



**Session 1: The Green Garage--How to Make  
Your Garage More Sustainable**

**July 15, 2020**





<https://www.sustainablefleetexpo.com/>





## Next Series Dates & Topics:

**July 29:** Electrification of Regional Haul Trucking featuring North American Council for Freight Efficiency (NACFE)

**August 12:** Natural Gas + Propane: Trends, Applications & Success Stories for Gaseous Fuels

**August 26:** The Evolving World of Telematics: Real-Time Information for Fleet Performance

**September 09:** Green Fleet Award Winners 2020 Announcement



# Format

- Q&A at the end
- Submit questions and comments to “Panelists”
- Scheduled for 2:00p-3:30p
- Can go beyond, if interest remains
- Slide handout
- Recording



**Sustainable Fleet Technology Virtual Conference Series:  
The Green Garage--How to Make Your Garage More Sustainable  
July 15, 2020**

- 2:00-2:10 **Rick Sapienza & Tom C. Johnson, NC Clean Energy Tech Center & 100 Best Fleets—Welcome**
- 2:10-2:20 **Courtney Bozic, Chief Judge Green Garage Contest, Clean Fuels Consulting**
- 2:20-2:35 **David Dunn, Division Manager, Fleet & Facilities Management Division, City of Orlando FL**
- 2:35-2:40 **Mike Woodfall, Sales & Commercial Lead, Biosynthetic Technologies**
- 2:40-2:55 **Mike McColgan, Fleet Service Coordinator, City of Cheapeake**
- 2:55-3:00 **Chaz James, Building & Project Design Consultant, Legacy Building Solutions**
- 3:00-3:15 **Mark Stevens, Fleet Manager Department of Public Works, City of Sacramento CA**
- 3:15-3:30+ **Q&A**





Rick Sapienza

[resapienza@ncsu.edu](mailto:resapienza@ncsu.edu)

Phone: 919-515-2788

- **Clean Transportation Program Director NC Clean Energy Technology Center at NC State University**
- **8 years with NC State**
- **30+ years experience including General Motors, Draper Lab and Great Lakes Pulp & Fibre in both engineering and business management roles**



# The 100 Best Fleets in the Americas



Tom C. Johnson,  
author of *Green Fleet Awards™*  
and *100 Best Fleets in the Americas™*

5407 Diamond Heights  
San Francisco, CA 94131  
[www.the100best.com](http://www.the100best.com)  
415-285-8391 | [tom@the100best.net](mailto:tom@the100best.net)





- Environmental Scientist w/ more than 30 years experience
- Principal Consultant at Clean Fuels Consulting since 2003
- 20 years experience with clean transportation strategies and technologies
- Chief Judge for the Green Fleet Awards, involved for 13 years
- Chief judge for newly launched Green Garage Contest with *lighter* spin on highlighting sustainable fleet and garage practices

R. Courtney Bozic  
[chinchinb@yahoo.com](mailto:chinchinb@yahoo.com) or  
[Courtney@greeningyourfleet.com](mailto:Courtney@greeningyourfleet.com)  
631-665-6513  
[www.greeningyourfleet.com](http://www.greeningyourfleet.com)







- Contest currently open
- Information & application on [www.The100BestFleets.com](http://www.The100BestFleets.com)
- Application deadline October 05, 2020



**David L. Dunn, CFM**  
**Division Manager**  
**Orlando Fleet**  
**& Facilities**



**I have**  
**51 yrs. in**  
**Fleet Ops**



**to a County Govt. fleet**  
**1971 - 1974**  
 Brevard County Schoolboard



**1975 - 1981**  
**to a US Navy fleet**



**to an Aerospace fleet**  
**1978 - 2006**  
**2006 - Present**  
**to City of Orlando fleet**



**My Path**

**1959 - 1966**



**from a farm**

**The early days**  
**1953 - 1959**



I am the 100 Best Fleet Manager recognized at the White House by the President of the United States for the City's environmental practices. To learn more about why we were recognized see:



# The Green Garage: How to Make Your Facilities More Sustainable



Even old dogs can learn new tricks with the Green Garage Webinar Series!



