

Designing Church Kitchens

By Eric MacInerney, AIA

Part 1: Essential Things you must Consider

Almost all buildings used for religious assemblies have some sort of a kitchen. Faith and food seem to go hand in hand, well, hand to mouth. Church kitchens range from a folding table with crock-pots and chafing dishes for pot luck dinners to full commercial kitchens that make restaurants jealous. There are two main factors when designing or renovating a kitchen: how you plan to use the kitchen and how the code authorities apply the code to what you are doing.



Full Commercial Kitchen. Note: hand sink is used as accessible sink
Foundation United Methodist Church, Temple TX

Most people think the difference between a commercial and a residential kitchen is whether the appliances are commercial grade. The appliances do have some bearing on kitchen requirements, but the most important factor is how you use the kitchen. Church kitchens, historically thought as being like larger home kitchens, have become more akin

to restaurant kitchens (especially in the eyes of the code). If you are regularly serving the public (not the just congregation), if you are charging money for the food, or if you are serving an accredited day school or mother's day out, you most likely have a commercial kitchen. If you only serve your congregation but still cook full meals, it is a little gray as to whether you are commercial or residential. If you just have a warming kitchen or a catering kitchen where food is brought in already cooked, you probably have a residential grade kitchen, but you should check with the code officials as this can still be seen as having some commercial requirements.

Different jurisdictions have slightly different codes and varying interpretations of how these codes apply to religious uses. It is critical that you and your architect/designer contact the code officials during the planning stage to try to understand how the code will apply. This is not a 100% guarantee, as enforcement in the field can be different than review, but it will get you on your way. Also, keep in mind there may be multiple people within the jurisdiction that have purview over a kitchen, and don't expect one to know what the other will or will not accept. The building official is the most obvious, but often cities and counties have a health department that also regulates commercial kitchens. You need to be in contact with both groups

Why is this distinction important? There are three main reasons. First, commercial kitchens are likely to be required to have a Type 1 vent hood over the cooking equipment. These hoods and their integral fire suppression start in the range of \$20,000-\$25,000 (more on this later). Second, commercial kitchens are going to be required to have a grease trap, which can easily be an additional \$3,000-\$10,000. Third, commercial kitchens require regular inspections and may incur requirements and training for the volunteers who work there.



Residential Grade Kitchen
First Church of the Nazarene, New Braunfels, TX

Part 2 – Vent Hoods and Grease Traps: What are they and do I need them?

Vent Hoods

There are three basic vent hood types. First is the typical vent hood you would have in a residence. These simple hoods can either vent back into the room or can vent outside. They are relatively inexpensive and easy to use, but don't move a lot of air. Second are Type 2 hoods, also known as stem hoods, which vent directly to the outside. They move a lot of air and thus in many cases, outside air is blown into the room to makeup for the air that is removed by the hood. The third type, Type 1, involves much more. These hoods move a tremendous amount of air, and because the air could be grease laden the exhaust pipe has to be welded stainless steel and has a lot of restrictions on number of turns and length. They also incorporate their own fire suppression systems designed specifically for grease fires. Type 1 hoods work great and if you are doing a lots of cooking (especially if you are frying), they add a lot of safety. However, they are expensive, loud, and intimidating to the casual user. They also require a make-up air source, which can make it difficult to control temperature in the space when the hood is on.



Residential Ranges with Type 1 Hood. Hood sized to later allow a commercial range.



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Christ Lutheran, Georgetown TX

Generally (as with all of these issues, local conditions may vary), there are two factors that determine when a Type 1 hood is required. First, if you have a full commercial range or a fryer you can pretty much count on the Type 1 hood. Second, there is a section in the code (Section 507 of the International Mechanical Code) that says residential appliances used for commercial purposes must be treated as commercial. The interpretation of 'commercial purposes' varies by jurisdiction. We have been required to put a full hood over a residential range in a warming kitchen because the code official interpreted the fact that the church was a commercial building to mean the kitchen was for commercial purposes. The trend seems to be moving towards requiring the Type 1 hoods, so be sure to discuss this with your building official. The only thing worse than being forced to add a Type 1 hood in your plans is to try and do it once construction has started.

