

*Tree Transplanting • Tree Farming*



*Giant Tree Moving • Tree Preservation*

September 6, 2012

Asi Cymbal  
Cymbal Development  
3470 N. Miami Avenue  
Miami, FL 33127

Re.: Tree Relocation Procedures/Scope and Sequence

Dear Asi,

As a result of our meeting Tuesday I am forwarding this correspondence that outlines the procedures for the relocation of the *Albizia Seman* tree on your property in Fort Lauderdale. Please review it at your convenience and feel free to call me should you need any clarifications.

**Pre Transplant Procedures:**

**Root pruning-** This activity is initiated 6 months prior to the actual root ball encapsulation. Root pruning allows the tree to regenerate new feeder roots at the margins of the root ball which in turn aids the tree in taking up water and nutrients as well as compensating for the loss of roots. Our experience shows that root pruning is effective when initiated 3 months prior to a relocation and that a 6-9 month time period between root pruning and relocation provides optimum results.

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www.treemover.com*

**Application of nutrients/top dressing/initial hydration-** These procedures will take place concurrently with the root pruning. The nutrient application consists of beneficial fungus introduction to encourage root development. The top dressing of hard wood mulch acts as an insulating barrier to retain moisture.

**Pre transplant monitoring-** Gross observation of tree vigor as well as root ball moisture levels takes place on a weekly basis. Tree vigor can typically be determined by leaf color and turgidity.

**Root ball encapsulation-** Prior to the transplant, the actual root ball will be encapsulated. This procedure consists of a hand shaping of the root ball and the installation of a burlap shroud and heavy gauge field fence around the outer wall of the root ball. This wire fence is then tightened around the root ball making it rigid.

**Lifting platform installation-** After the root ball is complete our project team will determine the direction in which the pipe platform will be installed beneath the tree and a bore pit will then be excavated to accommodate the lengths of pipe and boring equipment. Pipes will then be individually be pushed horizontally beneath the tree creating a rigid lifting structure. Upon installation of the platform a system of channel beams are bolted to the pipes in order to further stabilize the pipe structure.

**Relocation site preparation-** Prior to setting up the lifting gantry the receiving hole and travel area is prepared. This typically consists of tree planting pit excavation and adjacent ground stabilization. We will likely lay heavy-duty 8'x16' laminated wooden mats along the tree travel distance in order to facilitate ease of movement of the load.

**Lifting gantry set up-** We will be using a hydraulic gantry system to lift the tree onto the transport trailer. This consists of 4-8 hydraulically actuated lifting jacks, a series of I-beams, and rigging. Once the jacks are installed at the corners of the pipe platform and the rigging is in place, the tree can be slowly raised.

**Loading-** after raising the tree approximately 6 ' a heavy-duty trailer capable of carrying the weight of the trees is then backed into place beneath the pipe platform and the tree is then lowered onto the trailer.

**Tear down and setup of Gantry at planting site-**Once the tree is loaded the gantry will be disassembled and then reassembled at the planting site. The tree is then driven to the planting pit and maneuvered beneath the gantry.

**Lowering tree into place-**Once beneath the gantry, the pipe platform is rigged to the gantry lifting beams and the tree is lifted off the trailer. The trailer is then removed and the tree is lowered into place making sure that its' final elevation is slightly above adjacent grade. Upon final placement the rigging is removed from the pipe platform and the gantry is disassembled.

**Post Transplant Procedures:**

**Backfill-**The tree planting pit will be backfilled with a combination of previously stockpiled soil mixed with a nutrient rich soil mix. The back fill material will be water jetted in to prevent air pockets. A hardwood mulch top dressing will be applied to the top of the root ball.

**Notes:**

Prior to our initial mobilization all utilities adjacent to the tree and proposed planting site must be clearly marked and identified.

We will require an unobstructed route of travel from the tree's current location to the proposed new location.

Irrigation-We will require access to an adjacent water source for the duration of the project and either a temporary irrigation system or hand watering schedule will need to be in place once the tree has been relocated.

Sincerely,

Paul Cox – Regional Vice President, EDI, Inc.

