Green Roof Review Task Force
Agenda – Meeting #5 – March 21, 2018 – 9:00-12:00
200 W 14th Ave, 2nd Floor, Grand Mesa Room

Meeting Objectives:
- Background – Roofing and Insurance
- Examine the Matrices

9:00 Opening
  - Welcome – Opening – Introductions – Preliminary Matters – Agenda Preview and Operating Protocol Reminder

9:10 Background
  - Roofing 101
    o Presentation – 10 minutes
    o Q&A – 5 minutes
  - Insurance 101
    o Presentation – 10 minutes
    o Q&A – 5 minutes

9:40 Matrices – Review and Discussion
  - Small-Group Work
    o Heat Island and Green
    o Storm Water
    o Climate
  - Staff Effort to Simplify the Small-Group Work
  - Discussion and Revision
    o Does the new ordinance retain the option of complying with the original ordinance or do you create something completely new?
    o Do the matrices contain workable options for all building types?
    o What’s the best way to calculate the required roof coverage for each building type?
    o Is the system striking the right balance of flexibility and performance?
    o How might this change for new buildings if they are part of a campus or a new affordable housing project?
    o How might this change for existing buildings if they are part of a campus, an affordable housing project, an addition, an emergency roof replacement, an historic building?
    o How should certification systems factor in – LEED Platinum, etc.?

11:30 What data and scope of work do you need from Stantec and other experts to finalize and fill in the matrix?

11:45 Next Steps
  - Council Begins to Consider the Work Thus Far – Monday, April 2 1:30-3:30
12:00  Adjourn
Green Roof Review Task Force
Summary – Meeting #5 – March 21, 2018

Meeting Objectives:
▪ Background – Roofing and Insurance
▪ Examine the Matrices

I. Preliminary Matters
Reminder of protocols – to help free up creativity, no one should tie any member of the group to any proposed solution or idea – everyone has to explore options, even those they may not support in the end

II. Roofing 101
- Temperature, weather, freeze-thaw cycles, extreme weather events, winds – all impact whether roofs installations and roof replacements are successful
- Be very wary of one-sized solutions – not every building needs a cool roof, not every building can support the weight of a green roof – no one solution fits every situation

Q: Bi-facial solar installations with a cool roof work in other states – what’s your view?
A: I don’t like blanket statements, we are not against white roofs, but they don’t function well here all the time

Q: Is there way to determine the best white roof for each type of building in Denver?
A: You need a designer that has a good understanding of the roof and building system for any individual building

Q: Are there any UL-tested green roofs? Having a UL listing helps fire departments and insurance companies and financiers to accept a project
A: Not aware of any UL-listed green roof systems
A: There are certifiers – other than UL – who have tested and certified green roof systems

Q: What are the coatings and what is the purpose?
A: Coatings are for waterproofing; surface coatings are expensive and hard to apply correctly; a good designer is important
A: The key with a roof replacement or a new roof is having a good consultant involved upfront so when you go out to bid you get qualified bids; we need qualified designers and contractors; roofing is a specialty, and it’s difficult to find qualified designers

III. Insurance 101
▪ Design and integrity of construction will determine possible, future claims
▪ Two types of insurance – property insurance and general liability
▪ Additional load from the weight of soil and vegetation will matter
▪ Other cities with green roof programs – coverages exist
▪ Insurance coverage for green roofs will have specific coverage for plants
▪ Water intrusion risk is important
• Three levels of coverage that will vary from building to building – depreciated coverage, full roof replacement, and law-and-ordinance coverage

Q: Is there a difference in pricing in white vs green?
A: It depends on the type of green roof and exposure

Q: Is there an additional cost if there’s public access?
A: Yes, additional injury exposure
A: How risk will be underwritten depends on the policy and the price

Q: Can you estimate the percentage increase of coverage if and when a conventional roof has to be replaced by green, solar or a combination?
A: I don’t know if it would be a percentage increase, you should get an audit by a roofer to see if there is an increased cost to roof replacement; it really depends on the policy, it depends on the sublimit

Q: What is the most common type of coverage large, commercial buildings?
A: The green roof would have a business policy and would likely have full replacement; the replacement insurance replaces the roof to similar standards to the situation you were in before damage; law and ordinance depends of the carrier of the policy

Q: Is there a limit to the current law and ordinance coverage or its up the policy owner?
A: Yes, it is up to the property owner but it’s not cheap, it all depends on property values
A: Commercial policies are re-set every year; at the time you replace your coverage, you have the opportunity to deal with the current ordinance; if anything happens before the coverage can change, the owner is at risk for the additional cost. Many building owners have exposure this year prior to when their policies re-up to being underinsured for a roof replacement coming up to the new code that includes the green roof requirement.

