

2017 Exhibition of School Planning and Architecture

Kansas City University
for Medicine and Bioscience
Joplin, Missouri Campus

Category:
Post-Secondary Education Environment
Renovation/Major Addition
Design Concept-Unbuilt Project

Executive Summary

A Story of Holistic Healing at the Student Level, Campus Level, and Community Level

On May 22, 2011, an EF5-rated tornado struck Joplin, Missouri. It left a devastating path of destruction including the local St. John's Mercy Hospital. Executives from the hospital set out to erect a temporary hospital over the next 11 months utilizing 224 prefabricated modules shipped from California.

Four years later, upon completion of their new permanent home, **St. John's Mercy donated their temporary facility to Kansas City University** – to become home to a new state of the art medical university.



Following the 2011 tornado, much of Joplin was destroyed, including St. John's Mercy hospital, lower center of photo.

Executive Summary


A Story of Holistic Healing at the Student Level, Campus Level, and Community Level

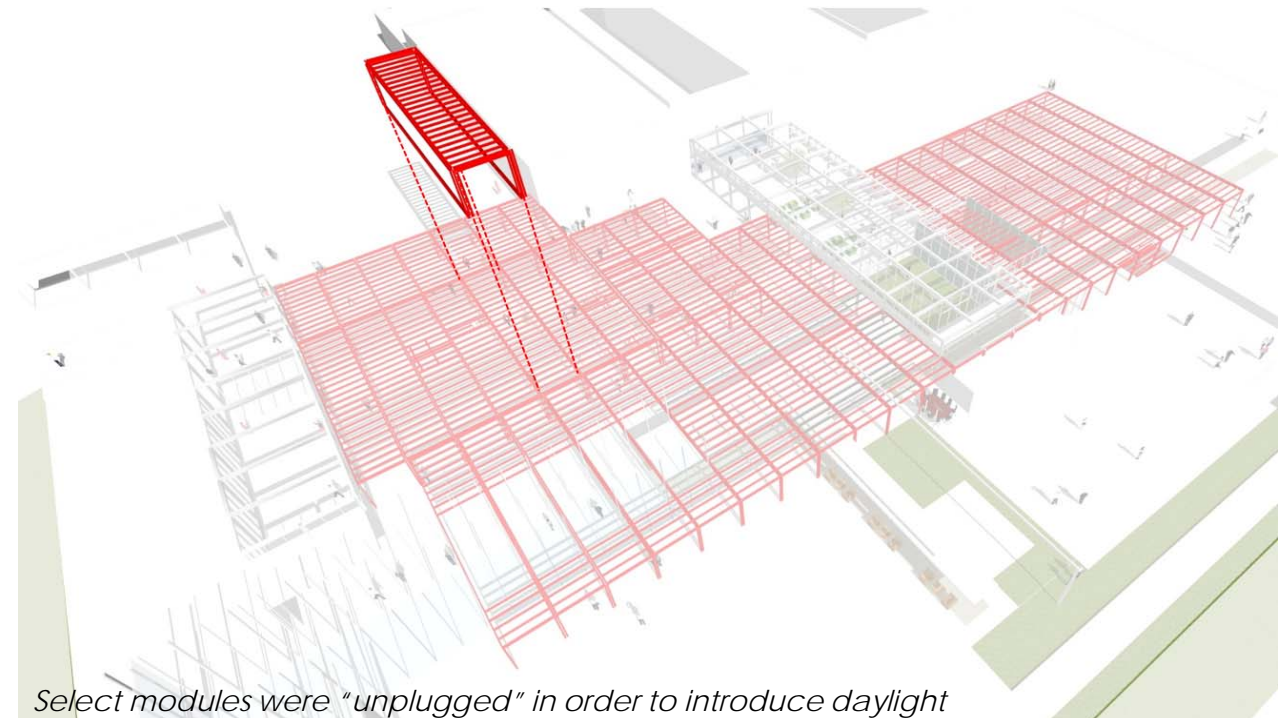
The KCU Joplin campus was created from an abandoned temporary hospital, constructed of prefabricated modules, each 12' wide x 60' long x 9' high. KCU charged the design and construction team with converting this makeshift structure into a state of the art school of medicine.



Executive Summary

Key Questions that Drove the Planning Process:

1. How can a university of osteopathic medicine apply its principles of holistic healing to be a catalyst in the healing of a tornado ravaged community?
 2. With rates of depression among medical students as high as 30%, how can the facility translate principles of modern psychology to create a hyper-restorative campus?
 3. How do we measure student success among 21st century students? How can we look beyond academic success to incorporate physical and mental success?
 4. How do we create a powerful college campus experience within a single sprawling building with low structural clearances and minimal daylight?
 5. How can the adaptive re-use of the existing modular building become an extraordinary story of sustainability?
- 



Planning Strategies | Process:

A Highly Restorative Campus Focused on Student Wellness:

To address these issues of student wellness within highly demanding collegiate settings, our team conducted an extensive literature review and held numerous interviews with students and staff to explore issues that may lead to design strategies.

