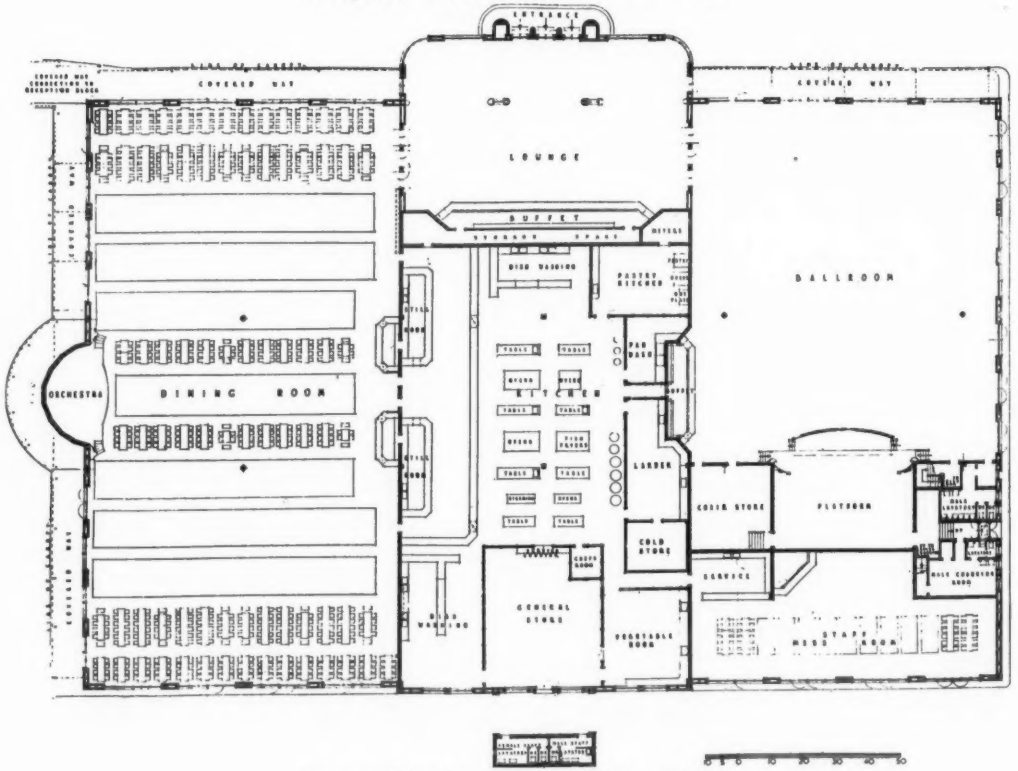


Reception Block: First Floor Plan



Reception Block: Ground Floor Plan

The Reception Block and the Observation Tower.—From the tower, 85 ft. high, visitors can obtain views out to sea and towards Snowdonia.



Dining Block: Ground Floor Plan

PRESTATYN HOLIDAY CAMP • By William H. Hamlyn

The chalets are of three types; semi-detached, for two persons; family, two adults and one child; and terrace singles. Each group of chalets has its own w.c.s, showers, and its own grass plots and colour-scheme. Chalets are electrically lighted and hot and cold are equipped with basins and cold water supply.

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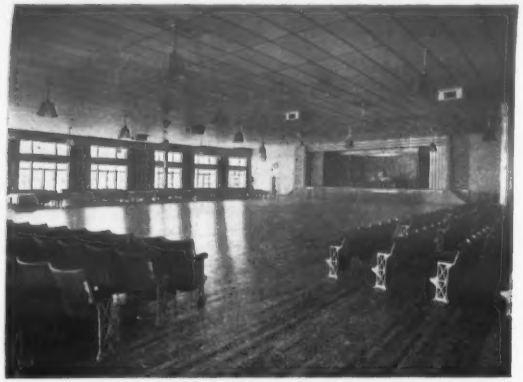
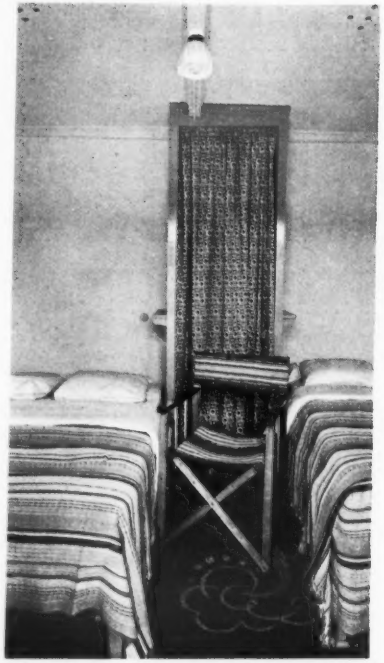


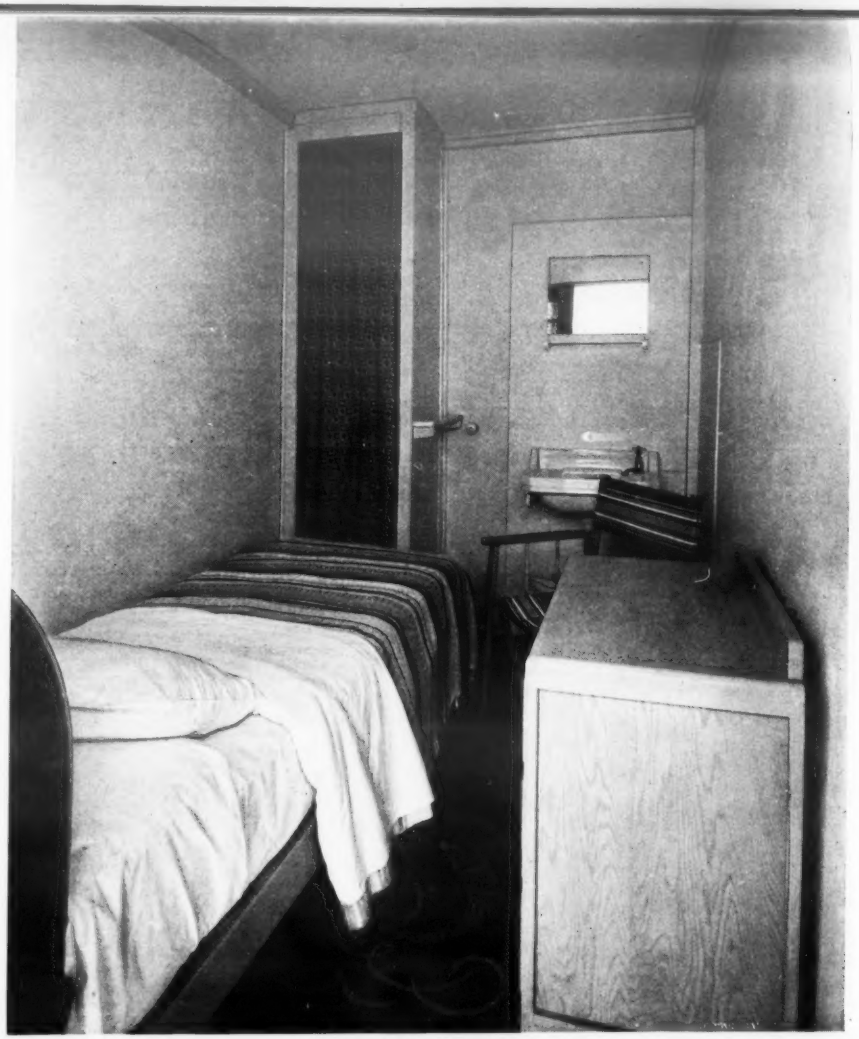
Ballroom and Concert Hall

Sun Lounge

Reception Hall



A Family Chalet for two adults and child



A single-bed Chalet

INTERNAL FINISH—The main buildings have flat wall treatments in colour, combined with curtains specially designed by the architect, and form a basis for the colour scheme in each room. Relief effects around doorways are formed economically in cut out block board, the only fibrous plaster enrichments being around stage prosceniums and the Britannia bar counter recess.

PRESTATYN HOLIDAY CAMP • By William H. Hamlyn

The Entrance to the Camp

INTERNAL FINISH—*continued*

Specially designed back cloths and flies have been fitted to the ball room stage. In the dining room the wall at the back of the band platform is decorated with an underwater scene based on the specially woven curtain fabric design. In the "Britannia" bar Mr. H. S. Ayers and Mr. P. H. Kemp have carried out a scheme of mural decoration to the bar surround and over the doorways communicating with the ball room and dining room.

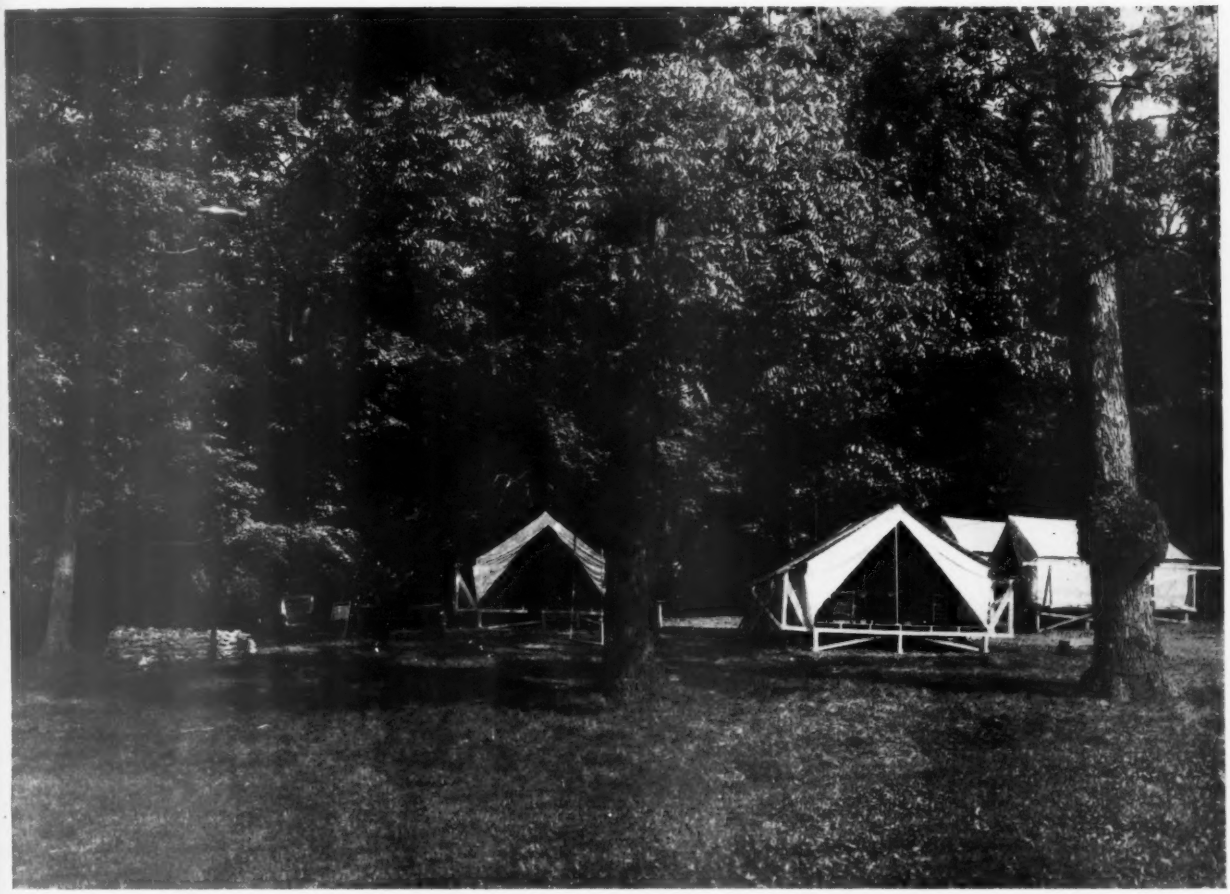
SERVICES—*The camp was originally planned for 3,000 visitors, and although the initial occupation is 1,700, the essential services are designed for the ultimate usage with the minimum amount of alteration. The equipment includes steam-raising plant, hot water and heating apparatus, ventilation plant, kitchen equipment, refrigeration, cold water and fire services, water softening plant, filtration and aeration apparatus, electrical equipment for lighting and power, amplifying installation, and sewage and storm water pumping plant.*

The general contractors were Messrs. McLaughlin and Harvey, Ltd.

For list of sub-contractors see page 84.

PRESTATYN HOLIDAY CAMP • By William H. Hamlyn

THE BACKGROUND OF CAMPS



THE growth of the school and holiday camp movement in this country, in conjunction with the usefulness of all camps for evacuation purposes, is almost certain to result in a large number of camps being built in the next few years.

The following survey of camps for various purposes in eight countries has been prepared for the JOURNAL *by Gordon and Flora Stephenson. The* JOURNAL *acknowledges the help of the Housing Centre from whose recent exhibition on "Camps" a number of photographs have been reproduced.*

ALTHOUGH Britain has only recently begun to regard camps as a matter of first-class importance, the idea of camping is no newer in this country than elsewhere. Even old countries have pioneer traditions hidden somewhere in their dim historical past, and the man who does not, at some time in his life, feel an urge to live the simple, primitive life, is rare. In newer countries where there are still stretches of frontier land to be braved and enjoyed, camping becomes a natural and accepted pastime for many enthusiasts.

In Britain this desire for a close physical contact with nature has developed several organizations whose facilities make it possible for members to enjoy the countryside without

destroying what they are trying to appreciate. The Youth Hostels Association has over 70,000 members, and operates nearly 300 hostels throughout England and Wales. Only hikers or cyclists may stop at the hostels, where the fee is a shilling a night. The high standards maintained, and the cheap accommodation provided, have helped many thousands of young people to explore their country since the Association was organized in 1930.

The Camping Club of Great Britain is another group which fosters open-air recreation. Founded in 1901 to promote the pastime of camping it has grown into a national organization with 1,000 approved camping sites. The sites are scattered throughout the country and not necessarily confined to the sea coast. The members of the Camping Club use their own equipment, and must qualify as genuine campers—indeed, they are justified in feeling that they are the real campers in the full sense of the word.

