

TOWN OF WELLESLEY



MASSACHUSETTS

ZONING BOARD OF APPEALS

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ZBA 2003-83  
Petition of Wellesley College  
Alumnae Valley Landscape Renewal Project  
Wellesley College Campus

Pursuant to due notice, the Special Permit Granting Authority held a Public Hearing on Thursday, November 20, 2003 at 7:30 p.m. in the Great Hall at the Town Hall, 525 Washington Street, Wellesley, on the petition of WELLESLEY COLLEGE requesting the following relief for the ALUMNAE VALLEY LANDSCAPE RENEWAL PROJECT on the WELLESLEY COLLEGE CAMPUS in a Water Supply Protection District and an Educational District:

1. A Special Permit pursuant to the provisions of Section XIVE and Section XXV of the Zoning Bylaw for a Major Construction Project in a Water Supply Protection District.
2. Site Plan Approval pursuant to the provisions of Section XVIA and Section XXV of the Zoning Bylaw for a Major Construction Project, which shall involve grading or regrading of land to planned elevations and disturbance of the existing vegetative cover over an area of 5,000 or more square feet.

The project shall consist of the following:

- a. Removal of existing tennis courts and the "Service Lot" parking area.
- b. Creation of a cattail marsh, a grassed event space and an extended detention/infiltration basin.
- c. Installation of a new main drainage trunk line running east/west through the valley over a 7.9 acre limit of work.

No buildings shall be constructed within the 7.9 acre limit of work. Parking shall be supplied with 177 spaces at the Davis Parking Garage, 110 spaces at the Trade Shops and 4 new spaces at the Boat Landing.

On October 10, 2003, the petitioner filed a request for a hearing before this Authority, and thereafter, due notice of the hearing was given by mailing and publication.

Presenting the case at the hearing was Barry Monahan, Assistant Vice President of Administration for Wellesley College. Mr. Monahan was accompanied by the following members of the project team:

Christopher Lovett, Project Manager  
Douglas Landry  
Michael Van Valkenburgh, Landscape Designer  
Andrew Gutterman  
Emily Muir

Vanasse Hangen Brustlin  
Michael Van Valkenburgh, Inc.

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Mark Haley, Geotechnical Engineer  
Patrick Willoughby, Assoc. Director/Physical Plant

Haley & Aldrich, Inc.  
Wellesley College

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Mr. Monahan said that the Alumnae Valley project constitutes the last piece of the jigsaw puzzle. The College was delighted to be before the Board for approval to complete this last phase of the project.

Mr. Lovett explained that when they were before the Board in December, 2002 for Site Plan Approval for the Campus Center and the Parking Garage, they had detached the Alumnae Valley portion from the project due to the findings of geotechnical work done in the Valley. At that time, they had discussed installing additional drainage improvements such as recharge.

LANDSCAPE DESIGN – Michael Van Valkenburgh

The Valley Restoration Project is a major piece of the 1998 Master Plan, which is an effort to reclaim the character and presence of some of the major landscape elements of the campus. Early in the 20<sup>th</sup> century, the Valley became a parking lot. One of the Master Plan recommendations was the collection and removal of parking from the Valley.

The major goal of their landscape design was to keep an area through the middle of the Valley as a low relief of wetland plantings to reestablish the original feeling of a wet meadow system, and to provide sight lines from the Campus Center across the Valley to Lake Waban.

On the western side, there will be an events and recreation lawn. Two of the major elements of the design are the places in which stormwater is released into the Valley through a series of settlement basins and structures that release the stormwater across the site. The water moves through this process for purification. They have also tried to recreate some of the ecological life of the Valley. Almost all the plantings will be native plants.

One of the stormwater entry points goes into the marsh feeder pond; another is located on the far side of the Valley. There is a version of the created filtering system of plants, which goes around the events lawn and finally discharges into the lake. Access to the Boat House has been maintained, and four parking spaces have been added.

There is also vehicular access to a service stop beneath the Campus Center. This building is unusual in that it has no back. The service road goes beneath the building with a vehicular turn around. The land forms to be created will help to guide traffic down into the Campus Center, with the effect that the slight rise of topography and the creation of a small hill will serve to make the service road barely visible from the Valley, while integrating it into the Campus Center.

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DRAINAGE IMPROVEMENTS – Christopher Lovett

The storm water “in points” into the Valley remain the same as when the college came before the Board for the Campus Center/Parking Garage project. However, some natural water quality features, structural devices and recharge components have been added.