# Fleet & Facility Sustainability requires change.

For change to occur we hope to travel

from



to: **Where we**

**Where we are. .**

**want to be!**

Copyright 2004 by Randy Glasbergen.  
www.glasbergen.com

Often where we start.....



Often where we end up.....



**"I want you to find a bold and innovative way to do everything exactly the same way it's been done for 25 years."**



It is change, continuing change, inevitable change, that is the dominant factor in society today.

No sensible decision can be made any longer without taking into account not only the world as it is, but the world as it will be.

Isaac Asimov

Lesser known...

“Never let your sense of morals get in the way of doing what's right.”

“The most exciting phrase to hear in science, the one that heralds new discoveries, is not 'Eureka!' but 'That's funny...’”



Green Works Orlando!



Orlando's legacy of a Sustainable Footprint is already well defined; but never finished!

Green Works Orlando clearly defines change and the world as we want it to become.

If you take nothing else away from my presentation take this the FOUNDATION of Orlando's Green Garage & How to Make Your Facilities More Sustainable begins with ↴

City of Orlando



[www.cityoforlando.net/greenworks/](http://www.cityoforlando.net/greenworks/)



## SOLID WASTE



Orlando uses technologies that allow for recycling or energy development for most of our waste.





## GREEN ECONOMY



Orlando is a hub for green companies and green jobs that benefit the environment or conserve natural resources.





# Green Works Orlando Goal 5:

## Run City Fleet Vehicles on 100% renewable sources by 2030

ELECTRIFY MY FLEET!



All purchases of materials and consumables are scrutinized to verify fit into our Sustainable Purchase Policies.\*\*

If something can be recycled, we are already doing it.\*\*

**We just began the recycle of textile products.**

Warranty Provider Programs & Training keep your team on the Sustainability leading edge. \*\*

Can I say use Alternative Fuels enough? No I can't!\*\*

Oh My!

A big part of the [Fleet & Facilities Management Division](#) solution is to further electrify the Fleet & expand/deploy more Solar.

**We have two motor pools with 80% of the vehicles EV's.**



\*\* = It's in [www.cityoforlando.net/greenworks/](http://www.cityoforlando.net/greenworks/)

# Current On Road Inventory



Waiting to order  
100 Ford F-150's  
(Rivian Tech)

Two ANG F-150's  
Inbound now

# of Vehicles	Type		Percentage of Fleet
1500	E85 compatible vehicles		56.97%
530	Bio-Diesel compatible vehicles		20.13%
2	Bio-Diesel refuse trucks		0.08%
68	CNG refuse trucks		2.58%
2	Terminal Tractors		0.08%
37	All Electric LSEV	PEV	1.41%
1	Adomani Van Chassis	PEV	0.04%
4	Electric Motorcycles	PEV	0.15%
18	Propane/LP gas		0.68%
1	2009 Hybrid Ford Escape's		0.04%
10	Eco-Boost Ford F150's		0.38%
12	Eco-Boost Ford Escape's		0.46%
24	Eco-Boost Ford Fusion's		0.91%
1	Eco-Boost Ford Expedition		0.04%
15	Nissan Electric LEAF's	PEV	0.57%
30	Chevy Bolts	PEV	1.14%
1	Ford Focus C-Max	PHEV	0.04%
5	Chevrolet Volt	PHEV	0.19%
4	Hybrid Ford Fusion's		0.15%
72	Toyota Camry Hybrid's		2.73%
2,337			
2,633	Total number of On Road vehicles in the Fleet		
89%	Of Fleet has some form of an Alternative Fuel or Propulsion system		



[www.driveEVfleets.org](http://www.driveEVfleets.org)

# What will your Mechanics be working on in 20 years? Change is an unstoppable force!



City of Orlando

# What could your Future Fleet look like? Probably no autonomous rockets, but...



### Transform Your Fleet

DANNAR Mobile Power Stations<sup>®</sup> have the **Power to Transform** your fleet, by replacing many single-use work vehicles with a multi-functional, zero-emissions, configurable platform for your daily maintenance and emergency

### Transform Your Community

DANNAR Mobile Power Stations<sup>®</sup> have the **Power to Transform** your community and its air quality by providing zero-emissions heavy-work vehicle, solar-powered and configurable, to meet event, seasonal, maintenance and

One platform and multiple transformations



DANNAR Mobile Power Station





Why do they  
call it the  
H-Bldg?

