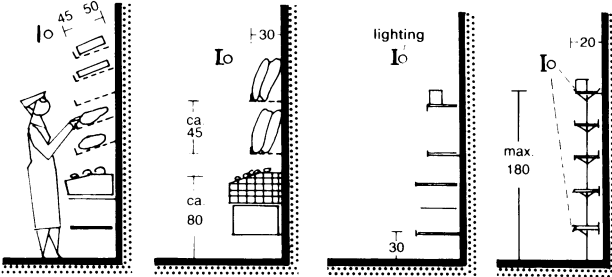
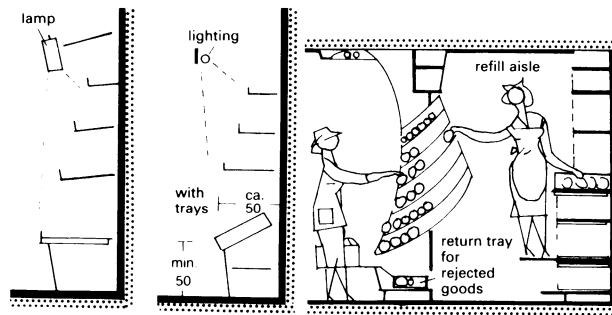


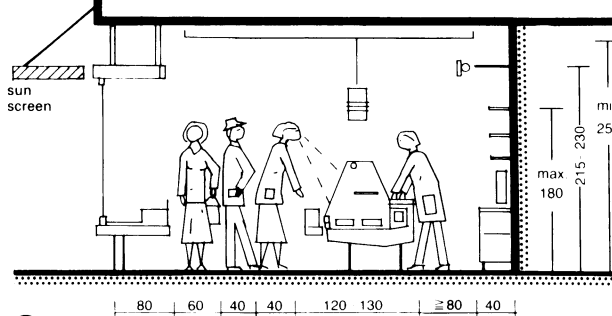
① Shelves for bottles  
Shelves for fruit, vegetables and loose goods  
② Partition allowing replacement of containers from refilling aisle



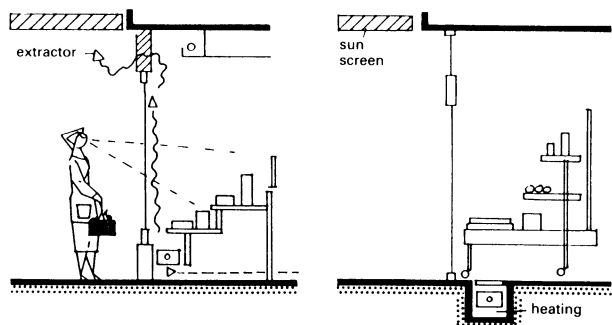
③ Bread display  
④ Shelf display unit



⑤ Self-service shelves  
⑥ Shelf unit with refill aisle and return tray



⑦ Minimum width of a shop  $\geq 4.0$  m, preferably 5.0 m

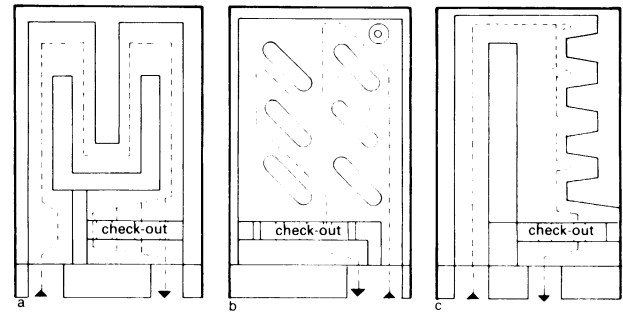


⑧ Stepped window display, with protective glass behind  
⑨ Mobile window carousel, protective screen behind

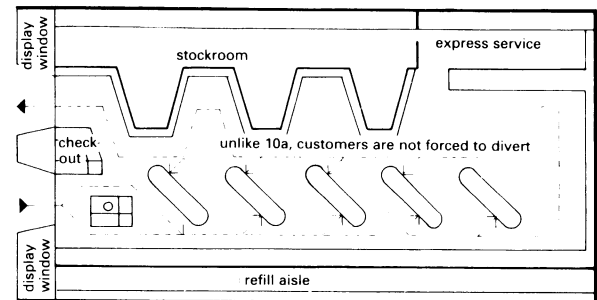
Shelf units in shops → ① – ⑥ from which customers pick their own goods should be no higher than 1.8 m and no lower than 0.3 m above floor level.

Attention must be paid to circulation routes in larger shops → ⑩ + ⑪. They should begin at the trolley/basket pick-up and end at the check-outs.

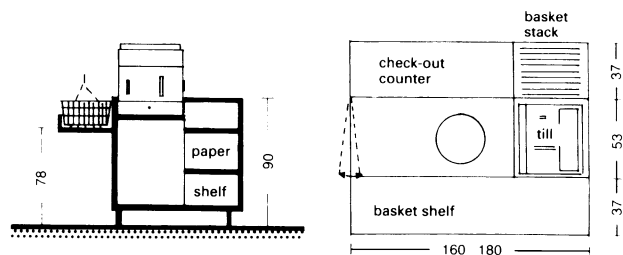
All shops require some provision for the handling of goods. These needs may vary from off-pavement deliveries for small units to the complex operations carried out by large retail businesses.



