

**GRAN VISTA GARDENING REPORT N°003
(2022-08-15)**

**PRIORITIZATION OF URGENT GARDENING PROBLEMS
AND ADAPTATION NEED FOR GRAN VISTA**

Currently, the Gardening Group registers that there is a very important difference between some house owners who want specific details about the state of the gardens and improvements made, and other owners who want very summarized information.

If we make the reports very summarized, we would leave an important group of owners without specific information. Therefore, we will make the reports detailed and leave it to each owner to read as much as he wants.

Gran Vista normally faces challenges and problems earlier than other Gran Alacant developments. This is due to:

- Being one of the first developments built in Gran Alacant.
- The great size and extension of its facilities and gardens.

Many gardening problems have earlier been documented due to these characteristics, but since they were not understood as important at the time, it did not seem urgent to decide on them until now, when the problems have been accentuated and very visual.

Many of the problems are in places not seen by many, and end up being reported by few phase owners in phases without necessary resources to fix them.

But the current Gardening Group has made it its objective, to analyze even the smallest details to allow for improvement to the satisfaction of **all** the house owners. Gran Vista needs to be experienced in its entirety, as a uniform whole. This means with the same measures and resources applied to **all** its zones and phases equally, since **all of its public areas are open to all owners**.

There should always be an active link between the community and the gardening company, a link to channel the needs of the owners, following logical methods and prioritization of activities. No community, particularly as big as Gran Vista, should be left entirely in the hands of a gardening company.

For the above reasons, it is important to structure this report, into the most important gardening aspects and problems we find this year 2022:

1. ALERT OF THE IMPACT OF CLIMATE CHANGE.
2. ADAPTATION TO THE SURVIVAL PROBLEMS OF “NON-AUTOMATICIZED” GRASS.
3. ADAPTATION TO THE PROBLEMS: GRASS VS PINES.
4. ADAPTATION TO THE PROBLEMS OF EXCESS HUMIDITY UNDERGROUND.
5. ADAPTATION TO THE PROBLEM OF INVASIVE SPECIES.
6. ADAPTATION OF PRIVATE GARDENS TO THE PROBLEMS OF AUTOMATED PHASE IRRIGATION AND ITS BREAKS.
7. ADAPTATION OF PERIMETER STRUCTURES AGAINST RUN-OFF EFFECTS.
8. ADAPTATION OF COOPERATION BETWEEN PHASES AND IMPROVEMENT OF INTERSTREET CORRIDORS.
9. ADAPTATION TO THE PROBLEM OF FLORAL BUSHES IN AREAS OF NARROW PASSAGE.

