NEW CHANGES IN THE POST PANDEMIC ERA IN THE DESIGN OF CAMPUS

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Abstract. *The global shift to distance learning caused by the pandemic requires rethinking the fundamentals of design for higher education. This milestone moment in global health and human interaction accelerated long-emerging changes in higher education and augmented certain shortcomings and strengths in pedagogical models, causing institutions to reassess existing structures and learning and campus life as they question their visions and goals. New design research on this new normal is required, as the physical space has largely been taken out of the equation of university life. This type of change is something seen in other industries and means for engineers to be more open-minded and creative in their designs. In the past, the purpose of a building was usually clear from the beginning (a hospital is a hospital; a cinema is a cinema), but in the world of tomorrow, engineers must design for agility with a human-centered approach and ensure that developments are resilient. Educators recognize that many formal and informal interactions occur frequently and naturally on campus, promoting cognitive and social development, collegiality, and well-being. Even today's digital natives perceive the inherent value of true interpersonal participation for meaningful experiences. This research study offers new planning and design perspectives to explore how design can support what lies at the center of the campus experience as institutional responses to the pandemic continue to evolve.*

Keywords: *future of campus design; post-pandemic campus; speculative design.*

1. INTRODUCTION

The Covid-19 pandemic has changed everything for the world's population. Its impact has forced people in every industry to flex and evolve in real-time and with long-lasting effects. The way we live, work, learn and even play in times of crisis has changed dramatically. In many ways, the changes are here to stay. These changes can be felt in every field from agriculture to medicine, from ready-made clothing to aviation, from technology travel to automobiles and architecture. As millions of students adapt to online classes, while everyone leaves home and returns to work, professionals work from home and take precautions to stay safe and healthy, as always the word "ordinary" has a new meaning - the world is already changing, fields are changing. Living in social distancing for the foreseeable future affects every move we make and every breath we take. Architecture has always been a way of designing and building how we optimize and interact with the spaces around us; how we live in the world, whether inside or outside; in our homes or public places. This fundamental architectural perspective, which was to design how we as a community interact with our environment and other people around us, and even live our individual lives, may now see a serious overhaul. For practicing architects this has proven to be a huge challenge. In the beginning, perhaps when things stopped completely as people grappled with construction and other architectural projects, and now, as time goes on, the need to envision new approaches to architecture. For young people who want to study architecture, this heralds the beginning of something new and exciting.

2. PUBLIC AND PRIVATE AREAS WILL SEE SERIOUS CHANGES IN DESIGN

Public and private buildings, even open spaces, will no longer be traditionally conceptualized. The world has already begun to adopt new indoor structures. As the coronavirus pandemic spreads around the world, architects and designers are leaving hotels, residential communities, sports complexes, etc., in the future. they accelerated their research and technical skills to identify new patterns that could be incorporated into the design of different spaces. For example, for some activities that are nothing out of the ordinary in a hotel or residential area, there is a major refurbishment and change that we are all witnessing right now. For example, hotels all over the world are abolishing the buffet system. Food is served directly to the table with minimal contact with face masks, globes, and more

precautions. While many schools and universities around the world have yet to reopen, some schools plan to abolish meeting meetings even in the future. In the big picture, areas such as the hall may be missing from the architect's drawings and plans.

As revenues for shopping complexes, restaurants, and hotels around the world continue to decline, their spaces need to be designed to ensure future safety. Architects and interior designers will be asked to submit a blueprint for these plans and processes. In a new future for higher education facilities, one of the most important issues will be how to shape the use of physical space. With the expected changes in the educational process, some of the existing spaces in universities will need to be reused and newly built places will need a different approach in terms of design and purpose. This kind of change is something seen in other industries and means for engineers to be more open-minded and creative in their designs. In the past, the purpose of a building was often clear from the very beginning (a hospital is a hospital; a cinema is a cinema), but in the world of tomorrow, engineers must design for agility with a human-centered approach, developments continue apace. flexible.

3. WHAT HAPPENS WHEN WE BACK TO SCHOOL IN THE SHORT TERM IN THE POST-COVID PERIOD?

Current estimates suggest that it is unlikely that faculty, staff, and students will suddenly return to campus. As institutions assess the potential for "rolling occupancy" on campus to more effectively maintain a safe distance, education leaders need to consider how to apply this approach in physical settings.

To support "rolling occupancy," we will need to create strategies to reduce the density of existing spaces, rethink underutilized space, and incorporate structures to support hybrid installations for digital and physical use. Schools should still rethink how they use their space. While space usage was previously defined for specific purposes, there may now be opportunities to maximize the use of previously underutilized space in brand new ways. Existing underutilized space can be reused to create complementary learning and work environments to ensure safe distance or to be designated as quarantine areas.

Figure 1. To comply with physical distancing, other areas on a campus can be repurposed into educational spaces, including student lounges.