# Expanding solar deployments!

Current 10 acre  
Site Conditions:

Solar Array  
produces 420 KW  
feeding directly into  
Orlando Utilities Commission Grid

Our Stand-By Generator  
produces 500 KW  
when land power fails

The new array will produce an  
additional 250 KW



**KMF**  
ARCHITECTS

**SGM**  
ENGINEERING

**Every newly constructed building must be Solar Ready!**



# Phase 1



4Q18 we began the expansion of the Solar Array to make our ten acre site Net Zero even though we operate from 6 AM to 10:30 PM.

We will charge 32 EV Motor Pool units from the new Solar as well.

[www.cityoforlando.net/greenworks/](http://www.cityoforlando.net/greenworks/)



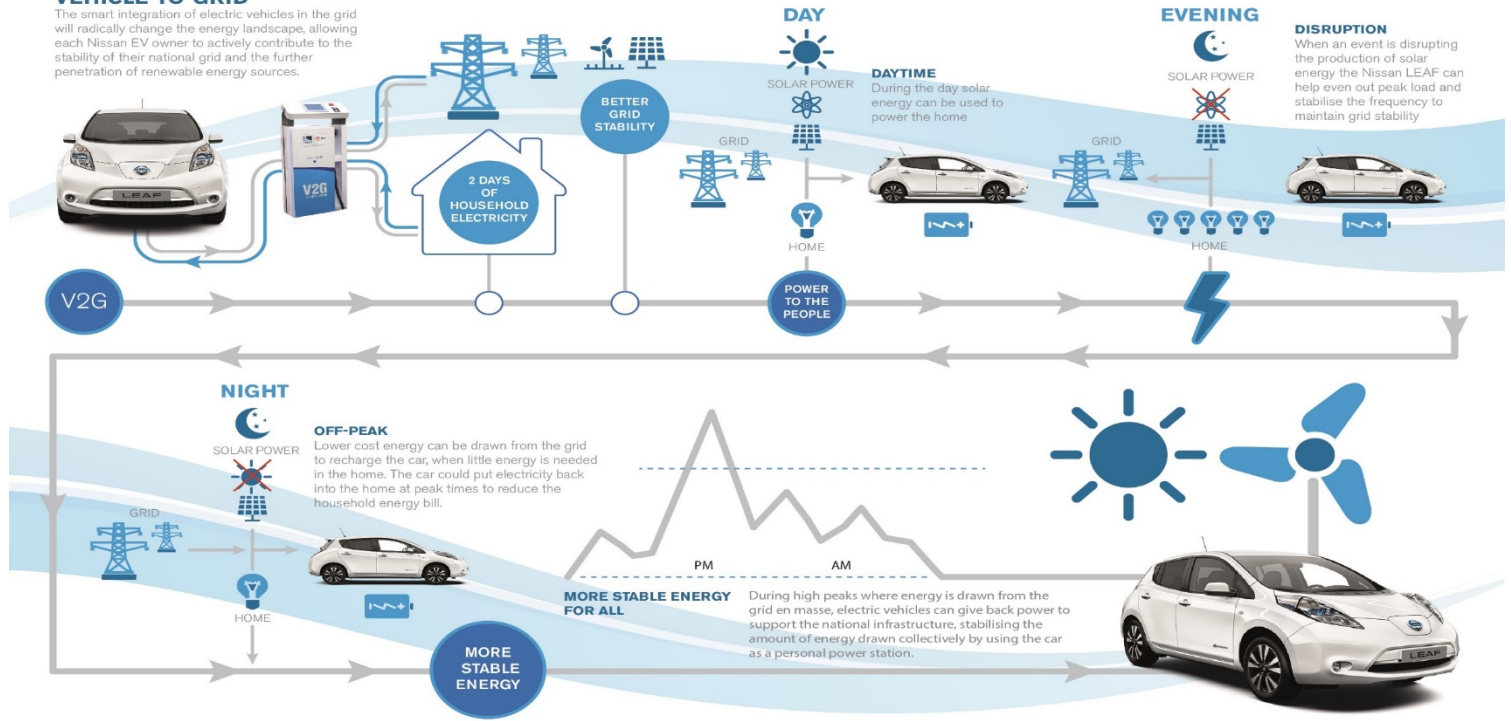


# POWER TO THE PEOPLE

NISSAN'S VISION FOR THE ENERGY GRID PUTS THE POWER IN YOUR HANDS

## VEHICLE-TO-GRID

The smart integration of electric vehicles in the grid will radically change the energy landscape, allowing each Nissan EV owner to actively contribute to the stability of their national grid and the further penetration of renewable energy sources.





# ENERGY STORAGE



Talking with GE and Rivian now.

# Phase 2 discussed with Gordon yesterday.



<http://www.gosolar.us.com/>



ORLANDO

## In addition to Phase 2, City Commons Parking Garage 16 unit Pilot

**Cindy & Gordon Baier**

**cel. 636 - 614 - 4416**

**tel. 636 - 681 - 1469**

**fax. 636 - 681 - 1401**

**GoSolar, LLC**

**100 Chesterfield Business Pkwy, Suite 200**

**Chesterfield, MO, 63005**



<http://www.gosolar.us.com/>



