



6328 A 104 Street Edmonton, AB T5K 0Z3  
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## Standards for Housing Development

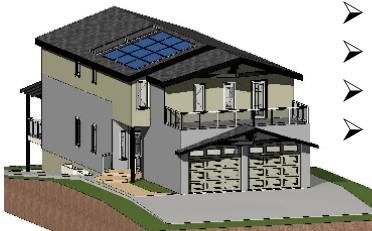
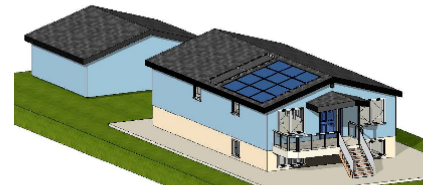
### Seven-Generation / 100-year Lifespan Philosophy

For Info: Brian Staszewski (780) 990-9887

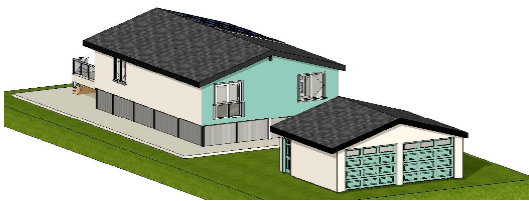
[www.GreenByDesignHOMES.com](http://www.GreenByDesignHOMES.com)

### **Key Features:**

- ✓ SolidWall™ System: Non-Combustible & Mould Resistant
- ✓ Key Focus on Recycled Materials – like Galvanized Steel Studs
- ✓ Super High Insulation Values: Typically R30 Walls & R50 Roofs
- ✓ Extreme Long-Life Roofing: 50-year Recycled Rubber
- ✓ Waterproof & Mouldproof Foundations (or screw-piles)
- ✓ ALL Models Include Solar Thermal Panels (Free Heat) & Solar PV Panels (Free Electricity)

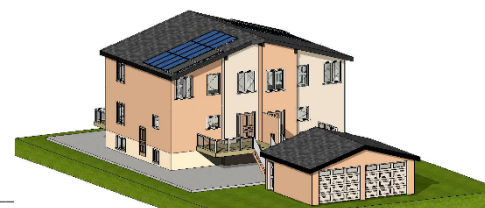
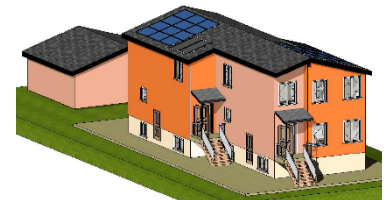


- High Top Floor: Vaulted Ceiling Throughout
- Wide & Tall Double Garage: 24'x24' with Double Doors (10' wide by 8' tall)
- Large Deck (100 SqFt or larger): Typically ~8' by ~12' (Front or Back)
- Forced Walk-Out Basement Available (at Extra Cost – not all models)



- Very Low Carbon Footprint – Aiming Towards Net-Zero Target!
- Energy Efficient Boiler for In-Floor Heating COMBINED with Air
- High Velocity Air Handling with Heat Recovery Ventilation
- Energy Efficient Windows / Doors / Appliances / Lighting (LED)
- Energy/Sound Insulated Interior Walls (ROXUL)
- High Efficiency Plumbing Fixtures & Heat Recovery Drain

*Construction is fast, easy, cost-effective, and delivers energy efficient projects resulting in homes with better indoor air quality; resistance to mould/mildew and pest such as carpenter ants; dramatic savings on heat and cooling expenses; greater sound insulation; superior ability to withstand earthquakes/tornados; Duplexes/Multiple-Floor Units also available, for efficient Multi-Family Living. Opportunities to train/hire local labour, increasing benefits to the community.*



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**SolidWall™ System:** The **SolidWall™ System** is a solid wall system that's a perfect match for modern day commercial, institutional, and residential building construction, providing a superior quality wall finish.

The SolidWall™ System is lightweight, greatly reducing the dead load on the structure. This in turn reduces the embodied carbon footprint of the building, as well as minimizing on-site wastage. The system complies with required fire-rating, soundproofing and thermal insulation, and is certified as an Industrial Building System (IBS). The fibre cement boards that are used for this system contain low VOC and low formaldehyde.

