Preliminary Arborist Report

420 S. 2nd Street
San Jose, CA 95113

Prepared For:
RMW Architecture and Interiors
30 E. Santa Clara St.
Suite 200
San Jose, CA 95113

Prepared By:
HortScience | Bartlett Consulting
325 Ray Street
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May 26, 2021

HORT SCIENCE
BARTLETT CONSULTING
A Division of The A. Bartlett Tree Expert Company

Preliminary Arborist Report

420 S. 2nd Street
San Jose, CA

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Preliminary Arborist Report

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San Jose, CA

Introduction and Overview

RMW Architecture and Interiors is involved with the redevelopment of the subject property located in San Jose, CA. HortScience | Bartlett Consulting, a Division of The F.A. Bartlett Tree Expert Company, was asked to prepare a **Preliminary Arborist Report** for submittal to the City of San Jose. The property currently consists of an apartment building and associated parking and landscaping. This report provides the following information:

1. An assessment of the health, structural condition, and suitability for preservation of the trees located on and adjacent to the proposed project area based on a visual inspection from the ground.
2. An assessment of the trees that would be preserved and removed based on preliminary development plans.
3. Preliminary guidelines for tree preservation during the design, construction, and maintenance phases of development.

Tree Assessment Methods

The trees were assessed on May 18, 2021 and numbered #182 – 187. The assessment included all trees 6' in height and taller located within and adjacent to the proposed project area. The assessment procedure consisted of the following steps:

1. Identifying the tree species.
2. Assigning each tree an identifying number and recording its location on a map.
3. Measuring the trunk diameter at a point 54" above grade.
4. Evaluating the health and structural condition using a scale of 1 – 5 based on a visual inspection from the ground:
   - ***5*** - A healthy, vigorous tree, reasonably free of signs and symptom of disease, with good structure and form typical of the species.
   - ***4*** - Tree with slight decline in vigor, small amount of twig dieback, minor structural defects that could be corrected.
   - ***3*** - Tree with moderate vigor, moderate twig and small branch dieback, thinning of crown, poor leaf color, moderate structural defects that might be mitigated with regular care.
   - ***2*** - Tree in decline, epicormic growth, extensive dieback of medium to large branches, significant structural defects that cannot be abated.
   - ***1*** - Tree in severe decline, dieback of scaffold branches and/or trunk; most of foliage from epicormics; extensive structural defects that cannot be abated.
5. Rating the suitability for preservation as "high", "moderate", or "low". Suitability for preservation considers the health, age and structural condition of the tree, and its potential to remain an asset to the site for years to come.

   High: Trees with good health and structural stability that have the potential for longevity at the site.

   Moderate: Trees with somewhat declining health and/or structural defects that can be abated with treatment. The tree will require more intense management and monitoring, and may have shorter life span than those in 'high' category.

   Low: Trees in poor health or with significant structural defects that cannot be mitigated. The tree is expected to continue to decline, regardless of treatment. The species or individual may have characteristics that are undesirable for landscapes and generally are unsuited for use areas.

Description of Trees

Six trees representing four species were evaluated (Table 1). All of the assessed trees were street trees. Descriptions of each tree are found in the ***Tree Assessment Form***, and approximate locations are plotted on the ***Tree Location Map*** (see Exhibits).

Table 1. Condition ratings and frequency of occurrence of trees. 420 S. 2nd Street. San Jose, CA.

Common Name	Scientific Name	Condition			Total
		Poor (1-2)	Fair (3)	Good (4-5)	
Australian willow	*Geijera parviflora*	3	-	-	**3**
Chinese flame tree	*Koelreuteria bipinnata*	-	1	-	**1**
Chinese pistache	*Pistacia chinensis*	-	1	-	**1**
American elm	*Ulmus americana*	1	-	-	**1**
Total		**4**	**2**	**-**	**6**

Three Australian willows were street trees along S. 3rd Street. Trees #186 and 187 were semi-mature, with trunks ranging in diameter from 11" to 14". Tree #185 was mature, with a trunk diameter of 25". All of the Australian willows were in poor condition with multiple stems arising from one and poor attachments between stems (Photo 1). They had very thin upper canopies with healthier and denser growth in their lower canopies.

Chinese pistache #183 was a street tree planted in a concrete cutout along San Salvador Ave (Photo 2). It was in fair condition and was 11" in diameter. It had numerous basal sprouts and minor mechanical damage, but a dense, healthy crown.

Photo 1 (above): Australian willows 185 – 187 (left to right) were street trees with poor structure.

Photo 2 (below): Chinese pistache #183 was a street tree planted along San Salvador Ave.

Chinese flame tree #184 was also planted as street tree along San Salvador Ave (Photo 3). It was in fair condition and had a trunk diameter of 7". It had a healthy, dense crown with a rounded form.

American elm #182 was planted as a street tree in front of the adjacent property 446 S. 2nd Street (Photo 4). It had a trunk diameter of 49" and was in poor condition. The base of the tree and the planting area crossed over the property line. The curb near the planting area was buckling, and there was a beehive in a hollow. The canopy had a significant overhang above the subject property, though at a height of an estimated 50'.

Photo 3 (left): Chinese flame tree #184 was planted as a street tree along San Salvador Ave.

Photo 4 (above): American elm #182 was a street tree on S. 2nd Street located in front of the adjacent property.

The City of San Jose protects trees with trunk diameters of 12" or greater (Municipal Code Chapter 13.32) as well as all street trees. Five trees were *Ordinance*-sized.

Suitability for Preservation

Before evaluating the impacts that will occur during development, it is important to consider the quality of the tree resource itself and the potential for individual trees to function well over an extended length of time. Trees that are preserved on development sites must be carefully selected to make sure that they may survive development impacts, adapt to a new environment and perform well in the landscape.

Our goal is to identify trees that have the potential for long-term health, structural stability, and longevity. For trees growing in open fields, away from areas where people and property are present, structural defects and/or poor health presents a low risk of damage or injury if they fail. However, we must be concerned about safety in use areas. Therefore, where development encroaches into existing plantings, we must consider their structural stability as well as their potential to grow and thrive in a new environment. Where development will not occur, the normal life cycles of decline, structural failure and death should be allowed to continue.

Evaluation of suitability for preservation considers several factors:

- **Tree health**
  Healthy, vigorous trees are better able to tolerate impacts such as root injury, demolition of existing structures, changes in soil grade and moisture, and soil compaction than are non-vigorous trees.

- **Structural integrity**
  Trees with significant amounts of wood decay and other structural defects that cannot be corrected are likely to fail. Such trees should not be preserved in areas where damage to people or property is likely. For example, the Australian willows all had varying levels of structural problems.

- **Species response**
  There is a wide variation in the response of individual species to construction impacts and changes in the environment. Some species, like Chinese pistache, are relatively tolerant of construction impacts.

