



URBAN GREEN WALL | A LIVING LABORATORY

MONITORING REPORT | 2016-2017

BACKGROUND

The urban green wall is an active experiment to bring nature to unexpected places in the city. Part plant, part infrastructure—it's living architecture! Since its installation in July of 2016, City staff have been monitoring the wall's performance, testing different species, and adapting maintenance techniques to determine what works best in the challenging conditions of our local climate. From rapidly changing temperatures to drying winds, fluctuations in delivery of water and nutrients to vertical growing conditions, the urban green wall is the first year-round installation to face the extremes of the Front Range. This monitoring report captures challenges and adaptations to date to expand community knowledge about the feasibility of living architecture in Fort Collins and across the Front Range.

MAINTENANCE + MONITORING

The living wall is maintained by the City of Fort Collins Parks Department with input from project partners in Natural Areas and Colorado State University's Department of Horticulture and Landscape Architecture. Since July of 2016, Parks staff have photographed the wall monthly to track vegetation patterns over time. They have also recorded observations and maintenance events in a log to document changing conditions on the ground (e.g. hand weeding, pruning, plant replacement, plant die-off, fertigation adjustments, etc.). Their findings are summarized in the Image Tracking sections that follow, and the entire Maintenance and Monitoring Log is attached for reference as Appendix A.



TESTING . . . TESTING . . .

The first round of plants tested on the living wall consisted of a mix of sedum and herbaceous cultivars selected for their hardiness and ability to adapt to extreme conditions. They were planted as plugs directly into Sempergreen Flexipanel cells and cared for at a local nursery until installation.



Species tested at the time of installation included:

- *Sedum spurium* 'Blaze'
Blaze Stonecrop
- *Thymus praecox* 'Coccineus'
Pink Creeping Thyme
- *Thymus praecox* 'Nutmeg'
Creeping Thyme
- *Sedum rupestre* 'Angelina'
Angelina Stonecrop
- *Thymus lanuginosus*
Woolly Thyme
- *Ajuga reptans* 'Chocolate Chip'
Dwarf Carpet Bugle
- *Sedum spurium* 'John Creech'
John Creech Stonecrop
- *Sedum spurium* 'Voodoo'
Voodoo Stonecrop
- *Delosperma* 'Lavender Ice'
Lavender Ice Iceplant

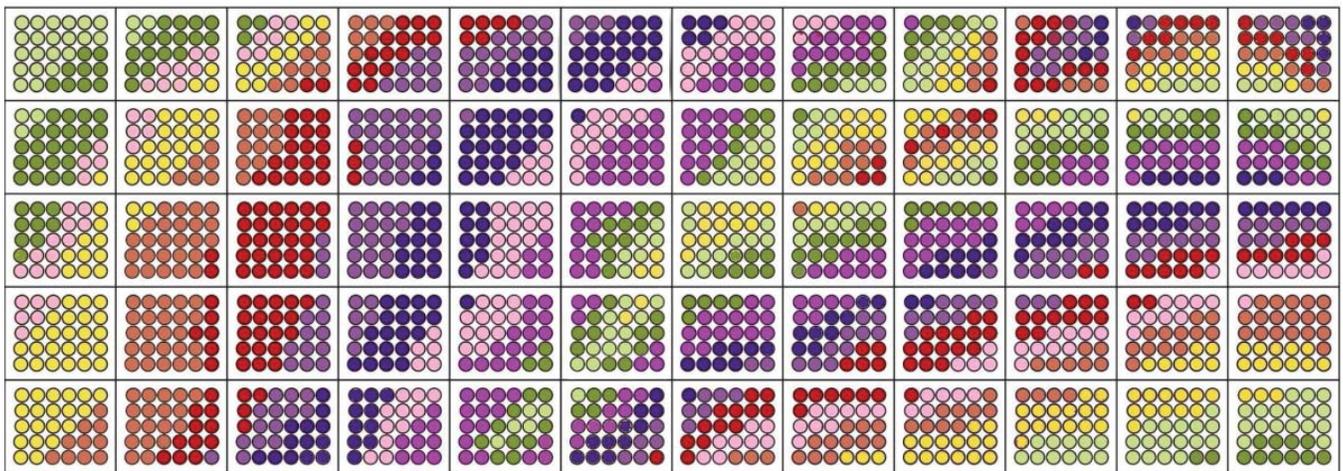
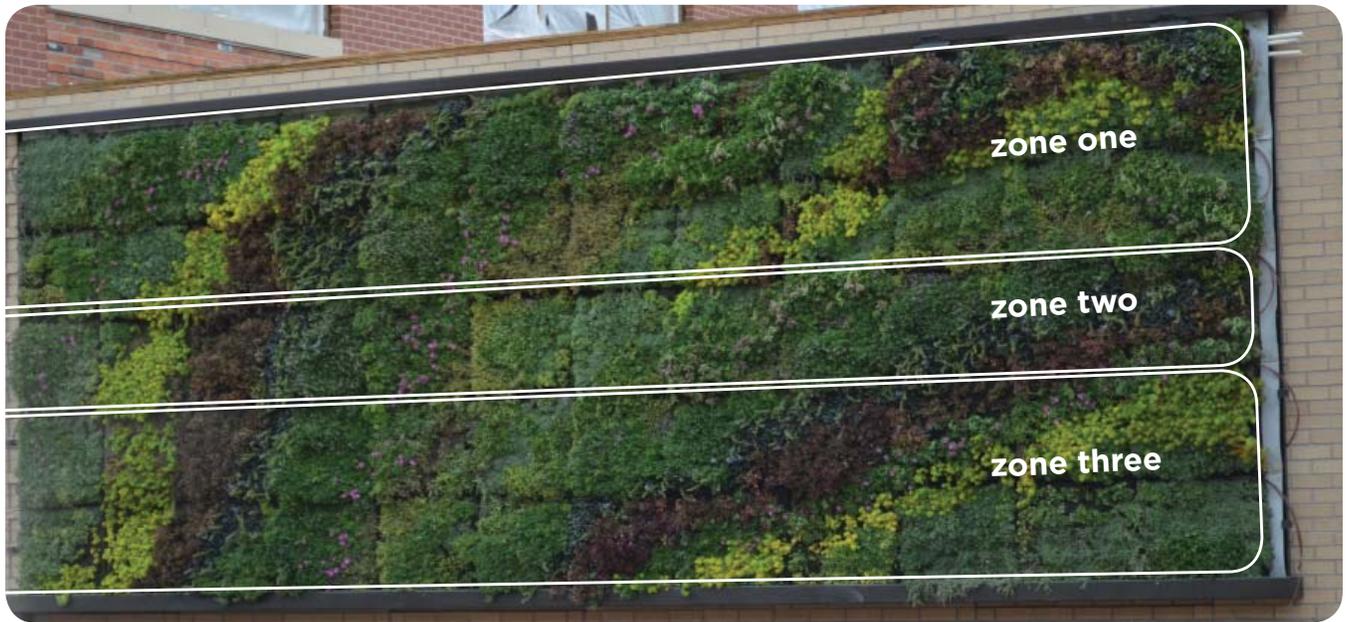


IMAGE TRACKING | 2016

JULY

Pre-planted Flexipanel was installed on site on July 18, 2016 with the following system settings: N-P-K: 17-2-5; Dosatron rate of .035; irrigation set to run once per day for nine minutes per zone (see zone diagram below).



AUGUST | DIE-OFF

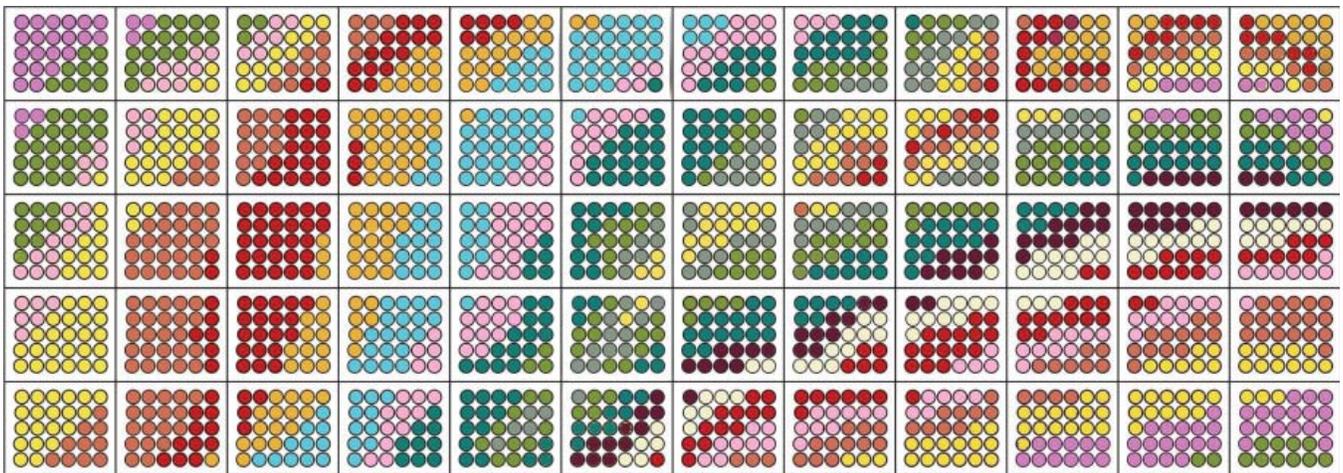
Ongoing construction and the installation of the surrounding landscape interrupted the living wall's irrigation and fertigation settings and lead to wildly varied and excessive run times during the first month of establishment. In addition, the absence of a fertigation bypass valve lead to delivery of the entire season's nutrients in the first week following installation. As a result, all of the herbaceous species (*Thymus praecox* 'Coccineus'; *Thymus lanuginosus*; *Thymus praecox* 'Nutmeg'; *Ajuga reptans* 'Chocolate Chip') died from over-fertilization, over-watering, drought, or a combination of all three (outlined below in white). Several of the surviving species exhibited signs of shock (*Delosperma* 'Lavender Ice') and/or root rot (*Sedum rupestre* 'Angelina').



AUGUST | REPLANT

To replace lost specimens, the team focused on testing additional sedum and delosperma cultivars as they seemed best equipped to withstand the stresses of drought, over-watering, and intense nutrient delivery experienced by the wall in July. On August 1, 2016, test plots of *Sedum tetractinum* 'Coral Reef' and *Sedum nevii* 'Silver Frost' were installed to give the maintenance team time to refine watering schedules and develop a more nuanced understanding of the irrigation system. After a successful trial period, the species depicted below were added to the wall as plugs on August 26, 2016.

- *Sedum tetractinum* 'Coral Reef'
Chinese Sedum
- *Delosperma* 'Fire Spinner'
Fire Spinner Ice Plant
- *Sedum reflexum* 'Blue Spruce'
Blue Spruce Stonecrop
- *Sedum sexangulare*
Tasteless Stonecrop
- *Delosperma* 'John Proffitt'
John Proffitt Ice Plant
- *Sedum hybridum* 'Czar's Gold'
Mongolian Stonecrop
- *Sedum nevii* 'Silver Frost'
Southern Stonecrop
- *Sedum spurium* 'Dragon's Blood'
Dragon's Blood Stonecrop



Irrigation was shifted to “odd” days of the week and set to run at 9:00 am for fifteen minutes in zone one, ten minutes in zone two, and five minutes in zone three. Fertigation was terminated for the remainder of the season.



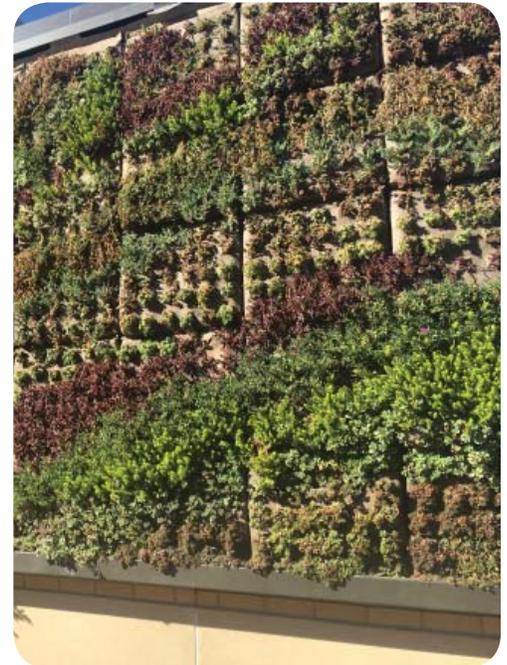
SEPTEMBER

No adjustments were recorded for the living wall in September. No die-off was noted and most species appeared stable.



OCTOBER

Deadheading and pruning occurred to trim-up “leggy” specimens (e.g. *Sedum rupestre* ‘Angelina’). No other system adjustments were recorded.



NOVEMBER [NO IMAGE]

The irrigation system was blown out on November 2, 2016, and the maintenance team shifted to hand watering once per week, or as dictated by weather (consecutive days above freezing). By mid-November, *Delosperma* species were observed to be “struggling.”

DECEMBER

The living wall was hand watered as needed.



IMAGE TRACKING | 2017

JANUARY [NO IMAGE]

Hand watering continued as needed. *Sedum tetractinum* 'Coral Reef' appeared to be "shriveled," and all *Delosperma* continued to struggle.

FEBRUARY

Hand watering continued as needed. Die-off was recorded for all *Delosperma* and *Sedum tetractinum* 'Coral Reef' (outlined below in white). New growth was observed for *Sedum rupestre* 'Angelina,' *Sedum* 'Blue Spruce,' *Sedum hybridum*, and *Sedum sexangulare*.



MARCH

Hand watering continued as needed, irregular moisture levels were observed across the panels, and surviving species exhibited signs of new growth. Insects were observed taking an interest in the wall by mid-March.



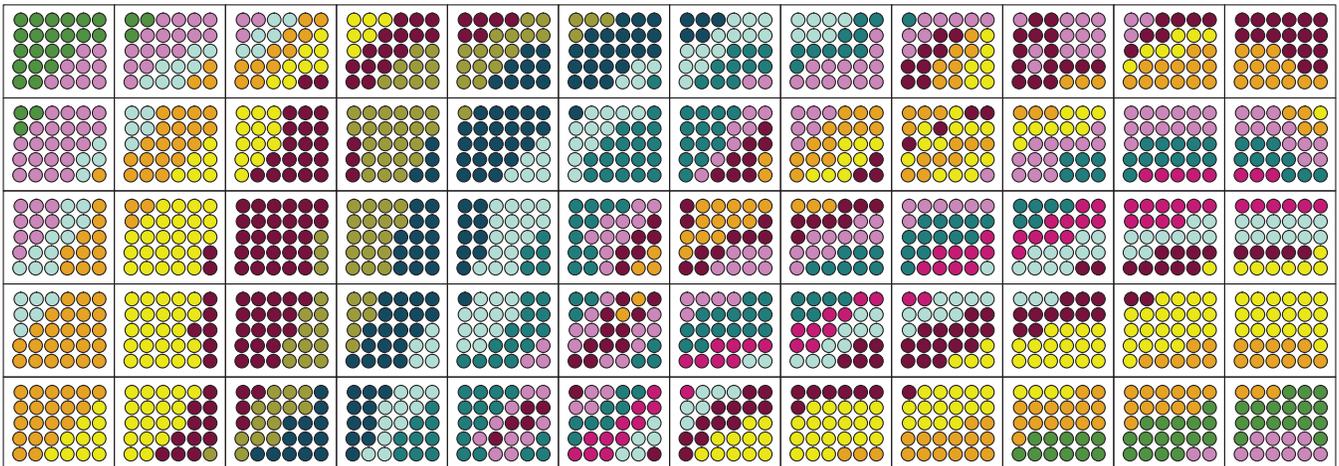
APRIL

Irrigation and fertigation started up again in April with a new NPK ratio: 21-7-21 +3MgO. The maintenance team assessed die-off and species performance and developed a replacement plant palette to test in 2018.



Some bands of die-off were filled in with existing species (e.g. *Sedum spurium* 'Voodoo,' *Sedum sexangulare*, *Sedum rupestre* 'Angelina'). As all *Delosperma* and *Sedum tetractinum* 'Coral Reef' did not survive the winter, the grasses depicted below were proposed to replace them and continue plant trials.

- *Bouteloua dactyloides*
Buffalo Grass
- *Cynodon hybrida*
Dog Tuff Grass



MAY

All replacement planting (with the exception of *Bouteloua dactyloides* and one section of *Sedum nevii*) occurred on May 25, 2017. Existing *Sedum nevii* 'Silver Frost', and all existing *Sedum spurium* cultivars had a robust spring rebound. *Sedum sexangulare* slowly put out new growth, and both *Sedum rupestre* 'Angelina' and *Sedum reflexum* 'Blue Spruce' remained stable, but somewhat delicate (fell off the wall easily).



