

AUGUST 2020

ADAPTABILITY AND FLEXIBILITY

Will COVID-19 save PreK-12 education?

COVID-19 has changed lives around the world, from the way people work, learn/teach, and deliver/receive education. Through the lens of research, HMC Architects is exploring the pandemic as an opportunity to learn, reinvent, and most importantly help our clients amid this crisis.

As part of this ongoing research effort, we are committed to sharing our findings with the industry on five main areas of: Technology, Adaptability and Flexibility, Regulatory/Budgetary/Institutional Impacts, Space Needs Restructuring, and Impact to Wellness/Mental Health. In this article, we are discussing Adaptability and Flexibility as it relates to the PreK-12 sector.

METHOD

Our study started with a comprehensive literature review on building design and infectious disease transmission/prevention, as well as guidelines from industry groups (AIA, ASHRAE, and others) and governmental agencies (CDC, LADPH, and others). A group of representative PreK-12 clients from various school districts and county offices of education were invited to participate in individual phone interviews to share their insight and understanding of the short- and long-term impacts of COVID-19 on school design and

operation. An online survey was developed to ask parents with children living at home to share their insight across various dimensions of technology, operations, health and safety, and procedures to reopening schools in the fall of 2020. The survey was distributed to all HMC colleagues and has been posted on social media platforms to engage participants outside the firm.

RESULTS/DISCUSSION

In this time of uncertainty, as schools and school districts proceed with mapping out plans for the fall semester, we face a key moment for our schools: Can we use the momentum gathered to respond to this pandemic to enhance learning, wellness, and community? Or, will we return to even more restrictive versions of the traditional classroom?

Based on an in-depth investigation of the evolving research, HMC proposes that we can respond with safer, more welcoming, and nurturing school environments. This can be achieved with a focus on adaptable, flexible solutions that allow schools and districts to pivot as needed to accommodate changing and unpredictable local conditions of the pandemic.

Schools occupy a special place in our society, providing not only essential services for the education of our children, but also for their



Clearwater Elementary School, Perris Unified School District

social and emotional development, for food security, and for the care of children during the weekday allowing parents to work. As a result, schools face intense pressure to re-open prior to the wide-spread availability of a vaccine.

Added to this is the urgency of ensuring equity for all students across school districts: Ensuring equal access to the technology and resources that facilitate remote learning and, more broadly, providing an education that narrows, rather than widens the persistent gap between students from different segments of our community. The aim is not just for our schools to survive, but to capitalize on this disruption with a vision for long-term enhancements to our learning communities. So, what might this vision look like?

To begin, this vision requires a good understanding of how the virus is transmitted, so

that we can plan effectively, without excessive measures, to keep our schools safe. (See our forthcoming article on this topic.) With limited space capacity, restricted budgets and staffing, and unpredictable local pandemic conditions, schools and districts will need flexible and adaptable solutions to be able to quickly pivot around the latest conditions, family expectations, and staff availability. At the end of June, some districts were projecting, based on parent surveys, that only 30 percent of families were comfortable sending their children back to school full-time in the fall, and only 70 percent of teachers and staff were willing to return full-time. In other districts, 70 percent of families are anxious for schools to re-open so that parents can return to work. These percentages, however, are almost certain to shift in two months' time. If designed optimally, solutions that allow this short-term flexibility will also offer

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Rancho Campana High School, Oxnard Union High School District



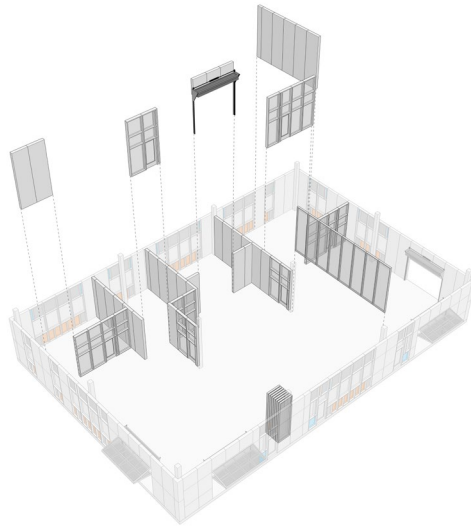
STEM High School Biotech Lab Study, Corona-Norco Unified School District

the flexibility to serve well for the long-term, to create student-centered, adaptable learning environments accommodating a wide range of learning modalities.

A VISION FOR FLEXIBLE STUDENT-CENTERED LEARNING ENVIRONMENTS

HMC has identified and developed a number of design solutions that expand on this vision:

- A school design of flexible connected spaces that allow classrooms to expand and contract, with transparency between spaces, to facilitate blended in-person and online learning (synchronous and asynchronous), collaborative and independent learning, and indoor/outdoor continuity. In the short-term, these scenarios could facilitate having one
- teacher support the students of one class spread across two or more spaces. Spaces could have transparency between them, either as windows or as operable partitions or NanaWalls. These adjoining areas could be break-out spaces, adjacent classrooms, circulation space or outdoor areas. Creative solutions are needed urgently to expand capacity within a safe environment.
- Modular components for architecture, building systems, and furniture to allow districts to pivot quickly as local conditions change: Taken to the next level, flexible connected spaces can be configured with movable modular components so that the partitions themselves can be re-located to form larger or smaller spaces.



The Agile Classroom / Flexible Wall Systems



The Agile Classroom / Endless Possibilities



Various options for technology can facilitate flexible learning environments even when physical flexibility is limited.



