

# PLANNING LEARNING SPACES

FOR ARCHITECTS  
DESIGNERS AND  
SCHOOL LEADERS

**EDUCATION MEETS COVID-19**  
CHALLENGES AND SOLUTIONS





- Q How do we keep staff and pupils safe?
- Q How do we reshape our school so that it functions with physical distancing?
- Q How can we build confidence that it's safe to come into school?

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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 UK and Europe. It is given free to European members and distributed to 8000 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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## TOMORROW'S WORLD

IRENA BARKER EDITOR

**“We need to produce people who know how to act when they are faced with situations for which they were not specifically prepared.”**

This quote from the late mathematician and educator Seymour Papert could not be more apt in these bleak times of Covid-19.

While planning was possible to mitigate the ravages of a global pandemic, coronavirus has been a phenomenon for which no one was “specifically prepared”.

Some countries have fared well; for others it has been a catastrophe brought about by specific local factors and poor government decision-making.

Whatever their infection rates though, all countries now face the same challenge: how to get all children and teachers back safely into schools.

And how, once this is done, can we ensure that young people receive the kind of education that gives them the skills to cope with the next set of unforeseen circumstances?

How do we avoid the trap of allowing outdated approaches to education — deemed temporarily necessary for social distancing — to continue to dominate after the threat has passed?

Desks in rows may seem like the simplest way to keep pupils two metres apart, but there is a danger that this practice will become re-entrenched, setting back the cause of progressive educators everywhere.

It is vital too that schools and authorities look beyond their firefighting role and ask themselves what they can learn from these strange times. What opportunities do they offer for the future?

Have our interactions with technology, for example, thrown up any new possibilities for schools to engage with their students and communities?

One thing is certain as we step into an era where the coronavirus continues to affect our daily lives: space will be at the forefront of everyone’s minds — on the pavement, at the supermarket and in our schools.

On page 20, Murray Hudson explores the different approaches and measures schools can take to maintain a progressive vision for education despite the imperative to keep pupils apart.

If you can put desks in rows, can you put them in a circle, for example, allowing for more collaborative learning?

He writes about how this push for space is expected to take far more lessons outside and how existing resources can help to make this possible.

The move outside will also take learning closer to the natural world, something that many people have grown to appreciate with the newly fresh air and the natural soundtrack of birdsong of cities in lockdown.

Of course, architects and educators have long had an understanding of the importance of nature. But the new era could mean it becomes, by necessity, an intrinsic aspect of school for the majority rather than the minority of learners.

St Andrew’s Scots School in Buenos Aires, which we profile on page 67, takes inspiration from the Scottish landscape thousands of miles away, creating a playful environment which sparks creativity and wonder.

Indeed, creativity, wonder and emotional well-being need to be at the core of our own post-Covid learning landscape.

Progressive approaches which allow young people to experience deep learning, develop relationships personal qualities and skills mustn’t be permanently swept aside by the practicalities of dealing with the virus.

They are more important than ever. ■

## LOOK! NO HANDS

As school leaders look to remove avoidable touch points in their classrooms, the solution appears to be lying at our feet.

A number of manufacturers including Step'n'Pull have created simple foot-operated openers for doors. These simple brackets attach to the bottom of the inside of the door allowing you to pull it open simply by using your foot.

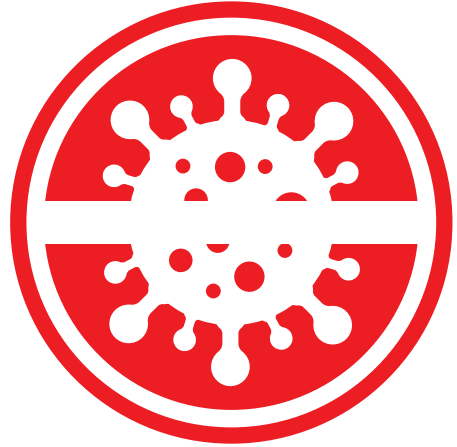
The same approach can be applied to hand sanitising stations with foot-operated pumps.

Solutions vary - some simply hold a standard half-litre bottle of hand sanitiser with a series of levers depressing the pump at the top.

Of course, 1,000 learners each using 3ml of hand sanitiser will get through six bottles, meaning multiple re-fills every day.

First Dispense has solved this by making the entire body of their pump a reservoir holding around three litres of hand sanitiser, dispensed in 1.5ml doses.

This means far fewer visits to the store cupboard for the caretaker. For further information, click on [www.firstdispense.co.uk](http://www.firstdispense.co.uk) ■



## OVER-PROMISING, UNDER-DELIVERING?

Schools are being offered many solutions which claim to be coronavirus-proof.

But as we go to press, no commercial testing laboratory has access to the virus for testing, so it pays to be wary of these claims.

Some companies are testing their products against a feline coronavirus that scientists believe will react in the same way and this is fairly standard industry practice. However, scientists are finding out new things about SARS-CoV-2 every day, so to think of this as a guarantee is at best misplaced.

The same can be said of plastic “sneeze” screens.

There is a global shortage of acrylic and polycarbonate — the plastics most commonly used in their manufacture — which means few manufacturers can actually deliver on their promises.

Also, computer modelling suggests the screens are of very limited value anyway.

Scientists at Aalto University in Finland modelled how a cough travelled through the air in a supermarket demonstrating that the 8 to 10 ft high shelves — much higher than any proposed screen — did little to impact on the spread of the aerosol of droplets. For more information see <https://youtu.be/WZSKoNGTR6Q> ■

## ONLINE AND LIVE

### Terry White, the chair of A4le (UK), explains how his organisation is adapting

What are the new landscapes for learning? It is clear we need a vision that is more inclusive, engaging, motivating and relevant for our young people and our learning communities. It must also be sustainable for all our futures.

We are developing our UK European Network Programme over the next 12 months to bring together all those who value improving learning opportunities for young people as we move into the future.



#### Our plans for the coming weeks and months include:

- Our popular Learning Spaces Live events will continue across locations in Europe, subject to restrictions on gatherings. They will also be available online for members.
- We will be sharing a European Network series of snapshots through Scandinavia, Italy, Spain, Germany and the UK, looking at ways these countries are returning to learning.
- We have set up our Edudesign Lockdown Challenges for all to enter. To see two submissions for our first challenge, to design a learning space for 30 pupils aged 8 and 9, turn to pages 40 and 44.
- We are working with the teams who took part in our multi-disciplinary design workshops last year to address the challenges of today.
- Under the theme Space Really Matters we have been working on mini projects with our European and international members and will be sharing our work later this year. ■

## VIRTUAL FESTIVAL

The six-week Festival of Learning Spaces continues online right up to July 10 with a series of webinars. One, run on Thursday June 11, considered the value of creating inspiring rather than functional learning spaces in schools.

"The design of spaces informs how we interact with people, and contributes to general wellbeing," said Gareth Long, director of the-learning-crowd and one of

the speakers. "Many people consider exciting individual learning spaces, but I explored how fresh design could minimise cramped circulation spaces in schools and argued that we should try and make every space into an opportunity for formal and informal interaction and learning". You can still register to take part in the festival at [www.festivaloflearningspaces.com](http://www.festivaloflearningspaces.com) ■

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# NATURE AND NURTURE

Lesley McMillan, an interior designer with The City of Edinburgh Council, tells *Planning Learning Spaces* about the key things she considers with each new project and why incorporating nature into schools and nurseries is so important.

**What kind of spaces are you involved in designing and what are your responsibilities?**

I am involved with the architectural and technical aspects of interiors through to decoration and furniture specification.

Design projects include libraries, young people's residences, schools and nurseries.

Being involved in projects from the outset allows us to influence the building design, consider the configuration of the teaching space and how it will be used.

We work with teachers to give advice on how to support pedagogy in these new spaces or to use existing spaces more creatively.

**Have any projects in particular informed the foundations of your thinking as a designer?**

The beginning of my design journey at City of Edinburgh Council has been with early years environments; it really is about getting it right from the beginning.

The lessons learnt in these settings have had a huge influence on many of my other designs and are translatable through the different stages of education.

With a rising birth rate and an increase in the number of free nursery hours there is a growing demand for nursery places in Scotland. There have been numerous new builds and refurbishments as part of a building programme to accommodate this expansion.

In designing these spaces, we have taken into account research emphasising the importance of free flow play and creating a nurturing, holistic and natural environment to support children's learning and development.

We considered the forest nurseries approach, the benefits of biophilic design, best ergonomic practice and research on brain development and attachment theory.





**IN DESIGNING THESE SPACES, WE HAVE TAKEN INTO ACCOUNT RESEARCH EMPHASISING THE IMPORTANCE OF FREE FLOW PLAY**



### What other things are important in the design of these learning spaces?

A key requirement in any learning setting is that it allows for flexibility, creating highly configurable environments.

Each group of children is different. The age and number of pupils - and what they do in that space - is going to vary. Also, we need to take into account children with additional support needs.

Flexible storage furniture and screens can create natural boundaries between activity areas, protecting children's play and supporting their focus.

Carpeted areas can sometimes restrict the possibilities for rearranging interest areas as the room's use changes. This is why I mostly use vinyl flooring throughout with the use of extra soft, tactile carpet area rugs for flexibility.

### How do you take into account pupil wellbeing in your designs?

I was recently asked to chair the new Education Design Council, part of the Society of British and International Interior Design.

I invited Jim Taylor and Oliver Heath, two experts in designing for wellbeing who I admire, to join me on the panel.

Oliver Heath is a biophilic design expert and founder of architectural and interior design practice Oliver Heath Designs.

His work is inspired by the idea that humans have an innate attraction to nature and natural processes. The term was popularised by the US psychologist Edward O. Wilson in the 1980s, when he observed how increasing rates of urbanisation were leading to disconnection with the natural world.

Regular positive interactions with nature allow children to feel comfortable and grow to love it.

Research has proven that our attention capacity, which is essential for our cognitive functioning, is restored when we come into contact with nature, improving performance and the wellbeing of both staff members and students.

Where a primary experience of nature is not available, experts say that installing tactile and visual references to nature can reduce stress responses. You could use natural textures, materials, patterns, colours and motifs in floor and wall coverings to achieve this.

### Do you have any projects you are particularly proud of?

We received a commendation in the Scottish Play Awards and also the Education Buildings Scotland Awards for the Murrayburn Imagination Playroom.

The space, originally a library, was converted to create a playroom for children in the early years of the school, with the intention of softening the transition into primary 1 (4 and 5-year-olds) from nursery.

We designed it with no 'front of room', orientation and resources added to the magical, calm nurturing environment.

