

Manning Gymnasium

Dalen Acton, Blythe Rients, and Kusai Contractor
Department of Civil and Environmental Engineering
University of Iowa

Location and Purpose

Manning, Iowa is located 90 miles west of Des Moines. The city's current Recreation Center does not have adequate space to host the practices, games, tournaments, exercise classes, and open gym times that it is current being used for. The City of Manning tasked us with exploring alternative designs to create a new gymnasium and space for exercises classes.

Final Design

Our final design is a construction of a new gymnasium in the current location of the Senior Center. This new gymnasium, which is just under 40,000 square feet, includes a gymnasium with built-in bleachers, a multi-purpose exercise room, a new senior center, and community room available to be rented or reserved that has access to an exterior patio area.

To meet parking requirements, two new parking lots have been designed, which include an extension of the existing parking lot and new construction into City Park. The full site design is detailed on the right in Figure 1 and 2.

Below are architectural details and renderings of each floor of the new building. The total occupancy is 1270 people. The total viewing capacity of the gymnasium is 400 people, including the built-in bleachers and second floor viewing area.

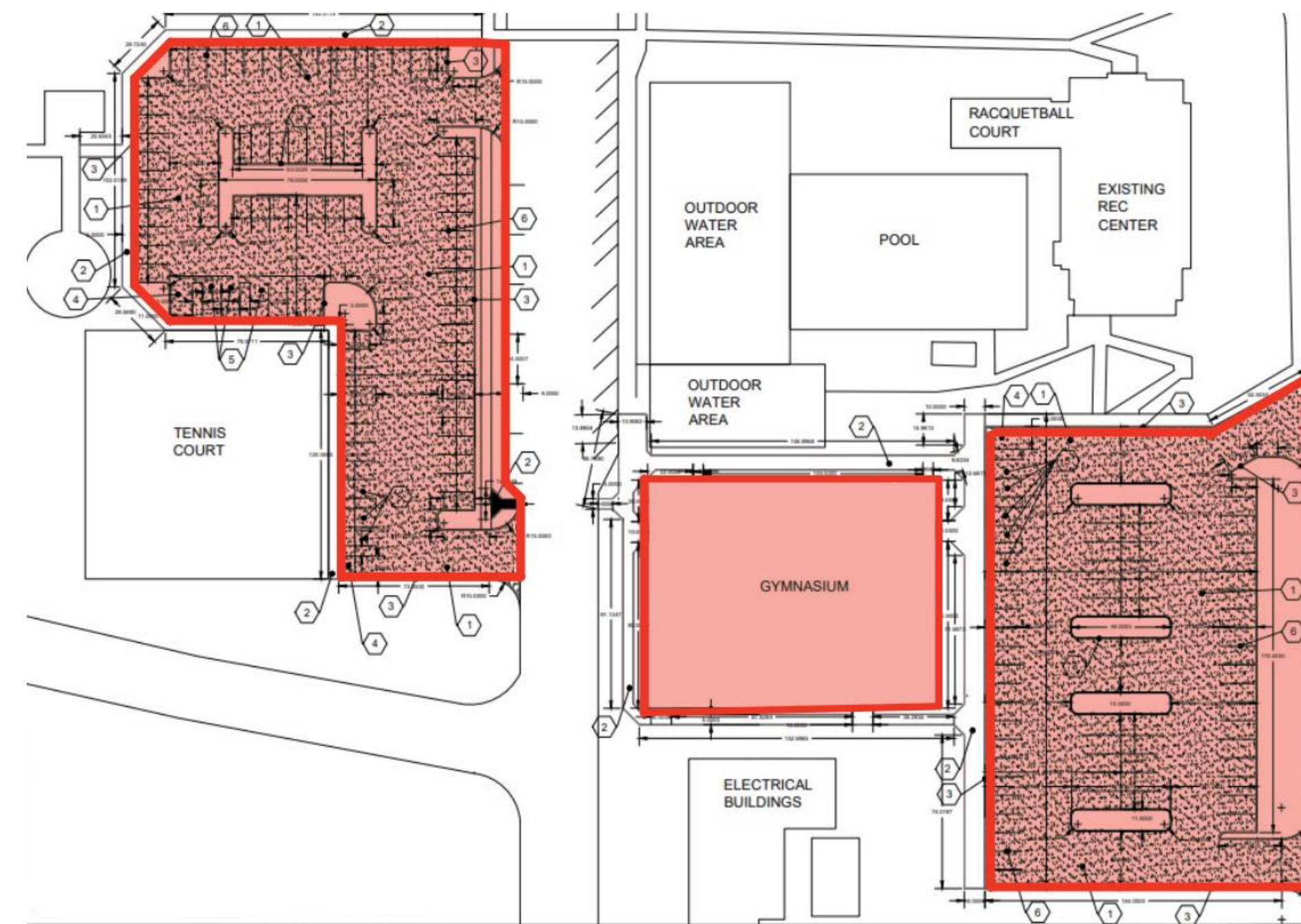
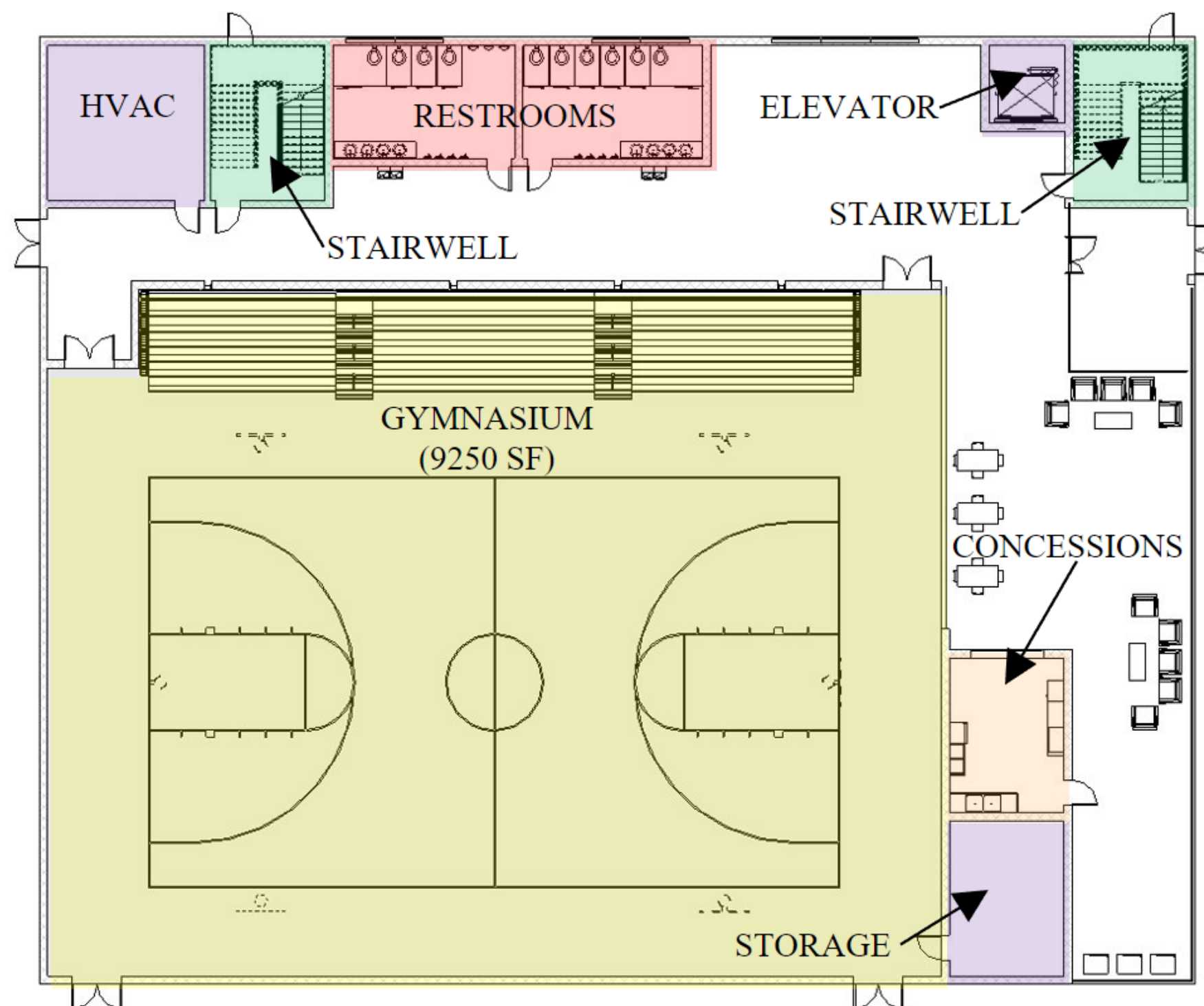


