IMPLEMENTING ECO-MANAGEMENT

CONCEPTS AND PRACTICES FOR MORE NATURE IN THE CITY

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ECOJARDIN: A COLLECTIVE APPROACH TO ECO-MANAGEMENT

EcoJardin accreditation has proudly taken its place in the panorama of French accreditations. For more insight into what this means we take a look at how it started and how it is defining eco-management.

ECOJARDIN BASICS: A COMMON DEFINITION OF ECO-MANAGEMENT

How it started: a collective project

EcoJardin started out in 2009 to address the needs of park and garden managers. At the time, sustainable landscaping pioneers were already using biodiversity-friendly practices, but these were not widely shared or regarded as standard practice. On top of this need for technical standards for eco-management, there was the need for a process that would recognise the practices put in place, by both green-space managers and the general public, and provide information in a positive way about changes seen in parks and gardens. A total of 14 partners – public- and private-sector contractors and members of landscape and training networks – teamed up with Plante & Cité over a two-year period to create the tools to address these needs. The work was supported by the French Biodiversity Agency (OFB) as part of the Ecophyto plan.

Two tools for landscaping professionals

The main result of this project was the EcoJardin standard, a technical guide to eco-management. Bodies of work from around the world were reviewed and compiled into a series of recommendations on how to implement eco-management and monitor progress using self-assessment grids. EcoJardin accreditation also has its own trademark and accreditation process. Recognition is founded on the fulfilment of a common set of requirements, the principles of continuous improvement and a transparent and independent assessment. The assessment grids used for this accreditation are driven directly by the standard.

Shared governance

Today, the collective work that gave rise to EcoJardin is reflected in its governance. All stakeholders (specifiers, producers, general interest groups and scientific experts) are partners in a three-tier operation, which is one of the fundamental criteria for quality initiatives in France. First there is a Technical Committee, made up of experts and partners, which monitors communication and tool updates. Next is an Accreditation Committee, made up of four equally represented bodies, which is in charge of awarding the accreditation, and lastly, there are the independent auditors who perform on-site assessments of applicants' management practices. Coordination of the above bodies and the accreditation process is shared by the Paris Region biodiversity agency (ARB *Ile-de-France*) and Plante & Cité.

National recognition

In 2018, EcoJardin accreditation received some major recognition. It was recommended by France's Economic, Social and Environmental Council as a way to develop nature in cities and was also mentioned in the government's Biodiversity plan: "We want to reward communities that take biodiversity into account when managing their public spaces. [...] We will therefore seek to award *Terre Sain* (pesticide-free communities) and EcoJardin (green space eco-management) accreditations throughout the country." For the past three years, the annual meeting of label recipients has been held at the French Ministry for Ecological and Inclusive Transition (MTES). ■