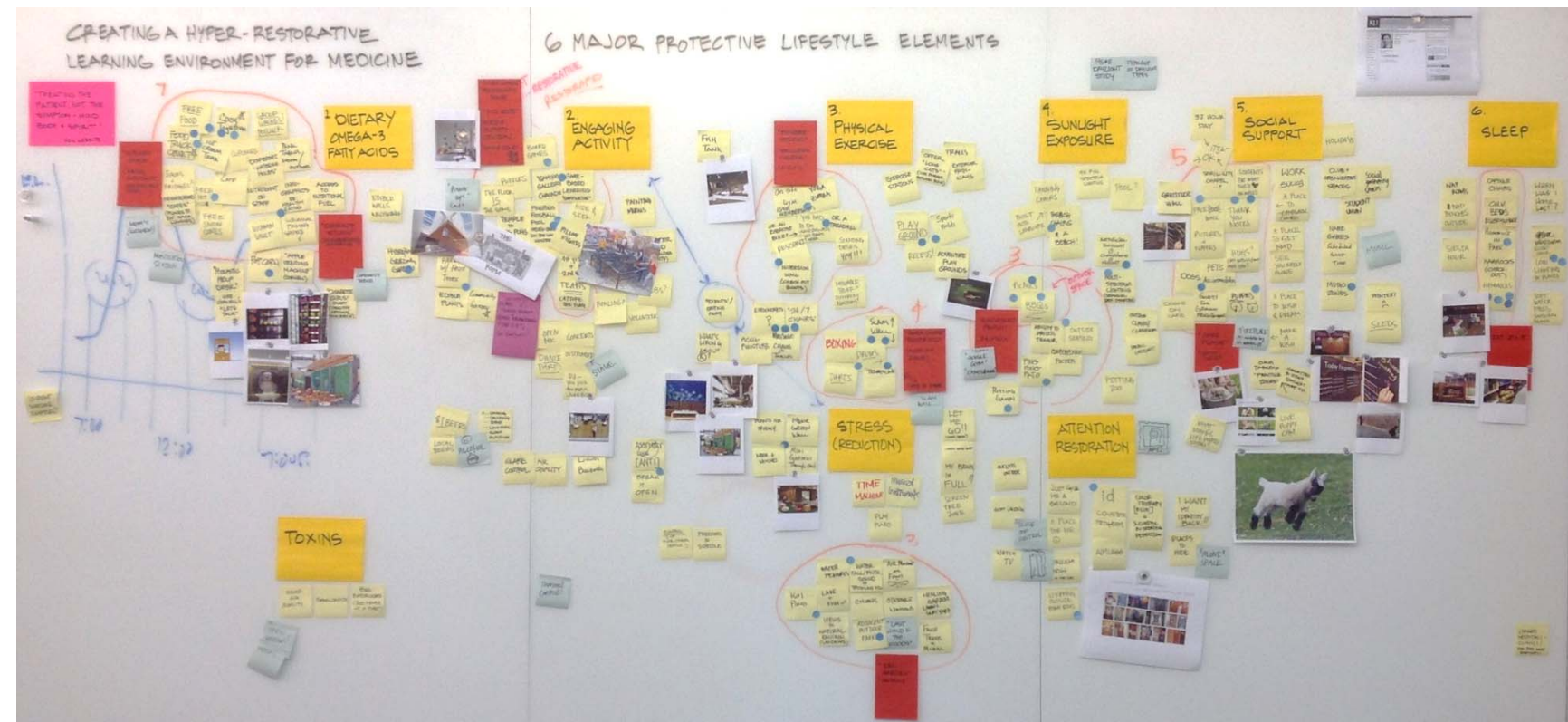
A key reference document was the book by Dr. Stephen Ilardi, *The Depression Cure*. In it, Ilardi elaborates on **6 primary strategies to naturally avoid and cure depression**. These, along with an understanding of bio philia, and integrating the university's extensive student service programs, led to specific design strategies geared toward this student population.

1. Diet & Omega 3 Fatty Acids: Development of a "Student Nutrition Center" with counselors cross-trained in nutrition; a plaza for local food trucks to bring dietary options to campus; "Lunch Bars" with self-serve healthy snack options and vitamin supplements; abundant student gathering spaces to support recharge time (indoors and out).

2. Engaging Activity: A range of precincts offer a variety of activities and opportunities to build a strong sense of community: game room, yoga studio, sand volleyball court, inspiration gallery, poetry wall, bbq patio, music zone, central garden, and other outdoor activity spaces.



An extensive literature review yielded numerous strategies for design to support mental wellbeing.



The beginnings of a Design Thinking process to uncover design strategies addressing student wellness

Planning Strategies | Process:

A Highly Restorative Campus Focused on Student Wellness:

3. Physical Exercise: variety of activity spaces including a yoga studio, fitness path, Frisbee golf course, open space for ultimate Frisbee, partnership with the local YMCA, and learning spaces that offer a palette of postures.

4. Sunlight Exposure: modules of the existing building were selectively removed ("unplugged") to introduce daylight into the deep building footprint. From every major pathway through the building, daylight and landscaped views are present, where before there was no connection to the outdoors. A south-oriented student commons dubbed "the beach", optimizes daylight exposure even further.



The existing building was carved away (unplugging select prefab modules) to introduce daylight and views.

Planning Strategies | Process:

A Highly Restorative Campus Focused on Student Wellness:

5. Social Support: Hospitality Center ("Front Porch") that serves as connecting hub for students, staff, and community partners, a hub to connect volunteer opportunities, and venue for student appreciation events. A variety of social gathering and activity spaces, places to "check out" of academic studies for a break, concierge lounges staffed by university personnel, and a poetry wall

6. Sleep: napping hammocks and cocoon chairs, quiet student gathering spaces off the beaten path, contemplative outdoor gardens, a building policy to allow use of osteopathic therapy tables for napping



