

SCGSA

*Path to making
Ecological Responsive Architecture (ERA) Guideline for Nepal*

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Ecologically Responsive Architecture Guide

E. R. A. GUIDE : An Undertaking of The Society Of Nepalese Architects (SONA)

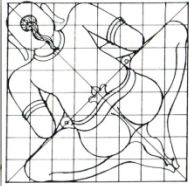
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Key to Initials / Numerals

← ALTERNATE emergent									dominant MAINSTREAM →													
Case Studies	Biosphere Biophilic Design Bio Mimicry	N o o s p h e r e					Heritage & Tradition			Best Practices: INTERNATIONAL				Best Practices: ARCASIA			Best Practices: NATIONAL			Case Studies		
		Vastu	Feng Shui	Scriptures	New Age Lit.	Feminism	Pre-History	Vernacular		LB	BREEAM	LEED	CASBEE	GRIHA	TREE	OTHER	DUBBC	UN-Habitat	Academia			
(Tiwari)	(Shradhan)	(Sakar)	(Sona) (Neelima)	(Narayan)	(Sankalp)		(BMS)	(Rajeeb)	Materials Methods Resources	Jal Water	(Salina) (Kripa) (Shristi)	(Arun)	(Puspa)		(Puspa) (Kripa) (Shirsti)				(Sarita)	(Sarita)	(Binaya)	
									Materials Methods Resources	Jal-Vayu Climate												
									Materials Methods Resources	Vayu Air Wind												
									Materials Methods Resources	Agni Fire Energy Power												
									Materials Methods Resources	Prithvi Earth Land Site Soil												
									Materials Methods Resources	Akash Sky Daylight Luminous												
	(Shradhan)								Materials Methods Resources													
Case Studies																						



Vastu Purush

Graphics
Evaluations
Conclusions



Vitruvian Man

Ecologically Responsive Architecture Guide (ERA Guide)

AN UNDERTAKING OF THE SOCIETY OF NEPALESE ARCHITECTS (SONA)

S T R E A M S O F T H O U G H T

ALTERNATE

EMERGENT

Attributes

MAINSTREAM

dominant

Distilled essence of all knowledge and best practices as codified in documents of authority, a badge of honour when certified.

BIOMIMICRY
Integrating & imitating models, systems & elements visually & literally to solve complex human problems.

VASTU
Ancient Indian Science of directions, orientations for Life & Energy.

FENG SHUI
Ancient Chinese Science of ambient energies, flow & direction to integrate & accommodate to benefit human life and systems.

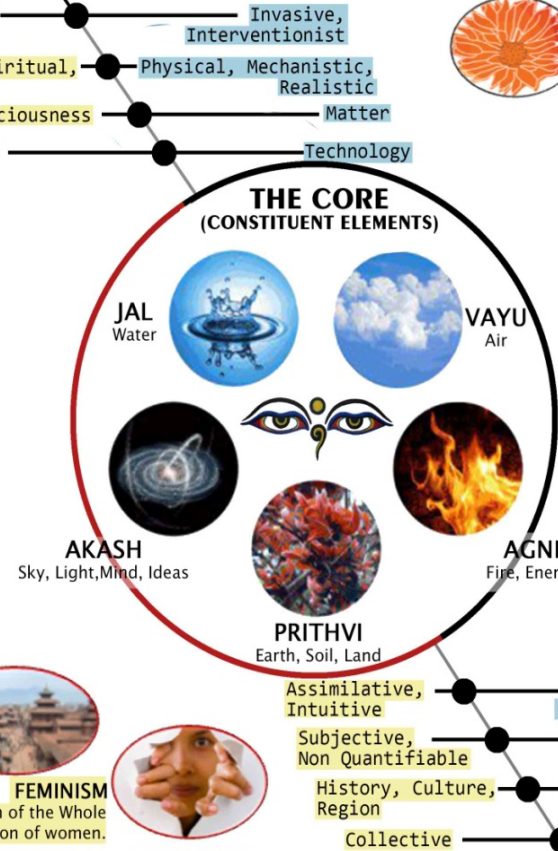
SCRIPTURES
Recorded interactions of the human mind with the Universe. Hindu, Buddhist, Christian & Islamic civilizations, their take on ecology & the human condition.

NEW AGE LITERATURE
Incredible Spiritualism, captured the imagination of a generation of glorious & inspiring misfits.

PRE-HISTORY
They were here. They lived, loved and left. Left the stuff of amazing archaeology.