- **Tree age and longevity**
  Old trees, while having significant emotional and aesthetic appeal, have limited physiological capacity to adjust to an altered environment. Young trees are better able to generate new tissue and respond to change.

- **Species invasiveness**
  Species that spread across a site and displace desired vegetation are not always appropriate for retention. This is particularly true when indigenous species are displaced. The California Invasive Plant Inventory Database http://www.cal-ipc.org/plants/inventory/ lists species identified as being invasive. San Jose is part of the Central West Floristic Province. None of the species assessed were rated as invasive.

Each tree was rated for suitability for preservation based upon its age, health, structural condition, and ability to safely coexist within a development environment (see ***Tree Assessment Form*** in Exhibits, and Table 2). We consider trees with high suitability for preservation to be the best candidates for preservation. We do not recommend retention of trees with low suitability for preservation in areas where people or property will be present. Retention of trees with moderate suitability for preservation depends upon the intensity of proposed site changes.

Table 2. Tree suitability for preservation.
420 S 2nd Street. San Jose, CA.

High	These are trees with good health and structural stability that have the potential for longevity at the site. None of the assessed trees had a high suitability for preservation.
Moderate	Trees in this category have fair health and/or structural defects that may be abated with treatment. These trees require more intense management and monitoring, and may have shorter life-spans than those in the “high” category. Two trees had moderate suitability for preservation (#183 and 184).
Low	Trees in this category are in poor health or have significant defects in structure that cannot be abated with treatment. These trees can be expected to decline regardless of management. The species or individual tree may possess either characteristics that are undesirable in landscape settings or be unsuited for use areas. Four (4) trees had a low suitability for preservation (#182, 185, 186, and 187).

Preliminary Evaluation of Impacts and Recommendations

Appropriate tree retention requires a practical match between the location and intensity of construction activities and the quality and health of trees. The ***Tree Assessment Form*** was the reference point for tree health, structure, and suitability for preservation. I used the *Tree Disposition Plan* and the *Site Plan* provided by RMW Architecture and Interiors, dated May 2021, to estimate impacts to trees. The plans depicted the complete redevelopment of the site, including the construction of a new multi-story residential tower and the reconfiguration of street frontages along S. 2nd Street, S. 3rd Street, and E. San Salvador Street, including the installation of new street trees. The plans were preliminary, and grading and utility plans were not reviewed. Potential impacts to trees should be reevaluated when more complete plans are available.

Given the lack of trees on-site, there is little opportunity for tree preservation on the project property. Based on the proposed plans and an intent to revise the surrounding street, I recommend preservation of American elm #182 and removal of the five remaining street trees (Table 3, next page).

Tree Mitigation Requirements

The City of San Jose requires mitigation of trees removed on development sites. The species and exact number of trees to be planted on the site will be determined in consultation with the City Arborist and the Department of Planning, Building, and Code Enforcement.
The City of San Jose requires the replacement of removed trees as follows:

Diameter of Tree to be Removed	Type of Tree to be Removed			Minimum Size of Each Replacement Tree
	Native	Non-Native	Orchard	
12 inches or greater	5:1	4:1	3:1	15-gallon container
6 - 11 inches	3:1	2:1	None	15-gallon container
less than 6 inches	1:1	1:1	None	15-gallon container
x:x = tree replacement to tree loss ratio **Note:** Trees greater than 12” diameter shall not be removed unless a Tree Removal Permit, or equivalent, has been approved for the removal of such trees.				

Table 3. Proposed action.
420 S. 2nd Street. San Jose CA.

Tree No.	Species	Trunk Diameter (in.)	Trunk Circumference (in.)	Ordinance Size Tree?	Condition 1=poor 5=excellent.	Proposed Action	Notes
182	American elm	49	154	Yes	2	Preserve	Street tree
183	Chinese pistache	11	35	No	3	Remove	Street tree
184	Chinese flame tree	17	53	Yes	3	Remove	Street tree
185	Australian willow	25	79	Yes	2	Remove	Street tree
186	Australian willow	14	44	Yes	2	Remove	Street tree
187	Australian willow	15,11	82	Yes	2	Remove	Street tree

Table 4. Estimated tree mitigation.
420 S. 3rd Street. San Jose CA.

Tree No.	Species	Trunk Diameter (in.)	Trunk Circum-ference	Ordinance Size Tree?	Proposed Action	Status	Replacement Ratio	Mitigation Trees No.
183	Chinese pistache	11	35	No	Remove	Non-native	2:1	2
184	Chinese flame tree	17	53	Yes	Remove	Non-native	4:1	4
185	Australian willow	25	79	Yes	Remove	Non-native	4:1	4
186	Australian willow	14	44	Yes	Remove	Non-native	4:1	4
187	Australian willow	15,11	82	Yes	Remove	Non-native	4:1	4

Total No. of Mitigation Trees: 18

Based on my evaluation of the plans and the standard replacement ratios for the City of San Jose, I calculated 18 15-gallon trees as the replacement requirement for the trees recommended for removal (Table 4).

Alternative Mitigation Measures
In the event the project site does not have sufficient area to accommodate the required tree mitigation, one or more of the following measures may be implemented, to the satisfaction of the City's Environmental Principal Planner, at the development permit stage:

- The size of a 15-gallon replacement tree can be increased to 24" box and count as two replacement trees.
- An alternative site(s) will be identified for additional tree planting. Alternative sites may include local parks or schools or installation of trees on adjacent properties for screening
- A donation of $775 per mitigation tree to Our City Forest or San Jose Beautiful for in-lieu off-site tree planting in the community. These funds will be used for tree planting and maintenance of planted trees for approximately three years. A donation receipt for off- site tree planting will be provided to the Planning Project Manager prior to issuance of a development permit.

Preliminary Tree Preservation Guidelines

The goal of tree preservation is not merely tree survival during development but maintenance of tree health and beauty for many years. Trees retained on sites that are either subject to extensive injury during construction or are inadequately maintained become a liability rather than an asset. The response of individual trees depends on the amount of excavation and grading, care with which demolition is undertaken, and construction methods. Coordinating any construction activity inside the **TREE PROTECTION ZONE** can minimize these impacts.

The following recommendations will help reduce impacts to trees from development and maintain and improve their health and vitality through the clearing, grading and construction phases.

Tree Protection Zone

1. **A TREE PROTECTION ZONE** (TPZ) shall be identified for American elm #182 on the Tree Protection Plan prepared by the project arborist.
2. The TPZ shall be the edge of the existing concrete cutout or planting strip.
3. Tree protection fences shall be 6' high chain link fencing mounted on 8' tall, 2" diameter galvanized posts, driven 24" into the ground, or equivalent as required by the City.
4. Fences must be installed prior to beginning demolition and must remain until construction is complete.
5. No grading, excavation, construction or storage or dumping of materials shall occur within the **TREE PROTECTION ZONE**.
6. No underground services including utilities, sub-drains, water or sewer shall be placed in the **TREE PROTECTION ZONE**.
7. Fenced areas shall be posted with signs stating, "TREE PROTECTION FENCE – DO NOT MOVE OR REMOVE WITHOUT APPROVAL FROM CITY ARBORIST".