The beginnings of a system of school camps in Great Britain have already been mentioned. The efforts of the School Camps Service of the National Council of Social Service, the school camps of 18 education authorities, and the 50 camps to be built by the Government are all a part of the growing realization of how valuable an asset camps could be to our educational system.

The commercial holiday camp, ranging from the super-colossal variety to the smaller and more intimate type, seems to be a purely British idea. Investigation has not revealed anything of exactly parallel nature in other countries. It is probably the traditional British desire for a seaside holiday which has fostered the growth of some 160 of these holiday centres along the coasts of England and Wales and on the Isle of Wight and Jersey. The camps consist, to a large or small degree, of groups of chalets for sleeping, buildings for the preparation and serving of food, some kind of assembly hall, indoor recreation rooms, and often bars. One of the more pretentious camps is the proud possessor of a Tyrolean Beer Garden, a rustic English Inn, a Dungeon Bar replete with ghoulish skeletons and fake cells, and last but not least, a shiny, chromium-plated American Cocktail Bar. Outdoor recreational facilities are varied and numerous to please all ages and all tastes. Swimming pools, even in camps near the sea, are always a popular attraction and, with the appropriate belles, are featured on the covers of highly-coloured brochures.

The average commercial camp can accommodate between 300 and 400 people. There are many smaller camps, but unfortunately there are also many larger holiday centres. Great mass camps for 1,000 or more people can never be real camps. They inevitably tend to reproduce the crowded, noisy, and too-sparkling atmosphere of the busiest resorts. Managers of camps are agreed that from the administrative and social standpoint a group of about 350 people is a happy maximum. Let us hope that any future family holiday camps, established as part of a national system, will not be over-decorated rural pens for herds of jaded city dwellers. Already the lack of design and control in holiday camps has despoiled parts of the countryside and damaged the amenities within and without the camps.

Every country develops its own solution to the holiday problem, and has its own species of camp, week-end cottage, tourist bungalow, hotel or chalet. The Youth Hostel movement, so recently started in England, had its origin in Germany, and was for many years a valuable part of German life. Germany possesses today many finely built and equipped hostels which her young people are encouraged to use. There are, too, the numerous local headquarters of the Hitler Youth, often serving as a kind of hostel. More modern and individual developments are the semi-military labour camps at which every youth in Germany spends some time.

In Denmark, the week-end house in the country is the popular attraction. In all parts of the country, but particularly near the capital, week-end houses for 40–60 people have been built by sports' or students' organizations, by syndicates, and private employers. Youth hostels are also plentiful, and have accommodation similar to that offered in German and English hostels. Denmark favours timber construction for holiday homes and hostels.

Various types of holiday camps or schools for children are to be found in other European countries. In Belgium a fine system of open-air schools near the seaside exists. In Italy, things are done in a big way, and buildings are provided where hundreds of youngsters sleep in long rows, study in long rows, and bask in the sun in neatly arranged rows of cots. Poland is well advanced in the open-air educational movement, many of the larger city schools having their own country homes, while smaller schools share a camp. In Hungary, the movement has taken the form of health camps to which delicate children go for their schooling, nearly all of which is co-educational.

The Swedish gymnastic system and the National Movement for the Improvement of Health are responsible for many thousands of youths and adults spending one or two weeks each year in school and drill camps. Children go to the country in the summer months for physical training and their regular scholastic studies. Many workers receiving holidays with pay spend their vacations at the camps run by the organization mentioned above. In the Soviet Union there are many holiday homes and camps run for workers and school children. The Artek camp, illustrated in this issue of the JOURNAL, is considered a rather special camp, and is the prototype for others which are being built.

In the following pages, considerable space has been devoted to material from the United States. It was possible to illustrate in this one country a very wide range of camp types, from the Federal Project Construction Camp to the Trade Union Holiday Camp. To see the many different kinds of camps, serving vastly different groups, being used successfully for their particular purposes, is to realize that things which at first seem foreign and not applicable to England, may really have some elements in their composition which are suitable for home consumption. To say that National Parks and their accompanying camp developments are suitable only for Canada and the States, where they can spread out over several thousand square miles, is to neglect a great opportunity for preserving and enjoying many parts of the countryside in Great Britain. Careful planning and thoughtful control can do much to make up for lack of room. Some form of youth labour camps have often been proposed for the unemployed in England, and a study of the Civilian Conservation Corps in the U.S.A. reveals a popular development which could hardly offend any shade of political opinion.

A school camp at Llanelly—a new addition to a rural community.

Children's Colony—CONTINENTAL

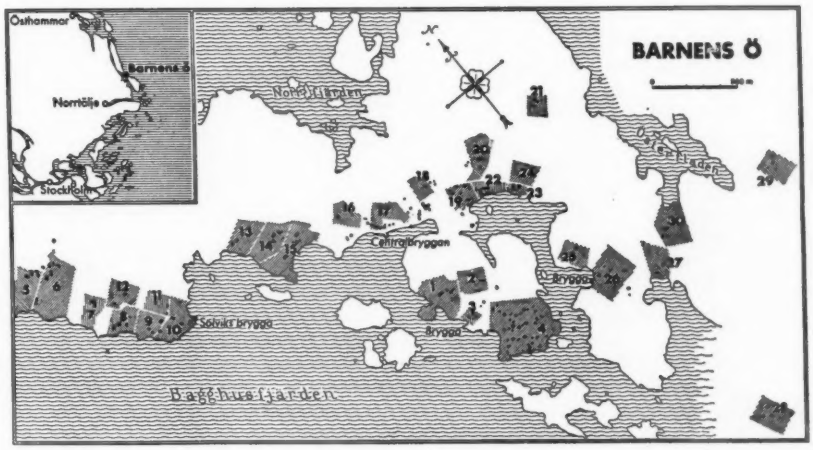
SWEDEN

HOLIDAY colonies for Swedish school children date back as far as 1884, when the first colony was founded by a Stockholm school mistress. In 1885 a central board was established in Stockholm, with a representative in each parish, to help promote the movement. Other colonies were started for densely populated towns whose children would benefit from country holidays.

Today the Swedish Gymnastics Association is supplementing its health work to an ever-increasing extent through summer camps for school children. The camps enable hundreds to benefit from an open-air life combined with gymnastics, games, and sports under the supervision of experts. The Association is now working for larger grants of money which will make it possible to increase their camp programme. The colonies are usually located in the archipelagos and forest regions, sometimes in their own premises, but more often in rented houses. Barnens Ö, or Children's Island, near Stockholm, is devoted to a whole group of camps for school children. There are 30 camps beautifully situated on the island, with premises recently built.

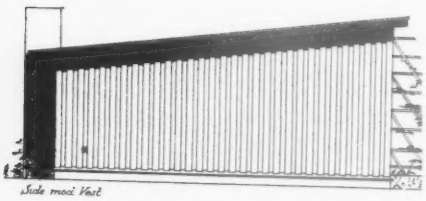
Holiday camps for industrial workers are a newer innovation in the voluntary gymnastic movement. Planned to help workers get the best out of their short holidays, the camp life includes sports, gymnastics, swimming, walks. Existing country houses are used as a centre for tents and recreational facilities.

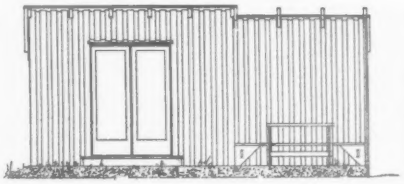
The well-known holiday home development at Årsta Havsbad was initiated in 1930 by the H.S.B., a large-scale housing society. It comprises a great number of small holiday homes which are sold or rented to private individuals. The scheme embraces one and a half miles of beach, two large recreational parks and many communal facilities, including a spacious hotel and restaurant.

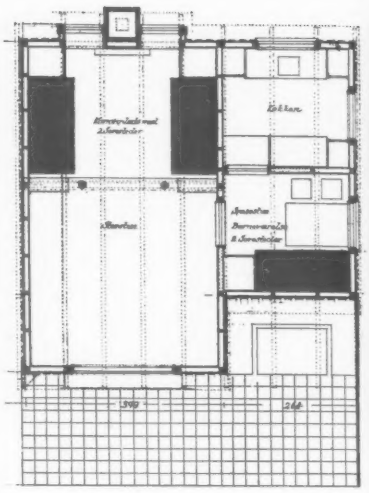


Top : Play in camp on Children's Island. Centre : Map of Children's Island, showing camp sites on the Baltic near Stockholm. Bottom : A typical holiday home at Årsta Havsbad.

CONTINENTAL—Holiday Camps







DENMARK

IN Denmark there is an extremely wide variety of country holiday facilities The sponsoring organizations for the open-air schools and the holiday and health camps include newspapers, Scouts and Guides, Municipalities, Y.M.C.A., and the State Education Department. To help matters even more, a law was passed in 1938 which gives every employee, whether public or private, the right to a holiday with pay. The same law brought into being an institution called the Dansk Folkferie, whose aim is to aid the Danish people in making the best use of their holidays. Camps will be built under the new legislation, but it is too early as yet to see what the results will be.

The holiday home illustrated on this page has been planned by the Danish Forest Authorities. The estimated construction costs are about 2,000 kroners. A model of this scheme was exhibited in 1938 at the Bellahj Rural Exhibition.

School camps in Denmark are very efficiently run. Children's visits vary from a few days to as much as six months during a year. All the camps are open to any children whose health would benefit from open-air schooling, regardless of their ability to pay. The camps are in use all the year, and an old country house often forms a nucleus for a cluster of new buildings around it. The existing gardens and parklands are ideally suited for camp grounds.

Above : A model holiday home in Denmark. It is of timber construction and suitable for a family of four.

U. S. S. R.

THERE are many camps for workers and school children in the Soviet Union. All workers receive holidays with pay, and it is estimated that there are holiday homes for 2,000,000 people in Russia.

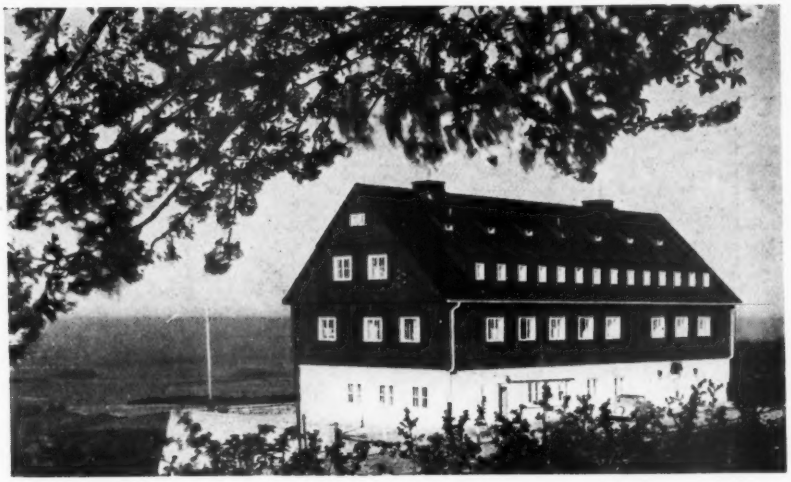
Among the many camps for school children, perhaps the most famous is Artek, called an All-Union Pioneer Camp, of the sanatorium type. A vacation at Artek, the largest and best known of Soviet camps, is a coveted honour. Children with high scholastic records or with exceptional ability in music, literature, art, or technical subjects are chosen to attend the camp.

Artek is fifteen years old, and is really a colony of five camps, each able to take 450 children in summer and 300 in winter. Other camps of the Artek type are being planned and built. Children sleep in small two-storied pavilions of timber construction during their stay of at least six weeks. An open-air amphitheatre, auditorium, gymnasiums, and swimming pools are provided.

Dining-rooms, medical building, and hothouses to supply the extensive flower beds are in the central part of the colony. Among the activities are sports, bathing, boating, hiking, nature studies, and work in craft shops and museums.

Bottom, left : A general view of one section of the Artek Camp on the Black Sea coast. Bottom, right : Campers provide their own entertainment. A national dance on one of the terraces.

Hostels and Children's Colonies—CONTINENTAL



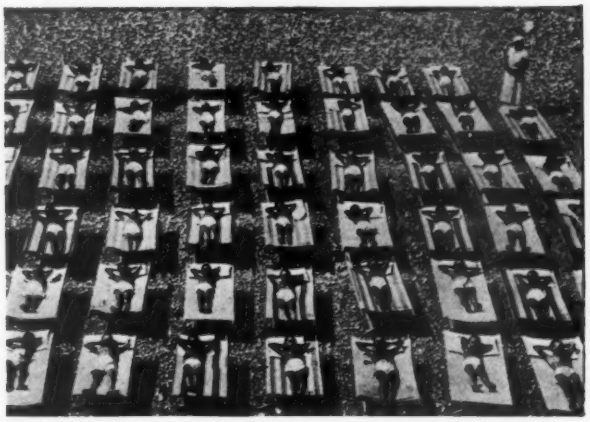
GERMANY

AMONG the many holiday-providing facilities in Germany, perhaps the most famous are the Youth Hostels. It was in Germany that the Youth Hostel movement had its beginning, its aims and character being originally very similar to those of today. The large number of visitors from foreign lands has added an important function to the social purposes of Youth Hostels in the New Germany. The hostels are now looked upon as a useful way of promoting friendship and understanding between the young people of Germany and their guests from abroad. It is hoped that a sympathy for the culture and aims of the German people will be promulgated.

In 1937 eight million lodgers were registered for a night in German hostels and 200,000 of the visitors were from foreign countries. The hostels are of three classes, according to their yearly capacity for lodgers. The smallest can accommodate 6,000 people annually, the next class up to 18,000, and the largest hostels can take over 18,000 guests each year. Hostels are run on similar principles to those in England. There are usually dormitories with eight or ten beds, kitchens where guests may cook their own meals, and also a kitchen where the resident warden supervises the preparation of meals. The visitors make their beds and in general look after their own welfare.