⑩ Circulation routes must account for corners (a and c, entrance and exit separate; b, together)

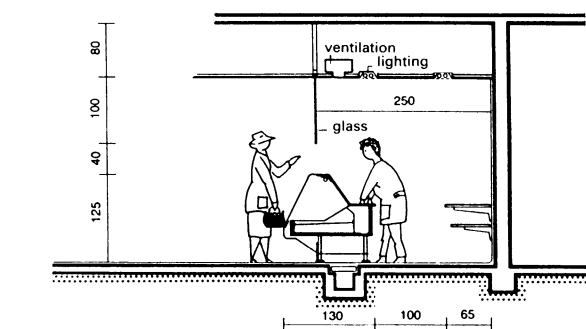


⑪ Good view of the whole shop from check-outs is essential for customer convenience and security

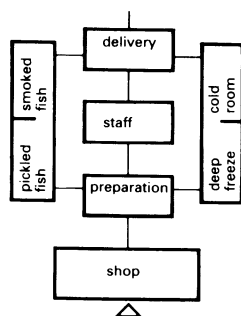


⑫ Section through small check-out position

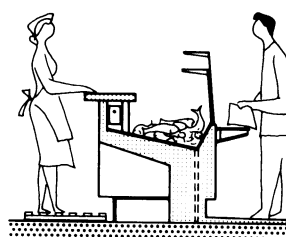
⑬ Plan of a check-out position giving minimum dimensions



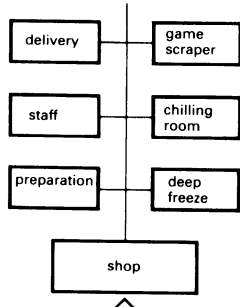
⑭ Section through counter in a self-service shop



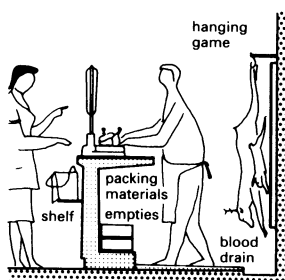
① Functional diagram for fishmonger's



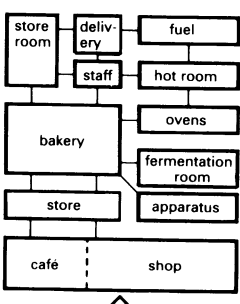
② Fish counter with cooling compartment and drain



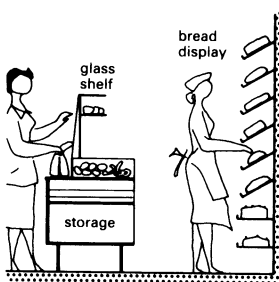
③ Functional diagram for poultry and game shop



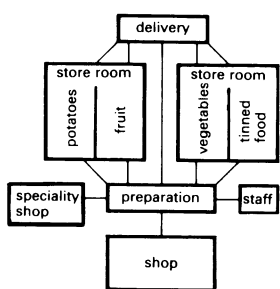
④ Solid counter with marble or tile facing



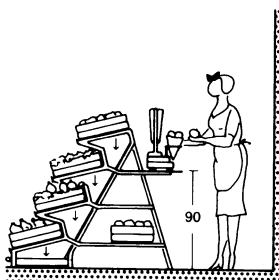
⑤ Functional diagram for a bakery: good ventilation needed, possibly dehumidify



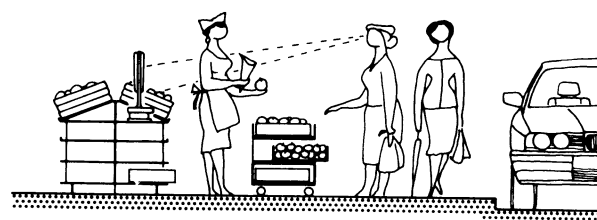
⑥ Sales counter with screen



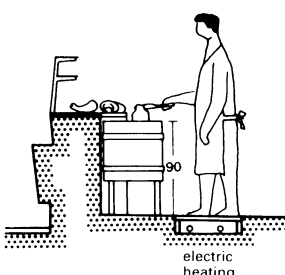
⑦ Functional diagram for fruit and vegetable shop: little storage provision as most goods delivered daily



⑧ Counter with stands for boxes and baskets, drip pan and dirt trap



⑨ Pavement sales from trolleys or shop-front displays



⑩ Butcher's counter with chopping block



⑪ Normal butcher's counter (also for fishmonger's → ②)

The walls, floors, counter tops and work surfaces in fishmongers, game and poultry shops and butchers must be washable. Suitable materials therefore include marble, ceramic tiles, glass and plastics.

Fish perishes quickly and so must be kept chilled. It also smells strongly so fishmongers' shops should be surrounded by air-locks or air-curtains. Note that smoked fish, unlike fresh fish, must be stored in dry conditions and provision must be made for this. The possibility of large bulk deliveries should be taken into consideration. There may also be a need for an aquarium to attract the eye. → ① + ②

Game and poultry shops are sometimes part of fish shops and often stock only one day's supply of goods. They require a separate work room with facilities for plucking and scraping. As poultry absorbs smells, it must be stored separately both in the cold room and shop. Large refrigerated compartments and display cases are needed. → ③ + ④

Butchers' shops → ⑩ + ⑪ should preferably be on one level and have trucks on rails or castors to allow carcasses (which can weigh up to 200kg) to be moved easily. Work rooms and cold rooms should be one and a half to two times the size of the shop.

All fittings in cold stores must be adequately protected against corrosion, due to the high humidity level in these spaces.

