Hydroponics, Aquaponics Farm, Cannabis Facility, Cold / Storage Warehouse, Co-Packaging Plant / CLA Production, Power Generation Facility, Rain Reservoir, Waste To Bio-Fuel Chemical Facility, Cabin Rentals

Blindman Industrial Park Red Deer, Alberta **Private & Confidential 2016**







The SARPAL Group

AQUAPONICS FACILITY SQFT 400,000



Red Deel Riv

1 HYDROPONICS & AQUAPONICS



To produce leafy greens, vegetables and fish to be supplied to Canada and export based purposes.



2 CANNABIS FACILITY



Grow up to 150,000 KG of Cannabis per year, THC & CBD Bi-Product Production, co packaging & distribution

3 COLD STORAGE WAREHOUSE



Develop on-site cold storage facility, enter into relationship with VersaCold to manage operations and lease unused space.

(4) CO-PACKAGING PLANT & CLA PRODUCTION



Automate packaging of goods for all levels of distribution and also provide co-packaging and branding for clients. Bi-Product production of CLA fish capsules and oil.

5



Waste to Biofuels and Chemicals Facility is the first industrial scale waste to biofuels facility of its kind to turn household garbage into biofuels and biochemicals. CETRA facility (Complete Endothermic Treatment and Recovery Apparatus-Electricity / Steam) technology.



Rainfall catchment area creating rainfall into runoff and reusable water to reduce water consumption.



7 POWER GENERATION FACILITY



Facility with Eco-Gen Hybrid Generators. Where each pod produces 525,600 kWh annually.



30 Non-Combustible Units For Rental Purposes. Units will be aligned along the ridge.



Leafy Greens, Vegetables, Fish Hydroponic & Aquaponic Production

Hydroponic means growing without soil. From there, several different systems have been put together since the early sixties, starting mostly in England and Israel. Early systems were very basic, replacing soil by growing media like sand, peat moss or rockwool.

Why does it work? Because plants are not feeding on soil but on minerals hidden in the soil. The purpose of hydroponic agriculture is to make those minerals available to the plants directly through water. Modern hydroponic growing systems are using more and more water as a growing media, preventing depletion of natural resources such as peat moss or accumulation of residues like rock wool and other fibres.

While current lettuce production figures for greenhouse soil production show harvests of 108 plants/m2/year, HydroNov projects are harvesting up to 500 plants/m2/year in a wide variety of climate around the world. Produce is clean and free of any contaminants present in outdoor crops. Production schedule allow even harvest every day year round. See our videos for a description of the growing process.

Deep Water Floating Rafts Technology (DWT)

Floating Rafts Technology has been developed at the University of Arizona (U.S.A.) and at Italian Research Centres in the late seventies and has been adapted to commercial production by HydroNov Inc. from Mirabel, Canada. Since 1988, Floating Rafts Technology has been installed over thirty hectare (30ha) (3,000,000 square feet) of greenhouse in Canada, U.S.A., Mexico and Asia and has been used successfully to grow butter head and curly lettuces at a rate never reached before. Floating Rafts Technology has also been used for demonstration of public interest in EPCOT CENTRE, Florida, U.S.A.

Floating Rafts Growing Technology is certainly the most water conscious system among existing hydroponic growing systems. One of its key features is the use of a large volume of water allowing enormous buffer for fertilization and oxygen control as well as economic plants transportation by flotation. This large buffer brings a level of security and easiness that no other growing system can match. Although large volume of water is required at the beginning for filling up growing beds, equipment and know-how developed by HydroNov Inc. allow user to grow crop after crop, year after year, without having to discard any water. We just keep adding as much fresh water as plants required through evapo-transpiration. Absolutely no water is lost through soil or growing media, no direct evaporation to the sun, no dumping of growing solution, no dripping gutters; just plants' needs.

In terms of output, Floating Rafts Growing Technology will produce four times more than any soilbased growing techniques. Up than 500 heads of lettuce and 40 Kg of baby leaf can be produced from each square meter of production area on a yearly basis. Particularly well adapted for the production of any leafy vegetables, Floating Rafts Growing Technology is also a potential winner for the production of fruits and flowers and for plants' propagation.

Aquaculture & Aquaponics

Recent development in water recirculation systems for sh production are quite similar to those made for recirculated hydroponic plant production. New technologies now allow indoor production levels up to 200Kg per square meter annually according to species, helping to overcome the dramatic decrease output from traditional wild fishing.

Recirculated Aquaculture

The development of water recirculation applied to sh production has made it possible to grow several sh species in a wide range of locations in the world. One of the main advantages is to save water while increasing production levels, thus helping to protect water resources while helping to feed the world.