Areas awaiting the arrival of *Bouteloua dactyloides* in the upper left and lower right hand corners; zone awaiting *Sedum nevii* in the center.



2017

JUNE

No system changes were recorded. Remaining replacement plants were installed toward the end of June or in early July. Aphids were observed on the living wall!



JULY

No system changes were recorded. *Bouteloua dactyloides* was noted to be dry, *Sedum nevii* 'Silver Frost' was marked as 'struggling,' and *Sedum sexangulare* exhibited patchy performance across panels. An aphid infestation ensued and was treated in mid-July with Safer Soap, which appeared to knock back the population a bit.



AUGUST

At the beginning of the month, most winter survivors appeared to be thriving along with newly planted *Bouteloua dactyloides* (bottom right hand corner), and the *Cynodon hybrida* (left of center). *Bouteloua dactyloides* in the top left hand corner struggled. Aphids persisted and ladybugs were brought in to help control the population by mid-August. Dead plant matter was removed and several species were trimmed back to try to contain the infestation. Irregular panel saturation and uneven water flow were noted, and fertigation ceased. The team made the decision to hold off on any replacement planting until the spring of 2018 to see if winter's chill might assist with aphid control.



SEPTEMBER

The maintenance team continued to remove dead plant material and decreased irrigation. All grasses appeared to be unaffected by the aphids and putting out new growth. Uneven moisture distribution was observed across panels.



OCTOBER

The irrigation system was blown out and hand watering commenced. Plants seemed to be stable and/or dormant.



NOVEMBER [NO IMAGE]

Hand watering continued as necessary (one minute per panel). *Cynodon hybrida* was trimmed back and surviving plants appeared to be stable. Only four ladybugs were observed, and aphids were sparse to “essentially gone.” Uneven water flow and distribution persisted, and panels without plants were quite dry.

DECEMBER

Hand watering continued as needed.



FINDINGS

After two years of experimentation, observation, and consultation with living architecture expert Dr. Jennifer Bousselot (Colorado State University Horticulture and Landscape Architecture), the urban green wall team has learned that:

- *Sedum spurium* are resilient! They weathered most challenges that came their way and popped back to life in a variety of adverse conditions.
- Although *Sedum* in general were well suited to life on the wall, their extensive use made the wall vulnerable to infestations (e.g. aphids).
- Areas where die-off occurred created patchy ‘deserts’ that affected water flow across the wall.

NEXT STEPS

Moving forward, the living wall team will:

- Increase diversity by testing a range of genera that add structural and aesthetic variety and help the wall resist infestations;
- Break up similar planting bands with different genera (e.g. alternate between *Sedum*, *Lysimachia*, etc.);
- Moderate nitrogen inputs and watering to avoid the creation of favorable conditions for aphids.
- Maintain cover across the wall to mitigate opportunities for patchy deserts to form.



FOR QUESTIONS CONTACT:

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Environmental Planner | Natural Areas
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APPENDIX A | MAINTENANCE AND MONITORING LOG

LIVING WALL | MAINTENANCE + MONITORING DOCUMENTATION

NAME OF PERSON <i>Mullin</i>	DATE <i>8/2/16</i>	TIME (e.g. 11:00 - 11:15) <i>1:00 PM</i>	SERVICE AREA (CIRCLE) Fertigation Irrigation Pruning Weeding Pest Management Structural Other	ACTION(S) TAKEN <i>Filled Fertigation Bucket with H₂O Morning of 8/2.</i>
WEATHER (CIRCLE) 10's 20's 30's 40's 50's 60's 70's 80's 90's 100+ Sunny Cloudy Partly Cloudy Rainy Snowy Hailing/ Sleetng Windy <i>Sunny for upwards turning cloudy in the afternoon</i>	CURRENT SETTINGS N-P-K: <i>0</i> Dosatron: Irrigation Frequency: Irrigation Duration: <i>15/10/5 x 1</i> Irrigation Time of Day: <i>8:01 AM</i>			
OBSERVATIONS Plant Health: Vigor? Dry? Chlorotic? Soil Medium: Saturation? Coverage? <i>dry Panels? Coverage? Panels Dry but Soil moist</i>	RECOMMENDATIONS <i>Planted 2 New Sedums 8/1. Found H₂O was off all week and from iso valve. After watering at 7 am @ 2) checking at 1 plus still moist and happy. Check 8/3 to Adjust Watering.</i>			
SPRING MOBILIZATION* Irrigate often for shorter periods of time Irrigation: Zone run times, any adjustments?	SUMMER Increase irrigation time of each zone and/ or frequency.	FALL Decrease irrigation time of each zone and/ or frequency.	WINTERIZATION Drain pipes/ blowout and shift to hand watering (frequency to depend on climate, but plant roots must remain moist at all times!).	

- ▲ Fertigation activities include adjustments to Dosatron settings, NPK ratios and frequency (dose rates), checking tank levels, refilling liquid fertilizer, and cleaning filters.
- Irrigation activities relate to changes in frequency, duration, time of day, as well as general system assessments (e.g. checking lines and emitters).
- Any pruning or weeding activities should note what was removed (if known) and in what quantity (e.g. 11 specimens).
- △ Any pest management activities should describe what pest is being managed (if known), what has been applied, and in what quantity.
- Any structural maintenance includes checking the frame and flexipanel and clearing out the gutter.
- Any other actions taken that do not fall under the listed service areas should be noted and described in detail.

+ Please refer to the Routine Living Wall Maintenance guide for more detailed operations and maintenance information.

1	2	3	4	5	6	7	8	9	10	11	12	
A	B	C	D	E								

Sedum 'Blaze' | 228 (240) Plants
 Sedum 'Czar's Gold' | 220 (240) Plants
 Sedum 'John Creech' | 164 (192) Plants
 Thymus praecox 'Nutmeg' | 132 (144) Plants
 Thymus coccineus | 199 (240) Plants
 Woolly Thyme | 185 (192) Plants
 Sedum 'Voodoo' | 220 (240) Plants
 Ajuga 'Chocolate Chip' | 184 (192) Plants
 Delonix 'Lavender Ice' | 185 (192) Plants

City of Fort Collins Parks Operation Services
 URBAN LAB
 INSTITUTE FOR THE URBAN ENVIRONMENT

LIVING WALL | MAINTENANCE + MONITORING DOCUMENTATION

NAME OF PERSON	DATE	TIME (e.g. 11:00 - 11:15)	CURRENT SETTINGS	SERVICE AREA (CIRCLE)	ACTION(S) TAKEN
P. Mullin	8/3/16	6:30	N-P-K: \emptyset Dosatron: 1000/40 Irrigation Frequency: 30min Irrigation Duration: 10 min Irrigation Time of Day: 7:00 am	Fertigation Irrigation Pruning Weeding Pest Management Structural Other	None

WEATHER (CIRCLE)
10's Sunny Cloudy Partly Cloudy Rainy Snowy Halling/Sleeting Windy
20's Cloudy
30's Partly Cloudy
40's Sunny
50's Partly Cloudy
60's Rainy
70's Snowy
80's Halling/Sleeting
90's Windy
100+ Windy

OBSERVATIONS
Plant Health: Vigor? | Dry? | Chlorotic? *Seeing New Growth on John Creech - Chris Gold seems to be doing better*
Soil Medium: Saturation - dry Panels? | Coverage? *doing better*

SPRING MOBILIZATION*	SUMMER	FALL	WINTERIZATION
Irrigate often for shorter periods of time. Irrigation: Zone run times; any adjustments?	Increase irrigation time of each zone and/or frequency.	Decrease irrigation time of each zone and/or frequency.	Drain pipes/ blowout and shift to hand watering (frequency to depend on climate, but plant roots must remain moist at all times!).

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● Sedum 'Blaze' | 228 (240) Plants
● Sedum 'Car's Gold' | 220 (240) Plants
● Sedum 'John Creech' | 164 (192) Plants
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● Thymus praecox 'Nutmeg' | 132 (144) Plants
● Woolly Thyme | 185 (192) Plants
● Ajuga 'Chocolate Chip' | 186 (192) Plants
● Sedum 'Voodoo' | 220 (240) Plants
● Sedum 'Lavender Ice' | 185 (192) Plants

LIVING WALL | MAINTENANCE + MONITORING DOCUMENTATION

NAME OF PERSON <i>P. Mullin</i>	DATE <i>8/5</i>	TIME (e.g. 11:00 - 11:15) <i>6:30</i>	CURRENT SETTINGS N-P-K: Dosatron: Irrigation Frequency: Irrigation Duration: Irrigation Time of Day:	SERVICE AREA (CIRCLE) Fertigation Irrigation Pruning Weeding Pest Management Structural Other	ACTION(S) TAKEN <i>45 Tunnel Checks off. cool Temp and saturation. (cleaned up some dead plant material - left plugs</i>
WEATHER (CIRCLE) 10's <i>5+</i> 20's 30's 40's 50's 60's 70's 80's 90's 100+ Sunny <i>Cloudy</i> Partly Cloudy <i>Rainy</i> Snowy Hailing/Sleeting Windy					

OBSERVATIONS
Plant Health: Vigor? | Dry? | Chlorotic?
Soil Medium: Saturation - dry Panels? | Coverage?

RECOMMENDATIONS
Seeing new growth/blows on Voodoo. Big Spore / Coral Reef seems to be hurt. Blaze - still struggling w/ root rot.

SPRING MOBILIZATION*	SUMMER	FALL	WINTERIZATION
Irrigate often for shorter periods of time. Irrigation: Zone run times; any adjustments?	Increase irrigation time of each zone and/or frequency.	Decrease irrigation time of each zone and/or frequency.	Drain pipes/ blowout and shift to hand watering (frequency to depend on climate, but plant roots must remain moist at all times!)

- ▲ *Fertigation* activities include adjustments to Dosatron settings, NPK ratios and frequency (dose rates), checking tank levels, refilling liquid fertilizer, and cleaning filters.
 - *Irrigation* activities relate to changes in frequency, duration, time of day, as well as general system assessments (e.g. checking lines and emitters).
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Plant Legend:

- Sedum 'Blaze' | 228 (240) Plants
- Sedum 'Czar's Gold' | 220 (240) Plants
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- De osperma 'Lavender Ice' | 185 (192) Plants

Logos: City of Fort Collins Parks, Operation & Services; URBAN LAB; INSTITUTE FOR THE BUILT ENVIRONMENT

LIVING WALL | MAINTENANCE + MONITORING DOCUMENTATION

NAME OF PERSON <i>P. Allen</i>	DATE <i>8/10</i>	TIME (e.g. 11:00 - 11:15) <i>6:30</i>	CURRENT SETTINGS N-P-K: Dosatron: Irrigation Frequency: Irrigation Duration: Irrigation Time of Day: <i>9:00 am</i>	SERVICE AREA (CIRCLE) Fertigation Irrigation Pruning Weeding Pest Management Structural Other	ACTION(S) TAKEN <i>120 water off 8/10/17 Sun + checked</i>
WEATHER (CIRCLE) 10's 20's 30's 40's 50's 60's 70's 80's 90's 100+ Sunny Cloudy Partly Cloudy Rainy Snowy Hailing/ Sleetng Windy					

OBSERVATIONS <i>Plant Health: Vigor? Dry? Chlorotic?</i> <i>Soil Medium: Saturation - dry Panels? Coverage?</i> <i>Moisture levels good After Switched to Every other day</i>		RECOMMENDATIONS <i>8/8 - Switched to Watering Every other Day. Continue to monitor moisture levels. Blaze - resetting less y. New plants still doing well. Remaining plants seem to be bearing back from over watering.</i>
SPRING MOBILIZATION* Irrigate often for shorter periods of time. Irrigation: Zone run times; any adjustments?	SUMMER Increase irrigation time of each zone and/or frequency.	FALL Decrease irrigation time of each zone and/or frequency.
		WINTERIZATION Drain pipes/ blowout and shift to hand watering (frequency to depend on climate, but plant roots must remain moist at all times!)

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LIVING WALL | MAINTENANCE + MONITORING DOCUMENTATION

NAME OF PERSON <i>P. Mullin</i>	DATE <i>5/22</i>	TIME (e.g. 11:00 - 11:15) <i>12:30</i>	CURRENT SETTINGS	SERVICE AREA (CIRCLE)	ACTION(S) TAKEN
WEATHER (CIRCLE)			N-P-K: Dosatron: <i>By Pass</i> Irrigation Frequency: Irrigation Duration: <i>0.5 hrs</i> Irrigation Time of Day: <i>9:00 a.m.</i>	Fertigation Irrigation Pruning Weeding Pest Management Structural Other	
10's 20's 30's 40's 50's 60's 70's 80's 90's 100+ Sunny Cloudy Partly Cloudy Rainy Snowy Hailing/ Sleetng Windy					

OBSERVATIONS	RECOMMENDATIONS
Plant Health: <i>Vigor? Dry? Chlorotic?</i> Soil Medium: <i>Saturation - dry Panels? Coverage?</i>	<i>After Switching to 'odd's'. Moisture levels are maintaining well.</i>
SPRING MOBILIZATION* Irrigate often for shorter periods of time. Irrigation: <i>Zone run times; any adjustments?</i>	FALL Decrease irrigation time of each zone and/or frequency.
SUMMER Increase irrigation time of each zone and/or frequency.	WINTERIZATION Drain pipes/ blowout and shift to hand watering (frequency to depend on climate, but plant roots must remain moist at all times!).

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LIVING WALL | MAINTENANCE + MONITORING DOCUMENTATION

NAME OF PERSON <i>Emily Brodshoff</i>	DATE <i>10/5/16</i>	TIME (e.g. 11:00 - 11:15)
WEATHER (CIRCLE)		
10's	30's	40's
Sunny	Cloudy	Partly Cloudy
	Rainy	Snowy
	Hailing/ Sleet	Windy

OBSERVATIONS	
Plant Health: Vigor? Dry? Chlorotic?:	
Soil Medium: Saturation - dry Panels? Coverage?:	
CURRENT SETTINGS	
N-P-K:	
Dosatron:	
Irrigation Frequency:	
Irrigation Duration:	
Irrigation Time of Day:	
RECOMMENDATIONS	
FALL	Decrease irrigation time of each zone and/or frequency.
WINTERIZATION	Drain pipes/ blowout and shift to hand watering (frequency to depend on climate, but plant roots must remain moist at all times!).

- ▲ *Fertilization* activities include adjustments to Dosatron settings, NPK ratios and frequency (dose rates), checking tank levels, refilling liquid fertilizer, and cleaning filters.
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 Sedum 'Czar's Gold' | 220 (240) Plants
 Sedum 'John Creech' | 164 (192) Plants
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Version 2.0

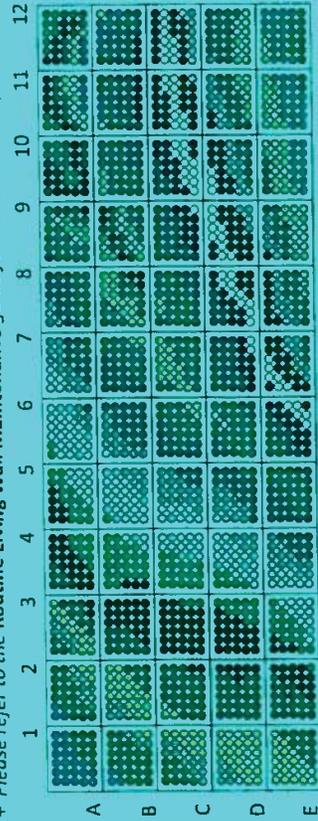
LIVING WALL | MAINTENANCE + MONITORING DOCUMENTATION

NAME OF PERSON <i>Mullin</i>	DATE <i>11/2</i>	TIME (e.g. 11:00 - 11:15) <i>2:45 pm</i>	CURRENT SETTINGS N-P-K: Dosatron: Irrigation Frequency: Irrigation Duration: Irrigation Time of Day:	SERVICE AREA (CIRCLE) Fertigation Irrigation Pruning Weeding Pest Management Structural Other	ACTION(S) TAKEN <i>Living Wall Blown out for Season.</i>
WEATHER (CIRCLE) 10's 20's 30's 40's 50's 60's 70's 80's 90's 100+ <i>Sunny</i> Cloudy Partly Cloudy Rainy Snowy Hailing/Sleetng Windy					
OBSERVATIONS Plant Health: Vigor? Dry? Chlorotic?: Soil Medium: Saturation - dry Panels? Coverage?:					
SPRING MOBILIZATION* Irrigate often for shorter periods of time. Irrigation: Zone run times; any adjustments?		SUMMER Increase irrigation time of each zone and/or frequency.		FALL Decrease irrigation time of each zone and/or frequency.	
				WINTERIZATION Drain pipes/ blowout and shift to hand watering (frequency to depend on climate, but plant roots must remain moist at all times!).	