Grease Traps

Grease traps are special tanks designed to separate and contain the grease that ends up in the drain water of the kitchen. Cities require these because if not captured at the kitchen, the grease coagulates in the city sewer lines and eventually clogs them. City officials seem to be growing more cognizant of this issue and we are seeing more requirements for grease traps. Having a grease trap is not a huge imposition other than the initial cost, which can range from \$3,000 to \$10,000. Periodically (depending on your amount of grease) they need to be cleaned so they should be located in an accessible spot (most often buried). They can smell, especially if above ground, so take that into consideration.

Also, if you do not have a full commercial kitchen, there are smaller sized grease traps that may be acceptable to the code officials. This can save you some money.

Part 3 – Appliances, Drains, and Space Planning

Commercial Appliances

When it comes to the equipment for the kitchen, once you get past the big code related issues of the vent hood and grease trap, most of the decisions really are based on how you use your kitchen and what your budget is. There are some stipulations on sinks, dishwashing, and refrigeration that a fully regulated commercial kitchen will need to deal with, but these do not usually apply to the majority of church kitchens. The commercial-rated equipment tends to work better and longer, but it is more expensive and more foreign to the average volunteer. We most often see a mix of appliance types.

Refrigeration

Commercial refrigerators provide more room and better temperature control, so we see these used a lot. Occasionally, if the kitchen is really going to be used for feeding lots of people regularly, we will use a walk-in refrigerator. These are more expensive and take planning to make them fit into the building.



Open preparation and serving islands with mix of commercial and residential.
All Saints Episcopal Church, Southern Shores, North Carolina



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Commercial ranges are great for cooking large meals, as their bigger surfaces and smooth tops easily allow for the use of bigger pots. They often have large griddles, which are great for pancake breakfasts; in fact many have large removable griddles that can be placed on the normal burners. This can give you a little more flexibility in that you don't dedicate a section to a griddle. Keep in mind that choosing a commercial range with almost certainly bring in the Type 1 hood requirement.

Ovens

Commercial ovens also greatly increase your baking and cooking capacity. Stand-alone ovens usually come in stacks of two and each oven has multiple racks inside. They tend to be convection ovens, which can be a bit scary as your baking times have to be adjusted for the faster oven. However, more and more residential ovens have convection features, so your average volunteer is more likely now to be ready to deal with convection. There are commercial microwaves as well, which like the ovens are more powerful. In both cases, the controls are very functional and are not as user-friendly as residential appliances.

Warming Cabinets

Another commercial appliance that is fairly foreign to residential users is the warming cabinet. These are vertical units that can hold many racks of food and keep the food warm (and in some units cold) until it is time to serve. This allows a group to pre-cook parts of the meal to be ready and then serve it all at once. You have seen these cabinets if you have ever seen a caterer provide food away from their kitchen.

Dishwashers

There are two types of commercial dishwashers: slide through, and under counter. Each of these can use one of two types of cleaning systems: high temperature and chemical. The great advantage of a commercial dishwasher is that it cleans a load of dishes in a few minutes rather than the longer time it takes a residential dishwasher. High temperature dishwashers need booster heaters to get the water hot enough for sanitation (170°) so you need to make sure you have capacity for the added load. Chemical dishwashers use lower temperatures plus chemicals. Make sure you have room beside the dishwasher for the chemical bottles and know that you will most likely have to have a contract with a chemical provider.

Sinks and Floor and Drains

Triple Sink

Commercial kitchens will be required to have a triple sink for sanitation purposes (though if you have a commercial dishwasher this can often be reduced to a double sink). We have found that even in our residential grade kitchens, the triple sink is a cost-effective way to get nice deep sinks for washing large gear. The commercial sprayer valve is also a pretty useful device. Note: in all commercial kitchens the drains are required to have a

visible air gap between the drainpipe and a floor sink. This is so that if the sewer backs up, it spills on the floor and does not continue into the sinks or dishwashers. This is a good idea for residential grade kitchens as well.



