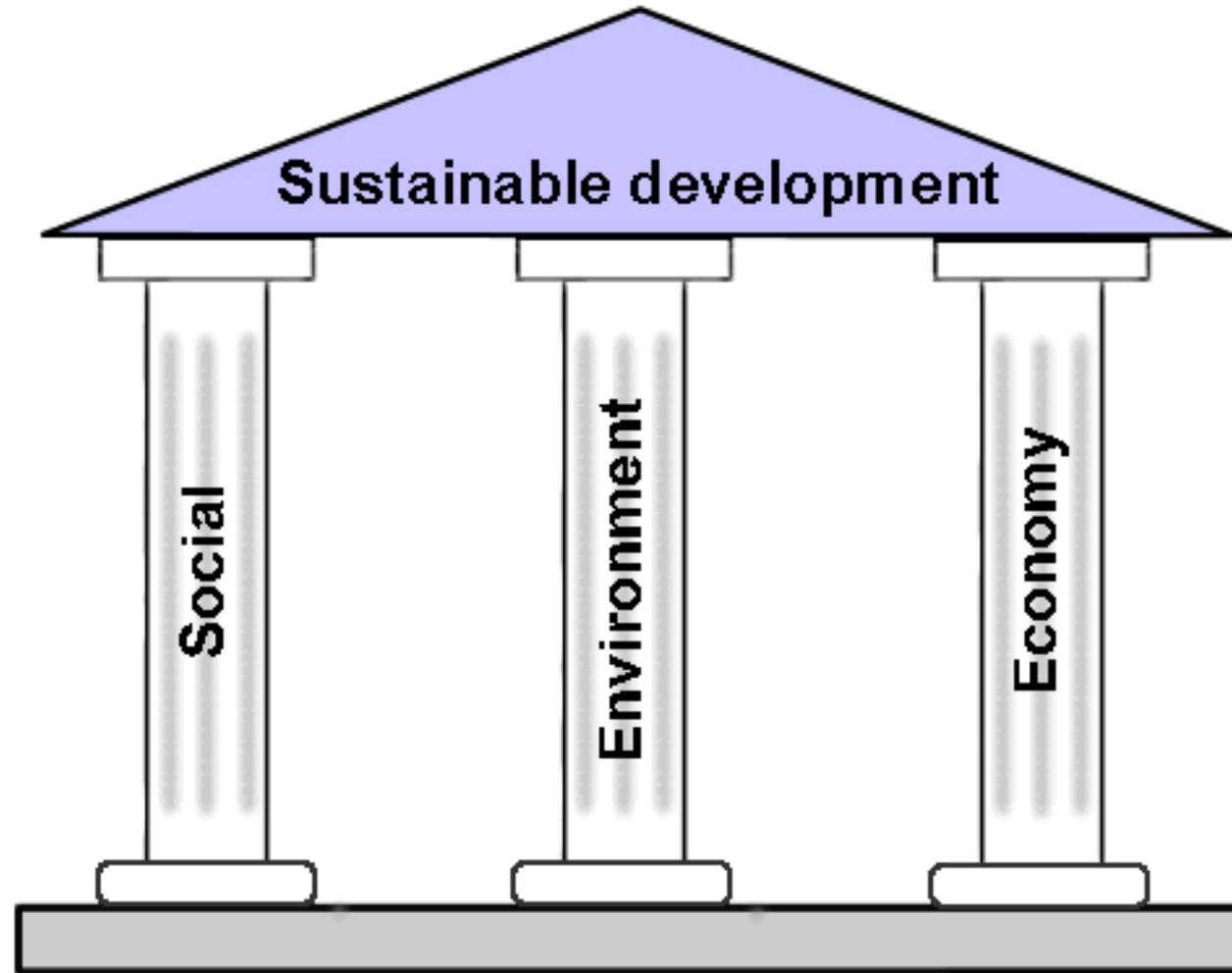


Allentown Sustainability: Green Building Initiatives

Kyle Ropski, SEA, LEED GA

What is Sustainability?



Cred: University of Guelph

What is Green Building?

