



STERILE **HYDROPONIC** **GREENHOUSE**

www.itcltd.it

MISSION & VISION

ITC Ltd was founded in London in the year 2002.

We are a a Consultancy and EPC Company operating in the renewable energies field.

With time, the Company has grown and has broadened its interests towards new technologies and fields of application.

We have invested in the renewable energies and in the green economy aiming at providing not only products, but complete and cutting edge solutions.

The Company Mission is to create a cleaner world thanks to the technologies that we are able to offer which we improve day by day, based on the requests coming from the countries that are interested in developing our Projects.

We aim at creating a sustainable development respects the environment and the humankind, by cooperating with those who have acquired ou trust and those who would like to become our Partners, so that we can face this great adventure in the most responsible way possible.

Cohesion, respect and responsibility are fundamental features to reach shared objectives.

The most important sectors we have covered in the recent years allow to:

Protect the environment avoiding unnecessary waste ;
Solve serious environmental pollution Improve the territory with particular attention to Agricultural in the World which is very important for the survival of every people .

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STERILE HYDROPONIC GREENHOUSE



STERILE HYDROPONIC GREENHOUSE

Every year in the world are estimated exorbitant losses of agricultural products, caused from climate change, unpredictable weather events, environmental disaster.

They are the reason of incalculable damage to crops after months of work and money invested. For this reason ITC give you the solution to save your investment and your business.

Save Resources as water, energy, land.

In traditional agricultural production on the soil are employed many natural resources, greater than necessary, as water, energy and land with enormous production of waste, pollution, and contamination of agricultural products;

The Hydroponic Greenhouse is the best technologic solution to protect crops, to reduce waste, and save vital resources as water and energy.

**THE BEST INVESTMENT TO
SAVE YOUR WORK AND
YOUR MONEY**

HYDROPONIC GROWING

Crop Protection Systems

The protected crops systems are increasing in the recent years, as per demand of consumers, who want the guarantee to eat a good product, and because there is the necessity to reduce waste and save resources (water, land, energy).

Others important reasons are the climate change and unusual weather events that each year cause many damages to crops outdoors.

The first important sistem we propose is

The Hydroponic Tecnology in Greenhouse.

This technology is applied to produce tomatoes, melons, peppers, eggplant, lettuce, strawberries, vines, herbs, medicinal plants, cut flowers, and others...

The plants are grown in a substrate that replaces the soil, as for example rock wool, clay, perlite, coconut fiber etc;

With Hydroponics System, water, and nutrients are given directly to the plants, (not on the soil where 90% of them is lost), with faster results in terms of crops growth and quality products.



