MONTGOMERY COUNTY HISTORIC PRESERVATION COMMISSION STAFF REPORT

Address: 8000 Westover Rd., Bethesda Meeting Date: 4/28/2021

Resource: Contributing Resource **Report Date:** 4/14/2021

Greenwich Forest Historic District

Applicant: Kay Richman & Daniel Kaplan **Public Notice:** 4/7/2021

Maria Fanjul, Agent

Review: HAWP **Tax Credit:** n/a

Permit No.: 948208 **Staff:** Dan Bruechert

Proposal: Building Addition, Hardscape Alteration, and Tree Removal

STAFF RECOMMENDATION

Staff recommends the HPC approve the HAWP.

ARCHITECTURAL DESCRIPTION

SIGNIFICANCE: Contributing Resource within the Greenwich Forest Historic District

STYLE: Colonial Revival

DATE: 1936



Figure 1: 8000 Westover is at the intersection of Westover Rd. and York Ln.

PROPOSAL

The applicant proposes to construct an addition and a rear brick patio to the house. One tree is also proposed for removal.

APPLICABLE GUIDELINES

When reviewing alterations and new construction within the Greenwich Forest Historic District several documents are to be utilized as guidelines to assist the Commission in developing their decision. These documents include the historic preservation review guidelines in the approved and adopted amendment for the *Greenwich Forest Historic District (Guidelines)*, *Montgomery County Code Chapter 24A* (*Chapter 24A*), and *the Secretary of the Interior's Standards for Rehabilitation (Standards)*. The pertinent information in these documents is outlined below.

Greenwich Forest Historic District Guidelines

A. PRINCIPLES

The preservation of the following essential elements of Greenwich Forest is the highest priority in making decisions concerning applications for work permits. These Principles are not meant to stop or create unreasonable obstacles to normal maintenance, reasonable modifications, and the evolving needs of residents.

- A2. The houses in Greenwich Forest create an integrated fabric well-suited to its forest setting. These Guidelines are intended to preserve this environment by ensuring that approved work permits include appropriate safeguards that protect the following three essential elements of this fabric:
 - c. High quality building materials and high level of craftsmanship.
- A3. The neighborhood needs to evolve to meet the needs of its residents while maintaining the charm and architectural integrity that have been maintained since the 1930s. Introducing new *architectural styles* that are not already present in the neighborhood will detract from its integrated fabric.

B. BALANCING PRESERVATION AND FLEXIBILITY

Greenwich Forest represents a period in the evolution of Montgomery County worthy of preservation, but it has also changed in response to the needs of residents since it was created in the 1930s. These Guidelines seek a reasonable compromise between preservation and the needs of residents in several ways.

- B1. Most of the houses in the Greenwich Forest Historic District are designated "contributing" because they contribute to the architectural and historic nature of the district. Contributing structures are shown in the map of the districts. These Guidelines are more specific for contributing structures.
- B2. Other houses in the district are designated non-contributing either because (1) they were built more recently than contributing houses with other architectural styles (see Appendix 3) or (2) their original features have been significantly altered by subsequent modifications. Non-contributing structures are shown on the map of the District. The Guidelines provide greater flexibility for owners of non-contributing houses.

- B3. These Guidelines reflect the reality that nearly all houses in Greenwich Forest have been modified since their construction. Owners are not expected to return their houses to their original configurations. The modifications they are permitted to make under these Guidelines are based on the current reality in the neighborhood, provided that those modifications are consistent with the Principles in these Guidelines.
- B4. Property owners have additional flexibility under these Guidelines to make more extensive changes to the parts of their houses that are less visible from the public rights-of-way in front of their houses. The Guidelines accomplish this by stipulating different levels of review for specific elements on different parts of houses.

The Guidelines that pertain to this project are as follows:

D4. Additions: Additions to contributing and non-contributing houses are allowed. The style of an addition must be compatible and in keeping with the prevailing styles of that house. The style of the addition must be compatible with the style of the original house, unless the owner wishes to change the architectural style of both the house and addition to another style of a contributing house in Greenwich Forest (see Changes to architectural style, below). Additions to contributing houses must preserve as a recognizable entity the outline of the original house (not including subsequent additions). Side additions to contributing houses are allowed, but the limits of the original façade must be demarcated by stepping back the front plane of the addition and by a change in the addition's roofline. Rear additions to contributing houses are allowed within limitations on height and setbacks (see D5).

D5. Guidelines on dimensions: The total lot coverage of a house may not exceed 25% of the lot area, and accessory buildings may not exceed 5% of the lot area. The area of an accessory building may be increased by 2%, to 7% of total lot coverage, if the lot coverage of the house and the accessory buildings added together does not exceed 30% of lot area.

Additions should try to preserve ample spacing between houses (see Principle 2b). For example, visual crowding between houses could be minimized by placing an addition toward the back of a property, placing an addition on the side of a property with greater distance to the adjacent house (especially when a side lot abuts the rear setback of an adjacent corner house), or by screening additions with plantings. The total of the two side lot setbacks must be at least 18', with no less than 7' on one side. Rear lot setbacks must be at least 25', though decks no higher than 3' from the ground may extend to an 11' setback.

