

Project Overview and Objectives

The green space to be redeveloped is located at the NE corner of S Main St and E Pleasant St. This corner is home to several popular Maquoketa events like the summer concert series, Maqtoberfest, Fireball, and more. The space, however, lacks the amenities necessary to comfortably host these events. Our redevelopment project will provide the green space with a permanent stage, restroom and storage structure, lighting, and shade to meet the needs of event-goers.



Figure 1. Current state of green space.

Overall Proposed Design

To make the construction cost more manageable, our design has been divided into three phases. Figure 2 below depicts the green space if Maquoketa implements construction of all three phases. Also, note the proposed stage (Figure 3) remains unchanged throughout the phasing. Both structures are proposed to be constructed from brick masonry and steel to match the aesthetic of the downtown area.

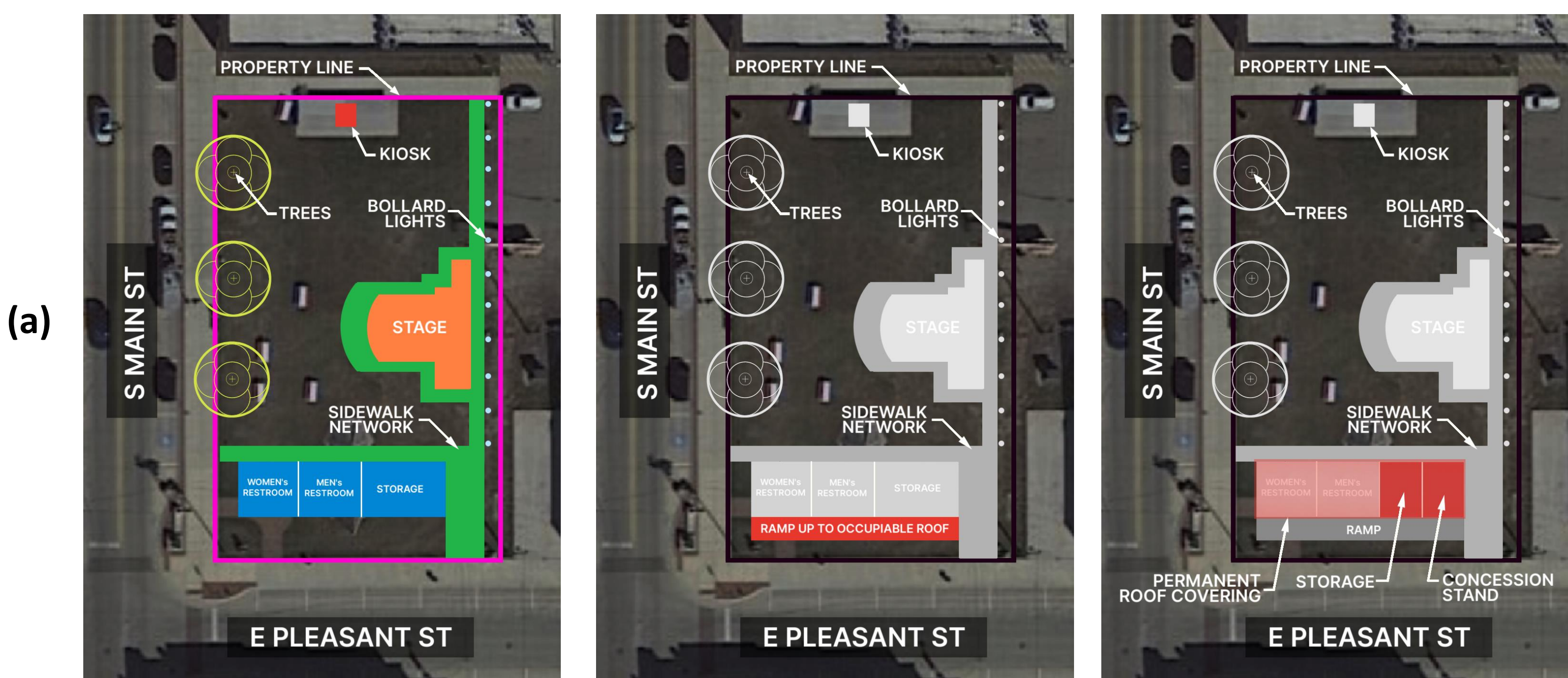


Figure 2. Proposed green space design: (a) site plan phasing, (b) site rendering.

Phase One Stage Design:

The stage size (26' x 20') was selected to accommodate all the performances the city of Maquoketa desires to host. Its placement on the east side of the site provides a more personal experience between the audience and the performers. There is also an ADA compliant ramp and stairs to the stage.



Figure 3. Stage structure.

Phase One Restroom Design:

The restrooms were designed for usage of a 390-person audience. There are men's and women's restrooms with a storage room that has garage door access.



Figure 4. Phase one restroom structure.

Phase Two Restroom Additions:

In this phase, an ADA compliant ramp and railing system is introduced. This allows the restroom structure to have an occupiable roof which provides more sightlines to the stage.

Phase Three Restroom Additions:

This final phase offers shade as well as solar energy through the implementation of a permanent steel roof with solar panels mounted. Phase Three also introduces a concessions area which will complement the food trucks during events.



Figure 5. Phase three restroom structure.

Restroom Floorplans:

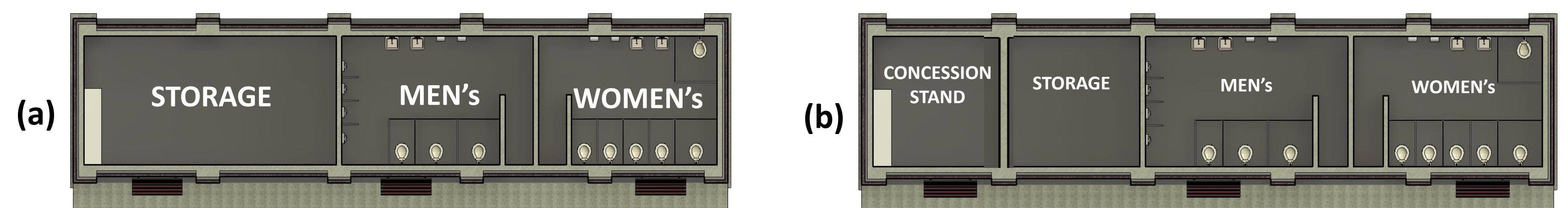


Figure 6. Restroom structure floor plans: (a) phase one and two, (b) phase three.

Construction Cost Estimate

The total cost for design, administration, and construction of the project, if built straight to completion (Phase Three), was estimated to be \$1,123,500. The estimated cost break-downs for Phase One, Two, and Three are \$744,500, \$276,000, and \$103,000, respectively.

References: ACI Building Code Requirements for Structural Concrete, 2010 ADA Standards for Accessible Design, 2021 International Building Code (IBC), 2018 International Energy Conservation Code (IECC), Iowa Statewide Urban Design Manual (SUDAS), ASCE 7-22, AISC Construction Manual, NCMA TEK Manual.