

NOTE: Denver's Green Buildings Ordinance applies to all existing commercial buildings with 25,000 ft² of Gross Floor Area or larger upon roof replacement or roof recover. For all permits issued after May 1, 2023, the effective code is 2022 Denver Building Code including 2021 IBC & 2021 IECC and all 2022 Denver Amendments.

1. Required & Reference Documents

[Click here to view the Green Buildings Ordinance](#)

[Click here to download the GBO Rules & Regulations PDF](#)

[Click here to download the Green Building Declaration Form for Existing Buildings](#)

[Denver Roof Permit Application](#)

Abbreviations

GBO = Green Buildings Ordinance
R+Rs = Rules & Regulations
GBDF = Green Building Declaration Form
SDP = Site Development Plan
IBC = International Building Code
IECC = International Energy Conservation Code
DBCA = Denver Building Code Amendments

2. Project Compliance

- A. All projects must address two areas of compliance:
 - i. Provide a cool roof, and
 - ii. Select an additional green building option (A through G) on the GBDF.
- B. Exemptions are available for certain types of projects. See Section 10-302(d) in the Ordinance for a complete list of available exemptions.

3. Site Development Plans (Green Space Option Only)

- A. A Site Development Plan minor modification must be created/included if providing green space is the chosen additional green building option. The SDP must include identification of the selected GBO additional green building option, and any full or partial exemptions taken, on the cover sheet.
 - i. If providing green space, specific GBO notes as defined below in the submittal requirements and final green space calculations after the permit CDs are approved, must be included in the SDP for SDP approval.
- B. Submit a [GBDF for Existing Buildings](#), including the owner's signature, with the SDP submittal.

4. Construction Permits

- A. At the time of the permit submittal, provide all applicable materials listed in the submittal requirements table below necessary to demonstrate conformance with requirements specifically outlined in the GBO R+Rs Article III pertaining to cool roof requirements and R+Rs Article IV Section 4.07 pertaining to Payment to the Green Building Fund.
- B. Note – **Separate Permits** – *If applicable*, please note that beyond the general construction permit, for vegetated roof construction and for at-grade green space included in the selected compliance pathway separate approvals and permits must be received as outlined in the Green Buildings Ordinance (GBO) Rules and Regulations (R+Rs) including but not limited to roofing, fire protection systems, plumbing, irrigation systems, and Zoning. The permit for the vegetated roof must be issued to a Denver licensed green roof installer per GBO R+Rs Article II Section 2.03(e).

5. Project Requirements for Payment into the Green Building Fund:

Payment into the Green Building Fund

- A. Choose a green space and/or on-site % amount from Option A, C or F (GBDF)
 - ❖ Payment = \$50 per square foot of green space or on-site solar required but not provided
- B. Reference R+Rs for specifics including those related to:
 - ❖ If providing green space and/or on-site solar, payments are allowed up to 25% of the green space and/or on-site solar required but not provided, or payments may cover 100% of green space and/or on-site solar required.
 - ❖ Payment is due prior to pulling building permits

6. Project Requirements for Green Space *(if applicable)*:

Green Space (Vegetated Roofs + At-Grade Green Space) *Note - Existing green space cannot be used to meet the Green Buildings Ordinance, unless it is improved with trees or an above-grade, vegetated, water quality facility. Review the Rules and Regulations for details.*

- A. Total roof replacement/additions, select a coverage area (choose one):
 - i. 2% of Gross Floor Area
 - ii. 18% of Total Roof Area
- B. Replacing roof section(s), select a coverage area (choose one):
 - i. $(2\% \text{ of the building GFA} \times \text{roof section area}) \div \text{total roof area of the building}$
 - ii. 18% of the roof section(s)
- C. For Vegetated Roofs, reference R+Rs for specifics including those related to:
 - ❖ Professional qualifications
 - ❖ Irrigation
 - ❖ 80% coverage of vegetated roof within 3 years
 - ❖ Plant selection lists
 - ❖ PVs and vegetation
 - ❖ Trees and groundcover
 - ❖ Maintenance plan
 - ❖ 5" growing media
 - ❖ IBC, IFC, IPC Denver amendments
 - ❖ Standpipes, fire zones, fire clearances, and exit stairs
 - ❖ Wind and gravity loads
- D. For At-Grade Green Space, reference R+Rs for specifics including those related to:
 - ❖ Trees and groundcover
 - ❖ Zoning
 - ❖ Water quality treatment
 - ❖ Right of way
 - ❖ Must be new
 - ❖ Soil quality
 - ❖ Drainage
 - ❖ Tree standards