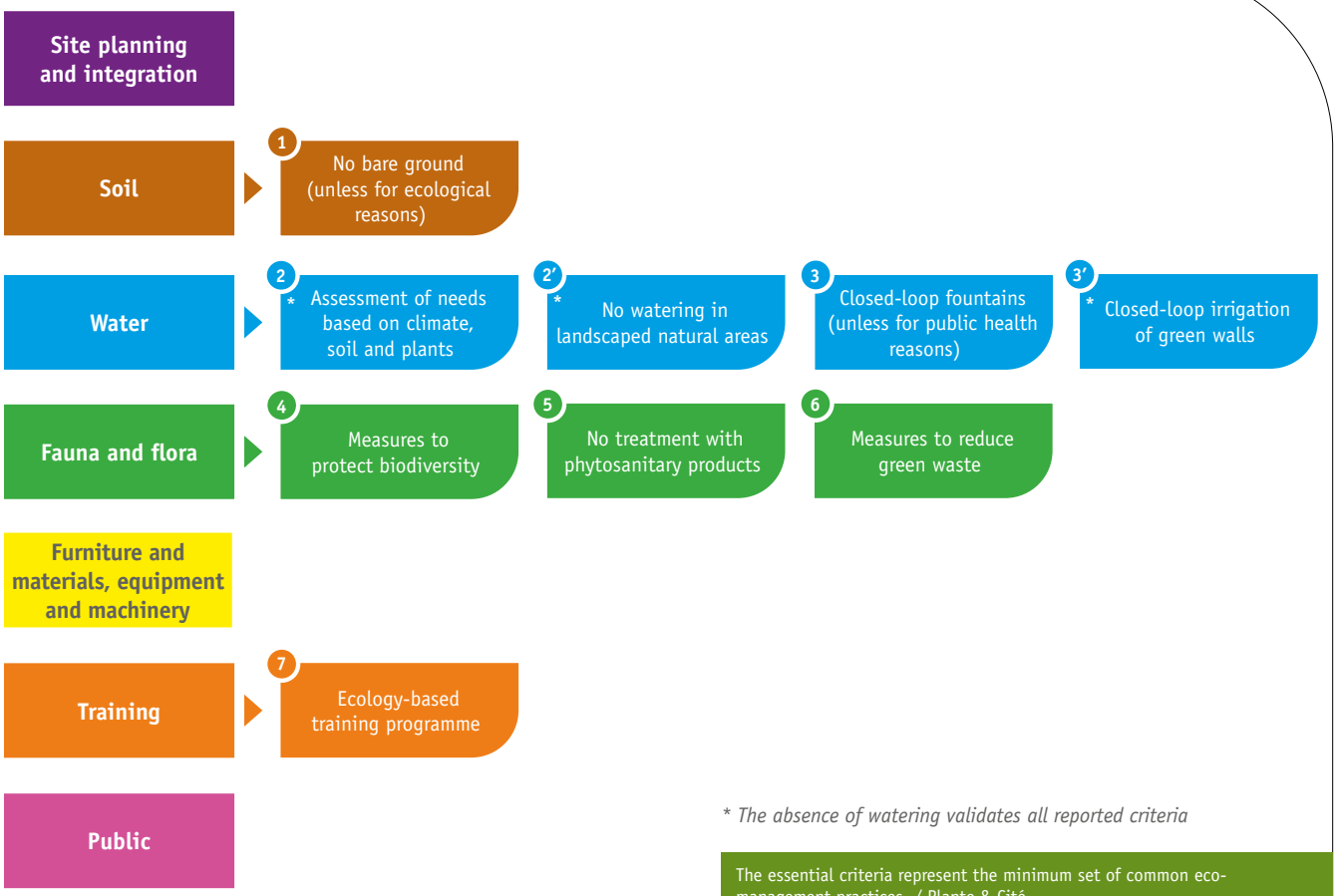
Eco-management can be applied anywhere, for example here at the Robert Ballanger intermunicipal hospital complex at Aulnay-Sous-Bois. / Tréhin G., Arp Astrance.

KEY PRINCIPLES OF ECO-MANAGEMENT

All recommendations contained in the EcoJardin standard are based on a single principle, which is to rely on scientific ecology and knowledge of biodiversity to come up with the most appropriate form of management. The standard promotes the establishment of ecological connections to strengthen France's "green and blue grid" (a national network of biodiversity corridors); the safeguarding of soil and water resources; plant choice and maintenance practices (pruning, clipping, mowing, etc.) to improve biodiversity; the circular economy and the environmental impact of equipment and materials; the pooling of efforts and the acquisition of new skills; and lastly, relationships with the people using the sites.

In addition to recommendations applicable to all types of green space, the standard contains appendices dedicated to specific spaces. Cemeteries, allotments and shared gardens, for example, are distinctive in that among other things they are managed jointly by local authorities and private individuals.

The guidelines have three criteria levels: essential, recommended and optional, based on importance and feasibility. While the essential criteria must be complied with in order to receive the accreditation, what is most notable about them is that they represent a common set of practices crucial to eco-management (see diagram on next page). ■



The essential criteria represent the minimum set of common eco-management practices. / Plante & Cité.

CONTINUOUS IMPROVEMENT... INCLUDING FOR THE PROJECT!

Every year, Plante & Cité meets with the Technical Committee to update the standard, the assessment grids and the procedure so that every aspect of the accreditation process is in line with the latest scientific and technical knowledge.

