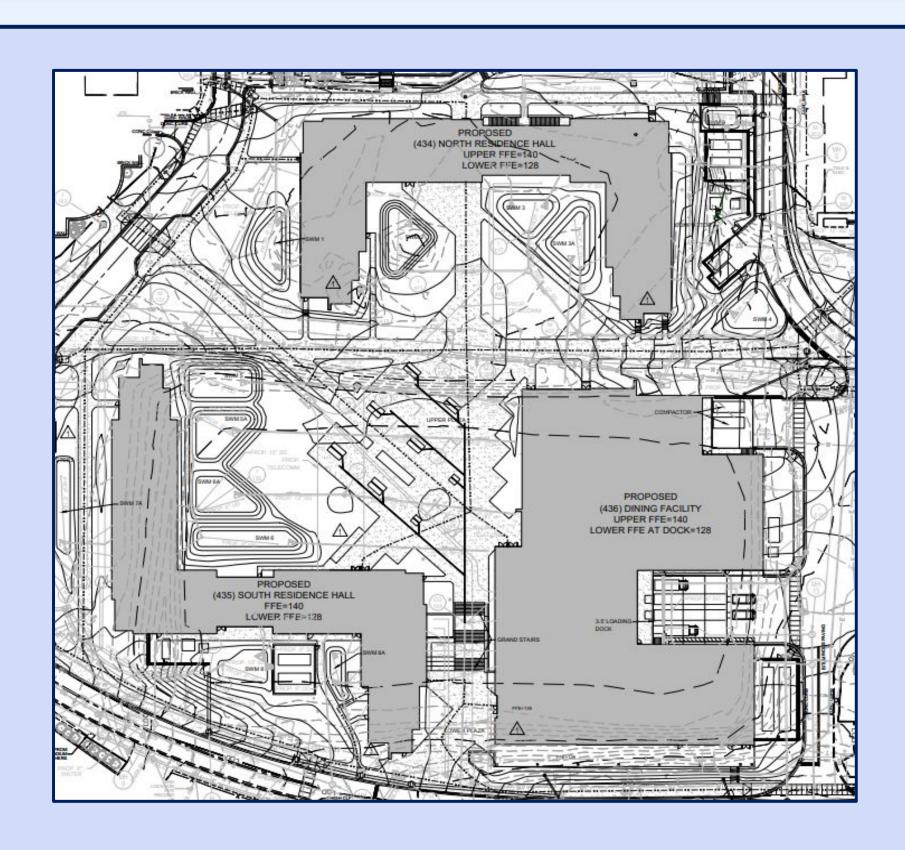
CIVIL AND ENVIRONMENTAL ENGINEERING DEPARTMENT

Redevelopment of the Heritage Community Courtyard Ritzer Cruz, Andrew Espinal, Brock McNicholas, Sarkis Pakhchanian C17: SiteDev1

