

DESIGN FOR HALLOWED GROUND

CU BOULDER ARCHITECTURE

STUDENTS CRAFT A GRAVE MARKER
STORAGE STRUCTURE FOR COLUMBIA
CEMETERY THAT INSPIRES AWE ON A
MODEST SCALE

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Columbia Cemetery, located along Ninth and Pleasant in Boulder's University Hill neighborhood, is a veritable catalog of the city's founders and pioneers. Familiar names like Macky and Rippon are among numerous others interred here for whom the city's streets, parks, and university buildings are named. Yet age, weather, and vandalism have left an off-site warehouse full of broken grave marker fragments belonging to this historic burial ground. For Mary Reilly-McNellan, the cemetery's Preservation Project Manager, the situation was troubling as she worried that these cultural artifacts, overtime, might be lost or forgotten. She envisioned a place, within the cemetery, where families, friends and historians could easily access the stones, and where a dedicated conservation corps could provide hands-on restoration.

In 2011, with a small reserve from Boulder Parks and Recreation (\$15,000), the forward-thinking Reilly-McNellan reached out to the University of Colorado's Environmental Design Program (ENVD) to tap the creativity of the undergraduate architecture studies students for the design and construction of a building to house the stones, tools, and workspace.





LIFE LESSONS

Under the direction of architect and senior instructor, Marcel de Lange, twelve CU Boulder Environmental Design students experienced the practical side of the profession when they signed up to design and build a grave marker storage structure for Boulder's Columbia Cemetery. The students gravitated toward a contemporary design solution with historical references.

Intrigued by a building site layered with cultural and symbolic meaning, Marcel de Lange, principal of architecture firm 641 West and ENV D senior instructor, seized the opportunity to guide a select group of design students through the exploration of how a utilitarian structure, made from affordable materials, could fit comfortably into the larger context of life and death, mourning and decay.

By utilizing high-tech digital tools, prefabrication strategies and sourcing local materials, the students completed the project all within a twelve week summer session. Yet, the process was not without obstacles. The building had to be sited so as not to disturb any human remains within the adjacent Potter's Field—home to at least 500 unmarked graves. Additionally, the cemetery's Landmark status dictated that the new structure should not diminish the understanding of the historic site. "The real challenge," explains Reilly-McNellan, "was not to confuse the course of history with an incompatible building."

Guided by these constraints and aspiring to elevate the typical shed aesthetic, the group selected a building site at the terminus of an abandoned road towards the back of the cemetery. The road's narrow width established the structure's rectangular shape, while the building's cross-section evolved from the students' exploration of fundamental principles of architecture such as hierarchy, symmetry, and structural clarity. Under de Lange's guidance (and multiple reviews by the Boulder Landmarks Board) they arrived at a compact footprint (440 sq. ft.) and a classic gabled form that seemed befitting its location and use. Participant Caleb White explains that the shape straddles both "the more ceremonial and respectful tone of the cemetery and the more familiar shape we associate with home." But that is where the reference to the language of domestic architecture ends.

The design team wrapped not only the roof with naturally rusting Cor-Ten steel, but also the entire north and south walls—imparting the building with a monolithic quality—"like an obelisk or memorial," describes team member Erin Masket. In a further effort to use workaday materials evocatively, the students turned the corrugated Cor-ten panels sideways to symbolically link the building to the site's rural beginnings. In contrast, the gabled end walls are clad with white polycarbonate plastic panels to provide diffused natural light

LUMINOUS

TOP: To pay tribute to the reliable generator that provided power to the construction site, the team placed floodlights within the building to produce a one-time luminous glow.

MIDDLE: Naturally rusting, corrugated cor-ten steel panels reference the region's mining roots and hint at the decomposition occurring within the cemetery grounds.

BOTTOM: The building site, along a narrow abandoned road, predetermined the structure's slim profile while the classic gabled roof form was selected for its dual reference to the iconography of domestic and sacred architecture.



ARCHITECTONICS

TOP: Structural engineer, Chris O'Hara of Studio NYL advised the team on the forces and assembly of the building. Students designed and modeled each connection in 3-D software and were responsible for cutting the wood members, welding the steel, and assembling the components.

BELOW: To elevate the role of the shed and its contents, the students carefully balanced the proportions of the structure and considered the textural and sensory property of each building material to create a unified whole. Recycled materials were used wherever possible, including crushed concrete surfacing, logs salvaged from the Fourmile Canyon fire and beetle-kill pine.



into the storage and work areas (the building has no electricity). The material choice further serves to emphasize the structure's silhouette which merges simultaneously with the sky and earth—suggesting a place of reflection and repose.

Given that cemeteries were among the first formal outdoor gathering places, the students felt inclined to include a public component to the building. They achieved just that by splitting the programmatic elements into "tool storage" and "grave stone storage" and bisecting the enclosed spaces with an open breezeway. From the aperture, visitors have unobstructed views to the surrounding landscape— dotted with listing markers that seem to mimic the Flatirons in the distance.

With an eye to sustainable materials, the breezeway is clad in beetle-kill pine panels. A low retaining wall utilizes salvaged logs from the recent Fourmile fire and crushed recycled concrete heightens the sensory contrast between adjacent ground surfaces. A post and beam structural system, with plate steel connections and steel tie-rods, elevates the straightforward assembly to a poetic level.

What started as a plan for an on-site marker storage and volunteer work space, and a desire to teach about architecture through hands-on building, ended up as a deftly crafted example of contemporary architecture—derived from the essence of its place and time.

VIEW CORRIDOR

RIGHT: Delicate rings cut from round tube steel sections and thin steel rods comprise a part of the building's three-point arch. All components were pre-fabricated and assembled on site to speed construction time.

BELOW: A breezeway, envisioned as a spot for contemplation and interaction, separates the larger grave marker storage space from a smaller tool shed. A timeline etched in acrylic and attached to the wall provides visitors with a quick glimpse of the cemetery's rich history.

NOTE: The project received an award of excellence for new construction in a historic context from the Boulder Landmarks Board.

THE TEAM

STUDENTS

Scott Abernethy, Ian Carr, Nile Greenberg, Erin Masket, Andrew Mayer, Alex Mulhern, Taylor Odell, Preston Penny, Abe Rifkin, Jessica vanWey, Caleb White, Derek Woods

SENIOR INSTRUCTOR

Marcel de Lange, 641 West Design principal

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