Drainage enters the Valley from five points. There is a pipe system that comes down west of Alumnae Hall that captures the Sports Center, portions of Alumnae Hall and portions of the drainage in front of Alumnae Hall. This system will drain into a sediment forebay, then into a long shallow infiltration basin, which will overflow into a long shallow grassed swale and eventually discharge through a headwall into the forebay upstream of Lake Waban. There are approximately 9,000 cubic feet of storage in the infiltration basin, which means that between the basin and the marsh, there is storage for 1.25 inches of rainfall.

The second entrance to the Valley is from the Campus Center where a new structural device has already been installed. From that point down, they will tie into a new trunk line that will run through the Valley. The trunk line has been raised up over the existing drainage system, as the existing system sits in the ground water table. It is always inundated, and is in poor condition.

The third input is from Paramecium Pond and the northeast portions of the campus, including the Science Center. This drainage goes through an 18 inch pipe located east/west, and goes between the Campus Center and the Physical Plant. This portion of the drainage will be picked up with the pump station. Typically, this is not preferred, but because of the existing conditions, they can't get the flow to Lake Waban by gravity. The pump station will also take flow from the areas immediately adjacent to the Physical Plant, which are too low to reach by gravity. The pump station will pump into the new trunk line, which is sized to take a 100 year storm, so there won't be any backup in the system. The pump station is designed to pump up to a 10 year storm. After that, there is an overflow within the structure, which will discharge down the line.

The eastern connection picks up Davis Museum and the flow past the quad. This area is high enough to pick up with a new drain line and reroute it on the other end of the Service Road, where it will discharge into a sediment forebay and then into a part of the marsh. This will deliver water quality treatment to the marsh and will provide infiltration through the cattail marsh. There will be a clay bentonite liner in the marsh. However, due to the size of the marsh, which is about ¾ acre, there will be constant slow recharge into the groundwater system.

To recharge the cattail marsh, they would like to maintain 3 inches of water at all times so the cattails can survive. There is a connection, which is part of the irrigation pump system installed for Paintshop Pond, that ties back into the cattail marsh and helps move the water around to prevent stagnation, and will maintain the 3 inches of water necessary for the vegetation.

Overall, there will be 15,000 square feet of recharge, which is far more than the 5,000 square feet recommended in DEP regulations.

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### Discussion Of Storm Water Drainage Issues

The Board commented that two areas that are not being treated are the boat landing parking area and anything downstream of the defender control device where several small catch basins have been provided.

A third important untreated area is the storm water reach coming in from Paramecium Pond, which goes to the pump station; it is going into the inlet without treatment. It appears from the storm water modeling that this is by far the largest area with the largest storm water flow that is being drained. Given that the lines from the pump station go right past the sediment forebay, could they also go into the marsh?

Mr. Lovett responded that the problem is partly created by the elevation of the marsh. The bottom of the marsh is at 114 and the top is at 115. The overflow at the top of the pump station is at 112.5. The second reason is the amount of water flowing through. They did not want to create the marsh and then blow it out. The forebay would have to be much bigger if the flow from the total area were to enter it.

The Board stated that DEP Stormwater Standards for a project with an Order of Conditions requires treatment of the water to the maximum extent possible, which suggests that the largest stream, which is contributory to the projects, should be treated. The Standards also state that in a project of this type, water that comes from areas outside the project should also be treated to meet the standards at the point of discharge. To say the project is not contributing to that in any significant way does not absolve the requirement to treat it.

Mr. Lovett said they have designed a system that picks up 79% of the areas in which they are working, which totals 3 acres plus the roof-top runoff. The 79% includes 1.88% of additional areas outside the project. They are also removing 3 acres of impervious surface, which is also considered an improvement.

Mr. Lovett suggested the addition of a water quality unit to remove total suspended solids (TSS) upstream of the pump station as a solution. This would have the advantage of both improving water quality and protecting the pumps from grit damage.

The Board was of the opinion that the best solution would be to discharge to the wetlands, but if that was not possible due to the space constraints of the forebay, Mr. Lovett's suggestion would be closer to the intent of the DEP requirements.

The Board asked if the installation of the bentonite liner for the marsh area was due to contamination. Mr. Lovett said the liner is simply an effort to hold water and has nothing to do with contamination.

### REMEDICATION IMPROVEMENTS – Mark Haley

Prior to Mr. Haley's presentation, the Board noted that there are two active DEP Remediation Permits. There is one for Alumnae Valley, which is a Tier One requiring a Licensed Site Professional.

