

LAURA CONYERS SMITH MUNICIPAL

# Rose Garden Restoration



In 2009?, Kansas City Parks called on Earth Right products to help restore the famous Rose Garden in Jacob L. Loose Memorial Park.

SPOLIER ALERT: In 2018, the garden was awarded a Garden of Excellence by the World Federation of Rose Societies.



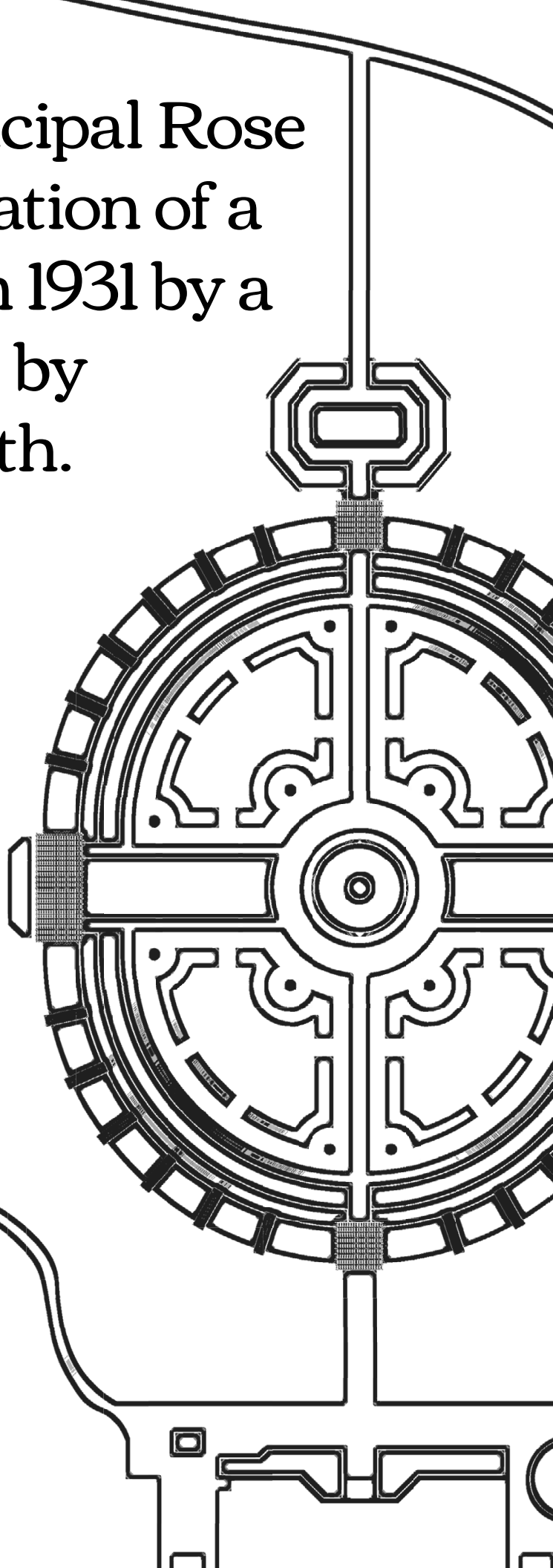


# Kansas City's Municipal Rose Garden is the realization of a dream that began in 1931 by a group of women led by Laura Conyers Smith.

They established the Kansas City Rose Society which created the public rose garden in Loose Park. The first garden contained 120 rose plants. Now there are about 3,000 roses of about 130 varieties in the 1.5 acre garden.

The circular plan of the garden was the concept of eminent landscape architect, S. Herbert Hare. In 1965, the garden was officially named the Laura Conyers Smith Municipal Rose Garden.

**LAURA CONYERS SMITH  
MUNICIPAL ROSE GARDEN**





## The Problem

Over the years there were issues in the garden related to clay, water filtration and absorption, chemical use, and use of commercial fertilizer. Additionally, in years with extreme temperatures the roses would suffer and did not always survive.

In an effort to increase pore space in the soil to allow for the movement of water, nutrients, bacterial and fungal support, and allow for better root growth, the Kansas City Rose Society called on Janmarie Hornack, owner of the EarthRight product line.

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## Objectives

This report is the initial phase of an effort to return the park to sustainable practices. Our overall objective over time is to reduce chemicals for safety, cost savings and so that we will be a responsible environmental citizen.

1. Increased pore space
2. Better water and nutrient absorption
3. Better drainage
4. Less NPK usage
5. More natural nutrient usage
6. Decrease use of chemicals due to health of roses to save money and time
7. Ease of application
8. Respect for the environment and water table
9. Colonization of bacterial and fungal systems to support health and root systems

# Products Used



## EARTH RIGHT SUPER STUFF®

Helps to loosen soil, add beneficial microbes and better utilize nutrients.



