

### THE BUILDING AND CONTRACTING TRADE

*Note.*—For information regarding the scope of the Census, instructions given to firms for making returns, and definitions of the terms used in this report, reference should be made to the Introductory Notes on pages v to xviii.

#### Introductory

The Census of Production Act, 1906, includes, in the list of persons required to make returns, persons who, by way of trade or business, undertake "the construction or alteration of a building or any part thereof" or carry out "works of construction, alteration or repair of railroads, tramroads, harbours, docks, canals, sewers, roads, embankments, reservoirs or wells, or of laying or altering gas or water-pipes, or telegraphic, telephonic or electric lines or works, or any other prescribed works."

The firms assigned to the Building and Contracting Trade were those whose business consisted wholly or mainly in the classes of work mentioned in the preceding paragraph and whose manufacturing output, if any, was intended principally for their own use and not for sale. Firms that manufactured building materials on a large scale and also carried out contracts for the installation, etc., of their products were included in the trades covering their special class of production; the principal group of firms in question comprised those engaged in constructional engineering, but electrical, heating and sanitary engineering establishments, manufacturers of iron and steel structural work, and firms working in timber and stone also contributed an important proportion of the total building output.

The present report deals with the work of private firms. The similar output of Public Utility Services and Government Departments was valued on a somewhat different basis and is dealt with in the reports on those undertakings, included in a later part of this volume. The amounts recorded by the various manufacturing trades and by public service undertakings in respect of building or contracting work are stated in the table on pages 188-9.

The following table shows the main results of the Censuses of 1930 and 1924 in respect of firms in Great Britain that employed an average of more than ten persons:—

Particulars	Unit	1930	1924
Value of work done and goods made (Gross output)	£'000	191,278	159,883
Cost of materials used and amount paid for sub-contract work	"	98,711	80,686
Net output	"	92,567	79,197
Average number of persons employed	No.	444,538	410,638
Net output per person employed	£	208	193
Power available:—			
Prime movers	H.P.	92,275	86,416
Electric motors driven by purchased electricity	"	123,611	86,751
Number of returns	No.	8,334	9,525

**Deficiencies due to the exclusion of small firms.**—The repair and maintenance of buildings includes work such as painting and decorating, plumbing, gas-fitting, electric wiring, etc., and the small firms in this class of business are very numerous.

The total number of firms known to be engaged in building and contracting work, including repairs or maintenance, in 1924 was about 50,000. Of these firms only 9,500 employed more than ten persons and 27,400 employed fewer than ten persons, while no information was received from the remaining 13,000. A total of 505,981 employees was recorded in all returns received for the year 1924, 410,638 being employed by firms with an average staff of more than ten, and 95,343 by the smaller firms. As regards the outstanding cases the great majority of these consisted of very small businesses and it was estimated that the total number of their employees, including the proprietors, was not more than 40,000. The total number of persons employed in the Building and Contracting Trade in 1924 may therefore be estimated, approximately, as between 540,000 and 550,000, of which between 130,000 and 140,000 (or one-fourth of the total) were employed by the small firms. The total would have been larger by at least 10,000 persons had it not been for the partial stoppage of work in the Building Trade, which lasted for about six weeks and affected about 100,000 workpeople.

For 1930 the number of firms that furnished a record of their employees was 48,000. Of these 39,670 employed not more than ten persons, the aggregate number of their workpeople (including the proprietors) being 154,341, or 3.9 persons per firm, and the remaining 8,330 firms recorded a total staff of 444,538. There were also 3,950 firms which furnished no information, and which consisted almost exclusively of firms having very small businesses. The average number of their employees is likely to have been smaller than the average of the small firms given above and on the assumption that, on the average, they employed about three persons, including the proprietors, approximately 12,000 workpeople should be added on their account. The total number of persons employed by building and contracting firms in 1930 is therefore estimated as between 610,000 and 615,000, an increase of about 12 per cent. over the total estimated for 1924. Of the 1930 aggregate the numbers employed in the smaller businesses amounted to about 27 per cent.

It appears from these estimates that employment in the larger businesses increased in 1930 by 8 per cent. and among the small firms by about 23 per cent. Comparison cannot be quite exact owing to differences in the treatment of individual businesses or classes of output, but this qualification applies mainly to the figures for the smaller firms and the increase in employment among these firms would not in any event be less than 22 per cent.

Allowing for this factor the figures are of interest as evidence of the great importance of the small concerns in this trade and of the fact that the advance in employment between 1924 and 1930 occurred to a much greater extent in businesses of this type than among the larger firms.

According to estimates made by the Ministry of Labour the number of insured workpeople aged 16 to 64 in employment in the Building and Contracting Trade in Great Britain and Northern Ireland was about 744,250 in June, 1924, and about 871,520 in June, 1930, an increase of about 17 per cent. These estimates are inclusive of workpeople employed direct by local and national authorities in building and contracting work and of a large number of firms that were classified in manufacturing trades for the purposes of the Census of Production, and the figures are therefore not comparable with those given in the preceding paragraphs.