The architecture of the German Youth Hostels is traditional, with a preference for half-timbered effects and steeply pitched roofs. Simplicity and efficiency characterize extremely pleasant interiors.

German Youth Hostels—the most common form of provision for campers—are built for sleeping and cooking only. On the left is a representative interior of an 8-berth room. On the right is one of the new hostels, all of which are similar in form.



ITALY

THE holiday movement for children in Italy has taken the form of colonies which are too expensively built and equipped to be called camps. The colonies are, in fact, more in the nature of rest houses or sanatoria. One million children each year receive the benefits of a holiday in the colonies, which are located at the seaside, in the mountains, or on lakes and rivers. There are three types of colony—temporary ones which take about 42 per cent. of the children, permanent ones taking 18 per cent., and daily colonies for about 40 per cent.

The importance of sunshine therapeutics is stressed in many of the Italian colonies, the buildings being designed to allow a maximum of light and air. Great terraces are provided for sunbathing. Among the most ambitious of the helio-therapeutic colonies is the one built by the Fascist Federation of Turin and opened in 1936. There are six large buildings or pavilions containing dormitories, sanitary facilities, kitchens, dining halls, etc. One of the pavilions is a day school for local children. This colony, like other permanent ones in Italy, gives the impression of terrific scale and organization, sturdy and expensive building, and well-finished and equipped interiors.

Above : Children sunbathing at an Italian children's camp. Left : One of newest Italian seaside camps for children at Rimini.

U.S.A.—National Park Camps

Above, "El Capitan," a 2,000-foot granite hill overlooking the canyon of the Yosemite National Park in California. Bottom: one of many camps in the Yosemite canyon of which only the community buildings and the car parks can be seen from any distance. National Park camps are highly successful in their informal and "uninstitutional" layouts.

RECREATIONAL CAMPING

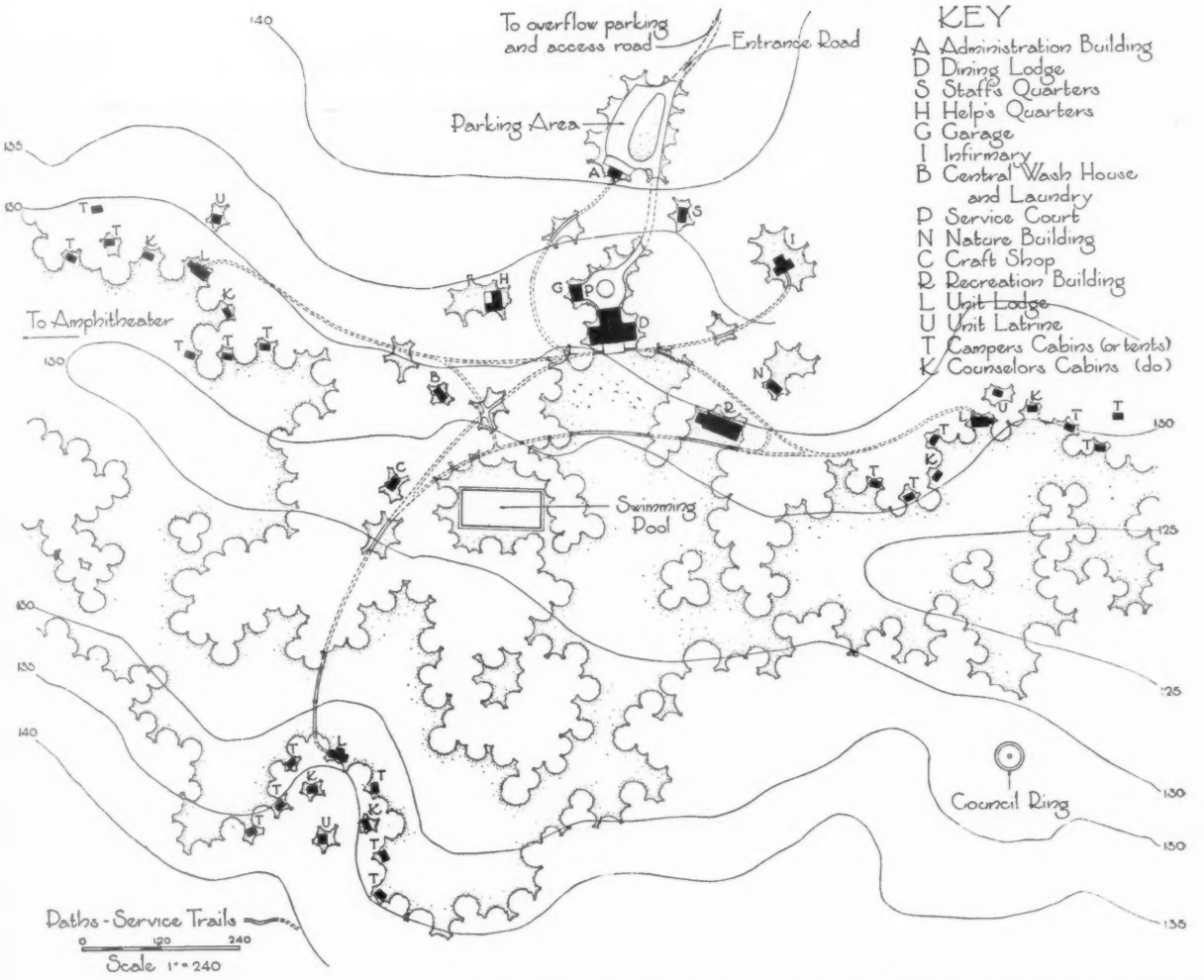
CAMPING in a variety of forms has long been a popular pastime in the United States. In fact, it would be hard to define the exact time at which pioneer camping as a necessity ceased to exist and holiday camping took its place. Many of the original traditions of camp life have been preserved, and the programmes of organized camps are always closely linked with Indian lore and woodcraft.

In addition to camps run by such organizations as the Boy Scouts and the Girl Scouts, there are hundreds of others in all parts of the country for children of school age. The latter are in most cases rather expensive, the fees for a ten or twelve weeks' stay ranging from £30 to £80. Programmes include instruction in all manner of outdoor sports from tennis to sailing. Woodcraft, nature lore, and arts and crafts are always popular. Camps run by the Scouts and other groups are cheaper and their programmes perhaps more limited, but their general aims and activities are much the same.

Obviously camps such as these cannot provide summer holidays for children from the lowest income groups. It was with this in mind that the National Park Service entered the field of organized camping in 1934 when 46 recreational demonstration projects were authorized for purchase. Thirty-two of the projects have been developed, primarily as organized camp vacation areas and are placed, wherever possible, within a 50-mile radius of urban centres. All of these camps are rented to and operated by qualified organizations of public or semi-public nature. The Scouts, the Y.M.C.A., and Boards of Education, for example, can rent a camp for 100 people for £120 a season. This makes camping facilities available to these people at a minimum cost, and they are therefore able to provide their members with inexpensive holidays. Camps of this type, for 100 people, are divided into four units, which radiate from an administrative centre where dining and recreation halls are located. Each unit has its own sleeping, washing, and lavatory facilities as well as its own common room.

Within the National Parks themselves there is a wide range of camping facilities. Many of the vast park areas when first set aside by the Government for preservation were great stretches of forest, mountain, or desert country with few, if any, inhabitants. They could be seen only by enterprising campers who enjoyed arduous exploration trips on horseback. Today they have been opened up to the general public by the construction of excellent motor roads and the careful location of holiday accommodation. A holiday may be spent in a National Park in anything

National Park Camps—U.S.A.

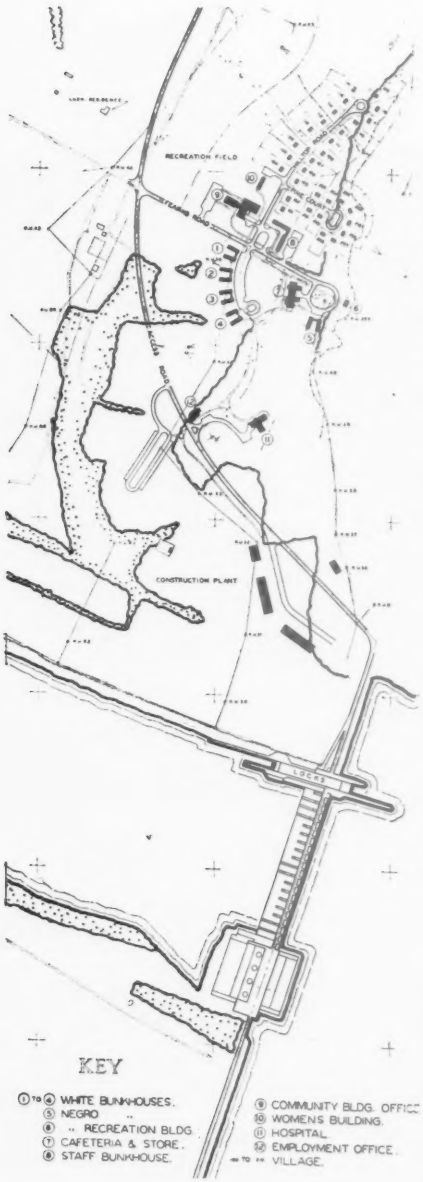


A National Parks Service plan for a more fully-equipped camp. In spite of the services obtainable, privacy has been retained for individual families. Below, the swimming pool at a similar camp at Blue Knob, Pennsylvania.

from a luxurious hotel to a sleeping bag under a pine tree.

There are expensive hotels and less expensive hotels. There are lodges in the local architectural tradition with one or two rooms and private bath. There are smaller one-room cabins with a little wood-burning range for cooking your own meals. There are trailer camp grounds carefully planned to accommodate cars and trailers and with the necessary electric power connections available. Finally, dotted among the woods, are stone fireplaces near which campers may pitch their own tents or sleep in the open by their fires. Close by the camping grounds are the sanitary blocks which contain lavatories, wash basins, and shower baths for the free use of the campers. Indeed, the variety of holiday possibilities within the structure of the National Parks is an indication of the popularity of camping in the United States.

U.S.A.—New Deal Camps



CONSTRUCTION CAMPS

THE "New Deal" in the United States has seen the initiation of Federal works projects in all parts of the country. As a long-term policy the projects have added new highways, bridges, dams, schools, and public buildings to the wealth of America. To alleviate the serious economic situation of the past ten years the work has been rushed ahead. In many cases relief labour has been employed.

Some of the more extensive projects such as the Boulder Dam in Arizona or the work of the Tennessee Valley Authority have been on so great a scale that whole new communities had to be erected to house workers and staff during the period of construction. These camps usually consist of some buildings of a permanent nature, for example, the administrative headquarters and houses for the engineers and their families. Such houses are kept in a self-contained unit apart from the construction camp, and are intended for later use by the permanent staff at the project. In Tennessee, the town of Norris, built near the Norris Dam, will remain as a complete community partly for the use of those employed at the dam site, and partly as a dormitory town for the city of Knoxville.

The unmarried workers on a Federal works project are accommodated in bunk houses of prefabricated timber units which can be assembled for use on a required site. Married workers are provided with small timber houses of prefabricated sections which can be used in different localities. They are built for a cost between £150 and £200. Each camp has a community centre which usually contains a large restaurant, assembly hall, shop, library, and clinic.

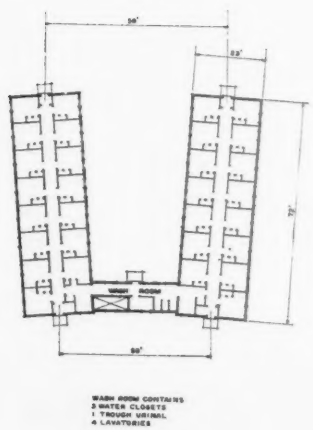
CAMPS FOR THE CIVILIAN CONSERVATION CORPS

THE Civilian Conservation Corps, an independent agency, was created in 1933 to give employment and training to the many thousands of young men who found themselves idle and unable to obtain work in the slump. In six years the C.C.C. has initiated and carried forward a conservation programme on a nation-wide scale. It is also the first real effort ever made by the United States Government to provide training for the bodies and minds of its unemployed youth.

The Departments of Interior and Agriculture advised on the placing of camps in areas where there was much needed work to be done. The 150 major types of work carried out by the C.C.C. come under the general headings of forest protection and conservation, soil conservation, recreational developments, aid to grazing, aid to wild life, flood control, reclamation, drainage, and emergency rescue activities. For the first time Federal, State, and local governments had available adequate supplies of labour and money to meet these important problems.

Since the beginning of the C.C.C. programme some 4,500 camps have been established in various parts of the country. At the present time there are more than 1,500 camps of 200 men each in operation including those on Indian reservations, and in Alaska, Puerto Rico, the Virgin Islands, and Hawaii. The first labour corps were housed in army tents, but later permanent barracks were built. As the number of necessary buildings increased, a standard C.C.C. camp of twenty-two buildings was evolved. The structures included are barracks, dining hall, headquarters, recreation hall, dispensary, washing block, bath and latrine, lorry garages, and an educational building.

Considerable study was made of possible types of construction and, of course, much actual experience was gained in building the first camps. Finally, in 1935, shelter of movable type was prescribed as standard C.C.C. camp construction in place of the rigid or fixed-type construction. Records have since shown a considerable saving in costs where these portable structures have been used. They are readily assembled, or dismantled and transported to a new site at a minimum cost.