THE STRUCTURE

MODULAR RETICULAR
STRUCTURES
FROM 1.700 MQ TO 50.000 MQ
AND MORE

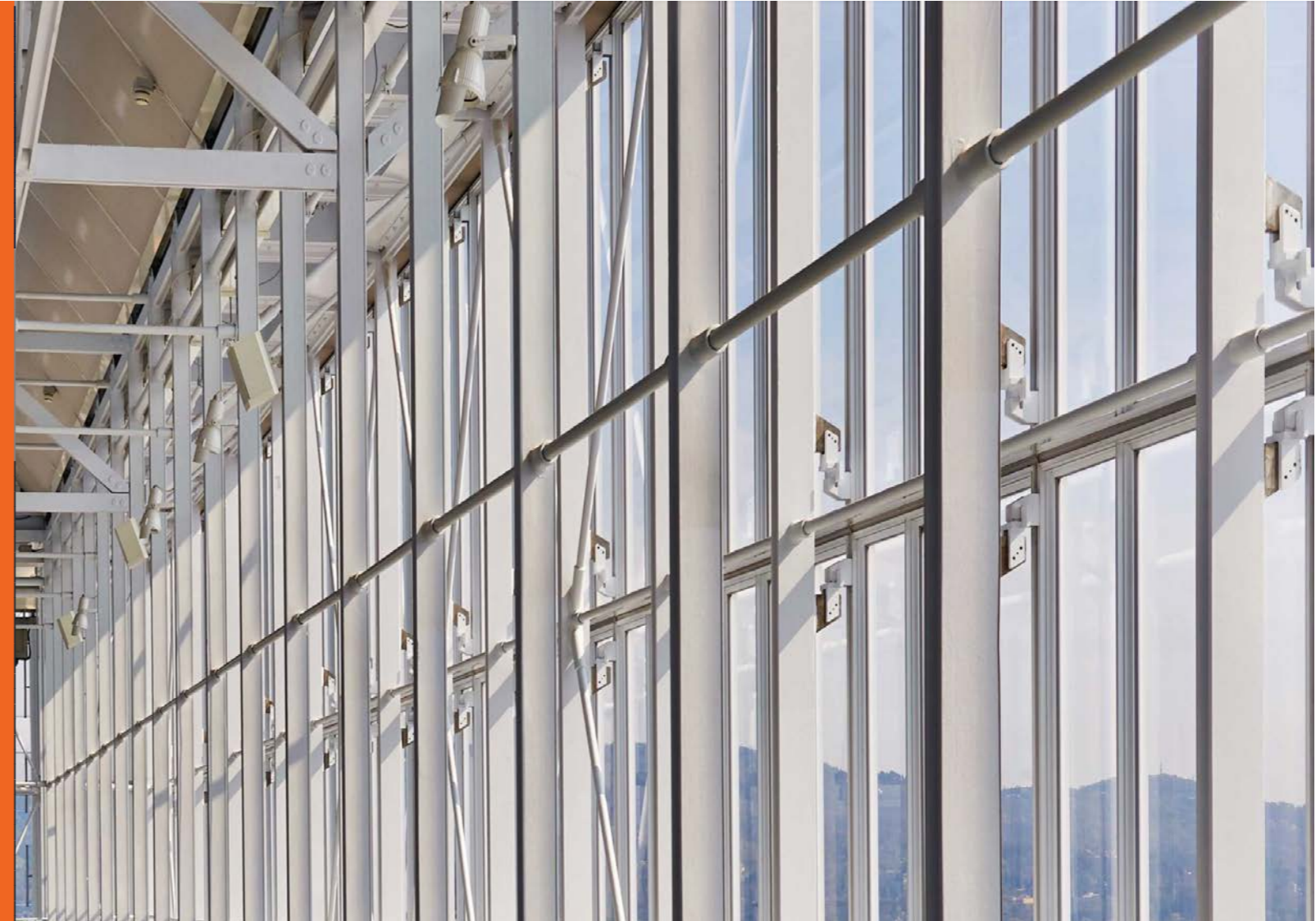
The Structure

The Hydroponic Greenhouse has been designed with a resistant structure in steel, and stratified glass, with filters, to protect crops.

