

Drumthwacket Garden Inventory, Assessment and Immediate Action Plan



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EXECUATIVE SUMMARY

Drumthwacket Estate, the official residence of the governor of New Jersey, has the potential to serve as a home, welcoming meeting place, and model of public estate management. Based on historic research and onsite investigation, this report provides a comprehensive inventory of existing conditions of Drumthwacket Garden and outlines first steps toward the goal to preserve its historic significance, enhance public engagement in its upkeep, increase education opportunities, and incorporate best practices for sustainable stormwater management and habitat diversity.



Drumthwacket Estate is the official residence of the governor of New Jersey. In coordination with the Drumthwacket Foundation, the Center of Urban Environmental Sustainability at Rutgers University was tasked with creating an inventory of existing estate conditions, analyzing the current estate grounds and helping to formulate a direction for the future of the Drumthwacket Estate.

Originally inhabited by the Lenape, the grounds have transitioned over the course of 300 years from a deciduous forest to a colonial agricultural landscape to an Italianate garden. Today, a core feature is the Italianate Garden a typical element of late nineteenth century estates. Originally designed by Daniel Langton in 1893, it fell in disrepair in the second half of the twentieth century. The 1992 reconstruction happened under significant time and financial constraints, leading to the decision to erase historical retaining walls and balustrades and replace them with a contemporary Italianate design. The reconstruction maintained the style and overall spatial composition, some historical elements were preserved including: the wellhead, statue, frog pond, and marble bench. Besides Drumthwacket Estate itself, the most significant historical elements on site are the sycamore trees. The trees were part of the original garden plantings and remain an important

feature of the garden today, creating a link from the past to the present.

The review of historic documents allowed the team to develop a time line of the garden, and provided information to understand the existing conditions. On-site surveys of selected dimensions and elevations were necessary to fill-in missing information required to create an up to date existing conditions map.

Suggestions for future maintenance of the decorative planting beds around the Estate and in the Italianate garden were derived from visual assessments following conversations with Master Gardeners who volunteer caring for the garden in addition to the maintenance staff. The diagram on page 14 outlines planting beds with degraded conditions that might become a priority for improvement of maintenance efforts.

Drumthwacket Estate has the potential to become a model for sustainable and resilient landscapes of larger scale mansions. The analysis of slopes, existing drainage infrastructure, and impervious surface provides information that allows future explorations of more sustainable stormwater management practices. One ad hoc suggestion is to reduce and redirect runoff from the recently

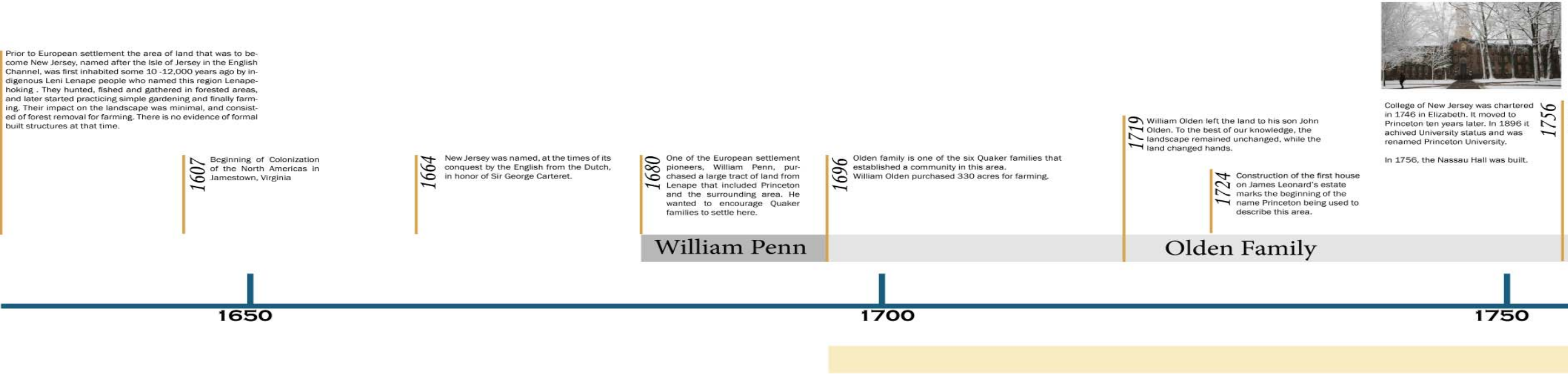
expanded parking lot.

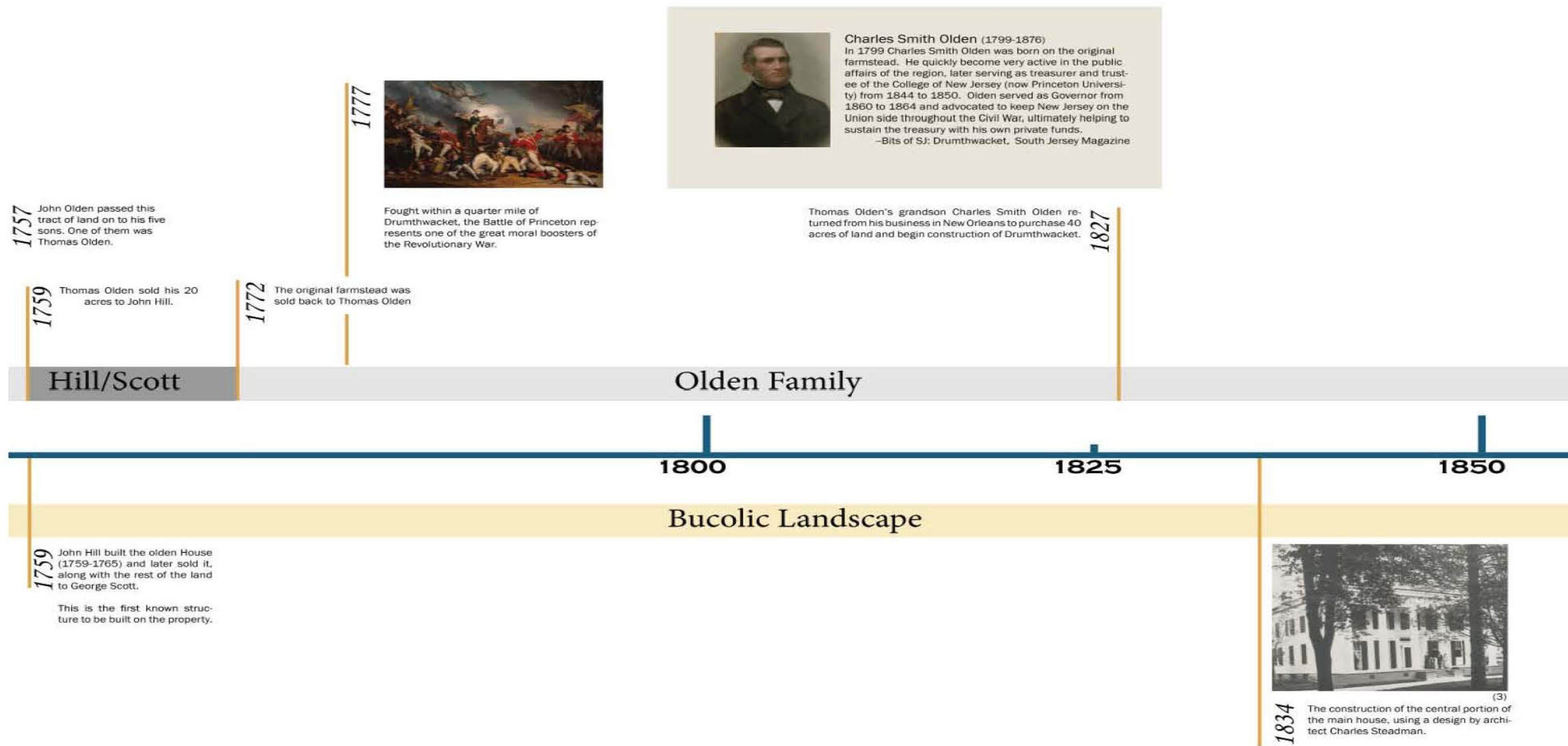
A main function of the estate is to serve as the official residence of the Governor of New Jersey. The garden is used for hosting events of different scales and further has to meet the needs of the Governor's family living in the residence. A diagrammatic outline of usage zones supports event planning and can further inform vegetation management strategies.

Parking overall is an important component of event management for Drumthwacket. The discussion of on-site vehicle circulation and parking outlines potentials for a more efficient parking management. We suggest taking more advantage of off-site parking opportunities during large-scale event by utilizing a shuttle or valet system.

We greatly appreciate the effective collaboration with Drumthwacket Foundation, the NJ Department of Environmental Protection (Director's Office, Gen Services & Support Services), and the Office of the First Lady.

TIMELINE (1650~2050)







Moses Taylor Pyne (1855-1921), a prominent member of Princeton University's Board of Trustees from 1884 to 1921, also served as chairman of the Committee on the university's Grounds and Buildings. His influence guided the physical appearance, style, and campus design of Princeton's collegiate Gothic architecture. Pyne generously purchased hundreds of acres on behalf of the university free of charge and saw the campus and his own property as public cultural assets.

—Alexander Leitch, Princeton University Press

Daniel W. Langton, the landscape architect who designed the Italianate garden of the Drumthwacket. In addition to the Italian influence, Daniel W. Langton utilized French and English elements within the estate to connect the architectural formality to the pastoral landscape of the former farmlands to the South. Langton is one of the eleven charter members responsible for forming the American Society of Landscape Architects in 1898.

—Historic American Buildings Survey



Abram Nathaniel Spanel (1901-1985), "a Russian immigrant who is also an inventor and businessman. His latex products such as inflatable rescue rafts were critical to the success of the war effort. In 1962, his company won a contract to develop the Apollo spacesuit. At the time of his death, Spanel held 2,000 patents. Because of his efforts, the French government decorated Mr. Spanel with one of the highest ranks in the Legion d'Honneur—Grand Officer. During his time Drumthwacket was host to many French guests, including visiting officials and diplomats who were friends of the Spanels."

—W.H. Waggoner, New York Times (April 2, 1985) Jewish Virtual Library

1893 Moses Taylor Pyne purchases Drumthwacket from Phoebe Ann Olden for \$15,000. The industrialist and banker quickly made many alterations to the estate including the addition of the Eastern and Western wings to the original house designed by architect Raleigh C. Gildersleeve and the development of the Italianate garden designed by landscape architect Daniel Webster Langton. Following the purchase of over 300 acres of adjacent land Pyne offered the property as a public park.

1899 Mr Pyne would take twenty years to complete his extensive master vision of Drumthwacket's estate and grounds which included the establishment of a dairy farm, new butler house, greenhouses, new barn and other Elizabethan style outbuildings all designed by prominent architect Raleigh C. Gildersleeve.

1911 A fire destroyed an iconic barn owned by Mr. Moses Taylor Pyne.

1941 Abraham Nathaniel Spanel purchased Drumthwacket and 12 acres of the surrounding land from Agnes Pyne.

Pyne Family

Spanel Family

1875

Charles A. Platt promotes the style in US through his book *Italian Gardens*

1900

Italianate garden design movement in America

1925

In Longwood Gardens, the Italian Water Garden was installed 1925-1927. The design was also inspired by the Villa Gamberaia Garden.

1950

Italianate Garden

Stabilizing

Like many upper class homes in the United States during the Gilded age of the late 1800s and early 1900s, Drumthwacket's grounds were heavily influenced by the traditional Italianate gardens of the 15th century



Borrowing proportions and sequences from the villa Gamberaia in Settignano Italy, Drumthwacket's original Italianate Garden included a three-tiered fountain, ornate precast concrete balustrades and a picturesque view of the naturalistic ponds and rolling pastures beyond.

1893



1910

A pool at the center tier of the Italianate garden was replaced with a large white marble fountain



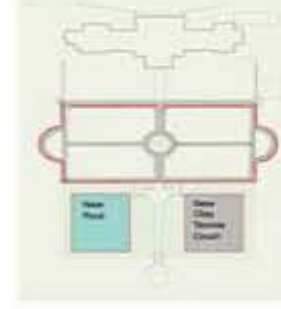
Between 1936 and 1940, there was no maintenance on the gardens because of no house residence

1940

1941

Shortly after the purchase of the house and property, Spanel began to make repairs to the house and garden. Through efforts such as pruning and drainage repairs, the garden conditions improved.

- A swimming pool was installed and the tennis courts were refurbished around 1941
- The paths of the portiere, which originally contained river stone was replaced with asphalt
- Improvements and repairs were done on the garden walls, perennial beds, and urns.