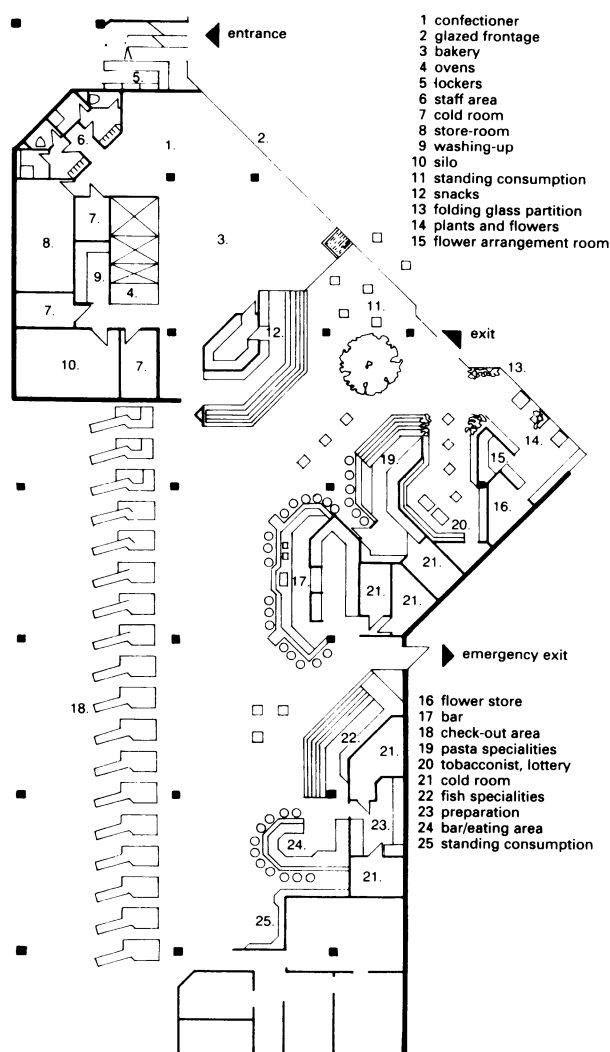
The conflict in fishmongers' and butchers' shops between balancing the requirements of temperature for staff comfort (around 16°C) and the display of provisions (-2°C to 0°C), can be dealt with by using directional fan heaters, which blow warm air towards staff and away from food, radiant heaters placed high on the walls or under-floor heating.

In addition, adequate ventilation is required for the removal of smells.

Fruit and vegetables need to be kept cool but not refrigerated. Potatoes should be kept in dark rooms. Sales are mostly from delivery containers (baskets, crates, boxes etc.) and dirt traps and refuse collectors should be provided below storage racks. → ⑦ + ⑧

In general, the planning and design of greengrocers' shops should consider the requirements for delivery and unpacking of goods, washing, preparing, weighing, wrapping, waste collection and disposal. Flower shops can be combined with fruit and vegetable shops.

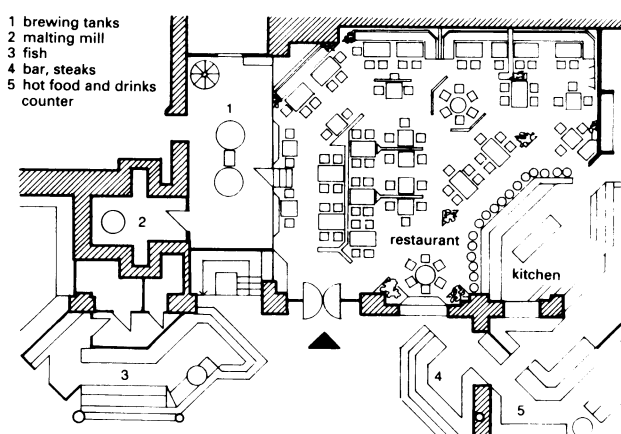
## FOOD COURTS



Food courts are large halls that house groups of small outlets selling a wide variety of specialist food products. Customers can either sit and eat on the premises or take the food away. With attractive displays and a market-style environment, food courts offer a pleasant shopping environment and can be added to supermarkets beyond the check-outs → ①.

The produce is predominantly fresh or cooked on the premises so storage space for one day's trade is adequate. Deliveries are usually made early in the morning.

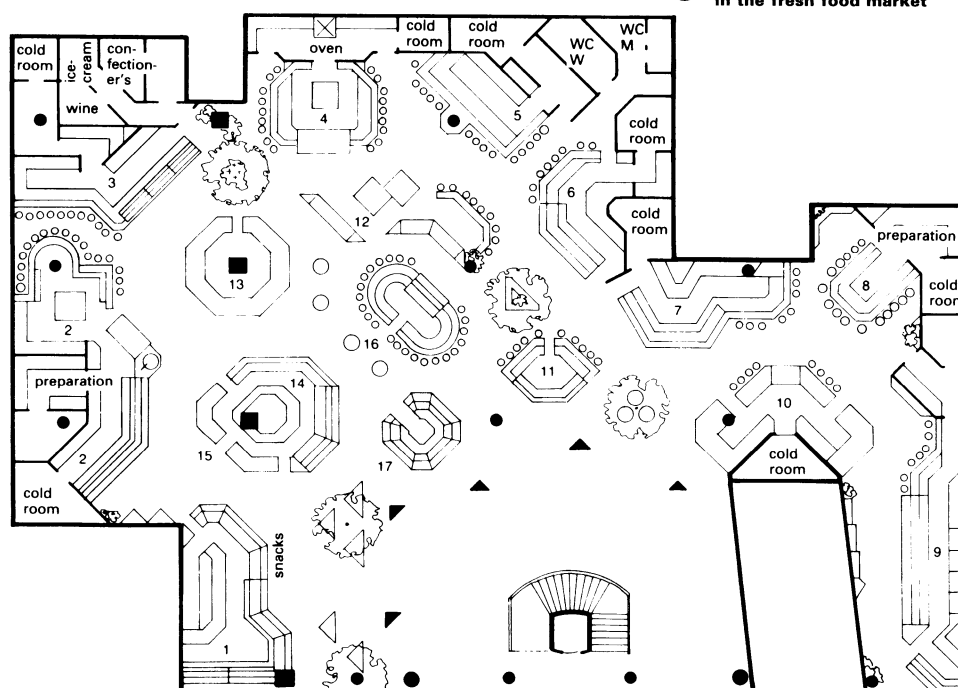
A typical food court might include a bakery, a butcher, cafés and bars, a delicatessen snack bar, an ice-cream parlour plus shops and counters selling sea food, fruit, vegetables, flowers, beers and wines, pizza, wholefood, local specialities etc.