Figure 1. New Gymnasium & Parking Lots

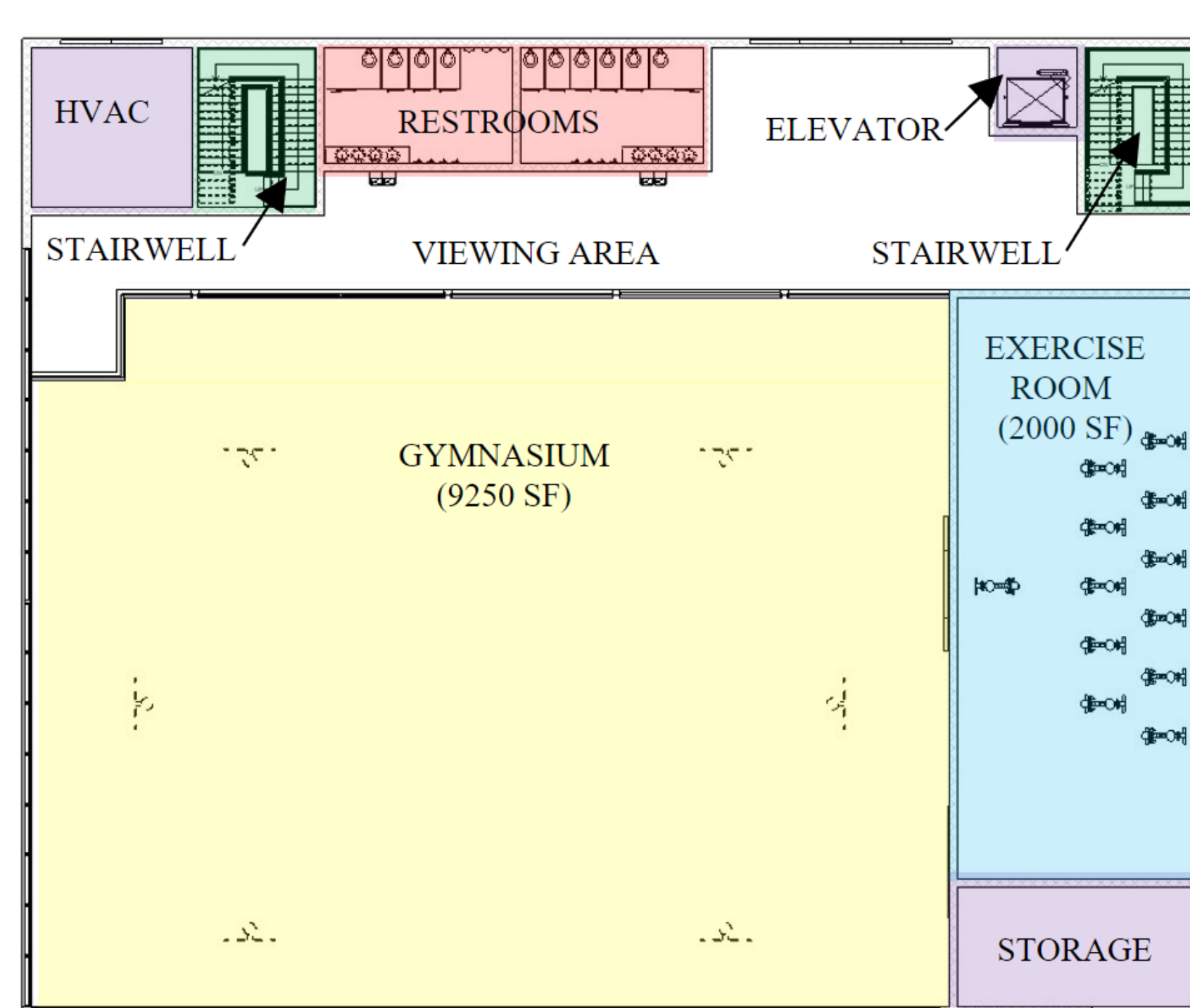


Figure 2: Gymnasium Rendering

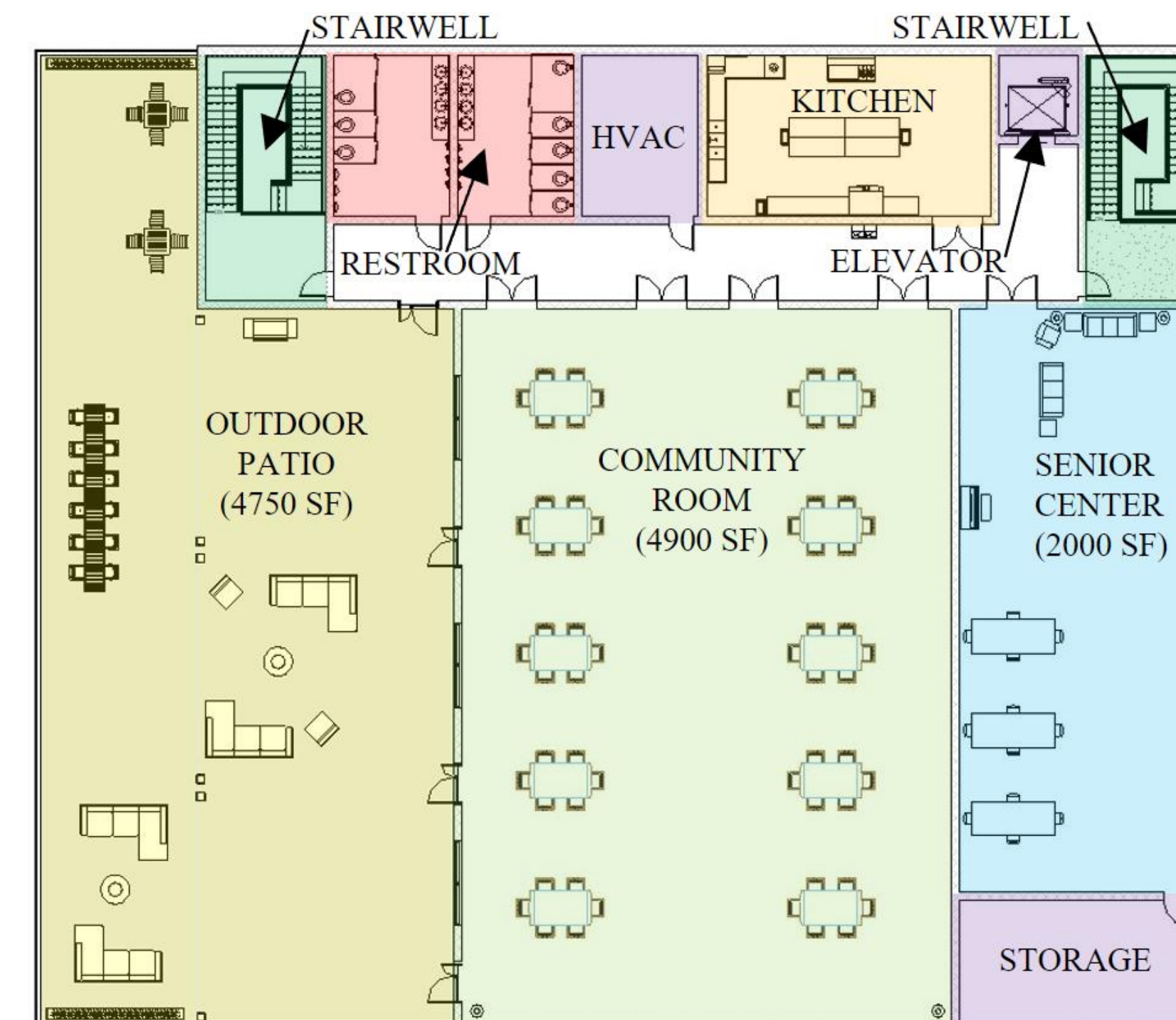
FIRST FLOOR



SECOND FLOOR



THIRD FLOOR



Conclusion and Cost Estimate

This design is focused on bringing the community of Manning into one facility. Our new building not only provides space for the gymnasium and exercise rooms as requested by the client, but also provides new opportunities for the residents of Manning. The new senior center gives those members a newly built space to continue to run their programs. The community room and outdoor patio, which can be rented out for private events and celebrations, provides the City of Manning with a beautiful venue to earn revenue. Overall, this design provides the City of Manning with the opportunity to continue to grow its passionate and involved community.

The final construction cost estimate for this project will be \$8.73 million.

References

ASTM: ASCE 7-16, Iowa Statewide Urban Design Manual (SUDAS), International Building Code (IBC 2021), AISC Steel Construction Manual 15th Ed., ADA Accessible Details Builder's Code, and City of Manning, Iowa Zoning Ordinance.