

STAFF REPORT

TO: Planning Commission **DATE:** December 10, 2012
FROM: Tom Zanarini, Associate Planner *BZ*
RE: Design Review and Conditional Use Permit to establish a combined residential and business/professional office building in an existing single-family residential building –Stewart Summers, Applicant – Greg Norris, Owners – 110 East Blithedale Avenue - APN 028-022-03 File No. DC12-3965

DIRECTIONS

110 East Blithedale Avenue is located on the south side of East Blithedale Avenue, between Forrest Street and Hill Street

STAFF RECOMMENDATION

1) As a Consent Calendar item, staff recommends that the Commission approve the Design Review and Conditional Use Permit to establish a combined residential and business/professional office building in an existing single-family residential building at 110 East Blithedale Avenue based on the findings in **Exhibit A** and subject to the conditions of approval in **Exhibit B**.

ZONING COMPLIANCE

The proposed project is a Design Review and Conditional Use Permit to establish a combined residential and business/professional office building in an existing single-family residential building at 110 East Blithedale Avenue. The tenant space is located within the P-A (Professional - Administrative) Zoning District.

Zoning: P-A (–Professional - Administrative) District
Site Size: 7,114 square feet
Building Floor Area: Upper Floor: 1,425 square feet
Lower Floor: 1,418 square feet (includes storage)

	Total: 2,843 square feet
Existing Building Height:	21.5 feet
Proposed Building Height:	25 feet (35 feet maximum)
Proposed Use of Building:	Combined Residential and Business/Professional office building
Existing Parking Spaces:	2 parking spaces
Proposed Parking Spaces:	8 parking spaces
Proposed Hours of Operation:	Monday – Friday 8:00 a.m. – 6:00 p.m.,
Number of Employees:	6 full time employees

PRIOR REVIEW

The project was first brought before the Planning Commission on June 11, 2012. The staff report (**Attachment 1**) and meeting minutes (**Attachment 2**) are attached. At the June 11 meeting, the Planning Commission discussed the Conditional Use Permit along with the parking lot impact to the large oak tree in the rear of the property. The Commission was satisfied that the proposed combined office/residential use was an appropriate use for the neighborhood and that the Design Review proposal to raise the building 3 feet 6 inches to allow for additional head height in the lower floor offices complied with the Design Review Guidelines, subject to the Findings for Approval in Exhibit A of this staff report.

The oak tree is 33 inches in diameter, which classifies it as a Heritage Tree as defined in Section 20.67.020 of the Zoning Ordinance. The Commission was concerned that the proposed 8-space parking lot would negatively impact the root system of the oak tree and asked the applicant to have the arborist report peer reviewed. James Thomas of 30 Forrest Street commented that his studio is directly behind the subject property and that the oak tree is an important feature to the surrounding properties and the neighborhood. During public discussion, the Commission suggested that the applicant have another arborist peer review Mr. Clement’s arborist report. Mr. Thomas suggested that the applicant contact Ray Moritz as he is familiar with similar tree protection situations in Mill Valley. Mr. Moritz was contacted and prepared the attached arborist report (**Attachment 3**). The applicant worked with Mr. Moritz and Mr. Thomas to address the parking and tree preservation issues through the revised plan.

The Commission stated that the Design Review and Conditional Use Permit applications are consistent with the Findings for Approval in Exhibit A of the staff report and that no further review of the building design or combined office/residential use would be required. The Commission asked that the applicant return with a revised parking plan, arborist report from Ray Moritz and a landscape plan that is sensitive to the heritage oak tree.

STAFF ANALYSIS

The proposed project includes a revised parking plan that includes a two-car parking deck on piers nearest the heritage oak tree as shown on Sheet SP of the project plans. The proposed parking deck was reviewed by arborist Ray Moritz of Urban Forestry Associates (**Attachment 3**). In his report, Mr. Moritz concludes that the pier structure is suitable near the heritage oak tree, stating that the parking deck must provide growth space between the trunk and parking spaces. Mr. Moritz would first probe the proposed pier locations for lateral roots prior to drilling. The pier locations could be adjusted to protect any significant lateral roots encountered during probing. A permeable parking deck will allow for natural drainage of rain water. The report further states that the permeable pavers for spaces 6-8 and the turnaround area is an improvement over the existing condition as they will allow more natural drainage and therefore root support of the oak tree. Mr. Moritz also included a detailed Construction Guideline for Protected Trees. These guidelines give specific requirements for tree protection fencing, root and canopy pruning, site grading and post construction restoration. Condition #8 of Exhibit B states that these guidelines shall be incorporated into the building plans and construction management plan as they are specific to this project.

Design Review and Conditional Use Permit

The Design Review and Conditional Use Permit was reviewed at the June 11, 2012 Planning Commission meeting. The building is proposed as a mixed-use residential/commercial project subject to the Design Review criteria of Sections 20.66.036 and 20.66.040 of the Zoning Ordinance for both residential and non-residential projects. The project consists of raising the existing building 3 feet 6 inches to provide a 9 foot 4 inch ceiling height in the lower level office. The proposed height is 25 feet, 10 feet below the 35-foot maximum height permitted in the P-A Zoning District. Exterior changes also include changing the stucco color from off-white to 'French gray', and a new elevated stairway in the front yard to accommodate the elevated building height.

The lower level consists of 1,320 square feet of office space, including 2 private offices with 2 open office areas, a reception room, waiting room, break room and restroom. The office proposes to operate from 8:00 am to 6:00 pm, Monday through Friday. The Commission stated that they did not want to restrict the office hours in case an employee decides to work late or come in early. Condition #3 of Exhibit B is revised to state that the office hours are for the public and customers and those office employees can conduct business beyond the 8:00 am – 6:00 pm hours.

PUBLIC COMMENT:

No letters or comments have been received relating to this project.

ATTACHMENTS:

1. PLANNING COMMISSION STAFF REPORT DATED JUNE 11, 2012
2. PLANNING COMMISSION MINUTES DATED JUNE 11, 2012

3. ARBORIST REPORT FROM URBAN FORESTRY ASSOCIATES DATED
OCTOBER 18, 2012
4. PROJECT PLANS

EXHIBITS:

- A. FINDINGS OF APPROVAL CONDITIONAL USE PERMIT
- B. CONDITIONS OF PROJECT APPROVAL

EXHIBIT A
FINDINGS FOR APPROVAL
DESIGN REVIEW AND CONDITIONAL USE PERMIT APPLICATION
110 E. Blithedale Avenue - APN 028-022-03 - File No. DC12-3965

- A. The proposed use is consistent with the General Plan and Municipal Code.

The proposed combined residential and professional/administrative office building is a conditionally permitted use in the PA (Professional Administrative) zone and the granting of this application is consistent with the Municipal Code and the General Plan of Mill Valley.