4. IN THE LONG-TERM, WHAT CAN WE LEARN FROM THIS EXPERIENCE THAT WE CAN CARRY FORWARD TO FUTURE-PROOF OUR CAMPUSES?

Educational institutions need to focus on achieving greater physical and mental well-being during the current pandemic and potentially in the future:

1. Lowering densities

2. Optimizing human interaction

3. Providing natural lighting

4. Improving access to air quality

5. Using more exterior spaces

6. Providing concentration spaces

How can we achieve this through strategic design? Some physical and logistical changes may include:

1. Fewer seats and workstations on campus

2. Increasing or creating new virtual tuning styles that make you feel "in the experience"

3. Changing pedestrian access and flow in buildings

4. Limiting the use of basic common items such as fountains and benches

5. Increasing the use of open spaces and lounges for training and meeting purposes

6. Optimizing human encounters to better meet mental, emotional, and cultural needs

Figure 2. Social Distancing in Student Lounge

4.1. Hybrid Higher Education

While lecture halls and indeed many large classrooms will find themselves empty, face-to-face interaction will continue to be a crucial part of higher education. Campus life includes socializing, building relationships, and working collaboratively, and this will continue as part of an education and character-building journey. All this

means that in the near term our university campus designs will be a mix of our familiar campus and new spaces for different uses. The new training facilities will be designed to be more versatile to accommodate flexibility of use. This will allow them to adapt as needed and incorporate modern technology, which has become increasingly important in education. More breakout spaces allow students to collaborate, but most likely in smaller groups.

4.2. Industry Cooperation

Another important factor in how we evaluate the design of our future universities is the reassessment of their purpose and how they serve their communities. While it is easy to imagine how technology or changes in physical domains will affect higher education, it is more difficult to predict how the purpose of universities might change. In these commercial relations, both parties gain. Universities get the much-needed funding, credibility, and opportunity for students to work in real-world project scenarios. Organizations access talent and a wider research pool. An additional advantage in the current environment is that it connects the repurposing of fields in universities; This comes at a time when many companies are considering creating future-proof workspaces and giving their employees more flexibility to work from elsewhere.

4.3. Digital tools: The Key To Future Sustainability

An important question is how to develop a campus that is both versatile and future-proof, with so many possibilities for future university designs. The answer is digital engineering. Powered by domain expertise, digital tools are revolutionizing engineering and design and pushing us into an exciting new future. Using digital technology to design the universities of the future is perhaps the most critical aspect in determining their success, especially given their need to adapt to a new future in a changing world. For example, consider the changing nature of our workplaces. Many of the jobs we saw 10-15 years ago are no longer available.

Figure 3. New Designing in Classrooms

5. WHAT WILL FUTURE EDUCATION SPACES LOOK LIKE?

5.1. Class Occupancy

Educational institutions face the need to reduce classroom sizes, in some cases to 20 to 25 percent of original capacity, to maintain social distancing. To realize these smaller class sizes, schools are considering a hybrid model of online and onsite learning.

5.2. Laboratory Occupancy

Schools are looking for ways to reduce the number of students in lab spaces that require a more hands-on, face-to-face teaching style. For science courses, there may be a transition to virtual simulation software to complement the laboratory curriculum.

5.3. Performing Arts Spaces

Reducing the number of people in performing arts spaces brings with it more challenges. It may take more than a year for these gaps to return to normal. It's difficult to host auditions and group performances while staying away.

5.4. Student service

Institutions are considering what services traditionally offered on campus can now be shifted online. If services are held on campus, considerations are being made for how many students can be served in the same space and by appointment.

5.5. Student Lounges

It is considering removing or reducing the number of chairs and benches in campuses, student halls, and open spaces.

5.6. IT and AV

The increase in online learning has pushed IT and AV departments to make major advances in infrastructure–to support and distribute access–and equipment–to accommodate more laptops, enhanced screens, monitors, recording, and broadcasting. These departments are also considering room configuration–redoing typical classrooms to accommodate virtual learning. This means much better lighting, acoustics, cameras, two-way engagement software, etc.

5.7. Administrative Space

There may be a return to closed offices through open stations. Seating in reception areas, break rooms, and meeting rooms will be monitored.

5.8. Libraries

Libraries are adapting to meet the demand for online resources as well as technology to address growing concerns about cybersecurity and privacy. Institutions identify the best ways to disinfect books, materials, and workspaces.
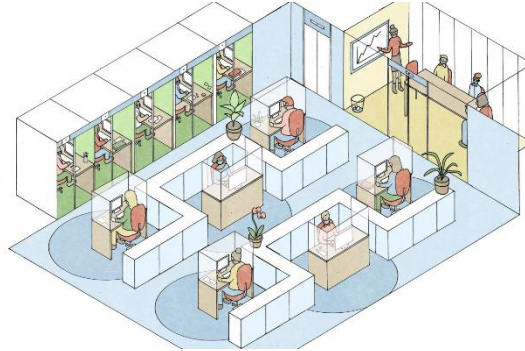

Figure 4. Designing For Higher Education In A Library

6. CONCLUSION

In the future, campuses will not separate learning areas from residential and recreational areas. The mixed-use environment, the key to dynamic urban neighborhoods, will be replicated in the mini-city that functionally makes up most of the closed campuses. The key will be to deliberately redesign the campus model to not only pool the uses to see what happens, but also continue to maximize the factors we know feed these neural networks. But it's time to imagine a different model that creates countless small moments of interaction, bringing people together rather than separating them.

The most important point to remember is that our universities are in a dangerous position and that education contributes significantly to the progress of our societies. By reshaping our universities, we not only have the opportunity to ensure their survival, but we also have the opportunity to position our societies the way we want, with foundations and individuals who will provide an exciting new future.

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