



Mega Tree Build; Imagination to Reality!

Mark "Zman" Zembruski
www.WoodinvilleWonderland.com



Mega Tree Build; Imagination to Reality!

Disclaimer:

This class is not about lighting technology, software or hardware that would be implemented within a Mega Tree. It will however reference certain aspects as it pertains to the design and consideration of implementation

It is going to explore from the ground up, what types of frames are typically used, questions to ask yourself about your Mega Tree, and what needs to be considered to safely implement a Mega Tree in your Display

What is a Mega Tree?

- Bueller?..... Bueller?
- Is it Conical? Is it Flat?
- Is it Squatty? Is it Slender?
- Is it **RGBW**? LED? Incandescent?

It Can Be..... However....

- Major investment and addition to Display
 - Time and \$\$
- Centerpiece or focal point of Displays
 - Serve as an anchor for vignettes
- In reality, its just a **BIG** Tree
 - Your Implementation... and Execution..... makes it **MEGA!**



Agenda

- Overview
- Location / Focal
- Size has an impact
- Structures
- Ground UP! - The Base
- Base Ring
- Topper
- Pixel Strips
- Safety
- My Tree(s)
- Resources

Mega Tree Overview

- 3 Structure Categories
 - Center Pole Trees
 - Frame or Barrel Trees (hollow center)
 - Flat / 2D / Ribbon Trees
- Conical circumference
 - 180 - 270 - 360 degrees
- Height = 10' to "Infinity!.... And Beyond!"
- Any light technology can be used
 - RGB/Pixel
 - LED (M5/M6/C6)
 - Rope (Incandescent or LED)
- Several different "implementations"



Mega Tree Location / Focal

- What visual impact do you want for your Tree?
- Premier Feature? Will it be a Centerpiece for vignette or Standalone?
- How large is your yard?
- How does this stand against your house? Or up against your house
- Will it be stationary or moving it year to year?
- These questions will have an impact on.....



Mega Tree Size

- Viewing distances needs to be considered
 - On sidewalk in front (short distance)
 - On street or parking (long distance)
- Fullness/density of the tree
 - Determines the number of strings/strips
 - Determines controller channels or ports
- Light string lengths need to be considered
 - M5/M6 50ct string at 4" spacing = 17ft
 - RGB pixels strips
 - 50 Pixels at 2 inch spacing = 8.3ft
 - 100 Pixels at 1 inch spacing = 8.3ft
 - 100 pixels at 1.5 inch spacing = 12.5ft
 - 100 pixels at 2 inch spacing = 16.6ft
 - Impact on power injection
- Base Ring diameter



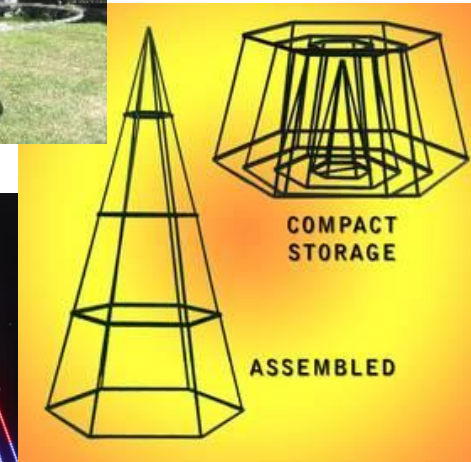
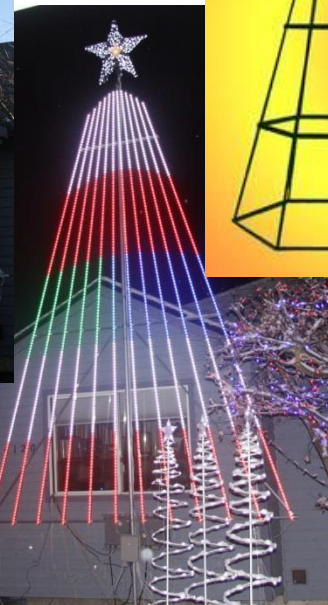
Mega Tree Structures

- Center Pole
 - Supported upright post
 - Steel, Galvanized, Water Pipe, Fencing, EMT, Flagpoles, Truss, Radio towers



- Conical Frame/Barrel

- Concentric rings
- Steel, EMT, PVC
- Garland accent



- 2D Flat / Ribbon
 - Aluminum
 - Space restrictions



Mega Tree Structures

NOTE on PVC

It is the instructor's opinion, that a PVC center pole design should not be considered. That is not to say it has not been attempted and successful, till its not. I did, and in 2006, I had a failure in its 3rd Season, that forced me to re-do my support and Post. It then lasted several more seasons till I went to an RGB Tree. After the failure, the "Post" was re-enforced with an EMT insert for strength.

