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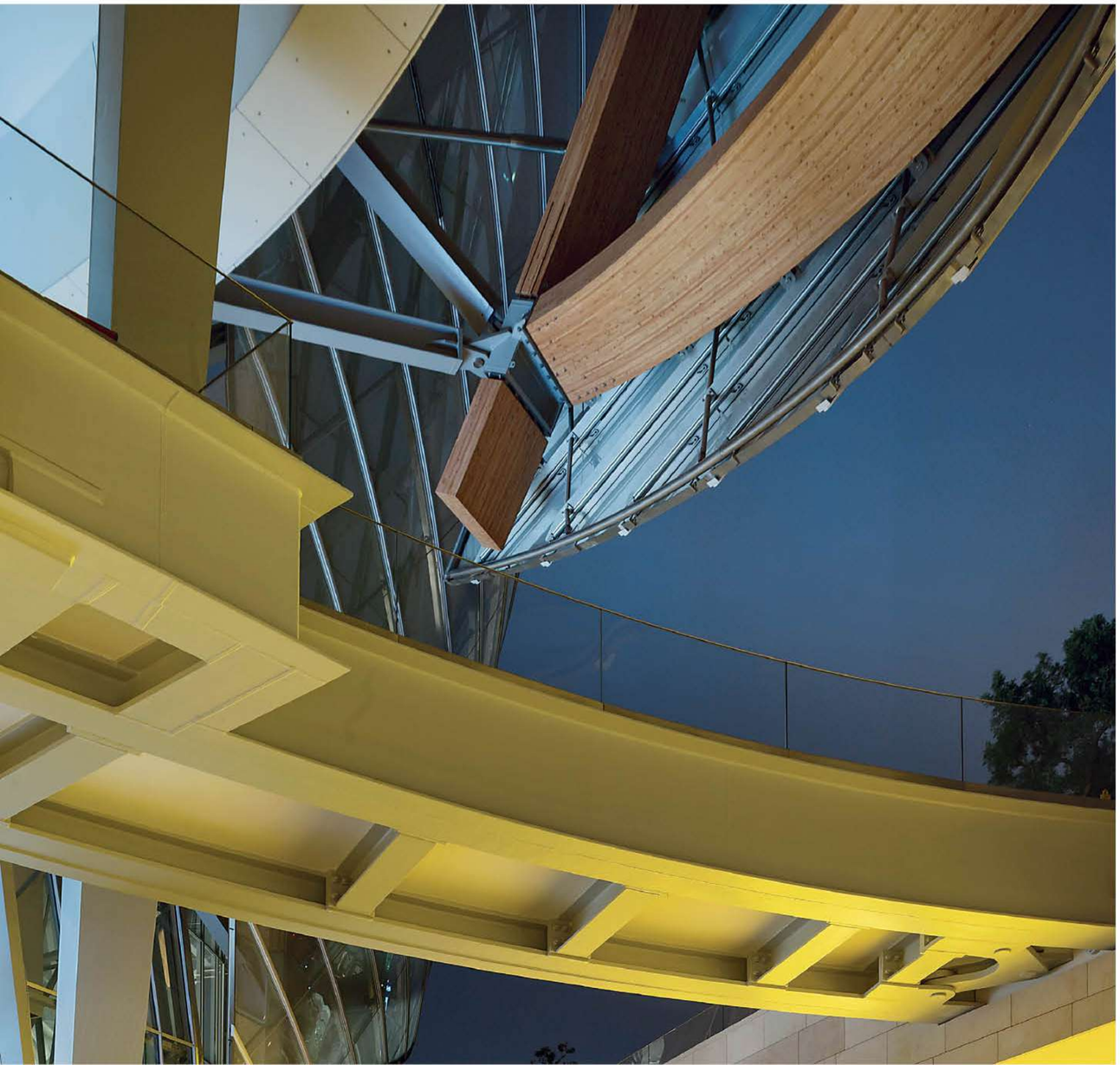

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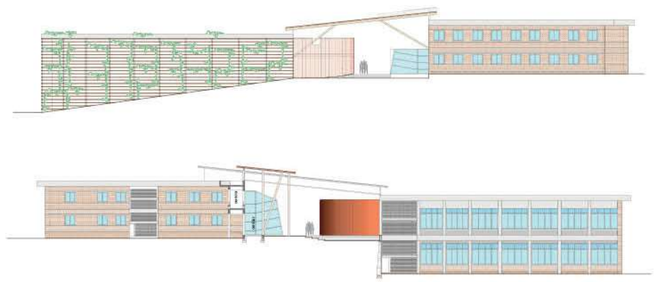
Cover: Detail of the Fondation Louis Vuitton building in Paris by Frank Gehry. The 43 luminous columns alternated with yellow mosaic and mirrors below (not seen in the image) cast a gleam on the connecting bridge above.



