

Summary

History Of Kitchen

The kitchen today is truly the hub of the family home. It is a place where chores other than cooking take place, where children play or do homework, and where parents spend a great deal of time. It also is the room upon which most money is spent and so deserves special attention.

Designing kitchens necessitates the integration of functional requirements, together with spaces which are pleasant to work in. Before analysing these needs it is worth looking back in time to see the antecedents of the modern kitchen. This will help to articulate and clarify the different activities needed to prepare complex meals and to realise how radically modern technology has reduced both the space and manpower needed to achieve this.

Early kitchens

The evolution of the kitchen is linked to the invention of the cooking range or stove and the development of water infrastructure capable of supplying water to private homes. Until the 18th century. The earliest kitchens, all over the world, are simply open fires, most often out of doors which is still so today in countries with a climate hot enough all the year round to make this possible, food was cooked on central hearths in large, high ceilinged halls. Smoke drifted out of unglazed windows or a hole in the roof.

The houses in Ancient Greece were commonly of the atrium-type: the rooms were arranged around a central courtyard for women. In many such homes, a covered but otherwise open patio served as the kitchen. Homes of the wealthy had the kitchen as a separate room, usually next to a bathroom (so that both rooms could be heated by the kitchen fire), both rooms being accessible from the court. In such houses, there was often a separate small storage room in the back of the kitchen used for storing food and kitchen utensils.

In the Roman Empire, common folk in cities often had no kitchen of their own; they did their cooking

in large public kitchens. Some had small mobile bronze stoves, on which a fire could be lit for cooking. Wealthy Romans had relatively well-equipped kitchens. In a Roman villa, the kitchen was typically integrated into the main building as a separate room, set apart for practical reasons of smoke and sociological reasons of the kitchen being operated by slaves. The fireplace was typically on the floor, placed at a wall, sometimes raised a little bit such that one had to kneel to cook. There were no chimneys.

Technical advances in heating food in the 18th and 19th centuries, changed the architecture of the kitchen. Before the advent of modern pipes, water was brought from an outdoor source such as wells, pumps or springs.

Kitchen Planning

The work sequence describes the order of activities from the unloading of food through storage, preparation, cooking and washing up, which can be described as follows:

1. Store unloading and unwrapping of food, storing in refrigerator/freezer/larder/cupboards
2. Wash washing, peeling, chopping, sieving food, dishwashing
3. Prepare weighing, mixing, cake and pastry making
4. Cook hob for boiling and frying, grill for grilling and browning, oven for baking and roasting, microwave oven for defrosting, fast cooking and re-heating
5. Serve dishing up food, keeping food hot, toasting bread, storing cutlery, crockery and condiments
6. Eat table laying and eating After this sequence is complete, there is the return sequence as follows:

Clear removing dirty dishes to sink and dishwasher, returning uneaten food to refrigerator and cupboards

Wash up waste disposal, loading dishwasher, hand washing, draining, putting away

The work triangle

From the work sequences described above, it will be seen that there are three activities which relate to three main appliances : the refrigerator, the sink and the cooker. The relationship of these three fittings is commonly referred to as the work triangle.

The total length of the three sides of this triangle, measured from the centre front of each appliance, should not be less than 3.5 m or more than 6.5 m long. If the distance is shorter, then the work surface will be insufficient. If the distance is longer, then too much walking will be in-

involved, making the whole process slow and exhausting.

Avoid circulation through the triangle – especially between the sink and cooker. These should be connected with a continuous worktop not longer than 1.8 m so as to limit the distance of carrying heavy pots, filled with liquid, between the two.

Key dimensions on plan

Allow a minimum of 1200 mm between parallel countertops. This is needed for two people to pass one another and for access when kneeling down to base cupboards and undercounter appliances. The minimum clear doorway dimension for carrying a tray so as not to graze knuckles is 850 mm, ideally 900 mm. Minimum space for walking between a counter and a vertical surface is 650 mm. Squeezing between the two is 450 mm.

Key vertical dimensions

The height of cupboards, drawers and shelves should be set at levels to minimise bending down or stretching up too far. Heights between +750 mm and +1550 mm are comfortable to reach. The maximum upward reach (for a woman) when standing in front of a counter to access shelves is +1950 mm increasing to +2000 where there is no worktop. Average eye level for men and women is 1567 mm.