**Environmental Design, Inc.**

**Selected Giant Tree Relocation  
Projects**



### **The Links at Pebble Beach 2000**

Species: *Cupressus macrocarpa*

Common Name: Monterrey Cypress

Canopy Spread: 85' tall x 80' wide

Trunk Diameter: 55"

Root Ball size and Weight: 34' diameter/500,000 lbs.

Timeline: Root pruned August 2000/Relocated November 2000

Relocation Technique: Gantry/Transporter

Current Status: Continues to thrive, last inspected June 2012

When the original monterrey cypress guarding the 18<sup>th</sup> green at the Pebble Beach Golf Links died, EDI was called upon to relocate another specimen on the course to replace this iconic tree. After a suitable candidate was identified, our team root pruned and maintained the new tree in its original location for 4 months prior to the move. Two weeks prior to the relocation effort, the root ball was encapsulated and the pipe platform was installed. As moving day approached the hydraulic gantry system was erected in order to facilitate the lifting of the tree. The actual move across two fairways required the use of a heavy duty multi-axle transporter and took an entire day to accomplish. Once in place the tree was lowered into its new location and guyed due to constant winds on the course.



### **Guacalito de la Isla, Nicaragua 2011**

Species: *Enterolobium cyclocarpum*

Common Name: Guanacaste

Canopy Spread: 55' tall x 80' wide

Trunk Diameter: 47"

Root Ball Size and Weight: 24' diameter/275,000 lbs.

Timeline: Root pruned January 2011/Relocated April 2011

Relocation Technique: Box/Slide

Current Condition: Continues to thrive, last inspected April 2012

The developers of Nicaragua's premier eco-resort wanted to create a dramatic entrance to the property by relocating a specimen tree that would be the first thing visitors would see upon their arrival. EDI was contracted to aid in the tree selection process and oversee the relocation of the tree to the entrance. This project was quite challenging as the site location was very remote and the importation of specialized rigging from the United States was difficult. Moreover, the limited availability of heavy equipment on site and constant rain slowed the project. Before attempting to relocate the tree a wooden box was built around the proposed root ball and a pipe platform was installed beneath the tree. Relocation of this tree required the use of several custom built slid plate that were inserted below the pipe platform. Once installed, and with the tree sitting on top of the plates, heavy equipment was used to slide the tree from its original location to the resort entrance.



### **San Diego Zoo 1998**

Species: *Ficus watkinsiana*

Common Name: Strangler Fig

Canopy Spread: 80' tall x 140' wide

Trunk Diameter: 9' 6"

Root Ball Size and Weight: 36' diameter/650,000 lbs.

Timeline: Root pruned March 1998/Relocated July 1998

Technique: Tracked Gantry

Current Condition: Continues to thrive, last inspected 2009

When the San Diego Zoo rebuilt its primate exhibit they included the installation of a giant ficus tree as the focal point. This giant tree had to be lowered 30' into the habitat so that visitors could view the animals living in the tree at eye level. In order to accomplish this move EDI oversaw the installation of a railed gantry lifting system over the exhibit area as well as the lowering and planting of the tree in its final location. At the time of its relocation this particular tree was considered the California state size champion *Ficus watkinsiana*.



**Ziff Properties Manalapan, Florida 2002**

Species: *Ficus watkinsiana*

Common Name: Strangler Fig

Canopy Spread: 60' tall x 55' wide

Trunk Diameter: 7' 6"

