



#### **CODE** BARRIERS

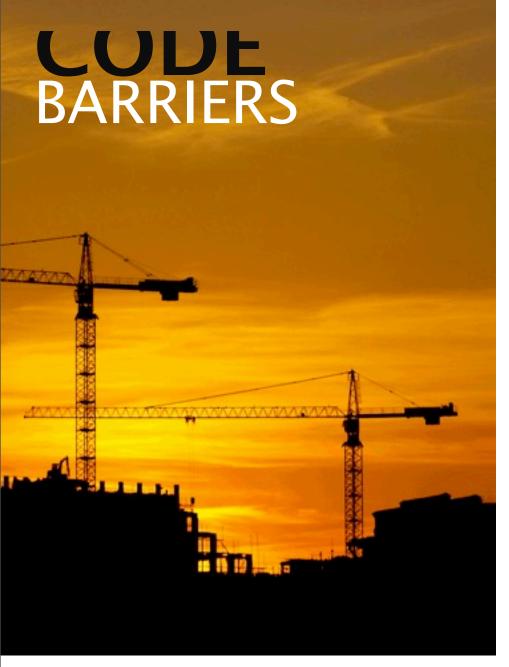
What are the obstacles to true innovation?











#### 2006 INTERNATIONAL BUILDING CODE

**101.3 Intent.** The purpose of this code is to establish the minimum requirements to safeguard the public health, safety and general welfare through structural strength, means of egress facilities, stability, sanitation, adequate light and ventilation, energy conservation, and safety to life and property from fire and other hazards attributed to the built environment and to provide safety to fire fighters and emergency responders during emergency operations.

#### **CODE and LAND USE** BARRIERS RISK - THROUGH THE MICROSCOPE OF CODES

Fire Safety Structural Integrity Means of Egress Light Ventilation Heat Water & Wastewater Electrical & Gas **Energy Efficiency** 

#### **CODE and LAND USE** BARRIERS RISK - THROUGH THE MICROSCOPE OF CODES

#### Risks to Future Generations

Climate Impact

**Embodied Energy** 

**Pollution** 

Toxicity of Materials

Nutrification of Water

Heat Island Effect

Fire Safety Structural

Integrity

Means of Egress

Light

Ventilation

Heat

Water &

Wastewater

**Electrical & Gas** 

Resource Depletion

Dependence on Non-Renewable Energy

Loss of Habitat

Loss of Biodiversity

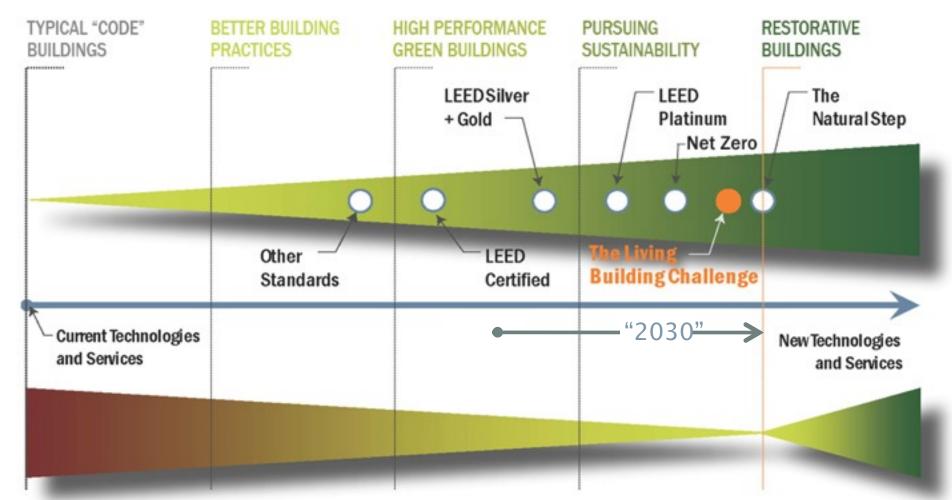
Loss of Agricultural La

Energy Efficiency Increased Transportation

Externalized Costs to Society

Development Center for Appropriate Technology 20

#### **SHADES** OF GREEN



**ECOLOGICAL FOOTPRINT** 

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### LIVING BUILDING CHALLENGE

#### WHY A CHALLENGE?

to set a mark to achieve

to provide an aspirational signpost BEAUTY &

 to connect dots between real sustainability and the built environment

 to recognize the "actual" performance of buildings

 to spur innovation and market transformation



"It's about what you do, not what you say

http://ilbi.org/

### LIVING BUILDING CHALLENGE

#### **IMAGINE A BUILDING THAT:**

- is as elegant and efficient as a flower
- is informed by the bioregion
- generates all of its own energy on site
- captures and treats all of its water on site
- uses resources efficiently for maximum beauty.

