

# Living Building Challenge

## An Overview



LIVING  
BUILDING  
CHALLENGE™

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**Green Buildings and Sustainable Materials Project**

**Supported by grant 70NANB18H277 from the National Institute of Standards  
and Technology**

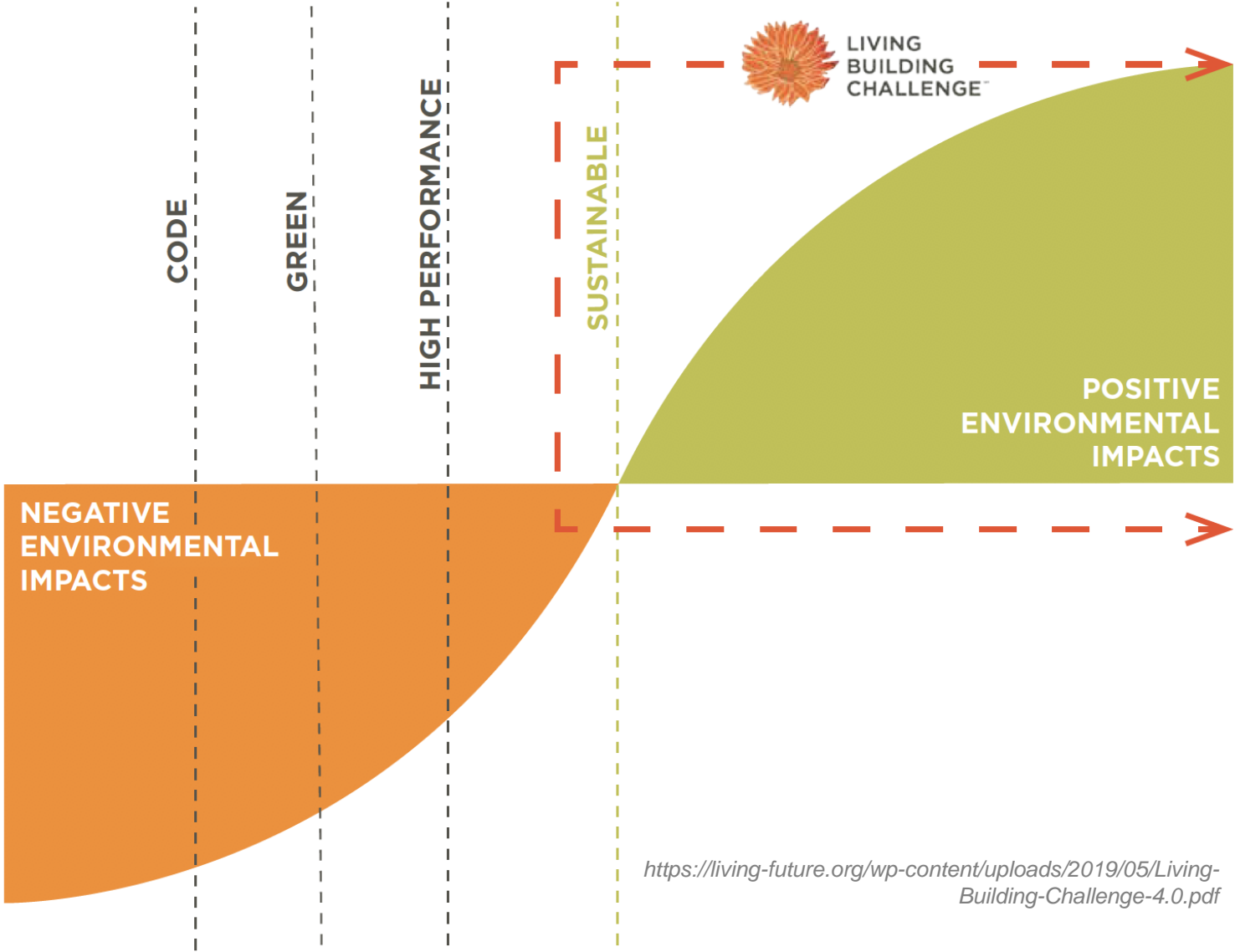
*“IMAGINE a building designed and constructed to function as elegantly and efficiently as a flower: a building informed by its bioregion’s characteristics, that generates all of its own energy with renewable resources, captures and treats all of its water, and that operates efficiently and for maximum beauty.”*

*~ Living Building Challenge 4.0*



Image by International Living Future Institute™

THE LIVING BUILDING CHALLENGE IS A PHILOSOPHY, CERTIFICATION, AND ADVOCACY TOOL FOR PROJECTS TO MOVE BEYOND MERELY BEING LESS BAD AND TO BECOME TRULY REGENERATIVE.



