University of Colorado
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University of Colorado Design Review Board
And Research Park Design Review Board
Meeting Notes

Date: Friday, October 14, 2016
Time: 8:00 a.m. – 1:00 p.m.
Location: Outdoor Program Meeting Room, #A146, Student Recreation Center, University of Colorado Boulder, Colorado

DRB members present: Don Brandes, Sarah Brown, Rick Epstein, Michael Winters, Teresa Osborne (ex officio), and Tom Goodhew and Richelle Reilly, campus representatives for the University of Colorado Boulder Campus ("CU Boulder").

Others in attendance not otherwise noted:
Linda Money, CU Real Estate Services, CU System employee / DRB note taker.

Mr. Brandes, Chair, determined a quorum and called the meeting of the Research Park Design Review Board to order at 8:05 a.m., after which the Board and the individuals present for the meeting introduced themselves.

8:00 - 9:30 **Aerospace Engineering Sciences ("AES") Building – CU Boulder**

Architects: Hord Coplan Macht, Inc., Denver, Colorado, architects
RATIO Architects, Denver, Colorado
PLOT Project, LLC, Denver, Colorado, landscape architects,

Presenters: Jennifer Cordes, Principal, Hord Coplan Macht
Anthony Mazzeo, Principal, PLOT Landscape Architecture
Kent Freed, Principal, PLOT Landscape Architecture
Chris Boardman, Principal, RATIO Architects

CU Boulder Campus Presenter:
Wayne Northcutt, Architect – Facilities Planner

Other CU Boulder Campus Representatives Present:
Douglas Smith, Assistant Dean, College of Engineering, CU Boulder
Penina Axelrad, Chair, Aerospace Engineering Sciences
Matthew Rhode, Aerospace Engineering Sciences
James Faber, Project Manager, Construction Management, Facilities
Tom Goodhew, Assistant Director, Facilities Planning
Bill Haverly, Campus Architect and Director of Planning, Design and Construction

Ida Mae Isaac, Capital Planning Strategist, Facilities Planning
Amy Kirtland, Architect & Project Planner, Facilities Planning
Brian Moffitt, Project Manager, Planning, Design & Construction, Facilities Management
Richelle Reilly, Landscape Architect, Facilities Planning

Description: Project Introduction

Presentation to the Board/Discussion:

Mr. Northcutt began the presentation by providing a brief history of the project after which Mr. Brandes indicated that, as a pre-design introduction, it will be the only opportunity for the Board to gain context and an understanding regarding the project and he requested that the following items be addressed during the presentation:

- Project Team Composition, including the project team roles and responsibilities;
- Project Programming, including any past and current program development changes;
- Project Schedule, from planning through completion of construction;
- Project Budget, and any budget contingencies;
- Project History and Context; and
- Review and Discuss notable project-related issues.

Ms. Cordes explained the relationship between Hord Coplan Macht ("HCM") and RATIO Architects ("RATIO") noting that HCM will complete the construction documents and construction administration while RATIO will lead the design and programming efforts. Ms. Cordes will be the project manager and the primary point of contact for the University. All consultants will be contracted through HCM.

The University and HCM worked together to select PLOT Project, LLC ("PLOT") as the landscape architect; Shaffer Baucom Engineering & Consulting as the mechanical engineer; and The RMH Group, Inc. as the electrical engineer. With the assistance of PLOT, JVA, Inc. was selected as the civil engineer, and Iron Horse Architects, Inc., was selected for lab planning services. HCM and the University are currently in the process of selecting a consultant for audio/visual/IT/security services.

The construction delivery method is yet to be determined. For the time being, HCM is moving forward as though the project will be completed using Design Bid Build, but Construction Manager General Contractor may ultimately be selected. The Board discussed the delivery method with the University staff present.

Ms. Cordes reviewed the schedule which reflected a number of design and system meetings, potential Board meeting dates, an anticipated bid date of September 1, 2017, followed by approximately 18 months to break ground and complete construction. The critical end dates include the spring of 2019 for the completion of the project followed by the move of the Aerospace Engineering Sciences Program over the summer and occupancy in the new space in time for the beginning of the 2019 academic school year in the fall.