While some subjects are obvious, group discussions are held to address any matters that are sensitive or emerging. Such is the case with biocide products, for which new criteria to raise awareness and establish a list of practices have just been introduced.

Other matters that are the subject of discussions and recommendations include animal welfare, wildlife hosting and the over-use of green spaces. There are always new areas to explore to take eco-management to the next level! ■

Aurore Micand, Plante & Cité

ECOJARDIN IS SPREADING...

Initially designed for Metropolitan France, EcoJardin accreditation is now the inspiration for an eco-management project in a tropical environment. Dubbed GreenVille, the project has been co-sponsored by the Guadeloupe Architectural Council for Urban Planning and the Environment (CAUE) and Plante & Cité, with financial support from the OFB.
Practitioners in Belgium, Luxembourg and Spain have also shown an interest in the EcoJardin tools and how they might be adapted to their respective national context. In 2020, for example, authorities in Wallonia asked Plante & Cité to adapt the EcoJardin standard for use in that area of Belgium.

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CHOOSING THE RIGHT PLANTS FOR ECO-MANAGEMENT

Each project requires a specific, sustainable range of plants featuring diverse cultivated (mainly native) species, while accommodating spontaneous flora.

ADAPTING TO CONTEXT AND CREATING PLANT DIVERSITY

When it comes to eco-management, the fundamental challenge is the plants' impact on, and interactions with, spontaneous biodiversity. These interactions, like the plants' adaptability, are tied not only to the plants' genetic heritage, which itself depends on their type (native* to the region, acclimatised alien species*, horticultural creation), but also to their method of propagation.

An additional criterion is the sustainability of the proposed landscaping. This will depend on whether or not the plant palette is suited to the specificities of the project and the site. Questions to be asked include: will unsuitable plants be replaced and how will biomass be managed? The presence of the three strata (arboreal, shrub/ climbing and herbaceous) and their positioning are key to maximising the success of the biodiversity. A well-chosen palette also calls for proper planting, effective dialogue between stakeholders and appropriate maintenance. Lastly, and more generally, it's important to consider the carbon footprint and contribution of the chosen plants to local economic activities.

Different problems can only be solved through diversity. Therefore, a combination of the three plant types (native, alien and horticultural creations) is usually best, in order to benefit from their respective advantages. ■

PRIORITISING NATIVE FLORA

For plants to do well in a local context, priority should be given to flora that is native to the region in question. By determining the true origin of the mother plant*, the genetic characteristics that make the plant suitable for local conditions (climate, soil, spontaneous flora) can be preserved and its interaction with local biodiversity maximised. This means avoiding any gene exchange between populations of the same species that have not evolved in the same way. This is precisely the work being done by Végétal Local, a tool that tracks a plant's genetic origins to guarantee it was collected in a natural environment and has not undergone any selection or cross-breeding. When it comes to native plants, it is better to propagate them through sexual reproduction* (i.e. seedlings), if such techniques are available, since this maintains the diversity of the lineage through genetic admixture. If there is no selection, the established population's plasticity will be increased by the plants' heterogeneity. ■

When choosing plants, talking to nursery specialists is key, as shown in this image at the Aude nursery, which uses the Végétal Local tracking tool. / Ori D., Agroof.

CHOOSING ACCLIMATISED SPECIES TO TACKLE ADVERSITY

Urban areas are a mosaic of habitats with potentially poor or even extreme pedoclimatic conditions. In such circumstances, the palette can be broadened to favour ecotypes* from more challenging environments or so-called alien species that have undergone a process of acclimatisation*, rather than native forms. These would be plants obtained from seedlings or vegetative reproduction*, which is similar to cloning, if the mother plants at the breeders are insufficiently rejuvenated. Monospecific alignments resulting from vegetative reproduction should be ruled out because of the health risk and their small contribution to urban challenges (climate change adaptation, biodiversity and landscape). ■

DIVERSIFYING THE HORTICULTURAL PALETTE

The so-called "horticultural" palette, which is extremely diverse (the French app Floriscope, for instance, contains more than 17,000 taxa), could also be used more frequently to address certain issues. This category includes species that are found locally but whose origin in terms of production is unclear, such as alien plants or hybrids and cultivars* with native or alien relatives, produced through breeding or varietal improvement processes. Despite the heritage aspect of "old varieties", the least sold breeds are disappearing and the horticultural palette is starting to erode. As a result, the diversity of its genetic resources is shrinking. The process to improve this situation focuses not just on aesthetic criteria, but also on agronomic and health characteristics, which are of key concern to breeders. In France, the Label Rouge (Red Label) initiative and ADR certification for roses attest to these efforts. Some cultivars are more adaptable at the individual level, and this can be further amplified through grafting.