## SURE BLOOM NATURAL®

Helps to replace straight fish emulsion applications and provide a much wider range of nutrients in a safe manner in heat and gentle manner in spring.



## SURE BLOOM 6-7-6®

Helps to apply NPK in low doses to replace high dose commercial NPK and to provide other phytonutrients that are not available in commercial fertilizer.

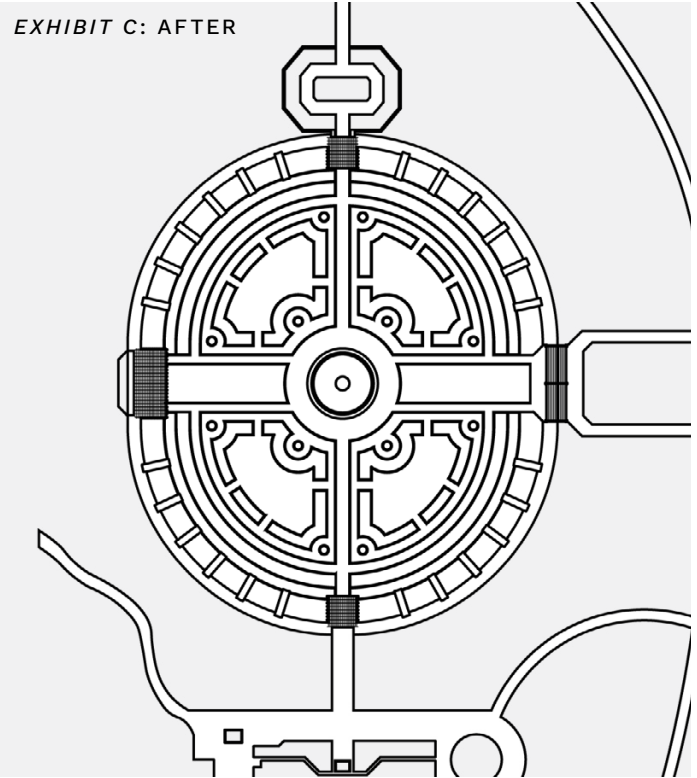
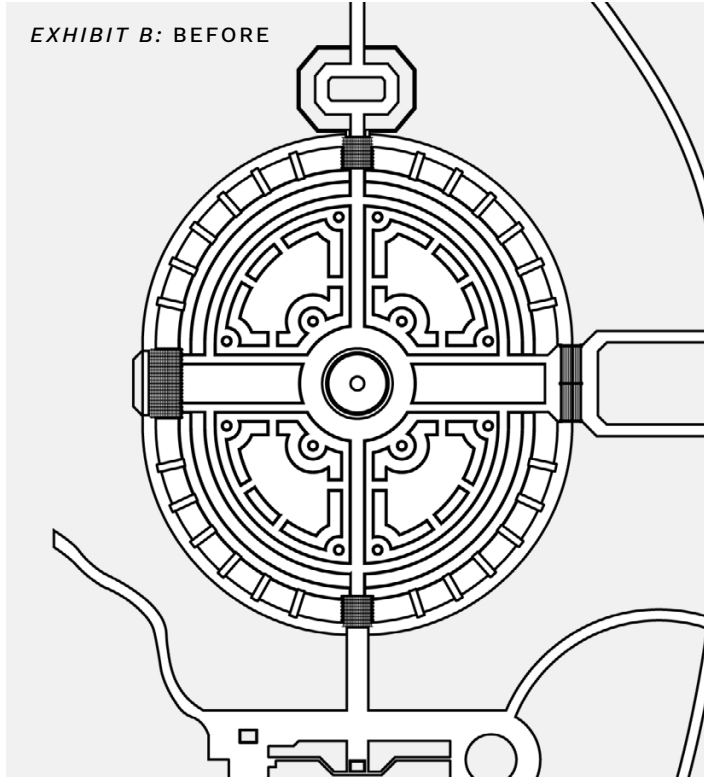


## THE MUSHROOM STUFF®

Helps increase healthy root systems using beneficial mycorrhizae, natural nutrients and Earth Right conditioner.



# Before vs. After



## Garden Renovation

Exhibit B is a map of the garden before the renovation. Exhibit C is a plan of the garden as it stands today, after the renovation. As you can see from these maps, we dug out and added drainage to 16 beds in the center of the garden. The North bed, the West bed, the roses on the outer ring, and the east entrance were not moved. We had wanted to replace the roses at the East entrance because they had poor growth every year and had weak canes.

