



DESIGNING
FOOD
FACILITIES

OPTIMIZING
FORM AND
FUNCTION

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CHAPTER ONE

INTRODUCTION

This series, *Designing Food Facilities*, shares the basics of USDA's free architectural services ([Wholesale Market and Facility Design](#)) and the design process for new or renovated farmers markets, food hubs, community kitchens, or mixed-use facilities.

This document outlines the phases of facility design for many types of food-related facilities. The phases outlined below create the foundation for a well-designed and successful project. The architect, in collaboration with project stakeholders, will explore the outcome possibilities, while considering the needs of the community, consumers, and vendors, along with site availability, infrastructure support, and project funding.

Farmers markets are the simplest intersection between agriculture and architecture. The design of a farmers market is crucial to its success, but is often undervalued during planning. Markets are more likely to be successful when a facility combines the architectural elements of planning and design; the architectural principles of construction planning and budgeting; and the architectural components of spatial function, design, flow, and display. Essential factors in market design include location, size and type of structure, special purposes of the facility, aesthetics, accessibility, effective flow, and use of the market by consumers, vendors and others. Cost is equally important to these physical attributes and encompasses not just construction or renovation, but also long-term maintenance. Attention to detail in market design, building type, and construction cost early in the process will greatly contribute to a successful outcome.

A building has the potential to change the character of a community for generations (socially, economically, visually, etc.). Attention to market layout and architectural design will optimize the marketing process and create a sense of community pride and ownership. For example, the Santa Fe Farmers Market Institute transformed a railyard park into a market pavilion, outdoor educational area, and office space. The design also included areas for visitors to relax. Balancing creativity and practicality may result in a structure that is uniquely designed to communicate the history, traditions, and local architecture of the community. Facilities can display an aesthetic that complements local architecture, but still expresses its own interior and exterior design quality and identity.

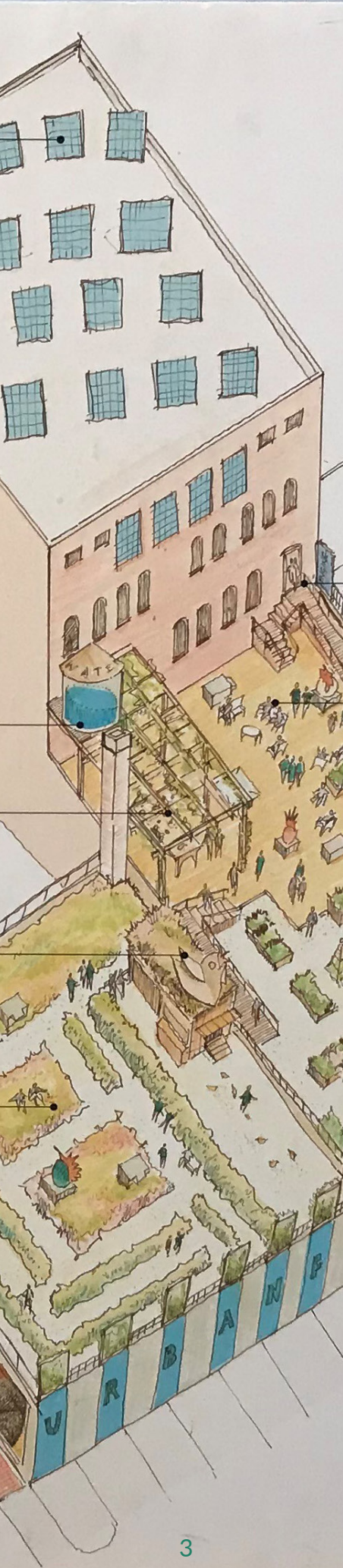


The aesthetic of architecture has to be rooted in a broader idea about human activities like walking, relaxing, and communicating. Architecture thinks about how these activities can be given added value.¹



— Thom Mayne
American Architect

¹ Diane Dorrans Saeks, The Style Saloniste, <http://www.thestylesaloniste.com/2012/10/the-definitive-new-architecture-book.html> (October 15, 2012).



CHAPTER TWO

UNDERSTANDING THE DESIGN PROCESS

Schematic Design

A representation of the elements of a system using abstract, graphic symbols rather than realistic pictures.

Engaging stakeholders is a key component to a successful design process. The American Institute of Architects offers a guide titled, *Engaging Communities*¹, which explores how to create a successful process that is responsive to the needs of a community.


1 https://content.aia.org/sites/default/files/2019-12/AIA_Guides_for_Equitable_Practice_08_Community_Engagement.pdf.