http://www.cascadiagbc.org/lbc

#### LIVING BUILDING **CHALLENGE**

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SUSTAINABLE DEVELOPMENT: CHART YOUR COURSE

#### LIVING BUILDING **CHALLENGE**

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SUSTAINABLE DEVELOPMENT: CHART YOUR COURSE

#### SITE DESIGN PREREQUISITES

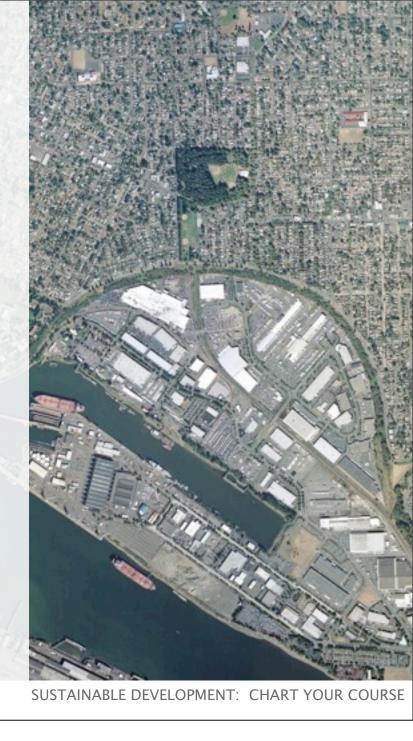
RESPONSIBLE SITE DESIGN

LIMITS TO GROWTH

HABITAT EXCHANGE

Focus on human development in connected communities.

Building Challenge



#### **ENERGY PREREQUISITES**

**NET-ZERO ENERGY** 

Safe, reliable, decentralized power gleaned from clean and renewable sources. Ving Building Challenge



#### **MATERIALS PREREQUISITES**

**MATERIALS REDLIST** 

**CONSTRUCTION CARBON** 

**FOOTPRINT** 

RESPONSIBLE INDUSTRY (FSC)

MATERIALS / SERVICE RADIUS

LEADERSHIP IN CONSTRUCTION

whaterials are renewable and safe to humans and the larger ecosystem.

Ving Building Challenge



### WAILK PREREQUISITES

**NET-ZERO WATER** 

SUSTAINABLE WATER DISCHARGE

Buildings harvest enough water to supply the needs of occupants and Starry Building Challenge

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# INDOOR QUALITY PREREQUISITES

A CIVILIZED ENVIRONMENT

HEALTHY AIR / SOURCE

**CONTROL** 

HEALTHY AIR / VENTILATI

Establish conditions that facilitate the creation of healthy, productive places to work / live.

Living Building Challenge

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BEAUTY & INSPIRATION

BEAUTY and INSPIRATION

BLAUTT AND INSPIRATION

**INSPIRATION** and **EDUCATION** 

Explicitly state intentions and design both for user and community.





#### SAKD SUSTAINABLE AFFORDABLE RESIDENTIAL DEVELOPMENT 3-PHASE PROJECT

- IDENTIFY BARRIERS
- DEVELOP STRATEGIES
- EVALUATE COSTS & BENEFITS



#### GOAL GET OUT OF THE WAY



# PHASE 1: IDENTIFY BARRIERS

DEVELOPMENT CODE
BUILDING CODE



CODE AND REGULATORY BARRIERS TO THE LIVING BUILDING CHALLENGE FOR SUSTAINABLE, AFFORDABLE, RESIDENTIAL DEVELOPMENT

REPORT #1: FINDINGS

PREPARED FOR:

CITY OF VANCOUVER, WA CLARK COUNTY, WA PREPARED BY:

CASCADIA REGION GREEN BUILDING COUNCIL

#### PHASE 1: **IDENTIFY BARRIERS**

#### **6 CASE STUDIES**

- 2-unit urban townhouse
- 54-unit urban stackedflat apartments
- 11-unit single-family cottage development



# PHASE 1: IDENTIFY BARRIERS

#### **6 CASE STUDIES**

- 34-unit multi-family co-housing project
- 175-unit masterplanned community
- 10-unit single-family rural straw bale construction