The SolidWall™ System is extremely durable – immune to permanent water damage, and impervious to high humidity/moisture. It doesn't warp, crack or split, and the system is mould and rodent resistant, as well as impact/scuff resistant.

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**Euroshield Rubber Roofing:** Because durability REALLY matters!

Euroshield recycled rubber roofing is rated for 50 years – and can last for more than 75 years. That's truly superior durability. And Euroshield is Eco Friendly, Light and Sturdy: Because other things matter too! Euroshield rubber roof is made of 95% recycled materials. No other roofing material can be recycled as much. The materials are far less vulnerable to hail and weather extremes. And the resulting roof is lightweight, for an easier installation. The net result is a better roof, providing long-term cost savings on repairs or replacement.

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### **Energy Efficient Boiler for In-Floor Heating with High Velocity Air Handling**

Small and Energy Efficient Package – combining water and space heating.

- Lower Operating Costs – as compared to traditional systems
- Constant Air Circulation – for increased comfort and better air quality
- Quiet Operation & Easy Installation – designed for low maintenance
- Dual-Purpose Hot Water Tank – or On-Demand water heater Option
- Zoning Capable & Cooling Capable – super flexible system
- Humidistat & Thermostat Interlock – for better humidity control
- Space Saving Small Diameter Ducts – for no-bulkheads design



The resulting SYSTEM offers more comfort through better control of heat and humidity levels, while providing long-term cost savings through energy efficiency and short-term cost savings through ease of maintenance.



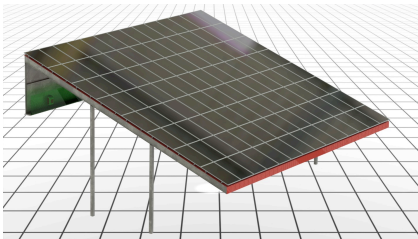
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## ***Energy Efficient LED Lighting – Endless Possibilities & Combinations!***

LED Panels – 30-watt / 2100 lumens / 3000k: Surface Mount, 1x1; 1x2; 1x4;  
Ceiling Dome Lights (non-dimmable): 4-watt & 22-watt  
BR30 LED Replacement for 100-watt light bulbs;  
MR 16 Mini LED Spot Lights (GU10 base / G5.3 Pin)  
Garage LED – waterproof & climate proof

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## ***Solar Photo-Voltaic Car Port – An easy way to get free energy!***



Structure fully covered with Solar 260-watt  
PV Panels: 204 kW Total.  
To be installed in unshaded area with south  
facing orientation, with a southward tilt of  
20 to 25 degrees.



## ***Solar PV on the roof – The Smartest Way To Build!***

A typical photo-voltaic (PV) solar panel is approximately 5' by 3½'.  
Each panel typically produces 1.04 amps @ 240 volts AC during sun hours.  
Stacked end-to-end and/or side-to-side – adding 2.8 lb/ft<sup>2</sup> of dead load.

Producing about 4,000 kWh /year requires:

Either:           12 Direct-South Facing Panels  
Or about:       15 East-West Facing Panels

They are considered “slick surfaces” for building code  
purposes. Multiple slopes/steps on the roof makes piecing  
the modules less efficient. So best practice is to consider  
these factors BEFORE building, rather than as add-ons...





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## ***Neighborhood Green Design – Looking at the BIG Picture!***

The green community concept offers an opportunity to take the lead in rethinking the environmental culture, eliminating wasteful inefficiencies, and embracing positive environmental policies.

Green Community Programs...

- produce environmental, social, economic sustainability
- enhance the project's reputation
- enable economic efficiency and savings

Recommendations from environmental audit programs target waste and inefficiency, and can lead to very real cost savings by reducing energy and water use, minimizing the community waste stream, and improving overall environmental compliance.