- B. The project is consistent with the residential design guidelines adopted by the City in Section 20.66.036

The project complies with Guideline 6 for privacy and views by utilizing ebony tinted windows to increase privacy and reduce glare from the office entrance to the residential properties to the rear, with Guideline 13 by using a permeable driveway surface and a parking deck on piers for spaces 4 and 5, with Guideline 17 by minimizing the total height increase to 25 feet, Guideline 21 by providing the required off-street parking spaces for both uses and Guideline 22 by using tinted windows in the lower level commercial area to minimize exterior lighting glare to the residential neighborhood.

- C. The project is consistent with the non-residential design guidelines adopted by the City in Section 20.66.040.

a. *The combined residential and professional/administrative office building is in substantial harmony with its locale and is generally compatible with the size, mass and height of other buildings in the vicinity.*

b. *The 'French Grey' stucco and weathered copper standing seam roof are compatible with other structures in the vicinity.*

c. *The parking deck and permeable pavers used in the parking area are consistent with the protection of heritage trees as defined in Section 20.67 of the Zoning Ordinance.*

d. *The drainage system has been designed to avoid adverse impact on the surrounding properties including the residential properties to the rear.*

e. *The design and location of the driveway and sidewalk are consistent with the existing function of the right-of-way and avoids adverse impact to adjacent properties.*

- D. The City has considered whether to apply any limitations on building, size, height and setbacks pursuant to Section 20.66.045.

No limitations have been placed on the project pursuant to Section 20.66.045.

- E. Make the findings that approval of the Conditional Use Permit establishes a combined residential and professional/administrative office building will not, under the circumstances of this particular case, be detrimental to the health, safety, peace, morals, comfort or general welfare of persons residing or working in the neighborhood of such proposed use nor be detrimental or injurious to property and improvements in the neighborhood of such proposed use, nor to the general welfare of the City based on the following:
- a. *That the proposed 8 parking spaces are sufficient for the residential and office use.*
 - b. *The office use public hours of operation are from Monday - Friday from 8:00 am – 6:00 pm is compatible with the combined residential use, existing office uses in this zoning district and residential zoning district to the south.*
 - c. *That the proposed combined residential and professional/administrative office use is consistent with uses in the neighborhood, is a permitted use in the PA (Professional Administrative) Zoning District and conforms to the General Plan and Municipal Code.*
 - d. *That the exterior changes and height increase are consistent with the design review findings in this section.*

EXHIBIT B
CONDITIONS OF PROJECT APPROVAL
110 E. Blithedale Avenue - APN 028-022-03 - File No. DC12-3965

PLANNING DEPARTMENT; contact Tom Zanarini, Associate Planner at 388-4033 with questions:

1. The proposed project shall be in substantial conformance with project as approved by the Planning Commission on October 19, 2012 and on file with the Mill Valley Planning and Building Department except as modified herein.
2. All conditions of approval shall be included on the front sheet of the construction drawings submitted for a building permit.
3. The public hours of operation for the office use are from 8:00 am to 6:00 pm, Monday through Friday. The operating hours of 8:00 am to 6:00 pm does not prevent employees from working beyond the time the office is open to the public. Any modifications to the approved schedule shall be reviewed and approved by the Zoning Administrator.
4. The number of employees shall not exceed six (6) at any time.
5. Two (2) off-street parking spaces shall be designated as reserved for the residential tenants of 110 East Blithedale Avenue.
6. Specific details of the sign program shall be submitted to the Planning and Building Department for review and approval.
7. The eight parking spaces to the rear of the building shall be installed in conformance with the proposed plans dated March 28, 2012 prior to issuance of a Certificate of Occupancy.
8. The Construction Guidelines for Protected Trees as prepared by Urban Forestry Associates, Inc., dated October 18, 2012 and cited in Attachment 3 of the staff report shall be included in the building plans and construction management plan.
9. The applicant shall indemnify, defend and hold harmless the City, its officers, agents and employees (collectively "the City") from any and all claims, actions, lawsuits, damages, losses and liabilities arising or resulting from the granting of this permit by the City, the performance of the use authorized by this permit or the exercise of the rights granted by this permit. The applicant's obligation to indemnify, defend and hold harmless the City shall include, but not be limited to, paying all fees and costs incurred by legal counsel of the City's choice in representing the City in connection with any such claims, actions or lawsuits, any expert fees, and any award of damages, judgments, verdicts, court costs or attorneys' fees in any such claim, action or lawsuit.
10. This approval shall expire one year after approval. Prior to the expiration of an

approval, the applicant may apply to the Director of Planning and Building for a one-year extension from the date of expiration. Not more than two one-year extensions may be granted. The Director of Planning and Building may make minor modifications of the approved design at the time of extension if he finds that there has been a substantial change in the factual circumstances surrounding the originally approved design.

11. All portions of the job site that are in view of the public shall be maintained in an organized and professional condition. All trash, debris, construction scraps and broken/deteriorated machinery shall be removed from the site at the end of each week. If off loaded construction materials are not used within 2 weeks, they shall be screened from view. All sidewalks, driveways and public/private roadways fronting the subject site shall be broom cleaned at the end of each business day.
12. This approval is effective from the date of approval until the building permit is issued and shall expire one year after approval should a building permit not be issued.

BUILDING DEPARTMENT: Any questions, contact Dan Martin, 388-4033

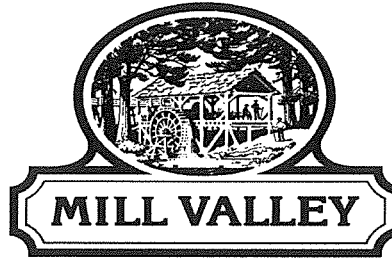
13. This project shall be subject to the 2010 California Building, Plumbing, Electrical, Mechanical, Energy and other applicable Title 24 Codes and the Building Department Comments in Attachment 2 of this report.

FIRE DEPARTMENT: Any questions, contact Tom Welch, Fire Marshal, 389-4130

14. Fire Sprinklers:
 - a. A fire sprinkler system shall be provided for:
 - b. All new construction.
 - c. Fire sprinkler coverage shall be provided through the entire structure as per Uniform Fire Code Section 1001.9.
 - d. Plans for fire sprinkler system design and hydraulic calculations shall be completed by a licensed C-16 sprinkler contractor and submitted to the Mill Valley Fire Department for approval prior to installation. Fire sprinkler system design and installation shall conform to the provisions of the Mill Valley Fire Department and N.F.P.A. Standard 13D.
15. The address shall be posted in accordance with requirements of the California Building Code, Uniform Fire Code, and Fire Department Standard 205. Final inspection and signoff of address posting shall be coordinated through the Building Department.
16. Smoke and CO detectors shall be installed in accordance with the California Building Code. Final inspection and signoff of smoke and CO detectors shall be

coordinated through the Building Department.

17. Prior to occupancy, a spark arrester shall be installed on the chimney(s) (3/8 to 1/2" mesh minimum).
18. Final occupancy approval shall not be granted by the Fire Department unless all conditions have been met.
19. Fire Department and City personnel shall be granted access to private driveways and private roadways in order to enforce applicable ordinances related to fire codes, municipal and penal codes pertaining to maintaining road access for emergency vehicles.
20. To avoid inspection delays by the Fire Department, all requests must be made at least 48 hours in advance.
21. All permits and/or inspection fees required by the Fire Department shall be paid in full prior to final occupancy being granted.