- ❖ Turfgrass
- ❖ Urban Agriculture

7. Project Requirements for On-Site Renewable Energy (if applicable):

On-Site Renewable Energy

- A. Total roof replacement/additions, select a coverage area (choose one):
- i. 5% of building or addition's Gross Floor Area
 - ii. 42% of the Total Roof Area
 - iii. An amount capable of generating 100% of the building's estimated average annual electricity use
- B. Replacing roof section(s), select a coverage area (choose one):
- i. $(5\% \text{ of the building GFA} \times \text{roof section area}) \div \text{total roof area of the building}$
 - ii. 42% of the roof section(s)
 - iii. An amount capable of generating 100% of the building's estimated average annual electricity use
- C. Reference R+Rs for specifics including those related to:
- ❖ 18% minimum efficiency
 - ❖ Clearances
 - ❖ Other renewable equivalency to solar output *if applicable*

8. Provide items listed in the [Submittal Requirements Checklist](#) starting on the next page of this guide.

Mandatory Cool Roof Requirements and Exemptions for All Existing Buildings:

| | # | Construction Phase | Applicable Code Section | Submittal Item | Requirement |
|----------------------------------|----|--------------------|--|--|--|
| MANDATORY FOR ALL NEW SUBMITTALS | 1 | Roof Permit | R+Rs 2.03(c) | Green Building Declaration Form | Provide a Green Building Declaration Form for Existing Buildings with all fields infilled including the owner's signature. |
| | 2 | Roof Permit | | Roof permit application | Provide a roof permit application with the project valuation. |
| | 3 | Roof Permit | R+Rs 2.03(a) | Roof plan | Provide a roof plan with the total roof area quantified. |
| | 4 | Roof Permit | R+Rs 3.02(a) R+Rs 3.03(a) R+Rs 3.03(b) | Roof product & solar reflectance data | Provide cool roof covering and paver solar reflectance data with the color circled, highlighted, or otherwise identified in conformance with Table 1 - Reflectance Requirements in the GBO R+Rs. This information may be included in the construction document specifications or on the roof plan. |
| | 5 | Roof Permit | | Roof assembly section details | <u>Roof section detail</u> - OR - <u>a detailed, layer-by-layer description</u> of the roof assembly. Please provide both a detail for the existing assembly AND the proposed assembly. |
| | 6 | Roof Permit | R+Rs 3.03(b)(i) | Condensation avoidance strategy | Provide one of the following options: (1) Air barrier AND vapor retarder product data if the low-slope prescriptive assembly is being provided, OR (2) A dew point analysis report following Denver's guidelines from a registered professional if a prescriptive assembly is NOT being provided, OR (3) <i>Roof recovers only</i> – A note stating that an existing cool roof is being replaced (Exemption 10 below). If a note is provided, then the prescriptive assembly or the dew point analysis does NOT need to be provided. |
| | 7 | Roof Permit | IBC 1202.2 IBC 1202.3 | (Steep slope only) Ventilation details | Provide a roof plan illustrating locations, sizing, and calculations. |
| EXEMPTIONS | 8 | Roof Permit | R+Rs 3.04 | Exemptions | For any exemptions claimed, please provide substantiation. |
| | 9 | Roof Permit | R+Rs 3.04(a) | Exemptions – Character defining roofs | See applicable GBO R+Rs Section 3.04(a) for additional submittal requirements if claiming a character defining roof. It is recommended that any project considering applying for a character defining cool roof exemption, contact us first at stephen.sanderson@denvergov.org or christy.collins@denvergov.org . |
| | 10 | Roof Permit | | Exemptions – Existing cool roof | <i>Roof recovers only</i> – Simply provide a note on the roof plan or roof assembly description submittal document. |
| | 11 | Roof Permit | R+Rs Section 10-302(d)(3)(a) | Exemptions – Residential building below 5 stories OR 62.5' in height | Provide photos and/or drawings substantiating the claimed exemption as a residential property <5 stories OR 62.5' or less in height with measurements. |