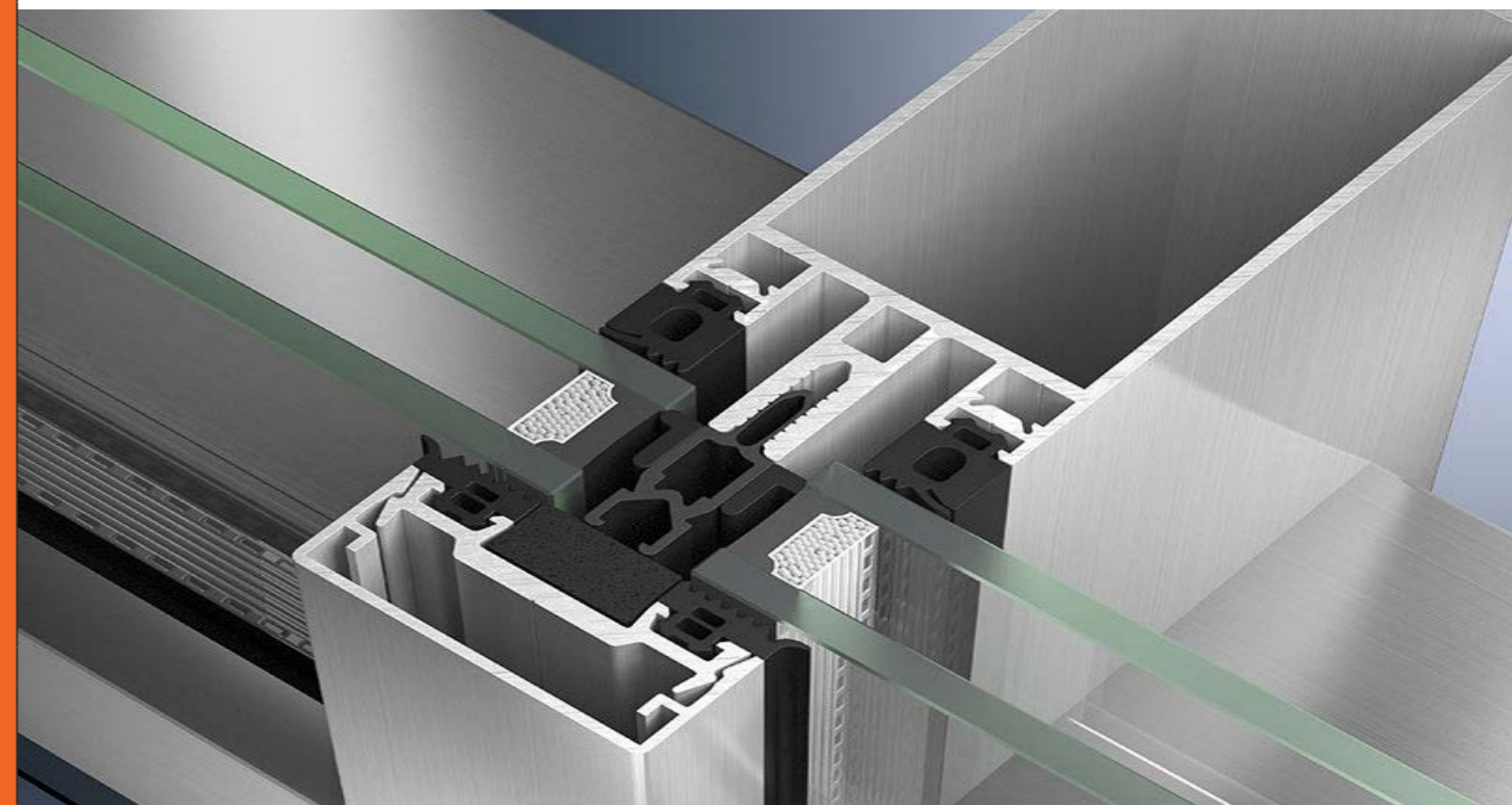
This Structure is able to resist to every external climate conditions (wind, heavy rains and heavy snowfall, high temperature). Integrated Technologic Plants , are able to create un internal microclimate suitable to crops, independent of external weather conditions.

The Advantages of our structure are:

- Great Strength little weight
- Expandable and reconfigurable
- Praticality in transportazion and mounting
- Wind and snow resistance



STRONG STRUCTURE IN STEEL ALUMINIUM AND GLASS



The Advantages of our Structure

GREAT STRENGTH LITTLE WEIGHT :

Rigid, resistant and lightweight reticular steel structures.

The basic concept of each of our structures is the same: grids and diagonals are produced to measure, flattened at the ends and drilled, and finally combined with the use of bolts and fasteners following geometrical patterns, mainly of pyramidal type that make the structures rigid and lightweight, but at the same time resistant and drawing strength from the intrinsic rigidity of the triangular frame.

Despite the conceptual repetitiveness, the system is very customizable. Our structures are safe and long-lasting, simple and geometric, they are strong and rigid, but at the same time lightweight, they allow to realise long spans thanks to a limited number of supports.

EXPANDABLE AND RECONFIGURABLE

Modular reticular structures

Our spatial reticular structures can be extended and re-moulded in their shape.

Even when the work is finished, it is possible to extend and increase the area of a reticular structure, or modify its shape or even disassemble it and then mount it again in another position.