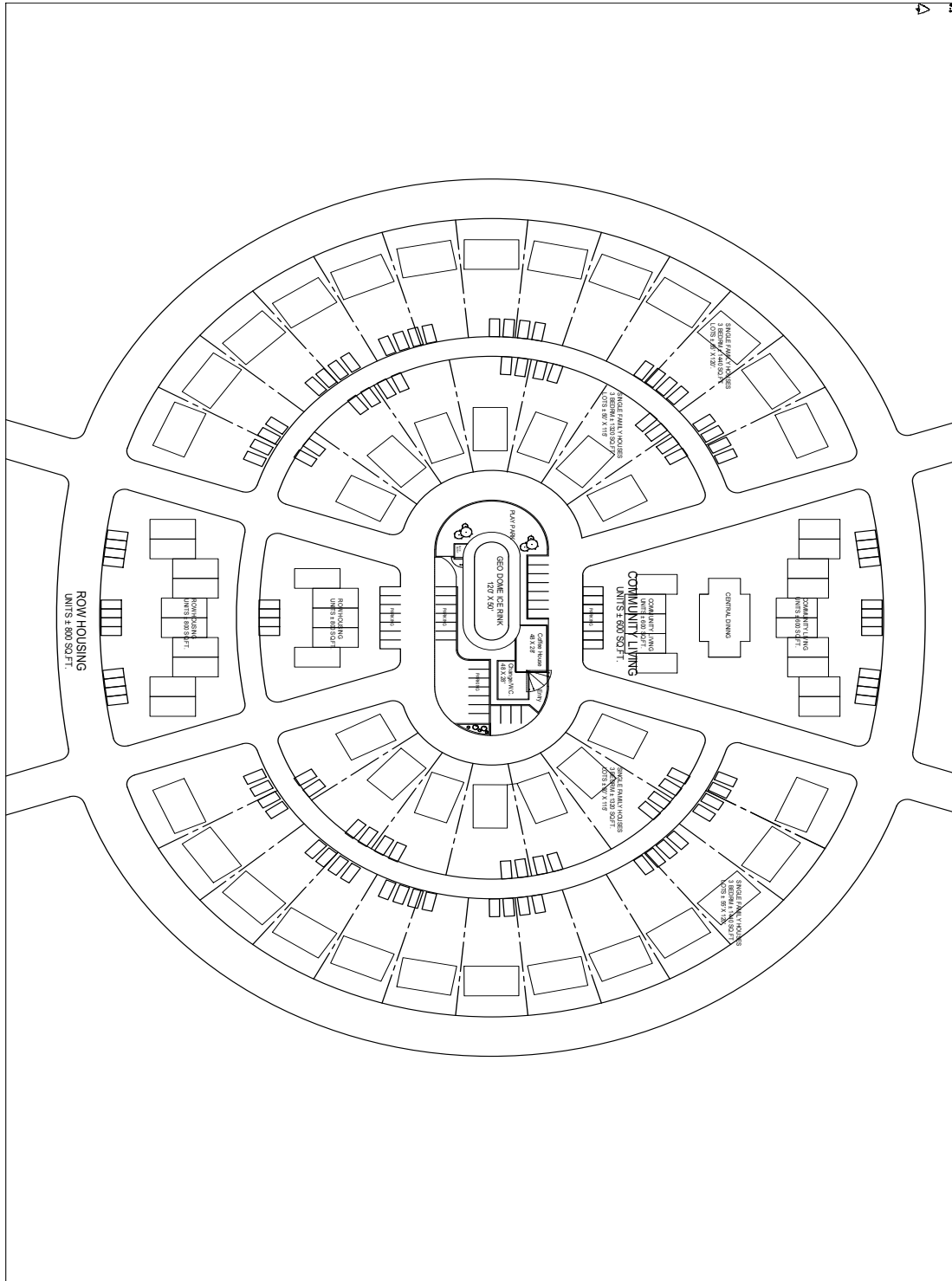
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## ***Components / Development-Wide:***

<ul style="list-style-type: none"><li>• Development-Wide Geothermal System with Geodome Rink</li></ul>
<ul style="list-style-type: none"><li>• Net Metering to Grid &amp; Internal Real-Time Metering</li><li>• Solar PV Farms &amp; Solar Street Lights</li><li>• Integrated Plan for a Utility and Micro-Grid</li><li>• Incentives / Rebates / Income-Tax Deductions</li></ul>
<ul style="list-style-type: none"><li>• Solid-Waste Minimization Program</li><li>• Waste-Water &amp; Sewage Management</li></ul>



