

Hospitality Design

Everything that goes into building a coffee shop — from grease interceptors to guest experience.

A GUIDE FROM HARMONY HOUSE

The Harmony House Guide to Hospitality Design

A coffee shop is one of the most technically demanding interior projects in commercial design. The guest experience — the warmth, the community, the considered material choices — is only possible when a dense infrastructure of plumbing, power, ventilation, and code compliance has been resolved first and resolved correctly. This guide covers both sides of that equation: the technical systems that make a hospitality space function, and the design decisions that make it worth coming back to.

HOW TO USE THIS GUIDE

The sections that follow address the seven layers of a hospitality project — from city permitting through guest experience. Each layer has dependencies on the others; a decision made in the plumbing rough-in will affect what is possible in the lighting layout, which affects the ceiling design, which affects acoustics. Reading the guide in sequence helps build that picture. Use it as a framework for conversations with your design team, contractor, and local authorities.

01

Permitting, Inspections, and Jurisdictional Requirements

The regulatory landscape for a public-facing food and beverage space.

Before a single design decision is made, a hospitality project must map its regulatory obligations. A coffee shop is subject to multiple overlapping jurisdictions: building permits from the city or county, health department approval for food service operations, fire marshal review for life safety systems, and in many cases additional review from a planning or design review board if the project involves exterior changes.

The permitting sequence matters enormously. Health department requirements, for example, must be incorporated into the construction documents before permit submission — not added later. The health department will specify sink counts and types, hand-washing sink locations, refrigeration requirements, food preparation surface materials, and mop sink location. These requirements are non-negotiable and must be designed around, not retrofitted into a

finished plan.

Fire and life safety review covers occupancy load, egress widths and paths, emergency lighting, exit signage, fire suppression systems (including suppression within the vent hood), and in some jurisdictions, sprinkler systems. The occupancy classification of a coffee shop (typically Assembly Group A-2 or Business Group B depending on seating configuration) determines which requirements apply.

- Building permit: structural, mechanical, electrical, and plumbing systems
- Health department: food service plan review — required before permit issuance in most jurisdictions
- Fire marshal: life safety systems, occupancy load, egress, suppression
- Planning/design review: exterior changes, signage, and in some jurisdictions, interior changes in historic buildings
- ADA compliance review: accessible route, counter heights, restroom configuration
- Business license and food handler certification: operational requirements separate from construction permits

“The permitting sequence is a design constraint. Health department requirements must be incorporated into construction documents before permit submission — not added after the fact.”

02

Plumbing Infrastructure: The Most Complex System in the Building

Sinks, drains, grease interceptors, and the systems that make food service possible.

The plumbing requirements for a commercial food and beverage operation are substantially more complex than for any residential or standard commercial project. The health department will specify a minimum sink count based on the scope of food and beverage preparation; a coffee shop typically requires a three-compartment sink for equipment washing, a dedicated hand-washing sink within the service area, a mop sink, and floor drains under all equipment that produces wastewater.

The grease interceptor is the plumbing element most often underestimated by clients and insufficiently planned for by design teams without food service experience. Any commercial kitchen or coffee bar that produces grease-laden wastewater — which includes any operation with an espresso machine, milk steaming, food preparation, or warewashing — is required to install a grease interceptor that captures fats, oils, and grease before they enter the municipal sewer system.

Grease interceptors are sized based on the volume and type of wastewater produced. They can be installed below the slab (preferred for capacity and cleanability), above the floor, or in some cases in an outdoor vault. The interceptor location must be accessible for pumping and maintenance, which affects layout planning significantly. This is a decision that must be made before the slab is poured.

- Three-compartment sink: wash, rinse, sanitize — health department requirement for all warewashing
- Hand-washing sink: dedicated, within the service area, with no other use permitted
- Floor drains: required under espresso equipment, ice machines, reach-in coolers, and anywhere water accumulates
- Grease interceptor: sized per fixture unit count and grease load, located before slab pour
- Drain lines: properly sloped (1/4 inch per foot minimum) to prevent pooling and backflow
- Hot water heater: sized for peak demand including warewashing and restrooms
- Water pressure: verify incoming pressure meets equipment manufacturer requirements

“The grease interceptor must be planned before the slab is poured. It is the single most consequential infrastructure decision in a coffee shop build — and the most expensive to correct after the fact.”

03

Electrical: Power for a High-Demand Environment

Dedicated circuits, 3-phase power, and the electrical infrastructure of a working coffee bar.

A commercial espresso machine is among the highest electrical demand appliances in any commercial environment. A two-group espresso machine typically requires a dedicated 240V/20A circuit; a three-group machine may require 240V/30A or higher. Multiple machines, grinders, and ancillary equipment on the bar create a load profile that must be addressed in the electrical panel design — not assumed from a standard commercial tenant improvement allowance.