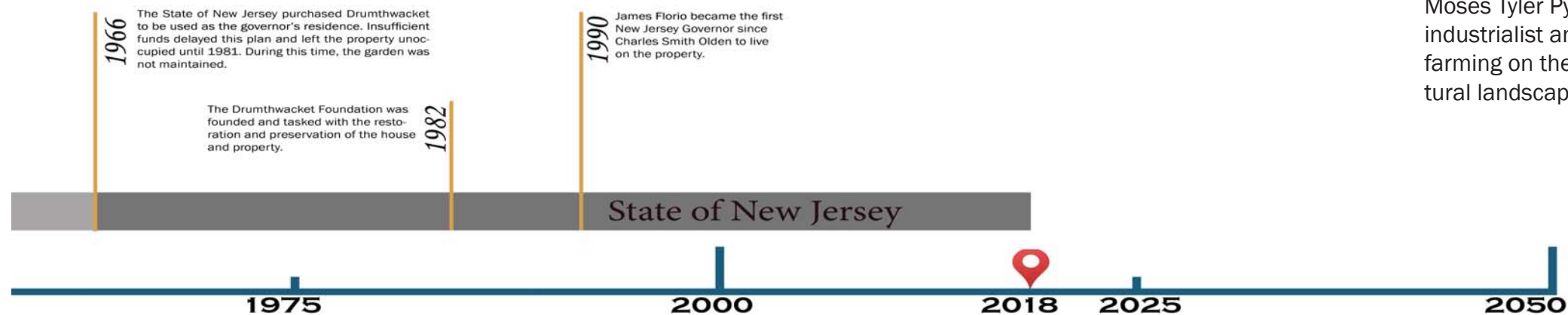


Extent of the Spanel Family Estate

Largest extent of the Pyne Family Estate




1-1985), "a Russian immigrant man; His latex products such as the success of the war effort. In develop the Apollo spacesuit. 2,000 patents. Because of his ated Mr. Spanel with one of the ir-Grand Officer. During his time ch guests, including visiting offi- of the Spanels." res (April 2, 1985).Jewish Virtual



Vacant Updates Italianate Reconstruction

1966


From 1966-1981, Drumthwacket was unoccupied, the garden was unattended.



(1)

1982


The swimming pool and tennis courts were decommissioned. A 1984 plan shows new locations for the pool and tennis courts.



(1)

1992


In partnership with Rutgers University Department of Landscape Architecture, students produced a variety of plans for garden reconstruction under the leadership of Professor Connie Webster. Ultimately, the final design was produced by landscape architect Paul Dorko.



(1)

2000


The Grotto and retaining wall were buried in place. In addition to changes to the parterre and terraces, the sharp features of the Italianate garden were softened to gentle slopes. To supplement the shade provided by the historic Olden Sycamores, magnolias were planted within the parterre. Restoration of the frog pond occurred in 1996. Thanks to donations, the foundation was able to restore the historic Star Garden in 2000.



(1)

2018

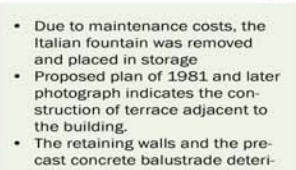
Due to maintenance costs, the Italian fountain was removed and placed in storage. Proposed plan of 1981 and later photograph indicates the construction of terrace adjacent to the building. The retaining walls and the pre-cast concrete balustrade deteriorated badly and were suspect removed during 1980s.



(1)

2025

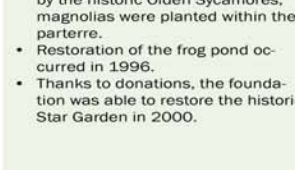
The garden is currently in a state of reconstruction. The plan shows the proposed layout of the garden, including the parterre, terraces, and the new terrace adjacent to the building.



(1)

2050

The garden is expected to be fully reconstructed and open to the public. The plan shows the final layout of the garden, including the parterre, terraces, and the new terrace adjacent to the building.



(1)

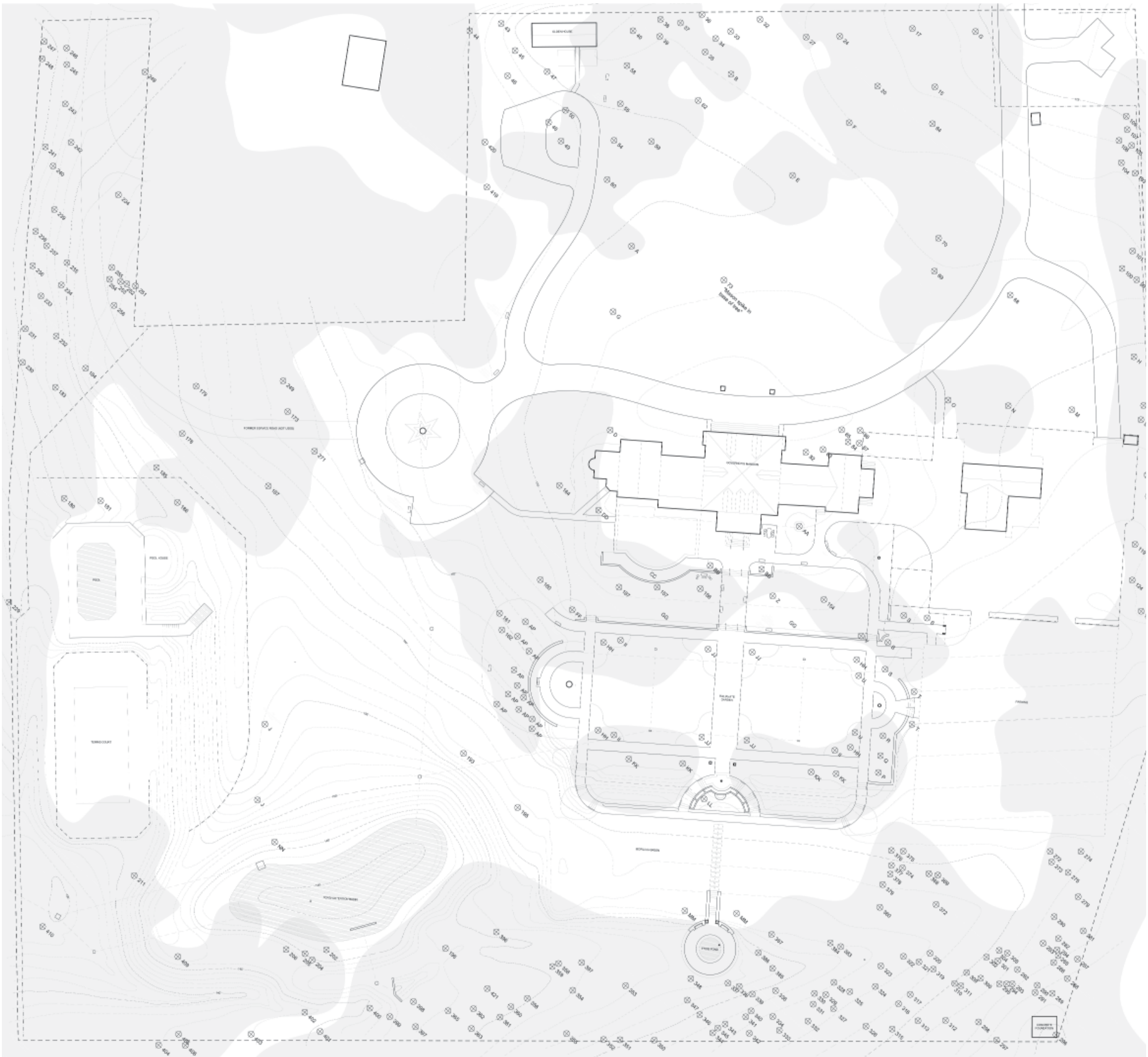
The timeline illustrates how Drumthwacket Garden is linked to the history of New Jersey. Originally established as a Quaker farm by the Olden family, some of its bucolic landscape became part of the Battlefield of Princeton. When Governor Charles Smith Olden made the decision to keep New Jersey on the Union side throughout the Civil War, he resided in Drumthwacket. New Jersey's transformation from an agricultural to a diverse industrial and financial economy during the nineteenth century is reflected by Moses Tyler Pyne's purchase of the land. He made his money as industrialist and banker, became a Princeton University Trustee, farming on the estate was not a major income stream. The agricultural landscape was merely a backdrop for an industrialist's man-

sion typical of the gilded age, enhanced by an Italianate Garden as centerpiece for entertainment and pleasure. The next owner, Abraham Nathaniel Spanel, represents a generation of successful immigrants who helped to establish New Jersey's position as leader in innovative technologies.

When the property became available in 1966, the State of New Jersey took the opportunity to purchase Drumthwacket to be used as the governor's residence. The historic relevance, the scale, and the architectural quality made it a good choice to represent the state. Unfortunately, this opportunity was not utilized until 1981. The gardens declined during 16 years of vacancy and neglect. Again, the fate of the site in the 1970s can be seen as a metaphor for the neglect of New Jersey's historic urban areas. By 1992 the Italianate Garden was beyond repair and was replaced by an Italianate style reconstruction.

Currently owned by the State of New Jersey, the vision for the future of Drumthwacket is to have a dual significance as the private home for the governor and his family and an official location used for state functions. Congruently, the future for the landscape plan is to serve as a model for sustainable and resilient landscape design for the design of other large private and public estates in the State of New Jersey.

EXISTING CONDITIONS SITE PLAN



Existing Conditions Plan (Left) represents a “best fit” combination of 5 existing plans including: Google Earth aerial photographs (2017), ArcMap aerial photographs (2017), HMR Architects (formerly Holt & Morgan) site survey and tree inventory (1967), HMR Architects’ Detention Basin Site Plan “as built” (1992), and Pleasant Run Nursery’s Italianate Garden Redevelopment Concept Plan (1992). Measurements and adjustments were made b CUES’s staff over the course of 3 site visits between June and July of 2018

Table A (page 11): Represents the site’s significant tree inventory as recorded by HMR Architects in a 1967 survey. Alterations as identified by CUES in 2018 are provided in the columns titled “status/replacement” and represents the remaining or re-placed trees as of 2018. Tree identification number correspond to specific locations represented in the Existing Conditions Plan.

TABLE B - RUTGERS SITE VISIT (07.10.2018)		
TREE I.D.	SPECIES	STATUS
A	Ulmus species	
B	Quercus palustris	
C	Cedrus deodora	
D	Cornus x Rutgers Hybrid	
E	Ulmus americana	
F	Ulmus americana	
G	Picea abies	
H	5, Tsuga canadensis	
I	—	
J	Malus	
K	Picea pungens	
L	Pseudotsuga menziesii	
M	Cornus florida	
N	Existing Tilia cordata	
O	Cercidiphyllum japonicum	
P	Cercidiphyllum japonicum	
Q	Cercidiphyllum japonicum	
R	Cercidiphyllum japonicum	
S	Cercidiphyllum japonicum	flagging stem
T	2, Physocarpus opulifolius	
U	2, Buxus	
V	Photinia	
W	—	
X	New Sycamore	
Y	New Sycamore	
Z	New Sycamore	
AA	Cornus florida	
BB	2, Magnolia virginiana	
CC	Taxus	
DD	Stewartia pseudocamellia	
EE	Hydrangea quercifolia	
FF	Acer palmatum 'Dissectum'	
GG	—	
HH	4, Cornus kousa	
II	2 Viburnum dilatatum	
JJ	Magnolia grandiflora	
KK	4, Betula nigra	
LL	Rhamnus frangula	in decline
MM	Prunus species	
NN	Salix alba 'Tristis'	

Table B (Left): Represents additional specimens recorded onsite by CUES on 07/10/2018. Species identification, location and status (health) assessment were recorded in person by Wolfram Hoefer and Bruce Crawford of Rutgers University. Tree identification letters correspond to specific locations represented in the Existing Conditions Plan.