Worktop heights

There has been much controversy about the ideal height for the kitchen countertop – not least because it has to suit women (average height +1650 mm) and men (average height +1740 mm).

Recent studies suggest that the standard height of +900mm is too low, and could be increased to +950 mm or even +975 mm. While it is true to say that it is more comfortable to work at a worktop that is too high rather than too low, worktops also have to suit elderly people whose height has shrunk, and not yet fully grown children. So in this respect the +900mm height is not a bad compromise.

Cabinets: dimensions to note

A continuous toe recess at the bottom of all cabinets should be provided. This should not be less than +100 mm high and 75 mm deep. Knee recesses under worktops should be at least 460mm wide by 500 mm deep, and not lower than 150 mm below a worktop.

Wall cupboards should not be fixed lower than 400 mm above a counter, otherwise they will obscure the back of the counter. Wall cupboard doors should not be too wide + 400 mm is the ideal maximum width to reduce the chance of banging one's head on a door if left open. Similarly in a narrow, two-sided kitchen,

base cupboard doors should not be too wide.

Kitchens for the disabled

About 11% of the world population is ambulant disabled. Most of these are over 50 years old and have difficulty in moving and bending down. Many are infirm and therefore need a kitchen that is well planned for their needs and to prevent accidents happening.

It is generally easier if the dining table is within the cooking area to reduce the amount of walking. If possible, provide space also for an easy chair for relaxation. Floors should be finished with non-slip but easy to clean materials. Avoid loose mats, steps and uneven surfaces. Skirtings with coved corner are easier to keep clean than rightangled

internal corners. Plan the sink, preparation area and cooker in one unbroken sequence. The countertop may need to be lower than the standard +900 mm, but be aware that this may inhibit the use of under-counter appliances. Windows, particularly behind counters, should be easy to open and clean. Remote control winding gear, espagnolette

bolts, pulleys and drop rods all help with stiff and inaccessible windows. Doors should be fitted with lever handles for those with arthritic hands.

Drawers, pull-out shelves and carousel trays are easier to use than fixed structures in base cupboards. Wall storage, providing it is not too high, is useful as it reduces the need to bend down. Open wall shelves are easier, but less dust-free, than wall cupboards

with doors. Avoid wall storage in the corner of an 'L'-shaped worktop where it may be out of easy reach. 'D' handles for cabinet doors are easier to use than knobs. For those who have difficulty walking, fix a 35 mm diameter grip rail along the front length of the worktop.

Lighting

Good lighting in kitchens is an essential pre-requisite. Inadequate lighting can cause accidents, fatigue and lead to bad hygiene. During daylight hours there may be sufficient light, but this will vary according to the size and orientation of the window,

the season and time of day.

Sinks

Of all appliances, the sink is the workhorse of the kitchen. Research shows that about 60% of the time spent in the kitchen is at the sink, compared with about 20% at the cooker. For this reason alone, it is important that the right sink is chosen at the outset.

The sink is also the least likely appliance to be replaced, partly because of the expense of altering the plumbing but mostly because it will affect the worktop in which it sits, where the cut-out hole will almost certainly be different or the bowl(s) may be an integral part of the worktop material.

Sinks come in the following broad categories:

Inset a sink top inserted into a hole cut out of the worktop and secured with a selfrimming flange.

Sit-on sink top designed to fit over a specific sized base cupboard which will butt up against adjoining worktop surfaces and leave an undesirable dirt-trapping slot.

Under-mounted individual or double bowl units fixed to the underside of work tops made of solid material.

Integral with worktop bowls cast or welded to a worktop of the same material, i.e. composite stone, Corian, SS, etc.

Individual individual bowl(s) such as the traditional fireclay Belfast sink which can sit on or be adjacent to worktops or draining boards.

Cooking appliances

Cooking appliances can be broadly categorised as follows:

- freestanding cooker
- range cooker
- built-in, split-level oven and hob
- microwave oven

Freestanding cookers combine an oven, grill and hob in one unit. They are generally cheaper and take up less room than either range cookers or built-in separate ovens and hobs.