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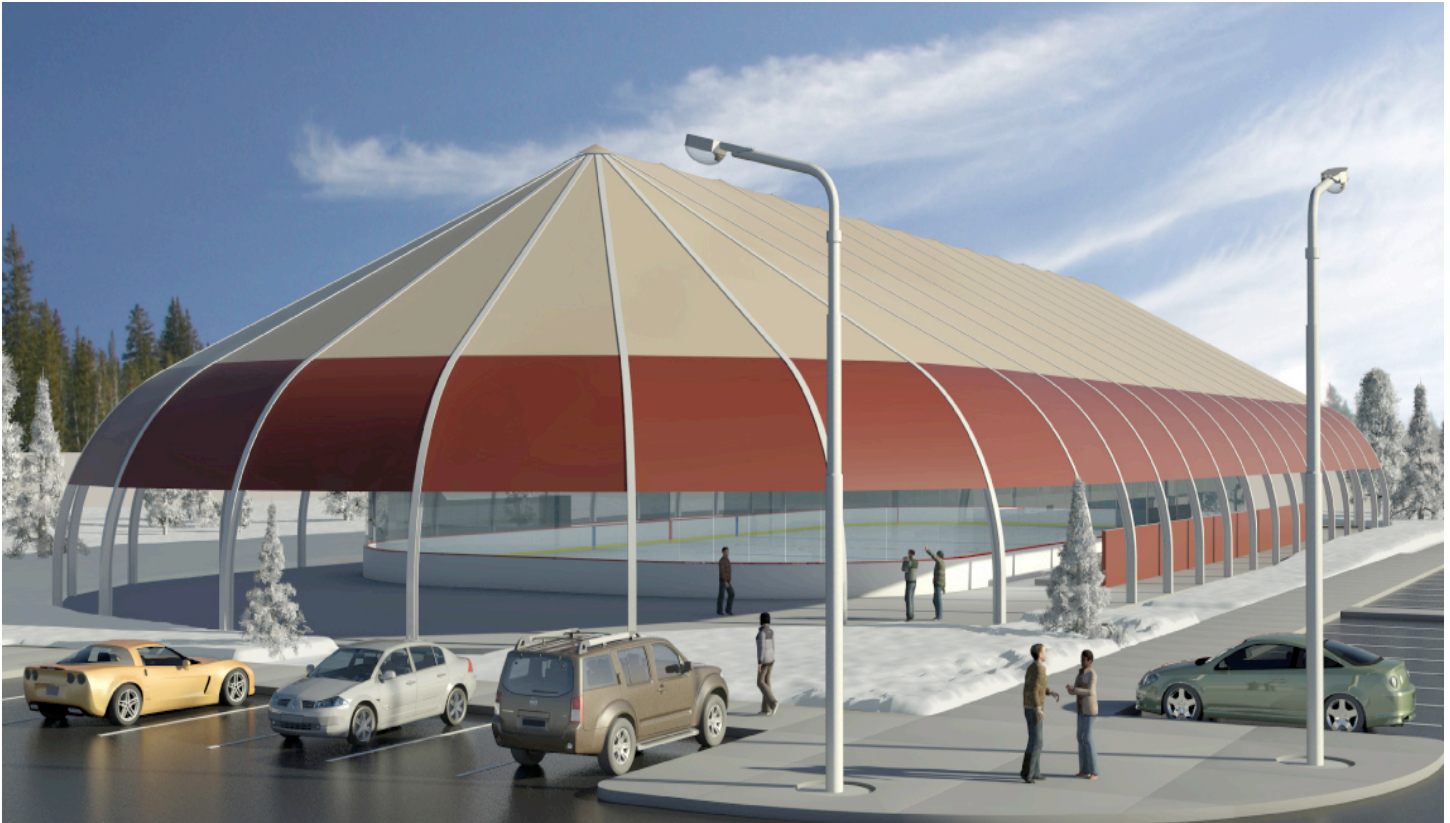






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## **Geodome Ice and Community Rink**



Compared to conventional ice plants, the GEO Dome will generate 73% less GHG emissions and will consume 55% less energy than a conventional ice plant. And it will produce up to 5 to 6 months of smooth, consistent quality ice supporting skating, ice hockey, figure skating, ringette, broomball.

Outdoor sports under the cover will also get protected from harsh weather conditions with the capability to play soccer, lacrosse, ball hockey.