Full Commercial Dishwasher in Separate Cleaning Zone
Emmaus Catholic Church, Lakeway, TX

Floor and Drains

Whichever type of kitchen you have, make sure your flooring material is ready for water. This means it needs to tolerate spills and mopping, and more importantly, maintain the required amount of slip resistance to make the users safe. Floor drains are very useful because at some point in the life of the kitchen, there is going to be stuff all over the floor.

One note on floor drains is that if you don't use your kitchen a lot (especially if you don't get a lot of water on the floor) the water in the trap under the floor drain will dry out. This will allow sewer gases to seep up through the drain. You will definitely know when

this happens as the smell is quite distinctive. There is an easy solution though—just pour a good amount of water down the drain and the trap will seal itself.

Accessibility and Planning

Accessibility

Typically, accessibility rules do not apply to commercial kitchens because these are limited use areas. However, church kitchens fall into a gray area because of their use by volunteers. If you have accessibility review, make sure you go over what will be required. Appliances are most often exempt because they are considered equipment.



Open stool area for meetings

All Saints Episcopal Church, Southern Shores, North Carolina

If you have a walk in cooler, be sure to know how the accessibility reviewer will look at this both in terms of turn-around space and door hardware—most walk in coolers are not accessible. One possible solution is to have another refrigerator that is accessible.

You will most likely be required to have at least one accessible sink and 30” minimum accessible counter space. One way we meet the sink requirement is to provide a hand sink (required in a commercial kitchen) that is accessible, thus solving two issues with one sink.

Space Planning

Church kitchens need a lot of flat preparation space. Think about people flow, especially if you plan to serve people from within the kitchen. It is important to keep the serving and cooking sections separate - and don't forget drink stations! If possible, it is also a good idea to keep dishwashing in a separate area, so the dirty dishes don't mix with serving and cooking. Functions in church kitchens generally involve a lot of conversation, so openness is key. Kitchens are also noisy, so be sure to think about audible separation between the kitchen and the larger spaces. Make sure openings to the main room will contain the noise—smoke seals are essential not just for fire code, but because they limit air flow and thus limit some noise transference. We like to use solid door rather than roll-down doors if possible. If you do use a roll up door, especially one with a counter in front, pay close attention to how it will be opened and closed. These doors can get pretty hard to move and often the person who is trying to close it is not a body builder.



Separation of serving area from cooking area
Note: Great storage under serving island
Spiritual Renewal Center, Victoria, TX

Storage and Management

Don't forget storage! You will need dish storage or paper good storage depending on whether you use re-usable dinnerware or paper. You need to think about which groups will store what food where. For example, a licensed day care facility needs to date and label their food so it can be disposed of when required. This group will have different



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and sometime conflicting needs from the youth group storing popcorn and drinks. A good church kitchen will have lots of different uses and functions. A good kitchen “Czar” or a well functioning kitchen committee will go a long way in setting up and enforcing the rules of the use of your kitchen—especially when there are commercial requirements.

Putting it All Together

I hope this has helped. Designing the right kitchen for your facility takes a lot of work. Be sure to have an architect with experience working with churches to help you listen to all the possible user groups and discern their needs. You need to know who is using the kitchen and how to determine and best design. The choices of types, layouts, appliances, and finishes need to be balanced with the users, the code, and the budget. We have from time to time found that the needs of the different user groups varied so much that it was actually better to design two different kitchens in different locations.

I cannot stress enough that you need to talk to the building officials during design when changes can be more easily made. It is not a 100% guarantee that something may not change in the requirements, but it should get you pretty far down the path. Commercial kitchen appliance vendors also have a lot of good advice, but remember they are trying to sell their equipment.

Closing Statement

Good Luck with your new kitchen—I’m hoping this article will ensure hundreds of successful pancakes suppers.