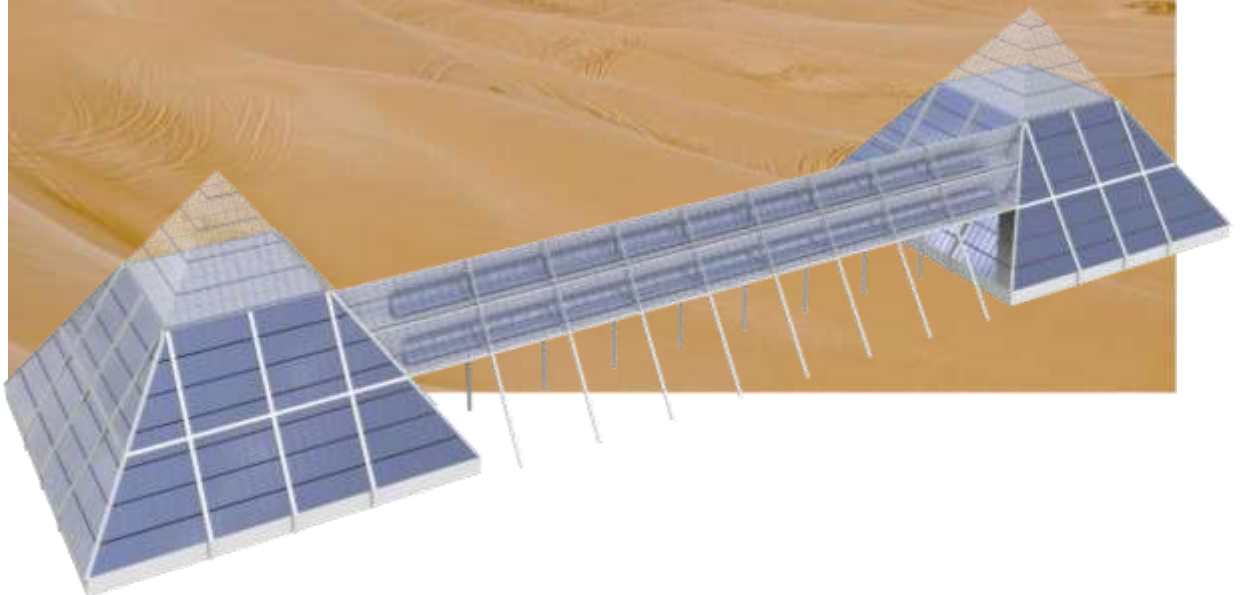




MANAGEMENT COMPANY OF THE HOLDING «OASIS»

Program “OASIS”

**Project «Equator»:
Creating universal agricultural platforms
in the desert**



**Moscow
2020**

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1. INTRODUCTION

“OASIS” Program provides for creating conditions to ensure food security of the State and to develop in Republic of Nigeria a range of innovative directions that make it possible to move the country to a leading position in Africa.

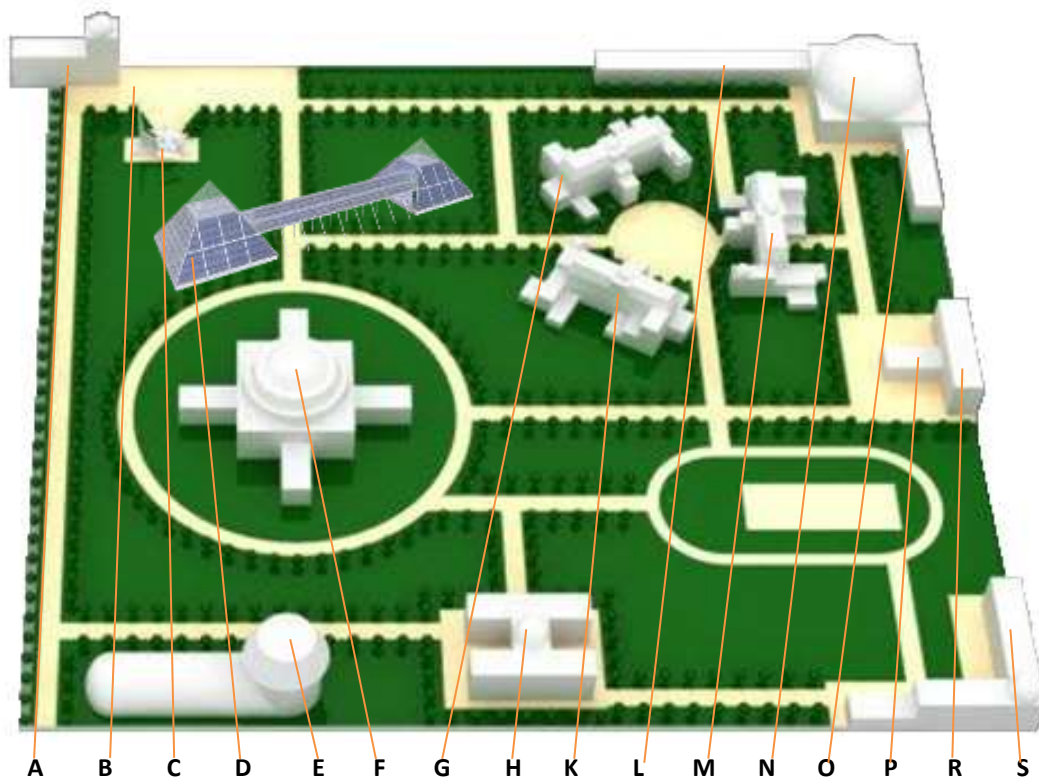
The 1st Stage of the Program provides for execution of Projects to form a base for the practical development of the “OASIS” PROGRAM, (drawing 1):

1. Organize a Center of Innovative Technologies of Nigeria with exhibition complex (CIT Nigeria);

2. Create an educational center for preparation and training of specialists to implement the Program (University of Nigeria, educational institutions for secondary and special education, etc.);

3. Form a network of factories to manufacture materials, components, equipment for the full scale realization of the Program on the territory of Nigeria.

Drawing 1. CIT Nigeria with infrastructure



- A - administrative building, center of introduction of technologies;
- B - parking;
- C - kindergarten;
- D - Equator
- E - exhibition complex;
- F - CIT Nigeria;
- G - University of Nigeria;
- H - warehouses of long term storage (WLTS), meristem laboratory;
- K - school;
- L - industrial complexes;
- M- college, hostel;
- N - industrial complexes;
- O - industrial complexes;
- P - sport complex;
- R - center of innovative medicine;
- S - hotel.

