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PLANNING LEARNING SPACES

We believe the learning environment has a profound effect on the educational outcomes for all pupils. If you would like to join us to improve these environments worldwide we would love to hear from you. This magazine is a not-for-profit journal and is the official magazine for A4LE (Europe). It is given free to European members and distributed to 8,000 A4LE members globally in e-format. If you would like to contribute articles to the magazine or purchase additional copies please contact us.

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GOING WITH THE FLOW

IRENA BARKER
EDITORIAL ADVISER



In the UK at least, life after lockdown has meant donning a warm jacket and taking to a pavement café or hosting a barbecue in the chilly garden. The trend towards society taking place outside, online, and in our homes – rather than in exclusive, monolithic and centralised buildings – is also reflected in how many people are now rethinking the role of the bricks-and-mortar school in education.

In this highly international issue, Ksenia Dokukina discusses how Russian education is moving away from traditional classrooms and making better use of natural spaces, museums, parks and research centres. “The pandemic has demonstrated that academic resources can no longer be owned and provided solely by schools,” she says.

Architectural designer Charlie Edmonds takes these ideas even further in his report on “Void Pedagogy” in Japan. Inspired by the rural Kinokuni Children’s Village, he proposes the possibility of going beyond traditional schools and using empty urban sites in Tokyo as places for experiential learning.

Of course, we cannot ignore the role technology has played in education throughout the pandemic. Many of us complained that online learning during lockdown lacked interactivity, humanity and, quite frankly, excitement. But on page 16 Hugh Gatenby paints his near-future vision of a greatly enhanced virtual learning experience.

There will always be a place for central buildings, and *Planning Learning Spaces* is always among the first to champion leading designs that create a unique educational experience.

On page 08, we profile the beautiful YueCheng Courtyard Kindergarten in Beijing, China. Looking like a cross between a golf course, Uluru and an ancient Chinese courtyard, the building instantly sparks the imagination, triggering possibilities for play and learning.

We also highlight the possibilities posed by the Col.legi Montserrat Early Childhood Learning Centre in Barcelona, a place where physical and mental “flow” sit at the heart of modern education.

The Hungarian-American psychologist Mihaly Csikszentmihalyi defined Flow as an optimal state of consciousness where we remain happy while doing things that stretch our skills and help us to reach our potential. As the role of the school building evolves, making way for new approaches and possibilities, perhaps we would all do well to go with it.

Irena Barker.

INVERURIE COMMUNITY CAMPUS WINS DEVELOPMENT OF THE YEAR AWARD 2021

An independent panel of 16 judges has named the £55 million Inverurie Community Campus the Development of the Year (Public Buildings) at the Scottish Property Awards 2021. The Inverurie Community Campus, which accommodates 1,600 pupils and provides amenities such as a community café, dance studio, gymnasium, games hall and a swimming pool for students and the wider community, was recognised for its collaboration, engagement and wider community benefits. The 360 rooms within the school include flexible and multi-purpose learning spaces with furniture and equipment designed to support new and innovative pedagogies.



ALL PATHS LEAD TO LEARNING



Ormiston College’s Centre for Learning and Innovation (CLI), designed by BSPN Architecture, has won the 2021 ALIA Library Design Awards – School Libraries.

Situated at the epicentre of Ormiston College, the CLI is purposefully located to reactivate the “school heart” and create an active hub where all paths lead and transverse. The arrangement of internal functions and configuration of spaces across two floors promotes the flow of learning from noisy, active, collaborative group areas to quiet, personalised and individual places. Ultimately, this allows teachers to utilise modalities (digital, tactile and visual) aligned with their pedagogical intent to support the full spectrum of student learning experiences.

“A LANDSCAPE OF PLAY AND LEARNING”

On 31 March 2021, three years after the project began, BS KA public school in Zottegem, Belgium, finally opened. The vision of this playful learning design, by Rosan Bosch Studio, B2Ai, Alheembouw and Denis Dujardin, was to create a “landscape of play and learning” that motivates movement and interaction across age groups while supporting learners’ self-agency.



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NEW PLACES, NEW SPACES

A4LE (Europe) is to move its headquarters to the upcoming Cambridge Centre for Learning Spaces Innovation. The centre will be a forum to support and advance excellence, innovation and well-being in school design, bringing thought leadership through its partnership with A4LE (Europe) and its activities as a knowledge and research hub.

A4LE membership is growing across Europe as people increasingly recognise the need for design professionals, educators, researchers, communities, and learners themselves, to work together to rethink learning spaces.

We believe that we need to take the opportunity to learn from the impact of Covid-19 and look towards new landscapes for learning. We have an opportunity to draw on all of our collective experience and build on the life-changing and life-learning events that we have all experienced over the last year to create a new vision for learning: a vision that is more inclusive, engaging, motivating and relevant for our young people and our learning communities, while being sustainable for all our futures.

More than ever, we now need to ensure that the

emotional well-being of all staff and students, and the communities in which they learn, are at the heart of how we rethink, reorganise and design the learning environments for our future.

A4LE (Europe) will:

- Share and promote good practice in the design of innovative environments for learning.
- Engage in evidence-based research at a European and international level to demonstrate the links between pedagogy and space and improved learning outcomes.
- Continue to focus on our learning-led design events programme.
- Promote innovation in design thinking through *Planning Learning Spaces* magazine.
- Publish our members' research and views on "Looking through Covid-19 to Future Learning" in a special edition of *Planning Learning Spaces* magazine.
- Provide members with full access to the events, information and resources available via the A4LE International website.

Visit a4le.co.uk for more information and details.



ADP'S THIRD SPACE CONCEPT



MAD WORLD

The MAD-designed YueCheng Courtyard Kindergarten is a place where nature, the world and human life come together, connecting past, present and future.

In 2017 MAD Architects was commissioned to design a kindergarten next to a senior citizens' apartment block in Beijing, reflecting the client's "intergenerational integration" ethos that blends pre-school education and eldercare. The subject site, covering an area of 9,275 square metres, consisted of an original eighteenth-century Siheyuan courtyard, an adjacent replica courtyard built in the 1990s and a four-storey modern building. Following its completion at the end of 2019, the kindergarten now serves as a pre-school education space for 390 children aged from 18 months to six years old.

"When I looked back at my own kindergarten years, and even the ones I saw after I grew up, I always wondered what it is that kids long for the most," said MAD Architects' founder Ma Yansong. "Perhaps it is freedom and love. A kindergarten doesn't always have to offer complex hardware or fixtures, but it must always make kids feel freedom and love – something that leads them to endless possibilities."

Harmonious fusion of past and present

In shaping the project, MAD chose to remove the replica courtyard outside the historic eighteenth-century original, and replace it with a new space that holds the Siheyuan courtyard "in the palm of its hand". As it envelops the old courtyard, the new space adopts a low and gentle posture, with a flowing motion contrasting the strict, orderly layout of the historic structure. This tension, emerging from different dimensions in time, gives the building a renewed life. The new does not overshadow the old, while the past does not overtake the present.

The new building forms a "floating roof" that unites a variety of independent spaces, while making people feel as if they have entered a whole new realm. Apart from the red walls and yellow tiles of the Forbidden City, the architecture of Old Beijing is dominated by the blue bricks and grey tiles of *hutongs* (narrow streets and alleys). MAD's kindergarten seeks to take people beyond this context, not just of Beijing but also even of earth; to see and imagine the long history in front of them from another time and space.

The floating roof evokes a children's proverb from Old Beijing: "If you go three days without being



"IN THE COURTYARD
THERE IS NATURE, THE
WORLD AND HUMAN LIFE,
ACTING TOGETHER TO
FORM THE CORE OF THE
ARCHITECTURE."





