

Work Triangle & Traffic Flow

Work Triangle

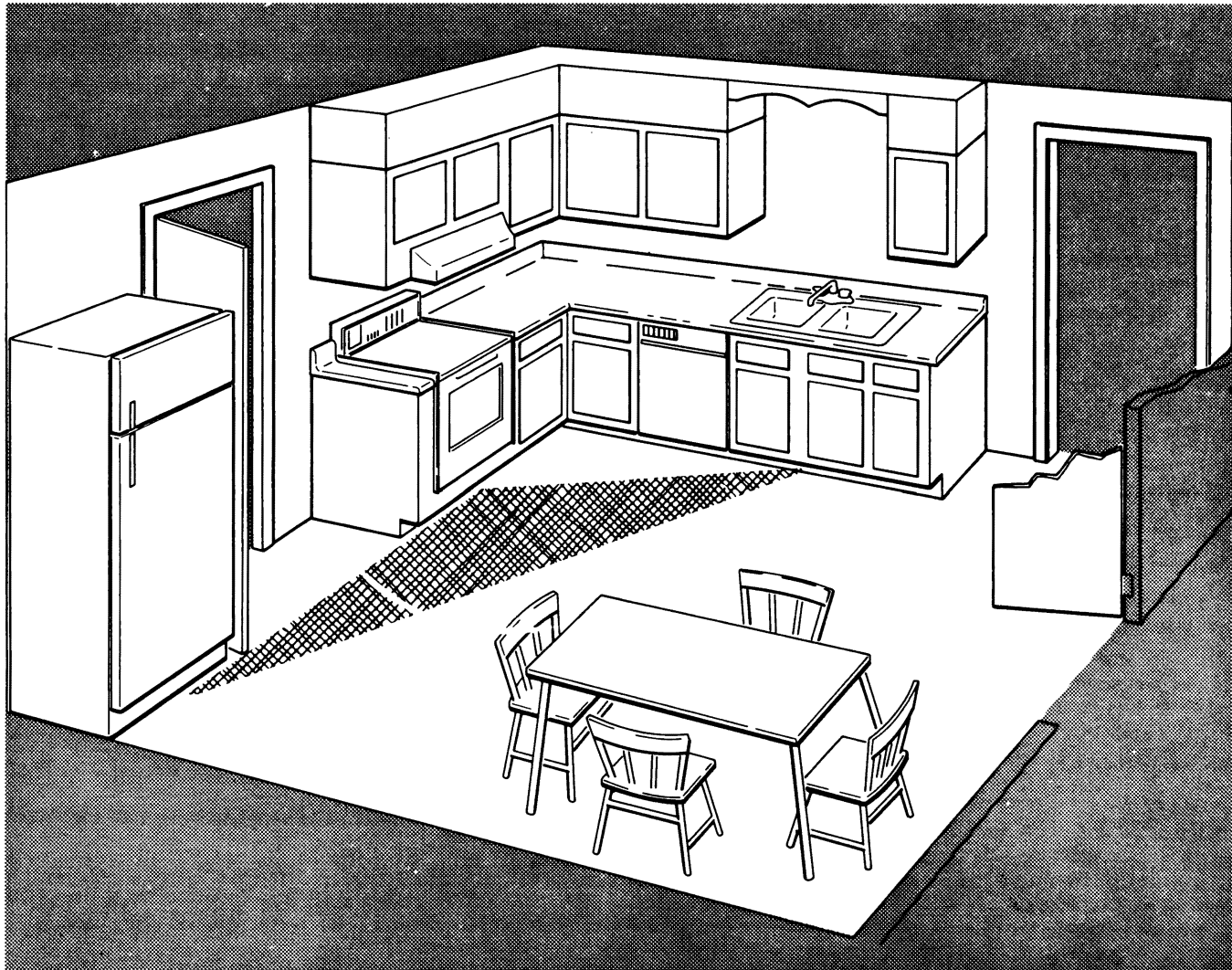
The work triangle is one means of measuring the efficiency of a kitchen. It is defined as a triangle whose sides are formed by lines connecting the center front of the sink, range, and refrigerator. This triangle encompasses the area of major activity in the kitchen. Time and steps are saved and fatigue is avoided if the configuration is designed so that the sum of the sides of the work triangle is relatively small, but yet is large enough that occupants are not crowded. With all other design factors considered to be satisfactory, the sum of the sides of the work triangle should not exceed 22 feet. Large kitchens are not necessarily more efficient or safer.

