

ARCHITECTURE

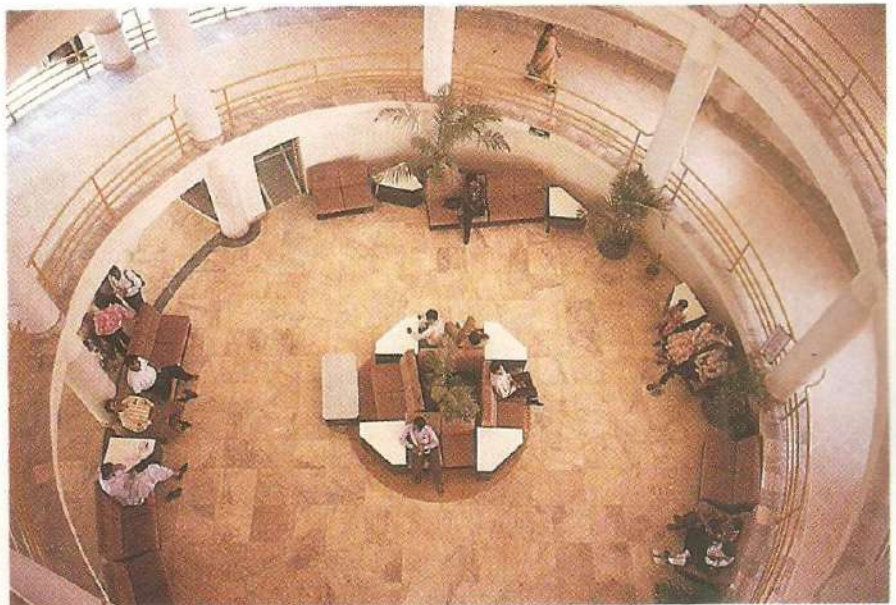
Piyush Prakash's People-sensitive Buildings

"I build all kinds of

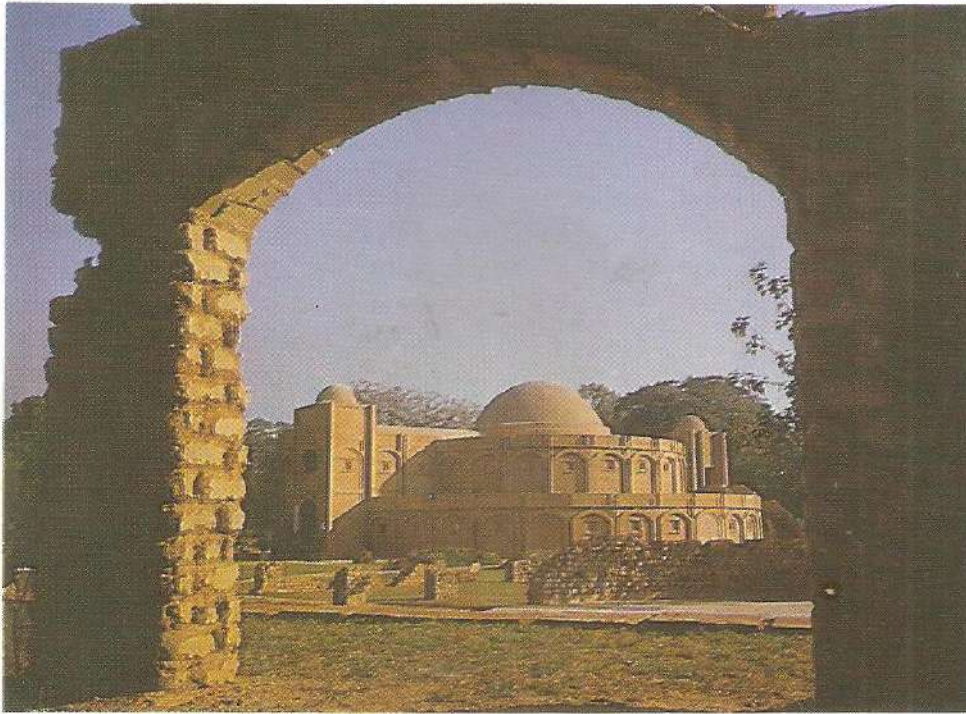
buildings for all kinds of people. I don't turn down a project just because there is no money in it," Piyush Prakash states firmly. An architect without any apparent ego, he refuses to specialise in any one kind of building. He has built tiny mud structures and he has built sprawling resorts. The more difficult the project, the more probable it is that he might be approached. "I think I specialise in meeting impossible deadlines and keeping to tight budgets, though they are definitely a strain on my nerves," he says with a chuckle.