The elevation of the main or predominant ridgeline(s) of a *contributing house* as viewed from the front may not be increased. To avoid excessive increases in the visual mass of houses, the elevation of any separate ridgelines of an addition to the rear of the house may not be more than 3' above that of the main ridgeline.

- D7. Building materials: Replacement of roofs, siding, and trim with original materials is strongly recommended and is considered maintenance that will not require an application for a work permit. Use of non-original "like materials" such as architectural asphalt shingles requires a work permit to ensure that they match the scale, texture, and detail of the original materials and are consistent with the overall design of the existing house. For example, homeowners wishing to replace slate or tile roofs may use alternative materials that match the scale, texture, and detail of the roof being replaced. If an original slate or tile roof had been replaced with non-original material before July 1, 2011, the homeowner may replace the existing roof in kind or with another material consistent with the architectural style of that house.
- D11. Runoff control: Proposals for work permits should consider rainwater runoff problems that may be created by additions and other property and structural alterations. Solutions to these problems should protect trees and maximize the on-property control of this runoff by drainage fields, installation of

permeable rather than impermeable surfaces, and other available means.

D15. Tree removal: The preservation of large mature trees in Greenwich Forest is a high priority of these Guidelines, but there are circumstances in which removal may be unavoidable. Trees smaller than 8" in diameter may be removed without an application for a work permit. Larger trees may be removed without an application for a work permit if a certified arborist provides documentation to the decision-making body stating that the tree is dead, diseased, dying, or a hazard (e.g. a threat to the public safety or the structural integrity of the house). Each tree removed for these reasons should be replaced in the manner below.

In planning landscape modifications, additions, and replacement houses, homeowners may propose the removal of trees with diameters greater than 8". If there is an obvious alternative sighting that would avoid the removal of mature trees, the application for a work permit should include a brief explanation of why that alternative was rejected. In such cases, the functional needs of the homeowner should be respected. If applications proposed the removal of trees larger than 8" in diameter, the site plan for the proposed modification must include the installation of two replacement trees for each tree removed as a result of the modification. These proposals are subjected to strict scrutiny to ensure that homeowners have not overlooked viable options that would avoid tree removal and that the plan for installing new trees adheres to the following guidelines. Each tree removed for the forest canopy must be replaced with two trees chosen from canopy species already established in the region... If the forest canopy is well established over the site, one of the two preplacement trees can be chosen from an understory species that is already established in the region. Ornamental trees such as American Dogwood, Serviceberry, or Amelanchier, and Eastern Redbud are native and desirable plantings, but they cannot be counted as replacement trees because they do not contribute to the canopy.

D16. Walkways and patios: Reconfiguration and replacement of existing pathways and patios that would not result in a net addition of impermeable hardscape surfaces are considered landscaping and do not require an application for a work permit. The installation of new walkways and patios requires a work permit and should minimize the creation of new impermeable hardscape surfaces (see Principle 1).

D17. Windows, dormers, and doors: Door and window replacements are acceptable, as long as the replacements are compatible with the architectural style of the house. Replacement windows with true or simulated divided lights are acceptable, but removable ('snap-in') muntins are not permitted on front-facing windows of contributing houses. Front-facing dormer additions to third floors are permitted on non-contributing houses and on contributing houses, if such additions do not involve raising the main roof ridge line (as specified in D5) and if the addition is compatible in scale, proportion, and architectural style of the original house.

According to the *Guidelines*, the three levels of review are as follows:

Limited scrutiny is the least rigorous level of review. With this level, the scope or criteria used in the review of applications for work permits is more limited and emphasizes the overall structure rather than materials and architectural details. The decision-making body should base its review on maintaining compatibility with the design, texture, scale, spacing and placement of surrounding houses and the impact of the proposed change on the streetscape.

Moderate scrutiny is a higher level of review than limited scrutiny and adds consideration of the preservation of the property to the requirements of limited scrutiny. Alterations should be designed so the altered structure does not detract from the fabric of Greenwich Forest while affording homeowners reasonable flexibility. Use of compatible new materials or materials that replicate the original, rather than original building materials, should be permitted. Planned changes should be compatible with the structure's existing architectural designs.

Strict scrutiny is the highest level of review. It adds consideration of the integrity and preservation of significant architectural or landscape features and details to the requirements of the limited and moderate scrutiny levels. Changes may be permitted if, after careful review, they do not significantly compromise the original features of the structure or landscape.

Sec. 24A-8. Same-Criteria for issuance.