EXISTING CONDITIONS SITE PLAN: TREE INVENTORY

TABLE A - 1967 TREE INVENTORY: HMR ARCHITECTS			
TREE #	DIA.	SPECIES	STATUS/REPLACEMENT
1	42"	Maple	Absent
2	4"	Triple Cherry	Absent
3	1 1/2,2 1/3,3"	Triple Cherry	
4	4"	Cherry	Poor/Quercus palustris
5	7"	Hemlock	
6	39"	Maple	
7	6"	Hemlock	
8	7"	Hemlock	
9	30"	Walnut	
10	7"	Hemlock	
11	14"	Sycamore	Absent
12	6"	Hemlock	Absent
13	7"	Hemlock	
14	8"	Hemlock	Absent
15	27"	Sycamore	Base suckers
16	8"	Hemlock	
17	37"	Basswood	
18	9"	Hemlock	
19	6"	Hemlock	
20	15"	Sycamore	Base suckers
21	7"	Hemlock	
22	6"	Hemlock	Absent
23	10"	Basswood	Absent
24	34"	Basswood	Base suckers
25	7"	Hemlock	
26	11"	Hemlock	Absent
27	35"	Basswood	Good
28	10"	Hemlock	Absent
29	6"	Hemlock	Absent
30	7"	Hemlock	Absent
31	5"	Hemlock	Absent
32	23"	Basswood	
33	7"	Hemlock	
34	9"	Hemlock	Absent
35	12"	Hemlock	Absent
36	16"	Maple	Absent
37	12"	Hemlock	Absent
38	11"	Hemlock	Absent
39	8"	Hemlock	Absent
40	31"	Sycamore	
41	26"	Sycamore	Absent
42	24"	Chestnut	
43	30"	Walnut	
44	36"	Ginkgo	
45	30"	Walnut	
46	6"	Twin Cherry	
47	30"	Walnut	
48	14",15"	Twin Hemlock	
49	5",12"	Magnolia	
50	5", 15", 16"	Triple Hemlock	
51	14"	Hemlock	
52	14"	Magnolia	
53	15"	Hemlock	
54	36"	Sycamore	Base suckers
55	24"	Sycamore	
56	12"	Hemlock	
57	12"	Pink Dogwood	
58	36"	Sycamore	
59	42"	Maple	Tulip Tree
60	48"	Sycamore	Base suckers
61	48"	Beech	Absent
62	36"	Maple	Absent
63	54"	Maple	Absent
64	36"	Sycamore	
65	25"	Walnut	Absent
66	48"	Maple	Absent
67	40"	Maple	Absent
68	36"	Hemlock	Absent
69	45"	Sycamore	
70	40"	Sycamore	

71	40"		Absent
72	7"	Birch	
73	42"	Beech	
74	42"	Walnut	
75	36"	Basswood	
76	8", 9", 9"	Triple Evergreen	
77	8"	Holly	
78	8"	Holly	
79	12"	Wild Cherry	
80	24"	Wild Cherry	Absent
81	42"	Sycamore	
82	3", 3", 3"	Triple Dogwood	
83	8"	Holly	
84	8"	Hemlock	
85	6"	Dogwood	
86	5", 8"	Twin Hemlock	
87	4", 5", 7"	Triple Hemlock	
88	5"	Pine	
89	8",9",12"	Triple Chestnut	Absent
90	6", 6"	Twin Cedar	Absent
91	7", 9", 14"	Triple Tree	
92	6", 6", 6"	Triple Cedar	
93	12"	Holly	
94	7"	Holly	
95	48"	Walnut	Absent
96	5"	Pine	Absent
97	4"	Pine	Absent
98	5"	Pine	Absent
99	8"	Pine	Absent
100	13"	Pine	Absent
101	7"	Pine	Absent
102	36"	Hemlock	Norway Spruce
103	12"	Pine	
104	12"	Pine	
105	14"	Pine	
106	12"	Pine	
107	14"	Pine	
108	5"	Silver Spruce	Absent
109	15"	Pine	
110	24"	Ginkgo	Absent
111	4"	Silver Spruce	Absent
112	8"	Hemlock	Absent
113	6"	Hemlock	Absent
114	10"	Hemlock	Absent
115	_	NA	
116	10"	Hemlock	Alive
117	12"	Maple	Alive
118	18"	Maple	Alive
119	9"	Maple	
120	19"	Elm	
121	22"	Oak	
122	11"	Locust	Absent
123	11"	Locust	Absent
124	6"	Maple	Hemlock
125	9"	Maple	Absent
126	48"	Oak	
127	30"	Oak	
128	7"	Maple	
129	14"	Maple	
130	10"	Elm	
131	30"	Oak	
132	_	NA	
133	10"	Maple	
134	24"	Ash	
135	15"	Maple	
136	_	Tree	Tilia
137	9"	Basswood	
138	17"	Basswood	
139	10"	Basswood	Absent
140	18"	Basswood	Absent

141	15"	Basswood	Absent
142	12"	Basswood	Absent
143	16"	Basswood	Absent
144	16"	Basswood	Absent
145	12"	Basswood	Absent
146	16"	Basswood	Absent
147	18"	Basswood	Absent
148	17"	Basswood	Absent
149	16"	Basswood	Absent
150	20"	Basswood	Absent
151	18"	Basswood	Absent
152	20"	Basswood	
153	24"	Basswood	
154	21"	Basswood	
155	24"	Basswood	Suckers at the base
156	18"	Basswood	Absent
157	54"	Sycamore	Concrete Core
158	30"	Sycamore	
159	30"	Sycamore	
160	48"	Sycamore	Suckers at the base
161	1"-6"	Cedar Clump	
162	1"-7"	Cedar Clump	
163	10"	Japanese Maple	
164	48"	Sycamore	Good shape
165	10", 24"	Twin Ironwood	
166	17", 30"	Twin Ironwood	
167	18"	Poplar	
168	8"	Maple	
169	12"	Maple	
170	14"	Ironwood	
171	44"	Pine	
172	18"	Spruce	
173	12"	Spruce	
174	_	Magnolia Gp.	
175	11"	Twin Fruit	Saucer Magnolia
176	44"	Hickory	
177	24"	Buckeye	
178	30"	Ginkgo	
179	20"	Spruce	Poor health
180	36"	Ginkgo	Alive
181	24"	Pine	Roots mowed
182	27"	Beech	
183	31"	Pine	
184	33"	Chestnut	
185	30"	Pine	
186	36"	Pine	
187	13"	Pin Oak	Sycamore
188	_	NA	
189	_	NA	
190	_	NA	
191	_	NA	
192	_	NA	
193	22"	Chestnut	
194	_	NA	
195	32"	Walnut	Tulip Tree
196	_	NA	
197	_	NA	
198	30"	Chestnut	
199	10"	Hickory	
200	8"	Hickory	
201	8"	Hickory	
202	10"	Hickory	
203	_	NA	
204	12"	Hickory	
205	8"	Hickory	
206	8"	Hickory	
207	8"	Hickory	
208	66"	Walnut	
209	14"	Hickory	
210	7"	Wild Cherry	Absent

TABLE A cont. - 1967 TREE INVENTORY: HMR ARCHITECTS			
TREE #	DIA.	SPECIES	STATUS/REPLACEMENT
212	12"	Oak	Alive
213	2", 3"	Dogwood	
214	6-4"	Oak	
215	4", 5"	Oak	
216	4", 4", 6"	Oak	Alive
217	8"	Pine	Alive
218	_	NA	
219	_	NA	
220	_	NA	
221	_	NA	
222	_	NA	
223	_	NA	
224	_	NA	
225	_	NA	
226	_	NA	
227	_	NA	
228	_	NA	
229	6"	Pine	
230	18"	Oak	
231	18"	Hemlock	
232	12"	Tree	
233	24"	Buckeye	
234	12"	Dogwood	
235	18"	Pine	
236	9"	Tree	
237	4"	Tree	
238	6"	Dogwood	
239	30"	Oak	
240	30"	Oak	
241	6"	Dogwood	
242	6", 7"	Twin Basswood	
243	9"	Hickory	
244	10"	Hickory	
245	4", 5"	Twin Tree	
246	6"	Tree	
247	36"	Oak	
248	7", 8"	Twin Maple	
249	33"	Pine	
250	24"	Elm	
251	7"	Hemlock	
252	6"	Hemlock	
253	6"	Hemlock	
254	8", 9"	Twin Hemlock	
255	10"	Hemlock	
256	12"	Cedar	
257	_	Bush	Absent
258	19"	Maple	Absent
259	12"	Maple	Absent
260	16"	Maple	Absent
261	14"	Maple	Absent
262	1-8", 3-6"	Tree Group	
263	_	Bush	
264	30"	Oak	
265	_	NA	
266	10"	Maple	Absent
267	50"	Oak	Absent
268	_	Bush	Absent
269	30"	Ginkgo	Absent
270	_	Bush	Absent
271	10"	Maple	Absent
272	14"	Maple	
273	15"	Maple	
274	18"	Elm	
275	42"	Walnut	
276	_	NA	
277	44"	Ginkgo	Absent
278	40"	Beech	Absent
279	18"	Maple	
280	8"	Maple	
281	6"	Cherry	

282	8"	Maple	
283	6"	Poplar	
284	10"	Hickory	
285	5"	Hickory	
286	9"	Hickory	
287	8"	Maple	
288	7"	Maple	
289	7"	Hickory	
290	9"	Hickory	
291	10"	Hickory	
292	14"	Poplar	
293	6"	Wild Cherry	
294	6"	Wild Cherry	
295	5"	Elm	
296	22"	Hickory	
297	9"	Dogwood	
298	14"	Poplar	
299	_	NA	
300	17"	Poplar	
301	13"	Poplar	
302	16"	Poplar	
303	_	NA	
304	6"	Poplar	
305	6"	Poplar	
306	30"	Maple	
307	8"	Japanese Maple	Absent
308	6"	Japanese Maple	Absent
309	6"	Japanese Maple	Alive
310	6"	Hickory	
311	6", 8"	Twin Hickory	
312	7"	Maple	
313	12"	Hickory	
314	_	NA	
315	21"	Maple	
316	12"	Maple	
317	11"	Maple	
318	_	NA	
319	12"	Maple	
320	6"	Japanese Maple	
321	6"	Dogwood	
322	_	NA	
323	12"	Maple	Absent
324	12"	Maple	Absent
325	27"	Oak	
326	14"	River Birch	
327	15"	Maple	
328	28"	Walnut	
329	28"	Maple	
330	6"	Japanese Maple	
331	5"	Japanese Maple	
332	30"	Oak	
333	10"	Wild Cherry	
334	24"	Walnut	
335	_	NA	
336	9"	Ash	
337	7"	Maple	
338	18"	Maple	
339	6"	Maple	
340	22"	Wild Cherry	
341	6"	Maple	
342	_	Tree	
343	18"	Walnut	
344	7"	Beech	
345	12"	Walnut	
346	10", 10"	2 Beech	
347	10"	Wild Cherry	
348	12"	Elm	
349	_	NA	
350	9"	Chestnut	
351	8"	Chestnut	

352	5"	Chestnut	
353	26", 26"	Twin Poplar	
354	8"	Holly	
355	6"	Chestnut	
356	12"	Walnut	
357	5"	Dogwood	
358	7"	Walnut	
359	7"	Tree	
360	7"	Ash	
361	30"	Sycamore	
362	28"	Sycamore	
363	24"	Sycamore	
364	—	NA	
365	6"	Oak	
366	—	NA	
367	—	Tree Clump	Absent
368	4", 6"	Ash	Alive
369	7"	Ash	Alive
370	—	NA	
371	—	NA	
372	3", 5"	Tree	Alive
373	24"	Maple	
374	8"	Japanese Maple	
375	10"	Japanese Maple	Alive
376	12"	Japanese Maple	Alive
377	6"	Japanese Maple	
378	8"	Japanese Maple	
379	10"	Japanese Maple	Alive
380	8"	Japanese Maple	Alive
381	14"	Japanese Maple	
382	45"	Walnut	Absent
383	7"	Elm	
384	8"	Wild Cherry	
385	18"	River Birch	
386	18"	Maple	
387	24"	River Birch	
388	5"	Chestnut	
389	6"	Japanese Maple	
390	36"	Walnut	
391	40"	Walnut	
392	26", 30"	Twin Walnut	
393	5"	Japanese Maple	
394	36"	Walnut	
395	7"	Maple	
396	42"	Sycamore	Alive
397	5"	Maple	
398	8"	Ash	
399	4", 6", 7"	Triple Apple	
400	7"	Hickory	
401	4", 5", 7", 8"	Quad Apple	
402	8"	Hickory	
403	24"	Chestnut	
404	6"	Pine	
405	5"	Pine	
406	5"	Pine	
407	10"	Cedar	
408	3", 4", 6"	Maple	
409	6", 8"	Birch	
410	7"	Pin Oak	
411	14"	Wild Cherry	
412	24"	Walnut	Fraxinus
413	18"	Walnut	Fraxinus
414	8"	Birch	
415	—	NA	
416	—	NA	
417	—	NA	
418	—	NA	
419	5"	Hawthorn	
420	6"	Evergreen	
421	10"	Walnut	

Like many historical properties, Drumthwacket's existing conditions has evolved greatly over the past 300 years. The many exchanges in ownership along with varied land-use practices has created a diverse landscape with great regional and national significance. Unfortunately, much of the historical nuance regarding the specific physical conditions of the estate has been lost, altered or forgotten. As the site represents a lineage of significant cultural and environmental traditions within New Jersey, it is critical that a comprehensive understanding of this site be documented to inform future decision making and master planning.