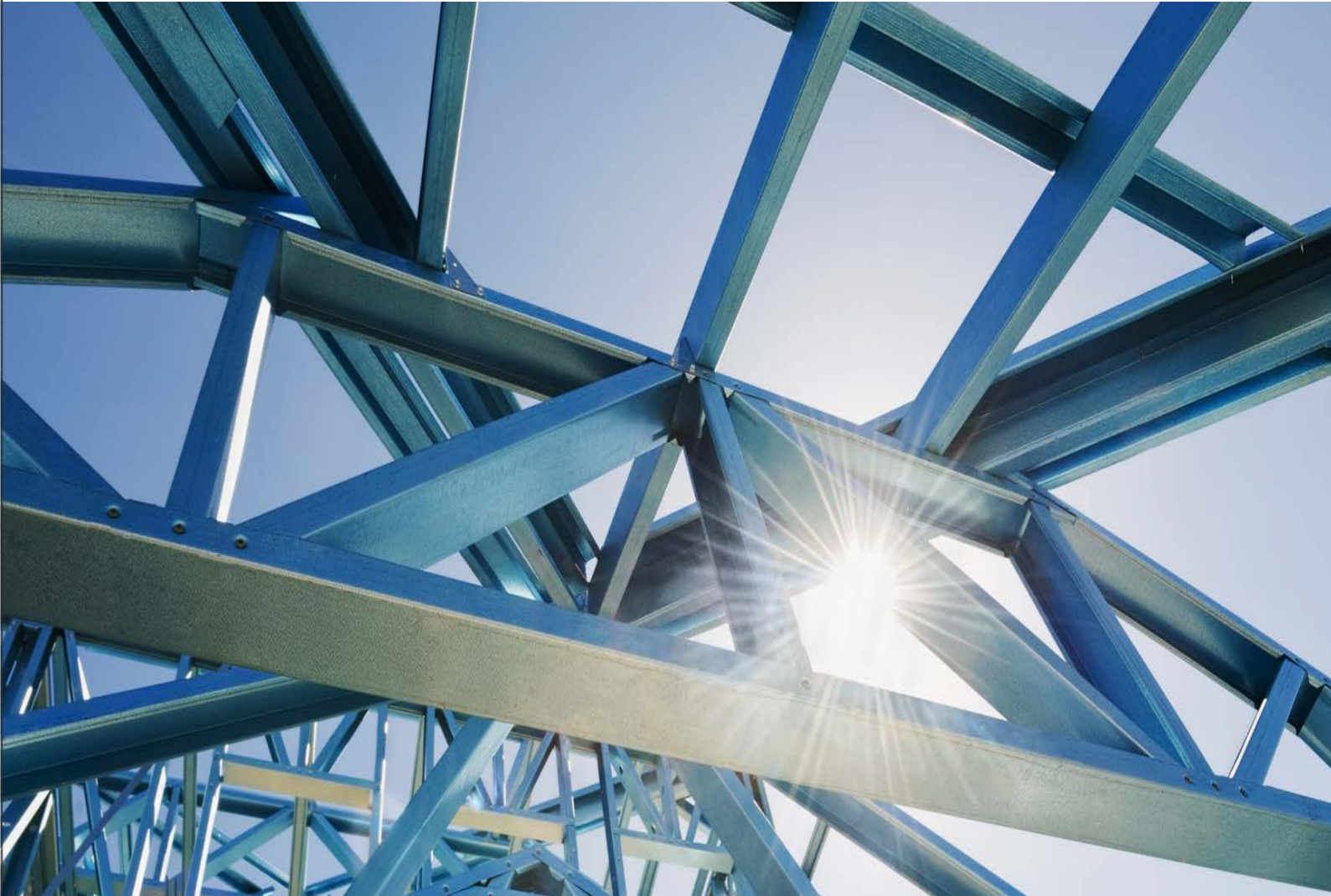


GREAT STRENGTH
LITTLE WEIGHT

EXPANDABLE AND
RECONFIGURABLE

PRACTICALITY IN
TRANSPORTATION
AND MOUNTING

WIND AND SNOW
RESISTANCE





The Advantages of our Structure

PRACTICALITY IN TRANSPORTATION AND MOUNTING

Space reticular structures, Lightweight, easy to be packed, transported, assembled.

A fundamental characteristic, as well as advantage, of the spatial reticular structures, is that they are suitable to cover large areas using elements of reduced dimensions, and very lightweight, with respect to metallic carpentry and reticular trusses-based implementations. Moreover, the extreme ease of our patented system allows to reduce the installation times to a minimum; the extreme simplicity in assembly allows us to install our structures all over the world.

WIND AND SNOW RESISTANCE

Great resistance against wind and snow action. Our structure system provides great resistance against the wind and the snow. Our technical staff analyses each plant in its geographical location and, if required, certifies its static resistance according to the regulations of the State where it is installed by providing a technical report.

A large white wind turbine stands against a clear blue sky with a few wispy clouds. The turbine's blades are long and pointed, extending from a central hub.

TECHNOLOGIC PLANTS

The design and construction of the plants in a Greenhouse are very important and sensitive matters.