- (b) The commission shall instruct the director to issue a permit, or issue a permit subject to such conditions as are found to be necessary to insure conformity with the purposes and requirements of this chapter, if it finds that:
 - (1) The proposal will not substantially alter the exterior features of an historic site or historic resource within an historic district; or
 - (2) The proposal is compatible in character and nature with the historical, archeological, architectural or cultural features of the historic site or the historic district in which an historic resource is located and would not be detrimental thereto or to the achievement of the purposes of this chapter; or
- (d) In the case of an application for work on an historic resource located within an historic district, the commission shall be lenient in its judgment of plans for structures of little historical or design significance or for plans involving new construction, unless such plans would seriously impair the historic or architectural value of surrounding historic resources or would impair the character of the historic district. (*Ord. No. 9-4, § 1; Ord. No. 11-59.*)

Secretary of Interior's Standards for Rehabilitation

The Secretary of the Interior defines rehabilitation as "the act or process of making possible a compatible use for a property through repair, alterations, and additions while preserving those portions or features, which convey its historical, cultural, or architectural values." Standards 2, 9, and 10 most directly apply to the application before the commission:

- #2. The historic character of a property shall be retained and preserved. The removal of historic materials or alteration of features and spaces that characterize a property shall be avoided.
- #9. New additions, exterior alterations, or related new construction shall not destroy historic materials that characterize the property. The new work shall be differentiated from the old and shall be compatible with the massing, size, scale, and architectural features to protect the historic integrity of the property and its environment.
- #10. New additions and adjacent or related new construction shall be undertaken in such a manner that if removed in the future, the essential form and integrity of the historic property and its environment would be unimpaired.

STAFF DISCUSSION

The subject property is one of the largest houses in Greenwich forest. The house is a stone and brick Tudor Revival house orientated towards the intersection of Westover and York Ln. The applicant proposes to demolish the existing rear brick patio, excavate, and construct a largely subterranean addition. After construction of the addition, a new, reconfigured patio will be installed in the rear. Due to the excavation for the addition, the applicant proposes removing one tree: a 50" d.b.h. Tulip Poplar. The applicant will plant two additional canopy trees. Staff finds the proposed work will not have a significant visual impact on the character of the house or surrounding neighborhood and recommends the HPC approve the HAWP.

Tree Removal

The proposal includes the construction of a new addition. The excavation required for the addition will impact the root zone of a healthy 50" d.b.h. Tulip Poplar. The consulting arborist recommends the tree be removed because the damage to its roots makes the long-term survival of the tree doubtful.

In evaluating the proposal Staff finds there is not an obvious alternative sighting for the addition. Because there is no obvious alternative, the wishes of the homeowner should be supported, per the *Guidelines*. The *Guidelines* require two additional canopy trees to be planted on the site. The submitted site plan identifies the location for two additional trees. The applicants have not identified the species of replacement trees, however, their application states that they will be either White Oak or American Beech. Both of these are acceptable and, if approved, Staff will verify the final tree selection from the two species proposed with the permit submission.

Staff additionally notes that Tulip Poplars have soft wood. Several have failed in county historic districts during intense storms and cause significant damage; including to this house. Because of this concern, the HPC has been more lenient about removing Tulip Poplars, particularly in instances where the trees will be replaced with hardwood species as is the case here. Staff supports the removal of the tree under *Guideline* D11 and 24A-8(b)(2).

Building Addition

At the rear of the house, the applicant proposes removing the existing brick patio and constructing a subterranean addition and subterranean patio, and then reconstructing the rear brick patio. The addition and patio will be constructed to the minimum setback line at the rear of the property, as shown on the site plan. The portions of the new construction from the public right-of-way will be the metal railing surrounding the patio and window well, and the brown metal skylight frames. Other materials used in the addition will be the painted concrete retaining walls and wood/composite decking stairs down to the patio, neither of which will be visible from the public right-of-way. The proposed construction will create an additional 223 ft² of lot coverage, which will result in a total lot coverage of 24.2% (less than the *Guideline* maximum 25%).

Staff finds that, as this construction will only partially be visible from the right-of-way, it should be reviewed under lenient scrutiny and that *Guideline* B4 supports more extensive changes to the resource. Staff additionally finds that constructing a subterranean addition is a unique solution in Greenwich Forest that the HPC has not had to evaluate before. Only a small portion of the skylights and metal railing will be visible from the surrounding right of way. The *Guidelines* state that additions need to match the style of the historic house. Staff finds that the exterior features of the proposed addition do not visually compete with the historic house and should be found to be compatible even though they do not include Tudor architectural elements.

Staff finds that the proposal will not have a substantial visual impact on the surrounding district and is supported by 24A-8(b)(1) and (2) and Standards 2, 9, and 10. Guideline D11, which states that projects should consider the impact new construction will have on the surrounding district, is the one element of the project that Staff is not convinced has been addressed. Staff notes that the topography of the site drops by 14' (fourteen feet) from the high point in the southeast corner to the low point in the northwest corner, which makes capturing rainwater more challenging. The additional trees on site will help to absorb rainwater once they have grown to sufficient size. Staff is unsure if any additional drywells or a rain garden would be appropriate on this site, but Staff also notes that these features would not be reviewed by the HPC.