VERNACULAR
Architecture without Architects. How did they do it? Feel and explore. Be humbled. Be chastened. Be enlightened.

FEMINISM
Eco-feminism. Compassion and the Wisdom of the Whole
Degradation of Nature & Environment can be traced to the oppression of women.



LIVING BUILDING CHALLENGE (LBC)
Among the less used rating system in the US, but much liked and appreciated outside.

BREEM
A premier rating system from the UK, the first in the world.

BUILDING RESEARCH ESTABLISHMENT ENVIRONMENTAL ASSESSMENT METHOD (BREAM)
A premier rating system from the UK, the first in the world.

LEADERSHIP IN ENERGY AND ENVIRONMENTAL DESIGN (LEED)
The most widely used rating system from the US, plenty of detractors in tow.

COMPREHENSIVE ASSESSMENT SYSTEM FOR BUILT ENVIRONMENT EFFICIENCY (CASBEE)
Rating system used in the Far East, more notably China and Japan

GREEN RATING FOR INTEGRATED HABITAT ASSESSMENT (GRIHA)
Much appreciated but less used rating system in India. Chosen out of three rating systems for its integrity and independence.

TREE
Recently published rating system from Thailand

DEPARTMENT OF URBAN DESIGN & BUILDING CONSTRUCTION (DUDBC)
Nepal Standards, Draft stage

UN HABITAT
The UN steps in with pioneering works, in association with Federation of Nepalese Chamber of Commerce and Industry (FNCCI)

What lies beneath the surface, inner certainties, tacit knowledge hidden away but underpinning the actual self. They matter.