Mr. Haley said the Trade Shops building has been demolished. At one time, there was a leak of heavy petroleum oil from a set of tanks, which flowed under the Trade Shops Building. This is one of the permits recently re-permitted, that has been outstanding under a RAO "C". The two underground storage

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tanks are still there, and were replaced within the last ten to fifteen years. There have been petroleum leaks from these tanks and from overfilling. The oil has traveled under the Physical Plant and along the drainage system in the Valley. There are monitoring wells at the Physical Plant around the tanks. Part of the remediation is a line of steel sheet piling that runs from beyond the tanks all the way to the recovery wells from which they will be recovering as well as monitoring. There are wells at both ends of the building.

The Board commented that the Mass. State Fire Marshal data base, which tracks underground tanks, does not have a record of the two tanks, and recommended that this oversight be corrected.

The Board asked how long the wells would operate. Mr. Haley said that they would operate until they can get a Class A RAO, which will be a number of years. This is a #6 oil, so it goes very slowly. The sheet piling will keep the oil away from the area that has been cleaned for 8 to 10 years.

The Board asked if Mr. Haley knew the extent of the plume. Mr. Haley said when the Trade Shops building came down, they were aware of the contamination, but not the extent. They dug until they got to clean soil.

They found another area, which will also be cleaned up during the next phase. The second area is part of the same plume. It probably came down the drainage courses, which is one of the reasons replacement of all the drainage piping was recommended. When working in the area, they were getting a sheen. Not only is the contamination in the pipes, but in the backfill around the pipes, which will also be replaced. They will dig out each of the contaminated areas until they reach clean soil, connecting the individual areas and remediating the entire oil plume in the Valley.

At the inlet, they will dredge the contaminated materials, dispose of those sediments and new piping will then discharge into this remediated area. There will be a new berm with a culvert underneath.

Another area where contamination was found was at the old Coal/Gas Plant. Upon further investigation, they found a very thick deposit of organic soils because the topography was marsh. The contaminants all flowed into this area and remained trapped. Four wells will be installed to recover the petroleum, and will be maintained until they reach a Class A RAO for the entire area. They have installed a test well from which they recovered about 20 gallons of product in the first week.

They have 70 wells in the area that they have been monitoring for about three years, and will continue to monitor. They have not found petroleum in any of the wells upgradient of the Physical Plant, and therefore do not expect the oil contamination to affect the Town well at Morses Pond. They have done significant modeling for this site because presently there is still chromium in the water. A significant portion of the contamination is coming from Morses Pond at the berm and the culvert, as opposed to coming from Paintshop Pond.

When they excavated for the Campus Center and Garage, the excavated material was piled on the walks. This material will be spread to create the mounds in the Valley and to put on a clean layer of soil to isolate the areas from potential exposure to people using the area. They still have wells to monitor and recover any contaminants from the ground water flow.

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When the work is begun, the clean-up sites are isolated by fencing. No signage is required. When the Valley construction is undertaken, the Valley will be closed for a period of time. The fencing around the Coal/Gas Plant cistern will be improved and made safe.

DE-ICING ISSUE – Patrick Willoughby

The Board noted that at the last hearing on the Campus Center, there had been a discussion about the use of calcium-based salts for de-icing rather than sodium based salts. The Order of Conditions issued by the Wetlands Protection Committee states, “use of calcium based salts on all areas which could contribute to these wetlands”, which would be a substantial portion of the campus.

Mr. Willoughby said that typically, rock salt and sand are used. He brought information about a new product they will try, which is a treated sodium chloride product in which the treatment is supposed to act as a buffer to the sodium chloride. It also can be used without sand.

The Board decided to defer to the Wetlands Protection Committee on this issue. The Committee must be satisfied that the sodium is sufficiently treated so it doesn't get washed downstream and into the wetlands. The Order of Conditions should be amended to reflect the use of the alternative product. The Board would prefer that, if the Wetlands Protection Committee approves use of the product, it, or calcium-based salts should be used over all areas that contribute to this watershed.

DISCUSSION OF CONDITIONS

The Board discussed the conditions under which the Special Permit and Site Plan Approval could be granted.

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Statement of Facts

The subject 7.9 acre work area is located in the Alumnae Valley on the Wellesley College Campus in a Water Supply Protection District and an Educational District. The work area is bounded by Route 135 to the north, College Road to the east, Tower Hill Lane and Lake Waban to the south and Paintshop Pond to the west.

The Alumnae Valley Landscape Renewal Project is the last of the five interrelated projects involving reclamation, remediation and construction covering 39 acres in the northwest quadrant of the campus. Site Plan Approval has been granted for Paintshop Pond Project (ZBA 2000-79), Paintshop Pond Project II (ZBA 2001-87, Trade Shops Project (ZBA 2002-72), and for construction of the Campus Center and Parking Garage (ZBA 2002-104 and 105).