STAFF REPORT

TO: Planning Commission **DATE:** June 11, 2012
FROM: Tom Zanarini, Associate Planner *B*
RE: Design Review and Conditional Use Permit to establish a combined residential and business/professional office building in an existing single-family residential building –Stewart Summers, Applicant – Greg Norris, Owners – 110 East Blithedale Avenue - APN 028-022-03 File No. DC12-3965

DIRECTIONS:

110 East Blithedale Avenue is located on the south side of East Blithedale Avenue, between Forrest Street and Hill Street

STAFF RECOMMENDATION:

- 1) Conduct a Public Hearing;
- 2) Approve the Design Review and Conditional Use Permit to establish a combined residential and business/professional office building in an existing single-family residential building at 110 East Blithedale Avenue based on the findings in **Exhibit A** and subject to the conditions of approval in **Exhibit B**.

ZONING COMPLIANCE:

The proposed project is a Design Review and Conditional Use Permit to establish a combined residential and business/professional office building in an existing single-family residential building at 110 East Blithedale Avenue. The tenant space is located within the P-A (Professional - Administrative) Zoning District.

Zoning: P-A (-Professional - Administrative) District

Site Size: 7,114 square feet

Building Floor Area: Upper Floor: 1,425 square feet

	Lower Floor: 1,418 square feet Total: 2,843 square feet
Existing Building Height:	21.5 feet
Proposed Building Height:	25 feet (35 feet maximum)
Proposed Use of Building:	Combined Residential and Business/Professional office building
Existing Parking Spaces:	2 parking spaces
Proposed Parking Spaces:	8 parking spaces
Proposed Hours of Operation:	Monday – Friday 8:00 a.m. – 6:00 p.m.,
Number of Employees:	6 full time employees

STAFF ANALYSIS:

The applicant proposes to create a combined residential and business/professional office use within an existing residence by raising the existing building 3 feet 6 inches and providing a parking lot at the rear of the lot. The proposed 9 foot 4 inch raised ceiling will allow for adequate commercial space in the lower floor. This change raises the building height from 21.5 feet to 25 feet, 10 feet below the 35-foot maximum building height in the P-A Zoning District. The neighboring buildings at 102 East Blithedale and 116 East Blithedale are both in excess of 30 feet in height.

The building is currently a two-story single-family residential building with a two-car tandem-parking garage accessed from the rear of the building. The existing 1,432 square foot lower floor consists of one bedroom, storage and mechanical rooms along with the tandem garage. The existing 1,425 square foot upper floor consists of two bedrooms, one bathroom, living room, dining room, kitchen, nook and utility room.

The project owners intend to locate their insurance company in the proposed lower level office. The proposed 1,320 square foot lower floor office use consists of two private offices, a reception/waiting area, open office space, break room, restroom and storage area. The proposed 1,425 square foot upper floor single-family residential retains the existing floor plan, but relocates the existing lower level third bedroom into the existing nook/utility area at the rear of the house.

Design Review

Proposed exterior changes include an elevated stairway in the front yard to accommodate the raised upper level, additional lower level windows on either side with an ‘ebony’ tint to reduce window glare to the residential properties to the rear of this lot. A new lower level office entrance includes glass with metal frames and a ‘weathered copper’ metal awning to match the proposed roof of the same material. The existing off-white stucco

siding is replaced with 'French gray' stucco siding. The building is proposed to remain in its existing location.

The building is considered a 'mixed-use' of commercial and residential uses and therefore must meet the Design Review criteria of Sections 20.66.036 and 20.66.040 for both residential and non-residential projects. The exterior changes include the addition of new windows along the lower floor for the office use, a new lower level entry at the parking lot replacing the existing garage, a minor color change for the new stucco, replacing the existing composition roof with a non-reflective standing seam metal roof and door for the office and raising the building 3 feet 6 inches to increase the lower level head height. The ebony tinted windows reduce glare to the residential neighbors in the rear. The proposed permeable driveway minimizes potential sheetflow runoff to the downhill neighbors. These changes meet the design guidelines for both the residential and non-residential guidelines by having an architectural character that is compatible with the neighborhood and reducing the mass and bulk of the proposed height increase.

The P-A Zoning District requires that where the boundary of a commercially zoned lot abuts on any R district lot, that the yard shall be not less than as required in such R district. The existing house is 62 feet from the rear property line, where a minimum 7.1-foot setback is required. There are no other setback restrictions in the P-A Zoning District.

Conditional Use Permit

The existing single-family use is a legal-nonconforming in the P-A Zoning District. As stated in Section 20.36.020, residential uses are a permitted use in the P-A Zoning District if they are, 'Residences as an integral part of an office building.' The proposed use is considered a conditional use under Section 20.36.030 as a, 'Combined residential, commercial and/or business and professional office buildings.' Conditionally permitted uses require the Planning Commission to conduct a public hearing and make a decision based on the findings of fact that the establishment of the use will not be detrimental to persons residing or working in the neighborhood, nor the general welfare of the City.

East Blithedale Avenue from Forrest to Sycamore Avenue has an existing mix of residential, commercial and office uses. Uses on the block of the proposed project include a hair and nail salon at 92 East Blithedale, and 2-story office buildings at 102, 116 and 124 East Blithedale Avenue. Other uses along East Blithedale Avenue include medical offices, pilates studios, hair salons, real estate offices, dry cleaners, a pharmacy, a furniture store, a restaurant and an office supply store. The proposed use allows the existing owner to maintain his existing residence and create an office use. A similar combined use was approved by the Planning Commission at 190 East Blithedale, where apartment was located above a real estate office with a detached single-family home in the rear of the lot.

Parking

The proposed parking plan includes 8 parking spaces at the rear of the lot, including one handicapped space and two 8-foot x 17-foot compact parking spaces. Section 20.60.090

of the Zoning Ordinance requires 2 off-street parking spaces for the residential use and 6 off-street parking spaces (1 space per 225 square feet of floor area) for the 1,320 square foot office space. While owner of the proposed project is considering a live/work building, two designated residential parking spots should be identified in the parking lot for possible future tenants as stated in Condition #5. The Permeable pavers are proposed in the new parking lot. The proposed permeable parking lot will reduce the lot's impervious surface by 206 square feet and will not increase the surface runoff. The parking plan and turning radius were reviewed and approved by the Department of Public Works. This plan, which includes 24 feet of back up space between the parking spaces, allows vehicles to make one maneuver into and out of a parking space and head out of the parking lot onto East Blithedale. The rear yards of 30 Forrest Street and 17 Hill Street are directly behind the subject property, with the house at 30 Forrest Street being 41 feet from the project property line and 17 Hill Street being 32 feet from the project property line. Three existing large trees and thick vegetation are existing along the property lines, similar to the rear parking lot at 116 East Blithedale Avenue. These existing conditions, coupled with the 6:00 pm Monday – Friday closing time of the insurance office, minimize the vehicle and noise impact to the residential neighbors to the rear. The existing driveway, sidewalk and on-street parking spaces on East Blithedale Avenue will remain.

