BUSINESS CASE
FOR LIVING BUILDINGS
LIVING BUILDING CHALLENGE® 4.0

A Visionary Path to a Regenerative Future
REGENERATIVE

Restoration of a system (such as a forest) after stress or injury as a NORMAL process.
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.
SELF-SUFFICIENT

Needing no outside help in satisfying basic needs.
NET-POSITIVE

A way operating which generates more CAPITAL than is required.
EIGHT FORMS OF CAPITAL

FINANCIAL
INTELLECTUAL
MATERIAL
CULTURAL

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

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<th>IMPERATIVE</th>
<th>Typology</th>
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<td>Education + Inspiration</td>
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WHY LIVING BUILDINGS
For millennia, atmospheric carbon dioxide had never been above this line.
STABILITY DIVERSITY HYPOTHESIS
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COMMUNITY DIVERSITY

A combination of abundance AND equity found within a community.
COMMUNITY STABILITY

The ability of a community to rebound from change; resilience.
STABILITY DIVERSITY HYPOTHESIS

The more diverse a community is, the more stable and productive the community is.
LIVING BUILDING CHALLENGE™ 4.0
A Visionary Path to a Regenerative Future
RESILIENT
A BIT OF CONTEXT
2.9°

RISE IN TEMPERATURE IN MICHIGAN SINCE 1960 (FAHRENHEIT)

SOURCE: Third National Climate Assessment, GLISAAnalysis of nClimDiv climate divisional data.
$42M

ECONOMIC DRAIN FROM EXTREME HEAT PER YEAR

SOURCE: Grand Rapids Climate Change Resiliency Report
1.4 IN

ANNUAL RAINFALL INCREASE IN MICHIGAN
(MOSTLY IN SPRING)

$1.3B

DAMAGE TO MICHIGAN INFRASTRUCTURE FROM FLOODING SINCE 2013

SOURCE: Grand Rapids Climate Change Resiliency Report
$2,514

ECONOMIC DRAIN FROM ASTHMA PER INDIVIDUAL PER YEAR

SOURCE: Grand Rapids Climate Change Resiliency Report
ECONOMIC DRAIN FROM ASTHMA IN MICHIGAN PER YEAR
13.2% OF KIDS (2.4M)
10.9% OF ADULTS (7.5M)

SOURCE: Grand Rapids Climate Change Resiliency Report
BUSINESS CASE
OF CULTIVATING RESILIENCE
RIGHT-SIZED INFRASTRUCTURE

Living Buildings are required to provide building- and/or community-scaled net-positive water and waste solutions.

$216.7M\textsuperscript{1}$ in MI water infrastructure damage per year since 2013.
MI spends $4.5M\textsuperscript{2}$ a year to throw away trash.

1. Grand Rapids Climate Change Resiliency Report
Living Buildings are required to produce 5% MORE energy than they consume.

Michigan spends $5.3B\(^1\) a year in commercial energy costs, 5% surplus is another $26.5M in potential energy revenue.

EMERGENCY POWER

Living Buildings are also required to provide adequate storage to support the building in the case of extreme events.

Power outages cost MI residents $42M\textsuperscript{1,2} per year.

LOCAL LIVING ECONOMY

Living Buildings are buffered against global supply chain disruptions.

Tariffs increased construction costs in MI by $176.5M in 2018

HUMAN POWERED LIVING

Living Buildings are required to improve access to non-motorized transportation, increasing mobility resilience within our communities.

People who bike for at least 30 minutes a day are 40% less likely to develop Type II Diabetes, saving Michigan residents $4.2B\textsuperscript{1} per year in direct and indirect medical expenses related to this disease alone.

FOOD SYSTEMS

Living Buildings are required to dedicate a portion of their project to the production of healthy food.

Access to healthy foods could save $19.8M\textsuperscript{1} in health care costs in Michigan per year.

1. https://www.canr.msu.edu/news/whats_a_food_desert
$2.2B

Annual additional first cost of Living Buildings
($7.5B / year, assuming a 30% premium, which is conservative)

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Combined annual economic impact of Living Buildings

$2.2B

$9.9B \times 4.5