2. STAGE №1 PROJECTS.

“Center of Innovative Technologies of Nigeria” Project provides for construction of a number of units, including:

- 2.1. Exhibition complex in a space truss MERO*;
- 2.2. University of Innovative Development of Ghana and a network of educational institutions to prepare specialists for “OASIS” Program implementation;
- 2.3. Agricultural platforms “Equator”, “Horizon” to produce genetically clean seeds and seedlings as well as fish, vegetables, berries, fruits, flowers, biomass (Annex №1);
- 2.4. Other constructions.

3. EXHIBITION COMPLEX



Paint 1. Exhibition complex in a space truss MERO.

* **Note:**

Unique building construction – frame of dome made of space truss “MERO” has been designed and manufactured by the German company MERO-TSK International GmbH. Dome is a frame assembled with metal complete set.

Patented method of structure calculation and use of special steel (with multiples layers protecting against corrosion) makes it possible to cover big areas without supporting columns.

The Frame causes minimum load on the basement and guarantees the highest security level during long term use in complicated climatic conditions.

Total area covered by dome is 6 200 m² (length-102 m, width – 61 m, height – 15 m).

Openwork structure makes it possible to make the dome transparent with glass covered surface.

Dome glazing is done with controlled glass with vacuum heat insulation (with two infrared layers) that ensure full independence of external conditions with outside temperatures up to +60 C° (Annex №2).



Paint 2. Exhibition complex in a space truss MERO.

4. CONTROL OF ATMOSPHERIC PROCESSES

With the aim to create conditions for beautification, products manufacturing on open plots, protection from dust and sand storms, etc. it is planned to place on the territory of CIT a number of units to control atmospheric processes using special equipment (ion generators).

Brief description of technology:

The technology is based on the electric method of influence on the atmosphere by ion generator (Photo 1). Generator produces negative charged ions that serve as condensation centers and attract water molecules suspended in the atmosphere. It leads to their consolidation, weighting and rain precipitation.



Photo 1. Ion generator, mobile version.

** Unit control is done by the computer. Minimum area of effective influence of 1 complex is 50-100 square meters. Electricity consumption is 2-3 kW per 1 unit. Personal: 6 persons (operator and technicians). Technology is ecologically safe. Equipment operation doesn't interfere other equipment work and doesn't produce electromagnetic and other types of radiation harmful for humans or environment.*

Processes of influence on the atmosphere are fully controlled and oriented and have specifically local action.

The complex has been tested in Russia and abroad. It makes it possible to solve a range of tasks (plants irrigation in open field, dust fighting, etc.

5. OBJECTIVES AND TASKS OF EXHIBITION COMPLEX OF CIT NIGERIA

- Demonstration, promotion, development of the best innovative technologies, machines and equipment in the sphere of ecological problems, effective use of recyclable materials, energy efficiency, etc.;
- Practical implementation of commercially attractive technologies, machines and equipment (qualified selection, certification, preparation for mass production and production supervision);
- Serial production of materials, machines and equipment oriented to solve priority tasks of the practical implementation of “OASIS” Program in the territory of Nigeria and abroad;
- Development and follow up of the Projects of the Program using the most promising innovative technologies;
- Development of cooperation and partnership between innovative enterprises of Russia and Nigeria to promote the most promising solutions (technologies, machines, equipment);
- Attracting investments.

6. STRUCTURE OF INDUSTRIAL PROJECTS OF OASIS PROGRAM

- 6.1. Project of industrial zone to create and manufacture new construction materials;
- 6.2. Projects of agricultural zone with systems of processing and storage of production, autonomous energy supply and waste utilization (processing);
- 6.3. Projects of building autonomous energy independent ecological communities (residential, industrial and social zones) with life support system;
- 6.4. Projects of alternative energy;
- 6.5. Ecological projects;
- 6.6. Projects of communications and transport.

PROJECTS OF INDUSTRIAL ZONE (STAGE №1)

Along with creation of CIT of Nigeria and educational complex to prepare specialists of different levels it is planned first of all to form a network of industrial enterprises that can provide Projects of OASIS Program with required innovative materials to restore/create land fertility, solve ecological problems, build OASIS construction projects and life support system:

- 1) Factories (2) for manufacturing components to restore/create land fertility and ecology TM “AridGrow/IdealSoil”, “ORGAMIN”, “SORBAMIN”;
- 2) Factories for manufacturing modified timber with a joinery shop with processing capacity 7 400 m³ per year, (*Annex№ 2*);
- 3) Factories for manufacturing water under “L-T” metatechnology to increase efficiency of plants growing, food processing, medical programs, etc.;

Note: *For manufacturing the above mentioned production big volumes of organic and mineral raw materials (peat, glauconite, sapropel, wood, water, etc.) are required. This is the reason why it is reasonable to set up the above factories in Russia.*

On the territory of Nigeria first of all it is planned to set up factories:

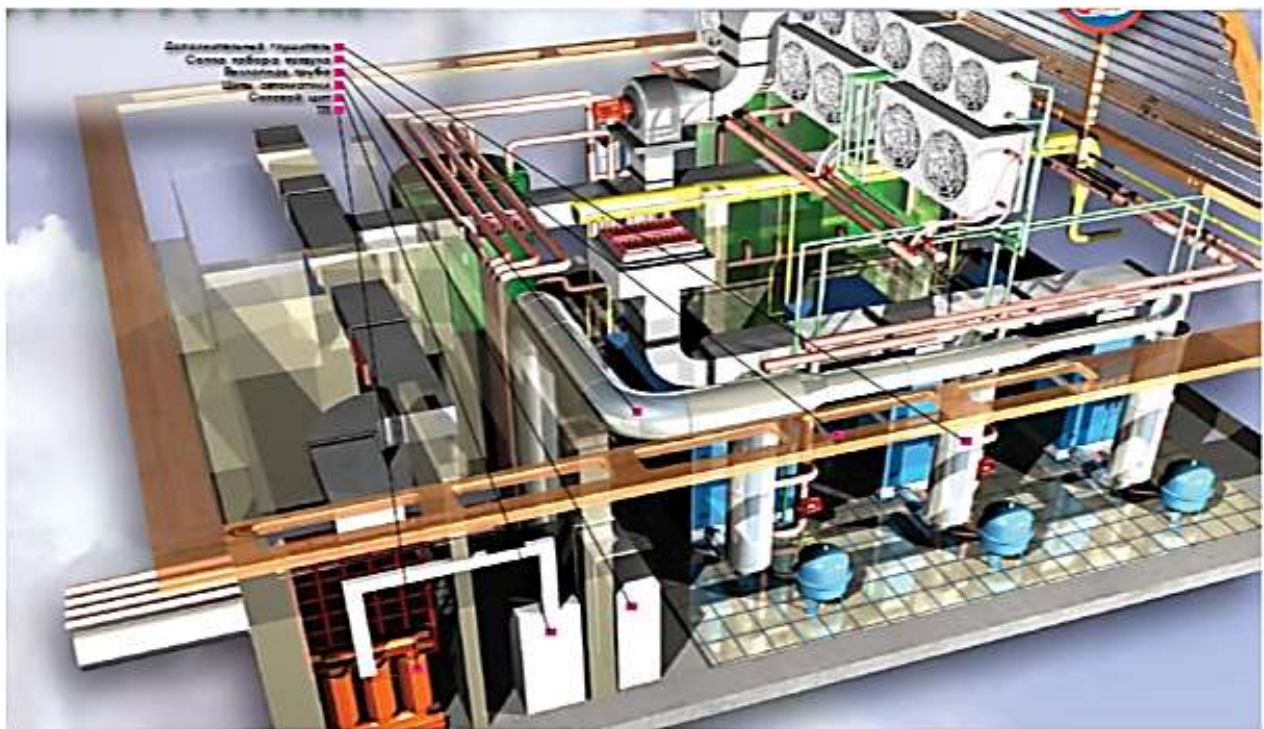
- 1) Mobile/Stationary complexes to manufacture foam silicate with curved casing and casts;
- 2) Factory for manufacturing glass units with vacuum heat insulation with