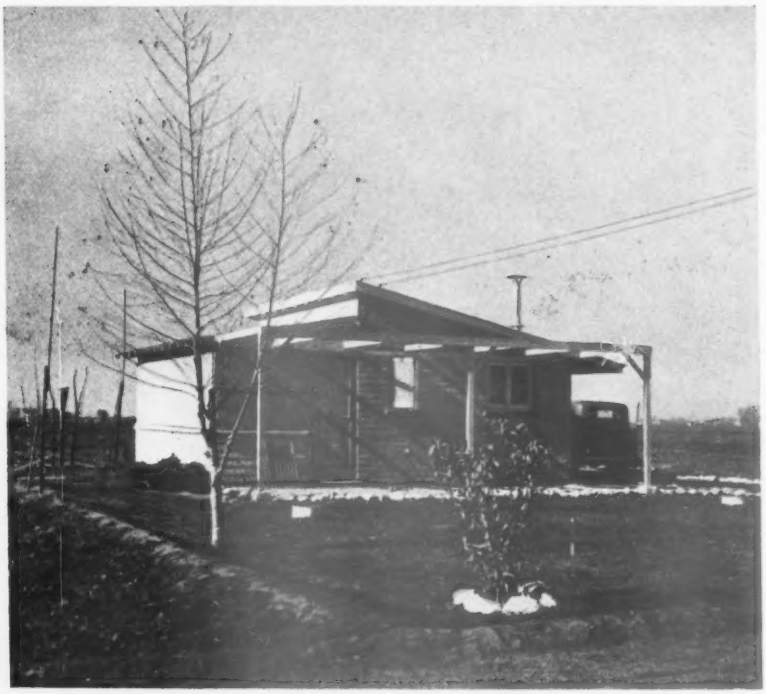


On the left is general layout of the Guntersville Dam and construction camp, one of the projects of the famous Tennessee Valley Authority. A sketch plan of one of the Guntersville bunkhouses is also shown.

On the facing page are two of the camps built by the Civilian Conservation Corps.

New Deal Camps—U.S.A.

U.S.A.—Agricultural Camps



MIGRATORY LABOUR

SINCE 1935 the Federal Government of the United States has been attempting, through the Farm Settlement Administration, to alleviate the conditions of migratory labourers in California. There are about 200,000 of these impoverished people who have drifted to the West Coast from the drought areas of the Middle West. At present they live in " squatters' camps " near the centres of seasonal crop work. Their only possession is a car which enables them to follow the seasonal work up and down the great central valley of California.

The F.S.A. hopes to build at least one camp for these workers in each county of California. Six camps are already in operation, and five under construction. The camps attempt to provide well planned groups of individual tent lots, each lot having enough room to park the family car. On the lots there are either steel shelters or concrete platforms for the tents. Centrally located in the camps are a utility building with showers, wash basins, laundry and ironing facilities ; and a community building with space for dances, movies, talks, etc. There is a clinic with a resident nurse, and an isolation unit. " Comfort stations " or, more plainly, toilet blocks, are distributed at several points along the road adjacent to the tent lots. At the entrance to the camp is the manager's office, and also a garage and store house.

It is nearly always necessary for the camps to have their own water supply from a specially drilled well and central water tower. Sewage disposal is taken care of by an Imhoff tank, trickling filter, and disposal field about 500 feet from the nearest tent lot.

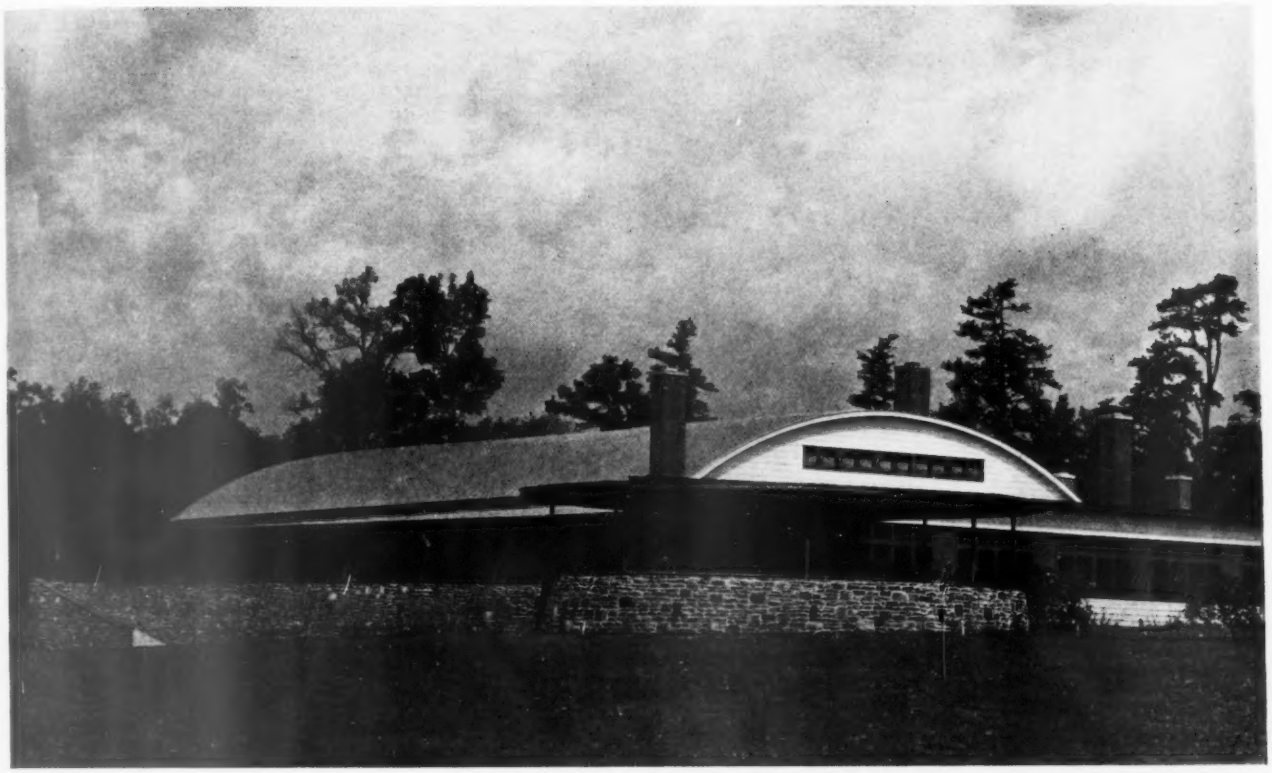
In addition to the tent or shelter camps, the F.S.A. is building some communities of subsistence-type farm houses. Thus, the migratory workers will be able to have permanent homes while they are working on crops in the surrounding area. When possible, the farm houses are situated near a camp, and make use of their community buildings. Otherwise they have their own community facilities and child nursery.

A TRADE UNION CAMP

THE I.L.G.W.U., or International Ladies' Garment Workers' Union, is a most enterprising organization. (Ladies' refers to the garments and not

Top: A typical Farm Settlement Administration camp in California. Centre : A farm labourer's subsistence homestead built in adobe, near one of the F.S.A. camps in Arizona. Bottom : Manager's house in a Californian Migratory Labour camp.

Trade Union Camps—U.S.A.

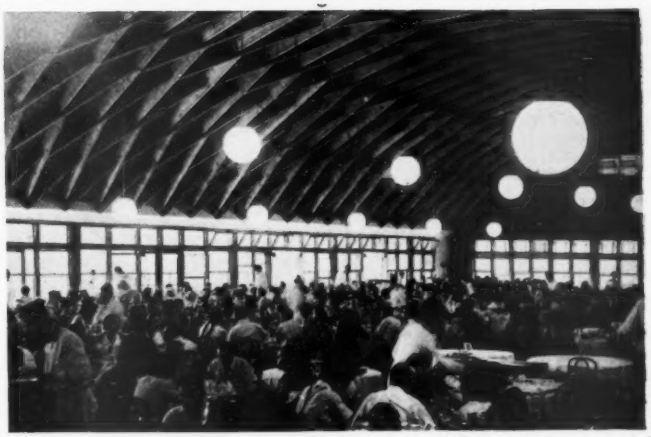


the workers, since both sexes are members of the Union.)

For some years the I.L.G.W.U. have had a holiday home in Pennsylvania called Unity House. A fire in 1934 led to the reconstruction of the main building and several of the cottages and cabins by the well-known architect, William Lescaze. £65,000 was spent on the new buildings, and on laying out and landscaping the grounds. At present Unity House claims to offer all the pleasure of camp life with the comforts of an hotel.

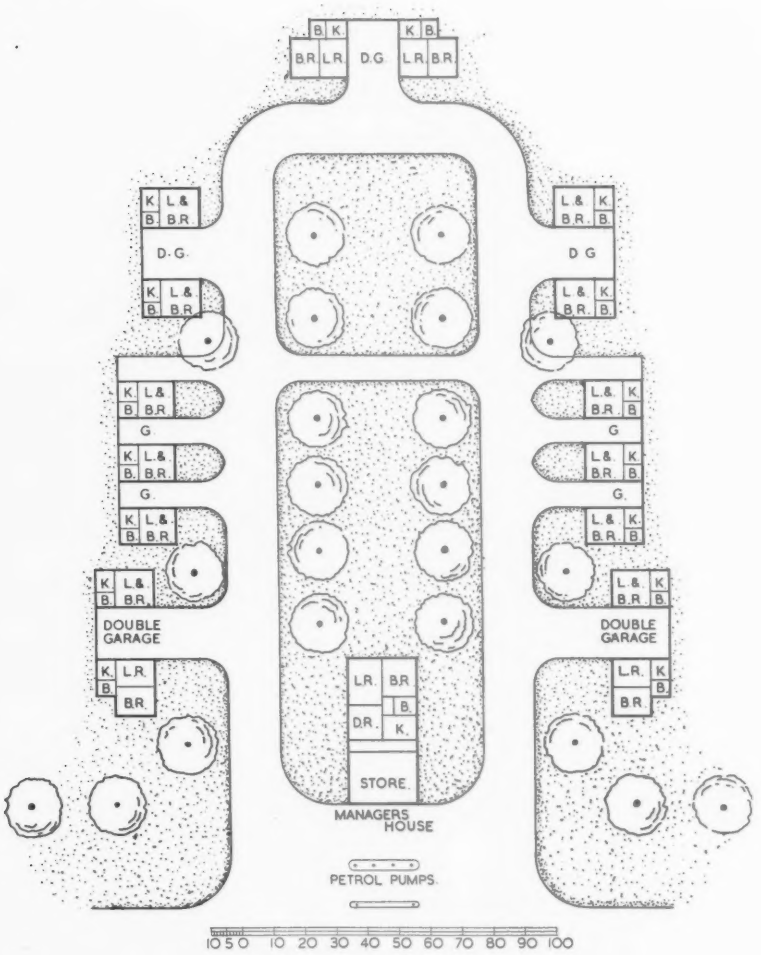
The new main building contains the dining hall and a sunken lounge with a tap room at one side and administration offices on the other. The dining room, effectively roofed with a lamella wooden truss, has seats for more than 1,000 people. In addition to the older cottages for guests, a new brick hotel-dormitory and eight new cottages were put up.

The activities at this trade union camp include tennis, swimming, boating, handball, horseback riding, dancing, talking motion pictures, a library, and an open-air pine grove theatre.



Three photographs of Unity House, the camp of the International Ladies' Garment Workers Union in Pennsylvania. This organization is one of the most energetically progressive in U.S.A. and Unity House has been largely reconstructed by William Lescaze. Top, dining hall and lounge ; centre, the belvedere ; right, the dining hall—showing the lamella roof construction.

U.S.A.



TOURIST CAMPS

THE popularity of the Tourist Camp in the U.S.A., which has led to its very rapid development, is due to its advantages over the hotel. In general, it provides equally good accommodation at less cost. The problems of garaging or parking a car are solved, and the nuisance of carrying baggage a considerable distance is eliminated. No tips or gratuities are necessary, nor is the formality of hotel dress required. More privacy is assured and housekeeping facilities are there for those who desire them.

Tourist camps are usually placed on the outskirts of towns, on the main approach road. The most common type consists of cabins which may be in a row, semi-detached, or detached. A shelter for a car is often attached, or, where this is not so, a convenient drawing-in space for a car is directly by the cabin. The best camps are grouped about a landscaped courtyard which attracts the tourist and at the same time offers privacy. The enquiry office, easily seen from the main highway, is usually combined with the living quarters of the proprietor and with a provision store. In front of the office there are generally petrol pumps, and behind it the groups of cabins, so placed as to be easily supervised.

The individual cabins vary in construction according to locality. Timber frame construction is the most common with either timber or stucco finish.

CANADA

Top : Layout of a representative Tourist Camp in the U.S.A. These camps adjoin towns and cater for motorists who normally stay only for a night or two en route to a holiday centre.

Above : A tourist's cabin in Jasper National Park, Canada. Construction is usually of logs with shingle roofs.

DEVELOPMENT IN CANADA

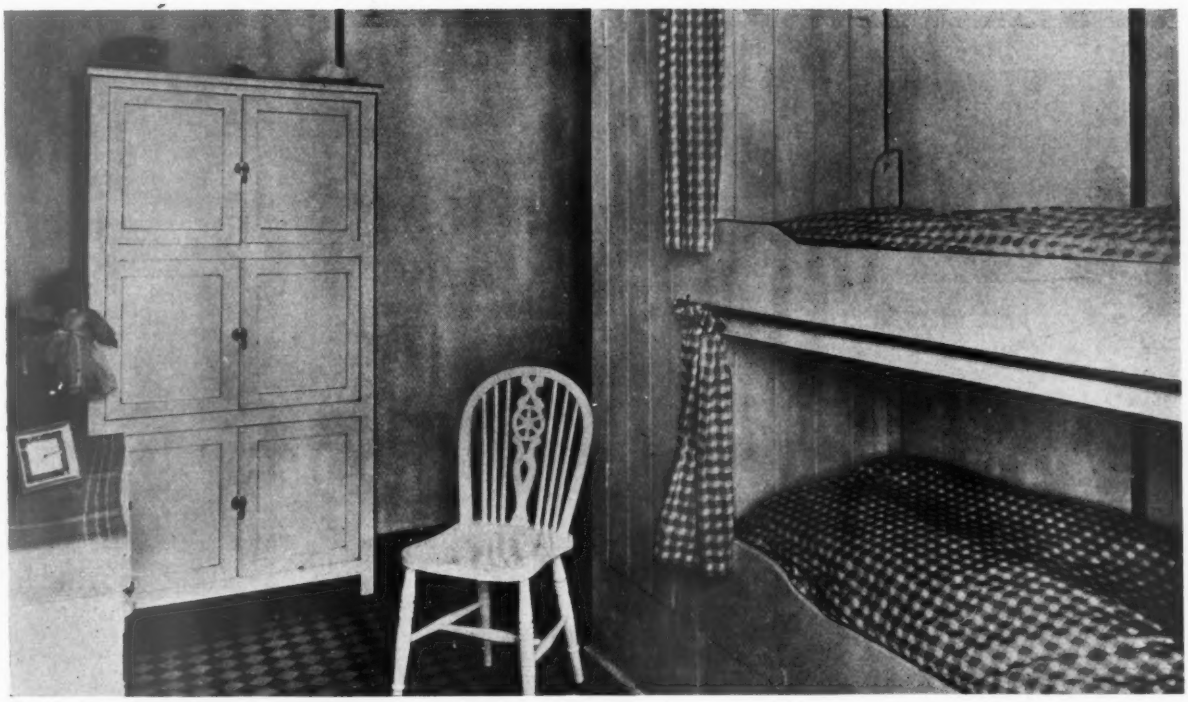
THE development of holiday and camp facilities in Canada is closely related to that in the United States. The same type of tourist camp is to be found, serving people who are accustomed to making long holiday trips by car.