More recently, a modern version of the traditional range cooker has been developed which also has become a status symbol and a mark of the serious cook as they have 6–8 burners rather than 4 on a standard split-level hob and have either one very large oven or a medium oven with a smaller oven alongside. Some models also have warming and/or storage drawers.

Built-in, split-level ovens and hobs can be positioned in different parts of the kitchen or be fixed one above the other. Hobs can be inset anywhere in a worktop as their height is seldom more than 40 mm so do not interfere with drawers or cupboards underneath. Ovens can be positioned at waist level in tall cabinets or fitted under a countertop wherever required.

Microwave ovens, in one form or another are an essential appliance in today's kitchen. They may only be used for minor tasks such as defrosting, warming plates or reheating food or they may be the sole oven in the kitchen when conventional cooking is combined with microwaving as in the combination microwave which allows for extra speed and efficiency.

Extractors and cooker hoods

Building Regulations require that all domestic kitchens must be equipped with an extractor fan and providing the fan is of sufficient size, cooker hoods are accepted. See below.

A cooker hood is an extractor fan enclosed within a hood with a grease filter incorporated in the underside. There are two sorts of cooker hood: those for extracting air to outside and those for re-circulating air over a carbon filter and back into the kitchen to remove the cooking smells.

Cooling appliances

The choice of cooling appliances depends upon the shopping habits of the clients and the space available in the kitchen. As the third component of the kitchen triangle, the refrigerator is both an essential and frequently used appliance. Urban dwellers with no children and no garden, with easy access to local shops and who do not mind frequent shopping trips, can make do with a relatively small refrigerator compared with the large family in a country house. In the very large household, a north facing larder or a cold room will reduce the need for a large refrigerator and with a freezer in an outhouse, a fridge-freezer would be all that is needed in the actual kitchen.

Floor and wall finishes

Floor finishes for kitchens should be waterproof, hardwearing, non-slip when wet, easy to clean, acid- and alkali-proof and easy on the feet. Under traditional range cookers they should also be fireproof. They are better if they are pale in colour to reflect light, and slightly patterned to conceal grime. Sheet materials have few joints so are easy to keep clean and

are likely to be more waterproof – but tiles have the advantage of being easier to fit round awkward shapes and can be individually replaced if damaged. In rooms which are not square, tiles laid on the diagonal disguise the fact that the walls are not parallel.

It is preferable to use specialist flooring contractors who will advise on suitability of materials for the purpose, including details of any substrates, fixing, surface sealants or polishes.

All flooring should be fixed and finished according to the manufacturer's instructions.

Timber floor finishes are NOT suitable for kitchens, even if well sealed, as water will eventually get underneath the seal and lift it off allowing the wood below to swell and discolour.

Safety in the kitchen

Forty per cent of all the accidents in the home happen in the kitchen. Children under 5 years, and elderly people over 65, are most at risk.

Bad design and faulty maintenance are responsible for some of the risks, but most accidents are due to personal factors such as worry, temper, fatigue, haste and depression in adults,

and curiosity and disobedience in children. The kitchen should have a first aid box or cabinet which should be lockable or kept well out of reach of small children.

The safest layouts are those where the cooker, work surface and sink are in an unbroken sequence, uninterrupted by doorways. This avoids carrying hot dishes and boiling pans across circulation spaces. Never position cookers near a window where draughts can

extinguish gas flames and where curtains or blinds might catch fire.

Check that fan casings and cooker hoods are positioned according to the manufacturers' recommendations, which must be well above a hob or a high level gas grill.

Drying racks should never be placed over cookers as towels may fall down and catch fire.

All appliances and sinks should be kept well away from inward opening doors, which may bang into the person using them.

A worktop area should be provided both sides of a cooker and should be level with the hob surround. Pan handles should always be parked sideways, out of the reach of small children.

Climbing up on rickety chairs to reach things accounts for many accidents, particularly amongst the elderly who should be provided with a small stepladder or a kick-step.

Good lighting of working areas is essential to prevent cuts, burns, scalds and fingers being trapped in moving parts. Floors must be level, with no steps or raised thresholds, and

the finish should be non-slip. Avoid wax polishes which can be slippery when wet. Water, and particularly grease and oil spills, should be mopped up as soon as they occur.

Lack of storage will result in things being left on the floor, such as shopping bags over which people can trip.