Sleeping pods in alcoves adjacent to courtyards

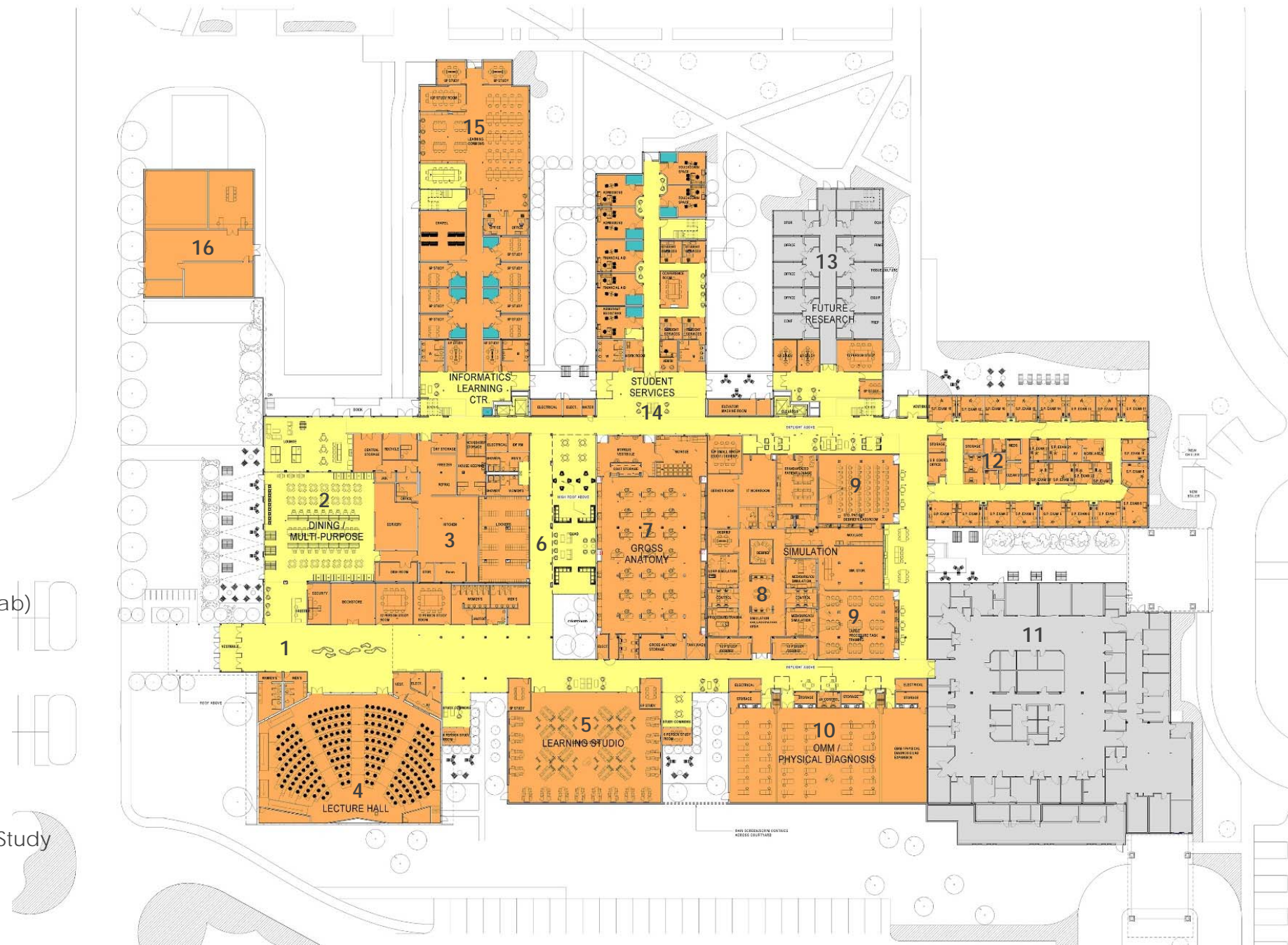


An ideation exercise explored design strategies to manifest the 6 principles of natural depression cure

Ground Floor Plan:

Key Legend

1. Main Entry Lobby
2. Dining Commons
3. Food Service
4. Lecture Hall (Storm Shelter)
5. Active Learning Studio
6. Quad Commons
7. Gross Anatomy Lab
8. Simulation Lab
9. Simulation Classroom
10. OMM Lab
(Osteopathic Medical Manipulation Lab)
11. Clinic (Future)
12. Standardized Patient Care
13. Research (Future)
14. Student Services
15. Informatics Learning Center & Group Study
16. Central Utility Plant



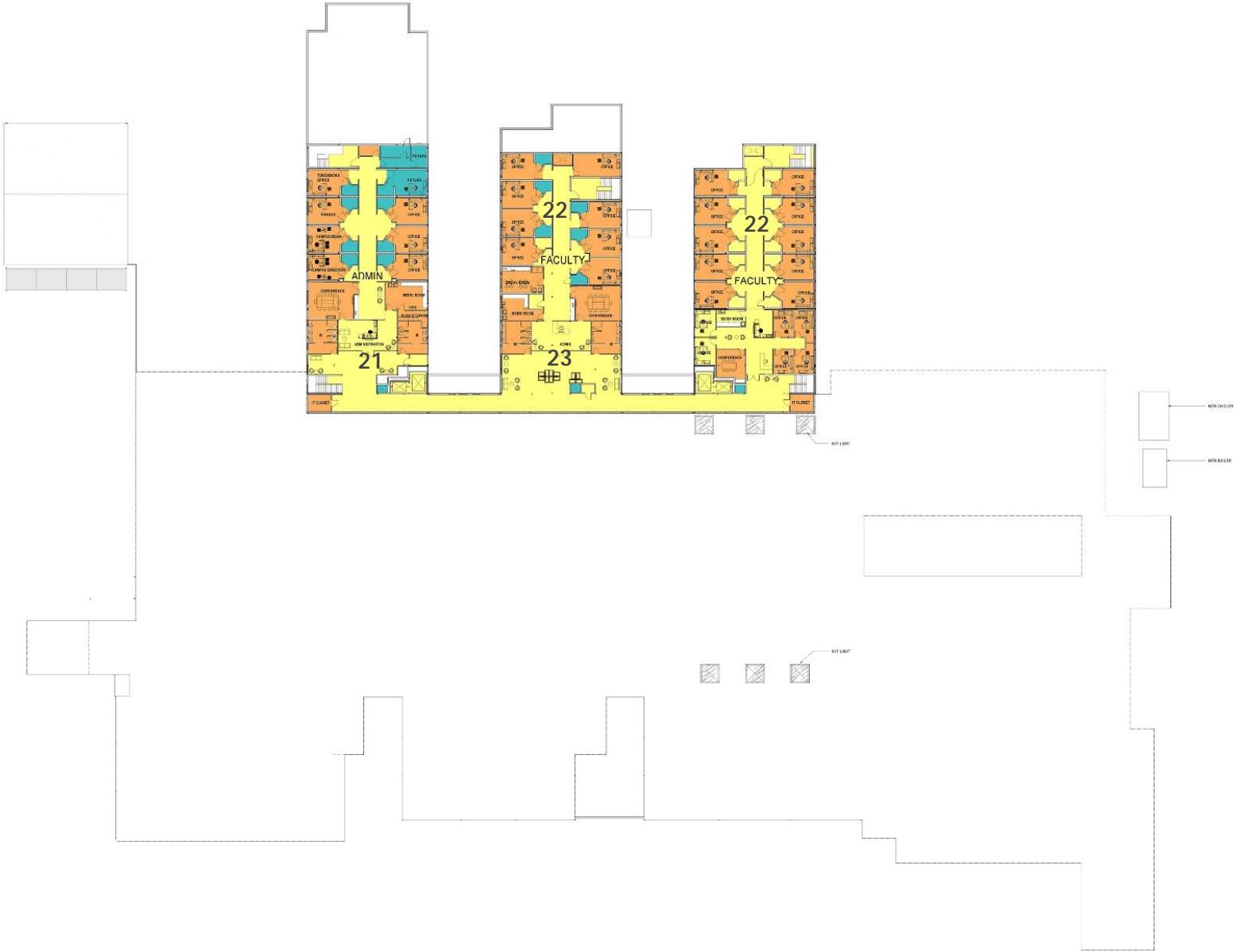
The renovation establishes a clear circulation to replace the existing disorienting hospital corridor system.