Q: Do protection measures effect liability and decrease insurance costs?
A: Yes, it makes sense to take extra security measures; underwriters will need to understand the potential risks; those risks will determine the price
A: Many will carry law and ordinance policies; premiums will increase because the cost to replace or to comply with the ordinance would increase

IV. Matrices – Introduction – Small Groups and Staff Simplification
   - Heat island and Green
     • Green on the ground and green on the roof are valued equally in the draft
     • PV shade structures get points
     • Adding or preserving trees get points
     • Extra points if the green space is accessible, is visible from the street or is used for food production
     • A financial contribution spend on local green space is an option in the draft; discussions are positive with staff from Parks and Rec

   - Storm water
• Alternative compliance pathways to create options and give points for the things that improve water quality
• Green space on the ground scores for water quality benefit
• Tree canopy - larger, older trees have additional value
• Bio-retention – meet standard for current city code and anything over would be extra points
• Water quality capture volume has value
• Offsite water treatment

- Climate strategies
  • Separated as a way of unlinking them from time of roof replacement
  • New buildings- full points for what is on the ballot
    o Full points for certified net zero buildings
    o Lower point levels for lower amounts of PV and offsite
    o Energy efficiency points
  • Existing buildings
    o Suggest separate climate program what would be decoupled from roof replacement
    o 3 points on roof replacement to address urban heat island and green experience
    o Mild climate program ongoing - high performance, retro commissioning

- City staff thought that these matrices was too complicated and offered a first draft of a simplified approach; all strategies would need to be normalized so each gets one point; a new building would have to get 6 points

V. Discussion

Existing Buildings

▪ Doing what’s in the ordinance today should get full points and you’re done

Q: What is a green wall?
A: Plants that are stacked vertically

Q: What do we do with exemptions for major structural alterations?
A: The goal is to create viable pathways for buildings that don’t have a structure to support the full weight and avoid exemptions, making a path that works for everyone

▪ There is a solar and energy efficiency baseline but no baseline for water
▪ WaterSense-labeled technologies can create more benefit than some of the individual strategies (WaterSense is in the same vein as Energy Star)
▪ Existing buildings – the existing ordinance should be the guide – because that’s what we have in black in white; there are too many things in the matrix for existing buildings
▪ Let’s create flexibility for small buildings and retail buildings and people without a lot of money
▪ We need to define ‘available roof space’ so we can get to specifics
▪ Existing – what if we had only three paths
  o Do what the ordinance says
- Do 100% solar or
  - 100% cool roof
- We could stick to options that are on the roof and not give them a laundry list of exemptions for existing buildings
- Building owners like the idea of flexibility but these versions of the matrices are confusing
- Sticking to meeting 3 categories makes it more rigid and we were looking for flexibility
- Not all buildings can be all things to all people; simplify it by saying ‘here are the points you need and how you get there is up to you’ – without making all buildings hit everything
- Get all 3 points by having a cool roof with some mild climate upgrades – that’s a reasonable compromise
- We missed a whole category of water conservation – implement graywater system, capture and reuse
- The key to success with the roll out for existing building is to make it simpler, easier to enforce, easy to comply and cost effective
- Cool roofs – very cost effective and doable and eager compliance
- Sophistication of building managers and engineers is limited; small building operator would run into a lot of mistakes with the permit employee because of limited understanding
- Three options that are easy to understand, then incentives to do more; tax credits; carrot instead of the stick
- If we allow cool roof as an option then everyone would choose cool roof as an option, but we will lose benefit of green experience and climate
- What if potion of cost gets budgeted to community benefit – the difference between cool roof and what the ordinance would have cost should go into a fund
- Three options plus the climate benefits will increase costs
- Downtown businesses met and asked for options, including the option of putting green space on the ground or on a mid-level roof surface or deck
- The status quo is what we have as of January 1st; we cannot go back to the world where these options do not exist
- We haven’t looked at the details of the matrices and we’re already stepping away from them – there are ways to make them less complicated without throwing out the whole idea of flexibility and options
- Remember – an exemption from the green roof does not create an exemption from the solar requirement – a very large number of existing buildings will be able to do solar and will be required to under the current ordinance – that has a far greater climate benefit than only a cool roof
- The climate program option allows for a climate benefit in some proportion to the solar requirement but allows for flexibility in how the climate benefit is realized
- The idea of paying into a fund is promising
- For existing buildings, it has to be simple and have options
- Putting in options that aren’t realized for 5-10 years down the road makes it complicated
- Net zero exemption- True net zero or just electricity? needs to be clarified
- If you have hail damage and you weren’t budgeting to replace your roof, then that’s the only instance that I see an exemption
- Cost effective is the key – cool roofs are a big win – we would be the only city in the country that will have a cool roof ordinance for existing buildings – that’s a big benefit
- Updated codes get more stringent over time; that will move us to solve energy efficiency issues
- Unintended consequences are the most important concern
- We may have three categories of buildings, not two – new buildings, existing buildings and major renovations
- Hundreds of people are moving here a month and if we have stopped building in the city that has impacts on residents and on the building community
- The level of resistance would change if we give roofers a time to figure this out and find ways to make it work and sell ideas to building owners; there’s a learning curve; if existing buildings just had to do a cool roof until this revision passes, people could wrap their minds around the changes
- If we simplified it to the 3 options, it is important to keep the cash-in-lieu and some element of green
- The next version has to separate out different building types – different point totals or weights perhaps

