

# QUALIFICATIONS AND EXPERIENCE

## ENGINEERING AND CONSTRUCTION MANAGEMENT SERVICES

*Prepared for*

**MICROBREW FACILITIES**



*Prepared by*

**Systems Design Engineering, Inc.**

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**STATEMENT OF QUALIFICATIONS**  
**ENGINEERING AND CONSTRUCTION**  
**MANAGEMENT SERVICES**

**For**

**MICROBREW FACILITIES**

▪ **UNDERSTANDING OF PROJECT**

- *Microbrew Project*
- *Overview of Typical Design Activities*
  - *Site Planning*
  - *Facility Engineering*
    - *Foundation / Structural Steel Design*
    - *Mechanical Plans / Process Utilities*
    - *Process Piping*
    - *Electrical Design*
    - *Refrigeration*
    - *CHP Systems*
    - *Plant Renovations*
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▪ **SDE STATEMENT OF QUALIFICATIONS**

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- *SDE Professional Services*
- *SDE Project Experience*
- *SDE Design / Construction Observation / Management Experience*
- *SDE Construction, Inc. Building Experience*
- *SDE Land Development Services*

▪ **PROJECT STAFFING**

- *Key Project Staff*

# UNDERSTANDING OF PROJECT

## MICROBREW PROJECTS

Systems Design Engineering (SDE) has a full understanding of the typical microbrew project based on our proven track record in the Engineering Design and Construction Management of several brewery / expansion projects as well as new or expanded microbrew facilities. We are confident of our ability to provide potential microbrew clients with the needed expertise to assure timely and successful completion of their important project.

## OVERVIEW OF TYPICAL DESIGN SERVICES

The following discussion presents an overview of the types of services that typically are involved in the performance of Engineering Design and Construction Management services for brewery / microbrewery facilities. The actual delineation of specific services to be performed would be determined by the specific client prior to start of any project.

We have broken the typical Scope of Services into the major project components of: site planning, facility design and construction management.

### Site Planning:

Typical key activities to be involved in a project of this type involving redevelopment within an existing developed area would include:

- Deed research and property survey
- Identification and location of surrounding utilities (sewer, water, gas, electric, and cable).
- Preparation of existing conditions site plan
- Evaluation of zoning compliance and initiation of any needed applications for zoning relief/approvals (i.e.: special exceptions, conditional uses or variances)
- Site design for proposed facilities and associated improvements
- Site grading and stormwater management
- Site landscaping and lighting
- Preparation of formal Land Development Plans for municipal review and approval
- Preparation of required local, state and federal permitting required for the project.

### Facility Engineering:

Major activities typically required for a project of this type include: architectural design, foundation / structural steel design, mechanical design and electrical design.

## Architectural Design

Systems Design Engineering, Inc. provides the design service to provide a pleasing and functional building type insuring all requirements for current and future needs. Accessibility and building code requirements are considered with the Owner to provide the building needed in an economical and functional way. The following two photos show pre and post construction of a recent brewery expansion for Yuengling in Tampa, FL.



The photo below shows the turn-key Big Storm Brewery project in Clearwater, FL.



Attached Drawing A-102 shows a typical layout plan with Drawing A-201 showing a typical elevation of a recent project.



## Foundation / Structural Steel Design

Systems Design Engineering, Inc. can provide steel design and analysis for building and vessel construction based on local, state and federal guidelines including seismic constraints for the local area. Foundation plans are based on the geotechnical report of the site. The following photos depict foundation construction activities associated with the expansion of the Yuengling brewery facility in Pottsville, PA.



Foundation work for recent brewery expansion project for Yuengling brewery in Pottsville, PA



Erection of structural steel supports



Completed structural support for fermentation tanks  
for Yuengling brewery expansion in Pottsville, PA



## Mechanical Plans / Process Utilities

Systems Design Engineering, Inc. routinely provides mechanical design of power plant facilities including steam boilers, refrigeration systems, CO<sub>2</sub> collection and storage, plant air and other supporting utilities.