Design recommendations

1. Any changes to the plans affecting the trees should be reviewed by the consulting arborist with regard to tree impacts. These include, but are not limited to, site plans, improvement plans, utility and drainage plans, grading plans, landscape and irrigation plans, and demolition plans.
2. Plot accurate locations of all trees to be preserved on all project plans.
3. Consider the vertical clearance requirements near tree #182 during design. Avoid designs that would require pruning more than 20% of a tree's canopy.
4. Irrigation systems must be designed so that no trenching severs roots larger than 1" in diameter will occur within the **TREE PROTECTION ZONE**.
5. **Tree Preservation Guidelines** prepared by the Consulting Arborist, which include specifications for tree protection during demolition and construction, should be included on all plans.
6. Any herbicides placed under paving materials must be safe for use around trees and labeled for that use.
7. Do not lime the subsoil within 50' of any tree. Lime is toxic to tree roots.
8. As trees withdraw water from the soil, expansive soils may shrink within the root area. Therefore, foundations, footings and pavements on expansive soils near trees should be designed to withstand differential displacement.
9. Ensure adequate but not excessive water is supplied to trees; in most cases occasional irrigation will be required. Avoid directing runoff toward trees.

Pre-demolition and pre-construction treatments and recommendations

1. The demolition and construction superintendents shall meet with the Consulting Arborist before beginning work to review all work procedures, access routes, storage areas, and tree protection measures.
2. Fence all trees to be retained to completely enclose the **TREE PROTECTION ZONE** prior to demolition, grubbing or grading. Fences shall be 6 ft. chain link with posts sunk into the ground or equivalent as approved by the City.
3. Trees to be removed shall be felled so as to fall away from **TREE PROTECTION ZONE** and avoid pulling and breaking of roots of trees to remain. If roots are entwined, the Consulting Arborist may require first severing the major woody root mass before extracting the trees, or grinding the stump below ground.
4. All down brush and trees shall be removed from the **TREE PROTECTION ZONE** either by hand, or with equipment sitting outside the **TREE PROTECTION ZONE**. Extraction shall occur by lifting the material out, not by skidding across the ground.
5. All tree work shall comply with the Migratory Bird Treaty Act as well as California Fish and Wildlife code 3503-3513 to not disturb nesting birds. To the extent feasible tree pruning and removal should be scheduled outside of the breeding season. Breeding bird surveys should be conducted prior to tree work. Qualified biologists should be involved in establishing work buffers for active nests.

Recommendations for tree protection during construction

1. Any approved grading, construction, demolition or other work within the **TREE PROTECTION ZONE** should be monitored by the Consulting Arborist.
2. All contractors shall conduct operations in a manner that will prevent damage to trees to be preserved.
3. Tree protection devices are to remain until all site work has been completed within the work area. Fences or other protection devices may not be relocated or removed without permission of the Consulting Arborist.
4. Any root pruning required for construction purposes shall receive the prior approval of and be supervised by the Consulting Arborist. Roots should be cut with a saw to provide a flat and smooth cut. Removal of roots larger than 2" in diameter should be avoided.
5. If roots 2" and greater in diameter are encountered during site work and must be cut to complete the construction, the Consulting Arborist must be consulted to evaluate effects on the health and stability of the tree and recommend treatment.
6. Prior to grading or trenching, trees may require root pruning outside the **TREE PROTECTION ZONE.** Any root pruning required for construction purposes shall receive the prior approval of, and be supervised by, the Consulting Arborist.
7. Spoil from trench, footing, utility or other excavation shall not be placed within the **TREE PROTECTION ZONE**, neither temporarily nor permanently.
8. All grading within the dripline of trees shall be done using the smallest equipment possible. The equipment shall operate perpendicular to the tree and operate from outside the **TREE PROTECTION ZONE**. Any modifications must be approved and monitored by the Consulting Arborist.
9. All trees shall be irrigated on a schedule to be determined by the Consulting Arborist (every 3 to 6 weeks is typical). Each irrigation shall wet the soil within the **TREE PROTECTION ZONE** to a depth of 30".
10. If injury should occur to any tree during construction, it should be evaluated as soon as possible by the Consulting Arborist so that appropriate treatments can be applied.
11. No excess soil, chemicals, debris, equipment or other materials shall be dumped or stored within the **TREE PROTECTION ZONE**.
12. Any additional tree pruning needed for clearance during construction must be performed by a Certified Arborist and not by construction personnel.
13. Trees that accumulate a sufficient quantity of dust on their leaves, limbs and trunk as judged by the Consulting Arborist shall be spray-washed at the direction of the Project Arborist.

Maintenance of impacted trees
Our procedures included assessing trees for observable defects in structure. This is not to say that trees without significant defects will not fail. Failure of apparently defect-free trees does occur, especially during storm events. Wind forces, for example, can exceed the strength of defect-free wood causing branches and trunks to break. Wind forces coupled with rain can saturate soils, reducing their ability to hold roots, and blow over defect-free trees. Although we cannot predict all failures, identifying those trees with observable defects is a critical component of enhancing public safety.

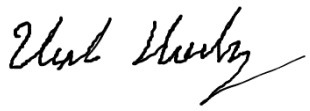
Furthermore, trees change over time. Our inspections represent the condition of the tree at the time of inspection. As trees age, the likelihood of failure of branches or entire trees increases. Annual tree inspections are recommended to identify changes to tree health and structure. In addition, trees should be inspected after storms of unusual severity to evaluate damage and structural changes. Initiating these inspections is the responsibility of the client and/or tree owner.

Preserved trees will experience a physical environment different from that pre-development. As a result, tree health and structural stability should be monitored. Occasional pruning, fertilization, mulch, pest management, replanting and irrigation may be required. In addition, provisions for monitoring both tree health and structural stability following construction must be made a priority.

If you have any questions about my observations or recommendations, please contact me.