Second Floor Plan:

(Existing patient rooms renovated to offices)

Key Legend

- 21. Administrative Offices
- 22. Faculty Offices
- 23. Faculty Commons



Ground Floor Plan:

The Making of a Collegiate Campus within an Existing Single Building

A: "Student Union"; dining commons, coffee shop, outdoor activity space, game zone, front lobby concierge, food truck court

B: "Central Quadrangle"; generous daylight, social center of campus, event space, learning commons

C: Patio Courtyard outdoor small group social and study space

D: Garden Courtyard; quiet, meditative place for independent study

E: "Gallery Commons"; poetry wall, inspiration wall, art display, overhead daylight

F: Flex Expansion Space/Yoga Studio

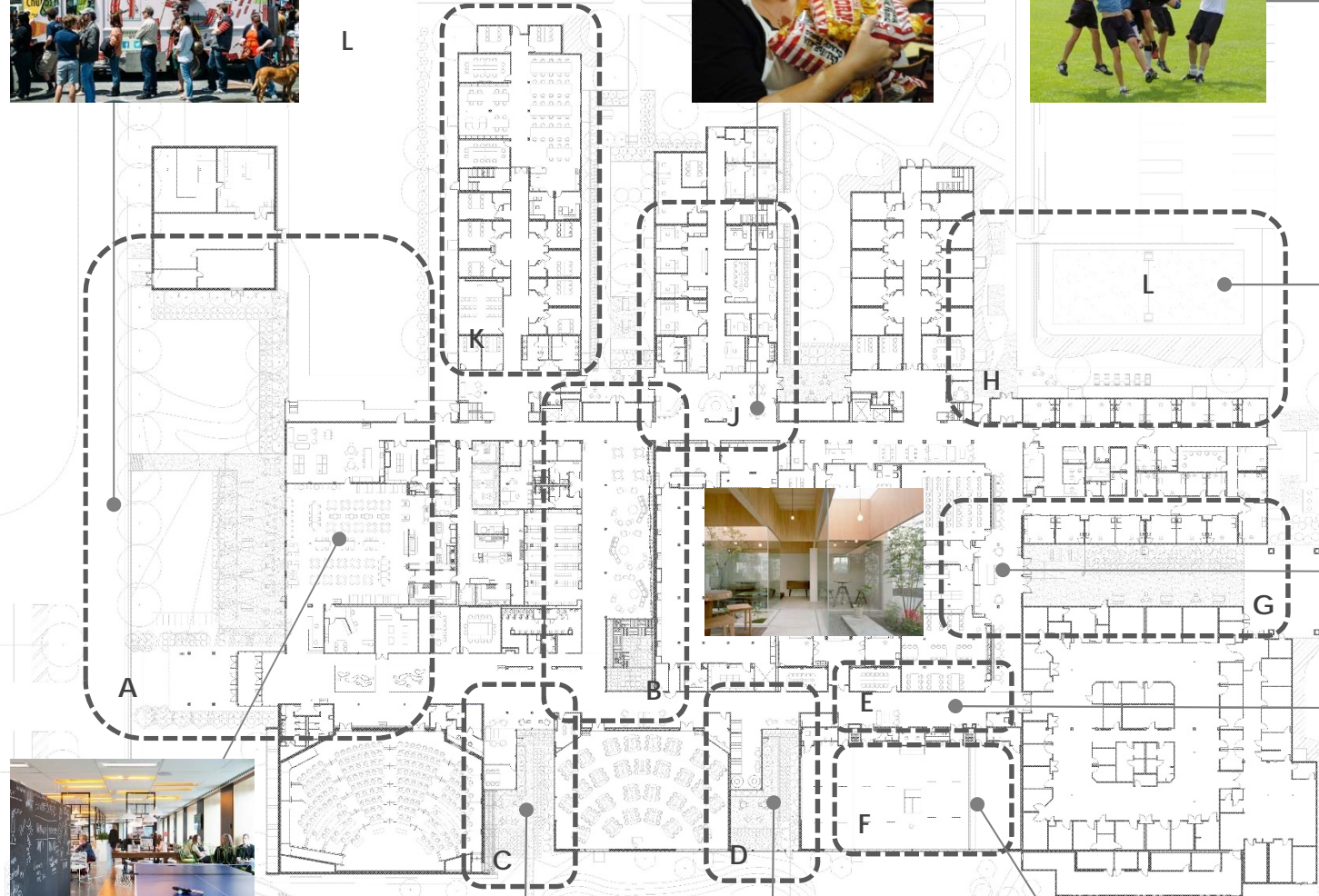
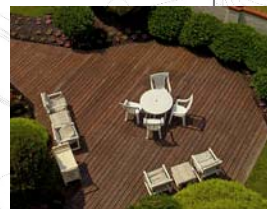
G: Nutrition Recharge Zone + South Courtyard; community kitchen, outdoor dining, occasional use for ambulance training drills

H: South Sun Terrace / "The Beach"; patio, deck chairs, umbrellas, sand volleyball court

J: Hospitality Center; holistic student services

K: Library/Learning Commons

L: Outdoor Fitness Amenities; walking trails, basketball court, Frisbee golf, activity lawn



Site Plan, Context, & Community

- A. Kansas City University, Joplin Campus (Temporary Hospital renovated and expanded)
- B. Memorial Park (Site of Original Hospital)
- C. Mercy Village Senior Living
- D. Irving Elementary School

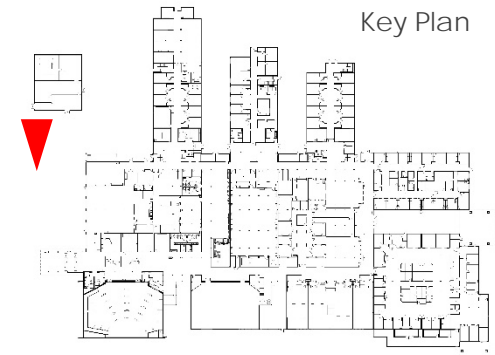
Joplin is a community of 51,000 people in southwest Missouri. Following the devastation of the 2011 tornado, community conversations led to the acquisition of the temporary hospital for KCU's new Joplin campus **offering multiple paths toward extended community healing and restoration.** KCU is partnering with Missouri Southern University (also in Joplin) for access to shared campus amenity spaces. They'll partner with the local YMCA for recreation amenities. They'll partner with the area hospitals to provide intern support and future graduates who will help address the critical shortage of health care in the rural Midwest.

KCU's new campus will provide much needed emphasis on rural medicine to support the surrounding region, which is a cultural shift for the University.



School and Community Engagement

The new front lawn, framing the new entry lobby, is an inviting community space for both the university community as well as the greater Joplin community. It will serve host to community cookouts, food trucks, and events hosted by Kansas City University.