The technological systems are designed to be perfectly integrated with the structure and to favor the growth of crops in the Greenhouse.

The aim is to obtain a high yield of production and a very good crop quality, regardless of the outdoor climatic conditions .

The indoor climate, handled with the installation suited to crops, manages the concentration of carbon dioxide CO₂, oxygen, temperature and humidity; all elements that are interrelated and that must be present in balanced quantities to have a good performance of crops .

The Hydroponic Greenhouse is equipped with automated systems that can be controlled and managed with remote controller.

Our technologic plants can be customized and adapted to any type of crops, thanks to our technological innovations.

HYDROPONIC GREENHOUSE

The technological plants supplied with the Hydroponic Greenhouse are:

- Heating system from air, water or electric wire;
- Fertigation application systems;
- Cooling systems;
- Shading and screens to protect crops;
- LED Lighting to support and speed up the growth of crops;
- Automation system to check indoor temperature, humidity, fertigation and brightness;
- Computerized systems for automatic and remote control of all installation;
- Photovoltaic panels;
- Wind turbines;
- Geothermic solutions;
- Infinity Energy System;

We are able to supply and install the best renewable energy solution to produce electric energy, necessary for the management of technologic plants and cycle crops.

The Hydroponic Greenhouse can be installed in any geographical area; the structure made in steel is very solid and durable in the years.

The structure is closed with double glazing to have a good thermal insulation; the Greenhouse is equipped with technological systems that are able to create a microclimate inside, independent of external climate conditions.





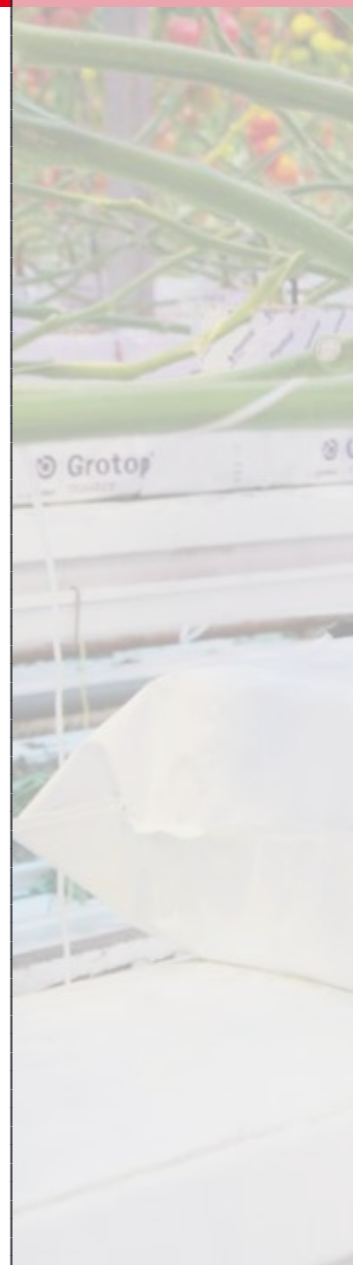
Growing Equipment for Hydroponic Greenhouse

We are able to supply different kind of equipment for crops cultivation. The technology for hydroponic cultivation we can supply, enables growers to produce more while using less water, nutrients and space. It creates optimal growing conditions for a whole season, and allows roots to make better use of the entire substrate.

We can offers a crop-specific range of substrate slabs for vegetable growing, specifically for tomato, cucumber, sweet pepper and aubergine crops, and many other products. We have developed a wide range of innovative substrate slabs, on the basis of on the basis of the specific characteristics necessary for grow each kind of product.

Our technology allows precision irrigation possible through accurate measurement and detailed display of the water content (WC), electrical conductivity (EC) and temperature levels in the substrate. Greenhouse vegetable production is constantly developing.

Consumers are becoming increasingly aware of the importance of healthy and sustainably fresh produce. Technological development is continuing to advance, and demands with regards quality of products increase every day. In line with these developments, the market is demanding ever higher standards that we can guarantee with our Sterile Hydroponic Greenhouse.





Climatization and Fertigation Systems

Greenhouse Computers & Control Technology to Automate your Greenhouse Operation



We supply with the technologic plants, the **Fertigation Manager** that is a greenhouse fertigation machine that offers some of the most advanced computer technology with all inclusive software and instrumentation. Growers depend on these fertilizer programs to irrigate vegetable crops on a daily basis and according to the recipe of each kind of crops. Fertigation Manager allows the grower to produce excellent products with one centralized computer controlled irrigation machine.