STAFF RECOMMENDATION

Staff recommends that the Commission approve the HAWP application; under the Criteria for Issuance

in Chapter 24A-8(b)(1), (2), and (d), having found that the proposal will not substantially alter the exterior features of the historic resource and is compatible in character with the surrounding district and the purposes of Chapter 24A;

and with the Secretary of the Interior's Standards for Rehabilitation #2, 9, and 10;

and with the general condition that the applicant shall present an electronic set of drawings, if applicable, to Historic Preservation Commission (HPC) staff for review and stamping prior to submission for the Montgomery County Department of Permitting Services (DPS) building permits; and with the general condition that final project design details, not specifically delineated by the Commission, shall be approved by HPC staff or brought back to the Commission as a revised HAWP application at staff's discretion;

and with the general condition that the applicant shall notify the Historic Preservation Staff if they propose to make **any alterations** to the approved plans. Once the work is completed the applicant will contact the staff person assigned to this application at 301-563-3400 or dan.bruechert@montgomeryplanning.org to schedule a follow-up site visit.



DATE ASSIGNED___ **APPLICATION FOR** HISTORIC AREA WORK PERMIT HISTORIC PRESERVATION COMMISSION

301.563.3400

FOR STAFF ONLY: **HAWP#** 948208

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APPLICANT	
Name: Kay Richman and Daniel Kaplan	E-mail: kay.richman@gmail.com
Address: 8000 Westover RD	city: Bethesda zip: 20814
Daytime Phone: 301-775-1443	Tax Account No.: 00494943
AGENT/CONTACT (if applicable): ユレモムラモ このい の	STACT AGENT IF YOU HAVE ANY
Name: Maria Fanjul	E-mail:
Address:	City: Cabin John zip: 20818
Daytime Phone: 2403555338	Contractor Registration No.: 125753
LOCATION OF BUILDING/PREMISE: MIHP # of Histo	
Is the Property Located within an Historic District? _	
Is there an Historic Preservation/Land Trust/Environn map of the easement, and documentation from the E	nental Easement on the Property? If YES, include a
Are other Planning and/or Hearing Examiner Approva (Conditional Use, Variance, Record Plat, etc.?) If YES, supplemental information.	
Building Number: 8000 Street: W	estover Road
	oss Street: York Lane
4.4	0026 Parcel:
TYPE OF WORK PROPOSED: See the checklist on for proposed work are submitted with this application be accepted for review. Check all that apply: New Construction Deck/Porch Addition Fence Demolition Hardscape/Land Grading/Excavation Roof I hereby certify that I have the authority to make the and accurate and that the construction will comply was agencies and hereby acknowledge and accept this to	Shed/Garage/Accessory Structure Solar Tree removal/planting dscape Window/Door Other: foregoing application, that the application is correction plans reviewed and approved by all necessary to be a condition for the issuance of this permit.
Signature of owher or authorized agent	^l Date

Description of Property: Please describe the building and surrounding environment. Include information on significant structures, landscape features, or other significant features of the property:
1- A Please see attached information with description
Description of Work Proposed: Please give an overview of the work to be undertaken:
1-B Please see attached information with description
2. Photographs of existing house and proposed tree to be removed.
3. Description of proposed materials.
4. Addresses of adjacent and confronting properties owners.
5. Tree report dated April 5, 2021 prepared by Keith Pitchford of Pitchford Associattes, Certified Arborist and Tree risk assessor.
6. Proposed floor plans, elevations and sections (format 24X36 sheets)

Work Item 1:	
Description of Current Condition: Please see attached information	Proposed Work: Please see attached information.
Work Item 2:	
Description of Current Condition:	Proposed Work:
Work Item 3:	
Description of Current Condition:	Proposed Work:

HISTORIC AREA WORK PERMIT CHECKLIST OF APPLICATION REQUIREMENTS

	Required Attachments						
Proposed Work	I. Written Description	2. Site Plan	3. Plans/ Elevations	4. Material Specifications	5. Photographs	6. Tree Survey	7. Property Owner Addresses
New Construction	*	*	*	*	*	*	*
Additions/ Alterations	*	*	*	*	*	*	*
Demolition	*	*	*		*		*
Deck/Porch	*	*	*	*	*	*	*
Fence/Wall	*	*	*	*	*	*	*
Driveway/ Parking Area	*	*		*	*	*	*
Grading/Exc avation/Land scaing	*	*		*	*	*	*
Tree Removal	*	*		*	*	*	*
Siding/ Roof Changes	*	*	*	*	*		*
Window/ Door Changes	*	*	*	*	*		*
Masonry Repair/ Repoint	*	*	*	*	*		*
Signs	*	*	*	*	*		*

1-A Description of existing property

The property is a Tudor Revival style residence located at the corner of Westover Road and York Lane. The residence is considered a contributing resource in the Greenwich Forest Historic District. The original main structure of the house was built in 1941. It is a single two-story house with a central one-story stone and brick front porch, with arched brackets that shelter the entry. At one side of the entry, there is a two-story stone and weatherboard siding gabled bay with narrow casement windows. At the other side, there is a single-story stone bay dominated by a large brick and stone chimney. The original structure of the house was enlarged in the early 1990's to create a family room/kitchen at the rear of the house. After a huge Tulip Poplar tree fell on the house in 2007, this rear addition was recreated and a garage near the driveway and a bathroom above the side porch were added. All of the work complements the original style of the house.