My frame also was not a true Center Pole design. This was an original Christmas Light Show, 10ft PVC Mega Tree Plan. It was modified to 12ft

PVC can absolutely be used for a Conical/Barrel Tree or vertical upright frame with high confidence for success



Mega Tree Ground UP! - The Base

- Decision time; Permanent or Portable?
 - In ground
 - Frame
 - Portable Hole
 - Upright Pole Support
 - Threaded
 - Sleeved



5 - Way
Cross



Mega Tree Base Ring

- Provides the Mega Trees:
 - Profile for the "cone" shape
 - Aspect ratio is 2:1 or less
 - Attach point for light strips or strings
- Needs to be **interfaced** to the ground
- Needs to be centered/aligned with Center Pole
- Compensate for yard slope
- Many different implementations, DIY, Custom or ready made [Mattos Designs](#)
 - Bent PVC or EMT
 - Professionally bent aluminum or galvanized
 - Trampoline frames

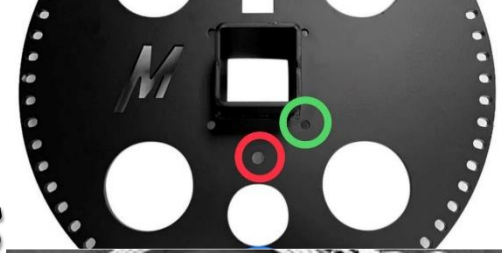
Mega Tree Base Ring

- Strip or string Attachment
- Tensioning
 - J-Hooks
 - Bungee cords
 - Turnbuckle



Mega Tree Toppers

- A.K.A. Hook Head
- Many types; DIY & Off the Shelf
- Slide or hard mount (fixed)
 - Slide = winch; ensure sufficient lift capability
- Consider the weight if steel
- Consider the weight of the lights and the downforce from lights
- 180 or 360 degrees to match tree style



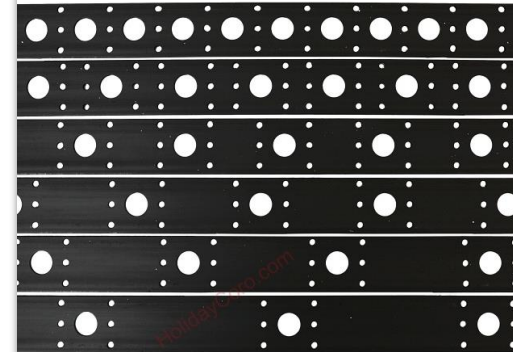
Mattos Designs



Mega Tree RGB Pixel Strips

[Boscoyo](#)
[MISR](#)

- Pixel Strips are sold in bulk rolls by most pixel vendors
- User can cut to length or vendor can cut for you
- Spacing between nodes can be created by end user or vendors supply different spacing to include custom order spacings
- Strips should be re-enforced at the top and bottom holes connecting to Topper and Base Ring



Sample Sizes Shown - Available From .7" to 8" Inches



[Gilbert](#)
[Engineering](#)
["T" Hook](#)



Mega Tree Safety



- Each year there are tales of woe as Mom Nature can be a bitch....
- Preserve your investment
- Do it **RIGHT** the first time!
- Over design and do not cut corners



Mega Tree Safety

- Securing your investment is a 3-legged stool:
 - Base
 - Guy Wires
 - Anchors
- Do not skimp in this area!



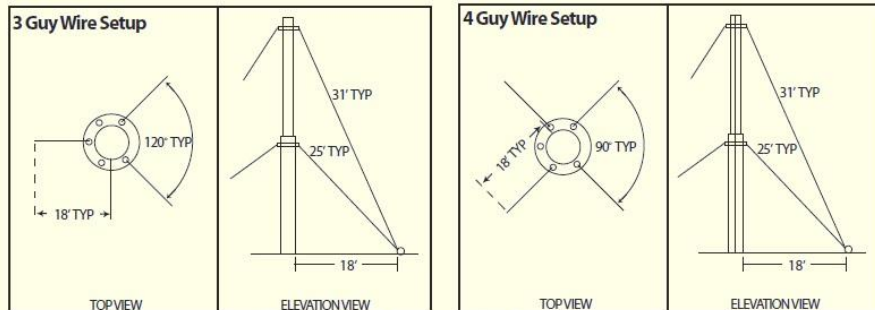
Mega Tree Safety

- **Guy Wires**
 - Wire rope/cable or Kevlar rope (non-stretch)
 - Ensure adequate size cable for loads
 - Ensure adequate attach points to Center Pole
 - 3 or 4 wire set up
 - Depending on center pole height, 1 or 2 points may be needed
 - Consider using turnbuckles
 - Tie a ribbon on the cable at eye level so as not to walk into them