Advantages

- Manage Water and Fertilizer Usage;
- One Central Machine for Multiple Crop Feeds;
- Customized To Your Needs with Sensors & Injectors.

The Fertigation Manager is a precise fertilizer management system that allows you to create many different fertilizer feeding formulas for diverse Hydroponic crops.

The Fertigation Manager has a key component in engineered water recycling system in conjunction with the Ozone Pro water sterilization system. It provides a complete turn key water collection and recirculation system that saves the grower up to 80% water and fertilizer costs.

Since the system recycles 100% of the fertilized irrigation waste water it meets all required environmental regulations for commercial greenhouses.

The Climate Manager controls your greenhouse during cold winter and hot summer months. Temperature, humidity and Co2 is accurately controlled inside the greenhouse to your set points during the day and night. The environment inside the greenhouse is very dependent on the weather conditions outside the greenhouse. The Climate Manager program takes into consideration outside weather conditions, such as solar radiation, outside temperature, rain, and wind and makes adjustments necessary to create optimal climate conditions requested to grow the crops.



LED LIGHT To increase your production



We are able to control growth perfectly throughout the entire year using LED lighting system

For the horticulture in the Hydroponic Greenhouse you can use special light: LEDs (Light Emitting Diodes) which can supply light with a distinct red or blue component based on wavelength; exactly the light that plants such as iceberg lettuce, tomatoes and basil need for photosynthesis and for optimal growth.

The light colors emitted by the diodes combine and produces the pink aura.

Another advantage is that by using LED light, the crops is no longer dependent on natural light sources.

With the supplemental LED lighting grow light levels can be raised in order to enhance photosynthesis and thereby improve growth and quality of the plants.

With artificial LED light the light period can be controlled by extending the natural day length to get more plant growth in a shorter time, **(higher production up to 60%)** There is also the possibility of cultivation without daylight: regardless of rain or the lack of sunlight, the constant light produced by the LEDs ensures consistent growth of healthy, fertile plants.



STERILE HYDROPONIC GREENHOUSE

The Top of Technology for crops

The Sterile Hydroponic Greenhouse is a more advanced Technology than previous mentioned.

The Sterile Hydroponic Greenhouse is perfectly protected from every climate conditions, pathogens, insects, pollution etc.; the internal climate condition is constantly checked.

Inside this Hydroponic Greenhouse the air is sterile, to ensure the total absence of contaminants from external environment and the absence of pathogens.

In the Sterile Hydroponic Greenhouse the access of staff is permitted only with special clothing to guarantee maximum hygiene and attention to prevent contamination of the products.

Advantages Hydroponic Technology

This technology is the best solution for crop protection; you can have the guarantee of the result, because the product is not subject to attack by insect, parasites or bacteria, that could compromise the quality and the quantity of the crops.

The **Sterile Hydroponic Greenhouse** is equipped with air conditioning systems and fertigation fully automated;

The management must be delegated to specialized staff, which is able to monitor in real time the internal climatization, the fertigation system and verify the quality of crops.

- The staff employee works in good conditions on support worktop.
- + 60 % production with Led Lighting Technology .
- Saving 90% of water compared that used for crops in the soil.
- Product growth in safety, protected from weather adverse conditions and parasite attacks.
- No use of antiparasitic products and pesticides.

No Risk of loss production
Save 90 % of water
Final product better
than Biologic

FROM PRODUCER - TO CONSUMER

The **Hydroponic Greenhouse** can be organized with a shop to sell fresh products to the final consumer;

Non only fresh products but also sub-product by processing them from industrial plants.

We can make project and enclose in equipment's **Hydroponic Greenhouse**, industrial plants to processing the products after collection. So you will be able to produce and to sell fresh products and sub-products transformed by the crops.

For example if the crops are tomatos you can produce sauces, past, preserved tomatoes etc...

A shop inside the Hydroponic Greenhouse will complete the life cycle of the products.

In the same time it may be intersting to set up a restaurant, bistrot where offer prepared products, collected from from the Hydroponic Greenhouse,for lovers of vegetarian culture and therefore fruits and vegetables. We remember that the crops produced whith our Sterile Hydroponic Greenhouse, , will be better than Biologic !!