By contrast, at the population level, genetic diversity may be reduced. This is because vegetative reproduction is sometimes necessary, for reasons of the plant's reproduction potential, quick development, varietal authenticity and health, for example. ■

Benjamin Pierrache,
Plante & Cité

Established in 2009 and EcoJardin-accredited, Parc Sant Vicens in Perpignan combines cultivated plant beds with large areas assigned for spontaneous flora. / Hédont M., Plante & Cité.

KEY CONCEPTS

Cultivar: cultivated variety bred by humans through hybridisation, selection or mutation.
Ecotype: population that differs genetically from the typical species after it has adapted to a particular habitat.
Native species: species that grows in a given region spontaneously, or was introduced before 1500.
Sexual reproduction: production of offspring that are genetically variable and different from their parents, accomplished through the fusion of the gametes of both parents (through seeds).
Vegetative reproduction: production of individuals genetically identical to one another and their parents, except for mutations, accomplished through asexual propagation methods such as cuttings, divisions and layering.
Mother plant: specimen from which seeds or cuttings are collected for propagation.
Acclimatisation process (in horticulture): collection, importing and then a long period of experimentation and adaptation involving a form of selection, prior to introduction of the new species to the market.

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WHAT TO DO FOR BIRDS AND POLLINATORS

Birds and pollinators are the hallmarks of an unspoilt natural environment. How can the impacts of eco-management be optimised in their favour? Below are some key principles to be applied to green spaces.

Pollination (pictured: halictus scabiosae) means maintaining vegetation, food and shelter for wildlife and controlling pests and parasites. / Lambert O., Oniris.

INCORPORATING BIOLOGICAL CYCLES AND FOOD CHAINS INTO MANAGEMENT PLANS

Sometimes it's easier for urban birds and wild bees to find food and nesting places (cavities, trees, etc.) in an urban environment than in the countryside. But a site that appears to be conducive to hosting wildlife will not be an effective habitat unless properly managed.

For example, a shrub or tree stratum will only work for birds if pruning is done in accordance with reproduction and nesting cycles and provides a food supply (e.g. berries left on branches). Maintaining bird and pollinator populations requires food chains and, more broadly, the entire habitat, to run smoothly. A key goal of any management plan is therefore to ensure food chains are uninterrupted and there is generational continuity throughout the seasons. ■

AN INTER-DEPARTMENTAL INITIATIVE TO ENCOURAGE INSECTIVORES

From white wagtails, great tits, blue tits and long-tailed tits to black redstarts and bats, the city of Saint-Martin-d'Hères in south-eastern France is restoring interactions between species in an effort to combat the tiger mosquito. In 2018, the council's health & hygiene and environment teams launched an initiative in partnership with the French League for the Protection of Birds (LPO). By superimposing maps of bird sightings on areas where tiger mosquitoes were present, the teams identified some fifteen locations suitable for nest boxes. They then defined the placement parameters (height, orientation, location) before installing 42 nest boxes (with different sizes of entry holes). To encourage birds to use the boxes, the team drew up a list of recommendations that were then incorporated into the green space sustainable management plan.

GRASS COVER: REFUGE HABITATS TO BE MAINTAINED YEAR-ROUND

Maintaining habitats that are not cut, mown or grazed is crucial to providing uninterrupted access to floral resources and shelter. In summer, these refuge habitats are a major source of larvae, slugs and snails for young birds. Late autumn mowing is prohibited in order to protect insects nesting underground (such as wild queen bees) and to provide a winter food source (grass and flower seeds) for granivorous birds. Most of all, though, these habitats allow certain pollinators to complete their biological life cycles. For instance, some bumble bees winter at soil level, while the eggs or larvae of certain butterflies overwinter on dry stems before hatching in the spring. ■

DIVERSIFYING SPECIES AND PLANT STRATA

Tree, shrub and herbaceous strata are mutually complementary and represent a patchwork of natural habitats for both birds and pollinators.