HortScience | Bartlett Consulting

Uriel Hernandez, Urban Forester



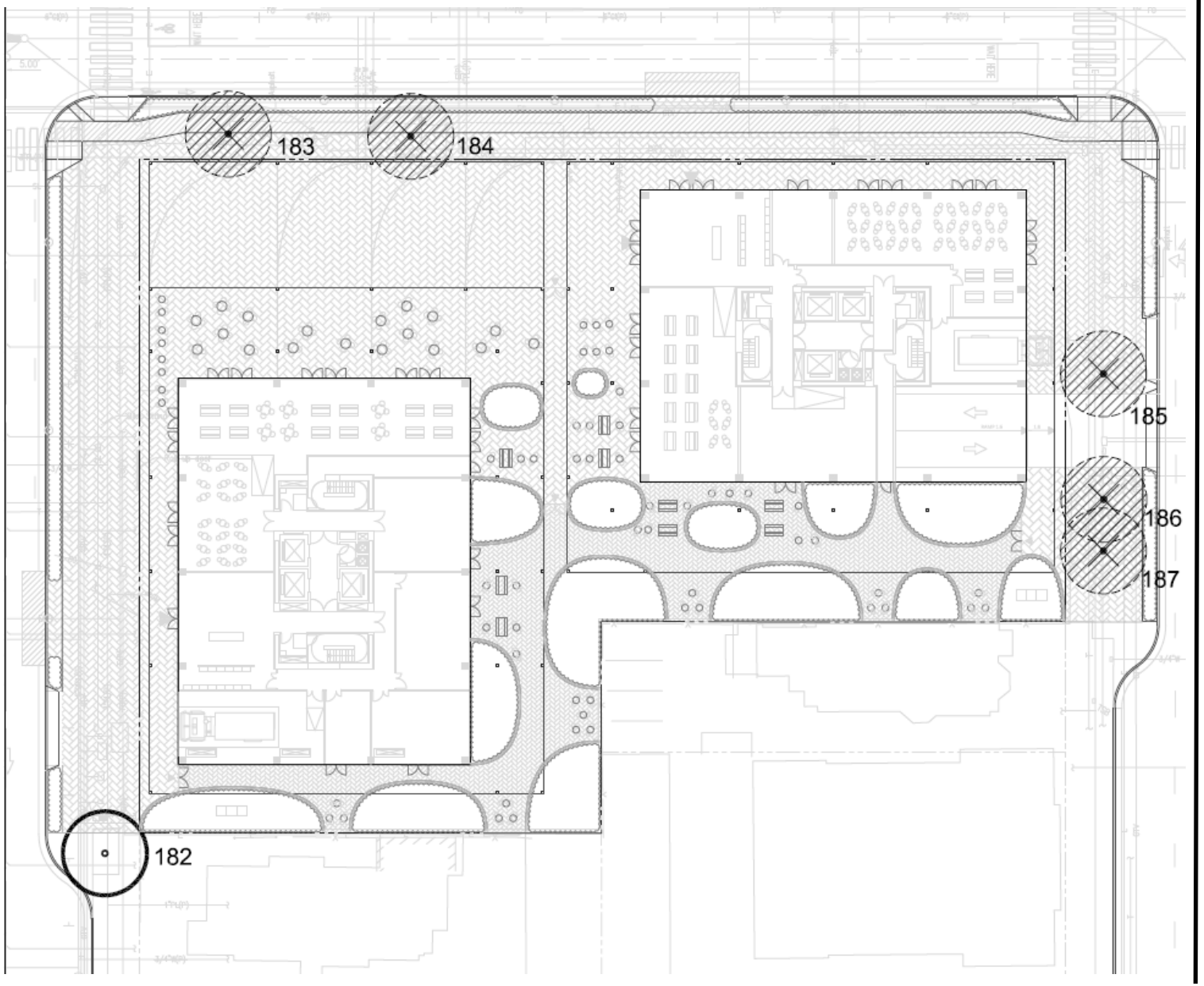
Certified Arborist #WE-11955A
Tree Risk Assessment Qualified
uhernandez@bartlett.com

Exhibits

Tree Location Map

Tree Assessment Form

Tree location Map



420 S. 2nd Street

San Jose, CA

Prepared for:
RMW Architecture

May 2021

No Scale

Notes:

Base map provided by:
RMW Architecture

Numbered tree locations are approximate

N

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Tree Assessment Form

420 S. 2nd Street
San Jose, CA
May 21, 2021

Tree No.	Species	Trunk Diameter (in.)	Protected Tree?	Condition 1=poor 5=excellent	Suitability for Preservation	Comments
182	American elm	49	Yes	2	Low	Off-site street tree; adjacent to property line; overhanging property high in crown; in 8' x 14' sidewalk cutout; severe epicormic sprouts; codominant attachments arise from 20' and 25'; beehive in hollow at 25'; buckling curb.
183	Chinese pistache	11	No	3	Moderate	Street tree; in 3' x 6' cutout; severe basal sprouts; multiple attachments arise from 6'; minor mechanical damage at 6'; rounded form; healthy, dense crown.
184	Chinese flame tree	17	Yes	3	Moderate	Street tree; in 3.5' x 7' cutout; epicormic sprouts; multiple attachments arise from 8'; upright trunk; buckling sidewalk; rounded form; dense green canopy; water sprouts throughout canopy.
185	Australian willow	25	Yes	2	Low	Street tree; in 6' x 10' cutout; narrow codominant attachments arise from 6'; thin upper crown; dense lower crown; rounded form; suppressed to W; poor structure; buried root flare.
186	Australian willow	14	Yes	2	Low	Street tree; in 6' x 6' cutout; narrow multiple attachments arise from 6'; thin upper crown; dense lower crown; rounded vase form; poor structure; buried root flare.
187	Australian willow	15;11	Yes	2	Low	Street tree; in 6'x6' cutout; narrow multiple attachments arise from 3' and 6'; branch failure wound on S; thin upper crown; dense lower crown; rounded vase form; poor structure; buried root flare.

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1. An assessment of the health, structural condition, and suitability for preservation of the trees located on and adjacent to the proposed project area based on a visual inspection from the ground.
2. An assessment of the trees that would be preserved and removed based on preliminary development plans.
3. Preliminary guidelines for tree preservation during the design, construction, and maintenance phases of development.

Tree Assessment Methods

The trees were assessed on May 18, 2021 and numbered #170 – 181. The assessment included all trees 6' in height and taller located within and adjacent to the proposed project area. The assessment procedure consisted of the following steps:

1. Identifying the tree species.
2. Assigning each tree an identifying number and recording its location on a map.
3. Measuring the trunk diameter at a point 54" above grade.
4. Evaluating the health and structural condition using a scale of 1 – 5 based on a visual inspection from the ground:
   - ***5*** - A healthy, vigorous tree, reasonably free of signs and symptom of disease, with good structure and form typical of the species.
   - ***4*** - Tree with slight decline in vigor, small amount of twig dieback, minor structural defects that could be corrected.
   - ***3*** - Tree with moderate vigor, moderate twig and small branch dieback, thinning of crown, poor leaf color, moderate structural defects that might be mitigated with regular care.
   - ***2*** - Tree in decline, epicormic growth, extensive dieback of medium to large branches, significant structural defects that cannot be abated.
   - ***1*** - Tree in severe decline, dieback of scaffold branches and/or trunk; most of foliage from epicormics; extensive structural defects that cannot be abated.
5. Rating the suitability for preservation as "high", "moderate", or "low". Suitability for preservation considers the health, age and structural condition of the tree, and its potential to remain an asset to the site for years to come.

   High: Trees with good health and structural stability that have the potential for longevity at the site.

