

FOR ARCHITECTS
DESIGNERS AND
SCHOOL LEADERS

PLANNING LEARNING SPACES

PLAYING INTO LEARNING SPACE DESIGN

RESEARCH BY
DR FIONA YOUNG



WITH GUEST EDITOR MICHAL COHEN



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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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NOVEL APPROACHES

MICHÁL COHEN
GUEST EDITOR

When I was asked to edit this issue of *Planning Learning Spaces* magazine, I deliberately wanted to showcase learning spaces around the world. Research is a key part of the design process in my practice, and I love discovering clever designs and novel approaches to pedagogy that inspire and delight our education clients – it's amazing what can be achieved with a grand vision and shoestring budget.

I'd expected to see more differences than similarities, but it became clear that good design principles are universal, transcending ages, abilities and cultural backgrounds. Dr Fiona Young's research into spaces in Australian schools that support playful learning includes a useful list of the most important criteria, all of which emphasise versatility of use and character. She then turns her attention to spatial qualities for "deep learning" by older pupils – the similarities are plain to see.

Nine thousand miles north, in Helsinki, the plain exterior of Suomalais Venäläinen Koulu (SVK) school belies its amazing interior. Cross-laminated timber (CLT) is used throughout; it's highly sustainable and exudes a warmth, while the flexible design and transparency connects spaces visually and physically. It fascinates me that teachers work in pairs here, planning lessons together and supporting each other. This resonates with school leader Meg Fargher's thoughts on the importance of collaborative learning at Somerset College in South Africa; once again the agility of the building is a key component in creating the right conditions for contemporary learning.

Meanwhile, over in New York, Mi Casita preschool is a joyful project that creates a home away from home from a simple palette of natural materials. Based on the Reggio Emilia approach, it includes child-appropriate furniture, nooks and crannies and fun cut-outs in bold colours that help children explore their environment with curiosity and confidence. Like SVK, the floor-to-ceiling heights are generous and flexibility is built into the design with sliding doors, echoing – and confirming – the results of Fiona's research into successful learning environments.

I love that these projects are in different parts of the world, for different ages, but use the same principles to build spaces well-loved by their communities. It's so important to consider pedagogy and space in parallel, and in discussion with the people involved in delivering the 4Cs: communication, creativity, collaboration and critical thinking. But we also need to value the legacy of the pandemic, where technological advances gave us new ways to learn online, yet equally made us appreciative of human interaction and what good learning spaces provide beyond chasing grades, of creatively finding solutions, of being inspirational as much as functional, fostering a sense of community and ultimately inspiring kindness and compassion, as explained in Dr Robert Dillon's article. All these things can and should thrive in innovative learning environments, wherever you are. ■

Michal





A4LE EUROPE ACTION RESEARCH TEAM UPDATE

Innovative Learning Environments and Student Experience (ILE+SE) Scoping Study

With the first phase of the project concluded and a White Paper due to be published in the New Year, the international teams working on the ILE+SE Scoping Study met in Copenhagen and Melbourne to review and plan the next stages. A4LE Europe's Action Research Team, Alastair Blyth and Terry White, were there and spoke to Wes Imms, Associate Professor of Education at the University of Melbourne and Dr Julia Morris, from Edith Cowan University, about the project's aims to establish priorities for future research.

Involving 21 teams across the globe made up of academics, educators and industry experts, and a separate panel of about 40 independent experts, the ILE+SE scoping study included a series of workshops and surveys held over 18 months and came up with 20 research gaps and three priority areas. The research identified themes around evaluation, learning outcomes, health and well-being and inclusion.

"From this scoping study we can show that 250 people

who are experts in their field and coming from different geographies actually share a lot of commonality in terms of what the gaps are. Across all the different sectors people are saying the same things," said Dr Julia Morris, co-lead of the ILE+TC study.

"The biggest gap is research on student experience," said Wes Imms, who is concerned that so little is known about the drivers for how students use learning spaces. "Until we understand that, we are just designing on assumptions," observed Wes, adding that there needs to be a more mature discourse on the provision of learning environments. "We need to stop apologising for the 'fact' that we don't have data - we do; we just need to get more and better data."

"And what's also missing is the data that actually, once and for all, justifies expenditure on these spaces," said Julia.

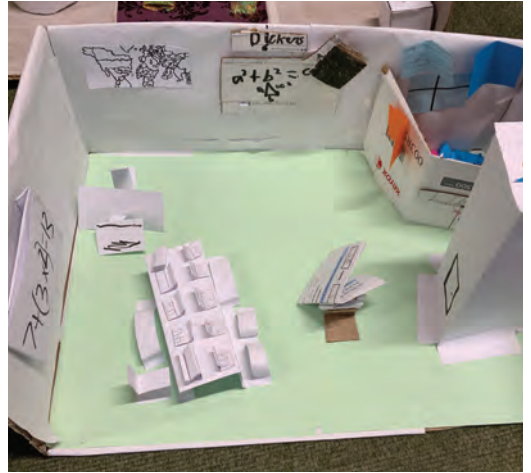
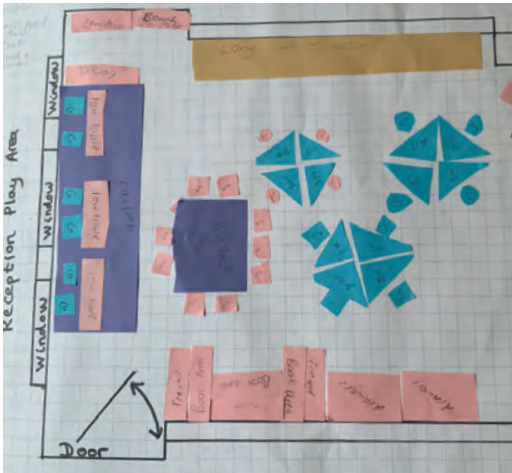
The scoping study deliberately engaged with a broad range of participants. "In education, we have for too long thought that education needs can only be addressed by educators, which is blatantly untrue," said Wes. Morris and Imms believe that all stakeholders involved in creating innovative environments, such as educators, architects, policymakers and manufacturers, have knowledge that helps to build a picture of what is needed to improve students' learning.

While hundreds of different research projects were identified in the scoping study, the vast majority are rarely cited, which suggests current research lacks impact and is not being accessed or read. "Although there is research that addresses some of those 20 gaps we identified in the study, the fact that it's not widely known about suggests that there's still more work to get that to maturity," said Julia.