RECOMMENDATIONS

We will begin watering by hand 1x week or as needed weather permitting!

- ▲ *Fertigation* activities include adjustments to Dosatron settings, NPK ratios and frequency (dose rates), checking tank levels, refilling liquid fertilizer, and cleaning filters.
 - *Irrigation* activities relate to changes in frequency, duration, time of day, as well as general system assessments (e.g. checking lines and emitters).
 - *Any pruning or weeding* activities should note what was removed (if known) and in what quantity (e.g. 11 specimens).
 - △ *Any pest management* activities should describe what pest is being managed (if known), what has been applied, and in what quantity.
 - *Any structural maintenance* includes checking the frame and flexipanel and clearing out the gutter.
 - *Any other actions* taken that do not fall under the listed service areas should be noted and described in detail.
- + Please refer to the **Routine Living Wall Maintenance guide** for more detailed operations and maintenance information.



<input checked="" type="radio"/> Sedum 'Blaze'	<input checked="" type="radio"/> Sedum 'Trix Spinner'	<input type="radio"/> Sedum 'Inaugurale'
<input checked="" type="radio"/> Sedum 'Czar's Gold'	<input checked="" type="radio"/> Sedum 'Summer Glory'	<input checked="" type="radio"/> Delosperma 'John Proff'
<input checked="" type="radio"/> Sedum 'John Creech'	<input checked="" type="radio"/> Sedum 'Yvondoo'	<input checked="" type="radio"/> Delosperma 'Lavender Ice'
<input checked="" type="radio"/> Sedum 'Coral Reef'	<input checked="" type="radio"/> Sedum 'Blue Spruce'	<input checked="" type="radio"/> Sedum 'Dragon's Blood'
<input type="radio"/> Sedum 'Newell'		



LIVING WALL | MAINTENANCE + MONITORING DOCUMENTATION

NAME OF PERSON <i>Emily Bredelhoff</i>	DATE <i>11/16/16</i>	TIME (e.g. 11:00 - 11:15) <i>7:00a - 9:00a</i>	CURRENT SETTINGS N-P-K: Dosatron: Irrigation Frequency: Irrigation Duration: Irrigation Time of Day:	SERVICE AREA (CIRCLE) Fertigation <u>Irrigation</u> Pruning Weeding Pest Management Structural Other	ACTION(S) TAKEN <i>Hand watering</i>
WEATHER (CIRCLE) 10's 20's 30's 40's 50's 60's 70's 80's 90's 100+ Sunny Cloudy Partly Cloudy Rainy Snowy Hailing/Sleeting Windy					

RECOMMENDATIONS

OBSERVATIONS
*Plant Health: Vigor? | Dry? | Chlorotic?
 Overall Vigor is lacking so the Delosperma Fire Spinner seems to be
 Soil Medium Saturation - dry Panels? | Coverage? Straggling and many of the
 Fire Spinner plants are browning. 4 plants missing.*

SPRING MOBILIZATION* Irrigate often for shorter periods of time. Irrigation: Zone run times, any adjustments?	SUMMER Increase irrigation time of each zone and/or frequency.	FALL Decrease irrigation time of each zone and/or frequency	WINTERIZATION Drain pipes/ blowout and shift to hand watering (frequency to depend on climate, but plant roots must remain moist at all times!).
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- ▲ *Fertigation* activities include adjustments to Dosatron settings, NPK ratios and frequency (dose rates), checking tank levels, refilling liquid fertilizer, and cleaning filters.
- *Irrigation* activities relate to changes in frequency, duration, time of day, as well as general system assessments (e.g. checking lines and emitters).
- *Any pruning or weeding* activities should note what was removed (if known) and in what quantity (e.g. 11 specimens).
- △ *Any pest management* activities should describe what pest is being managed (if known), what has been applied, and in what quantity.
- *Any structural maintenance* includes checking the frame and flexpanels and clearing out the gutter.
- *Any other actions* taken that do not fall under the listed service areas should be noted and described in detail.
- + *Please refer to the Routine Living Wall Maintenance guide for more detailed operations and maintenance information.*

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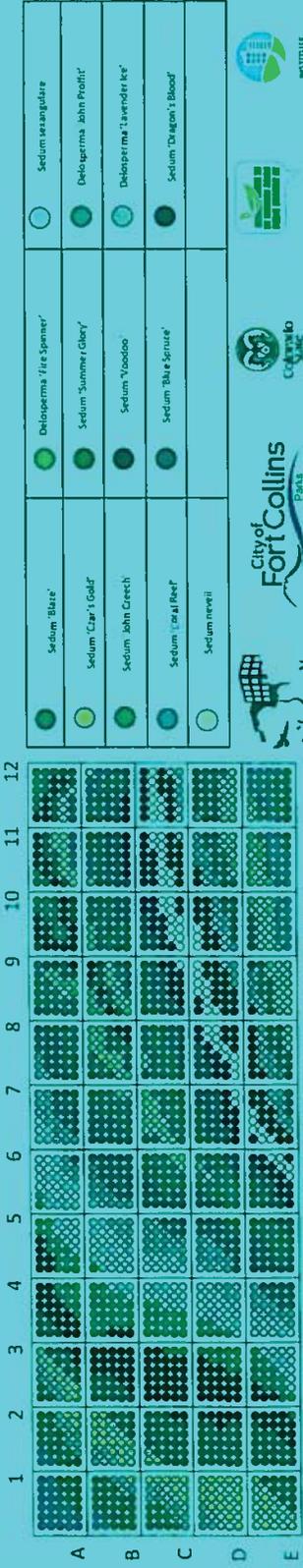
	Sedum "Blaze"		Delosperma "Fire Spinner"		Sedum arangulata
	Sedum "Coral Reef"		Sedum "Sunset Glory"		Delosperma "John Profit"
	Sedum "John Creech"		Sedum "Voodoo"		Delosperma "Lavender Ice"
	Sedum "Blue Spire"		Sedum "Blue Spire"		Sedum "Dragon's Blood"
	Sedum nevada				



LIVING WALL | MAINTENANCE + MONITORING DOCUMENTATION

NAME OF PERSON <i>Emily Brodehoeft</i>	DATE <i>11/23/16</i>	TIME (e.g. 11:00 - 11:15) <i>10a - 11:20a</i>	CURRENT SETTINGS N-P-K: Dosatron: Irrigation Frequency: Irrigation Duration: Irrigation Time of Day:	SERVICE AREA (CIRCLE) Fertigation Irrigation Pruning Weeding Pest Management Structural Other	ACTION(S) TAKEN <i>Hand watering and panel inspection.</i>
WEATHER (CIRCLE) 10's 20's 30's 40's 50's 60's 70's 80's 90's 100+ Sunny Cloudy Partly Cloudy Rainy Snowy Hailing/Sleetng Windy		RECOMMENDATIONS <i>(Other observations on back →)</i> <i>*Missing plants:</i> <i>*Panel D2: 3rd column, 3rd row and 6th column, 2nd row</i> <i>*Panel E6: 1st column, 1st row</i> <i>*Panel E6: 2nd column, 3rd row</i> <i>*Panel D10: 5th column, 1st row</i>			
OBSERVATIONS <i>Plant Health: Vigor? Dry? Chlorotic? Most plants seem to be doing well, a few dry patches but overall seem healthy.</i> <i>Soil Medium: Saturation - dry Panels? Coverage?:</i> <i>Soil was dry and hard.</i>	SPRING MOBILIZATION* Irrigate often for shorter periods of time. Irrigation: Zone run times, any adjustments?		FALL Decrease irrigation time of each zone and/or frequency.		WINTERIZATION Drain pipes/ blowout and shift to hand watering (frequency to depend on climate, but plant roots must remain moist at all times!).

- ▲ *Fertigation* activities include adjustments to Dosatron settings, NPK ratios and frequency (dose rates), checking tank levels, refilling liquid fertilizer, and cleaning filters.
- *Irrigation* activities relate to changes in frequency, duration, time of day, as well as general system assessments (e.g. checking lines and emitters).
- *Any pruning or weeding* activities should note what was removed (if known) and in what quantity (e.g. 11 specimens).
- △ *Any pest management* activities should describe what pest is being managed (if known), what has been applied, and in what quantity.
- *Any structural maintenance* includes checking the frame and flexipane's and clearing out the gutter.
- *Any other actions* taken that do not fall under the listed service areas should be noted and described in detail.
- + *Please refer to the Routine Living Wall Maintenance guide for more detailed operations and maintenance information.*



LIVING WALL | MAINTENANCE + MONITORING DOCUMENTATION

NAME OF PERSON <i>Emily Bredelheff</i>	DATE <i>12/30/16</i>	TIME (e.g. 11:00 - 11:15) <i>1:52p</i>
WEATHER (CIRCLE) 10's <input type="radio"/> 20's <input type="radio"/> 30's <input type="radio"/> 40's <input checked="" type="radio"/> 50's <input type="radio"/> 60's <input type="radio"/> 70's <input type="radio"/> 80's <input type="radio"/> 90's <input type="radio"/> 100+ Sunny <input type="radio"/> Cloudy <input type="radio"/> Partly Cloudy <input type="radio"/> Rainy <input type="radio"/> Snowy <input type="radio"/> Hailing/Sleeting <input type="radio"/> Windy <input checked="" type="radio"/>		

CURRENT SETTINGS	SERVICE AREA (CIRCLE)	ACTION(S) TAKEN
N-P-K: Dosatron: Irrigation Frequency: Irrigation Duration: Irrigation Time of Day:	Fertigation <input checked="" type="radio"/> Irrigation Pruning Weeding Pest Management Structural Other	Hand Watering

RECOMMENDATIONS	RECOMMENDATIONS
Did not notice any new missing plants.	

SPRING MOBILIZATION*	SUMMER	FALL	WINTERIZATION
Irrigate often for shorter periods of time. Irrigation: Zone run times; any adjustments?	Increase irrigation time of each zone and/or frequency.	Decrease irrigation time of each zone and/or frequency.	Drain pipes/ blowout and shift to hand watering (frequency to depend on climate, but plant roots must remain moist at all times!).

▲ *Fertigation* activities include adjustments to Dosatron settings, NPK ratios and frequency (dose rates), checking tank levels, refilling liquid fertilizer, and cleaning filters

● *Irrigation* activities relate to changes in frequency, duration, time of day, as well as general system assessments (e.g. checking lines and emitters).

■ *Any pruning or weeding* activities should note what was removed (if known) and in what quantity (e.g. 11 specimens)

△ *Any pest management* activities should describe what pest is being managed (if known), what has been applied, and in what quantity.

○ *Any structural maintenance* includes checking the frame and flexpanels and clearing out the gutter

□ *Any other actions* taken that do not fall under the listed service areas should be noted and described in detail.

+ *Please refer to the Routine Living Wall Maintenance guide for more detailed operations and maintenance information.*

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<input checked="" type="radio"/> Sedum 'Blaze'	<input checked="" type="radio"/> Delosperma 'Fire Spinner'	<input type="radio"/> Sedum 'Sanguinaria'
<input checked="" type="radio"/> Sedum 'Coral Reef'	<input checked="" type="radio"/> Sedum 'Summer Glory'	<input checked="" type="radio"/> Delosperma 'John Profit'
<input checked="" type="radio"/> Sedum 'John Creech'	<input checked="" type="radio"/> Sedum 'Woodoo'	<input checked="" type="radio"/> Delosperma 'Lavender Ice'
<input checked="" type="radio"/> Sedum 'Coral Reef'	<input checked="" type="radio"/> Sedum 'Blue Spruce'	<input checked="" type="radio"/> Sedum 'Dragon's Blood'
<input type="radio"/> Sedum 'noveboracense'		

LIVING WALL | MAINTENANCE + MONITORING DOCUMENTATION

NAME OF PERSON <i>Rita Jakerst</i>	DATE <i>1-18-17</i>	TIME (e.g. 11:00 - 11:15) <i>12:00 - 1:00</i>
WEATHER (CIRCLE) <i>Sunny</i> Cloudy Partly Cloudy Rainy Snowy Hailing/ Sleetng Windy		
10's 20's 30's 40's 50's 60's 70's 80's 90's 100+ <i>Sunny</i> Cloudy Partly Cloudy Rainy Snowy Hailing/ Sleetng Windy		

CURRENT SETTINGS	SERVICE AREA (CIRCLE)	ACTION(S) TAKEN
N-P-K: Dosatron: Irrigation Frequency: Irrigation Duration: Irrigation Time of Day:	Fertigation <i>(Irrigation)</i> Pruning Weeding Pest Management Structural Other	<i>hand watering</i>
RECOMMENDATIONS <i>replace 'lavender ice' and 'sedum voodoo' some springtime w/ different species; increase fertilizers to juga 'chocolate chip' to increase leaf production</i>		
FALL Decrease irrigation time of each zone and/or frequency.		
WINTERIZATION Drain pipes/ blowout and shift to hand watering (frequency to depend on climate, but plant roots must remain moist at all times!).		

SPRING MOBILIZATION*	SUMMER
Irrigate often for shorter periods of time. Irrigation: Zone run times; any adjustments?	Increase irrigation time of each zone and/ or frequency.

▲ *Fertigation* activities include adjustments to Dosatron settings, NPK ratios and frequency (dose rates), checking tank levels, refilling liquid fertilizer, and cleaning filters.

● *Irrigation* activities relate to changes in frequency, duration, time of day, as well as general system assessments (e.g. checking lines and emitters).

■ *Any pruning or weeding* activities should note what was removed (if known) and in what quantity (e.g. 11 specimens).

△ *Any pest management* activities should describe what pest is being managed (if known), what has been applied, and in what quantity.

○ *Any structural maintenance* includes checking the frame and flexpanels and clearing out the gutter.

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+ *Please refer to the Routine Living Wall Maintenance guide for more detailed operations and maintenance information.*



LIVING WALL | MAINTENANCE + MONITORING DOCUMENTATION

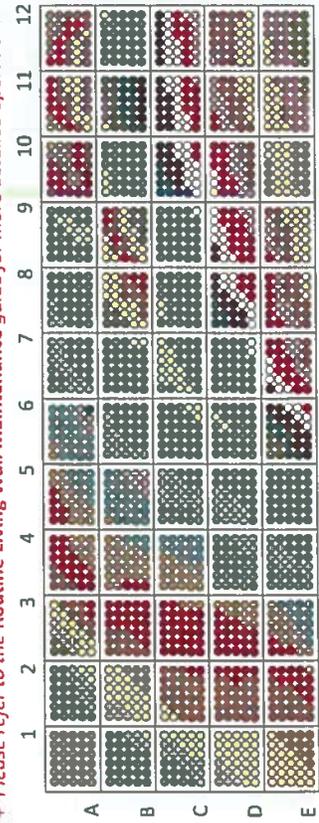
NAME OF PERSON <i>Emily Brodehoeft</i>	DATE <i>1/31/2017</i>	TIME (e.g. 11:00 - 11:15) <i>9:52a</i>	CURRENT SETTINGS N-P-K: Dosatron: Irrigation Frequency: Irrigation Duration: Irrigation Time of Day:	SERVICE AREA (CIRCLE) Fertigation Irrigation Pruning Weeding Pest Management Structural Other	ACTION(S) TAKEN <i>Hand watering</i>
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WEATHER (CIRCLE) <i>Sunny</i> 20's <i>Cloudy</i> 30's <i>Partly Cloudy</i> 40's <i>Sunny</i> 50's <i>Rainy</i> 60's <i>Snowy</i> 70's <i>Hailing/Sleeting</i> 80's <i>Windy</i> 90's <i>Breezy</i> 100+	RECOMMENDATIONS <i>Keep monitoring sedum plants. Soil is moist. No new plants missing. Sedum coral reef seems to be thriving; not dry. Soil Medium: Saturation - dry Panels? Coverage? but leaves look plumpness.</i>
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SPRING MOBILIZATION* Irrigate often for shorter periods of time. Irrigation: Zone run times; any adjustments?	SUMMER Increase irrigation time of each zone and/or frequency.	FALL Decrease irrigation time of each zone and/or frequency.	WINTERIZATION Drain pipes/ blowout and shift to hand watering (frequency to depend on climate, but plant roots must remain moist at all times!).
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- ▲ *Fertigation* activities include adjustments to Dosatron settings, NPK ratios and frequency (dose rates), checking tank levels, refilling liquid fertilizer, and cleaning filters.
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Sedum 'Blaze'	Delosperma 'Fire Spinner'	Sedum 'Sanguinaria'
Sedum 'Coral Reef'	Sedum 'Summer Glory'	Delosperma 'John Profit'
Sedum 'John Creech'	Sedum 'Yonah'	Delosperma 'Lavenderley'
Sedum 'Coral Reef'	Sedum 'Blue Spruce'	Sedum 'Oregon's Blood'
Sedum 'Revel'		



LIVING WALL | MAINTENANCE + MONITORING DOCUMENTATION

NAME OF PERSON <i>Emily Bredehoeft</i>	DATE <i>2/10/17</i>	TIME (e.g. 11:00 - 11:15)
WEATHER (CIRCLE) <i>Windy</i>		
10's 20's 30's 40's 50's 60's 70's 80's 90's 100+	Rainy	Snowy
Sunny	Cloudy	Partly Cloudy
	Hailing/Sleeting	<i>Windy</i>

OBSERVATIONS
Plant Health: Vigor? | Dry? | Chlorotic?: Soil Moist in lower panels but plant leaves dry and brittle. Some new growth seems to be Soil Medium: Saturation - dry Panels? | Coverage?: appearing on the Avinga 'chocolate chip' and the Czar's Gold sedum plants.