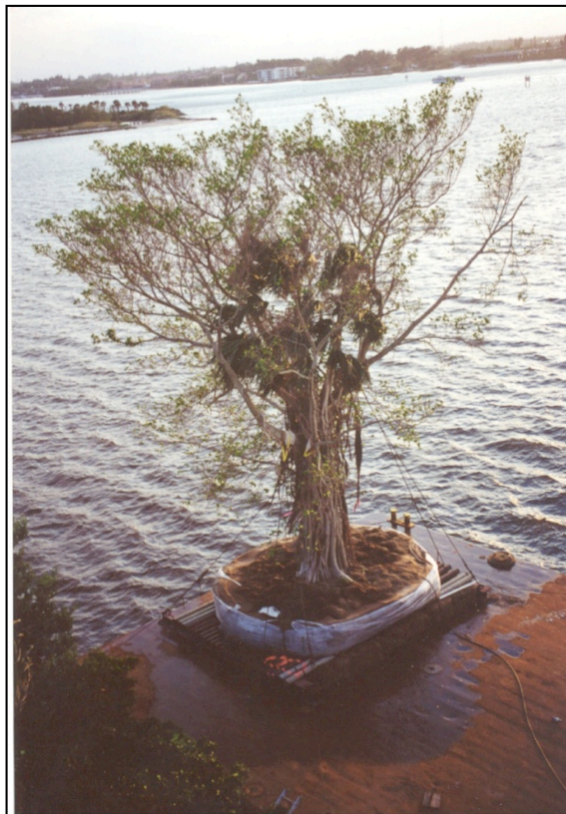
Root Ball Size and Weight: 36' diameter/675,000 lbs.

Timeline: relocated in June of 2002. No root pruning due to project time constraints

Technique: Crane/Barge

Current Condition: Continues to thrive, last inspected 2009

The relocation of this significant strangler ficus from one side of the Intercoastal Canal to the other required the loading of the 675,000 lb. tree onto a barge and towing it across. The tree was growing near the water so during the root ball excavation and shaping pumps were used to dewater the surrounding area. Due to a tight construction schedule at the receiving site no root pruning was employed. Upon its successful relocation this tree became part of a private tropical tree collection on an estate in Manalapan.





**Ziff Properties Pawling New York 1998**

Species: *Quercus rubra*

Common Name: Red Oak

Canopy Spread: 70' tall x 140' wide

Trunk Diameter: 6'

Root Ball Size and Weight: 42' diameter/1,000,000 lbs.

Timeline: Root pruned March 1997/Relocated March 1998

Technique: Gantry/Transporter

Current Condition: Continues to thrive, last inspected 2010

From approximately September of 1995 until March of 1999 EDI was under contract to perform tree relocation services at the request of an estate owner in upstate New York. During our time on site we relocated hundreds of trees utilizing various methods dependent upon tree size and specie. The largest tree moved on the property was a giant red oak. Moving this tree required a nine-month in advance root prune operation as well as an engineered lift plan. The relocation site for this tree was approximately ¼ mile from its original location. The actual travel time for the transporter from point a to point b took 4 days to complete.



### **Louisiana Highway Department 2011**

Species: *Quercus virginiana*

Common Name: Live Oak

Canopy Spread: 55' tall x 150' wide

Trunk Diameter: 8'

Root Ball Size and Weight: 38' diameter/875,000 lbs.

Timeline: Root pruned April 2011/Relocated May 2011

Technique: Gantry/Transporter

Current Condition: Continues to thrive, last inspected August 2012

Last year a community group in New Iberia contacted EDI when it became public that a highway construction project was going to impact a 140 year old live oak nicknamed "Mr. Al." Through generous donations and highway department cooperation we were able to facilitate the relocation of the tree rather than having it cut down. The moving of the tree from its original site to a nearby park required the temporary closing of an interstate highway as well as the take down of power lines along the route of travel. Once in place, Mr. Al became and remains the focal point of the park.



**Ayalon Highway Tel Aviv, Israel 2008**

Species: *Ficus sycamorus*

Common Name: Sycamore Ficus

Canopy Spread: 60' tall x 100' wide

Trunk Diameter: 8'

Root Ball Size and Weight: 44' diameter/750,000 lbs.

Timeline: Root pruned April 2008 /Relocated November 2008

Technique: Double Crane/Transporter

Current Condition: Continues to thrive, last inspected 2010

Road construction in Tel Aviv doomed a 300 year old historic sycamore ficus that marked the intersection of two roads just outside of town. Relocating this tree required two cranes due to the significant weight of the root ball. The movement of this tree one mile to its new location had to be done at night and with the highway closed. This tree is the largest ever moved in Israel.