On the back of this scoping study, the research team is now putting together an international research project to look at student experience. "We are talking about a research agenda for the next decade," said Wes.

This new project would be the most comprehensive international innovative learning environment research yet undertaken and it would gather high-quality evidence on student experience fostering a number of geographically relevant deep studies into local issues. ■

DESIGN TECHNOLOGY CHALLENGE DEMONSTRATES IMPORTANCE OF STUDENT VOICE IN LEARNING SPACE DESIGN



The Planning Learning Spaces In Practice (PLSiP) team has been working with Dollis Primary School, London, as they redesign some of their learning spaces. Student voice is playing a vital role in stakeholder engagement.

By delivering workshops at the school, and working closely with staff, students and the wider school community the PLSiP team ensures that the voices of all stakeholders are heard.

“When designing learning spaces, it is often external stakeholders who create the overall floorplan, with very little consultation with teachers and students themselves,” explains Bhavini Pandya, who leads the PLSiP team. “By ensuring all stakeholders contribute to the process, the design of the places and spaces in which students learn are more purposeful, meaningful and authentic.”

As part of the design consultation process, Dollis’s DT Leader set a design technology challenge for all students from Early Years to Year 6. The students were asked to consider what makes an effective learning space, what the interior space should be like and what they

felt they needed to become resilient, independent and motivated learners.

Discussions with the students clearly demonstrated that they wanted areas in which to work in groups, places to work independently, engaging reading areas and places to retreat to when they needed some “quiet time”.

“I need a quiet space to go into when I get stressed, but I should be able to still see and hear my teacher,” were the thoughts of one Year 5 student, clearly articulating the idea of staying within the room but having a more dedicated quiet space that would allow him to deal with his emotions without feeling excluded.

“We were really inspired by the designs the students created as part of their DT challenge, because they clearly showed which areas within the learning spaces the students felt were most important,” said Bhavini Pandya. “It’s vital that students are included in the design process because they are the ones who are going to use it and they know what they need to learn well.” ■





OUR FIRST CONSIDERATION SHOULD ALWAYS BE TO REPURPOSE EXISTING SPACES BEFORE CONSIDERING BUILDING NEW.

A SENSE OF (RE)PURPOSE

Michál Cohen, editor of this issue, explains how transforming existing education spaces can be a hugely rewarding task that has a big impact on learning.

At my practice, Walters & Cohen Architects, we have been designing and transforming schools for over two decades. Even when we started the practice I was keen to embed sustainability into our designs. Now, as the importance of reducing carbon emissions grows, our first consideration should always be to repurpose existing buildings before considering building new.

And this has additional benefits. Creating good learning spaces can be expensive, and many schools don't have the luxury of designing from scratch because they're in existing buildings on existing campuses.

I love these sorts of challenges: making sure that spaces work well (individually and together), look good and meet sustainability, accessibility and heritage requirements is the architectural equivalent of solving a Rubik's Cube, a puzzle and untangling a knot at the same time. Here are some examples of projects I have created with my team in recent years.



The Innovation Hub

Firstly, let's look at Brighton Girls, a visionary client and part of the Girls' Day School Trust (GDST). Our design for its new Innovation Hub meant we were able to do "more with less", creating a series of spaces that gave teachers and pupils far greater opportunities for project-based learning.

We were asked to redesign three rooms in a Grade II listed building and create an area where up to 60 pupils could be taught at any one time.

We couldn't move any walls: that would have required a listed building application and consent, and the project was to be completed quickly and built over a summer holiday.

The largest space is for presentations. Moveable furniture means it can easily seat a large group watching a presentation on the multi-screen display on the end wall. The design allows pupils to divide into smaller collaborative groups by relocating mobile whiteboards.

The two bay windows provide valuable smaller spaces where the furniture creates a sense of enclosure. Nothing in this space feels like a classroom: the pupils love the soft seating, mobile amphitheatre and large kitchen table. It is also a popular social space for pupils

and staff, and for parent briefings.

This space leads directly onto a research area with computers and a green screen. A smaller room, it encourages small group or individual work and sits between the presentation space and a maker space, which is for prototyping and testing.

The listed building features wonderfully tall floor-to-ceiling heights, large windows that flood the spaces with natural light, and the bays that allow a different type of collaboration. These would be hard to achieve in modern school design due to constrained costs. This has added to the success of the spaces and made sure that the history of the school is clear for all to see and celebrated in the new design.

Temple – another commission at Brighton Girls

The Innovation Hub project was a big hit, so in 2020 the GDST commissioned us to refurbish three of the school buildings at Brighton Girls: Vicarage, Temple and Montpelier.

Until then the prep school had been in nearby premises, but the school wanted all pupils, aged three–18, to be on the same site as "a family of big sisters and little sisters".



Here I describe the works to the Grade II listed Temple, which has gone through a head-to-toe makeover to provide inspiring spaces on all four levels.

Temple's ground floor: entrance and café

Walk through the front door and you'd be forgiven for checking that you're in a school. In the space formerly used as a library, the main entrance and reception has been re-established with a twist: it looks like a café.

Or rather, it's a flexible space that can be transformed instantaneously into a café for events, which is a huge selling point given the school's busy events schedule.

Pupils can study, staff can work, parents and visitors can wait, and it promotes the joy of incidental encounters over a cup of coffee. On a recent visit, we were delighted to see that the girls have blended their own teas in cooperation with a local teamaker, and to meet the building's favourite resident, Pip the dog.

The space is large enough for year-group lectures and parents' evenings and can be used in conjunction with the adjoining library, presentation room and offices. Immediately welcoming, lively and cool, it is not only a wonderful introduction to the ethos of the school, but also very much in keeping with the spirit of the city.

Temple's basement: the music centre

How do you take a dark and underused basement full of lockers, loos and storage, and turn it into a place that inspires creativity? Stripping out partition walls has created large spaces for teaching and performance, full of natural light, as well as five soundproofed practice pods. The central area is both classroom and venue: an acoustic curtain separates it from the circulation route, or can be drawn back to provide an extra area for audience seating.

Temple's top floor: the Sixth Form Hub

On the first floor, underwhelming classrooms have been refurbished to be more uplifting, but a more dramatic transformation took place on the second floor.

Physically and metaphorically at the top of the school, the new Sixth Form Hub is designed as a sanctuary for the older pupils. What was once classrooms is now ostensibly an open-plan space, given different identities by a variety of furniture. Plywood shelving features cosy seating alcoves on one side and a smart screen on the other, subtly separating the kitchenette/dining/presentation area from a more informal space full of sofas, small tables and booth chairs.