Elevations of the Symbiosis Knowledge Village campus buildings, in Lavale, Pune designed by Rahul Kadri of IMK Architects

IMK Architects

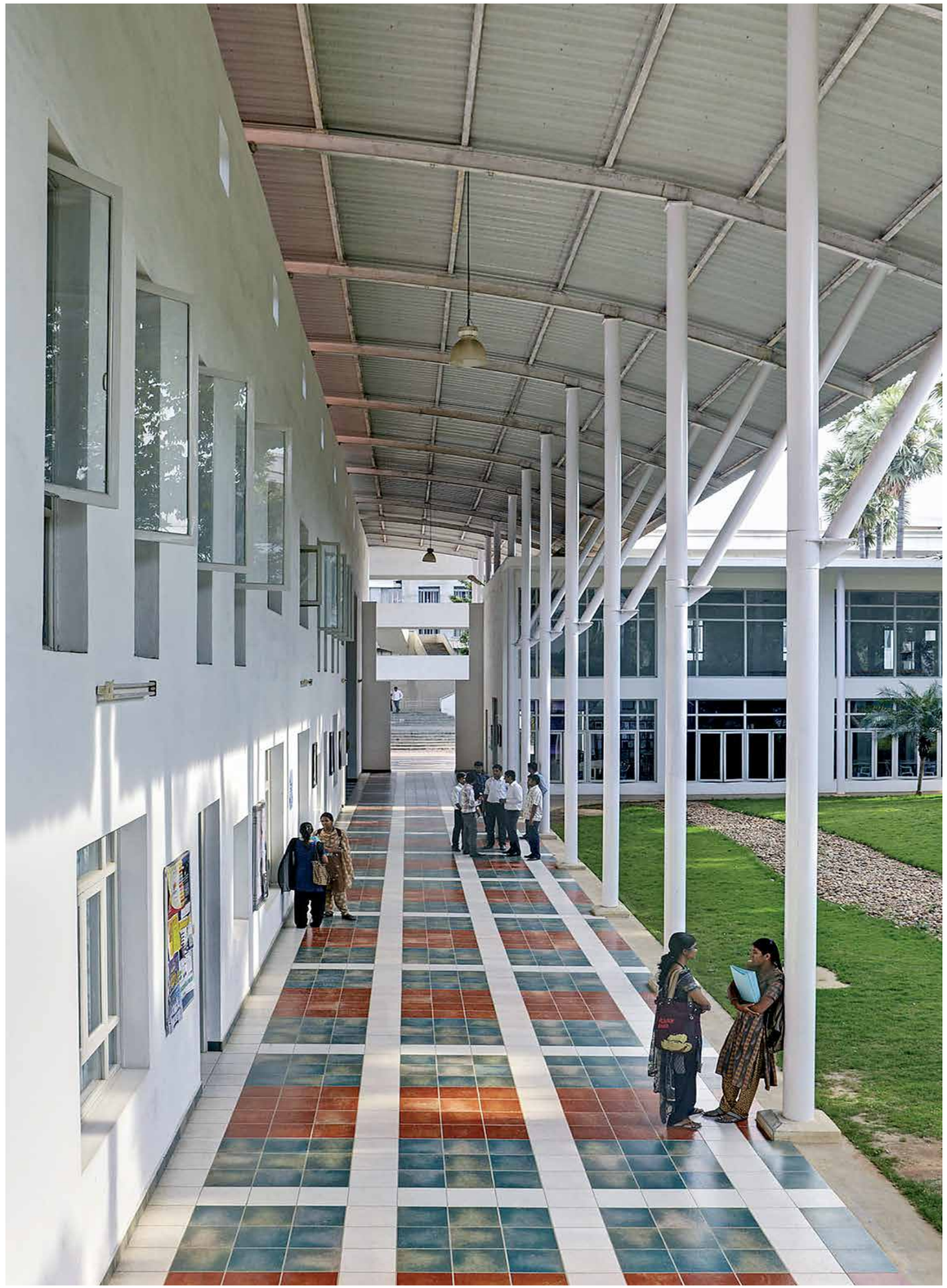
CRUCIBLES FOR THINKING, AND REDRAWING LIVES

Two campus designs, one in Tamil Nadu and the other in Maharashtra, address the increasingly complex questions of educational building designs – where architectural articulations, and the detailed hierarchy of spaces aim for a campus that is interactive, spontaneous and provocative