1-B Description of proposed work

We propose to construct an underground (basement) ceramics studio addition at the left rear of the house. The owners opted for this location – underground, mainly beneath an existing side patio – so that their home would continue to have an understated presence relative to its surroundings. The proposed addition will create few changes to the existing footprint of the house, will minimize any visual crowding between the house and the adjoining properties, and will not change the view of the house from the public right-of-way facing the front door.

The existing house, including the brick patios, covers 3,776 SF of a 16,470 SF lot. The proposed addition will add 136 SF of brick patio and an underground rear open patio with permeable floor of 223 SF. The total coverage after the proposed construction will not exceed 25% of the lot area.

The proposed location takes advantage of the existing natural topography of the lot to maximize the capture of natural light to the new area. Because of the existing natural lot grades, some areas of the addition will be slightly above ground.

Access to the new space will be through the existing basement utility room and through the proposed underground open patio (outdoor work space) to be located at the rear of the house.

In order to create the underground studio, we will temporarily remove a large section of the existing brick patio, which will be rebuilt with similar characteristics after the addition is in place beneath it. We will permanently remove a large rounded brick planter at the rear of the house to create an open connection between the new studio and the underground patio. We will add two groups of skylights at the level of the existing brick patio for natural light. One group of skylights will be connected to four awning windows, creating a unit. The other group of skylights will be connected to a double glass patio door with a sidelight, creating a second unit between the proposed studio and the new underground patio. To access the underground patio from the rear yard, we will add stairs framed with wood and covered with composite decking. All new areas 30" below grade will have a simple perimeter metal railing.

We are well aware that the preservation of mature trees in Greenwich Forest is a high priority, but we consider that the removal of a single large mature Tulip Poplar, located along the rear of the property, is unavoidable. As explained in arborist Keith Pitchford's tree report dated April 5, 2021 (attached), "cutting these roots at such a close distance to the base [of the tree] will almost certainly cause this tree to fall over."

We considered other locations for the studio addition but any location to the rear or yard side of the house would still interfere with the roots of this already-compromised tree, thus creating a similar hazard and also likely jeopardizing one or both of the healthier Tulip Poplars near the screened porch.

The large Poplar is, in any event, "not a good preservation candidate," according to the tree report, given its poor live crown ratio and the signs of Armillaria root rot. As explained by the arborist, the tree will likely be at "moderate to high hazard for whole tree failure . . . in 5+ years. So, irrespective of any construction activity, I would probably recommend that you remove this tree within the next few

years. . . . I would not want this tree near my house. I don't like the form and am concerned with the presence of a highly aggressive trunk rot pathogen."

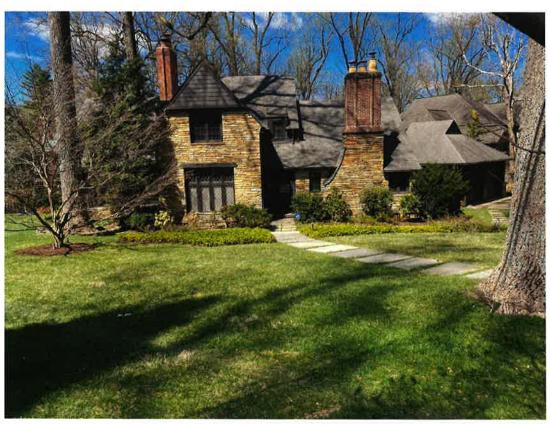
Given the hazards this tree presents, and especially in light of their traumatizing experience in 2007, when a slightly smaller Tulip Poplar fell on their home, damaging nearly every room of the house and completely demolishing the rear addition (see attached photographs), the owners see no alternative to removing the Poplar.

There are many other very large mature trees – three in front, two to the side -- on the property, and still more on adjacent neighbors' properties, so that the canopy in the vicinity is already very full. See photographs. And as explained by the arborist, there is an adjacent American beech on the neighbor's property "that has been suppressed by the poplar, and which would love the extra sunlight and canopy space if the poplar were removed." There are more than 40 smaller trees on the property.

The owners propose replacing the removed poplar with either two White Oak trees or two American Beech trees. See proposed location on site plan.

2- Photographs of existing house and proposed tree to be removed.

A- Front elevation



B.1 Side elevation where underground addition is proposed



B.2 Side/Rear elevation where underground addition is proposed



C. Rear elevation where new underground patio is proposed in front of bay windows after planter is removed



D.1 Existing natural grading where studio and underground patio are proposed.



D.2 Existing natural grading where studio and underground patio are proposed.





F. Photographs showing damge caused by fallen tree in 2007













anthony wilder design/build, inc., 7913 MacArthur Boulevard • Cabin John, MD 20818 • 301-907-0100 • 301-907-3300 Fax • www.anthonywilder.com

3. Description of proposed materials.

- Brick patio at first floor and patio perimeter walls: will be removed and reinstalled to match

existing brick material as closely as possible.

