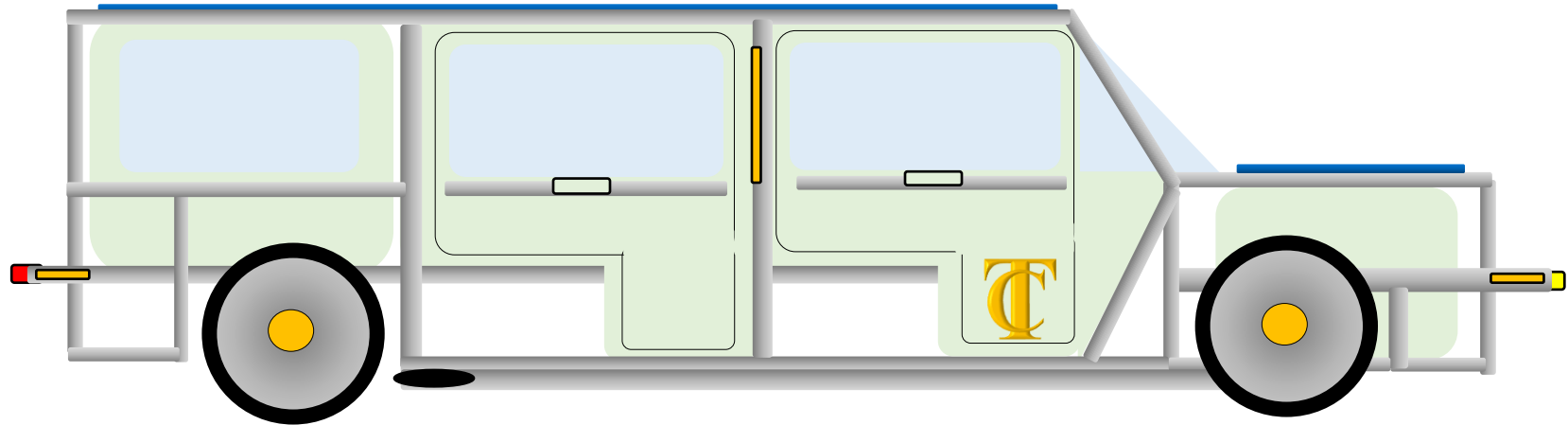


Tube Car *The Pod-Mobile*

Exposed Bicycle-Motorcycle Framing Principle for Automotive Light Weighting, Simplification, Damage Resistance, Ease of Repair

William C. Patterson, Met.E., M.B.A., Ph.D.

Side View One (Front Drive)



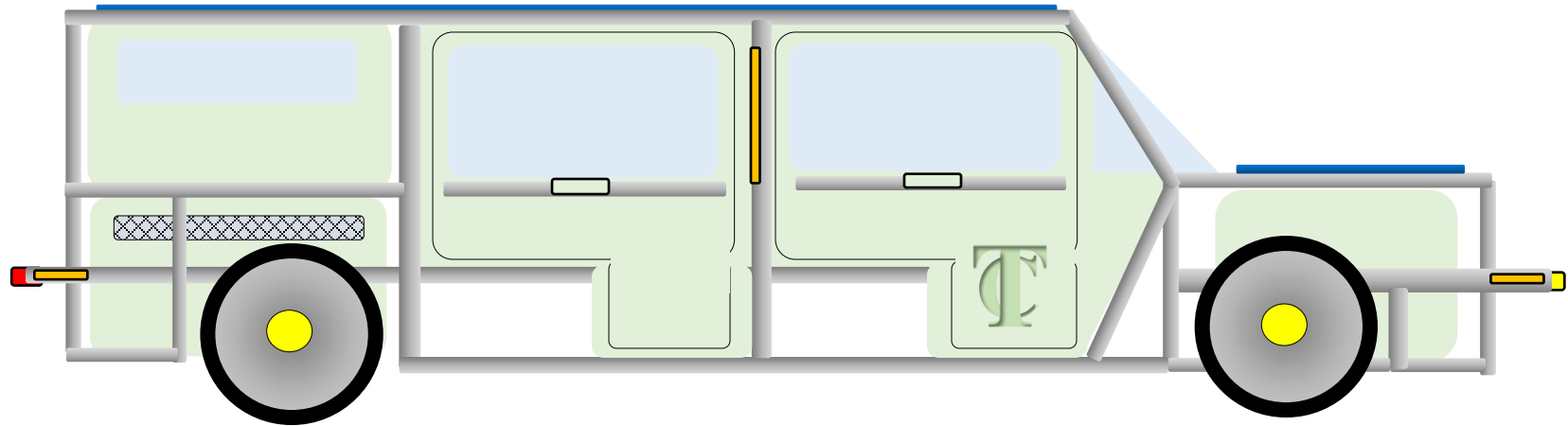
Soundproof Weatherproof Drop-In Swappable Engine Pod (Al or FRP)
Soundproof Weatherproof Drop-In Swappable Cargo Pod (Al or FRP)
Soundproof Weatherproof Drop-In Swappable Passenger Pod (Al or FRP)
Fingerprint Entry Via Side-Guard Lift Handle
Center-Lit Safety Wheels (Amber)