PUBLIC COMMENT:

No letters or comments have been received relating to this project.

ATTACHMENTS:

1. Applicant's Project Description
2. Project Plans

EXHIBITS:

- A. FINDINGS OF APPROVAL CONDITIONAL USE PERMIT
- B. CONDITIONS OF PROJECT APPROVAL

EXHIBIT A
FINDINGS FOR APPROVAL
DESIGN REVIEW AND CONDITIONAL USE PERMIT APPLICATION
110 E. Blithedale Avenue - APN 028-022-03 - File No. DC12-3965

- A. The proposed use is consistent with the General Plan and Municipal Code.

The proposed combined residential and professional/administrative office building is a conditionally permitted use in the PA (Professional Administrative) zone and the granting of this application is consistent with the Municipal Code and the General Plan of Mill Valley.

- B. The project is consistent with the residential design guidelines adopted by the City in Section 20.66.036

The project complies with Guideline 6 for privacy and views by utilizing ebony tinted windows to increase privacy and reduce glare from the office entrance to the residential properties to the rear, with Guideline 13 by using a permeable driveway surface, with Guideline 17 by minimizing the total height increase to 25 feet, Guideline 21 by providing the required off-street parking spaces for both uses and Guideline 22 by using tinted windows in the lower level commercial area to minimize exterior lighting glare to the residential neighborhood.

- C. The project is consistent with the non-residential design guidelines adopted by the City in Section 20.66.040.

- a. *The combined residential and professional/administrative office building is in substantial harmony with its locale and is generally compatible with the size, mass and height of other buildings in the vicinity.*
- b. *The 'French Grey' stucco and weathered copper standing seam roof are compatible with other structures in the vicinity.*
- c. *The drainage system has been designed to avoid adverse impact on the surrounding properties including the residential properties to the rear.*
- d. *The design and location of the driveway and sidewalk are consistent with the existing function of the right-of-way and avoids adverse impact to adjacent properties.*

- D. The City has considered whether to apply any limitations on building, size, height and setbacks pursuant to Section 20.66.045.

No limitations have been placed on the project pursuant to Section 20.66.045.

- E. Make the findings that approval of the Conditional Use Permit establishes a combined residential and professional/administrative office building will not, under the circumstances of this particular case, be detrimental to the health,

safety, peace, morals, comfort or general welfare of persons residing or working in the neighborhood of such proposed use nor be detrimental or injurious to property and improvements in the neighborhood of such proposed use, nor to the general welfare of the City based on the following:

- a. *That the proposed 8 parking spaces are sufficient for the residential and office use.*
- b. *The office use hours of operation are from Monday - Friday from 8:00 am – 6:00 pm is compatible with the combined residential use, existing office uses in this zoning district and residential zoning district to the south.*
- c. *That the proposed combined residential and professional/administrative office use is consistent with uses in the neighborhood, is a permitted use in the PA (Professional Administrative) Zoning District and conforms to the General Plan and Municipal Code.*
- d. *That the exterior changes and height increase are consistent with the design review findings in this section.*

EXHIBIT B
CONDITIONS OF PROJECT APPROVAL
110 E. Blithedale Avenue - APN 028-022-03 - File No. DC12-3965

PLANNING DEPARTMENT; contact Tom Zanarini, Associate Planner at 388-4033 with questions:

1. The proposed project shall be in substantial conformance with project as approved by the Planning Commission on March 28, 2012 and on file with the Mill Valley Planning and Building Department except as modified herein.
2. All conditions of approval shall be included on the front sheet of the construction drawings submitted for a building permit.
3. The hours of operation for the office use are from 8:00 am to 6:00 pm, Monday through Friday. Any modifications to the approved schedule shall be reviewed and approved by the Zoning Administrator.
4. The number of employees shall not exceed six (6) at any time.
5. Two (2) off-street parking spaces shall be designated as reserved for the residential tenants of 110 East Blithedale Avenue.
6. Specific details of the sign program shall be submitted to the Planning and Building Department for review and approval.
7. The eight parking spaces to the rear of the building shall be installed in conformance with the proposed plans dated March 28, 2012 prior to issuance of a Certificate of Occupancy.
8. The applicant shall indemnify, defend and hold harmless the City, its officers, agents and employees (collectively "the City") from any and all claims, actions, lawsuits, damages, losses and liabilities arising or resulting from the granting of this permit by the City, the performance of the use authorized by this permit or the exercise of the rights granted by this permit. The applicant's obligation to indemnify, defend and hold harmless the City shall include, but not be limited to, paying all fees and costs incurred by legal counsel of the City's choice in representing the City in connection with any such claims, actions or lawsuits, any expert fees, and any award of damages, judgments, verdicts, court costs or attorneys' fees in any such claim, action or lawsuit.
9. This approval shall expire one year after approval. Prior to the expiration of an approval, the applicant may apply to the Director of Planning and Building for a one-year extension from the date of expiration. Not more than two one-year extensions may be granted. The Director of Planning and Building may make minor modifications of the approved design at the time of extension if he finds that there has been a substantial change in the factual circumstances surrounding the originally approved design.

10. All portions of the job site that are in view of the public shall be maintained in an organized and professional condition. All trash, debris, construction scraps and broken/deteriorated machinery shall be removed from the site at the end of each week. If off loaded construction materials are not used within 2 weeks, they shall be screened from view. All sidewalks, driveways and public/private roadways fronting the subject site shall be broom cleaned at the end of each business day.
11. This approval is effective from the date of approval until the building permit is issued and shall expire one year after approval should a building permit not be issued.

BUILDING DEPARTMENT: Any questions, contact Dan Martin, 388-4033

12. This project shall be subject to the 2010 California Building, Plumbing, Electrical, Mechanical, Energy and other applicable Title 24 Codes and the Building Department Comments in Attachment 2 of this report.

FIRE DEPARTMENT: Any questions, contact Tom Welch, Fire Marshal, 389-4130

13. Fire Sprinklers:
 - a. A fire sprinkler system shall be provided for:
 - b. All new construction.
 - c. Fire sprinkler coverage shall be provided through the entire structure as per Uniform Fire Code Section 1001.9.
 - d. Plans for fire sprinkler system design and hydraulic calculations shall be completed by a licensed C-16 sprinkler contractor and submitted to the Mill Valley Fire Department for approval prior to installation. Fire sprinkler system design and installation shall conform to the provisions of the Mill Valley Fire Department and N.F.P.A. Standard 13D.
14. The address shall be posted in accordance with requirements of the California Building Code, Uniform Fire Code, and Fire Department Standard 205. Final inspection and signoff of address posting shall be coordinated through the Building Department.
15. Smoke and CO detectors shall be installed in accordance with the California Building Code. Final inspection and signoff of smoke and CO detectors shall be coordinated through the Building Department.
16. Prior to occupancy, a spark arrester shall be installed on the chimney(s) (3/8 to 1/2" mesh minimum).
17. Final occupancy approval shall not be granted by the Fire Department unless all

conditions have been met.