- manufacturing capacity of 120 000 m² per year (Annex №3);
- 3) Factory for manufacturing foam ceramics with manufacturing capacity of 30 million bricks equivalent per year;
 - 4) Factory for manufacturing glass siliceous processing quartz materials with manufacturing capacity of 120 000 m² per year;
 - 5) Automotive and special vehicles (including screen planes “Burevestnik”) series, accessories and fittings, engineer and transport communications.

7. STRUCTURE OF ENERGY PROJECTS “OASIS” PROGRAM

7.1. Autonomous three generating thermo electric stations

In all the Projects of “OASIS” Program technologies of total saving of resources are used which are based upon new construction materials as well as high technologies of conversion of gas – methane energy to electricity, heat and cold that is three generation.



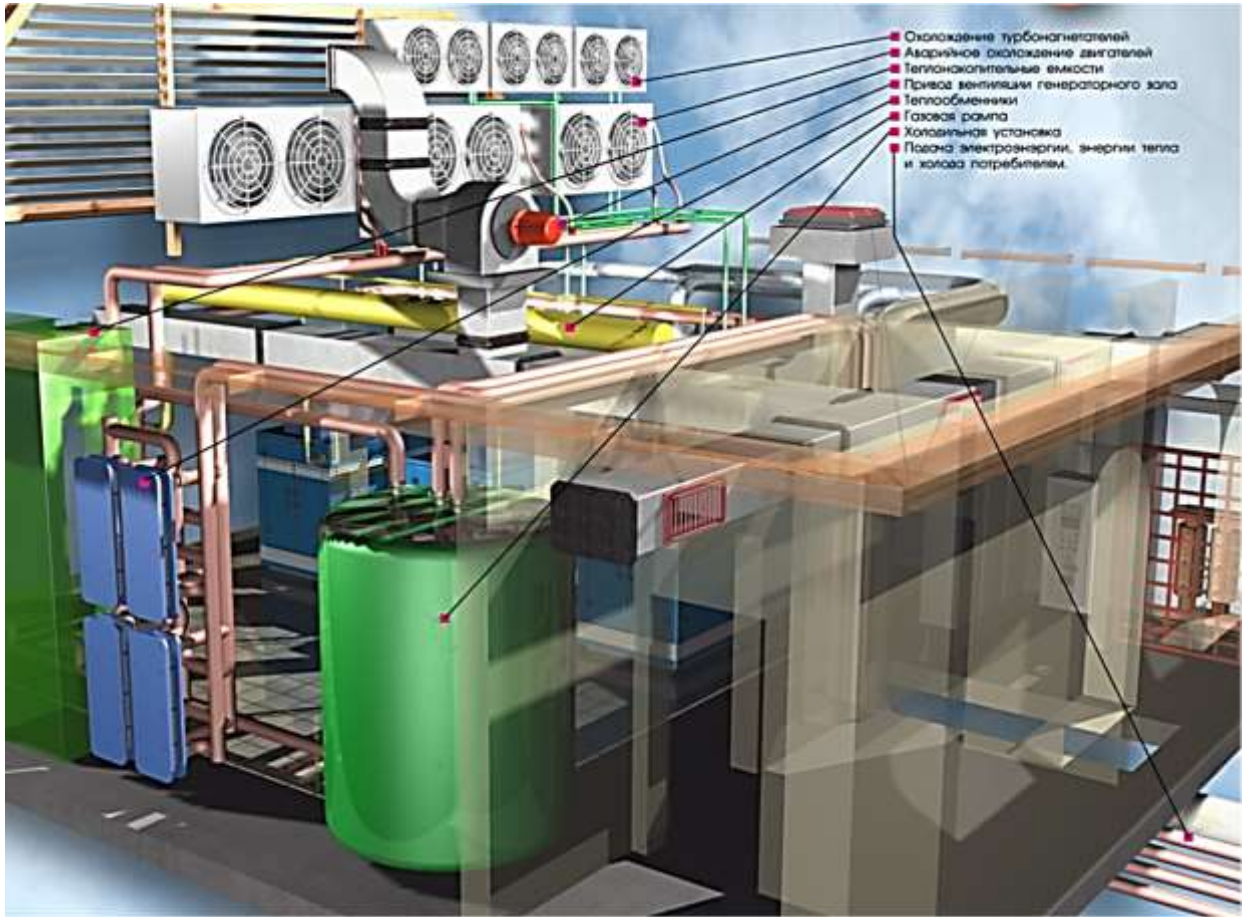
Paint 3. Figure three generating units due.

Three generating units due to the use of thermal energy work with 80-90% efficiency.

