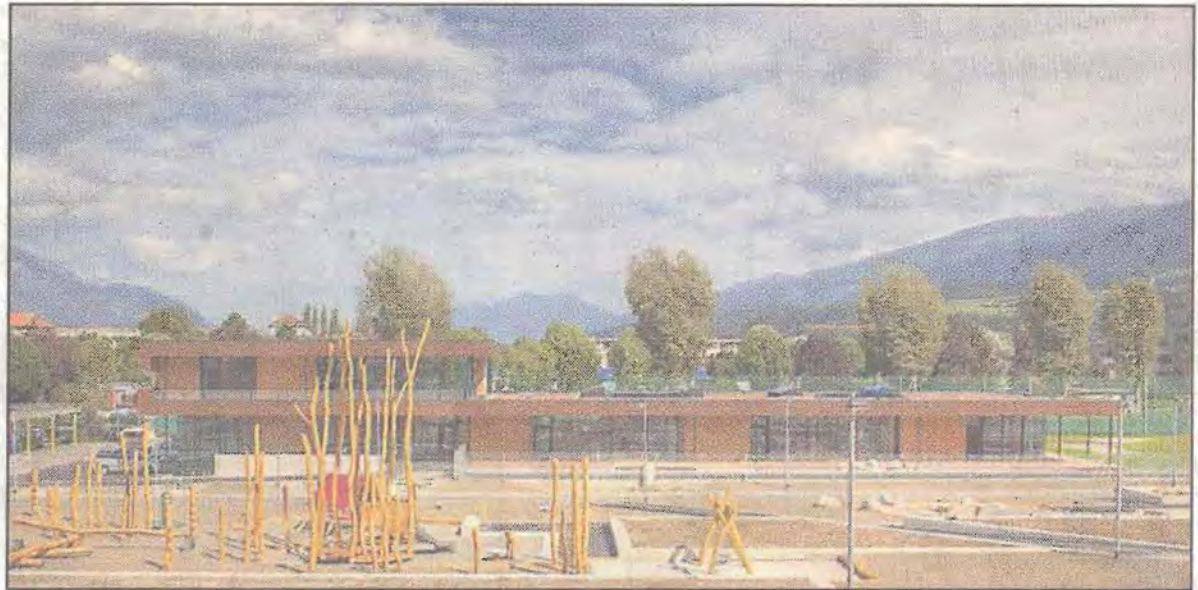


Eco-friendly architecture starts with the young

ONE of the most inspiring and delightful buildings I have ever visited is a kindergarten in the Austrian city of Innsbruck. It is a passive building, constructed to have minimal impact on the environment. The kindergarten uses renewable sources of energy and is built with sustainable materials. Its designers clearly set out to amuse and fascinate the children using the building.

The children number about 100 and are mostly between the ages of two and six. I watched

Architect **Frances Power** finds sustainable design of a kindergarten to be a bit more than child's play



ages of two and six. I watched them running their hands along the soft, tactile timbers — white oak, spruce and silver fir — on the walls and floor. Everything within the building, even the door-handles and coat hangers, is on a child's scale.

It's built from congenial natural materials in order to induce a sense of wellbeing. The building is timber-framed and hemp is used for insulation. During our visit the alpine sunshine flooded through the glass facade. Efficient filters continuously expel stale and introduce clean, fresh air.

The kindergarten is exemplary in its design and its construction is fascinating in itself. Most of its component parts were manufactured remotely and only the final assembly of the building took place on-site.

The building typifies the Austrian approach to building schools: the more time and effort devoted to preplanning and designing, the easier it is to construct the building.

The architects spent 10 months designing the building. The period between writing the brief and final completion was 18 months. Off-site assembly of the timber frame took three weeks, assembling the building shell two more and the completion of the inner joinery work four weeks.

Off-site assembly offers the additional benefit of minimising delays and price variation. The price is fixed in advance: contrast this arrangement with the timing problems which contributed to the under-spend of €79 million in the Irish school building programme this year.

A passive building is usually 8%

more expensive to build than an equivalent conventional building. But a well-designed passive building such as the kindergarten in Innsbruck is superior to an equivalent traditional building in several respects. Passive buildings are much kinder to the environment and emit much less of the greenhouse gas carbon dioxide than buildings with traditional oil heating — the kindergarten derives 80% of its energy from non-fossil, renewable sources.

The community centre in the town of Ludesch in the province of Vorarlberg by the Swiss border is a fine example of another Austrian innovation: a passive municipal building that generates revenue. The architects designed the building in consultation with a project group which included the mayor of Ludesch and members of the town council building and finance committees. They produced a pioneering passive building that cost less to build per square metre than an equivalent traditional building in Vorarlberg. The centre received federal funding and research grants. The construction period between the demolition of the former community centre and the occupation of the new one was 18 months. The building is occupied by a restaurant, a physiotherapy practice, a post-office, a playgroup and various clubs.

What distinguishes the community centre is its highly-efficient use of energy. A photovoltaic screen acts as a shade



The kindergarten in the Austrian city of Innsbruck whose passive construction is designed to have minimal impact on the environment. The kindergarten uses renewable sources of energy and is built with sustainable materials.

for the town square: it protects people from the heavy winter snows and the burning summer sun, while simultaneously generating solar electricity. The building sells the electricity to the national grid. The photovoltaic screen has already paid for itself, by providing shade for the town square, it makes the building of an expensive conventional shade unnecessary.

Local biomass (forest cuttings) provides 95% of the community centre's primary source of energy for heating. As this fuel is cheap and readily available, the community centre is an inexpensive place to heat. With careful metering the heating bill can be as low as €4,000 a year. In contrast a conventional building — even one constructed in line with strict Austrian regulations — can cost up to €56,000 a year to heat.

After my visits to these and other pioneering buildings I

realised I had learnt as much about Ireland as about Austria. The Austrians value good design and understand it does not come cheaply. This is certainly not the case in Ireland, where the fees paid to design professionals by government are falling. Austrian design professionals receive fees of on average 12% of the total building costs while their Irish colleagues faced a directive this year reducing the fees for work on construction projects governed by government-funded building contracts by 8%.

Do we value our architects? It seems we don't. By March this year 41% of Irish architects had lost their jobs. Most of the rest are in survival mode. Things need not be as they are. In 2008 Grafton Architects won the World Building of the Year award at the World Architectural Festival for their inspiring new Università Luigi Bocconi in Milan. We have great potential. If

government policies were more enlightened Irish architects could produce more world-class buildings. Inspired government policy could strengthen and sustain our architectural profession.

We have yet to embrace the simple notion that we have a right to live and work in people-friendly buildings. How much healthier our children would be if they were educated in the ductile, well-oxygenated atmosphere of a building such as the kindergarten in Innsbruck. The action of advanced filters makes the air within Austrian passive buildings purer than the alpine air outside.

The Austrians' attention to planning and design only highlights our deficiencies. They value good design and designers; we undervalue the former and underpay the latter. We under spend the funds we allocate to school building while thousands of our construction workers are unemployed.

We must simultaneously take short-term and long-term measures. If we were to adopt a policy of retrofitting our buildings to passive house standards we could create work for some of our unemployed builders and architects. If we were to switch for good to environmentally-sensitive architecture, building and planning — and cease our longing for another building boom — then this country could one day become a centre of sustainable architecture. Austria, which is comparable in size and population to Ireland, is showing us the way.

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She travelled to Austria as a guest of the commercial section of the Austrian embassy (www.advantageaustria.org/ie).