Particulars of the main kinds of work done in 1924 by the 27,400 small firms that furnished returns at that Census are given below :—

Kind of work done and goods made	Value
Work on buildings :—	£'000
Work of new construction :—	
Public buildings ... ..	360
Places of public worship and buildings connected therewith ...	144
Factories and workshops ... ..	351
Working class dwellings ... ..	3,426
Other buildings ... ..	3,113
Buildings, not separately distinguished ... ..	16
Work other than of new construction :—	
Jobbing and repair work on buildings (painting, decorating, plumbing, etc.) ... ..	22,773
Electrical work (wiring, fitting, etc.) not included elsewhere ...	198
New work and repair work, not separately distinguished ... ..	237
Total—Building work ... ..	30,618
Other constructional work :—	
Construction, alteration, repair or maintenance of—	
Railways and light railways (permanent way, tunnels, bridges, etc.) ... ..	46
Highways (roads, bridges, footpaths, surface drains, etc.) ...	105
Sewers and sewage disposal works ... ..	32
Waterworks (reservoirs, aqueducts, wells, mains, hydraulic works, etc.) ... ..	56
Electric lines and works ... ..	62
Other works, etc. ... ..	78
Total—Other constructional work ... ..	379
Total—Building and contracting work ... ..	30,997
Other work done :—	
General and jobbing carpentry ... ..	24
New and repair work on ships, boats, etc. ... ..	12
Other work done, including repair and maintenance work on machinery ... ..	33
Total—Other work done ... ..	69
Goods made :—	
Manufactured joinery (window frames, doors, shop fittings, etc.) ...	146
Other manufactures of timber... ..	76
Other goods ... ..	71
Total—Goods made ... ..	293
TOTAL VALUE OF WORK DONE AND GOODS MADE ... ..	31,359

**Size of firms.**—In the following table the main particulars recorded at the Census of 1930 are grouped according to the average numbers of persons shown in the returns :—

Size of firm (average numbers employed)	Number of returns	Gross output	Net output	Average number of persons employed	Net output per person employed
	No.	£'000	£'000	No.	£
11-24 ...	3,749	22,544	12,126	64,754	187
25-49 ...	2,480	32,453	16,648	84,839	196
50-99 ...	1,239	34,923	16,926	84,269	201
100-199 ...	549	32,707	15,271	75,778	202
200-299 ...	169	19,033	8,633	41,129	210
300-399 ...	65	10,883	4,958	22,209	223
400-499 ...	29	6,148	2,699	12,769	211
500-749 ...	26	8,759	3,401	15,362	221
750-999 ...	12	5,606	2,695	10,451	258
1,000-1,499 ...	6	3,469	1,722	6,968	247
1,500 and over ...	10	14,753	7,488	26,010	288
TOTAL ...	8,334	191,278	92,567	444,538	208

Firms with 100 or more workpeople numbered only 866, or about 10 per cent. of the total number that furnished particulars; the number of persons employed by these firms (210,676) was about 47 per cent. of the total, and their share of the total net output was about 49 per cent. With two exceptions, net output per employee increased with the ascending order of employment. For the three smallest size groups, i.e. firms with less than 100 workpeople, the average net output per employee was £195, while in the three groups containing the largest firms the average was £274.

Taking together all firms employing more than ten persons, the average number of workpeople recorded by each firm was 53; if the Building and Contracting Trade is taken as a whole, including firms with less than ten persons, the average staff employed was only 11·8.

**Regional distribution.**—In the following table the results recorded at the Censuses of 1930 and 1924 are grouped according to the areas\* into which Great Britain has been sub-divided. A number of large contracting firms that carried out work in different parts of the country found it impossible to give detailed particulars showing the value of the work done, the number of persons employed, etc., in the course of the year in the various Census areas. The returns furnished by these firms were consequently assigned to the areas in which the head offices were situated. General speaking, the table affords a comparison only as between the work done in the two years by firms whose head offices were situated in the specified area, and is not necessarily representative of the volume of work carried out in particular areas in either year.

\* For particulars see page xviii.

Area	Number of returns	Gross output	Net output	Average number of persons employed	Net output per person employed	
		£'000	£'000	No.	£	
1	1930	1,833	73,747	35,085	144,488	243
	1924	1,792	51,218	25,264	119,004	212
2	1930	959	19,965	9,501	44,905	212
	1924	1,257	19,039	9,078	46,773	194
3	1930	533	9,906	4,803	23,649	203
	1924	752	11,307	5,502	27,412	201
4	1930	294	4,367	1,976	10,945	181
	1924	446	7,059	3,323	17,968	185
5	1930	537	15,128	7,014	35,432	198
	1924	627	10,467	5,041	27,027	187
6	1930	3,016	51,030	25,519	136,754	187
	1924	3,266	44,239	22,514	126,080	179
7	1930	137	1,959	967	5,314	182
	1924	250	3,015	1,569	8,465	185
8	1930	69	914	421	2,594	162
	1924	106	989	485	2,648	183
9	1930	392	7,031	3,411	18,379	186
	1924	439	6,452	3,201	17,064	188
10	1930	564	7,231	3,870	22,078	175
	1924	590	6,098	3,220	18,197	177
TOTAL...	1930	8,334	191,278	92,567	444,538	208
	1924	9,525	159,883	79,197	410,638	193

**Northern Ireland.**—The following table summarises the particulars recorded at the Census of Production taken by the Government of Northern Ireland for 1930, together with those furnished at the 1924 Census. The 1930 figures relate to firms that employed an average of more than *five* persons, while those for 1924 relate to all firms. About 350 firms were exempted from the 1930 Census on the ground that they did not employ more than five persons; it was estimated that these firms employed about 1,000 persons and that the value of their gross output was not more than £250,000.