Glycol Piping Systems



CO<sub>2</sub> Reclaim System



**Large Boiler Systems – High Pressure**



**Small Boiler – Low Pressure for Microbreweries**



## Process Piping

SDE also has experience in process design for chilled glycol and water, hot water, CO<sub>2</sub>, beverage and breweries systems.



## Electrical Design

Systems Design Engineering, Inc. provides complete electrical design for plants including sub-station power, distribution / MCC panels, power, lighting, control and alarm.



## Refrigeration

SDE experience also includes the design of refrigeration and supporting equipment for chilled water and direct expansion systems in multiple refrigerant needs.



## CHP Systems

Design of high efficiency systems to reclaim waste heat and cogeneration systems has also been involved in SDE's projects.





## Plant Renovations

A number of SDE's projects have involved construction and retrofit of plant utilities during production and planned outage schedules.

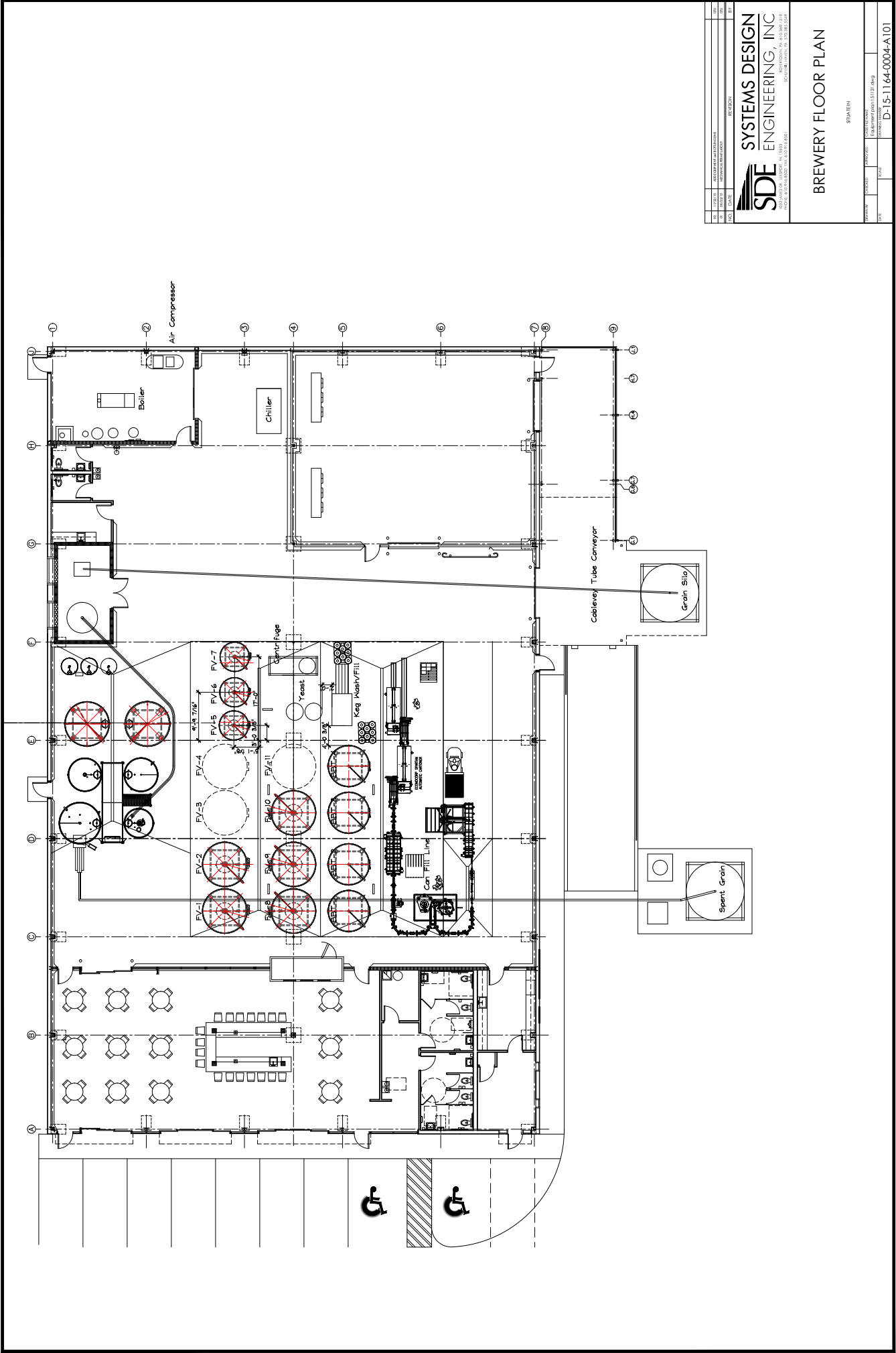


## Microbrewery Construction

Turnkey design and construction of microbreweries at existing or new site is also part of SDE project experience.







NO.	DATE	REVISION	BY
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BREWERY FLOOR PLAN			
STUATIN			
DESIGNED BY	CHECKED BY	APPROVED BY	DATE
STUATIN	STUATIN	STUATIN	10/10/24
PROJECT NO. 15-1164-0004-A101			



### **Project / Construction Management:**

A listing of typical duties of the Project / Construction Manager would include the following:

- Project Manager (PM) would report directly to the client person responsible for the expansion project. PM would be prepared to conduct meetings and take an active leadership role in coordinating all business requirements of the project.
- Project Scheduling – The PM would be responsible for establishing project schedules.
- Budgeting – The PM would provide direct supervision in the control of project budgets to be certain that all projects are cost contained.
- Project Documents – PM would be charged with the preparation and review of all documents directly pertaining to the details of all the projects. This includes memos, contracts, proposals, agreements and insurance requirements.
- Bid Documents – Coordinate issuance of bid documents with the design professionals and / or contractors