The National Parks of Canada are also very similar to those in the States. The Parks contain hotels, lodges, cabins, and camping grounds to meet all requirements of taste and cost.

The sites of the popular "auto" bungalow camps and the standard of buildings are specified by the Park Department, while the actual camp concessions are disposed of by tender on a profit-sharing basis. Applicants for proprietorship must prove their ability to build, maintain, and operate the camps. Usually the cabins cost about £100 each, and are equipped with bathrooms. In other camps, sanitary facilities are centrally located instead of being in individual cabins. Adequate heating for the short summer tourist season is provided by a fireplace or a small kitchen stove.

In most camps there is a water supply, and drainage by means of a septic tank system. Cabins are nearly always built of logs, and have shingled roofs.

Large Holiday Camps— GREAT BRITAIN



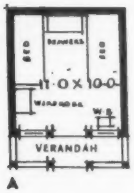
A large British commercial camp. Above: the central buildings and swimming pool at Skegness. Below, a sleeping cabin in one of the better British camps.

COMMERCIAL CAMPS

FOLLOWING the English tradition for seaside holidays, the commercial holiday camp has rapidly established itself as a feature of our coastal landscape. The camps jockey with each other and their more established resort neighbours for a position near the sea, and as a result are often crowded on to inadequate sites which endanger the amenities of their environment and of the camps themselves.

The typical holiday camp has central buildings flanked by tent sites, with tenting equipment available for those who cannot bring their own. Tennis courts and a swimming pool are central features of attraction. Any true spirit

GREAT BRITAIN—Large Holiday Camps



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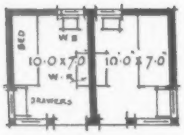

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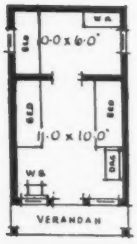

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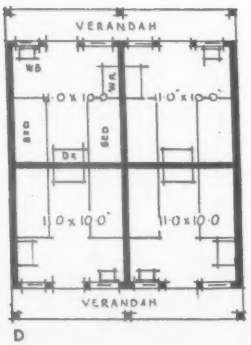


D

Top: Chalets at Old Hall Holiday Camp. Both chalets and layout are typical of smaller English camps. Centre: radial layout of holiday camp at Dymchurch. Left: Standardized chalet types as used in many camps.

of camping in the "wide open spaces" is lost in the densely populated reproduction of urban surroundings. A wide range of recreational features for both indoor and outdoor use is provided at an "all-in rate" which varies from £2 10s. per week in the more modest camps to £3 10s. in those which are larger and better equipped. Special playgrounds and playrooms for children, in charge of trained supervisors, allow great freedom to mothers and account for much of the great popularity of the holiday camp.

The commercial camps provide small huts for sleeping, and add the necessary touch of romanticism by calling the huts "chalets." The illustrated brochures always stress the fact that each camper has his own "individual" chalet, but do not mention that they are in long rows, with about a foot or two between each building. Occasionally, wash-basins and lavatories are included in the chalets, but communal sanitary blocks are more usual.

The social life of a holiday camp is centred on a group of buildings which contain the dining room and kitchens, a social hall for dances, parties and entertainments, and a few smaller rooms for reading, card playing, billiards and table tennis. Some of the camps function successfully without a bar or "club room," and their patrons agree that the spirit of the camp benefits. The larger camps, however, make a feature of their club facilities, or of their fully licensed bars. A camp tuck shop is an important item for the sale of cigarettes and sweets.

SCHOOL CAMPS

SCHOOL camps have not yet become a common part of the education system in this country, but a few education authorities, and private individuals or groups, have made a beginning. There are, in fact, 18 local authorities who own and operate camps for their school children. Most of these camps have been established for some time, and have gradually grown up from a small original nucleus. In some cases existing country houses have been used. In general, the sleeping accommodation varies from tents, or marquees, to wooden huts of the army type.

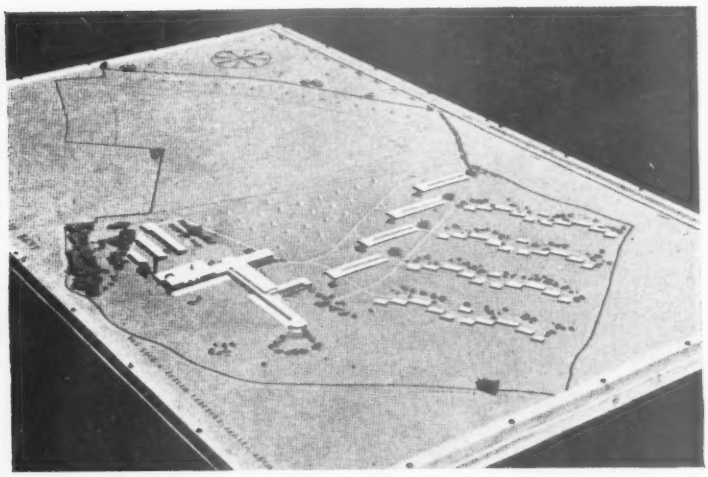
Another type of school camp is run by the School Camps Service of the National Council of Social Service for children from the elementary schools of the Special Areas. The Service was inaugurated in 1935 and by 1937 there were 16 camps in operation, some in existing brick buildings, and others in new timber frame structures. The average camp accommodates about 340 children. A few of the buildings are heated for winter use. Under the School Camps Service, four voluntary organizations manage camps: the National Council of Social Service, the Y.M.C.A., the Lord Mayor of Newcastle's Camp Committee, and the West Hartlepool Children's Camp.

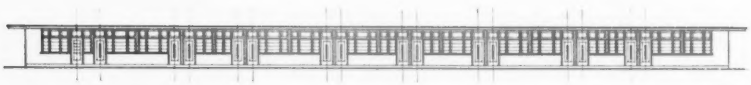
There are a few camps for school children or young people which are run by private individuals on a non-profit-making basis. One of the most interesting of these is the Wytham Abbey Camp, built by Colonel R. ffennell, on the grounds of his estate near Oxford. It is mainly for the use of children from Oxford, although some parties come from London for a fortnight's visit. There is accommodation for 80 children in dormitories, but as many as 300 local children at one time can spend a day at the camp and use the class rooms, playing fields, and swimming pool.

Top: Wytham Abbey school camp, showing the dormitories and classrooms. Below, an outdoor class at the Lord Mayor of Newcastle's camp.

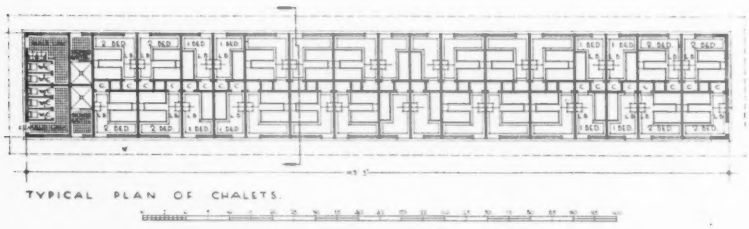
The camp buildings at Wytham Abbey vary in character and in materials. Some are of brick, some of elmwood on brick foundations, and some of split Canadian cedar logs. Plenty of space has been left between groups of buildings so that children using one group consisting of dormitory, classrooms, and sanitary block can be well isolated from those whose activities revolve around a similar trio of buildings across the field. In this way over-stimulation from too large a crowd is avoided, and the classroom units are more easily managed by the teachers. A swimming pool is well located at the foot of a southern slope, and away from the classrooms. The pool and dining hall are the communal meeting places of the campers.

GREAT BRITAIN





ELEVATION OF CHALETS



TYPICAL PLAN OF CHALETS.

Top : A model of proposed holiday centre for the Lambeth Borough Council. (Architects : Max Lock and Judith Ledeboer.) Centre : Chalet details for Rogerson Hall Holiday Camp. Bottom : Rogerson Hall Holiday Camp. (Architect : Ernest Law.)

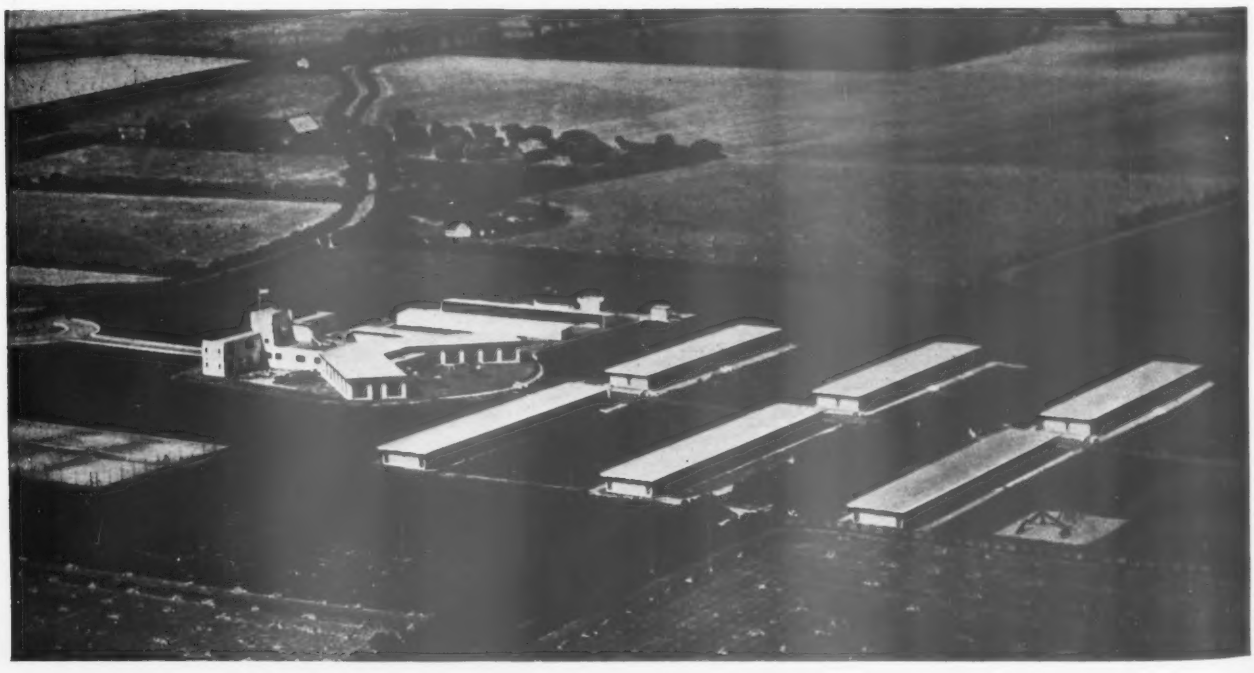
NON-COMMERCIAL CAMPS

ONE of the best examples of the English family holiday camp is Rogerson Hall, at Corton, Lowestoft. It is jointly sponsored by the Workers' Travel Association and the Co-operative Wholesale Society, and is the first of a series of camps to be promoted by Travco Camps, Ltd.

The camp has an area of 36 acres, and can accommodate 360 people at one time, plus a staff of 30 and a resident manager. The cost per place for construction (including land) is just over £80. The buildings are of breeze blocks with an external rendering of cement stucco. There are single and double rooms in terraces. All have running cold water laid on, while hot water, lavatories, and showers are available at the end of each terrace. The main building, which is centrally-heated, contains a dining and social hall. A septic tank and filtration plant take care of the drainage. Recreation facilities include four hard tennis courts, deck tennis courts, concrete cricket pitch, children's playground, bowling green, and a large beach.

The Lambeth Borough Council have purchased a 50-acre site at Herne Bay, and intend to build there a holiday camp with accommodation for 300 people in chalets and 100 in bell tents. There will be two-, three-, and four-roomed chalets for about 240 people and four blocks of terrace bedrooms, each holding 40 people. Timber construction will be used throughout the camp, the sleeping chalets being in prefabricated sections three feet wide.

A spacious community block will contain a dining room, main recreation hall, and rooms for games, reading, and children's play. Covered terraces around the community building will be very welcome in wet weather.



PLANNING

[This outline is based upon a report prepared by Max Lock and Miss J. Ledeboer]

THERE are very few camps in England which have been conceived and built as complete entities. There is, therefore, little experience on which to base important planning decisions. Only by a study of the basic needs of the three main types of camp can one arrive at certain principles for planning. Each camp group will have its individual elements dictated by the people for whose use it is intended.