From where we are . .

To where we want to be!



Fleet touches everything, so get out of the “Old Way” box and prepare for your Sustainable future!





Service  
Writer



CITY OF ORLANDO  
Off World M & R  
Facility

Call me if I can help.  
I'll be in the Green Garage if you need me.



**GREEN WORKS  
ORLANDO**



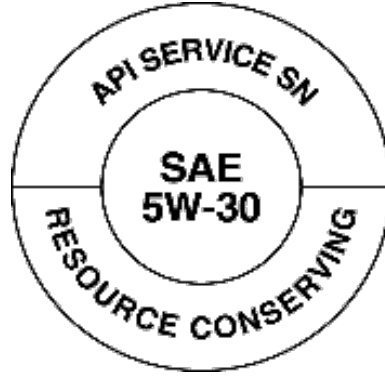
and there is so  
much more...

407.246.3873 Office  
321.231.2904 Cell



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Let us Help you Green your Fleet!



Please contact:

- Mike Woodfall
  - [mwoodfall@biosynthetic.com](mailto:mwoodfall@biosynthetic.com)
  - 1(281) 419-8924

Or visit:

- [www.biosynthetic.com/motoroil](http://www.biosynthetic.com/motoroil)





**BIOSYNTHETIC<sup>®</sup>**  
TECHNOLOGIES





# Biosynthetic® Motor Oil:

- Delivers Performance Benefits
  - Cleaner Engines
  - Improved Fuel Economy
  - API Certified
- Delivers Environmental Benefits
  - Feedstocks are
    - Renewable
    - Non-Toxic
    - Biodegradable
    - Bio Based
    - Non Bio-accumulative
  - USDA BioPreferred Certified



# 3%

FUEL ECONOMY GAIN\*

## CAN YOUR BASE OIL DO THAT?™

THE CLEANEST ENGINE POSSIBLE AND A CLEANER ENVIRONMENT

Based on the Mercedes Benz M111 fuel economy test using an ILSAC GF-5 certified SAE 5W-30 formulation with 35% Biosynthetic Base Oil