ALTERNATE

EMERGENT

Attributes

MAINSTREAM

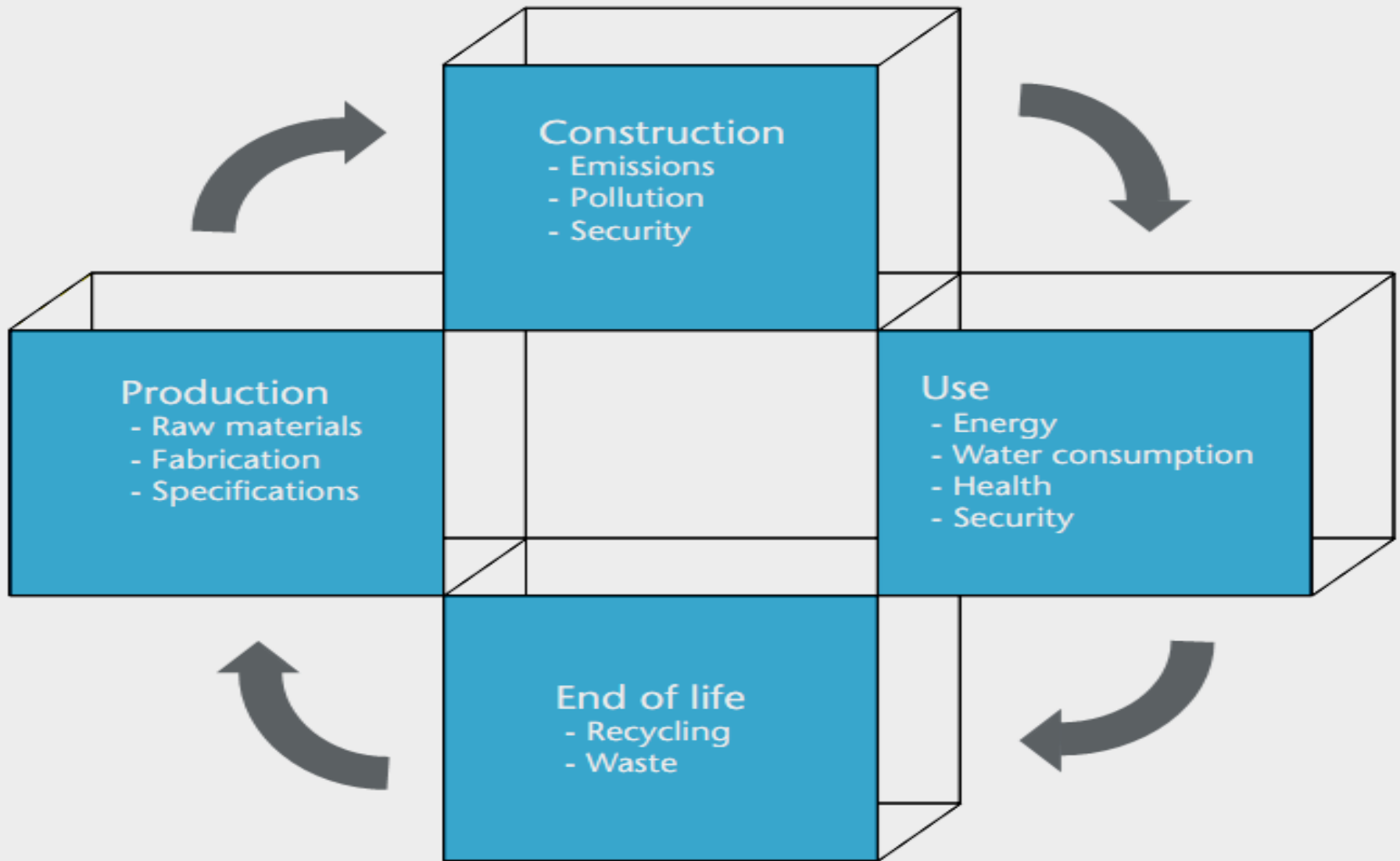
dominant

S T R E A M S O F T H O U G H T

The SONA ERA Guide is not just a mindless collection of information. It is meant to be read in a certain way. At the core are the five elements, the basic constituents of the Universe as laid out in ancient times. Each of these elements are to be used as the medium through which to view each of


the 'aspects' ranged on each side. For example, the element 'Jal' or water when used to view, say, 'pre-history' or 'Griha', will assess what each of these aspects say on water. Permutations & combinations of the elements and aspects are numerous and the uses of the resulting matrix awesome!

Holistic approach



Source: WBCSD, 2007

Figure 18: Sources of environmental impacts in each phase of the building life cycle



Incorporate in B.Arch. Curriculum

- 1) Building Material**
 - 2) Building Construction**
 - 3) Building Science**
 - 4) Design Studios**
 - 5) Electives: Sustainable Architecture, Passive Solar Design, EEBD, Vernacular Architecture, Cost Effective Housing.**
- 

Elective-I
(Sustainable Architecture)
BEG319AR-SA

Year: III

Semester: VI

Teaching schedule Hours/Week					Examination Scheme						Total marks
					Final				Internal Assessments		
					Theory		Practical		Theory Mark	Practical Mark	
Cr.hr	L	Tu	P	T	Duration	Mark	Duration	Mark			
3	3	2	-	5	3 hrs	80	-	-	20	-	100

Course Objective:

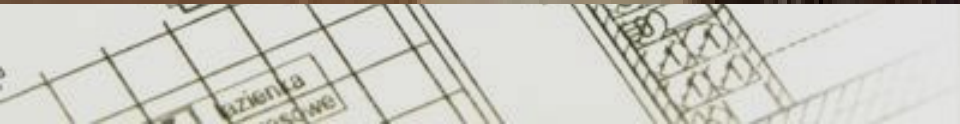
- To introduce basic ideas on sustainability movement, sustainable development and sustainable engineering
- To enable students visualize and access architecture as integrated meta-system of environmental subsystems
- To enable students make simple analysis of building using EIA and SLCA tools
- To enable students explore details in components/ features of sustainable architecture from site planning to indoor detailing
- To enable students design a sustainable building
- To introduce different Green building rating Programs and make students enable to formulate rating strategies for different cases

Chapter 1: Fundamentals of Sustainability Literacy

(6 hrs)

1.1 Humans and Sustainability: an overview

- *Major crisis of our civilization:*
Population growth, resource depletion, environmental pollution, climate change, bio-diversity degradation, poverty, urbanization and globalization
- *Environmental problem, a multidimensional perspective:*
Relation between human activities, environment and sustainability; Carrying capacity and tragedy of commons, Ecological foot-print and Carbon foot-print
- *Four pillars of sustainability:* Environment, Society, Economics and Culture
- *An overview of Sustainability Movement:*
Different eras of environmental histories, World Commission on Environment and Development (WCED), Rio de Janeiro and Agenda 21, United Nation Framework Convention of Climate Change (UNFCCC) and Kyoto Protocol