THE TREE TRANSPLANT SPECIALISTS

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# Environmental Design

## Large Tree Preservation Specialists



Company Introduction



## THE TREE TRANSPLANT SPECIALISTS

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### Purpose,

Environmental Design is pleased to provide the enclosed introductory information pertaining to our comprehensive tree solutions service offering. For the past 30 years, Environmental Design has been a pioneer in the art and science of large tree preservation, transplant, supply and reclaimed salvage tree relocation. EDI has effectively practiced and encouraged sustainable design for over three decades. We have established and maintained a competitive advantage by internally developing equipment and techniques that have led to our relocating the largest trees in the world with the industry's best success rates. Our commitments to quality and environmental sustainability have enabled us to participate in some of the most challenging and highly visible landscape projects across the world; most recently the World Trade Center Memorial project in Lower Manhattan. The contents of this document include introductions to our patented equipment, techniques and environmentally sustainable solutions that benefit the development and the end users. In addition, several development case studies have been provided for discussion and reference.

Jonathan Judice  
Environmental Design, Inc.

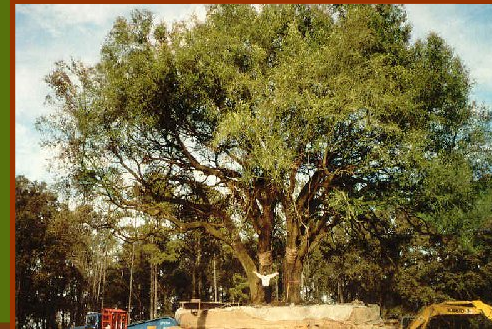
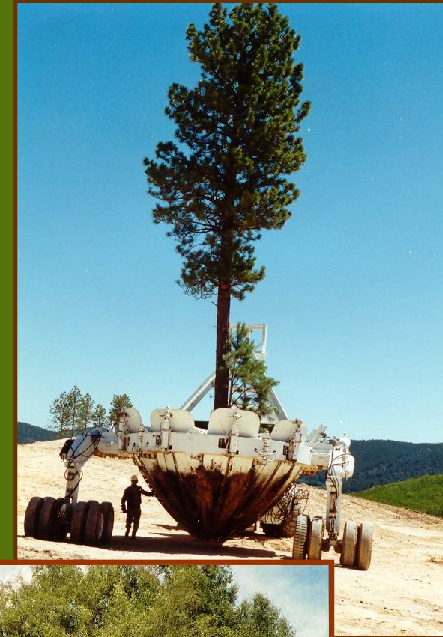


## THE TREE TRANSPLANT SPECIALISTS

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# Company Overview/History

- Environmental Design was founded in 1977
  - Original Sr. Management team remains in place
  - Headquartered in Houston, TX
  - Offices in Las Vegas, Phoenix, Atlanta, Sea Island, GA, Carmel, Austin and Dallas
- Designed and patented the world's largest on-site hydraulic tree spade
- Designed and patented the world's largest highway legal tree spade
- Developed and perfected the "roundball" tree transplanting technique used for giant tree transplanting, including the development of the pipe lifting platform, which is now industry standard
- Developed and perfected the Gantry Lift System for giant tree transplanting
- Transplanted the largest tree ever moved







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## EDI – A comprehensive tree solutions offering

- Tree Preservation
- Large to Giant Tree Relocation
- Reforestation
- Reclaimed Salvage Tree Relocation
- Tree Farm Design, Implementation & Maintenance
- Specimen Tree Supply
- Custom Growing
- Consulting Services



## Sustainable Development through tree preservation

- Benefits associated with preservation/relocations
  - Instantly Mature Landscape
  - Preserved tree canopy
  - Positive Publicity
- Avoid negatives associated with clear cutting
  - Mitigation costs
  - Difficulty in permitting
  - Clearing/Grubbing costs
  - Increased replacement landscape costs
  - Negative Publicity
  - Reduced canopy



## Our Equipment - Patented 14 Foot Hydraulic Spade

- Digs a 168" diameter rootball
- Encapsulates approximately 27 cubic yards of the essential root system of the tree to ensure survivability.
- Lifts and transports trees up to 24" in diameter and up to 90,000 pounds
- Moving up to 5 trees on site per day
- Trees transported in vertical position
- Onsite Transplants