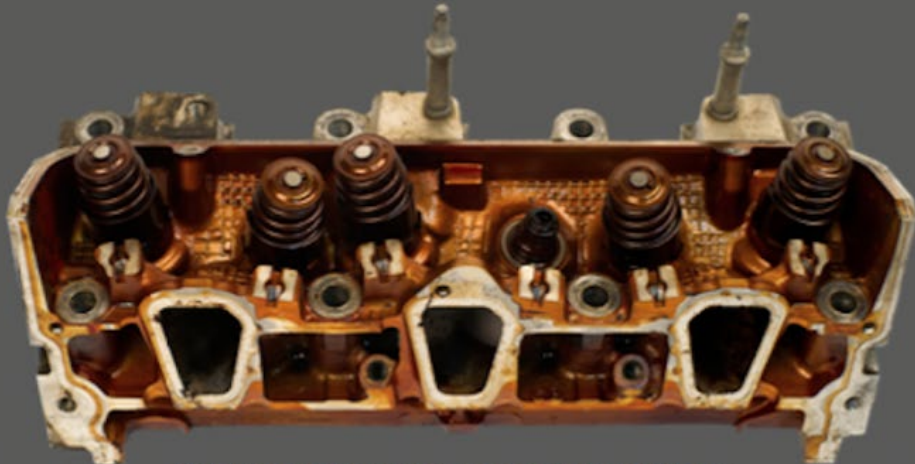


# THE CLEANEST ENGINE POSSIBLE AND A CLEANER ENVIRONMENT

LAS VEGAS FIELD TRIAL PHOTOS  
ENGINES FROM TAXIS TRAVELING 150,000 MILES



*BIOSYNTHETIC MOTOR OIL*



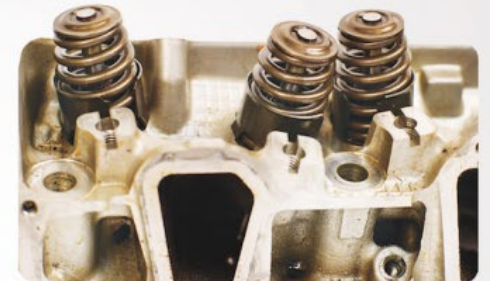
*CONVENTIONAL PETROLEUM BASED MOTOR OIL*

# BIOSYNTHETIC™ BASE OIL

Las Vegas Taxi Field Trial - 150,000 Miles



Typical Petroleum Motor Oil



Biosynthetic Base Oil + Group III Blend

## CAN YOUR BASE OIL DO THAT?™

The field trial included:

- Engines run for 150,000 miles with identical oil change intervals
- Common base oil additives were used in both engine oils

The difference?

One engine ran motor oil formulated with an equal blend of Group III base oil and Biosynthetic Base Oil

**THE CLEANEST ENGINE POSSIBLE AND A CLEANER ENVIRONMENT**

ENVIRONMENTAL  
BENEFITS



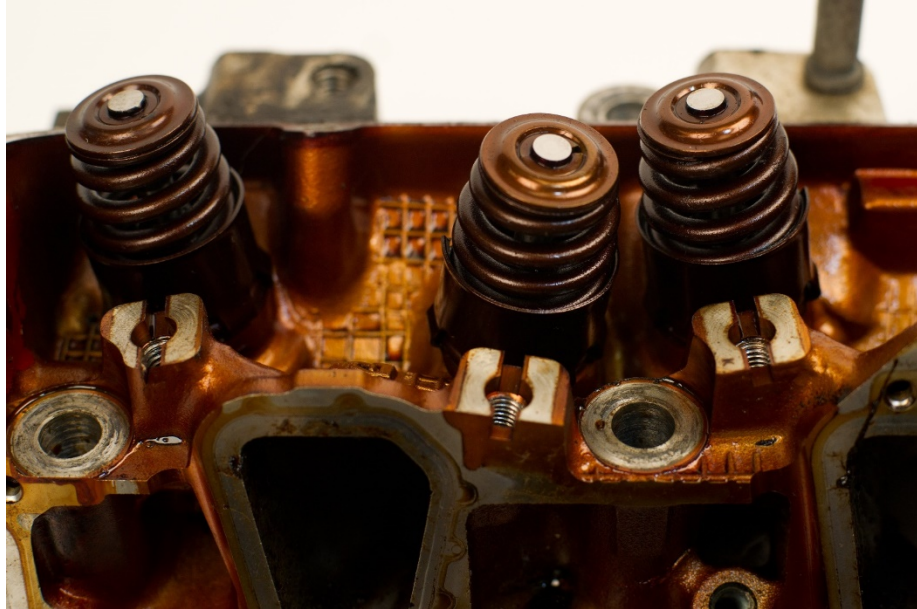
Biosynthetic™  
TECHNOLOGIES  
[biosynthetic.com](http://biosynthetic.com)