They were susceptible to pest infestation and disease from being so weak. The company convinced me to use the East Entrance beds as an experiment so I did not replace those roses. New pathways were installed to mimic pathways in the 30's.

The central section of the garden was dug up and the turf, the shrubs and the roses were all affected. When we looked at the soil structure 4 feet down as the drainage was being installed we realized that most of the structure was extremely poor. It was either clay or gumbo at deep levels. Exhibit D from Turf Diagnostics describes soil conditions near the surface, in the top 12 – 18". Of course, I realized that soil conditions at deeper levels affected water percolation throughout the garden. Knowing the dilemma I worked with the principals of Earth Right to come up with a plan to treat the garden beds over a five year period to rectify the situation as much as possible. We are now four years into the program and my notes and observations are in this report.



# The Report

This was a stressful process.

By: Janmarie Hornack,  
*Owner & Creator of Earth Right Products*

Compaction was my biggest concern due to the heavy equipment and the condition of the underlying soil.



Due to the structure of the decision making for the renovation, I was not in control of the plan for renovating the soil. The decision makers concluded that adding sand to all of the beds, as suggested by the ARS and our landscapers, was in our best interest and that adding organic matter was not as important. I believe that organic matter containing beneficial microbes is crucial to plant and soil health. Sand is used in concrete and when mixed with clay it will perform for a time. But over time, the fines compact and we get a brick like clay structure.

So after the renovation, I had beds containing more sand than I wanted and not enough organic matter. We used the Earth Right products to try to overcome this liability. Of course, I was a little nervous because **I had to plant over 2000 hybrid teas, grandiflora and shrub roses and have them root and bloom and be healthy.** Naturally my concern was for leafing out, strong canes and good development. I also thought that flooding in the beds during rainy season could sabotage my efforts to maintain the new plants.



In fact, that year we did lose a few roses due to standing water where there had been sand added to the beds. The sand was added to the areas that were holding water, against my better judgment and that is in fact where we wound up having problems the first year (2009).

We applied Earth Right Super Stuff but we needed multiple applications to overcome renovation specs. After the first year, this was not really an issue. The product had done what it said it would do, our soil was more open, I had better soil tilth, percolation, and the microbes in the product were helpful in reducing nutrient application rates. By 2010 most of the areas holding water due to the added sand were corrected and by 2011 they all were corrected.

By planting the new roses with The Mushroom Stuff we got excellent and quick root growth in terms of size of the roots and because Earth Right Super Stuff opened soil at deeper levels the roots could grow down and out. I have pulled some of these roses over the last four years to move them or replace them with new varieties. I have

always moved roses in beds and there are always regular replacements. The roses that we have moved or replaced since implementing our current program have bigger roots and longer roots that pulled from deeper depths and larger canes than roses we moved prior to the renovation which were treated with commercial NPK and no mycelium, microbes or conditioner.

1. Less NPK was required
2. Less spray for disease was required

Since 2009 we have steadily reduced our dependence on Sure Bloom 6-7-6. The company had said that we would be able to do this and we have. Just switching to the Earth Right program meant considerable reduction in NPK. Now we are using less than we did in 2009. In fact we have reduced our dependence on NPK by half since 2009 and we used 1/7 the amount of N in 2009 that we did in 2008!

The good news is that means less phosphates and nitrogen in the soil/water with improved results. The bloom count and size are not negatively affected by the reduction in the fertilizer chemicals we need to reduce to be environmentally friendly. So this proves that we can grow spectacular roses for the city using natural ingredients and microbes and protect the environment at the same time. Over the four years we have had a steady program that has increased health annually and reduced dependence on chemicals.

The difference is visually remarkable even to the untrained eye. We saved time and money by not replacing these





roses. In fact, these roses were not even treated every time we applied product and they are still spectacular and people remark about them. Bloom size is bigger than we have ever anticipated. The roses are full and healthy.

Twenty five years ago I was using a lot more NPK and an insecticide in the formula. I changed this fertilizer as quickly as I could. I did not like dumping pesticides into the soil. I was also spending a lot of man hours applying granular fertilizer to the garden. In the early 90's I switched to lower NPK numbers in fertilizer and did not include pesticides in the mix. We treated for pests separately as needed. In 2009 we totally changed our program to more natural methods using the Earth Right Products which have been wonderful. I love the liquid application as it can be applied directly to the mulch

and watered in to feed the roses; restore the soil profile and microbes; and to increase root and bloom production.

I have seen the roses in the Laura Conyers Smith Municipal Rose Garden improve annually in the four years I have been using the Earth Right products.