Tasked with creating a holistic Existing Conditions Plan, CUES researchers took inventory of the many disconnected historical documents and site plans (including surveys and illustrative plans), combining the artifacts most relevant to existing conditions. A mixture of three recording strategies including, modern aerial photographs, historic plans, and field-recorded measurements contributed to the creation of a "best-fit" existing conditions plan.

Modern Aerial Photographs – Because the site had not undergone a complete survey for many decades (1967) and because of the many alterations done to the mansion and supporting out-building, and landscape, CUES began a trace overlay of the property using contemporary aerial photographs. Google Earth (2017) and ArcMap (2017) images were combined in order to establish a scalable CAD based framework to compare with the few historical site plans and surveys available today. These images would be utilized throughout the drafting process to maintain proportions, dominant structure locations and tree-canopy cover.

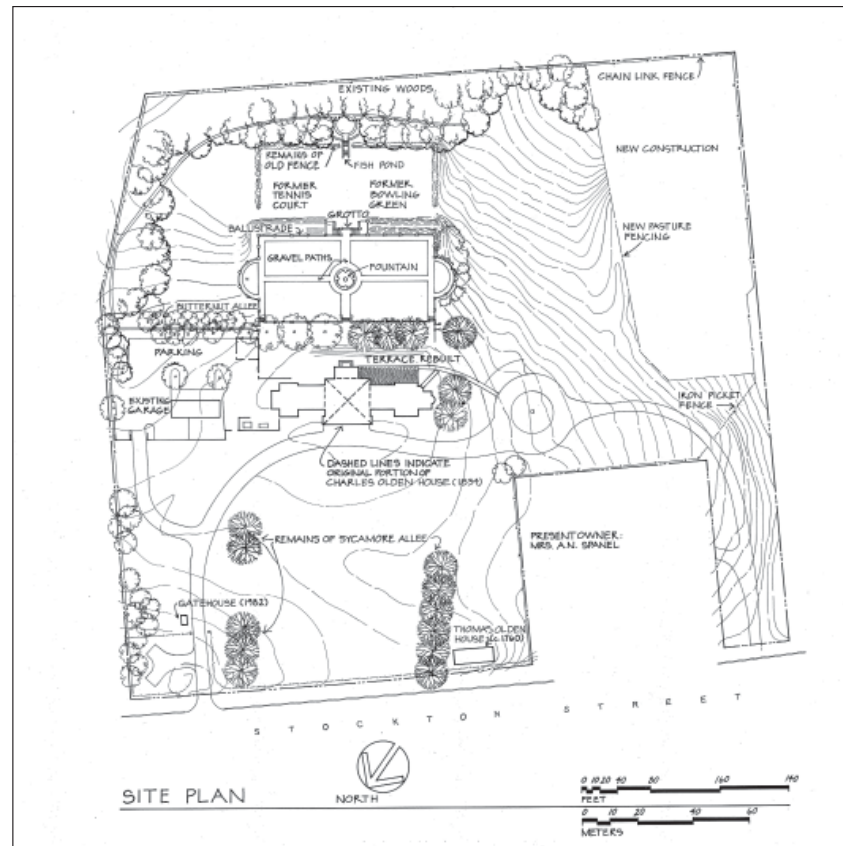
Historic Plans - Despite the site's early historical significance regarding prominent landscape architecture and architectural influences, the whereabouts of the many original plans that contributed to the design of the main building, Italianate garden, and pastoral landscape remain unknown. Thankfully, much of the work of HMR Architects (formally Holt and Morgan) from the mid 20th century has been preserved. Two of HMR plans including a 1967 tree inventory and complete site survey, and a 1992 (as built) detention pond regrading plan, were used to make alterations to the aerial photograph CAD-based framework. The 1967 plan included a complete scope of the site's grading (topography), significant tree inventory, hardscaping layout and building footprints. The 1992 plan provided additional grading and drainage information regarding the installation of the detention pond and storm-water infrastructure to the South-West of the site as well as the layout of the private pool and tennis courts to the far West of the site.

HMR Architects' plans offer a firm snapshot of existing conditions from early 1992 however the deteriorated Italianate garden area was completely redeveloped later that year. Possibly because of budget and time restrictions, a detailed site survey and layout plan (including topographic alterations) of the new design by Pleasant Run Nursery was never produced. In place of such a plan, an illustrative rendering including the basic proportions, layout and plant palette of today's garden was drawn over one of HMR's surveys. While dimensionally off and completely lacking topographic information, this rendering aided in the drafting of the Existing Conditions Plan as pathways and garden bed proportions represented the fundamental design philosophy of the garden.

Field Recording – In order to adjust topography to existing

conditions and gather more precise layout dimensions of the formal Italianate garden, several site visits were conducted by CUES employees between June and August of 2018. Measurements made in the field using traditional surveying equipment (tape measure, builder's level, and ranging rod) were used to reference distances to "hard" infrastructure including, the main building (mansion) and the corners and edges of walls, roads and pathways. Further topographic and layout figures were created by recording twenty spot-elevations along the Italianate garden's central spine; from the base of the mansion's back door to the southern edge of the Frog Pond's patio. From the evaluation of multiple spot-elevations grade changes (slope) and topographic lines were interpolated, connecting the topography of the Italianate Garden to the ones represented in both of HMR's previous surveys.

Existing Conditions – The combination of aerial photographs, detailed site surveys and field corrections has contributed to the development of a representative existing conditions plan that serves as the template for Drumthwacket's Garden Bed Diagram and Water-Flow Diagram. Proportions and layout offer a firm understanding of design principles and current physical conditions. While this plan is not intended for construction, it offers the most thorough understanding of the site since 1967. From this input general understanding of spatial and ecological processes can be derived including: tree canopy coverage, the identification and location of significant tree specimens, architectural elements, garden layout and design, impervious surface areas and topographic lines displayed in one-foot intervals.



1984 reinstall of drumthwacket done by Holt and Morgan



CUES team surveying the Italianate Garden



Tree inventory and condition being updated and assessed

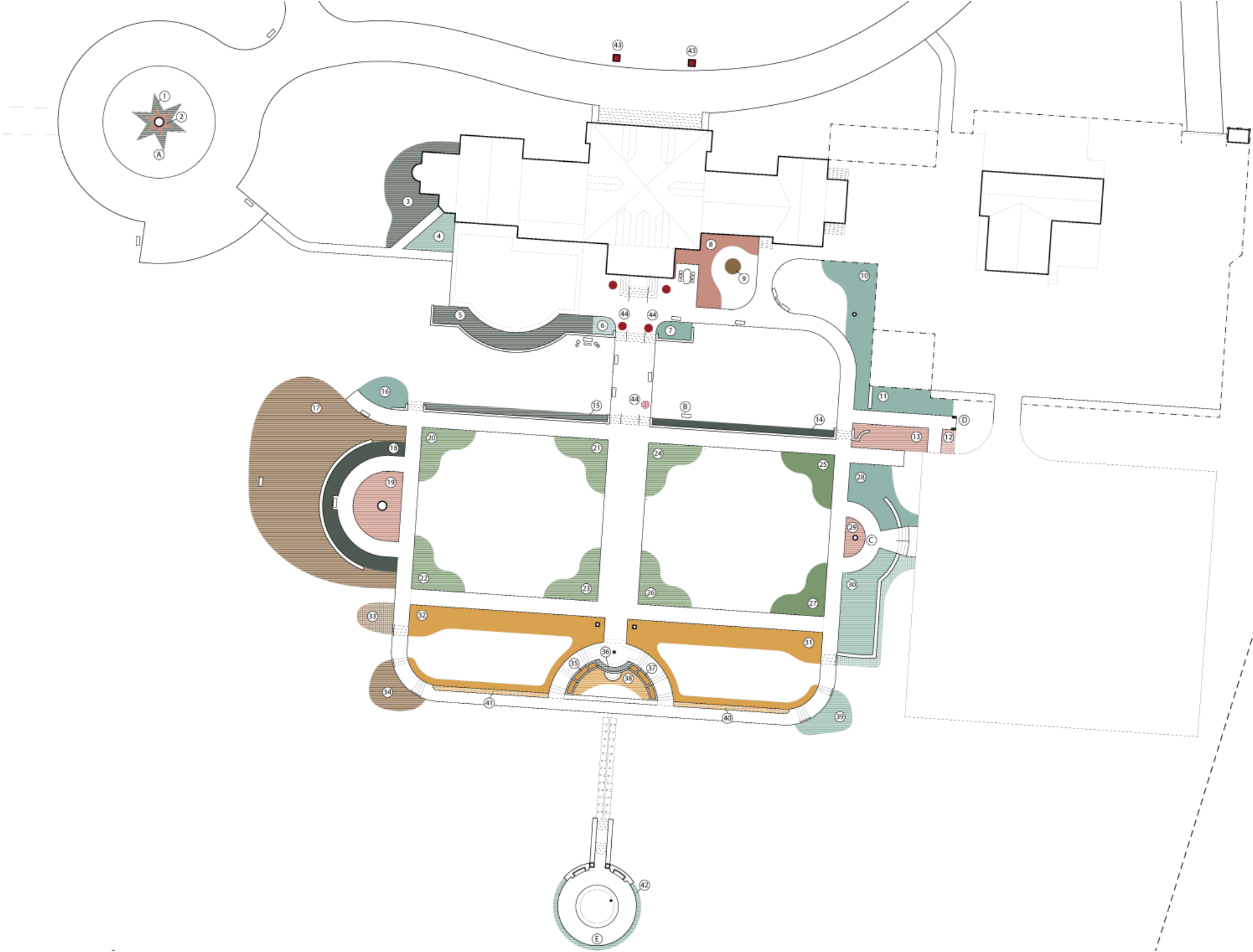


Hand drawn 1991 plan (marker and ink on trace) done by Hidden Valley



Bartlett Tree Experts, The Drumthwacket Foundation, and the CUES team discussing the new parking lot.

EXISTING PLANTING BEDS AND CONDITIONS



Type : Terrace Planting



Wide variety of plants create view frames and structure for the central terrace while understory plants offer diverse textures and interest on a personal scale.

Beds included:

- 20. Dogwood, Holly, Viburnum, mixed perennials etc...
- 21. Magnolia
- 22. Dogwood, Holly, Vinca, Peony, mixed perennials etc...
- 23. Magnolia
- 24. Magnolia, Vinca, Azalea (deer grazed)
- 25. Dogwood, Azalea, Boxwood,
- 26. Magnolia, Vinca, Butterfly Bush
- 27. Dogwood, Vinca, Sweet Pepperbush, Boxwood



Type : Rose Base



Rose bushes along with other flowering perennials frame intimate enjoyment spaces that invite olfactory and visual experiences.

Beds included:

- 2. Perennials
- 8. Roses, Hydrangea, Canna lily, Sedum, Holly, Perennials etc.
- 12. Roses
- 13. Roses, Magnolia, Yew etc.
- 19. Lavender, Roses, Boxwood
- 29. Lilyturf, Roses (very poor condition)

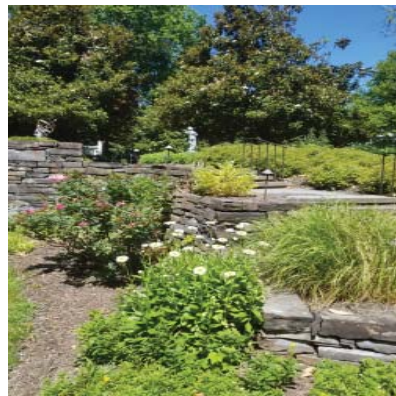
Type : Perennials (Sun)



Diverse perennial mix situated in the part of the garden with the most sun exposure offers a burst of color and texture contrasting the bowling green area bordering the south edge of the garden.

Beds included:

- 31. River Birch, Yew, Peony, Spiraea, Roses mixed Perennials, Bushes, Ground cover etc.
- 32. River Birch, Yew, Day Lily, Spiraea, Azalea, Peony, Perennials, Roses
- 35. Roses, Perennials
- 37. Roses, Perennials
- 38. Mixed Perennials, Lilyturf, Annuals, Specimen tree (unhealthy)
- 40. Mixed Ground-cover
- 41. Mixed Ground-cover



Type : Perennials (Shade)



Shade perennials soften the corners of the garden and provide a backdrop for specimen trees and flowering shrubs.

Beds included:

- 4. Stewartia
- 6. Hosta, Yews
- 7. Magnolia, Hosta, Perennials
- 10. Crabapple, Holly, Azalea
- 11. Magnolia, Ferns
- 16. Japanese Maple, Oakleaf Hydrangea, Perennials
- 28. Ivy, Katsura
- 30. Katsura, Vinca, Holly
- 39. Cherry, Maple
- 42. Pachysandra, Ferns



Type : Misc. Mulched Bed



Mulch beds offer a transition into the pastoral landscape to the West of the site and, with improvement, could become an ideal backdrop and frame for a number of ground cover and herbaceous plants.