- Efficiently using energy, water, and other resources
- Reducing waste, pollution, and environmental degradation
- Protecting occupant health and improving employee productivity



Green Building Rating System

- Leadership in Energy and Environmental Design (LEED)
- Internationally recognized as the standard in green building
 - 150,000+ and growing
- Opportunities for new and existing buildings



Kyle Ropski and Heidi Kunka at DEP Building in Harrisburg, PA - 2019

Example Scorecard



Sustainable Sites



Water Efficiency



Indoor Environmental Quality



Materials & Resources



Energy & Atmosphere

- Pre-Requisites that are mandatory

- Flexible guidance for projects

- Transparency and clarity on progress

0	0	0	Indoor Environmental Quality		17
Y			Prereq	Minimum Indoor Air Quality Performance	Required
Y			Prereq	Environmental Tobacco Smoke Control	Required
Y			Prereq	Green Cleaning Policy	Required
			Credit	Indoor Air Quality Management Program	2
			Credit	Enhanced Indoor Air Quality Strategies	2
			Credit	Thermal Comfort	1
			Credit	Interior Lighting	2
			Credit	Daylight and Quality Views	4
			Credit	Green Cleaning- Custodial Effectiveness Assessment	1
			Credit	Green Cleaning- Products and Materials	1
			Credit	Green Cleaning- Equipment	1
			Credit	Integrated Pest Management	2
			Credit	Occupant Comfort Survey	1

Benefits - PEOPLE

- 27% higher occupant satisfaction
 - 1.8 times more willing to get job done
 - 26.4% higher cognitive test scores
 - 6.4% higher Sleep Quality scores
- Health of employees
 - EX: Green Cleaning