Multiple lots / Multi Stage Management

The approach is to multiply the number of starting lots to achieve continuous production throughout the year, thus leading to a continuous harvest output. Each lot has a set number of individual sh that will be monitored through their entire lives, thus making possible implementation of a constant quality tracking system. The end result is maximum productivity and full traceability of first quality fish.

Recirculating systems have less of an impact upon the environment because of their closed nature - wastes and un-eaten feed are not simply released into the ambient environment in the manner that they are with netpens, and exotic species and diseases are not introduced into the environment. In recirculating systems, wastes are filtered out of the culture system and disposed of in a responsible manner. Recirculating systems can be built just about anywhere, including in urban settings where they can use existing structures and be placed close to markets, thereby reducing transportation costs.



Blindman Industrial Park **120 Acre Development**

The Project

- To build 80 acres of indoor facilities to produce leafy greens, vegetables fish and fish related products. Cannabis and cannabis related products.
- To create energy efficient facilities that use renewable energy to operate.
- Allocate 5 acres for joule box hybrid generators to develop green sustainable energy for the development and provide energy back to the grid.
- Allocate 5 acres towards a CETRA facility (Complete Endothermic Treatment and Recovery Apparatus-Electricity / Steam) technology.
- Green space and parks.
- Cold storage facility, co packaging and distribution centre.

Location

120 Acres In Red Deer, Alberta in the Blindman Industrial Area Zoning: Light Industrial Cost of Land: \$4,800,000

The Blindman Industrial Park is situated and located in the mid-point between Calgary and Edmonton making it a perfect place logistically to export the production. The land is already zoned light industrial and ready to build to suit. The location will offer many people new sustainable jobs as the Red Deer population relies heavily on the oil industry for employment.







Blindman Industrial Park Full 80 Acre Breakdown

- Hydroponics Facility \$4.5 million / Hectare
- Aquaponics Facility \$17.5 million / Hectare
- Cannabis Facility \$15.0 million / Hectare
- Transportation / Cold Storage Warehouse and Facility 250,000 SqFt \$40,000,000
- Rain Reservoir \$3,000,000
- Packaging Plant \$17,500,000
- Production of Fish Oil and Capsule Facility \$8,000,000
- CETRA Facility \$20,000,000
- Power Generation Facility 450 Joule Boxes \$30,000,000
- Rental Cabins x 30 = \$5,000,000
- 1 Hectare = 2.47 Acres
- 8 hectares allocated for Hydroponics 19.76 Acres
 - Short Crop Cycle
 - 20 60 Kg per square meter / per year depending on the crop.
 - 20 hectares = 80,000 square meters
 - Production of approximately 1.6 million kg 4.8 million kg of crops per year.
 - Approximate Cost Of Production: \$36,000,000

• 4 hectares allocated for Aquaponics - 9.88 Acres

- Optimal environment and water recirculation system
- 50 218 tons of fish per 240 square meters per year deepening on the type of fish
- 4 hectares = 40,000 square meters
- Production of approximately 8,300 tons 36,188 tons of fish per year.
- Approximate Cost Of Production: \$70,000,000

Crop Comparison



Outdoor Soil Farming 3 Harvests / Year



Protected Soil Horticulture 5 Harvests / Year



Protected Hyrdaponic Floating Technology 18 Harvests / Year

Advantages

- Huge buffer for fertilization and water temperature regulation
- Cost-effective and efficient internal transportation
- Excellent space utilization and fast turnover (18 lettuce crops per year)
- Permanent re-utilization of nutrient solution, no dumping of solution, rational use of water.
- Work load is easy to control and mechanize
- System technology is simple (low capex)
- Pro-environment
- Minimal use of fresh water
- No waste of nutrients
- Integrated management of pests and diseases
- Optimizes energy management and consecration
- computer assisted production and monitoring
- Ideal growing system fro lettuces including butterhead, batavia, curly, romaines, leaf, crisp etc.
- Plant cuttings for propagation.





12 hectares allocated for Cannabis Facility - 30 Acres.

- Short Crop Cycle
- 1 Kg Crop Per Year Per 8 SqFt
- 1,200,000 SqFt Facility
- Production of approximately 150,000 Kg of Cannabis Per Year
- Approximate Cost Of Production: \$180,000,000

• 2 hectares allocated for CETRA Facility - 5 Acres

• Can convert up-to 140,000 tonnes of municipal solid waste into approx. 38 million litres of biofuels and chemicals. Waste is decomposed 100% green and turned into recycled and sellable fuels and resources providing energy sustainability to the city.