#### PHASE 2: STRATEGIZE & PRIORITIZE IDENTIFIED BARRIERS

21 DEVELOPMENT COD BARRIERS

50 BUILDING CODE BARRIERS



CODE AND REGULATORY BARRIERS TO THE LIVING BUILDING CHALLENGE FOR SUSTAINABLE, AFFORDABLE, RESIDENTIAL DEVELOPMENT

REPORT #2: STRATEGIES & RECOMMENDATIONS

PREPARED FOR:

CITY OF VANCOUVER, WA CLARK COUNTY, WA PREPARED BY: CASCADIA REGION

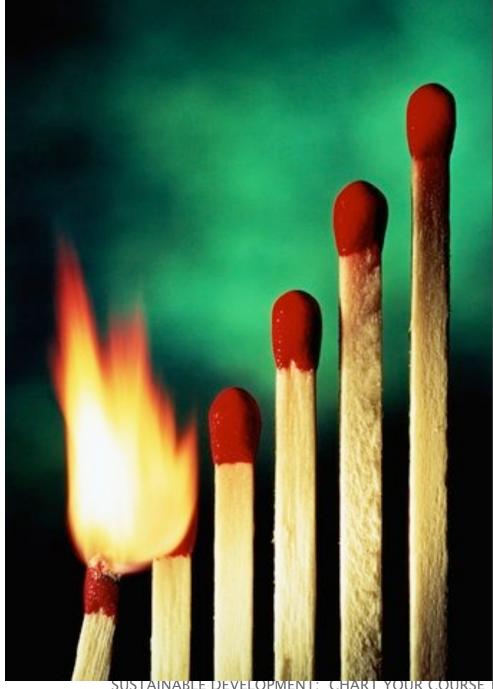
GASCADIA REBIONI GREEN BUILDING COUNCIL



SUSTAINABLE DEVELOPMENT: CH/

#### PHASE 2: **STAKEHOLDER WORKSHOPS**

- **PRESENTED**
- **BRAINSTORMED**
- **PRIORITIZED**



### PHASE 2: EXTERNAL STAKEHOLDERS

- 1. BUILDERS
- 2. ARCHITECTS
- 3. DEVELOPERS
- 4. ENGINEERS
- 5. ADVOCATES



### PHASE 2: INTERNAL STAKEHOLDERS

- 1. BUILDING OFFICIALS
- 2. UTILITIES
- 3. PUBLIC HEALTH
- 4. KEY STAFF



#### PHASE 3: EVALUATE COSTS & BENEFITS

LIVING BUILDING
 STUDY

PUBLIC SECTOR
 SURVEY



CODE AND REGULATORY BARRIERS TO THE LIVING BUILDING CHALLENGE FOR SUSTAINABLE, AFFORDABLE, RESIDENTIAL DEVELOPMENT

REPORT #3: COST BENEFIT SUMMARY

PREPARED FOR

CITY OF VANCOUVER, WA

PREPARED BY:

CASCADIA REGION GREEN BUILDING COUNCIL

### PHASE 3: EVALUATE COSTS & BENEFITS

	FIRST COST INCREASE	PAYBACK PERIOD	
SINGLE	27-32%	30 years	
MULTI- FAMILY	31-36%	22 years	

### PHASE 3: EVALUATE COSTS & BENEFITS

BENEFITS	PUBLIC	PRIVATE	COMMUNIT
SOCIETAL	Improve d	Facilitates use of	Stormwate r reuse
FINANCIAL	Reduce s impact	Reduced energy	Cost savings reflected
ENVIRONMENT AL	Reduce s	Facilitates adoption	Encourage s resource

### **EXERCISE:** FINDING CODE BARRIERS

Using the proposed design narrative and plans as the Basis of Design please respond to the following question:

WHAT CODE BARRIERS WOULD THE PROPOSED DESIGN ENCOUNTER IF SUBMITTED TO YOUR JURSDICTION FOR REVIEW?

SHARE YOU THOUGHTS WITH YOUR NEIGHBORS!



# FINDINGS LAND USE AND DEVELOPMENT CODE BARRIERS

- MIN. PARKING REQUIREMENTS
- SETBACKS FOR CISTERNS
- STORMWATER BMPS
- DRIVEWAY AND FIRE ACCESS ROAD WIDT
- COMMON AREA
- ALTERNATE FUEL STORAGE