   Moderate: Trees with somewhat declining health and/or structural defects that can be abated with treatment. The tree will require more intense management and monitoring, and may have shorter life span than those in 'high' category.

   Low: Trees in poor health or with significant structural defects that cannot be mitigated. The tree is expected to continue to decline, regardless of treatment. The species or individual may have characteristics that are undesirable for landscapes and generally are unsuited for use areas.

Description of Trees

Twelve (12) trees representing nine species were evaluated (Table 1). Six species were represented by one tree each. Descriptions of each tree are found in the ***Tree Assessment Form***, and approximate locations are plotted on the ***Tree Location Map*** (see Exhibits).

Table 1. Condition ratings and frequency of occurrence of trees. 420 S. 3rd Street. San Jose, CA.

Common Name	Scientific Name	Condition			Total
		Poor (1-2)	Fair (3)	Good (4-5)	
California buckeye	*Aesculus californica*	-	-	1	**1**
Tree of heaven	*Ailanthus altissima*	1	-	-	**1**
Hollywood juniper	*Juniperus chinensis* 'Kaizuka'	-	-	1	**1**
Chinese flame tree	*Koelreuteria bipinnata*	-	1	-	**1**
Avocado	*Persea americana*	-	-	2	**2**
Canary Island date palm	*Phoenix canariensis*	-	1	1	**2**
Chinese pistache	*Pistacia chinensis*	-	2	-	**2**
Windmill palm	*Trachycarpus fortunei*	-	1	-	**1**
Mexican fan palm	*Washingtonia robusta*	-	-	1	**1**
Total		**1**	**5**	**6**	**12**

Two Canary Island date palms were located in the interior courtyard (Photo 1). Tree #180 was in good condition while tree #179 was fair. Trunk diameters were 15” and 14”. Both trunks had mechanical damage from climbing spikes, from base to crown.

Two Chinese pistaches were street trees in 6.5’-wide planting strips along S. 3rd Street (Photo 2). Tree #175 had an 8” trunk and tree #176 was 11”. Both trees were in fair condition with rounded canopies and dense, green growth. Minor twig dieback in the lower crown was present on both trees.

Photo 1 (above): Canary Island date palms #179 and 180 were located in the main courtyard.

Photo 2 (left): Chinese pistaches #175 and 176 were street trees planted along S. 3rd Street.

Two off-site avocado trees (#171, 172) were assessed. Both were located approximately 6' from the property line. Trunk diameters were estimated to be 7". Both trees were in good condition with upright trunks. The trees' crowns extended into the subject property by approximately 3'. Tree #171 was located approximately 6" from the base of California buckeye #170.

California buckeye #170 was located off-site. It was in good condition with an estimated 7" diameter. The base was approximately 6" from avocado #171 and 6' from the property line. Its crown overhung the subject property by approximately 4' and had minor branches rubbing against the existing apartment building (Photo 3).

Chinese flame tree #174 was a street tree in a 6.5'-wide planting strip along S. 3rd street (Photo 4). It had a 15" trunk diameter and was in fair condition. Though it had some epicormic growth, the tree crown was dense and green.

Tree of heaven #181 was growing on the property line with 452 S. 3rd Street and was in poor condition. The trunk was growing through and embedded in the chain link fence dividing the properties. Estimated diameter was 19". The tree had a history of large branch failure, and severe epicormic sprouting. Branches rubbed against the existing apartment.

Hollywood juniper #173 was located off-site, approximately 1' from the property line with a 5' overhang (Photo 5). It was in good condition and had multiple trunks, with diameters ranging from 4" – 9". The crown was dense and had a semi-rounded shape.

Mexican fan palm #177 and windmill palm #178 were both located within a small planting area immediately in front of the main street entrance to the apartment building. Mexican fan palm was in good condition and had a trunk diameter of 19", while windmill palm had a 10" diameter and was in fair condition. Mexican fan palm #177 had an estimated 50' of trunk height free of fronds, while windmill palm #178 had approximately 6' of clear trunk height. Both trees had healthy, green fronds.

Photo 3 (top): California buckeye #170 had a 4' overhang with branches rubbing against the building.

Photo 4 (middle): Chinese flame tree #174 was a street tree planted along S. 3rd Street.

Photo 5 (bottom): Hollywood juniper #173 was located approximately 1' from the property line, which is marked with a yellow arrow.

The City of San Jose protects trees with trunk diameters of 12" or greater (Municipal Code Chapter 13.32) as well as all street trees. Six of the assessed trees met the criterion for *Ordinance*-size (see Tree Assessment Form).

Suitability for Preservation

Before evaluating the impacts that will occur during development, it is important to consider the quality of the tree resource itself and the potential for individual trees to function well over an extended length of time. Trees that are preserved on development sites must be carefully selected to make sure that they may survive development impacts, adapt to a new environment and perform well in the landscape.

Our goal is to identify trees that have the potential for long-term health, structural stability, and longevity. For trees growing in open fields, away from areas where people and property are present, structural defects and/or poor health presents a low risk of damage or injury if they fail. However, we must be concerned about safety in use areas. Therefore, where development encroaches into existing plantings, we must consider their structural stability as well as their potential to grow and thrive in a new environment. Where development will not occur, the normal life cycles of decline, structural failure and death should be allowed to continue.

Evaluation of suitability for preservation considers several factors:

- **Tree health**
  Healthy, vigorous trees are better able to tolerate impacts such as root injury, demolition of existing structures, changes in soil grade and moisture, and soil compaction than are non-vigorous trees.

- **Structural integrity**
  Trees with significant amounts of wood decay and other structural defects that cannot be corrected are likely to fail. Such trees should not be preserved in areas where damage to people or property is likely. For example, tree of heaven #181 had an embedded chain link fence and a history of branch failure, indicating a higher likelihood of branch failure.

- **Species response**
  There is a wide variation in the response of individual species to construction impacts and changes in the environment. Some species, like Chinese pistache, are relatively tolerant of construction impacts.

- **Tree age and longevity**
  Old trees, while having significant emotional and aesthetic appeal, have limited physiological capacity to adjust to an altered environment. Young trees are better able to generate new tissue and respond to change.

- **Species invasiveness**
  Species that spread across a site and displace desired vegetation are not always appropriate for retention. This is particularly true when indigenous species are displaced. The California Invasive Plant Inventory Database http://www.cal-ipc.org/plants/inventory/ lists species identified as being invasive. San Jose is part of the Central West Floristic Province. Tree of heaven and Mexican fan palm were identified as having a "Moderate" invasive rating. Canary Island date palm was designated as "Limited". Species with the "Limited" designation are known to be invasive with minor ecological impacts or information about them is limited.

Each tree was rated for suitability for preservation based upon its age, health, structural condition, and ability to safely coexist within a development environment (see ***Tree Assessment Form*** in Exhibits, and Table 2). We consider trees with high suitability for preservation to be the best candidates for preservation. We do not recommend retention of trees with low suitability for preservation in areas where people or property will be present. Retention of trees with moderate suitability for preservation depends upon the intensity of proposed site changes.

