



**“In crisis time,
imagination is more important that knowledge”.**
(A. Einstein)

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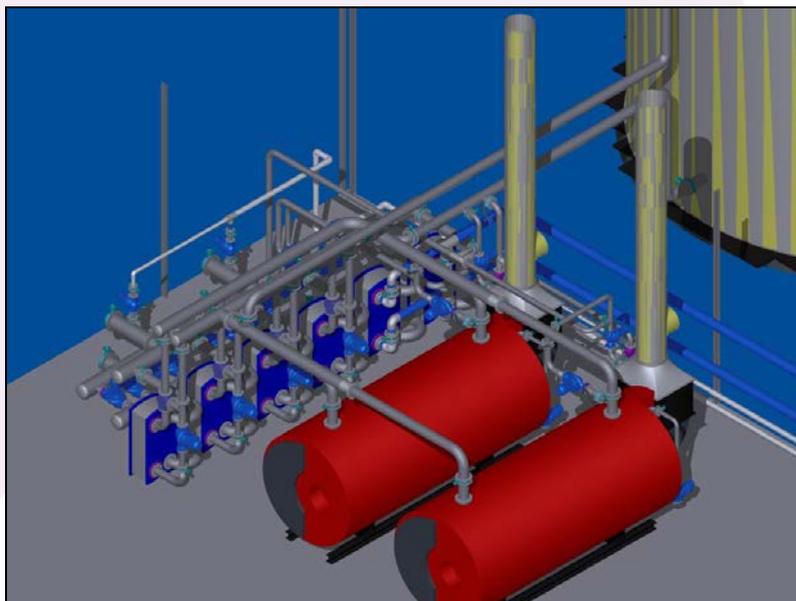
1.-

INTRODUCTION.

Throughout our careers, for more than 15 years, we have specialized in the whole development of Agricultural and farming projects; i.e., greenhouses, hydraulic technology, water treatments, greenhouse climate control, automatic irrigation, and heating systems.

We are strategically situated in the region of Murcia, in the heart of the Spanish Levant area, motor of our national agriculture, and we have a vast experience and full dedication in the world of farming production and innovation. The chronic conditions of extreme dryness of our land, where the rainfall is inferior to 250 mm per year, have forced us to take measures and ration the use of water, through the application of the latest and most up to date tendencies in the irrigation world and hydraulic treatments.

During last two years we have been developing Cogeneration Systems applied to agriculture, carrying out two projects: for a flowers greenhouse and for a seedbed.





2.-

**WORLDWIDE
EXPERIENCE.**

We have carried out different types of important projects in places like Ningxia (China), Morocco, Romania, Algeria, Costa Rica, Italia, Turkey and Mexico. We collaborated on each of the development's stages on these projects: design, implementation, project manager, and start-up of installation. Here are some of them:



Turnkey Project Greenhouses (Turkey)



Irrigation Cooperative (China)



Cogeneration System (Spain)



Turnkey Project Greenhouse (Italy)



Field trials C7 (Spain)



Ploiesti (Romania)



Adalya (Turkey)



Irrigation training (Kurdistan)



Irrigation Project (Mexico)

3.-



**PROJECTS
WE CARRY OUT**

3.1. IRRIGATION SYSTEMS AND HYDRAULIC CONDUCTIONS.

3.2. CLIMATIC CONTROL SYSTEMS.

3.3. COGENERATION AND HEATING PROJECTS.

3.4. DESALTING, AND TREATMENTS FOR WASTE WATER.

3.5. MANAGING FOR TURNKEY PROJECTS FOR AGRICULTURE.



3.1.-

IRRIGATION SYSTEMS AND HYDRAULIC CONDUCTIONS.

These are the main activities we have developed since our beginning, back in the nineties. We have known how to adapt ourselves, in all these years, to the needs in farming and agriculture and to a highly changing area, at all times.



We have an extensive experience in the calculation of automatic irrigation systems; from the dimensioning of pipes on field, to the design of head pumping stations (automatic filtration, fertigation machines, pumps, electrical equipments, etc.)





3.2.-

CLIMATE CONTROL SYSTEMS.

In this field, we calculate fog systems (for humidity or phytosanitary treatments), heating systems for air or water, pad cooling, CO₂ enrichment, and artificial lighting systems for greenhouses.

We can advise several climatic controllers, but we usually work with two brands, offering the possibility of two different decide upon the level of automated applied according to the complexity of the technical needs that the client has in his greenhouse.

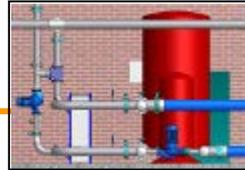


In the case of the high level controller, we are dealers for the Spanish Levante Area, of one of the best existing climatic controllers at present: MCU-Climat, of Franco-Dutch origin. This controller takes on any need that even the most advanced greenhouse may have, technologically speaking at the present time.