18. Fire Department and City personnel shall be granted access to private driveways and private roadways in order to enforce applicable ordinances related to fire codes, municipal and penal codes pertaining to maintaining road access for emergency vehicles.
19. To avoid inspection delays by the Fire Department, all requests must be made at least 48 hours in advance.
20. All permits and/or inspection fees required by the Fire Department shall be paid in full prior to final occupancy being granted.

RECEIVED
Planning Department

MAR 28 2012

City of Mill Valley

3/28/12

**NORRIS BUILDING ATERATION
110 E. BLITHEDALE AVENUE
MILL VALLEY, CA 94941
A.P. # 028-022-03**

CONDITIONAL USE PERMT FINDINGS

1. The proposed project combines the existing residential upper floor with a new commercial lower level for a small insurance office. The resultant building will be commercial/residential mixed-use project. To achieve the goal of providing a viable commercial space in the lower level, this proposal includes "lifting" or "raising" the entire existing building by 3'-6".
2. The existing gross floor area of the existing building is 2,857 sq. ft. The resultant gross floor area of the building after the project will be 2,843 sq. ft.
3. The Insurance office will be open to the public Monday through Fridays from 8am – 6pm.
4. The Insurance office has and expects to maintain 6 employees
5. The Insurance office conducts business with their customers primarily electronically or via telephone. Currently, the business has an average of one customer visit the office per week for a duration of 15 minutes.
6. (8) Eight parking stalls are proposed for the project meeting the City of Mill Valley's parking standards. (2) Two for the dwelling unit and (6) for the business.
7. There will be no lease agreement for parking on the property or on other properties
8. No fees will be paid in lieu of parking spaces as the proposed projects meets the City of Mill Valley Parking Standards.
9. The project will be constructed in the following phases and expected schedule:
Phase 1: Building Lift and associated foundation/slab work
Expected Duration: 1 month
Phase 2: Exterior Improvements and Interior Tenant Improvements
Expected Duration: 3 months
Phase 3: Site Work: Parking Lot Construction, Drainage and Driveway Repaving
Expected Duration: 2 Months

Total Expected Duration of 6 months.

Typical construction hours would be 7am-4pm Monday-Friday

10. The zoning of the area is P-A. The proposed conversion of part of the property to a commercial use for offices is consistent with the zoning and general plan of the City of Mill Valley. The neighboring buildings and building along the block are primarily office use per the P-A Zoning thus the proposed use of the building will not be detrimental to the health, safety, peace, morals, comfort or general welfare of persons residing or working in the neighborhood. The project will not be detrimental or injurious to property and improvements in the neighborhood nor to the general welfare of the City of Mill Valley.
11. Item does not apply as proposed use is for a business office.

3/28/12

RECEIVED
Planning Department

MAR 28 2012

City of Mill Valley

**NORRIS BUILDING ATERATION
110 E. BLITHEDALE AVENUE
MILL VALLEY, CA 94941
A.P. # 028-022-03**

The subject property is located in the "Professional Administrative" P-A zone. This neighborhood, which is on the fringes of the downtown area, has buildings, pedestrian travel ways, bus stops, and other characteristics that are consistent with both commercial and residential uses. The area of the subject lot is approximately 7,117 square feet. The parcel presents a gentle down-slope running from front to back. The existing ample rear yard has brick-covered parking for two cars, a large BBQ structure, and a garden area fenced in with a concrete wall. These existing amenities will be removed (demolished) and the parking area will be refinished in order to provide room enough for the 8 required parking spaces. The balance of the driveway to the street will be refinished in asphalt.

The existing building currently functions as a single-family dwelling with the upper floor (residence) having 1,425 square feet. The existing lower level garage, bedroom, and mechanical areas contain 1,432 square feet. The existing total square footage is 2,857 square feet. The vernacular of the residence is "Bungalow" style and was constructed around 1928.

The proposed project combines the existing residential upper floor with a new commercial lower level resulting in a commercial/residential mixed-use project. To achieve the goal of providing a viable commercial space in the lower level, this proposal includes "lifting" or "raising" the entire existing building by 3'-6". As part of the lift, the existing lower floor walls will be removed and new wood framed underpinning will be installed at the new (proposed) plate height. These new walls, as well as the newly lifted building, will be placed on the existing foundation system. Thus the location of the building does not change, just the height. The two existing brick chimneys will be removed.

After the building is lifted, the lower level will be converted into professional offices with new exterior and interior walls, windows, doors, and storefronts. The exterior walls of the new lower level will be stucco covered and a fresh "overcoat" of stucco will also be placed on the existing walls above. The existing wood windows on the upper floor will remain and the windows on the new lower level will be metal clad.

The existing upper floor deck and supporting block walls at the rear will be removed. The upper level bedrooms at the rear will be altered slightly.

The new lower level commercial space will house 1,320 square feet of professional offices and retain the existing 98 square feet of existing under the. The project owners intend to locate their small insurance company in these new offices. The new lower floor also has a small single-story addition on the northwest corner.

The project is consistent with the intent of, and meets all of the requirements of, the City of Mill Valley General Plan and Zoning Ordinances which allow such mixed uses. As such no variances or exceptions are requested as part of this application.

storage. He would like to see an FAR map to see what is counted as the FAR is so close the maximum allowed. He supports the colors and materials.

Commissioner Richardson echoes everything that Commissioner Geiszler said. Her concerns are the parking and would like to see three independent spaces provided with a two car garage. She is concerned about the views from 142 La Goma as you are moving the house 12' closer to them. She is concerned about the amount of lawn you are proposing with regards to water, fertilizer, etc. She requested net zero loss of parking on La Goma.

Commissioner McCauley seconds the FAR map requirement and echoes the comments regarding the parking. He cautioned Mr. Linsteadt to ensure the FAR map is complete and accurate. He is concerned about the impact of the deck in regards to the neighbors. He's fine with the basement, agrees with the copula issue, feels the lawn is too big and agrees the roof pitch should come down.

Commissioner Chambers liked seeing happy neighbors and likes the beautiful design. She echoes everything everyone said and is okay with the basement and deck. She feels, as the lot is large, they should be able to have a 1,000 square foot lawn. She feels the clerestory is very nice but would like to see a dormer out of respect for the neighbor for privacy.

Commissioner Rand really likes this project a lot. He agrees about the clerestory in regards of privacy to the neighbor. He is okay with the deck issue and feels the parking should be addressed with a two car garage. He agrees with Commissioner Chambers regarding the large lawn.

Commissioner McCauley, Richardson and Geiszler agree with a 500 square foot limit and would like to see greener landscape solutions.

PUBLIC HEARING:

3. 110 East Blithedale - Summers - Conditional Use Permit & Design Review - File No. 3965 (Zanarini) Consideration of the application of Stewart Summers, Architect for a Design Review, Conditional Use Permit and Categorical Exemptions from the Requirements of CEQA to raise an existing building 3 feet 6 inches and covert the lower level of residence to administrative and professional offices on an existing parcel owned by Greg Norris.