Text Kaiwan Mehta
Photos Rajesh Vora, IMK Architects

A conversation with the architect Rahul Kadri, as we started working on the feature of his campus design projects, began with a question – what would one want from a campus? Indirectly, what is it that we look forward to in an educational campus, as a space and building? At one level, this question stems from an architectural inquiry into the typology of educational spaces, but for me, the question stands ground also as an educationist, and one who has been involved in setting up new educational organisations. I was thinking of these questions more as a teacher myself, than as an architect or a writer.
Well, a campus means something, not simply for the growing up years of any student, as a student (whatever the age), but also for the educational process and the outlook one generates through education. For a campus to be open and interactive, spontaneous and provocative is very important – it should essentially be a well-detailed hierarchy of spaces – from the most intimate classrooms, to the many corridors and courts and landings. The classroom is a space to focus and be attentive in – but, well, a bit of dreaming is necessary – and some good light and a couple view-outlets are always welcome. The corridors in a campus are never just movement channels, they are that too… but a corridor is where you 'hang out', share notes, study before an exam or prepare for a presentation; a corridor is also where from you connect with the world and crowd outside your own space and circle of friends or classmates. Should a campus be an iconic structure? Well, it need not be… it has to be a well-structured building with elements of architecture creating a good script on site, but any form of iconicity is neither necessary and may actually overpower the free nature of a campus. However, a playful set of elements, choreographed to connect as well as distribute spaces may actually enhance the sense of place, and the architectural landscape that offers a setting for the various activities to take place, occur, and evolve.

This page: the Sona College building has a deep pitched roof, and a fairly traditional form. Opposite page: corridors in the campus are not just meant to be movement channels, but also an informal space for the exchange of idea



Left: the lower parts of building's walls are clad in stone, while arches open up the verandahs on the floor above

We look closely at two campus designs by Rahul Kadri of IMK Architects, one for the Sona College of Technology in Salem, Tamil Nadu, and the other for Symbiosis Knowledge Village in Lavale, Pune, Maharashtra. The above discussion would comfortably fit these campuses. The campus for Sona College works with a fairly traditional form that sits firm on the ground; however as one moves inside, and in between the building, a range of elements such as jaalis, wide verandahs and walkways, or deep stone-clad openings in walls puncture and punctuate the built-volumes creating a sense of play as well as an architectural landscape for multiple levels of interactions. The chosen language plays softly between the traditional imagination of an educational institute, which should be stolid, and monumental in some ways, and the porosity needed in this typology to let students breathe, move, and evolve. At the cost of using a clichéd phrase, one could say that the architecture here is an interesting balance between an old-world charm and a new-age experimental effort!

The deep pitched roof, stone cladding for the lower parts of the walls, arches that open up the verandah, all sit very finely with the curve and slenderness of a material like corrugated roofing, projecting to create a nice walkway marked by slender metal columns. Light and nature seem to flow around freely within the campus, although the buildings are planned along a fairly geometric plan. The use of jaalis, and carefully designed openings, as well as the use of pergolas creates a nice series of shade and shadow patterns, punctuating the various spaces and interactive paths.

As for the Symbiosis Knowledge Village, one would immediately say it is a healthy as well as playfully built space. A certain Modernist language and programmatic agenda clearly governs the design of the buildings, and then come in a palette of elements that tie these buildings into a landscape of tectonic interaction spaces. The elements animate the campus giving it an identity and a symbolic presence, while controlling its scale such that

it does not impose itself on the programmatic purpose of the building and campus. Deep overhangs, verandahs or punctuated building edges render the much-needed hierarchy of varieties (of spaces) in the campus; these also visually make the buildings lighter and hence the atmosphere more joyful, although structured and organised.

In both cases, primary care was taken to make sure that the spaces inside receive abundant light and ventilation, and the orientations were worked out so that interior spaces, depending on their functions and needs, get adequate light and ventilation. These campuses are designed to celebrate life on earth, in nature, and the idea of education as a growing and evolving of human minds and souls. As much as architecture nurtures niches and corners, courtyards and steps, surely within a larger structured format of building, for students to chat, share and 'hang out', one will always produce built environments as a crucible for everyday thinking and redrawing lives. One of the pleasures of architecture is its ability to give joy, and enhance the life experiences of those who occupy it. These campuses, indeed, do so! ◭

Top: light and nature seem to flow around freely within the campus. Above: the architecture nurtures niches and corners, courtyards and steps, for students to chat, share and 'hang out'