INDUSTRY

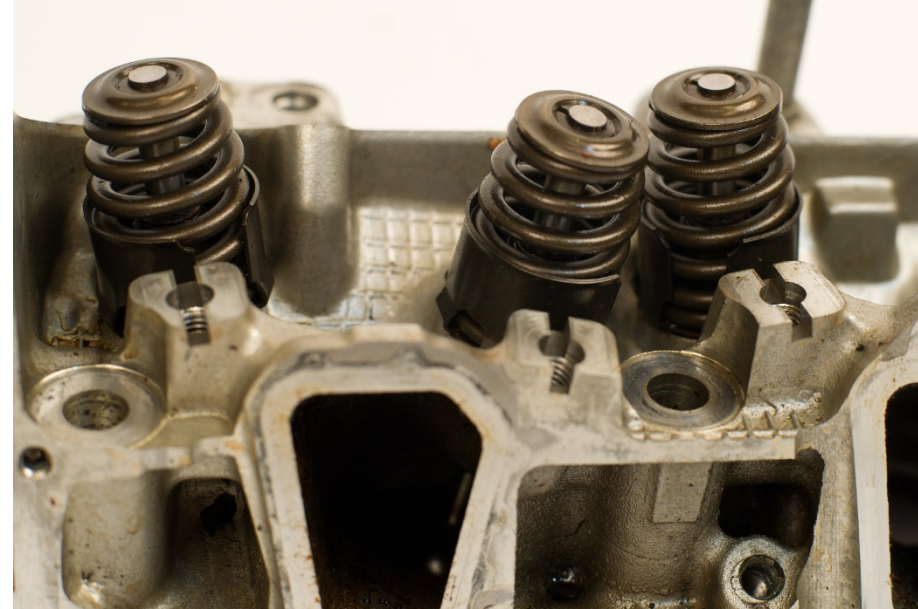


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## Engines run on estolide based formulations had far less varnish



Commercially Available Mineral Oil  
Based Motor Oil



Biosynthetic® Motor Oil

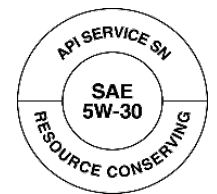
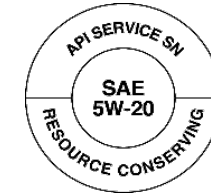


Now Available on  
Amazon.com

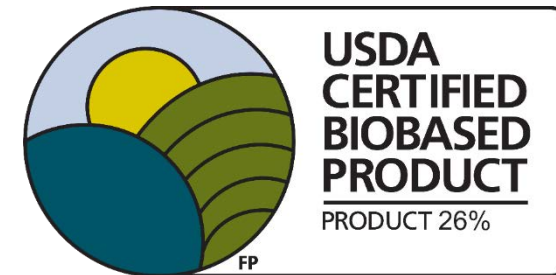


## Full Synthetic Engine Oil

- Approved by the American Petroleum Institute (API)
  - API SN-RC certification on a 5W-20 and 5W-30 motor oil
  - 5W-20 and 5W-30 grades represent 79% of all motor oil sold in the U.S.



- BioPreferred Certified



A federal purchasing program that provides purchases with a list of products that have been vetted by the federal government to be biobased.

*Stay Connected!*

Linked IN

[www.linkedin.com/company/biosynthetic-technologies](http://www.linkedin.com/company/biosynthetic-technologies)

Twitter

[www.twitter.com/BiosyntheticT](http://www.twitter.com/BiosyntheticT)

Website

[www.biosynthetic.com](http://www.biosynthetic.com)

Blog

[www.biosynthetic.com/media](http://www.biosynthetic.com/media)

For samples visit [www.biosynthetic.com](http://www.biosynthetic.com)

DELIVERING INNOVATIONS  
FOR A SUSTAINABLE  
FUTURE



Michael McColgan

[mccolgan@cityofchesapeake.net](mailto:mccolgan@cityofchesapeake.net)

- Fleet Service Coordinator for City of Chesapeake VA, 19 years
- Involved with vehicle specification and procurement, Virginia Contract Officer certified
- Long history in transportation and vehicle service, including 20 years with Ford as HD Technician and Service Manager
- Started career in US Army, served 6 years working as a wheel vehicle mechanic