- Flexible furniture to facilitate multiple learning styles: Some districts have raised concerns regarding their collaborative furniture and soft seating options, adopted in recent years to promote student-centered learning. With care, diligence, and clear messaging, it is preferable to create strategies for the safe use of these types of settings, including materials that are easy to disinfect, to maintain the positive atmosphere and promote mental and emotional well-being as well as sanitary environments. Keeping in mind the age of the students as well as the size of the class, protocols can be established for maintaining physical distancing with use of the soft seating. These styles of furniture can be used to advantage in areas designated for independent learning. Protocols for collaborative learning, such as staggered seating rather than seating directly facing one another, can be developed to enforce physical distancing requirements while allowing critical collaboration time. Simply returning instead to more restrictive traditional classroom furniture layouts will unfortunately reinforce the disadvantages faced by students with varying learning styles and will reduce the development of collaborative skills.
- Student-centered classrooms: A 2014 study by the Stanford Center for Opportunity Policy in Education found that student-centered schools showed significant gains in student performance, helping to close the opportunity gap for students of color, low-income students, and English language learners. A common component of student-centered schools is the 360-degree classroom. With student-led instruction on all four perimeter walls, the teacher acts as a collaborator moving throughout the space to support the students. Some COVID-19 directives, such as the June 2020 AIA guide, “Reopening America: Strategies for Safer Schools,” have recommended that all students face front, to minimize the chance of viral droplets being transmitted from face to face. Though this configuration may be required for some portion of the day due to capacity constraints, it is preferable to strategize ways to accommodate some face-to-face interaction between students. Possibilities include increasing the separation between students and ensuring a high air change rate with 100 percent outside air, to promote high dilution of the virus in the air. Even better would be to locate these interactive and collaborative activities outdoors where dilution rates are much higher. Providing flexible and varied spaces will maximize the opportunities for these sorts of interactions.
- Envisioning spaces as multi-functional: The school environment is particularly complex and multi-functional, encompassing a variety of activities—from learning to preparing and eating food, sports and performance, counseling and after school care. It encompasses a wide variety of occupants of various age groups and developmental levels. The more these spaces are configured to accommodate multiple activities, the more flexible the



We can find bright sides to this experience.

Lindsay Currier

FACILITY ADMINISTRATOR,
RIVERSIDE COUNTY OFFICE
OF EDUCATION



Leroy Greene Academy, Natomas Unified School District



administration's response to changing pandemic conditions will be. For example, with some forethought and attention to HVAC systems, multipurpose rooms and gymnasiums can be re-purposed as additional learning environments. Different outdoor areas can be used as dispersed lunch areas and outdoor learning zones, allowing students to get fresh air and sun rather than restricting them to their classrooms.

- Various options for technology can facilitate flexible learning environments even when physical flexibility is limited. These include technology for distance learning, in particular to offer blended learning options combining in-person and virtual learning. (Details on these options will be provided in a future paper.)

RE-OPENING: NOT ONE SIZE FITS ALL

As districts evaluate instructional program options and classroom configurations to finalize their re-opening plans, various factors must be considered for a successful, flexible response. Most critical is to understand the instructional and community needs of each school's specific students, families, teachers, staff and other stakeholders. A re-opening plan will function as intended only with the buy-in and compliance of all stakeholders. This buy-in can be achieved by gathering stakeholder input and providing opportunities for community discussion through surveys and virtual town-hall meetings. Regular follow-ups are recommended to gauge community response to changing conditions in order to maintain transparency and trust as

adjustments to school re-opening plans are needed.

A second aspect to consider is the condition of the school facilities. A nimble response to changing conditions will be best facilitated when an accurate assessment of the existing conditions of facilities is available. In particular, accurate site and floor plans of the school, and records of the type, features, and condition of HVAC systems. Keeping these records up to date will allow a more precise assessment of the safety of existing systems, providing for maximum use of existing facilities while minimizing the cost of upgrades.

SUMMARY

Our vision for school environments has evolved in the last decade to places that nurture mental and emotional wellness, community, and belonging rather than impose restrictions to movement, social connection, and collaboration. Such a vision is still within reach if we keep our eye on the long-term goals while responding to the immediate and urgent needs presented by COVID-19. The implementation of flexible and adaptable learning environments will facilitate quick pivoting to respond to changing short-term needs, while at the same time providing more options to accommodate the long-term vision for student-centered learning.

Already, this half-year experience has shown that we can mobilize to face a community challenge. We can and must take advantage of this momentum to move toward measurable



San Clemente High School, Capistrano Unified School District

improvements in creating high performing learning environments that are safe, healthy, equitable, effective, and resilient. As Lindsay Currier, facility administrator with Riverside County Office of Education noted, “We can find bright sides to this experience.”

- Staff and students have had to become more comfortable with trying new technological platforms, adding the flexibility to provide other types of student-centered and collaborative instruction, and leading to innovative and creative schoolwork.
- Some school communities have experimented with walking bus routes, where students gather at the bus stop to walk or ride their bikes to school together, with the potential to improve student health and reduce carbon emissions.

- Many of us have gotten to know our neighbors better through local walks replacing trips to the gym.
- Our lives have become simpler, with less time spent in transit and more time with our families.

It’s our belief that these bright sides can become part of our thinking towards higher performance in our learning environments and in our communities.

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