2030 Districts in Pennsylvania

A what does a community of high performance buildings in Pittsburgh mean for planning in the Commonwealth?

Sean C. Luther, LEED Green Associate
Green Building Alliance (Western PA)
Our Vision…
The places where we live, work, learn, and play will be healthy and high performing.
Green Building Service Areas for Pennsylvania

- Greater Pittsburgh Branch
- Laurel Highlands Branch
- Northwest PA Branch
- Outside of GBA’s Network
  - Green Building Association of Central PA
  - Delaware Valley Green Building Council
2030 DISTRICTS...

1. **Get Educated:**
   2030 Challenge & Pittsburgh 2030 District

2. **Get Local:**
   This makes sense for PA cities

3. **Get Real:**
   What is the impact for planners?
INTERNATIONAL 2030 CHALLENGE

WHY FOCUS ON BUILDINGS?  WHO IS THIS Ed guy?  WHY 2030?  HOW DOES ANY OF THIS RELATED TO PITTSBURGH?
2030 CHALLENGE

U.S. ENERGY CONSUMPTION

Detail by Sector

- Buildings: 49%
- Transportation- Light Duty: 23%
- Transportation- Other: 12%
- Industry: 17%

2030 CHALLENGE

BUILDINGS ARE...

THE PROBLEM
BUILDINGS ARE . . . THE SOLUTION
2030 CHALLENGE

NEW BUILDING & MAJOR RENOVATION TARGETS

--- TODAY --- 2015 2020 2025 2030

- 50% Water Reduction
- 50% CO2 from Transportation Reduction
- 60% Energy Reduction
- 70% Water Consumption
- 80% CO2 from Transportation
- 90% Energy Consumption
- CARBON NEUTRAL*

The 2030 Challenge for Planning: New Buildings & Major Renovations

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*Using no fossil fuel GHG-emitting energy to operate.
EXISTING BUILDING TARGETS

The 2030 Challenge for Planning: Existing Buildings

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2030 CHALLENGE

MEETING THE CHALLENGE

The 2030 Challenge

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Meeting the 2030 Challenge

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PITTSBURGH 2030 DISTRICT

A GREEN BUILDING ALLIANCE Strategic Inspiration

Presented by:

TEN THE EFFICIENCY NETWORK

also sponsored by:

EcoCommercial Building
DISTRICT TOTALS:

450 properties

56,000,000 ft²

100% of the PITTSBURGH 2030 DISTRICT
DISTRICT GOALS...

Targets for Existing Buildings

- Today (Max)
- Today (Avg.)
- 2015
- 2020
- 2025
- 2030

National/District Average

Targets for New Buildings & Major Renovations

- Today (Avg.)
- Today (Cut)
- 2015
- 2020
- 2025
- 2030

National/District Average

= Energy Consumption

= Water Consumption & Transportation Emissions

Indoor Air Quality – In Development
## Baselines: Energy

- **2003 Commercial Buildings Energy Consumption Survey (CBECS)**

<table>
<thead>
<tr>
<th>Bank/Financial Institution</th>
<th>Floor Space</th>
<th>Weekly Operating Hours</th>
<th>Workers on Main Shift</th>
<th># of PCs</th>
<th>% Gross Floor Area Air Conditioned</th>
<th>% Gross Floor Area Heated</th>
<th>Floor Space</th>
<th>Site Average EUI (kBtu/ft²/yr)</th>
<th>Estimated Curve</th>
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<tbody>
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![Graph](graph.png)

\[ y = -12.33\ln(x) + 112.81 \]

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## CURRENT PROGRESS

### BASELINES:

**WATER - DISTRICT HISTORIC AVERAGE COMPILED BY PITTSBURGH WATER AND SEWER AUTHORITY (2009-2012):**

<table>
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<tr>
<th>Use Type</th>
<th>PRELIMINARY 2009-2012 WUI (Gal/SF/year)</th>
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<tbody>
<tr>
<td>Commercial</td>
<td>10</td>
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<tr>
<td>Residential</td>
<td>87</td>
</tr>
<tr>
<td>Entertainment/culture</td>
<td>3</td>
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<tr>
<td>University Campus</td>
<td>28</td>
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<tr>
<td>Office</td>
<td>12</td>
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<td>&lt;2,000,000 SF</td>
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**BASELINE: TRANSPORTATION**

- **PARTNER:** SOUTHWESTERN PENNSYLVANIA COMMISSION (SPC)

- **APPROACH:**
  - **WILL ESTABLISH**
    - District average mode split
    - Associated air emissions
  - **COMMUTER TRANSPORTATION WITHIN DISTRICT BOUNDARY**
    - Mode x Distance (from zip)
    - Think Sim City...

- **TIMELINE:**
  - **COMPLETE IN 2013 Q4**
BASELINES:

INDOOR AIR QUALITY (COMING SOON)

- Targeted for beta testing in 2014

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GRAND TOTAL OF COMMITMENTS:

100 properties

30,162,483 ft²

53% of the PITTSBURGH 2030 DISTRICT
WHY A 2030 DISTRICT

Energy efficiency in existing buildings = Improved Economic Competiveness for Pennsylvania cities
WHY A 2030 DISTRICT?

ECONOMIC COMPETITIVENESS

BoA Corporate Center
1992

One PNC Plaza
1972
AS GOES PITTSBURGH...
WHY A 2030 DISTRICT?

Net Operating Income & Regional Economic Competitiveness

Energy Consumption & Operating Expenses
WHY A 2030 DISTRICT?

ALCOA

PNC

USS

BNY MELLON

PPG

UPMC

EFFICIENT BUILDINGS = JOB SECURITY
IMPLICATIONS FOR PLANNING PROFESSIONALS

WHAT DOES A 2030 DISTRICT IN YOUR CITY MEAN FOR YOU?
IMPLICATIONS FOR PLANNERS

Across the United States, 2030 Districts are being formed to meet the energy, water and vehicle emissions targets called for by Architecture 2030 in the 2030 Challenge for Planning.

Through unique public/private partnerships, property owners and managers are coming together with local governments, businesses, and community stakeholders to provide a business model for urban sustainability through collaboration, leveraged financing, and shared resources. Together, they are developing and implementing creative strategies, best practices, and verification methods for measuring progress towards a common goal.

Established in Seattle, 2030 Districts are at the forefront of regional – and national – grassroots efforts to create strong environmental partnerships, coalitions, and collaboration around ambitious, measurable and achievable goals.

Interested in establishing a 2030 District? Check out the 2030 Districts Toolkit.

Seattle | Cleveland | Pittsburgh | Los Angeles
IMPLICATION FOR PLANNERS

LEED

On-Site Renewables

Zoning Changes

IgBC

Grey Water Reuse

Mandatory Energy Benchmarking
IMPLICATION FOR PLANNERS

2030 DISTRICTS ARE NOT...

- Mandatory
- Related to LEED standards
- Reliant on renewable energy
- Expensive
- Intrusive to zoning, buildings, or health codes (but we could use some help in that arena!)
- Dealing with solid waste
IMPLICATION FOR PLANNERS

BUT 2030 DISTRICTS ARE

- WORKING...
IMPLICATIONS FOR PLANNERS


Source: Architecture 2030, U.S. Energy Information Administration, Annual Energy Outlook (EIA AEO)
QUESTIONS?

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#PGH2030