

Project Goals: Assist in the renovation of Volga City's opera house by designing a new visitor's parking lot, multiple outdoor seating areas, a food delivery system, and developing a building flood protection plan.

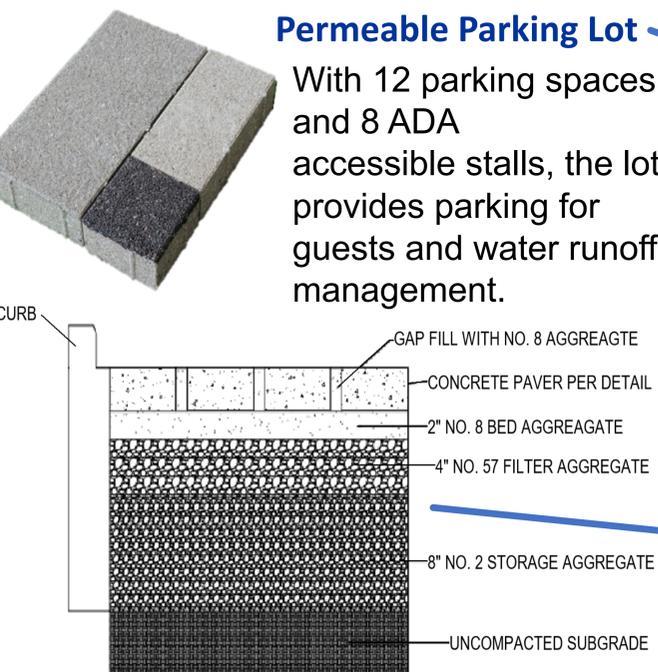


Figure 2. Cross-section of drainage system.



Project	Project Cost
Roof Replacement, Roof Top Deck, and Truss Alterations	\$ 15,900.00
Permeable Parking Lot	\$ 81,500.00
Food Delivery System and Associated Costs	\$ 8,500.00
ADA Ramp and Wrap-Around Deck	\$ 9,850.00
Flood Protection and Waterproofing	\$ 13,700.00
Exterior Steel Staircase	\$ 13,700.00
Total Cost	\$ 129,450.00
Engineering and Administration (20%)	\$ 25,890.00
Contingencies (10%)	\$ 12,945.00
Mobilization (5%)	\$ 6,475.00
Contract Price	\$ 174,760.00

Figure 5. Total Project Cost Estimate.