Consultation with the children led to a space incorporating some of their wishes such as blocks and wigwams, encouraging imagination and active play.

Pupils with additional support needs from the school's language and communication classes equally enjoy using this inclusive space. The nook, wigwams and playhouse provide a comforting place if a child wants some time out.



### Is it hard to get the decoration right in a learning space – how much is too much?

One of the reasons I mainly use a natural colour palette is that it allows children's work to stand out.

It allows the focus in the environment to go on the colours inherent in the work completed by the children and staff.

Natural backgrounds give children the opportunity to learn about, compare, contrast and experiment with colour.

Natural holistic environments are also calmer inclusive spaces for children with autism and additional support needs.

One idea that has been a big success for us has been "velcro receptive pin boarding". I use it in early years spaces at low level to allow the child to stick their artwork on by themselves.



## INTERACTIONS WITH NATURE ALLOW CHILDREN TO FEEL COMFORTABLE



## CREATE THE MOST POSITIVE LEARNING ENVIRONMENTS POSSIBLE



### Why is a sense of calm so important in classrooms?

I have been working on the interior of a newbuild SEN school, St Crispin's, which is due for completion in 2021.

Part of this project included a seminar with Phoebe Caldwell - an expert practitioner who has spent 45 years working with people on the autistic spectrum.

She stressed that people with autism need "visual and auditory tranquillity". Schools are difficult environments for children with autism: they are over-stimulating, triggering behavioural distress.

Sensory processing problems are triggered by environmental sensory overload so designers have to think carefully about lighting and visual hypersensitivity, boundaries and space, storage and how many resources to have out at any one time.

### How important for you is the idea that children feel "cosy" in their learning environments?

Research on brain development and attachment underlines the importance of creating opportunities for children of all ages to develop trusting relationships with practitioners/ keyworkers.

These help ease anxieties brought on by separation from parents and caregivers and create the most positive learning environments possible.

Suzanne Zeedyke, senior lecturer at the University of Dundee, highlights the need for children to have cuddles from a trusted key-worker, boosting levels of oxytocin, the feel good hormone, in the brain and lowering levels of the stress hormone, cortisol.

The English translation of the Scottish term *coorie-in* is cuddle up. Cuddle sofas with a low seat height for children to sit on but also deep enough for the adults to sit in too are a must. They have big comfy arms encouraging children to snuggle up with a parent, practitioner or friend for cuddles and cosy reading time.

Designed-in nooks and other small spaces can encourage reading, as can dedicated bedtime story areas.

Wallpaper (in many of my projects it's upcycled) can make a space feel homely; cubes and shelves allow staff to display seasons and themes.

Sometimes simply bringing a branch indoors and adding fairy lights can add to a magical calm environment.

### How important is it to include young people in the design of their learning spaces?

When we were refurbishing St Margaret's we trialled learning space ideas for future school projects. During our consultation with pupils some ideas were coming up multiple times or along similar themes.

Pupils wanted to represent the school's sense of identity and they had many ideas about the sea, fish, boats and coral reefs. Blue was a favourite colour, too and all this inspired a design centred on the story of Saint Margaret.

We managed to incorporate references to St Margaret's Cave, the Forth Sea and Fingal's Cave into the school, which also featured a "learning shipwreck" and classrooms making reference to the land and local areas.

Developing a design journal can help the class understand the "design story" of their environment and act as a prompt for future pupils and teachers to understand and develop the space in the future.

In a current project I suggested the class formed a design team – with architects, interior designers, furniture specialists, M&E consultants, ICT & AV specialists.

The teacher led the class to think about the role they would like and had them fill out mock job applications.

### How would you sum up the key principles of learning space design for you?

I aim to create natural, nurturing spaces that are non-prescriptive which stimulate or require imagination and which can be used in multiple ways.

The outdoor environment is important for all stages of education and should be an extension of the indoor environment with opportunities to free flow where possible.

Learning spaces should provide possibility.

A rich range of opportunities and furniture choices should allow and encourage children to move and create a nurturing yet exciting play environment which promotes creativity, imagination and flexibility.

Continuing to work as an in-house design team and client teams allows us to continually get feedback from the client and users of the spaces.

It's an amazing opportunity and extremely rewarding to see how these learning spaces develop over time. ■





## NOBODY SAY “SCHOOL”

The playful and stylish Learnlife hub in Barcelona, Spain uses the studio concept to help teenagers blossom into independent learners with a sense of purpose.

By Irena Barker

Sandwiched between a Mexican restaurant and an artisan cobbler on a pedestrianized Barcelona street, it would be easy to mistake the Learnlife hub for a small art gallery or fancy shop.

Intriguing artworks in the windows attract curious viewers every day and people frequently stop to take pictures and peer inside.

But despite appearances and its trendy city-centre location, the Learnlife hub is neither of these.

Avoiding the word school, or even college, the hub is a privately-funded learning base aimed at teenagers who want an alternative to standard school offerings in the city. Here, the focus is on nurturing learners' well-being and relationships as a foundation for discovering their interests and directing their own learning.

The young people are helped along their way by “learning guides” (rather than teachers) within a series of studio spaces, which allow them to immerse themselves in their passions.

The studios include a makerspace for activities such as art and fashion, woodworking areas, a food lab, multi media lounge and sound studio.

The building is also home to a co-working space which allows learners to be inspired by professionals working in their areas of interest.

It is hoped that the hub will become an example of best practice in learner-centred education that will inspire many other such institutions across the world.

This well-lit learning utopia, with its bright white walls, Scandinavian-style timber fittings, resplendent plant life and playful nooks and corners has been a labour of love since the very start.



Until 2017 the space was a lawyer's office, until it was spotted as a potential site for conversion by Sol Espoille, the architect in charge of creating Learnlife's first hub.

"From the beginning I was completely in love with this place mainly because we are in the heart of Barcelona, we are in one of the most beautiful pedestrian streets," says Espoille.

"The location is really fantastic as we are near the universities and the curious buildings."

One benefit of the building was that the internal courtyard – typical of Barcelona buildings – had already been covered over, allowing for the creation of a central performance area lit from above.

The final space is licensed for 350 learners but the aim is for Learnlife to grow its current full-time student numbers from 65 to around 150. Many more will attend its evening programmes for young people attending mainstream schools.

Despite the obvious benefits of the building's location, the conversion itself had its challenges – and its opportunities.

Courses were already running in the building with 35 learners in attendance while the conversion was being carried out, with the inevitable noise and dust.

"It was completely inspiring and a challenge," says Espoille.

"It was the most amazing experience. We have plenty of stories about involving the learners in the design process."







**COURSES WERE ALREADY RUNNING IN THE BUILDING WITH 35 LEARNERS IN ATTENDANCE WHILE THE CONVERSION WAS BEING CARRIED OUT, WITH THE INEVITABLE NOISE AND DUST**



Learners were put in charge of coming up with a use and a design for one particular small space under a staircase, and carried out workshops and research to decide what it should be.

They eventually emerged with the idea of the “Yellow Submarine”, a focus room where people can go to make a Skype call or work undisturbed on something requiring intense concentration.

“They had to think about budget, measurements, maths, design process, team building and finally making a presentation with their results,” says Espoille, stressing the advantages of an “organic” design process where not everything has been decided in advance of works taking place.

Young people have also been involved in the development of the furniture.

Learners were set the challenge of designing stools that could be mass-produced, flat-packed and involve no glue or nails.

A winner was chosen from a number of prototypes and is now in use in the spaces.

The striking timberwork throughout the building — including eye-catching “beach hut” style booths in the entrance hall — was created by Learnlife’s own in-house carpenter, but it has already inspired learners to work with wood.

Involvement of learners is key to much of Espoille’s work — she is the founder of the Arquikids project which encourages children to become involved in architectural design.

But there is a lot more she is proud of in the design of the learning hub.

“Our philosophy in terms of the space is that in every corner we have a challenge to make a learning experience around that.

“One of the objectives was that the whole building is somehow a learning environment, it invites you to learn something, even the bathroom.”



## THE CREATIVITY OF THE SPACE INSPIRES THE LEARNERS TO BE CREATIVE



This concept is illustrated perfectly in the hub's toilets where giant murals illustrate the long journey water goes on before arriving into our taps.

Playfulness is also key to the design, says Espoille who incorporated skateboard racks for learners, many of whom skate to school.

One of her favourite spots in the school is the lobby "shark attack" scene constructed from a deckchair, mirror and a surfboard with a bite taken out of it.

While offering some fun for visitors to the school to take a selfie and amuse themselves, it also covers some ugly electrical boxes.

The use of wooden swings for seating is also not just a whimsical bit of fun – enabling learners with ADHD or autism to move or rock as they work helps them to focus and concentrate.

"There's always a reason, I like to challenge myself to think that every corner has a function but also a story behind it," says Espoille.

This sense of fun itself has a function, explains Stephen Harris, an experienced headteacher and now chief learning officer at Learnlife:

"The creativity of the space inspires the learners to be creative," he says.

Above all, while Learnlife is about learning, it is far removed from everything young people might expect from an exam-focused and teacher-centred traditional school.

Learners do not study for specific qualifications at the hub, although they are supported by staff if they want to gain them through distance learning options.

"Kids come into the space and they have no concept of school," says Harris.

"They may have been damaged by their school experience but here they can relax emotionally. The space encourages positivity." ■

# EDUCATION MEETS COVID-19: THE CHALLENGES AND THE SOLUTIONS

The advent of Covid-19 poses huge challenges for schools but there are many ways our learning spaces can be adapted to maintain a progressive approach to learning, writes Murray Hudson.

We are in the grip of a pandemic: governments, authorities, schools, teachers, parents and students face a situation that has never been experienced before.

Nothing has ever kept 87 per cent (about 1.5 billion) of the enrolled learners in the world out of school for such an extended period.

Educators around the globe are scrambling to find individual solutions to problems that are not always easy to define.

Covid-19 has created a disruptive situation. While it is not welcome or in any way good, it is both a challenge and an opportunity. It is a chance to reflect not just on ourselves but on everything our society values.

We at *Planning Learning Spaces* are heavily invested in making education and working environments more effective, creative, communicative, active, and healthy.

As we have looked at the effort that is going into getting education systems functioning again, we have noticed that there has not been much focus on the learning environment and products to support teachers and children.

The “Third Teacher” concept explains how the environment in which children learn plays a major role in their learning outcomes.

Issues such as the differences in how younger and older children may react or perceive the “new normal” are important to understand. How can we develop environments where we do not instil fear but instead confidence within our students?

There is no way to suddenly change and rebuild the existing infrastructure, but we can adjust, change and repurpose what we have.