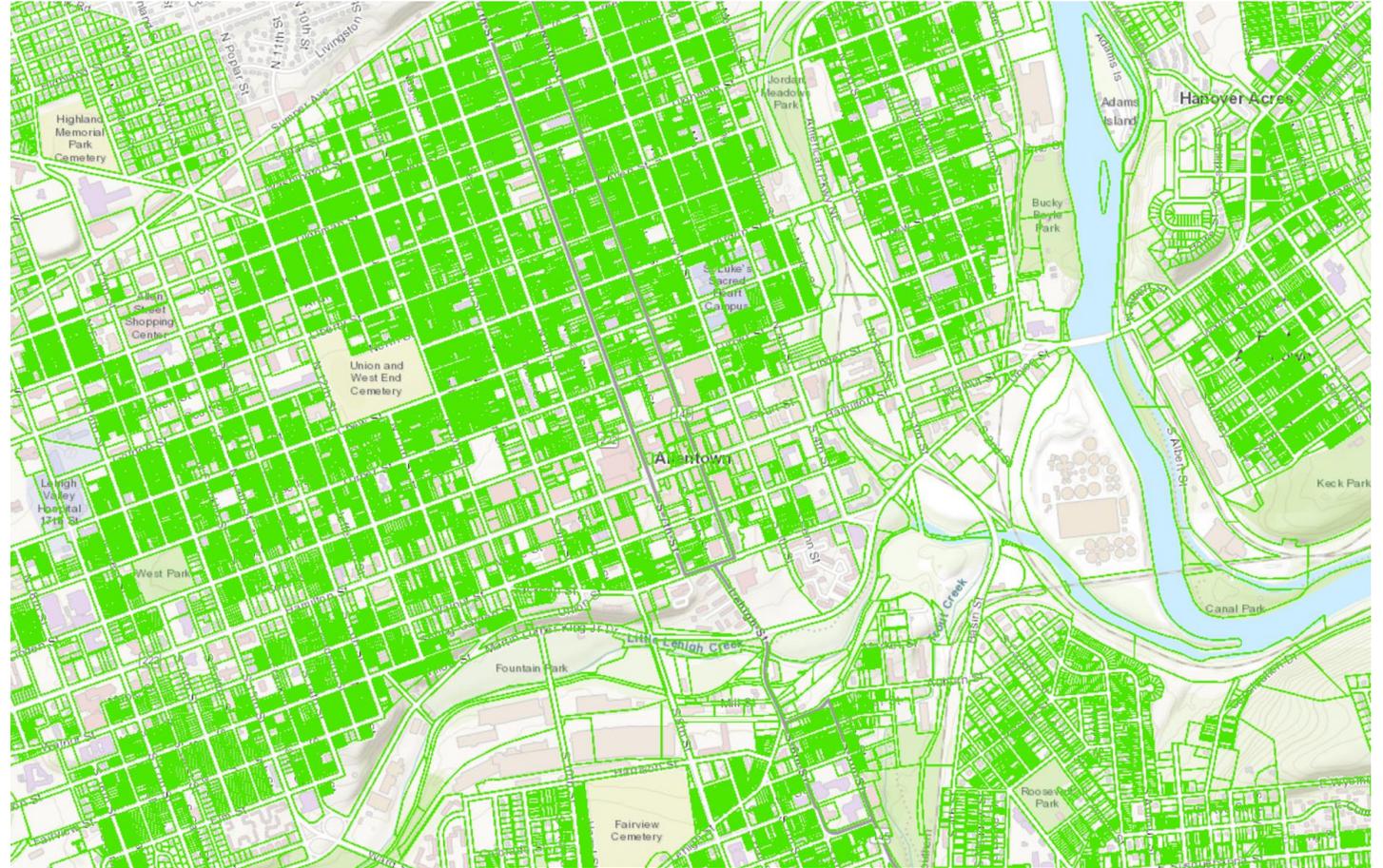
Cred: iStock - Getty Images



Cred: Ethical Design Co.

Benefits - PLANET

- 36% fewer carbon emissions
- Construction and demolition waste
- Stormwater management

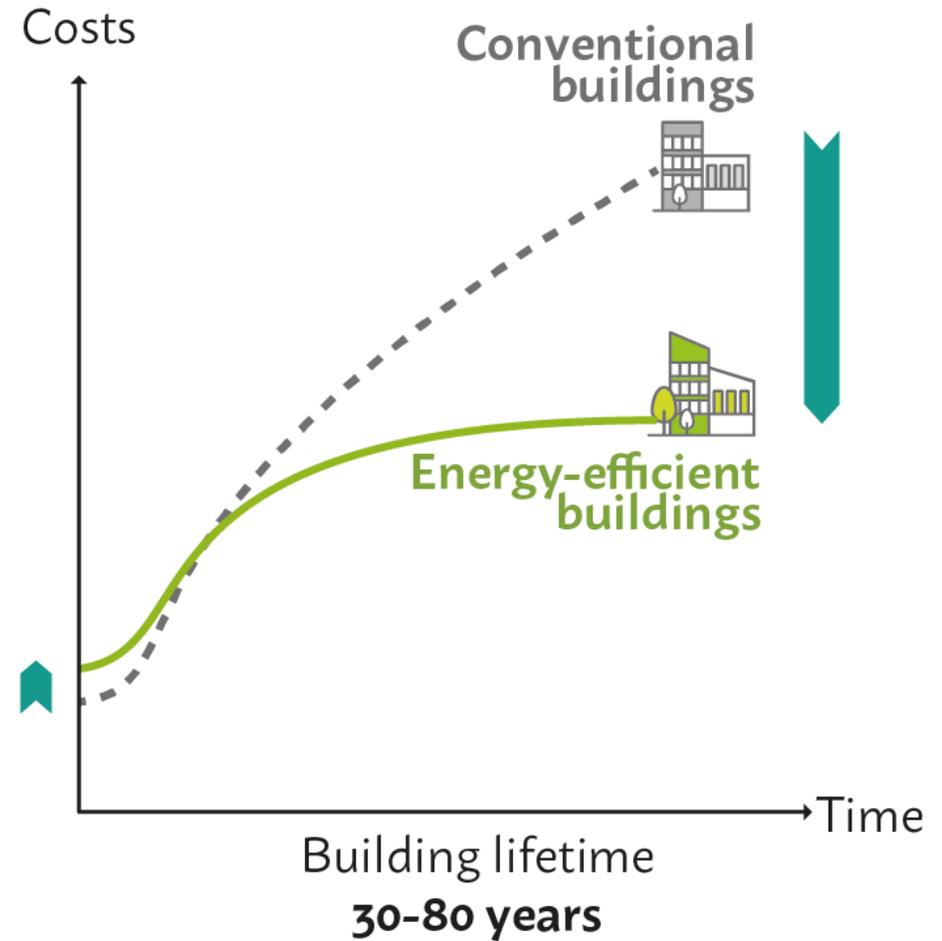


Cred: GISPortal – City Impervious Area Parcels

Benefits - PROFIT

- 25% lower energy use
- 19% Lower operational costs
- 82% of Fortune 200 companies use LEED

**Goldman
Sachs**



Cred: ideasfordevelopment.com

Community Highlights



Muhlenberg College's Parkway Boulevard Building
Cred: Vision Architecture + Muhlenberg Sustainability