Ms. Cordes noted that HCM is working with Cummings and JE Dunn to provide expertise regarding cost estimates. She reviewed the process by which HCM developed early cost estimates and how these numbers are being refined. The cost estimates presented included the base project and, at the request of the University, a 20% growth allowance. The base building is approximately 139,000 sq. ft. and the estimated cost per square foot is $450. The size of the site is approximately four acres and does not include a growth element for the site itself. Site costs have been estimated at approximately $1 million/acre and include a pedestrian bridge at an estimated cost of $375,000 and approximately $1 million for utilities. The survey and the geotechnical report have not yet been completed, both of which may have an impact on the site costs. The approved project budget includes soft costs at a state-mandated 5%. HCM has included 10% for soft costs within the cost estimates presented.

Ms. Cordes reviewed the program plan for AES. Six basic program groups will be moving into the new building including: 1) Satellite Systems and Astrodynamics, 2) Remote Sensing & Aerospace, 3) Unmanned Aircraft Systems and Mobile Sensing, 4) Bioastronauts, 5) Fluid & Structural Dynamics, and 6) Shared Research Support.

A number of specialty labs and support programs also will need space in the new building, including: 1) AES department administration; 2) outdoor labs; 3) instructional space including four learning classrooms made up of a 200-seat auditorium, a 60-person active learning classroom, an 80-person active learning classroom, and a 30-person multi-use, active learning and distance learning classroom; 4) building support and amenities including public space for large gatherings, and 5) ITLL labs.

Generally, the majority of the space will be used for offices and workshops with a few laboratories and learning spaces. Many of the program groups require access to the roof in order to complete their program requirements. The ideal roofscape needed to meet these needs has not yet been determined.

Currently, student enrollment anticipated for 2019 will be approximately 800 undergraduate students and 350 graduate students. Generally, the space utilization plan indicates that approximately 70% of the space is used for research and 30% is used for undergraduate learning. Space utilization regarding graduate student research and learning space needs would change these percentages.

The engineering program has experienced enormous growth within the last decade during which enrollments have doubled. Since the preparation of the initial program plan approximately three years ago, the program has grown by 25%. The potential growth of the program and the ability of the proposed building to accommodate this growth were discussed.

The proposed site plan was reviewed. It includes room for the 20% expansion and also includes only minimal parking as surrounding parking lots are underutilized. Mr. Freed and Mr. Boardman reviewed an analysis of the site plan, East Campus, and a comparison to the Main Campus.

The status of the update to the East Campus Master Plan was also discussed.

Upon the completion of the presentation, the Board expressed an appreciation for the presentation and shared the following issues and comments:

- Although it was good that the budget was split into building costs and site costs, given the physical and natural features of the site and the uniqueness of the site development requirements, the budget allowance for the site is a concern since details regarding the existing conditions are not yet available;
- Closely monitoring the budget, design, infrastructure, program and project schedule and scope will be critical;
- Absent a current master plan for the East Campus, the goals and opportunities for the East Campus identified as part of this project are very important, particularly concerning the relationship with the natural and academic landscapes; being able to demonstrate how this project works for AES; the connectivity and relationship with the Main Campus; and determining the identity of the East Campus whereby it currently feels more like a suburban office park rather than an academic campus;
- Regarding the identity of the East Campus and the existing suburban elements, experiment with a tighter grid and alternative planning strategies that are very different from the direction the current planning strategy is headed; determine how these alternatives might inform the building and what would the East Campus look like and how would the spaces interact with each other if the scale were changed by using a tighter grid; spreading things out too far may be going in the wrong direction; compare the East Campus and the Main Campus and from a site planning perspective and from an architectural perspective, determine how they are alike and how they are different;
- This project could set a precedent and could be a critical component for the East Campus in order to help define its identity;
- While considering the scale, the spaces, connections with the Main Campus, the building program and what a successful building for AES means, it will be important not to let restrictive design guidelines or precedents inhibit the design; consider the spatial relationships between the outdoor spaces and the building edges and reference these relationships while planning the building and other spaces of the East Campus;
- Given that the East Campus Master Plan is in the initial stages, the Board supports the team to be innovative early on regarding both site planning and architectural design and do not feel that either of these are locked in place; explore a broader range of options which may result in an iconic building for AES, or it may be determined that a more traditional and standard academic approach, or a combination of the two, will better suit the program's needs;
- Regarding the design of the building, investigate what a different stacking plan with a larger footprint might mean to the program and if it would be more beneficial as the need to use the roof may lead to a building with a flat roof but may also lead to other, non-standard options.