A spacious front yard invites students and community members alike to participate in the vital culture at KCU.

School and Community Engagement

Student Survey:

We asked students: What's important?



Scope of Work & Budget

This renovation and expansion transformed the existing temporary modular-built hospital into a state-of-the-art school of medicine. In order to increase the spaciousness, and bring it up to standards with competing schools of osteopathic medicine, selective demolition was done to increase ceiling heights, increase clear span for large labs, and introduce daylight and views.

Re-use of existing assets:

- Existing exam rooms were renovated to serve as standardized patient care learning spaces
- Existing food service operations were maintained and modestly upgraded
- Existing patient rooms on second floor are lightly renovated and repurposed as administrative and faculty office space
- Existing clinic operations will be lightly renovated and utilized for this same purpose
- 58% of the existing building components were reused

Site: 47 Acres

Budget: \$34,000,000

Square Footage: 153,000 gsf



Before (Existing Building)



During (Demo of west wing)



After (New Lecture Hall & Storm Shelter, right)



Before (Existing Building)



During (Demo at Main Lobby)



After (New Lobby & Event Space, looking south)



Before (Existing Building)



During (Demo at "Central Quad")



After (Student Gathering & Study Space)

Educational Environment

"The Central Quad" is a light-filled space carved out of the center of the existing building. It serves as the heart of the campus; socially and academically. An exterior courtyard is cut into the building adjacent to this, with mature trees planted, to provide views not just to the sky and daylight, but to landscape and outdoor space.

The renovated campus is host to a wide variety of study spaces that offer choices for the varying learning styles of each of its students, allowing learning to happen inside and outside the classrooms all the time.

We asked students:

Where do you socialize?
"We don't. There's no time."

Where do you study?
"Everywhere! All the time!"



Use of natural materials creates warm, inviting and calming spaces with cognitive connections back to nature. The fluid, self-replicating patterns of the wood wall are found in nature, and assist with sound absorption within the large study space. Behind the wood lattice are clerestory windows into the Gross Anatomy Lab, screened for privacy.

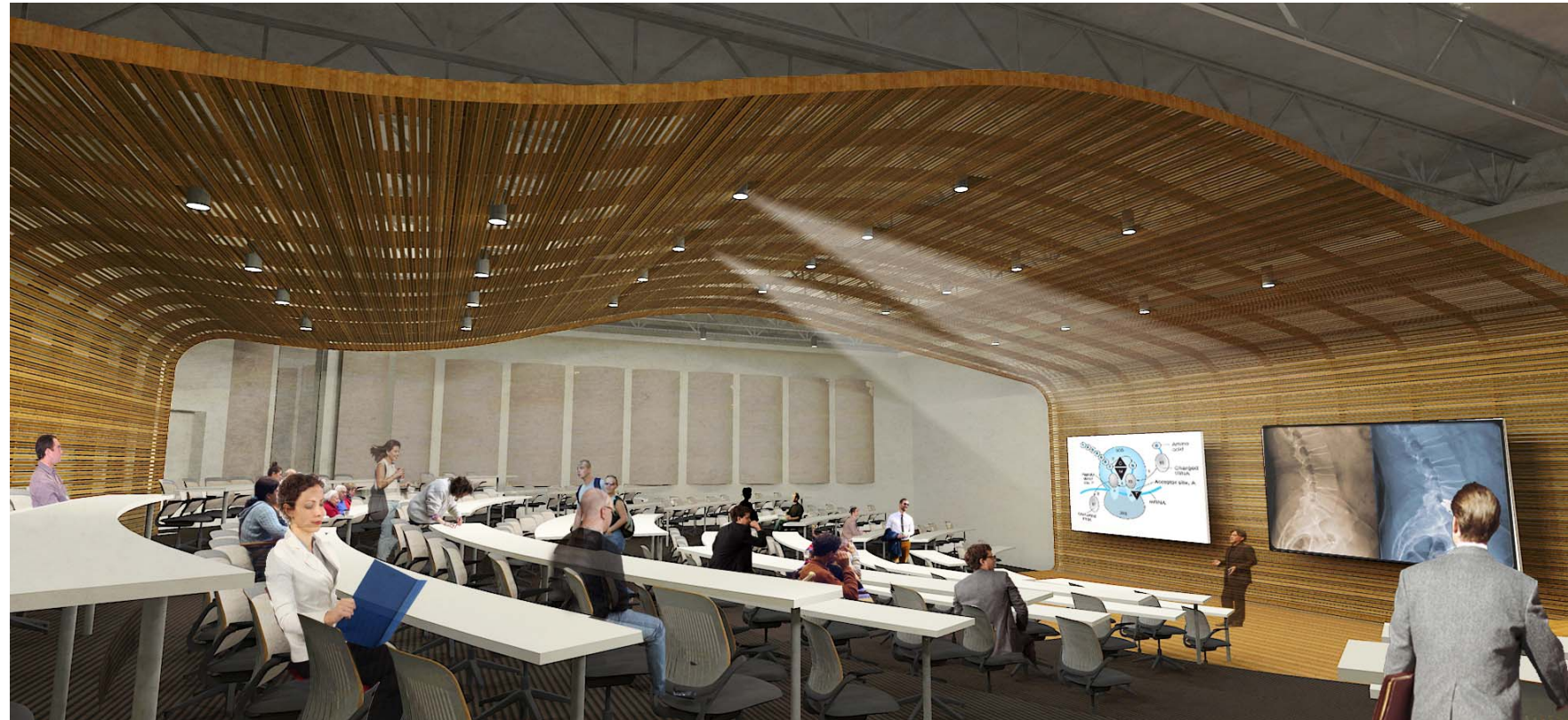
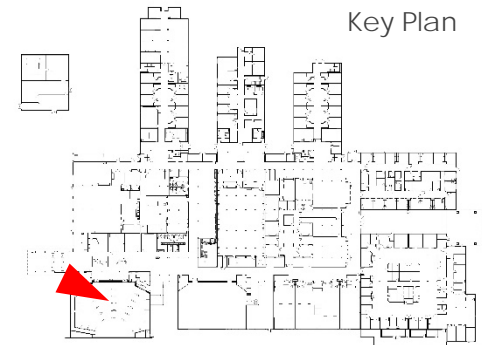


Educational Environment

A new 200 seat lecture hall accommodates a full cohort of medical students. Double-width tiers allow students to quickly shift from instructor-led learning to team-based learning. The space further adapts to support community events. Ergonomics are designed to support the extended 4 hour class schedule. Microphones at the tables facilitate easy student engagement. All content is recorded and viewable on-line asynchronously. The AV system also allows professors from the Kansas City campus to teach remotely in live distance ed configurations.

