

The Green Roof Initiative

The Denver, Colorado Code of Ordinances:
Title I, Chapter 10, Article XIII

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Constructing Legal Solutions

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The Green Roof Initiative – Ballot Title *Passed by 54% of Denver's Voters*

Shall the voters of the City and County of Denver adopt a measure that **requires every building and any roof replacement of a building with a gross floor area of 25,000 square feet or greater, or a building addition that causes the building to become 25,000 square feet or greater**, constructed after January 1, 2018, shall include a green roof or combination of green roof and solar energy collection; while also requiring proper permits and maintenance plans, establishing construction standards and a technical advisory group, and publishing construction guidelines and best practices; also allowing for exemptions and requiring enforcement with violations and penalties?

A Green Roof



BRYAN LOPEZ, COLORADO JUDICIAL DEPARTMENT

The green roof on the Ralph L. Carr Colorado
Judicial Center over Lincoln Street and 14th Avenue
in Denver.

Denver's Green Roofs

REI – South Platte River Denver



EPA Region 8



Little Raven Parking Structure



Arnold & Arnold, LLP Attorneys at Law

Denver Botanic Gardens



What is a Green Roof?

“A green roof is a living landscape above a structure – it doesn’t matter if it’s at the ground, or above the ground, or below the ground – it just needs to sit above a structure,” Leila Tolderlund, Assistant Professor CU Denver’s College of Architecture and Planning.

“A green roof is any living plant material above a living or parking space. It’s ‘green,’ meaning it has plants on it, over a waterproofing membrane – but that membrane could be over an underground parking garage. It can be on a rooftop or on top of as skyscraper.” Andy Creath, Boulder-based Green Roofs of Colorado.

Source: Denver Business Journal (March 9, 2018)

Since the 1800's – Sod Houses



Current Exemptions

- Existing buildings needing major structural work.
- Residential buildings up to four stories.

Variations

- Planning Board may grant a variance but applicant must:
pay a cash-in-lieu fee of \$25/SF for each SF of coverage of available roof space that is no longer required to provide a green roof or green roof combination.

Proposed Rules and Regulations

Proposed Rules and Regulation--Public Review Draft December 26, 2017

Table 1

Gross Floor Area (Size of Building or Addition)	Coverage of Available Roof Space (Size of Green Roof)
25,000—49,999 square feet	20%
50,000—99,999 square feet	30%
100,000—149,999 square feet	40%
150,000—199,999 square feet	50%
200,000 square feet or greater	60%

Licensing and Permitting Changes

Created two new licenses

- • Green roof installer
- • Irrigation for greywater or green roof

Buildings 25,000 sq ft or larger must:

submit for a roofing permit over the counter or via email if they are requesting that the building qualifies for an exemption as outlined in the ordinance

Task Force

Department of Public Health and Environment

- The Green Roofs Task Force – meeting since January: 20-member task force of stakeholders – collaborative/consensus based
- Green Roof Technical Advisory Group:
 - 10-member body appointed by Mayor
 - Appointees have expert knowledge.
 - Identify technical issues.
 - Possible amendments.

City Council Action 9 Votes to change

- Final recommendations to City Council May 23, 2018 by Task Force.
- The initiative can be changed with the support of 2/3's of the city council: 9 Votes.
- July 2018: The City Council will meet to review Task Force recommendations.

Challenges

- Denver's climate:

Compared to other cities, Denver has “higher temps and a drier climate than where [green roofs are] typically built around the world – so they’ll need extra irrigation.”

Andy Creath, Boulder-based Green Roofs of Colorado.

Source: Denver Business Journal (March 9, 2018)

Challenges

Roof membrane – *“There’s the myth that having a green roof will make your roof leak more. It’s actually the exact opposite, because green roofs protect the membrane.”*

Andy Creath, Boulder-based Green Roofs of Colorado.

Source: Denver Business Journal (March 9, 2018)

Challenges

- Cost

Upfront, building a green roof these days can add anywhere from \$18 to 25 per square foot to the standard cost of a roof, depending on the type of access to the roof and the plants that re used. Andy Creath, Boulder-based Green Roofs of Colorado.

The EPA figured the roof added an extra \$12 per foot to the roof cots, or about \$240,000 for a 20,000-square-foot roof (2007 figures).

Source: Denver Business Journal (March 9, 2018)

Challenges

Water

- 2013 EPA Study found that plants could capture and hold about 77 percent of the water and snow that fell – reducing the runoff from the building.
- State water law conflicts with the requirement to retain and reuse water captured.
- Smaller stormwater vaults – cost saving; but
- Less water in the stormwater system.

Good for Denver?

- Lowers the temperature above the immediate building.
- Collectively – lowers the temperature above the City.
- Adds Green spaces.

Stay up to Date

- See www.denvergov.org/greenroofs

The screenshot shows the Denver Development Services website. At the top is a navigation bar with the Denver logo and menu items: Neighborhood, Business, Visiting, Government, Online Services, and A to Z. A search bar is on the right. Below the navigation bar is a blue header with 'Denver Development Services' and a secondary menu: Home Projects, Commercial Projects (selected), Small Business Services, Help Me Find..., Contractor Licenses, and Contact Us. The main content area has a breadcrumb trail: Denver Development Services / Commercial Projects / Green Roof Initiative. The title is 'Denver's Green Roof Initiative'. The text states that on November 7, 2018, Denver voters passed the Green Roof Initiative (Initiative 300). It explains that the initiative has an effective date of January 1, 2018, and applies to new buildings or additions with a gross floor area of 25,000 square feet or more, or existing buildings over 25,000 square feet seeking a roof replacement. A blue button links to 'Read the Denver Green Roof Initiative (PDF)'. A section titled 'Permitting details available below...' contains two expandable items: 'Submitting a formal site development plan (SDP) for review before December 29' and 'Applying for roof and green roof permits'. On the right, a blue box titled 'Administrative Rules & Regulations' contains text about rules adopted on April 30, 2018, and a link to 'Rules governing green roofs (Final PDF)'. Below that, another blue box titled 'Join the Technical Advisory Group' contains text about joining the Green Roof initiative.

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THE MILE HIGH CITY

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Denver's Green Roof Initiative

On November 7, Denver voters passed the Green Roof Initiative ("Initiative 300").

The initiative has an effective date of January 1, 2018. The green roof requirement will apply to projects that submit a site development plan on or after January 1, 2018, for any new building with a gross floor area of 25,000 square feet or more or a building addition that causes the building to become 25,000 square feet or more, and any existing building over 25,000 square feet that is seeking to do a roof replacement.

Community Planning and Development is presently working to harmonize existing laws and policies with this new law, and to build its requirements into our permitting and contractor licensing procedures.

[Read the Denver Green Roof Initiative \(PDF\) »](#)

Permitting details available below...

- Submitting a formal site development plan (SDP) for review before December 29 +
- Applying for roof and green roof permits +

Administrative Rules & Regulations

On April 30, 2018, Denver adopted rules and regulations for implementing Article XIII, Chapter 10, of the Denver Revised Municipal Code (Denver Green Roofs). An initial draft of these rules and regulations was circulated for public comment in January 2018, with a public hearing held January 17.

- [Rules governing green roofs \(Final PDF\)](#)

Join the Technical Advisory Group

If you are interested in joining the Green Roof

Dennis the Menace by Hank Ketcham



“You mean you went to school for all those years, an’ you still don’t know all the answers?”

Experience isn't something you
get until just after you need it.

~Mark Twain