The petitioner is now requesting the following:

1. A Special Permit pursuant to the provisions of Section XIVE and Section XXV of the Zoning Bylaw for a Major Construction Project in a Water Supply Protection District.
2. Site Plan Approval pursuant to the provisions of Section XVIA and Section XXV of the Zoning Bylaw for a Major Construction Project, which shall involve grading or regrading of land to planned elevations, and disturbance of the vegetative cover over and area of 5,000 or more square feet.

The project shall include removal of existing tennis courts and the "Service Lot" parking area; creation of a new cattail marsh, a grassed event space and an extended detention infiltration basin; installation of a new main drainage trunk line running east/west through the valley over a 7.9 acre limit of work. A new pump station collecting flows from the Paramecium Pond pipe system and areas adjacent to the Physical Plant shall be constructed. Four new parking spaces shall be created at the Boat Landing.

The following plans were submitted:

- G1.1 Title Sheet
- R1.1 Reference Plan
- L1.1 Layout & Materials Plan/West
- L1.2 Layout & Materials Plan/Central
- L1.3 Layout & Materials Plan/East
- L4.3 Planting Plan/West
- L4.4 Planting Plan/Central
- L4.5 Planting Plan/East
- L4.15 Planting Details/Trees & Shrubs
- L6.1 Site Details/Pavement & Curb
- L6.2 Site Details – 11/6/03
- L6.3 Site Details/Retaining Wall
- L6.6 Site Details/Forebay Walls
- L6.7 Site Details/Stone Swale Overflows – 11/6/03

Plans G1.1 through L6.6, except L6.2, are dated October 9, 2003 and stamped by Michael Van Valkenburgh, Registered Landscape Architect.

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S-1 Existing Site Features Plan 12/14/01 Scott D. Cameron, Registered Land Surveyor

The following plans were dated October 9, 2003 and stamped by Christopher Lovett, Registered Professional Engineer:

- |       |  |                                      |
|-------|--|--------------------------------------|
| C-1   | Legend & General Notes                   |                                      |
| C-2   | Utility Demolition Plan                  |                                      |
| C-3   | Grading, Drainage & Erosion Control Plan | Revised 11/6/03                      |
| C-4   | Drainage Profiles                        | Revised 11/6/03                      |
| C4A   | Drainage Profiles                        | Revised 11/6/03                      |
| C-5   | Details                                  | Revised 11/6/03                      |
| C-6   | Details                                  | Revised 11/6/02                      |
| GT2.1 | Details                                  | 10/9/03 Mark Haley, Registered PE    |
| E2.0  | Electrical Site Plan                     | 10/9/03 Julian Asbury, Registered PE |
| E7.0  | Electrical Details                       | 10/9/03 Julian Asbury, Registered PE |

The following written information was submitted dated October 9, 2003 and prepared by Vanasse Hangen Brustlin, Inc.:

Site Plan Approval Application  
Site Plan Approval Application/Technical Appendix

On June 24, 2003, the Design Review Board reviewed the original landscape plan for the Alumnae Valley Restoration Project and sent a detailed letter of its findings to the Board of Appeals on July 9, 2003. On October 22, 2003, the Board discussed the site plan for the project and recommended approval of the project as presented.

The Planning Board reviewed the project and recommended approval of the site plans.

On November 20, 2003, the Wetlands Protection Committee issued an Order of Conditions (DEP 324-444) for the Alumnae Valley Project.

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Decision

This Authority has made a careful study of the materials submitted and the information presented at the Public Hearing. The Petitioner's proposed Alumnae Valley Landscape Renewal Project covering a work area of 7.9 acres on the Wellesley College Campus, in an Educational District and a Water Supply Protection District, constitutes a Major Construction Project pursuant to Section XVIA of the Zoning Bylaw because it includes grading or regarding of land to planned elevations and disturbance of the vegetative cover over an area of 5,000 or more square feet.

A Special Permit is also required pursuant to Section XIVE for a Major Construction Project in a Water Supply Protection District.

It is the finding of this Authority that the proposed plans for the Alumnae Valley Landscape Renewal Project, as listed in the foregoing Statement of Facts, comply with the Zoning Bylaws of the Town, protect the safety, convenience and welfare of the public, minimize additional congestion in public and private ways, and insure adequate provision for water, sewerage and drainage. Furthermore, said plans insure compliance with Section XVI, Section XXI and Section XXII of the Zoning Bylaw.

Therefore, Site Plan Approval is granted, as voted unanimously by this Authority at the Public Hearing, pursuant to Section XVIA, Section XIVE and Section VII of the Zoning Bylaw, subject to the conditions attached hereto as "Addendum A".