SPRING MOBILIZATION*	SUMMER	WINTERIZATION
Irrigate often for shorter periods of time. Irrigation: Zone run times; any adjustments?	Increase irrigation time of each zone and/or frequency.	Drain pipes/ blowout and shift to hand watering (frequency to depend on climate, but plant roots must remain moist at all times!).

RECOMMENDATIONS

CURRENT SETTINGS

N-P-K:

Dosatron:

Irrigation Frequency:

Irrigation Duration:

Irrigation Time of Day:

SERVICE AREA (CIRCLE)

Fertiligation

Irrigation

Pruning | Weeding

Pest Management

Structural

Other

ACTION(S) TAKEN

Hand Watering

1	2	3	4	5	6	7	8	9	10	11	12
A	B	C	D	E							

Sedum 'Mare'
 Sedum 'Czar's Gold'
 Sedum 'John Creech'
 Sedum 'Coral Reef'
 Sedum 'newell'

Delosperma 'Fire Spinner'
 Sedum 'Summer Glory'
 Sedum 'Yoodoo'
 Sedum 'Mar Spruce'

Sedum 'Sasagulare'
 Delosperma 'John Profit'
 Delosperma 'Lavender Ice'
 Sedum 'Dragon's Blood'

LIVING WALL | MAINTENANCE + MONITORING DOCUMENTATION

NAME OF PERSON Rita	DATE 2-16	TIME (e.g. 11:00 - 11:15) 2 PM
WEATHER (CIRCLE) 10's Sunny 20's Cloudy 30's Partly Cloudy 40's 50's 60's 70's 80's 90's 100+ Rainy Snowy Hailing/Sleeting Windy		

CURRENT SETTINGS	SERVICE AREA (CIRCLE)	ACTION(S) TAKEN
N-P-K: Dosatron: Irrigation Frequency: Irrigation Duration: Irrigation Time of Day:	Fertigation Irrigation Pruning Weeding Pest Management Structural Other	hand watering

RECOMMENDATIONS	
FALL Decrease irrigation time of each zone and/or frequency.	WINTERIZATION Drain pipes/ blowout and shift to hand watering (frequency to depend on climate, but plant roots must remain moist at all times!).

OBSERVATIONS
Plant Health: Vigor? | Dry? | Chlorotic? | Dead plants are past recovery, but surviving ones are healthy
Soil Medium: Saturation - dry Panels? | Coverage? medium

SPRING MOBILIZATION*
Irrigate often for shorter periods of time.
Irrigation: Zone run times; any adjustments?

▲ *Fertigation* activities include adjustments to Dosatron settings, NPK ratios and frequency (dose rates), checking tank levels, refilling liquid fertilizer, and cleaning filters.
● *Irrigation* activities relate to changes in frequency, duration, time of day, as well as general system assessments (e.g. checking lines and emitters).
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		Sedum 'Blue'	Delosperma 'Fire Spinner'	Sedum irregularis
		Sedum 'Coral Reef'	Sedum 'Summer Glory'	Delosperma 'John Profit'
		Sedum 'John Creech'	Sedum 'Woodor'	Delosperma 'Lavender Ice'
		Sedum 'Coral Reef'	Sedum 'Blue Spruce'	Sedum 'Dragon's Blood'
		Sedum 'revel'		



LIVING WALL | MAINTENANCE + MONITORING DOCUMENTATION

NAME OF PERSON Rita	DATE 2-21-17	TIME (e.g. 11:00 - 11:15) 1:30 PM	CURRENT SETTINGS N-P-K: Dosatron: Irrigation Frequency: Irrigation Duration: Irrigation Time of Day:	SERVICE AREA (CIRCLE) Fertigation <u>Irrigation</u> Pruning Weeding Pest Management Structural Other	ACTION(S) TAKEN hand watering
WEATHER (CIRCLE) 10's 20's 30's 40's 50's 60's 80's 90's 100+ (Sunny) Cloudy Partly Cloudy Rainy Snowy Hailing/Sleetng (Windy)					

OBSERVATIONS Plant Health: Vigor? Dry? Chlorotic? Both Delosperma plants dead! Soil Medium: Saturation - dry Panels? Coverage? medium	RECOMMENDATIONS remove dead plants to reduce water run off while hand watering - 3 species adjust hanging mechanism to allow for vertical watering - horizontal watering wastes so much water - H2O
SPRING MOBILIZATION* Irrigate often for shorter periods of time. Irrigation: Zone run times; any adjustments?	FALL Decrease irrigation time of each zone and/or frequency.
SUMMER Increase irrigation time of each zone and/or frequency.	WINTERIZATION Drain pipes/ blowout and shift to hand watering (frequency to depend on climate, but plant roots must remain moist at all times!).

- ▲ **Fertigation** activities include adjustments to Dosatron settings, NPK ratios and frequency (dose rates), checking tank levels, refilling liquid fertilizer, and cleaning filters.
- **Irrigation** activities relate to changes in frequency, duration, time of day, as well as general system assessments (e.g. checking lines and emitters).
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- **Any structural maintenance** includes checking the frame and flexipanel and clearing out the gutter.
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new growth

missing plants

dead

new growth

Sedum 'Sedum'
Sedum 'Summer Glory'
Sedum 'Yucca'
Sedum 'Blue Spruce'
Sedum 'Coral'
Sedum 'John Creech'
Sedum 'Carr's Gold'
Sedum 'Blaze'
Sedum 'Dragon's Blood'
Sedum 'Sedum'
Sedum 'John Profitt'
Sedum 'Delosperma'
Sedum 'John Profitt'
Sedum 'Delosperma'
Sedum 'John Profitt'
Sedum 'Dragon's Blood'

City of Fort Collins
Parks Operation Services

URBAN LAB

UNIVERSITY OF COLORADO
Boulder
Center for Urban and Environmental Sustainability

LIVING WALL | MAINTENANCE + MONITORING DOCUMENTATION

NAME OF PERSON <i>Emily Bredehoeft</i>	DATE <i>3/3/17</i>	TIME (e.g. 11:00 - 11:15) <i>1p-2p</i>
WEATHER (CIRCLE) <i>10's 20's 30's 40's 50's 60's 70's 80's 90's 100+</i> <i>Sunny Cloudy Partly Cloudy Rainy Snowy Hailing/ Sleetng Windy</i>		

OBSERVATIONS <i>Plant Health: Vigor? Dry? Chlorotic? Surviving species showing new growth. Soil Medium: Saturation - dry Panels? Coverage? irregular moisture in panels, some more saturated than others. otherwise no new changes.</i>		CURRENT SETTINGS N-P-K: Dosatron: Irrigation Frequency: Irrigation Duration: Irrigation Time of Day:	SERVICE AREA (CIRCLE) Fertilization Irrigation Pruning Weeding Pest Management Structural Other	ACTION(S) TAKEN <i>Hand watering</i>
RECOMMENDATIONS <i>Monitor and water as needed. Continue to measure new growth and replace dead or missing plants.</i>		FALL Decrease irrigation time of each zone and/or frequency.		
SPRING MOBILIZATION Irrigate often for shorter periods of time. Irrigation: Zone run times; any adjustments?		WINTERIZATION Drain pipes/ blowout and shift to hand watering (frequency to depend on climate, but plant roots must remain moist at all times!).		

- ▲ *Fertilization* activities include adjustments to Dosatron settings, NPK ratios and frequency (dose rates), checking tank levels, refilling liquid fertilizer, and cleaning filters.
- *Irrigation* activities relate to changes in frequency, duration, time of day, as well as general system assessments (e.g. checking lines and emitters).
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- ▲ *Any pest management* activities should describe what pest is being managed (if known), what has been applied, and in what quantity.
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City of Fort Collins
Parks & Recreation
Services



Colorado State University
Extension



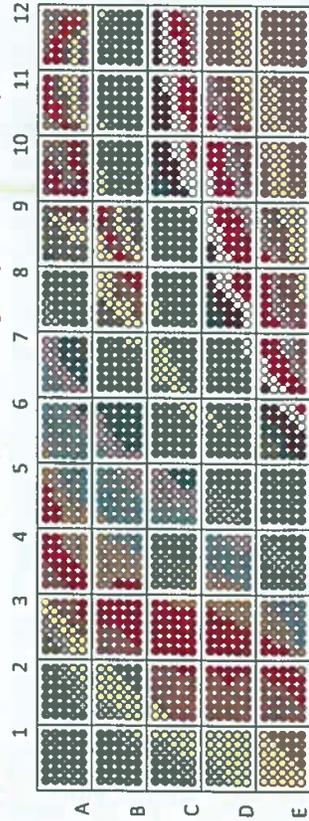
URBAN LAB

LIVING WALL | MAINTENANCE + MONITORING DOCUMENTATION

NAME OF PERSON <i>John K / Emily B</i>	DATE <i>3/6/17</i>	TIME (e.g. 11:00 - 11:15)
WEATHER (CIRCLE) 10's 20's 30's 40's 50's 60's 70's 80's 90's 100+ Sunny Cloudy Partly Cloudy Rainy Snowy Hailing/Sleeting Windy		

OBSERVATIONS Plant Health: Vigor? Dry? Chlorotic?: Soil Medium: Saturation - dry Panels? Coverage?:		CURRENT SETTINGS N-P-K: Dosatron: Irrigation Frequency: Irrigation Duration: Irrigation Time of Day:	SERVICE AREA (CIRCLE) Fertigation Irrigation Pruning Weeding Pest Management Structural Other	ACTION(S) TAKEN
RECOMMENDATIONS <i>Notes on back.</i>		FALL Decrease irrigation time of each zone and/or frequency.	WINTERIZATION Drain pipes/ blowout and shift to hand watering (frequency to depend on climate, but plant roots must remain moist at all times!).	

- ▲ Fertigation activities include adjustments to Dosatron settings, NPK ratios and frequency (dose rates), checking tank levels, refilling liquid fertilizer, and cleaning filters.
- Irrigation activities relate to changes in frequency, duration, time of day, as well as general system assessments (e.g. checking lines and emitters).
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Sedum 'Blaze'	Delosperma 'Fire Spinner'	Sedum 'Krugandere'
Sedum 'Carr's Gold'	Sedum 'Summer Glory'	Delosperma 'John Profit'
Sedum 'John Creech'	Sedum 'Voodoo'	Delosperma 'Lavender Ice'
Sedum 'Coral Reef'	Sedum 'Blue Spruce'	Sedum 'Dragon's Blood'
Sedum neveri		



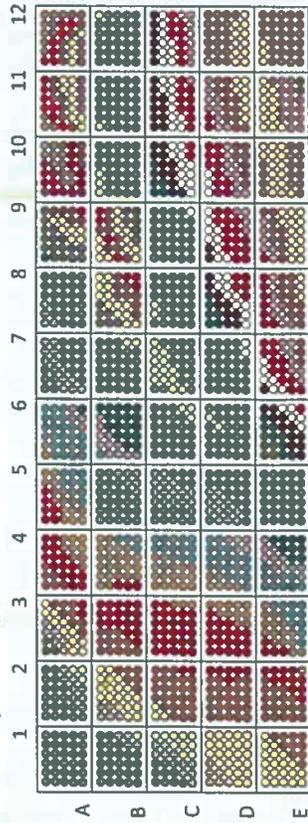
LIVING WALL | MAINTENANCE + MONITORING DOCUMENTATION

NAME OF PERSON <i>Emily Bedelhoff</i>	DATE <i>3/10/17</i>	TIME (e.g. 11:00 - 11:15) <i>1:15p - 2:20p</i>	SERVICE AREA (CIRCLE) Fertigation <u>Irrigation</u> Pruning Weeding Pest Management Structural Other	ACTION(S) TAKEN <i>Hand watering</i>
WEATHER (CIRCLE) 10's 20's 30's 40's 50's 60's 70's 80's 90's 100+ Sunny Cloudy <u>Partly Cloudy</u> Rainy Snowy Hailing/Sleeting <u>Windy</u>			CURRENT SETTINGS N-P-K: Dosatron: Irrigation Frequency: Irrigation Duration: Irrigation Time of Day:	

OBSERVATIONS <i>Plant Health: Vigor? Dry? Chlorotic?: 2 new missing plants: C3, 3e/5e and C4, 4r/1c Soil Medium: Saturation - dry Panels? Coverage?: Panels are still moist, remaining live plants show no major changes.</i>	RECOMMENDATIONS <i>Continue to monitor the plants, watering as needed.</i>
SPRING MOBILIZATION* Irrigate often for shorter periods of time. Irrigation: Zone run times; any adjustments?	FALL Decrease irrigation time of each zone and/or frequency.
	WINTERIZATION Drain pipes/blowout and shift to hand watering (frequency to depend on climate, but plant roots must remain moist at all times!).

- ▲ *Fertigation* activities include adjustments to Dosatron settings, NPK ratios and frequency (dose rates), checking tank levels, refilling liquid fertilizer, and cleaning filters.
- *Irrigation* activities relate to changes in frequency, duration, time of day, as well as general system assessments (e.g. checking lines and emitters).
- Any *pruning or weeding* activities should note what was removed (if known) and in what quantity (e.g. 11 specimens).
- ▲ Any *pest management* activities should describe what pest is being managed (if known), what has been applied, and in what quantity.
- Any structural maintenance includes checking the frame and flexipanel and clearing out the gutter.
- Any other actions taken that do not fall under the listed service areas should be noted and described in detail.

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Sedum 'Blaze'	Delosperma 'Fire Spinner'	Sedum 'Azangulare'
Sedum 'Carr's Gold'	Sedum 'Summer Glory'	Delosperma 'John Profit'
Sedum 'John Creech'	Sedum 'Voodoo'	Delosperma 'Lavender Ice'
Sedum 'Coral Reef'	Sedum 'Blue Spruce'	Sedum 'Dragon's Blood'
Sedum 'Newell'		



LIVING WALL | MAINTENANCE + MONITORING DOCUMENTATION

NAME OF PERSON <i>Emily Bredehoeft</i>	DATE <i>3/15/2017</i>	TIME (e.g. 11:00 - 11:15) <i>1:08p - 2:10p</i>
WEATHER (CIRCLE) 10's <input type="radio"/> Sunny <input type="radio"/> Partly Cloudy <input type="radio"/> Rainy <input type="radio"/> Snowy <input type="radio"/> Hailing/Sleeting <input type="radio"/> Windy		
OBSERVATIONS <i>Plant Health: Vigor? Dry? Chlorotic? Panels still moist. No major changes observed. Insects beginning to investigate the soil medium: Saturation - dry Panels? Coverage? plants?</i>		

CURRENT SETTINGS N-P-K: Dosatron: Irrigation Frequency: Irrigation Duration: Irrigation Time of Day:	SERVICE AREA (CIRCLE) Fertigation Irrigation Pruning Weeding Pest Management Structural Other	ACTION(S) TAKEN <i>Hand watering</i>
RECOMMENDATIONS <i>Continue monitoring and water as needed.</i>		

SPRING MOBILIZATION* Irrigate often for shorter periods of time. Irrigation: Zone run times; any adjustments?	SUMMER Increase irrigation time of each zone and/or frequency.	FALL Decrease irrigation time of each zone and/or frequency.	WINTERIZATION Drain pipes/ blowout and shift to hand watering (frequency to depend on climate, but plant roots must remain moist at all times!).
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- ▲ *Fertigation* activities include adjustments to Dosatron settings, NPK ratios and frequency (dose rates), checking tank levels, refilling liquid fertilizer, and cleaning filters.
- *Irrigation* activities relate to changes in frequency, duration, time of day, as well as general system assessments (e.g. checking lines and emitters).
- *Any pruning or weeding* activities should note what was removed (if known) and in what quantity (e.g. 1.1 specimens).
- ▲ *Any pest management* activities should describe what pest is being managed (if known), what has been applied, and in what quantity.
- *Any structural maintenance* includes checking the frame and flexipanel and clearing out the gutter.
- *Any other actions* taken that do not fall under the listed service areas should be noted and described in detail.