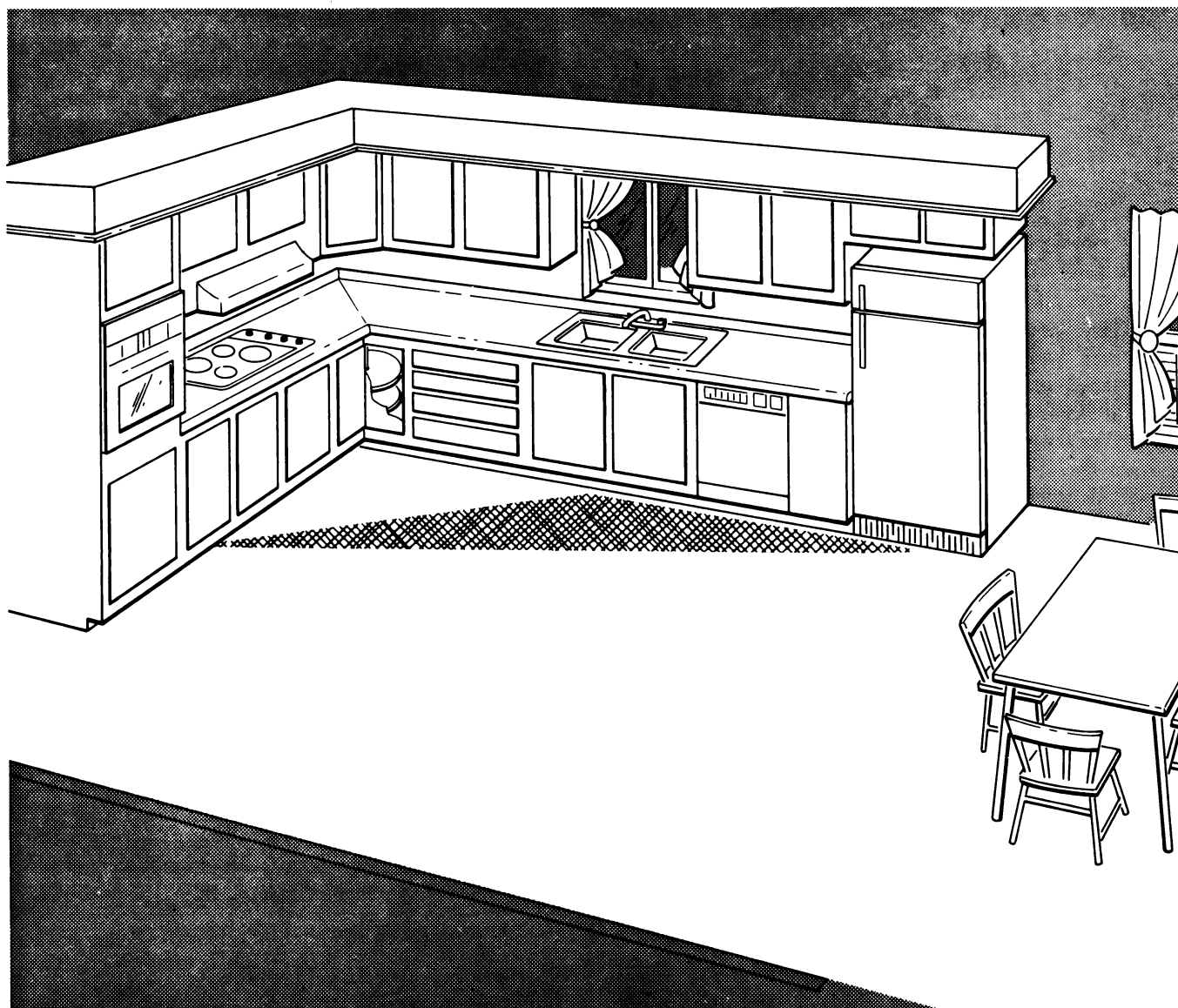
RECOMMENDATION:

To provide for an efficient and safer kitchen layout, the following recommendation is made:

- The sum of the sides of the work triangle (lines connecting the center fronts of the sink, range, and refrigerator) shall not exceed 22 feet.

This illustration depicts a poor kitchen arrangement, showing a crowded work triangle which is traversed by the traffic flow between adjacent areas. Also, the door swings of access doors and appliance doors are obviously poorly planned from the safety standpoint.





This illustration shows a well-planned kitchen layout with ample task space provided. Convenient traffic flow provides easy access to and from adjacent areas without crossing the work triangle.