He almost became a fighter pilot, but changed his mind at the last moment to forgo the National Defence Academy at Khadakvasla for the School of Planning and Architecture, Delhi. The initial years were frustrating when he had to make do with whatever projects came his way. Now, however, he has a most impressive portfolio. Piyush's projects range from the Maati Ghar at the Indira Gandhi National Centre for Arts (IGNCA); Aurobindo Ashram's alternative school, Mirambika; the nursery block of the Shri Ram School at Vasant Vihar; Tamanna, a school for children with cerebral palsy; Tapasya, a hostel at Aurobindo Ashram; to various farmhouses. Outside Delhi, his projects include a stadium,

Right : A view of the reception located under the dome at the MMI Hospital, Raipur. *Facing page, above* : The OPD block of the Eye Care hospital at Noida is a low-key project and, with its arches and domes, is a throwback to another time. *Facing page, below* : The huge MMI hospital's exterior has a white finish, which makes for an ultra-hygienic feeling.



Text by Ruby Dash



A view of the IGNCMA Maati Ghar with a dome believed to be the largest of its kind in the world. Built in a circular shape, the structure was built for an exhibition on time.

a hospital and a large market complex in Raipur, Madhya Pradesh, the Ram Ganga resort near Corbett Park in Uttar Pradesh and the interiors of the UNICEF building in Dhaka, Bangladesh.

What is his trademark, the link between all his buildings? Tough to say, he admits. "I concentrate on one particular aspect during one phase. There was a time when I liked only domes or only arches." His current passion is to build in hilly regions taking care not to tamper with the natural surroundings. "There is no point in uprooting the trees and breaking down the rocks. Instead I build on different levels."

Piyush worked with Manoj Mathur and Uday Kapre and his younger brother, Sanjay, under the banner of Studio Plus for nine years. Later Manoj and Uday started on their own and it was then that Piyush and Sanjay started their firm, DAAT (Design, Architecture and Associated Technologies).

"Those days, the joke among architects was, if you have anything impossible to build, go to Studio Plus. Now they probably say, go to DAAT," says Piyush. One of the impossibles that he made possible is the nursery block of the Shri Ram School. The

management wanted to set up a temporary structure and get the school started. But they wondered whether this shelter could be constructed with materials that could be salvaged later, and yet provide the children with an environment that was stimulating and did not create the feeling of studying in relief camp tents. Construction began in May '88 after a short but intense and interactive design phase. Despite many technical difficulties, the building was ready in just 55 days.

Being a rocky area, and a landfill besides, there were problems galore. Site planning was given special consideration incorporating existing slopes and rocks, adding playfields, assembly areas, paving, sand-pits and play equipment. The layout constituted a hierarchical pattern of terraces and courtyards at different levels, with a careful consideration of the child's eye level and possible views from various points. Conceived as a set of individual huts with four classrooms, a toilet and an administrative block, special emphasis was laid on the interplay of outdoor and indoor spaces.

Brick walls with sloping buttressed piers form the load-bearing fabric of the building. The roofs are in pyramidal and gabled shapes, which, along with the bright colours, make the structure very attractive. The quality and quantity of light admitted into the rooms led to a drastic reduction in the need for artificial lighting. "The children and the parents loved it so much that the structure has stayed on," says Piyush, with a laugh.

The roofing material came from the Tiruchirapalli plant of Shri Ram Fibres Ltd, which manufactures a high strength PVC-coated fabric with diverse applications such as car hoods, tents and awnings. It is water-proof and impregnated with fire-resistant chemicals while the dyes used created unusual colours.

The roofs were designed as fabric covers which would fit the steel tube truss snugly, necessary to make the structure waterproof. "Once we were stuck with a large fold which appeared while fitting the

**The Maati Ghar shatters
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Above : The mud-like appearance of the Bahl farmhouse has given Piyush the reputation of being a small-budget architect. Being built on different levels, it has the appearance of being bigger than it is. *Right* : The breathtaking view of the swimming pool through the carved columns of the Bahl farmhouse.

fabric. An elderly gentleman, who was passing by, suggested that we make tiny eyelets on the sides and tighten the fabric using a mountaineering rope," narrates Piyush. There is a liberal use of corbelled openings above the windows and small jaali-like vents in the rooms. The doors and steel glazing used are according to the design for the final school.