Table 2. Tree suitability for preservation.
420 S 3rd Street. San Jose, CA.

High	These are trees with good health and structural stability that have the potential for longevity at the site. Three (3) of the assessed trees had high suitability for preservation: #177, 180, and 170.
Moderate	Trees in this category have fair health and/or structural defects that may be abated with treatment. These trees require more intense management and monitoring, and may have shorter life-spans than those in the “high” category. Eight (8) trees had moderate suitability for preservation.
Low	Trees in this category are in poor health or have significant defects in structure that cannot be abated with treatment. These trees can be expected to decline regardless of management. The species or individual tree may possess either characteristics that are undesirable in landscape settings or be unsuited for use areas. Tree of heaven #181 had low suitability for preservation.

Preliminary Evaluation of Impacts and Recommendations

Appropriate tree retention requires a practical match between the location and intensity of construction activities and the quality and health of trees. The ***Tree Assessment Form*** was the reference point for tree health, structure, and suitability for preservation. I used the *Tree Disposition Plan* and the *Site Plan* provided by RMW Architecture and Interiors (May 2021) to estimate impacts to trees. The plans depicted the complete redevelopment of the site, including the construction of a new multi-story residential tower and the reconfiguration of the street frontage along S. 3rd Street.

Given the proposed plans, there is little opportunity for tree preservation. Based on the proposed plans, I recommend preservation of four trees and removal of seven (Table 3). Among trees to be preserved are four off-site trees (#170 – 173). The five trees recommended for removal include on-site trees located within areas proposed for redevelopment (#177 – 181) and three street trees (#174 – 176).

Tree Mitigation Requirements

The City of San Jose requires mitigation of trees removed on development sites. The species and exact number of trees to be planted on the site will be determined in consultation with the City Arborist and the Department of Planning, Building, and Code Enforcement.
The City of San Jose requires the replacement of removed trees as follows:

Diameter of Tree to be Removed	Type of Tree to be Removed			Minimum Size of Each Replacement Tree
	Native	Non-Native	Orchard	
12 inches or greater	5:1	4:1	3:1	15-gallon container
6 - 11 inches	3:1	2:1	none	15-gallon container
less than 6 inches	1:1	1:1	none	15-gallon container
x:x = tree replacement to tree loss ratio **Note:** Trees greater than 12” diameter shall not be removed unless a Tree Removal Permit, or equivalent, has been approved for the removal of such trees.				

Table 3. Proposed action.
420 S. 3rd Street. San Jose CA.

Tree No.	Species	Trunk Diameter (in.)	Trunk Circumference (in.)	Ordinance Size Tree?	Condition 1=poor 5=excellent.	Proposed Action	Notes
170	California buckeye	7	22	No	4	Preserve	Off-site
171	Avocado	7	22	No	4	Preserve	Off-site
172	Avocado	7	22	No	4	Preserve	Off-site
173	Hollywood juniper	9;8;6;4	85	Yes	4	Preserve	Off-site
174	Chinese flame tree	15	47	Yes	3	Remove	Street tree
175	Chinese pistache	8	25	No	3	Remove	Street tree
176	Chinese pistache	11	35	No	3	Remove	Street tree
177	Mexican fan palm	19	60	Yes	4	Remove	Within development area
178	Windmill palm	10	31	No	3	Remove	Within development area
179	Canary Island date palm	14	44	Yes	3	Remove	Within development area
180	Canary Island date palm	15	47	Yes	4	Remove	Within development area
181	Tree of heaven	19	60	Yes	2	Remove	On property line

Table 4. Estimated tree mitigation.
420 S. 3rd Street. San Jose CA.

Tree No.	Species	Trunk Diameter (in.)	Trunk Circum-ference	Ordinance Size Tree?	Proposed Action	Status	Replacement Ratio	Mitigation Trees No.
174	Chinese flame tree	15	47	Yes	Remove	Non-native	4:1	4
175	Chinese pistache	8	25	No	Remove	Non-native	2:1	2
176	Chinese pistache	11	35	No	Remove	Non-native	2:1	2
177	Mexican fan palm	19	60	Yes	Remove	Non-native	4:1	4
178	Windmill palm	10	31	No	Remove	Non-native	2:1	2
179	Canary Island date palm	14	44	Yes	Remove	Non-native	4:1	4
180	Canary Island date palm	15	47	Yes	Remove	Non-native	4:1	4
181	Tree of heaven	19	60	Yes	Remove	Non-native	4:1	4
							Total No. of Mitigation Trees:	**26**

Based on my evaluation of the plans and the standard replacement ratios for the City of San Jose, I calculated 26 15-gallon trees as the replacement requirement for all trees recommended for removal (Table 4).

Alternative Mitigation Measures
In the event the project site does not have sufficient area to accommodate the required tree mitigation, one or more of the following measures may be implemented, to the satisfaction of the City's Environmental Principal Planner, at the development permit stage:

- The size of a 15-gallon replacement tree can be increased to 24" box and count as two replacement trees.
- An alternative site(s) will be identified for additional tree planting. Alternative sites may include local parks or schools or installation of trees on adjacent properties for screening
- A donation of $775 per mitigation tree to Our City Forest or San Jose Beautiful for in-lieu off-site tree planting in the community. These funds will be used for tree planting and maintenance of planted trees for approximately three years. A donation receipt for off- site tree planting will be provided to the Planning Project Manager prior to issuance of a development permit.

Preliminary Tree Preservation Guidelines

The goal of tree preservation is not merely tree survival during development but maintenance of tree health and beauty for many years. Trees retained on sites that are either subject to extensive injury during construction or are inadequately maintained become a liability rather than an asset. The response of individual trees depends on the amount of excavation and grading, care with which demolition is undertaken, and construction methods. Coordinating any construction activity inside the **TREE PROTECTION ZONE** can minimize these impacts.

The following recommendations will help reduce impacts to trees from development and maintain and improve their health and vitality through the clearing, grading and construction phases.

Tree Protection Zone

1. **A TREE PROTECTION ZONE** (TPZ) shall be identified for each tree to be preserved on the Tree Protection Plan prepared by the project arborist.
   a. For all off-site trees (#170 – 173) the TPZ shall be the property line.
   b. Tree protection fences shall be 6' high chain link fencing mounted on 8' tall, 2" diameter galvanized posts, driven 24" into the ground, or equivalent as required by the City.
   c. Fences must be installed prior to beginning demolition and must remain until construction is complete.
   d. No grading, excavation, construction or storage or dumping of materials shall occur within the **TREE PROTECTION ZONE**.
   e. No underground services including utilities, sub-drains, water or sewer shall be placed in the **TREE PROTECTION ZONE**.
   f. Fenced areas shall be posted with signs stating, "TREE PROTECTION FENCE – DO NOT MOVE OR REMOVE WITHOUT APPROVAL FROM CITY ARBORIST".

