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TIMELESS FLUX

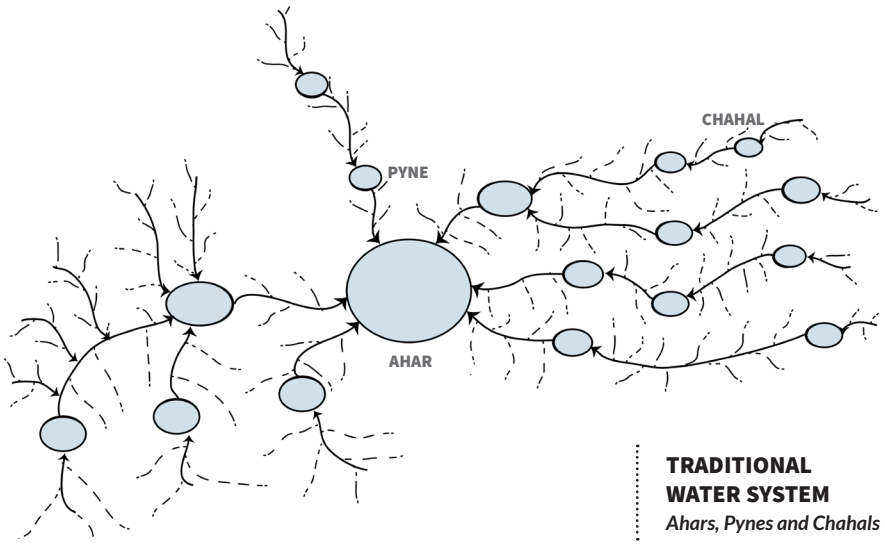
IMBIBING LAND RITUALS INTO AN EDUCATIONAL CAMPUS

Taking inspiration from the regional landscape structure, especially the water conservation systems, the educational campus in the arid region attempts to create a framework of nature conservation – water and vegetation – integrated with its design program.

Nalanda University lies in a rich ecosystem developed on the Gangetic flood plains and dominated by hot-humid climate, alluvial geology, rich clayey soils, high groundwater table, flat terrain and subtropical dry deciduous forests. Institutions in this region have a history of successful co-existential relationships with the surrounding human and the natural environment, which have resulted in a vibrant cultural heritage. Human society is overwhelmingly agrarian with a long history of smaller administrative units supporting a group of villages. The landscape master plan intends to act as a steward to its region of influence through a comprehensive program encompassing ecology, community and culture.

The site is an agricultural land on the outskirts of the town of Rajgir. One can observe centuries of agricultural rituals moulding the site's structure – a flood-prone area consisting of an intricate water system of *"ahars, pynes* and *chahals"* that move water as well as percolate it. The University was very clear that the soul of Nalanda must not be lost. Hence, it was decided early on to work closely with the datum line and complement the regional landscape structure.

Nalanda University is imagined as a set of great mudplinths arising out of a fluctuating water body in a fluid terrain, carved to create introspective spaces and clustered to generate dialogue. This great vista is set in a rustic traditional landscape generated by large swathes of agrarian landscape, woodlands as well as low-lying areas that seem to blend into one another seamlessly; and the entire landscape is overlaid with a series of man-made swales that direct rainwater to embankment reservoirs. As one enters the



TRADITIONAL WATER SYSTEM
Ahars, Pynes and Chahals

University, one travels through densely shaded plantations of mangoes, sal and dense bamboo clusters, with water lilies, birds and small animals abounding in shallow waterholes formed in the rainwater swales, crossing them through rough wooden bridges, stepping over stone paths raised over the viscous soils. One treads with care over these obstacles, while being deeply immersed in nature before reaching the University.

The masterplan framework developed is simple yet spatially powerful. Kamal Sagar – a square water body, 400 metres in each direction, is the heart of the campus, while academic buildings, recreational area, student hostels and faculty cum staff housing are arranged around it. Kamal Sagar acts as the central congregation area, with the library, amphitheatre, meeting spaces as well as civic amenities at its centre and periphery. Kamal Sagar also holds and supplies the annual water requirement of the campus. The centrally situated water source strongly imprints awareness of resource dynamics and its management into the young minds being moulded here.

