INNOVATION AT LAS
THE NEW ATLAS PROGRAM IS DRAMATICALLY CHANGING
THE ACADEMIC LANDSCAPE AT LAS
A MILLION Open Doors

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In the 21st century we now have instant universal access to information. In this world of a million open doors, how do we design schools that take advantage of this unparalleled access to information? How do we create an environment that will prepare children for this rapidly changing world?

Everyone talks about the digital revolution and how it is affecting our children. We refer to people born before 1980 as “Digital Immigrants” since they grew up in a paper driven, analog world before the emergence of the digital era. They had to learn and adapt to the advent of instantaneous access of digital information and communications. Children born after 1980 grew up in a world where the personal computer and the World Wide Web has always been a key fixture of their existence. That generation has been referred to as “Digital Natives”.

That first generation of “Digital Natives”, children who went through the school systems of the world in the 1980s, 1990s and early 2000s are now adults. A child born the same year as the release of the Macintosh Computer in 1985 is now 26. Many of these young adults are now entering the work force as teachers in the very schools we are striving to transform. So now, instead of just discussing the negative impacts of placing a child of this “digital” generation into the closed cells of traditional “Factory Model” School, we must also now recognize the impact of placing young teachers into a school environment closed off from the open world of the 21st century.

Children now attending primary and secondary schools around the world were born at the turn of the millennium and beyond. We are now into our second generation of “Digital Natives” and still we persist in designing schools for a departed paper driven, analog age.

Obviously the world has changed. It is virtual, it is augmented, and it is rapidly being connected by the gossamer threads of an instantaneous wireless society. In the 21st century world of a million open doors, how do we design schools that take advantage of this unparalleled access to information? When our children are now communicating by what can only be termed electronic telepathy, how do we create a learning environment that will prepare them for this rapidly changing world?

Over the years, I have observed how each new technological innovation has continued to transform and accelerate the education process and expand the social interactions. The access to in-depth information has become instantaneous through wiki sites, social networking sites, news forums, access to scientific papers and blogs. Distance learning has become more prevalent. This has led to educational collaboration on a global scale among this generation of students.

Today’s students are learning from each other in ways they were impossible only 20-years ago. It has become apparent that the flood of new knowledge from all corners of the world has reinforced trial and error learning; project based learning and peer to peer instruction. And, many times the people learning from each other might be thousands of kilometres away from each other connected through Skype or WebEx, through massive multi-player gaming environments or other similar platforms.

This is a natural way to learn. It is how Firefox and Chrome, even the Android Operating system is evolving. We are in fact hard wired for a trial and error based learning system. Our brains are actually structured to learn by trial and error. It is how our brains learn to process the stimuli of our senses, how we learn to walk, acquire language; even how we learn not to touch really hot objects.

Unfortunately, school design is still structured around this idea of regimented, mass-produced education. Classrooms that are self-contained boxes leave little or no opportunity for pedagogical innovation. Teachers find it hard to work in teams and kids find it very difficult to work or learn together. When they enter their school they find themselves rendered deaf, dumb and blind within the confines of the traditional classroom box. Yet the world they now live in and play in connects them instantaneously across all economic and national boundaries. Young adults regularly visit virtual environments where they learn how to work together to solve problems in new games such as “Mine Craft” or “Sim City” where they can build whole new worlds together.

How do we as architects and planners utilize these emerging learning patterns to create new kinds of learning communities? How do we design new schools that will enable our children to make the most of their unique abilities and strengths? We need to create new learning places where they will actually want to be all day; a place that fosters growth and makes learning a pleasure.

“A Little History From A Personal Perspective

Through the 1980s and 1990s there was a growing realization that the closed classroom was not the best environment for learning. The traditional classroom; commonly known as the “Cells and Bells” model was designed for an assembly line approach to education where each child learned the same thing, at the same time, in the same way and in the same place. Aside from its pedagogical inflexibility, this model
has been failing our children at an accelerating rate. Teachers and child physiologists have been scrambling to find a reason for the explosion of the diagnosis of ADD, ADHD, and even Asperger's syndrome.

Beginning in the early 1990’s, the world has undergone some radical changes. As a consequence, the world our children live in now and will live in tomorrow has been transformed before our very eyes. We have accelerated right out of the Industrial Age, straight through the Information Age and into the Creative Age. Each of us at FNI has witnessed this change; as practicing architects, planners, educators and parents, we have lived through this transformation. In my case, it has been a very personal exploration and discovery having raised a hearing impaired child and learning firsthand how important classroom design and educational strategies can be.