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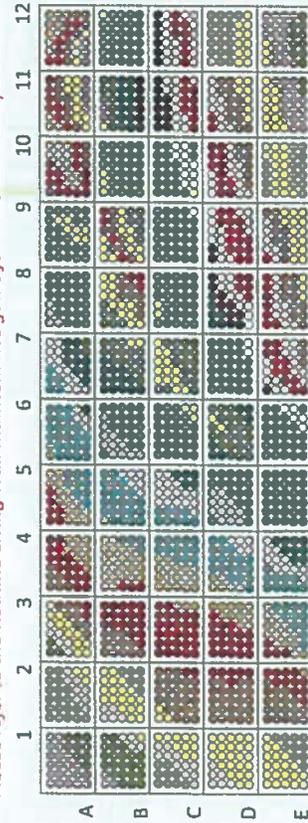
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LIVING WALL | MAINTENANCE + MONITORING DOCUMENTATION

NAME OF PERSON <i>Emily Bredelweert</i>	DATE <i>3/20/17</i>	TIME (e.g. 11:00 - 11:15) <i>1:10p - 2:10p</i>
WEATHER (CIRCLE) 10's 20's 30's 40's 50's 60's 70's 80's 90's 100+ Sunny <u>Cloudy</u> Partly Cloudy Rainy Snowy Hailing/Sleeting Windy		
OBSERVATIONS <i>Plant Health: Vigor? Dry? Chlorotic? No major observable changes, plants seem to be putting out more new growth slowly. Soil Medium: Saturation - dry Panels? Coverage? Panels seem to be slightly on the dry side. Less moisture present than last watering.</i>		
CURRENT SETTINGS N-P-K: Dosatron: Irrigation Frequency: Irrigation Duration: Irrigation Time of Day:		
SERVICE AREA (CIRCLE) Fertigation <u>Irrigation</u> Pruning Weeding Pest Management Structural Other		ACTION(S) TAKEN <i>Hand watering</i>
RECOMMENDATIONS <i>Continue to monitor and water as needed.</i>		
FALL Decrease irrigation time of each zone and/or frequency.		WINTERIZATION Drain pipes/ blowout and shift to hand watering (frequency to depend on climate, but plant roots must remain moist at all times!).

- ▲ *Fertigation* activities include adjustments to Dosatron settings, NPK ratios and frequency (dose rates), checking tank levels, refilling liquid fertilizer, and cleaning filters.
- *Irrigation* activities relate to changes in frequency, duration, time of day, as well as general system assessments (e.g. checking lines and emitters).
- *Any pruning or weeding* activities should note what was removed (if known) and in what quantity (e.g. 11 specimens).
- △ *Any pest management* activities should describe what pest is being managed (if known), what has been applied, and in what quantity.
- *Any structural maintenance* includes checking the frame and flexpanels and clearing out the gutter.
- *Any other actions* taken that do not fall under the listed service areas should be noted and described in detail.

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LIVING WALL | MAINTENANCE + MONITORING DOCUMENTATION

NAME OF PERSON <i>Emily Bredehoeft</i>	DATE <i>4/10/17</i>	TIME (e.g. 11:00 - 11:15) <i>1p - 2:00p</i>	CURRENT SETTINGS N-P-K: Dosatron: Irrigation Frequency: Irrigation Duration: Irrigation Time of Day:	SERVICE AREA (CIRCLE)	ACTION(S) TAKEN <i>Hand Watering</i>
WEATHER (CIRCLE) 10's 20's 30's 40's 50's 60's 70's 80's 90's 100+ Sunny Cloudy Partly Cloudy Rainy Snowy Hailing/Sleeting Windy					
OBSERVATIONS <i>Plant Health: Vigor? Dry? Chlorotic? No major visible changes to the plants.</i> <i>Soil Medium: Saturation - dry Panels? Coverage?:</i> <i>Panels barely damp</i>					
SPRING MOBILIZATION* Irrigate often for shorter periods of time. Irrigation: Zone run times; any adjustments?			RECOMMENDATIONS <i>Begin fertilization and keep monitoring.</i>		
SUMMER Increase irrigation time of each zone and/or frequency.			FALL Decrease irrigation time of each zone and/or frequency.		
			WINTERIZATION Drain pipes/ blowout and shift to hand watering (frequency to depend on climate, but plant roots must remain moist at all times!).		

- ▲ Fertilization activities include adjustments to Dosatron settings, NPK ratios and frequency (dose rates), checking tank levels, refilling liquid fertilizer, and cleaning filters.
- Irrigation activities relate to changes in frequency, duration, time of day, as well as general system assessments (e.g. checking lines and emitters).
- Any pruning or weeding activities should note what was removed (if known) and in what quantity (e.g. 11 specimens).
- △ Any pest management activities should describe what pest is being managed (if known), what has been applied, and in what quantity.
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1	2	3	4	5	6	7	8	9	10	11	12
A	B	C	D	E							

Sedum 'Blauer'

Sedum 'Zar's Gold'

Sedum 'John Creech'

Sedum 'Coral Reef'

Sedum 'Blue Spruce'

Sedum 'Tricolor's Blouse'

Delosperma 'Fire Spinner'

Sedum 'Summer Glory'

Sedum 'Woodrow'

Sedum 'Blue Spruce'

Sedum 'serotangulare'

Delosperma 'John Profit'

Delosperma 'Lewylander Jar'

Sedum 'Tricolor's Blouse'

4-27 worked S to N
 Counting for spring 2017 replacements

	Plant	Number Needed	
Plants:	Lavender Sedum	$27 + 44 = 71$	
	Sedum Neveii	$40 + 99 = 139$	
	Buffalo grass	83	
	Angelina sedum	$80 + 46 = 126$	
	Wood	$11 + 8 +$	
	individual replacements	Czas's Gold	$14 + 2$
		John Creech	$25 + 18$
		Angelina	50
		Wood	$45 + 12 + 2 + 1$
		sexangulare	50
Blue spruce		$15 + 17$	
Neveii		3	

4/27/2017

Plant Counts for Replacement

Plant	Swath No. Needed	Indiv. No. Needed	Total No. Needed	TO ORDER w/ 10 extra per
Lavendar Sedum TBD by Stephanie's recommendation	71		71	81
Sedum 'Neveii'	139	3	142	152
Buffalo Grass	83		83	93
Sedum 'Angelina'	126	50	176	186
Sedum 'Voodoo'	19	60	79	89
Sedum 'Czar's Gold'		16	16	26
Sedum 'John Creech'		43	43	53
Sedum sexangulare		50	50	60
Sedum 'Blue Spruce'		32	32	42

No. Plant Replacing	782
% Plant Replacing	43%

- Wait until May 1 to trim
- H₂O early April
- Start fert with irrigation, turn off fert in May
- Fertilizer from bath
-
- Sodium coral reef replacement
- Buffalo grass turf type plus
- replant May 1st

Stephanie will order grasses from Solley for coral reefs species conversion.

LIVING WALL | MAINTENANCE + MONITORING DOCUMENTATION

NAME OF PERSON <i>Emily Bredehoeft</i>	DATE <i>7/25/17</i>	TIME (e.g. 11:00 - 11:15) <i>9:50a</i>
WEATHER (CIRCLE) 10's 20's 30's 40's 50's 60's 70's 80's 90's 100+ Sunny (Cloudy) Partly Cloudy Rainy Snowy Hailing/ Sleetng Windy		

CURRENT SETTINGS N-P-K: Dosatron: Irrigation Frequency: Irrigation Duration: Irrigation Time of Day:	SERVICE AREA (CIRCLE) Fertigation Irrigation Pruning Weeding Pest Management Structural Other	ACTION(S) TAKEN <i>Trimming out and removing dead plant material.</i>
RECOMMENDATIONS <i>Continue to monitor and record aphid activity as well as root rot. See reverse side for more detailed observations.</i>		
SPRING MOBILIZATION* Irrigate often for shorter periods of time. Irrigation: Zone run times; any adjustments?	SUMMER Increase irrigation time of each zone and/ or frequency.	FALL Decrease irrigation time of each zone and/ or frequency.
WINTERIZATION Drain pipes/ blowout and shift to hand watering (frequency to depend on climate, but plant roots must remain moist at all times!).		

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1	2	3	4	5	6	7	8	9	10	11	12
A	B	C	D	E							

- SEDUM DRAGON'S BLOOD
- SEDUM ANGELINA
- SEDUM JOHN CREECH
- SEDUM VOODOO "BLAZE"
- DOG TUFF GRASS

- SEDUM BLUE SPRUCE
- BUFFALO GRASS
- SEDUM SEXANGULARE
- SEDUM CZAR'S GOLD



LIVING WALL | MAINTENANCE + MONITORING DOCUMENTATION

- * Buffalo grass in panel A1 seems to be dying, cause unknown, possible plant replacements needed.
- * Sedum (Neivus?) in panels E4 up through A8 seem to be struggling. Possible root rot and/or nutrient problem. More research is needed. Also, plants in panels E8-C12 need replacements.
- * Replacement plants needed for the sedum saxifrage
- * Sedum Woodoo Blaze plants in panels E7-C12 may need to be cut back and/or replaced.
- * Safer Soap used seems to have killed off most, if not all, of the aphid infestation. Ladybugs still present, approximate count of 5-6, mostly adults but one larva.

LIVING WALL | MAINTENANCE + MONITORING DOCUMENTATION

NAME OF PERSON <i>Emily Bredehoeft</i>	DATE <i>7/25/17</i>	TIME (e.g. 11:00 - 11:15) <i>9:50a</i>
WEATHER (CIRCLE) 10's 20's 30's 40's 50's 60's 70's 80's 90's 100+ Sunny (Cloudy) Partly Cloudy Rainy Snowy Hailing/ Sleetng Windy		

CURRENT SETTINGS N-P-K: Dosatron: Irrigation Frequency: Irrigation Duration: Irrigation Time of Day:	SERVICE AREA (CIRCLE) Fertigation Irrigation Pruning Weeding Pest Management Structural Other	ACTION(S) TAKEN <i>Trimming out and removing dead plant material.</i>
RECOMMENDATIONS <i>Continue to monitor and record aphid activity as well as root rot. See reverse side for more detailed observations.</i>		
SPRING MOBILIZATION* Irrigate often for shorter periods of time. Irrigation: Zone run times; any adjustments?	SUMMER Increase irrigation time of each zone and/ or frequency.	FALL Decrease irrigation time of each zone and/ or frequency.
WINTERIZATION Drain pipes/ blowout and shift to hand watering (frequency to depend on climate, but plant roots must remain moist at all times!).		

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- BUFFALO GRASS
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LIVING WALL | MAINTENANCE + MONITORING DOCUMENTATION

- * Buffalo grass in panel A1 seems to be dying, cause unknown, possible plant replacements needed.
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LIVING WALL | MAINTENANCE + MONITORING DOCUMENTATION

NAME OF PERSON <i>Emily Bredelhoff</i>	DATE <i>8/2/17</i>	TIME (e.g. 11:00 - 11:15) <i>12:45p</i>
WEATHER (CIRCLE) <i>10's</i> Sunny <i>20's</i> Cloudy <i>30's</i> Partly Cloudy <i>40's</i> Rainy <i>50's</i> Snowy <i>60's</i> Hailing/Sleeting <i>70's</i> Windy <i>80's</i> <i>90's</i> 100+ <i>100+</i>		

CURRENT SETTINGS N-P-K: Dosatron: Irrigation Frequency: Irrigation Duration: Irrigation Time of Day:	SERVICE AREA (CIRCLE) Fertiligation Irrigation Pruning Weeding Pest Management Structural Other	ACTION(S) TAKEN None
RECOMMENDATIONS Continue to monitor the plant health. Deadhead and trim as needed. Aphid infestation has been dealt with.		
SPRING MOBILIZATION* Irrigate often for shorter periods of time. Irrigation: Zone run times; any adjustments?	SUMMER Increase irrigation time of each zone and/or frequency.	FALL Decrease irrigation time of each zone and/or frequency.
WINTERIZATION Drain pipes/ blowout and shift to hand watering (frequency to depend on climate, but plant roots must remain moist at all times!).		

- ▲ **Fertiligation** activities include adjustments to Dosatron settings, NPK ratios and frequency (dose rates), checking tank levels, refilling liquid fertilizer, and cleaning filters.
- **Irrigation** activities relate to changes in frequency, duration, time of day, as well as general system assessments (e.g. checking lines and emitters).
- **Any pruning or weeding** activities should note what was removed (if known) and in what quantity (e.g. 11 specimens).
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- **Any structural maintenance** includes checking the frame and flexipanel and clearing out the gutter.
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- SEDUM DRAGON'S BLOOD
- SEDUM ANGELINA
- SEDUM JOHN CREECH
- SEDUM VOODOO "BLAZE"
- DOG TUFF GRASS

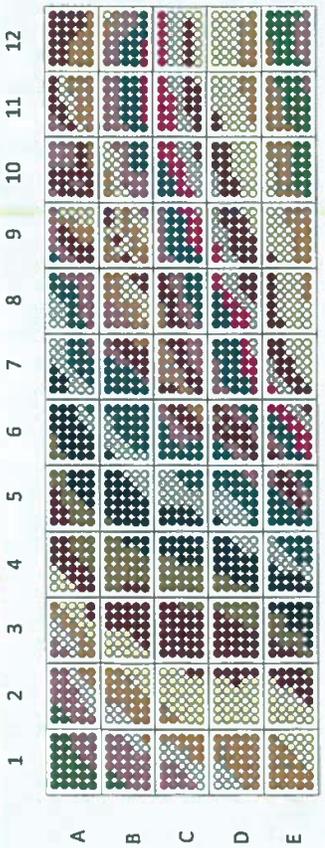
- SEDUM BLUE SPRUCE
- BUFFALO GRASS
- SEDUM SEXANGULARE
- SEDUM CZAR'S GOLD

Aus 10, 2017

LIVING WALL | MAINTENANCE + MONITORING DOCUMENTATION

NAME OF PERSON	DATE	TIME (e.g. 11:00 - 11:15)	CURRENT SETTINGS	SERVICE AREA (CIRCLE)	ACTION(S) TAKEN
WEATHER (CIRCLE)			N-P-K: Dosatron: Irrigation Frequency: Irrigation Duration: Irrigation Time of Day:	Fertigation Irrigation Pruning Weeding Pest Management Structural Other	
OBSERVATIONS			RECOMMENDATIONS		
Plant Health: Vigor? Dry? Chlorotic?:					
Soil Medium: Saturation - dry Panels? Coverage?:					
SPRING MOBILIZATION*		SUMMER	FALL	WINTERIZATION	
Irrigate often for shorter periods of time. Irrigation: Zone run times; any adjustments?		Increase irrigation time of each zone and/or frequency.	Decrease irrigation time of each zone and/or frequency.	Drain pipes/ blowout and shift to hand watering (frequency to depend on climate, but plant roots must remain moist at all times!).	

- ▲ *Fertigation* activities include adjustments to Dosatron settings, NPK ratios and frequency (dose rates), checking tank levels, refilling liquid fertilizer, and cleaning filters.
- *Irrigation* activities relate to changes in frequency, duration, time of day, as well as general system assessments (e.g. checking lines and emitters).
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LIVING WALL | MAINTENANCE + MONITORING DOCUMENTATION

- Sedan - blaze
- Six sided sedan } Fill in again
- Angelina
- replace sedan newail boards with something else
- lady buss

LIVING WALL | MAINTENANCE + MONITORING DOCUMENTATION

NAME OF PERSON <i>Emily Breckelwedt</i>	DATE 8/16/17	TIME (e.g. 11:00 - 11:15) 10:47a - 11:43a
WEATHER (CIRCLE) 10's Sunny Cloudy Partly Cloudy Rainy Snowy Hailing/Sleetng Windy 20's Cloudy 30's 40's 50's 60's 70's 80's 90's 100+		

CURRENT SETTINGS	SERVICE AREA (CIRCLE)	ACTION(S) TAKEN
N-P-K: Dositron: Irrigation Frequency: Irrigation Duration: Irrigation Time of Day:	Fertigation Irrigation Pruning Weeding Pest Management Structural Other	Checking Panel moisture. Trimming back dog Tuff grass/Removal of dead plant matter

RECOMMENDATIONS	FALL	WINTERIZATION
Aphids still present, ladybugs still active (see count on back) Trim back needed for dog tuff grass, upper panels.	Decrease irrigation time of each zone and/or frequency.	Drain pipes/ blowout and shift to hand watering (frequency to depend on climate, but plant roots must remain moist at all times!).

OBSERVATIONS	SUMMER
Plant Health: Vigor? DRY? Chlorotic? Little to no change in living plants. Lower corner buffalo Soil Medium: Saturation - dry Panels? Coverage? grass thriving. Most panels seem to be getting enough water however, water flow is irregular and uneven.	Increase irrigation time of each zone and/or frequency.