1. ALERT OF THE IMPACT OF CLIMATE CHANGE.

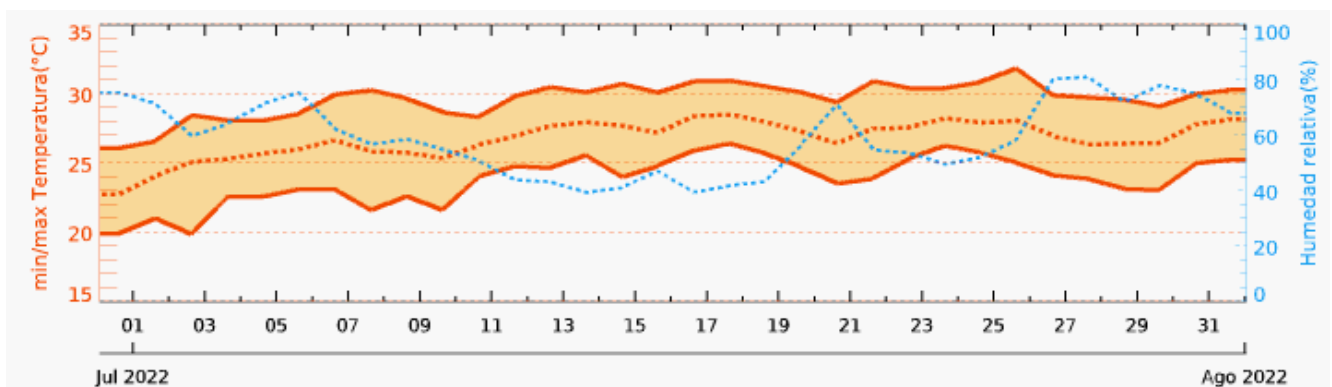
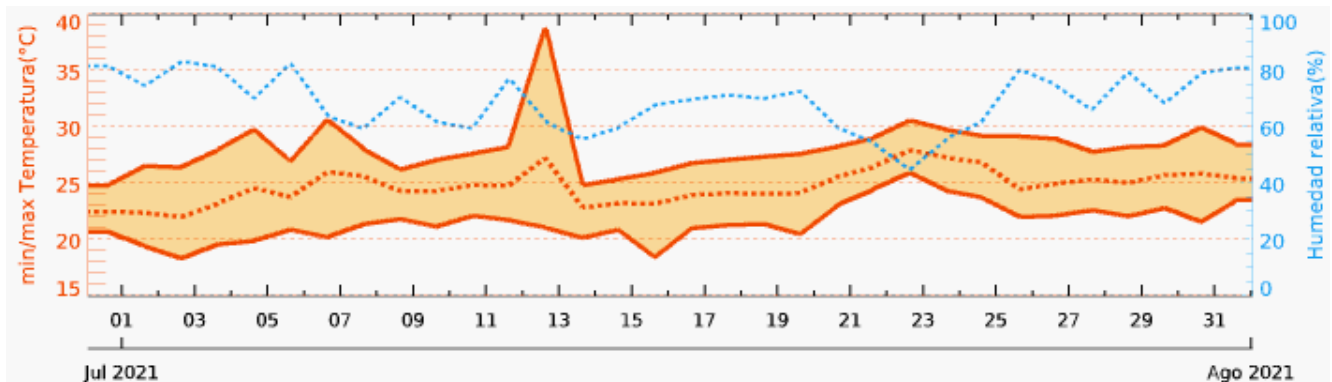
Until now, aspects related to Climate Change were not seen to be of much importance. Or at least, not seen to have a direct impact on the private gardens or public gardens such as those inside of Gran Vista.

To understand it and put simply, plant species have thresholds for adaptation to climate changes, above which they cannot live. *"... the classic maintenance strategies have to be adapted, you can no longer continue watering and planting as we did one or two decades ago..."* (María Pedro Ferrer, 2022-08-15, Master of Gardening and Landscaping, Barcelona).

Climate change is not only about having higher or lower temperatures, but also about greater thermal variations during seasons affecting the adaptation of plant species.

One of the fundamental changes is the heat threshold during this summer 2022. Earlier years the temperature has been rising significantly, but in a relatively smooth way. However, this summer the increase has been extremely high, continuously and without lowering the temperature enough at night. And this is very important because more water is not enough to cushion these big changes, nor is it the only problem.

This can be seen in the graphs below. A very high and sustained increase over time, with a very significant drop in humidity. This generates a very important hydric stress even to plant species with high resistance to drought. to which they cannot adapt immediately.



In addition to the heat increase, there are other important facts documented this year 2022, such as a very **warm winter** that favors **early flowering**, and then a **very cold spring with intense and continuous rains**. These circumstances are conditions for which the species of the region are not prepared – unless there is good drainage in the soil. And these changes during the flowering season cause each species to react in a different way, even specimens of the same species, both from an aesthetic point of view, such as pests, and in their fruit production.

The importance of this report is to be able to report on the **need for "adaptation" of Gran Vista**, and that, if these types of changes continue, it will be very difficult to maintaining this little "paradise" the same way, in an environment, not to be forgotten, where normally climatology precisely will not allow a landscape like the one we have.

2. ADAPTATION TO THE SURVIVAL PROBLEMS OF “NON-AUTOMATICIZED” GRASS.

Survival of some of our grass types is one of the main problems that we as house owners are beginning to visualize. It was reported only 2 years ago, but has been intrinsically linked to climate change for many years now.

In order to fully understand the importance of the problem, it must be explained that there are different types of grass, and Gran Vista, since its inception, has basically had 3 types:

-**Festuka** (sensitive, and very characteristic of meadows in northern Europe and the United Kingdom). It has exceeded its thermal threshold and has in Gran Vista completely disappeared, leaving some areas with bare land, especially in many interstreet corridors.

-**Gramma** (of greater resistance than Festuka), is the one that we mostly have in Gran Vista. Unfortunately, it is already close to its thermal threshold, so it needs to be watered automatically day and night for it to survive. This means that areas in Gran Vista not yet automated, this year 2022 have worsened significantly since hose irrigation or using portable sprinklers during the day are meant to compensate for the situation, but does not solve it.