Following the comments by the Board, Mr. Brandes thanked the presentation team for their introduction and Pre-Design workshop. He noted that the future meetings with the Board will include conceptual design, schematic design and design development. The conceptual design submittal will require formal Board approval and is a critical step leading to the more detailed schematic design submittal. He encouraged the consultant group to carefully review today's Board comments and issues, to provide detailed site constraints and opportunities, and to provide a range of site and architectural alternatives to review and discuss for the Conceptual Design submittal.

Upon the conclusion of the comments by the Board, Mr. Brandes thanked the presentation team for their work. He noted that the future meetings with the Board for review and approval, as

appropriate, will include pre-design, conceptual design, schematic design and design development.

There being no further business, the public meeting of the Research Park Design Review Board was adjourned at 9:47 a.m.

Mr. Brandes then convened the meeting of the University of Colorado Design Review Board immediately following the adjournment noted above.

9:30 - 10:00 **University Memorial Center ("UMC") South Terrace Repaving – CU Boulder**

Architects: HDR, Inc., Denver, Colorado, architects

Presenters: Kaia Nesbitt, Site Design Principal, HDR, Inc.

CU Boulder Campus Presenters:
Richelle Reilly, Landscape Architect, Facilities Planning
James Wollum, Project Consultant, Construction Management

Other CU Boulder Campus Representatives Present:
Andrea Zelinco, Associate Director for Administration, UMC
Jimmy Baker, Senior Associate Director, UMC
Tom Goodhew, Assistant Director, Facilities Planning
Bill Haverly, Campus Architect and Director of Planning, Design and Construction
Ida Mae Isaac, Capital Planning Strategist, Facilities Planning
Amy Kirtland, Architect & Project Planner, Facilities Planning
Wayne Northcutt, Architect – Facilities Planner

Description: Concept Design

Presentation to the Board/Discussion:

Ms. Reilly began the presentation by introducing Ms. Nesbitt from HDR, Inc., and other University staff present for this agenda item. She noted that the UMC is funded by the students and that this project, if approved, will be a student-funded project with a budget of approximately $1.38 million. The project will need to be reviewed and approved by the student board in order to move forward. There are currently no other capital requests in the process which could compete with this project for student funding approval. She indicated that the project was initially intended to be a paver-replacement project. However, because of existing leaks through the terrace roof onto the bowling alley below, the scope of the project has changed a bit and completion of the project has become more urgent. She also noted that the student finance board is encouraging this project to move forward.

Ms. Nesbitt explained that although the functional repairs to the terrace roof are a primary part of this project, because the space is used for a wide variety of functions on a regular basis,

aesthetics is also important. She described a large tent which is generally on the terrace from April through October. Two of the three entrances have temporary ADA ramps. The project will provide a permanent ADA ramp at the main entrance. Other challenges include snow removal, issues with the existing ice melting equipment, drainage issues, insufficient wall height not built according to current code, and improper access to a nearby roof.

Ms. Nesbitt described the proposed pedestal paver system, how it will be used to replace the existing pavers, and fix the drainage issues, etc. She also reviewed a number of options regarding how the entry areas and ADA access might be completed, various options regarding the paver pattern, the wall height and the roof access.

The Board confirmed that this project needed to go to the students for approval in order to be funded and that the students were already aware of the structural drainage issues. The primary goals for this project are to correct the drainage issues from a structural standpoint, improve ADA access, bring the wall height up to current building code and add furnishings to enhance the programmatic use of the plaza.