Easton City Hall
Cred: Boyle Construction

Community Highlights



4% added to construction cost
=
40% in annual energy savings

The Plaza at PPL Center -
Green Roof
Cred: Robert A.M. Stern
Architects

Support - Our Community

Allentown Vision 2030

- LS3f Energy Efficiency Programs and Policies (pg 173)
 - “Consider the adoption of high-performance building goals for city construction projects and evaluate incentives for others to adopt energy efficiency measures in new and existing buildings.”
- LS1a Climate Action Plan
 - “Many of the reduction strategies affect land use and transportation systems...energy efficiency for buildings and infrastructure.”



Support – Regional Cities



Cred: City of Bethlehem

Objective and goals

The primary objective of the Buildings section of the Bethlehem Climate Action Plan is to reduce GHG emissions from buildings by 30% by 2030. This objective will be accomplished through strategies that target four specific impact goals:

- Expand public disclosure of building energy use
- Decrease buildings' fuel carbon intensity
- Increase the energy efficiency of existing buildings
- Increase the energy efficiency of new buildings

Support – Regional Cities



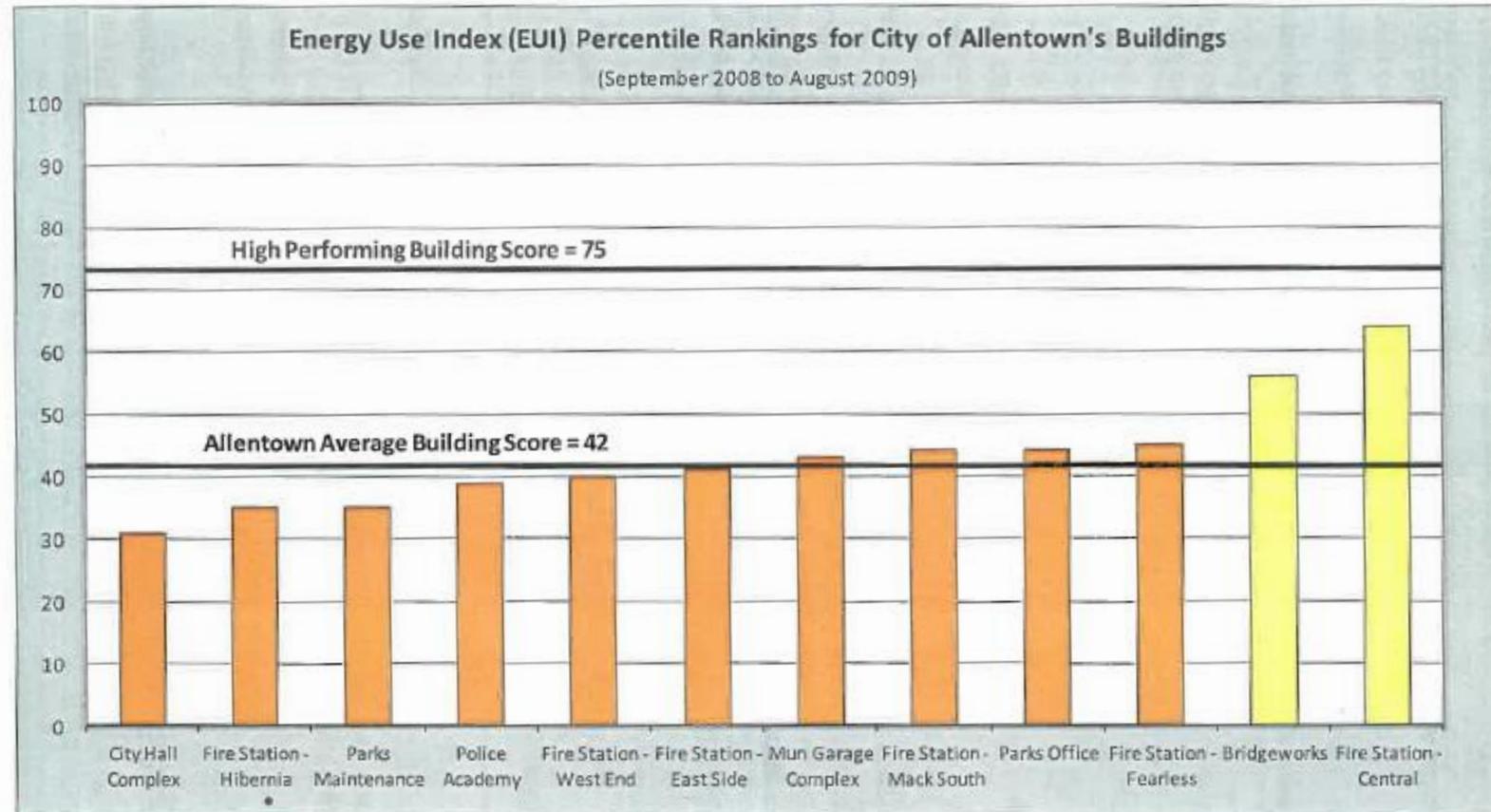
Cred: City of Easton
/ Nurture Nature
Foundation