THE NEW DOES NOT
OVERSHADOW THE OLD,
WHILE THE PAST DOES NOT
OVERTAKE THE PRESENT.



punished, the roof will cave in." The undulating "caving" topography of the roof forms a Martian landscape of sorts, enticing children to run, play and interact with it and each other. When combined with the ancient courtyard, old trees and infinite sky, the result is a surreal environment that inspires children to think, reflect and chase endless possibilities.

At ground level, MAD designed three courtyards around several old trees on the original site. The new courtyards correspond to those of the old Siheyuan structures, providing the teaching spaces with light, ventilation and an outdoor extension, while slides and stairs connect the courtyards to the rooftop landscape above.

Inspired by history

Reflecting further on the project, Ma Yansong says: "Old Beijing has many 'cracks' – tunnels, roofs, courtyards, etc. The courtyards, in particular, reflect an oriental view of nature. Here, nature becomes the main subject, and the architecture instead revolves around it. In the courtyard there is nature, the world and human life, acting together to form the core of the architecture."

As one enters the interior from above, the atmosphere feels warm and bright. Responding to the sensitive sense of scale and comfort experienced by children,



the interior of the building is suspended from a single aluminium grille, which lowers the visual height of the scheme while instilling the interior with a family-like warmth. Meanwhile, floor-to-ceiling glass walls allow sunlight to stream through the interior, while forming a visual connection with the old courtyard house. Here, the 300-year linear history between the old and new buildings becomes three-dimensional.

The transition space from the first floor to the sunken level on the east side of the lobby is cleverly designed as a theatre, the top of which is surrounded by a circular wall of bilingual cartoon books. The theatre stage doubles as the entrance to a two-level indoor playground, which serves not only as a space for children's activities but also a place for the whole kindergarten to hold arts and sports events.

The west side of the lobby leads to a learning area, where a flowing spatial layout creates a free, communal atmosphere, and a unique density and scale. Within the learning area, the different mixed-age learning groups are separated not by closed walls but by curved walls at regular intervals – originally a supporting structure for the building. The "borderless" learning space, ubiquitous reading environment and curriculum focusing on learning through exploratory play, not only enriches the



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Sir Ken Robinson

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interaction between children but also allows teaching and learning to take place in an optimal atmosphere.

The triple-entry courtyard house, connected to the new space via courtyards and corridors, serves as a place to host the children's extracurricular cultural, artistic and creative activities, as well as an office for staff. The eaves and tiles of the courtyards, and the old trees contained within, are filled with a historical and natural atmosphere that is greater than the length of an individual life; this can become a point of inspiration and reflection in the children's minds, and a chance to deepen their understanding of history.

The YueCheng Courtyard Kindergarten shows how several seemingly disparate, even sometimes contradictory, elements of architecture from different historical periods can coexist harmoniously while maintaining their authenticity and individuality. What is more, they can work in unison to create a new openness and richness, giving children an objective and realistic perception of their environment. The result is an understanding of how nature and history can bring a sense of inclusiveness to a new place, shaping a community's unique consensus and values. ■

“THE RESULT IS A SURREAL ENVIRONMENT THAT INSPIRES CHILDREN TO THINK, REFLECT AND CHASE ENDLESS POSSIBILITIES.”

Client: Yuecheng Group

Chief Architect: MAD Architects

Executive Architect:

China Academy of Building Research

Interior Design: MAD Architects, Supercloud Studio

Landscape Architect:

MAD Architects, ECOLAND Planning and Design Corporation

Lighting Design: Lumia Lighting Design

Ceiling R&D:

Shanghai Siyou Metallic Materials Co., Ltd.

Remote learning during the pandemic has ushered in new ways of connecting teachers and students. Hugh Gatenby imagines a bold new future where remote learning, technology and reimaged classroom design combine to revolutionise education.

THE SHAPE OF THINGS TO COME

A new type of learning

Fifteen and a half million students in the UK were affected by school closures during the Covid-19 pandemic, UNESCO reports. From their homes, students relied on remote learning technology to link them to their schools, where their teachers were broadcasting lessons from otherwise empty classrooms. It was an unprecedented experiment into the viability of remote learning, and one that teachers and students were forced into without any time to prepare, and with inadequate resources – particularly the prerequisite laptops or tablets. In spite of these obstacles, Ofsted's research into remote learning found that the majority of teachers expressed some confidence that they were delivering a high-quality education.

Remote learning is possible: we can connect teachers and students in different places to form one shared learning experience. This conclusion might seem irrelevant in light of the full reopening of schools. It has certainly been important to restore students with a school life that is separate from their home life, and we no longer need to link homes and schools together. However, linking schools to other schools with remote learning technology is a powerful prospect. Anthony Seldon, educationalist and historian, is critical of the familiar classroom. He likens them to factories where every student is given the same treatment as if on a production line, even though they progress at different

rates in different subjects. Those who learn slowest are soon left behind, and those who learn fastest become disengaged and disruptive without being adequately challenged.

This "factory model" of learning has remained unchanged because it has been impossible to imagine an alternative without adding to the cost of education by increasing the staff to student ratio. If you need to bring together 30 students for every lesson, it is hard to ensure they are all at the same point in their learning, or that they experience the same barriers to progressing, when you can only draw from a relatively small school population. This is where the recent success with remote learning becomes relevant. By linking schools to other schools, teachers could lead lessons with well-matched groups of 30, drawing from the whole school-age population. Seldon has argued that we are in need of a revolution in education: remote learning could be it.

A new design of classroom

To implement this kind of learning in our schools we will need to reimagine classroom design. Classrooms designed for remote learning will be a different size to the classrooms of today. Since the group for each lesson will be spread across a number of schools, no single classroom will need capacity for a full cohort of 30. Instead smaller classrooms will link with other smaller classrooms up and down the country.

LINKING SCHOOLS TO OTHER SCHOOLS WITH REMOTE LEARNING TECHNOLOGY IS A POWERFUL PROSPECT.



THIS “FACTORY MODEL” OF LEARNING HAS REMAINED UNCHANGED BECAUSE IT HAS BEEN IMPOSSIBLE TO IMAGINE AN ALTERNATIVE.

These classrooms will also need to be designed with integrated technology. Remote learning from home worked, but the technology used did pose limitations. Portable devices like laptops, tablets or, worse, smartphones, limit interaction to small screens. These devices also only capture a small area with their webcams. Remote learning could be even better in the future if we emulate the approach of virtual conferencing facilities with integrated video link technology. In these spaces projectors are configured so that other rooms appear across entire walls. This is a much more immersive way to interact, where people are seen in real size; with their surroundings, which, like whiteboards, might be crucial for learning; and can move around without being cropped.

It will be as if the walls of every classroom were windows onto other classrooms across the country. These spaces will virtually link edge to edge. We must design them not as stand-alone rooms, but to fit together effectively. By using hexagonal rather than rectangular classrooms for remote learning, we could bring the connecting groups closer together, despite the distances between them. Rectangles tessellate without gaps or overlaps, but hexagons do so more efficiently. No other shape tiles so densely, which is why nature abounds with tessellating hexagons, forming the cells in a beehive or the receptors of a dragonfly’s eye. It is not only the size of the classroom that might be transformed by remote learning, but the shape too.

A new method of construction

New ways of doing things are enabled by particular technologies and by particular construction strategies. Co-working, which has redefined office culture since the turn of the millennium, is a good example. Co-working’s casual model of working is enabled by portable electronics like tablets and laptops, allowing us to work when and where we please, and by the open-plan spaces made possible by the large spans of steel-

frame office construction. Just as video link technology will be essential in creating a national network of classrooms for remote learning, prefabricated construction will be too.