The girls took part in workshops with us, exploring





THE GIRLS TOOK PART IN WORKSHOPS... EXPLORING COLOUR, FURNITURE AND LAYOUT OPTIONS; THEIR THOUGHTFUL INPUT GAVE US A GREAT INSIGHT INTO HOW THEY WANTED TO USE THE SPACE...

colour, furniture and layout options; their thoughtful input gave us a great insight into how they wanted to use the space, which has translated into flexible facilities with a sense of fun.

The buildings were completed in August 2022, ready for the new year. This project epitomises the value in reimagining buildings of poor and deteriorating condition through creative reuse and reorganisation.

Our designs meet the needs of contemporary teaching and learning methods, yet also meet the challenges of working within listed buildings. Structural and fabric repairs protect and preserve the life of the buildings so they are fit for purpose for years to come, and insulating the roof spaces, installing LED lighting, replacing radiators and upgrading the heating system has improved the buildings' sustainability credentials.

While some original windows were retained and refurbished without environmental improvements (on account of their heritage value), the majority were replaced with slimline double glazing. Accessibility has also improved across the site, and biodiverse planting and railway sleeper seating increases the use, value and enjoyment of the outdoors.

This project required an eye for innovative design, but equally important was the enthusiasm and support from a brave client willing to look beyond the concept of the traditional classroom. The staff at Brighton Girls and GDST fully embraced trying something different, and we are delighted to see how much they love their "new-old" buildings.

Making spaces work harder

Alongside refurbishment of historic spaces, it is important that organisations make sure their spaces "work" as hard as possible and are not underused. Even specialist spaces can be designed so they are multi-use. At Notting Hill & Ealing High School (another GDST school) we were asked to transform a traditional physics laboratory, with fixed central benches, to a more flexible space where both physics and design technology (DT) could be taught. Both subjects had other dedicated spaces in the school, but the DT spaces were not quite sufficient to accommodate the number of students, whereas this physics classroom had capacity.



It was clear from the start that we needed to keep the central space as open and flexible as possible, so a fixed storage wall and services were set around the edges (including gas and water). We took care to include a variety of storage suitable for large sheets of Perspex, card and plastics as well as the equipment required for physics.

One challenge was that the workbenches used for physics were higher than those required for DT and the space was not big enough to accommodate both. We decided that the ideal solution would be height-adjustable workbenches that would work for both disciplines and would be mobile and stackable for easy reconfiguration of the space.

Not just secondary schools

This type of thinking is not solely for secondary schools: we are currently designing a primary school with a specialist space that isn't allowed for in standard Building Bulletins (BB).

We have carved out space to provide a science and cooking facility in the dining area by locating the services along the edges of the space and keeping the centre clear for large dining tables that will also be used for cooking or science. By doing this we also get a small, dedicated dining area, which is not provided for in BB103.

I was also inspired by a visit to the Mandeville Centre, another great example of doubling up the use of space. This project by Architectus for a school in Melbourne



has a teaching classroom in the library. While it is not unusual to have a teaching space in a school library, the simple inclusion of a large, sliding glass door means the space can be used as a completely independent classroom, or for the rest of the time as extra workstations in the library.

These projects have provided wonderful opportunities to repurpose and redesign spaces. To take an underappreciated or neglected space and transform it into something truly useful is immensely satisfying as an architect, but what I really enjoy is being involved in conversations with ambitious and engaged clients who recognise that undergoing these physical changes offers a chance to rethink what they want from their learning environments. It's a privilege that never gets old. ■

**OUR DESIGNS MEET THE
NEEDS OF CONTEMPORARY
TEACHING AND LEARNING
METHODS, YET ALSO MEET
THE CHALLENGES OF
WORKING WITHIN LISTED
BUILDINGS.**

LEARNING IS AMPLIFIED
IN SPACES DESIGNED
FOR STUDENTS TO FEEL
BELONGING.

SETTING UP FOR SUCCESS

Dr Robert Dillon, an expert on the design of the education space, suggests six ways in which we can showcase the positive impacts of learning environments.

In education, it would be great if every instructional decision that we made had a direct and clear impact on the academic achievement of students, but it is rare that we can isolate a variable, especially individual decisions of teachers, and its effect on test scores. The realm of classroom and school design is no different. Design is an intentional act of hundreds, if not thousands, of micro decisions based on research and best practice that happen in real time each day. This can make it easy for educational pundits to question why we should be spending money on where students learn, but the reality is that a proper environment can create the conditions needed for excellence, and it is our role to explain this reality in six, clear, powerful ways that resonate with our families and communities. These six ways of intentionally designing learning environments will set students up for success.









1. Space as a place of belonging

The world in which our students navigate can be confusing and disorienting at best, and one that creates loneliness and isolation for most. Although these emotions and feelings emerge in our older students in ways that are expressed in words, all students are feeling these waves in our complex and uncertain world. With these increasing realities, it is essential that students know that they have a welcoming, belonging place in their classrooms. This happens when the colour palette is coherent, the messages – both verbal and non-verbal – speak to kindness and compassion, and students can see themselves on the images on the walls and displays in the space. Learning is amplified in spaces designed for students to feel belonging. This level of design can't be left to chance or it will put a drag on even the best instruction.

2. Space as experience

Experiences make learning sticky. Many of our students

get these learning experiences through their lives beyond school, but there is a growing set of students that don't experience life in a robust way because of the impact of poverty, stress and/or trauma. When we look to serve these students, it is more important than ever to design our spaces so that students are gaining experience from our spaces. What spaces do this well? Museums are a great example of learning spaces that provide experiences. Although classrooms can't be museums, there are a number of aspects of experiential learning that can be a part of classroom design. This includes zones and activities in which students can participate and interact. This may mean allowing our space to showcase new ideas through rotational displays that include visuals that are engaging and relevant to students. Students should have experiences in all classrooms based on the instructional activities that are designed, but they should also be able to activate and transfer their learning based on impactful stimulus provided in the classroom design.



3. Space as inspiration

When we are surrounded by beauty, our chances for unique thoughts and inspiration rise. Our sense of awe grows, and our brain gets turned on to new connections. This should provide us with inspiration and is a reason to design with intention. Not all of our students are surrounded by beautiful things during the other hours of their lives, and this makes it essential that our spaces provide students with inspiration to learn. When our students get to see art and artifacts, it can create a sense of wonder and curiosity. When our students can interact with furnishings that aren't old, tired and worn, but showcase a dignity for learning, there is a greater opportunity for our students to find their passion. Allow your design to not only be functional, but also inspirational if you want your instruction to be magnified.