Together with open communication, we can provide creative product solutions and environments which will make social distancing work. Sometimes a simple product addition can multiply the number of ways a school can react to a given situation.

There are no answers or magic bullets here. This article is a way to kickstart a dialogue where together we can begin to understand the bigger problems and then hopefully solve them, step by step.

As a society, we need to focus on how we can safeguard recent gains in modern education.

For example, how group and project work are accepted as vital and how students’ ability to communicate effectively, physically, verbally and emotionally is key to their development.

If we turned to home-schooling as a Covid-19 solution we would see these positive advances quickly disappear.









**EDUCATORS AROUND  
THE GLOBE ARE  
SCRAMBLING TO  
FIND INDIVIDUAL  
SOLUTIONS TO  
PROBLEMS THAT ARE  
NOT ALWAYS EASY  
TO DEFINE**

It is possible to use advances in digital media to support ideas such as the flipped classroom and blended learning ideas.

At the same time, we should all remember that digital technology is not a replacement for analogue, just as social media is not a replacement for companionship and physical closeness.

We as humans require a sense of togetherness and that is what a school community, even in these times, can offer.

A balanced solution is normally the best one, and while it is not easy, it is imperative for the health of our society and our children.

Any idea voiced here comes with a lot of questions and issues that need to be worked through. The entire organisation of a school day will need to be questioned, altered and refined to achieve the goals.

This unique situation will need cross-functional teams developing many new ideas, sharing them and developing answers that work for individual situations.

It is important to work with those who are willing to pounce on the good ideas together, develop them and above all test them with users.

Covid-19 has and is impacting our world in ways only works of fiction had imagined, but at the same time, we see a global effort to solve the shared problems.

We look to this as a sign that together is better, and together we can solve the big issues. It takes communication, co-operation and the willingness to try new things to create long term solutions.

Let it not take our focus off providing wonderful environments for our students and teachers. Do not take the easy way and fall back into the old methods of education. See it as a challenge where no one is alone and through collaboration we can create effective solutions and transition to a new future.

This approach is also central to the mission of the A4le (UK) which believes that bringing together teachers, educators, design professionals and researchers is the only way to develop effective, innovative design solutions for educational facilities. They hold workshops to demonstrate that collaboration and consultation across multi-disciplinary teams is central to meeting new design challenges.

As a community of educators, suppliers and product designers, we needed to challenge our assumptions and work together to develop solutions.

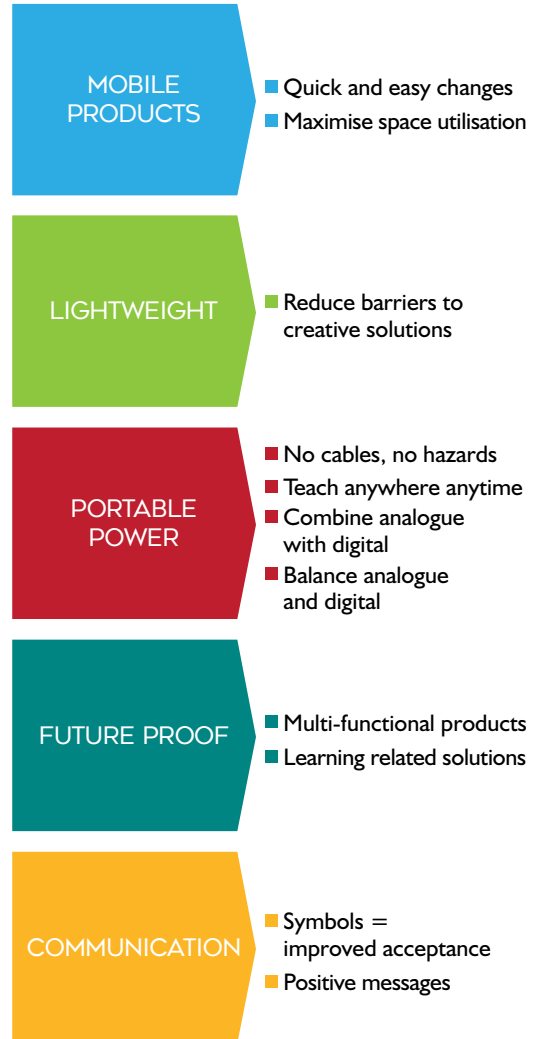


**HUMANS REQUIRE A SENSE OF  
TOGETHERNESS AND THAT IS WHAT  
A SCHOOL COMMUNITY, EVEN IN  
THESE TIMES, CAN OFFER**



## SOME OF THE QUESTIONS WE HAVE POSED OURSELVES INCLUDE:

- How can methods such as the flipped classroom and blended learning help us to solve the structural issues caused by Covid-19?
- What spaces can be repurposed to increase the theoretical capacity of buildings while maintaining social distancing?
- How can signage better inform and better support cultural change within the restrictions of a pandemic?
- What products could be used to support safely learning close together?
- How can products be designed to maintain their relevance later on and to justify their added costs to the system?



### General design points for meeting the Covid-19 challenge:

- Mobile products solutions allow for quick, easy changes in the environment which allow staff to fine-tune systems more easily and maximise the use of space
- Lightweight solutions make every stage of initiating the change and adapting things easier
- Portable power solutions (battery packs) give schools more options and save time given the absence of cables
- Using symbols rather than words in signage encourages universal understanding of the message
- Reduce fear but encourage respect for the situation through positive messaging. Use encouragement instead of force
- Create products that work now and in the future, saving schools time and money



## THE CHALLENGES OF SOCIAL DISTANCING

### Ideas for use of space in the Covid-19 era:

- Make use of unused spaces: sports halls/entry halls/outdoors/cafeteria
- Create classrooms with larger footprints to enable more students to be taught
- Give students places to study/work while keeping to the social distancing rules
- Adapt seating and tables for break times that prevent/minimise close contact
- Products and equipment with antimicrobial surfaces add a further level of protection, and prevent cross contamination
- Use pinboards/whiteboards to display information, such as what side of the walkway to walk on
- Make use of functional products to aid in keeping social distance within walkways and break-out areas
- Create freestanding boards to create "Pop-Up" classrooms in new places
- Use lightweight, easily movable digital screens/touchscreens to allow teaching outside the normal areas
- Use cloakroom trolleys, particularly in Early Years, in individual classrooms to provide convenient storage, and prevent congestion in communal areas
- Use video conferencing within schools to support spreading students over a larger area
- To aid sharing and teaching without digital aids, small to medium-sized whiteboards can be used to allow every student and the teacher to record, create content and then present it. This avoids having to



## PRODUCTS AND EQUIPMENT WITH ANTIMICROBIAL SURFACES ADD A FURTHER LEVEL OF PROTECTION, AND PREVENT CROSS CONTAMINATION

Use under utilised space	Sport halls	Outdoors	Create classrooms with larger footprints
	Entry halls	Cafeteria	Give students safe space to study
Pinboards whiteboards storage	Portable	Acoustic	Clear and up to date information (analogue)
	Light-weight	Information	Divide spaces clearing and cleanly
Mobile digital displays touch screens	Selfpower battery	In-house conference calls	Multiple screens allow multiple groups to be taught simultaneously
	Multi-purpose trolley	Mobile classroom	Move and rearrange without barriers (cables electricity)

Mobile sets of classroom furniture	Light-weight	Rearrange and change	Every communication tool required in one mobile set
	Analogue and Digital	Disinfection	Mobile storage for disinfection items (bigger is better)
Small to large format presentation boards and storage	Portable	Acoustic	Better interaction while keeping distancing
	Light-weight	Information	Use mobile items to organise space
Mobile battery packs	Self power battery	In-house conference calls	Digital equipment anywhere anytime
	Multi-purpose trolley	Mobile classroom	No cables or searching for plugs

share the central class whiteboard. Whiteboards are also easier to disinfect compared to chalkboards

- Good sharing and collaboration is not limited to the exchange of physical resources. Encourage presentation, discussion and Q&A's as a positive form of sharing
- Lightweight chairs and tables can easily be moved to allow every child to own their own set and be responsible for it. This minimises cross-contamination
- Use individual storage in primary schools, minimising the need to congregate at storage areas
- Use of personal trays, beneath well separated desks, allows the safe storage of personal property
- Use mobile disinfection carts

### Creating a classroom anywhere

- Institutions can relieve stress on larger classes by moving them into spaces that allow them to spread out. If they lack infrastructure, one solution could be taking an IdeenStor loaded with all you need (about 30 Whiteboards, markers, erasers, post-its, digital screen, pinboards and battery power). You can create a classroom environment with one product, plus the tables and chairs
- If classes need to relocate into larger areas more permanently, such as halls and unused buildings, you could add larger acoustic walls and panels that can also be used as pin boards and whiteboards
- If several groups are meeting in one larger area, complete visual separation can lead to increased noise levels due to classes not realising what's going on on the other side of the wall. A degree of visual contact between groups can encourage empathy and respect for others through the acknowledgement that other people are close by

This approach requires greater collaboration and shared understanding between staff on the range of learning and teaching activities that are taking place.



### Flexibility is still important

Since the 4th May schools in Germany have been welcoming back their graduating students to prepare for exams. A trend has emerged where only “teacher-up-front” instruction is being practised. While this is understandable for the short term, it is very undesirable in the long term. With numbers of students allowed per classroom being halved, there is still room to communicate and mix it up.

The generic classroom is still rows of desks, either singles or doubles. Most classrooms now look like this, (see opposite left) keeping a 1.5-2 metre distance.

This can be improved by offsetting rows to maximise the distance between students in the direction of view/breathing (this does have the negative effect of making it more difficult for the teacher to move around the classroom if required).

We believe that group work and discussion can still be performed by simply using some of the following combinations:

- Large groups can create circles and smaller groups can remain in place. Therefore products that are light and mobile make this easier. Chairs and tables that are easy to move or where the user can easily change position are optimal here, such as KI Ruckus chairs and tables
- Mobile storage units and standing height tables can be used for presentations and there is no reason students and teachers cannot move or change the layout to suit the lesson plan. This will have to be done in an orderly fashion and more controlled than normal but is achievable
- Use of portable flip charts and whiteboards allows smaller groups to work collectively in distanced spaces

Let us not take our focus off providing wonderful environments for our students and teachers. Do not take the easy way and fall back into the old methods of education. We are ready for the challenge.

*Murray Hudson is the co-editor and contributor to Planning Learning Spaces book and is the founder of Gratnells Learning Rooms [www.planninglearningspaces.com](http://www.planninglearningspaces.com) and [www.learning-rooms.com](http://www.learning-rooms.com)* ■

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PLANNING LEARNING  
**SPACES**



## BUBBLE WRAP

Bringing pupils safely back to school is a huge ongoing task for managers. Former UK primary teacher Bhavini Pandya looks at how her old school is rising to the challenge.