This is an example of the minimalist architecture which Piyush believes in. Another institutional structure, which he built with Sanjay, was the Tapasya Hostel at Aurobindo Ashram. Being a charitable society involved in education, religion and culture, the use of non-conventional energy was both economically and spiritually in keeping with its tenets. The Tapasya block is the first phase of an unusual building complex, which is being added to provide residential, meditation, dining, office, library and swimming facilities to ashramites, students and visitors. "This phase, which was completed in '90, houses 100 people and has three of the 24 chakras



planned," he explains. Rooms are laid around three hexagonal courtyards, each surrounded by galleries leading to rooms with dressing, reading and toilet facilities. Except on the ground floor, all the rooms have been provided with multi-directional balconies. The building has generous but deeply recessed openings with an innovative and multiple set of opaque and transparent shutters. A high-emission, low-absorption, permanent finish of rough white slate has been used on the external surfaces.

Despite only moderate roof insulation, the building is pleasant and uses no artificial cooling. There is abundant daylight, eliminating the need for

Tamanna, being built at a time when he was obsessed with domes, has one at the entrance itself.

lighting during the day. A solar hot water system has been integrated into the design and there is no electrical back-up. As a result, the basic energy consumption of the building is very low.

The brief for Tamanna, the school for spastics, was to create a composite and maintenance-free structure. "The load-bearing walls are of simple exposed brick while the internal columns are of steel," says Piyush. It's a partly framed structure with arches instead of beams. "At the basement level we encountered hard rock which saved a lot of money on the foundations," he explains. That was a time when he was obsessed with domes, which explains why Tamanna has one at the entrance.

The huge mud dome which Piyush built for the Maati Ghar at the IGNCA is the only one of its kind in the world, "which we discovered later", he says. This temporary structure was created for the exhibition on Time. Intended to house a series of experiences, the plan materialised in the form of concentric circles. The brief required a building that was dust-, sound-, and almost light-proof. There are

three concentric rings of increasing height, the inner ring crowned by a 9.2 m diameter dome, which "provides a metaphor for the cosmic dimension of temporal reality".

The landscaped area around the building is a development in continuity with the exhibition theme, and, in a sense, the entire compound has been considered display space. A prominent feature of the landscape is the physical manifestation of the passage of time shown in the specially created ruins. They represent what the building would look like after nature has taken its toll.

The structure is built of sun-dried stabilised earth blocks, which were produced on site through manual compression. Cement was added to the soil mix, giving the blocks additional strength and water resistance, thus eliminating the need for plastering. "An interesting feature of the gallery is that it was constructed using a highly labour intensive process that required few expensive tools," says Piyush.

Using only hand tools, the dome was built with the aid of a central guiding arm of aluminium pivoted



at the centre of the hemisphere. This guided the masonry in the horizontal as well as radial directions, each layer being held in place by self-generating compressive forces and mortar. The bricks were fitted at an angle so that they would not slide radially inward. A final compression ring at the top locked the whole hemisphere into place. One of the myths the building shatters is that mud is a weak material, or at least a material that cannot be used in an engineering sense.