With such an ambitious undertaking as transforming schools up and down the country we need an economic construction strategy. By using a design which is standardised for virtual compatibility, it becomes possible to mass-produce classrooms in large sections which are then assembled on site. This process of prefabricated construction delivers cost savings compared to traditional techniques; it draws on the economies of volume that come with factory production; it decreases build time and reduces the risk of delays due to bad weather. Prefabricated buildings also deliver cost savings throughout their lifespan: factory conditions allow a high level of precision compared to construction sites, which makes it easier to create better-performing thermal environments, lowering energy use.

ArcED

ArcED was founded in the throes of Covid-19. That very particular context has informed our mission. The pandemic saw students across the country leaving their schools, adapting to remote learning from home, then returning to schools, only to be sent home once more. Students seesawed between the two, and the debate was similarly polarised: some welcomed a new era of digital learning, others defended traditional schools. At ArcED we aim to present an alternative to this binary choice. We believe that great edtech and great school architecture are compatible, because both share a common goal to create meaningful connections between students and teachers. Our ideas for an education for the future continue to evolve, but we are certain that both technology and architecture will have parts to play. ■

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TO CREATE AN IDEAL FUTURE, YOU HAVE TO SOMEHOW DISRUPT THE STATUS QUO.



Jay Litman AIA, Jill Ackers, Jennifer Leyva and Ellen Woodsbie reveal how Fielding International vividly reimagined a Barcelona pre-school from a place of rectilinear “cells and bells” into a free-flowing learning environment where “anything is possible”.

LOOKING BEYOND THE MOUNTAINS

The theme for the 2021 A4LE LearningSCAPES Conference in Denver is “Disruptive Optimism”, a term synonymous with futurism. At Fielding International we look at futurism through a lens of gentle disruption, with an eye for the future of all humans and how they interact with their environment and with each other. Futurists have always looked “beyond the mountains” to new ideas imagining the world as it could be. However, to create an ideal future, you have to somehow disrupt the status quo by questioning what is working and what needs to evolve. A child currently in the first years of learning will not be entering the independent world until the early 2040s. What will that world be like? What can we do now to evolve? How might we prepare the incoming generation so they will be successful and happy in the future to come? Our children and grandchildren will build the economy of the future. This is our human calculus.

The team at Fielding International considers itself a group of gentle disruptors looking to create a better world through the redesign and transformation of schools that will better support a more flexible approach to teaching and learning. The firm designs school spaces that will allow teachers to expand their role beyond being instructors to becoming mentors and guides. These learning spaces are designed to ignite the imagination and joy of students and support student-directed learning and project-based pedagogies. Our goal is to change the world through innovations in education design, but what should modern learning look like? This is a question our firm has been asking for

the last 15 years, and we know that the answer does not begin with the school building; it begins with the child.

In Barcelona the celebrated, innovative, private Catholic school Col.legi Montserrat, serving learners aged from one to 18, had already accepted that the traditional, rectilinear classroom used by many schools throughout the world is no longer the appropriate environment for their students to thrive and be successful. In order for the children of tomorrow to find success in a rapidly approaching AI-driven, fully wired, technocratic world, they first need to have a solid grounding in the physical world. New schools must be designed to support the development of technical skills and competencies, along with human skills such as patience, inquisitiveness, imagination, curiosity, empathy, collaboration, confidence, humour and critical thinking. These are the very qualities Fielding International has been practising for years and they were the driving force behind our thinking as we began to undertake the redesign of the Early Childhood Learning Centre at Col.legi Montserrat.

This centre for three–five-year-olds is a 500-square-metre gut-renovation of the existing early childhood space on the first floor of the building. The school pedagogy integrates the multiple-intelligence theories of Howard Gardner with their unique approach to project-based cooperative and student-directed learning. The renovated area is designed to ignite curiosity and imagination with spaces and furniture that can adapt to the students’ self-selected activities, supporting natural play individually or in groups.



Discovery process

Col·legi Montserrat allowed the Fielding International team to realise this project as the perfect example of “Disruptive Optimism”. We worked extensively with the school community on how the design of their spaces would inspire learning and wonder. We went into the discovery process with the goal of examining the future through a child’s eyes and we learned that sustained and repeated engagements with nature were a fundamental desire of the school community.

In our early discovery visit with the pre-schoolers, we observed the children during a morning ritual of “swimming” along the main corridors’ slippery vinyl floor like little fish. While the purpose of the exercise was meant to alternatively engage the children’s right and left brain and enhance their gross motor skills, we began to see this “flowing river” as the foundational design concept of the space as we began to transform the existing “cells and bells” classroom spaces into a free-flowing Learning Community.

Based on our initial concept of a flowing river, we designed each of the three areas, or Learning Commons, of the Learning Community to represent one of the natural ecosystems found within the local environment surrounding Barcelona: the ocean, the mountains and the forest. Because each of these ecological systems interacts with and influences each other, the idea began to emerge that the flowing river would link the Learning Commons spaces (Ocean, Mountains and Forest), each with its own special quality and educational purpose.

The Ocean

Barcelona is a coastal city, facing the section of the Mediterranean known as the Balearic or Iberian Sea. During the discovery process, many children expressed a desire to have school at the beach or deep underwater in a submarine. The first Learning Commons was designed to be an expansive-feeling space for whole-community gatherings, reminiscent of the ocean waves lapping on coastal beaches with





WE WORKED
EXTENSIVELY WITH
THE SCHOOL
COMMUNITY ON HOW
THE DESIGN OF THEIR
SPACES WOULD
INSPIRE LEARNING
AND WONDER

deep blue skies and billowing clouds. The design team created a large, curved seating piece, inspired by an ocean wave, with soft flexible seating blocks that support both daily morning meetings and activities throughout the day. This wave-like piece has practical uses such as storage and student display but is also designed so that children can physically interact with it by crawling inside and peeking through the portholes.

The (cave and) Mountains

Another element of nature unique to Barcelona – and the namesake of the school – are the rounded mountaintops of the Montserrat range. This landscape feature was the inspiration for a space designed to help students practise their gross motor skills, starting with a sculptural climbing wall that also features a small felt-lined cave for one or two individuals. Like many design elements in the space, it doubles as a storage unit for large play elements like foam blocks and rockers. The mountain theme is continued in the writing studio, with its child-sized, mountain-shaped whiteboards on the walls and floor, where students combine their practice of fine and gross motor skills. A labyrinth pattern in the carpet and large building blocks in this zone create additional opportunities for kinaesthetic play.

The Hive – a chapel for Godly Play

Nestled between the Ocean and the Mountain Learning Commons, just like Col.legi Montserrat itself, is the chapel. This circular room is designed with specific criteria based on Godly Play pedagogy, which is a specific sequencing of Bible storytelling that follows the liturgical calendar. The casework was custom designed to follow the requirements for material storage and sequencing that is particular to Godly Play. The circular shape of the classroom enables intimate gatherings of students as members of their own hive community and enhances their engagement in this spiritual learning activity. The concept of the Hive comes from the central role this space plays in the Catholic education of students at Col.legi Montserrat. Hexagonal windows, flooring and other design elements visually accentuate this space as unique within the Learning Community.

Colours

(inspired by nature)



We took a leaf out of nature's book.

The new colour choices for our furniture were inspired by the great outdoors. After all, neuroscience tells us we have a preference for natural colours and finishes.

And education research tells us we should avoid overly complex and stimulating environments in which to learn.

WE BEGAN TO SEE THIS “FLOWING RIVER” AS THE FOUNDATIONAL DESIGN CONCEPT OF THE SPACE.