A natural wood ceiling embodies the materiality and organic forms of nature, thereby further connecting students with the restorative attributes of the natural environment. The curriculum during the first two years of medical school is compacted and extremely rigorous. Students effectively learn 4 years of content in 2 years. Design strategies to support attention restoration, and mitigate mental and physical fatigue were paramount.

This space is part of the new addition, built of precast concrete to serve as a storm shelter. Critical lighting and HVAC systems are on emergency generator.



Educational Environment

Indoor spaces move fluidly to outdoor spaces with courtyards cut into the existing building. A critical design strategy was the provision of views to light and landscape upon exiting every major learning space.

Sustainable design elements:

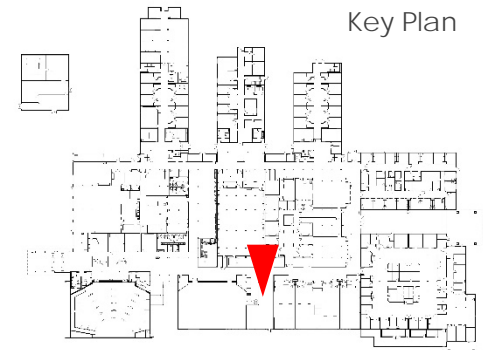
- Daylight and views
- All LED lighting
- Automatic light sensors
- New zoned, energy efficient mechanical systems. Re-use of existing mechanical equipment where possible.
- Low flow plumbing fixtures
- Water bottle refilling stations
- Energy efficient glazing and insulation
- Low VOC paint
- Reflective roof
- Electrical vehicle charging stations
- Community connectivity – buses, bicycle racks and showers
- Green cleaning
- Collection of recyclables
- Furniture – recycled content of selected “cradle to cradle” furniture diverted 86,900 pounds of waste from the landfill

“Spending two hours in an artificially lit space bent over a cadaver can really get to you. Exiting the lab into a light filled green space would be so refreshing!”

– Student Focus Group comment

“Students like to study together, alone, and alone-together (in the company of other students).”

– Faculty Focus Group comment

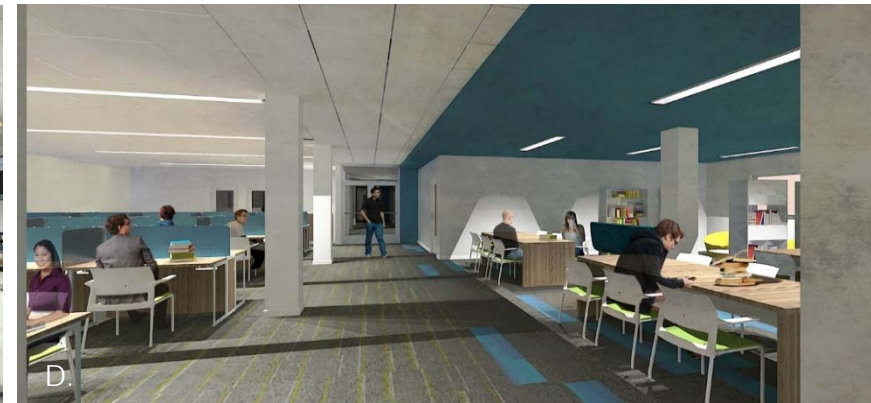


Study space wrapping a newly created courtyard

Educational Environment

All the scheduled learning spaces are designed to support a curriculum of applied learning.

- A. **Gross Anatomy Lab** features high clerestory lighting to provide privacy yet introduce the restorative properties of natural daylight. Overhead displays provide students easy viewing of the professor at the demonstration table while maintaining concentration on their subject cadaver.
- B. **Learning Studio** supports an upper class cohort of 174. Its flexibility accommodates a hybrid of instructor-led learning, group-based learning and individual learning. Connectivity with the Kansas City campus allows KCU's full faculty to teach in Joplin. Student/faculty interaction is enabled via collaborative software.
- C. **OMM Lab** has 56 tables and is subdividable for multiple uses and testing. Overhead monitors enhance visibility of instructor demonstrations. Operable partitions allow space to be reconfigured for smaller rooms for use in testing and higher levels of privacy.
- D. **Informatics Learning Center** provides students heads-down study space and access the university's specialty digital archive. Group study spaces support team-based work.



- A. *Gross Anatomy Lab*
- B. *Learning Studio*
- C. *OMM Lab (Osteopathic Medical Manipulation Lab)*
- D. *Informatics Learning Center / Library*