Q: Will this all delay permitting?
A: Once we figure out a formula, this will take longer, at least two-week to a two-month delay; industry will have to get used to it; it will involve engineers and architects; no concern for learning curve within the city

- Climate strategies could start whenever this group would want them to start if people need time to get their minds around the recommendation and the replacement ordinance
- We know that a green roof doesn’t work for many existing buildings, but it would be a mistake to jump to cool roof only because we can all be certain that voters wanted something to do with climate
- Energy efficiency should still be part of the options

Q: Do we jeopardize Xcel incentives?
A: We don’t risk the solar incentives – they will always be available from Xcel

- The insurance gap is important and could create a hardship if coverage hasn’t caught up with requirements

Q: On storm water – are the square footages of green on the roof too small on small building to be an effective stormwater retention strategy?
A: There would be benefit because you are holding off that small amount of runoff

Q: is there a size below which a solar array would not be beneficial?
A: It depends on the energy profile. It does have some benefit. it’s a risible accommodation

- For existing compliance methods, don’t dilute today’s ordinance; if you can you meet the ordinance today, then do that; if not, and if it’s a structural reason, then being able to choose the energy efficiency is good
- Outreach and training is the thing that will get building owners and managers to adopt the energy efficiency strategies on a voluntary basis
- We aren’t far apart – three paths – the ordinance, all solar and cool roof with some mild upgrades on the energy side that might not start for a number of years – that seems possible

New Buildings

- LEED Gold instead of ordinance should be an option
- During implementation process, having Denver facilitate workshops bringing builders, roofers, solar industry, energy efficiency, etc, together will help with change
- Allowing new buildings to move the green space off the roof to make it more accessible and to prevent the increased insurance cost associated with having people on the roof makes sense
- There is a lot in the matrix for new buildings that is very valuable
- The green spaces don’t need to be on the rooftop
- We have to reconcile the mixed message we’re sending – we say we want choices but now that we have choices we want simplicity – we have to make that choice
- LEED Gold time period between building permit and receiving LEED status can be years, so we have to think through the time complication
- LEED equivalency is valuable as well – so that owners can make the improvements but skip the certification effort if they choose to
- The options for new buildings are good, but have to be simplified; weed out the redundancies; a 6-point scale may be too simple
- Meeting the different categories for new buildings is good
- We could simplify the matrix if we replace tactics with performance measures and put the tactics in a list that a building owner or developer can use

Q: Could the existing ordinance work as it stands today for new buildings?
A: In a straw poll, four said that it would work as is

VI. Next Steps

- Use today’s discussion to create an option that could be the basis for an agreement – begin with the idea of three paths
- Staff will revise the matrices to respond to the feedback about the need for simplicity, and other feedback from today
- Questions Stantec could help answer
  o Can we get research on other cities with green roof programs and any impact on heat island? When Stantec spoke with the other cities, we learned that they are not yet tracking it
  o On the matrices – it would be useful to know how the options align with the city’s climate goals
- Council committee-of-the-whole – April 2 – 1:30-3:30 in City and County Building – it will be televised – no public comment opportunity
- Meeting #6 – Friday, April 6 10:00 – 1:00
**DRAFT City and County of Denver Green Building Compliance Matrix**