The rose canes on average were a little bit larger then a number 2 pencil before using Earth Right products. Presently the canes are on average about 1 – 2 inches in diameter near the base and not much smaller as you move up the cane.

The leaves on the roses are a deeper green and have more leaves for better photosynthesis. Black spot and other diseases still affect our roses but overall the number of diseased leaves has decreased for an overall reduction in black spot.



# Exhibit D



## TURF DIAGNOSTICS & DESIGN

"Managing the Elements Through Science"

July 10, 2009

Diana Long  
PSI  
1211 W. Cambridge Circle Dr.  
Kansas City, KS 66103

RE: Loose Park Rose Garden - File #09070012

Dear Ms. Long:

Enclosed are the laboratory results of the nine samples received by our laboratory on 7/6/09. These samples were tested for particle size (ASTM F1632) and organic matter (ASTM D2974).

The samples as received appear to be core samples ranging from 13" to 18" in length. The samples do not appear to be homogeneous throughout the profile. The table below details our observations of the submitted samples.

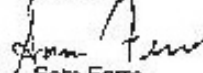
Lab ID #	Sample Name	Observations
09070012-1	NE1	organic in top 10"; clay & gravel 10-18"; large gravel in bottom 2"
09070012-2	NE2	0-13" clay w/small gravel; 13-18" big gravel w/lighter color clay
09070012-3	NE3	0-14" & 16-18" clay; 14-16" sandy gravelly layer
09070012-4	NE4A	striations present but mostly consistent throughout
09070012-5	SE1	consistent with organic present throughout entire 14"
09070012-6	SE2	dark clay to 12"; brownish clay 12-17"
09070012-7	SE3	large root mass in top 4"; otherwise similar throughout entire 17" core
09070012-8	SE4B	loose clay & some organic in top 14"; 14-18" lighter clay
09070012-9	SW3B	dark clay to 15"; gray clay 15-17"

After discussing these samples with Kelly Rotort of PSI, the NE2 and NE3 samples were subdivided into two samples each for testing. The remaining samples were subsampled, and the predominant layers were used for testing.

These samples do not meet the sand, silt, and clay specifications, but the SE2 (0-12") sample is classified as Loam per the specifications. The organic matter contents for these samples are below the specified range of 23 - 26%.

If you have any questions or are in need of further assistance, please do not hesitate to contact us. Samples are generally kept on the premises for 45 days after report date. Thank you for using Turf Diagnostics and Design, Inc.

Sincerely,

  
Sam Ferro  
President

File: Loose Park Rose Garden

# Exhibit D

**TURF**  
DIAGNOSTICS  
& DESIGN

"Managing the Elements Through Science"



PSI  
Diana Long  
1211 W. Cambridge Circle Dr.  
Kansas City, KS 66103  
PHONE: 913-370-1500

Date received Jul-02-2009  
Accession No. 03099130  
Date reported Jul-10-2009  
Facility Loose Park Rose Garden

### Particle Size Evaluation\* - USDA

Lab ID#	Sample Name	% Sand 2.0 - 0.06 mm	% Silt 0.06 - 0.002 mm	% Clay < 0.002 mm	Gravel 4.0 (5)	Gravel 2.0 (10)	% Retained on USDA mm (US sieve)				
							V. Coarse 1.0 (10)	Coarse 0.5 (30)	Medium 0.25 (60)	Fine 0.10 (140)	V. Fine 0.05 (270)
09070012-5	SE1	22.5	51.9	25.5	3.3	4.1	4.6	7.2	5.4	3.6	2.1
09070012-6	SE2 (0-12")	25.2	49.0	24.9	0.1	4.4	5.4	7.8	6.0	4.2	2.1
09070012-7	SE3	23.2	51.0	24.9	0.2	3.6	5.2	7.2	5.8	3.5	1.6
09070012-8	SE4B (0-14")	18.0	55.1	26.9	5.2	5.0	4.6	5.2	4.5	3.7	2.1
09070012-9	SW30 (0-15")	19.8	54.1	26.1	1.1	2.2	4.6	5.8	5.1	3.3	1.6
Rose Bud Planting Medium Specifications		37 - 41	44 - 48	13 - 17			29 - 31	31 - 33	24 - 28	10 - 12	1 - 3
Sieve Size / Sand Fraction Percentage							24.3	28.1	23.8	16.2	11.0