Before building, consult the BOCA code.

Extension Division • Virginia Polytechnic Institute and State University • MI-170 • September 1977

Prepared by Helen L. Wells, Housing Specialist

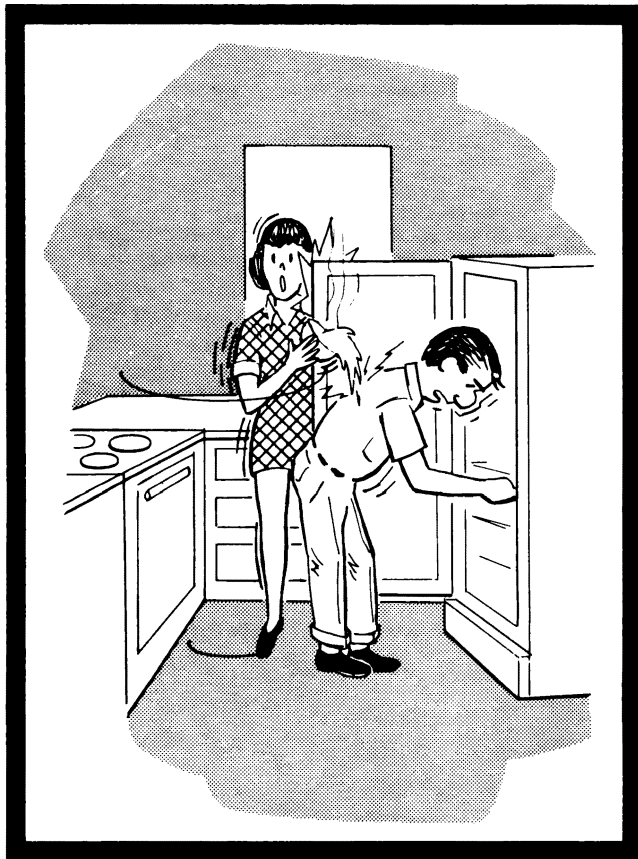
Originally prepared for the Office of Research and Technology, U.S. Department of Housing and Urban Development,
"A Design Guide for Home Safety" HUD-RT-17 January 1972

Issued in furtherance of Cooperative Extension work, Acts of May 8 and June 30, 1914, in cooperation with the U.S. Department of Agriculture. W. R. Van Dresser, Dean, Extension Division, Cooperative Extension Service, Virginia Polytechnic Institute and State University, Blacksburg, Virginia 24061.

The Virginia Cooperative Extension Service by law and purpose is dedicated to serve all people on an equal and nondiscriminatory basis.
An Equal Opportunity/Affirmative Action Employer

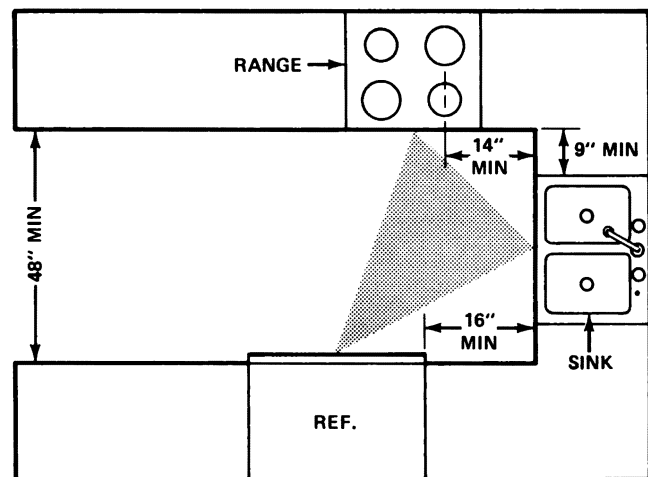
Traffic Flow

Anticipated traffic flow patterns of the entire home environment must be taken into consideration when designing safe, efficient kitchens. In today's home, the patio and/or other outdoor recreational areas have become significant factors contributing to the occupant's daily life style. As such, these areas should be located adjacent to, or easily accessible from, the kitchen. The normal meal-serving areas, including dining room and breakfast room, should also be located as convenient to the kitchen activities as practicable. In no case, however, should there be an interference between the work triangle and normal traffic flow patterns for these areas. The presence of hot dishes, appliances, and utensils in the kitchen, combined with a traffic flow that traverses the work triangle, creates an accident-prone condition. All traffic flow patterns that originate outside the home should be convenient to the kitchen but should not pass through the work triangle.