Beds included:

- 9. Dogwood
- 17. Maples, Holly, Perennials
- 33. Cherry (very poor health)
- 34. Blue Fescue (mostly barren)



Type : Hedge



Garden hedges highlight long views of garden's horizontal axes, enforcing structure and setting the stage for other garden elements. They provide rhythm, connection and guidance.

Beds included:

- 1. Boxwood
- 3. Boxwood
- 5. Hosta, Lily, Yews (deer grazed)
- 14. Red tipped Photinia, Boxwood, Vinca
- 15. Boxwood, Vinca
- 18. Boxwood Hedge
- 36. Boxwood



Type : Container Annuals



A variety of annuals provide focal points, adding color and texture to the garden's grand entrances. This gesture reinforces the vertical formality of the architecture and draws visitor deeper in to the garden.

Beds included:

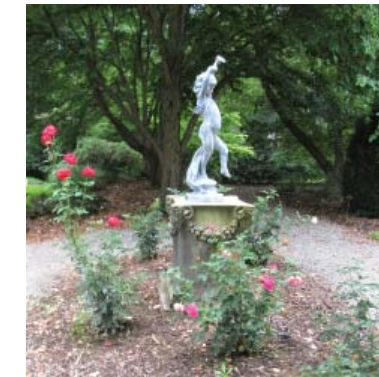
- 43. Mixed annuals
- 44. Mixed annuals

Historical Artifacts Pre-dating 1992

Ⓐ Star Garden Wellhead



Ⓒ Historic Statue Ballustrade



Ⓓ Historic Marble Bench



Family Breakfast Terrace

Ⓑ Between Appointments



Ⓔ Frog Pond



Since its purchase in 1966, the state of New Jersey has been tasked with both safeguarding a publically owned property and maintaining the historic significance of the 11 acre Drumthwacket estate. While, the New Jersey Department of Environmental Protection (NJ DEP) (the lead curators of the site) along with the Drumthwacket Foundation have made great strides to reinvigorate the grounds in recent years, the maintenance and management of such a large and complex landscape remains a challenge.

Because of limited funding and the vast range of maintenance tasks, both organizations have utilized various agencies to help complete day to day maintenance practices. Currently, maintenance and alterations are completed by a wide variety of professionals, including: two full time employees funded by the NJ DEP to maintain the general breadth of the landscape, an outsourced mowing crew to upkeep the vast lawn and Bartlett Tree Experts who volunteer their services regarding tree pruning.

On a more intimate scale, the Drumthwacket Foundation oversees the management of two primary volunteer groups who focus their efforts on the pruning, planting and maintenance of garden elements within the landscape. The Essex Fells master gardener's program supports the herb garden adjacent to the original Olden house to the North of the site while the Middlesex County master gardener's program (with input from Pleasant Run Nursery) curates the planting beds to the south of the mansion including the star garden surrounding the wellhead, the Italianate garden, peripheral transitional zones and the Frog Pond.

Because such a wide ranging aggregation of groups and individuals represent various skill levels, time investments and dedication, CUES created a Garden Planting and Elements diagram to begin a strategy of garden inventory and analysis. Several visits were conducted between May and August of 2018 to familiarize CUEs employees with the intricacies of the landscape and to begin analysis on the existing conditions of the garden elements. Photographs were taken regularly to witness the changing conditions of both plant-life and maintenance schedules within the garden beds themselves. It quickly became clear that the scope of this investigation would target the main features seen by the thousands of annual visitors in tours given by the Drumthwacket Foundation as feedback from the foundation suggests these areas harbor the main historical artifacts, are most commonly appreciated or photographed and are situated within the grounds regularly utilized for events. This scope overlaps with the range of the Middlesex master gardener's program and puts significant weight on the Italianate terrace garden.

Input from the transitional seasons allowed for the revision of a Garden Planting and Elements diagram which uses colors to represent 6 garden-bed types including: Terrace Planting, Rose Base, Perennial (Sun), Perennial (shade), Misc. Mulched Bed, Hedge, and Container Annuals. Within these garden-bed types, 43 actual garden beds are spatially located and identified (including significant plant material) so that volunteers and workers alike can more accurately address, record and share any longstanding or spontaneous plant and maintenance issues. Ranging from "acceptable"

to "degraded", hatch patterns represent a spectrum of garden-bed quality to ensure that upkeep is addressed on a priority basis.

Extensive research and field recordings confirm that the majority of Drumthwacket's grounds has been completely redeveloped since the creation of the pastoral scenery and the construction of the Italianate from the early 1900s. This realization bolsters the significance of the remaining trees (archived within the Existing Conditions Plan) and historical artifacts within the landscape. Within the Garden Planting and Elements diagram, the few known prominent historical elements are located including: the Wellhead (within the star garden), a remaining balustrade (sculptural support), a marble bench, the frog pond and the sculpture titled "Between Appointments".

Now that Drumthwacket is securely owned and managed by the NJ DEP and has dedicated support from the individuals associated with the Drumthwacket Foundation, the estate has an opportunity to further embed itself into the cultural significance of New Jersey's residents for generations to come. While much has been altered regarding the original design of the Italianate garden, the rear terraces embody most of the character of the Country Place movement, allowing curious visitors and residents to peer back in time to the ideology of the gilded age. The greater organizing structure of the Planting and Elements diagram along with continued site inventory and analysis strategies will allow Drumthwacket's many committed workers and volunteers to more easily create and manage a streamlined vision for the future growth of the site.

EXISTING GARDEN ELEMENTS

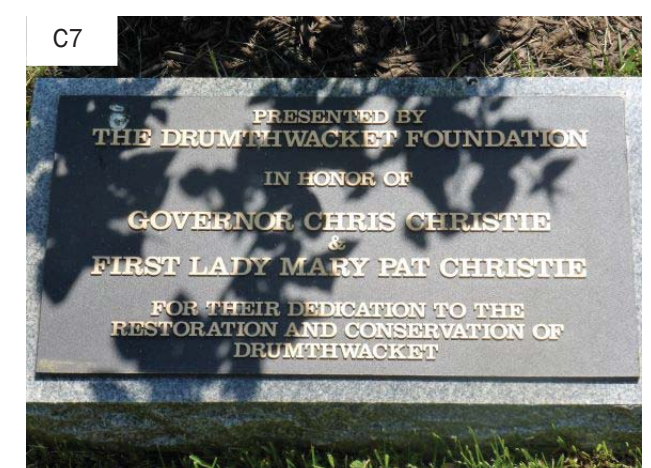
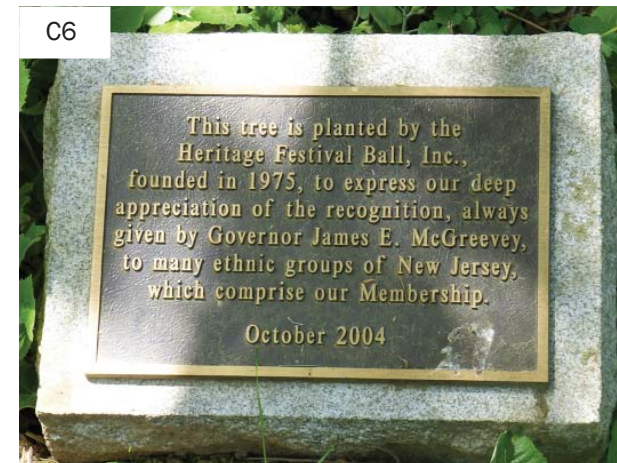
Other Plaques:	Location:	Date:	Dedicated To:	Dedicated By:	Text:
C1	Between Appointments Sculpture	Unknown	Donated to the garden	Gloria and Herbert Glatt of Fawn HillFarm	Donated by Gloria and Herbert Glatt of Fawn Hill Farm Morristown, New Jersey
C2	Statue on Ballustrade	Unknown	Samuel, Sarah and Gertrude	Edythe Sharf	GIVEN BY EDITH SHARF IN MEMORY OF HER FAMILY SAMUEL - SARAH - GERTRUDE
C3	Dog Statue	Unknown	Daphne Townsend	John J. Culhane	Gift in honor of Daphne Townsend Drumthwacket Foundation Executive Director 1985 to 1999 from John J. Culhane
C4	Mercer County Master Gardeners Plaque	Unknown	Mercer County Master Gardeners		Drumthwacket Gardens maintained by The Master Gardeners of Mercer County
C5	Frog Pond Plaque	Unknown	Agnes Pyne Davis	Family and Friends	THE FROG POND dedicated to AGNES PYNE DAVIS granddaughter of MOSES TAYLOR PYNE restored by Her Family and Friends
C6	McGreevey Tree	Oct-04	Governor James E. McGreevey	Heritage Festival Ball, Inc.	This tree is planted by the Heritage Festival Ball, Inc., founded in 1975, to express our deep appreciation of the recognition, always given by Governor James E. McGreevey, to many ethnic groups of New Jersey, which comprise our Membership.
C7	Chris Christie Shrub	Unknown	Governor Chris Christie & First Lady Mary Pat Christie	The Drumthwacket Foundation	PRESENTED BY THE DRUMTHWACKET FOUNDATION IN HONOR OF GOVERNOR CHRIS CHRISTIE & FIRST LADY MARY PAT CHRISTIE FOR THEIR DEDICATION TO THE RESTORATION AND CONSERVATION OF DRUMTHWACKET

Table 1: Existing garden elements and plaques

Throughout the existence of the estate, there have been generous donations to the gardens. Many of the donations are “in memory” of someone or something. As a whole, these donations of plaques, statues, and benches play a valuable role in painting the picture of Drumthwacket. The person being remembered, the person making the donation, or both have had some kind of interaction with the estate. In this way, Drumthwacket has the unique

opportunity to be a memory bank for New Jersey and a place where future Governors and guests can remember and build on the past.

Table 1 shows a list of garden elements that are currently on display. From plant material to statues, these garden elements are important part of what makes the garden. Images of the plaques are visible on the adjacent page (19).



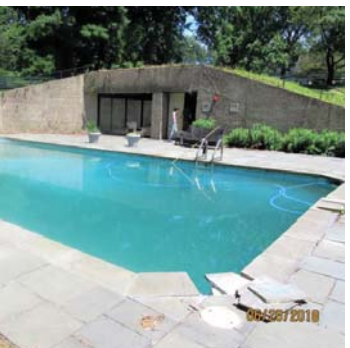
Bench#:	Location:	Date:	Dedicated To:	Dedicated By:	Text:
B1	First Next to Olden house	Unknown			WILLIAM S. (unknown)
B2	Second Next to Olden House	Unknown	Jeffry	Mr.&Mrs William	GIVEN BY MR. & MRS. WILLIAM W. ELLIS IN MEMORY OF THEIR SON, JEFFRY
B3	Between Olden House and Star Circle	Unknown	Gift to the Graden	The Contemporary Garden Club of Princeton	GIVEN BY THE CONTEMPORARY GARDEN CLUB OF PRINCETON
B4	Between Olden House and Star Circle	Unknown	Gift to Garden	Martha and Don Pickering	GIVEN BY MARTHA and DON PICKERING
B5	Star Circle	Unknown	The Mothers and Babies of New Jersey	New Jersey Chapter American College of Nurse Midwives	GIVEN BY THE NEW JERSEY CHAPTER AMERICAN COLLEGE OF NURSE MIDWIVES DEDICATED TO THE MOTHERS AND BABIES OF NEW JERSEY
B6	Star Circle	Unknown	Gift to Graden	Garden Club of Essex	GIFT OF THE GARDEN CLUB OF ESSEX FELLS
B7	Northwest Corner of Garden	Unknown	Margaretta Stockton Pyne	The Garden Club of Princeton	IN MEMORY OF MARGARETTA STOCKTON PYNE THE GARDEN CLUB OF PRINCETON
B8	West Mulch Bed	Unknown	Anette Trevin	Unknown	ANETTE VAN MATTER TREWIN 1894-1994
B9	West EdgeMain Garden	Unknown	1990-1994 Board of Trustees of the Drumthwacket Foundataion	Unknown	THIS BENCH IS DEDICATED TO THE 1990-1994 BOARD OF TRUSTEES OF THE DRUMTHWACKET FOUNDATION Marie Cascone, Finn W. Caspersen, John C. Collins, Ann Cummins, S. Leonard DIDonato, Wm. R. Faherty, Jr. Dorothea Frank, Loretta B. Glucksman, Veronica Goldberg, Maxine Goodman, Wm. S. Greenberg, Kathy Higgins, Arthur Emperatore, James C. Kellogg, Iv, Karen Kessler, Michael Loyack, Samuel C. Miller, Carl R. Nordstrom, Wm. A. Schreyer, T. Joseph Semrod, Wm. Sword, Nancy Weber

Table 2: Existing garden benches and plaques

A total of nine benches have been donated to the estate over the years by various individuals and organizations. Table 2 shows where they are located, who donated them, who or what they were donated for, and what the text on the plaque reads. Corresponding photos of the bench plaques are on page 31.