- The PM would solicit bids or negotiate proposals in accordance with client policy and State law.
- The PM would be involved with the process for payment, change orders and payment of design professionals.
- The PM would be tasked to develop a system to keep everyone informed within the Client Organization of all phases of development and construction. The PM and Construction Manager (CM) would also be available to attend public meetings of the elected and appointed officials.
- The PM would be responsible for coordinating / obtaining all required governmental permits and agency review by Municipal Boards and Commissions.

Additional duties envisioned by SDE in the performance of the work beyond those described above could include some of the following:

- Review Construction Documents to ensure all public requirements are met, as well as total working package for completion.
- Advertise and solicit private bids for construction based on the AE Construction Documents.
- Receive and review bids, tabulate and certify bids.
- Check insurances, references and past work to ensure that Contractor is responsible vendor.
- Recommend Award to Client.
- Issue Intent to Award, compile contracts and issue Award and Notice to Proceed.
- Hold Pre-Construction Meeting.
- Review schedules and/or create schedule using Microsoft Project.
- Review Shop Drawing submittals, and coordinate approvals with AE. In the review of Shop Drawings, compliance of proposed design with UCC requirements will be reviewed and any conflicts / needed revisions brought to the attention of the AE and the Client.
- Inspect all work being performed.
- Coordinate all aspects of the projects and act as liaison between Owner, AE and Contractors.



- Review and approval of all Applications for Payment using AIA documents.
- Close-out project through punch list, inspections and reviews.

As noted previously, it is anticipated that the actual delineation of specific services to be performed by the selected contractor would be determined by the Client prior to start of the project.

SDE is, however, thoroughly qualified and experienced in all the areas typically involved in construction observation / construction management process and is prepared to provide any and all services that would be required by our clients for these important building projects.