Design recommendations

1. Any changes to the plans affecting the trees should be reviewed by the consulting arborist with regard to tree impacts. These include, but are not limited to, site plans, improvement plans, utility and drainage plans, grading plans, landscape and irrigation plans, and demolition plans.
2. Plot accurate locations of all trees to be preserved on all project plans.
3. Consider the vertical clearance requirements near trees during design, such as off-site trees #170 – 173. Avoid designs that would require pruning more than 20% of a tree's canopy.
4. Irrigation systems must be designed so that no trenching severs roots larger than 1" in diameter will occur within the **TREE PROTECTION ZONE**.
5. **Tree Preservation Guidelines** prepared by the Consulting Arborist, which include specifications for tree protection during demolition and construction, should be included on all plans.
6. Any herbicides placed under paving materials must be safe for use around trees and labeled for that use.
7. Do not lime the subsoil within 50' of any tree. Lime is toxic to tree roots.
8. As trees withdraw water from the soil, expansive soils may shrink within the root area. Therefore, foundations, footings and pavements on expansive soils near trees should be designed to withstand differential displacement.
9. Ensure adequate but not excessive water is supplied to trees; in most cases occasional irrigation will be required. Avoid directing runoff toward trees.

Pre-demolition and pre-construction treatments and recommendations

1. The demolition and construction superintendents shall meet with the Consulting Arborist before beginning work to review all work procedures, access routes, storage areas, and tree protection measures.
2. Fence all trees to be retained to completely enclose the **TREE PROTECTION ZONE** prior to demolition, grubbing or grading. Fences shall be 6 ft. chain link with posts sunk into the ground or equivalent as approved by the City.
3. Branches extending into the work area that can remain following demolition shall be tied back and protected from damage.
4. Tree(s) to be removed that have branches extending into the canopy of tree(s) or located within the **TREE PROTECTION ZONE** of tree(s) to remain shall be removed by a Certified Arborist or Certified Tree Worker and not by the demolition contractor. The Certified Arborist or Certified Tree Worker shall remove the trees in a manner that causes no damage to the tree(s) and understory to remain. Stumps shall be ground below grade.
5. Trees to be removed shall be felled so as to fall away from **TREE PROTECTION ZONE** and avoid pulling and breaking of roots of trees to remain. If roots are entwined, the Consulting Arborist may require first severing the major woody root mass before extracting the trees, or grinding the stump below ground.
6. All down brush and trees shall be removed from the **TREE PROTECTION ZONE** either by hand, or with equipment sitting outside the **TREE PROTECTION ZONE**. Extraction shall occur by lifting the material out, not by skidding across the ground. Brush shall be chipped and spread beneath the trees within the **TREE PROTECTION ZONE**

7. All tree work shall comply with the Migratory Bird Treaty Act as well as California Fish and Wildlife code 3503-3513 to not disturb nesting birds. To the extent feasible tree pruning and removal should be scheduled outside of the breeding season. Breeding bird surveys should be conducted prior to tree work. Qualified biologists should be involved in establishing work buffers for active nests.

Recommendations for tree protection during construction

1. Any approved grading, construction, demolition or other work within the **TREE PROTECTION ZONE** should be monitored by the Consulting Arborist.
2. All contractors shall conduct operations in a manner that will prevent damage to trees to be preserved.
3. Tree protection devices are to remain until all site work has been completed within the work area. Fences or other protection devices may not be relocated or removed without permission of the Consulting Arborist.
4. Construction trailers, traffic and storage areas must remain outside **TREE PROTECTION ZONE** at all times.
5. Any root pruning required for construction purposes shall receive the prior approval of and be supervised by the Consulting Arborist. Roots should be cut with a saw to provide a flat and smooth cut. Removal of roots larger than 2" in diameter should be avoided.
6. If roots 2" and greater in diameter are encountered during site work and must be cut to complete the construction, the Consulting Arborist must be consulted to evaluate effects on the health and stability of the tree and recommend treatment.
7. Any brush clearing required within the **TREE PROTECTION ZONE** shall be accomplished with hand-operated equipment.
8. Prior to grading or trenching, trees may require root pruning outside the **TREE PROTECTION ZONE.** Any root pruning required for construction purposes shall receive the prior approval of, and be supervised by, the Consulting Arborist.
9. Spoil from trench, footing, utility or other excavation shall not be placed within the **TREE PROTECTION ZONE**, neither temporarily nor permanently.
10. All grading within the dripline of trees shall be done using the smallest equipment possible. The equipment shall operate perpendicular to the tree and operate from outside the **TREE PROTECTION ZONE**. Any modifications must be approved and monitored by the Consulting Arborist.
11. All trees shall be irrigated on a schedule to be determined by the Consulting Arborist (every 3 to 6 weeks is typical). Each irrigation shall wet the soil within the **TREE PROTECTION ZONE** to a depth of 30".
12. If injury should occur to any tree during construction, it should be evaluated as soon as possible by the Consulting Arborist so that appropriate treatments can be applied.
13. No excess soil, chemicals, debris, equipment or other materials shall be dumped or stored within the **TREE PROTECTION ZONE**.
14. Any additional tree pruning needed for clearance during construction must be performed by a Certified Arborist and not by construction personnel.
15. Trees that accumulate a sufficient quantity of dust on their leaves, limbs and trunk as judged by the Consulting Arborist shall be spray-washed at the direction of the Project Arborist.

Maintenance of impacted trees
Our procedures included assessing trees for observable defects in structure. This is not to say that trees without significant defects will not fail. Failure of apparently defect-free trees does occur, especially during storm events. Wind forces, for example, can exceed the strength of defect-free wood causing branches and trunks to break. Wind forces coupled with rain can saturate soils, reducing their ability to hold roots, and blow over defect-free trees. Although we cannot predict all failures, identifying those trees with observable defects is a critical component of enhancing public safety.

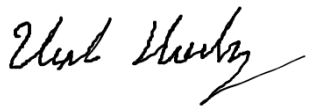
Furthermore, trees change over time. Our inspections represent the condition of the tree at the time of inspection. As trees age, the likelihood of failure of branches or entire trees increases. Annual tree inspections are recommended to identify changes to tree health and structure. In addition, trees should be inspected after storms of unusual severity to evaluate damage and structural changes. Initiating these inspections is the responsibility of the client and/or tree owner.

Preserved trees will experience a physical environment different from that pre-development. As a result, tree health and structural stability should be monitored. Occasional pruning, fertilization, mulch, pest management, replanting and irrigation may be required. In addition, provisions for monitoring both tree health and structural stability following construction must be made a priority.

If you have any questions about my observations or recommendations, please contact me.