The Board made the following observations and comments:

- The terrace is a very visible entryway for the campus, so the end result of this project will be very important. Regarding how the terrace is used, from a programmatic point of view, the Board suggested that the tent be relocated closer to the south outside wall allowing for a larger space between the south side of the building and the north side of the tent which could be used for other types of events and in time, fixtures, furnishings and even plantings could be added to this space as well. The Board encouraged the design team to review possible options for this space in order to determine what might be possible in the future so a long-range plan could be developed and shared with the students.
- Regarding the main entry from the terrace into the UMC building where the seat walls have been proposed, the Board suggested that the walls become planters along both sides of the entryway so it becomes a visible gateway and is also connected to the existing entrance on the south side of the terrace itself.
- Concerning the design of the pavers, critically review how the design programmatically interacts with and defines the space. The medallions and the paver design pattern could be made less random and structured in its design. This includes using the paver pattern to break down the scale of the plaza. The paving pattern could also be made to highlight the three entryways into the building, making them more intuitive, and a smaller medallion could be used to direct people toward the entryways. Paver material, color and pattern are critical considerations in such an immense space.
- Consider what options might be available for lighting, such as overhead lighting, keeping in mind the uses of the terrace. This includes exploring concepts such as incorporating light poles into the tent structure so the scale of the tent has a presence on the plaza year-round.
- Regardless of whether the tent is present or not, try to determine the place-making opportunities for the terrace and beyond modifying the paving pattern. Consider what can be done to break down the scale of the space, including creating a series of “rooms,” with paving, lighting, planters, etc.
- Consider the project from a broader master planning standpoint and identify things that could be done to the terrace whether they are completed during this project or in the future. Although this is an iconic space on the CU Boulder campus, it is also a very

unsuccessful space because of the scale, so one of the challenges will be to make it work during everyday conditions when there aren't as many people on the terrace as well as when there are large groups utilizing the space.

- Review other options regarding screening off the access to the roof by using something other than the screen as it has been proposed and determine if it can be done in such a way that it appears to be an extension of the existing wall structure while still providing staff with a secure way to access the roof when needed.
- Banner program should be considered as an overall composition with the building. Consider incorporating banners with potential light post or suspending within the existing entry portal, rather than covering up existing windows.
- Consider re-cladding the exterior limestone walls in the existing archway to the east of the entry portal.

The Board also discussed suggestions regarding the paver patterning, the lighting, the tent, the limestone archways on the north side of the terrace, and the use and placement of the event banner signage.

In order to accommodate the academic year, the design team would like to get this project to the students as soon as possible before the fall break and, if approved, plan to start construction in May 2017. The Board felt that the terrace space could be developed into a very exciting space with great potential.

Following Board discussion, Mr. Brandes made the motion to approve Conceptual Design with the strong recommendation that the consultant carefully review all of the Board comments and suggestions prior to preparing the Schematic Design submittal. In this regard, the Board indicated their willingness to meet with the University staff and consultant for a brief workshop to better define the Conceptual Design. The motion was seconded by Mr. Epstein and passed unanimously.

10:00 - 1:00 **North of Boulder Creek Bridges – CU Boulder**

Architects: Loris and Associates Consulting Engineers, Superior, Colorado
MIG, Inc., Architects and Planners, Denver, Colorado

CU Boulder Campus Presenter:
Amy Kirtland, Architect & Project Planner, Facilities Planning

Other Presenters:
Peter Loris, P.E., Loris and Associates Consulting Engineers
Dan Beltzer, P.E., Loris and Associates Consulting Engineers
Chase Mullen, Director, MIG, Inc., Architects and Planners
Paul Kuhn, MIG, Inc., Architects and Planners
Craig Jacobson, ICON Engineering, Inc.

Other CU Boulder Campus Representatives Present: Tom Goodhew, Assistant Director, Facilities Planning
Bill Haverly, Campus Architect and Director of Planning, Design and Construction

Ida Mae Isaac, Senior Project Coordinator, Facilities Planning
Brian Moffitt, Project Manager, Planning, Design & Construction, Facilities Management
Wayne Northcutt, Architect – Facilities Planner
Richelle Reilly, Landscape Architect, Facilities Planning

Description: Concept Workshop

Presentation to the Board/Discussion:

Prior to beginning the Concept Workshop on the North of Boulder Creek Bridges Project, the Board took a walking tour of the proposed bridge location and surrounding area north of Folsom Field.