2 hectares allocated for Power Generation Plant - 5 Acres

- Provide a insulated building with 450 Eco-Gen JouleBox Hybrid Generators. Each box costs approx. \$60,000 and will produce 525,600 KwH annually.
- 450 x 525,600 kWh = 236,520,000 kwH

Blindman Industrial Park Full 80 Acre Breakdown continued...





Greenhouses Covered

Block 3 HD Leafy's Production

Block 2 **Lettuce Production**

Service Building

Lettuce Harvest Line

Shipping/ Receiving

Lettuce Cooler

Shipping/ Receiving Fish Cooler

Office & Employees Room

Fish Processing Area

Bioreactor

Waste Management Building



Blindman Industrial Park Hydroponics Choices Of Production



BUTTERHEAD GREEN Butterhead Lettuce / Boston / Bibb



GREEN OAKLEAF European Leaf Lettuces



LOLLO BIONDA European Leaf Lettuces





BATAVIA European Leaf Lettuces



BUTTERHEAD RED Butterhead Lettuce / Boston / Bibb



RED OAKLEAF European Leaf Lettuces



LOLO ROSA European Leaf Lettuces



RED ROMAINE American Leaf Lettuces



SPINACH



ARUGUALA



BEET



CHICORY



CERVIL



GREEN ROMAINE American Leaf Lettuces

GREENLEAF SALANOVA Easy Cut



CURLY LETTUCE American Leaf Lettuces



NOVITA Compact Oakleaf



MIX GROWN



Easy Cut



BASIL





MACHE



DARK BASIL





WILD ROQUETTE

GREEN LEAF

ALSO:

- KALE
- RADISHES
- PARSLEY
- AMARANTH
- MIZUNA
- TATSOI
- BABY LETTUCE
- GREEN ONION
- ASIAN GREENS
- CULINARY HERBS
- MEDICINAL HERBS



Blindman Industrial Park **Aquaponics Choices Of Production**



















PERCH

















Submersible Pump (4 per raceway)

Arctic Char Production Capacity: 50 tons / year / Oval Unit Tilapia Production Capacity: 106 tons / year / Oval Unit Catfish Production Capacity: 218 tons / year / Oval Unit



Financial Financial Breakdown

Development Breakdown

Land	\$4,800,000		Low Year	High Year		Low Year	High Yea
Hydraponics	\$36,000,000	Hydroponics	1.6 million Kg	4.8 million Kg	Aquaponics	8,300 Tons	36,188 To
Aquaponics	\$70,000,000	Harvest	1.0 million Kg	4.0 minon kg	Harvest	0,300 10115	30,100 101
Cannabis Facility	\$180,000,000	Average Selling Price Per Kg	\$10.67	\$10.67	Average Selling Price Per Ton	\$6584.00	\$6584.00
Transportation and Cold Storage Warehouse	\$40,000,000						
Rain Reservoir	\$3,000,000	Hydroponics Gross Sales	\$17,072,000	\$51,216,000	Aquaponics Gross Sales	\$54,647,200	\$238,261,7
Packaging Plant	\$17,500,000	Raw Materials 20%	\$3,414,400	\$10,243,200	Raw Materials 20%	\$10,929,440	\$47,652,35
Production Of Fish Oil	\$8,000,000	Factory Overhead 20%	\$3,414,400	\$10,243,200	Factory Overhead 20%	\$10,929,440	\$47,652,35
CETRA Facility	\$20,000,000	Profit Before Taxes	\$10,243,200	\$30,729,600	Profit Before Taxes	\$32,788,320	\$142,957,07
Power Generation	\$30,000,000		÷ • • ;= • • ;= • • •	+ , ,		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	φ <u>,</u> ,,.
30 Cabin Development	\$5,000,000						
Marketing & Management	\$10,000,000					Low Year	High Yea
Engineering	\$5,000,000	Hydroponics +			Hydroponics Harvest	\$10,243,200	\$30,729,6
Amount	\$429,300,000		Aquaponics Summary		Aquaponics Harvest	\$32,788,320	\$142,957,07
10% Contingency	\$42,930,000	Revenue Forecast			Total Profit Before Taxes	\$43,031,520	\$173,686,6
Total Capital Allocation	\$472,230,000						

Hydroponics Financials

Aquaponics Financials







Cannabis Breakdown

	Low Year	High Year	
Cannabis Harvest	75,000 KG	150,000 KG	
Average Selling Price Per Kg	\$4000	\$4000	
Hydroponics Gross Sales	\$1,600,000,000	\$4,800,000,000	
Raw Materials 20%	\$320,000,000	\$960,000,000	
Factory Overhead 20%	\$320,000,000	\$960,000,000	
Profit Before Taxes	\$960,000,000	\$2,880,000,000	