Solar Panel Roof & Hood Blocks Sun Heat and Generates Free Power (300W)
Dual Batteries (Main + Auxiliary) Avoid Stranding
Lake Pipe Exhaust with Easy Side Access for Inspection & Replacement
Resilient Polymer-Rubber 6-Dimensional Pod Suspension
Flex Shaft Drive Wheels

Tube Integral Lighting & Wiring (Headlights, Taillights, Parking Lights, Running Lights)

Airstream Flows Smoothly Over Rounded Content Pods Mounted to Drag-Free Tubular Aluminum Exoskeleton
Cooler Passenger Compartment, Less Drag, Wide-Open Access for Cleaning & Maintenance

Side View Two (Rear Drive)



Soundproof Weatherproof Drop-In Swappable Engine Pod (Al or FRP)
Soundproof Weatherproof Drop-In Swappable Cargo Pod (Al or FRP)
Soundproof Weatherproof Drop-In Swappable Passenger Pod (Al or FRP)
Fingerprint Entry Via Side-Guard Lift Handle
Center-Lit Safety Wheels (Yellow)

Solar Panel Roof & Hood Blocks Sun Heat and Generates Free Power (300W)

Dual Batteries (Main + Auxiliary) Avoid Stranding

Resilient Polymer-Rubber 6-Dimensional Pod Suspension

Flex Shaft Drive Wheels

Tube Integral Lighting & Wiring (Headlights, Taillights, Parking Lights, Running Lights)

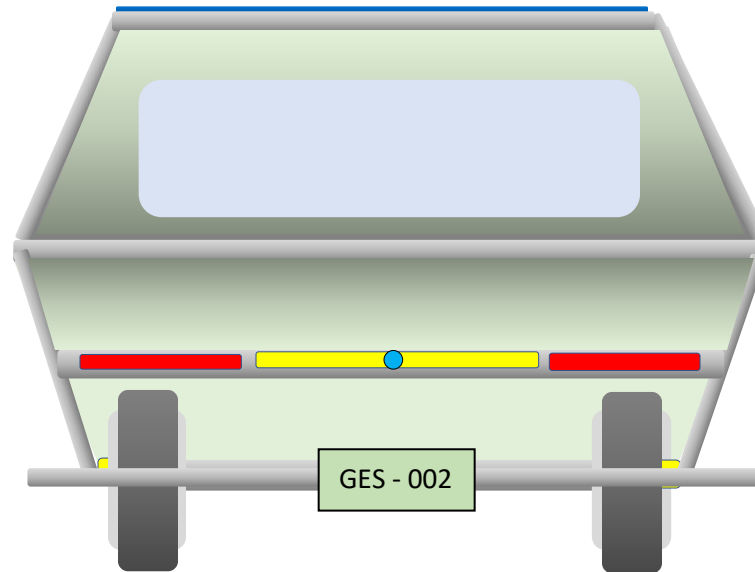
Airstream Flows Smoothly Over Rounded Content Pods Mounted to Drag-Free Tubular Aluminum Exoskeleton
Cooler Passenger Compartment, Less Drag, Wide-Open Access for Cleaning & Maintenance

Tube Car

Exposed Bicycle-Motorcycle Framing Principle for Automotive Light Weighting, Simplification, Durability Enhancement, Repair Ease

William C. Patterson, Met.E., M.B.A., Ph.D.