Particulars	Unit	1930	1924
Value of work done and goods made (Gross output)	£'000	3,010	2,842
Cost of materials used and amount paid for sub-contract work ... ..	"	1,512	1,445
Net output ... ..	"	1,498	1,397
Average number of persons employed ... ..	No.	9,269	8,415
Net output per person employed ... ..	£	162	166
Power available :—			
Prime movers ... ..	H.P.	5,213	2,869
Electric motors driven by purchased electricity	"	2,234	870

The principal items included in the gross output values shown in the above table were as follows :—

Kind of work done and goods made	1930	1924
	£'000	£'000
Work on buildings :—		
New constructional work :—		
Dwellings erected with the aid of public funds* ...	611	406
Other residential houses, shops, offices and hotels	450	690
Public buildings † ... ..	583	219
Places of worship and buildings connected therewith ... ..	60	66
Places of entertainment (theatres, cinemas, etc.) ...	17	†
Factories and workshops ... ..	111	202
Other and unclassified buildings ... ..	38	23
<b>Total—New constructional work ... ..</b>	<b>1,870</b>	<b>1,606</b>
Repair and maintenance work on buildings (painting, decorating, plumbing, etc.) ... ..	453	614
Shop and office fitting ... ..	37	†
Electric work (wiring, fitting, etc., not included above)	21	9
New work and repair work, not separately distinguished ... ..	—	20
<b>TOTAL—Work on buildings ... ..</b>	<b>2,381</b>	<b>2,249</b>
Other constructional work :—		
Work of new construction, alteration, repair or maintenance on :—		
Tramways (permanent way, overhead wires, etc.)	5	381
Highways (roads, bridges, footpaths, surface drains, etc.) ... ..	192	73
Sewers and sewage disposal works... ..	67	15
Harbours, wharves, docks and piers ... ..	18	—
Waterworks (reservoirs, wells, mains, hydraulic works) ... ..	201	89
Other works, etc. ... ..	30	7
<b>TOTAL—Other constructional work ... ..</b>	<b>513</b>	<b>565</b>
Work of all kinds done on sub-contract ... ..	78	†
<b>TOTAL VALUE—Constructional work ... ..</b>	<b>2,972</b>	<b>2,814</b>
Goods made for sale or for stock ... ..	38	28
<b>TOTAL VALUE OF WORK DONE AND GOODS MADE</b>	<b>3,010</b>	<b>2,842</b>

\* Described as "Working class dwellings" in 1924.

† Buildings owned by the Government or by Local or other Public Authorities, except dwellings or factories.

† Not separately recorded.

**Sub-divisions of the industry.**—The following table summarises the results of the 1930 Census in six groups, each of which comprises firms whose main business consisted in the class of work specified in the first column. Comparable figures for 1924 are not available.

Kind of work (1)	Number of returns (2)	Output		Cost of materials (including work sub-let) (5)	Net output (6)	Average number of persons employed (7)	Net output per person employed (8)
		Work specified in Col.(1) (3)	Total (4)				
	No.	£'000	£'000	£'000	£'000	No.	£
Construction of buildings	4,538	109,164	134,058	74,070	59,988	290,472	207
Repair and maintenance of buildings	2,909	21,307	26,192	10,407	15,785	82,106	192
Shop and office fitting ...	97	3,769	4,119	1,794	2,325	8,794	264
Work on highways ...	149	6,342	7,803	3,819	3,984	16,726	238
All other work (except sub-contract work) ...	309	...	11,099	4,744	6,355	29,231	217
Sub-contract work ...	332	6,952	8,007	3,877	4,130	17,209	240
<b>TOTAL</b> ...	<b>8,334</b>	<b>...</b>	<b>191,278</b>	<b>98,711</b>	<b>92,567</b>	<b>444,538</b>	<b>208</b>

This table shows that there was considerable variation in the average size of the firms in the different groups, varying from 28 persons per firm in the group concerned mainly with "repairs and maintenance of buildings" to 112 persons in that concerned with work on "highways". Net output per head was highest among firms carrying out shop and office fitting (£264) and lowest in the group dealing with the repair of buildings.

### Production

**Work done by the Building and Contracting Trade.**—The table below gives particulars of the different classes of work done in 1930 and 1924 by firms whose returns were made on schedules for the Building and Contracting Trade. Similar work done by firms making returns on schedules for other trades was not recorded in the same degree of detail, but the available particulars are summarised in the table on pages 188-9, with details of the building output of public authorities.

Kind of work done	1930		1924
	Value £'000	Entries No.	Value £'000
<b>Work on buildings :—</b>			
Work of new construction (including enlargement of existing buildings) :—			
Public buildings (buildings owned by the Government or by Local or other Public Authorities, except dwellings or factories)...	17,047	1,827	8,762
Places of public worship and buildings connected therewith ...	2,336	1,096	1,824
Factories and workshops (including electric power stations, gasworks, etc.) ...	13,956	1,627	11,830
Dwellings (including tenements) erected with the aid of public funds ...	17,842	1,229	67,971‡
Other residential houses, shops, offices and hotels ...	55,490	4,929	
Places of entertainment (theatres, cinemas, etc.) ...	4,087	718	
Greenhouses and other horticultural buildings	319	584	
Exhibition stands and similar temporary structures ...	125	16	3,835
Other buildings ...	2,837	706	
Buildings, not separately distinguished ...	1,281	82	
<b>TOTAL—Work of new construction</b> ...	<b>115,320</b>	<b>...</b>	<b>94,222</b>
<b>Work, other than of new construction :—</b>			
Repair or maintenance work of all kinds on existing buildings, such as painting, decorating, plumbing, heating, lighting, carpentry work, etc. ...	35,334	6,589	37,324
Shop and office fitting ...	5,378	1,144	*
Electrical work (wiring, fitting, etc.), not included above ...	1,308	625	1,159
Demolition work, not included above ...	131	275	*
New work and repair work, not separately distinguished ...	1,110	80	3,166
<b>TOTAL—Work on buildings</b> ...	<b>158,581</b>	<b>...</b>	<b>135,871</b>
<b>Other contracting :—</b>			
Construction, alteration, repair or maintenance of :—			
Railways and light railways (permanent way, tunnels, bridges, etc.) ...	1,618	107	2,792
Tramways, including trackless trolleys (permanent way, overhead wires, etc.) ...	174	12	210
Highways (roads, bridges, footpaths, surface drains, etc.) ...	9,221	669	8,271
Sewers and sewage disposal works ...	3,344	535	2,598
Harbours, wharves, docks and piers ...	1,569	69	1,550
Canals and waterways ...	34	22	121
Sea walls and embankments ...	295	58	135
Waterworks (reservoirs, aqueducts, wells, mains, hydraulic works) ...	1,917	273	2,104