As schools across Europe welcome back learners, the preparation workload for school leaders and teachers has increased drastically.

Some schools have been cautious about opening because they feel it is unsafe for both staff and children, but many want to get back to some form of normality.

These schools are of course having to plan for extra safety measures. The UK government guidelines say that children and staff are not required to wear PPE, but huge changes will need to be made to the school day and the classroom itself.

Class sizes in the UK will be restricted to a maximum of 15 students but each student will need to be seated at their own desk and they must be two metres apart from one another.

Children's resources such as books, pens and pencils will be strictly for their own use, with no sharing allowed.

With this in mind, several schools have opted to give each child their own desk, chair and tray – usually placed on top of the desk – for their individual learning resources.

Some schools have also opted for a big tray placed underneath each individual desk, to hold larger items such as coats, and bags.

Trumpington Park Primary School in Cambridge has opted for this style because managers want to avoid



gatherings of children in communal areas such as cloakrooms. This way, pupils also avoid touching other people's belongings, reducing the risk of contamination between students.

This school has also chosen to use antimicrobial products including trays for the children because they can reduce infection rates and boost existing classroom hygiene measures.

Charlotte Leaver, assistant headteacher, said: "Antimicrobial products, including trays, have allowed us to ensure that our keyworker children have been able to come into school daily and still access their own individual resources.

"Children have become familiar with using the jumbo trays to safely store their possessions."

Trumpington Park has planned for smaller teaching groups across the school. All the children will be in their own "bubble" or "kingdom" with a few other peers and one adult and they will stay in those groups for the whole day. This will all help make the transition between home and school much smoother for all.

In addition, parents will also feel reassured knowing the school has put in extra measures to protect their children as much as possible.

Keeping children and teachers safe during this unprecedented time is the priority for all schools across the country. All schools will have their own way of putting safety measures into place, supporting children's safe and happy return. ■

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# VIEW FROM DENMARK

Schools in Denmark were some of the first to return after the Europe-wide lockdown. *Planning Learning Spaces* contributor Lene Jensby Lange from autens.dk gave us an exclusive look behind the scenes at Skolen i Bymidten state-run school, which is part of Helsingør Skole, comprising of four schools in the city of Helsingør. ■











# BY MIDTEN

**ONE OF THE FIRST  
SCHOOLS TO RETURN  
AFTER THE EUROPEWIDE  
LOCKDOWN**



**MANY HAVE  
CREDITED DENMARK'S  
SOCIETAL TRUST  
AND PROPENSITY  
TO FOLLOW RULES,  
FOR THE SUCCESS  
OF REOPENING  
AND REDUCING THE  
SPREAD OF INFECTION**



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TO CLEAN

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## TRIED, TESTED & PROVEN SINCE 1996



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Postura+ is also available in a family of specialist seating products for all types of learning spaces:



**TEACHING TIMETABLES WERE CHANGED, CLASSES WERE KEPT TO SMALL GROUPS AND A LOT OF FOCUS WAS PUT ON OUTSIDE PLAY AND LEARNING**



# Gratnells

# Learnometer

## Helping improve learning outcomes

The Gratnells Learnometer is a device developed in partnership with Professor Stephen Heppell and his research team to measure and monitor classroom environments, allowing the optimal conditions to be maintained for improved learning and achievement.

***Professor Heppell says, "Our research, and others', confirms that poor light levels, the wrong temperatures, inappropriate sound volumes and rhythms, humidity, air pollution, CO<sub>2</sub> and air pressure can all impair learning. Our Learnometer research tool automatically samples your classroom environment, and makes suggestions through a unique algorithm as to what might be changed to allow students to learn and perform at their best."***

The Learnometer records data, stores this data in the cloud, and produces dashboard reports, allowing the user to get instant readings, as well as monitor trends and compare locations with differing environmental factors.

As a constant monitor, visible within the classroom, the Learnometer will also provide the ideal opportunity to engage students in discussion about environmental factors, and can even be used to launch a variety of classroom based STEM projects.





**A HEALTHY, VERSATILE AND FUN ENVIRONMENT**



Open International #EduDesign Challenge #001  
Design a multi-disciplinary post-COVID learning space for thirty pupils ages eight and nine.

## OUTDOOR KIT

Glasgow-based architects O'DonnellBrown showed the A4le (UK) Challenge how they designed and built the prototype for a striking outdoor “community classroom”.

O'DonnellBrown was first inspired to create this outside learning space by the design of their own studio, the Greenhouse, which has a very direct connection with nature.

They recognised the positive effect that their studio space was having on their collective sense of wellbeing and saw the crossover with their education and community projects.

The classroom shown here is intended to promote and support creative and independent learning in a healthy, versatile and fun environment.

It has been designed in line with Scotland's Curriculum for Excellence and the National Improvement Framework and promotes inclusive learning and mental wellbeing.

The design approach was driven by a desire to produce a stripped-back yet architecturally engaging space that could be constructed from a kit and demounted when necessary.

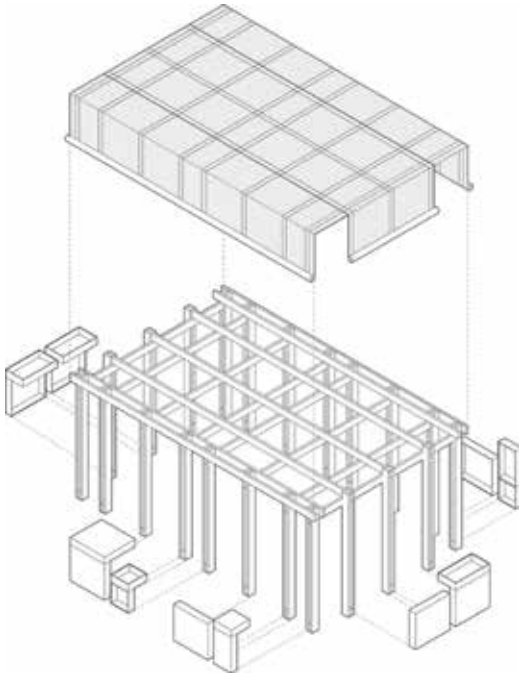
Standard structural timber section sizes provide a skeletal frame, forming the base for plywood modules to be placed and reconfigured to suit different activities and inhabitants.

The kit comes complete with an easy-to-follow manual and modules can provide seating, shelving, worktops or even presentation surfaces.

At the same, it engages its hosts in the creative process of constructing and defining their own environment.



## PROMOTES INCLUSIVE LEARNING AND MENTAL WELLBEING



The practice worked closely with the national children's charity Barnardo's Works to identify young people who could help build the prototype.

Tommy McDade, from the charity, said: "We were delighted to be part of The Community Classroom - one of our project workers and a small team of young people volunteered to help build the classroom."

"The experience helped the young people understand more about the value of teamwork and effective communications, while also gaining insight into working in this sector. This has helped them to further develop their job prospects and career ambitions."

Post lockdown it will be re-erected at Operation Play Outdoors, a Glasgow-based organisation which hosts outdoor learning activities for children and adults.

### Details:

**Address:** 84 St Andrews Drive, Glasgow G41 4EQ

**Completion:** September 2019

**Gross internal area:** 24 m<sup>2</sup>

**Architect:** O'DonnellBrown

**Structural engineer:** Design Engineering Workshop

**Collaborators & sponsors:** Three Four Five Joinery, RIAS, St Gobain. ■

*O'DonnellBrown is a multi-award-winning, Glasgow-based architectural practice with experience across a range of specialisms, and a keen interest in making a positive contribution to the built environment. O'Donnell Brown was a finalist in The Architectural Review Emerging Architecture Awards 2019. Community Classrooms are now available to buy from Spaceoasis and Learniture.*

# Everything in its place



## Not just decorating classroom spaces, but designing them to improve learning

**Gratnells** is privileged to be part of a global movement that is shaping the learning environment.

Working with academics, educationalists, teachers and architects our vision is to create better spaces for children to learn and teachers to teach.

Our work has gone far beyond the concept stage. Supported now by empirical evidence, the views of renowned experts and professional bodies, Gratnells Learning Rooms is an idea whose time has come.

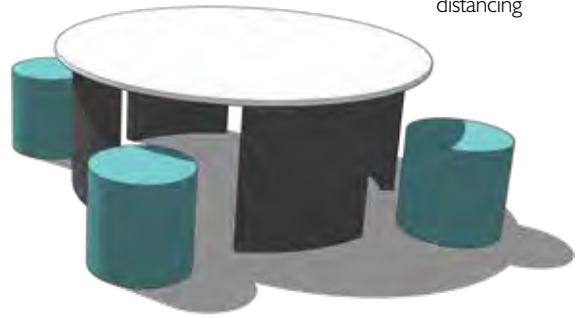
Open International #EduDesign Challenge #001  
Design a multi-disciplinary post-COVID learning space  
for thirty pupils ages eight and nine.

# PLANNING FOR A COVID AWARE WORLD

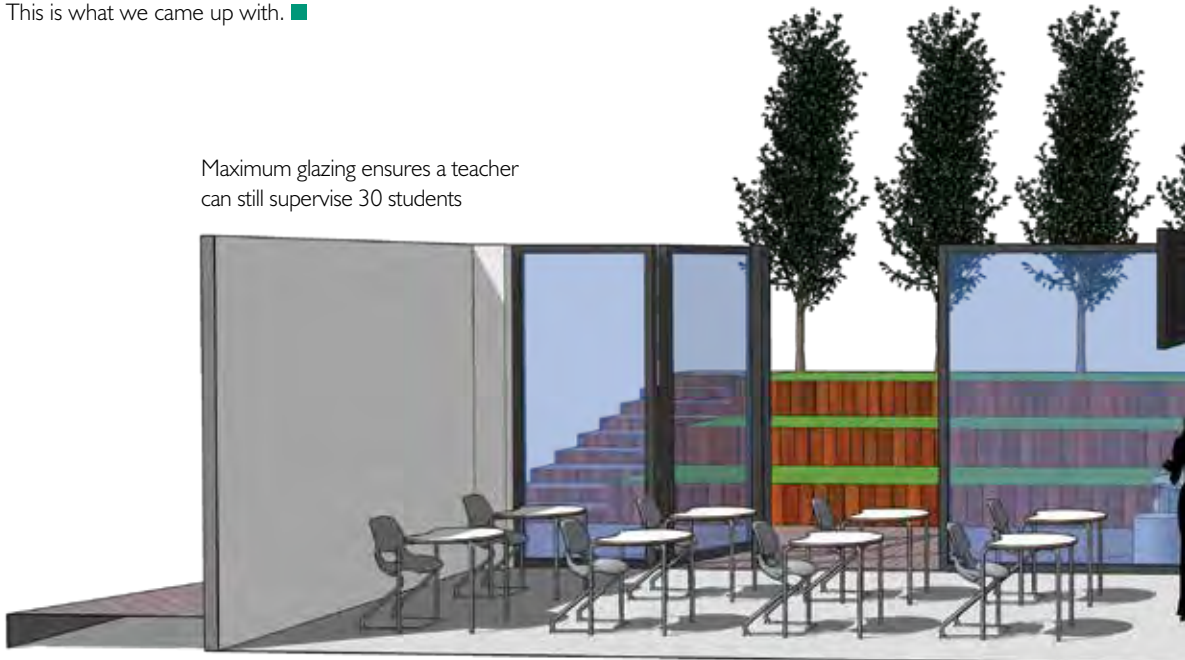
The design team at Spaceoasis and Learniture started with a blank sheet of paper for their submission to the A4le Challenge. Here, designer James Clarke describes their rationale.