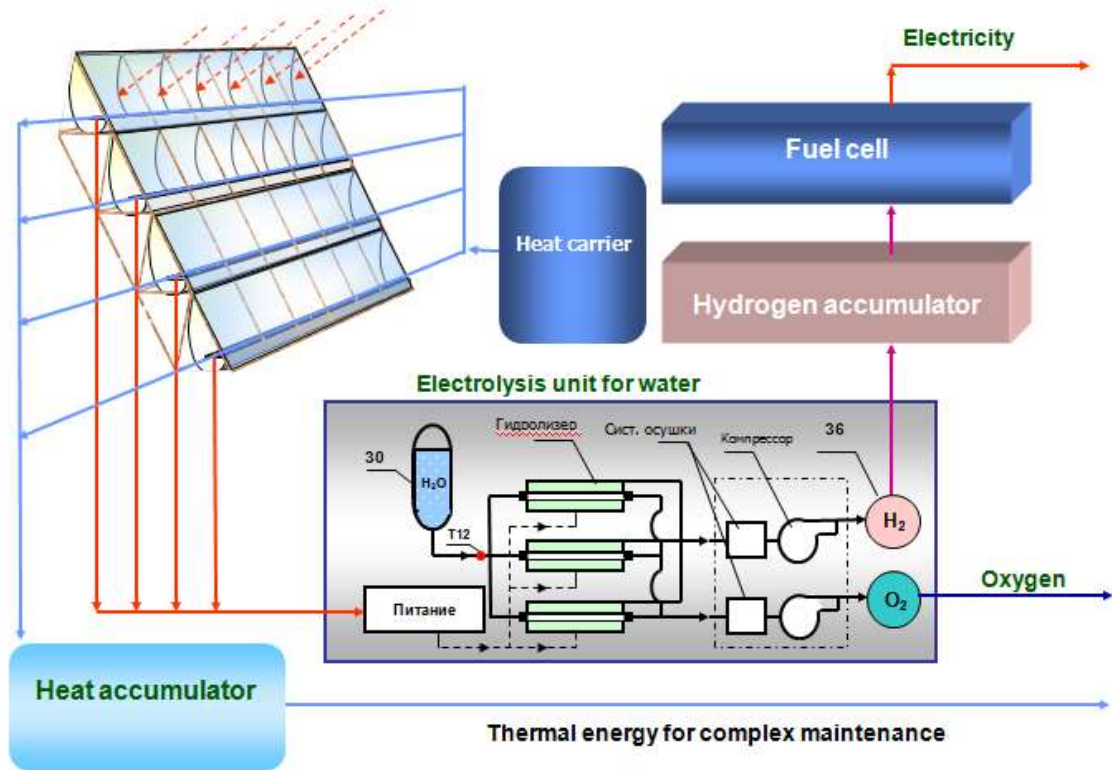
Warranty period of operation is 3 years depending on classification and service life is 25 – 40 years.

Control of energy supply of all the projects of the “OASIS” Program is effected by the Integral Automatic Control System (IACSE) that is computerized radio technic complex with adaptive structure for each given purpose.

The «Equator» complexes are equipped with a reserve NPP with a capacity of 450 kW electric and 630 kW of thermal capacity based on a new generation of triggering gas-piston systems.



Solar-hydrogen NPP with a capacity of 450 kW electric and 3 mW thermal power based on solar concentrators.



Paint 4. Technological scheme NPP

8. STRUCTURE OF PROJECTS FOR WASTE PRODUCTS UTILIZATION AND SATISFYING ENERGY NEEDS OF THE “OASIS” PROGRAM

- Highly profitable innovative project **“Synthesis”** for replication of energy and resources saving technology to utilize Technogenic emission of “greenhouse” gases and accumulation of energy of renewable and non stationary energy sources, conversion into products of organic synthesis, hydrocarbon energy resources and ultrapure oxygen.

- Project **“Solid Domestic and Industrial Waste” (SDIW)** to build and replicate complex ecologically clean units to process solid domestic and industrial waste (SDIW), any dirty hydrocarbon raw material, black oil, heavy fractions of oil processing (oil waste), coal gasification, processing of rubber items (tyres), organic waste, medical waste, poisons, chemicals obtaining at the end energy, hydrocarbon fuel, metals, coal plastic, basalt plastic and a wide range of construction materials returning back to use waste of civilization.

- Project **“Basis”** to create reserve systems of energy supply based on the use of new one wire quasi superconductivity technology of energy transmission at any distance without traditional electric lines including space, transcontinental, continental, regional and local.

- Project **“Sun Wind”** to set up factories for manufacturing sun silicon with efficiency up to 37% for energy supply and building complex ecologically clean stations of non fuel energy based on helium concentrators with modular power up to 1 TW.

- Project **“Hydrogen Energy”** to set up ecologically clean stations of non fuel energy with oxygen-hydrogen cycle of energy accumulation from renewable sources.

- Project **“Turbo wind”** to set up ecologically clean stations of non fuel energy based on manufacturing and operation of ecologically clean wind assembly units of new generation.

- Project **“ATES”** to create decentralized three generating intellectual gas piston stations to supply energy of all kinds including cold.

- Project **“Biofuel”** to set up complexes for processing low calories raw materials (coal, shales, oil processing products), domestic and agricultural waste and producing gas or liquid fuel.

- Project **“Biogas”** to set up a complex for utilization of agricultural waste and producing biogas and bio humus for further use.

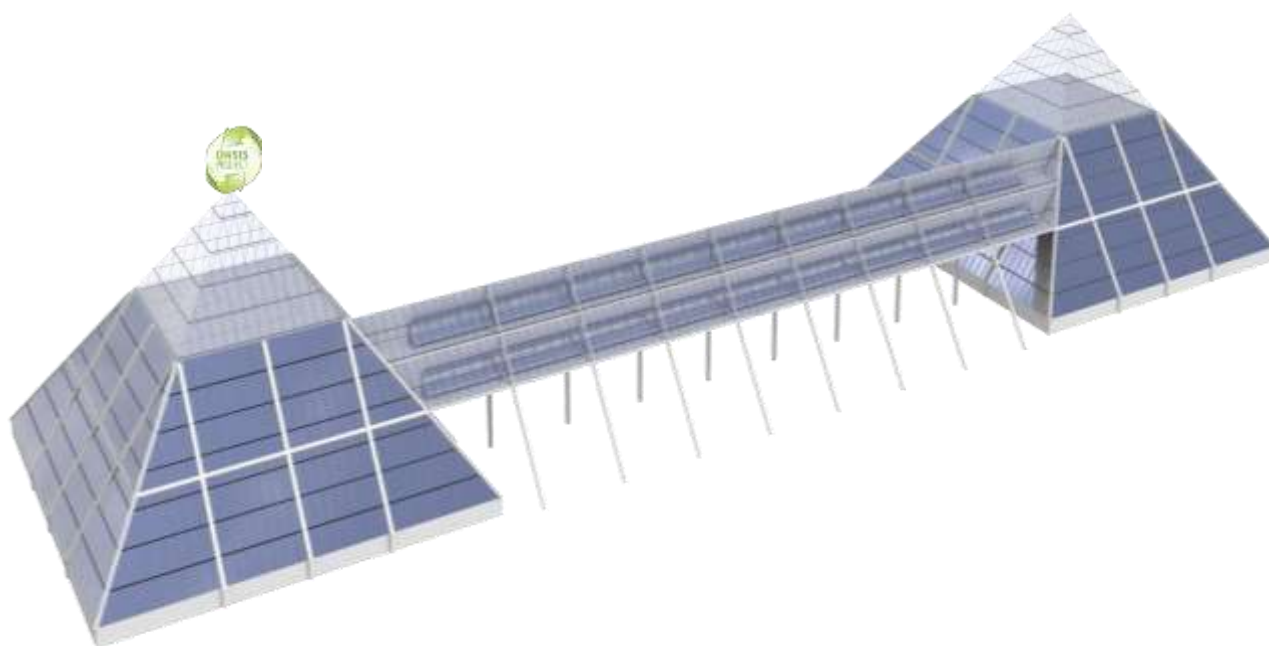
9. Project «Equator» on the creation of universal agricultural platforms.

