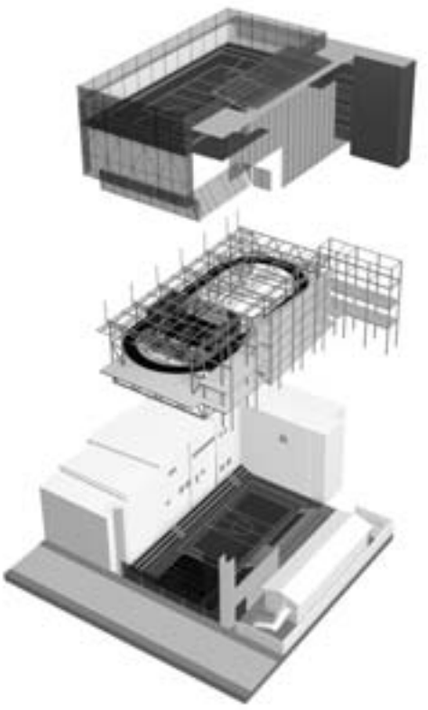
Dribbling in traffic

In the densely populated barrios of Caracas, services as basic as plumbing are often lacking, never mind space for recreational facilities. But one group of architects has found a workable solution: the vertical gymnasium



By Alex Ulam

La Cruz barrio in Caracas. An estimated 50 per cent of the 4.7 million residents of Venezuela's largest city live in such improvised settlements as this one.

Fleeing famine, war and rural poverty or simply drawn by a desire to improve their circumstances, people are flocking to cities at an unprecedented rate. This year marked a tipping point: 50 per cent of the world's population now lives in urban areas and, according to the UN's Human Settlements Programme, that number will surge to 67 per cent by 2050. In developing countries, the population explosion is in slums, *favelas* and other squatter areas whose residents frequently lack political rights and basic public services.

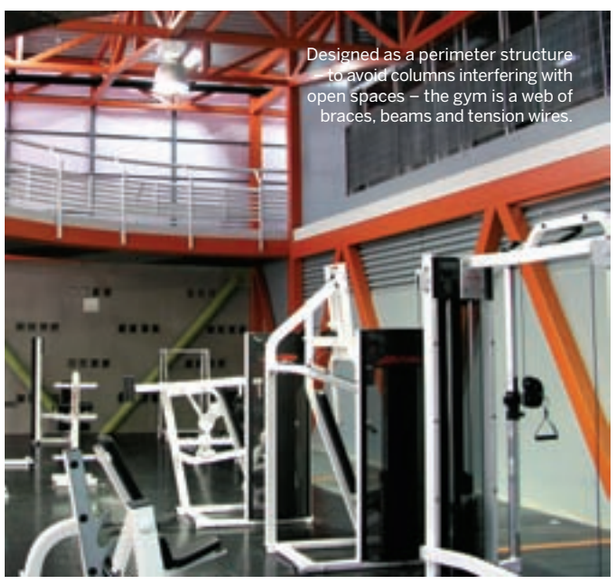
One city struggling with the effects of this demographic change is Caracas, where improvised slums, called barrios, are virtual no-go zones for most of the city's middle class. The worst of them are mazes of make shift dwellings, open sewers and walkways precariously built on steep hillsides. With an estimated 50 per cent of the 4.7 million people who live in and around Caracas inhabiting these densely packed neighbourhoods, they have also become one of the most dangerous regions in Latin America. From an airplane, they look like a giant fungus strangling the established parts of the city.

Historically, slum clearance has been a preferred strategy for taming migration settlements that surround urban cores. But the barrios have grown so rapidly that the option of razing and relocating is no longer viable. Nowadays, development experts favour retrofitting dense areas with specially designed infrastructures. One building that exemplifies this new approach is the vertical gymnasium. Located at the edge of La Cruz barrio, in the otherwise prosperous Chacao municipality of Caracas, the four-level gym serves as a prototype for a space-saving structure that provides recreational opportunities within densely populated areas. It was designed in 2002 by a team consisting of two Venezuelan architects, the brothers Matías and Mateo Pintó, together with Austrian architect Hubert Klumpner, and built two years later for approximately US$600,000. Chacao's mayor commissioned the gym as part of an effort