Of course nobody is going to build brand new learning spaces at a point where we do not know how long, as a society, we will be living with the constraints brought about by the coronavirus pandemic. But if those issues did become long term – the 'new norm' we're all talking about, then what might classrooms look like? That said, the one thing we didn't challenge was that one teacher would need to be able to supervise around 30 learners. The ramifications of suggesting differently would have been significant. This is what we came up with. ■

Special tables allow  
collaboration whilst  
ensuring physical  
distancing



Maximum glazing ensures a teacher  
can still supervise 30 students

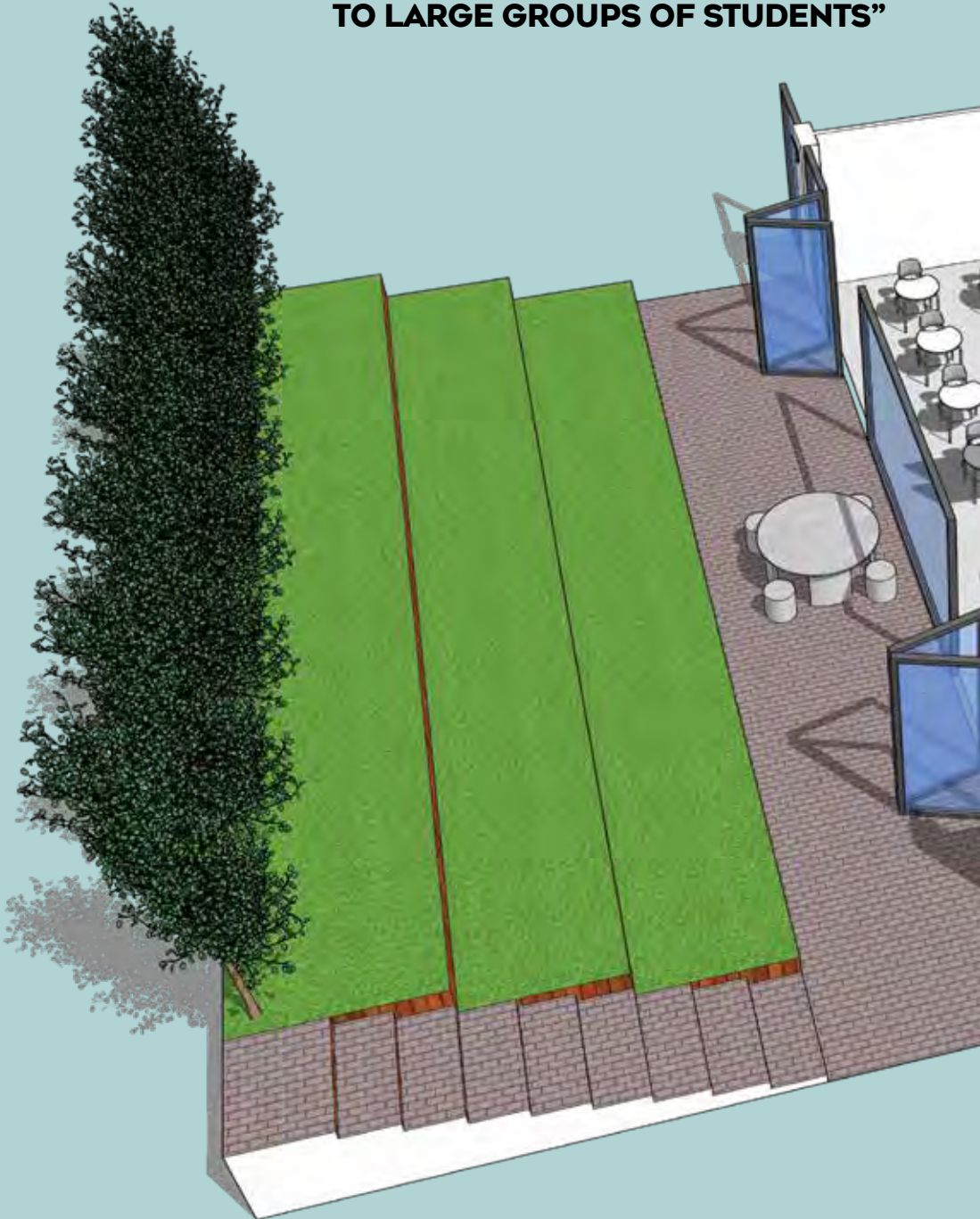


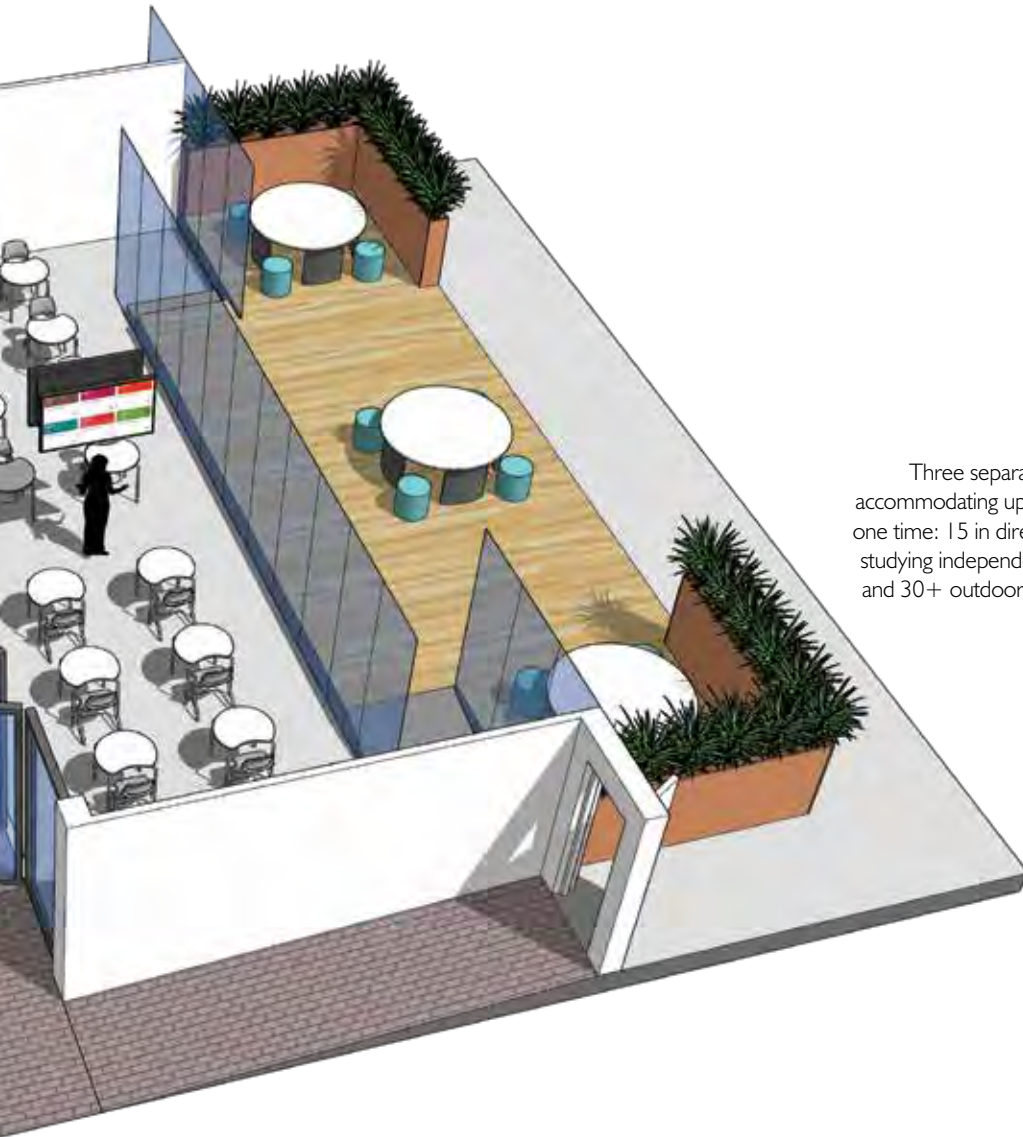


Strong WiFi outdoors as well as projecting onto the back of the glazing allows the outside to become an intrinsic part of the learning space



**“WE USED OUTDOOR TERRACES TO CREATE SPACES FOR PLENARIES AND PRESENTATIONS TO LARGE GROUPS OF STUDENTS”**





Three separate learning zones accommodating up to 60 learners at one time: 15 in direct instruction; 15 studying independently or in groups and 30+ outdoors on the terraces.

**“WHILST PREVIOUSLY WE’D PREFERRED SQUARE SPACES, WE FOUND THAT NARROW SPACES GAVE CLEARER, PHYSICALLY-DISTANCED CIRCULATION AROUND STUDENTS”**

## LET NATURE DO THE TEACHING

Headteacher Gary Spracklen explains how great educational thinkers and modern research led him to prioritise natural outdoor learning spaces in his primary school.

During the Covid-19 lockdown, I was continuously grateful for where I live.

Not because I live in a mansion with an indoor cinema, games room or library.

And not because my property has fast broadband connectivity, energy efficient lighting or the very latest in ergonomic furniture.

No, it was because I have something as simple as a garden.

Having an outdoor space I could call my own during lockdown was wonderful, and it's where my family members have spent the vast majority of their time.

Outdoor space is important, even more so of course in times when our movement is restricted. I felt for those families without access to outside space during lockdown. It made me think about how, in normal circumstances, children in schools without appropriate outdoor learning environments are missing out.