- ▲ **Fertigation** activities include adjustments to Dositron settings, NPX ratios and frequency (dose rates), checking tank levels, refilling liquid fertilizer, and cleaning filters.
- **Irrigation** activities relate to changes in frequency, duration, time of day, as well as general system assessments (e.g. checking lines and emitters).
- **Any pruning or weeding** activities should note what was removed (if known) and in what quantity (e.g. 11 specimens).
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● SEDUM DRAGON'S BLOOD

● SEDUM ANGELINA

● SEDUM JOHN CREECH

● SEDUM VOODOO "BLAZE"

● DOG TUFF GRASS

● SEDUM BLUE SPRUCE

● BUFFALO GRASS

● SEDUM SEXANGULARE

● SEDUM CZAR'S GOLD



LIVING WALL | MAINTENANCE + MONITORING DOCUMENTATION

Lady bug count:

- Larva: ~~||||~~ |||| |||| |||| ||||

- Clutch of eggs: ||

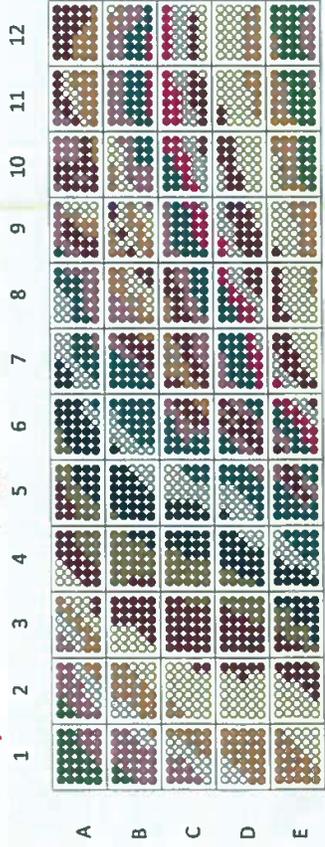
- Adult: ~~||||~~ ||||

LIVING WALL | MAINTENANCE + MONITORING DOCUMENTATION

NAME OF PERSON <i>Emily Bredehoeft</i>	DATE <i>8/21/17</i>	TIME (e.g. 11:00 - 11:15) <i>10:07a - 11a</i>	CURRENT SETTINGS	SERVICE AREA (CIRCLE)	ACTION(S) TAKEN
WEATHER (CIRCLE) 10's <i>Sunny</i> 20's <i>Cloudy</i> 30's <i>Partly Cloudy</i> 40's <i>Rainy</i> 50's <i>Snowy</i> 60's <i>Snowy</i> 70's <i>Hailing/Sleeting</i> 80's <i>100+</i> 90's <i>Windy</i> 100's <i>Windy</i>			N-P-K: Dosatron: Irrigation Frequency: Irrigation Duration: Irrigation Time of Day:	Fertigation Irrigation Pruning Weeding <u>Pest Management</u> Structural Other	<i>One carton of ladybugs released onto wall. @ 8:50a</i>
OBSERVATIONS <i>Plant Health: Vigor? Dry? Chlorotic? Little to no change in plant health. Aphids still present though greatly diminished. Soil Medium: Saturation - dry Panels? Coverage? Panels seem to be irrigating properly but moisture saturation seems inconsistent.</i>			RECOMMENDATIONS <i>Continue to observe plant health as well as the ladybug population. Replant in fall as needed. See current count on back. Trim/dead head as needed.</i>		
SPRING MOBILIZATION* Irrigate often for shorter periods of time. Irrigation: Zone run times; any adjustments?			FALL Decrease irrigation time of each zone and/or frequency.		
			WINTERIZATION Drain pipes/blowout and shift to hand watering (frequency to depend on climate, but plant roots must remain moist at all times!).		

- ▲ *Fertigation* activities include adjustments to Dosatron settings, NPK ratios and frequency (dose rates), checking tank levels, refilling liquid fertilizer, and cleaning filters.
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LIVING WALL | MAINTENANCE + MONITORING DOCUMENTATION

adybug Count:

Larva: IIII IIII IIII IIII

Adult: 15.00 +

• 1 carton released

LIVING WALL | MAINTENANCE + MONITORING DOCUMENTATION

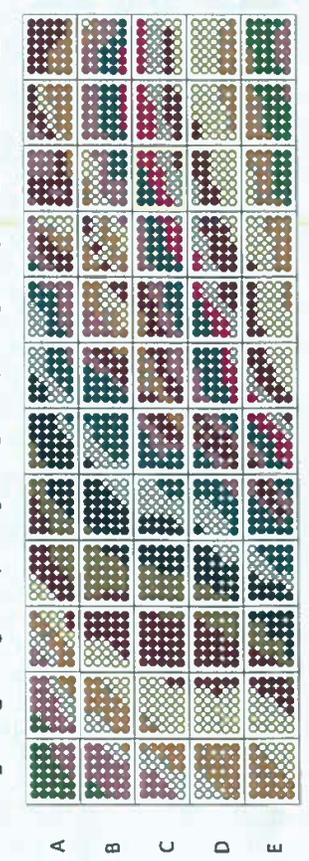
NAME OF PERSON <i>Emily Bredelweert</i>	DATE <i>8/23/17</i>	TIME (e.g. 11:00 - 11:15) <i>10:30a - 11:13a</i>	CURRENT SETTINGS N-P-K: Dosatron: Irrigation Frequency: Irrigation Duration: Irrigation Time of Day:	SERVICE AREA (CIRCLE) Fertigation Irrigation Pruning Weeding Pest Management Structural Other	ACTION(S) TAKEN <i>Checking on plant health and soil moisture.</i>
WEATHER (CIRCLE) 10's Sunny Cloudy Partly Cloudy Rainy Snowy Hailing/Sleeting Windy 20's Cloudy 30's Partly Cloudy 40's Partly Cloudy 50's Partly Cloudy 60's Partly Cloudy 70's Partly Cloudy 80's Partly Cloudy 90's Partly Cloudy 100+ Partly Cloudy					

OBSERVATIONS
*Plant Health: Vigor? | Dry? | Chlorotic? Little to no change in plant growth.
 Soil Medium: Saturation - dry Panels? | Coverage? Panels seem to be retaining moisture though it is still unevenly distributed during tests.*

SPRING MOBILIZATION* Irrigate often for shorter periods of time. Irrigation: Zone run times; any adjustments?	SUMMER Increase irrigation time of each zone and/or frequency.	FALL Decrease irrigation time of each zone and/or frequency.	WINTERIZATION Drain pipes/blowout and shift to hand watering (frequency to depend on climate, but plant roots must remain moist at all times!).
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RECOMMENDATIONS
Aphids still present, but manageable with the current population of ladybugs. As for the panels hopefully replanting in the fall will keep the soil from drying out.

- ▲ *Fertigation* activities include adjustments to Dosatron settings, NPK ratios and frequency (dose rates), checking tank levels, refilling liquid fertilizer, and cleaning filters.
- *Irrigation* activities relate to changes in frequency, duration, time of day, as well as general system assessments (e.g. checking lines and emitters).
- *Any pruning or weeding* activities should note what was removed (if known) and in what quantity (e.g. 11 specimens).
- ▲ *Any pest management* activities should describe what pest is being managed (if known), what has been applied, and in what quantity.
- *Any structural maintenance* includes checking the frame and flexipanel and clearing out the gutter.
- *Any other actions* taken that do not fall under the listed service areas should be noted and described in detail.
- + *Please refer to the Routine Living Wall Maintenance guide for more detailed operations and maintenance information.*



- SEDUM DRAGON'S BLOOD
- SEDUM ANGELINA
- SEDUM JOHN CREECH
- SEDUM VOODOO "BLAZE"
- DOG TUFF GRASS
- SEDUM BLUE SPRUCE
- BUFFALO GRASS
- SEDUM SEXANGULARE
- SEDUM CZAR'S GOLD



LIVING WALL | MAINTENANCE + MONITORING DOCUMENTATION

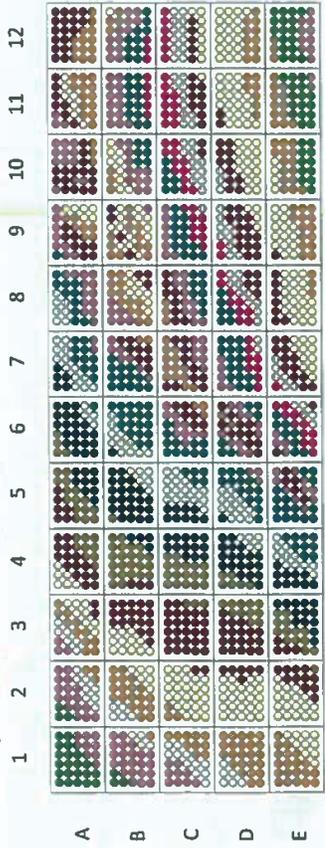
Continued Observations on Back →

NAME OF PERSON <i>Emily Bredehoeft</i>	DATE <i>8/30/17</i>	TIME (e.g. 11:00 - 11:15) <i>9:47a - 10:47a</i>
WEATHER (CIRCLE)		
10's Sunny	20's Cloudy	30's Partly Cloudy
40's Rainy	50's Snowy	60's Hailing/Sleeting
70's Windy	80's 100+	90's

<p>OBSERVATIONS</p> <p><i>Plant Health: Vigor? Dry? Chlorotic? Most surviving plants seem to be in good health. Minimal new growth on some of the sedum. Soil Medium: Saturation - dry Panels? Coverage? Sexangular plants on Panel C4. Soil medium saturation seems good overall but water flow irregularities still exist.</i></p>	<p>RECOMMENDATIONS</p> <p><i>Continue to monitor plants, take count of how many plants need to be replaced the spring. Keep trimming dog tuft grass as needed.</i></p>
<p>SPRING MOBILIZATION*</p> <p>Irrigate often for shorter periods of time. Irrigation: Zone run times; any adjustments?</p>	<p>SUMMER</p> <p>Increase irrigation time of each zone and/or frequency.</p>
<p>FALL</p> <p>Decrease irrigation time of each zone and/or frequency.</p>	<p>WINTERIZATION</p> <p>Drain pipes/blowout and shift to hand watering (frequency to depend on climate, but plant roots must remain moist at all times!).</p>

- ▲ *Fertilization* activities include adjustments to Dosatron settings, NPK ratios and frequency (dose rates), checking tank levels, refilling liquid fertilizer, and cleaning filters.
- *Irrigation* activities relate to changes in frequency, duration, time of day, as well as general system assessments (e.g. checking lines and emitters).
- *Any pruning or weeding* activities should note what was removed (if known) and in what quantity (e.g. 11 specimens).
- △ *Any pest management* activities should describe what pest is being managed (if known), what has been applied, and in what quantity.
- *Any structural maintenance* includes checking the frame and flexipanel and clearing out the gutter.
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LIVING WALL | MAINTENANCE + MONITORING DOCUMENTATION

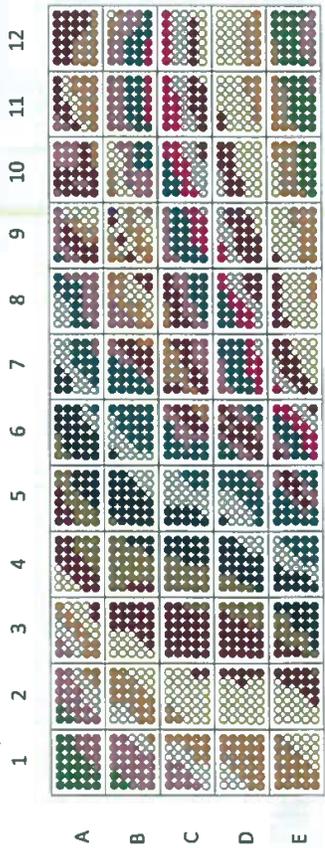
prox. ladybug count: IIII IIII IIII IIII

* Due to the aphid infestation there has been an increase of beneficial insects visiting the wall. In addition to the ladybugs, there were also jumping spiders, harvesters (aka Daddy longlegs), and lacewing eggs found. I anticipate that the aphid population has decreased dramatically and is a now a minimal threat to the plant health.

LIVING WALL | MAINTENANCE + MONITORING DOCUMENTATION

NAME OF PERSON <i>Emily Bredehewft</i>	DATE <i>9/13/17</i>	TIME (e.g. 11:00 - 11:15) <i>9:50a - 10:50a</i>	CURRENT SETTINGS N-P-K: Dosatron: Irrigation Frequency: Irrigation Duration: Irrigation Time of Day:	SERVICE AREA (CIRCLE) Fertigation Irrigation Pruning Weeding Pest Management Structural Other	ACTION(S) TAKEN <i>Trimming back the Buffalo and Dog Tuff grasses, Removing dead plant matter; also making observations.</i>
WEATHER (CIRCLE) 10's 20's 30's 40's 50's 60's 70's 80's 90's 100+ Sunny Cloudy Partly Cloudy Rainy Snowy Hailing/Sleeting Windy			RECOMMENDATIONS <i>Continue to monitor and adjust accordingly. No aphid activity visible, ladybug appear to have moved on.</i>		
OBSERVATIONS <i>Plant Health: Vigor? Dry? Chlorotic? Some potential new growth on the upper left corner of wall, dog tuff grass. Soil Medium: Saturation - dry Panels? Coverage? The uneven water flow continues to exist creating dry patches on panels.</i>			FALL Decrease irrigation time of each zone and/or frequency.		
SPRING MOBILIZATION* Irrigate often for shorter periods of time. Irrigation: Zone run times; any adjustments?			WINTERIZATION Drain pipes/ blowout and shift to hand watering (frequency to depend on climate, but plant roots must remain moist at all times!).		

- ▲ *Fertigation* activities include adjustments to Dosatron settings, NPK ratios and frequency (dose rates), checking tank levels, refilling liquid fertilizer, and cleaning filters.
- *Irrigation* activities relate to changes in frequency, duration, time of day, as well as general system assessments (e.g. checking lines and emitters).
- *Any pruning or weeding* activities should note what was removed (if known) and in what quantity (e.g. 11 specimens).
- ▲ *Any pest management* activities should describe what pest is being managed (if known), what has been applied, and in what quantity.
- *Any structural maintenance* includes checking the frame and flexpanels and clearing out the gutter.
- *Any other actions* taken that do not fall under the listed service areas should be noted and described in detail.
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LIVING WALL | MAINTENANCE + MONITORING DOCUMENTATION

NAME OF PERSON Emily Bredehoeft	DATE 9/20	TIME (e.g. 11:00 - 11:15) 11:08a - 11:50a
WEATHER (CIRCLE) 10's Sunny 20's Cloudy 30's Partly Cloudy 40's Rainy 50's Snowy 60's Hailing/Sleeting 70's 80's 90's 100+ Windy		
OBSERVATIONS Plant Health: Vigor? Dry? Chlorotic? Steady growth of established plants, some possible new growth. Soil Medium: Saturation - dry Panels? Coverage? Uneven Saturation, scattered patches of dry areas.		
CURRENT SETTINGS N-P-K: Dosatron: Irrigation Frequency: Irrigation Duration: Irrigation Time of Day:		SERVICE AREA (CIRCLE) Fertigation Irrigation Pruning Weeding Pest Management Structural Other
RECOMMENDATIONS *Uneven water distribution could be caused by the uneven holes in the irrigation drip line. *More observations are needed, but the Sedum Nevii that was planted earlier this year seems to be coming back.		ACTION(S) TAKEN Removal of dead plant material. Testing soil moisture. Trimming back grasses.
SPRING MOBILIZATION* Irrigate often for shorter periods of time. Irrigation: Zone run times; any adjustments?		FALL Decrease irrigation time of each zone and/or frequency.
SUMMER Increase irrigation time of each zone and/or frequency.		WINTERIZATION Drain pipes/blowout and shift to hand watering (frequency to depend on climate, but plant roots must remain moist at all times!).

▲ **Fertigation** activities include adjustments to Dosatron settings, NPK ratios and frequency (dose rates), checking tank levels, refilling liquid fertilizer, and cleaning filters.

● **Irrigation** activities relate to changes in frequency, duration, time of day, as well as general system assessments (e.g. checking lines and emitters).

■ **Any pruning or weeding** activities should note what was removed (if known) and in what quantity (e.g. 11 specimens).

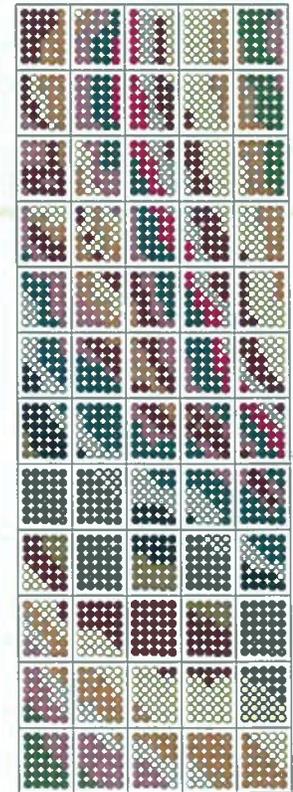
▲ **Any pest management** activities should describe what pest is being managed (if known), what has been applied, and in what quantity. *Other observations*

○ **Any structural maintenance** includes checking the frame and flexipanel and clearing out the gutter.

