

Fulfilling the Australian dream of owning a home: modular HOUSE 2.0 as affordable answer

Nicolas Perren, Managing Director of architecture firm TEKUM, on the firm's innovative

Having founded Tekum in 2010 what would you consider as your greatest success so far?

Assembling a very enthusiastic team throughout all sectors of the business especially the extremely professional design team at the everyday coalface of developing the design to construction readiness. Whilst they are demonstrating an amazing level of creative skills, they have the necessary pragmatism when it comes to useability, buildability and cost, be it the board of directors or industry leaders in their fields with the vision to see TEKUM flourish. Certainly not less important our first client, the Endeavour Foundation had the incredible foresight to purchase our sustainable, affordable, safe and universally accessible HOUSE2.0. I purposely count Endeavour into our team, since they have helped with marketing of HOUSE2.0 through their enthusiastic reports to other industry groups.

What opportunities do you see for the housing industry in Australia?

The housing industry in Australia is living through a paradigm shift. The Australian dream of owning a house in the suburbs is under threat by the increasing capital and operational expenditure for housing. One out of three Australian families is experiencing housing stress. Families struggle, the large affordable housing suppliers are barely covering their cost. Whilst the demand for affordable rental accommodation is immense, the capital strapped industry is struggling to get new product on the ground. That is where TEKUM's offer steps in. HOUSE2.0 is not only less expensive than traditionally built houses, it is also much more efficient from an operational perspective, and TEKUM is currently negotiating with a banking partner to provide a new way to finance housing. In order to minimise capital expenditure, HOUSE2.0 is set up to not only to reinvent the way we build but to revolutionise the way property is financed.

It is projected that Australia's cumulated housing shortage would reach 466,000 dwellings by 2020. What would you propose as a solution to this issue?

Whilst the implications of these numbers from the National Housing Supply Council, a government advisory board, are hard to grasp, it gives an idea of the problem's dimension Australia is facing. Researchers of the United Nations estimate the worldwide shortfall of housing to be an inconceivable 500 million dwellings. HOUSE2.0 cannot satisfy everyone's need, but we are certain we have the best low-density residential solution for the Australian market. Our main differentiators beyond affordability, are sustainability,



Nicolas Perren in the TEKUM office in Sydney with a glass-lasered model of HOUSE2.0



HOUSE2.0 in its two bedroom version as being built currently for the Endeavour Foundation. The range includes also a double studio, three bedroom and four bedroom house from 45 sqm. to 140 sqm., and comes in a series of solutions for mining camps, affordable housing, caravan parks and disaster relief.

safety and universal access. Since on-site construction time is less than a week and skilled labour is reduced to a minimum, HOUSE2.0 is perfectly suited for rural Australia with its extreme housing need.

You have practised architecture in Zurich, San Francisco, Berlin and now Sydney. What are the major differences?

I am stunned how different the procedures in the construction industry are from country to country. The "International Style" might prevail from a form finding perspective; the

construction and procurement methods are still very much driven by local traditions despite the large internationally operating construction companies.

Who do you regard as your architectural heroes – if you have any, and why do you regard these personalities as exemplary for your work?

Architecture is mostly perceived from the street perspective. Urban space becomes therefore an important aspect of architecture.

to country's critical housing shortage modular building, their first client, and the world at large

My architectural heroes are the designers creating a good quality urban space. Of course I enjoy seeing the icons by world renowned architects now and then, but most of these buildings are self reflecting and are not addressing their neighbours. As an example the Sydney Opera House is a masterpiece for itself; an entire city made from similar buildings is hardly liveable.

What inspired you to start Tektum?

The property industry is still in its pre-industrialised age. We are consistently producing prototypes. The building elements like windows, doors, façade panels, air conditioning units etc are highly engineered and very sophisticated products, yet, due to the size of the building itself, it is still assembled in a pre-industrialised fashion. Our innovative transport and installation process opens the opportunity to factory mass produce all components requiring skilled labour in a factory.

Can you provide us with some details on your product HOUSE2.0 and its advantages?

TEKTUM has developed a modular housing product, which is affordable, sustainable and safe. HOUSE2.0, will offer fast, flexible and affordable housing, certain to revolutionise the residential building industry. TEKTUM has patents pending, which allow a pre-manufactured house to be stored and transported in standard shipping containers. This will provide significant benefits compared to traditional on-site construction and other modular housing products by dramatically cutting the cost of a house, through mass manufacturing, efficient transport, procurement economies and reducing assembly time on site to a matter of days. When installed, HOUSE2.0 will look and feel like a traditionally built home. HOUSE2.0's key difference is the ability to quickly provide quality housing into areas with skills shortages.

How do you define sustainable living?

Sustainable living is the form of living allowing human kind to inhabit planet earth for a prolonged period in great numbers without significantly impairing the living quality of future generations. Remember construction and operation of residential buildings produce 20% of the global carbon emissions, this needs to be changed if we want to sustain it.

What can the housing industry do for a more sustainable future?

Some 100 years ago, buildings hardly produced any carbon emissions, materials were sourced locally, energy was too expensive and hard to get to use in large quantities. Technology has helped us to produce energy for minimal monetary cost, increasing comfort levels in buildings by enabling air conditioning and lighting. We suggest using a combination of common sense and technology to turn our building stock into energy saving devices. Already now homes are built which do not use but produce energy. These homes are at the moment

making it the most dangerous place in which we spend time. It took the car industry until 1958 to first introduce the seat belt. As a standard my vision for the housing industry is to introduce similar, simple yet efficient solutions to create affordable, sustainable, safe housing by integrating contemporary technology into the homes we live in.

In 2005, together with your father Stephan, you circled the globe in a single-engine airplane as pilots, in aid of the fight against osteoporosis. This sounds like a great adventure. What did you learn from this experience, and can you tell us briefly what you did?



House2.0 in a typical Australian suburb: this rendering also shows the two bedroom solution as is being built for the Endeavour Foundation.

prohibitively expensive but when factory mass produced, prices will come down.

What is your vision for housing in Australia in the next 20 years?

TEKTUM's start of HOUSE2.0 production will initiate a fast paced innovation cycle. I see homes in the not too distant future, that have undergone a similar evolution like the automotive industry. I remember the generation one VW Golf GTI I learned to drive on, poor little car (smiles). The cutting edge technology it had was a fuel efficiency indicator. Compare this to the cars we drive today merely 20 years later. Similar to the car industry TEKTUM is concerned about the safety of its inhabitants. \$13.2 billion is Australia's annual expenditure for direct and indirect cost of accidents. According to the Australian Bureau of Statistics, 55% of accidents happen in or around homes,

Sitting in a small plane is like sitting in a car at an elevated position. Travelling like that around the world gave me a much better idea of the dimension of our planet. I learned that the Earth itself is rather small and fragile! In one word, I learned to be humble.

The Endeavour Foundation is one of Queensland's oldest charities, founded in 1951 by a group of mothers who wanted to educate their children with an intellectual disability. Nowadays it is one of the largest non-governmental disability service providers in Australia, supporting 3,350 people, in 230 locations in Queensland and New South Wales. They offer people with a disability a range of services, amongst them also accommodation.