Rear View One (Front Drive)



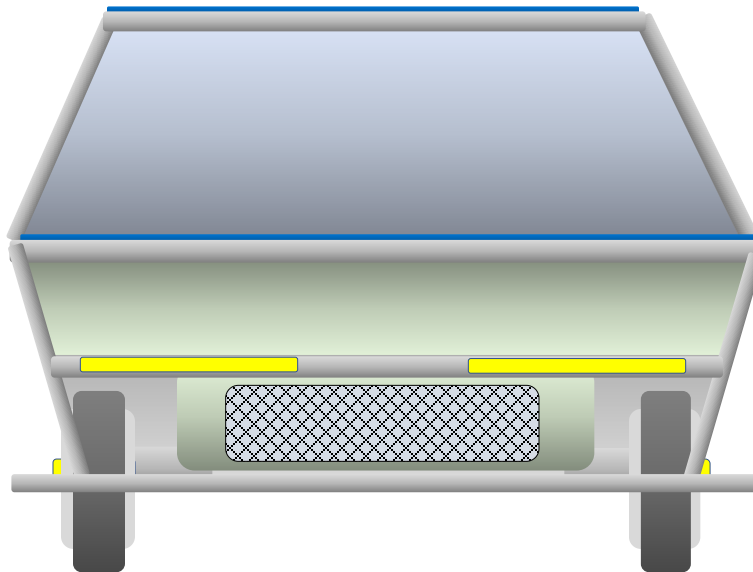
Full-Time Rear Cam
Tube Integral Lighting & Wiring

Tube Car

Exposed Bicycle-Motorcycle Framing Principle for Automotive Light Weighting, Simplification, Durability Enhancement, Repair Ease

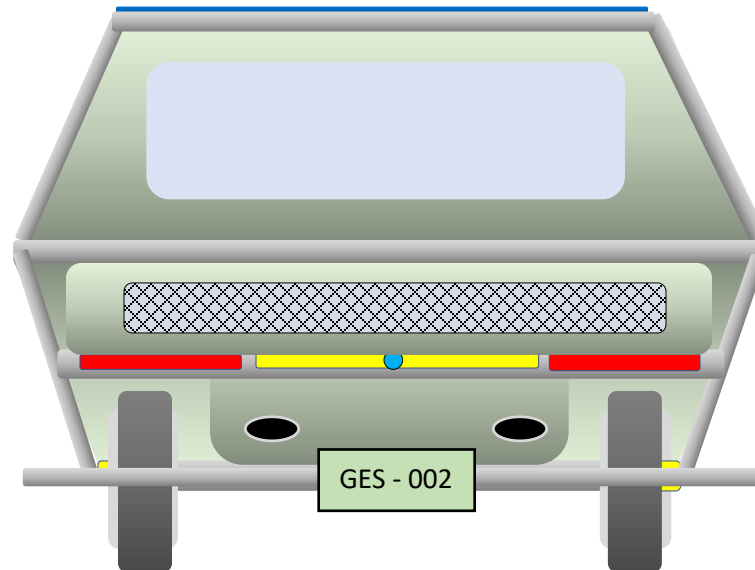
William C. Patterson, Met.E., M.B.A., Ph.D.