- Underground studio addition: Perimeter walls and roof will be concrete with brick above.

Wall where planter will be removed will be siding, with color to match existing siding or and

Brick.

- Proposed skylights, windows and patio doors: will be transparent glass with opaque brown

metal structure to match color of trim on main house doors and windows as closely as

possible.

- Railing: Metal railing to match existing trim color as closely as possible.

- Underground open rear patio: will have concrete painted perimeter walls, wood and

composite decking stairs, and gravel floor with some stepping flagtones.

4. Addresses of adjacent and confronting properties owners

Owners' mailing address: Daniel Kaplan and Kay Richman

8000 Westover Road

Bethesda, Maryland 20814

Mailing addresses of adjacent and confronting property owners:

Deborah and Robert Bruskin

5619 York Lane

Bethesda MD 20814

Stephen Sherman

8004 Westover Road

Bethesda MD 20814

Becker Kathryn

5605 York Lane

Bethesda MD 20814

Virginia and Robert Essink

5606 York Lane

Bethesda MD 20814



April 5, 2021

Mrs. Kay Richman 8000 Westover Rd. Bethesda, MD

Dear Kay:

It was a pleasure meeting with you recently to discuss your proposed construction project. We met to survey three Tulip poplar (*Liriodendron tulipifera*) for potential impact by this project. The trees are as follows:

- 1. Tulip poplar, 50" of diameter at breast height (dbh). Located along the rear property line. This tree is in fair condition.
- 2. Tulip poplar, 37.7" dbh. This tree is the closer of the two near the proposed limits of disturbance. It is in good condition.
- 3. Tulip poplar, 33.7" dbh. Further from the LOD, and closer to the house. It is in good condition.

Trees #2 and 3 are both in good condition, in that they appear to be vigorous and with no apparent defects in the canopy, main trunk and root collars. Some lower lateral limbs have been pruned out over the years in both trees, which I assume was to allow more light into the house or to clear the limbs from over the roof. Regardless, the live crown ratio (LCR) for each is still at 40-50%. The LCR is a ratio of the live canopy to the full length of the tree height. Ideally, I would want to see an LCR of at least 30%.

The LCR of tree #1 is closer to 30%, which is a cause for some concern. This means that the live crown is restricted to the upper 1/3 of the tree, with no limbs found in the lower 2/3 of the trunk. The detrimental effects of this pattern are twofold. Initially, I am concerned that because the wind loading is concentrated at the top, and with no lateral limbs below to dampen the stresses, this energy will travel further down the trunk to the base. In the event that the tree base is structurally compromised, this can lead to whole tree failure. A second concern is that the leaves and therefore the products of photosynthesis are concentrated high in the tree and are not be transferred to the lower trunk. This phenomenon creates a tree trunk with less taper down the trunk. Instead of a tree trunk with gradual taper, the result is a telephone pole-like trunk. This, too, is a concern in terms of structural integrity going forward.

Tree #1 is an extremely large tree both in diameter and height. If it were to fail, it could cause catastrophic damage to either your home or your neighbors. I did not see any evidence to suggest that this failure is imminent, or even probable at this time. However, there are signs of *Armillaria* root rot present on several root flares. The signs of this disease are the hyphae, or rhizomorphs. The disease is colloquially called 'shoe-string root rot' because of these thin, black hyphae that spread through the soil. This is a native root rot that for some reason is common on several tree types in our area, but especially tulip poplar and beech. I cannot explain this pattern in these tree types, but it is ubiquitous.

The presence of *Armillaria* is not an evidence of infection. My understanding of this disease is that it infects wounds to the large structural roots close to the base. Once in the tree, it is an aggressive invader of live cells. Trees will act quickly to contain the infection, but if the tree is weakened, the disease will get the upper hand and spread quickly. From my experience, it is this disease to a great extent that causes poplars to fail. So, I take it very seriously when I see the hyphae.

To confirm, I did not see evidence that the disease has entered your tree. There are typical indicators that would be present if an infection were active and advanced, and these are not present. However, despite the absence signs or symptoms of infection, its presence suggests that any changes to the tree could lead to the pathogen advancing into the tree base.

We reviewed your building plans, and I explained the two zones of a tree's root system – the structural root zone and the critical root zone. The nomenclature of these zones is varied in our industry, but the definitions are the same. The SRZ is comprised of the large diameter woody roots close to the base that form the 'base of the wine glass' that keeps the tree upright. The dimensions of this zone are often calculated as being 6" of radial distance around tree for each inch of trunk diameter. This means that the SRZ for tree #1 could be 25' in all directions.

The CRZ is the zone of absorbing roots that can extend 2-3 times beyond the edge of the canopy, or 'drip line.' These roots can be cut, and they will regenerate in place or elsewhere in the CRZ. The State of Maryland's technical manual for the Forest Conservation Act determines the CRZ to be 1.5' for each inch of trunk diameter. Therefore, the CRZ for tree #1 is about 75' in all directions. This gives you a sense of how extensive these root systems can be.