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## Our Equipment - Patented 10 Foot Hydraulic Spade

- Digs a 120" diameter rootball
- Lifts and transports trees up to 13" in diameter and 35,000 pounds
- World's largest "street legal" tree spade
- Rear Tilt Design allows the trees to be safely transported even in the presence of overhead obstructions such as overpasses, traffic lights and utilities
- Eliminates the need for cranes, which reduces transplant cost





## THE TREE TRANSPLANT SPECIALISTS

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### Our Equipment – Conventional Spades

- Full fleet of conventional tree spades ranging in size from 42" – 100"
- Utilized for the transplant of trees from 4" to 11" in diameter
- Strategically distributed across the country at our various branch offices
- Tree Farming & Basketing
- Superior efficiency and survivability when compared with balled and burlap trees







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## Our Techniques – Tree Boxing



## Our Techniques – “The Roundball”

- 3.5 to 4 foot of rootball is encapsulated, which preserves the essential root system responsible for hydrating and feeding the tree
- Rootball diameter is determined by the caliper size of the tree
- Steel pipe is pushed beneath the rootball
- A lifting platform is created beneath the tree, which provides the least intrusive method for relocating the tree
- A crane or specialized transporter is then employed to load the tree onto a trailer in either a vertical or horizontal position, dependent upon the transport method (onsite or off)





# Giant Tree Rootball Encapsulation







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## Roundball Piping Technique





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## Our Equipment– Gantry Lift System







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### Project Types:

- Master Planned Communities
- Private estates
- Large municipal properties
- Hotels and resorts
- Mixed Use Developments
- Corporate campuses and office buildings
- Golf courses
- Public and private universities
- Public highways
- Theme parks
- Museums
- Sports venues



## Project Experience – World Trade Center Memorial - NY

Environmental Design has been awarded the tree services contract for the World Trade Center Memorial grove. The design calls for the delivery of 437 custom-grown mature trees in time for the memorial's scheduled opening in Fall, 2009.





## Project Experience – World Trade Center Memorial - NY

Temporary Box Nursery, New Jersey





## Project Experience – World Trade Center Memorial - NY

Temporary Box Nursery, New Jersey





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## EDI – A Rich History of Golf Project Experience

The Concession

Frederica Township

Kiawah Island Golf Resort

Colleton River Plantation

Pebble Beach Golf Links

Wynn Resorts

Firestone Country Club

Fallen Oak Golf Course

Tehama Golf Club

The Golf Resort at Indian Wells

Torrey Pines

Gozzer Ranch Golf Club

Preston Trail Golf Club

Bachman Springs

Four Seasons Las Colinas





## Project Experience – Wynn Resorts, Las Vegas, NV

When Steve Wynn purchased the old Desert Inn, his vision was to use the property to create a 5-star resort hotel and a world-class golf course set in a pine forest, but located on the Las Vegas Strip.



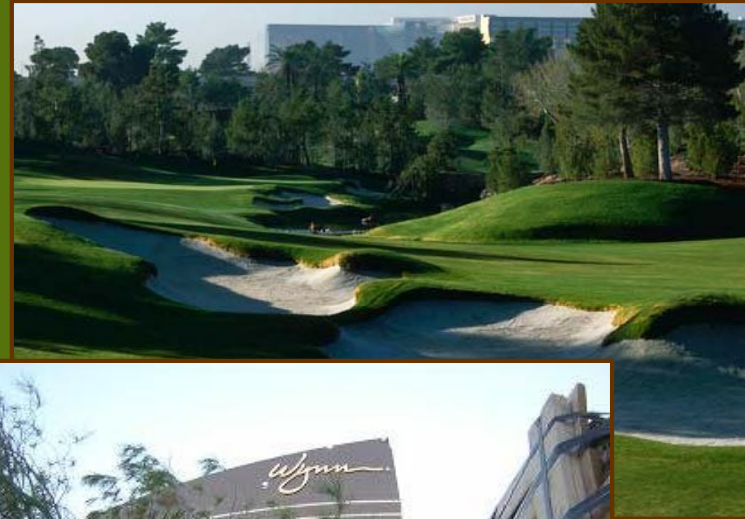


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## Project Experience – Wynn Resorts, Las Vegas, NV