Adequate work space within the kitchen is necessary to avoid accidental collisions while preparing hot foods.

Another traffic flow factor of safe, efficient kitchen design which must be considered during the planning stage is adequate clearance between fixtures and appliances. Minimum space between fixtures that are opposite each other should be the space required for one person to safely pass another who is using one of the fixtures, without crowding or physically contacting that person. A minimum of 48 inches provides adequate space between most kitchen fixtures (including oven, refrigerator, and cabinet doors) for normal traffic to pass, without undue interference to the person functioning in the kitchen work area.



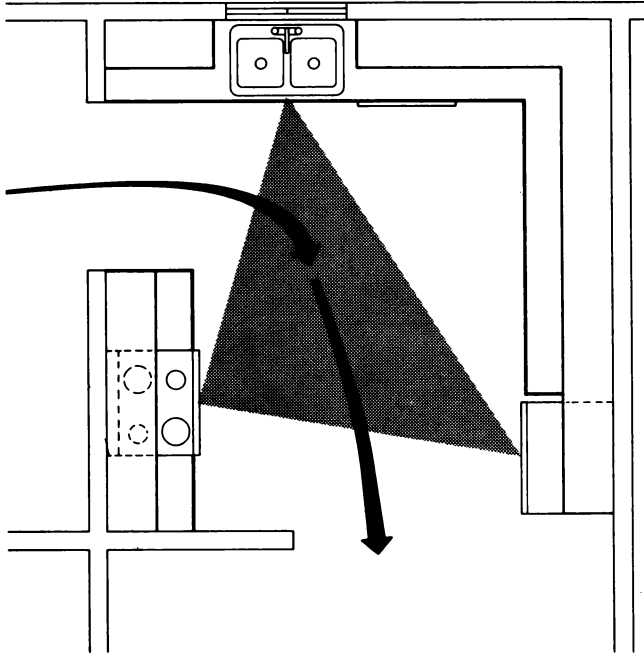
Crowded kitchen floor plans create unsafe conditions. Inadequate task work space within the work triangle may result in painful injury caused by accidental bodily contact between two individuals while preparing hot foods.

RECOMMENDATIONS:

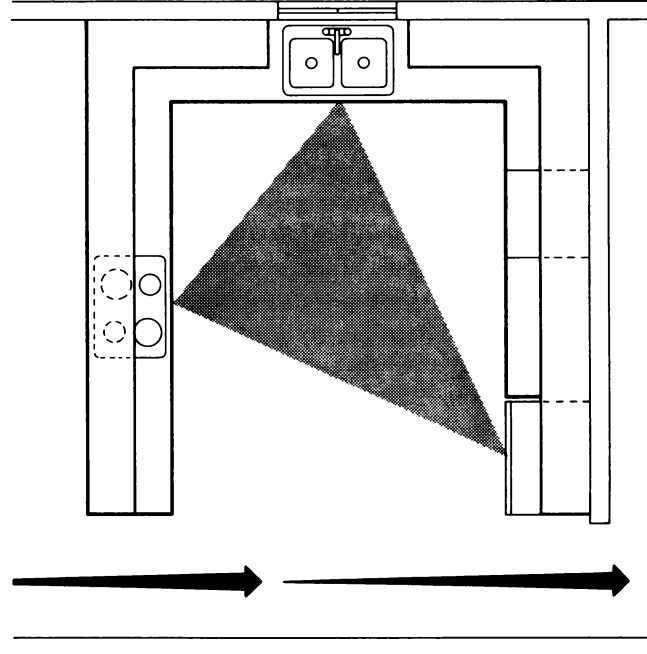
The following recommendations for kitchen fixture placement provides for a more efficient and safer kitchen.

- Kitchen shall be designed so that no traffic flows through the work triangle.
- The clear space between cabinets and appliances opposite each other shall be a minimum of 48 inches. When such fixtures are at right angles to each other and separated by a passageway, they shall be spaced a minimum of 30 inches apart.

- In "L" -shaped or "U" -shaped kitchens, the minimum edge distance between the appliance and adjacent corner shall be 9 inches from edge of sink, 16 inches from the refrigerator, and 14 inches from the center of the nearest range burner.



Example of a poorly planned kitchen which routes traffic through the work triangle. This arrangement will result in the creation of hazardous conditions as people move through the kitchen while others are engaged in food preparation.



Example of a well planned kitchen which provides ample working space, an adequately proportioned work triangle, and a through traffic plan which does not interfere with kitchen activities.