*City of*  
**CHESAPEAKE**  
*Virginia*



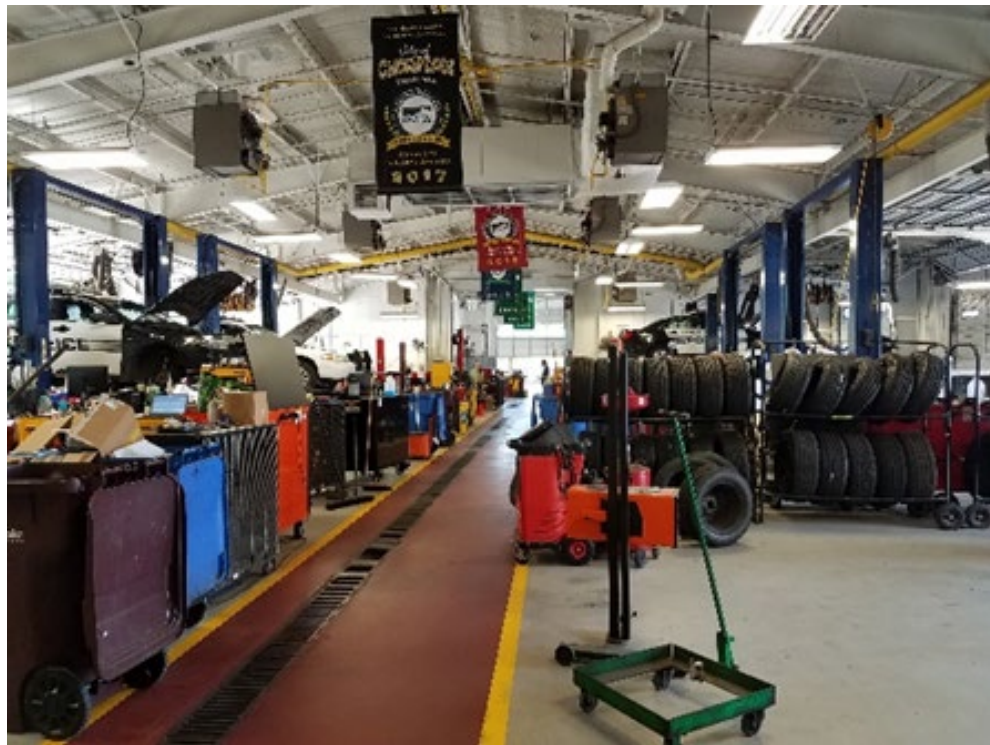


City of  
**CHESAPEAKE**  
Virginia





City of  
**CHESAPEAKE**  
Virginia



*Tension Fabric Structures*

# PRESENTER

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CHAZ JAMES

Building + Project Design Consultant

**CUSTOM TENSION FABRIC BUILDINGS**

# INNOVATIVE STORAGE SOLUTIONS

**PRESENTED BY**

Chaz James  
Legacy Building Solutions



*Tension Fabric Structures*

# LEGACY BUILDING SOLUTIONS

---

100+

Years of combined leadership  
experience in the industry

MILLIONS

Of square feet sold and installed

2010

Founded in South Haven, MN





**IN-HOUSE DESIGN,  
ENGINEERING,  
MANUFACTURING +  
INSTALLATION**

Vertically integrated for  
quality control and timing

ISO 9001:2015  
certification, AWS, CSA A660  
certification, CWB certified,  
Florida Product Approval



**COMPLETE  
CUSTOMIZATION**

Size, clearance

Architectural features



**PROVEN  
ENGINEERING**

Rigid steel frame with a  
superior building envelope

All structures designed to  
site-specific criteria



**FOCUS ON  
INNOVATION +  
QUALITY**

Patented technology for  
the attachment of fabric to  
a rigid steel frame

Safer, faster installation



*Tension Fabric Structures*

# COMPLETELY CUSTOMIZED

- Rigid I-beam frames
- Proven engineering
- Adherence to building codes
  - Seismic activity
  - Snow loads
  - Wind load, etc.