Kind of work done	1930		1924
	Value	Entries	Value
	£'000	No.	£'000
Other contracting— <i>cont.</i>			
Construction, alteration, repair or maintenance of :—			
Gas mains and works ... ..	907	62	828
Telegraphic and telephonic lines and works ...	526	93	666
Electric power and lighting lines (including installation and erection of generating plant and appliances) ... ..	789	74	1,092
Electrical repair and maintenance work, not separately distinguished ... ..	99	22	—
Recreation or sports grounds (tennis courts, bowling greens, etc.) ... ..	632	346	} 778
Other works, etc. ... ..	273	183	
TOTAL—Other contracting ... ..	21,398	...	21,145
Work of all kinds done on contracts sub-let to the firm ... ..	9,236	1,430	†
TOTAL—BUILDING AND CONTRACTING WORK ...	189,215	...	157,016

‡ This amount was made up as follows :—

Working class dwellings ... ..	£22,888
Other buildings (including shops, hotels, etc.) ...	£45,083

\* Not separately recorded.

† Included in amounts shown against appropriate headings above.

Comparisons between the figures shown for individual classes of work are affected by the following qualifications :—

(1) Sub-contract work, which was required to be shown separately for 1930, was not distinguished in the 1924 returns from work done direct for property owners. It will be noted that the value of this item was returned as £9,236,000 for 1930. The greater part of this sum, if not the whole, was also included by principal contractors in their statements of output and is thus duplicated in the total output value. For this reason, the amounts shown for the individual items for 1924 are overstated relatively to those for 1930 but the extent to which particular headings are affected is not known. As the Board of Trade were advised that it was not the normal practice of builders and contractors to record the amounts *paid* by them to sub-contractors separately from the cost of materials purchased, a separate statement of such payments was not required at either Census.

(2) The enlargement of existing buildings was required to be returned as new constructional work for 1930, but no definite instruction on this point was given for 1924 and work of this nature was recorded by some firms under the head of "repair and maintenance work."

(3) The separation of the important group "Shop and office fitting" (£5,378,000 for 1930) was not made at the 1924 Census, being included in the total for new constructional work on "other buildings" if done on new buildings, and in "repair and maintenance work" if on existing buildings.

(4) Work done by certain electrical firms carrying out wiring contracts on buildings is included in the 1930 figures but not in the 1924 figures for corresponding headings, while for 1930 some road contractors were classified in the Building Materials Trade instead of in the Building and Contracting Trade as in 1924 (see page 86).

It is clear from the information given on pages 179-80 that the aggregates shown in the above table are seriously defective owing to the exclusion of the small firms. The value of work done on buildings in 1924 by all firms in this trade that made returns was about £166 million and of this total £30.6 million represented work carried out by firms employing not more than ten persons; the possible output to be added on account of the firms that failed to furnish returns may be estimated very roughly at a further £13 million, giving a total of about £179 million for 1924 as the approximate value of all work done on buildings by firms in the Building and Contracting Trade. For 1930, the value of work on buildings done by firms with more than ten employees was £158,581,000. It has been estimated (page 179) that the smaller firms may have employed about 166,000 persons, and these persons may have carried out work on buildings amounting to roughly £55 million in value. The total value of work on buildings for 1930, corresponding to that of about £179 million for 1924, was probably between £210 million and £215 million.

These rough estimates indicate that, as regards work on buildings, the value shown in the above table for 1930 may represent only about three-quarters of the total. As already explained, the class of work chiefly affected is the repair and maintenance of buildings, the figures shown against this heading possibly representing rather less than one-half of the total that would have been recorded if returns had been obtained from all firms engaged in work of this description. The defects in the figures shown for the various kinds of new constructional work are less serious. It is probable that a considerable part of the new constructional work done by the small firms represents work sub-let to them by principal contractors, in which case it is already accounted for in the returns of the latter firms. The total amount shown above under the heading of "work of new construction" is unlikely to be in defect of the true figure by more than 10 per cent. As regards the different descriptions of contracting work not specifically on buildings (included under the general heading "other contracting") it will be seen from the table

on page 180 that the small firms were responsible for only a relatively small fraction of the total output in 1924, and their exclusion cannot have affected the results for 1930 in any material degree.

**Total value of all work of construction, repair and maintenance carried out in Great Britain in 1930 and 1924.**—In the following table, the amounts returned by all trades, including public authorities, carrying out work of the kinds specified in the foregoing table are brought together. Work done by public utility undertakings was valued on a non-profit basis, and the figures for this group are therefore not strictly comparable with those shown for the private firms.