Front View (Front Drive)



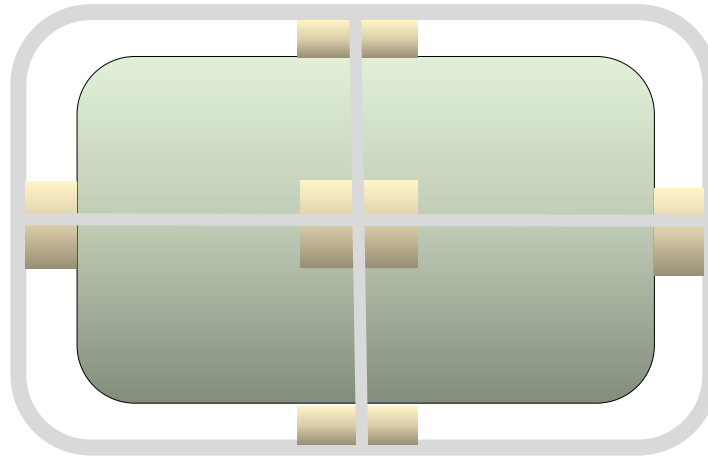
Front & Rear Vents for Engine Air-Flow Cooling
Tube Integral Lighting & Wiring

Rear View (Rear Drive)

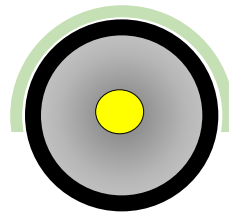


Full-Time Rear Cam
Storage Pod Tops Rear Engine Pod
Rear Engine Pod
Four Intake Vents
Dual Exhaust
Dual Flex-Shaft Drive
Tube Integral Lighting & Wiring

Pod No-Maintenance Permanent Solid-State Suspension *Transverse Detail*
Flexible Rubber Spacers @ Frame-Pod Interface Floats Pod Along 6 Dimensions

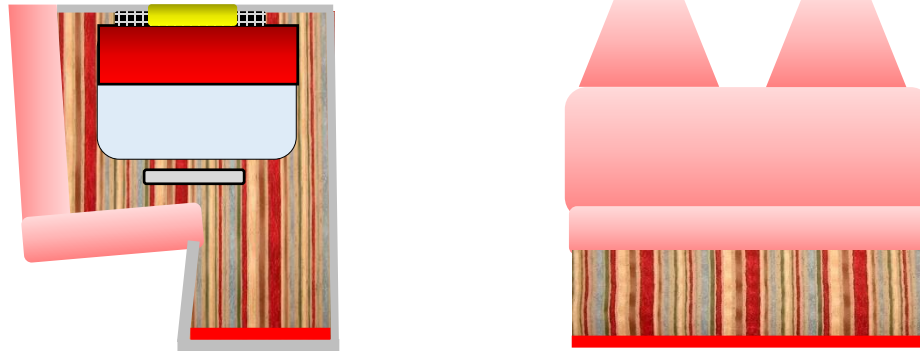


Option *Motorcycle Fenders*



Super Light FRP Passenger Pod Detail
Body Comforting Software Gently Surrounded by Protective Tubular Metal Hardware

Rear Pod Seat

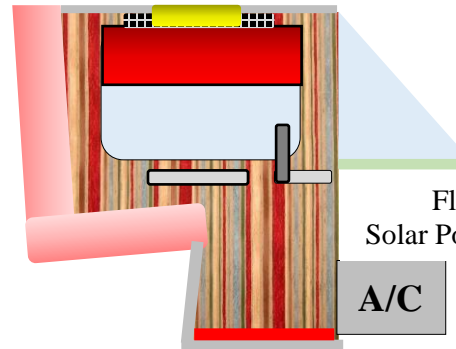


Auto Sofa: Integral Upholstered Full-Height Memory Foam Seatback & Deep Foam Seat
Color-Coordinated Fabric-Lined Doors & Walls Roll-Up/Down Fabric Blinds
Metal Door Handle w/ Integral Window Controls Indoor-Outdoor Carpet Floor
Soft Reading Lights w/ Integral A/C Unlimited Re-Decorating Opportunities

Front Pod Seat



Aircraft-Motorcycle (AM) Control Tech
Concentrate & Simplify: NO FOOT ACTION
Steer: Rotate Yoke
Accelerator: Rotate Right-Hand Grip
Cruise/Robo: Thumb Button Right-Hand Grip
Brake: Pull Back/Release Adjustable Yoke
Automatic Transmission (No Shift): CVT
Reverse: Rotate Center Hub
Soft Instrumentation: Yoke Display