① **Area behind check-outs**

Design: Maier and Pistor

③ **Open brewery and restaurant in the fresh food market**

Design: Maier  
and Pistor

Operator:	Floor space (incl. ancillary areas)
1 bakery with eating area	≈ 64 m <sup>2</sup>
2 butcher's with steak and drinks bar	≈ 89 m <sup>2</sup>
3 local specialities	≈ 50 m <sup>2</sup>
4 Italian specialities	≈ 54 m <sup>2</sup>
5 Japanese specialities	≈ 43 m <sup>2</sup>
6 fish specialities	≈ 43 m <sup>2</sup>
7 cheeses/salads	≈ 45 m <sup>2</sup>
8 Mexican specialities	≈ 46 m <sup>2</sup>
9 cold meat specialities	≈ 68 m <sup>2</sup>
10 fruits/salads/juices	≈ 42 m <sup>2</sup>
11 coffee and ice cream	≈ 20 m <sup>2</sup>
12 wine merchant, tasting	≈ 28 m <sup>2</sup>
13 confectioner's	≈ 35 m <sup>2</sup>
14 coffee roasting	≈ 28 m <sup>2</sup>
15 tea merchant	≈ 23 m <sup>2</sup>
16 champagne bar and delicatessen	≈ 21 m <sup>2</sup>
17 chocolates	≈ 25 m <sup>2</sup>
<b>total</b>	<b>≈ 724 m<sup>2</sup></b>

### General circulation space and WCs

Design: Maier and Pistor

## ② Fresh food market at Hamburg Central Station

## DEPARTMENT STORES AND SUPERMARKETS

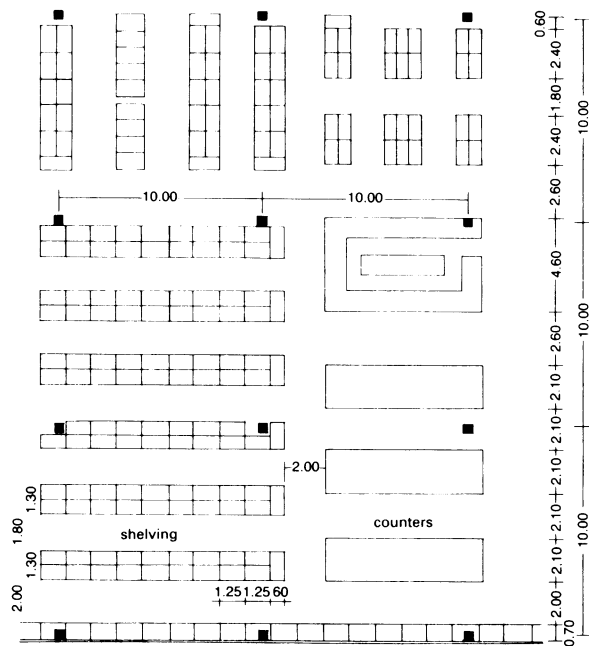
When designing retail outlets all national regulations (building and planning, fire, health and safety at work etc.) should be observed.

Basic dimensional guidelines give the minimum heights of spaces in shops and storage facilities as:

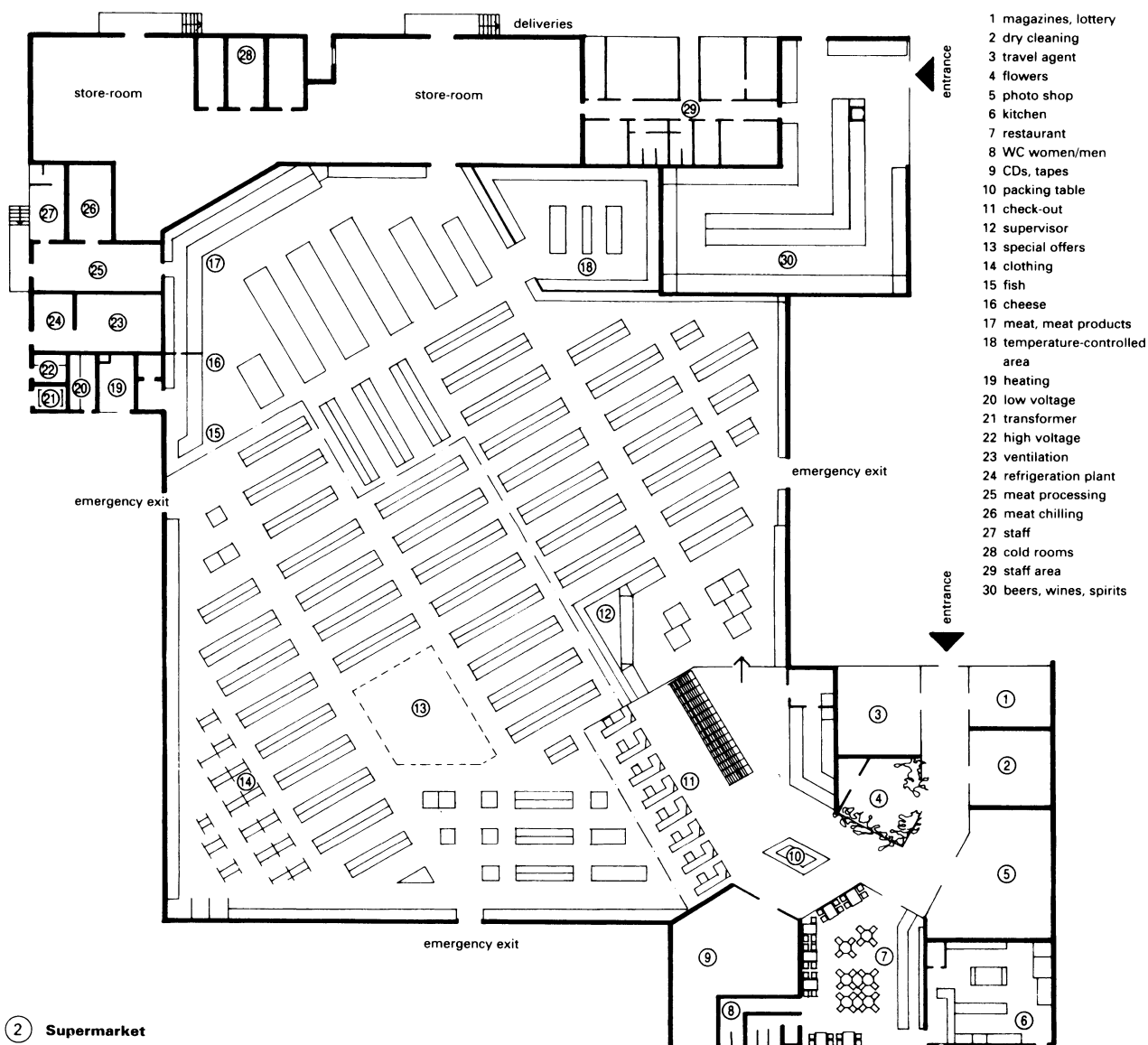
up to 400 m <sup>2</sup> retail floor space	3.00 m
over 400 m <sup>2</sup> retail floor space	3.30 m
over 1500 m <sup>2</sup> retail floor space	3.50 m

Ventilation ducts or other structures should not reduce the required clear room heights. If possible rooms up to 25 metres wide should be free of columns. The load-bearing capacity of floors should be designed to take additional loads such as light fittings, suspended ceilings, decoration, ducts, sprinkler systems etc. (approximately 20 kp/m<sup>2</sup>). In the shopping areas and store-rooms it should be 750–1000 kp/m<sup>2</sup>, and 2000 kp/m<sup>2</sup> for ramps. The floors connecting sales areas, stores, and delivery ramps should be at the same level. Note that delivery ramps or platforms are 1.10–1.20 m above ground level.

Shelf arrangements are developed from considerations of how best to lead customers past all the different ranges of goods. → ① + ②

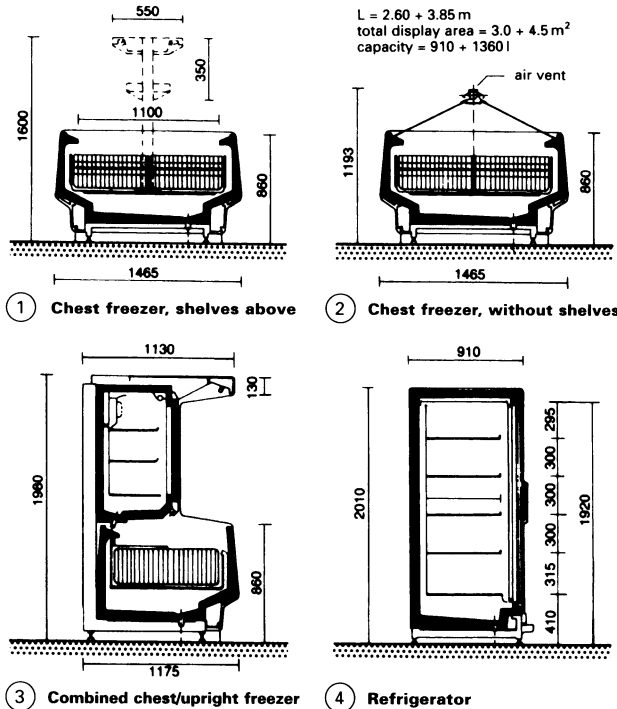


① Dimensions of counters and shelf units (grid 10 × 10 m)



② Supermarket

# DEPARTMENT STORES AND SUPERMARKETS



The department store is essentially a very large shop, generally on several floors, selling a wide variety of goods, including clothes, household goods and food. Their design should provide maximum flexibility to permit frequent adjustments required for the seasonal sales patterns. The food department is the only one purpose designed. A main structural grid between 5.4 and 6 m is commonly used, with 5.4 m being considered optimum.