We also calculate heating rails system (see image), aero thermos heaters, air-fans, low-pressure fog systems, (air+water) which at the same time allow us to carry out preventive phytosanitary treatments to the protected crops, conductions for hot water and CO₂, evaporative panels and in definitive, those instruments, at our reach, that allow us to give our clients, and even more complete and satisfactory service to meet their needs.





3.3.-

COGENERATION AND HEATING PROJECTS

Due to the ever increasing demand of our clients on new systems and advances, we must try to include on our services all the aspects that cover a project of these characteristics apart from taking on other further agriculture projects.

This is the reason why Neurona Engineering opted to specialize in agricultural cogeneration, in order to be ready for a close future, especially on Europe, due Kyoto Protocol. Cogeneration System, are also called Combined Heat and Power (CHP) Systems, which generate both heat and power. This systems use waste heat from various sources.



Gas Engine-Power Generation.



Water Buffer Tank.

In these projects we calculate the heating requirement into the greenhouses, according the crop, the type of greenhouse, the covering (simple or double plastic, glass, etc.), the historic of monthly average temperatures in this area, and planting date. In addition of hot water, it's possible to harness the CO₂ emitted through the chimney for plants, to get an increase amount of 15% in production.



Boiler room (GLP) with exchangers for PVC heating.

3.4.-



DESALTING, DEPURATION AND WATER TREATMENT.

We can carry out desalting through inverse osmosis, system of boron, to make water drinkable, decalcification, disinfection by ultraviolet or ozone, ionic interchange and adaptation of residual waters in urban and industrial areas.

This range of our activity originates from the grouping of several professionals who have an ample experience in design, manufacture, maintenance and operation of great diversity of installations for water treatments.

We facilitate our clients with the advise and necessary assistance at all times, so as to maintain their installations at the maximum level of operating capacity, offering the highest quality and service guarantee.



- We offer integral solutions to water treatment problems, using the most up to date technology.
- We facilitate turnkey installations which are completely adapted to the problem in question.
- We supply modular installations, assembled in compact and easy to install framework, which allow a scaled increase of the capacity of treatments installed, as much as the possibility of moving the equipment from one place to another, should the case arise.



The activity we carry out is clearly compromised with our environment, adjustment our processes to the environmental rules and laws that only goes to show and proves that it is possible to combine technological progress with total respect to our environment.

We are implementing a new system with oxygenated filtration, which is natural (without chemical additives), low maintenance, has low energy consumption, and with the total absence of odours. It also blends into the landscape, as we can see in the following snapshot.



This is an innovative technology, totally clean and ecological, for any kind of sewage water, it's a natural treatment system, subterranean and by diffusion, called Oxygen Percolation Treatment (OPT).

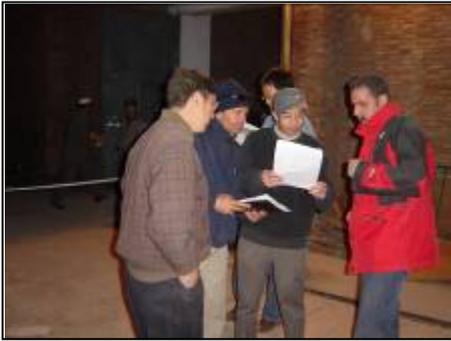
After the wastewater has gone through the depuration stage, it complies with the parameters set by the European Directive 91/271/CEE in regards to the discharge of the effluent into urban wastewater collection systems. This treatment is unaffected by long shutdowns, and it's not necessary to add bacteria to work properly. Bad odours aren't produced because of aerobic conditions process.





3.5.-

AGRICULTURAL TURNKEY PROJECTS.



It is frequent to combine one or several of the previous activities, to create turnkey projects for farming technology, applied to hydraulic conductions, greenhouses, heating systems, or water treatments of all kinds, where the customers needs are evaluated, and the project is personally and individually studied in a wholesome manner. This is being required, more and more, especially out of Spain.

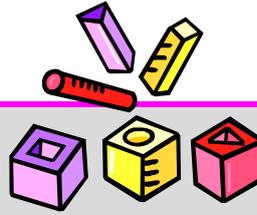
We have carried out implantations of this type in many countries during last 15 years.

The ending of these is to give the customer our project manager services for a global solution, so that he can face his future projects, without the need to contact nor agree with each and everyone of the firms that have to carry out the work.



In this sense, we are capable of carrying out reservoirs projects, water treatments, desalting of sea water or deep wells, complete cogeneration projects, totally automated watering installations, hydraulic conductions, watering, etc. We also project different types of greenhouses: grape-vine, multi-tunnel, even in high technology in glass, with its corresponding climatic controls, fog system, cooling system, air-fans, and all that is necessary to create an ideal environment for the best development in our crops, whether it be vegetable or flower.