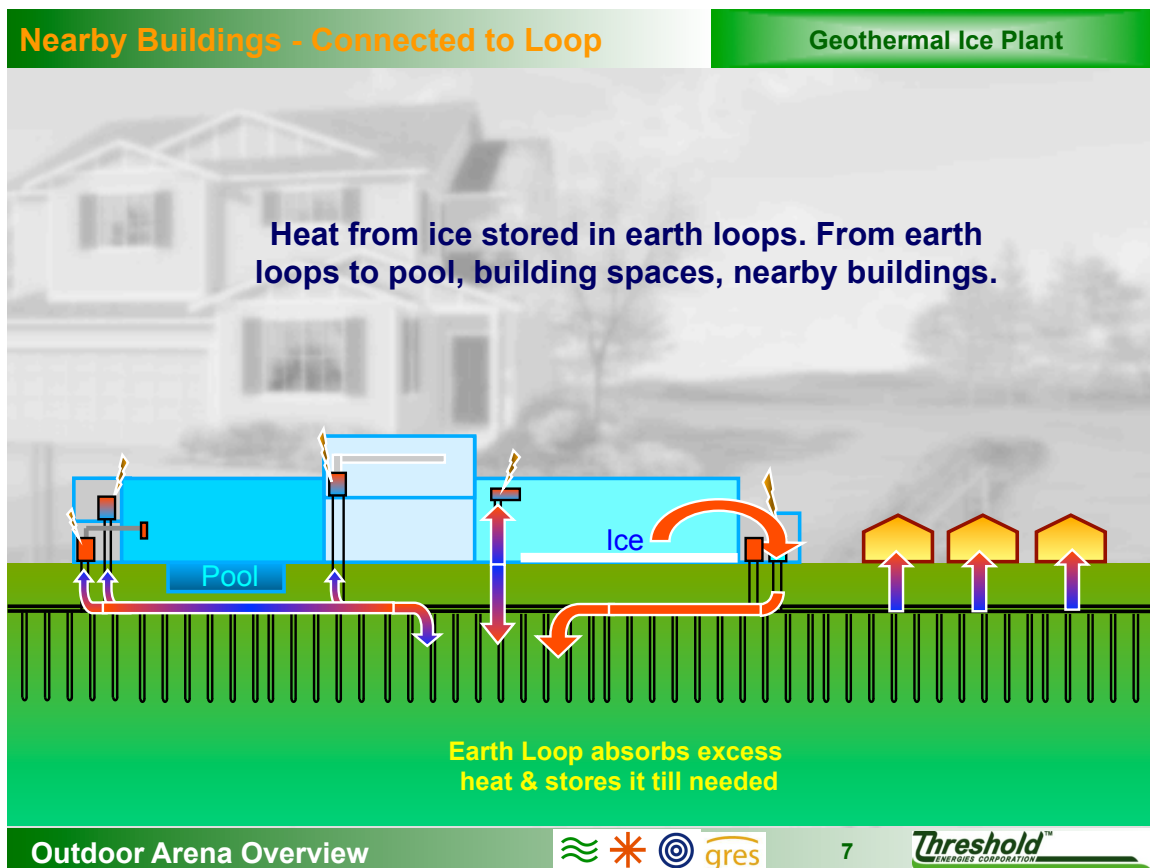
And community events such as large meetings, BBQs, block parties, farmer's markets, fitness classes, special events, etc, will all be enhanced by providing comfort and peace of mind by mitigating the effects of less-than-perfect weather.



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For every 50- 100 housing units, a geodome rink and community centre will be part of the package.

This building will provide heating and cooling for the individual housing units and an instant community focal point.





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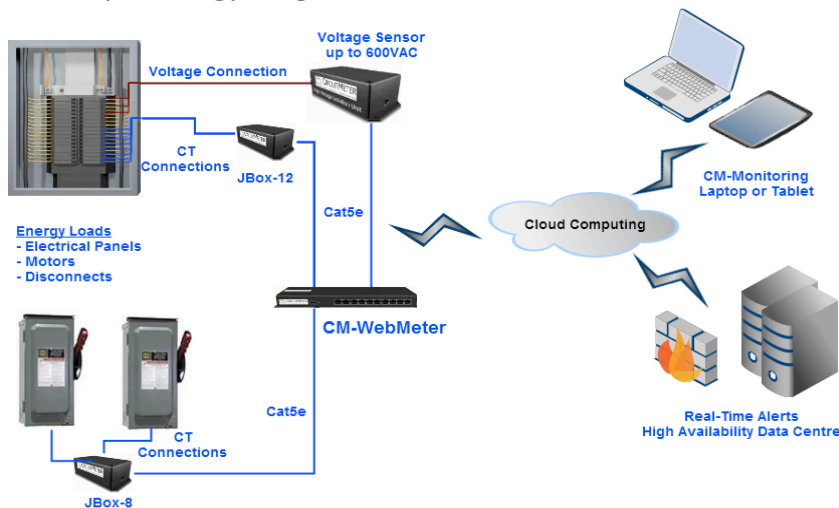
## **Net Metering**