Ms. Kirtland began the presentation by providing a brief project overview. She noted that the project is for the construction of one new bridge which will be located above the 100-year flood plain level and that a schematic design submittal is due to FEMA in January 2017. Key points for discussion at this workshop included: 1) to review existing conditions; 2) to study the north and south landings, 3) to review the crossing and how it functions and relates to the campus, and 4) to enhance the graphic illustrations. In addition to reviewing these key points, the presentation also will review the project goals.

The design team took the Board through a slide presentation which reviewed the project goals, existing conditions, design process and precedent studies, current thoughts on the bridge and the landing alternatives, and reviewing a sketch up model. The following items were reviewed for the Board:

- mission statement and goals of the project;
- opportunities and constraints;
- site analysis which included existing, former, and proposed bridges;
- bicycle and student circulation;
- typical pedestrian experiences for an existing weekday, the projected weekday, and a typical game day;
- flood plain, including the “no net rise” requirement of the project grant;
- visual representation of the 100-year flood plain elevations;
- survey and photographs of the area impacted by the placement of the proposed bridge;
- locate plan showing the utilities in the area;
- brief overview of a planning charrette held by the design team after the last Board meeting;
- crossing examples and structural precedents reviewed by the charrette;
- structural examples and precedents from the CU Boulder campus;
- the Buff Walk experience;
- brief review of the alternatives presented at the last Board meeting;
- bridge landing studies and potential designs;
- concerns regarding the recreational fields to the north of the north landing;
- potential relocations of the proposed bridge connections;
- new bridge design alternatives and related graphic representations;
- new potential landing and plaza options, related graphic representations, and programming;

- maintenance and snow removal concerns.

Staff has not yet discussed or looked at any options regarding lighting the bridge and the landings. The construction of the bridge and the alignment of the bridge coming from the Buff Walk were discussed with the Board.

Mr. Brandes thanked the team for the Concept Workshop and the significant progress made on the proposed design and the presentation. It was felt that the additional research and in-depth presentation provided a clearer definition of, and connection to, the proposed bridge that had previously been lacking or absent.

The Board provided the following comments and direction:

- The symmetrical arch for the bridge presented as option C was the preferred option;
- The sense of place and the gathering spots have improved although both landings still need some further site design and study;
- Regarding the materiality for the north landing, the more refined, cut stone vocabulary that matches the CU character is preferred;
- The diagonal connection leading the Buff Walk to the potential, future soccer field/recreational fields should be made, so the alignment of the bridge and landings should be adjusted accordingly;
- The work regarding FEMA and the calibration of the flood plain as it evolves will be very important going forward;
- The materiality of the floor for the bridge crossing and potential degradation, ongoing maintenance operations and snow removal are still concerns that need to be investigated further;
- The connection points between the bridge and the stairs of the north landing still need to be resolved, especially how the bottom core of the bridge relates and resolves itself with the tectonics of the stairs;
- The proposed shapes of the north landing might fit into the overall feel of the bridge if they were a smooth, curved line rather than the boxy or octagonal shapes as proposed;
- On the south landing, the larger plaza and landing area such as what has been proposed as option C are preferable, and the width of the south landing should be extended so it matches the width of the plaza;
- The north landing doesn't necessarily need to match the south landing;
- Because the 12' light posts in the plaza of the Buff Walk on the south end of the bridge seem to be in conflict with the height of the bridge elements, replacing the posts with bollard lighting might be a better option;
- Regarding the bike path sidewalk near the north landing, the connection between the sidewalk coming off of the landing and the realigned bike path might need to be adjusted; and
- Mr. Epstein indicated that he would like to look at other sections of the bridge and would still like to investigate using a round tube for the upper cord portion of the arch as an option and compare it to the proposed rectangular tubing.

There being no further business, the public meeting for Friday, October 14, was adjourned at 1:10 p.m.