The aim of the project is to create new technical means for the reproduction of bio resources and the cultivation of valuable aquaculture species and higher plants in isolated technical and biological systems of new-generation.

The project solves the problems of creating technologies for human life support systems in extreme situations, including survival in deserts.

The project provides for the use of renewable energy technologies as well as energy-saving technologies (transparent wall structures with vacuum insulation, etc.).

The project of the complex «Equator» was developed by the leading specialists of the Russian Academy of Sciences, the Russian Academy of Agricultural Sciences and the military-industrial complex in the interests of the USSR rocket and space complex from 1955 to 1989 on the basis of high technologies for creating isolated life-support systems.

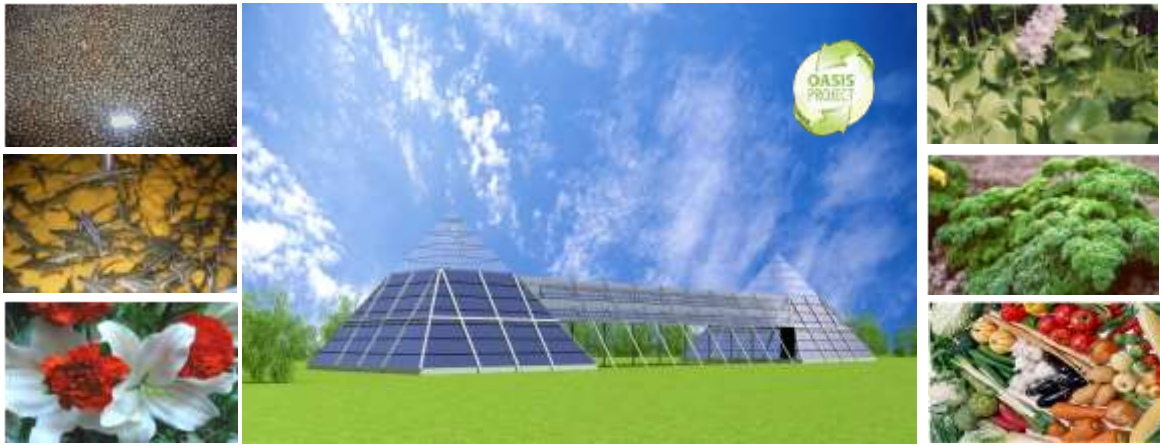


The "EQUATOR" complex for the reproduction of bio resources with helium concentrators uses solar energy in the oxygen-hydrogen cycle as the main.

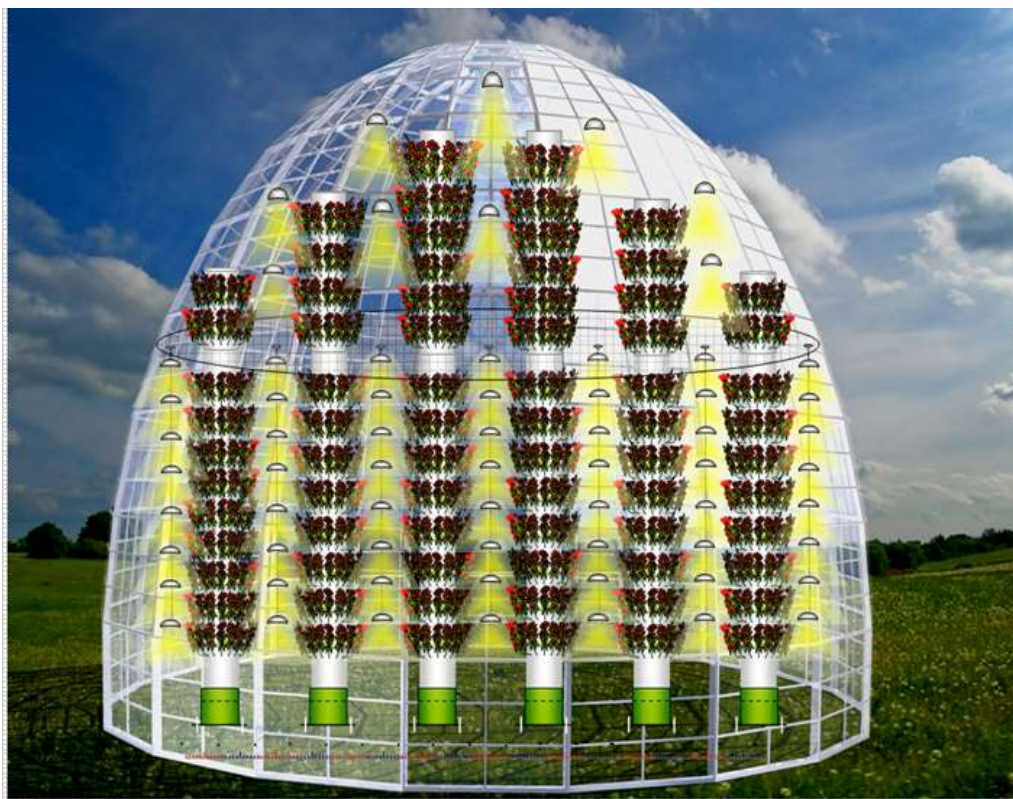
The universal agricultural platform «Equator» is a multifunctional system of reproduction of bio resources as the basis of guaranteed production: meat, fish, berries, vegetables, fruits, flowers, biomass and also genetically pure planting material and seeds.

Complex "Equator" and «Horizon» due to modified wood and vacuum glass can produce products all over the world and used for the reproduction of aquaculture, higher plants and high-protein biomass.