The Forest

The Forest Learning Commons recalls Barcelona's surrounding forest regions such as the Can Casades or the El Bosc Encantat. This area features a treehouse reading loft and life-size chessboard, and a hideaway cabin loft in the learning studio. These design features were inspired by the children's creative drawings during the discovery process, which showed their desire for elevated and secluded reading areas and cave-like spaces. The Forest Learning Commons allows for the children to play in small groups or independently. Creative learning and problem-solving are supported by many components of the treehouses, including a Lego table for building and manipulating small parts, a hidden light table located inside the hollow trunk of the tree, and the tree loft area outfitted with soft cushions to encourage independent reading.

The concept of Flow

Throughout the construction timeline, Learning Designers from Fielding International conducted workshops with teachers to reimagine their daily activities and schedule, and to design teaching strategies that will allow a project-based learning experience to flow throughout the entire community. These strategies help to ensure that learners have the independence to self-select and self-regulate through a variety of learning experiences and opportunities.

During design and construction, the school community simultaneously synthesised the design concepts of the space and educational philosophy of the school into a concept of “Flow”. Beyond the initial idea of a

flowing river or a project-based learning experience, Flow is also a philosophical concept defined by Mihaly Csikszentmihalyi. He describes Flow as an optimal state of consciousness where we remain happy while doing things that stretch our skills and help us grow and fulfil our potential. In this state, people/children are completely absorbed in an activity, especially an activity involving their creative abilities. The synthesis of these concepts and varied student experiences is laid out in the book *FLOW: Emerging Learning* (2020) by Sister Núria Miró, Director of Col.legi Montserrat from 2011 to 2019, which communicates how this space illustrates the future of learning.

The resulting confluence of space transformation and mindfully curated, enquiry-based teaching strategies transformed the Col.legi Montserrat Early Childhood community from one of traditional age-segregated classes into a flowing space where the teachers become the futurists and children's learning experiences are interdependent. In this ecosystem, school becomes a space where children learn to play together, imagination has no bounds and anything is possible. ■

Fielding International Team Acknowledgements:

- Jay Litman:** Architect – Partner-in-charge
- Ellen Woodsbie:** Project Manager
- Jennifer Leyva:** Chief Interior Designer
- Jill Ackers:** Chief Learning Designer
- Celeste Martinez:** Designer
- David Dalzell:** Acoustical Consultant
- Grupo TBA:** Local Architect of Record

Years ago, John Lennon encouraged us to contemplate a world without heaven or hell so that people would concentrate properly on the here and now. In a parallel way, educational learning space researcher Pam Woolner would like architects and designers, school teachers and leaders to “imagine there is no perfect school”.

IMAGINE...

What happens to school design if there is no stable, ideal solution, certainly not across diverse places, and perhaps not even over time for one school community? We can provide the fundamentals: decent levels of daylight, appropriate temperatures and controls, ventilation for good indoor air quality and acoustic solutions to excessive noise. But then what...?

Consultation and collaboration

To achieve the fit between educational function and physical form that research, unsurprisingly, shows schools need, I would argue that it is vital to involve users in evaluating their environments and planning changes to the space or its use. This activity can and should happen at any stage in the lifetime of a school, from the relatively unusual situation of planning a new school, to preparing for and moving into redesigned space, to reflecting on the way established premises enable or discourage particular pedagogical and social activities. Such participation needs to be collaborative, crossing boundaries between teachers and students, designers and educators, school staff and local communities, which can be exciting. But it can also be hard work and time-consuming. Despite support for participation from diverse actors, including architects, planners, designers, educators and (sometimes) governments, history and experience show failures and limits.

There are numerous challenges to collaborative design of school space, of course, but an aspect that is sometimes overlooked is the availability of ways and means to participate. In her recently completed Industrial PhD thesis, *Unlocking Learning Spaces*, Copenhagen-based design researcher Bodil Bøjer argued that a “gap in the literature is actual strategies and tools for stakeholder participation, especially teachers, in the design of new learning spaces as well as ways of transitioning into these new spaces”.

Collaborative ReDesign with Schools

This is where I came in, leading the EU-funded project CoReD – Collaborative ReDesign with Schools, running from 2019 through to 2022. The project partners, spread across six European nations, are all established school environment researchers, some from education backgrounds, some from architecture and design. They have all developed methods for planning and evaluating educational spaces, usually with school user involvement. A suite of stand-alone tools, based on these methods, that school communities can download from the project website and use without researcher assistance is being trialled and further developed through the lifetime of the project. The tools are being used by partner schools in the different countries to improve their space, and by others who come across the CoReD website or tools and think they could be useful. The project is particularly keen to include such



“WHILE THERE MIGHT NOT BE A PERFECT SCHOOL, THE DEVELOPING KNOWLEDGE BASE OF GOOD PRACTICE IN SCHOOL DESIGN CAN BENEFIT US ALL.”

serendipitous participants, knowing that their feedback could be vital in appreciating what is needed to help schools across Europe address the diverse challenges that are presented by their various settings, curricula and pedagogical practices.

Evaluating education from Iceland to Iberia

The CoReD project partners are a diverse group, united by their interest in educational space. Based at the University of Iceland, in Reykjavik, Anna Kristín Sigurðardóttir and Torfi Hjartarson have worked for many years with the city authority as schools in new neighbourhoods are planned and built. For one of these schools, architect Bruce Jilk worked with a group of local stakeholders, including the director of schools, using his “Design Down Process” to plan an innovative school. Two decades on, Anna Kristín and Torfi continue to visit and document the school’s development of its vision. Their CoReD tool supports a self-evaluation process for school leaders and teachers to use to develop personalised and collaborative learning for students.

In Denmark, Bodil Bøjer, the design practitioner quoted above, has teamed up with a historian of education, Lisa Rosén Rasmussen, to develop a tool that uses a school community’s engagement with the past to inform the present and future. CoReD’s Swedish partners, Anneli Frelin and Jan Grannäs, have taken the “walk-through” method initially developed by architects to create a “pedagogical walk-through” for teachers to use to think about how different places could be used for teaching and learning. In the South Tyrol region of Italy, Ulrike

Stadler-Altmann is building on partnerships she has developed with innovative school and nursery principals in this unusual multi-lingual, mountainous area. She is focusing on a tool to assess the detail of how spaces within a school are used in practice, and how use transforms school and classroom culture.

Considering the student experience is Survey on Students School Spaces (S3S), developed by the Portuguese partners from the University of Coimbra, drawing on expertise from architecture, geography and educational sciences. The tool aims to promote an inclusive and critical reflection on possible changes to school spaces, supported by student feedback. School staff use the template to prepare the online student survey and to identify the spaces to address, focusing on which spaces students use most frequently in the school and how those spaces make them feel. The second stage involves focus groups with the students, visiting the spaces identified in the survey to clarify, confirm and triangulate the results previously obtained. This tool is being piloted in two schools in Coimbra: Rainha Santa Isabel School and Eugénio de Castro School, which are very different in terms of configuration, urban location and the number of students attending them, enabling S3S to be tested in distinctive educational scenarios.

Finally, the UK team of myself, Ulrike Thomas and Lucy Tiplady, is supporting the development of “diamond ranking” of photographs of educational space using sets of images or choices from the CoReD image libraries. This activity enables any stakeholders – including students, teachers, other school staff, governors or

parents – to think and talk about what they value in a space, connecting types of space with particular learning, teaching or social activities. It helps people consider what they want and need from a setting, providing them with some concrete examples to start them off.

All the tools will be trialled beyond their originator country, with translation of instructions and materials ongoing. For instance, in the Gävleborg region, Sweden, Anneli and Jan are working with two schools to test the UK and Icelandic tools as well as their own pedagogic walk-through. The English translation of S3S is ready to be used by a Newcastle school that has already used “diamond ranking” to begin an extracurricular project to build a new outdoor learning space. In Copenhagen, Lisa and Bodil are working with the municipality to trial a number of the CoReD tools in summer 2021.