4. Space as comfort

Learning is hard, and the schedule demands that we make upon our students can accelerate these issues. Moving from space to space to learn on a schedule, at times during the day when the brain isn't always primed, creates troughs of energy and engagement.

Content can be difficult even when the morning goes smoothly, deadlines aren't approaching or there isn't stress at home, but when these things exist, students need a comfortable space to learn. This doesn't mean that students are lying on a couch or having a nap during class. It means that students have the choice to move throughout a learning period, choose where they learn best and not get bombarded with light and sound that distracts them. Control the elements that you can through your design, so that students can pause life, prime their brains and prepare for maximum learning.

5. Space as healing

Our spaces will never be counsellors or social workers, but they can supplement the support through their design. Does your space increase student stress or reduce it? This question can only be answered when we co-design with students. Are we getting feedback about how our space impacts their work and lives? Great classrooms are malleable to the students that are learning in them. This doesn't mean that everything needs to shift every hour of the day, but it does mean having spaces in which students can slow their bodies and minds, reflect and get some additional quiet.



Stark classrooms or their polar opposite, visually noisy classrooms, both enhance stress. Find a middle ground that showcases organisation and orderliness. This will allow your student to take a breath and feel supported in their struggles in life and learning.

6. Space as a teaching palette

Most of our focus on classroom design should remain on crafting a learning experience for our students, but it should be noted that how space is designed and furnished deeply impacts the level of instruction in our classrooms. Teachers in many cases facilitate learning despite their space, not because of it. Classroom environments should empower teachers and let them have easy access to the technology that they need, the configurations of seating that they need (to complement their daily lessons) and the conditions that allow them to be mentally sharp to make the best decisions that they can, in real time, based on student readiness for learning. ■

WHEN WE ARE SURROUNDED
BY BEAUTY, OUR CHANCES
FOR UNIQUE THOUGHTS AND
INSPIRATION RISE. OUR SENSE
OF AWE GROWS, AND OUR
BRAIN GETS TURNED ON TO
NEW CONNECTIONS.

Dr Robert Dillon is a Doctor of Education (EdD) focused in educational leadership and administration.

He is also the author, along with Rebecca Louise Hare, of The Space: A Guide for Educators, The Space: A Guide for Leaders and an upcoming book Creating Space: A Reflective Journey.

REALISING THE ESTEAM DREAM

School leader Meg Fargher explains how a chance meeting at a conference helped her draw up an ambitious campus development plan to make a South African private school fit for the future.

After heading up St Mary's School for girls in Johannesburg for the first decade of the twenty-first century, I found myself leading Somerset College in the Cape winelands. Both are excellent private schools that cater to the economically privileged.

At St Mary's I'd been asked to help develop an older, but lovely, school into a space that honoured the potential of young women. When I moved to Somerset College as the first female head, I encountered some scepticism that a woman could run a co-educational school. There were also some other old-fashioned attitudes among stakeholders.



Agreeing to make classrooms fit for purpose

Somerset College had a sound educational base, but I believed adding the Cambridge International Examinations (CIE) to the South African Independent Examination Board (IEB) curriculum would provide a necessary academic boost.

While the college enjoyed exquisite and expansive views of mountains and vineyards, the classrooms had low ceilings and small windows with restrictive outlooks. There was also a shortage of classrooms, and introducing the CIE exacerbated the problem: tempers were as hot as the dry Cape summers as teachers fought over space. A few minor building operations eased the situation but added to the problem of an already incoherent campus layout.

Simultaneously, after numerous academic discussions about being relevant for the digital age, teachers indicated the need for flexible learning spaces for science, technology and art. After a few iterations at strategy sessions, the school board challenged me to deliver on my proposal.

It was a massive challenge, especially when dealing with the daily demands of headship, a recalcitrant old guard, a lack of money (I'd inherited a serious deficit in the budget), an endless list of needs and some buildings that were not fit for purpose.



IN THIS CYBER-PHYSICAL
WORLD CHILDREN NEED TO
HAVE SPACE TO THINK ABOUT
WHAT TECHNOLOGY MEANS
FOR THEIR OWN PERSONAL
HUMANITY.





Energised by Michál Cohen's vision

Fortunately, a board member, Nicky Newton-King, and I attended an Independent Schools' Association of South Africa heads' conference where we listened to an inspiring lecture by Michál Cohen (editor of this issue) from the UK architectural practice Walters & Cohen.

I managed to drag Michál back to Somerset College campus that afternoon. Although she lives in the UK, I urged the new, dynamic Somerset College board to meet her during her next visit. Michál's deep knowledge around educational spaces captivated the board and they agreed to engage her to draw up a campus development plan (CDP). She understood ratios and won the finance people over by talking return on investment and cost to company.

Working with Michál energised the majority who had bought into the vision of making Somerset College an iconic destination school, relevant for Africa and beyond.

Entrepreneurship, Science, Technology, Engineering, Art and Maths (ESTEAM) Centre

While developing the CDP, Michál's philosophy of including all stakeholders generated a palpable energy for the future. One aspect of the strategy, which now became entrenched in the CDP, was the building of a centre for Entrepreneurship, Science, Technology, Engineering, Art and Maths (ESTEAM Centre). We had a number of rationales:

- There are not enough people in South Africa properly skilled to manage the demands of the new digital economy.
- Solution-finding and critical thinking have become inextricably linked to being able to model outcomes and code concepts.
- Robotics will become an inevitable aspect of many jobs, and it is essential for young people to know how to code if they are to flourish in the digital space.

Every aspect of the building's design needed to be intentional and transformative. The inner workings of the building are exposed so pupils can understand how a building works. Typically, privileged children turn on a tap, or switch on a light without having to think of the source of these marvels. At least now they could see some of the ingenuity that lies hidden behind the plaster.



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PLANNING LEARNING
SPACES



ESTEAM REPRESENTS AN OPPORTUNITY FOR YOUNG PEOPLE TO FIND A NICHE OF EXCELLENCE AND TO LEARN TO COLLABORATE WITH A DIVERSE RANGE OF OTHER PEOPLE...

To show we loved the children in our care as well as the earth, we tried, where feasible, to ensure that the building included green solutions. For example, the roof was angled so that solar panels could get the most sun. Cold wet Cape winters and dry scorching summers presented a challenge to managing temperatures.