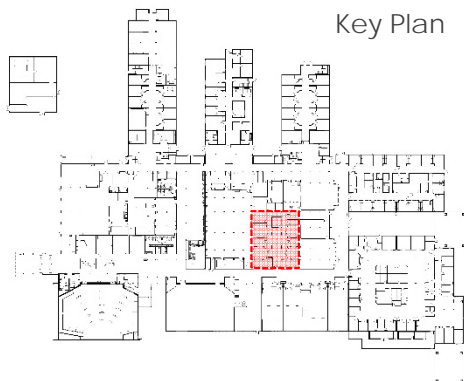
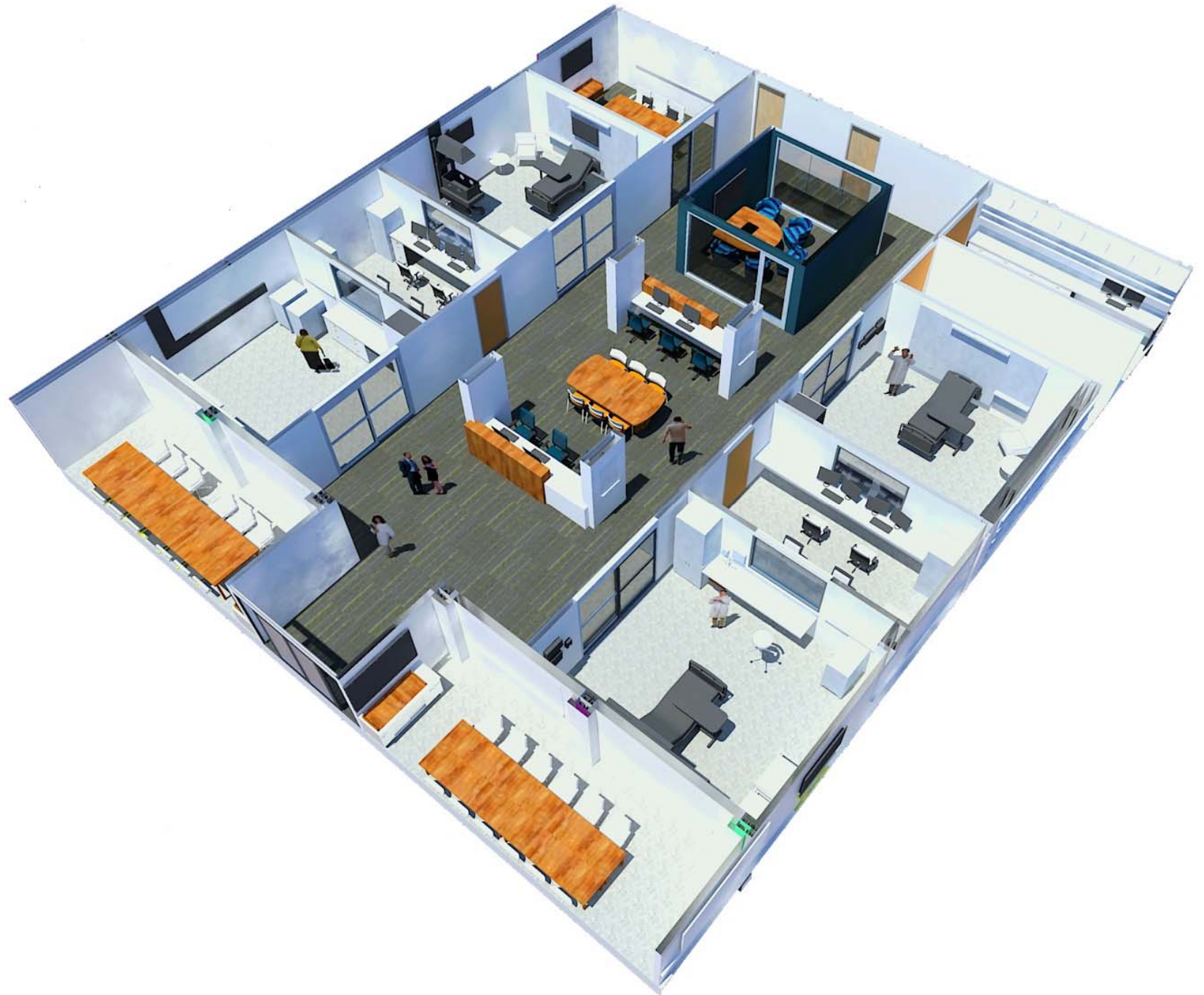
Educational Environment

Simulation Lab features 4 high-end simulation rooms with high-fidelity simulation mannequins. Control rooms are central to each pair of sim rooms allowing students to be exposed to life-like applied learning scenarios.

Existing hospital head walls we re-used in each simulation room.

Real time video and audio is captured of all simulations for review in the debrief rooms (bottom left of plan).

Care provider stations allow for inter-personal collaboration during and after simulations.



Key Plan

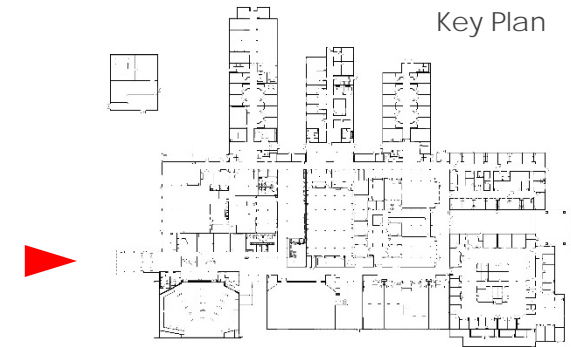
Physical Environment

The conversation regarding student success needs to be extended well beyond active learning environments. KCU has established successful links between pedagogy, student service programming, restorative facility design, and community engagement to help mitigate the distressing factors impacting today's college students.

Transferring the face-to-face culture from the Kansas City campus to this small-town campus requires careful attention for this rural satellite location – every detail needed to take care to establish equity between the two campuses. While the two campuses don't look alike, the attributes of each offer distinct advantages and an equity of service and attention to KCU customers – the students.

"Students feel more productive if they stay on campus, as they are less distracted from non-school activities and realities. We need to offer them a wide range of places to stay, appealing to the diverse demographics of our population."

- Planning Goal, Stakeholder Workshop

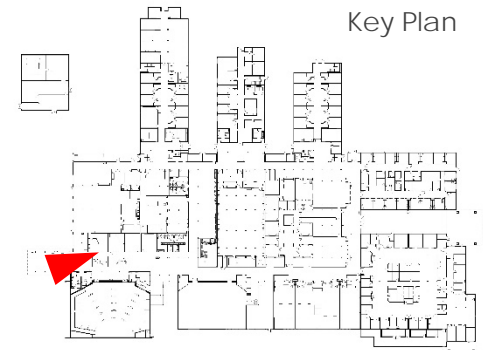


Physical Environment

Much of the existing pre-fabricated structure was left exposed, to celebrate the creative re-use of this temporary structure, and to tell a visual story of the building's sustainable reclamation.

The main lobby doubles as an event space and supports the large crowds of students that queue up before each class in the 200-seat Lecture Hall (right in image). A video wall (inside the alcove on right) displays campus information to students and community members. A wall of honor (left in image) recognizes the significant contributions that made this campus possible.

A Welcome Center just inside the entry (far left in image) doubles as an additional place for students to lounge or study. This space will also be used for student appreciation events.



Before

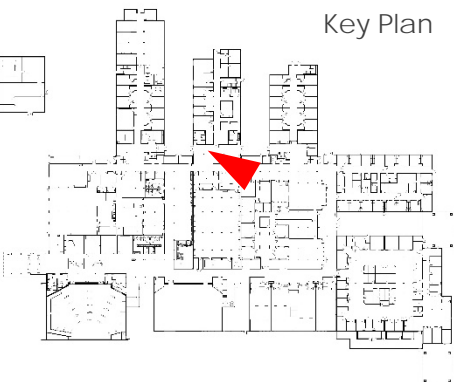


After

Physical Environment

Hospitality Center: Located at the entrance to Student Services, this area provides extended support service programs to the students – “holistic student services”. From the six elements necessary to support mental wellness, several of these are addressed here: access to healthy nutrition, social support, and engaging activities.

This “front porch” is conceived to encourage student drop-ins, with the enticement of healthy snack options and student-centered activities, thereby increasing interaction between students and staff, and offering earlier intervention in the event of student struggles. KCU often hosts student appreciation events to help this space lose stigmas commonly associated with support service programs and help the space feel like a cool and hip hangout where all students want to be!