10. Project “Horizon” for building complexes made of vacuum glass and modified timber for aeroponic volume growing vegetables and berries as well as flowers, grains green vitamin fodder (GVF).



“Horizon” complex doesn’t have analogs in production capacity, ecology and quality of products.

Complex operates round the year in any part of the Planet, doesn’t require infrastructure, uses 14 times less water and gives 6-12 crops per 1 year.

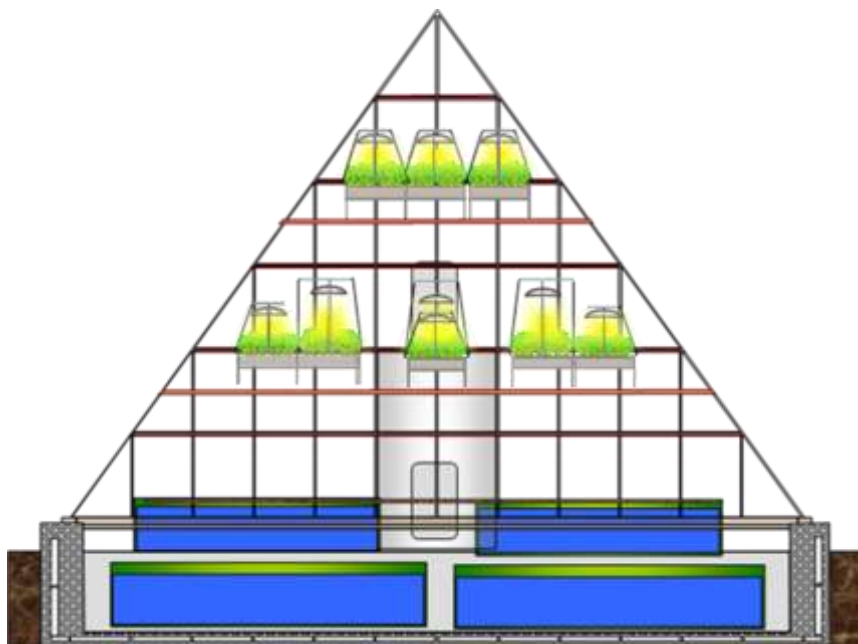


Paint 5. "Svetokultura" module.

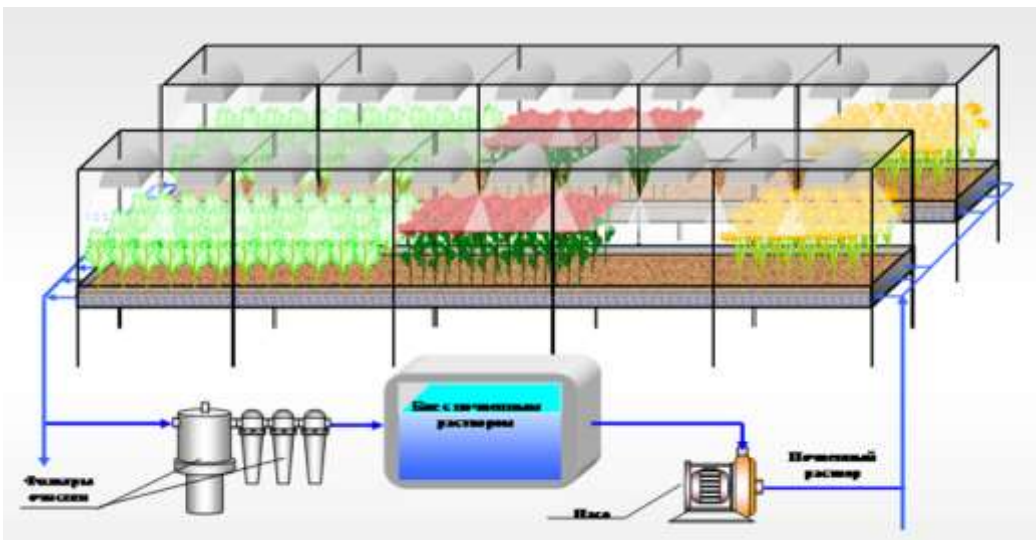


Technology of year-round growing of seeds "Svetokultura" (module):

- vitality and germination of seeds increases;
- volume of the root system is increased 4-6 times;
- green bulk of plants increases by 40-80%;
- yield increases by 20-60%;
- terms of ripening of agricultural crops are shortened.



"Light culture" installations for year-round intensive cultivation of ecologically clean dietary and medicinal crops of greenery, salad products, cucumbers, tomatoes, herbs, seedlings, and flowers according to the wasteless groundless technologies developed for them using specially simulated artificial polarized light and precisely selected for each plant nutrition artificial nutrient solution gives 6-8 yields per year.



The hydro botanic biotechnology of purification of circulating water and its saturation with atomic oxygen based on the use of the aquatic hyacinth "Eichornia" has an 93% efficiency.

For the year the complex yields about 2000 tons of high-protein biomass for livestock and fish feed in the form of by-products.



Project creation of modified wood has made it possible to replace expensive aluminum structures and to obtain unique materials for strength, durability, fire safety and environmental cleanliness.

The raw materials are aspen, birch, alder, etc.

Production of one complex for the reproduction of valuable bio resources:

Up to 200 tons of sturgeon per year



Up to 5 000 000 fry per year for development



Up to 10 000 000 fry per year for sale



Up to 10 tons of caviar per year



Up to 600 tons of tilapia per year



Up to 1500 tons of catfish a year



Up to 250 tons of eel per year



Up to 2000 tons of biomass per year



Production of the upper tiers of the complex for the reproduction of bio resources. For biological water treatment 1000 m² of universal installation «Light culture» are used (up to 8 crops per year).