-**Kikuyu** (very similar in appearance to grass, and highly resistant to heat and lack of water), exists in some specific areas of Gran Vista, but is classified as invasive, so the Environment Department Authorities does not allow its use in public and open areas (that means outside private gardens).

We can observe this gradual deterioration by analyzing the photographic archive that we have of the same areas during the last 24 years.



PHASE 7: LAWN WITHOUT AUTOMATION IN 1997



PHASE 7: LAWN WITHOUT AUTOMATION IN 2021

It is **ABSOLUTELY necessary to finish automating all the grass areas of Gran Vista**, because even the automated areas sometimes have to be turned on during the day when the heat is extreme like this year 2022. Manual irrigation with sprinkler or hose is definitely obsolete, because it is not precise enough, nor is it efficient, since it causes us to waste a large amount of water - with economic impact. What is watered for 15 minutes at night, will during the day need more than an hour.

After automation, it will be **necessary to re-top the lawn from time to time** to prevent the loss of substrate (nourishment) with each rain (Gran Vista is built on a slope), **and scarify** to aerate the compaction of grass growth.

3. ADAPTATION TO THE PROBLEMS: GRASS VS PINES.

Another important deterioration is found in the vicinity of our pines, where both the **roots and the acidity of the needles (pine leaves)** prevent the lawns from developing properly.

This was already documented a few years ago and motivated PHASE 1 to remove the lawn in poor condition from a community garden, to build a parterre with rosemary, and convert the other adjoining community garden with pine trees into a gravel surface, as it did not have more resources to landscape it.

Now, we are also beginning to document this in other places, such as the leaning pine tree at the entrance to the central parking lot, a place where even though the grass is automated, it is unable to develop properly.



PHASE 1 (WITH SERIOUS PROBLEMS OF SURVIVAL OF THE LAWN UNDER THE PINES)



CENTRAL SPINE OF THE COMMUNITY PARKING NEXT TO THE ENTRANCE (WITH SERIOUS PROBLEMS OF SURVIVAL OF THE LAWN UNDER THE LEANING PINE)

In order to adapt Gran Vista to this problem, it will be necessary to **continuously monitor** the status of these tree species, to ensure that they are healthy and not in danger of falling.

In cases where the tree species are healthy and safe, it will be necessary to **replace the lawn area** (that cannot be developed) **with another area efficiently landscaped by added drip irrigation** and with efficient perimeter containment structures that will allow small additional contributions of substrate.

4. ADAPTATION TO THE PROBLEMS OF EXCESS HUMIDITY UNDERGROUND.

Another aspect that owners may not be aware of is that Gran Vista has a dangerous excess of moisture in the ground, which is established by measurements with special meters.

This is due to:

- The significant humidity that we have in front of the sea, especially with the dew at night.
- Gran Vista is built on a slope.
- The automated lawn is watered every night.

The situation with excess moisture is certainly not beneficial, since there are areas where **under the grass** and next to large trees there **appears mud**, blackish in color, very soft and in which people's feet sink slightly. This is also a problem in that it attracts **wasps** to these areas, but also a problem in mowing the lawn as **mower wheels sink** leaving a rut (something that was reported almost 2 years ago).

In fact, there are several tree species that are biologically designed to develop only with little rainwater, and yet we overgrow them by watering them massively every day at the same time as the grass around them. This generates **"lignification problems"** (that the wood is not hard enough to support its own weight), and problems of diseases, fungi and internal rot.

These negative effects are dangerous because many trees are beginning to show health problems. Many pines have split, or have leaned, and with **very high tonnage**. Many, when analyzed, are found to be about **40% rotten inside**. This is **VERY dangerous**, as Gran Vista's large trees in common areas weigh between **10 and 15 tons**.



In this case, the adaptation of Gran Vista must be very gradual, with a **detailed follow-up of each one of the large trees**. With any suspicion of an **imminent problem** for the community, **they must be taken down and substituted**.

For this substitution, we recommend that each large tree be replaced by two smaller trees to avoid the landscape impact of its elimination. Replacement should be made by species that cannot generate the same problems in the future but still compatible with community life and Gran Vista characteristics.

5. ADAPTATION TO THE PROBLEM OF INVASIVE SPECIES.

This is also an important issue since today all gardening has to be **sustainable and environmentally adapted**.