The standard architectural design process consists of five phases: schematic design, design development, construction documents, bidding/award, and construction administration. Each phase builds on decisions made in previous phases to refine and develop the work. As it progresses, the process becomes increasingly detailed, eventually culminating in building completion and owner and/or tenant occupancy. Collaboration among all parties involved in the project is crucial for a smooth process.

1. Schematic Design (SD) is the first design phase. During this phase, the architect, stakeholders, and other vested parties discuss and determine project goals and requirements, as well as research any details (i.e. zoning requirements) that may impact the project. From these discussions, the architect develops general sketches or renderings, or parti diagrams, which show relevant and fundamental relationships between design components. The architect presents these design documents to the owner to clarify the spatial relationships, scale, form, and function of the design. The owner and architect discuss any changes in scope, design, and budget to ensure that all design expectations and requirements are met. The process will continue until a preliminary design is approved, which might mean one quick discussion for small projects or many lengthy discussions for larger complex projects. Following approval, the architect further develops the design with more detail and accuracy.

2. Design Development (DD) is the second design phase. Following approval of the schematic design, the architect further develops documents. Mechanical, structural, electrical, architectural, plumbing, and fire protection building systems may be discussed and included to ensure that all required elements fit within the approved design. If the requirements preliminary design does not meet these requirements, the team may need to meet again to discuss design alterations. Drawings during DD determine materials to be used, window and door placement, etc. They may also specify the site plan, floor plans, and exterior elevations. Additionally, drawings are typically used as the basis for construction drawings during the subsequent “construction documents” phase.

3. Construction Documents (CDs) is the third design phase. CDs compile drawings and specifications presented to contractors during the bidding process and for preliminary approval from the municipality for constructability and compliance with local codes and regulations. Drawings illustrate the details of the building (e.g. plans, elevations, sections, etc.) and become the instructions for project construction. Specifications provide written requirements for building materials and equipment, as well as for construction equipment to be used during construction. CDs allow the contractor to develop a final estimate of project costs and schedule. Necessary changes should be documented prior to requesting bids.



4. Bidding and Award is the fourth phase. The bidding process typically requests bids from multiple contractors. In addition to the drawings and specifications in the CDs, contractors might receive industry-standard legally binding documents, such as the owner-contractor agreement, performance bond and payment bond, bid bond, and register of bid documents. Bidders then detail their projected timeframe and budget for the construction project. Owner-contractor negotiations regarding project cost and scope must occur prior to signing the construction contract. Once the owner selects a bidder and awards a contract, and construction may begin.

5. Construction Administration (CA) is the final phase: building! CA transforms the concept of the building into reality. The architect will assist the contractor in ensuring that the building is constructed to the details specified in the owner-approved CDs. To assure conformance to drawings, specifications, and standards, the architect visits the construction site, provides additional design details, and addresses problems. The owner may hire a construction management company responsible for ensuring timely and accurate completion of the project.

Once the contractor notifies the architect that the structure is “substantially complete,” the architect will conduct a final review and inspection of the building. With this inspection, the architect and owner will create a “punch list” and provide it to the contractor to address. This document outlines repairs, corrections, or other modifications to any part of the new facility that do not conform to the specifications in the construction documents.

The construction contract may include “as-built” drawings, which the architect develops to incorporate all changes and alterations made during construction by the contractor or the architect and are then provided to the owner. As-built drawings detail (“red-line”) changes to either the original construction plans or to those of the renovated structure. They are valuable to facility management and for future renovations. The drawings provide vital details allowing for efficient space usage and furniture placement, as well as for the location of utilities throughout the structure, including water shut off valves, central electrical system, air conditioning, and duct work.

Once construction is complete, the owner is ready to apply for a “certificate of occupancy” from the local governmental authority. This certificate allows the owner to occupy the newly constructed/renovated property.



CHAPTER THREE
BALANCING
CREATIVITY AND
PRACTICALITY

The new structure may become a distinctive addition to the community. Besides facilitating the availability of fresh and processed local foods, it may become a destination for community gatherings, learning, entertainment, and other social activities. A building will be a physical presence for generations and has the potential to affect the character, environment, and quality of life in a community.

A building design may be unique and complement the regional and local design style. This is an opportunity to create a structure with distinctive qualities. Context, the local and regional building characteristics, as well as the vernacular style of architecture must be seriously considered.

The sponsoring entity (i.e. state/local government) often determines design. A design charrette could also play an important role in the final design. The charrette is a focused and intensely purposeful meeting that typically consists of a team of architects, community stakeholders, and any others who may provide relevant feedback regarding building design. The goal is to quickly work through design criteria and meaningful design ideas.

Design Charrette

A charrette or design charrette is an intense period of design or planning activity.