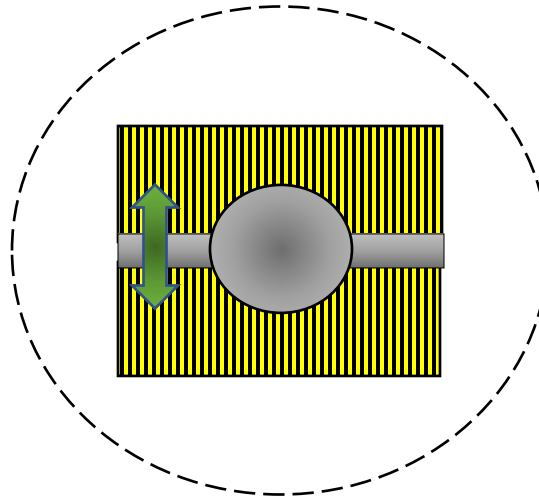


Flex Connections for Control Tech
Solar Powered A/C Mounts to Front Pod Wall

A/C

Wheel-Frame Connection Detail
Solid State Brakes & Suspension *Light-Weighting Enabled Simplification*

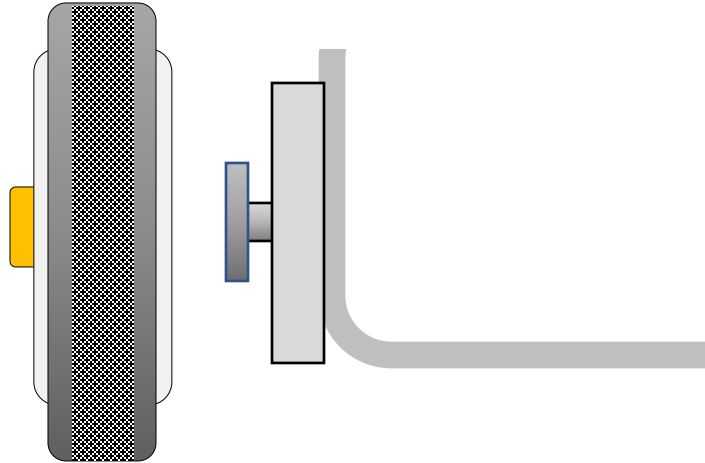
Facing View



Boxed Vertical Polymer Strands (As in Bungy Cord or Pogo Stick) Requisite to Wheel Load (Perhaps 300 Lb) Mount to Tube Frame
Strands Connect to Central Excursion Bar of Prescribed Vertical Cushioned Movement (Perhaps 5 Inches)
Upper & Lower Resilient Arrays Restore to Central Equilibrium After Excursion (Automatic Damping)
Aluminum Wheel Bolts to Circular Mounting Plate
Pneumatic or Solid Rubber Tire (35 to 90 PSI) Furnishes Secondary Suspension Compliance
Aluminum Wheel Has Integral Cable-Operated Disc Brake (As in Bicycle or Go-Cart)
Wheel + Tire Size Illustrated by Dotted Line. Motorcycle Type is Reasonable for This Weight Regime

Wheel-Frame Connection Detail
Solid State Brakes & Suspension *Light-Weighting Simplification & Permanence*

Transverse View



Outer-to-Inner Sequence

Resilient Tire – Aluminum Wheel - Integral Disc Brake – Mounting Plate – Polymer Suspension Array – Tube Frame