The spirit of the Hospitality Center: a place where everybody knows your name, a place to fuel up on healthy snacks, to grab a cup of freshly brewed coffee, a place to meet shoulder to shoulder with student advisors who are eager to support your overall wellness and student success.



Physical Environment

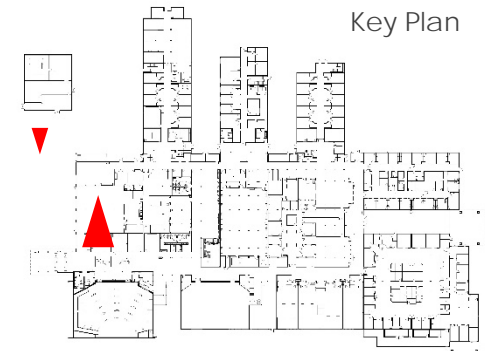
Within the Dining Commons, the 12' x 60' pre-fabricated steel structure is easily visible. This 3,300 s.f. space seats 180 and spills out onto the adjacent "Front Lawn" for additional outdoor seating (left side of interior view and image above).

In the background is the Gaming Area, able to be acoustically separated, or opened into the Dining Hall for large student appreciation events.

The flexibility of this space allows it to multi-function as dining space, study space, white coat ceremony, extended gaming space, student appreciation events, and much more.



The Dining Commons spills out onto the Front Lawn



Before



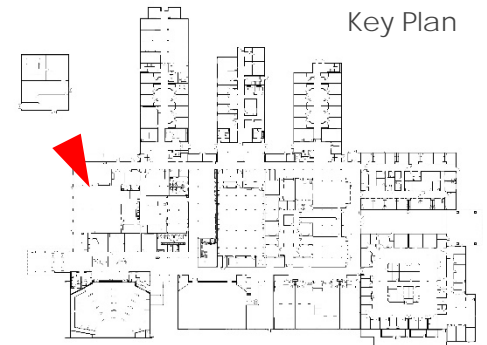
After

Physical Environment

The Game Room, looking back into the Dining Commons (beyond), also reveals the existing pre-fab structural elements.

The space is important for student decompression – it needed to be acoustically separate from adjacent areas. Ping pong and foosball were noted as the quickest decompression strategies for students when taking a study break.

Students can spill out onto the outdoor activity lawn (doors along right side of image).



Results of the Process and Project

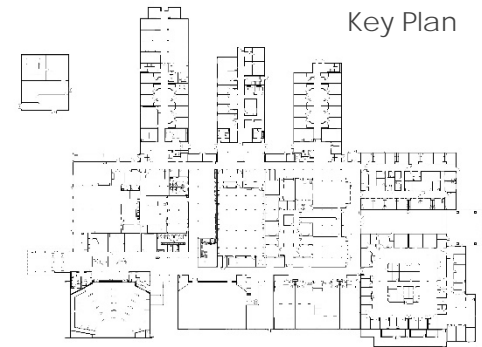
The visioning and programming process began with student and faculty focus groups. These insights sent the design team on an extensive research process to explore design strategies that could help mitigate the stresses that today's medical students endure. Throughout the design phase, these strategies were validated and strengthened via stakeholder input, and new programming services were even developed by KCU as a result of these findings.

The project is scheduled to open in the fall of 2017. Ongoing post occupancy assessments will be completed to further fine tune the customer experience of the students.

Multiple partnerships, including agreements with the local hospital, the YMCA, and Missouri Southern University, will allow KCU to build less infrastructure, while still providing full amenities to its students. The community partners benefit greatly as a result, and KCU's overall operating costs are reduced. Technological connectivity between the Joplin campus and the KC campus will further help create cost benefits.

"The faculty culture in Joplin is a small community ("out on an island"). We want to create a consistent experience, with a healthy tension created via the two campus cultures."
- Campus Leadership, from Focus Group Session

"How can an innovative campus, rebuilt from a temporary building, serve as a role model to improve metrics on student success?"
- Planning Goal from Stakeholder Workshop



Key Plan



Results of the Process and Project

Design Thinking Workshop:

Working from a robust set of student success strategies and goals, built around principles of modern psychology research, the design team followed a Design Thinking process to explore ideas that could translate into design strategies to **redefine “The New Restorative Campus”**.

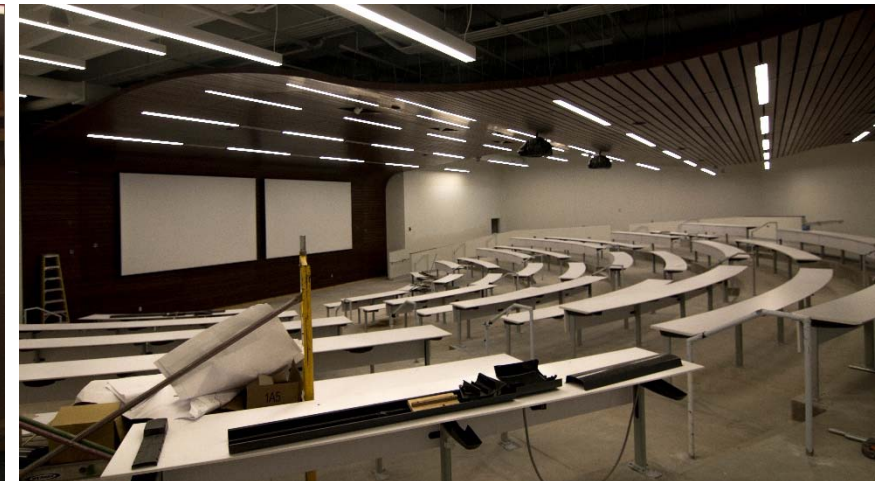


Results of the Process and Project

Outcomes & Lessons Learned:

The new KCU Joplin Campus is scheduled to open in Fall of 2017. Outcomes will continue to be tracked. But just through the planning process, there have already been a number of lessons learned.

- Nothing comes for free, not even donated buildings. Significant additional costs were required to level floors, raise ceilings, and replace temporary systems with more permanent, long-life systems. However, there were still significant costs savings compared with building a new facility.
- KCU is still in the process of discovering pros and cons of bringing a national medical program into a rural community as they continue to recruit faculty and negotiate relationships with area hospitals and clinics.
- The design process has helped sharpen student service programs on both campuses, as a result of the conversations, research and student focus groups implemented to define the Joplin Campus' needs.



Construction progress photos. Completion is targeted for July 2017.