Deciduous vines were planted in massive pots during the construction phase and replanted when the building was complete. Soon, vines covered the tensile steel railings, providing shade in summer and letting in heat in the winter.

Lighting specifically designed to support the creation of art is provided by dormer windows and large, glass sliding doors in the art studios. Sliding doors in every learning space open onto wide verandas to let in air but also to slide open onto the vast possibilities that exist beyond classroom walls.

ESTEAM includes a reflective space. In this cyber-physical world children need to have space to think about what technology means for their own personal humanity. Ironically, they need a place that is quiet and tech-free to cope with and contemplate the use of tech effectively.

The value of collaboration

The ESTEAM building is designed to house a variety of disciplines able to collaborate while also being autonomous when necessary. The fact it has few permanent internal walls discourages division and users must be aware of the needs of others.

In the past, teachers didn't encourage collaboration. As pupils we were taught to cover our work, not look at the answer given by a peer, and so we were deprived of key learning opportunities. In ESTEAM, the solution room is for finding solutions (not solving problems). Semantics is important. The glass walls are for students to work out their solutions so others can see their thinking.

Children need to know that there is no shame in asking for another to help, or to offer help. ESTEAM represents an opportunity for young people to find a niche of excellence and to learn to collaborate with a diverse range of other people who have strengths they perhaps do not yet have.

After all, NASA's *InSight* spacecraft didn't land on Mars because of one person, but because of the collaboration of scientists, artists, dreamers and doers. ■

What do parents of young children seek when searching for an early learning centre? At Mi Casita, a bilingual pre-school, the clue for pupils is in the name, “My Little House”. Bridgitte Alomes (pictured, right), the CEO of Canadian learning furniture company Natural Pod, explains how she helped create a safe, welcoming and meaningful environment for the residents of Brooklyn.

HOME AWAY FROM HOME IN NEW YORK CITY

It all starts with the founder, and in this case it is Eva Ruiz, who was the inspiration and creator behind Mi Casita, a bilingual pre-school and cultural centre in Brooklyn, New York City (NYC). Ruiz left her position as the Director of Community Affairs at the NYC Department of Education in 2010 to follow her vision of creating an early learning space that she would be proud to have her own daughter attend.

As a teacher, researcher, policy advisor and parent, Ruiz had gained tremendous insights into the best industry practices. A speaker of Spanish and English, Ruiz saw the value of nurturing children’s rich multi-lingual and multicultural identities. As a result, she wanted to offer a unique combination of place-based learning that reflected the many cultures that co-exist in Brooklyn. Key to this would be the value placed on community engagement and neighbourhood exploration.

This particular approach has been popular within the city. By 2019 Mi Casita had expanded to offer pre-school places and was growing into a community cultural space.

Inspiring through spatial design

The first impression upon walking into Mi Casita is that the space is visually stunning. A bold colour scheme, natural materials and thoughtful layout reflect an environmentally conscious and nurturing environment.

With the proportions of a small child in mind, the spatial design encourages exploration and curiosity. Flexible furniture is used to transform the space as needed for additional creative activities or community events.

A child’s-eye view

To create an interior to inspire and match the centre’s pedagogical vision, Ruiz commissioned Barker Associates Architecture Office (BAAO) and 4|Mativ Design Studio – two Brooklyn-based architecture companies. The 2,500-square-foot (232-square-metre) ground floor, with its 15-foot-high (4.6-metre) ceilings, is divided into three multi-functional areas that can be used together or separately based on the activity of focus.

These areas are organised around an L-shaped trough sink that also becomes a social gathering spot. The focus on being a “home away from home” as well as a cultural community hub within Brooklyn, motivated the designers to incorporate graphic elements relating to home and the city, thoughtfully situated at a child’s vantage point. Colour has been used to both delineate and connect the different spaces. The overall effect is one of calm and wonder, which sets the stage for the additional colour children create every day through their play and artwork.







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A natural, sustainable learning space

Mi Casita is a Reggio Emilia-inspired, place-based learning centre. The Reggio approach values education as a learning partnership between children, teachers and place, with an emphasis on environmental responsibility.

Ruiz gave a lot of thought to the furniture the children would engage with and how it would influence their play and learning. In fact, it was as important to find the right furniture to fit out the space as it was to create the interior. Ruiz collaborated with our team with the intention of bringing nature through natural materials into Mi Casita.

The design of the centre's flexible, multi-functional pieces invites open-ended play, enquiry and curiosity: fulfilling both the spaces' needs, and those of the occupants.

Mi Casita illustrates how you can build and engage community through intentional, thoughtful design of space and place. The centre uses furniture and the built environment as an integral part of the teaching and learning experiences. ■

Bridgitte Alomes is the founder and CEO of Natural Pod. She hosts Natural Pod™ LIVE, an online conversation between a community of educators, students and architects. Bridgitte also acts as President of the Green Schools National Network.

*For the full case study visit
<https://www.micasitabk.org/> <https://naturalpod.com/projects/project-profile-mi-casita/>*



RESEARCH: ALL ABOUT SPACES FOR PLAYFUL LEARNING

The link between space for play and learning was an important finding from Dr Fiona Young's doctorate. It plays a significant part in her work as Principal at Hayball, an Australian architectural practice with a strong focus on research in school design. Dr Young explains.