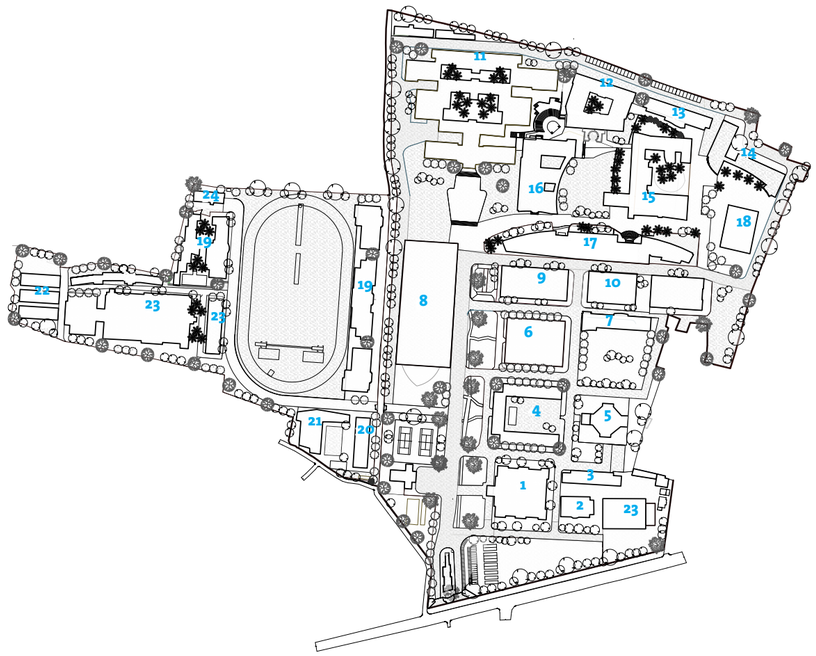
FROM THE ARCHITECT'S PROJECT DESCRIPTION

Sona College of Technology, Salem, Tamil Nadu

The design philosophy for the Sona College of Technology focusses on interaction – the interaction between built forms, between students, and between the indoors and the outdoors.

Courtyards are planned as green plazas landscaped with multi-level outdoor seating. Residual spaces, stepped walkways, and pathways connecting buildings are used as interactive landscaped platforms for student activity. Stairways are designed not merely as transit routes but as casual sit-outs for students. An open-air theatre snuggled between the built forms acts as the cultural focus of the campus.

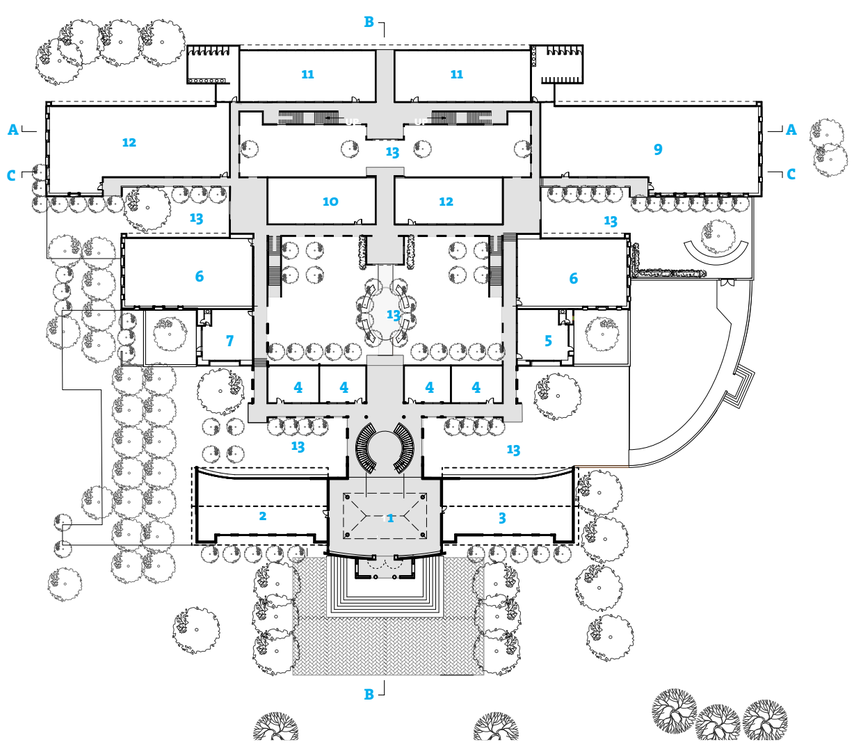
Apart from vibrant social spaces, the campus also offers spaces for privacy and contemplation. Niches in corridors