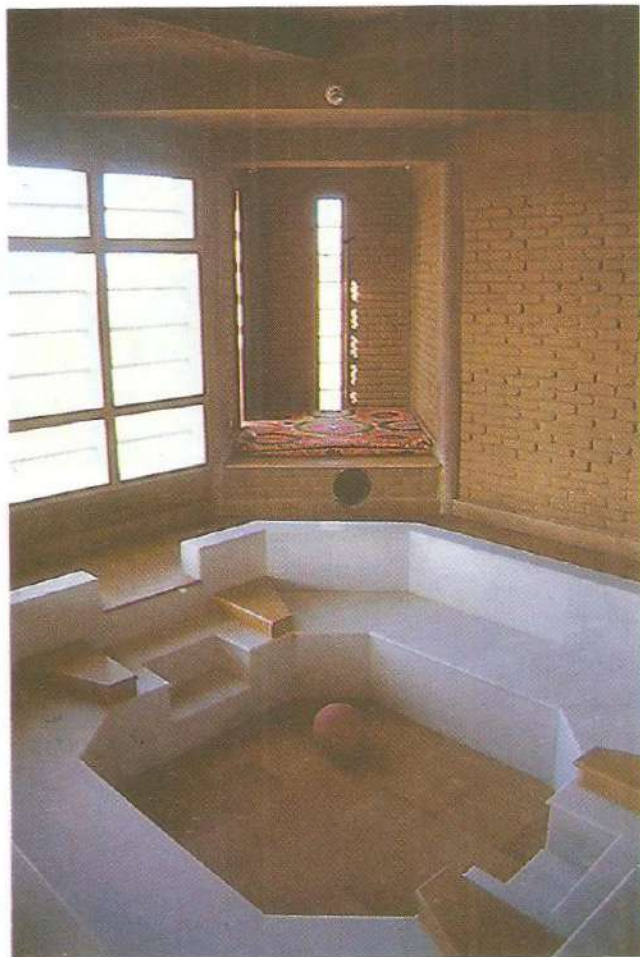
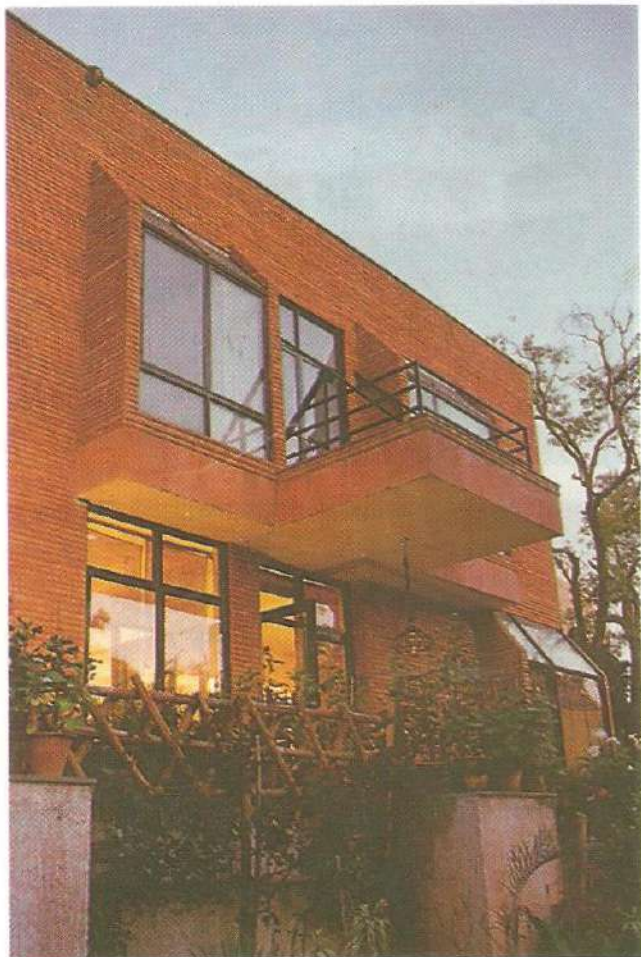
Piyush's love for nature leads him to create lakes and fit them into his projects. One of them is at a country house near Pataudi on a four-acre plot "designed with German architect Gernot Minke, using his principles of ecological architecture". It is a single storeyed house covering 206 sq m, set into

earth berms, with the south side exposed to the sun. "The arrangement of the rooms around a central patio, which has a pool, facilitates cross-ventilation and cooling by evaporation. The structural frame includes load-bearing stone columns which support beams and stone slabs to form slightly domical enclosures over all the rooms," he explains. Wherever the berms cover the external face, an air cavity is formed through the use of an inclined stone slab resting against the wall. The stone louvres in all the windows are designed to function as security grilles as well. Additional cooling is provided in each room by an earthen air tunnel ventilation system. The entire house is built without using fired bricks and only a limited amount of cement and steel.