Kind of work done	Private firms		Public Utility Undertakings			Total
	Returned on schedules for					
	The Building and Contracting Trade	Other trades	Railway Companies	Other Public Utility Companies*	Local Authorities and Government Departments	
	£'000	£'000	£'000	£'000	£'000	£'000
Construction, alteration, repair or maintenance of:—						
Buildings ...	1930 158,581	3,635	3,621	7,548	8,535	181,920
	1924 135,871	3,268	3,439	3,829	4,904	151,311
Railways and light railways	1930 1,618	—	20,499	15	205	22,337
	1924 2,792	—	21,556	13	199	24,560
Tramways ...	1930 174	—	—	411	2,104	2,689
	1924 210	—	—	688	4,115	5,013
Highways ...	1930 9,221	2,147	—	—	41,300	52,668
	1924 8,271	1,898	—	—	35,558	45,727
Sewers and sewage disposal works ...	1930 3,344	—	—	—	3,158	6,502
	1924 2,598	—	—	—	2,891	5,489
Harbours, wharves, docks and piers ...	1930 1,569	8	988	192	1,282	4,039
	1924 1,550	52	1,526	116	2,440	5,684
Canals and waterways ...	1930 34	—	202	404	652	1,292
	1924 121	—	223	449	883	1,676
Sea walls and embankments	1930 295	—	53	57	603	1,008
	1924 135	—	†	17	412	564
Waterworks, etc.	1930 1,917	—	134	4,625	29	6,705
	1924 2,104	18	144	4,642	—	6,908
Gas mains and works (other than buildings)	1930 907	—	86	8,090	—	9,083
	1924 828	12	†	14,297‡	—	15,137
Telegraphic and telephonic lines and works	1930 526	567	842	—	11,092	13,027
	1924 666	515	1,021	—	10,884	13,086

Kind of work	Private firms		Public Utility Undertakings			Total
	Returned on schedules for					
	The Building and Contracting Trade	Other trades	Railway Companies	Other Public Utility Companies*	Local Authorities and Government Departments	
	£'000	£'000	£'000	£'000	£'000	£'000
Construction, alteration, repair or maintenance of— <i>cont.</i>						
Electric power and lighting lines (including installation and erection of generating plant and appliances) ...	1930 789	4,131	410	13,485§	200	19,015
	1924 1,092	2,524	589	7,274§	62	11,541
Electrical repair and maintenance work, not separately distinguished	1930 99	1,577	—	—	—	1,676
	1924 —	1,627	—	—	—	1,627
Recreation and sports grounds	1930 632	—	—	—	2,042	2,674
	1924 †	†	†	†	†	†
Other and unclassified work	1930 9,509	158	—	—	239	9,906
	1924 778	—	—	—	1,836	2,614
TOTAL of above	1930 189,215	12,223	26,835	34,827	71,441	334,541
	1924 157,016	9,914	28,498	31,325	64,184	290,937
Iron and steel constructional work ...	1930 —	21,301	—	—	—	21,301
	1924 —	15,720	—	—	—	15,720
TOTAL ...	1930 189,215	33,524	26,835	34,827	71,441	355,842
	1924 157,016	25,634	28,498	31,325	64,184	306,657

\* Including gas, electricity and water undertakings operated by Local Authorities.

† Not separately recorded.

‡ Including £6,034,000, work done by employees of gas undertakings on buildings, plant and machinery and on gas mains and works, not separately distinguished.

§ Including, for 1930, £565,000, and, for 1924, £336,000, in respect of work done by employees of electricity undertakings on public lamps.

|| Including, in 1930, work of all kinds done on sub-contract. In 1924 this work was included against the appropriate headings.

Manufacturing firms that carried out work on buildings, etc., were instructed to state the value of such work *exclusive* of any materials which they themselves produced and used in the work, these materials being returnable separately. This provision also applied to constructional engineers. Consequently the amounts shown in respect of "other trades" above are understated by the value of any materials that may have been manufactured by the

firms by whom the work was carried out. An exception to this instruction was made in the Building Materials Trade, where firms were asked to enter, against the heading for "Contract work," the total amounts received for such work; the amounts stated were consequently inclusive of the value of all materials used, whether made by the firms themselves or not (see page 169).

As no record of the amounts paid in respect of work sub-let is available it is impossible to estimate how far the total of £33,500,000, shown in the above table as returned by "other trades", consisted of sub-contract work given out by firms in the Building and Contracting Trade and was included in the total of £189,215,000 returned by those firms. Without making allowance for any duplication thus arising, or for the different basis on which the output of public service undertakings was valued, the table shows that in 1930 about 63 per cent. of all work of the specified kinds was done by private firms and about 37 per cent. by public service undertakings. If the estimated value of work done by small firms is included, the share of private firms in the total would be increased to about 68 per cent.

**Volume of production in 1930 and 1924.**—The value of the building and contracting output in 1924 is shown in the table on pages 85-6 as £157,016,000 and of this amount approximately one-half, or £78 million, was made up of purchased materials and payments for work sub-let. In view of the numerous varieties of materials used in building work and of the lack of adequate information as to the consumption of particular kinds, an attempt to re-value this figure at 1930 prices must be very hazardous. From such particulars as are available, however, as to the movement of prices of constructional iron and steel and of non-ferrous metals, timber, bricks, slates, tiles, glass, stone, sand, cement and other building materials, it is estimated that the figure of £78 million would be equivalent at 1930 prices to a sum of approximately £67 million. As regards other factors entering into the cost of production, information is available only in respect of the movement of average earnings which, for the Building and Contracting Trade as a whole showed little change between 1930 and 1924. Based on these items, which together cover more than two-thirds of the total value of the building and contracting output in 1924, the sum of £157,016,000 would represent in terms of 1930 prices a total of £145 million, indicating that the volume of production in 1930 was greater than in 1924 by about 30 per cent. Having regard to its speculative basis, no great degree of precision is claimed for this estimate.

The recorded increase in employment was only 8 per cent. An explanation of the somewhat wide divergence between these two results may be found in the possibility that a relatively greater volume of work was sub-let by building firms in 1930 to firms whose returns were made on schedules for other trades or to the small firms, resulting in an increase in the output value returned by building firms with no corresponding addition to the employment totals. In this connection it will be observed that, without adjustment for

price changes, the gross output value in 1930 was greater by about 20 per cent. than in 1924, while the value of work done by the firms in trades other than the Building and Contracting Trade, which recorded an output of work on buildings, increased by 30 per cent.