It is important to remember that summer holiday camps for families depend for their commercial attraction on fairly complete and expensive features such as swimming pools, ballrooms, and lounges. The camp life which revolves around these facilities calls for a different plan from that of the simpler school camp. Children's camps can do away with the side-shows and organized pleasures of the seaside resort, which now seem to be an essential part of the larger holiday camps. School camps can be more utilitarian, though no less pleasant, in character. Since the school camps will be used for evacuation of children with their teachers in war-time, it is necessary that they be well built and equipped for winter use. Holiday camps which might be used for evacuation of old people, infirm, or mothers with babies, must also consider the problems of planning for winter use.

Holiday Camps.—Many of the commercial camps in England today are æsthetically unsatisfactory and haphazard in layout. Good planning and simple, sound construction can remedy these defects. There is scope for standardization of repetitive units in the provision of sleeping accommodation. A certain amount of thoughtful freedom in planning, as the camp is moulded to the site, will increase the amenities of most camps and help to prevent danger from aerial attack. The informality should not be carried to such a degree that it entails higher cost of construction and upkeep.

Experience in existing camps, such as those of the Workers' Travel Association and the Miners' Welfare Association, points to 350 people as the most manageable group, and to a 50-acre site as desirable for this size camp. A staff equal to 10 per cent. of the number of campers is needed for a camp in full operation. Five or six of these people should be permanently housed on the site, namely, the manager and his wife, the cook, and one or two groundsmen. In season, there must also be staff accommodation for kitchen help, waitresses, and maids.

A holiday camp should be planned around the administrative, social, and sleeping accommodation. The administrative function requires space for an office, and for the preparation and serving of food. The office, kitchen, dining room, and canteen can be well located in one main building to which motor vehicles have access for service and for arriving and departing guests. Other parts of the camp need only pedestrian access, paths being wide enough for use of service lorries.

The sleeping accommodation can be well removed from the main administrative block, depending on the type of hot water supply. Cold water, at least, is advisable in each room. There are three types of sleeping quarters recommended for holiday camps :

(*a*) Individual chalets.

(*b*) Terrace blocks of chalets designed in a double row, placed back to back.

(*c*) Terrace blocks of single chalets in one row only.

The double row of terrace blocks are to be preferred where :

(*a*) it is necessary to economize on site area covered;

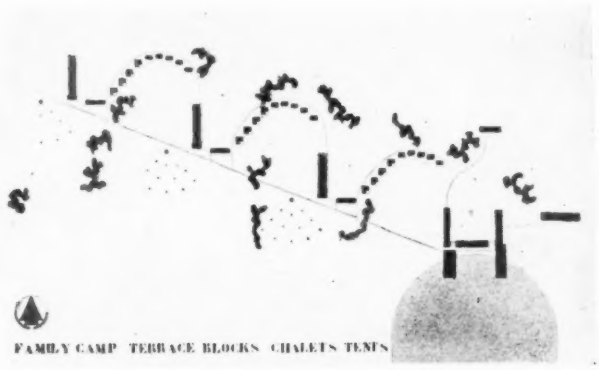
(*b*) heated sleeping quarters are required for use in off-seasons ;

(*c*) covered lavatory access is required.

In family camps separate chalets of two, three and four rooms ensure a measure of self-contained privacy for the family group.

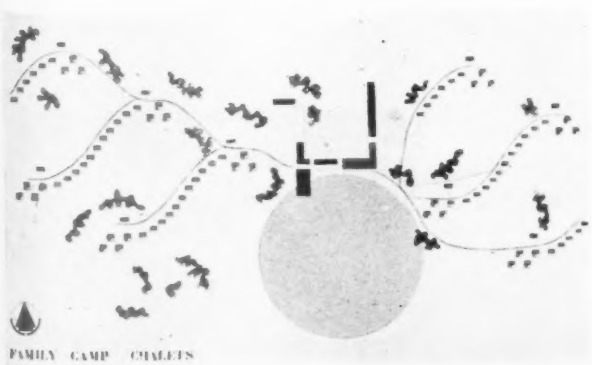
Lavatory and wash blocks should be conveniently placed with regard to the sleeping rooms which they serve. In existing camps the chalets are cleaned daily by charwomen. In future camps, planned for the lowest income groups, expense could be saved by making campers responsible for their own rooms, with the exception of week-end changes. Supervision might be needed to maintain high standards.

The social facilities of holiday camps include provision for both indoor and outdoor recreation. A large hall which can be used as a lounge or ball room is the most important indoor feature. It

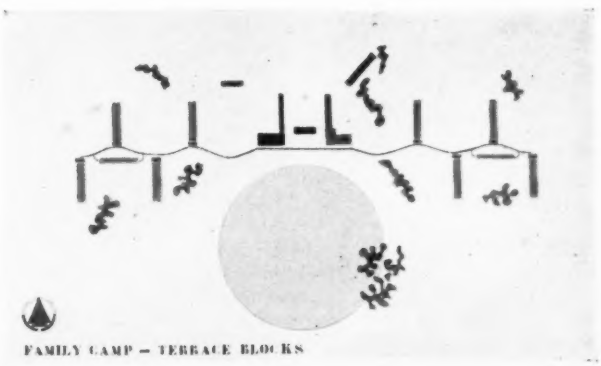


FAMILY CAMP TERRACE BLOCKS CHALETS TENTS

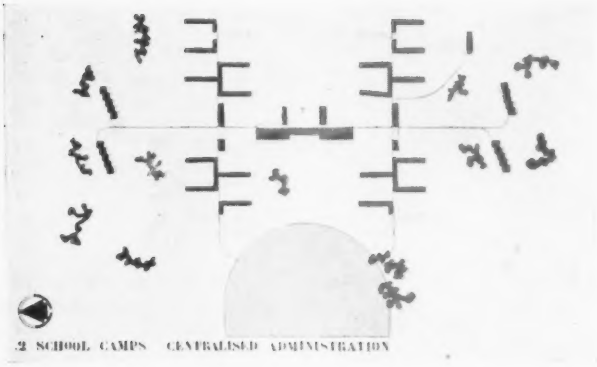
Alternative layouts for a family camp, showing the possibility of using chalets, terrace blocks, or a combination of both. The designs were prepared by Camp Planning Consultants, a group of architects and town planners.

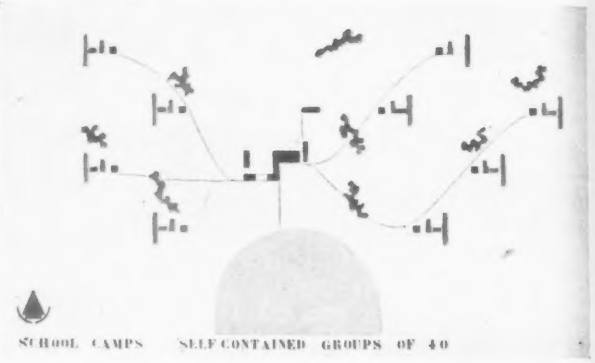


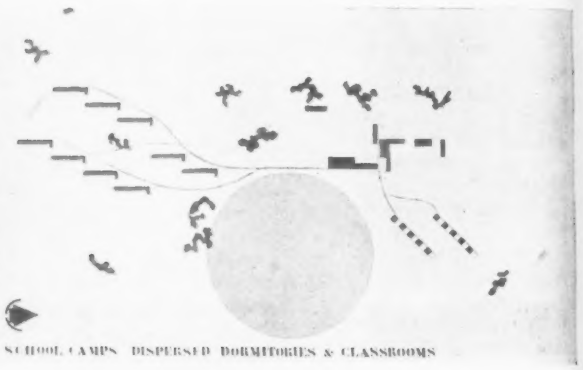
FAMILY CAMP CHALETS



FAMILY CAMP — TERRACE BLOCKS







Layouts for a school camp, showing the various possibilities in grouping the sleeping, administrative, and service units. The designs were prepared by Camp Planning Consultants.

should be included in the main building, and have fireplaces and a small platform stage. The dining hall should not be used for social activities. Other social rooms for games, reading and writing, and children's play are needed. All of these rooms and the canteen should have access to a terrace on the sunny side of the building.

The placing of outdoor recreational features will depend largely on the requirements of a particular site. Noisy games should not be located directly adjacent to the sleeping quarters or main building.

School Camps.—The planning of a school camp will depend on the important functions of administration, recreation and education, and sleeping. Children's camps fall into two general divisions, first, those for summer holidays where no formal lessons are given, and second, those camp schools where children continue with their regular educational programme in fresh surroundings.

The first type of school camp will be used mainly in the summer holidays. The life in the camp should be a care-free, out-of-door existence, completely divorced from the routine of city life. In planning for such a camp, it will not be necessary to include so many facilities for organized recreation as are required in the family holiday camp. A playing field, a place to swim or paddle, and room to wander about over fields and through woods will keep the children quite happy. Some form of covered or enclosed pavilion for wet-weather play is an important feature of the camp. Whenever possible, a hall for entertainments and occasional classes should be included as a separate feature from the dining room.

Sleeping accommodation in the school camp will be in the form of dormitories for 30 to 40 children, rather than in the terraced rooms or individual chalets of the family camp. Each dormitory should have a teacher's room at one end for supervision, and a night lavatory. In a summer camp of this kind some form of emergency heating should be provided, so that the camp could be used for brief visits during the winter, or for evacuation in war-time.

For the camp school, more indoor accommodation is necessary. Classrooms for all the children must be included in the scheme. Since the camp would probably be used for at least ten months of the year, all the buildings would need some form of heating. Otherwise the sleeping, recreational, and administrative quarters would be similar to those of the summer camp for school children. A hard surface outdoor play area is particularly important for the all-year-round camp.

There are one or two items of accommodation which should be remembered in both school and family camps. A sick bay with three or four beds, with a resident nurse in charge, is necessary. The services of a local doctor should be available to the camp. Finally, the item of storage space is extremely important. There must be room for supplies of food, linen, blankets, tools, and extra chairs. In the school camps additional clothing for cold and wet weather is stored and lent to the children.

CONSTRUCTION

[*By DAVID GODDARD*]

THERE are available for camp construction such a vast number of materials, varying from concrete to canvas, that an analysis of these, let alone an attempt to pick out those most suitable, is quite impossible in a short article. This article is not confined to the narrow aspect of materials and methods, which is relatively unimportant at this stage of such a large building programme as must ultimately be necessary under peace or emergency conditions. Such a programme is entirely dependent on the main issues of function, human standards, and economy both national and industrial. It would seem most satisfactory to note current practice and review the main issues of the camp problem in an effort to determine how these affect and are affected by structural considerations.

A series of diagrams prepared by C.P.C., a group of architects and town planners, for the Housing Centre Exhibition, are reproduced on the next two pages, and these illustrate broadly some of the methods and materials at present available. These diagrams were based in each case on an examination of erection time, cost, and proportions of skilled to unskilled labour under normal and comparable conditions.

It is frequently assumed that it will be best to construct the camps of light

BASES
KEY
SKILLED LABOUR
UNSKILLED LABOUR
COST
ERECTION TIME
BRICK BASE
CONCRETE RAFT
CONCRETE POST & TIMBER
CONCRETE POST
WALLS
BRICK
CLAY BLOCK
CONCRETE & STEEL
STEEL
CONCRETE & STEEL
FOAM SLAG
CORK SLAB
CONCRETE
CONCRETE (AERATED)
CONCRETE

prefabricated sections, and this is the conclusion reached by C.P.C. in their diagrams. It would be as well to see how far this assumption is borne out by experience and by our review of the main issues.

At the present time fifty school camps are being built throughout the country. These are in addition to a far greater number of other camps and similar building programmes (militia and service camps, emergency reserves, aerodromes, etc.), all constituting new and small centres of community. Although the school camps are different in character from the other camps which are more directly related to our war preparations, it would be wrong to think of their construction independently of the whole programme.

The school camps are, I understand, being built of the only material—wood—of which there is apparently an abundant supply. Presumably other building materials, of similar cost and suitability, are required for other purposes.

The majority of existing camps, where not built traditionally, are standardized and built up of sectional units or standard frames and panels. There are instances where frame members and often building component-sections are inter-standardized to the extent that many different plan types of hutment can be built, but the case I have in mind seemed to suffer from disadvantages of over-standardization. There are few, if any, examples of prefabrication, at least prefabrication carried to the stage where a reduction in initial costs, maintenance costs, and a raising of standards can all be expected. The initial expenses of organization and plant are necessarily heavy—an example and parallel is to be seen in the motor and aircraft industries.

Before discussing the present opportunity and need for prefabrication in the real sense, I think attention should be drawn to the anticipated demand. There may be well-founded reason to build as rapidly as possible fifty standardized evacuation camps to meet any emergency in the immediate future, but in an emergency or in peace time this number is entirely inadequate. A minimum of 1,500 school camps and a similar number of holiday camps are likely to be required in the near future.

We are thus likely to be confronted with a large-scale building programme, a programme little different from that of meeting the post-war housing shortage, rendered more difficult by the emergency provision, but with a compensating advantage in our being able to start unhampered by traditional conceptions. This advantage could easily become a disadvantage if we failed to profit from our experience of unco-ordinated housing activity.

This programme can only be met satisfactorily by prefabricated building methods — and their implications. Firstly, an analysis of our available industrial resources and a review of all the materials, potential methods and labour available is vital. Secondly, it is of even greater importance to decide exactly what we mean when we talk of camps, what the exact function of the camp will be apart from evacuation. All these must be in relation to an estimated life of a reasonably short term.

With the establishment of such standards and the review of materials and methods available, it will be easy to classify the various types of camp and allocate materials and methods appropriate for their construction. At the present time it is an arbitrary assumption that any one material is most satisfactory for the construction of the great variety of camps.

It seems clear that we now have the opportunity of introducing prefabricated methods into building on a scale which will enable us to reap the full benefits from such methods.

The diagrams on this and the previous page illustrate some of the materials and methods of construction which are at present available for use in building camps. They are based on a study of erection time, cost, and proportion of skilled to unskilled labour under normal conditions—see key on p. 79. The diagrams were prepared by Camp Planning Consultants.