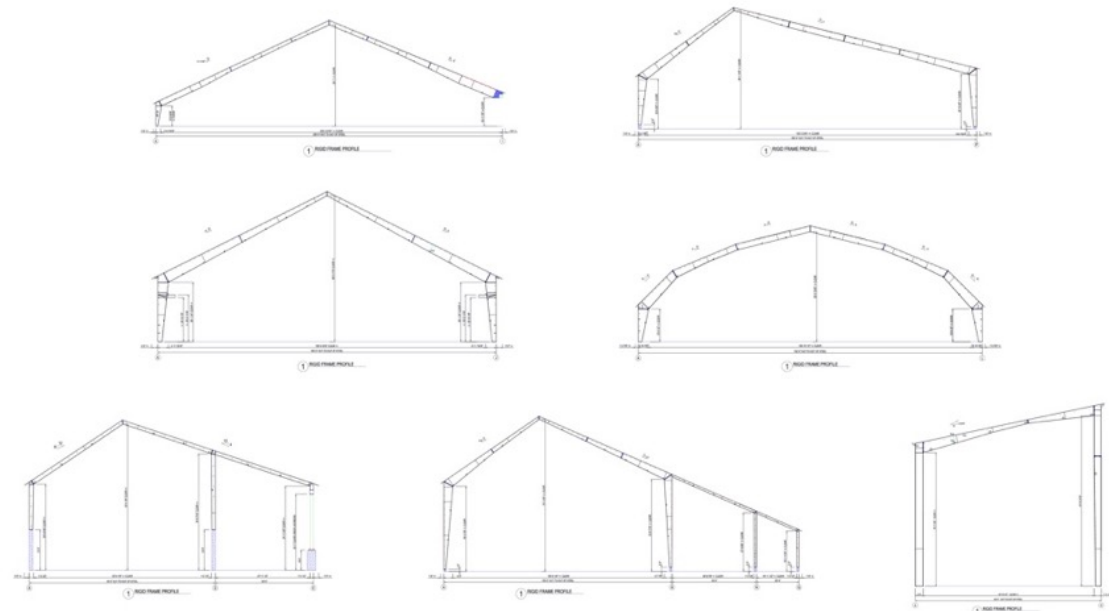




Tension Fabric Structures

# COMPLETELY CUSTOMIZED

- Engineered for your specifications and site conditions
- Customization options
  - Balconies
  - Mezzanines
  - Overhangs
  - Soffits
  - Lean-tos



*Tension Fabric Structures*

# EXXOTEC™ FABRIC

- Self Cleaning PVC with high tensile strength and long-term weathering
- Cost competitive with PE and other PVC fabrics while providing significantly better strength and performance characteristics
- Excellent performance in UV resistance
- Allows natural light through while reflecting heat
- Exclusively available from Legacy Building Solutions



# ENVIRONMENTALLY SUSTAINABLE



- Natural light equals fewer lights installed and powered, lower energy costs
- No reverberation for superior acoustics
- Our fabrics have a white underside providing superior light reflection for a better lit interior



- Stays cooler in summer and warmer in winter
- Wider and taller structures with freespan space
- Seamless roof construction with no penetrations, which eliminates leaks
- Relocatable



- Installed in 1/3 the time – faster return on investment
- Minimal maintenance requirements
- 1/5 cost of roof replacement
- Single source engineering, manufacturing & installation

*Tension Fabric Structures*

# LEGACY BUILDING SOLUTIONS

- Complete Customization
- Reduced Construction Timelines
- Proven Engineering
- Full-Service Installation
- Lower Life-Cycle Costs





*Thank You!*

**CHAZ JAMES**

Building + Project Design Consultant

320.267.8720 | [cjames@legacybuildingsolutions.com](mailto:cjames@legacybuildingsolutions.com)



Mark Stevens

[mstevens@cityofsacramento.org](mailto:mstevens@cityofsacramento.org)

916-808-5869

- Fleet Manager City of Sacramento CA
- Started career with Detroit Edison
- Previous fleet manager positions with Pompano Beach FL, Asheville NC
- Innovator and technology champion enhancing fleet operations for efficiency and sustainability
- 2020 Public Sector Fleet Manager of the Year, #1 Green Fleet Award Winner 2019 & #2 Green Fleet Award Winner 2018 100 Best Fleets
- BSME Purdue University

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Fleet Management



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Your Garage More Sustainable**

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