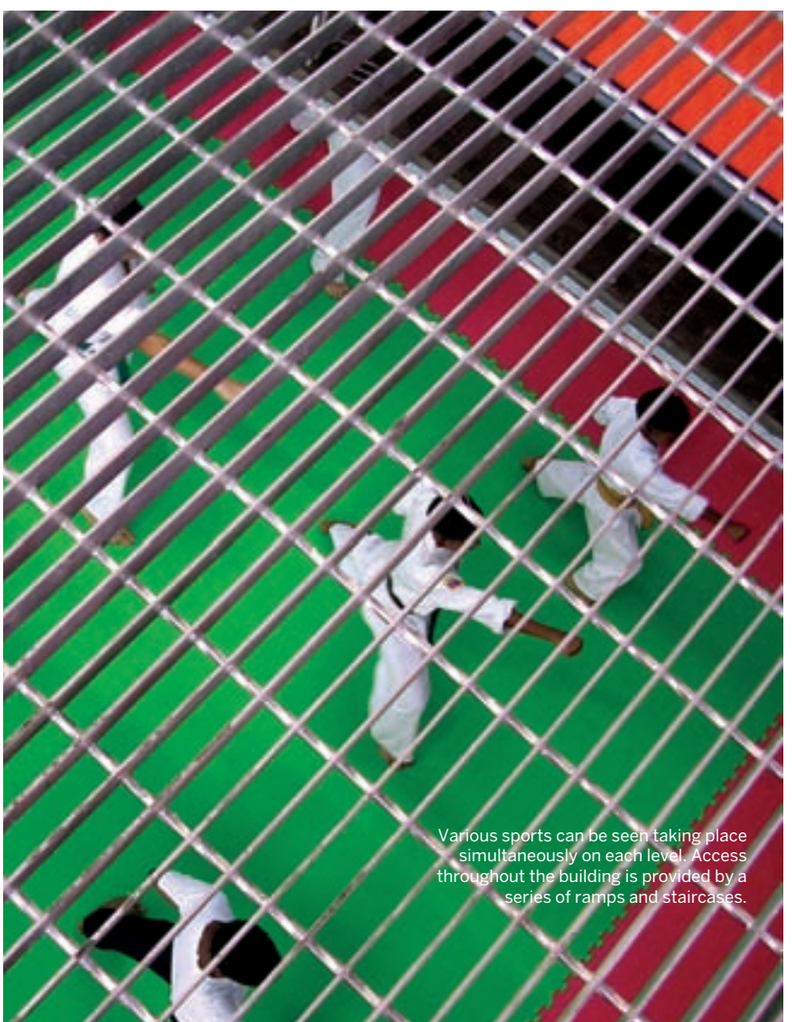
PHOTOS AND RENDERING COURTESY OF MATIAS AND MATEO PINTÓ

The vertical gymnasium, located in La Cruz barrio, sits on an 800-square-metre patch of land. It's built out of steel and concrete, with a semi-translucent polycarbonate facade.

The rooftop's multi-use surface accommodates volleyball, basketball, soccer and racquet sports.



Designed as a perimeter structure – to avoid columns interfering with open spaces – the gym is a web of braces, beams and tension wires.



Various sports can be seen taking place simultaneously on each level. Access throughout the building is provided by a series of ramps and staircases.

PHOTOS COURTESY OF MATÍAS AND MATEO PINTÓ

The gym has created a sense of community. Other projects, including a medical centre and an elementary school, are now being built nearby.

to improve living conditions for barrio residents, a project that included building medical centres and schools and a program to help squatters gain land titles.

The Pintós' work in the barrios dates back to 1999, when they won a commission to design a community centre for a neighbourhood deep in the heart of La Vega, one of Caracas's largest and poorest barrios. The centre was part of a pilot project aimed at providing such amenities as staircases to replace rudimentary stone pathways along the hillsides. Called CAMEBA, the multimillion-dollar project was partially funded by a loan from the World Bank and administered by the Venezuelan ministry of infrastructure.

Like the vertical gym, the centre features an open floor plan and incorporates low-cost industrial materials and exposed structural supports. The project received accolades for its design; however, it fell into disrepair due to a lack of programming and proper staffing – the result of an unstable political situation. "They were working in a terribly difficult area, and the institutional weaknesses in Venezuela were very obvious: they were learning by doing," says Ephim Shluger, a World Bank urban development specialist who served as an advisor for CAMEBA.

The vertical gym, however, is flourishing, in part because it's properly staffed, but also because it's located at the border of a barrio and one of Caracas's more established neighbourhoods, where the community has a vested interest in the gym's success.

The major challenge facing the architects was designing the facility on a modest 800-square-metre site bounded on three sides by buildings. Each design decision was tempered by the need to maximize usable space. "It was like doing a puzzle – playing with the size of squares," says Mateo Pintó. "What we ended up with was a skeleton of a structure." The gym is supported by a series of truss frames, and from inside it looks like an immense scaffold of diagonal cross braces, beams and tension rods.

Access is provided by a ramp and staircase that zigzag up to a rooftop playing field. To withstand pounding, the gym is built of steel and concrete, with a semi-transparent polycarbonate facade. The most distinctive feature is the atypical floor plates that transform the interior into one giant room. From different viewpoints, one can see various sports taking place on each level simultaneously – everything from martial arts and weightlifting, to joggers on the track that circles the perimeter, and a basketball game in the central court area. It's like "looking into a well-built engine," says Hubert Klumpner. "You open the hood, and you see all these different functions acting compactly together."

Evidence of the gym's success as a vital addition to the community can be seen in the surrounding neighbourhood, where more infrastructural projects are underway. In January, construction began on a new medical centre and elementary school located on a plot of land next to the gym, yet the vertical gym has not been duplicated in other barrios. Lack of funds is a continuing problem, as are the intractable social conditions that exist in more violent areas. Klumpner has been trying to replicate the project with his firm Urban Think Tank, in which he is a principal with Alfredo Brillembourg. The two architects have researched the barrios extensively and are active spokesmen of the retrofitting philosophy. They have come up with various infrastructure solutions, including pedestrian bridges, and dry toilets for areas where there is no plumbing.

Mateo Pintó, now based in New York (Matías is based in Madrid), says it's difficult to make a living designing for the barrios, even with the accolades and the satisfaction that comes with doing valuable work. "When we received the final payment for the vertical gym, it was not until a year after it was built, and it wasn't much," he says, adding, "You're always happy your building got built, and you are the most lucky guy in the world – but you cannot survive." **AZ**