Over the last 40-years there has been a revolution in the study of how we learn and specifically how a child’s brain develops. The brain is no longer considered a static organ but instead a flexible, evolving system. Its development is tied to genetic cues, environmental and cultural influences and of course, the stimulus it receives. Each person is unique; each person is wired to learn in a slightly different way and is interested in different things. This has led to profound changes in how we think about educational strategies and how we design the schools our children inhabit for the majority of their waking hours.

The theories that have grown out of this research were put to the test by Dr. Daniel Ling a noted doctor in the field Aural Habilitation. He was a pioneer in the field of deaf education, developing the discipline of Auditory Verbal Therapy (AVT) for deaf and hard of hearing children. His successes in the 1970’s and 80’s proved that the brain can be rewired, that it can adapt. Teaching deaf children first involves intensive therapy focusing on strengthening and expanding the auditory centers of the brain followed by customizing an education plan specific to each child. This is known as an IEP (Individual Education Plan). This plan is built upon the recognition that there are multiple intelligences beyond Linguistic Intelligence and that there are many modes of learning beyond lecture mode. Using a simple set of tests the teacher may find that this child has a high degree of spatial intelligence or is a true kinesthetic learner. The child's revealed strengths can then be paired with the various modes of learning most advantageous to that child. These modes may include direct peer to peer involvement, collaboration, project based learning, etc.

One thing became immediately clear to me as an architect: the realization that the traditional autonomous rectangular classroom was not appropriate to effectively educate a child in this modern era. Educational spaces needed more pedagogical flexibility, classroom acoustics needed to be thought about, natural and artificial lighting, needed to be carefully designed.

Through the 1990’s and 2000’s, I put this collection of best practices in education to the test actively rebuilding my son’s classrooms and any other learning spaces I could get my hands on. Teachers were very resistant at first but gradually came to realize that these changes not only were working for my son but that all the kids were benefiting from these strategies. They realized that some children, like my son, were visual learners, others need to move, or build, or draw, or dance to learn.

I began to bring these design tools and new ideas to the schools I was designing as an architect. In time, I began to discover the work of other architects who were as passionate about reinventing the school experience as me. In 2006, I met Prakash Nair and we began to work together. Soon after, I joined forces with Prakash and his partner, Randy Fielding at their firm Fielding Nair International.

The Language of School Design

Fielding Nair International embraces these wonderful discoveries in education and the 21st century world that we now live in. This changing world has affected how our children think and learn. The digital revolution has had a profound impact on us and more especially our children. It has fundamentally changed how they access the world around them and the design requirements for their ideal learning environment. This
revolution is now influencing global trends in education by advancing new “best practices” on how we teach our children and in turn how we design schools in the 21st century. These schools are very different from those of the last century. Beyond obtaining various educational proficiencies these schools are designed to nurture the following global skills.

- We now live in a global society that is interconnected in a very intimate way. What happens anywhere on earth can have an immediate impact worldwide. Our children need a global perspective and the ability to access and understand it.
- The way we live, work and play is increasingly based on the collaborative efforts of many team players. Our children must learn to work collaboratively.
- We live in a knowledge based society rather than a work based society. Our children must be capable of quickly researching any topic and even contributing to the knowledge base.
- The Information Age has given way to the Creative Age. Our children must learn how to look at the pieces and find the patterns. They must learn to be creative problem solvers.

**Preparing for the 21st Century at the Leysin American School**

In 2008, FNI was engaged by Leysin American School to design the new academic center at the former “Grand Hotel”. This venerable historic structure evolved into the new Belle Époque Campus or BEC. The new academic center, built within the BEC, follows the design patterns developed for this new language of school design.

Each floor contains a Small Learning Community (SLC) consisting of different sized Learning Studios clustered about a Learning Commons. Some of these Learning Studios are connected in pairs to enable for teachers to collaborate. All the Learning Studios are visually connected to the Learning Commons, an agile space designed for students to work in teams or individually.

The design of the BEC Academic center also emphasizes the “bones” of the building, much like a 3D textbook, using timber trusses interconnected into a white steel superstructure. The roof is designed in a Gull Wing pattern to allow for a maximum amount of natural light and ventilation and panoramic views of the Rhone Valley below.

Today, teachers at LAS are utilizing the Learning Center as envisioned and they have expanded their range from the traditional classroom out through the entire SLC, which includes their Learning Studio, the Learning Commons and other smaller seminar spaces. This has encouraged more independent work among the students and shifted the teacher from the position of the instructor to that of mentor. The physical design and panoramic views have also created an environment for inspired and creative academic pursuit. The vision for the school of the future has been realized in Leysin.