REALISING THE ESTEAM DREAM

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

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

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

Agreeing to make classrooms fit for purpose

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

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

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

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

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

Energised by Michál Cohen's vision

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

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

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

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

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

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

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

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To show we loved the children in our care as well as the earth, we tried, where feasible, to ensure that the building included green solutions. For example, the roof was angled so that solar panels could get the most sun. Cold wet Cape winters and dry scorching summers presented a challenge to managing temperatures. Deciduous vines were planted in massive pots during the construction phase and replanted when the building was complete. Soon, vines covered the tensile steel railings, providing shade in summer and letting in heat in the winter.

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

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

The value of collaboration

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

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

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

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