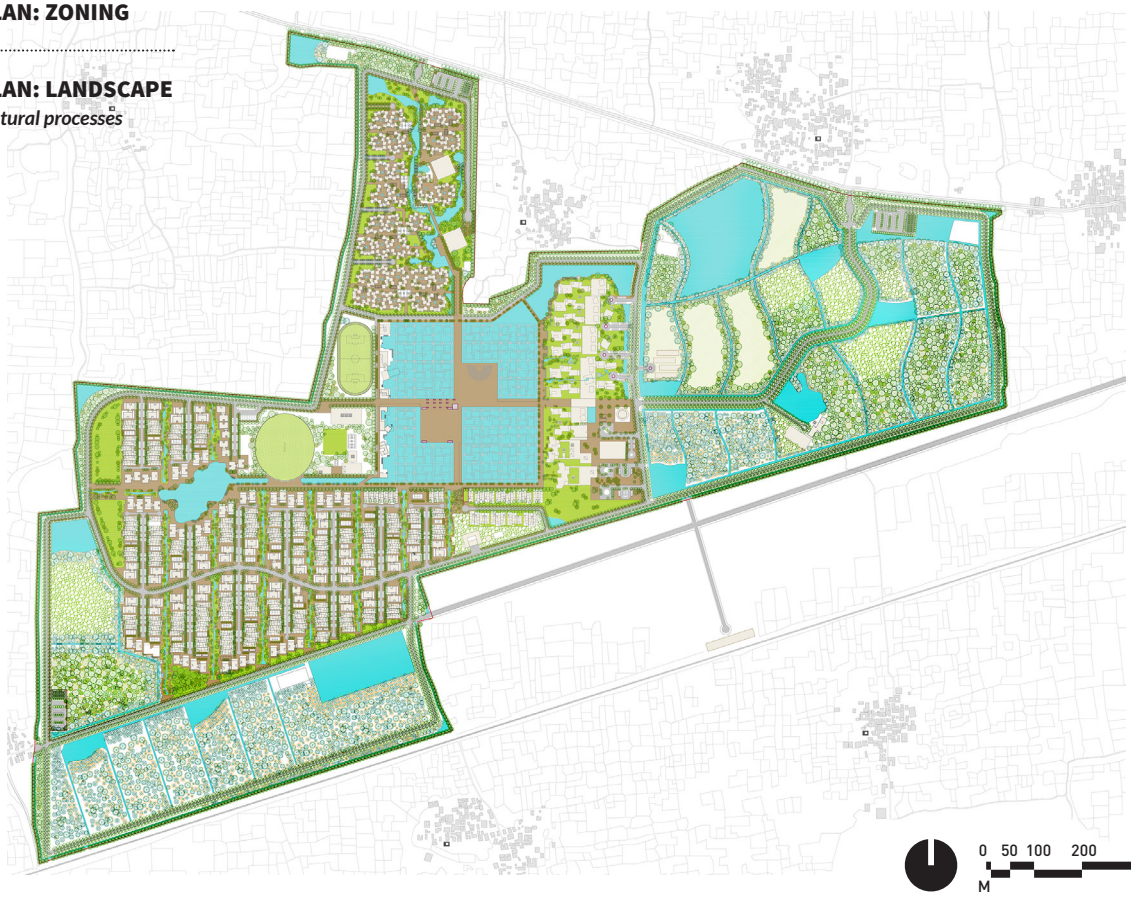
The entire built campus is restricted to thirty per cent of the site area, the remaining being given to ecosystem conservation. The prime element of landscape infrastructure is the *ahar-pyne-chahal* system, whose integration with regional networks shall ensure water security leading to a productive ecosystem. *Ahars* are deep ponds or embanked retention areas, *pynes* are channels that connect the *ahars* and *chahals* are smaller depressions that hold water along the *pynes.* This system channels, collects, stores and recharges rainwater for subsequent use throughout the year. It is reinforced with edge plantation for shade, wind-break and micro-climate normalization as well as fostering small wildlife habitats and corridors along water channels. The flexibility of the system allows water bodies to transform from ponds and canals in the monsoon into wetlands in summer.