Wire Cable Tensile Strengths

- 1/16" - 96# Working Load - Breaking 480#
- 3/32" - 184# Working Load - Breaking 1000#
- 1/8" - 840# Working Load - Breaking 2000#



20 Foot Mast Recommended guying above



Mega Tree Safety

- Guy Wire technique for limited space;
 - “Monkey Bars” can be used
- Walter Monkhouse has a great presentation delivered at Christmas Expo in 2018 that has a **WEALTH** of data and input for guy wires and anchors. If interested, I have an edited copy and can provide it to you.

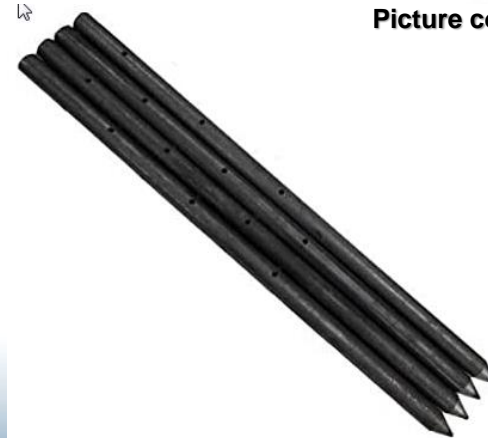


Mega Tree Safety

- Anchors & Techniques
- Be sure you take into account your soil and weather conditions
- [American Earth Anchor - Penetrator](#)
- Custom EMT straps with hole large enough to use Penetrators
- Rebar / Concrete form stakes
 - Rebar "X" wired together
 - Concrete stakes can be customized with eye loops



Picture courtesy Tom Gore



Mega Tree Safety

- Anchor (Con't)
 - Auger Ground Anchor
 - Spiral Ground Anchor
 - Ratchet Straps or [Mattos Anchor Ease Kit](#)
 - Tent stakes
 - We look forward to your post in the future!
- Where the tops are out of the ground, paint or cap, they are trip hazards



Mega Tree Safety



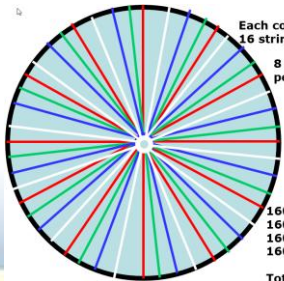
- If you're not sure of your utilities, call **811** before you dig or screw!
- This could add significant cost to your Mega Tree budget!

My Mega Tree(s)



**Original Vertical
Mega Tree
12ft**

**RGBW LED strings
32 LOR Channels**



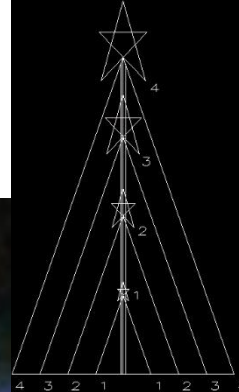
Each color has
16 strings
8 channels
per color
1600 Red
1600 Green
1600 Blue
1600 White
Total Lights: 6400



**RGB/Pixel Tree
15ft - 270 Degree
15 Universes
56 50ct strips,
2800 nodes
2 Advatek
controllers & nodes**



**Icicle Tree
14ft
RGBW
Super Strings
32 LOR
channels
11760 M6 LEDs**



**Spiral Tree
11ft
16 LOR Channels
1600 M6 LEDs**



**Concentric Tree
"Tree w/ Tree"
12ft
4 LOR Channels
3100 M5 LEDs**



Mega Tree Resources

- Monitor forums and FB pages for display liquidation sales
- Pixel Tree Calculator - [Light Show Hub](#)
- EMT Bending - [Woodinville Wonderland](#)
- Mega Tree Kits/Parts/Accessories
 - [Mattos Designs](#)
 - [Christmas Light Emporium](#)
 - [3G Lighting Creations](#)
 - [Boscoyo](#)
- How To Videos;
 - [Learn Christmas Lighting](#)
 - [Monkhouse ASAP](#)
 - [Counter Holiday Lights](#)



Questions?





Thank You For Attending we
hope you enjoyed the 2023
Christmas Expo Experience

Presentation can be found at
Woodinville Wonderland
www.WoodinvilleWonderland.com

Thanks to Lorne Counter - Counter Holiday Lights and Walter
Monkhouse for collaboration on this material

Mark Zembruski
modec@frontier.com

Mega Tree Backup