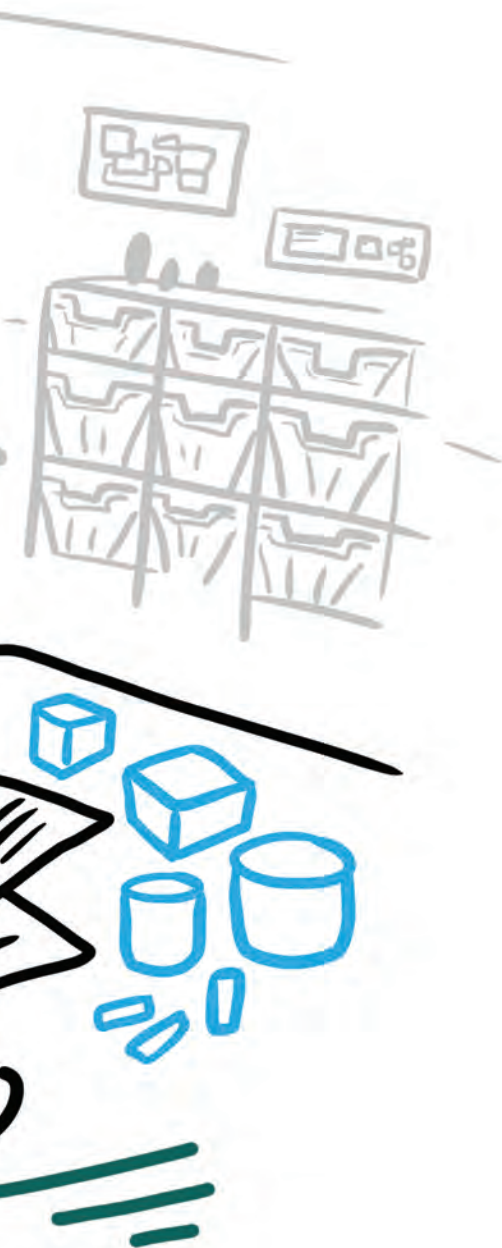
Play is a critical part of children's learning and space is recognised as an enabler for these playful learning experiences. However, as students progress in their development, the perceived relationship between play and learning and the spaces that support these complementary activities can become tenuous.

However, two separate studies point to an alignment in the types of spatial qualities that support both playful and deep learning practices at school level. They also reveal how perception can be a barrier to enabling the affordances of school learning environments designed to support a wider range of pedagogies beyond direct instruction.

Spaces for playful learning

In the first study¹, situated at two girls' secondary schools in Sydney, Australia, a series of spatial qualities identified to enable playful learning were ranked by 253 students and 35 teachers. Of the characteristics identified, the most important criteria included:

- The ability to change spaces and use them in different ways;
- Variety of spaces;
- Variety of furniture types;
- Varying spatial volumes e.g. larger and smaller spaces;
- Areas to relax;
- Variation in colour, tones and lightness;
- Connection to the outdoors.





Two key findings emerged from this study. Firstly, while outdoor spaces were viewed favourably as places to engage with playful learning activities, they were rarely used. It appeared that teachers may be reluctant to teach outside of their classrooms.

Secondly, many respondents believed that playful learning approaches were only appropriate for more junior students. At senior level, learning was perceived as a “serious” endeavour and play considered “trivial”. Hence, the juxtaposition of “play” with “learning” was considered a challenging concept for some respondents.

Spatial qualities for deep learning

The results of the second study² may bring greater acceptance to the confluence of play and learning in schools. This study identified spatial qualities which supported deep learning activities at school and museum learning spaces. Deep learning is defined by the American Institute for Research (AIR) as having three key components: 1) a deeper understanding of core academic content; 2) the ability to apply this understanding to new situations; and 3) the development of a range of competencies including people skills³.

Deep learners are those that are empowered to take autonomy over their own learning⁴ and able to

engage strongly with the 4Cs associated with twenty-first century learning skills – creativity, critical thinking, collaboration and communication⁵.

In this study, 20 teachers identified spatial qualities that supported collaborative, interdisciplinary and deep teaching and learning practices. These included:

- A range of diverse settings to enable different ways to work, including wet areas for hands-on and explorative learning.
- Spaces that can be changed or used in different ways to support interdisciplinary pedagogies.
- A range of mobile furniture and different surface heights to enable both seated and standing work.
- A range of larger- and smaller-sized spaces.
- Soft seating and use of the floor as working and collaboration spaces.
- Outdoor spaces to enable the ability to extend learning activities outside.

A comparison between the two studies shows striking similarities between the characteristics and qualities of learning environments that support both playful and deep learning activities (see Table 1). Also common to the two studies was the role perception played in the enabling of these qualities.

TABLE 1.
CORRELATION OF SPATIAL QUALITIES ALIGNED WITH PLAYFUL LEARNING AND DEEP LEARNING PEDAGOGIES

Characteristics of playful learning environments (adapted from Young & Murray, 2017)	Spatial qualities related to deep learning approaches (adapted from Young, Cleveland & Imms, 2019).
The ability to change spaces and use them in different ways	Spaces that can be changed or used in different ways to support interdisciplinary teaching and learning practices.
Variety of spaces	A range of diverse settings to enable different ways to work, including wet areas for hands-on and explorative learning.
Variety of furniture types	A range of mobile furniture and different surface heights to enable both seated and standing work.
Varying spatial volumes	A range of larger- and smaller-sized spaces.
Areas to relax	Soft seating and use of the floor as working and collaboration spaces.
Connection to the outdoors	Outdoor spaces to enable the ability to extend learning activities outside.

Affordances and the critical role of perception

To understand the important role that perception plays in using space, affordance theory⁶ is a useful framework often used by researchers. Learning environment affordances are qualities of the environment (space, objects and people) which enable perceived teaching and learning activities and behaviours⁷ (see Figure 1). These qualities may exist in the environment offering the potential for users to engage with them; however, unless they are perceived they may not be used at all. The ability to perceive and utilise affordances is dependent on an individual's intentions, influenced by their background, social setting and culture.

For example, whether a teacher perceives and uses a spatial quality (or not), such as an outdoor learning space, depends on their ability to plan and facilitate lessons for an outdoor context. School cultural and organisational contexts (such as values, structures and protocols) also influence how teachers think about their work. So, unless teachers have a sense that engaging with playful learning activities in outdoor spaces is supported, or encouraged by school leadership, they may not recognise that this practice is even possible.

**MORE RECENTLY,
INNOVATIVE LEARNING
ENVIRONMENTS HAVE
EMERGED WITH SPATIAL
QUALITIES INTENDED TO
SUPPORT MORE VARIED
PEDAGOGICAL PRACTICES.**