*<https://living-future.org/wp-content/uploads/2019/05/Living-Building-Challenge-4.0.pdf>*

# Seven Petals (categories)

- **Place**
- **Water**
- **Energy**
- **Health + Happiness**
- **Materials**
- **Equity**
- **Beauty**

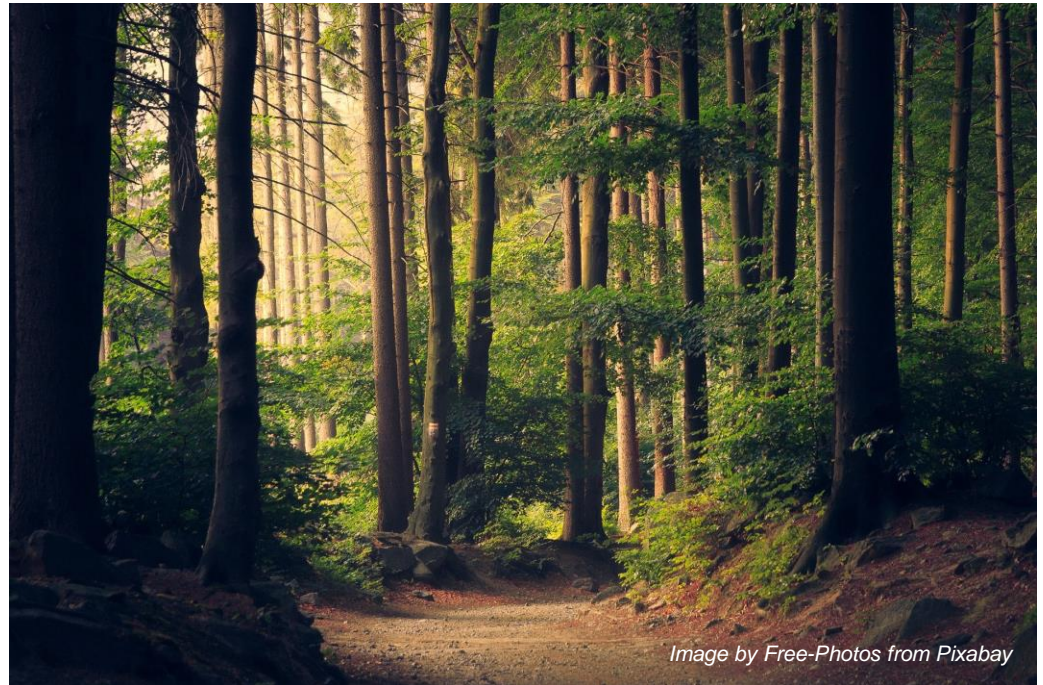


<https://living-future.org/wp-content/uploads/2019/05/Living-Building-Challenge-4.0.pdf>

Image by International Living Future Institute™

# Place

- Ecology of Place
- Urban Agriculture
- Habitat Exchange
- Human-Scaled Living



*Image by Free-Photos from Pixabay*

# Water

- Responsible Water Use
- Net Positive Water



*Image from rony michaud on Pixabay*

<https://living-future.org/wp-content/uploads/2019/05/Living-Building-Challenge-4.0.pdf>



# Energy

- Energy + Carbon Reduction
- Net Positive Carbon



*Image from rony michaud on Pixabay*

<https://living-future.org/wp-content/uploads/2019/05/Living-Building-Challenge-4.0.pdf>