Up to 10 kg of dill, etc., per month from 1 m²



Up to 8 kg of salads per month with 1 m²



Up to 160 kg of tomatoes per year with 1 m²



Up to 450 roses per year with 1 m²



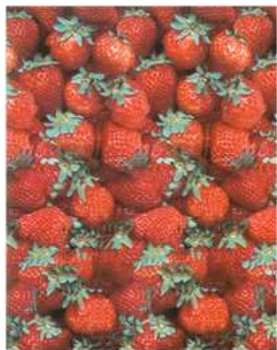
Up to 100 kg of peppers per year with 1 m²



Up to 3000 plant seedlings per year with 1 m²



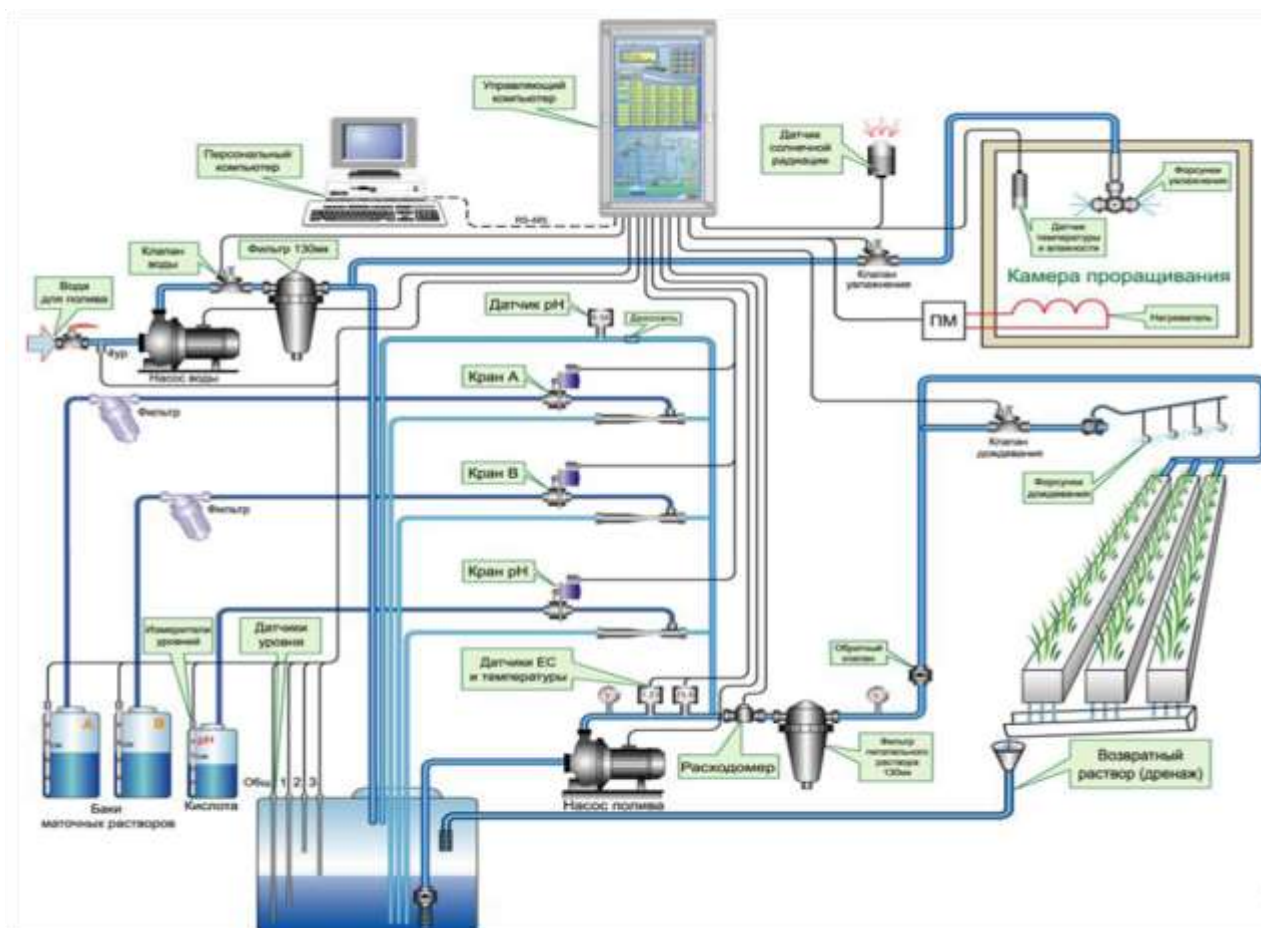
Up to 5 kg of berries per month with 1 m²



Up to 140 kg eggplant per year with 1 m²



Complex management system «Light culture»



11. STORAGE TECHNOLOGY. SYSTEM FOR LONG TERM STORAGE OF VEGETABLES AND FRUITS (SLTS)

Specialists of space complex with support of leading institutes of Russian academy of agricultural sciences based on the latest space technologies have developed a system of long term storage (SLTS) of practically any agricultural and maritime products.

The presented technology is the result of many years research and development of Russian scientists and based on achieving the condition of biological anabiosis of production at positive temperatures and regulated gaseous medium. Unique at the international level technical and economic parameters of the new technical means make it possible to solve the problem of long term high quality storage of production at all stages: from the field to the table of a customer.

In the modular complexes of long term storage of new generation with storage capacity from 200 to 1000 tons fruits and vegetables can preserve taste, nutrition, vitamin, energy and consumer properties for many months.

After 10 months of storage the freshness of agricultural products in the condition of biological anabiosis in regulated gaseous medium reaches 97%.



PRODUCTION OF MODIFIED TIMBER

Factory to manufacture modified timber.

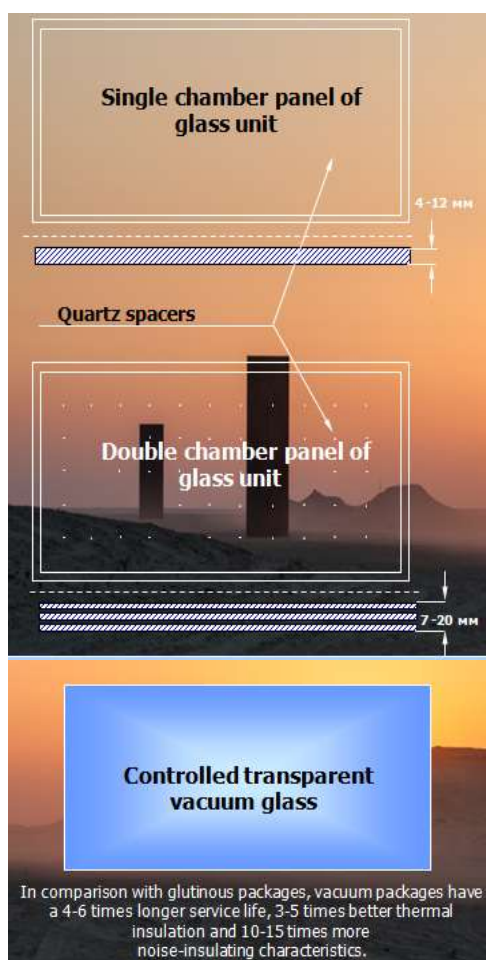
Manufacturing capabilities of the technology make it possible to produce as end product modified timber (MT) with a wide range of decorative, strength, mechanical and service properties. Maximum economic effect is achieved with modified timber made of cheap and low grade wood like birch, aspen, alder, etc.