Most good ideas result from the interplay of the general and the particular, with innovations in school design and use being no exception. School insiders understand their specific situation, but outsiders can help them see beyond this immediate set-up to develop alternatives. The CoReD project aims to support schools to do this thinking, guided by four basic principles:

- Start where people are mentally (values, pedagogy) and physically (spaces).
- Understand the intertwining of the physical, organisational and social aspects of the school environment.
- Aid the exploration of ideas and possibilities.

“THE PROJECT PARTNERS, SPREAD ACROSS SIX EUROPEAN NATIONS... HAVE ALL DEVELOPED METHODS FOR PLANNING AND EVALUATING EDUCATIONAL SPACES, USUALLY WITH SCHOOL USER INVOLVEMENT.”

- Appreciate the complex lengthy process that is change.

As the Covid-19 pandemic recedes and we come out of restrictions across Europe, citizens will be considering what societies need from education. Most are not dismissing the physical base of a school as a community asset, but many are wondering how to integrate digital and material learning. Some organisational changes made due to the pandemic might stick, such as a more relaxed start time where students arrive gradually instead of all cramming into tight cloakroom space at the same time. Areas of the school that had previously been overlooked, such as the bleak outdoor space that is common at schools for older students, might suddenly seem more important.

If the CoReD tools can help you to think about your school space, or initiate design discussions with the schools you work with, please do use them. And, if you use them, please tell the team how you got on – all the tools are still being developed and will be improved by feedback.

While there might not be a perfect school, the developing knowledge base of good practice in school design can benefit us all. ■

The CoReD website: www.ncl.ac.uk/cored

Pam tweets as @PamWoolner: twitter.com/PamWoolner

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ПОТОК

ПОТОК

“MODERN EDUCATION IS MOVING OUT OF CLASSROOMS INTO NATURE, MUSEUMS, PARKS AND RESEARCH CENTRES.”

A LETTER FROM MOSCOW

Architects and educators from across the world have been grappling with the pandemic fallout. The future of school buildings and the curriculum itself is on the agenda from Minneapolis to Minsk. Ksenia Dokukina from the online magazine EdDesign in Moscow reports on the situation in Russia.

There are over 40,000 schools and 16.6 million schoolchildren in Russia, a number that is expected to rise to 19 million in the coming years. Almost all children go to state schools and only 1 per cent attends private institutions, making Russia a global outlier. But pandemic-induced distance learning has highlighted many weaknesses in the Russian education system, which may explain the increased availability and quality of private educational online content. Emerging hybrid forms of education suggest how the future of schools might look.

Last year, the Russian edtech sector grew by more than a third. Alexander Laryanovsky, executive partner of Skyeng online school, one of the top three players in the online education market, observes that “more than a quarter of the entire volume (£141 million/€166 million) is from extracurricular online education”. He expects that by 2023 this figure will be around £380 million (€450 million).

EMERGING HYBRID FORMS OF EDUCATION SUGGEST HOW THE FUTURE OF SCHOOLS MIGHT LOOK.



With these part-time activities in mind, seven key trends have been identified that will have a systemic impact on how pupils learn in modern schools:

1. School is no longer limited to the school building

Modern education is moving out of classrooms into nature, museums, parks and research centres. The entire urban infrastructure is becoming an educational platform. A network of “Quantoriums”, or technoparks, where schoolchildren can study STEM for free, is developing.

Moscow city authorities have launched a project called “A School Day at the Museum”, where several lessons on different school subjects can be organised on the premises of partner museums. For some schools, outings to museums, theatres and exhibitions are part of the educational process and are integrated into the curriculum. Likewise, students can use local libraries, sports or theatre complexes rather than have them take up space and resources on school grounds.

2. School infrastructure does not have to be a dumbed-down building designed for adults

Schoolchildren do not have to play at science – they are able to make scientific discoveries on a par with grown-ups. A 12th Grader (final year of secondary)

from one of the Nazarbayev Intellectual Schools (NIS) in Kazakhstan won a £4,000 (€4,750) grant for the best start-up project, named “Obtaining powdered milk whey from dairy waste” (so that it would not have to be imported).

Within the school building learners can process and work with information, rather than simply receive it: they try, they invent, they experiment.

Elena Aralova, general director of school designers Martela Russia, says: “Schools should have powerful, well-equipped infrastructure blocks, such as workshops, laboratories and art studios.”

3. Separate highly specialised research centres exist with hi-tech equipment

Children can go to these centres part-time to work on individual projects, supervised by qualified experts. The most vivid example of such an institution in Russia is the Sirius Centre in Sochi, created by using the 2014 Winter Olympics infrastructure. For several years the Sirius Centre has been preparing mathematicians, physicists, athletes and musicians for participation in international competitions. A total of 800 children, aged between ten and 17, from all regions of Russia, go there every month, and the teaching is conducted by leading specialists.

4. Schools have expanded the circle of experts involved

For certain courses, schools invite specialists from outside to give anything from one lecture to a whole course of classes. The more versatile the school’s expert community is, the more opportunities for personalised learning it can provide.

Scientists from the Institute of Nuclear Physics are involved in conducting classes at the St. Petersburg Physics and Mathematics Lyceum No. 30. This kind of cooperation prompts reconsideration of the concept of the school staff room, which turns into a co-working space where both full-time and invited teachers work together.

5. Children in middle and high school are free to manage their study time by themselves

In the engineering building of State School No. 548, located in the Moscow region, Saturday lessons for children, starting from the 7th Grade, are now held online.

In 2022, at the request of schoolchildren, the administration is planning to make attendance optional one day a week. During offline lessons, the space is divided according to two types of activity. Some subjects, like literature and history, unite several classes

in large rooms, then the students disperse and go to small classrooms to study in groups of varying size.

6. Remote work is the new normal

First of all, it is worth using the distance learning model where it can be most effective, such as showing interesting and short video lessons, or texts and infographics which can be used by several schools and teachers at once.

Although the content will need to be updated, there will be no need to maintain a huge staff of teachers just to “explain the material” and “check progress”. By moving away from their packed subject-teaching schedules, the teachers will then be able to tackle the development of children’s soft skills, working with their values and motivation.

“The school building should be able to maintain this remote approach,” Elena Aralova says. “It should provide both a well-equipped studio for recording high-quality video and sound with an option of augmented reality, and a call centre to ensure technical support for people working remotely that day.”

Take the Point of the Future School, which was opened in 2020 in Irkutsk, Siberia, designed by the Danish architects CEBRA and equipped by Martela.



“IN 2022, AT THE REQUEST OF SCHOOLCHILDREN, THE ADMINISTRATION IS PLANNING TO MAKE ATTENDANCE OPTIONAL ONE DAY A WEEK.”



The school has a state-of-the-art media laboratory, including a TV studio with professional equipment and a press centre with screens where you can hold a conference. The multi-functional library centre allows staff to create modern video materials. There is a printing house with plotters and printers nearby.