□ **Any other actions** taken that do not fall under the listed service areas should be noted and described in detail.

+ **Please refer to the Routine Living Wall Maintenance guide for more detailed operations and maintenance information.** **Aphid activity seems to have ceased, ladybugs have dispersed.*

1 2 3 4 5 6 7 8 9 10 11 12



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LIVING WALL | MAINTENANCE + MONITORING DOCUMENTATION

NAME OF PERSON <i>Emily Bredelhoeft</i>	DATE <i>9/29/17</i>	TIME (e.g. 11:00 - 11:15) <i>1p - 2p</i>
WEATHER (CIRCLE)		
10's Sunny (Cloudy)	20's Partly Cloudy	30's Cloudy
40's 60's	50's 70's	80's 90's
100+ Sunny	100+ Rainy	100+ Snowy
		100+ Hailing/Sleeting
		100+ Windy

CURRENT SETTINGS	SERVICE AREA (CIRCLE)	ACTION(S) TAKEN
N-P-K: Dosatron: Irrigation Frequency: Irrigation Duration: Irrigation Time of Day:	Fertigation Irrigation Pruning Weeding Pest Management Structural Other	Removal of dead plant material. Checking soil moisture content.

RECOMMENDATIONS / Observations	WINTERIZATION
Irrigation decreased. John Creech sedum still flowering. Minimal new growth on Sedum Neufli and upper corner Buffalo grass. Lower corner Buffalo grass over growing the John Creech	Drain pipes/ blowout and shift to hand watering (frequency to depend on climate, but plant roots must remain moist at all times!).

SPRING MOBILIZATION*	SUMMER	FALL
Irrigate often for shorter periods of time. Irrigation: Zone run times; any adjustments?	Increase irrigation time of each zone and/ or frequency.	Decrease irrigation time of each zone and/ or frequency.

▲ *Fertigation* activities include adjustments to Dosatron settings, NPK ratios and frequency (dose rates), checking tank levels, refilling liquid fertilizer, and cleaning filters.

● *Irrigation* activities relate to changes in frequency, duration, time of day, as well as general system assessments (e.g. checking lines and emitters).

■ *Any pruning or weeding* activities should note what was removed (if known) and in what quantity (e.g. 1.1 specimens).

△ *Any pest management* activities should describe what pest is being managed (if known), what has been applied, and in what quantity.

○ *Any structural maintenance* includes checking the frame and flexipanel and clearing out the gutter.

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SEDUM DRAGON'S BLOOD ●

SEDUM ANGELINA ●

SEDUM JOHN CREECH ●

SEDUM VOODOO "BLAZE" ●

DOG TUFT GRASS ●

SEDUM BLUE SPRUCE ●

BUFFALO GRASS ●

SEDUM SEXANGULARE ●

SEDUM CZAR'S GOLD ●



LIVING WALL | MAINTENANCE + MONITORING DOCUMENTATION

NAME OF PERSON <i>Emily Brdebehoff</i>	DATE <i>10/14/17</i>	TIME (e.g. 11:00 - 11:15) <i>12p - 1p</i>
WEATHER (CIRCLE)		
<i>10's</i> Sunny	<i>20's</i> Cloudy	<i>30's</i> Partly Cloudy
<i>40's</i> Rainy	<i>50's</i> Snowy	<i>60's</i> Hailing/Sleeting
<i>70's</i> 100+	<i>80's</i> REALLY Windy	<i>90's</i> 100+

OBSERVATIONS
*Plant Health: Vigor? | Dry? | Chlorotic?: Living plants seem to be stable. Most plants are dormant, no new growth.
 Soil Medium: Saturation - dry Panels? | Coverage?:
 Panels/soil slightly dry but not completely.*

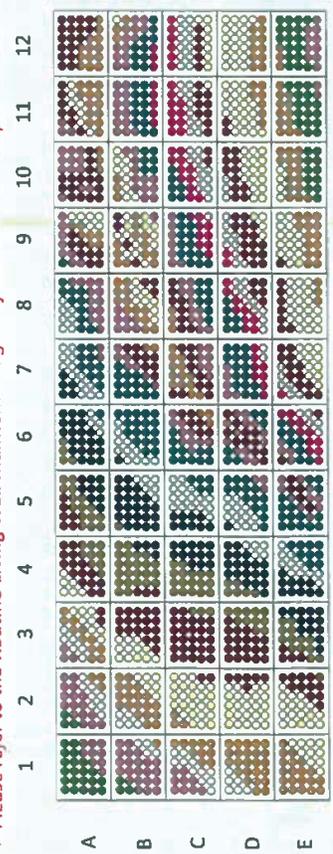
SPRING MOBILIZATION* Irrigate often for shorter periods of time. Irrigation: Zone run times; any adjustments?	SUMMER Increase irrigation time of each zone and/or frequency.	FALL Decrease irrigation time of each zone and/or frequency.	WINTERIZATION Drain pipes/ blowout and shift to hand watering (frequency to depend on climate, but plant roots must remain moist at all times!).
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CURRENT SETTINGS
 N-P-K:
 Dosatron:
 Irrigation Frequency:
 Irrigation Duration:
 Irrigation Time of Day:

SERVICE AREA (CIRCLE)
 Fertilization
 Irrigation
 Pruning | Weeding
 Pest Management
 Structural
 Other

ACTION(S) TAKEN
Hand watering

RECOMMENDATIONS / Observations (Cont...)
Dog Tuff grass seems to be dormant for the season.



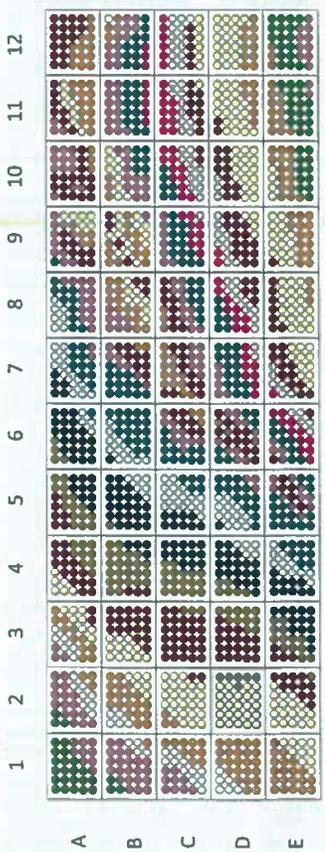
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LIVING WALL | MAINTENANCE + MONITORING DOCUMENTATION

NAME OF PERSON <i>Emily Bredehoeft</i>	DATE <i>10/18/17</i>	TIME (e.g. 11:00 - 11:15) <i>1p - 2p</i>
WEATHER (CIRCLE) 10's 20's 30's 40's 50's 60's 70's 80's 90's 100+ <i>Sunny</i> Cloudy Partly Cloudy Rainy Snowy Hailing/Sleeting Windy		
OBSERVATIONS <i>Plant Health: Vigor? Dry? Chlorotic? No new growth, surviving plants going dormant for the season. Soil Medium: Saturation - dry Panels? Coverage? Soil moisture, good. Ever coverage with minimal dry patches, mostly spots with out plant cover.</i>		
SPRING MOBILIZATION Irrigate often for shorter periods of time. Irrigation: Zone run times; any adjustments?	SUMMER Increase irrigation time of each zone and/or frequency.	FALL Decrease irrigation time of each zone and/or frequency.
WINTERIZATION Drain pipes/ blowout and shift to hand watering (frequency to depend on climate, but plant roots must remain moist at all times!).		
CURRENT SETTINGS N-P-K: Dosatron: Irrigation Frequency: Irrigation Duration: Irrigation Time of Day:	SERVICE AREA (CIRCLE) Fertigation Irrigation Pruning Weeding Pest Management Structural Other	ACTION(S) TAKEN <i>Handwatering</i>
RECOMMENDATIONS		

- ▲ Fertilization activities include adjustments to Dosatron settings, NPK ratios and frequency (dose rates), checking tank levels, refilling liquid fertilizer, and cleaning filters.
- Irrigation activities relate to changes in frequency, duration, time of day, as well as general system assessments (e.g. checking lines and emitters).
- Any pruning or weeding activities should note what was removed (if known) and in what quantity (e.g. 11 specimens).
- ▲ Any pest management activities should describe what pest is being managed (if known), what has been applied, and in what quantity.
- Any structural maintenance includes checking the frame and flexipanel and clearing out the gutter.
- Any other actions taken that do not fall under the listed service areas should be noted and described in detail.
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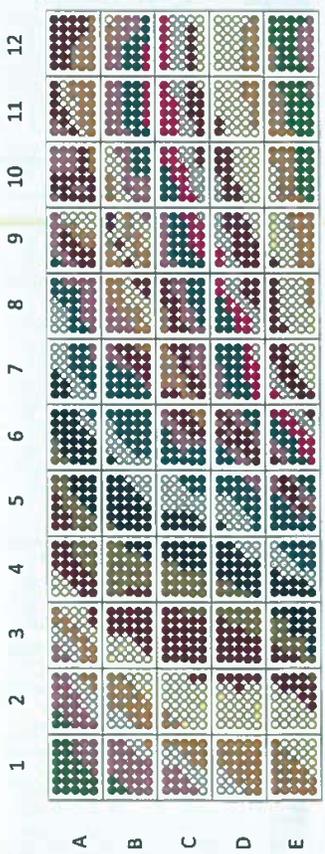
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LIVING WALL | MAINTENANCE + MONITORING DOCUMENTATION

NAME OF PERSON <i>Emily Bredehoeft</i>	DATE <i>10/25/17</i>	TIME (e.g. 11:00 - 11:15)
WEATHER (CIRCLE) 10's 20's 30's 40's 50's 60's 70's 80's 90's 100+ <i>Sunny</i> Cloudy Partly Cloudy Rainy Snowy Hailing/Sleeting Windy		
OBSERVATIONS <i>Plant Health: Vigor? Dry? Chlorotic? Uneven coverage</i> <i>Soil Medium: Saturation - dry Panels? Coverage?:</i>		
CURRENT SETTINGS N-P-K: Dosatron: Irrigation Frequency: Irrigation Duration: Irrigation Time of Day:	SERVICE AREA (CIRCLE) Fertigation <i>Irrigation</i> Pruning Weeding Pest Management Structural Other	ACTION(S) TAKEN <i>Handwatering</i>
RECOMMENDATIONS <i>Continue to monitor.</i>		
SPRING MOBILIZATION* Irrigate often for shorter periods of time. Irrigation: Zone run times; any adjustments?	SUMMER Increase irrigation time of each zone and/or frequency.	FALL Decrease irrigation time of each zone and/or frequency.
		WINTERIZATION Drain pipes/ blowout and shift to hand watering (frequency to depend on climate, but plant roots must remain moist at all times!).

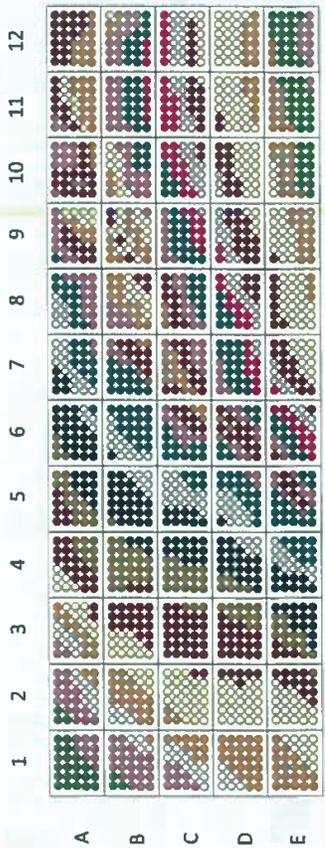
- ▲ *Fertigation* activities include adjustments to Dosatron settings, NPK ratios and frequency (dose rates), checking tank levels, refilling liquid fertilizer, and cleaning filters.
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LIVING WALL | MAINTENANCE + MONITORING DOCUMENTATION

NAME OF PERSON <i>Emily Bredemeff</i>	DATE 11/6/17	TIME (e.g. 11:00 - 11:15) 10a-11a
WEATHER (CIRCLE) 10's Sunny Cloudy Partly Cloudy Rainy Snowy Hailing/Sleetng Windy 20's Cloudy 30's 40's 50's 60's 70's 80's 90's 100's		
OBSERVATIONS <i>Plant Health: Vigor? Dry? Chlorotic? Living plants seem stable, no new die off found. Possible new growth in upper left buffalo Soil Medium: Saturation - dry Panels? Coverage? grass. Never water flow still in effect.</i>		
CURRENT SETTINGS N-P-K: Dosatron: Irrigation Frequency: Irrigation Duration: Irrigation Time of Day:		SERVICE AREA (CIRCLE) Fertigation Irrigation Pruning Weeding Pest Management Structural Other
RECOMMENDATIONS / Observations <i>Lady bugs seem to be retreating for the winter, only 4 sighted, however aphids are essentially gone.</i>		ACTION(S) TAKEN <i>Trimming back the dog tuft grass. Checking on aphid infestation. General observations</i>
FALL Decrease irrigation time of each zone and/or frequency.	WINTERIZATION Drain pipes/blowout and shift to hand watering (frequency to depend on climate, but plant roots must remain moist at all times!).	

- ▲ **Fertigation** activities include adjustments to Dosatron settings, NPK ratios and frequency (dose rates), checking tank levels, refilling liquid fertilizer, and cleaning filters.
- **Irrigation** activities relate to changes in frequency, duration, time of day, as well as general system assessments (e.g. checking lines and emitters).
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- **Any structural maintenance** includes checking the frame and flexipanel and clearing out the gutter.
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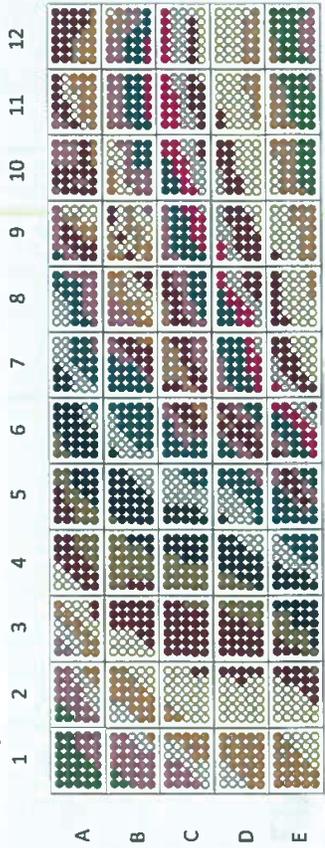


LIVING WALL | MAINTENANCE + MONITORING DOCUMENTATION

NAME OF PERSON <i>Emily Bredehoeft</i>	DATE <i>11/6/17</i>	TIME (e.g. 11:00 - 11:15) <i>1:30p - 2:30p</i>	ACTION(S) TAKEN <i>Handwatering</i>
WEATHER (CIRCLE) 10's <u>Sunny</u> 20's <u>Cloudy</u> 30's <u>Partly Cloudy</u> 40's <u>Partly Cloudy</u> 50's <u>Partly Cloudy</u> 60's <u>Rainy</u> 70's <u>Snowy</u> 80's <u>Snowy</u> 90's <u>Hailing/Sleeting</u> 100+ <u>Windy</u>		CURRENT SETTINGS N-P-K: Dosatron: Irrigation Frequency: Irrigation Duration: Irrigation Time of Day:	SERVICE AREA (CIRCLE) Fertigation Irrigation Pruning Weeding Pest Management Structural Other
OBSERVATIONS <i>Plant Health: Vigor? Dry? Chlorotic?: Panels without living Soil Medium: Saturation -dry Panels? Coverage?: Plants are very dry.</i>		RECOMMENDATIONS <i>Continue to monitor.</i>	
SPRING MOBILIZATION* Irrigate often for shorter periods of time. Irrigation: Zone run times; any adjustments?		FALL Decrease irrigation time of each zone and/or frequency.	WINTERIZATION Drain pipes/ blowout and shift to hand watering (frequency to depend on climate, but plant roots must remain moist at all times!).