Manufactured end product obtained full range of technologically precalculated properties like for example high hardness, wearability, density and firmness, bio- moisture and fire resistance, new decorative properties.

Technological process consists in chemical mechanical modification of wood and as a result new material called DESTAM is obtained (GOST 24329-80). DESTAM compared to source wood has profound texture and light yellow to dark brown color.

One of the main features of the modification process is that wood can be pressed (to the density 1200 kg/m³) and bended that opens new possibilities to mechanical machining during manufacturing final products.

Processing technology makes it possible to obtain original product that cannot be manufactured by other method.



MANUFACTURING OF VACUUM (CONTROLLED) GLASS

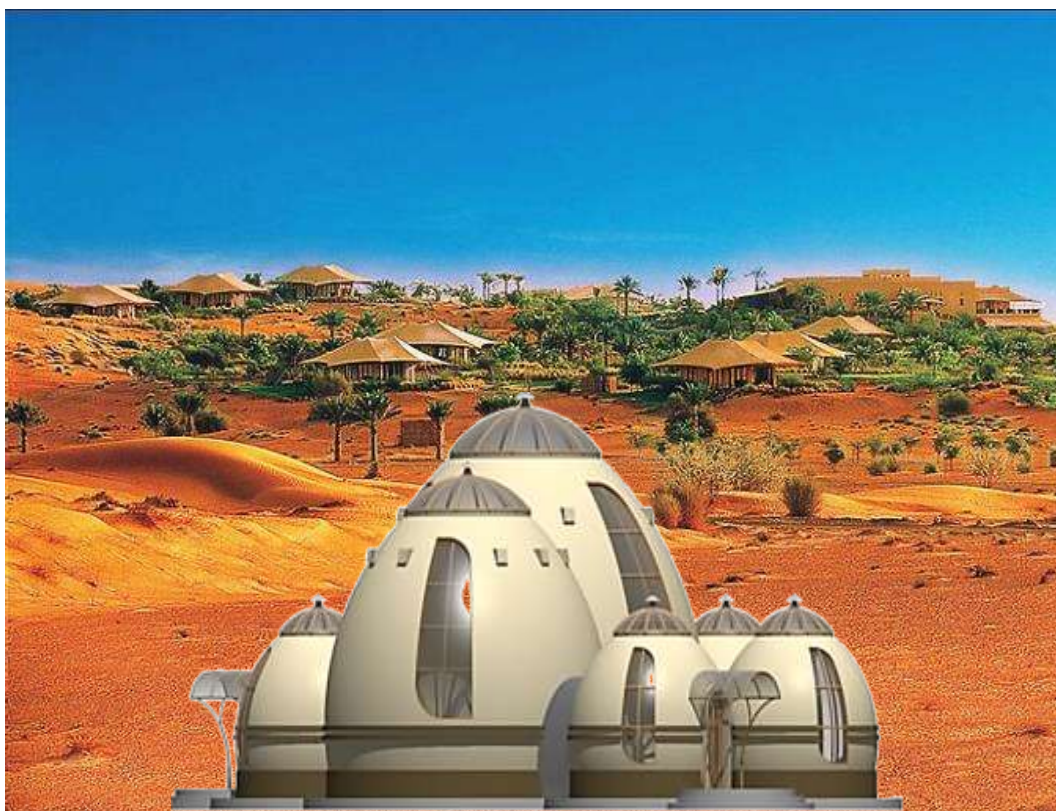
Controlled transparent double-glazed windows with vacuum thermal insulation have no analogues
Glass heat transfer resistance with vacuum heat insulation:

- without special coating - 0,64 m² degree/W;
 - with IR coating on one glass - 0,85 m² degree/W;
 - with IR coating on two glasses – 1.25 m² degree/W;
- Service life - 50 years

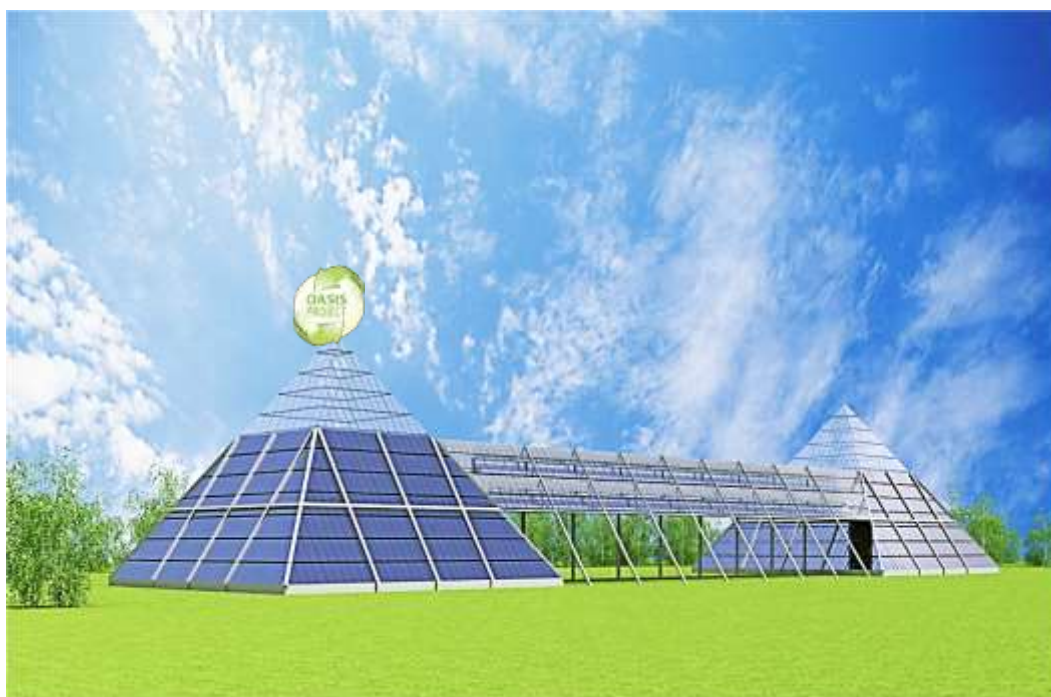
Resources saving glass units with vacuum heat insulation ensure thermal resistance of structures due to thermal conductivity and convection in the air layer between glass sheets.

The above makes it possible to reduce losses through glass structures in 4 to 6 times compared to conventional glass units.

Compared to conventional glass units vacuum units have service life 4 to 6 times longer, 2 -4 times better thermal insulation and 8-12 times better noise insulation properties.



Paint 6. New type of buildings made of foam silicate



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