Lab ID#	Sample Name	USDA Textural Classification	Uniformity Coefficient Cu	D60 mm	Acid Reaction	Combined Fractions < 0.25 mm	No. 100 Fines #/100	% of Total > 1/8"	% Organic Matter Dry Wt.**
09070012-5	SE1	Silt Loam	21.7	0.01	Moderate	82.6	2.8	-	13.41
09070012-6	SE2 (0-12")	Loam	19.7	0.01	Severe	80.8	3.0	-	12.46
09070012-7	SE3	Silt Loam	15.5	0.01	Moderate	81.8	2.4	-	10.64
09070012-8	SE4B (0-14")	Silt Loam	16.6	0.01	Moderate	65.5	2.1	-	12.08
09070012-9	SW30 (0-15")	Silt Loam	13.8	0.01	Severe	64.4	2.3	-	10.59
Rose Bud Planting Medium Specifications		Loam							23 - 26

A2: A Testing Certificate Number 797-01 ASTM F1832 Method B & Determination of Size Factors SOP ASTN E2974  
 Samples were tested as received and comments pertain only to the samples shown.  
 This report may not be reproduced in part, but only in full.  
 Sample condition upon receipt was noted.  
 Samples were received with a transmittal letter.

Reviewed by: *[Signature]*



# Fertilizer Records 2009-2012

YEAR	EARTH RIGHT SUPER STUFF	THE MUSHROOM STUFF	SURE BLOOM® NATURAL	SURE BLOOM® 6-7-6	TOTAL NPK	NOTES
2009	50 gal	50 gal	10 gal	80 gal	N-41.76 P-48.72 K-41.76	The entire rose garden was redesigned and replaced. There were 2000 roses removed and we replanted with new roses. The beds were full of clay and gumbo and we were unsure how well the newly designed garden would perform. When irrigation was going in we found gumbo as well as clay as deep as 4 feet. There was a lot of rain, more than we normally have experienced. Nevertheless, the roses grew to over expectations in terms of height and strength. We had a couple of small spots that held water but were able to get rid of that in 2010.
2010	59 gal	90 gal	33 gal	35 gal	N-18.27 P -21.32 K-18.27	We had higher than normal temperatures and precipitation.
2011	30 gal	40 gal	20 gal	65 gal	N-33.93 P-39.59 K-33.93	We replaced some varieties in the west bed and created new beds in the southwest outer ring. Everything performed well. The new area had been highly compacted from construction as heavy equipment drove through the area repeatedly. This has not affected the health of the roses because the Earth Right program loosens the soil. Temperature and precipitation was just slightly above average.
2012	94 gal	94 gal	84 gal	38 gal	N-19.84 P - 3.14 K-19.84	We had drought conditions from the winter of 2011 through all of 2012 with very high heat in the summer. High levels of Earth Right Super Stuff, The Mushroom Stuff and Sure Bloom® Natural were needed to keep roses cool, blooming and showy since our summer was so hot, with temperatures of over 100 degrees for weeks on end. In 2012 we moved Wild Blue Yonder from the west garden to the southwest garden. We moved other roses and most roses performed well despite the heat. We received bare root roses too late in the season and they did not perform well because the heat started too early in the season and so we will replace those roses in 2013.

# Comparison NPK Chart

This chart compares NPK numbers of Commercial Fertilizer vs. **Sure Bloom® 6-7-6** for sustainability issues.

There is a substantial amount of savings for the water table and environment. There is also less salts applied when using Sure Bloom® 6-7-6 compared with the commercial fertilizers. For the purposes of this comparison we have rounded the numbers either up or down.



YEAR	NPK	SAVING FOR SUSTAINABILITY OF N	SAVING FOR SUSTAINABILITY OF P	SAVING FOR SUSTAINABILITY OF K	NOTES
2008 Commercial Fertilizers	320– 400– 160	–	–	–	In general before we implemented the Earth Right program we used higher levels of NPK that are in line with levels recommended by ARS.
2009	41.76 – 48.72 – 41.76	278 lbs	351 lbs	119 lbs	
2010	18.27 – 21.32 – 18.27	320 lbs	20 gal	65 gal	
2011	33.93 – 39.59 – 33.93	286 lbs	84 gal	38 gal	
2012	19.84 – 23.14 – 19.84	300 lbs	380 lbs	140 lbs	



# Comparison Spraying Record

The 2012 season started a month early so that is why we started spraying in April. We had such hot temperatures in the months of June , July, August and September we did not spray so as not to burn the roses.

The roses went through the drought and extreme heat very well they did not look affected by the high temperatures. They continued to bloom and put on new growth.

PAST YEARS AVERAGE	2012
0 x April	2 x April
3 x May	5 x May
5 x June	2 x June
4 x July	1 x July
4 x August	0 x August
4 x September	3 x September
0 x October	2 x October
<b>20 sprays</b>	<b>15 sprays</b>





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