The facility will have net metering installed for electricity. This will be accompanied with a service contract from a selected local utility. It will follow the prescribed provincial system under the AESO.

## **Real-Time Metering**

Real time metering (Circuit Meter) will be installed for the whole facility. The metering will provide a solution for determining exactly where and when energy is being used in buildings. It collects energy data from within the User's building, straight from each-and-every circuit breaker.

This data is placed into a safe server location where the User has full access using a simple dashboard and software that can analyze energy usage.



## **Micro Grid**

It will draw electricity from a solar array, a wind turbine, to provide electricity from loads such as lighting, air conditioning and refrigeration at its head office location.

Electricity generated from this combination of clean and renewable sources can also be used to power electric vehicle charging stations and to maintain a steady charge in Micro Grid storage batteries.





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## **Large Solar PV Installations & Solar Hybrid-Powered Streetlamps**

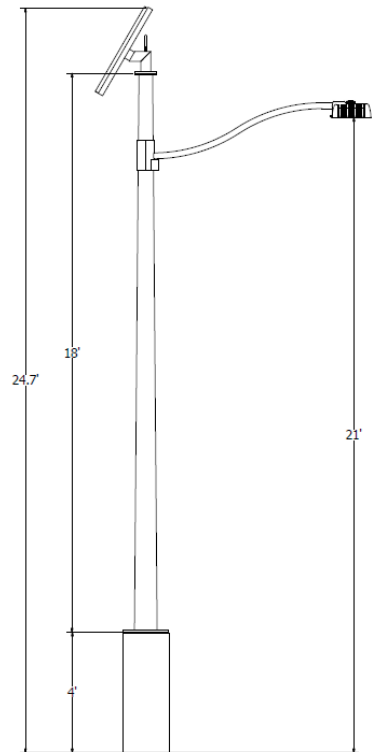


Various sizes of solar installations can be provided. Design and economic payback calculations are required to make sound decisions that work effectively with a micro grid system.



### **Solar Hybrid Streetlamps:**

- Metal pole – 22' incl base enclosure
- Motion sensing - integrated
- Single 260 watt 60-cell Solar Panels
- Smart Off Grid Controller with cabling
- 50-watt LED Roadway (24 vDC) on 3' or 6' Light Arm
- Up to 150-watt LED is also available
- Smart Off-Grid cloud-based monitoring/control (3yrs)
- 3 years of communications/cellular for Single Units
- Mesh/Ethernet or Mesh/Cellular for Multi-Pole
- 4x 140ah 24vdc AGM, TP LA batteries: 7-yr warranty.





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## **Solid-Waste Program**

Solid waste can now be processed to change landfill material into reusable minerals, water and oils.

Waste is not really waste, it is just material that came on site and didn't get used. It needs to be removed, and that's an expensive process.

A proper waste management system:

- Provides a more efficient and safer working environment;
- Saves money and helps provide a cleaner and safer facility;
- Addresses issues like global warming and climate change.

Diversion from costly landfills, along with revenues from recycling opportunities, all add up in huge direct savings as well as social impact.



## **Waste-Water and Sewage Management**

Forget sewage lagoons. They cost a lot, they leak and overflow, and they fill up way too early. Newer and BETTER technologies should be used, such as Dual Bioreactors: Bioreactors contains aerobic, microaerophilic and anoxic zones, as well as a clarification zone for solid-liquid separation. Each has a multiplicity of zones with different environmental conditions necessary for the removal of carbon / nitrogen / phosphorus by biological processes.

## **Water Management**

Water management begins with setting up systems that are based on partnerships with local communities and industries. Water moves and knows no boundaries. The completion of a local source water protection plan results in protecting life-giving water.

The plan must always be a priority as we will never be able to live without water.