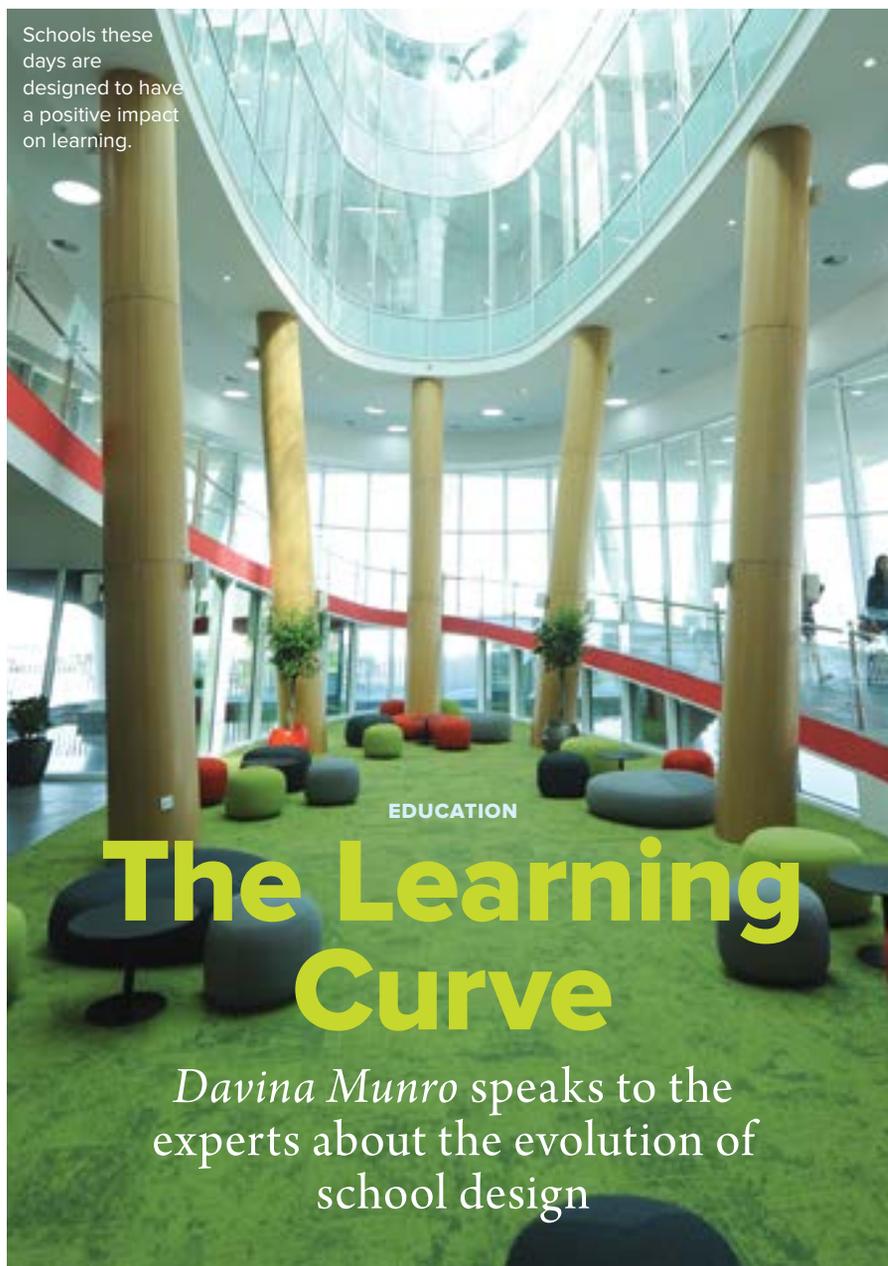


On topic

Schools these days are designed to have a positive impact on learning.



EDUCATION

The Learning Curve

Davina Munro speaks to the experts about the evolution of school design

Over the years, schools have evolved not only in terms of teaching methodology, but also from an architectural and design point of view. Classrooms have grown bigger and more colourful, more social spaces have been added in which students and faculty can interact, and the overall structure of many institutions has been designed to have a positive effect on learning itself.

Having recently completed phase one of the Swiss International Scientific School in Dubai (SISD), Gabriele Rossi, founder and director of Archilab, an architectural consultancy in Switzerland, says that though the evolution of schools varies from culture to culture, some features are standard across international borders.

“A common point between cultures and institutions would be the evolution of open spaces in the interior of the school,” he says. “If you see traditional old schools, because of the lack of technical construction tools and the lack of proper budgets, it was difficult to create big open spaces in schools.

“Nowadays, you will find that schools are becoming more and more welcoming and have larger open public spaces, larger entry doors, big corridors and classrooms – and all of this was not the case with older constructions.”

Today’s teaching practices require the frequent use of smart gadgets, with access to the internet no longer confined to the computer room. This was a key issue for Dubai-based Louise Collins, director of MEP at WME Consultants, who also worked on SISD’s infrastructure and security engineering.