## “NATURE WANTS CHILDREN TO BE CHILDREN BEFORE THEY ARE MEN”

*Jean-Jacques Rousseau*



The need for children to develop naturally as part of nature and be considered “connected” to their environment is not new and can be traced back to the philosopher Jean-Jacques Rousseau in the 18th century. He said: “Put children in natural surroundings and let them develop...the mind should be left undisturbed till its faculties have developed. Nature wants children to be children before they are men.”

The Swiss educational reformer Johann Pestalozzi advocated that we learn from nature, saying: “It is nature that teaches...just be silent and listen.”

His student Friedrich Fröbel, who coined the word kindergarten, did not want us to just observe plants and animals but to follow everything through to the source and see how everything connects.


At the school where I am headteacher, The Prince of Wales School in Dorchester, Dorset, we are fortunate to be blessed with outdoor space.

Having lots of outdoor space is only as useful as you

make it and we work hard to ensure our provision has the greatest impact on learning for our whole-school community.

Indeed, as a philosophy, we see our outdoor learning spaces as just as important as the internal learning spaces which we have also spent time developing in recent years. The two must sit hand-in-hand to sustain learning and deliver impact.

Going back to Fröbel, he spent many of his formative years in the garden. He saw that the whole curriculum could be taught in the garden but, also, that nature provided the strongest evidence possible for the “unity of all things”. Even the word “kindergarten” combines the child with the garden.

A photograph of a wooden play structure, possibly a fort or a shelter, in a snowy outdoor setting. The structure is made of dark wood and has a flat roof. It is surrounded by snow, and there are trees in the background. The scene is bright and clear.

He believed that we are all part of nature itself and one of his first recollections was when one of his grammar school masters made him realise that the tree, though complete in itself, is part of a larger whole. It takes from the soil and the air and gives back to both. One of his observations on children was "...the contemplation of a stone or plant often led to profound outbursts upon the universe".

The story of The Prince of Wales School goes back to the early 1990s. At that time there was a need for more first school places in Dorchester (for children aged from four to nine), so it was decided to build a completely new school.

It was to be on a site next door to a small special school on Maiden Castle Road, a mile away from the Iron Age hill fort.

The special school was for pupils with physical disabilities, and it was so small that it was struggling to survive.

Its chair of governors felt that the children were not getting their entitlement to a full curriculum, and closure seemed inevitable. But in a moment of vision the decision was taken to integrate all the pupils from the special school into the new school.

Twenty-five years later, we have a thriving, fully inclusive and community-focused school with an integrated unit for children with physical disabilities.

Our purpose-built school has a particularly impressive design and is spacious and practical. It is set in its own extensive grounds which currently include play fields, playground, environmental studies area, orchard and outdoor teaching areas. There are hedgerows, imaginative play facilities and a reconstruction of an Iron Age settlement that is developed each year by the oldest children.

As headteacher, it's been important for me to break down barriers and lead on maintaining and growing the use of our outdoor provision. A Guardian article published in March 2016, revealed the shocking truth that three-quarters of UK children spend less time outdoors than prison inmates.

Young children today are growing up in a world that is changing more rapidly than in any other time in history – technologically, environmentally, socially, politically and culturally. My challenge is to inspire them to care, preserve and develop this world in the future - to connect them with nature and provide a relevance that goes way beyond any artificial experience generated by technology.

**A GUARDIAN ARTICLE PUBLISHED IN MARCH 2016,  
REVEALED THE SHOCKING TRUTH THAT THREE-  
QUARTERS OF UK CHILDREN SPEND LESS TIME  
OUTDOORS THAN PRISON INMATES**





Young children today are growing up in a world that is changing more rapidly than in any other time in history – technologically, environmentally, socially, politically and culturally. My challenge is to inspire them to care, preserve and develop this world in the future - to connect them with nature and provide a relevance that goes way beyond any artificial experience generated by technology.

**To address the challenge, it's important to first acknowledge the barriers -**

- Dangers from traffic
- Health and Safety - obsession with a “zero-risk” world
- Parental fears of “stranger danger”
- Negative attitude of some authority figures to children’s “natural play”
- Past - and sometimes present - role of nature conservation organisations
- “Busy” people
- Smaller gardens
- Peer pressure

The perceived “standards agenda” can be added to these as it can cause tension even when delivering the EYFS (Early Years Foundation Stage) Curriculum. EYFS recognises the importance of the outdoor environment for optimal learning and development.

However, researchers have explored the tension between this child-centred rhetoric and the political standards agenda which remains the dominant discourse in the UK. It reveals it is a key factor in why access to outdoor environments remains limited for children.

In the development of outdoor spaces at The Prince of Wales School, we have looked carefully at the research on the developmental impact of “landscape-based” play spaces as opposed to “equipment-based” play spaces.

Much of this research indicates that equipment-based play spaces are much more focused on physical development rather than emotional, cognitive and social development as in the more natural play-spaces.



## IT'S SENSORY INTERACTIONS THAT HOLD LONG IN THE MEMORY, THESE ARE THE EXPERIENCES THAT SHAPE US

Synthetic, generic outdoor areas are still very evident in today's Early Years provision and, although these areas satisfy the requirements of the EYFS, it's my belief they respond more to adults' need for health and safety, cleanliness, order, tidiness and, maybe, the pressure from glossy catalogues, than to child development. At The Prince of Wales School we have been keen to develop a different approach.

### While still evolving, this is steered by these five guiding principles:

- Seek more landscape-based play spaces instead of equipment-focussed outside areas. Why do you need these spaces? Always focus on the "Why?" before the "How?" and the "What?"
- When planning outside spaces consider future sustainability - a rose garden could deliver some amazing inspired writing for your next Year 5 Tudor unit of work but who is going to tend to those roses in the meantime?





**TREAT THE OUTDOORS AS AN  
EXTENSION TO THE CLASSROOM**

- Allow children to have as many sensory interactions with nature and natural materials as possible. This point links back to Rousseau, Pestalozzi and Fröbel. It's sensory interactions that hold long in the memory, these are the experiences that shape us
- Ensure access to the outdoors is available as much as possible if not all the time. Treat the outdoors as an extension to the classroom
- Use technology outdoors - It's easy to think of technology as being something we just use to support learning inside the classroom. We seek to use technology outdoors in an integrated way so it does not provide "nature through a lens" but supports the child's relationship with nature. Things like bird box cameras and weather stations can really support here to connect and inspire young minds



If the principles above steer us, it's our community that powers us to move forward and break down the other barriers previously listed.

"Community Makeover Days" have now become a monthly staple of my school calendar with the majority of work being focused on improving our outdoor provision.

Days like these which see families come together for the good of the school give me hope that the future of our planet will be safer in the hands of young children who have grown up feeling a connectedness to nature.

This ideal, against the backdrop of a global climate emergency, can only serve to underline the urgency of preparing young people for their future responsibility as caretakers of the earth. ■

*Gary Spracklen is headteacher of The Prince of Wales School, Dorchester. He is a former Digital Educator of the Year and a member of the UK Government's Educational Technology Action Group. Gary was recently named on the #Edtech50 "People of 2020" list by The Education Foundation.*

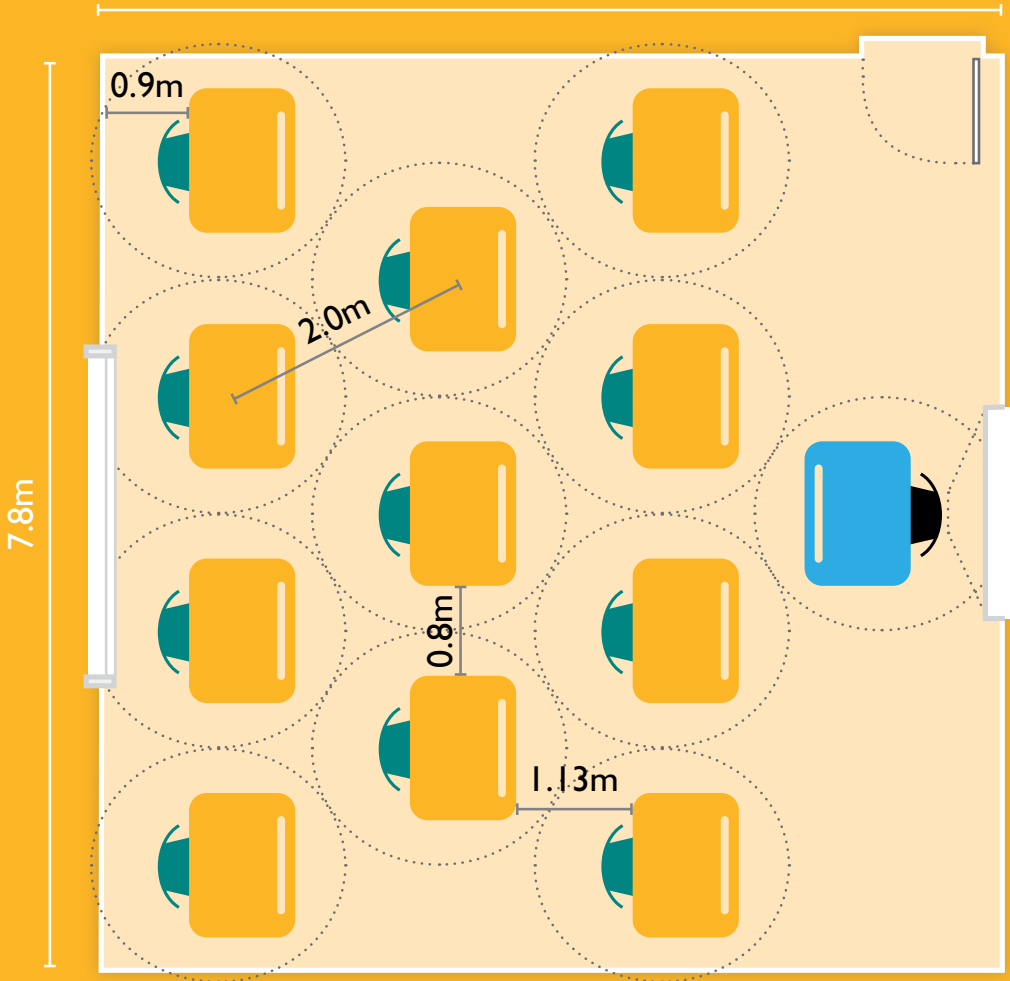


# HONEY, I SHRUNK THE CLASSROOMS

A look at the history of school space standards explains why some UK schools will find it harder than others to introduce social distancing measures, writes architect Guy Shackle.

Typical Classroom 55m<sup>2</sup>

7.05m





The reopening of schools in the UK for pupils beyond those of key workers has thrust the otherwise arcane matter of classroom sizes and corridor widths firmly into the limelight.