# Health + Happiness

- Healthy Interior Environment
- Healthy Interior Performance
- Access to Nature

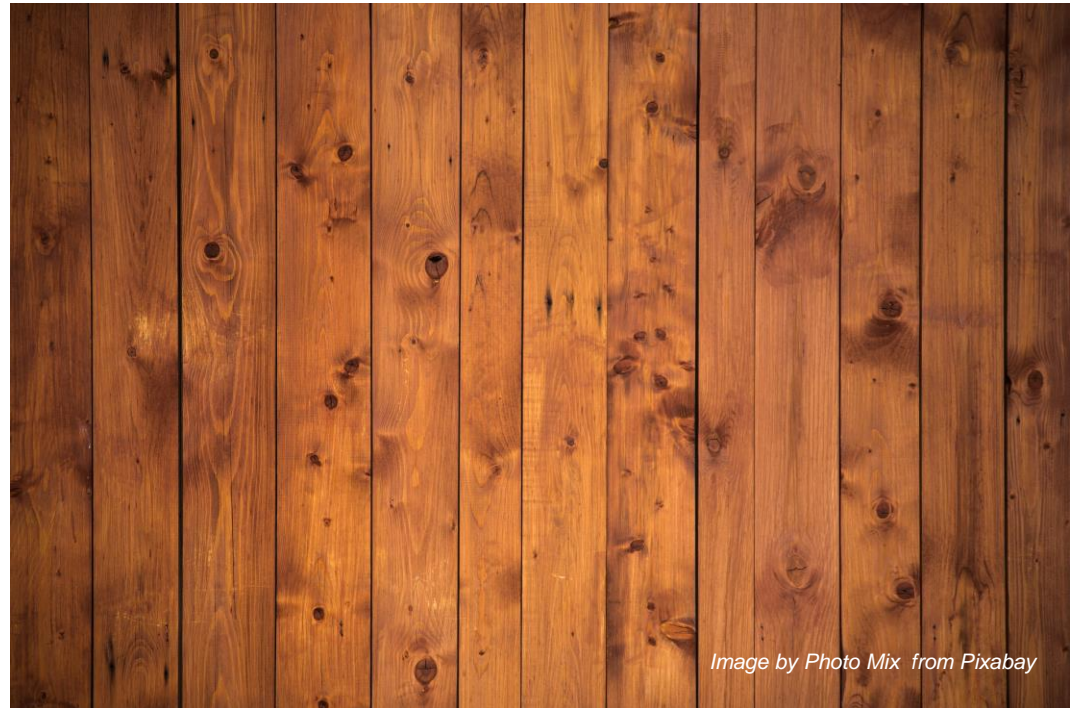


<https://living-future.org/wp-content/uploads/2019/05/Living-Building-Challenge-4.0.pdf>



# Materials

- Responsible Materials
- Red List
- Responsible Sourcing
- Living Economy Sourcing
- Net Positive Waste



*Image by Photo Mix from Pixabay*

# Equity

- Universal Access
- Inclusion



Image by Gerd Altmann from Pixabay

<https://living-future.org/wp-content/uploads/2019/05/Living-Building-Challenge-4.0.pdf>

# Beauty

- Beauty + Biophilia
- Education + Inspiration

















*Image by Bessi from Pixabay*

<https://living-future.org/wp-content/uploads/2019/05/Living-Building-Challenge-4.0.pdf>

# Transects

## SUMMARY TABLE

The Living Building Challenge is composed of 20 Imperatives grouped into seven petals. Some Imperatives are not required for all Typologies.

PETAL		IMPERATIVE	TYPOLOGY			
			New Building	Existing Building	Interior	Landscape + Infrastructure
PLACE		1 Ecology of Place	Imperative Required	Requirement Dependent	Not Required	Imperative Required
		2 Urban Agriculture	Imperative Required	Imperative Required	Not Required	Not Required
		3 Habitat Exchange	Imperative Required	Imperative Required	Imperative Required	Imperative Required
		4 Human Scaled Living	Imperative Required	Requirement Dependent	Requirement Dependent	Not Required
WATER	 	5 Responsible Water Use	Imperative Required	Imperative Required	Imperative Required	Imperative Required
		6 Net Positive Water	Imperative Required	Imperative Required	Not Required	Imperative Required
ENERGY		7 Energy + Carbon Reduction	Imperative Required	Imperative Required	Imperative Required	Imperative Required
		8 Net Positive Energy	Imperative Required	Imperative Required	Imperative Required	Imperative Required
HEALTH + HAPPINESS		9 Healthy Interior Environment	Imperative Required	Imperative Required	Imperative Required	Not Required
		10 Healthy Interior Performance	Imperative Required	Imperative Required	Imperative Required	Not Required
		11 Access to Nature	Imperative Required	Imperative Required	Imperative Required	Not Required
MATERIALS		12 Responsible Materials	Imperative Required	Imperative Required	Imperative Required	Imperative Required
		13 Red List	Imperative Required	Imperative Required	Imperative Required	Imperative Required
		14 Responsible Sourcing	Imperative Required	Imperative Required	Imperative Required	Imperative Required
		15 Living Economy Sourcing	Imperative Required	Imperative Required	Imperative Required	Imperative Required
		16 Net Positive Waste	Imperative Required	Imperative Required	Imperative Required	Imperative Required
EQUITY		17 Universal Access	Imperative Required	Requirement Dependent	Requirement Dependent	Requirement Dependent
		18 Inclusion	Imperative Required	Imperative Required	Imperative Required	Imperative Required
BEAUTY		19 Beauty + Biophilia	Imperative Required	Imperative Required	Imperative Required	Imperative Required
		20 Education + Inspiration	Imperative Required	Imperative Required	Imperative Required	Imperative Required

-  CORE IMPERATIVE
-  SCALE JUMPING ALLOWED
-  HANDPRINTING IMPERATIVE
-  IMPERATIVE REQUIRED FOR TYPOLOGY
-  REQUIREMENT DEPENDENT ON SCOPE
-  NOT REQUIRED FOR TYPOLOGY



# LBC Certifications

- Living Certification
- Petal Certification
  
- Core Green Building Certification
- Zero Energy Certification
- Zero Carbon Certification



*Image by Gorkhs from Pixabay*

# Living Building Challenge Website



**LIVING  
BUILDING  
CHALLENGE<sup>SM</sup>**

<https://living-future.org/lbc4/>



# Visit Our Project Website

<https://faculty.cnr.ncsu.edu/yuanyao/green-buildings-and-sustainable-materials/>

This presentation and video were prepared by the project team (Yuan Yao, Stephen Kelley, Traci Rider, and Adam Scouse) at North Carolina State University using Federal funds under award 70NANB18H277 from the National Institute of Standards and Technology, U.S. Department of Commerce. The statements, findings, conclusions, and recommendations are those of the author(s) and do not necessarily reflect the views of the National Institute of Standards and Technology or the U.S. Department of Commerce.