7. Technical infrastructure provides a flexible environment

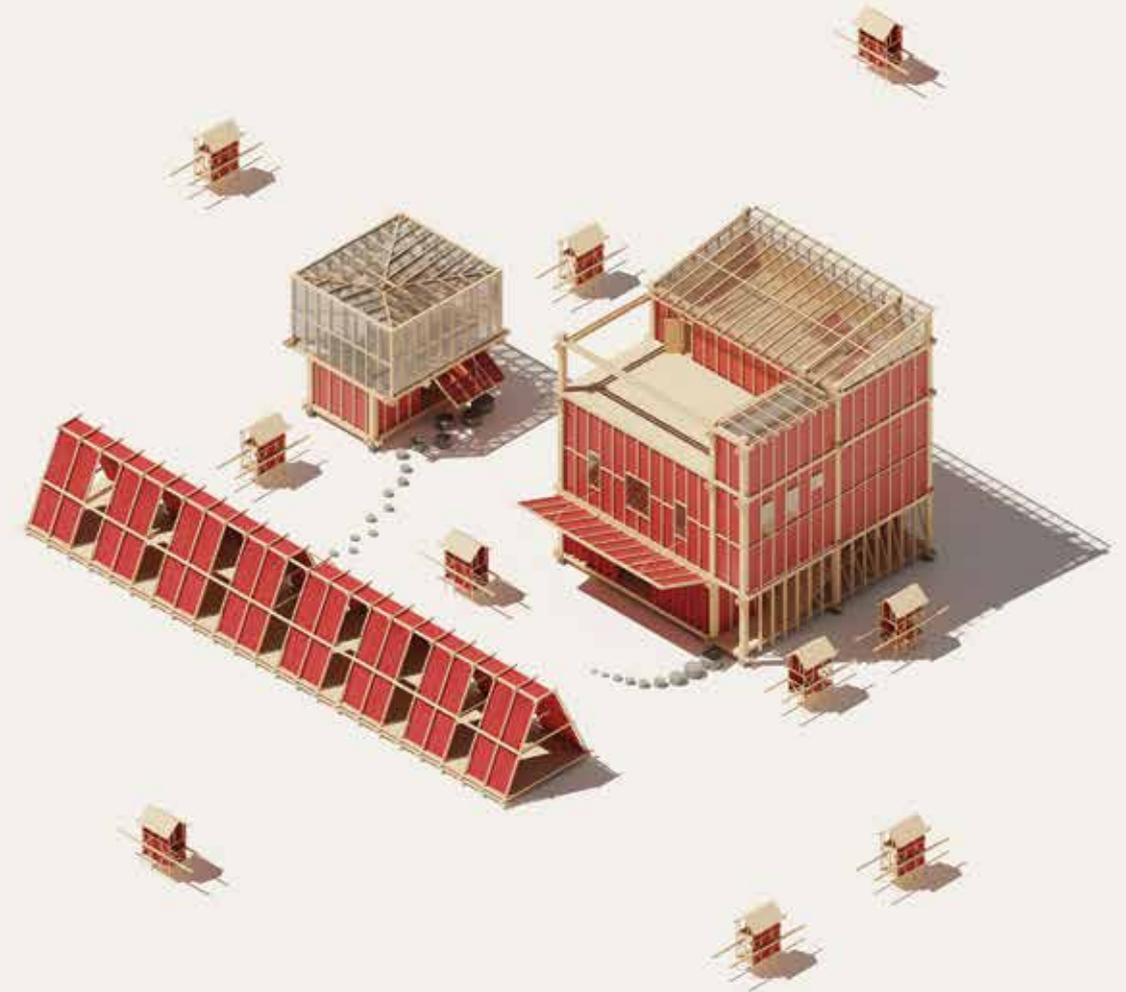
Getting wireless access to a projector or interactive panel should not be a problem, neither should instantly sharing audio content from any gadget. There should be the option to rearrange mobile partitions within the school premises overnight, so as to demarcate new types of spaces whenever needed.

Laboratories therefore should be versatile and transformable, like those in the engineering building of State School No. 548, where – whether you study chemistry or biology – the electricity, vacuum equipment, water, compressed air and gas are supplied from the ceiling and there is access to it anywhere within the room. Systems should be controlled automatically, like those in the Moscow private school Snegiri, which was opened in 2020. All this makes it possible to change the purpose of rooms and zones.

There are 16.6 million schoolchildren in Russia – and they are all different. These children will have a vast choice of ways to find the skills and knowledge they need: by attending traditional and online schools, open lectures and commercial courses or by collaborating with museums and research centres. The process of going beyond the school building cannot be stopped – the pandemic has demonstrated that academic resources can no longer be owned and provided solely by schools. ■

**Unless otherwise indicated, data was provided by the Higher School of Economics (HSE), which is rated one of the top three universities in Russia and the top 200 universities in the world in terms of research, according to Times Higher Education rankings.*

Charlie Edmonds reports on how, inspired by the Kinokuni Children's Village, vacant lots in Tokyo could be used for new urban learning modalities.



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**INTO THE VOID:
ENABLING PROGRESSIVE
EDUCATION THROUGH
TOKYO URBANISM**



The term “progressive” when used in the context of education is often troublesome and ambiguous. However, in Japan it has become interwoven with the “free school” and “new education” movements and is therefore the most commonly adopted term by Japanese education academics. Yoko Yamasaki, a leading education scholar at Kyoto University, defines progressivism as “advocating for the agency and liberation of children from the traditionally authoritarian system of schooling”. In her book, *Educational Progressivism: Cultural Encounters and Reform in Japan*, Professor Yamasaki explores various incarnations of progressive education in Japan since its inception in the early twentieth century. Throughout the book, recurring themes defined by progressivism include pedagogies that are democratic rather than authoritarian, which encourage greater self-direction of students in the learning process, and employ flexible demonstrations of knowledge beyond traditional standardised testing. In 2019, funded by the University of Cambridge, I was lucky enough to conduct my own research into progressive Japanese education and the role that architecture and planning might play in assisting these new learning modalities. Throughout my work, one particular form of Japanese progressive education struck me as uniquely successful: the Children’s Village schools founded by Professor Shinichiro Hori.

Kinokuni Children’s Village

Professor Hori is a well-respected figure within the field of Japanese progressive education. As a student,

Hori was particularly interested in the alternative education movements of the UK. He describes his academic inspiration as his “DNA”: referring to renowned twentieth-century educators, John Dewey, A.S. Neill and John Aitkenhead. As a professor, Hori was able to engage with his idols in a prolific collaboration of intercontinental ideas; he frequently visited Neill’s Summerhill School in England as well as Aitkenhead’s Kilquhanity School in Scotland. Eventually, Hori proposed to the Japanese Ministry of Education that a new school be established, founding Kinokuni Children’s Village in 1992. The school was intended as a reaction to what Hori saw as the three core failings of public education in Japan: a lack of self-esteem, the cramming system and outdated values taught through government-approved textbooks.

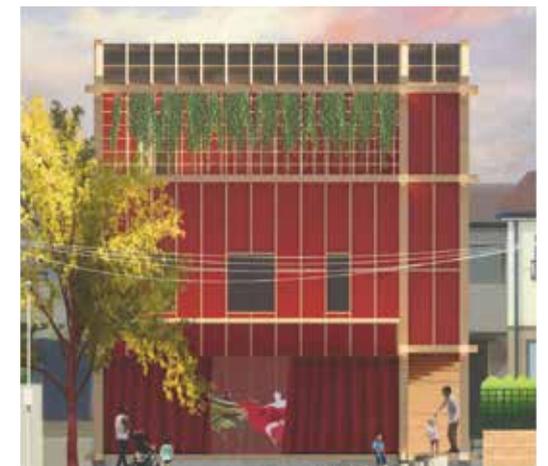
In the summer of 2019, I had the good fortune to visit Kinokuni Children’s Village myself. I was immediately struck by the ambition of the curriculum: the school implemented project-based learning on a larger scale than I had previously believed possible. Students are grouped by interest rather than age, and the education is achieved through the practical pursuit of these interests, from gardening to building. What was particularly unique about the Children’s Village from an architectural point of view, was that new facilities were often designed and constructed by the children themselves as part of their projects. I took away from this experience a greater respect for the competencies of children to build and shape their own environments.