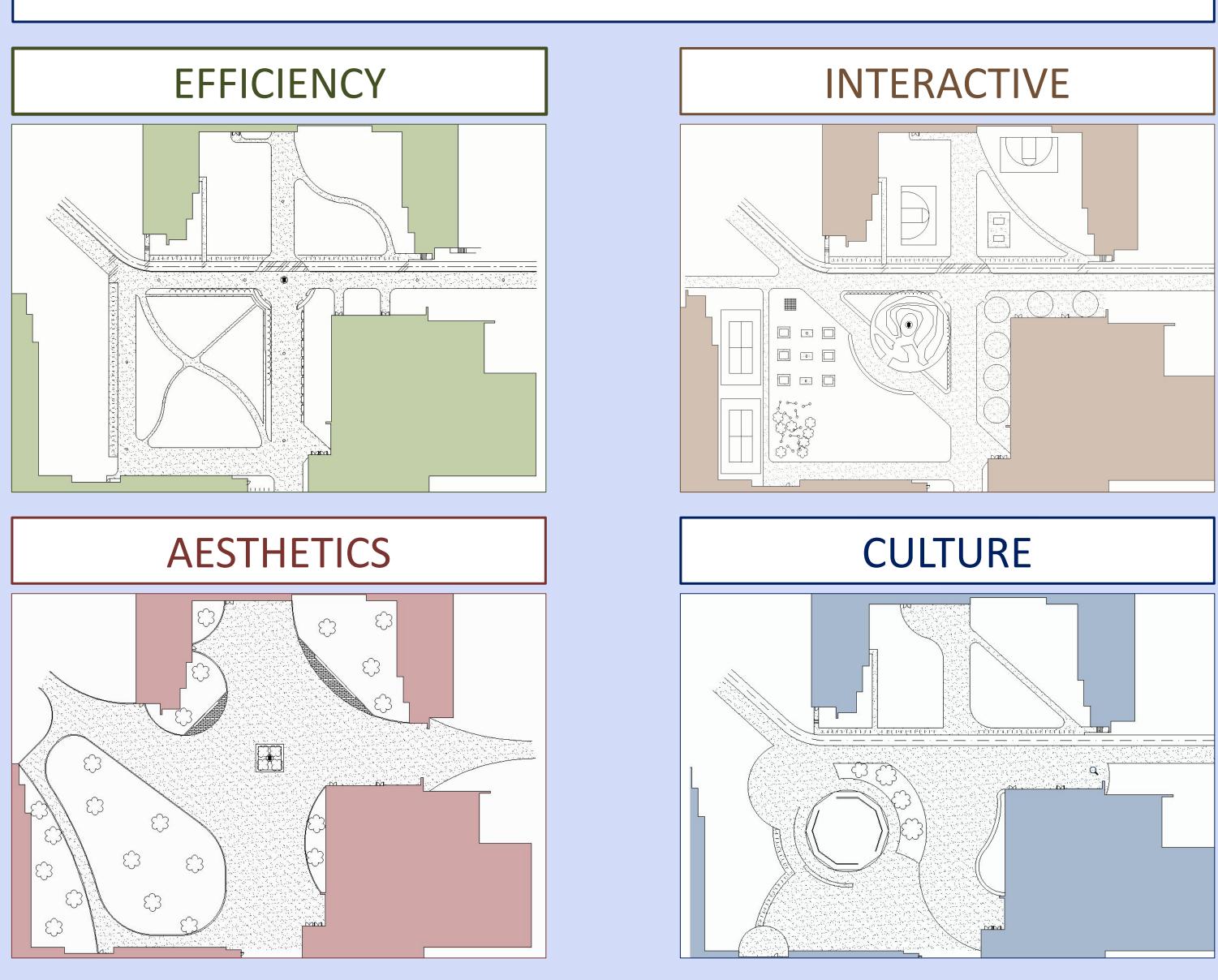
Objective

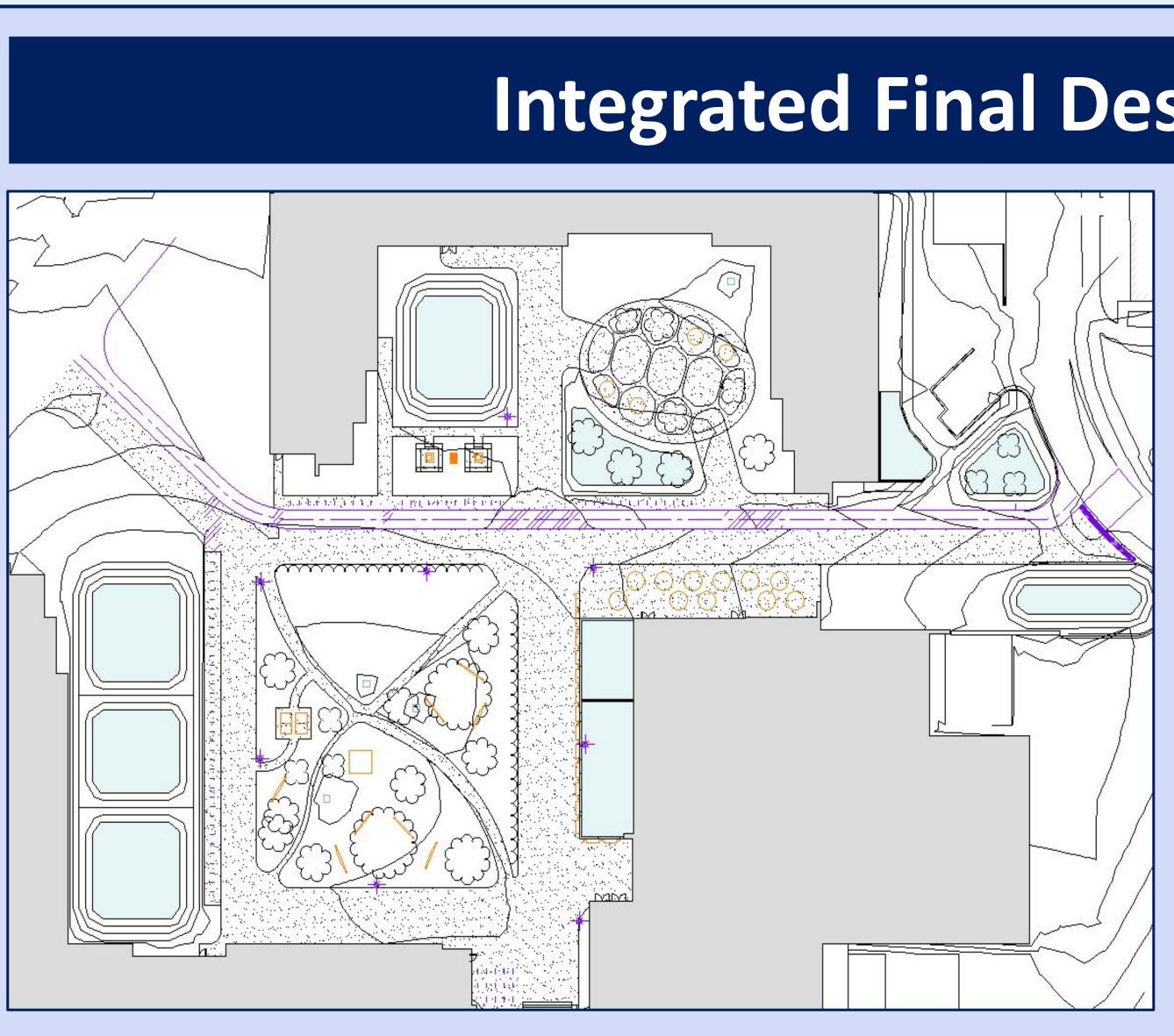
Site Resources tasked the team with redeveloping the Heritage Community courtyard from a student's perspective. Based on community feedback, the team focused on enhancing **user** experience, safety, and functionality.