The electrical load calculation for a coffee shop must account for: espresso machine(s), grinders (typically one per group head), hot water dispensers, refrigeration units (reach-in and under-counter), POS systems and credit card terminals, display lighting, ambient lighting, exterior signage, audio/visual systems, HVAC equipment, and any food preparation equipment. Each of these has specific amperage requirements that the equipment manufacturer specifies; Harmony House collects and coordinates all equipment specifications before the electrical engineering is completed.

Panel location and capacity are decisions made early in the design process and difficult to change. In a tenant improvement scenario, the existing panel may not have sufficient capacity for the additional load of a commercial food service operation — panel upgrades are common and must be factored into the project budget and timeline. In some cases, a subpanel dedicated to kitchen equipment is the most efficient solution.

- Espresso machine: dedicated 240V circuit, amperage per manufacturer specification
- Water heating element within espresso machine: some require separate circuit
- Grinders: 120V dedicated circuits preferred; one per group head minimum
- Refrigeration: each unit on its own circuit; refer to equipment schedule
- POS and technology: clean power circuit, separate from high-demand equipment
- Lighting: calculate load for all circuit types including LED drivers
- Panel capacity: verify existing service amperage before finalising equipment schedule
- GFCI protection: required within 6 feet of any water source per electrical code

04

Ventilation, Vent Hoods, and Mechanical Systems

Air quality, make-up air, and the systems that keep a coffee shop comfortable and compliant.

Commercial vent hoods are required over any cooking equipment that produces grease-laden vapors, heat, or combustion byproducts. In a coffee shop, this typically includes any oven or warming equipment, and may include the espresso machine depending on jurisdiction and equipment type. The hood must be sized per the equipment it covers, and the exhaust volume it removes must be balanced by an equivalent volume of make-up air — otherwise the space will be depressurized, doors will be difficult to open, and the hood will not perform correctly.

Make-up air is the aspect of coffee shop ventilation most consistently underspecified. It must be tempered (heated or cooled to within a certain range of the interior temperature) to avoid creating uncomfortable drafts in the service area. The make-up air system is a significant piece of mechanical equipment that requires ceiling space, ductwork routing, and its own electrical connection. It must be coordinated with the hood manufacturer's specifications and the mechanical engineer's design.

Beyond the hood, the overall HVAC system for a coffee shop must address: the heat load from espresso equipment and refrigeration, the latent load from steam and dishwashing, the occupancy load from guests (which can be variable and high), and the need for controlled fresh air ventilation. A coffee shop that is too warm, too cold, or smells of yesterday's milk is not a place people want to linger.

- Type I hood: required over grease-producing equipment; includes fire suppression system
- Type II hood: for heat and moisture without grease — may suffice over espresso equipment in some jurisdictions

- Exhaust CFM: calculated per linear foot of hood and equipment type
- Make-up air: minimum 80% of exhaust volume; must be tempered
- Fire suppression within hood: required for Type I; inspected and certified separately
- HVAC sizing: must account for equipment heat load, latent load, and occupancy
- Ductwork routing: planned in design phase to avoid conflicts with structure, lighting, and ceiling design

“Make-up air is the most consistently underspecified system in a coffee shop build. A hood without balanced make-up air will not perform — and the consequences are felt by every employee working beneath it every day.”

05

Equipment Specification and Coordination

How equipment selection drives every infrastructure decision in the project.

In a hospitality project, equipment specification is not a late-stage decision — it is one of the earliest. The size, power requirements, ventilation needs, plumbing connections, and structural load of every piece of equipment must be known before the mechanical, electrical, and plumbing engineering is completed. A change in espresso machine selection after the electrical rough-in can require new conduit, a new circuit, and a new panel schedule — at significant cost.

Harmony House develops a complete equipment schedule at the beginning of every hospitality project. This document lists every piece of equipment with its manufacturer, model number, dimensions, weight, power requirements (voltage, amperage, phase), ventilation requirements, plumbing connections, and clearance requirements. This schedule is issued to the mechanical, electrical, and plumbing engineers as part of the design package — it is the document that makes coordination possible.

Common equipment in a coffee bar: espresso machine, grinder(s), batch brewer, hot water tower, blender (if applicable), refrigerated display case, under-counter refrigeration, ice machine, reach-in cooler, POS terminal, and any food warming or preparation equipment. Each has its own utility requirements that must be coordinated and verified against the building's available services.

- Equipment schedule: developed at project outset, updated throughout design
- Manufacturer cut sheets: collected and issued to engineers for all equipment
- Clearance requirements: equipment needs service clearance that affects layout density
- Ice machine: requires water supply, drain, and ventilation clearance
- Blender station: requires sound mitigation consideration in open-plan layouts

- Display cases and reach-ins: refrigeration load adds to HVAC cooling requirement
- POS and technology: coordinate power, data, and display mounting with millwork design

06

Health Department Compliance by Design

Building a food service environment that passes inspection the first time.