**Other work done and goods made.**—In addition to the work shown in the table on pages 185-6, firms that made returns on schedules for the Building and Contracting Trade carried out other kinds of work, not directly connected with the construction or maintenance of buildings, and particulars of this work are given below. Particulars of the goods made by these firms and not used by them in their own work are also shown. These products are dealt with in the reports on those trades in which the principal output was recorded.

Kind of goods made and work done	1930 Value	1924 Value
	£'000	£'000
Goods made and not used by the manufacturers in the work entered in the preceding tables :—		
Manufactured joinery (window frames, doors, shop fittings, etc.)	1,047	885
Sawmill products (including staves, barrel ends and other parts of barrels, casks, etc.)	35	101
Furniture and cabinetware	114	82
Coffins...	58	141
Wooden crates, cases, boxes, etc.	60	215
Wood paving blocks...	52	
Portable buildings (garages, poultry houses, etc.)	87	344
Other manufactures of timber	97	
Monumental and architectural masonry, stone, etc.	26	121
Bricks	18	18
Artificial stone, concrete blocks, slabs, etc.	83	84
Mortar	19	29
Road-making materials (tar macadam, crushed stone, slag, clinker, etc.)	108	52
Heating and ventilating apparatus	5	51
Electrical goods	15	*
Other manufactures of metal	49	107
Other products	73	110
<b>TOTAL—Goods made, etc.</b>	<b>1,946</b>	<b>2,340</b>
	Amount received	Amount received
	£'000	£'000
Other work done :—		
General and jobbing carpentry	28	166
Repair and maintenance work on machinery	21	124
New and repair work on ships, boats, etc.	46	72
Other work done	22	165
<b>TOTAL—Other work done</b>	<b>117</b>	<b>527</b>
<b>TOTAL—Goods made and other work done</b>	<b>2,063</b>	<b>2,867</b>

\* Not separately recorded.

**Employment and Wages**

**Employment.**—The following table shows the average numbers of persons employed in 1930 and 1924.

Persons employed	Males		Females		Total	
	Under 18	All ages	Under 18	All ages	Under 18	All ages
	<b>1930</b>					
Operatives (average for the year) ... ..	24,789	409,894	75	599	24,864	410,493
Administrative, technical and clerical staff (as at 18th October) ... ..	1,898	27,644	937	6,401	2,835	34,045
<b>TOTAL</b> ... ..	<b>26,687</b>	<b>437,538</b>	<b>1,012</b>	<b>7,000</b>	<b>27,699</b>	<b>444,538</b>
<b>1924</b>						
Operatives (average for the year) ... ..	26,396	378,661	157	707	26,553	379,368
Administrative, technical and clerical staff (as at 18th October) ... ..	1,821	25,857	691	5,413	2,512	31,270
<b>TOTAL</b> ... ..	<b>28,217</b>	<b>404,518</b>	<b>848</b>	<b>6,120</b>	<b>29,065</b>	<b>410,638</b>

**Wages.**—The available information as to the amount of wages paid in 1930 and 1924 is given on pages 98 and 99.

**Power**

The following table shows the capacity of prime movers, electric generators and electric motors ordinarily in use and in reserve or idle in 1930 and 1924:—

Power equipment	1930			1924		
	Ordinarily in use	In reserve or idle	Total	Ordinarily in use	In reserve or idle	Total
<b>PRIME MOVERS</b>						
Reciprocating steam engines ... ..	H.P.	H.P.	H.P.	H.P.	H.P.	H.P.
Reciprocating steam engines ... ..	19,642	7,930	27,572	26,593	5,772	32,365
Steam turbines ... ..	197	—	197	133	32	165
Internal combustion engines:—						
Gas ... ..	16,901	1,830	18,731	30,144	2,343	32,487
Petrol, kerosene, or other light oils ...	32,883	4,881	37,764	17,298	1,827	19,125
Heavy oils ... ..	6,477	1,058	7,535	2,053	44	2,097
Water engines ... ..	278	58	336	177	—	177
Other prime movers ...	120	20	140	—	—	—
<b>TOTAL</b> ... ..	<b>76,498</b>	<b>15,777</b>	<b>92,275</b>	<b>76,398</b>	<b>10,018</b>	<b>86,416</b>

Power equipment	1930			1924		
	Ordinarily in use	In reserve or idle	Total	Ordinarily in use	In reserve or idle	Total
<b>ELECTRIC GENERATORS</b>						
Driven by	Kw.	Kw.	Kw.	Kw.	Kw.	Kw.
Reciprocating steam engines ... ..	358	161	519	825	150	975
Internal combustion engines:—						
Gas ... ..	834	412	1,246	1,878	394	2,272
Petrol, kerosene, or other light oils ... ..	346	28	374	240	—	240
Heavy oils ... ..	626	187	813	277	—	277
Water engines ... ..	7	—	7	38	—	38
<b>TOTAL</b> ... ..	<b>2,171</b>	<b>788</b>	<b>2,959</b>	<b>3,258</b>	<b>544</b>	<b>3,802</b>
<b>ELECTRIC MOTORS</b>						
Driven by	H.P.	H.P.	H.P.	H.P.	H.P.	H.P.
Electricity generated in same works ...	2,453	361	2,814	4,794	396	5,190
Electricity generated in other works under same ownership ... ..	401	—	401	—	—	—
Purchased electricity	105,191	18,420	123,611	77,387	9,364	86,751
<b>TOTAL</b> ... ..	<b>108,045</b>	<b>18,781</b>	<b>126,826</b>	<b>82,181</b>	<b>9,760</b>	<b>91,941</b>

**Consumption of fuel**

The following table shows the quantities of coal, coke and electricity recorded as used in 1930:—

Kind of fuel used	For power (driving engines)	For other purposes (so far as recorded)	For power and other purposes, not separately distinguished
	Tons	Tons	Tons
Coal ... ..	95,890	29,204*	479
Coke ... ..	6,009	24,849*	542
Electricity used for all purposes:—			B.T.U. (Kw.-hrs.) '000
Generated in same works ... ..	...	...	1,830
Generated in other works under same ownership ... ..	...	...	145
Purchased ... ..	...	...	39,246
<b>TOTAL—Electricity</b> ... ..			<b>41,221</b>

\* These figures were recorded by firms representing 93.4 per cent. of the net output of the whole trade.