WATER AND DRAINAGE



Creating a sustainable stormwater management system is a priority of stormwater management practices that have undergone a significant change in the past thirty years. Stormwater management today is regulated by law and directed at reducing stormwater runoff by minimizing the use of impervious surfaces, slowing the runoff down and allowing it time to percolate by manipulating topography and vegetation. Furthermore, capturing and storing the excess water on site, ideally reusing it and finally reducing the amount of pollutants in the runoff are all considered sustainable BMP (best management practices).

Specific topography of Drumthwacket estate along with the impervious surface coverage are two important factors to consider for the stormwater management planning. The topography was last surveyed by HMR Architects in 1992 when drainage pipes and drains were added in the garden area and retention pond was regraded. At that time, the drainage system was designed to capture and channel water off the property via the shortest and quickest route possible, as used to be a standard practice. Evidence of stream channelization is found in the stream bed at the south end of the property where textile lining is covering the bottom of the creek, and further down the stream there are asphalt chunks found in the stream bed (3). Older, possibly historic drain pipe in this area requires more research to determine its exact age and capture area (2).

General water movement on the estate follows the topography flowing from higher elevations on the North side to lower elevations on the south and east end of the property. There is a swale (1) stretching the length of the southeast end of the property. Runoff collected from adjacent property to the east and Drumthwacket estate as well as runoff from the parking lot, driveway and garden areas is directed to the retention pond (6) via this swale, a culvert (5) and drainage pipes. From here it is released or retained, depending on the desired water level of the pond. Released water moves further west to the adjacent property via drainage pipe. Further research should determine what happens to the runoff after it leaves the property.

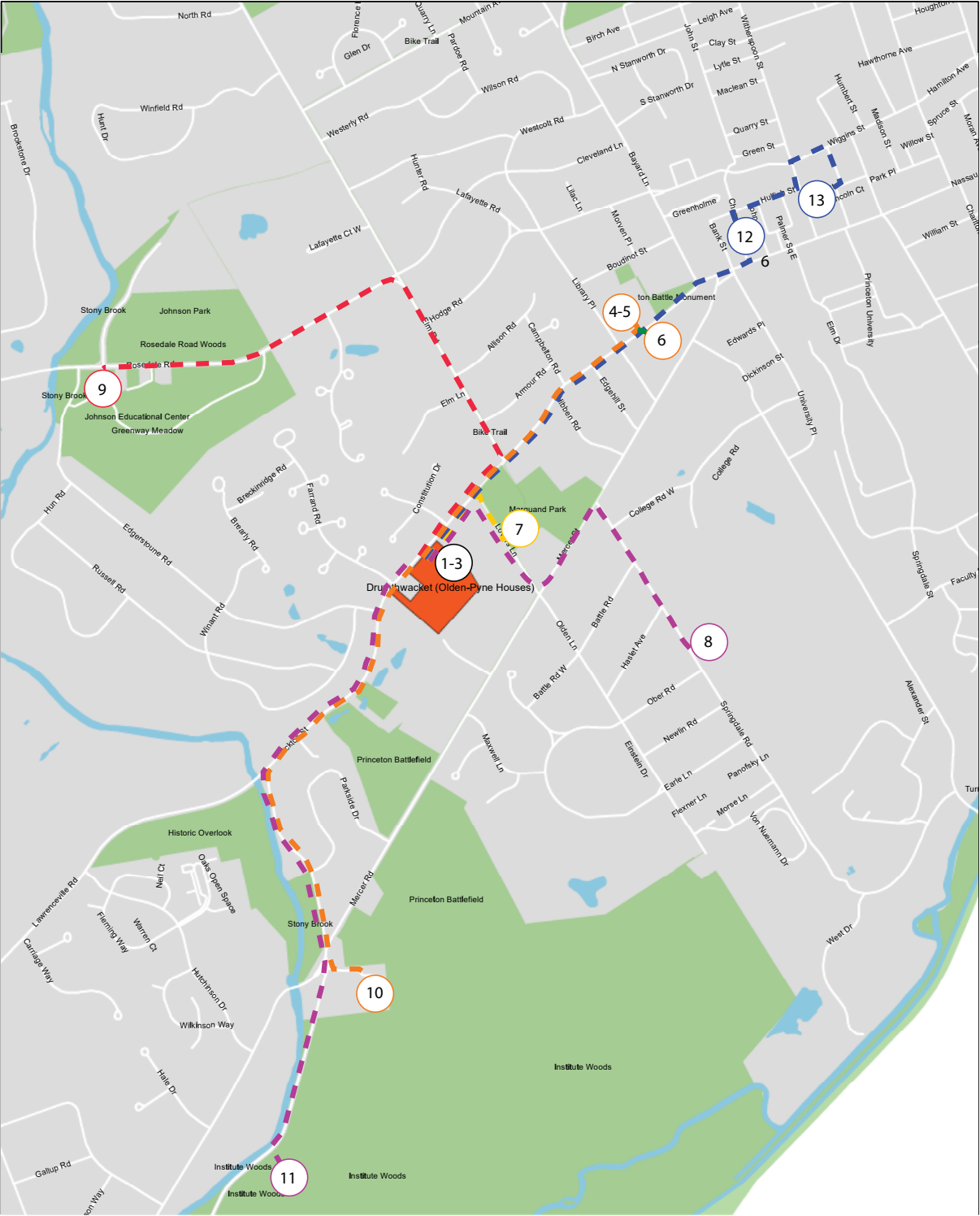
Steepness of slopes determines the potential for soil erosion, the steeper the slope, the higher the risk for erosion is. Areas with darkest arrows are the areas where water runs the fastest over the land. Lightest arrows designate the areas where slopes are minimal, they appear to be flat. This is where water has the most chance of percolating back into the ground recharging the water table. Within these areas are low-lying wet areas where water tends to pool after rain events. These areas tend to stay moist for longer periods. Ridges are higher and drier than their surroundings.

There is some recent evidence of erosion around the new parking lot addition. Our recommendation is regrading and planting the area directly adjacent to the lot. At this size, the lot generates over 9,000 gallons of runoff for every inch of the rainfall. Runoff is often hot and polluted coming of the parking lot's black-top surface and it needs to be mitigated before it runs back to the swale in forested area.

The frog pond (4) and the swimming pool (8) are currently not connected to the landscape stormwater management system.

Item	Location	Surface Type	Description	Aprox Square feet
1	Swimming pool	Flagstone Pavement	Pool and Patio	4,365
2	Tennis Court	Asphalt	Court Area	7,715
3	Road	Stone Pavement	Olden House Parking Area	23,205
4	Frog Pond	Brick Pavement	Pond and Patio	1,170
5	Gatehouse	Roof	Roof Area	50
6	Olden House	Roof	Roof Area	705
7	Main House	Roof	Roof Area	7,610
8	Garden Main Entrance Pathway	Flagstone Pavement	Path Area	1,725
9	Back Patio	Flagstone Pavement	Patio Area	2,595
10	Service Parking	Asphalt and Roof	Shed Roof Included (1,735ft ²)	21,435
11	New Parking	Asphalt	Parking Area	15,455
	Total Impervious Ground Surfaces:	Paths and Parking		69,580
	Total Impervious Roof Area:	2 Houses and 1 Shed		10,050
	TOTAL:			86,030

VEHICLE CIRCULATION AND PARKING

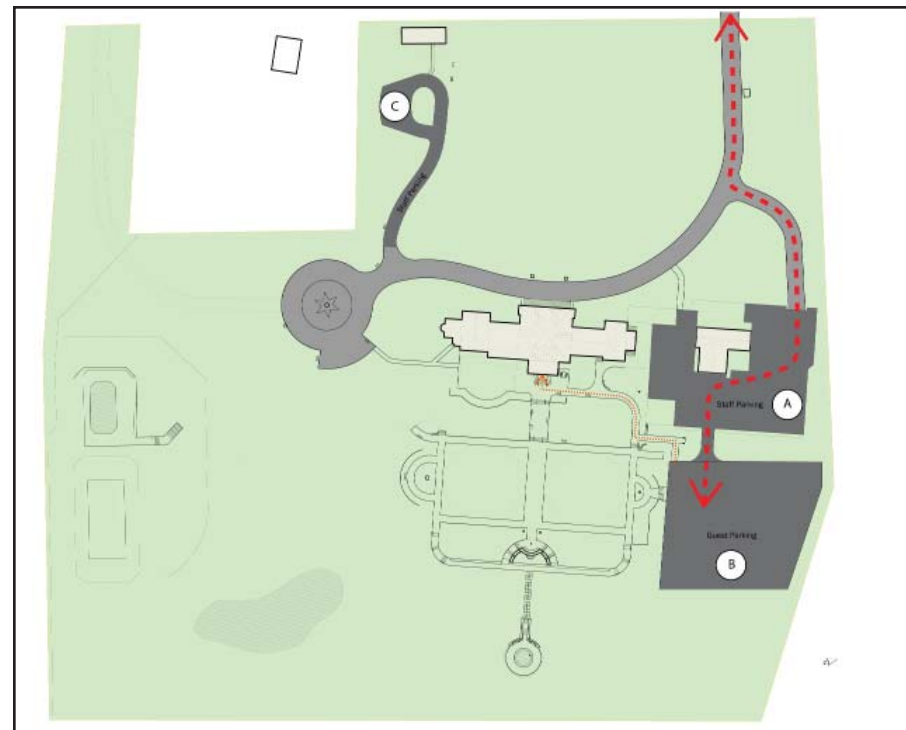


Off-site parking locations and distances from the Drumthwacket Estate

Parking at the Drumthwacket Estate is an important aspect of the landscape use. The newly expanded parking lot allows for more on-site parking. However, depending on the size of the event and the number of attendees, off-site parking may be needed. Taking this into account, the approximate number of parking spaces of on-site and nearby parking options was calculated based on the area of the parking lots. Table 3 shows a list of possible options for event parking in the future. Collaboration with the managing entity of the parking lots will be needed. Shuttle systems or a valet parking service are the best options for large events.

Number	Name	Number of Parking Spots	Managing Entity
1	Drumthwacket Zone A	~35	Drumthwacket Foundation
2	Drumthwacket Zone B	~65	Drumthwacket Foundation
3	Drumthwacket Zone C	~10	Drumthwacket Foundation
4	Morven Museum and Garden	~75	Morven Museum
5	Princeton Battle Monument and Princeton Human Services	~100	Princeton Battle Monument
6	Princeton Theological Seminary Library	~220	Princeton Thoelogican Society
7	Marquand Park	~30	Marquand Foundation
8	Springdale Rd Lot 19	~300	Princeton University
9	Greenway Meadows Park	~55	D&R Greenway
10	Princeton Friends School	~80	Princeton Friends School
11	Historical Society of Princeton	~20	Historical Society of Princeton
12	Chambers Street Garage	Unknown	Palmer Square Management
13	Spring Street Garage	Unknown	Unknown

