

LECTURE ONE  
INTRODUCTION  
and OVERVIEW

GOALS and  
REQUIREMENTS  
DEFINITIONS  
BACKGROUND  
ASSESSMENT  
RESOURCES  
NEXT CLASS

ARCH 2450  
SUSTAINABILITY  
THROUGH  
ARCHITECTURE  
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## Goal One

Develop a fundamental understanding of Site Planning and its technical requirements



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GOALS and  
REQUIREMENTS  
SITE PLANNING  
ECOLOGICAL  
DESIGN  
SUSTAINABILITY  
AN EXERCISE

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## Goal One

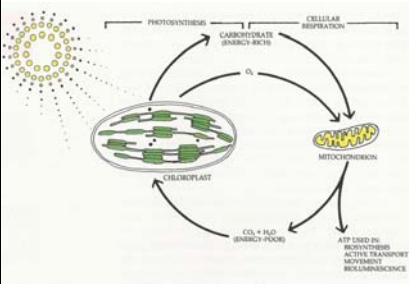
Develop a fundamental understanding of Site Planning and its technical requirements. See the cycles and the systems.



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## Goal Two

Develop a working knowledge of the ecological design principles, which underlay architectural & site sustainability.

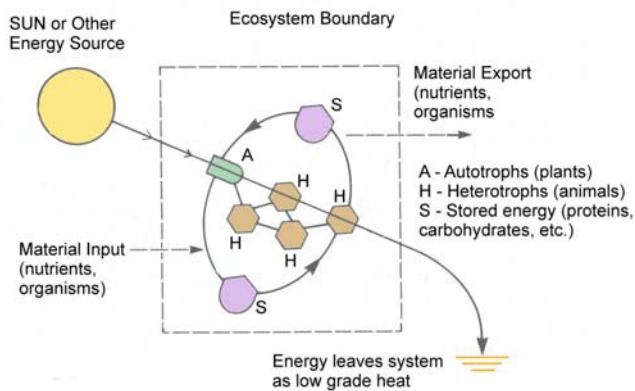


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## Goal Three

Become familiar with the tools we use to assess sustainability.



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## Sustainability is

forward looking

“Sustainable development meets the needs of the present without compromising the ability of future generations to meet their own needs.”

– Bruntland Report, 1987

a way of continuing

Capable of being ‘sustained’, supported, prolonged, capable of enduring; a method of harvesting or using a resource so that the resource is not depleted or permanently damaged

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Forest, North Carolina (image © 2009 John Seitz )

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## Ecological Sustainability

Focuses on the interrelationships among ALL living creatures and their environment. Sustainable criteria support ecosystem services by maintaining biodiversity, cycling water, nutrients and material resources, conserving and storing energy, eliminating toxins and powering all of this on current solar income.

**SITE** support biodiversity, optimize access to transportation and services,

**WATER** cycle site water resources to ensure 100% of need is met on site

**ENERGY** harvest site energy resources to ensure 100% of need is met on site

**MATERIALS** cycle material resources to eliminate waste, draw on local resources, eliminate toxins

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Eagle Street Rooftop Farm, Greenpoint (image © 2010 John Seitz )

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## Human Sustainability

Recognizes that human well-being includes more than food, water and shelter. The following criteria, falling within 3 broad categories, are commonly considered part of sustainability.

**COMMUNITY** social justice, equitable communities, equal access to essential human services, democracy

**HEALTH** access to clean air, daylight and quiet, inclusion of bio-philic design elements

**INSPIRATION** beauty, education, celebration of culture and spirit, connection to place

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In the Hometree, Avatar, 2009

- The Tree of Souls

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**true green home**  
100 inspirational ideas for creating a green home

Energy efficient renovations  
Green gardening techniques  
Therapeutic tree planting  
Water conservation in the house and garden  
Environmentally sound paints and finishes

NATIONAL GEOGRAPHIC Clear up the world  
Kim McKay and Jenny Blevins  
Foreword by Ian Kwan, AIA, LEED-accredited Interior Design Firm

**BIG & GREEN**  
HOWARD S. SCHWARTZ  
SUSTAINABLE ARCHITECTURE IN THE 21ST CENTURY  
EDITED BY DAVID BRISQ

**TEN SHADES OF GREEN**  
ARCHITECTURE AND THE NATURAL WORLD  
PETER BUCHANAN

**the green house**  
NEW DIRECTIONS IN SUSTAINABLE ARCHITECTURE  
EDITED BY ROBERT W. HARRIS AND JAMES H. HARRIS

**Think greener.**

April 17 - A

**NY's greenest**  
Battery Park City Celebrates the 40th Anniversary of Earth Day

Environmental Workshops  
Panel Discussions  
Screenings

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## Ecological Footprint

The Ecological Footprint is a measure of the “load” imposed by a given population on nature. It represents the land area necessary to sustain current levels of resource consumption and waste discharged by that population.