Environmental Design was tasked with harvesting over 2000 trees from the existing Desert Inn Golf Course and Resort and to maintaining the trees in an on-site nursery. After the course was shaped, Environmental Design transplanted the trees back to the new golf course. Additional trees were harvested from 3 separate sites in Las Vegas by EDI and transplanted to the pine mountain and the surrounding forest that makes up the grounds of the spectacular Wynn Resort. Every tree on the property was either preserved in place or relocated at least once.







## THE TREE TRANSPLANT SPECIALISTS

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### Project Experience – Frederica Township, Sea Island, GA

The Sea Island Company's concept of a high-end Golf Community on the picturesque St. Simons Island, Georgia called for the preservation and relocation of 1000's of mature oak trees.



By maximizing the natural resources located onsite, Sea Island has become one of the more spectacular landscapes and destinations.





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## Project Experience – Frederica Township, Sea Island, GA







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## Project Experience – Frederica Township, Sea Island, GA

**The Cloister**



**Sea Island, GA**





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### Project Experience – Tehama Golf Club, Carmel, CA

Carmel Development Corporation (Clint Eastwood and partners) mapped out a plan to develop a golf course and residential properties in an ecologically sensitive region of California. To gain approval for the project, Carmel Development demonstrated a commitment to preserving the native forest by agreeing to transplant all native trees that would be affected by construction. The trees were to be transplanted to highly visible locations throughout the golf club and development.





## Project Experience – Tehama Golf Club, Carmel, CA

Guided by the developer's vision of sustainable development, Tehama was honored with the prestigious Golden Bear award in 1999 for its careful preservation of the environment. As part of that preservation effort, Environmental Design has relocated over 4,000 trees over the last 8 years.





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## Project Experience – Tehama Golf Club, Carmel, CA



Giant Coast Live Oak Relocated via Dual Crane Lift



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### Project Experience – Park Lane, Dallas, TX

Developer: Harvest Partners

Project Type: Mixed Use

Jobsite: ~20 acres

Techniques: "Roundball", Hydraulic Spades

Equipment: 120", 168" Spades

Scope: Establish a temporary nursery onsite for staging over 150 trees ranging from 8 – 20 caliper inches in advance of site demolition and earth work. Maintain the trees and relocate them a second time into the permanent landscape.







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### Project Experience – Park Lane, Dallas, TX

Over 100 additional trees were reclaimed and salvaged for other local residential and commercial projects. By finding nearby homes for these trees, EDI helped the developers to avoid mitigation costs and benefited from positive publicity associated with preserving the existing canopy.

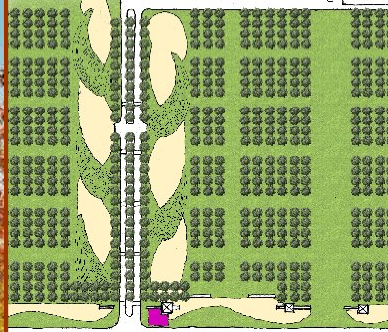




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## Tree Farming – “A Functional Amenity”







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## Value Proposition – Why EDI?

- EDI is the clear technical & practical leader in the tree industry
- 30 years of experience – with a sole focus on tree preservation and environmental sustainability
- Unmatched Transplant Success rate in the industry (98%)
- EDI Provides a Cost Effective Alternative to Clear Cutting
- Patented Equipment (Largest Hydraulic Spades in the World)
- Certified Arborists on Staff
- An impressive clientele that includes high visibility projects across the world





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For further information, please  
contact Jonathan Judice @  
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[jonathanjudice@treemover.com](mailto:jonathanjudice@treemover.com)  
Please visit [www.treemover.com](http://www.treemover.com) to learn  
more about our industry leading  
product and service offering.