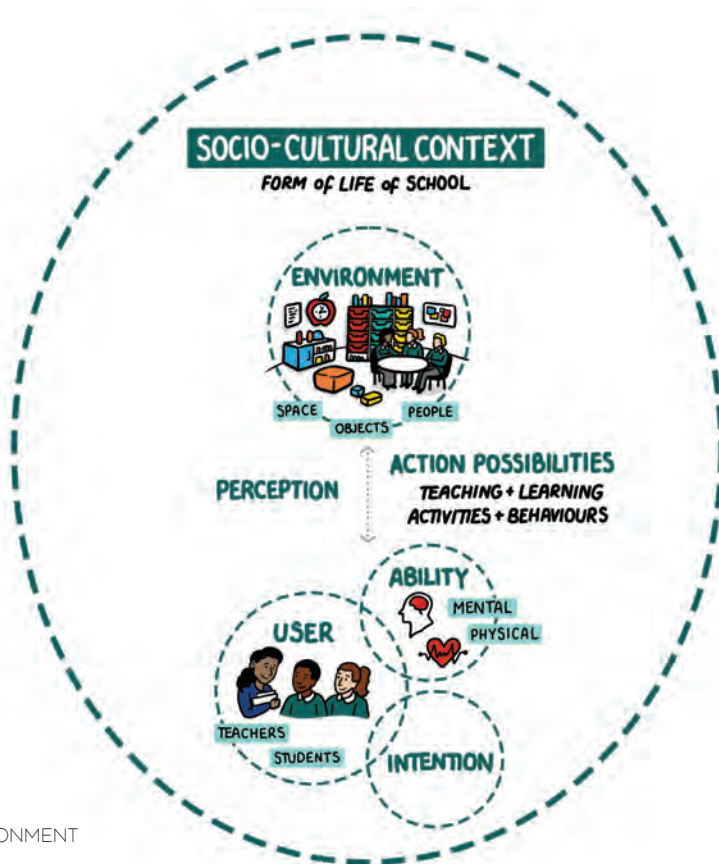


FIGURE 1.
LEARNING ENVIRONMENT
AFFORDANCES

Shifting teacher practice to enable use of new learning spaces

Traditional schools, largely consisting of cellular classrooms and teacher-directed instruction, have dominated educational contexts since the industrial age. More recently, Innovative Learning Environments (ILEs)⁸ have emerged with spatial qualities intended to support more varied pedagogical practices that enable explorative, interactive, playful and deeper learning experiences. However, in order to optimise the affordances of these new spaces, teachers need to be supported to transition from traditional teaching spaces and practices.

Up until more recently, the focus of the development of ILEs has tended to be on the spaces themselves rather than the practices that take place within

them. Hence, little is known about how to prepare teachers to practise in these new spaces⁹. This has raised consciousness of the need to find strategies to encourage teachers to think more critically and creatively about the relationship between pedagogy and space.

Enabling playful learning through playful learning

A recent interdisciplinary PhD study¹⁰ explored strategies to support teachers in shifting their perceptions and practice around the use of ILE spaces to enable deeper and more collaborative approaches to teaching and learning. Twenty-five teachers from two separate schools with new ILEs in development participated in this combined Participatory Action Research (PAR)/co-design study.

The PAR methodology directed the framework for the research in which teachers as researchers reflected on their current contexts, identified key issues relating to the transition to new ILEs and designed initiatives to address these. A series of co-designed workshops took place at each phase of the study giving teachers dedicated time, space and tools to reflect on the process and share their thoughts with each other.

Playful and hands-on methods were used in each workshop to help teachers reflect and communicate their insights. These ranged from using materials to build metaphors of their practice, creating “field guides” to facilitate the observation of practices around them, and creating drawings to reflect on both previous and projected practices.

A range of strategies relating to school organisation, teacher practice and infrastructure were identified to support teachers in the use of new ILEs. However, critical to the process of shifting perceptions and empowering teachers with the agency to use the affordances of new spaces were the playful co-design workshop techniques which helped participants “better surface unknowns”, “think through nuances”, “link thinking and feeling”, “go deeper” and ‘get to the truth’¹². Reflecting on the value of play as a vehicle to evolve perceptions of space as a resource for learning, one participant noted, “we sometimes jump to the product and we just want a framework or guidelines to tick a box. But this process really has been about experimentation and play and discovery for teachers which is really valuable”.

Although play and learning have often been considered mutually exclusive, this paper highlights the intrinsic connection between play, learning and space, not just for early learners, but also at school level and beyond. Importantly, it recognises the role perception plays in the activation of space for playful learning and the need to enhance teacher’s abilities to optimise the use of ILE spaces for more playful and deep learning approaches. ■



*Dr Fiona Young is Principal at Hayball Architects.
hayball.com.au*

Full footnotes to Dr Young’s research can be found at
www.planninglearningspaces.com.



EVERY DETAIL, WHETHER IT WAS THE TABLES AND CHAIRS FOR THE COMMON SPACES, THE COLOURS OF THE DIFFERENT CAMPUSES OR THE DESIGN OF THE COURTYARD, WAS CHOSEN BY STUDENTS' VOTE.

WOOD IS THE WAY

The newly rebuilt Suomalais Venäläinen Koulu (SVK) school in Helsinki is the largest wooden school in Finland. Viktoria Petrovskaya from EdDesign online magazine looks into the updating project, which took more than 50 brainstorming sessions to finalise.

The funding for SVK was allocated in 2015 and the project required the demolition of the old building, erected in 1955, and construction of a new one. AFKS Architects (afks.fi) was awarded the contract to build the 6,400-square-metre (68,889-square-foot) school, which has 85 staff and 700 students, many learning in Finnish and Russian.

"It was an amazing, difficult, but incredibly exciting time that even a pandemic could not spoil," says school principal Tuula Väisänen.





THE BUILDING IS CARBON-NEUTRAL AND IS EQUIPPED WITH SOLAR PANELS PAIRED WITH AN AUTOMATED ENERGY-SAVING SYSTEM.

“Teachers, students and even the parent committee took part in the planning. Every detail, whether it was the tables and chairs for the common spaces, the colours of the different campuses or the design of the courtyard, was chosen by students’ vote. Then the interior designers incorporated it all. In total, we conducted about 50 brainstorming sessions.”

SVK is the largest wooden school in Finland, built with cross-laminated timber (CLT). The two-storey building is constructed in the form of the letter “L” with windows in each room, filling them with light. The property is carbon-neutral and is equipped with solar panels paired with an automated energy-saving system.

Campuses and clusters

The structure is divided into three campuses for elementary, middle and high school students. The school has a special wing for the youngest pupils, with every element scaled to size, from door handles to stairs.

At the elementary level, classes are kept separate because it was felt that younger children benefit from their own space in which to feel comfortable and confident. It helps them concentrate and allows them the time to get used to school life, to acquire the skills of independent decision-making and self-organisation. When they are ready, they can work in any study place they choose.

High school students, on the other hand, have spare time; they often have gaps in their timetable, and they wanted a choice of comfortable spaces where they can work, play and rest.

The middle and high school students’ space is divided into themed clusters. These are groups of classrooms

united by their specialisation. For example, there is a liberal arts cluster and an applied sciences cluster.