To meet the needs of a wide array of pollinators, green spaces must feature a broad range of plants with staggered but continuous flowering. A plant's attractiveness can be determined by observing the pollinators that visit it. However, even if the plant is attractive, some species and certain cultivars either produce no pollen or nectar or provide few carbohydrates. Spontaneous flora provides high-quality resources, so when sowing or planting native species, it's better to opt for plants collected locally that will interact with the local wildlife. ■

Preserving or creating habitats: deadwood, bare soil, hollows, nest boxes, etc. Here, the design includes an ecosystem pond (Cimetière de l'Est, Lille). / Fournier F., Cerema.

AN ACTION PLAN FOR WILD BEES IN LILLE

In 2011, the northern French city of Lille began keeping an inventory of the region's wild bees and introduced specific conditions that would help them thrive. The bees in question included highly endangered species that were dependent on specific flora and soil types. Since most species nest on the ground, the city created a network of nesting sites for species that favour sandy, sandy-loam or clay soil conditions with little vegetation. The network fans out from where the latest populations have been identified and is modelled on the main "green grid". Habitat restoration work includes introducing plant species that will help develop the entire life cycle of these soil species (seedlings are collected locally).

SPECIFIC MEASURES TAILORED TO TARGETED SPECIES

When preserving a species has been identified as meeting key objectives, a specific action plan must be drawn up with regard to its arrangement and management. This is when it's best to call in the experts, whether in-house or independent (local or national naturalist networks or consulting firms). ■

Marianne Hédont, Plante & Cité

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INVASIVE PLANTS: ADAPTING TO CONTEXT AND SETTING PRIORITIES

Managing invasive plants in cities poses a variety of problems: action can be poorly coordinated, resources can be limited, follow-up after an intervention can be time-consuming and equipment can be unsuitable. What's the best way to develop a management strategy that is cohesive and compatible with eco-management?

WHAT ARE INVASIVE PLANTS?

European Regulation 1143/2014 defines an invasive alien plant as "an alien species whose introduction or spread has been found to threaten or adversely impact biodiversity and related ecosystem services". More broadly, in urban areas, managers include among invasive plants any plant likely to proliferate that is difficult to manage and can lead to various types of nuisance: competition with existing plants, building degradation, use disturbance, health risk, etc. There are a number of lists available that pinpoint plants requiring extra vigilance (see references).

BEST STRATEGY: FROM EARLY DETECTION TO MANAGEMENT

Monitoring plots to check for new infestations

In most cases, it is virtually impossible to eradicate populations that are already established. Plots should be monitored regularly to detect infestations early on and take quick, effective action. Attention should also be paid to potential sources of contamination (topsoil, poorly cleaned equipment, infestation at plot edges, etc.). There are a variety of organisations that can assist with this monitoring process (national botanical conservatories, regional federations for defence against pest organisms, nature-related non-profits, etc.).

Eradicating new infestations

Once a new infestation is detected, action must be taken quickly before it spreads further and can no longer be controlled. Plant management sequences must be tailored to the characteristics of the species to be managed (its mode of propagation and development cycle), the infestation (age, extent, connectivity) and the site itself (access and surface type). This, together with whatever material, labour and financial resources are available (in terms of volume and time), will determine the results that can be expected. Either the infestation will be eradicated or, more often than not, contained and thus prevented from creating new ones.

For inspiration, Plante & Cité, with the support of French trade association VAL'HOR and the OFB under the Ecophyto plan, has gathered feedback from managers on how they have dealt with land plants (see references). Practices vary widely. While some have a low environmental impact, such as combating through competition or grazing, others, such as covering with tarpaulin, have a major impact on soil biodiversity. These should therefore only be used as a last resort if other techniques prove ineffective.