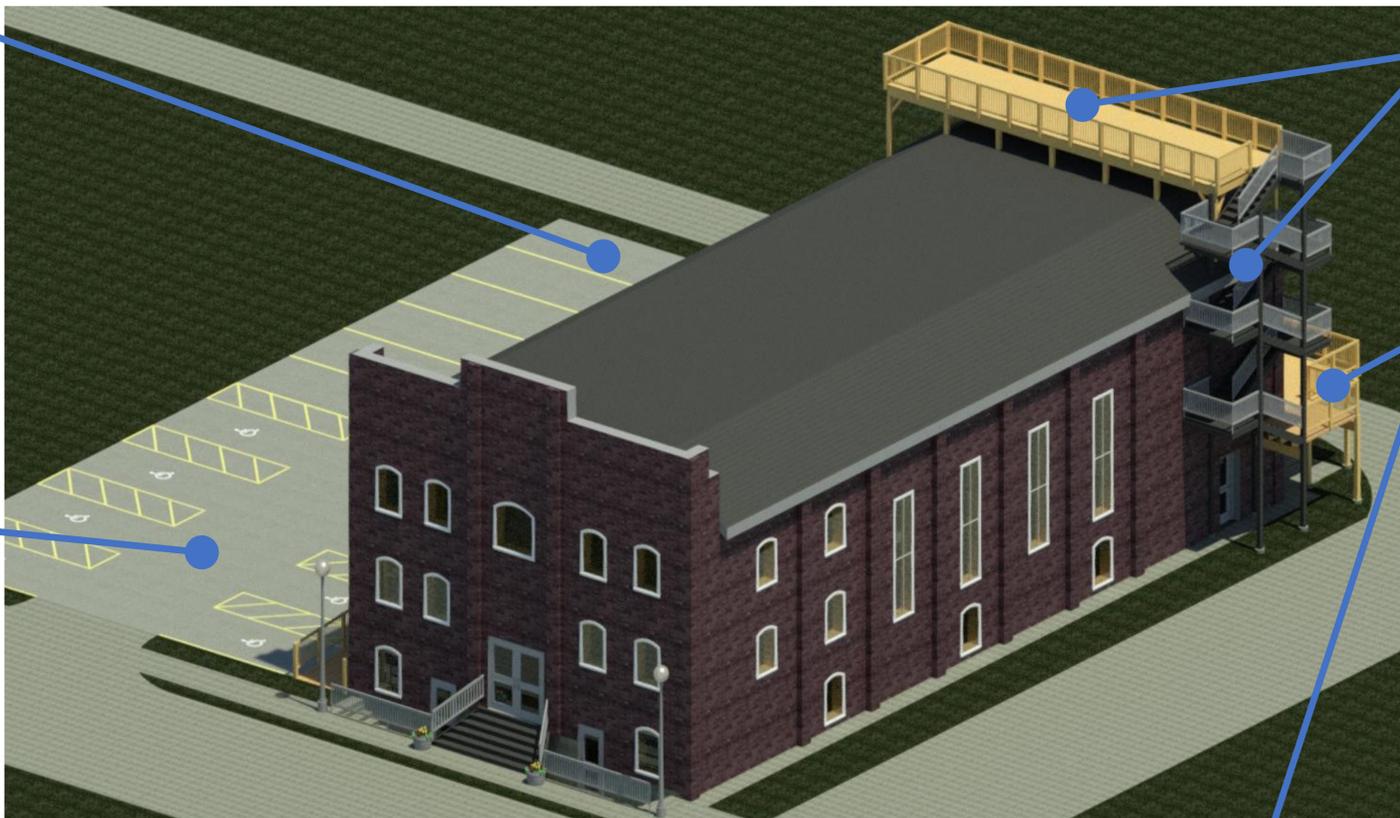


Figure 1. Overview of the opera house within planned additions.

Rooftop Deck and Exterior Staircase

The rooftop deck and stairs provide an overhead view of the nearby park and additional outdoor seating capacity. The roof will be redesigned to accommodate the rooftop deck.

Wrap-Around Deck and ADA Ramp

The wrap-around deck and ADA ramp extension provide access to the backstage door and creates additional outdoor seating.



Figure 3. East building elevation.

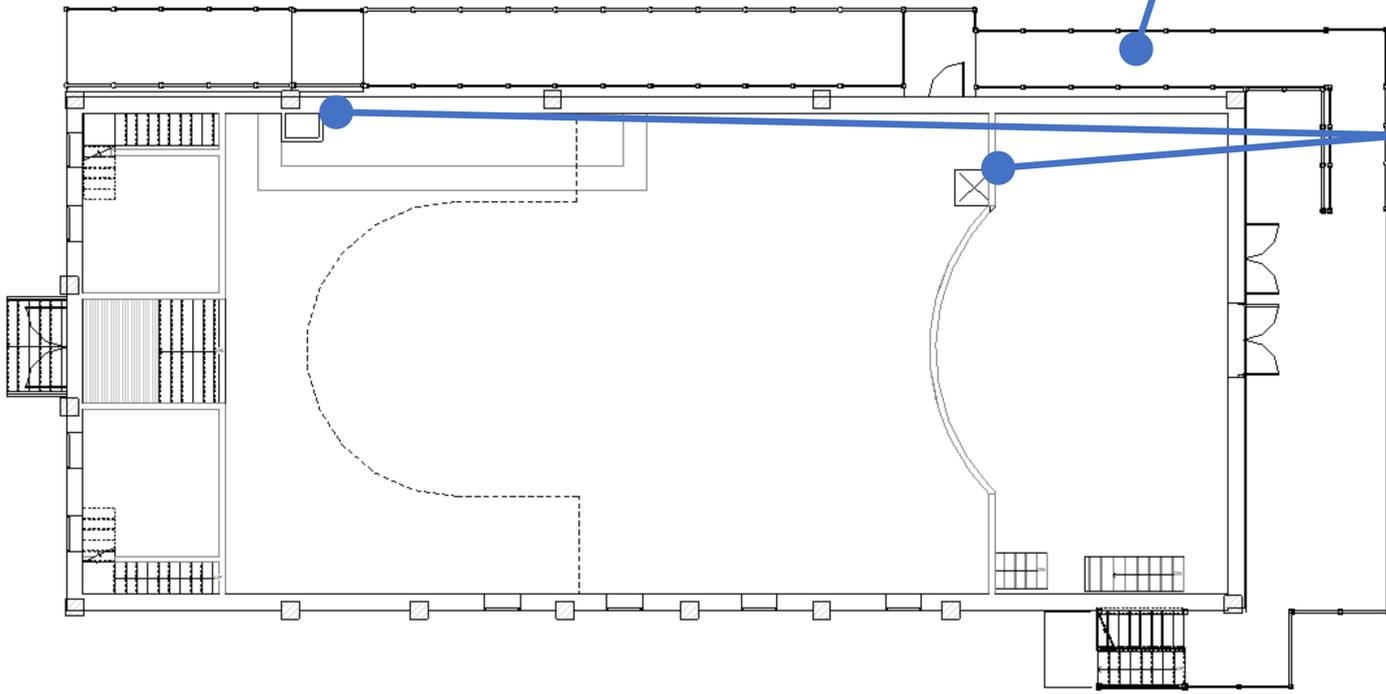


Figure 4. Main level floorplan with outline of balcony level.

Food Delivery System

Dumbwaiters create a safe and efficient delivery system for food and beverages between the kitchen to the main floor and the main floor to the balcony.

20" Std.
Loading Height
Floor to Floor
Overall Height

References

ADA. (2010). Standards for Accessible Design.
 ASCE. (2010). Minimum Design Loads and associated Criteria for Buildings and other Structures
 ICC. (2014). 2015-International Building Code.
 IOWA DNR. (2019). Chapter 8:Permeable paving system. Iowa stormwater management manual.