“THE PROPOSAL RESPONDS TO THE UNIQUE PLANNING CONDITIONS OF TOKYO, THE CYCLICAL NATURE OF VOID SPACE... AND THE INHERENT POTENTIAL CONTAINED WITHIN THESE PERFORATIONS IN THE URBAN FABRIC.”

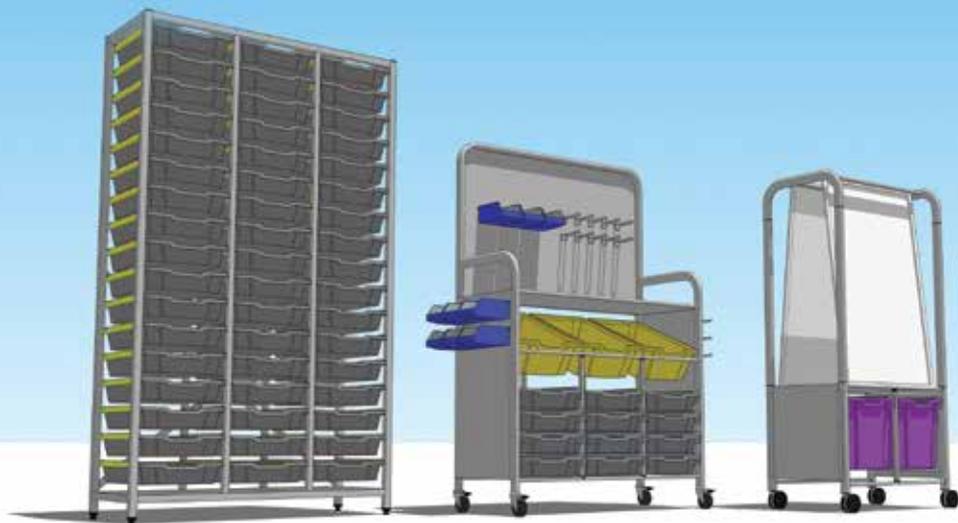
It was evident that this educational practice was not only engaging for students, but also encouraged a sense of belonging – since the children could very literally call parts of the school “their own”. I was curious about the apparent rural focus of the Children’s Village and asked Professor Hori if he had ever considered opening a school in Tokyo; he laughed at the idea and replied, “our curriculum cannot exist in the city, we depend on spatial freedom”.

Tokyo’s children and urban play

After meeting Professor Hori, I had decided that the ambition of my research would be to investigate how the Children’s Village might become the “Children’s City”. I believed that through an unconventional approach to school architecture and planning, Professor Hori’s goal of “spatial freedom” might be realised in Tokyo. The context for this new spatial strategy eventually presented itself during an interview I conducted with a Japanese architect – when he described to me the unique phenomenon of Tokyo’s “void space”. Voids are quite simply “gaps” in the urban fabric of a city, spots sometimes referred to as “abandoned” or “derelict” depending on the cultural context. Within Tokyo, void space is a common occurrence due to the city’s rapid cycle of demolition and reconstruction and its fragmented planning system. I discovered that void spaces in Tokyo already have a surprising connection to the lives of children in the city. In the late twentieth century, it was common for the city’s children to play together in vacant lots known as



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KINOKUNI CHILDREN'S VILLAGE

harappa. Through a series of interviews with adults that had played in such spaces, I learned that their primary appeal was the lack of an explicit function – children could make of them what they wished. One particular interviewee, when contemplating the protectiveness of modern parents, made a comment I found to be particularly resonant: “I don't think children of today have that level of freedom anymore... Maybe in the digital world.”

The language of “Void Pedagogy”

The result of six months' fieldwork studying Japan's progressive education and unique urbanism was a design thesis titled *Void Pedagogy; a proposal for a new school typology which might facilitate the spatial freedom of the Children's Village in the city*. “Void Pedagogy” proposes that void space in Tokyo be formally adapted for educational means. A new kind of urban progressive school may manifest in a dispersed form across the vacant lots of Tokyo's residential neighbourhoods. The proposal identifies a number of opportunities for such a decentralised school to offer progressive education models that have been historically excluded from the city. Project-based learning becomes achievable through void spaces, which act as catalysts for student-led building projects. A decentralised model of school also allows for greater community engagement and participation, integrating local knowledge and skills into the teaching process. The diversity of scale and



permanence across different void spaces requires a formal language with the ability to respond and adapt to each individual void site, allowing the school to become both light and heavy, temporary and permanent. The proposal responds to the unique planning conditions of Tokyo, the cyclical nature of void space emerging and disappearing according to the city's development, and the inherent potential contained within these perforations in the urban fabric. Through urban dispersal and demountable construction, “Void Pedagogy” may manifest as an architectural language that shares its values with the progressive education it enables – inviting the Children's Village into the city. ■

**NEW FACILITIES WERE
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PERHAPS UNSURPRISINGLY, 78 RESPONDENTS SAID THEIR FAVOURITE THING ABOUT THE CLASSROOM WAS THE PROVISION OF VR HEADSETS.



THE THINKING BEHIND THE SPACE

Alex More had an opportunity to transform an old art room in his school in Dorset, UK. We find out what was behind his personal version of a “Future Classroom”.

Imagine a time-travelling child from 1870s’ Shaftesbury, England. If they were transported to 2021, they wouldn’t recognise our transport, our technology, our fashion and many aspects of our world. But when they arrived in school they would instantly recognise the classroom with its rows of desks, chairs and the teacher stood at the front imparting knowledge.

In a restored art room at Shaftesbury School in Dorset is a very different space, designed to disrupt this way of teaching: the Future Classroom.

Creating an agile learning space

The project was imagined by Alex More, lead teacher of innovation in teaching and learning at Shaftesbury School. The idea was to create an agile learning space – a place where knowledge and skills are both valued, where technology supports the teacher but does not replace them.

Alex partnered with Epson, Catchbox, Gratnells, SatComs Innovation and Biotecture to design and create a space fit for learning in the twenty-first century. Working with industry was key to the success of the project in order to find a balance between what students need to know now and what they will need to know in the future.

The room has been set up to be agile so that the teacher can position themselves at the heart of the action. The students are the main actors in the learning process and can design the room layout according

to what they are learning at that moment. The classroom is equipped with state-of-the-art technology, loaned from partners and sponsors within the edtech community. Pride of place is an Epson EB-1485Fi short-throw projector, which displays images up to 120 inches onto a SMIT visual whiteboard. This allows all students to see the content displayed from anywhere in the classroom. You might say it follows you around the room like the *Mona Lisa’s* eyes.

Catchbox, an edtech start-up, has designed a soft, throwable engagement microphone. It is an amazing tool for questioning and gives all students a voice in the class, even the quiet ones. The Catchbox Plus comes with a teacher microphone that amplifies the teacher’s voice and is really useful for training, CPD and observation coaching.

Gratnells has provided a Learnometer, which measures seven variables in the room: temperature, humidity, ambient noise, CO2 levels and other factors to monitor the learning environment. Too much CO2 in the air can harm learning, so research supported by Professor Stephen Heppell inspired Alex and the team to create a “living plant wall” to help absorb CO2 levels. Growing Revolution and Biotecture, industry leaders in living plant walls, helped to make the change.

Students can express their ideas via the 13 whiteboards that line the walls or a digital lightboard made from glass and LEDs. A greenscreen also provides a canvas for creativity.

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PLANNING LEARNING
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Two models of learning

Central to the technology, though, is the teacher. Alex has designed two models of learning to help structure the lessons, which are based on his own research into flipped and hybrid learning.