Teachers there have had to introduce physical distancing measures such as seating that is two metres apart in each class and it has not been an easy task for many.

Firstly, much of the UK school estate is over 40 years old, with nearly two thirds built before 1976. There are still Victorian board schools whose rooms were originally designed to accommodate over 60 pupils sitting in rows on shallow timber steps.

More interestingly though, changes to various government policies and guidelines in more recent years have also created issues, leaving some newer schools now desperately looking for extra space.

We can look back first to when the New Labour government passed the 1998 School Standards and Framework Act, limiting infant classes (Reception, Years 1 and 2) to 30 pupils, with just a few exceptions. Over time these rules worked through to older age groups.

This was clearly a positive move but the associated space standards for these classes were by no means generous, particularly for circulation spaces, and it was very challenging to deliver schemes within these constraints. (Building Bulletin 82: Area Guidelines for Schools, 1996 to 2004)

But in February 2003, the government announced the Building Schools for the Future (BSF) programme. It was a multi-billion pound government investment scheme to improve secondary schools in England.

The ambitious capital expenditure programme was matched by the raising of the bar on space standards with the publication in 2004 of Building Bulletin 98, which increased the proposed briefed area of secondary classrooms by 20 per cent.

The following year there were proposed increases in primary school classroom sizes of over 10 per cent, together with more generous learning support spaces including group rooms and specialist teaching areas.

Architects and educationalists welcomed these new standards as they allowed sufficient flexibility to deliver buildings that would remain useful across their 60 year anticipated lifespan.

Unfortunately, this new-found consensus between designers and educationalists did not last long.

The coalition government of 2010 first cancelled the BSF programme and then in 2014, the Department of Education

(DfE) under Michael Gove confirmed plans to relax the standards that set out the size of school buildings in a cost-cutting move that has led to smaller classroom sizes.

The DfE said it planned to relax space standards for schools, with a reduction of the overall gross area averaging 15 per cent in secondary schools and 5 per cent in primary schools for the entire school build.

The logic for this reduction in briefed areas was not driven by evidence that pupils were getting smaller or pupil numbers in each class would be reduced.

Instead, it was based on the need to deliver more buildings for less money and a philosophical disagreement with the idea that a high-quality physical environment improves learning outcomes.



**54m<sup>2</sup> - 62m<sup>2</sup>**  
**Primary Class**

**50m<sup>2</sup>**  
**Secondary Class**

**54m<sup>2</sup> Large**  
**Secondary Class**



**60m<sup>2</sup> Standard**  
**Secondary Class**

**66m<sup>2</sup> Large**  
**Secondary Class**



**56m<sup>2</sup> - 63m<sup>2</sup>**  
**Standard Primary**  
**Class KS1 & 2**

**63m<sup>2</sup> - 70m<sup>2</sup>**  
**Large Primary**  
**Class**



Building Bulletin 103: Area Guidelines for Mainstream Schools, published in 2014, set out non-statutory guidelines asking for a minimum of 55m<sup>2</sup> for 30 pupils in a junior classroom and general teaching space at secondary level, with a maximum of 62m<sup>2</sup> for Reception and infant classes.

There is also a statement which says that these spaces should provide “sufficient room for wheelchair users and assistants”. The overall impact of this change was to return school space standards to those that were current in the 1990s, which certainly imposed limitations on design.

The lowering of the bar in respect of what is non-enforceable guidance has allowed new build secondary school classrooms of only 50m<sup>2</sup> on a recent London school extension. Building at this size inhibits future flexibility of the space and restricts accommodating wheelchair users, teaching assistants, a variety of furniture layouts, new technology and storage of resources for both staff and pupils.

Optimism is perhaps in short supply for those looking for some inspiration in the design of new school buildings.

Devolution of education policy has allowed different approaches to emerge across the UK with Scotland (via the Scottish Futures Trust) funding primary classes of 55m<sup>2</sup>, occasionally 60m<sup>2</sup> but importantly with an additional 12m<sup>2</sup> of support space beyond the classroom itself.

No government, educationalist or architect could have anticipated the social distancing measures that will now need to be enforced in our schools for the foreseeable future.

But classrooms built to current space standards will struggle to safely accommodate more than twelve pupils in either primary or secondary school settings.

Classes of thirty pupils will need to be split over three rooms so further reducing access to face-to-face learning.

After a journey through the recent history of space standards in school design what conclusions can be drawn?

The simple answer would be to advocate that government increases the briefed area of new build classrooms by approximately 10 per cent to reverse the reductions imposed in 2014, as illustrated on the right.

67.5m<sup>2</sup> – Primary Reception | Infant KS1

63m<sup>2</sup> – Primary Junior KS2

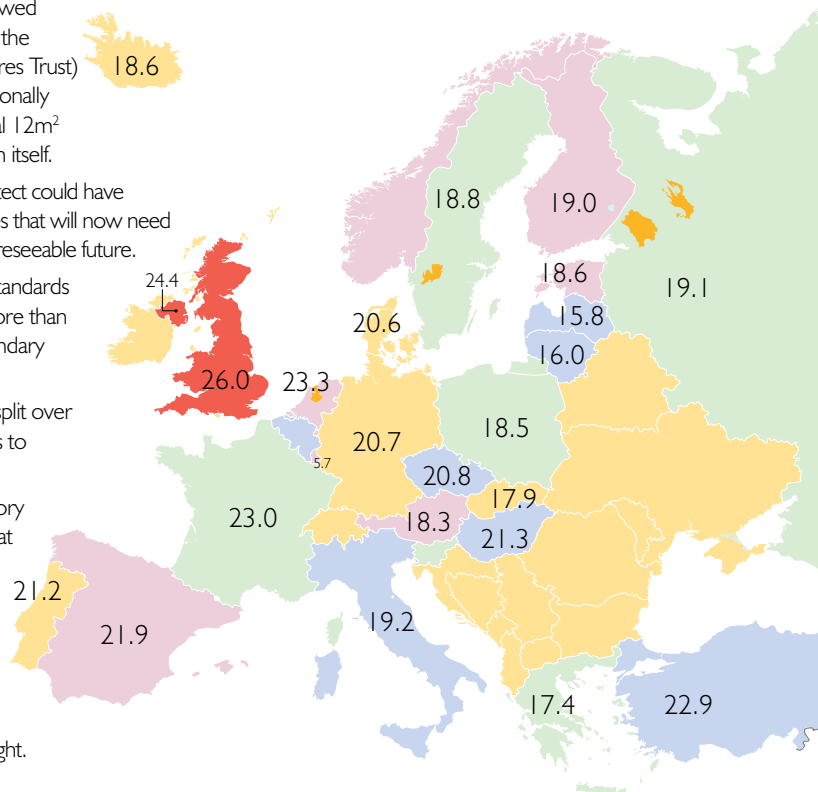
60m<sup>2</sup> – Secondary KS3 & 4

And it would perhaps mean we are better prepared to respond to the unexpected. ■

*Guy Shackle is a chartered architect with over twenty years experience in the design and delivery of education projects. He joined jmarchitects in 2018 to focus on education and residential projects from their London studio. He is governor at an Adult Education College after many years service at a local Primary school.*

## Average class size in primary education

Data by OECD, mostly 2015.  
Estonia, Denmark: 2012. Netherlands: 2014



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**THE SCHOOL IS FUTURISTIC - WITH ITS ROOF OF SOLAR PANELS AND TIGHT GEOMETRIC DESIGN**



## A NATURAL HABITAT

Sustainability and natural materials are the key to the design of a Swiss elementary school that encourages learning through flexible spaces and views of nature. Irena Barker explored.

The small Swiss town of Port, with its neat buildings and sloping roofs, is surrounded by the gentle hills of the Jura.

Fresh air is plentiful and nature is never far away, making it a good place to grow up and learn.

This was all at the forefront of architects' minds when they were asked to design a new kindergarten and elementary school for the town. It would replace tired temporary wooden buildings that had been in use since the 1960s.

The architects from the Zurich-based Skop studio were determined to make their mark with an aesthetically pleasing, ecological design built from natural materials that would complement the surrounding countryside.

And they didn't disappoint in what was the first ever project for the studio.

The school is futuristic – with its roof of solar panels and tight geometric design – but its wooden façade and modest height means it fits in with the natural landscape.

As it hugs the gentle slope of the plot, the jagged roof of the building both blends in with the sloping roofs of the surrounding houses and stands out as an outstanding piece of contemporary design.

The partially pre-fabricated school brings 280 kindergarten and elementary school children under one roof, with each of the nine classrooms benefiting from large windows on two sides.

"The main idea was to bring the school under one roof," says architect Basil Spiess, co-founder of Skop.

"We decided to limit ourselves to only two storeys to fit in with the surrounding family houses but this meant a larger building footprint.

"We had this zigzag layout to make it work in the space, but that also had the advantage of classrooms having two outside walls that get light from two sides."

Each classroom also benefits from the interesting zigzag of the roof geometry, which can be seen from the inside too.

"It's a design decision that makes each classroom more like a little house," says Spiess.

But this cosiness is not at the expense of fluidity and flexibility in the main school classrooms and three kindergarten spaces which take up the upper floor of the school building.

"Bringing all the main teaching rooms on one level is a big advantage for a school because it allows a very fluid interaction between different rooms and circulation zones and they also use all those spaces very actively. You don't have to go to another level," says Spiess.

Other aspects of the school, such as the administrative offices, workshops and school kitchen are on the lower floor.

Parts of this have been nestled into the natural slope of the land, using concrete construction where the walls meet the earth.

Free circulation zones through the school encourage all kinds of learning - from solo study to group work. There are inviting staircases for pupils to colonise and space to move around. Classrooms are also connected to each other through large doors.

Floor-to-ceiling magnetic chalkboard walls encourage the spontaneous display of work and allow children to express their ideas and workings.

Spiess explains: "We thought it would be nice alongside this digital world to bring back the old blackboard world to the school - they can use them spontaneously.

"We thought it would be a shame to say to children 'Well don't touch these walls', we wanted a proactive approach and say 'Those walls are open for everybody'.

"It's good to teach the digital methods but sometimes the easiest way is out from your brain directly into your arm and onto the wall."

## **FREE CIRCULATION ZONES THROUGH THE SCHOOL ENCOURAGE ALL KINDS OF LEARNING**



Picture credit xxxxxxxx.



**THE BUILDING IS A VISUAL DELIGHT, WITH CLASSROOMS BATHED IN LIGHT FROM THE WINDOWS AND SKYLIGHTS**





One really striking aspect of the school from the outside is the solar panels across the entire roof.