BIOLOGIC PRODUCTS

Biological Products have penetrated the European market of food and they are a fact for the producers as well as the consumer. The consumer of biological products has specific consumer characteristics and increased ecological sensitivities. The biological products are in a stage of replacing the similar products of chemical agriculture, which means that the market of biological products is in a competitive position against similar products of conventional agriculture.

Buyers who searches for biological products gradually increases. Biological products are distributed all kinds of sales such as traditional public markets (open markets), Healthy Food Stores, Specialist Shops, Farm Sales, Sales through orders and supermarkets. For the successful sales promotion of biological products, it needs to convince customers about the quality of biological products and with our sterile Hydroponic Greenhouse you can guarantee this.



GROW YOUR BUSINESS

Our technology systems of cultivation offer many advantages:

- The production year is extended to 365 full days, in any meteorological condition, even extreme, as in the middle of the desert, in cold areas, in highly polluted areas, in the middle of the city, in scarcity of light.
- Production levels are 60% above standard greenhouse results. The integrated 24/24 control system on 365 days, alone raises production by at least 40% above conventional hydroponic systems.
- Yields are 20 to 40 times more product per m² than conventional field production. For example, in a cultivation of tomatoes, a square meter of greenhouse can exceed the production of 400 kg per week;

- Achieves the lowest price per kg in the industry today.
- Water efficient growing system that requires 1/9th of equivalent water usage, compared with field grown product, further translating into an 90% savings in water usage.
- An important note, to understand the quality of the final product, the tomatoes produced with this system do not contain "NICHEL" metal of which 10% of the world population is allergic. The fully automated hydroponic system, far from pathogens and parasites.

COLLECTION | **PROCESSING** | **DISTRIBUTION**



**PRODUCTION IN LARGE SCALE WITH OUR STRUCTURE
FROM 1700 MQ TO 50.000 MQ AND MORE**



FROM DESIGN TO CONSTRUCTION

ITC Ltd is specialised in supplying complete, high-tech Sterile Hydroponic Greenhouse projects.

We relieve the burden on our customers by taking care of every aspect involved in developing and implementing a successful greenhouse project.

Each step is performed under our supervision, meaning that a single company is responsible for the entire process.

Design

The expert Staff of ITC Ltd put their extensive knowledge and experience to good use to devise and develop optimal solutions.