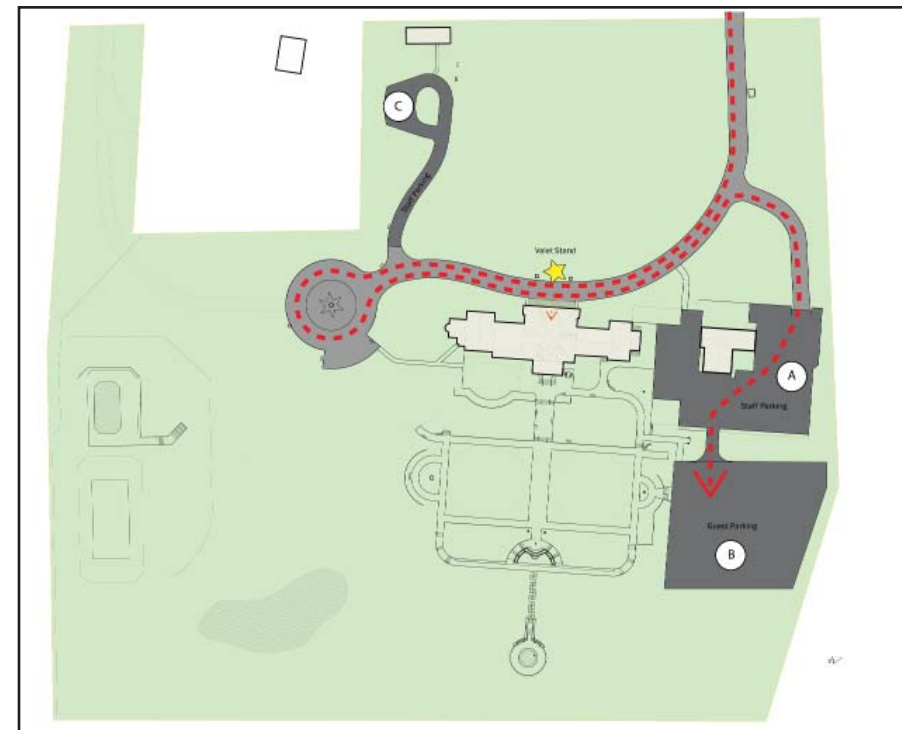
Table 3: Event Parking Options



Small Event Vehicle Circulation Plan

Small Event Vehicle Circulation

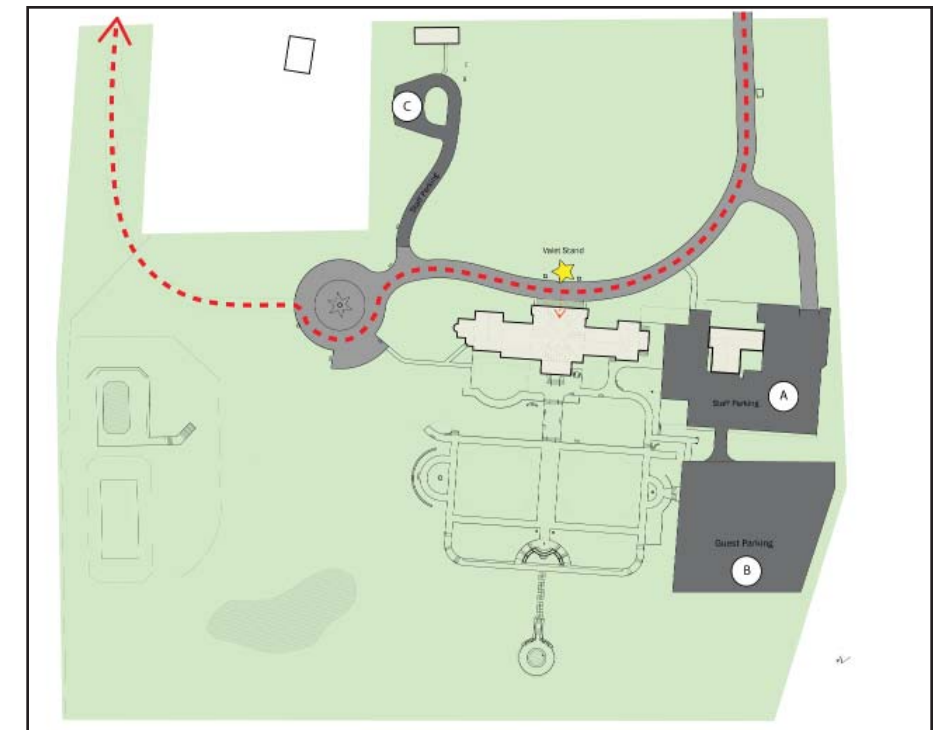
A small event at Drumthwacket will consist of less than 25 vehicles. For this size event, parking in Zone B will be reserved for event attendees. There will be no need for valet parking, and attendees can park themselves in Zone B to be received by the garden entrance.



Medium Event Vehicle Circulation Plan

Medium Event Vehicle Circulation

In order to adequately accommodate a 25-75 vehicle event, a professional valet service will be needed to fit the appropriate number of vehicles in the parking available. Event attendees will arrive and be greeted by the host/hostess on the front stairs and the valet will park the vehicle in one of the on-site parking zones. All vehicles will be parked on Drumthwacket property.

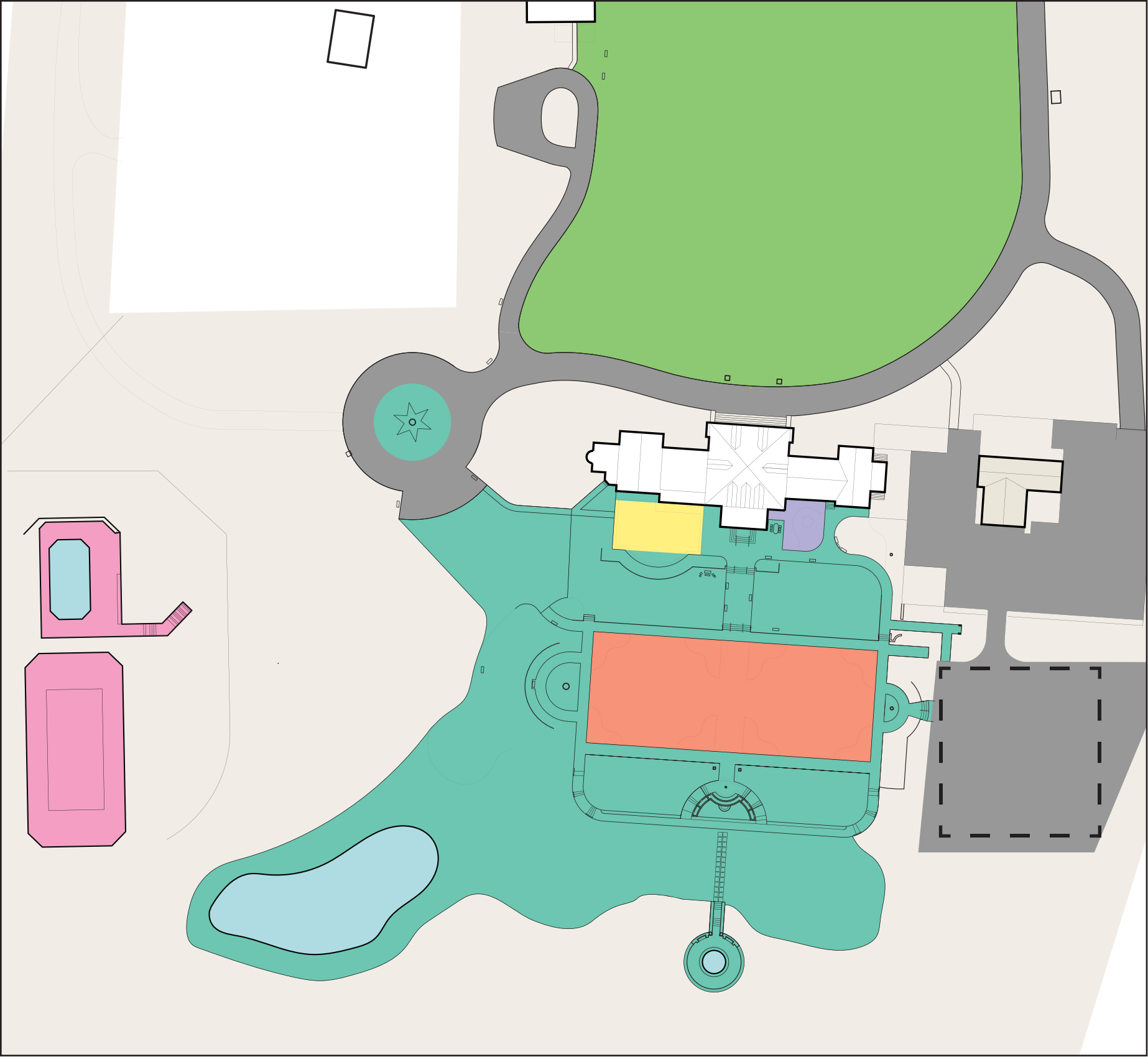


Large Event Vehicle Circulation Plan

Large Event Vehicle Circulation

To accommodate large events of more than 75 vehicles, off-site parking is required. A valet service will be required. Event attendees will arrive and be greeted by the host/hostess on the front stairs and the valet will park the vehicle either in one of the on-site parking zones, or a designated nearby parking location (Table 3). If possible, it's recommended that the southern entrance to the property is opened so the traffic flows in one direction to ensure smooth and efficient arrivals and departures. If the southern entrance is unavailable, the departing cars can be turned around at the roundabout.

SITE ZONES



In order to properly manage the estate and accommodate its dual purpose as residence of the Governor and a location for state functions, it is important to identify the different spaces that can be used in specific ways. The figure to the left divides the estate property into zones for use.

- Family Breakfast Terrace
- Governor's Family Space
- Small Event Tent Space
- Large Event Tent Space
- Visitor Park Experience
- Great Flat Lawn
- Potential Large Event Tent Space

SITE ZONES



Family Breakfast Terrace

Close to the kitchen and overlooking the garden, this space can be used by the Governor’s family for outdoor meals while the property is closed to tours and visitors.



Governor’s Family Space

These are spaces on the property reserved for the private use of the Governor’s family. The grade of the property already provides privacy from tours and visitors in spaces such as the pool and tennis courts.



Small Event Tent Space

Small events can be held with enough space for a tent. It is close to the back entrance to the house and is shaded by the sycamores to provide a comfortable and convenient environment.



Current Large Event Tent Space

The required tent for large events is currently placed in the center of the Italianate garden. Utilizing off-site valet parking will make it possible to place a large tent on the large parking lot. This would free up the space for the enjoyment of the guests.



Visitor Park Experience

This outlines the space where visitors to Drumthwacket will be experiencing the property. The space includes historic locations such as the frog pond and the Italianate garden.



Great Flat Lawn

The front lawn, along with providing a clean-cut aesthetic, also holds possibilities for lawn activities for different visiting organizations such as a school or camp tours for children. Distinctly separate from the garden, this space could be used while other public tours of the garden are in session.

COMPLETE DOCUMENT LIST

File name	Typ	Size	Includ	Affiliated	Media Title	Citation/Author of	Citations	Media	Description	Date of	Date	Date
Boards												
BO_01_Holt & Morgan	Board	24" x 36"	AP_001, AP_002, AP_003, AP_004,	BK_01_Holt & Morgan	Presentation Board 1	Holt & Morgan Assoc. PA, Architects		D-Foundation	one on three boards and a booklet explaining 1981 construction. One image missing from board	1981	5.29.2018	5.31.2018
BO_02_Holt & Morgan	Board	24" x 36"	AP_006, AP_007, AP_008,	BK_01_Holt & Morgan	Presentation Board 2	Holt & Morgan Assoc. PA, Architects		D-Foundation	photos from 1980	1981	5.29.2018	5.31.2018
BO_03_Holt & Morgan	Board	24" x 36"	AP_013, AP_014,	BK_01_Holt & Morgan	Presentation Board 3	Holt & Morgan Assoc. PA, Architects		D-Foundation	Old photos, two missing from poster	1981	5.29.2018	5.31.2018
BO_04_Early 1900s	Board	14.5" x 11"	PL_003, AP_017, AP_018		Early 1900s Documentation Board	D-Foundation Archives	N/A	D-Foundation	small two sided board, documenting early 1900s with two black and white photographs on one side - one of the tiger's head fountain	Unknown (early 1900s est.)	5.29.2018	6.5.2018
BO_05_Well Head	Board	28" x 22"	N/A	BO_06_1905 Gardens	Italianate Garden Well Head	N/A	N/A	D-Foundation	as the one found within the "star" (planted circle drive)		5.29.2018	6.6.2018
BO_06_1905 Gardens	Board	28" x 22"	N/A	BO_05_Well Head	Drumthwacket 1905 Gardens	N/A	The New York Times	D-Foundation	Articles on the restoration of similar gardens.		5.29.2018	6.6.2018
BO_07_Drumthwacket Star Garden	Board	36" x 24"	N/A		Drumthwacket Star Garden: Landscape Construction Plan	Bohler Engineering	Drumthwacket Foundation (client)	D-Foundation	Construction plan for replanging of star garden.	08.23.2004	5.29.2018	6.6.2018
BO_08_Section	Board	35.75" x 15"	N/A	PL_03_hidden Valley Renovation, BO_09_Section	Drumthwacket Garden Renovation	Hidden Valley Nursery	N/A	D-Foundation	Hand drawn 1/4" = 1' section of upper garden from building.	Summer 1991	5.29.2018	6.6.2018
BO_09_Section	Board	40" x 15"	N/A	PL_03_hidden Valley Renovation, BO_08_Section	Drumthwacket Garden Renovation	Hidden Valley Nursery	N/A	D-Foundation	Hand drawn 1/4" = 1' section of upper garden from building.	Summer 1991	5.29.2018	6.6.2018
BO_10_Holt & Morgan	Board	24" x 36"		PL_03_Holt & Morgan	Drumthwacket Garden Restoration	Holt & Morgan Assoc. PA, Architects		D-Foundation	Option for restoration includes contours	1981	5.29.2018	6.6.2018
BO_11_Plan with Contours	Board	24" x 36"		PL_04_Plan with contours	Drumthwacket Garden Plan	N/A		D-Foundation	Copy (reprint) of Drumthwacket Gardens with multiple over lays, one on the italianate garden, the other over the star garden.			
Info Booklets												