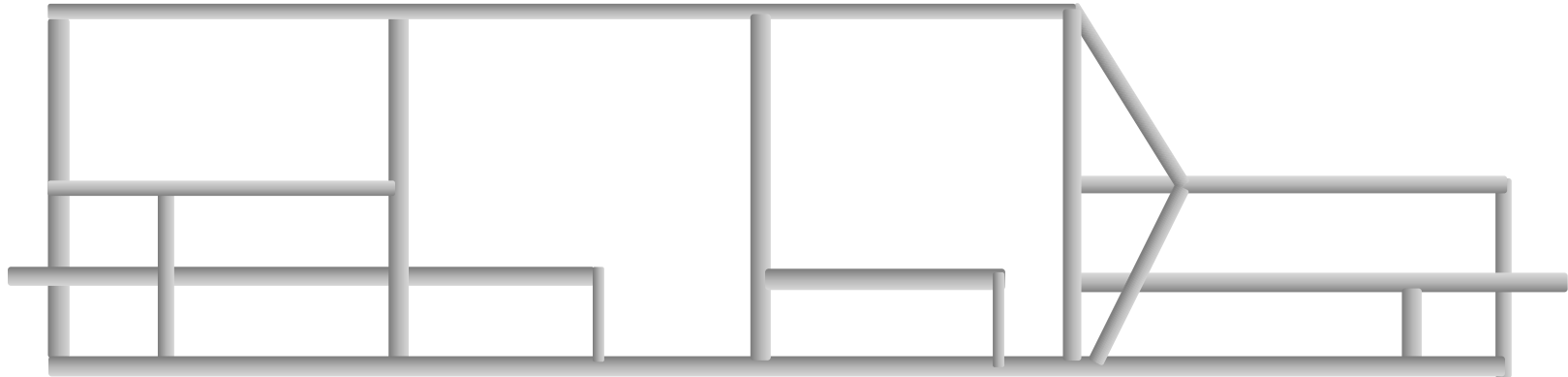
Future: Implement Indexable Drive Wheels

Mount Air-Cooled Electric or Internal Combustion Engine (e.g., Rotary or V) Within Wheel Space
Centrifugal Force Fuel Pump Added Unsprung Weight Confers Anti-Roll-Over Benefit

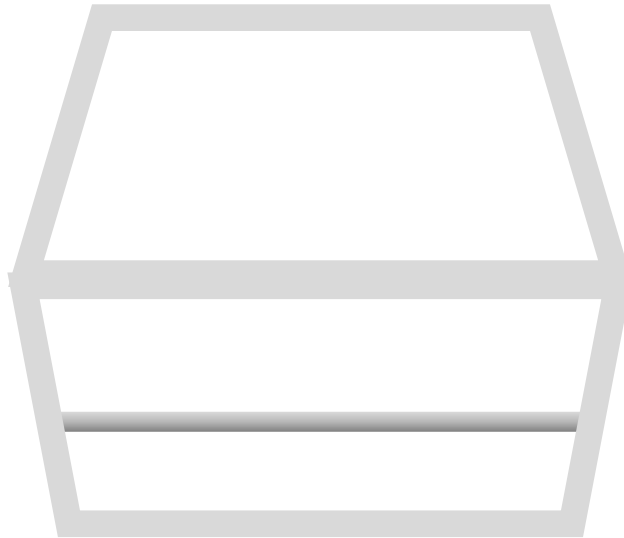


Exoskeleton Detail
Lightest Yet Automotive Ribcage to Protect Vital Life
(All Bends Rounded)