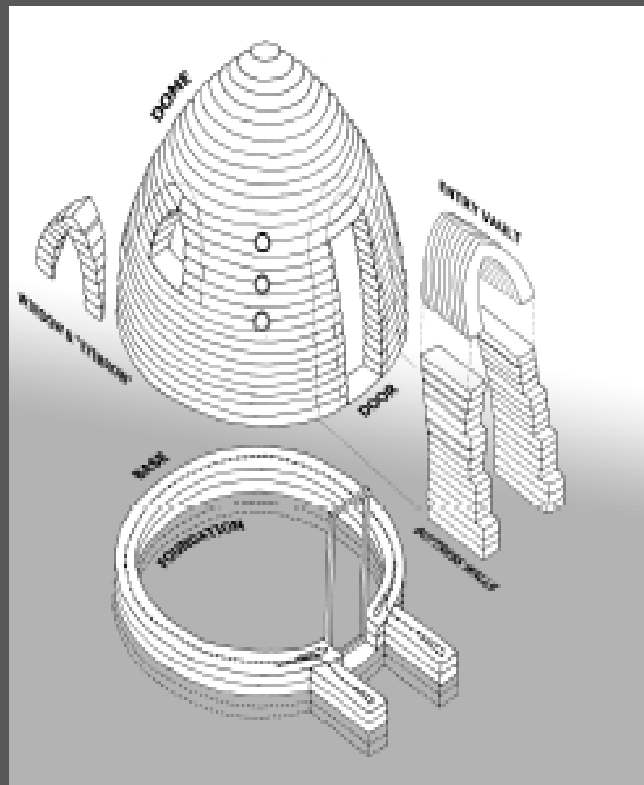




New practices



CENTRE
 WALL
 OPENING
 CIRCLE
 EARTH
 COILS
 COMPASS
 SPACE
 BUILDER



The techniques for building Emergency Sandbag Shelter can build us shelters and also show us a process of Research and Development. To scale up from an Emergency Shelter to the Eco-Village, we need to understand the ideas in this process and undertake the next journey of Research and Development.

GRAVITY

Winner of the Aga Khan Award for Architecture 2004.

ARCH
 DOME
 VAULT

SANDBAG SHELTER: A PROCESS





पुर्ननिर्माण अभियान नेपालको अस्थायी घर योजना

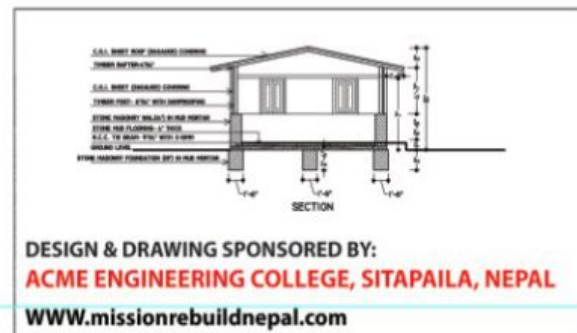
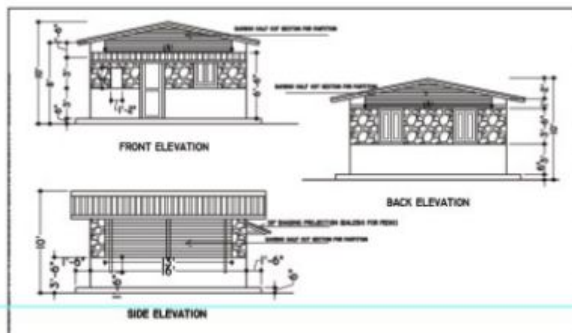
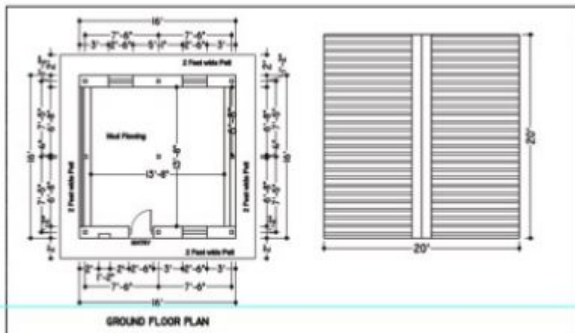
Transitional Homes plan of Mission Rebuild Nepal



घरको नक्सा निम्न बमोजिम रहने छ ।

Starting Date:
Jestha 2072 (May/June 2015)

Completion Date:
Chaitra 2072 (March/April 2016)



Sipapokhare VDC, Sindhupalchowk District, Nepal



Thank you for your time.

www.CartoonStock.com



"WITH ENERGY PRICES GOING UP.... I HAD AN IDEA!..."