BK_01_Holt & Morgan	Booklet	11" x 8.5"	N/A		EXISTING and proposed Plans of 1981	Holt & Morgan Assoc. PA, Architects	N/A	D-Foundation	Options of restoration and cost estimants	1981	5.29.2018	5.31.2018
BK_02_Written Historical Data	Booklet	11" x 8.5"	N/A		Reduced Copies of Measured Drawings Written Historical and Descriptive Data	Buildings Survey National Park Service Dept. of the Interior Washington DC 20240	N/A	D-Foundation	A discriptive status of the garden in 1984	1984	5.29.2018	6.3.2018
BK_03_Magazine Article Review	Booklet	14.5" X 7.5"			Moses T. Pyne's Italianate Gardens in Press	Mosses T. Pyne's Magazine Article Collection	Ferree, Barre. "American Homes and Gardens"; Unknown Author. "Town and Country";	D-Foundation	Privately published collection of various magazine article reprints describing M.T. Pyne's house and garden in 1905. Compiled by M.T. Pyne and published by Princeton	1905	5.29.2018	6.06.2018
Plans												
PL_01_Rear Garden Renovation	Plan	28" x 14"			Rear Garden Renovation	Hidden Valley Nursery Inc		D-foundation	Hand drawn plan with plant call outs	after 1991	5.29.2018	5.31.2018
PL_02_Pyne Estate Boundaries	Plan (part of)	11" x 8.5"			M. Taylor Pine Estate Map	D-Foundation Archives	N/A	D-Foundation	map (black and white) of the M.Taylor Pine Estate with immediate surroundings	unknown (early 1900s est.)	5.29.2018	6.5.2018
PL_03_Holt & Morgan	Plan	24" x 36"			Drumthwacket Garden Restoration	Holt & Morgan Assoc. PA, Architects		D-Foundation	Option for restoration includes contours	1981	5.29.2018	6.6.2018
PL_04_Plan with contours	Plan	21" x 20"		BO_11_Plan with Contours	Drumthwacket Garden Restoration	Holt & Morgan Assoc. PA, Architects	N/A	D-Foundation	Copy (reprint) of Drumthwacket Gardens with multiple over lays, one on the italianate garden, the other	1990s	5.29.2019	6.5.2018
PL_05_Hidden Valley Renovation	Plan	36" x 36"		BO_08_Section, BO_09_Section	Drumthwacket Garden Renovation	Hidden Valley Nursery Inc	N/A	D-foundation	Hand drawn plan (marker and ink on trace). 1" = 10'	Summer 1991	5.29.2018	5.31.2018
PL_06_Holt & Morgan 1984	Plans	Electronic			Drumthwacket Italianate Garden Plans	Holt & Morgan Assoc. PA, Architects		Library of Congress - https://www.loc.gov/resource/hhh.nj0989.sheet?st=gallery	12 page set of the 1984 reinstall of drumthwacket. Has measurements of original gardens	1984	6.12.2018	6.14.2018
PL_07_1940 Property Map	Plan	24" x 56"			1940 Property Map	C.S. Sincerbeaux, Civil Engineer Princeton, NJ		D-Foundation	1940 Property of Agnes Pyne McLean, the property divided up and sold off in different lots.	Nov. 1940	5.29.2018	6.14.2018
PL_08_Drumthwacket Star Garden	Plan	36" x 24"	N/A	BO_07_Drumthwacket Star Garden	Drumthwacket Star Garden: Landscape Construction Plan	Bohler Engineering	Drumthwacket Foundation (client)	D-Foundation	Construction plan for replanging of star garden.	08.23.2004	5.29.2018	6.6.2018
PL_09_Pond grading plan 1990	Plan	Electronic	N/A		Pond grading plan	Holt & Morgan	Van Hote-Harvey Associates	Bob Russell Holt & Morgan	Site plan from 1967 includes contours for around the pond, pipe lines and tress	02.8.1990	6.19.2018	6.19.2018

PL_10_Topo & Tree Survey 1967	Plan	Electronic		Topo & Tree Survey 1967	NJ Department Conservation and Economic Development	Van Hote-Harvey Associates	Bob Russell Holt & Morgan	Site plan that has contours around the house and a tree survey of 421 trees	06.14.1967	6.19.2018	6.19.2018
PL_11_Pyne Estate (colored)	Plan	Electronic		PL_12_Current DHS site (colored) PL_11_Pyne Estate (colored)	Pyne Estate (colored)	N/A	Bob Russell Holt & Morgan	Hand drawn plan (marker and ink on trace) showing the old property with the multiple ponds	N/A	6.19.2018	6.19.2018
PL_12_Current DHS site (colored)	Plan	Electronic		Current DHS site (colored)	N/A	N/A	Bob Russell Holt & Morgan	Hand drawn outline of the property after it was sold and divided	N/A	6.19.2018	6.19.2018
Photo Book											
PB_01_1905 2005	Photo book	11" x 17"		Photo Book of Drumthwacket Gardens 1905 to 2005	The Story of the Italianate gardens at Drumthwacket 1905 to 2005	The 1991 Plan by Paul Dorkop of Hidden Valley Nursery	D-Foundation	photos of the 1992 construction of stairway, 1995 frog pond restoration, photos of the garden in 2005	2005	5.29.2018	6.4.2018
PB_02_Drumthwacket 1905	Photo book	11" x 17"		Photo Book Of Articles	Moses Taylor Payne's Italianate Gardens Drumthwacket Princeton, New Jersey	American Homes and Gardens Magazine	D-Foundation	Pyne's privately published reprint of the 1905 American Homes and Gardens article and other articles	2005	5.29.2018	6.4.2018
Articles											
NP_01_Dec 1999	Article	11" x 8.5"		Drumthwacket's executive director to leave after 15 years	Greater Princeton Extra Vol. 15, No.49 Article by Louise Handelman		D-Foundation	Daphne Fomros Townsend started in 1985 with no knowledge of historical gardens but was executive director of the estate for 15 years. Lisa Paine was her	12.10.1999	5.29.2018	6.4.2018
NP_02_Oct 1905	magazine Cover	10.5" x 14"		Magazine Cover Oct 1905	American Home and Gardens		D-Foundation	the famous magazine cover featuring the Drumthwacket Gardens on the cover	Oct. 1905	5.29.2018	6.4.2018
Internet Resources											
IP_01_C&H Historical architects	Internet Page	N/A		Connolly & Hickey Historical Architects Drumthwacket Princeton, NJ			Internet	Short history of Drumthwacket	2018	6.5.2018	6.5.2018
Property Documentation											
PD_01_NR Historic Places	PDF	N/A	N/A	National Register of Historic Places Inventory - Nomination Form	United States Department of Interior, National Park Service	N/A	National Parks Service, US Department of the Interior, WEB		06.10.1975	06.06.2018	Unknown
All Photos											

AP_016_Garden Panorama 1900s	Photo	32' x 6"	AP_016 - single image		Garden and house, early 1900s		N/A	D-foundation	panoramic photograph of the garden with house in the background (black and white). Three tiered fountain and orange trees in the foreground, open lawn to the left and right, early 1900s	Unknown (early 1900s est.)	5.29.2018	6.5.2018
AP_017_Tiger's Head Fountain	Photo	10' x 8"	Part of BO_4		Tiger's head Fountain Closeup	D-Foundation Archives	N/A	D-foundation	black and white closeup photograph of the Tiger's head fountain within the Grotto boundaries	Unknown (early 1900s est.)	5.29.2018	6.5.2018
AP_018_Grotto, Balustrades, House	Xerox copy of photograph	5.5" x 3"	Part of BO_4		Grotto on the Balustrades 1900s	D-Foundation Archives	N/A	D-foundation	xerox copy of a black and white photograph of the grotto with the terraced balustrades and boxwood "seats" in the foreground and the main building in the background.	Unknown (early 1900s est.)	5.29.2018	6.5.2018
AP_019_The Entrance	Photo	10" x 8"			"Drumthwacket" - The Entrance Front	N/A	N/A	D-foundation	front of the house, shows the rhododendrons as foundation plantings	before 1980	5.29.2018	6.4.2018
AP_020_Pond	Photo	7" x 5"			Drumthwacket Pond	N/A	N/A	D-foundation	the picturesque pond landscape before the property was divided	before 1940	5.29.2018	6.4.2018
AP_021_Backyard 1905	Photo	5" x 4"			Italianate Backyard 1905		N/A	D-foundation	the back yard in good condition showing the balustrad stair case and the grotto	1905	5.29.2018	6.4.2018
AP_022_Fountain 1905	Photo	10" x 8"			Drumthwacket Fountain 1905			D-foundation	clear photo of the tiered fountain working while in Moses Taylor Pynes ownership of Drumthwacket. Now fountain is in storage.	1905	5.29.2018	6.4.2018
AP_023_View of Stairs 1905	xerox copy of photo	8.5" x 11"			Italianate Staircase 1905	D-Foundation Archives	Miss Johnston - Mrs. Hewitt	D-foundation	Shows the balustrad stair case and the patio landing	1905	5.29.2018	6.4.2018
AP_024_Fountain 1905	xerox copy of photo	8.5" x 11"			Drumthwacket Fountain 1905	D-Foundation Archives	Miss Johnston - Mrs. Hewitt	D-foundation	The fountain is not on but the photo shows the amount of detail in the garden design	1905	5.29.2018	6.4.2018
AP_025_Ariel View 1917	xerox copy of photo	8.5" x 11"			Ariel View 1917			D-foundation	the ariel view shows the property layout and the star shaped garden in the round about	1917	5.29.2018	6.4.2018
AP_026_Bridge Over Pond	Photo	16.5" x 5.5"			Bridge over pond			D-foundation	shows the bridge going over the pond and the gazebo to the left	1905	5.29.2018	6.4.2018
AP_027_Ducks on the Pond	Photo	3.5" x 3.5"			Ducks on the Pond			D-foundation	the pond before 1940 shows ducks, and sheep in the background	Before 1940s	5.29.2018	6.4.2018
AP_028_Gazebo on the Pond	Photo	3.25" x 5"			Gazebo on the Pond			D-foundation	the pond with the park like landscaping, there are men standing in the gazebo.	Before 1940s	5.29.2018	6.4.2018

AP_029_Agnes by the pond	Photo	6.9" x 8.5"			Agnes by the pond			D-foundation	Young Agnes, Moses Taylor Pyne's only grandchild standing by the pond	cca. 1905 - 1910	5.29.2018	6.4.2018
AP_030_Agnes and Mother	xerox copy of photo	5.9" x 8.5"			Agnes and Her Mother			D-foundation	Agnes and her mother are sitting in a Gazebo	cca. 1905 - 1910	5.29.2018	6.4.2018
AP_031_Tennis Court	Photo	3.5 x 3.5"			Tennis Court			D-foundation	Pyne's sons with their spouse at the tennis court	cca. 1905 - 1910	5.29.2018	6.4.2018
AP_032_The Lower Terrace	xerox copy of photo	12.5" x 5"			The Lower Terrace			D-foundation	View of the lawn and the lawn furniture	1905	5.29.2018	6.4.2018
AP_033_Backyard	Mounted photo	13.75" x 11"			Upper Terrace Backyard	Edmund Cook & Company Realtors - Insurance		D-foundation	Facing the back of the house, can see the porch is not enclosed and the large fountain isn't there	1900	5.29.2018	6.4.2018
AP_034_Fountain	Post card	3.5 x 5.5"			Drumthwacket Fountain 1905	W.C. Sinclair, Princeton, NJ		D-foundation	A post card showing the 3 tiered fountain garden in 1905	after 1905	5.29.2018	6.4.2018
AP_035_Parterre garden	Post card	3.5" x 5.5"			Parterre Garden 1905 King and Queen Of Sweden	The Jigger Shop, Lawrenceville, NJ		D-foundation	A post card showing the upper terrace gardens in 1905	after 1905	5.29.2018 6.4.2018	
AP_036_King and Queen Of Sweden	Photo	8.5" x 11"						D-foundation	King and Queen Of Sweden at a party in Drumthwacket			
AP_037_Sweetheart Ball 1992	Photo	8.5 x 11"			Sweetheart Ball 1992			D-foundation	Group picture from 1992	1992	5.29.2018	6.4.2018
AP_038_Drumthwacket indoors	Photos				Drumthwacket indoors			D-foundation	Pictures of groups inside Drumthwacket	after 1980	5.29.2018	6.4.2018
AP_039_Villa Gamberaia Gardens												
AP_40_Farm 1905												
AP_42_Olden Portrait												



Drumthwacket has a unique opportunity to set an example of a sustainably managed and designed grounds for large estates in New Jersey. With the first complete site plan in recent history, storm-water analysis, and planting bed inventory, it will be possible to build upon the past improvements and designs to exemplify the State's sustainable design goals.