HortScience | Bartlett Consulting

Uriel Hernandez, Urban Forester



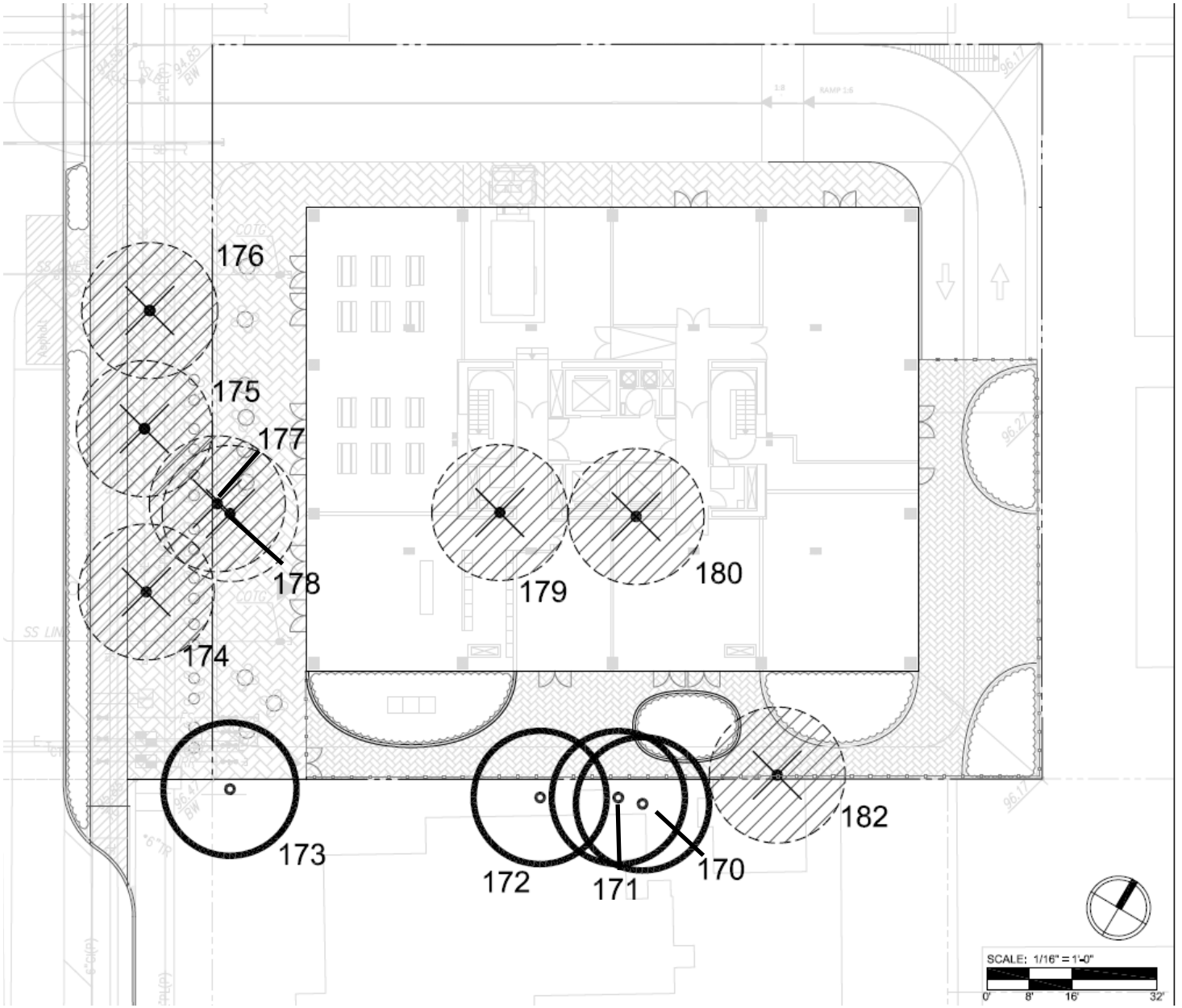
Certified Arborist #WE-11955A
Tree Risk Assessment Qualified
uhernandez@bartlett.com

Exhibits

Tree Location Map

Tree Assessment Form

Tree Location Map



420 S. 3rd Street

San Jose, CA

Prepared for:
RMW Architecture

May 2021

No Scale

Notes:

Base map provided by:
RMW Architecture

Numbered tree locations are approximate

N

HORT SCIENCE
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Tree Assessment Form

420 S. 3rd Street
San Jose, CA
May 21, 2021

HORT SCIENCE
BARTLETT CONSULTING

Tree No.	Species	Trunk Diameter (in.)	Protected Tree?	Condition 1=poor 5=excellent	Suitability for Preservation	Comments
170	California buckeye	7	No	4	High	Offsite no tag; dbh estimated; approximately 6' from property line; 4' overhang on subject propject; branches rubbing against apartment building; suppressed/one sided to N; multiple attachments arise from 8'; base is 6" from tree #183.
171	Avocado	7	No	4	Moderate	Offsite no tag; dbh estimated; 6' from property line; upright trunk; lower branches removed to 18'; oval crown; healthy new growth; 3' overhang; base is 6" from tree #182.
172	Avocado	7	No	4	Moderate	Offsite no tag; dbh estimated; approximately 6' from property line; upright trunk; crown leans to N; oval crown; healthy new growth; 3' overhang on subject property.
173	Hollywood juniper	9;8;6;4	Yes - ord	4	Moderate	Offsite, no tag; multiple attachments at 1' and 3'; suppressed; 1' from property line; overhangs subject property by 5'; dense, rounded crown.
174	Chinese flame tree	15	- Street and	3	Moderate	Street tree; in 6.5' planting strip; surface roots; suckers; upright trunk; codominant attachments arise from 10'; rounded, spreading form; several weeping branches; dense, green canopy.
175	Chinese pistache	8	Yes - Street	3	Moderate	Street tree; in 6.5' planting strip; upright trunk; multiple attachments arise from 8'; rounded form; no central leader; dense, green canopy; minor twig dieback in lower canopy.
176	Chinese pistache	11	Yes - Street	3	Moderate	Street tree; in 6.5' planting strip; trunk self corrected slight lean to E; multiple attachments arise from 9'; rounded form; no central leader; dense canopy; minor twig dieback in lower canopy.
177	Mexican fan palm	19	Yes - ord	4	High	Upright trunk; estimated 50' clear trunk space; healthy fronds.
178	Windmill palm	10	No	3	Moderate	Suppressed; green fronds; slight trunk lean to N; suppressed; 6' clear trunk space.
179	Canary Island date palm	14	Yes - ord	3	Moderate	Mechanical damage from climbing spikes; minor frond discoloration.
180	Canary Island date palm	15	Yes - ord	4	High	Mechanical damage from climbing spikes; deeply colored fronds; upright.
181	Tree of heaven	19	Yes - ord	2	Low	Located on property line; growing through chain link fence; lower branches rubbing against apartment building; history of large branch failure; epicormic sprouts; codominant attachments arise from 7'.