My assessment of your plans suggests significant damage to the SRZ of tree #1, but only moderate loss to the CRZ. I see on the plans a proposed excavation of roughly 9'4" for the window well, and 14'9" to the edge of the full excavation. It's important to note too that these distances do not appear to be the limits of disturbance for any over dig for construction. So, we should assume another 2' closer to the tree for both of these measurements. Unfortunately, these distances are too far within the SRZ to condone this excavation. Cutting these roots at such a close distance to the base will almost certainly cause this tree to fall over.

The proposed excavation is far enough from tree #2 and #3 so as not to be a concern to me. It would be well outside the SRZ of each, and the CRZ loss should be well within a level that these trees could tolerate. However, because these are tulip poplars and quite sensitive to root loss, you should consider applying a tree growth regulator (TGR) to both trees now in anticipation of the root loss. The TGR will simply act to reduce the stem and diameter growth for a period of three years. As a result, the carbohydrates produced during photosynthesis will be increasingly redirected to root growth. I have used this product for many years with good success on tulip poplar, and in situations just like yours.

We discussed this on site, but it is worth reiterating here. The anticipated damage to the SRZ of tree #1 is untenable. However, this tree is not a good preservation candidate to begin with. The LCR is poor and will ultimately be detrimental. The presence of *Armillaria* is concerning, and especially in light of the low LCR. Although this tree does not represent a moderate to high hazard for whole tree failure now, it will likely be at this level in 5+ years. So, irrespective of any construction activity, I would probably recommend that you remove this tree within the next few years. I would hate to see you

cancel or significantly alter your building plans just to save this tree. Personally, I would not want this tree near my house. I don't like the form and am concerned with the presence of a highly aggressive trunk rot pathogen. On the bright side, there is a very nice American beech on your neighbor's property that has been suppressed by the poplar, and which would love the extra sunlight and canopy space if the poplar were removed.

I do think that we can accommodate the other two poplars without any design changes. The next step would be to plan for ingress/egress for the construction equipment and personnel in order to avoid damaging these two poplars. That can be step two of this process.

Thank you for the opportunity to offer these observations and recommendations. Please let me know if you have any additional questions.