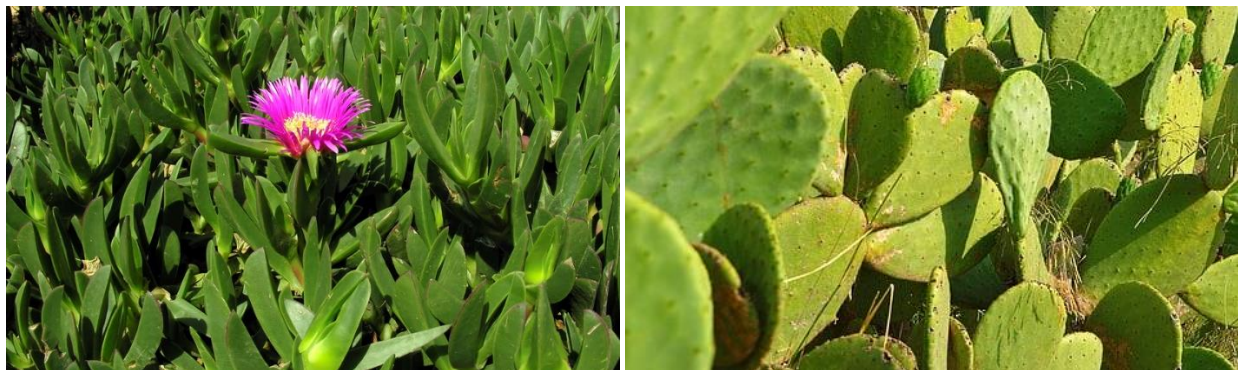
The Environment authorities have prohibited a series of shrub and tree species due to their harmful biological impact on the vegetation environment in our country.

Some are prohibited by law, and the others are recommended by the Environment authorities to be replaced by similar ones. (In spite of this some can still be found for sale!). Some are even very pretty, but in fact constitute a danger needing **gradual adaptation**.

Invasive species are capable of reproducing on their own without the help of humans. Some are invasive by roots, others by seeds. And that is a danger because:

- **Asphyxiate** (suffocating) **other species** causing nearby plants to die or get sick.
- **The seeds fly through the air and appear in other places where they generate the same problems** of suffocation and death of native species.

The Environment authorities also request **not to use hybrid, genetically modified or extremely resistant species**, because the same problems will occur (regardless of whether they are beautiful or not).



EXAMPLES OF SOME INVASIVE SPECIES THAT SHOULD BE REPLACED

It is necessary to adapt correctly and propose a **gradual restructuring** that will not allow **any type of negative environmental impact**, but instead be a benchmark of botanical and landscape sustainability, while at the same time aiming for beautiful and adorned public Gran Vista gardens for the future.

6. ADAPTATION OF PRIVATE GARDENS TO THE PROBLEMS OF AUTOMATED PHASE IRRIGATION AND ITS BREAKS.

Another of the documented problems is the state of drip irrigation in private gardens with respect to sustainability and fairness.

Current status is as follows:

- Some phases have **drip irrigation of private gardens in an automated way with a timer** (they are the most optimized with night irrigations and where the private gardens are best maintained).
- Other phases have **drip irrigation in private gardens manually** (it is necessary to connect them through an additional hose during the day because that is when the gardeners work; this irrigation is not efficient).
- Other phases have **drip irrigation in private gardens damaged underground** in some section (they will require intervention because the damage to the general pipe affects all the houses after the breakage point).
- Other phases have **drip irrigation only in some lines of private gardens**, but not in all.
- Other phases have **no drip irrigation in private gardens** (and you have to hose them manually=inefficient).

The last two cases imply that - although all owners pay the same amount for gardening - for private gardens to have correct and adequate maintenance, resources must be reallocated between phases.



The adaptations needed for Gran Vista are:

- That all **phases with breakdowns** in their private irrigation be **repaired**.
- That all **phases with manual drip irrigation, change to an automatic** nocturnal drip irrigation.
- That all **phases which do not have an automated irrigation** bring up in their respective **phase meetings**, the question of change to a common automatic irrigation similar to other phases, or that each owner takes care of his/her own private irrigation.

Watering during the day and with a hose should be stopped as soon as possible in private and common gardens (thereby also getting rid of unsightly accumulations of coiled hoses).