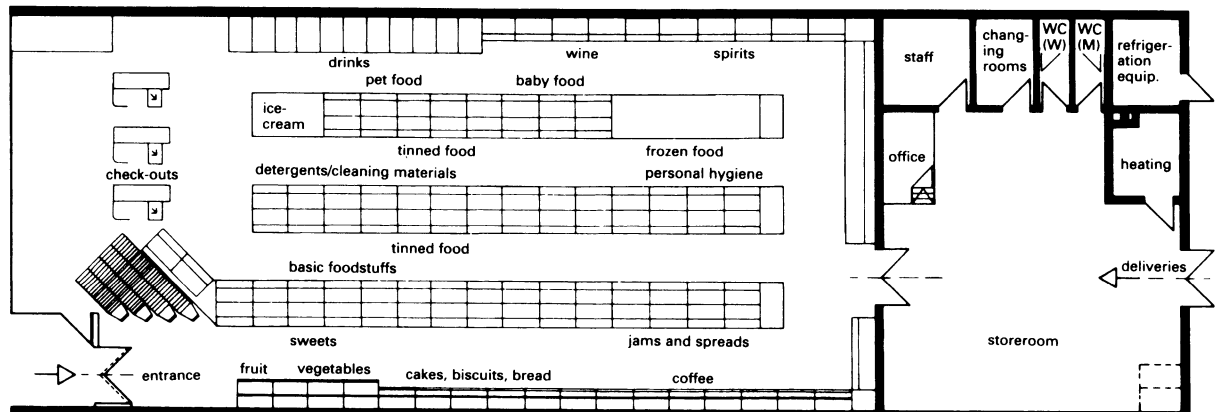
The increasing requirement for car-parking space has led to the growth of purpose-built out-of-town shopping centres. These in turn have encouraged the development of huge DIY warehouses, discount markets and 'hypermarkets', which are modelled along supermarket lines.

The largest hypermarkets are about 250 000 m<sup>2</sup>. Shoppers generally purchase a greater quantity of goods in hypermarkets than in supermarkets and therefore larger size trolleys are used. This needs to be considered in the design. The 'superstore' is a further development of the hypermarket.

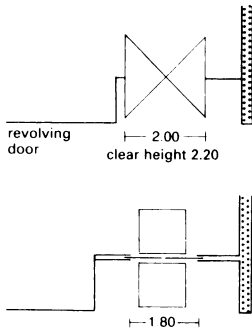
Requirements	up to 399 m <sup>2</sup>	400 – 499 m <sup>2</sup>	500 – 599 m <sup>2</sup>	600 – 799 m <sup>2</sup>	800 – 899 m <sup>2</sup>	1000 – 1499 m <sup>2</sup>
1. Staffing levels in terms of full-time staff	10.6 7 – 14	12.9 10 – 16	15.3 12 – 18	17.7 16 – 20	22.1 18 – 25	30.2 25 – 33
2. Raw and processed meat section						
a) proportion of turnover (%)	22	21	20	19	18	17
b) length of counter (m)	19 – 28	20 – 32	20 – 28	17 – 25	16 – 24	14.5 – 24
c) preparation room (m <sup>3</sup> )	6.50	7.60	8.75	9.08	9.75	11.75
d) chilling room (m <sup>3</sup> )	6.0 – 7.0	7.0 – 8.2	7.5 – 9.0	1.5 – 10.5	9.0 – 10.5	10.0 – 13.5
3. Dairy products and fats						
a) refrigerated shelves (m)	14	19	24	26	30	36
b) cold room (m <sup>2</sup> )	8 – 20	13 – 25	18 – 30	20 – 32	23 – 38	23 – 50
4. Frozen foods (not ice-cream)						
a) normal island unit (m)	11	13.5	15	15	22	25
b) extra-wide island unit (m)	7 – 15	9 – 18	10 – 20	10 – 20	14 – 30	16 – 35
5. Wall unit for fruit and vegetables (with two shelves) (m)	6.75	8.0	8.75	10.25	11.25	15.7
6. Number of cash desks	6.3 – 7.3	6.5 – 9.5	7.5 – 11	9 – 12	10 – 13.5	12 – 18.5
- at the check-out	6.0	7.6	10.0	12.0	13.0	15.0
- in the sections	4.0 – 8.0	5.0 – 10.5	8.0 – 12.0	8.0 – 15.5	8.0 – 18.0	10.0 – 20.0
7. Number of shopping trolleys needed						
a) normal island unit (m)	5.5	6.1	7.5	8.75	10.1	13.5
b) extra-wide island unit (m)	5.0 – 6.0	5.5 – 7.0	6.5 – 8.5	7.5 – 10.0	7.5 – 12.0	12.0 – 15.0
c) shelf units (m)	3.85	4.1	5.5	6.75	7.75	8.75
d) deep freeze room (m <sup>2</sup> )	2.6 – 4.6	3.0 – 5.0	4.0 – 7.0	4.0 – 7.5	5.5 – 10.0	6.0 – 10.0
8. Number of cash desks	2.4	2.75	3.6	4.4	5.8	6.6
- at the check-out	2.3 – 2.5	2.3 – 3.2	3.2 – 4.0	4.0 – 4.8	5.0 – 6.5	5.5 – 8.0
- in the sections	2.4	3.25	5.0	5.75	8.25	8.5
9. Number of shopping trolleys needed	2.0 – 2.8	2.0 – 4.5	4.0 – 6.0	4.0 – 7.5	6.0 – 10.5	6.0 – 11.0
10. Wall unit for fruit and vegetables (with two shelves) (m)	6.5	7.5	7.5	8.75	10.0	10.75
11. Number of cash desks	5.0 – 8.0	6.5 – 8.5	7.0 – 8.0	7.0 – 10.5	8.0 – 12.0	9.0 – 12.5
- at the check-out	2.5	2.9	3.4	3.9	4.9	6.3
- in the sections	2 – 3	2 – 3	3 – 4	3 – 4	4 – 5	6 – 7
12. Number of shopping trolleys needed	0.2	0.3	0.4	0.5	1.3	1.3
13. Number of shopping trolleys needed	0 – 1	0 – 1	0 – 1	0 – 1	1 – 2	1 – 2
14. Number of shopping trolleys needed	85	105	120	150	180	240
15. Number of shopping trolleys needed	70 – 100	85 – 130	100 – 160	100 – 200	150 – 220	200 – 300