**TABLES**  
**I. Summary of results**

Particulars	Unit	England and Wales	Scotland	Great Britain
Value of work done and goods made (Gross output) ... ..	£'000	177,016	14,262	191,278
Cost of materials used and amount paid for sub-contract work ... ..	"	91,730	6,981	98,711
Net output ... ..	"	85,286	7,281	92,567
Average number of persons employed...	No.	404,081	40,457	444,538
Net output per person employed ...	£	211	180	208
Power available :—				
Prime movers ... ..	H.P.	83,513	8,762	92,275
Electric motors driven by purchased electricity ... ..	"	109,608	14,003	123,611

**II. Production**

Kind of work done and goods made	England and Wales	Scotland	Great Britain
	£'000	£'000	£'000
Work on buildings :—			
Work of new construction (including enlargement of existing buildings) :—			
Public buildings (buildings owned by Government, Local or other Public Authorities, except dwellings or factories) ... ..	15,176	1,871	17,047
Places of public worship and buildings connected therewith ... ..	2,146	190	2,336
Factories and workshops (including electric power stations, gas works, etc.) ... ..	13,059	897	13,956
Dwellings (including tenements) erected with the aid of public funds ... ..	15,406	2,436	17,842
Other residential houses, shops, offices and hotels ... ..	53,193	2,297	55,490
Places of entertainment (theatres, cinemas, etc.) ... ..	3,845	242	4,087
Greenhouses and other horticultural buildings	280	39	319
Exhibition stands and similar temporary structures ... ..	125	*	125
Other buildings ... ..	2,639	198	2,837
Buildings, not separately distinguished ...	1,193	88	1,281
Work, other than of new construction :—			
Repair or maintenance work of all kinds on existing buildings, such as painting, decorating, plumbing, heating, lighting, carpentry work, etc. ... ..	32,681	2,653	35,334
Shop and office fitting ... ..	5,134	244	5,378
Electrical work (wiring, fitting, etc.), not included above ... ..	1,151	157	1,308
Demolition work, not included above ...	109	22	131
New work and repair work, not separately distinguished ... ..	1,015	95	1,110
<b>TOTAL—Work on buildings ... ..</b>	<b>147,152</b>	<b>11,429</b>	<b>158,581</b>

\* Less than £500.

Kind of work done and goods made	England and Wales	Scotland	Great Britain
	£'000	£'000	£'000
Other contracting :—			
Construction, alteration, repair or maintenance of :—			
Railways and light railways (permanent way, tunnels, bridges, etc.) ... ..	1,559	59	1,618
Tramways, including trackless trolleys (permanent way, overhead wires, etc.) ...	169	5	174
Highways (roads, bridges, footpaths, surface drains, etc.) ... ..	8,381	840	9,221
Sewers and sewage disposal works ... ..	2,962	382	3,344
Harbours, wharves, docks and piers ... ..	1,441	128	1,569
Canals and waterways ... ..	31	3	34
Sea walls and embankments ... ..	257	38	295
Waterworks (reservoirs, aqueducts, wells, mains, hydraulic works) ... ..	1,755	162	1,917
Gas mains and works ... ..	904	3	907
Telegraphic and telephonic lines and works ...	464	62	526
Electric power and lighting lines (including installation and erection of generating plant and appliances) ... ..	591	198	789
Electrical repair and maintenance work, not separately distinguished ... ..	39	60	99
Recreation or sports grounds (tennis courts, bowling greens, etc.) ... ..	554	78	632
Other works, etc. ... ..	234	39	273
<b>TOTAL—Other contracting ... ..</b>	<b>19,341</b>	<b>2,057</b>	<b>21,398</b>
Work of all kinds done on contracts sub-let to the firm ... ..	8,658	578	9,236
<b>TOTAL—BUILDING AND CONTRACTING WORK</b>	<b>175,151</b>	<b>14,064</b>	<b>189,215</b>
Goods made and not used by the manufacturers in the work entered above :—			
Manufactured joinery (window frames, doors, shop fittings, etc.) ... ..	998	49	1,047
Sawmill products (including staves, barrel ends and other parts of barrels, casks, etc.) ...	35	*	35
Furniture and cabinetware ... ..	109	5	114
Coffins ... ..	52	6	58
Wooden crates, cases, boxes, etc. ... ..	51	9	60
Wood paving blocks ... ..	50	2	52
Portable buildings (garages, poultry houses, etc.)	75	12	87
Other manufactures of timber ... ..	97	*	97
Monumental and architectural masonry, stone, etc. ... ..	21	5	26
Bricks ... ..	18	—	18
Artificial stone, concrete blocks, slabs, etc. ...	62	21	83
Mortar ... ..	18	1	19
Road-making materials (tar macadam, crushed stone, slag, clinker, etc.) ... ..	106	2	108
Heating and ventilating apparatus ... ..	4	1	5
Electrical goods ... ..	9	6	15
Other manufactures of metal ... ..	43	6	49
Other products ... ..	56	17	73
<b>TOTAL—Goods made, etc. ... ..</b>	<b>1,804</b>	<b>142</b>	<b>1,946</b>

\* Less than £500.