110 East Blithedale doc.

Staff Presentation from Associate Planner Zanarini.

Applicant presentation from architect Stuart Summers.

Public Comment

Commission Deliberation

Commissioner Richardson thinks taking over the rear yard is a bad idea but supports the mixed-use concept. She suggested some parking solutions for the employees.

Commissioner McCauley stated that if the limit of employees is 6 and the second story unit is not the principle residence then he is okay with 6 parking spaces. He would like to change the conditions of the hours of operation in condition 3 and would like to restrict the rental of the parking spaces. He is thrilled by the project because of the reuse of the building. He stated he is comfortable removing the parking spaces under the tree.

Commissioner Geiszler likes the mixed-use project as well. He is troubled by removing the 2 parking spaces as he doesn't see how it could work with the rental unit and the amount of employees. He is troubled by covering the tree roots with 2' of fill.

Director Moore explained that any future changes to the Conditional Use Permit would require another review by the Commission.

Commissioner Chambers stated she agrees with the 6 parking spaces solution as she feels it can be worked out between the building occupants. She would like to see a landscape plan done by a good landscape architect with some creative solutions. She would like to see it come back to the Commission to make sure it gets done.

Commissioner Rand is not in favor of reducing the parking to 6 spaces.

Commissioner Richardson suggested making the spaces up against the fence compact spaces.

Commissioner Geiszler suggested parking alternatives to get 7 spaces or reduce the commercial space. He would like a 2' planting buffer.

The Commissioners summarized that they are happy with the building but would like a peer review of the Oak tree and a revised parking and parking area landscape plan.

Motion to a date uncertain

It was M/s by Commissioner Richardson/Commissioner Geiszler to continue the item to a date uncertain. The motion was carried 5/0.

Adjourn

Any decision made by the Planning Commission on the above items may be appealed to the City Council by filing a letter with the Planning Department within 10 calendar days describing the basis for the appeal accompanied by the \$250 appeal fee.



Oct. 18, 2012

URBAN FORESTRY ASSOCIATES, INC.
8 Willow Street San Rafael, CA 94901
415 454 4212 arborforestry@sbcglobal.net

Greg Norris
412 W. Blithedale Avenue
Mill Valley, CA 94941

TREE PRESERVATION PLAN / ARBORICULTURAL REPORT
for the
Norris Property: 110 E. Blithedale Avenue, Mill Valley, California 94941

TREE ASSESSMENT SUMMARY - Heritage trees are listed in **bold** below.

Subject Trees:

1 **Coast live oak (*Quercus agrifolia*):** 1

Total: 1

Protected Trees:

1 **Coast live oak (*Quercus agrifolia*):** 1

Total: 1

Removals for Proposed Construction:

None.

Total: 0

Hazard Tree Removals & Removals Due to Poor Health/Disease:

None.

Total: 0

CITY OF MILL VALLEY'S TREE ORDINANCE

According to the City of Mill Valley's Tree Ordinance:

- ▶ **Heritage Trees:** (Section 20.67.010) 'shall include the species of tanbark oak (*Lithocarpus densiflorus*), oak (*Quercus* spp.), madone (*Arbutus menziesii*), and coast redwood (*Sequoia sempervirens*) which meet the following criteria:

- tanbark oak: 65" in circumference at CBH.
- oak: 75" in circumference at CBH.
- madrone: 75" in circumference at CBH.
- coast redwood: 95" in circumference at CBH.

CITATIONS:

- ▶ *City of Mill Valley - Mill Valley Tree Regulations - Mill Valley Municipal Code Section 20.67.*
- ▶ Lawrence Doyle Land Surveyor Civil Engineer. *Preliminary Grading & Drainage Plan Norris Building: 110 East Blithedale Avenue, Mill Valley, CA A.P. 028-022-03 (Sheet C-2).* ©2011.
- ▶ Lawrence Doyle Land Surveyor Civil Engineer. *Topographic Survey: 110 East Blithedale Avenue / A.P. 028-022-03 (Sheet 1).* ©2010.

TREE ASSESSMENT

All tree diameters were taken at CBH (Circumference at Breast Height measured at 4.5 feet above grade) or otherwise stated.

Condition Rating: 1-Poor, 2-Fair, 3-Good, 4-Very Good, 5-Excellent

Location: See attached Arborist Map

ASSESSMENT

DBH - Diameter at Breast Height, diameter measured at 4.5 feet above grade

SOD - Sudden Oak Death (SOD), *Phytophthora ramorum*

TPZ - Tree Protection Zone

Tree # 1 - Heritage Tree

Species Coast Live Oak (*Quercus agrifolia*)
Size: 33.0" DBH, 103.7" CBH ; The tree is 46.5' tall (measurement taken with Hypsometer device). The crown spread is 48 feet north to south. The crown radius of the east side is 27 to 30 feet - depending on where the measurement has been taken.

Location The subject tree is located in the southwest corner of the property. It is approximately 19 feet on center from the rear fence (south) / property line. The tree is 16.5 feet on center from the fence separating the existing parking area from the rear yard area. Note: The tree is within the west fence line and looks like it may be a 'shared' / co-owned line tree. The tree appears to be a co-tenancy tree. I found a southwest corner stake six to eight inches east of the existing fence indicating that the site has been recently surveyed and that the tree is a co-tenancy tree.

The west neighboring property is 102 East Blithedale Avenue belonging to William's Consulting and Fife Engineering.

Site Conditions: There is an existing small masonry retaining wall running along the west property line. It is approximately eighteen inches tall and runs from the north over to the tree's base and then continues on the south side of the tree.

There is a paved parking area on the west neighbor's #102 property up to the west side of the tree that is a higher grade. Approximately 40 to 50 percent of the root system is paved over by the 102 property's parking lot.

On the 102 property side, there is a light and electric line are mounted on the tree. A pipe appears to be embedded in the tree's root crown. There is a three inch plastic pipe that rises out of the soil makes a 90 degree turn past the tree and extends towards the rear of the 102 property.

There is a fence leaning up against the tree. There is Algerian ivy climbing up the tree.

Tree Condition: 3 - Good health, fair to good structural condition. This tree is vigorous with ample foliage with proper density and color. The tree's balance is not inordinately asymmetric, although it leans and is asymmetric to the north and is being forced over by a grove of multiple stem redwood trees to the south-southwest and southwest.

At 8 feet above grade on center, there is a cavity in the tree directly below an active beehive box. There is also an active hive in the cavity (Note: Given the number of bees entering and exiting the cavity, I estimate that the cavity is at least 1.5 ft³ by 1.5 ft³ in size. There's another cavity at fifteen feet above grade on the south side of the tree.

There is a cavity on the west side of the tree at approximately 25 feet above grade. There is common attachment (a structural defect) of a number of the scaffold limbs up at approximately 30 feet above grade. There are three major scaffold limbs and one minor branch. The canopy lean and balance is to the north-northwest.