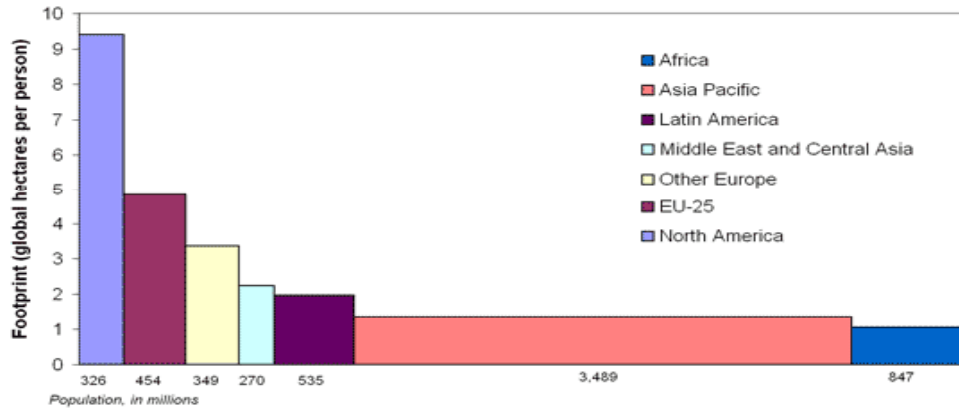
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## National Ecological Footprints

Wealthy, industrialized nations have a higher ecological footprint.  
As more nations industrialize and the standard of living increases, there is increased pressure on the earth's resources



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## Individual Ecological Footprints



Photographs © 2004 Peter Ginter in *Material World*

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To check yours go to:  
(<http://www.myfootprint.org>) or  
(<http://www.footprintnetwork.org/en/index.php/GFN/page/calculators/>)

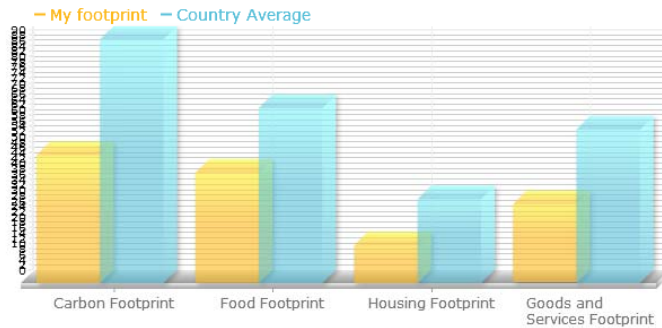
# Individual Ecological Footprints

## My Ecological Footprint - Quiz Results

If everyone on the planet lived my lifestyle, we would need:

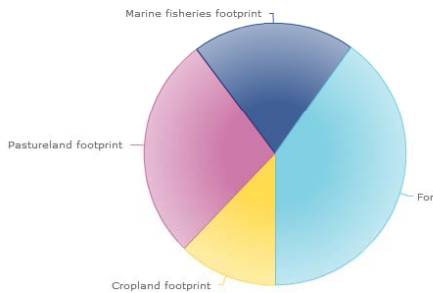


### MY FOOTPRINT IN GLOBAL ACRES BY CONSUMPTION CATEGORY



Total: 133.40

### MY FOOTPRINT SHARE BY BIOME



Reduce your footprint | Table View | Print

# What can you do to reduce your footprint?

## Reduce your footprint

There are many simple ways to reduce the footprint you leave on the planet. Learn how to reduce your footprint in each consumption category-carbon, food, housing, and goods and services-but don't stop there. Amplify your impact by encouraging others to follow your lead. Engage your friends and community with local and global movements for social change, or start your own movement!

### Reduce your Carbon Footprint

#### Use cleaner transport

- Walk, bike, or take public transit whenever possible.
- Avoid allowing your car to idle. If you'll be waiting for more than 30 seconds, turn off the engine (except in traffic). And don't take the drive-through-park the car and walk inside instead.
- Have your vehicle serviced regularly to keep the emission control systems operating at peak efficiency. Check your car's air filter monthly, and keep the tires adequately inflated to maximize gas mileage.
- Avoid short airplane trips-take a bus or train instead.

#### Add energy-saving features to your home

- Install compact fluorescent bulbs in all your home light fixtures-but remember, compact fluorescents contain mercury, so look for low-mercury models and be sure to dispose of old bulbs safely through your local hazardous waste program.
- Weatherproof your home. Make sure your walls and ceilings are insulated, and consider double-pane windows. Eliminate drafts with caulking, weather strips, and storm windows and doors.
- Insulate your water heater. Even better, switch to a tankless water heater, so your water will be heated only as you use it.
- Choose energy efficient appliances.

#### Adopt energy-saving habits

- Keep thermostat relatively low in winter and ease up on the air conditioning in summer. Clean or replace dirty air conditioner filters as recommended to keep the A/C operating at peak efficiency.
- Unplug your electronics when not in use. To make it easier, use a power strip. Even when turned off, items like your television, computer, and cellphone charger still sip power.

Homework:

Complete, print and email me your footprint survey  
1 page bulleted outline and 1 page summary



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# The Story of Stuff

THE STORY OF  
**STUFF**  
PROJECT

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[Translate]

## The Story of Stuff

Originally released in December of 2007, our flagship movie has been viewed millions of times in every country in the world. We welcome you to watch it again, or maybe for the first time, on our new website!

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WATCH THE MOVIE

ELECT

TAKES

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WITH ANNE LEONARD

LESS STUFF MORE FUN HELP OUT!

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To check yours go to (<http://www.storyofstuff.org/>)