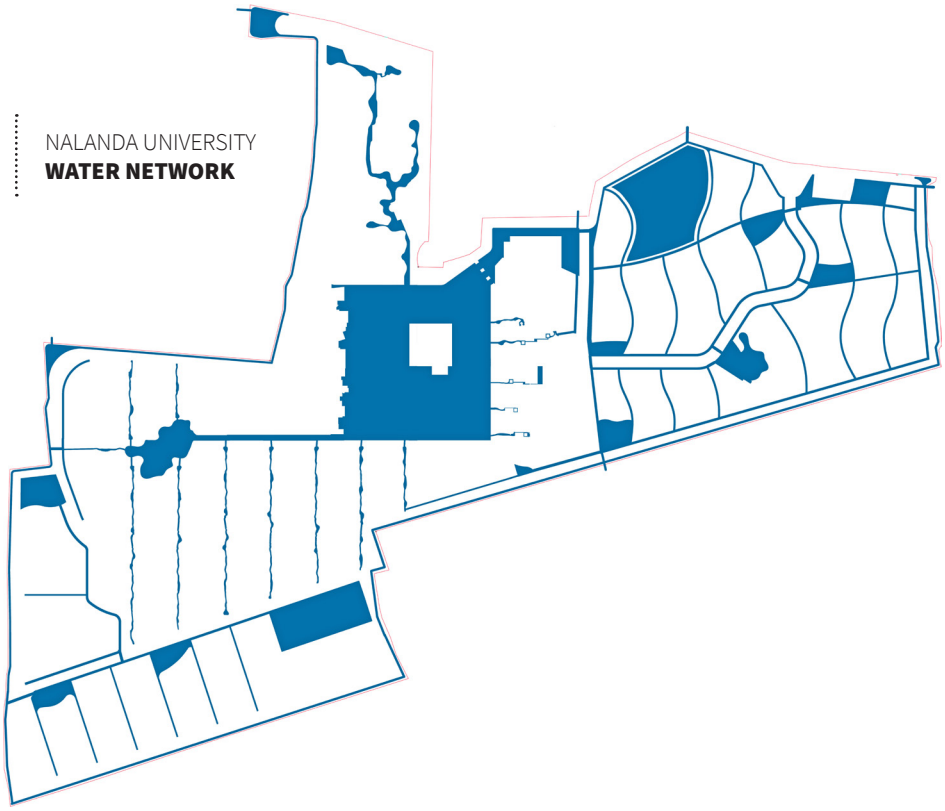
NALANDA UNIVERSITY

MASTER PLAN: ZONING

MASTER PLAN: LANDSCAPE

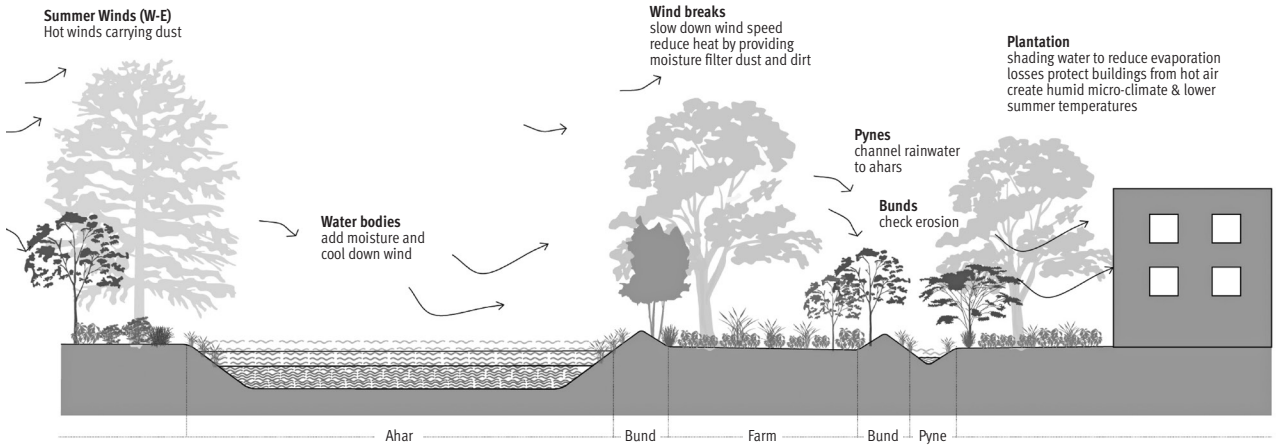
Integrating natural processes



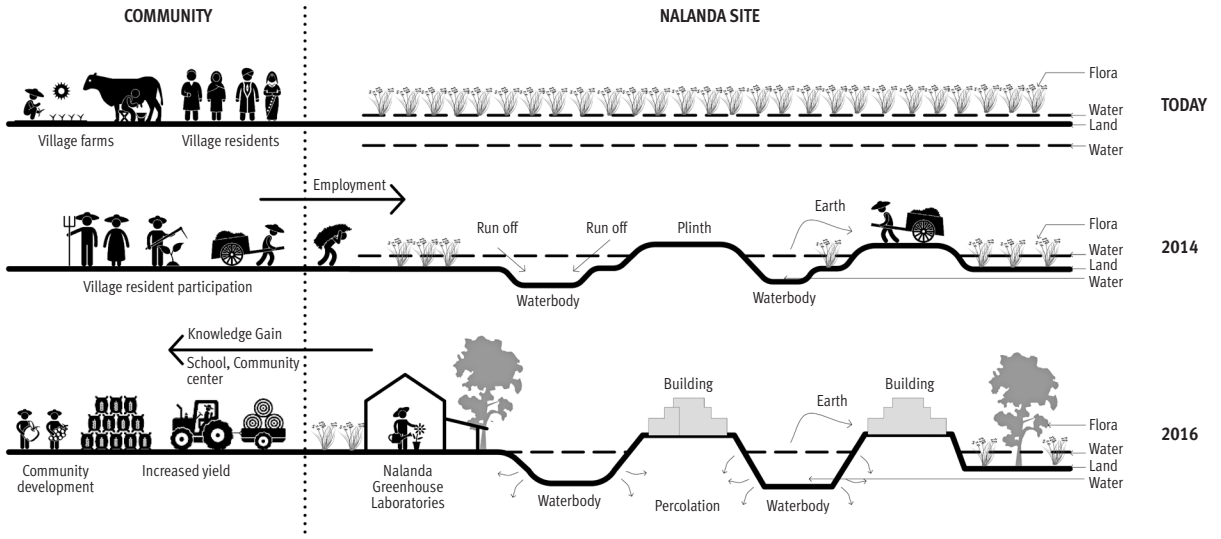


Runoff from rooftops shall be stored in underground tanks for drinking purpose, while runoff from all other surfaces in built areas shall assimilate in Kamal Sagar and its balancing tanks via a system of open and piped drains. Runoff in the remaining part of the site shall be assimilated in *ahars* for storage and percolation. Water from Kamal Sagar and balancing tanks shall be used for domestic demands, while water in *ahars* shall be used for irrigating plantation and experimental agriculture farms. Wastewater from domestic uses shall be treated via a decentralized wastewater treatment system [DEWATS] and used for irrigation of intense landscape around built areas. The system aims to establish an annual ritual for de-silting, cleaning, storage and judicious use of water.

Building upon this water-intensive structure, the eastern campus is proposed to be a mix of woodlands, orchards and experimental farms. An outreach centre in the middle of this area shall promote local knowledge documentation and dissemination combined with contemporary technologies. The landscape is proposed to be used as a live laboratory to document, experiment and enhance local natural rhythms. The laboratory will be used by students and researchers to explore suitable contemporary agrarian processes for the region.



