

## CRPD Green Design Guidelines and Energy Efficiency Standards

### Background:

In 2016, Mayor Andrew J. Ginther signed onto the Compact of Mayors to inventory greenhouse gas emission, identify climate hazards, and develop an action plan to deliver on its commitment to reduce GHGs and adapt to climate change.

In 2017, Mayor Andrew J. Ginther and City Council joined The Sustainable2050 effort--a new, multi-jurisdictional commitment to policies that enhance and protect the quality of life, environment and economic vibrancy of our region.

In February 2020, Mayor Ginther announced a bold and ambitious goal for the Columbus community to be carbon neutral by 2050. In order to do so, the City is implementing a **Climate Action Plan**, which serves as the fundamental source document for CRPD building design decisions.

CAP call for city-wide zero-carbon design by 2050. This is to be achieved through a combination of building efficiency and use of renewable energy (including on-site production).

Section 9.1 mandates the implementation of municipal zero-carbon design standards by 2025 and construction of four zero carbon pilot sites by 2030.

CAP also calls for reduction of greenhouse gas emissions from municipal buildings 40% by 2030 over the 2005 baseline as a stepping stone toward achieving carbon neutrality in 2050. A 2018 revised baseline has been selected as the base year as this is the earliest year for which the City has good and representative building energy performance data.

**Note: have achieved 15% reduction as of 2018 MORPC assessment**

**Note: Approximately 25% of city operations GHGs are a direct result of facility energy usage.**

The city will use 100% renewable energy by 2022. This will primarily be achieved through community source aggregation. see [www.cleanenergycolumbus.org](http://www.cleanenergycolumbus.org)

In addition to meeting the goals of the Climate Action, CRPD strives to represent its core values through the implementation of green design and construction concepts.

Green design encompasses many aspects facility design and construction such as:

- Energy use
- Environmental impacts, such as storm water
- Social benefits of nature, plants, and trees
- Solid waste generation
- Material selection and procurement

CRPD will follow LEED principles, but GBCI submittals will not be required. Each individual project team is responsible for selecting goals from the following core concepts to meet unique project demands.

## Require building third-party commissioning

Inform design by use of Life Cycle Cost Analysis; consider exceeding minimum insulation standards, equipment efficiency standards, and occupancy room control requirements

Generate renewable energy onsite through solar or other means

Increase efficiency beyond current ASHRAE 90.1 standards

>\$1M exceed code by 10%, consider LEED silver or better

>\$200,000 projects should exceed code by 5%

Reference [ASHRAE's Net-Zero Advanced Energy Design Guides](#) when providing design considerations including building EUI target with minimum 4 municipal zero carbon buildings by 2030 and all zero carbon design standard by 2050

Utilization of building automation systems (BAS) to manage energy demand

Implement HVAC set points and unoccupied setbacks in sequence of operations

Include electric infrastructure capable of supporting future EV and micromobility charging stations

Ensure walkability and bikeability by connections to surrounding community with ADA-accessible sidewalks and multi-use paths

Consider location of area public transportation infrastructure and micromobility hubs when arranging site plan

Reduce heat island effect with cool roofs and tree canopy

Minimize impact of light pollution in the community, provide minimum levels of light for each type of application and limit the lighting spillover onto adjacent property and the night sky. Use Dark Sky recommended lighting fixtures

Consider indoor air quality, noise reduction, and use of daylight. Apply ASHRAE 62.2 and the SMACNA IAQ Guidelines.

Reduce waste water using low flow WaterSense fixtures

Capture storm runoff on site with innovative designs

Install native plantings that do not require irrigation

Limit development of floodplains, wetlands, urban meadows, and forests, and preserve heritage trees

Provide are for onsite composting

Provide separated materials recycling options on the site

Reduce construction waste sent to landfills

Maximize use of locally sourced materials (within 500 miles of construction site)

Provide low/no VOC emitting materials

Select materials with low embodied energy

Design for efficient use of construction materials