



Rocklin Sierra Plaza

Tree Associates works with property developers to achieve desired and required preservation of trees.

We provide tree inventories, prognoses for tree preservation, preservation specifications, recommendations for design modifications, on-site monitoring and guidance, and injury treatment.

Our work on the development of Rocklin Sierra Plaza in Rocklin, California is presented here as an example of this type of work.

First we performed a comprehensive survey of the site's trees - their species, size, and condition.



Margatech Development / Rockin Sierra Plaza
Tree Evaluation

Tree #	Species	Diam. (Inches)	Drip Line Widths					Tree Protection Zone (Radius)	Health	Structure	Recommendations/Comments
			N	W	E	S	Max.				
1	Interior live oak (Quercus wislizeni)	8.8, 4.5	16	12	16	16	16	Fair to Good	Fair: South-west trunk 27" diam. 7' long, longitudinal crack over base with some decay; post limb attachments with included bark. North trunk cavities with decay. East trunk has no dominant primary or 4" height, poor attachment, included bark.	Remove structure. Remove north trunk. Do not remove tree; deep cutch that near ends of limbs with diameters >= 1.7 of trunk diameter in attachment, to remove 25% of foliage on those limbs.	
2	Interior live oak (Quercus wislizeni)	6.1	11	12	11	11	11	Fair to Good	Good: Several removal of deadwood, in 2" diameter.	Remove deadwood. Remove shallow roots and debris under canopy.	
3	Blue oak (Quercus douglasii)	22	9	19	25	35	33	Good	Fair to Good - pending further investigation. Highly shaded roof crown. South-west limb primary at ~28' excessive length and end weight. Deadwood in 4" limb's shaft. Evidence of decay in southwest-facing primary sublimb at 25'.	Remove deadwood, broken shaft. Reduce weight on south southwest facing limb attached at ~20% depending on leaning and roots to remove 25% of foliage. Perform aerial inspection to determine extent of decay.	
4	Blue oak (Quercus douglasii)	15	8	14	11	15	12	Fair	Fair - pending further investigation. Unilateral crown. Deadwood in 7" limb's shaft. Evidence of decay in upper crown.	Remove deadwood. Perform aerial inspection to determine extent of decay.	
5	Silverwood (Populus trichocarpa)	7	9	9	12	12	12	Fair to Good	Good: Several dead limbs in 1" diameter.	Remove deadwood and limbs.	
6	Incense cedar (Calocedrus decurrens)	18	12	15	9	18	18	Good	Fair to Fair: Highly irregular crown, multiple leaders at top, one lead, west-facing primary at ~28' extreme. No lateral canopy and has crown in long/vertical. Deadwood in 2" diameter.	Remove deadwood.	

The tree survey was compiled into a data table that contains tree species, size, health and structural condition ratings, calculated Tree Protection Zone, and recommendations for remediation of any significant defects found. Some trees were recommended for removal based on this initial assessment, due to poor health or structural conditions.

Next, a preliminary Development Impact Analysis was performed for each tree, based on a review of construction plans and tree data. This brief analysis describes proposed construction activities, their potential impacts on the trees, and estimates of the resulting prognoses for the trees.

TREE #	PROPOSED ACTIVITY WITHIN/NEAR TREE PROTECTION ZONE	POTENTIAL IMPACT	PROGNOSIS
1	Installation of turf northeast of tree.	Root injury, and degradation of soil environment from: grading, soil compaction.	Low to Moderate probability of decline.
5	Tree located within proposed building.	Tree would need to be removed.	
11	Installation of parking approx. 8' to east of tree.	Root injury, and degradation of soil environment from: grading, soil compaction and impermeable soil covering.	High probability of decline. High probability of toppling.
	Installation of (unknown feature) immediately adjacent to east side of trunk.	Root injury.	
12	Pruning for vehicle clearance.	Removal of ~15% of tree canopy.	Moderate probability of decline.
	Installation of parking approx. 8' to east of tree.	Root injury, and degradation of soil environment from: grading, soil compaction and impermeable soil covering.	
16	Pruning for vehicle clearance.	Removal of significant percentage of tree canopy.	High probability of decline. High probability of toppling.
	Installation of parking approx. 1' to northeast, 2' to northwest, 7' to southeast of tree.	Root injury, and degradation of soil environment from: grading, soil compaction and impermeable soil covering.	

Tree #	Possible Design Changes
1	Eliminate turf within the tree protection zone.
2	Eliminate turf within the tree protection zone.
3	Eliminate hardscape within tree protection zone, or install permeable surface with minimum below-grade vertical profile.
4	Eliminate hardscape within tree protection zone, or install permeable surface with minimum below-grade vertical profile.
5	Cannot be preserved unless building is moved - trunk is within building outline.
6	See above. "General guidelines".
8	Abandon parking stalls within protection zone. Utilize a flush curb (if any) and minimize scarification, excavation and soil compaction for roadway and parking - install on grade if possible within protection zone (avoid scarification, utilize thicker asphalt or concrete, minimize base, reinforcement, geotextile fabric, etc.).
10	Abandon parking stalls within protection zone. Utilize a flush curb and minimize scarification, excavation and soil compaction for roadway and parking - install on grade if possible within protection zone (avoid scarification, utilize thicker asphalt or concrete, minimize base, reinforcement, geotextile fabric, etc.).
11	Relocate (unknown feature). Minimize clearance setbacks.
12	Abandon parking stalls within protection zone. Utilize a flush curb and minimize scarification, excavation and soil compaction for roadway and parking - install on grade if possible within protection zone (avoid scarification, utilize thicker asphalt or concrete, minimize base, reinforcement, geotextile fabric, etc.).

Tree Associates then provided recommended modifications to the plans, to decrease construction impacts to retained trees. In this project, retaining walls were moved and a roadway was relocated to provide more protected area for the trees. The client also decided to preserve only the native oaks, which reduced plan changes while meeting the requirements of the city ordinance.

Pre-Construction Meeting - prior to the beginning of site work, Tree Associates met at the site with the property developer, engineer, primary and sub-contractors, and local agency representatives. The purposes of pre-construction meetings are: to make sure everybody is "on the same page" with regard to how impacts to the trees will be minimized; to bring up and discuss any last-minute design changes that may affect the trees; and to discuss any compromises that may be necessary to address those changes or to facilitate construction.



Construction Monitoring - Tree Associates worked closely with the contractor's personnel during construction within the Tree Protection Zone to assist in avoiding tree injury, to properly treat injuries (such as root damage) that occurred, and to document the extent of injuries so that the prognosis for trees could be revised as necessary. In this process we always strive to maintain a balance between reasonable tree protection and getting the job done, and we try to minimize any disruption or delay of construction.



In-Process Memoranda - During monitoring we may observe site conditions that need attention. For example, in this case we noted that the trees needed additional irrigation to compensate for exposed soil and root loss. We provide memoranda to site owners and managers as such issues arise, to enable them to respond to needs in a timely and effective manner.

Certification - Many governing agencies require a letter of certification describing the developer's compliance with tree preservation regulations. When the project is completed Tree Associates will provide a summary of our project activities and updated prognoses for the trees to satisfy this requirement.