BUILDING-LANDSCAPE RELATIONSHIP

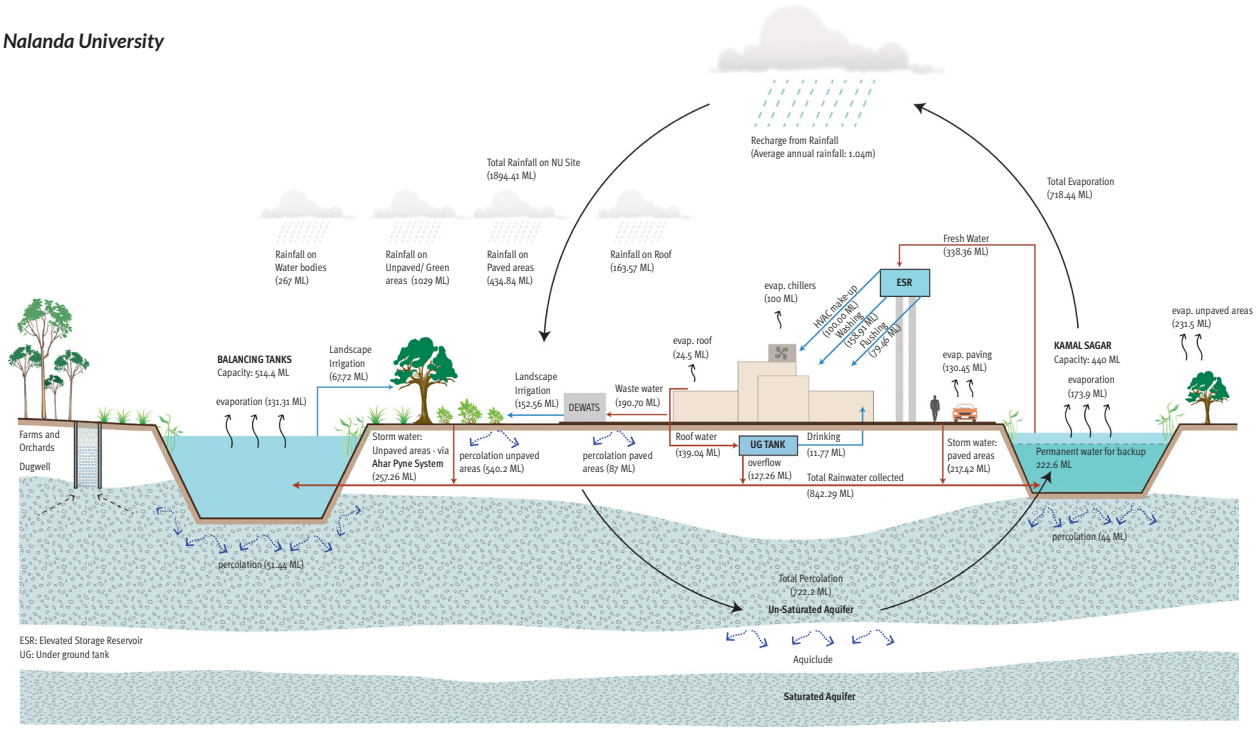


SOCIAL RITUALS

Establishing social rituals across the site

WATER CYCLE

Proposed water cycle for Nalanda University



VIEW
View from Student Hostels towards Kamal Sagar
Courtesy: Vastu-Shilpa Consultants

Presently, the water infrastructure of the site is established and being tested in each monsoon. While the expansive services infrastructure and building construction progresses, the eastern part of the campus is being planted intensively to develop the woodlands and orchards. One hopes that the landscape structure will have achieved resilience and established itself by the time the campus comes to life.

PROJECT SNAPSHOT

PROJECT: **Master Plan for Nalanda University**
LOCATION: **Rajgir, Bihar**
SITE AREA: **455 acres**
CLIENT: **Nalanda University**
PRINCIPAL ARCHITECT AND MASTER PLANNER: **Vastu-Shilpa Consultants, Ahmedabad**
MASTER PLAN LANDSCAPE ARCHITECT: **Earthscapes Consultancy Pvt. Ltd. , Ahmedabad**
DETAIL DESIGN LANDSCAPE ARCHITECT: **M/s Prabhakar B Bhagwat , Ahmedabad**
STRUCTURAL CONSULTANT: **Vinod Shah Consulting Engineers Pvt. Ltd., Ahmedabad**
MASTER PLAN MEPF CONSULTANT**: dbHMS, Noida**
PROJECT DURATION: **2012–Ongoing**

Drawings and images courtesy of Earthscapes Consultancy Pvt. Ltd.