THE BUILDING CENTRE COMPETITION

THE Building Centre recently organized a competition for designs for a school and holiday camp. Nearly a hundred schemes were submitted. The first prize went to Richard Sheppard and Jean Shufflebotham, AA.R.I.B.A. Some competitors made valuable contributions to the study of camps, while others, in varying degrees, failed to grasp the essentials of camp designing.

The programme was quite well prepared, considering that there is as yet no clear-cut policy on the question of school and holiday camps. The conditions were as open as possible, which gave competitors scope to develop ideas on their own lines. The site, included as part of the programme, was not particularly well chosen. It was too small (approximately 17 acres), treeless, and too near to a main road. For the purposes of the competition it was good in so far as it was fairly level and presented no peculiar difficulties. Because of this, competitors were able to develop schemes which could be adapted to different sites.

The main problem was to provide a camp which could be used as :—

a. A Residential School.
b. A Holiday Camp for Children.
c. An Evacuation Camp for War Time.

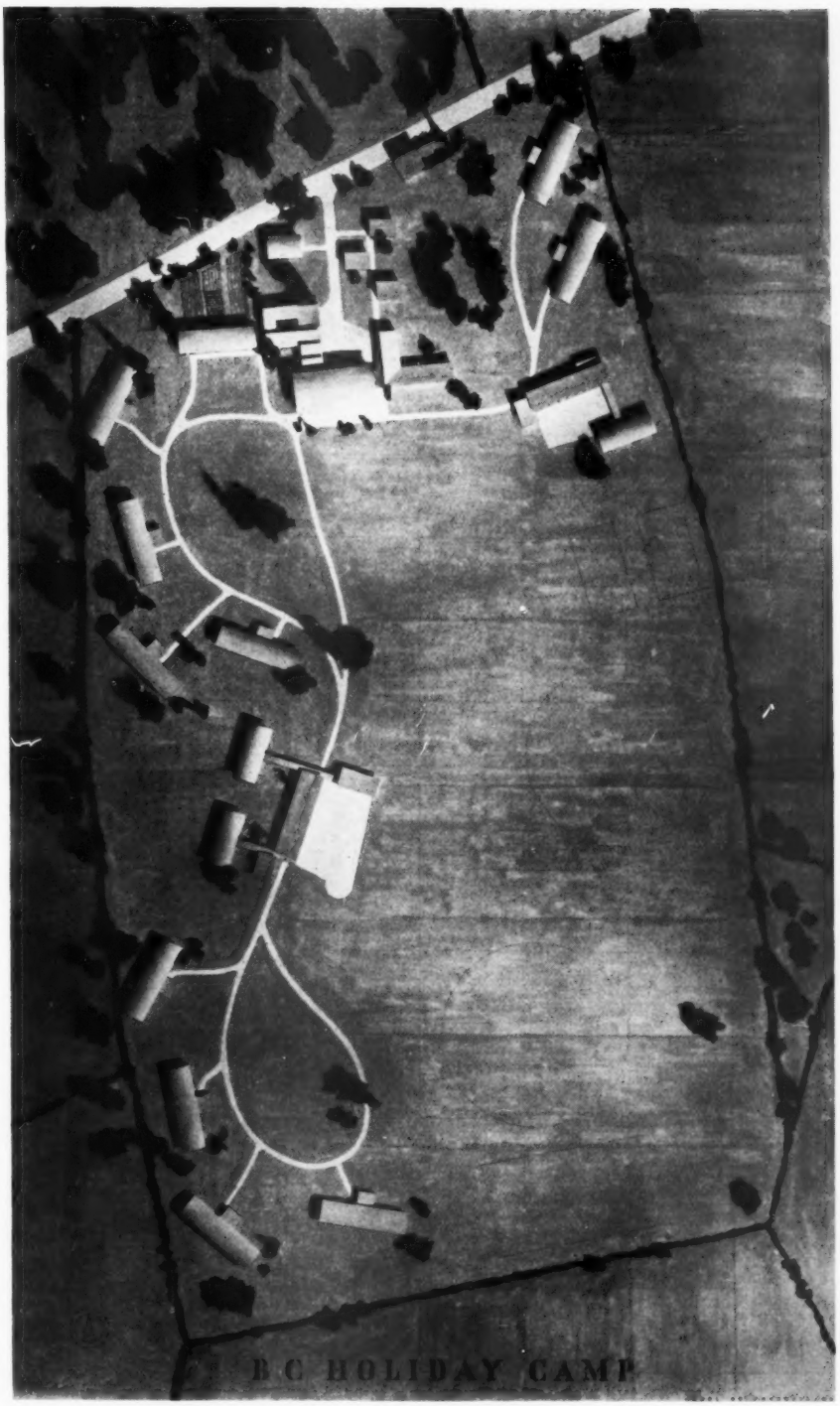
In peace time accommodation for 400 children was to be provided when the camp was used as a residential school. There would be 200 girls and 200 boys, forty of each sex being infants. More children would be accommodated when the camp was used for holidays. In this case certain portions of the buildings were to be used for additional sleeping and recreational accommodation. It was anticipated that in time of war much greater numbers of children would be accommodated, together with an increased proportion in the number of adults accompanying them. It was assumed that teaching would be carried on during a war period, and for this purpose classrooms would have to be retained. Also, in the provision of sleeping accommodation—both normal and emergency—it might not be necessary to have regard, within reason, to the existing regulations relating to the cubic space per child.

The choice of materials was left entirely to competitors. Some form of heating was to be provided for winter months. It was pointed out that the necessity for economy was vital, and competitors were asked to submit approximate estimates of building costs.

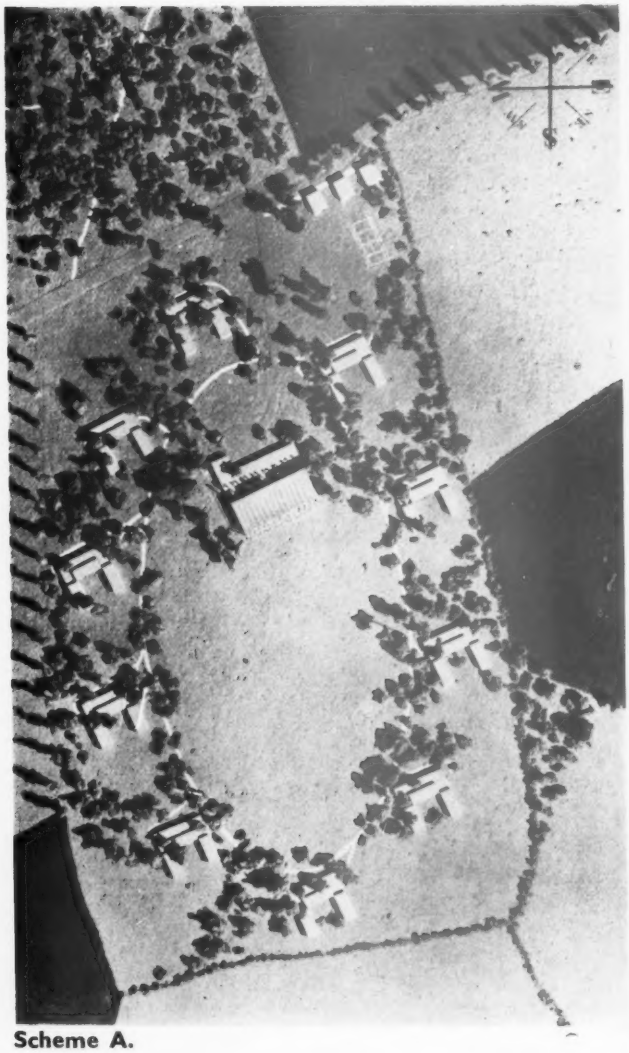
The winning scheme was thoughtfully and competently developed. The authors realized what many competitors forgot; namely, that they were designing a camp. They scored heavily by evolving a simple and satisfactory system of construction which enabled them to estimate a cost of £51 per place.

Their arrangement of buildings on the site was outstanding. Of all the schemes submitted theirs alone was completely free and informal, and at the same time excellent in arrangement.

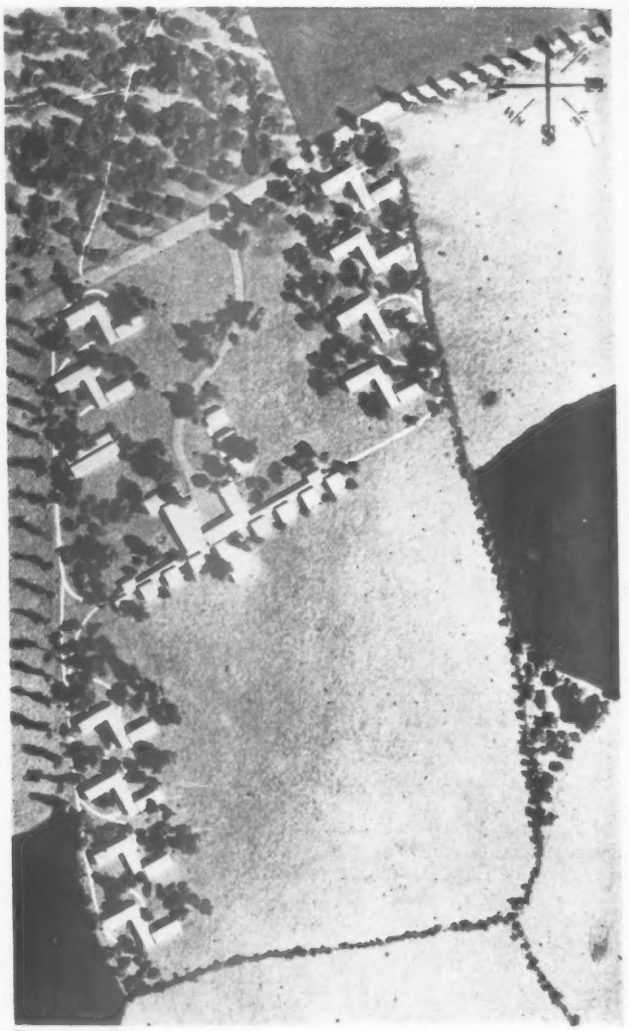
The nursery school and dormitories were near to the main block. The upper school and dormitories were well related, both to the main block and to each other. The necessity for some form of A.R.P. was recognized. The informal layout eliminated plan patterns easily distinguishable from the air. The buildings were placed at the edge of the site near to the surrounding



Aerial view of model showing layout of the winning design in the Building Centre Camps Competition by Richard Sheppard and Jean Shufflebotham.



Scheme A.



Scheme B.

Aerial view of models of alternative schemes submitted by the second prize winners in the Building Centre Camps Competition: Ernö Goldfinger, Mary Crowley, and Justin Blanco-White.

trees. They were orientated and designed in sections that offered little shadow and could easily be completely camouflaged by the addition of canvas sheets fixed to timbers which would be slotted to the main supports.

Generally, the details of the buildings were well considered. The materials and construction are robust and would need little maintenance over a twenty-year period. The scheme is designed on a standardized and prefabricated unit. The only site work necessary is the provision of small excavations for the foot-square concrete cubes which act as foundations and to which all of the buildings are bolted. The fenestration is well related to plan function and is not overdone as it was in so many of the schemes. After all, children would be living what is virtually an open-air life and, in the dormitories particularly, windows would be important chiefly for ventilation. Over-fenestration leads to difficulties in heating.

Criticisms one could make of the scheme are minor. The approach to the camp is not very interesting or æsthetically satisfactory despite the fact that buildings are in their right places. A re-grouping of the small units would remedy this defect. The service and kitchen are a little cramped. The boys' dormitories might prove to be a bit too far from the hot-water supplies. Electric heating in dormitories and classrooms might not prove economical in the long run.

The second prize went to Ernö Goldfinger, Mary Crowley, and Justin Blanco-White. They submitted a most competent set of drawings and models for two alternative schemes. Their analysis of the problem was thorough, their solutions exciting and imaginative. Architecturally the winning scheme was not as fine in detail, but it scored in comparison on economy of construction and informality of site planning.

The authors of the second prize scheme worked out a system of standardized construction units and planning units. Each of these units could be used in a wide variety of different combinations. The flexibility of this type of planning was clearly illustrated by the two schemes, A and B, in which two different concepts of camp life were illustrated. Scheme A was considered to be specially suitable if the camp were to be used mainly as a holiday camp; Scheme B if it were to be primarily a school.

Scheme A is composed of ten self-contained groups, each being for forty children in peace time and eighty in war time. There are two dormitories (one for boys and one for girls), and one classroom per group. The ten groups are arranged around an administrative block with central dining and recreation halls.

In Scheme B the camp is composed of a central administrative block and classrooms, recreation hall and dining hall in one building, with separate

groups of dormitories for boys and girls. The infants have their own dormitory and playroom group.

The authors considered it desirable to use a system of construction already applied in this country for the manufacture of prefabricated timber buildings, and to modify it slightly so as to suit the particular requirements. The constructional units consist of a framework of deal covered with :—

a. An external skin of weather-boarding made more waterproof by adding a layer of waterproof paper.

b. A thermal insulator consisting of ½-in. building board (besides the air space).

c. An internal skin of 4-mm. ply, or of asbestos sheeting in kitchen, lavatory, bathrooms, etc., to protect the building board.

Special plan units (the assembly halls in both schemes) could be built by local or other methods not conforming with the strict standardization of the rest of the construction.

In scheme A a double canvas roof was slung across the recreation and dining halls, suspended from cables which passed over built-up wooden struts, with a clear span between them of 54 ft. The architectural effect of this is dramatic and the light in the large rooms would be extraordinarily good. It is doubtful, however, if such a roof would stand the wind and rain of the notorious English climate.

The windows in the buildings of schemes A and B are large and would be expensive. They would increase the difficulty of heating in the winter time. In scheme A the amount of utilizable area for play is reduced considerably by the type of layout which surrounds it with buildings.