Construction Impact: Observation: The Site Plan indicates that the tree is about 29.75 feet from the rearmost end of the asphalt driveway and the start of the permeable pavement. This species extends its root zone approximately 1.5 times the crown radius, which places the end of pavement slightly into the root zone but outside the "dripline" of the canopy.

Conclusion: The architect has specified permeable pavers at the from the

end of the driveway to the rear property line throughout spaces 6, 7 & 8. This is an improvement over existing conditions from the tree preservation perspective, if the installation of the pavers does not involve excavation or grading within the 1.5 X radius root zone. The project arborist shall oversee the permeable paver installation to assure root preservation. There should be no demolition or grading within the 1.5 X root zone without arborist oversight.

Observation: The plan shows the existing concrete wall extending around and directly against the east base of the tree.

Conclusion: There should be no existing or new retaining wall against the tree base. This could seriously damage the tree. Any arborist-approved demolition of the existing retaining wall must be done by hand. Demolition of the old existing retaining wall should not be done without project arborist approval and oversight. Minimal site disturbance is recommended.

Observation: The plans show a drainage line 19.4 feet from the east of the tree base. The Site Plan shows the tree base to be 31.5 inches in diameter which is less than the measured diameter at DBH (33" DBH). The DGL (Diameter Ground Level) would certainly be greater than the DBH. The proposed drainage line would be within the drip line of the tree. The Plan does shift the drainage line over to the east at the rear of the house in an attempt to keep it away from the tree but not far enough. The Plan does not indicate where the wiring to the sump pump would be placed. I assume it would be in the same trench.

Conclusions: There are options for impact mitigation with this element. 1) The trenching could be done pneumatically with a AirSpade® and the lines threaded under or through the roots and the hole would need to be backfilled with grey river sand and compacted hydraulically. or 2) The drain pipe and electric feed would have to be shifted further east, 30 feet from the tree base. This is the preferred alternative.

Observations: The “curb wall” running along the back of the property between the southeast property corner and the turn short of the sump pump will have no significant effect on the health and longevity of the oak.

Conclusions: No impact anticipated.

Observation: The grade of the existing parking area between the back of

the house and the cross fencing is about 1.33 feet higher than the native grade where the tree is located.

Conclusions: The rear grade could be raised if the fill were engineered “structural tree soil” with permeable pavers on a sand base over the tree-friendly structural soil (See Cornell Mix or equivalent).

Observation: Structural tree soil fill and pavement within twelve feet (the structural root zone, a.k.a. the zone of rapid taper) of the tree base is not recommended.

Conclusions: The architect has designed a parking deck for spaces 4 and 5 adjacent to the oak. The 4 & 5 parking deck would be supported by a pier and beam construction where the project arborist could probe the proposed pier locations for lateral roots to a depth of three feet prior to drilling. The pier locations could then be adjusted to protect any significant lateral roots encountered during probing. The parking deck must provide growth space between the trunk and the parking space. A post or posts should be fixed to the west side of the parking deck to protect the tree from collisions or car door damage. The parking deck shall be permeable to rain water.

All waste subsoil from pier drilling will have to be removed from the tree root zone area. No subsoil should be placed over top soil (native grade).

GENERAL CONCLUSIONS

- ▶ No existing retaining wall should be retained within three feet of the tree base, and any retaining wall or must be at existing grade on arborist placed piers.
- ▶ All waste soil must be removed from the site and cannot be spread on native top soil.
- ▶ The project arborist shall oversee and approve all construction operations within the tree root zone.
- ▶ The extension of the parking lot shall consist of permeable pavers installed on root-friendly engineered soil.
- ▶ The attached arborist recommendations in the Appendix shall be adhered to throughout the construction period.



Certified Forester #241 / Certified Tree Risk Assessor #1205

APPENDIX

CONSTRUCTION GUIDELINES FOR PROTECTED TREES

TREE PROTECTION ZONES (TPZ's)

There are two primary tree protection zones: 1) 'Work Exclusion Zone', which shall be a designated area that is properly fenced off from construction activities, and 2) 'Tree Preservation Zone', which is a specified area where the soil and tree(s) are armored to prevent damage to the root zone soils, roots, and aerial structure of the tree. The retained trees on the property shall be fenced to protect them from heavy equipment impacts prior to any demolition, grading or around construction activities. The problems of soil compaction and root disturbance around preserved trees should be prevented through the installation of 4' plastic tree fencing. The fencing may either be installed around the construction zone(s) or around individual trees.

Tree Protection Fencing

The leave trees on the property should be fenced to protect them from heavy equipment impacts. The problems of soil compaction and root disturbance around trees should be prevented through the installation of 4' plastic tree fencing. The site is steep and heavy equipment has the potential to easily gouge the surface soils and damage major roots. The fencing may either be installed around the construction zone(s), around groups of trees or around individual trees.

Typically the fencing is installed beneath the drip line (the perimeter edge of the tree canopy) but different species have different root characteristics and therefore different protection requirements from no root protection necessary to more extensive tree protection zones. The exact placement of the fencing should be determined by the Project/Supervising Arborist or City/County representative in consultation with the contractors.

The contractor shall be responsible for maintaining the fencing and excluding construction activities from these zones unless it is supervised by the Arborist. If access cannot be avoided an intact four inch layer of mulch shall be maintained in the tree protection zone.

Where appropriate, metal strap-linked 1½" plywood may be required for greater protection. Areas where heavy equipment will be operated or where heavy foot traffic will occur, the soils should be heavily mulched to a depth of 3" to 6" (depending on the surface soil conditions) and maintained throughout the construction period. In specified areas where heavy equipment operates or demolition will occur, the trunks of the trees should be protected with a strapped, barrel stave-like armor of 2"x4"s around the full circumference of the tree trunk.

Note: The consulting arborist shall inspect the installation of mulch, plywood armoring, and any other specified tree protection measures after tier completion. All work done within the tree protection zone (TPZ) shall be supervised by the Arborist.

Soil and Feeder Root Armoring

Where the TPZ cannot be entirely mulched and fenced off, soil armoring is required with metal strap-linked minimum 1½" plywood for soil and root protection. Areas where heavy equipment will be operated or where heavy foot traffic will occur over an extended period, the soils should be mulched to a depth of 3", plywood armored and maintained throughout the construction period. In specified areas where heavy equipment operates or demolition will occur within the normal TPZ of a tree, the trunks of the trees should be protected with a strapped, barrel stave-like armor of 2"x4"s, 2"x6"s or a plywood box around the full potentially impacted circumference of the tree trunk. Any low limbs may also require three wraps of TPZ plastic fencing to protect against abrasion.

Note: The consulting arborist shall inspect the installation of mulch, plywood armoring, and any other specified tree protection measures after completion. All work done within a tree protection zone (TPZ) shall be supervised by the Arborist.

Root Pruning

Trees vary greatly in their tolerance of root pruning from the very high tolerance of Redwoods to the medium tolerance of Pittosporum to the low tolerance of Buckeye. Generally, cutting roots three inches or greater in diameter should be avoided. Roots one inch or greater in diameter that must be cut should be cut cleanly and obliquely with the cut surface facing down.