Here landscape played an important role as flat

Right: One of Piyush's all-time favourites is the UNICEF office in Dhaka. He has utilised his interior architecture skills to come up with partitions of exposed bricks. *Below*: The Goel farmhouse incorporates columns and elements of colonial architecture. *Facing page, left*: The entrance to the the red brick structure of the Tamanna School has a dome, the most cost-effective way of roofing a building. *Facing page, right*: The Tapasya hostel block of the Aurobindo Ashram in New Delhi is built around three hexagonal courtyards which allows a lot of light and air into the rooms, which are provided with multi-directional balconies in the form of galleries.





agricultural land was transformed into an undulating garden. "A lake was created to act as a central visual element and as a climate modifier. The earth removed to form the lake was used to create the berms around the house," he explains.

A recently completed farmhouse in Delhi is a structure which appears to be made of mud, but in fact isn't. A relatively low-key project, it's an organic building, with no verandahs, extravagant pergolas or connecting arcades. The site was a degraded brick kiln with no vegetation. For a number of years, the area was slowly stabilised by converting a quarry at the rear of the plot into a low level garden accessed from the semi-basement bedrooms. The quarry in front was converted into a 4,000 sq m lake, lined with clay. A variety of mosquito-inhibiting fish and

The water pipes, which run externally for easy maintenance, are hidden behind elevational features, in Piyush's designs.

Above : The Ravi Nath farmhouse near Pataudi has an interesting interior with its marble seating arrangement in the lobby near the fireplace. *Above left* : An apartment building complex on Delhi's exclusive Prithviraj Road. The sloping glass windows is something not commonly seen in the capital. The red brick façade adds elegance to the structure.

geese have now been introduced and are flourishing.

The only project Piyush has built so far without meeting the clients is again a farmhouse. "The brief was to build a Lutyenesque home which would also resemble the family's old palatial home in Bastar," he says. A tough project but he has come through with his usual aplomb. The kota stone flooring and the red cladding outside impart elegance. The common areas such as the dining, sitting and bedrooms are designed around a courtyard but set deep inside the house whose high ceilings and ventilators make it a very cool building. The water pipes, which run externally for easy maintenance, are hidden behind elevational features, a common characteristic in Piyush's work.

For the Modern Medical Institute, a 120-bed general hospital he designed in Raipur, Piyush used the narrow site for an unusually long front elevation. The building was divided into three blocks, each with



Above : A rockery and pond as well as lots of greenery at the Mirambika School matches its philosophy of being one with nature. *Above, right* : Mirambika was one of the first few schools in the country to be built in an informal architectural style, moving away from the almost sanitary buildings used for schools earlier. *Top, right* : The Ram Ganga resort near Corbett Park is built on different levels and fits in with the surroundings. *Top, left* : A computer generated image of the market complex at Raipur, which is still under construction. The Raipur Nagar Nigam is most enthusiastic about the complex because of its sheer size, though the construction is taking a very long time.

a different elevational treatment. The main entrance lobby with its helical ramp is located in the central block which has a 12 m diameter dome. On either side are skylights, glazed over with steel shell structures. The hospital has been planned around three internal courtyards, which have been converted into well-maintained gardens.

His other big project in Raipur was the stadium. "Since a stadium can be used for any kind of public event like a musical nite, cricket match or a swearing-in ceremony, I had to get under the skin of an unseen public. There are no colourful roofs or railings because people should not be overpowered or suffocated by the design in a place like this," Piyush

clarifies. While designing he is careful to use local materials and even workmen. "That way the money stays in the small places," he adds.

A work he enjoyed designing was the Ram Ganga Resort near Corbett Park in Uttar Pradesh. "I love it so much that I visit it thrice a year," he says. The resort comprises cottages with sloping roofs located in clusters on various levels with a common dining area and an open air swimming pool. From a distance it's difficult to identify it as a resort as it blends in so perfectly with the surroundings.

Another resort he has designed is on the Delhi-Jaipur highway, where he has used lakes and sprawling properties. The owners wanted an European castle, a form alien to that area. The final result is a copy of a 17th century English castle with a moat around it. It is a fun place like Cinderella's castle in Disneyland and since it has complete entertainment facilities including water sports, it's ideal for holidays, he says.

The only interior Piyush has designed is the UNICEF office in Dhaka. "I opted for the international look without being ostentatious. Though it was an empty shell I subconsciously made it into a building project." However, he dislikes doing interiors as he has no inclination for fancy lights and arbitrarily hung paintings. He would much rather deal with the exterior, nature. □