



Kitchen Ergonomics

Improving Your Production and Staff Efficiency

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Improving your production and staff efficiency starts with the layout and design of your commercial kitchen. Your kitchen setup affects everything from staff efficiency to utility costs, so you'll want to take the time to create an effective layout in order for things to operate as smoothly as possible. Utilizing natural gas equipment in your lineup is certain to keep operating costs lower and production at peak performance.

Aspects of Commercial Kitchen Layout

When planning the layout for your commercial kitchen, there are several factors you need to consider:

- **Available Space.** Available space is an important consideration regardless of whether you are building from the ground up or placing your commercial kitchen in an existing building. Either way, you want to make the most of your available space without sacrificing work flow or speed. A general rule-of-thumb is to allow five square feet of kitchen space for every seat in your restaurant, so a 60-seat restaurant will need a minimum 300 square foot kitchen.
- **Employee Mobility.** A well-arranged commercial kitchen will allow employees to easily move around without bumping into one another. This is vital to maintaining a smooth-running kitchen, especially during rush periods.
- **Health Codes.** Local health codes have certain stipulations when it comes to commercial kitchen layout and design. For example, most health

departments require a floor drain within six feet of a commercial ice machine.

- **Ergonomics.** The theory behind ergonomics is that the fewer steps and moves your employees need to complete a task, the better. An ergonomically designed commercial kitchen is one where employees can stand in one spot and do all of their work with minimal bending, reaching, walking or turning. Ergonomics can also reduce the amount of injuries, discomfort and fatigue in the kitchen.
- **Energy efficiency.** Efficiency should be a primary consideration for any commercial kitchen layout, because it saves money on utility costs. In an energy-efficient setup, refrigeration and cooking equipment are kept as far apart as possible while still being practical. Also, cooking equipment should be strategically placed to maximize the efficiency of the ventilation hood.
- **Flexibility.** Regardless of the final layout, flexibility of design is important for any commercial kitchen. A change of chefs or management or food trends could completely change the menu, which can affect equipment usage and placement. Remember to include quick disconnects for your gas cooking equipment to make mobility and cleaning a quick and trouble-free task.

Improving Equipment Arrangement

There is no definite rule on how to arrange your commercial kitchen equipment. It all depends on the available space and your particular needs. Your menu will be the major influence on how cooking equipment is arranged, however, there are four different arrangements that are common.

- **Ergonomic Configuration.** In a purely ergonomic configuration, the kitchen equipment is arranged according to what is most comfortable and efficient for the chef and kitchen staff. For example, an ergonomically arranged kitchen might have an under counter freezer located directly beside the commercial deep fryer. Although this is not energy-efficient, it allows frozen product to be moved directly from the freezer to the fryer, without even taking a step.
 - **Assembly-Line Configuration.** This design is ideal for a restaurant that mostly produces large quantities of the same foods, like pizzas or sandwiches. In an assembly-line configuration, the kitchen is laid out according to the order of use and the pieces of equipment are generally in a line, sometimes linked together battery-style. For example, a pizza shop might start with the refrigerator, move to the dough-
- shaping area, then to the pizza prep table, then to the gas deck oven, and finally to the warming and holding station or into a pizza box.
- **Zone-Style Configuration.** In a zone-style layout, the kitchen is divided into different zones or blocks. Generally, there is a block for food preparation, a block for cooking, a block for refrigeration and ice machines, a block for sanitation and warewashing, and a block for the kitchen-to-server transition. There may even be multiple blocks. For example, a large kitchen may need two food preparation blocks: one near the refrigeration zone and one near the cooking equipment zone.
 - **Island-Style Configuration.** Island-style kitchens are popular designs for today's restaurants and foodservice facilities. It is similar to the zone-style configuration but there is one main block in the



Island-style kitchen layouts are popular and efficient for restaurants and other types of foodservice facilities.



middle. Typically, kitchens with an island-style configuration place the cooking equipment in the middle with the food prep, storage and kitchen-to-server transition areas on the outer walls. The reverse is also common, with prep equipment in the center and cooking equipment on the outer walls.

Tips for Equipment Grouping

Each kitchen will have different equipment, so, you will need to tailor your equipment layout to your restaurant's specific needs. As mentioned earlier, an ergonomic layout is a strictly functional setup and has equipment arranged in the best way for the chef and kitchen staff.

When laying out the cooking equipment, remember that every piece of cooking equipment, with the exception of microwave ovens, needs to be placed under a properly designed ventilation hood. The hood is responsible for pulling out cooking effluent, heat and moisture, thereby keeping the kitchen safe and comfortable for your chef and staff. Depending on how many pieces of cooking equipment you have, you may need several hoods to provide adequate ventilation. Here are some additional tips for positioning your cooking equipment:

- **Center your gas ranges, griddles and charbroilers.**

Cooking equipment with exposed cooking surfaces such as restaurant ranges, griddles and commercial charbroilers, generate a lot of heat. It is important to make sure these have their own dedicated kitchen



Ranges, griddles and charbroilers should have their own ventilation hood or be centered beneath the larger hood if they are part of a kitchen equipment lineup.

hood or are centered beneath a larger one, so all of the excess heat and effluent can be properly removed from the air.

- **Place ovens under their own hood.** Generally, restaurants that have stand-alone ovens, like pizza deck ovens or convection ovens, don't do many other types of cooking and will only need one exhaust hood for the oven. However, if you use multiple cooking methods, like baking, frying, and grilling, be sure to place the ovens under their own hoods, this way, a single kitchen hood will not become overworked or get clogged.
- **Keep fryers separate.** Oil splashes and splatters are always a concern with fryers. In order to prevent hot oil from splattering onto a griddle top, for example, separate the fryers from other pieces of cooking equipment by placing a small commercial work table or fry-holding bin and heat lamp between.
- **Isolate your simmering liquids.** Steam kettles, tilting skillets and stock pot ranges are used for simmering or boiling liquids such as soups, stews, broths and water. If you are using them for this purpose, keep them near one end of your cooking block. They do not need to be monitored as carefully as a range or griddle. Also, they do not put off a lot of heat, so they can be near the edge of the hood.

Kitchen Layout Assistance

The overall layout and organization of your kitchen can be a difficult task. Unless you've done it before, it's a good idea to get help. There are a number of resources that can assist you through the process, i.e. restaurant consultants, interior designers, equipment dealers, etc. Determine what your priorities are and choose a design that will accommodate them and works well with your menu. Otherwise, you might end up having to make costly renovations to your kitchen layout. And remember to maximize your lineup of gas-fired equipment wherever and whenever possible to better minimize your energy needs, improve your efficiency and enhance your bottom line. 

To learn more about how natural gas can benefit your foodservice operation, visit the Gas Foodservice Equipment Network at www.gfen.com.