Exposed and pruned roots should be covered with light well-drained soils and mulch. The area should be kept moist during the drought season to avoid desiccation except for Oaks and other species that are highly susceptible to root disease and decay.

Canopy Pruning

Pruning shall be in accordance with ISA standards. The retained trees may need special pruning to accommodate the construction. Only an experienced, licensed arborist should perform the necessary tree work, and all tree work should be overseen by the consulting arborist.

Grading

Grading should be kept away from root zones, if possible. Unavoidable grading within TPZ's should be performed manually or pneumatically and overseen by the consulting arborist.

Retaining Walls, Terracing and Filling

Retaining walls may be mechanically cut but should be hand or pneumatically finished where significant roots of protected trees are encountered. The roots should be cut cleanly by the arborist and protected from desiccation. Wood retaining walls near roots that are treated with

phytotoxic chemicals (preservatives) should be pre-treated to avoid root damage. Backfill behind walls should be light and well drained to avoid water saturation around the cut roots. In most cases drainage pipe should be installed.

Soil fill should be avoided near trunks of protected trees. Where fill exceeds one foot in depth within 15 feet of a protected tree trunk, mitigation with a tree well or retaining wall shall be required. Fill soils should be light and well drained. Depending on the depth and extent of fill, an aeration / drainage pipes should be installed at the original grade and should be designed and inspected by the Arboricultural consultant.

Post Construction Restoration

- ▶ The soil and drainage shall be rehabilitated and all debris removed after construction.
- ▶ Landscaping around oaks should conform to California Oak Foundation guidelines and FireSafe MARIN standards.

ARBORIST CHECKLIST

- A certified or consulting arborist shall establish the Tree Protection Zone (TPZ) prior to starting grading, demolition, or construction work. Orange plastic fencing, will be erected by the Arborist to limit access to the TPZ. This will protect the trunk and root zone throughout construction.
- Specified arboricultural work (tree removals, trimming, fertilization, mulching, etc.) should be completed prior to construction.
- The Arborist shall have a pre-demolition and pre-construction meeting with contractor or responsible party and all other foremen or crew managers on site prior to any work to review all work procedures, access and haul routes, and tree protection. The contractor must notify the Arborist if roots are exposed or if trunk or branches are wounded.
- Any trunk and root crown that is close to equipment operations and is not protected by TPZ should be protectively wrapped per the arborist's specifications prior to demolition of any structures or construction.
- Storage of equipment within root zones shall be on asphalt or ground protected by mulch and possibly plywood in an area specified by the arborist in consultation with the contractor prior to the initiation of any demolition, excavation, or construction activity.
- Heavy equipment use should be limited around trees and the roots. No heavy equipment may be transported or used on bare ground within the critical root zone. A 6" layer of mulch and plywood must be placed under the path for access and egress.
- Any damage to trees due to demolition or construction activities shall be reported to the arborist within 6 hours, so that remedial action can be taken.

- All trenching within the critical root zones of preserved trees shall be done pneumatically or by hand.
- The consulting arborist shall over-see all grading, trenching, tunneling, or other excavation within the critical root zones of preserved trees.
- No chemicals or masonry waste materials shall be dumped in the critical root zones of preserved trees.
- Any minor roots (<3.0") encountered should be cut cleanly with a saw after excavation.
- Chimneys and other heat vents shall be screened and provided a trimmed clearance at least 10 feet from branches and foliage (Refer to local fire codes).
- Pruning will be done to ISA standards. All pruning will be supervised by the arborist.
- The soil and drainage shall be rehabilitated to provide aeration and water infiltration. All debris shall be removed from critical root zones after construction.
- The arborist must perform a final inspection to insure that not unmitigated damage has occurred and to specify any pest, disease, or other health care. The arborist shall specify and oversee any necessary restorative actions.
- A supplementary irrigation

SIMPLE RECIPES FOR STRUCTURAL SOIL

PURPOSE

“Structural soil”, also known as “gap graded” rock-soil mix, was developed to provide the a highly compacted base to support paved surfaces while maintaining a favorable root environment wit adequate aeration, moisture and a favorable³ soil texture component. Structural soil is assembled by mixing specific proportions of rock and soil together. It is used under sidewalks, roads and parking areas adjacent to trees. Placing a two to three foot deep layer of structural soil under asphalt, concrete or other paved surfaces provides additional root-healthy soil volume that allows increased root to development.

PROCEDURE OF MAKING STRUCTURAL SOIL USING SITE SOIL

Rock – Stable support is provided by a rock skeleton of sufficient hardness to avoid excessive breakage during compaction. Rock size should be as uniform as possible to increases void space. Rock size can be from ¾ inch to 2 inches. Calcium carbonate and heavy metals should not be present.

Soil – Soils with a texture of clay to clay-loam are preferred for their greater water and nutrient storage capacity. Prior to use, the soil be submitted for laboratory soils analysis. Soil is then amended as needed and mixed with the rock in the correct proportions.

Fertilizer - Add fertilizer as recommended by the soils laboratory.

Soil Binder - Mix in a soil binder such as “Stabilizer” according to label specifications.

Water-holding capacity - The water holding capacity of structural soil is reduced by the rock skeleton, but can be enhanced by mixing in Hydrogel at the label rate.

Rock and Soil Proportioning– Because the soil volume fills the voids in the rock matrix, the volume of rock is virtually equal to the volume of the excavation to be backfilled. The greatest potential for support failure is due to excess soil in the mixture, which results in excessive soil compaction and potential subsidence. The void space in the rock matrix is easily and accurately calculated by the water fill method. The soil volume is designed to fill 80% of the void space in the rock matrix, leaving some macro pore space for aeration and water infiltration. The soil volume is based upon an average bulk density of 65% ASTM (standards developed by the American Society of Testing and Materials).

Determine Soil Volume: A bucket with a measured volume of fluid ounces is first filled with the rock being tested. Water is then poured into the rock filled bucket to the top nor determined level. The volume of water (in fluid ounces) required to fill the bucket of rock is recorded. This is the void space within the rock matrix which soil will fill. You can then convert the ounces to percentages or cubic feet using a conversion table or formula.

Example:

Volume of Container: 588 fluid ounces

Water Volume to fill rock-filled bucket to the top: 264 fluid ounces

Percent Void: $264 / 588 = .45$ (45% void space)

Percent Soil: $.45 \times .8 = .36$ *(36% - close to one-third)

Mix Proportions: Three parts rock to one part soil.

A Simple Proportioning for one cubic yard of structural soil - by the City of Olympia, WA:

Crushed Rock	23.2 cubic feet
Clay loam top soil	5.9 cubic feet
Soil binder	13.7 oz
Water	1.6 gallons

Mixing and Installation- Soil, rock and other additives must be accurately measured and blended until homogeneous. The components may be mixed with a backhoe, front end loader or even a

forklift. Additional mixing may be required after the material is in place if the rock and soil have separated during the pouring operation.