**Existing Buildings, 65 points total**

<table>
<thead>
<tr>
<th>COMPLIANCE STRATEGIES</th>
<th>Urban Heat Island</th>
<th>Green Experience/ Air Quality</th>
<th>Water &amp; Stormwater Management</th>
<th>Greenhouse Gas Emission Reductions</th>
<th>Dark Blue = High, Light Blue = Low, Green=Positive, Yellow= Zero, Red=Negative</th>
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<tbody>
<tr>
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<td>Time of Roof Replacement</td>
<td>Ongoing Climate Requirements</td>
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**Streaming Surfaces**: Points shown are as if the entire square footage required by the ordinance on a roof was covered. Partial points for partial coverage, bonus points for higher percent coverage.

| Green Roof Non-accessible/non-street visible | 25 | 25 | 25 |
| Accessible Green Roof | +0 | +10 | +0 |
| Street Visible Green Roof | +0 | +5 | +0 |
| Rooftop food production | | +10 |
| Blue Roof (Water holding basin. Same coverage as required to be green under the ordinance.) | | | |
| Roof-top Water Harvesting (Use of water collected from roof for irrigation of vegetated areas on site)***Requires adequate water rights for implementation*** | 25 |
| Cool Roof (High-Albedo, SRI >82. More points shown because always covers full roof) | 40 |

**Ground Surfaces**: Points shown are as if the entire square footage required by the ordinance on a roof was completed on the ground. Partial points for partial coverage, bonus points for higher percent coverage.

| High-Albedo or PV Shade Structures along pedestrian access and parking | 20 |
| Groundcover and Shrubs | 25 | 35 | +5 |
| Multi-functional Green Space (WQ, Detention, Amenity) | | | +15 |
| Trees - Existing to be Retained - points per percent of required square foot that will be covered with tree canopy in 10 years | +15 | +5 | +20 |
| Trees - New (G over Impervious Area) - points per percent of required square foot that will be covered with tree canopy in 10 years | +15 | +5 | +5 |
| Ground-level food production | | +10 |
| BMPs with Infiltration to Subgrade | 15 |
| Reduce WQCV through Unconnected Impervious Area (MDCIA) | 20 |
| Providing WQCV for exempt projects | 40 |
| Treatment offsite flow (ROW, Adjacent Prop) | 40 |
| Provide Excess Urban Runoff Volume (EURV) | 25 |
| Green walls and hedges | 25 | 25 |
| Financial contribution for off-site green space | tbd | tbd |
| Bike Racks | 1-3 |

**Solar and Energy Efficiency**

| ENERGY STAR Score 80 or higher, reviewed every 5 years | 5 points per 5 yrs |
| EUI 20% below 2016 baseline, maintained over time. (40% EUI improvement earns double the points.) | 5 points per 5 yrs |
| Retrocommissioning (Study and complete all measures under 18 month payback. Has to be repeated every 5 years to maintain savings) | 5 |
| Lighting upgrades to LED’s (1 point per 4% total expected building energy savings. Points are double if completed by 2025. 50% more if completed by 2030.) | 1-5 |
| System upgrades. (More efficient than code where code applies. Calculated energy savings should be reported. 1 point per 4% total calculated building energy savings from an energy assessment. Points are double if completed by 2025, 50% more if completed by 2030.) | 1-25 |
| On-Site Solar PV - (Coverage of 70% in combination with a green roof, as on the ballot. Partial points given for partial coverage, bonus points for additional coverage.) | 25 |
| On-Site other renewable energy. (20% of energy use covered. Points adjust for percent coverage and contract term.) | 25 |
| Off-Site Solar PV (20% of energy use covered with solar, 25 year contract. points adjust for percent coverage and contract term.) | 25 |
| Net Zero Building - DOE Net Zero Energy or Carbon, or Living Building Challenge Zero Energy | 70 |
| Electric Vehicle charging stations (5 points for every 10% of occupants who can charge) | 1-3 |

**TOTAL POINTS**

Any projects receiving credit in the “Water & Stormwater Management” column should receive points only for projects that follow guidelines in Denver Ultra Urban Green Infrastructure Guide or Urban Drainage and Flood Control Criteria Manual, Volume 3, Chapter 4.
## DRAFT City and County of Denver Green Building Compliance Matrix

### New Buildings

*100 points required (10 minimum in each column)*

Compliance could be met through what was on the ballot. Otherwise the matrix below may be used as an alternative.