Designers had originally envisaged a living “green” roof to create habitats for small creatures, but the town council was so taken with a plan to include solar panels in the design it asked for the whole roof to be covered.

The panels are rented out to individuals in the area and the school now produces enough power to cover its own use and that of 50 domestic homes. The school itself is also highly energy saving with an energy efficient ventilation system.

The school is also in keeping with the trend to pre-fabricate many new school buildings. In the case of Port, the main wooden structure was created off-site, with the somewhat complicated segments winched into place. Other aspects of the school, including the concrete sections, were constructed on-site.

However, the decision to pre-fabricate didn't save time as the architects had hoped. The school took the standard two years to build, opening in summer 2017.

“We had hoped for a shorter construction period and the prefabrication was done very fast but you need a lot of precision to put them in place on-site because our geometry was a bit complex; they needed much more time to put the elements in place,” says Spiess.

The result though, is certainly stylish. The building is a visual delight, with classrooms bathed in light from the windows and skylights illuminating the building's interior.

The Skop studio believes strongly in using natural materials where possible, and the building design means children are never far from nature.

Neuroscientific research has suggested that by being surrounded by natural materials with imperfections, people are more likely to be creative.

In his 2016 report *The Neuroscience of Classrooms*, commissioned by Spaceoasis, Dr Tim Holmes, director of research and development at Acuity Intelligence Ltd, writes that using natural materials in areas where students are required to design and make things is beneficial.



He writes: “The natural imperfections in the materials will prime students to focus less on perfection and precision, and to be more innovative in their approach to experimentation and reinforce a general principle... that problem solving requires the making of mistakes.”

Research is emerging all the time, too, about how humans are “hardwired” to be happier and more relaxed when surrounded by nature – making easy access to the outdoors a prerequisite for optimal learning.

Elsewhere in the school, architects have shown great attention to detail.

Even the toilets – a place often neglected by designers – have not escaped thought.

“We were interested in giving a certain respect to every room,” says Spiess.

“We thought it would be a shame if the toilet wasn’t treated the same way.

“Of course you don’t spend much time there but we wanted a very high quality atmosphere there.”

The washrooms benefit from natural light from skylights, the interesting geometry of the ceiling and bright colours.

“In the other rooms we restricted ourselves to natural colours,” says Spiess.

“The woods and natural cement of the floor were enough because we thought the kids would bring enough colour, some drawings, for example.

“The normal classrooms are quiet in terms of decoration because the geometry is already exaggerated.”

But the toilets were a chance to go to town on colour – since it didn’t matter hugely if it was to users’ tastes or not – so they could experiment.

“We thought it would be nice to question a bit gender colour norms so we suggested for the boys a purple colour and for the girls a blue colour but this was rejected by teachers,” laughs Spiess.

As Skop’s first project, the school has been a learning experience – and a successful one.

Spiess says: “We were always looking for a strong design that answers many questions with one solution and it’s always difficult to get there.

“But I think we succeeded because the design was never questioned – we won the competition [to design it] and we were able to build it the way we designed it for the competition.

“Of course it’s a very stiff geometry but it answered the questions of the school very well.

“They were looking for an open layout, it’s a democratic structure, with a lot of flexibility and we were looking for a coherent structure.

“But at the same time we learnt that it doesn’t make sense to be too dogmatic and we were always looking to have conversations and discussions with the people who use the building.

“It’s has a strong design intent but it’s also very pragmatic.” ■

## THE SCHOOL HAS BEEN A LEARNING EXPERIENCE - AND A SUCCESSFUL ONE





## LEARNING LANDSCAPES FOR WONDER

The imaginative design of St. Andrew's Scots School in Buenos Aires Argentina evokes the Scottish landscape to encourage the youngest students to learn through play, bringing out their curiosity and creativity.

Playful learning is at the heart of St. Andrew's Scots School. With colourful and distinctive design features, the school offers a 3200 square metre landscape of wonders that lets pupils in kindergarten and primary romp, jump and play as part of their learning.

The flexible spaces of the Argentinian school are designed by Copenhagen-based Rosan Bosch Studio to evoke the school's Scottish heritage through myths and landscape features.

As a bilingual school established by Scottish immigrants in 1838, the school wanted a design that honored their traditions, while providing a modern framework for learning for the community of international students.



A photograph of a modern school interior. In the foreground, a young boy with curly hair is lying on the floor, focused on drawing on a large sheet of paper with a red marker. Two clear plastic containers filled with colorful markers and pencils are on the paper next to him. In the middle ground, a boy in a dark blue sweater sits on a large, bright green, cylindrical ottoman, holding up a colorful book. Another child is sitting on the ottoman behind him, looking at a book. In the background, a girl is sitting at a small yellow table with other children. The room has large windows, a concrete pillar, and a light-colored floor.

**ROSAN BOSCH STUDIO IS AN INTERDISCIPLINARY AGENCY WORKING AT THE INTERSECTION BETWEEN ART, ARCHITECTURE, AND DESIGN. THE STUDIO WAS FOUNDED IN COPENHAGEN IN 2011. AMONG ITS DESIGNS ARE THE RENOWNED SCHOOLS VITTRA SCHOOL TELEFONPLAN IN SWEDEN, WESTERN ACADEMY OF BEIJING IN CHINA AND SHEIKH ZAYED PRIVATE ACADEMY IN ABU DHABI**



Students are invited on a learning journey through the flat beaches of the lowlands to the rocky and untamed highlands of Scotland. Bright and playful in appearance, the learning environment sparks the children's curiosity, making it clear that play and movement are welcome.

But why put play at the centre of school design? For a society always on the lookout for new ideas, play is a powerful source of innovative thinking. When children are playing, they can do anything – literally anything they can imagine – and this makes it a great catalyst for curiosity and motivation, both in education and beyond.

“When we play we are trying new things, taking risks, and experimenting – over and over again,” explains creative director Rosan Bosch. “When you are playing, you collaborate and work together as a team. This kind of engagement is what is going to prepare young people for tomorrow’s society.”

For Bosch, this means taking play seriously when designing spaces for children.

Her studio’s designs for St. Andrew’s Scots School present a learning landscape where play can flourish. By having the opportunity to move their bodies, the children get more energy, become more engaged and develop the core skills needed for the future: collaboration, critical thinking and creativity.

As they start their learning journeys through the Scottish landmarks, the children in kindergarten and early years are grouped around the open beach-inspired areas of the Lowlands. Grand coral sculptures in these common areas promote a playful learning atmosphere and give the spaces a clear identity.

“When you’re small you need a strong connection to a place,” explains Bosch. “You need a fixed base to come home to. The older you get, the more you expand your radius of where you are comfortable.”

The padded surfaces surrounding the different corals are ideal for climbing and movement, so the students can move freely and improve their physical development.

Integrated lightboxes in the wooden podiums give the youngest students a place to develop fine motor control by tracing and drawing patterns on their own.

As the students grow older, they move on to the Highlands where their territory gradually expands, offering them more choice and autonomy in their learning activities.

In the differentiated learning environment of the Highlands, the students can work hands-on in the makers’ lab, make presentations in the circular Nessie theatre and exhibit their work on the platforms of the exhibition forests.

Inspired by the sculptural basalt rocks along the Scottish coast, the hexagonal columns create an intriguing learning setting. Here, students can work in groups, gather for presentations or find shelter to concentrate on their own between the towering pillars.

The school day at St. Andrew’s Scots School is planned as a series of destinations in the learning landscape, where the differentiated spaces can be combined in sequences to support project-based learning.

The open and shared learning areas have both bookable and unbookable spaces. This flexibility allows teachers to plan according to the needs of students – and improvise as needs arise during a project.

Overall, the new campus design gives the school a unique identity and fosters a playful learning environment developing creativity and innovative thinking. ■



# on reflection

## MORE PLAYFUL, MORE CONNECTED

The coronavirus crisis could have a long-lasting effect on how and where we learn in years to come, writes Stephen Heppell.

Twenty years ago, technology in learning was booming. Children were pursuing ambitious new directions. Multimedia had already shown how complex concepts could be very effectively conveyed, and the World Wide Web, since 1993, had made the walls of our classrooms softer and lower.

And with the new millennium came England's brave "Classrooms of Tomorrow" research project.

Our remarkable free-standing "Ingenium" classrooms moulded from glass-reinforced plastic seemed part way between space station and classroom.

As we debated the design details, it dawned on me that much of what we were seeing in these new learning spaces had been effectively prototyped by children working with technology a decade earlier.

We'd created a building with a memory, a building with a global audience, that lent itself to collaborative groups of learners working with some clear autonomy.

It was a building that challenged teachers to explore new ways of working which they responded to magnificently; a building that children rushed to get into and were very reluctant to leave.

The rooms measured up to the excitement of their previous technology-rich experiences in every way.

It takes about a decade for folk to understand what they are seeing online, and then to think how they might embed it in face-to-face everyday practice.

There has been much talk of learning in the post-Covid era.

Children and many teachers leapt forwards in a matter of days to explore new ways of learning, to be playful, to maintain a sense of community and to get deeply into topics.

Given the magnitude of this new engagement globally, it might be wise to unpack some of what we are seeing in 2020 as it will define what we build and occupy in 2030.

Here are four key things from the 2020 crisis that I think will influence how and where we educate.

> Outdoor learning is effective. As BeachSchool.org say "There is no such thing as bad weather only bad clothing". Kids might be isolating, but they are outside when they can be. Schools need to look again at their outdoor estate as an integral part of their learning space.

> Deep learning is immensely seductive. Parents have struggled to get children to do "this or that" at a precise and timetabled time, but children are throwing themselves into learning complex things where they have the freedom of time to do it. Anecdotally, my 6-year-old granddaughter is pouring her passion into space exploration and astronomy, whilst her 12-year-old cousin is now adept as a (newly) French speaking slack-wire circus performer. We need spaces for immersion, ambition and depth.

> Online connection has become the new normal and everyone from family to sports teams are enjoying Zooming (or whatever) together regularly. Those "Skype bars" at the back of a few classrooms before all this will become utterly normal and expected. That will be a design and pedagogical challenge.

> Playfulness. People who do not work day to day with children have been amazed by the playful and imaginative way in which children have spoofed, subverted and teased the new technologies of everyday locked-down-learning. That playfulness has been a rich vein of collaborative ingenuity. Previously, too, much of the joy of learning had been deflected by dour systems. Watching children through the coronavirus era, it is clear that they would like the joy back now in education, please. Playful and effective learning spaces? I don't think they will allow us 10 years to deliver on that one. ■

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

*He is an internationally recognised leader in the fields of learning, new media and technology.*



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