Goal-Specific Concept Designs

As part of the brainstorming process, each team member individually created a concept design focusing one of four design priorities: efficiency, interactive features, aesthetics, and cultural significance. The best features from each concept were incorporated into our final layout.





FUNCTIONALITY

Stormwater calculations were conducted to ensure the site can adequately handle rainwater without flooding. A 3D surface was generated to model the proposed grading, which was designed with 16 drainage areas in mind. Stormwater facilities were designed based on the soil type and imperviousness of each drainage area.

| BMP | DA to BMP (Acres) | Proposed Ai to BMP (Acres) | Provided Surface Storage (cf) | PE Achieved (in) | Provided ESDv (cf) |
|-----------------|----------------------|-------------------------------|----------------------------------|------------------|--------------------|
| A (M-6) | 0.44 | 0.25 | 2,970 | 2.60 | 2,340 |
| B (M-3) | 0.22 | 0.14 | 825 | 2.23 | 1,100 |
| C1 (M-6) | 0.18 | 0.16 | 1,188 | 2.60 | 1,442 |
| C2 (M-3) | 0.11 | 0.06 | 661 | 2.60 | 525 |
| D (M-6) | 0.22 | 0.12 | 1,348 | 2.60 | 1,107 |
| E1 (M-6) | 0.26 | 0.25 | 1,556 | 1.45 | 2,075 |
| E2 (M-6) | 0.45 | 0.42 | 2,662 | 1.98 | 3,549 |
| F (M-6) | 0.52 | 0.25 | 3,212 | 2.60 | 2,371 |
| G (M-6) | 0.47 | 0.16 | 2,742 | 2.60 | 1,565 |
| H (M-6) | 0.54 | 0.45 | 3,212 | 2.60 | 4,076 |
| Total Provided: | | | 20,149 | | |
| | | | Required: | | 13,749 |



A. JAMES CLARK SCHOOL OF ENGINEERING

Integrated Final Design

USER EXPERIENCE

The character of the site has been enhanced by providing 50% green space with additional vegetation, along with features embracing the campus culture.

There are several new interactive features such as fire pits, ping pong tables, a large-scale chess set, and outdoor seating for the diner.

SAFETY

The inclusion of a bike lane and twice the number of bike racks aims to decrease collisions between pedestrians and micromobility.

With the middle pathway following fire lane regulations, three faces of the surrounding structures are accessible by emergency vehicles.