Model A is based on John Hattie's ALT (Academic Learning Time) research. Twenty-seven minutes represents the optimum time students are able to focus on a task, so the learning is divided into new content, a break, then embedding content. In the new classroom, the teacher delivers new knowledge through a blend of direct instruction and "warm" technology (technology that helps deliver person-to-person interaction, rather than the machine-like AI and edtech).

In Alex's Model B lesson, students learn about hydroponics as a sustainable way to grow food in the future. They are tasked with creating a future growing medium to grow food in their own house. A short introduction to aqua, hydro and aeroponics sets the scene. Students work in groups of four and rotate around a series of stations that have been set up to be agile and immersive. A group "brings" plant species into the room via Google Expeditions AR (augmented reality) and discusses which species they are most likely to grow based on room temperature, growth periods and plant resilience. At the same time, another group is in a VR (virtual reality) journey, exploring plant cells and working to understand which species best suits their needs. On the SMIT visual whiteboard, a group uses 3D software to dissect a plant cell, while another group studies the fish tank that is rigged with a Raspberry Pi to monitor water flow and nutrients. They discuss the role of AI and evolution in growing food and the ethics associated with this. A final group draws their ideas on a digital lightboard. Groups rotate and learning happens.

The last 27 minutes sees students working in their teams as leaders, presenters, scribes and research assistants as they are tasked with creating a presentation on their growing medium. As the lesson concludes, students present their product to their peers using the Catchbox microphone to promote their ideas. The teacher is guiding from the side, ever present but rarely at the helm.

THE IDEA WAS TO CREATE AN AGILE LEARNING SPACE... WHERE KNOWLEDGE AND SKILLS ARE BOTH VALUED, WHERE TECHNOLOGY SUPPORTS THE TEACHER BUT DOES NOT REPLACE THEM.

Phase one of the Future Classroom project is now complete and a survey has shown how popular it could be with students.

In a questionnaire of 50 Key Stage 3 and 4 students, 46 per cent said all classrooms should be set up like the Future Classroom, while 54 per cent said classrooms should incorporate parts of it. Learners from that age group were also asked about their favourite aspect of the Future Classroom, and 26 per cent said the absence of desks. Other favourite aspects of the room included its layout, the whiteboards on the walls, the virtual reality (VR) headsets and the Catchbox microphone.

Students were asked to comment on the classroom, with one saying: "It's more interactive than any other classroom in the school."

Another said: "It takes a different perspective on learning, it gives us more responsibility."

One summed it up like this: "It's got a wide range and variety of learning methods, allowing everyone to learn in their own way."

In a survey of Key Stage 5 students, or Sixth Form equivalent learners, 84 out of 179 respondents said all classrooms should look like the Future Classroom, and 75 said they should maybe look like it. Perhaps unsurprisingly, 78 respondents said their favourite thing about the classroom was the provision of VR headsets.

Perhaps one day the Future Classroom will indeed become a reality for the majority of students. ■

THE PROOF OF THE PUDDING IS IN THE EATING

Bhavini Pandya reports on what happened when staff and pupils at Trumpington Park Primary School in Cambridge returned from the Easter holiday to test out a classroom transformed through Planning Learning Spaces in Practice workshops.

When leading staff through the Planning Learning Spaces (PLS) Framework, it's important that they have a clear vision of the zones they want to include in the learning space. The Year 4 teachers at Trumpington identified specific learning activities they wanted to take place. Focusing on the activities first helps to ensure the right specification of furniture, resources and interior design. Choosing specific kit that is suitable for this class and age group means the learning space will be used more effectively, ultimately improving concentration and engagement during lessons. The staff are keen to give students more responsibility and choice in how they learn and this is now achievable in the new design.

Within the new Year 4 learning space there are zones for group work, independent learning, ICT and quiet guided group work. All of these were chosen with curriculum activities in mind and designed specifically for the year group. The learning zones in the new design offer the students plenty of choice in where and how they choose to learn. A class of 30 students will encompass a range of learning preferences and an effective learning environment needs to provide variety and choice, enabling students to become leaders of their own learning within the comfort of their classrooms.

Reflecting on their new Year 4 learning space, teachers Emma Norman and Anna Patuck gave us their views: "Our new Year 4 space feels fresh, bright and spacious – and it allows flexibility in the classroom for learning. Nothing in the classroom is fixed, which means the style of teaching and learning can be altered depending on the lesson, which is fantastic," says Emma.

Anna added: "I am particularly happy with the sense of space that has been created in which I can see how the students will be able to move around more freely and work in different ways. There are lots of exciting and innovative elements within the design that I am looking forward to using with our students. I can clearly see how the room promotes collaborative learning, which was the overriding criteria that emerged from the design process."

The aim of the PLS Framework is to allow school communities to feel empowered to make positive changes in their learning environments. The PLS Framework develops the teaching staff's understanding of the inter-relationship between pedagogy, space, curriculum experience and the organisational model of the school. This in turn will support them to transition to a new way of learning.

As the students move into their new learning space at Trumpington Park Primary School, the PLS team will be working closely with them and their teachers to measure the impact of the new space on learning, teaching and, most importantly, their well-being. ■

For more information about our frameworks and ongoing projects, visit our website: www.learning-rooms.co.uk.

Bhavini Pandya: PLS Lead Project Facilitator



BEFORE



AFTER



on reflection

GET A MOVE ON!

One of the many insights to emerge from Covid-19 has been the role and impact of movement in our lives. Common sense helped us to combat our “Lockdown Lard” with exercise, while good science has mapped out the wider benefits of a brisk walk. For many, freed from a hideous daily commute, a walk around the place where they live has paid back in well-being, in skeletal and cardiovascular health, within a general recalibration of life. Children have universally reported enjoyment in outdoor and active tasks.

As schools around the world return, one common focus in our learning spaces seems to be the renewed role and function of movement. As ever, it is complex, and there are a number of dimensions to this, but the impact on the way we organise our future learning together will be considerable. In the “new normal”, we move more.

Movement matters

At the very simplest level, movement matters to learning because you only have the one heart and if it is pumping oxygen-rich blood around your body in a lively way, then that gets to your brain as well as to your muscles. Thus, moving is good for thinking. Good studies have previously emphasised and mapped the

role of movement in attentiveness. In school settings, moving between sessions is better than staying put all day. Moving within sessions – as, for example, with a zoned learning space and carousel of planned activities – is even better. That inevitably leads to a variety of seating or standing furniture to help delineate the move from one zone to another. A zone for quiet individual endeavour, a zone for two- or three-person collaboration, a zone to finesse a presentation. The movement between those zones is valuable, but if furniture encourages standing or moving for one component of the carousel, then better still.

Even at the micro level of a single test the science of movement and learning is compelling. A research study at University of Illinois by Dr Chuck Hillman contrasted brain scans of students doing identical tests but with one group enjoying a pre-test 20-minute walk while the other group sat quietly in preparation. The walkers' brains lit up with activity in the aggregate brain scans, the group who calmly sat and “collected their thoughts” were demonstrably disadvantaged.

Ironically, in schools that historically focused on “not fidgeting”, “sitting up straight”, with calm sedentary corridors, movement was seen as a disruption, but of course the less movement the tougher it was for children to be their very best. To optimise performance we need to nuance our learning spaces around – and embrace – appropriate movement. What Covid-19 has given us is a widespread awareness that this is a Good Thing, which science confirms. Learning may never be the same again.

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Frederiksbjerg School, Aarhus, Denmark
Designed by Henning Larsen

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Most education systems are rooted in the 20th century. Post-Covid-19, we should not ‘build back’ to that past but design for future, inclusive, learning communities. A4LE is helping to meet this challenge by bringing together teachers, students, design professionals and researchers, creating a shared design process to create innovatory and future-focused educational environments.

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