CAMPUS LAYOUT

0 30M

1 Silver Jubilee Block
2 Cps Block
3 Pf Classroom
4 Main Block
5 Auditorium
6 Textile Block
7 Golden Jubilee Bloack
8 Proposed University Block
9 Engineering Block
10 Workshops
11 Main Engineering Block
12 Ece Block
13 Civil Engineering Block
14 First Year Block
15 Sona School Of Management
16 MCA
17 Classroom Block
18 Proposed Civil Engineering Block
19 Girls Hostel
20 Staff Accomodation
21 Student Amenities Centre
22 Proposed Staff Housing
23 Boys Hostel
24 Guest House



GROUND FLOOR PLAN

0 5M

1 Entrance Foyer
2 Computer Hall
3 Computer And Program Lab
4 Lecture Hall
5 Computer Science
6 Mech Lab
7 Mech Faculty
8 Instrumentation And Dynamics Lab
9 Fluid Flow Lab
10 CAD/CAM Microprocessor Lab
11 Workshop
12 Metallurgy And Meteorology Lab
13 Courtyard
14 Lecture Hall Lobby
15 DWG. Hall
16 Elec Lab
17 DBMS Lab & SYS Software

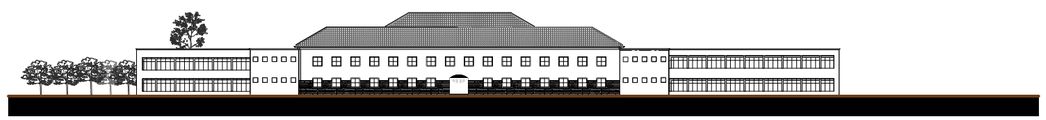
SECTION A

SECTION B

SECTION C

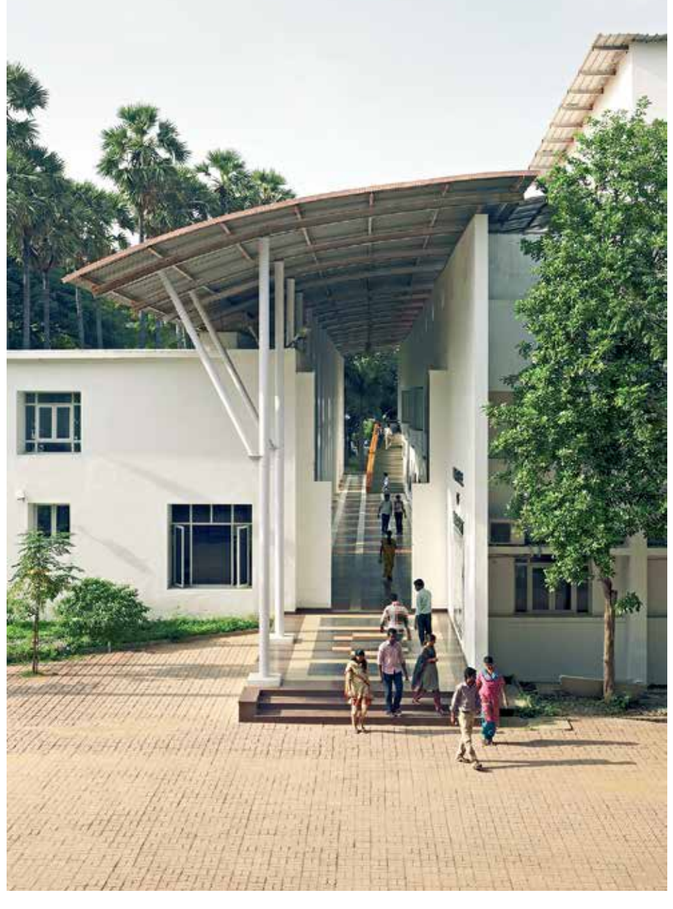
SOUTH ELEVATION

EAST ELEVATION



NORTH ELEVATION

0 5M



Opposite page top: the corrugated roofing projects to create a walkway marked by slender metal columns. Below left: the corridor of the MBA block. Below right: recessed areas between the classroom and corridors and landings of staircases serve as quiet, personal spaces within the buzzing campus of Sona College. This page top left and top right: the use of jaali creates a sense of play. Above: the entrance lobby of the Sona College of Technology

Project
Sona College of Technology
Location
Salem, Tamilnadu, India.
Client
Chockolingam trust, Sona College of Technology
Architect
Kadri Consultants Pvt. Ltd.
Design team
Mr. Sandeep Sen, Mr. Prakash Mankikar and Mr. Mangal Gupte
Site Area
45 acres
Project Area
approx. 10 lakhs sft
Civil Contractors
South India Corporation / Raj Constructions