Among the arts are languages, history of art, philosophy, history, psychology, religious studies and ethics. Applied sciences is mathematics, chemistry, physics and biology. There is also a separate cluster dedicated to craft and domestic science.

Every cluster has its own colour code, reflected in the furniture and carpets: applied sciences is turquoise, whereas liberal arts is red. The colours were chosen by the pupils themselves, and at the centre of each cluster is a large open space. Furniture can be quickly and easily rearranged, enabling a variety of different learning environments.

Transformable spaces

Any room in the school can be modified easily. Sliding walls and sound-insulating glass partitions enable three rooms to be merged to create a large hall for 100 people or simply make a space that is more comfortable for smaller groups. The glass walls mean teachers can observe several groups of pupils at once.

A great deal of attention is paid to multi-functionality. The doors of the classroom cabinets can either be written on or used as magnetic panels to which pupils’ work or posters can be attached and displayed.

The central school space – the atrium – can also be converted into a school cafeteria, an auditorium or a theatre stage. In addition to chairs there are wooden steps with built-in sockets. High school students often work here – or just relax during school breaks. All the corridors are wide, equipped with individual workplaces, sofas and chairs. There is a balance of furniture conducive to both study and relaxation.





CLASSES ARE HELD ON DIFFERENT FLOORS TO ENSURE THAT STUDENTS ARE MOVING THROUGHOUT THE DAY.



Areas for teachers

In Finland, teachers often work in pairs, teaching together. And in new schools, teachers no longer have individual classrooms. Except for elementary school, lessons are taught in a variety of areas – sometimes in a classroom, but sometimes in a more informal area and often outside if the weather is nice.

Within the school there are two rooms for the teachers. The smaller one was created for the elementary school teachers, who do not necessarily have enough time to get to the larger room during short breaks. Both rooms have desktops, places to relax and coffee-makers, which are must-haves in Finnish society.

Physical well-being

SVK embodies the accessible environment: there are ramps and railings everywhere, and each element of the school is adapted for people in wheelchairs.

The school is mindful of the need to encourage day-to-day physical movement. Classes are held on different floors to ensure that students are moving throughout the day.

All the school breaks take place in the fresh air. Two courtyard playgrounds were created in response to the wishes of the children. Climbing frames, swings and a basketball hoop offer opportunities for those who want to be active, but there is also space to sit and relax. There are places to park bicycles and scooters.

Principal Tuula Väisänen is delighted with the result: "We are all in love with this bright, traditional wooden, yet modern building, and, of course, it is clear how much social being determines consciousness.

"We can say with confidence that we have become much better in compliance with the rules, with discipline, with the self-organisation of pupils, with the careful handling of furniture and even with academic performance." ■

WHERE: capital of Finland, Helsinki. Residential area.
WHEN: School was founded in 1955, renovated in 2021.
SPECIALITY: Bilingual. Most advanced level learners are studying in Finnish and Russian.
WHO: 700 students and 85 staff.

on reflection

LEARNING FROM OTHERS

For years our schools have been told to be “more entrepreneurial” and to “learn from business”. But, actually, in today’s cash-strapped pandemic-riddled world, many schools have shown themselves to be remarkably resilient, evidencing an enterprising ingenuity. During the pandemic, they changed, they explored, they invented and mainly they succeeded against all the odds. That might not be true of the policymakers controlling them, but it is certainly true of those embattled heroes at the chalkface.

Meanwhile, it became clear to many organisations outside of Education that they themselves need to be much better at Learning. Far from showing schools a thing or two, the smarter ones are learning FROM schools, embracing the cutting edge of their great learning space designs. The resulting dialogue has moved fast; outside of Education, practice has raced past where policy was.

Some differences emerged quickly: where Education is often dragged back by some daft bureaucratic dictate, business has shown no such reticence, shouting simply: “It works; let’s do it!”

Consider a few examples:

Working with a group of property management companies I spent a day demonstrating the dramatic impact of bright white lighting (lux above 500, Kelvin value above 5,500). We looked at CO₂ and experienced the impact of plants’ photosynthesis on upping oxygen levels, at the importance of reducing total volatile organic compounds (TVOCs), and at the role of physical movement, all to keep minds sharp and ideas fresh. Within 24 hours offices had been changed, within the week outcome feedback was pouring in: “No turning back – this is so impactful.”

Working in the NHS, looking in particular at nurse training and retention, the Learning Clubhouse we had created was so rapidly embraced that even delivering the last items of learning furniture became problematic. The building was permanently crammed full of new nurses busy Learning! It is very much a huge-scale version of one of our Spanish schools with zoned learning, sumptuous light and air, ubiquitous clever technology and writeable furniture surfaces. Aspiring nurses arriving take one look, say “wow” and sign up.

Working with elite sports we made-over the GB Olympic Hockey teams’ demountable coaching hut to create what looked in truth like a state-of-the-art primary school with tiered seating, writeable walls, data-rich tech, bright lighting and every surface – even the floors – pressed into supporting Learning. Even before the Women’s team had progressed to their first Olympic Gold medals in Rio they had passed on the recipe to England Rugby.

The point in all these examples is the pace of change of these spaces beyond Education. No antediluvian inspectorate to persuade, no polemicist ministers with hidden agendas to win over, no need to do other than listen to active professionals who understand the science of making Learning better and can’t wait to get on with it. In Education, we need these freedoms too.

Professor Stephen Heppell is CEO of Heppell.net and holds the Felipe Segovia Chair of Learning Innovation at Universidad Camilo José Cela, Madrid.





The Prince of
Wales School,
Dorchester, Dorset
Photo: Gary Spracklen

The Future of Learning Space Design.

The A4LE Europe Action Research Team supported by its members has been one of 20 international teams working with the University of Melbourne. The White Paper and proposed next steps for this project focused on Innovative Learning Environments will be sent out to all A4LE Europe members in January 2023.

Standard membership is **£95.00** per year, and includes:

- *Planning Learning Spaces* Magazine, three times a year.
- Log in access to the A4LE Europe and A4LE International websites.
- Free entrance to the annual A4LE lecture.
- Reduced ticket prices for all A4LE European and International events and the programme of activities for 2023/2024.

We have a Lead Membership Category of £190.00 per year with a range of additional benefits for members.

Details of all our events for 2023/2024 in the UK and Europe are listed on our website:

www.a4le.eu/membership.

Please contact Terry White for more information on membership and how schools can be part of A4LE as associate members through partnership working.
Email: terry.white@a4le.eu.



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