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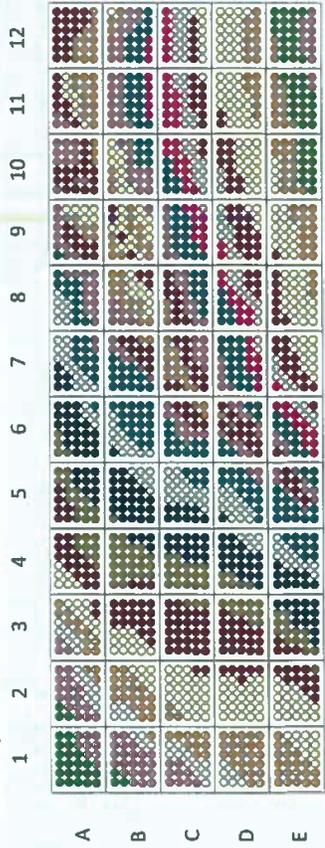


LIVING WALL | MAINTENANCE + MONITORING DOCUMENTATION

NAME OF PERSON <i>Emily Bredelhoeft</i>	DATE <i>11/15/17</i>	TIME (e.g. 11:00 - 11:15) <i>1:10p - 2:10p</i>	ACTION(S) TAKEN <i>Handwatering! 1 minute per panel = 60 minutes</i>
WEATHER (CIRCLE) 10's 20's 30's 40's 50's 60's 70's 80's 90's 100+ <i>Sunny</i> Cloudy Partly Cloudy Rainy Snowy Hailing/Sleeting <i>Windy</i>		CURRENT SETTINGS N-P-K: Dosatron: Irrigation Frequency: Irrigation Duration: Irrigation Time of Day:	SERVICE AREA (CIRCLE) Fertigation <i>Irrigation</i> Pruning Weeding Pest Management Structural Other
OBSERVATIONS <i>Plant Health: Vigor? Dry? Chlorotic? Living plants are dormant. No other visible changes.</i> <i>Soil Medium: Saturation - dry panels? Coverage?:</i> <i>Partially dry</i>		RECOMMENDATIONS <i>Continue to monitor</i>	
SPRING MOBILIZATION* Irrigate often for shorter periods of time. Irrigation: Zone run times; any adjustments?		FALL Decrease irrigation time of each zone and/or frequency.	WINTERIZATION Drain pipes/ blowout and shift to hand watering (frequency to depend on climate, but plant roots must remain moist at all times!).

- ▲ *Fertigation* activities include adjustments to Dosatron settings, NPK ratios and frequency (dose rates), checking tank levels, refilling liquid fertilizer, and cleaning filters.
- *Irrigation* activities relate to changes in frequency, duration, time of day, as well as general system assessments (e.g. checking lines and emitters).
- Any *pruning* or *weeding* activities should note what was removed (if known) and in what quantity (e.g. 1.1 specimens).
- ▲ Any *pest management* activities should describe what pest is being managed (if known), what has been applied, and in what quantity.
- Any structural maintenance includes checking the frame and flexipanel and clearing out the gutter.
- Any other actions taken that do not fall under the listed service areas should be noted and described in detail.

+ Please refer to the **Routine Living Wall Maintenance guide** for more detailed operations and maintenance information.



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- SEDUM JOHN CREECH
- SEDUM VOODOO "BLAZE"
- DOG TUFT GRASS
- SEDUM BLUE SPRUCE
- BUFFALO GRASS
- SEDUM SEXANGULARE
- SEDUM CZAR'S GOLD



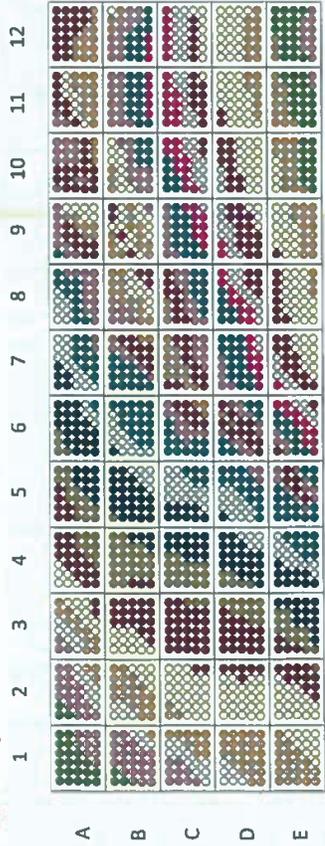
LIVING WALL | MAINTENANCE + MONITORING DOCUMENTATION

NAME OF PERSON <i>Emily Bredehoeft</i>	DATE <i>11/22/17</i>	TIME (e.g. 11:00 - 11:15) <i>1:11p - 2:11p</i>	CURRENT SETTINGS N-P-K: Dosatron: Irrigation Frequency: Irrigation Duration: Irrigation Time of Day:	SERVICE AREA (CIRCLE) Fertigation Irrigation Pruning + Weeding Pest Management Structural Other	ACTION(S) TAKEN <i>Handwatering: 1 min / panel</i>
WEATHER (CIRCLE) 10's 20's 30's 40's 50's 60's 70's 80's 90's 100+ <i>Sunny</i> Cloudy Partly Cloudy Rainy Snowy Hailing/ Sleeting <i>Windy/Breezy</i>					

OBSERVATIONS <i>Plant Health: Vigor? Dry? Chlorotic? No visible changes.</i> <i>Soil Medium: Saturation - dry Panels? Coverage?: Partially dry.</i>		RECOMMENDATIONS <i>Continue to monitor. Dead plant matter will need to be removed come Spring</i>
SPRING MOBILIZATION* Irrigate often for shorter periods of time. Irrigation: Zone run times; any adjustments?	SUMMER Increase irrigation time of each zone and/ or frequency.	FALL Decrease irrigation time of each zone and/ or frequency.
		WINTERIZATION Drain pipes/ blowout and shift to hand watering (frequency to depend on climate, but plant roots must remain moist at all times!).

- ▲ *Fertigation* activities include adjustments to Dosatron settings, NPK ratios and frequency (dose rates), checking tank levels, refilling liquid fertilizer, and cleaning filters.
- *Irrigation* activities relate to changes in frequency, duration, time of day, as well as general system assessments (e.g. checking lines and emitters).
- *Any pruning or weeding* activities should note what was removed (if known) and in what quantity (e.g. 1.1 specimens).
- ▲ *Any pest management* activities should describe what pest is being managed (if known), what has been applied, and in what quantity.
- *Any structural maintenance* includes checking the frame and flexipanel and clearing out the gutter.
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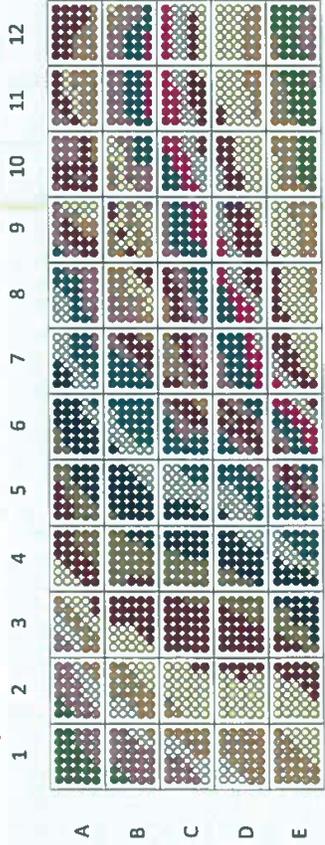


LIVING WALL | MAINTENANCE + MONITORING DOCUMENTATION

NAME OF PERSON <i>Emily Bredelhoeft</i>	DATE <i>12/1/17</i>	TIME (e.g. 11:00 - 11:15) <i>1:30p - 2:30p</i>	CURRENT SETTINGS N-P-K: Dosatron: Irrigation Frequency: Irrigation Duration: Irrigation Time of Day:	SERVICE AREA (CIRCLE) Fertigation Irrigation Pruning Weeding Pest Management Structural Other	ACTION(S) TAKEN <i>Handwatering Imm/panel</i>
WEATHER (CIRCLE) 10's 20's 30's 40's 50's 60's 70's 80's 90's 100+ <i>Sunny</i> Cloudy Partly Cloudy Rainy Snowy Hailing/Sleeting Windy			RECOMMENDATIONS <i>Continue to monitor.</i>		
OBSERVATIONS <i>Plant Health: Vigor? Dry? Chlorotic?: dormant, no visible changes. Soil Medium: Saturation - dry Panels? Coverage?: Partially dry, mostly in areas with no living plants.</i>			FALL Decrease irrigation time of each zone and/or frequency.		
SPRING MOBILIZATION* Irrigate often for shorter periods of time. Irrigation: Zone run times; any adjustments?			WINTERIZATION Drain pipes/ blowout and shift to hand watering (frequency to depend on climate, but plant roots must remain moist at all times!).		

- ▲ *Fertigation* activities include adjustments to Dosatron settings, NPK ratios and frequency (dose rates), checking tank levels, refilling liquid fertilizer, and cleaning filters.
- *Irrigation* activities relate to changes in frequency, duration, time of day, as well as general system assessments (e.g. checking lines and emitters).
- *Any pruning or weeding* activities should note what was removed (if known) and in what quantity (e.g. 11 specimens).
- ▲ *Any pest management* activities should describe what pest is being managed (if known), what has been applied, and in what quantity.
- *Any structural maintenance* includes checking the frame and flexpanels and clearing out the gutter.
- *Any other actions* taken that do not fall under the listed service areas should be noted and described in detail.

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LIVING WALL | MAINTENANCE + MONITORING DOCUMENTATION

NAME OF PERSON <i>Emily Bredehoeft</i>	DATE <i>12/8/17</i>	TIME (e.g. 11:00 - 11:15) <i>2p - 3p</i>
WEATHER (CIRCLE)		
10's Sunny	20's Cloudy	30's Partly Cloudy
40's 60's	50's 70's	80's 90's 100's
Cloudy	Rainy	Snowy
	Hailing/ Sleet	Windy

CURRENT SETTINGS

N-P-K: _____

Dosatron: _____

Irrigation Frequency: _____

Irrigation Duration: _____

Irrigation Time of Day: _____

SERVICE AREA (CIRCLE)

Fertigation Irrigation

Pruning | Weeding _____

Pest Management _____

Structural _____

Other _____

ACTION(S) TAKEN

Hand watering

RECOMMENDATIONS

Continue to monitor, water as often as weather conditions allow.

FALL

Decrease irrigation time of each zone and/or frequency.

WINTERIZATION

Drain pipes/ blowout and shift to hand watering (frequency to depend on climate, but plant roots must remain moist at all times!).

OBSERVATIONS

Plant Health: Vigor? | Dry? | Chlorotic?: Stable, no visible changes

Soil Medium: Saturation - dry Panels? | Coverage?: Partially dry in areas w/no plant cover.

SPRING MOBILIZATION*

Irrigate often for shorter periods of time.

Irrigation: Zone run times; any adjustments?

SUMMER

Increase irrigation time of each zone and/or frequency.

- ▲ *Fertigation* activities include adjustments to Dosatron settings, NPK ratios and frequency (dose rates), checking tank levels, refilling liquid fertilizer, and cleaning filters.
- *Irrigation* activities relate to changes in frequency, duration, time of day, as well as general system assessments (e.g. checking lines and emitters).
- *Any pruning or weeding* activities should note what was removed (if known) and in what quantity (e.g. 11 specimens).
- △ *Any pest management* activities should describe what pest is being managed (if known), what has been applied, and in what quantity.
- *Any structural maintenance* includes checking the frame and flexipanel and clearing out the gutter.
- *Any other actions* taken that do not fall under the listed service areas should be noted and described in detail.

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1	2	3	4	5	6	7	8	9	10	11	12
A	B	C	D	E							

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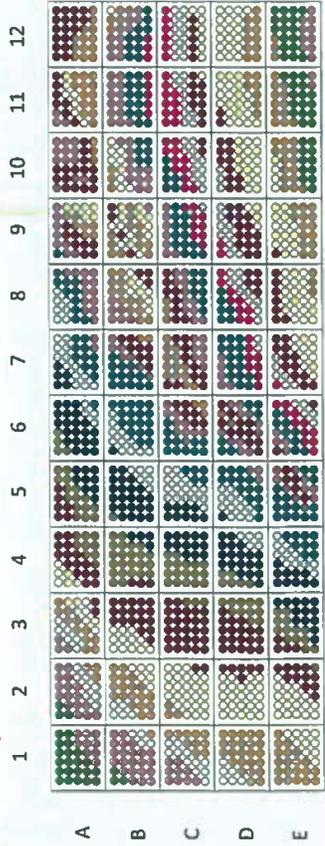


LIVING WALL | MAINTENANCE + MONITORING DOCUMENTATION

NAME OF PERSON <i>Emily Bredelhoeft</i>	DATE <i>12/13/17</i>	TIME (e.g. 11:00 - 11:15) <i>1:30p - 2:30p</i>	CURRENT SETTINGS N-P-K: Dosatron: Irrigation Frequency: Irrigation Duration: Irrigation Time of Day:	SERVICE AREA (CIRCLE) Fertilization Irrigation Pruning Weeding Pest Management Structural Other	ACTION(S) TAKEN <i>Handwatering</i>
WEATHER (CIRCLE) 10's 20's 30's 40's 50's 60's 70's 80's 90's 100+ <i>Sunny</i> Cloudy Partly Cloudy Rainy Snowy Hailing/ Sleetng <i>Windy/ Breezy</i>			RECOMMENDATIONS <i>Continue to monitor and water as needed.</i>		
OBSERVATIONS <i>Plant Health: Vigor? Dry? Chlorotic?: No visible changes.</i> <i>Soil Medium: Saturation - dry Panels? Coverage?: Slightly dry but not completely, plants are dry. Panels without plants are dry.</i>			FALL Decrease irrigation time of each zone and/ or frequency.		
SPRING MOBILIZATION* Irrigate often for shorter periods of time. Irrigation: Zone run times; any adjustments?			WINTERIZATION Drain pipes/ blowout and shift to hand watering (frequency to depend on climate, but plant roots must remain moist at all times!).		

- ▲ Fertilization activities include adjustments to Dosatron settings, NPK ratios and frequency (dose rates), checking tank levels, refilling liquid fertilizer, and cleaning filters.
- Irrigation activities relate to changes in frequency, duration, time of day, as well as general system assessments (e.g. checking lines and emitters).
- Any pruning or weeding activities should note what was removed (if known) and in what quantity (e.g. 1.1 specimens).
- ▲ Any pest management activities should describe what pest is being managed (if known), what has been applied, and in what quantity.
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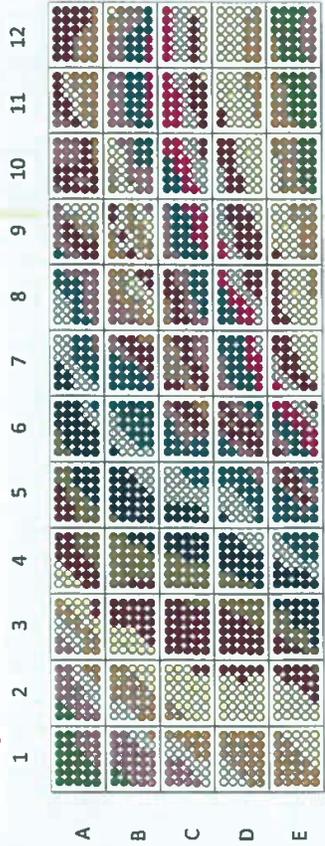


LIVING WALL | MAINTENANCE + MONITORING DOCUMENTATION

NAME OF PERSON <i>Emily Bredehoeft</i>	DATE <i>12/20/17</i>	TIME (e.g. 11:00 - 11:15) <i>1:40p - 2:40p</i>	SERVICE AREA (CIRCLE) <i>Handwatering</i>	ACTION(S) TAKEN
WEATHER (CIRCLE) 10's 20's 30's 40's 50's 60's 70's 80's 90's 100+ Sunny Cloudy Partly Cloudy Rainy Snowy Hailing/ Sleetng Windy		CURRENT SETTINGS N-P-K: Dosatron: Irrigation Frequency: Irrigation Duration: Irrigation Time of Day:	Fertiligation Irrigation Pruning Weeding Pest Management Structural Other	
OBSERVATIONS <i>Plant Health: Vigor? Dry? Chlorotic?: No visible changes, living plants dormant.</i> <i>Soil Medium: Saturation - dry Panels? Coverage?: Uneven Saturation, panels without plants dry.</i>		RECOMMENDATIONS <i>Continue to monitor. Water as weather allows.</i> <i>*Snow expected for tomorrow (12/21)*</i> <i>*Possible last watering day for the year (2017)*</i>		
SPRING MOBILIZATION* Irrigate often for shorter periods of time. Irrigation: Zone run times; any adjustments?		SUMMER Increase irrigation time of each zone and/or frequency.	FALL Decrease irrigation time of each zone and/or frequency.	WINTERIZATION Drain pipes/ blowout and shift to hand watering (frequency to depend on climate, but plant roots must remain moist at all times!).

- ▲ *Fertiligation* activities include adjustments to Dosatron settings, NPK ratios and frequency (dose rates), checking tank levels, refilling liquid fertilizer, and cleaning filters.
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