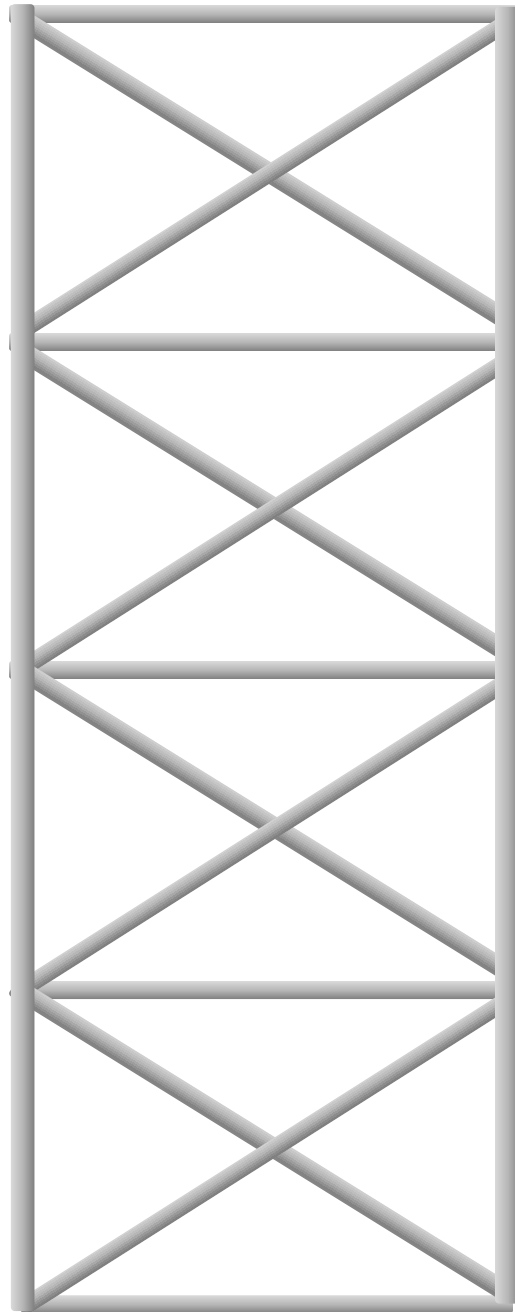
Side View



Transverse View



Roof & Underbody Tube Truss Detail



Precursor 360-Degree Perimeter Tubular Damage Shield for Kia Soul

Stainless Steel or Aluminum Perimeter Safety Tubing
All Bends Rounded Interior Bends Obtuse Satin Finish Amber Reflective Tape Optional



Pre-Cursor Tubular Frame Transportation



Protective Tubular Frame Generator



Light Vehicle Disc Brakes Motorcycle



Go-Cart



Bicycle



Tube Car Statistics

Tube Car				Heat Savings			Index Cost		Lb/Pass		Pass	GVW	Curb Wt	% Avg	Cost	\$/Lb	% Avg		
Superlight Durability				Avg Car Basis			98%		\$2,898		150		4	1180	580	17%	\$1,985	\$3.42	68%
Save The Planet				Avg SUV Basis			98%		Wt wrt SUV 2%										
William C. Patterson, Ph.D.				2020			Automotive Frame Outside: Body Inside						In Him we live and move and have our being. Acts:17.28						
	Material	Diameter"	Wall"			Lb/Ft		\$/Ft	\$/Lb			Feet	Total Lb	Total \$					
Tube	Al	2	0.125			0.87		\$1.00	\$0.87			200	174	\$200					
	Stainless	2	0.125			2.6		\$0.53	\$0.46			200	514	\$239					
	Material		Wall"	Lb/Ft2				\$/Ft2	\$/Lb	Ft2			Total Lb	Total \$					
Pod	FRP		0.06	0.475				\$2.00	\$2.00	96			46	\$192					
	Diameter"	Motorcycle Tire-Wheel-Suspension-Brake Lb					Motorcycle Tire-Wheel-Suspension-Brake \$					Total Lb	Total \$						
Unsprung	18			15					\$30				60	\$120					
	HP	In3	\$	Lb	HP/In3	\$/In3	Lb/In3	Lb/HP	\$/Lb	GVW/HP	Capability	Total Lb	Total \$						
Engine	32	32	\$475	186	1.0	\$15	5.8	5.8	\$3	37	130%	186	\$475						
	Type												Total Lb	Total \$					
Transmission	CVT	No shifting required. Conventional for motorscooters up to 250cc & 45 HP											15	\$250					
		Tank Gal	Fuel S.G.	Fuel Lb	Est MPG	GPM	Range Mi	Ft3	In/Side	BTU/Lb	BTU/Gal	BTU/Mi	Mi/Yr	BTU/Yr	Heat Svgs				
Fuel	Ethanol	4	0.8	25.6	65	0.015	261	0.41	8.9	6,551	20,963	321	5,000	1,607,332	98%	Avg			
															98%	SUV			
Accessories													Total Lb	Total \$					
A/C													40	\$150					
Air Compressor													5	\$150					
Solar Panel (Roof)													21.6	\$336					
Solar Panel (Hood)													7.2	\$112					

Future

Specs on Bungy Cord & Pogo Cord Solid-State Suspension