

Water Requirements

Hot water requirements for kitchens may be taken as 20 gal. per hour for each sink faucet and 40 gal. per hour per 1000 pieces capacity per hour of dishwasher. There is a peak load which occurs at dish washing time, and must be met either by instantaneous heaters or by a storage type heater. The requirements of the dish washing machine are somewhat under control of the operator, for by more liberal use of steam less hot water is used, and vice-versa.

Cold water requirements are approximately double the hot water requirements but will easily be met through pipes of ample size.

Steam Requirements

The dish washing machine will consume from 50 to 100 lb. of steam per 1000 pieces capacity of machine, per hour. An allowance of 150 lb. steam per person, per hour will meet all steam requirements for kitchen except dish washing machine and water heating.

The average steam requirements for a kitchen serving 300 to 500 persons will be cared for by a 25 to 30 hp. boiler. The annual consumption of such a kitchen will be about 2,000,000 lb. of steam.

Power Requirements

Dish washing machines require 1 to 2 hp. per 5000 pieces capacity per hour, to drive, with the smallest machine using $\frac{1}{2}$ hp. motor. Kitchen mixing machines take $\frac{1}{2}$ to 1 hp.; bake shop combinations 2 hp. per barrel rating of machine. The 17 in. meat, food and vegetable choppers require 1 hp. and the 20 in. size requires 2 hp. Coffee grinders, knife polishers, silver burnishers need nominal amounts, about $\frac{1}{4}$ hp. Vegetable peelers take $\frac{1}{4}$ to 1 hp. according to size. Allow $\frac{1}{2}$ hp. for a 25 qt. ice cream freezer and 1 hp. for 40 qt. size.

Electric Cooking Requirements

In a complete electric kitchen, *i.e.*, one in which ranges, broilers and hot-plates are electric, the watts required for a complete meal will average as follows; which are minimum:

General restaurant.....	400 to 500 watts
Institution kitchen.....	175 to 200 watts
Colleges, boarding schools, etc.....	250 to 350 watts
Clubs, etc.....	450 to 600 watts

Electricity is subject to considerable abuse, resulting in waste, unless care is used in its operation. It is easily possible for the figures to be exceeded by 100 per cent and probably that they always will be exceeded by some amount.

Steam Pressures

Not less than 30 lb. gage, and not over 50 lb. are the usual pressure limits for steam cooking. Lower pressures down to 1 lb. are ample for warmers, but the steam kettles require higher pressures and it is customary to carry the higher pressures mentioned on all equipment. All jacketed pots, have safety valves usually set at 50 lb. and usually vacuum breakers are required on the jacketed fixtures to prevent collapse under vacuum conditions.

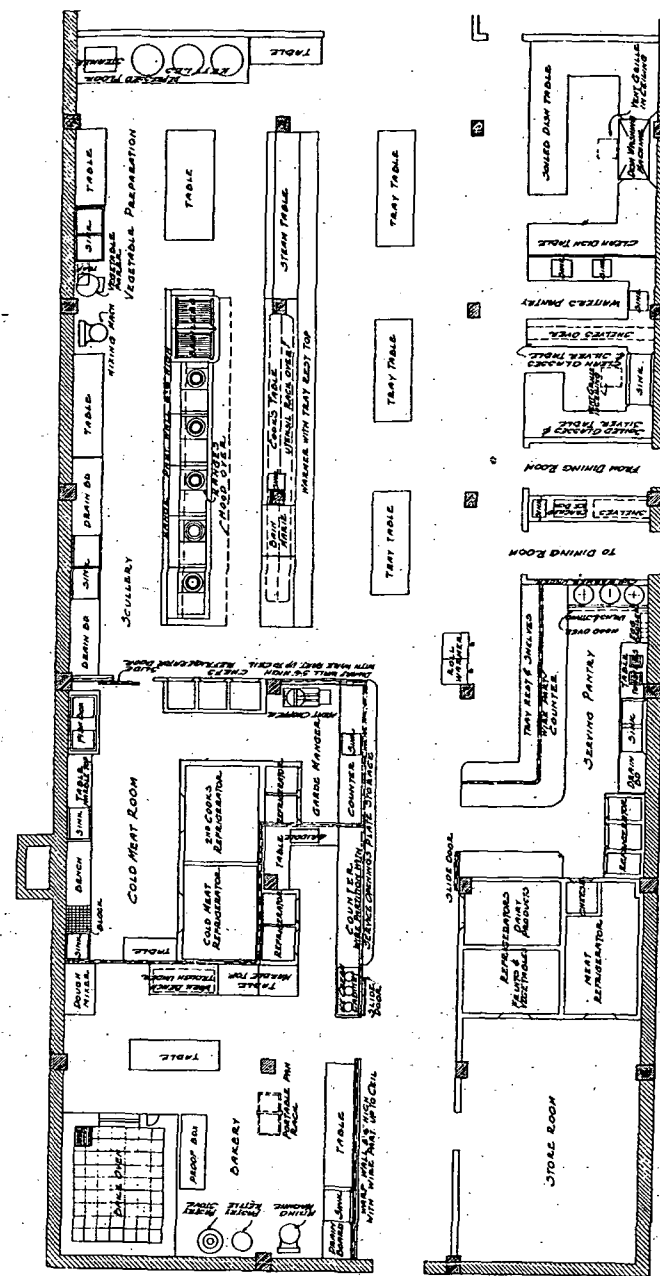


FIG. 4. KITCHEN FOR 500 ROOM HOTEL (FLOOR AREA 5175 SQ. FT.)