All requirements should be met in a way that is additional to what was required prior to ordinance passage to honor the vote. Alternate strategies and technologies not on this list that honor the benefits will be considered upon request.

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<td>Ground-level food production</td>
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<td><strong>Runoff Reduction and Bioretention Performance</strong></td>
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<td>Bike Racks</td>
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<td>Location near high quality transit</td>
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<td><strong>SOLAR AND ENERGY EFFICIENCY</strong></td>
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<td>Exceed Current Energy Code by 5%. (Double the points for 10% beyond code, etc.)</td>
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Therefore:

STEP 1 - Upon Adoption of New Ordinance - All Buildings Covered by the Existing Ordinance would enroll in Climate Program

Minimum - 5 points/year or 25 total over 25 years

Points can be earned early and banked.

<table>
<thead>
<tr>
<th>Capital Cost</th>
<th>Net Present Value</th>
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SOLAR AND ENERGY EFFICIENCY

ENERGY STAR Score 80 or higher, reviewed every 5 years. 5 points per 5 yrs

EUI 20% below 2016 baseline, maintained over time. (40% EUI improvement earns double the points.) 5 points per 5 yrs

Retrocommissioning (Study and complete all measures under 18 month payback. Has to be repeated every 5 years to maintain savings) 5

Lighting upgrades to LED’s (1 point per 4% total expected building energy savings. Points double if completed by 2025, 50% more if completed by 2030.) 1-5

System upgrades. (More efficient than code where code applies. Calculated energy savings should be reported. 1 point per 4% total calculated building energy savings from an energy assessment. Points are double if completed by 2025, 50% more if completed by 2030.) 1-25

On-Site Solar PV – (Coverage of 70% in combination with a green roof, as on the ballot. Partial points given for partial coverage, bonus points for additional coverage.) 25

On-Site other renewable energy. (20% of energy use covered. Points adjust for percent coverage and contract term.) 25

Off-Site Solar PV (20% of energy use covered with solar, 25 year contract. Points adjust for percent coverage and contract term.) 25

Net Zero Building - DOE Net Zero Energy or Carbon, or Living Building Challenge Zero Energy 70

Electric Vehicle charging stations (5 points for every 10% of occupants who can charge) 1-10

STEP 2 - At Roof Replacement, Earn 3 Points

All requirements should be met in a way that is additional to what was required prior to ordinance passage to honor the vote. Alternate strategies and technologies not on this list that honor the benefits will be considered upon request.

BENEFITS OF ORDINANCE

COMPLIANCE STRATEGIES

<table>
<thead>
<tr>
<th>Capital Cost</th>
<th>Net Present Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dark Blue = High, Light Blue = Low</td>
<td>Green=Positive, Yellow=Varies, Red=Negative</td>
</tr>
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</table>

ROOF SURFACES - Points shown are as if the entire square footage required by the ordinance on a roof was covered. Partial points for partial coverage, bonus points for higher percent coverage

| Green Roof Non-accessible/non-street visible | 1 | 1 | 1 |
| Accessible Green Roof | 1 | 1 | 1 |
| Street Visible Green Roof | 1 | 1 | 1 |
| Rooftop food production | 1 | 1 | 1 |
| Blue Roof (Water holding basin. Same coverage as required to be green under the ordinance.) | 1 |
| Roof-top Water Harvesting (Use of water collected from roof for irrigation of vegetated areas on site) ***Requires adequate water rights for implementation*** | |
| Cool Roof (High Albedo, SRI >82. More points shown because always covers full roof) | 3 |

GROUND SURFACES - Points shown are as if the entire square footage required by the ordinance on a roof was completed on the ground. Partial points for partial coverage, bonus points for higher percent coverage

| High Albedo or PV Shade Structures along pedestrian access and parking | 1 |
| Green Space | 1 | 1 |
| Groundcover and Shrubs | 1 |
| Multi-functional Green Space [WQ, Detention, Amenity] | 1 |
| Trees - Existing to be retained - points per percent of required square foot that will be covered with tree canopy in 10 years | 1 | 1 | 1 |
| Trees - New (5F over Impervious Area) - points per percent of required square foot that will be covered with tree canopy in 10 years | 1 | 1 | 1 |
| Ground-level food production | 1 |
| Runoff Reduction and Bioretention Performance | |
| BMPs with Infiltration to Subgrade. | 1 |
| Reduce WQCV through Unconnected Impervious Area (MDCIA) | 1 |
| Providing WQCV for exempt projects | 1 |
| Treatment offsite flow (ROW, Adjacent Prop). | 1 |
| Provide Excess Urban Runoff Volume (EURV) | 1 |
| Green walls and hedges | 1 | 1 |
| Bike Racks | | |
# DRAFT City and County of Denver Green Building Compliance