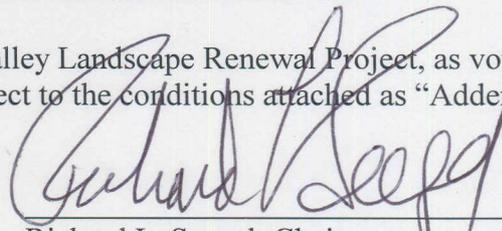
It is the finding of this Authority that the proposed Plans for the Alumnae Valley Landscape Renewal Project, as listed in the foregoing Statement of Facts, comply with the Design and Operation Standards in Part F of Section XIVE of the Zoning Bylaw, and shall protect the public health, safety and welfare by preventing contamination of and preserving the quality of ground and surface water which provides existing or potential water supply for the town's residents, institutions and businesses.

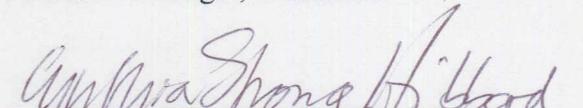
Therefore, a Special Permit is granted for the Alumnae Valley Landscape Renewal Project, as voted unanimously by this Authority at the Public Hearing, subject to the conditions attached as "Addendum A".

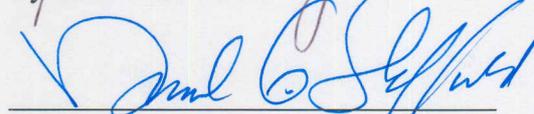
APPEALS FROM THIS DECISION,  
IF ANY, SHALL BE MADE PURSUANT  
TO GENERAL LAWS, CHAPTER 40A,  
SECTION 17, AND SHALL BE FILED  
WITHIN 20 DAYS AFTER THE DATE  
OF FILING OF THIS DECISION IN  
THE OFFICE OF THE TOWN CLERK

Cc: Planning Board  
Wetlands Protection Committee  
Department of Public Works  
Design Review Board  
Inspector of Buildings

Edg

  
Richard L. Seegel, Chairman

  
Cynthia S. Hibbard

  
David G. Sheffield

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ADDENDUM A

1. Within 90 days of the date time-stamped on this decision, the petitioner shall submit to the office of the Board of Appeals 5 copies of a revised storm water system design plan, which addresses the Paramecium Pond trunk line by providing Total Suspended Solids removal to the maximum extent practicable, including the installation of a water quality device upstream of the pumping station. Plans shall be reviewed by the Department of Public Works and the Wetlands Protection Committee for approval.
2. Appendix E "Stormwater Management System Operation & Maintenance System", found in the "Technical Appendix, Wellesley College – West Campus Projects: Alumnae Valley Landscape Renewal", is hereby incorporated into this decision.
3. The Construction Traffic Mitigation Plan shall specifically address precautions to be taken on Central Street between Weston Road and Cameron Street. A copy of said Plan shall be submitted to the office of the Board of Appeals.
4. All catch basins, trenches and water quality devices installed for the Alumnae Valley Landscape Renewal Project shall be inspected and maintained at least once a year. Certification of said inspection shall be submitted by July 1 of every year to the Department of Public Works.
5. The petitioner shall be required to use either calcium based salts, or an alternative that is satisfactory to the Wetlands Protection Committee, for de-icing. Said alternative shall be at least as protective of the wetlands as calcium based salts would be, and shall be applied to all areas on site from which storm water feeds into the storm water collection system. Written approval of the specific alternative by the Wetlands Protection Committee shall be submitted to the office of the Board of Appeals prior to the use of said alternative.
6. The Order of Conditions (DEP 324-444), issued by the Wetlands Protection Committee on November 20, 2003, is hereby incorporated into this decision.
7. All recommendations of the Design Review Board in its letter dated July 9, 2003 are hereby incorporated into this decision.
8. The petitioner shall comply with all the requirements of Section XIVE of the Zoning Bylaw, except to the extent that approved plans modify those requirements.
9. A complete set of "as-built" plans, including site utility plans, shall be submitted to the Department of Public Works upon completion of the Alumnae Valley project.
10. The petitioner is strongly encouraged, but not required, to register the existing underground storage tanks with the office of the Mass. State Fire Marshal.

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ADDENDUM A CONTINUED

11. All work shall be performed in accordance with latest revision of all plans submitted and on file in the office of the Board of Appeals.
12. All design and construction must comply with all applicable state and local codes.
13. All requirements of the Town of Wellesley Fire Department shall be met.
14. All requirements of the Department of Public Works shall be met, including but not limited to the requirement that water, sewer and electric connections, together with drainage connections, be made in accordance with DPW standards and installed and maintained at no cost to the Town of Wellesley.

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