#### FINDINGS BUILDING CODE BARRIERS

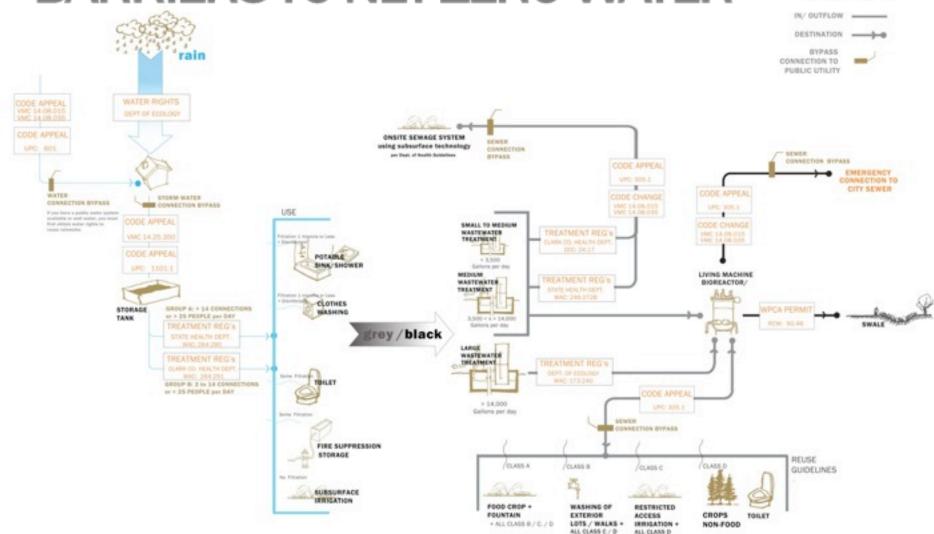
#### **TECHNICAL BARRIERS IN EXISTING REGULATION**







#### FINDINGS BARRIERS TO NET ZERO WATER



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SUSTAINABLE DEVELOPMENT: CHART YOUR COURSE

TREATMENT

#### **FINDINGS**

#### PROVISIONS THAT NEED TO BE ADDED





#### PROVISIONS THAT NEED TO BE UPDATED OR

**ELIMINATED** 



#### **LESSONS LEARNED**

- Affordable Housing Developments
  - Operation & Maintenance
- Alternative Methods & Materials
  - Track Record
  - Communication
  - Education

Public Cost Assessment Methodology

#### **NEXT STEPS**



#### TASKS SUSTAINABLE COMMUNITIES

#### FUNDED BY DEPARTMENT OF ECOLOGY

- Stakeholders Group
- Changes to Code/Landuse
- Web-Based Tool
- Incubator Project





# IT'S ABOUT CREATING THE GOOD NOT STOPPING THE BAD

**VERBS ASSOCIATED WITH THE** 





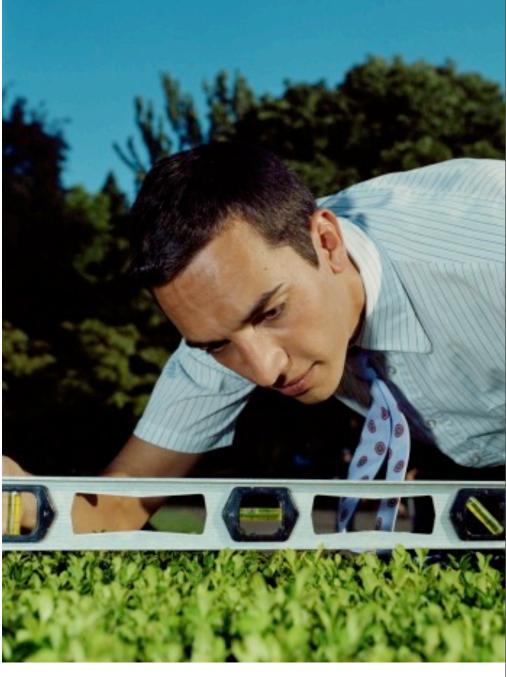
GO ENCOURAGE ALLOW INCENT UNLEASH

#### TASKS STAKEHOLDER GROUP

IMPLEMENT CODE CHANGES

#### **STAKEHOLDERS:**

- CLARK COUNTY STAFF
- LOCAL CITIES' STAFF
- BUILDING COMMUNITY





PRIORITY PERMITTING

MINIMUM PARKING

**COTTAGE HOUSING** 

STRAW BALE CONSTRUCTION

SMALL-SCALE RENEWABLE ENERGY

REGIONAL GREEN BUILDING STANDARD

#### TASKS WEB-BASED RESOURCE PACKAGE

 TRACK RECORD **DOCUMENTATION** LEVEL OF CONFIDENCE

#### **TASKS INCUBATOR** PILOT PROJECT

**LIVING FARM** 

Sustainable **A**ffordable Residential Development