The health department plan review is a design milestone, not an afterthought. Harmony House incorporates health department requirements into the design from the earliest planning stages — because retrofitting compliance into a near-complete design is expensive, time-consuming, and almost always results in compromises that affect both the operational quality and the aesthetic quality of the space.

The key health department concerns in a coffee shop are: adequate and properly located handwashing sinks, properly configured three-compartment sink, food-contact surfaces that are smooth, non-porous, and cleanable, adequate refrigeration for all perishables, proper separation of clean and soiled operations, and appropriate ventilation. Floor materials in the service area must be non-slip, coved at the base (where the floor meets the wall), and sealed — including under all equipment.

The health department will conduct a pre-opening inspection before the business opens, and the design must anticipate their standards. Health inspectors are looking for the same things during inspection that were reviewed during plan check — any inconsistency between the approved plans and the built condition will require correction before occupancy is granted.

- Hand-washing sinks: one per service zone, no other use, accessible without crossing soiled equipment
- Three-compartment sink: minimum sink size specified by health department; drainage and water supply required
- Floor surfaces: non-slip, coved base, no gaps or cracks, cleanable under equipment
- Food contact surfaces: stainless steel, solid surface, or other approved non-porous materials
- Refrigeration: adequate for all perishables, properly located, with thermometers
- Lighting: minimum foot-candle levels in food preparation and service areas
- Pest exclusion: no gaps in walls, floors, or ceilings larger than 1/4 inch

“Build the health department requirements into the design from day one. Retrofitting compliance into a near-complete design costs more than doing it right the first time — in money, time, and the quality of what gets built.”

The Guest Experience: Why People Come Back

Design for community, warmth, and the daily ritual of a great cup of coffee.

After the infrastructure is resolved — and it must be resolved, completely, before the guest-facing design can be finalised — the question becomes: what does this space feel like? A coffee shop is not merely a place to acquire coffee. It is a community anchor, a place where people begin their day, have their first conversation, sit with a book, take a meeting, or simply exist in public alongside other people in a way that feels human and unhurried.

The design decisions that create that experience are both spatial and material. The ceiling height and acoustic treatment determine whether the ambient sound feels lively or chaotic. The seating mix — bar stools, communal tables, pairs of lounge chairs, window-facing singles — determines what kinds of visits the space accommodates and whether it can hold a regular at 7am and a first date at 3pm. The lighting must be warm enough for morning and flattering enough for afternoon, layered enough to shift as the day changes.

Materials in a coffee shop must be durable enough to withstand daily commercial use while warm enough to feel like a place worth coming to. This is a harder brief than it sounds. Concrete and steel are durable but cold. Natural wood is warm but requires maintenance. The best coffee shop interiors resolve this tension through selection and proportion — warm materials at human scale (the counter edge, the table top, the chair back) and more durable materials at the floor and base where wear is highest.

- Seating mix: provide for solo visitors, pairs, small groups, and laptop workers simultaneously
- Counter design: the bar is the theatre of the space — it should be visible, considered, and operationally logical
- Acoustic treatment: absorptive ceiling or wall material is almost always necessary in a hard-surface commercial space
- Lighting layers: ambient, task (counter and tables), and accent (artwork, plants, architectural features)
- Natural light: maximise where possible; manage with diffusing or filtering window treatments
- Material durability: specify commercial-grade finishes where wear is highest — floor, counter edge, door hardware
- Community programming: design the space to accommodate events, pop-ups, and community use after hours

“A coffee shop is a community anchor. The infrastructure makes it functional. The design makes it worth coming back to. Both require the same level of intention.”

OUR WORK

Selected Hospitality Projects

The following projects represent our hospitality design work. Each required the full scope of technical coordination described in this guide — alongside the design thinking that makes these spaces worth visiting every day.

Bainbridge Play Cafe

Bainbridge Island, Washington

A children's play space with a hospitality-grade coffee bar for parents — one of the most complex dual-use briefs in our portfolio. Full plumbing, electrical, and ventilation scope for the coffee bar, coordinated alongside the play space requirements. Full construction management. The coffee bar was designed to read as a proper cafe rather than an amenity: real equipment, warm materials, and a counter that invites lingering.

Voyager Coffee and Cocktails

The Cove, Winslow, Bainbridge Island — Design Development

Currently in design development, Voyager Coffee and Cocktails is a full-service coffee and cocktail bar coming to The Cove on Winslow. The project involves the full hospitality infrastructure scope — grease interceptor, three-phase power, Type I hood, health department plan review, and fire and life safety coordination — alongside a guest experience designed for the character of the Winslow waterfront. Full details to follow on launch.

READY TO BEGIN?

Building a Coffee Shop Is Not Like Building Anything Else

Harmony House has built the expertise to carry a hospitality project through every layer of its complexity — from the first health department pre-application meeting through the final punch list walk. We would be glad to talk about your project.

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