Containing the spread of established populations

For older or more extensive infestations, the population must be contained by focusing efforts on the edge of the infestation. This must be repeated several times a year, sometimes indefinitely. It is therefore important to document what has been done so that in the event of any changes in staff, the same efforts can be continued. ■

For Asian knotweed infestations, cleaning tools and equipment before leaving the site will prevent the species from spreading / Laurent Bertrand, DIRCE CE Aigueblanche

BUILDING A STRATEGY AT ALL LEVELS

At the regional level, management initiatives should be coordinated to limit the spread

Even if the infestation has been controlled within a given plot, there is still a high risk of recontamination from other nearby sites. To limit these risks, it is important to check whether the infestations extend beyond the site to be managed and/ or whether they are connected to a green corridor. If that's the case, action should be taken in concert with neighbouring sites. When it comes to implementing coordinated initiatives and seeking financing for large-scale action, there are a number of associations (natural area conservancies and watershed authorities, in particular) that can provide support.

At the level of all sites under management, actions should be prioritised and resources allocated accordingly

Carrying out appropriate action means investing in resources – often heavily – over a long period of time. Resources can be directed proportionately to manageable infestations, or efforts can be combined with other more widespread site management initiatives. A percentage of resources must also be put into staff training, for example in species recognition, preventative management and management techniques. And sometimes, it just means accepting that the best course of action is to do nothing at all. ■

Maxime Guérin,
Plante & Cité

THE ADDED VALUE OF PRACTITIONER NETWORKS

Discussions between industry professionals at a technical day. / Guérin M., Plante & Cité.

France has a national strategy on invasive alien species (IAS). It takes into account existing work at other levels (watershed area, region and department level) and offers a common framework and shared guidelines for managing IAS. Implementation of this strategy relies on a network of practitioners that brings together all stakeholders – and there are a lot of them!
Uniting this broad range of practitioners around a common theme can be a challenge. However, it is extremely rewarding and offers genuine synergistic benefits when information, knowledge and data are pooled. The willingness to work together so that everyone has a better grasp of the problem – which is the basis of practitioner networks – leads to new common tools and a greater desire for knowledge transfer (through training, technical days, etc.).
Practitioner networks can be arranged at any level (watershed, sub-watershed, region, department, etc.). Activities conducted at the national level provide a general framework within which these networks, regardless of their scope, can identify their own issues and set their own priorities. In this way, each level can take the action that's appropriate for them, while complementing the work being done on a larger scale.

Sylvie Varray, French Federation of Natural Area Conservancies

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ECOSYSTEM-BASED GARDEN CEMETERIES

An increasing number of municipalities are now running pesticide-free cemeteries. This trend is an opportunity to rethink the landscaping of cemeteries so they can better serve the ecosystem.

HOW PLANTS CAN WORK IN CONTEMPORARY CEMETERIES

The model for contemporary French cemeteries dates back to the end of the 18th century. Paths were often grassed and the first individual tombs were adorned with a variety of plants. In the 1960s, grass paths began to be replaced by gravel, sand or asphalt paths, while flowering tombs gave way to stone monuments, all of which created a setting in which plants and spontaneous flora were rare. This trend can be compared to that in farming and the widespread use of synthetic pesticides. The idea that cemeteries lack greenery and are meant to be "neat and tidy" – concepts often fixed in people's minds – is therefore relatively recent. ■

Tombs adorned with plants and grass alongside paths and between tombs were once very common, as shown here at the Châtenay cemetery in north-central France (postcard – early 19th century). / NC.

WORKING WITH FAMILIES

Cemeteries are unique public spaces and managing them brings a host of challenges. Their layout is fragmented and they are maintained both by the local authority, which is responsible for the public areas, and by the families of the deceased, who care for the burial plots. The families have a strong emotional link to these plots, which they consider rather like their personal property. Cemeteries must be peaceful, contemplative places for families during visits and burials. This is why, when criticism or complaints are received about their maintenance, it's important to listen and educate, and provide appropriate training to caretakers. It's also crucial that the local authority supports the caretakers' work. There are several ways to handle complaints effectively while supporting caretakers and educating families. For example, a "complaints book" can be made available for people to express their concerns, or a personalised letter signed by the Mayor or relevant official sent in response to a complaint. Problems encountered should not be denied, but rather explained while offering a reminder of the goals being pursued. ■

TAKING THE OPPORTUNITY TO RETHINK CEMETERY LANDSCAPES

In the near future, all French cemeteries will be affected by the ban on pesticides. Instead of waiting for that day to arrive, many municipalities are already taking action. To support them, Plante & Cité has published a book of guidelines and measures on how to restore cemetery ecosystems and landscapes. It address the special nature of these places in terms of landscaping, regulations and their place in society. (See references).