Option B: Payment into the Green Building Fund – Additional Green Buildings Requirements:

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|----|-------------|--------------|------------------------------------|--|
| 12 | Roof Permit | R+Rs 4.07(a) | Green space and/or PV requirements | Detailed calculations of green space and/or on-site solar required including dimensioned building and/or roof plan(s) where applicable |
| 13 | Roof Permit | R+Rs 4.07(a) | Payment | Payment due when the roofing permit is pulled |

If providing Green Space – Additional Green Buildings Requirements:

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|----|------------------|-------------------------|--------------------------------------|---|
| 14 | SDP | R+Rs 4.02(b)(v) | GBO sheet | Provide a GBO sheet that includes the building area calculation, site plan, landscape plan and the following note: <i>Green space is shown on this site development plan for compliance with Article XIII of Chapter 10, must be maintained, and cannot be used for purposes other than that shown on this site development plan. Should a future amendment change the amount or location of this green space, then additional green space must be provided to document compliance or payment of cash-in-lieu fees will be required.</i> |
| 15 | SDP | | GBO sheet | Provide the required green space calculations and diagrammatic plan (identical to approved landscape CDs). |
| 16 | SDP | | Landscape sheet | Statement signed by landscape architect stating design is per GBO. |
| 17 | Roof Permit | | Green space calculations | Provide detailed calculations of green space required including dimensioned roof plan(s) if applicable. |
| 18 | Roof Permit | | General note | Provide a general note in the landscape documents underscoring the applicability of GBO landscape requirements. |
| 19 | Roof Permit | R+Rs 4.02 (d)(ii)(2)(b) | Vegetated roof clearances | Provide a roof plan identifying and dimensioning all GBO R+Rs required clearances. |
| 20 | Roof Permit | R+Rs 4.02 (d)(vi) | Vegetated details and specifications | Provide details and system specifications. |
| 21 | Roof Permit | | Applicable construction documents | Provide applicable landscape, irrigation, plumbing, zoning, and fire protection plans. |
| 22 | Separate Permits | R+Rs 4.02 (d)(i)(1)(b) | Separate CD submittals and permits | If applicable, separate CD submittals are required for fire protection systems; plumbing/backflow preventer; irrigation system; zoning; vegetated roof system (must include a maintenance plan). |

If providing On-Site Renewable Energy – Additional Green Buildings Requirements:

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|----|-------------|-------------------------|---------------------------------------|---|
| 23 | Roof Permit | R+Rs 4.03(a)(ii) | On-site solar - Coverage requirements | Detailed calculations of on-site solar coverage required including dimensioned building and/or roof plan(s) as applicable |
| 24 | Roof Permit | R+Rs 4.03 (a)(vi) & (x) | On-site solar - Clearances | Roof plan identifying and dimensioning all GBO R+Rs required clearances |
| 25 | Roof Permit | R+Rs 4.03(a)(v) | On-site solar - System information | On-site solar panel product data including efficiency rating and system capacity (kW) |
| 26 | Roof Permit | R+Rs 4.03(a)(vii) | Energy model | Denver Building Code, energy code checklist, and 2022 DEC Companion Tool which lists the performance path minimum submittal requirements are available on the Denver Building and Fire Code website |

Green Buildings Ordinance

Submittal Requirements Checklist

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|----|------------------|--------------|------------------------------------|--|
| 28 | Roof Permit | | General | Additional materials as required to illustrate compliance with GBO R+Rs Section 4.03(a)(ii) through (vii), and (x) |
| 29 | Separate Permits | R+Rs 2.03(g) | Separate CD submittals and permits | <i>If applicable</i> , separate CD submittals are required for fire protection systems; photovoltaic system; and zoning. |
| 30 | Post C.O. | | Inspections | On-site solar system must be installed and inspected within 12 months of final roof inspection |