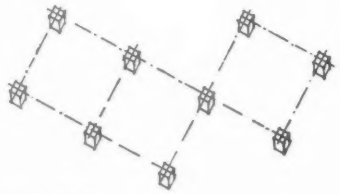
In conclusion, the Building Centre should be congratulated for organizing this competition. The authors of many designs, but particularly those of the first and second schemes, also deserve praise for demonstrating that the architectural profession is fully capable of tackling the new problem of camps in a most competent way.

WINNERS' REPORT

[*Extracts from the description of constructional methods submitted by Richard Sheppard and Miss Shufflebotham.*]

Ease of Fabrication and Erection

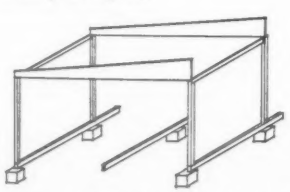
The scheme is designed on a standardized and prefabricated unit. The only site work necessary is the provision of small excavations for the foot-square concrete cubes which act as foundations and to which the whole of the buildings are bolted. A dry system of construction has been used throughout.



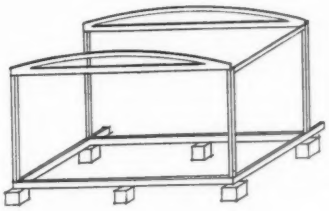
Planning Unit

It was decided that two standard widths of sections would meet all the requirements of the problem. These sections could be varied in regard to windows or sheet finishes and cross partitions, but in no other way. It will be noticed that every section, scantling or truss, can be handled easily.

(A) 16-ft. wide section. Used for all administrative offices, stores, playrooms and quiet rooms, in fact, for all rooms not permanently occupied.



(B) 20-ft. wide sections. Used for all classrooms and dormitories, staff sleeping quarters and covered playgrounds.



Framing Unit

With the exception of the roof the construction of both units is similar. It is based on an 8-ft. bay spacing, which besides being an easily manipulated size is also convenient for patent boards, etc.

The framing unit of 4-in. by 4-in. posts is set up at 8-ft. centres on the previously erected base to a standard height of 10 ft. for B section and 8 ft. and 10 ft. A section.

Slabbing Unit

Has a threefold function :—

(1) As the internal and external wall facing.

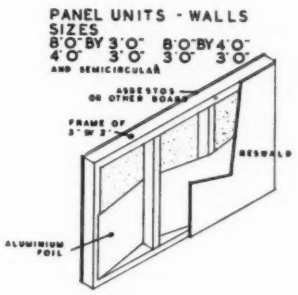
(2) Stiffening for the frame.

(3) Framing to windows.

This unit is in three sizes :—8 ft. by 3 ft. ; 4 ft. by 3 ft. ; 4 ft. by 4 ft.

The facings, both internal and external, may be varied according to their position. Reswald or similar ply is used externally throughout, except in the assembly and dining hall, where weather-boarding is employed. Internally, either spray-painted asbestos sheets or compressed hardboard or plaster board. This arrangement gives a wide choice of finish.

For floors and pitch roofs a further standard framed unit also 8 ft. by 3 ft. 10 in. is used, with joists of 5-in. by 2-in. section.



ORGANIZATION OF CONSTRUCTION

Foundations

1. 1-ft. square concrete blocks. They can be either formed *in situ* or precast and set in holes at 8-ft. centres. These have a bolt cast to take the timber beams.

2. Timber beams, two (6 in. by 2 in.) sections bolted together, are fixed to concrete piers.

3. 4-in. by 4-in. posts are bolted to these at 8-ft. centres and timber frame erected.

4. Floor units strapped and bolted.

5. Unit wall panels are bolted through to flange of floor unit and laterally to post.

6. Roof section bolted.

Roof sections, whether of the Belfast type or of normal truss type are framed out of 1-in. stuff, and no section is too large to be handled.

7. Windows and frames inserted—windows and frames are of deal and are designed so that both frame and window are assembled and fixed at works.

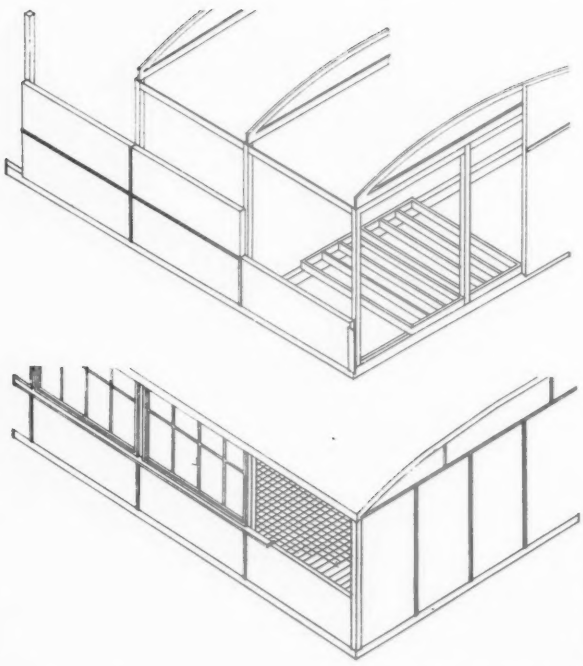
8. Roof assembled. In all cases the roof is formed of corrugated asbestos with a lining of asbestos under. The ceiling is formed of building board or similar material.

Assembly Hall

This is the only structure in the building which is not framed up on the units already described. It is constructed of Belfast trusses which are fixed to framed trusses, the whole forming a rigid structure based on a 10-ft. spacing. The timber hood shown above door and windows forms a transome stiffening the whole structure laterally. Walls are formed of 4-in. by 2-in. studs with diagonal boarding and weather boarding externally, and masonite or similar hardboard internally.

Extension

Extra classroom units could be extended as shown on plan. Provision is made for the extension of any block in one direction. The sectionalized gable end can be dismantled and a fresh extension easily and quickly made, or the gable end can be left and a fresh section added and a door opened by removing one unit.



Above : wall and floor panels being assembled. Below : window units being fixed — structure otherwise complete.

SERVICES

Heating

Owing to the cost of installation and upkeep, and to the fact that the camp is intended primarily for summer use, central heating is not provided for all parts.

Dining and assembly hall and the administration block is, however, to have central-heating system, the latter being in continuous use and the volume of the former making any other system difficult and expensive. These units are to have a low-pressure hot-water system acting through radiators.

Classrooms, dormitories and staff bedrooms are to be supplied with electric unit heaters.

In either case the heating is designed to give no more than an initial lift to the temperature. Should the camp be used for evacuation during the winter months, additional unit heaters would be necessary, for which points are to be provided.

Hot water is circulated from the boiler-house to the kitchen, central wash-houses and staff lavatories only.

Cold water. Four tanks each with a capacity of 5,000 gallons are provided coupled in series. These are built beneath the ground in order to minimize aerial observation. Water is circulated by means of a boost pump to local tanks attached to each lavatory unit.

Drainage and Sanitation

W.c.s have been provided on a decentralized basis throughout the camp. Earth closets or a system of centralized w.c.s were rejected owing to obvious difficulties of supervision and because the city child is unaccustomed to them.

A total of 32 w.c.s is provided, in the boys 11, girls 21. These should be sufficient even for the numbers anticipated in the event of evacuation.

Drainage. The system of drainage adopted must depend upon various factors, such as the nature of the soil, falls and facilities provided by the local authorities. With all these unknown factors it was decided that a system of three septic tanks at various points on the site was cheaper than providing one septic tank at the lowest level and guiding the effluent into the stream.

Equipment

This would not vary in the main from normal school and holiday-camp furniture. All furniture should, however, be preferably of the collapsible and storing type in order to allow the greatest flexibility of room area.

Dormitories. The number of children using the dormitories can be temporarily doubled. Beds provided are in the form of bunks 2 ft. wide and spaced at 2 ft. intervals. These bunks have a deal frame which is clamped automatically to metal uprights. Additional bunks can be added as vertical additions of sectional units screwed into the existing arms.

Each child is to be provided with a locker 1 ft. 9 in. wide and 3 ft. 6 in. high. These, in normal conditions, stand between the beds. It is ventilated, provided with a small hanging cupboard, three metal trays, a boot-rail and a towel and sponge-bag rack.

THE BUILDINGS ILLUSTRATED

PRESTATYN HOLIDAY CAMP, NORTH WALES (pages 54-60). Architects: William H. Hamlyn, F.R.I.B.A. General contractors, McLaughlin and Harvey, Ltd. Sub-contractors and suppliers included : Redpath, Brown & Co., Ltd., Head, Wrightson & Co., Ltd., steelwork ; General Electric Co., Ltd., electrical work ; R. W. Steel & Co, Ltd., hot and cold water ; United Filters and Engineering, Ltd., filtration plant ; Becco Engineering Co., Ltd., softening plant ; W. H. Gaze and Sons, Ltd., tennis courts ; Rustproof Metal Window Co., Ltd., metal windows ; Bradford & Co., Ltd., swimming pool ; Tannoy Products, loudspeakers ; Musgraves (Liverpool), Ltd., Rownson Drew and Clydesdale, sanitary fittings ; Benham and Sons Ltd., The Carron Company, J. Stott & Co. (Engineers), Ltd., kitchen equipment: Fernden Fencing and Construction Co., Ltd., fencing ; Taylor Pearse & Co., Metal Developments, Ltd., Lockerbie and Wilkinson (Birmingham), Ltd., ironmongery ; Burn Bros. (London), Ltd., sewage and stormwater pumps ; Dales, signs ; Lund-Signs, metal turrets and pressed steel fascias ; R. W. Brooke & Co., Ltd., maple flooring ; Williams and Williams, Ltd., patent glazing ; C. F. Anderson and Son, Ltd., patent ceiling construction and ceiling boards ; Educational Supply Association, flush doors (Esavian) ; Dicksons Seeds, Ltd., trees and plants ; The Ruberoid Co., Ltd., D. Anderson and Son, Ltd., roof coverings ; The Lipscombe Air-Condition Co., Ltd., ventilation and air-conditioning ; Turners Asbestos Co., garage roofing and enclosure to lookout tower ; Wolverhampton Corrugated Iron Co., enclosure to water tower ; J. B. Hickey and Sons, boiler chimney, steam boilers ; The Crown Bedding Co., Ltd., beds and mattresses ; John S. Brown and Sons, Ltd., sheets and pillowcases ; Hotel Furnishing Co., blankets, bedspreads, and chest of drawers ; B. Cohen and Sons, Ltd., wardrobes, bar tables, lounge tables, bar chairs, lounge chairs, settees, showcase (specially made to architects' design) ; Lewis's, Ltd., dining-room tables, dining-room chairs, cots, trestle beds, staff bunks, "The Wheelhouse" bar, (interior decoration), masts, flags, mirrors and shelves, ballroom seating, matting ; Cresta Silks, Ltd., curtain materials (specially printed to architects' design) ; Janes and Son, curtains (making-up) ; T. F. Firth and Sons, Ltd., rugs (specially woven to architects' design) ; John Hawley & Co. (Walsall), Ltd., deck chairs, garden umbrellas, garden tables, park chairs and benches ; The "X" Chair Patents Co., Ltd., folding camp chairs ; Stevenson and Son, Ltd., tablecloths (specially printed to architects' design) ; The United London Workshops for the Blind (Sales), Ltd., mats ; Edgley's, Ltd., office furniture, metal wastepaper tubs, litter bins ; J. Pemberton and Sons, billiard tables ; John Jaques and Son, table tennis tables and indoor games ; Gladwin, Ltd., cutlery ; J. and G. Meakin, Ltd., crockery ; C. J. Dams & Co., Ltd., Kristalux, Ltd., glassware ; Kings Signs, Ltd., lettering (to architect's design) ; The National Cash Register Co., Ltd., Amalgamated Business Machines, Ltd., cash registers ; Lambert and Blaber, meat flats ; James Deakin and Sons, Ltd., vegetable dishes ; James Sieber, cloakroom fittings ; H. Hunt and Son, gymnasium equipment and swimming-pool equipment ; W. A. Telling, Ltd., fibrous plaster ; Clibrans, Ltd., gardens ; Weaver & Co. (Refrigeration), Ltd., insulation of bars ; G. A. Harvey & Co. (London), Ltd., ventilators ; Negretti and Zambra, binoculars ; Chubb and Sons Lock and Safe Co., Ltd., strong-room door and angle ; Fredk. Braby & Co., Ltd., entrance pylons ; H. C. Slingsby, trucks ; Pugh Bros., Ltd., glassware on columns ; Billings and Sons, Ltd., first-aid equipment ; Pirelli, cables ; Rashleigh Phipps, Ltd., wiring ; Major Equipment Co., electric light fittings ; Ionite, Ltd., neon signs ; Crompton-Parkinson, Ltd., motors ; Allen-West, Ltd., starters for motors ; Synchronome, Ltd., clocks ; Concrete Utilities, lamp standards ; Crane & Co., pipes ; J. Blakeborough and Sons, Ltd., valves ; Lumbys, Ltd., calorifiers ; Bells Asbestos, pipe lagging ; J. Webb & Co., Ltd., taps ; Pyrene Co., Ltd., fire extinguishers ; S. Nixon & Co. hoses ; Minimax, Ltd., fire extinguishers ; Lipscombe Air Condition Co., Ltd., air-conditioning ; The Imperial Machine Co., potato peeling machines ; The "Euk" Manufacturing Co., Ltd., Berkel and Parnall's Slicing Machine Manufacturing Co., Ltd., Lancashire Dynamo and Crypto, Ltd., kitchen equipment ; W. M. Still and Sons, Ltd., tea and coffee making machines ; Fletcher Russell & Co., Ltd., kitchen equipment ; Lightfoot Refrigeration Co., Ltd., cold store ; Gliksten Doors Ltd., "Wellinlith" wood-wool fibre light-weight building slabs for all external and internal walls of the chalets, all partition walls in the main buildings, i.e. partition wall between kitchen and ballroom, kitchen and lounge, kitchen and dining-room, lounge and ballroom, all partitions in reception room, lounge and sports rooms and all plastered ceilings ; Ideal Boilers and Radiators Ltd., "Standard" lavatory basins ; R. Cattle, Ltd., flush doors.