Structural Engineers
Dept. of Civil Engineering, Sona College of Technology.
Services:
Dept. of Civil Engineering, Sona College of Technology
Site Supervision
Dept. of Civil Engineering, Sona College of Technology.
Project Estimate
approx. 650 Million Rupees
Initiation of Project
1997
Completion of project
Ongoing

serve as informal seating, which encourages an exchange of ideas. Recessed areas between the classroom and corridors and landings of staircases serve as quiet, personal spaces within the buzzing campus.
The institution has a strong design language that ties it together – the use of using over-sized cornices, overhangs, and beautifully designed jaalis, which add a play of light and shadow whilst giving the campus a distinctly Indian flavour.
The building is further designed to respond to climate and context. At the Sona College of Technology, double walls in the south provide 100 per cent shade in the summer, improving energy-performance. Simultaneously, north-facing classrooms with deeply recessed shading devices cut out glare and add to the thermal comfort.
Light wells provided allow for well-balanced illumination throughout the day and avoid overheating while maximising daylight. Courtyard trees prevent solar gain and shade adjacent classrooms.
Buildings in the Academic Block, in chronological order, include the MBA block, the main classroom block, civil engineering department, human sciences department, electronics and communications block, MCA department, golden jubilee block and the university centre. Similarly, building in the residential block, in the order of completion, include the ladies' hostel 1, ladies' hostel 2, hostel for international students (boys), hostel for international students (girls), ladies' hostel 3, residential quarters for management, and the boys' hostel.

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Symbiosis Knowledge Village, Lavale, Maharashtra
Sited on over 47,000 m^2 of partially sloping land, atop the Lavale hills, the Symbiosis Knowledge Village – a vibrant, eco-friendly student campus – is planned to seamlessly integrate with the contours and climate of the locale. The development consists of four faculties: The Symbiosis Institute of Business Management, The Symbiosis Institute of Mass Communication, The Symbiosis Institute of Telecom Management and The Symbiosis Institute of Photography.
The heavily contoured site posed a serious challenge to the architects to accommodate the building within the landscape with minimum cut and fill. A detailed slope analysis was carried out to determine the placement of the campus buildings, while local stone from the site was reused in the retaining walls.
The campus is home to 1000 students and comprises of hostels, dining halls, academic departments, an auditorium, a library, a canteen, an amphitheatre, an indoor sports complex, and teaching and non-teaching staff residences.
The academic block is consciously planned to encourage interactions and inspire friendships amongst students. This is achieved by concentrating movement through the campus along a "central spine" – a promenade formed by the organisation of buildings. This activated zone of interaction connects the major social functions and

Opposite page top: the Symbiosis Knowledge Village campus sits on a heavily contoured site. Middle: the water channels created by rainwater runoff course along a winding and interconnected route through the site. Below: walkways and pathways create an interactive landscaped platforms for student activity. This page right: windows, wherever possible, are recessed, thus increasing the shading component. Below: the semi-outdoors create student spill-out zones and break-out spaces