MO-1B	Continue to invest in energy efficiency measures whenever possible, including LED lightbulbs, system upgrades, programmable thermostats, etc.	Public Works	Decrease in municipal electricity consumption
MO-1C*	Lead by example and require all city buildings to meet higher energy efficiency standards and consider LEED certification for those not certified.	Public Works	Percentage of city-owned buildings with energy efficiency better than mandated by code

Pursuing LEED in City Buildings

- Guidance and flexibility on available options
- Detailed accountability of initiatives already in place
- Transparency for stakeholders backed by respected 3rd party



CLEAResult Consulting Inc. is under contract to PPL to implement the CitySmart Pilot Project.

What are the first steps to take?

- Energy Audits on existing buildings
 - Dashboard-goals-GESA
- Awareness and Education
- “Low Hanging Fruit”
- Green Infrastructure Projects Funding



Key Takeaways

- Considering Green Building strategies in new and existing buildings is not only good for environmental and community health, but also for the budget long term (**saving money for the taxpayer**)
- Utilizing a widely accepted 3rd party rating system such as LEED helps guide the process as well as hold operations and maintenance accountable/transparent to ensure **achievable sustainability goals continue to be met**
- Private business, educational institutions, and our sister cities in the Lehigh Valley have already engaged in green building certification and climate action. The City of Allentown needs to **recognize, organize, and prioritize** sustainability initiatives where/when we can

Sources + Avenues of Further Research

<https://www.hsph.harvard.edu/c-change/news/the-impact-of-green-buildings-on-cognitive-function/#:~:text=The%20Healthy%20Buildings%20Team%20at,%2Dperforming%2C%20green%20certified%20buildings.>

<https://sustain.wisconsin.edu/sustainability/triple-bottom-line/>

https://www.are.admin.ch/dam/are/en/dokumente/nachhaltige_entwicklung/dokumente/bericht/our_common_futurebrundtlandreport1987.pdf.download.pdf/our_common_futurebrundtlandreport1987.pdf

<https://www.usgbc.org/about/mission-vision>

https://www.gsa.gov/cdnstatic/Green_Building_Performance2.pdf

http://www.whitehouse.gov/administration/eop/ceq/Press_Releases/June_15_2012

<https://www.triplepundit.com/story/2016/data-green-buildings-financially-outperform-rivals/22961>

<https://www.usgbc.org/articles/conserving-water-all-people-through-leed-v41>

https://link.springer.com/referenceworkentry/10.1007/978-3-642-28036-8_165

<https://www.ramsa.com/projects/project/plaza-ppl-center>

<https://boyleconstruction.com/projects/easton-city-hall/>

<https://www.goldmansachs.com/our-commitments/sustainability/sustainable-finance/our-operational-impact/certified-management/>

[FACT SHEET: The Recovery Act Made The Largest Single Investment In Clean Energy In History, Driving The Deployment Of Clean Energy, Promoting Energy Efficiency, And Supporting Manufacturing | whitehouse.gov \(archives.gov\)](#)

<https://allentownvision2030.org/plan/>

<https://www.bethlehem-pa.gov/Public-Works/Climate-Action-Plan>

The City of Easton's Climate Action Plan | Nurture Nature Foundation (nurturenaturecenter.org)

<https://www.mcall.com/news/local/mc-xpm-2010-07-07-mc-allentown-solar-20100707-story.html>

2021: Muhlenberg to Break Ground for Parkway Boulevard Building | Muhlenberg College

<https://www.esmagazine.com/articles/97097-usgbc-survey-finds-80-of-companies-using-leed>