4.-

**OUR LAST
DEVELOPMENTS.**

4.1.- Radial Injector for Fertilizers.

This device was invented and patented by our engineers in 2007, and was registered in the Spanish Office of Patents and Trade Marks, with publication number ES1 065 858 U.



This is a new proportional injector for agricultural fertilizers with a new design. With this we reduce a 70% of volume (very interesting for transport costs), we also reduce the power of pump, but chiefly this equipment works hydraulically better over previous, keeping the same pressure in every injector.

We are especially proud of this device, which is installed on many crops all over the world nowadays.

4.2.- Global management for Greenhouses.

During last years we have been working on it, jointly with the Department of Engineering of Information, Communications and Computers of the University of Murcia. We got a grant of 5 million € for a research and development project, called **GICH** (Integral Management of Horticultural Crops).

This is a hardware and software device, destined to management the climate into greenhouses, but at the same time we can integrate this with the irrigation and the internal situation of the plants, in order to get an overview of the state of our crops.

Now we are involved in a new development for biocide treatment during the transport, to remove the E. coli or other infections, through the CDTI subventions for I+D+i.



5.-



**SOME OF OUR MOST
IMPORTANT CUSTOMERS.**

- -. TUSA, S.L. (Cuba, Venezuela)
- -. Grupo U. Mr. Lucky (México)
- -. AISCO SOLUTIONS (Venezuela, Perú, Colombia)
- -. Centro Integral de Formación y Experiencias Agrarias C.C.A.A. Murcia.
- -. LangMead España, S.L. (Murcia)
- -. Rijk Zwaan Ibérica (Murcia)
- -. Deleste Group (Rusia).
- -. Mancomunidad Canales del Taibilla (Ministerio de Medio Ambiente).
- -. Nunhems Ibérica (Murcia)
- -. Agricultura y Exportación (Murcia).
- -. Agrícola Perichan (Mazarrón).
- -. Frutas Esparza (Murcia)
- -. Verdimed – Kernel (Valencia)
- -. Seminis Vegetables (Murcia)
- -. Agrícola Durán (Mazarrón)
- -. Universitatea Agronomie Bucuresti (Romania)
- -. Gobierno de Ningxia (Rep. Popular China)
- -. Comunidad de Regantes Thazonit (Marruecos)
- -. Consejería de Agricultura de la Región de Murcia
- -. Universidad Politécnica de Cartagena
- -. Cooperativa Anecoop (Valencia)
- -. Cooperativa Surinver (Alicante)
- -. West Plant España (semilleros)
- -. Polaris “Mar Menor Golf Resort” (Murcia)
- -. John Emmet Murcia (Murcia)
- -. G’s España.

6-

WE ARE DEALERS OF

Due to our large and recognized experience in Spain, we are dealers of some major brands, and we work in an external way, like engineering department or management department for other important agricultural groups.





Attachement I.

REPRESENTATIVE JOBS.

It's certainly one of our most important project management, in which we have participated.

As we say, one of the projects that is applied for with great interest out of our borders are the Irrigation Communities, who apart from incorporating the highest technology in management and control of water, use systems via radio or monocable.

The main reason for the success of these great works is the enormous social benefit they mean, wherever they are implanted. They enrichment the area (now irrigated or watered) options of a better future for farmers, formation of farmers in modern crops, efficient management, of something which is scarcer everyday on our planet, preferential position afore public opinion for the governments to carry out these projects, increase in production and quality of fruits and a general growth of the area in which these systems are implanted.



This kind of project is the one we did for the government of Ningxia in China, and a couple of years after in Morocco.

In Ningxia it is a test area for "ecologic projects of the farm of integral farming developments", of the regional government, it's a pioneer system that even has a "water box" for the control of each of the users of the same.

There, we project several irrigation systems by drippers, sprinklers and central pivots.



In this work, there are 42 virtual farmers, with different crops and diverse hydraulic needs, each one had an individual hydrant installed, and even a small electro-valve to carry out dose of fertilizers, according to their needs.

In this sense, it was the farmer who did the work, with a magnetic key and private key, he chose the moment of watering, the length of time, the fertilizers he estimated necessary, etc, all this from a safety-box situated at the central-station, where he could also dispose of an extract of the cubic metres consumed by himself on his lands, and what he still had left to use, according to the quantities he had be assigned at the beginning of the campaign, according to the type of harvest and the area where it was planted.

Something very similar has happened in the Community of Thazonit in Morocco, with a different number of users, and crops that were radically opposed to those found in Ningxia, due the hard winter (up to 25° below 0°, enormously limited the variety to chose from).