Sincerely,

Keith C. Pitchford

ISA Certified Arborist, MA-0178

ISA Certified Tree Risk Assessor

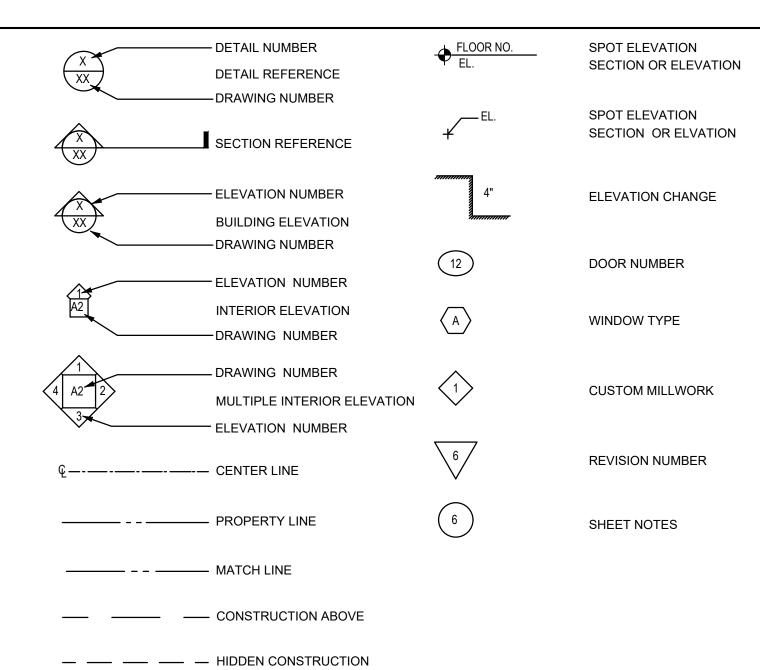
MD Licensed Tree Expert, #589

MD Licensed Forester, #675



Richman - Kaplan Residence

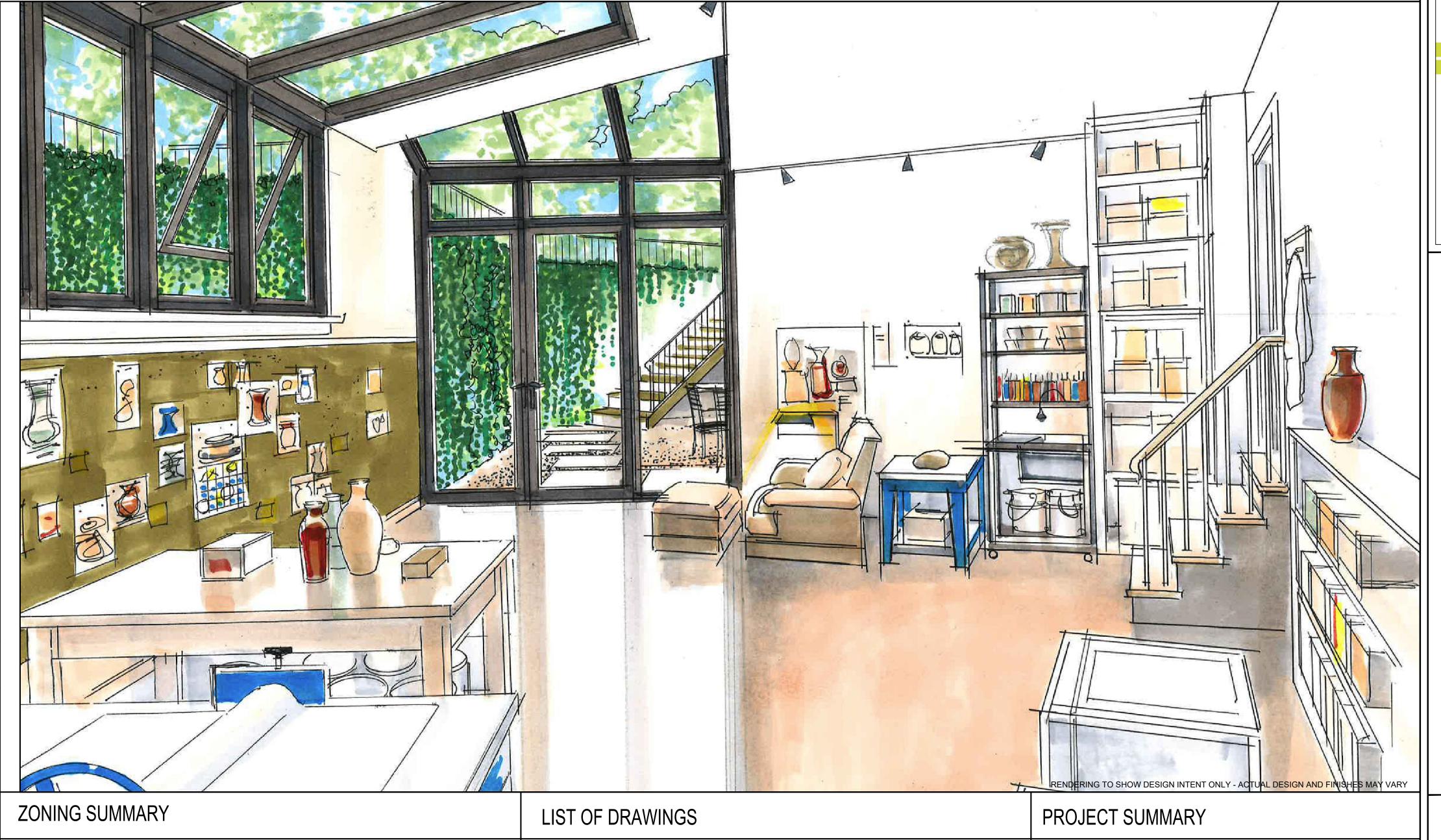
DRAWING SYMBOLS



REVISIONS

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CS COVER SHEET
SP SITE PLAN WITH PROPOSED AREA AND TREE LOCATIONS

A1 PROPOSED LOWER AND FIRST FLOOR PLANS
A2 PROPOSED SECTIONS
A3 PROPOSED EXTERIOR REAR ELEVATION
A4 PROPOSED EXTERIOR SIDE ELEVATION

CODE INFO

LOADS, IRC 2018 & MONTGOMERY COUNTY AMENDMENTS LIVE LOADS: LIVING AREA: 40 PSF ROOF: 30 PSF LATERAL LOADS: WIND PER IRC 115 MPH

DESIGNED PER IRC & IECC 2018

Project Location: 8000 Westover Road, Bethesda - Maryland 20814

Lot Description: Greenwich Forest - Lot 11, Block K, subdivision 0026, Map HN13

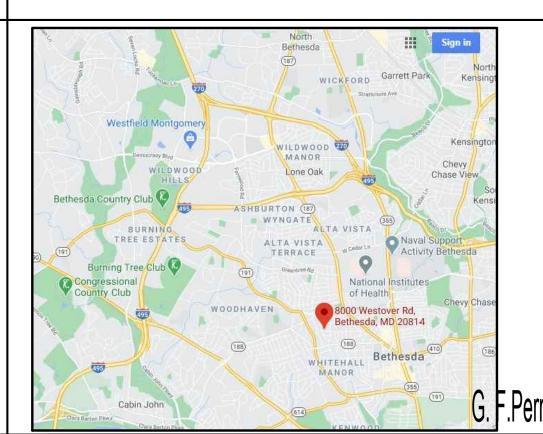
Site Area: 16,470 sq. ft.

SCOPE OF DESIGN

Design a new ceramic studio at side rear yard with ample daylight

Kay Richmand and Daniel Kaplan

VICINITY MAP



Schematic Design Set Feb.11, 2021
Schematic Design Options Feb.17, 2021
Design Development March.23, 2021
Greenwich Forest Permit April 7, 2021

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