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

Attention must be paid to circulation routes in larger shops → 7 - 9. 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.
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 → ⑤ + ⑥ 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 18°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.

⑩ Butcher's counter with chopping block
⑪ Normal butcher's counter (also for fishmonger's → ②)
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.

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
2 Fresh food market at Hamburg Central Station
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 and drinks bar | 84 m² |  
2 butcher’s with steak and drinks bar | 89 m² |  
3 local specialities | 50 m² |  
4 Italian specialities | 54 m² |  
5 Japanese specialities | 63 m² |  
6 fish specialities | 43 m² |  
7 cheeses/pickles | 45 m² |  
8 Mexican specialities | 46 m² |  
9 cold meat specialities | 60 m² |  
10 fruit/salad juices | 42 m² |  
11 coffee and ice-cream | 28 m² |  
12 wine merchant, tasting | 38 m² |  
13 confectioner’s | 36 m² |  
14 coffee roasting | 23 m² |  
15 tea merchant | 23 m² |  
16 champagne bar and delicatessen | 12 m² |  
17 chocolates | 2 m² |  
Total | 724 m² |  
General circulation space and WCs | 95 m² |  

Design: Maier and Pistor
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 m² retail floor space: 3.00 m
- over 400 m² retail floor space: 3.30 m
- over 1500 m² 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 kN/m²). In the shopping areas and store-rooms it should be 750–1000 kN/m², and 2000 kN/m² 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 x 10 m)
2. Supermarket

1. magazines, lottery
2. dry cleaning
3. travel agents
4. flowers
5. photo shop
6. kitchen
7. restaurant
8. WC women/men
9. CDs, tapes
10. packing table
11. check-out
12. supervisor
13. special offers
14. clothing
15. fish
16. cheese
17. meat, meat products
18. temperature-controlled area
19. heating
20. low voltage
21. transformer
22. high voltage
23. ventilation
24. refrigeration plant
25. meat processing
26. meat chiller
27. staff
28. cold rooms
29. staff area
30. beers, wines, spirits
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 6.0 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 m². 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.

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**Planning data for fitting shops and supermarkets**

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

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Discount market, 300-500 m² sales area
1. Service area
2. Space allocation
3. Sprinkler pump room
4. Space allocation sprinkler tank
5. High voltage switchroom in wire cage or disclosure 4m - 4m
6. Cold room
7. Warehouse area
8. Goods hoist
9. Marshalling area
10. Fork-lift recharge
11. Frozen food store
12. Bakery store
13. Fire exit
14. Roller shutter
15. Bakery rack store
16. Bulk store
17. Sprinkler riser and valve
18. Raw wash-up
19. Store room
20. Entertainments
21. Cooked wash-up
22. Preparation
23. Cleaners
24. Fresh food pizza
25. Bakery
26. Refrigerated
27. Groceries
28. Home and leisure
29. Produce
30. Drinks
31. Panel
32. Baby change
33. Cleaners
34. Disabled toilet
35. First aid
36. Male toilets
37. Dust
38. Female toilets
39. Switchroom
40. Riser
41. Compression
42. Main lobby
43. Kiosk
44. Customer restaurant
45. Electrical switches
46. Office
47. Car service
48. Window
49. Lift shafts
50. Disabled refuge
51. Lift motor
52. Lobby
53. ATMs

main customer entrance

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

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

first floor plan

ground 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