## NEW BUILDINGS - OPTION 1 - COMPLIANCE WITH ORDINANCE AS ADOPTED BY VOTERS

Compliance could be met through what was on the ballot. Otherwise the matrix below may be used as an alternative.

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<tr>
<th>COMPLIANCE STRATEGIES</th>
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**NEW BUILDINGS OPTION 2 - If you Don’t Like Option 1**

New Buildings - Earn SIX Points - One Each From THREE Columns

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**ROOF SURFACES** - Points shown are as if the entire square footage required by the ordinance on a roof was covered. Partial points for partial coverage, bonus points for higher percent coverage.

- **Green Roof Non-accessible/non-street visible**
- **Green Roof Solar Combo**
- **On-Site Solar PV** (Coverage of all available roof space.)
- **Rooftop Water Harvesting (Use of water collected from roof for irrigation of vegetated areas on site)*** Requires adequate water rights for implementation***
- **Cool Roof (High Albedo, SRI >82)**
- **High-Albedo or PV Shade Structures along pedestrian access and parking**
- **Groundcover and Shrubs**
- **Multi-functional Green Space (WQ, Detention, Amenity)**
- **Trees - Existing to be Retained - points per percent of required square foot that will be covered with tree canopy in 10 years**
- **Trees - New (SF over Impervious Area) - points per percent of required square foot that will be covered with tree canopy in 10 years**
- **Ground-level food production**
- **Runoff Reduction and Bioretention Performance**
  - BMPs with Infiltration to Subgrade.
  - Reduce WQCV through Unconnected Impervious Area (MDCIA)
  - Providing WQCV for exempt projects
  - Treatment of offsite flow (ROW, Adjacent Prop.)
  - Provide Excess Urban Runoff Volume (EURV)
  - Green walls and hedges
  - Financial contribution for off-site green space
  - Bike Racks
  - Location near high quality transit

**GROUND SURFACES** - Points shown are as if the entire square footage required by the ordinance on a roof was completed on the ground. Partial points for partial coverage, bonus points for higher percent coverage.

- **Groundcover and Shrubs**
- **Multi-functional Green Space (WQ, Detention, Amenity)**
- **Trees - Existing to be Retained - points per percent of required square foot that will be covered with tree canopy in 10 years**
- **Trees - New (SF over Impervious Area) - points per percent of required square foot that will be covered with tree canopy in 10 years**
- **Ground-level food production**
- **Runoff Reduction and Bioretention Performance**
  - BMPs with Infiltration to Subgrade.
  - Reduce WQCV through Unconnected Impervious Area (MDCIA)
  - Providing WQCV for exempt projects
  - Treatment of offsite flow (ROW, Adjacent Prop.)
  - Provide Excess Urban Runoff Volume (EURV)
  - Green walls and hedges
  - Financial contribution for off-site green space
  - Bike Racks
  - Location near high quality transit

**SOLAR AND ENERGY EFFICIENCY**

- **Exceed Current Energy Code by 5%**.
  - Double the points for 10% beyond code, etc.)
  - On-Site Solar PV - (Coverage of all available roof space, or up to 70% in combination with a green roof, as on the ballot. Partial points given for partial coverage.)
  - On-Site other renewable energy - 20% of energy use covered. Points adjust for percent coverage and contract term.
  - Off-Site Solar PV - 20% of energy use covered with solar, 25 year contract.
  - Net Zero Building - DOE Net Zero Energy or Carbon, or Living Building Challenge Zero Energy
  - Electric Vehicle charging stations (5 points for every 10% of occupants who can charge)

**TOTAL POINTS**

Any projects receiving credit in the “Water & Stormwater Management” column should receive points only for projects that follow guidelines in Denver Ultra Urban Green Infrastructure Guide or Urban Drainage and Flood Control Criteria Manual, Volume 3, Chapter 4)