7. ADAPTATION OF PERIMETER STRUCTURES AGAINST RUN-OFF.

Another fundamental problems that we need to correct in Gran Vista is that 90% of the gardens are on a slope, but they do not have any sediment containment structure against runoff.

This implies several problems:

- **Loss of continuous sediment:** Every year, accounting only for the rain, we have lost several tons of sediment. This is evidenced by the height to which the sprinklers and automatic diffusers have risen gradually. The average is a loss of 0.5 cm per year, but in many places the substrate that remains now is basically full of clay and compact, which with the sun turns into a hard and quite impermeable surface. This makes it difficult the percolation of irrigation water on plants and their roots.

- **Loss of fertilizers:** After fertilizing activity, 80 % is lost with the first rain, dragged by runoff to the cliff.

- **Additional dirt after topdressing:** This year 30 tons of mulch have been applied (for the first time) to improve the health of the lawns. Watering with a hose, the substrate may fall onto the sidewalks.

Inefficient rock planters: The only current structures, in some places, are stones, which do not efficiently contain the substrate, since they do not join together tightly.



INEFFICIENT CONTAINMENT SYSTEMS THAT GENERATE DIRT AND IMPOVERISHMENT OF THE LAND.

The adaptation process to solve these problems and increase the efficiency and care of the gardens, consists of several measures, to be implemented in each relevant space:

- Gradually resort to laying **rustic brick**.
- Proceed to lowering the land with **small ditches** near the borders.
- Increase **rustic terracing** in planters to avoid the speed of runoff.



EFFICIENT CONTAINMENT SYSTEMS AGAINST RUNOFF

8. ADAPTATION OF COOPERATION OF PHASES AND IMPROVEMENT OF CORRIDORS OF INTERSTREETS.

Given the general poor condition of the corridors between the phases, the Gardening Group proposes to coordinate work to improve these spaces through different activities.

Due to their small size, the cost of improvement is also lower, since they are also direct responsibility in maintenance of each of the phases.

The Gardening Group proposes applying in an orderly manner **the steps following below** for the development of a sustainable and efficient landscaping and gardening environment for Gran Vista, including these small passageways.

What is proposed is a **theming of the spaces playing with varieties of the same species in each corridor, with all the corridors different from each other**. These species will be chosen according to the different weather and sun exposure characteristics of each corridor, giving several options in a coordinated way to present to the representatives of the phases in question.

But the common objective will always be to decorate these spaces and implement the following improvement and optimization tools:

- Night automatic drip irrigation (reduction of water consumption).
- Replace the impact of shrub and tree species that can generate problems in the medium or long term.
- Geotextile on the ground to prevent the appearance of weeds (maintenance savings to be able to increase cleaning and pruning details).
- Gravels on the geotextile (reduce the force of runoff and for decoration).
- Rustic perimeter brick where necessary (contain sediment).
- Rustic terraces on large slopes (contain sediments).

In little more than a year we would have a much more beautiful and efficient Grand Vista, having eliminated all the places in poor condition, at low economic cost.



9. ADAPTATION TO THE PROBLEM OF FLORAL BUSHES IN AREAS OF NARROW PASSAGE.

We have additional problems with the location of some fast-growing shrubby species in narrow passageways, such as Nerium oleander (oleanders) and hibiscus. These species grow almost homogeneously in all directions and to flower need sufficient development. This implies that for us to be able to enjoy the flowering with these species we need to have many corridors almost blocked. This annoys many owners and is neither aesthetic nor practical.

When this happens, these species are pruned in a straight line and all flowers are removed. Therefore, we have fast-growing species of which we mostly cannot enjoy the flowers, since we at the same time want them well pruned so as not to be a nuisance.



SYSTEMATIC ELIMINATION OF FLOWERS DUE TO INCORRECT LOCATION OF SPECIES

The adaptation required in public spaces is that these shrubby species must be **pruned in a spherical way** and **should only be located in areas where they can have a free separation of 2 meters in radius** (which will allow their floral development and the passage of people).

Fast-growing shrubby species must be gradually replaced by slower-growing ones. There is an infinity of plants and shrub species that will allow decoration of the corridors efficiently.

GARDENING GROUP RECOMMENDATION:

Implement all these necessary adaptations as soon as feasible in all garden activities carried out in Gran Vista.

Sincerely:
Gardening Group