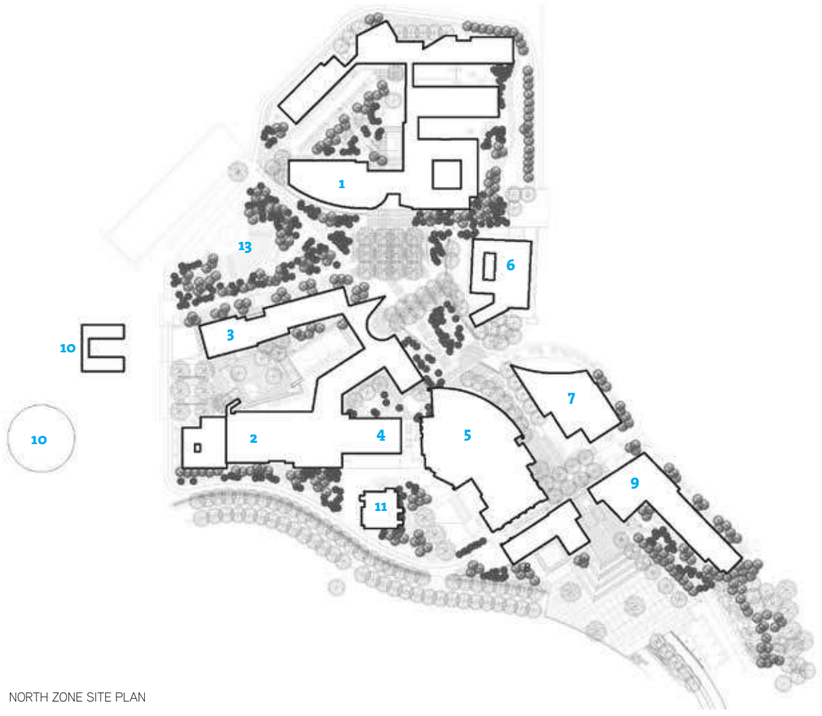
congregation spaces, forming the hub of activity.
A variety in the quality and scale of spaces created – semi-outdoors and outdoors – further stimulates social engagements between students and teachers.
The inner envelope of the building is composed of circulation elements, while the open corridors, shaded verandahs and light, steel staircases – the semi-outdoors – form major student spill-out zones and break-out spaces.
The multi-level courtyards and landscaped terraces carved out of the natural contours of the site – the outdoors – function as vast interconnected plazas for assemblies and gatherings.
An eco-friendly design, the Campus makes maximum use of natural light and winds to create a comfortable learning environment.
The open courts are oriented towards the northwest – the predominant wind direction. This creates positive and negative wind-pressure zones, funneling a cool breeze into the buildings and internal spaces.
Building elevations are climate responsive; buildings are oriented with the longest facade facing north-south. All teaching spaces face north with large windows that allow ample glare-free light into study areas, while a continuous corridor shades the southern facade. Being completely day-lit, cross-ventilated, and therefore electricity-free, the classrooms are 10 per cent cooler than the outside.
To reduce heat gain, double or cavity walls are employed. Building facades are fixed with a vertical steel trellis that support climbers, to further reduce vertical heat gain and arrest the dust.
Water channels created by rainwater runoff course along a winding and interconnected route through the site; from one level to another, below buildings and around them, opening up into water spaces in the courtyards. This water feature not only binds the academic campus together, but also allows for an organised draining of excess rainwater, reducing soil erosion and flooding during the monsoons.
The use of energy-efficient materials significantly reduced the carbon footprint of the project. Sun-dried, compressed earth blocks were utilised for the external walls after much research on the natural mix of different soil types – the first time ever for a campus of this scale. An extremely environment-friendly process, these CSEB blocks were manufactured without the release of any carbon by installing a block-making machine on-site.
The local stone excavated from the site during cutting and filling is reused for the building foundations and retaining walls. Steel members with high recycling content were used to create the framework for the roofing systems.
With a sensitive material palette and strategic planning, the Symbiosis Campus blends into the landscape to create a holistic and rich learning environment.

Thermal Comfort
The north campus (the academic block), where the students spend most of their time, has been designed keeping the climatic considerations in view. The buildings are oriented with their longest facade facing the north

MASTER PLAN

0 30M

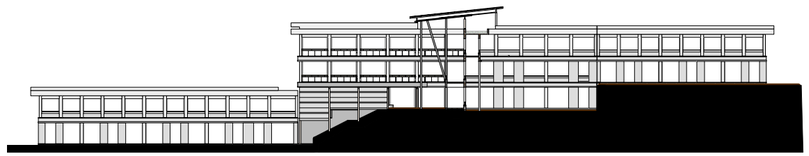
1 Symbiosis Institute of Business Management (SIBM)
2 Symbiosis Institute of Mass Communication (SIMC)
3 Symbiosis Institute of Telecom Management (SITM)
4 Symbiosis Institute of Photography
5 Auditorium and Connvention Centre
6 Canteen
7 Library
8 Society Offices
9 University Administration
10 Project Office
11 Sub Stn/DG Set (North Campus)
12 Helipad
13 Amphitheater
14 Amenity
15 Dining
16 VIP Guest Room
17 GSR
18 ESR
19 Girls Hostel
20 Indoor Sports
21 Boys Hostel
22 New Hostel
23 One B/Rm Jr Staff Hsg (Boys' Hostel Annexure)
24 Two B/Rm Jr Staff Hsg
25 Three B/R Jr Staff Hsg
26 Vice Chancellor's Bungalow
27 Chancellor's Bunglow
28 Sub Stn/DG set (South Campus)