“If you look at technology, it essentially evolves on a weekly basis, so you need to make sure that what you’re designing today and what’s being delivered two years from now is still relevant,” she says. “Staying up-to-date in the market is very difficult, so you have to make sure that



Since schools are a lot more technology-oriented, consultants need to stay up-to-date and relevant.

you are completely familiarised with every new technology yourself. You need to speak to suppliers and speak to end users to see what's required and what's out there to meet that need."

"In the case of SISD, education is very interactive, so in this school in particular, we had all the usual whiteboards, WiFi everywhere, iPad connections for all of the students. We also had to make sure that the IT platform was interactive for parents and students alike from remote locations."

With the educational landscape constantly evolving, consultants have to think out of the box to make classrooms more conducive to learning. One way of doing this is by focusing on the windows in classrooms and corridors, says Andrew Turner, partner at Hephher Project Management in Dubai, who represented the client on the SISD project.

Using SISD as an example, he says windows needed to be of a specific shape and size, and had to be placed strategically to allow more natural light in while keeping heat out. Another reason this had to be done was to comply with a Swiss standard called MINERGIE, which certifies that a building's energy consumption is low.

"One of the concepts that MINERGIE brought in was using more natural light, rather

than artificial light, to keep energy consumption down. Additionally, working in natural light is far healthier and far more conducive to learning than working in artificial light," he says.

"If you look at SISD, you'll notice that there's a different fenestration of window arrangement. That's not just to be fun, but is also set up specifically to throw light into the back of the classroom where often there isn't any.

"The classrooms are divided in the corridors by windows for two reasons. Firstly to throw daylight into the corridors so that they aren't artificially lit, and also to give a more open-air feel to the school while keeping a firm control on the acoustics so that one class doesn't interfere with another.

"The classrooms are also much bigger in both the kindergarten and primary section than what they would normally be in a traditional school here."

Another aspect that consultants are looking at is the flexibility of spaces, says Malcolm Macleod, project architect at DSA Architects International in Dubai. Because of the pace at which education is changing, Macleod says architects have to constantly think ahead to figure out how a particular space can be used going forward, as they did while working on SISD.

"One of the features in the school that we've



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"If you look at SISD, you'll notice that there's a different fenestration of window arrangements to specifically throw light into the back of the classroom"



At SISD, the windows have a unique fenestration to allow maximum daylight but minimise heat gain.



Andrew Turner, partner at Hephher Project Management.



Louise Collins, director of MEP at WME Consultants.



Malcolm Macleod, project architect at DSA Architects International in Dubai.

designed is the internal walling system, which is essentially a lightweight partitioning system that you could literally rearrange to change the whole internal spacial arrangement and dynamic if you chose to in the future. I think this is what we're going to be looking at and this is where we're going to be heading towards in terms of school designs."

Budgetary constraints are an obvious challenge when designing educational institutions. Educational operators all have different specifications and requirements as to how they want to build an institution – but always according to a strict budget, Collins says, adding that the other challenge is not knowing how the building has been received by the end users.

"The challenge is having to manage the client's expectations whilst trying to deliver to the best of your ability within budget and within time. We normally don't have access to end users like teachers. We're usually designing in an office with an architect whom we get input from on what the client wants and what the usage of the room should be, but we don't normally get feedback from teachers on what's good or what isn't good in a room that we've designed."

Macleod says a constraint on creativity is a common challenge faced by designers of educational institutions, but working on SISD was refreshing, as each consultant's opinions were collaboratively applied.

"The challenge in anything that one designs is having the trust of the client to allow you to do what you do. When a designer is given a project like this, he is in his element. Designing for these projects is not really a challenge, but more a case

"The internal walling system, which is essentially lightweight, can literally be rearranged to change the internal spacial arrangement"



Gabriele Rossi, founder and director at Archilab says schools these days require large open public spaces unlike before.

of limiting design consideration.

"While working on SISD, we were fortunate in a way because it was such an open programme and we were able to innovate in conjunction with the client. I think the building starts to be viewed with the ideas of the collaborative, and I think it worked incredibly well."

With the demands of society changing rapidly, consultants will have to keep refreshing their approach to school design. Turner says that one thing that could be applied more to Dubai educational institutions is a set of sustainable standards – like MINERGIE or LEED – which would both ensure that energy consumption is low and save on operational costs.

Rossi agrees, and says that another good reason to start adopting these standards is the positive lesson it teaches students about being environmentally consciosus.

"SISD is the first building in a Middle Eastern country to have this concept, which ensures that a building consumes only one tenth of the energy of a normal building. To develop a building that is nature-friendly is the future, because I don't think we can continue to construct buildings that consume so much energy and pollute the air.

"I feel this building is just the start of it. It would be very interesting to see this system being adopted by other designers in future in other projects. After all, this technology is applied not only to save on costs but to preserve our future. For it to be applied in a school sends a great message to students about the importance of preserving our environment." ●

COMPLETE SOLUTIONS FROM BASEMENT TO ROOF



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