The transition to zero-pesticides in cemeteries lacking greenery means making a number of changes to how work is organised. It requires time, equipment changes, caretaker training and, occasionally, some extra help. Once this is in place, a clear strategy can be developed, with an in-depth look at management practices and the cemetery's overall landscaping. ■

FOCUSING ACTION ON ALL LAYERS OF THE CEMETERY

Restoring a cemetery's ecosystem and landscape means first exploring the cemetery's topography and taking stock of what's going on below ground, on the surface and above ground. It involves a process of observation followed by a diagnosis and then a list of recommended actions and time frames specific to each cemetery.

Below ground

This is the non-visible part of the cemetery, the place where the deceased are buried (underground graves, vaults and caverns). Is anything missing? Is there water in the soil that is causing problems? Any pollution? Action can consist of draining wet soil; filling in problematic sites and adding plants; and offering new, more eco-friendly burial plots that reduce the risk of pollution (burial of coffins or urns with no surrounding infrastructure, use of untreated wood, only embalming if absolutely necessary).

On the surface

This is the landscape of burial plots, pathways and inter-tomb areas. What are the surface coverings? What state are they in? Are there any abandoned burial plots or ones where the leases are about to expire? Any accessibility issues? How diverse are the wild plants and wildlife? Action can consist of redesigning the pathways for easier maintenance and flow, grassing sand or gravel paths or areas, planting in between tombs, and learning about, accepting and setting up spontaneous vegetation.

Above ground

This is the landscape that comprises tombs, shrubs and trees. What legacy plants are there? What is the funerary heritage? What is the phytosanitary state of the trees? Action can consist of preserving existing trees, planting new ones, protecting and maintaining monuments and funerary items, using local stone, creating strategic groupings of plants and flowers (at the entrance, alongside paths, within burial areas, at the foot of walls), and promoting biodiversity in maintenance and layout (diversifying species, creating habitats for wildlife, combining horticultural and spontaneous plants).

All these actions can profoundly change the perception of the cemetery over time and bring its landscape closer to that of a park or garden. Whenever major changes are envisaged, it's essential to turn to the professionals, who will design the project down to the last blade of grass and then execute it. These are the landscape architects, landscape contractors and nursery gardeners. ■

Sandrine Larramendy,
Plante & Cité

INVENTORIES AND ACCREDITATION FOR THE *TOUTES AIDES* CEMETERY IN NANTES

In just a few years, plants in this cemetery, which was once dominated by stone, have started to flourish, either through horticultural practices or spontaneously. Inventories are kept of natural species, and in the spring of 2017, some 129 different plants were recorded by the city's botanist. In 2014 the cemetery was awarded EcoJardin accreditation, validating the work of the gardeners and heightening visitor awareness.

In 2020, a total of 18 other cemeteries in 11 French cities were awarded EcoJardin accredidation: *Besançon*, *Bordeaux*, *Cherbourg-Octeville*, *Courbevoie* (see p.33), *Dijon*, *Fontainebleau*, *Grenoble*, *Nantes*, *Pessac*, *Rennes* and *Versailles*.

New grass and a combination of horticultural and spontaneous plants at the Toutes Aides cemetery in Nantes, 2020 / Larramendy S., Plante & Cité

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IMPLEMENTING ECO-MANAGEMENT

Extract

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Constituted as a non-profit organization in 2005, with the support of the Association of French Mayors, Plante & Cité carries out applied research and studies in response to local authorities and professionals' needs. Through its governance and its missions, Plante & Cité is a unique model of public/private partnership.

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