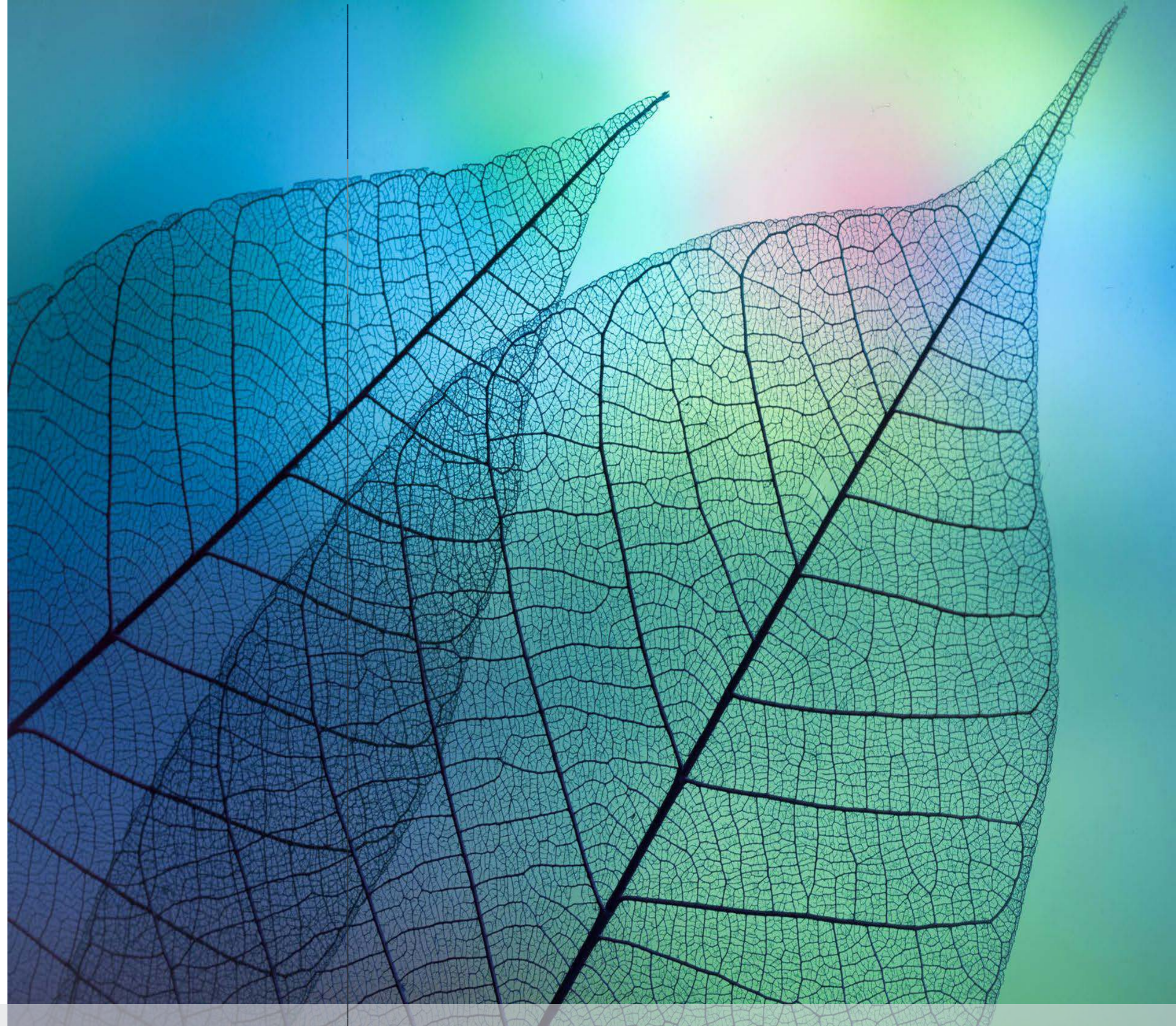
Installation

Under ITC 's supervision, local professionals work to assemble the greenhouse and install the systems on site. This is followed by the project management phase.

Growing

ITC 's commitment to service does not end with delivery of the greenhouse.

Customers also benefit from the knowledge and experience of our experts in terms of cultivation activities and the day-to-day running of the greenhouse facility. Our technical and management specialists provide all the necessary support with the complex processes involved in modern greenhouse crop production.



Advantages to invest in STERILE HYDROPONIC GREENHOUSE

WATER SAVING UP TO 90%

In the Hydroponic Greenhouse irrigation system allows to dose the water in the quantity required by the plant nutrition. The excess not absorbed is recirculated, so there are not produced unnecessary waste. This irrigation system called "closed loop" represents considerable advantages both in economic and environmental terms.

INCREASE PRODUCTIVITY

The ability to increase the productivity for more than 40%-60% in the Hydroponic Greenhouse depends from the constant microclimate throughout the year, ensured by technological systems that are integral part of the structure; between the technologic plants installed in the Greenhouse, we remember the LED Lighting system that emits light of wavelengths favorable to photosynthesis and consequently accelerates the growth of plants.

ZERO ENERGY CONSUMPTION

The Hydroponic Greenhouse is equipped with renewable energy plants such as solar panels, wind turbines, geothermal technology, biomass, etc... with this systems the Greenhouse will be able to produce electric energy necessary for his sustenance.

REDUCE POLLUTION

Hydroponic cultivation technique help to reduce the pollution of soil and groundwater; the crops growing in the greenhouse are not subjected to chemical treatments, fertilizer or pesticides; treatments increasingly used for crops in the soil unfortunately not subject to strict controls.

QUALITY GUARANTEED

The products grown in the Hydroponic Greenhouse are of good quality; all plants are regularly verified to check absorption of nutrients; the plants growing on the soil absorb all types of pollution of air, soil, and groundwater, and chemical treatments. For this reason the products grown in the Hydroponic Greenhouse can be considered superior of quality than those organic.

GOOD WORKING CONDITIONS

Inside the Hydroponic Greenhouse there is a constant microclimate throughout the year. This is good not only for crops but also for the staff which work inside, in optimal climate conditions and environmental hygiene.

GROW YOUR BUSINESS

STERILE HYDROPONIC GREENHOUSE

BY

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