5 Planning data for fitting shops and supermarkets

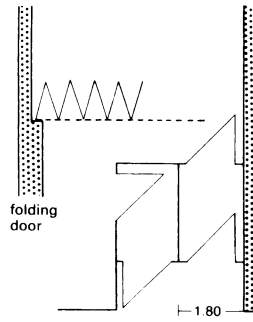
NB: first row = average values  
second row = range of variation



6 Discount market, 300–500 m<sup>2</sup> sales area



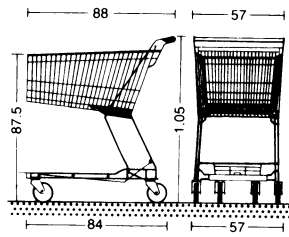
① Sliding doors



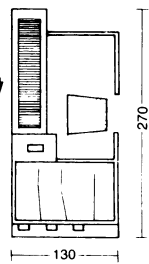
② Air lock



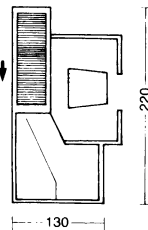
③ Shopping trolley: volume up to 1501



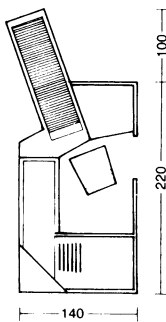
④ Shopping trolley: load up to 200 kg



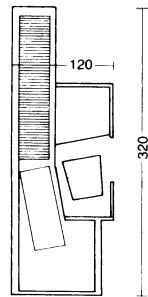
⑤ Supermarket check-out desk



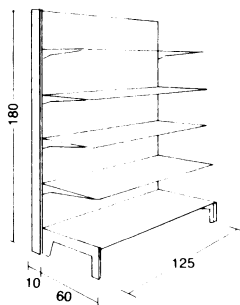
⑥ Variation on ⑤



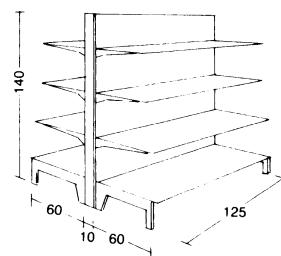
⑦ Variation on ⑤



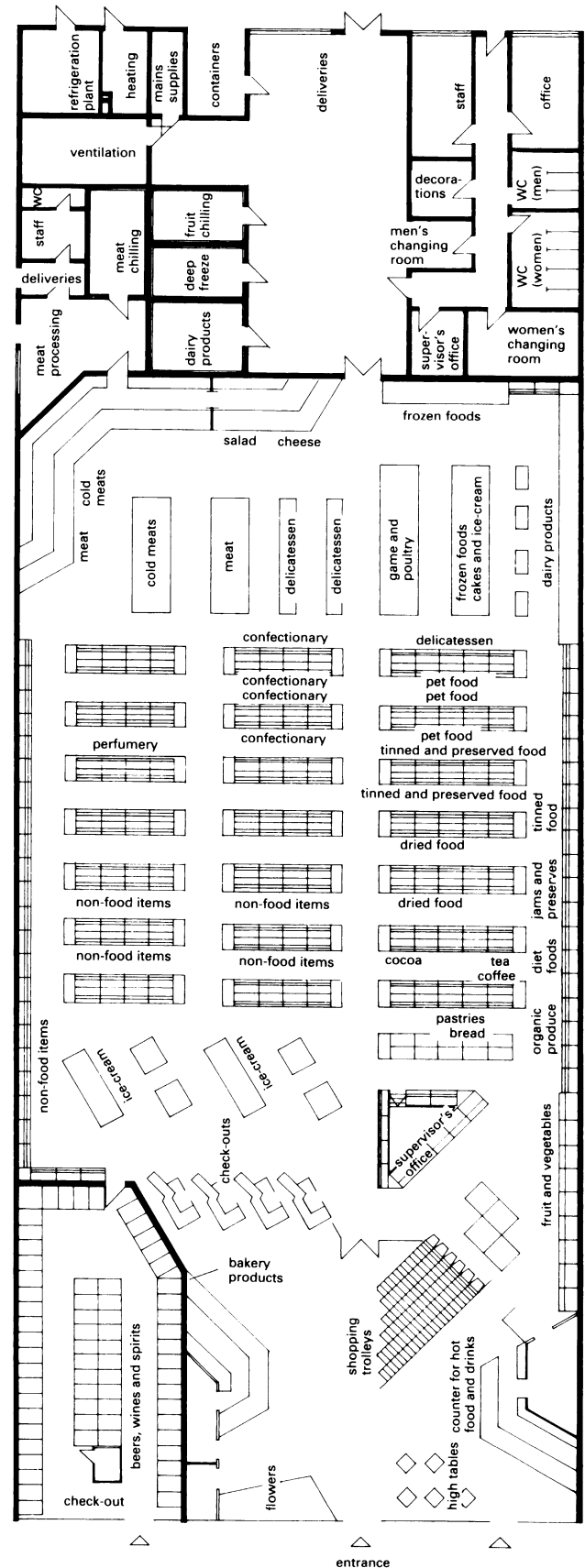