Kind of work done and goods made	England and Wales	Scotland	Great Britain
	£'000	£'000	£'000
Other work done :—			
General and jobbing carpentry ... ..	18	10	28
Repair and maintenance work on machinery ...	20	1	21
New and repair work on ships, boats, etc. ...	3	43	46
Other work done ... ..	20	2	22
TOTAL—Other work ... ..	61	56	117
TOTAL VALUE OF GOODS MADE AND WORK DONE (GROSS OUTPUT) ... ..	177,016	14,262	191,278

### III. Employment

#### A.—NUMBERS EMPLOYED IN WEEK ENDED 18TH OCTOBER, 1930

Persons employed	Males		Females		Males and females	
	Under 18	All ages	Under 18	All ages	Under 18	All ages
	<i>England and Wales :—</i>					
Operatives ... ..	22,017	377,923	61	531	22,078	378,454
Administrative, etc.* ... ..	1,788	25,206	734	5,126	2,522	30,332
TOTAL ... ..	23,805	403,129	795	5,657	24,600	408,786
<i>Scotland :—</i>						
Operatives ... ..	3,129	37,866	15	77	3,144	37,943
Administrative, etc.* ... ..	110	2,438	203	1,275	313	3,713
TOTAL ... ..	3,239	40,304	218	1,352	3,457	41,656
<i>Great Britain :—</i>						
Operatives ... ..	25,146	415,789	76	608	25,222	416,397
Administrative, etc.* ... ..	1,898	27,644	937	6,401	2,835	34,045
TOTAL ... ..	27,044	443,433	1,013	7,009	28,057	450,442

\* Administrative, technical and clerical staff.

#### B.—OPERATIVES EMPLOYED IN ONE WEEK IN EACH MONTH OF 1930

Week ended	Males and females			Week ended	Males and females		
	England and Wales	Scotland	Great Britain		England and Wales	Scotland	Great Britain
Jan. 18 ...	347,653	32,380	380,033	July 19 ...	386,046	38,067	424,113
Feb. 15 ...	355,404	33,765	389,169	Aug. 16 ...	394,055	39,590	433,645
Mar. 15 ...	362,501	34,386	396,887	Sept. 13 ...	392,007	39,118	431,125
April 12 ...	375,283	37,450	412,733	Oct. 18 ...	378,454	37,943	416,397
May 17 ...	383,883	38,483	422,366	Nov. 15 ...	363,614	35,972	399,586
June 21 ...	385,628	39,404	425,032	Dec. 13 ...	360,459	34,367	394,826
AVERAGE FOR THE TWELVE MONTHS ... ..					373,749	36,744	410,493

### IV. Power

#### PARTICULARS OF PRIME MOVERS, ELECTRIC GENERATORS AND ELECTRIC MOTORS

Power equipment	England and Wales		Scotland		Great Britain	
	Ordinarily in use	In reserve or idle	Ordinarily in use	In reserve or idle	Ordinarily in use	In reserve or idle
PRIME MOVERS	H.P.	H.P.	H.P.	H.P.	H.P.	H.P.
Reciprocating steam engines ... ..	17,659	7,642	1,983	288	19,642	7,930
Steam turbines ... ..	197	—	—	—	197	—
Internal combustion engines :—						
Gas ... ..	15,507	1,685	1,394	145	16,901	1,830
Petrol, kerosene, or other light oils ...	29,509	4,529	3,374	352	32,883	4,881
Heavy oils ... ..	5,258	1,058	1,219	—	6,477	1,058
Water engines ... ..	275	54	3	4	278	58
Other ... ..	120	20	—	—	120	20
TOTAL ... ..	68,525	14,988	7,973	789	76,498	15,777
TOTAL OF PRIME MOVERS INSTALLED	83,513		8,762		92,275	
ELECTRIC GENERATORS Driven by	Kw.	Kw.	Kw.	Kw.	Kw.	Kw.
Reciprocating steam engines ... ..	253	160	105	1	358	161
Internal combustion engines :—						
Gas ... ..	738	357	96	55	834	412
Petrol, kerosene, or other light oils ... ..	291	14	55	14	346	28
Heavy oils ... ..	549	187	77	—	626	187
Water engines ... ..	7	—	—	—	7	—
TOTAL ... ..	1,838	718	333	70	2,171	788
TOTAL OF ELECTRIC GENERATORS INSTALLED	2,556		403		2,959	
ELECTRIC MOTORS Driven by	H.P.	H.P.	H.P.	H.P.	H.P.	H.P.
Electricity generated in same works ...	1,983	311	470	50	2,453	361
Electricity generated in other works under same ownership ... ..	401	—	—	—	401	—
Purchased electricity	92,908	16,700	12,283	1,720	105,191	18,420
TOTAL ... ..	95,292	17,011	12,753	1,770	108,045	18,781
TOTAL OF ELECTRIC MOTORS INSTALLED	112,303		14,523		126,826	

## V. Consumption of fuel

Kind of fuel used	England and Wales	Scotland	Great Britain
	Tons	Tons	Tons
Coal used for power* ... ..	89,130	6,760	95,890
Coke used for power* ... ..	5,999	10	6,009
	B.T.U. (Kw.-hrs.) '000	B.T.U. (Kw.-hrs.) '000	B.T.U. (Kw.-hrs.) '000
Electricity used for all purposes :—			
Generated in same works ... ..	1,477	353	1,830
Generated in other works under same ownership ... ..	145	—	145
Purchased ... ..	34,850	4,396	39,246
TOTAL—Electricity ... ..	36,472	4,749	41,221

\* In addition, 479 tons of coal and 542 tons of coke (all in England and Wales) were recorded as used for power and for other purposes, not separately distinguished.