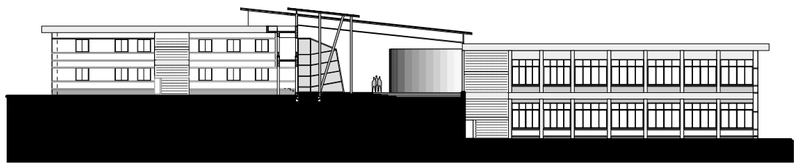
NORTH ZONE SITE PLAN

0 5M

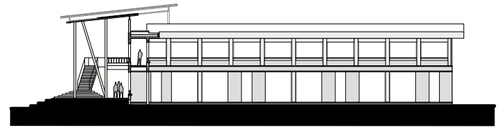
Project
Symbiosis Knowledge Village
Location
Village-Lavale, Taluka-Mulshi, Dist.-Pune, India
Client
Symbiosis Society
Architect
Kadri Consultants Pvt. Ltd.
Design team
Mr. Prakash Mankikar, Mr. M.B. Gupte, Ms. Anuprita Dixit, Ms. Dnyaneshwari Ajgaokar, Ms. Rashna Kapadi, Ms. Preeti Kapdi, Ms. Priya Barve, Ms. Gayatri Save, Ms. Vishakha and Ms. Aditi Mane.
Site Area
60 acres
Project Area
6,25,000.00 sq.ft.
Civil Contractors
Shapoorji Pallonji, Sharad Constructions.
Structural Consultants
JW Consultants LLP (Formerly Y.S. Sane Associates)
Plumbing Consultants
Hydro Mechanical Consultants
Electrical Consultants
Design Bureau
HVAC Consultants
Rumi Bharucha
P.M.C.
Shrikhande Consultants Pvt. Ltd.
Project Cost
Rs.125 Crore
Initiation of Project
May 2004
Completion of project
December 2007



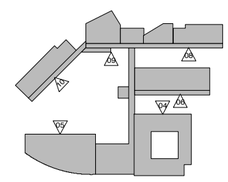
ELEVATION 10 ELEVATION 09 ELEVATION 08



ELEVATION 04 ELEVATION 05



ELEVATION 06



GROUND FLOOR PLAN

0 5M

1 Enterance
2 Admin Offices
3 Toilet
4 Computer Lab
5 Classrooms
6 Staff Room
7 Students Common Room
8 Terrace Roof Garden
9 Reception
10 Courtyard
11 Water Body
12 Conference

and south. The classrooms use maximum north-diffused light. The southern facade is buffered with singly loaded corridors that help in reducing the use of artificial light even during the day, as in case of doubly loaded corridors. The eastern facade and the western facade have comparatively less or no openings, so that they reduce the incoming radiation from these directions as well as cut off the glare. This becomes important for the classrooms, as the reflected glare component disturbs the visual comfort and creates difficulties for the students to concentrate.
To reduce the heat gains, use of double or cavity walls is considered. The windows, wherever possible, are recessed, thus increasing the shading component. Mutual shading is achieved between the buildings considering the sun's angle to create outdoor comfort conditions and shaded courtyards. Buildings facades are fixed with vertical trellis to support the creepers/climbers/planters to grow; a fine example of vertical landscape.
The roof of all structures is designed as a green roof with terraced rooftop gardens thus reducing the horizontal heat gain. The use of green roofs is the best-known heat-reducing strategy as the soil and water content act as a heat sink and the thermal lag for the horizontal surface is increased. The heat absorbed during the hot day is arrested in the green roof layers and slowly dissipated in the cool night due to temperature gradient and rules of heat transfer. Such surfaces help reduce the heat island effect.

Materials
Local materials are extensively used. The local stone (on-site stone) has been used in the building foundations as large amount of cutting and filling was carried out on site for preparing building areas. Use of CSEB (compressed stabilised earth blocks) for external walls has been consciously done. These blocks were manufactured on-site where a block-making machine was installed. The masons also worked as block-makers and made an extra earning (economically sustainable outlook)! The bricks were made with red clay + sand + grit + local Murum from the site and these were stabilised with cement and later sun-dried. This considerably helped reduce the carbon footprint of the project.

Design Principles
Use of ramps is done to connect different levels, indoors as well as outdoors, thus helping universal accessibility.

Water and Energy
Wastewater from all the services is collected and treated through Reed Bed Treatment System (RBTS). The treated water collected is used in irrigation of the landscape.
The kitchen runs on the biogas plant, which runs on the biodegradable waste from the site thus reducing the heavy dependency on LPG cylinders and thus effectively cutting down on fossil fuels.

This page: steel members with high recycling content were used to create the framework for the roofing systems. To reduce heat gain, building facades are fixed with a vertical steel trellis that support climbers, thus also arresting dust. The water feature not only binds the academic campus together, but also allows for an organised draining of excess rainwater

This page: sun-dried, compressed earth blocks are used for the external walls of the Symbiosis Knowledge Village campus buildings. The campus is a playfully built space, with a palette of elements that tie the buildings into a landscape of tectonic interaction spaces