⑧ Variation on ⑤



⑨ Wall shelving → ⑪

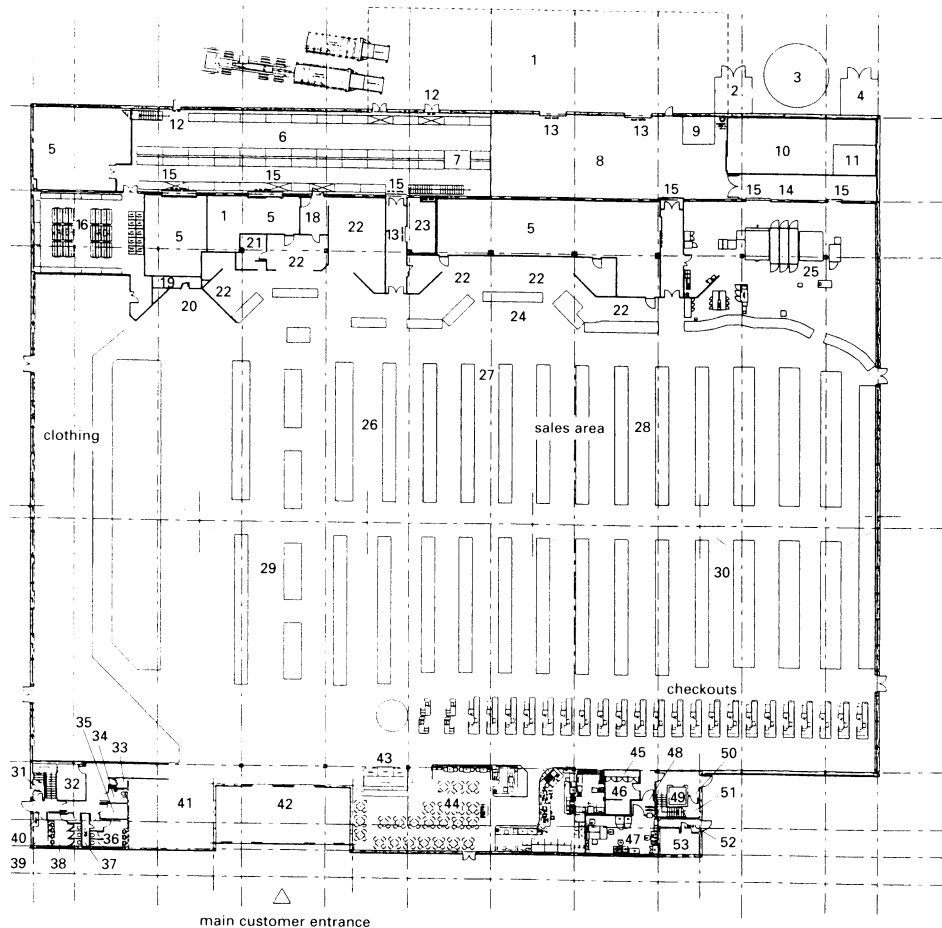


⑩ Free-standing shelf unit → ⑪

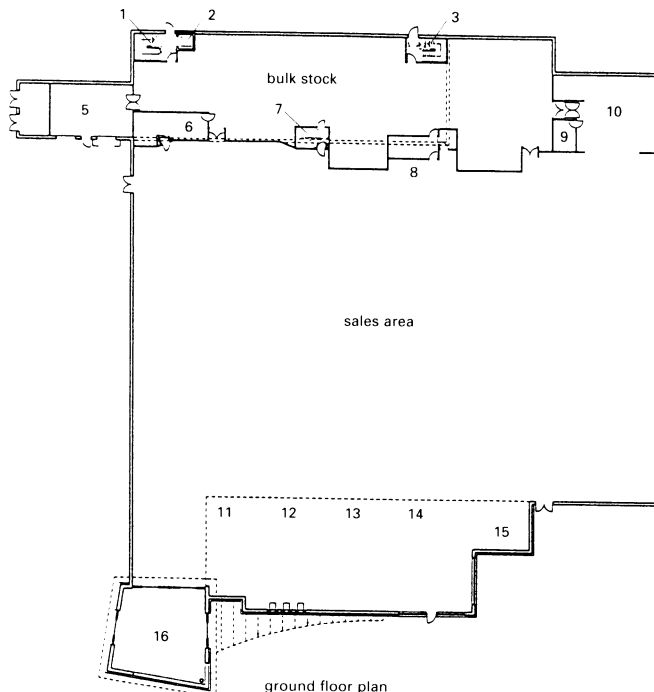


⑪ Supermarket

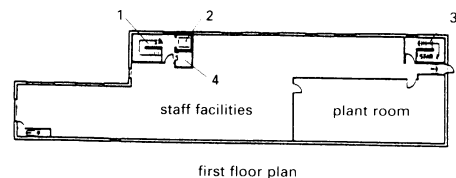
## SUPERMARKETS/HYPERMARKETS



1 Floor plan of an Asda supermarket/hypermarket in the UK (courtesy of Asda/WCEC Architects)



2 Floor plan of a Sainsbury's supermarket in the UK (courtesy of Pick Everard)



first floor plan

- 1 staircase 1
- 2 lift
- 3 staircase 2
- 4 pump room
- 5 unloading bay
- 6 meat and fish preparation area
- 7 provisions preparation
- 8 pharmacy
- 9 finishing room
- 10 bakery
- 11 CTN area
- 12 concession
- 13 ATM room
- 14 customers' restaurant
- 15 customer toilets
- 16 entrance/exit lobby