Ecosystems operate at large scales. That is why landscape-level interventions are better than buildings to achieve an ecological impact through design. This project is an example of this, because it addresses the problem of the urban park not only from its design but also from its ability to generate ecosystems that help its own maintenance over time, without neglecting the uses it should serve.

The urban park has traditionally been understood as the space in the city that mediates between the dynamics of society and the natural world. Acting, thus, like the great theaters of the city: scenarios for nature and community life. However, they also bring great challenges in terms of design, planning, management, and maintenance. These are expensive infrastructures that are even more expensive to operate and maintain over time. This, along with the increasingly urgent and pressing considerations of climate change and its effects, determines that today it is essential to reinvent them.

In this sense, it should be understood that a project of this kind will never be really finished or complete; they will always be provisional, a phase in a succession of status. As such, the landscape architecture project becomes a matter of both management (and cultivating), as well as formal design.

**Keywords**

Ecology
Landscape
Processes
Project
Park
Estudios preliminares / Preliminary studies

Capas de proyecto / Project layers

Planta general / General plan
S. E. / N. S.
Objectives

This project corresponds to the first stage of the new Cerros de Chena Park. It has been understood as part of an urban network, as a natural extension of the city for recreation, culture and leisure activities. It is also part of a geographical network or ecological corridor within the Santiago basin, acting as a bridge between the Mapocho River and the Maipo River, in addition, it serves as a southern counterpoint to San Cristóbal hill, forming an axis that brings together the great green areas of Santiago: Quinta Normal, O’Higgins Park, André Jarlan Park, and Cerrillos Park.

Within this project, the relationship between ecology and architecture is not about contrasts or camouflages, but about overlays and entanglements, where it builds an ecology originated in the pre-existences, not seeking conservation but a new landscape. Hence, the need to restore the ecosystems of this place – deteriorated by inappropriate use and exploitation, soil erosion, debris, indiscriminate vehicle traffic, and general deforestation, as well as monoculture and plot afforestation – is raised. The ultimate goal is to create a new dynamic in the ecosystem that allows for greater stability and lower energy consumption, as well as a massive and recreational use for the population of the south-west area of Santiago.
PROYECTO PARA EL PARQUE METROPOLITANO SUR, CERROS DE CHENA
PROJECT FOR THE SOUTHERN METROPOLITAN PARK, CERROS DE CHENA

Arquitectos / Architects: Teodoro Fernández Arquitectos,
Urbana E&D Estudios y Desarrollos
Colaboradores / Contributors: Lyon Bosch + Martic Arquitectos
Ubicación / Location: Cerro Chena, San Bernardo

Mandante / Client: Gobierno Regional Metropolitano
Superficie construida / Built surface: 58 Hectáreas
Año de Proyecto / Project year: 2016-2019
With this in mind, the project is developed in four fundamental aspects:

- **Environmental sustainability**: where the geographical and topographic conditions are relevant for the development of biodiversity and ecosystems.
- **Urban sustainability**: the condition of urban edge of the park makes it necessary to consolidate its accesses, while its interior layout is proposed as a series of paths and circuits of universal accessibility.
- **Social sustainability**: the community’s demands for the definition of programs and activities associated with the park have been considered. Additionally, this relationship consolidates as the park is intended to be an example of environmental education.
- **Economic sustainability**: a management model is proposed to ensure the long-term sustainability of the park, seeking a balance between investment, operation, maintenance, and administration.

**Vegetation**

The spatial and ecological conformation of the park is mainly carried out by incorporating new trees and ground covers in a sustainable reforestation over time. For this, native or related species that meet the same specifications are used, that is, low water
requirement, great rusticity and successfully tested in the area. The implementation of naturalized meadows aims to help restore the entire system, as they function as windows to the landscape, building open and sunny spaces of a great landscape and color richness, while functioning as a green roof that highlights the arboreal and topographic structures. At the same time, these meadows, with their continuous plant cover, protect the soil from erosion and are easy to maintain.

**Edge**

On the east side of the park – in contact with the highway –, accesses, parking areas, administration, and maintenance have been defined; those programs that require a certain organization and constant administration have been grouped, such as gateways, administration spaces, formal fields, and dressing rooms, among others. This space has been developed as a buffer or protective cushion, integrating all pre-existing elements, incorporating them into a single and unitary project in relation to its parts, defining an orderly orchard area between the highway and the diagonal access axis to the foot of the hill.
Axes and Circulations

The park’s circulation system is structured on the basis of three foundational axes that act as tree avenues, with rows of *Quercus falcata*:

First, on the current road that connects the access with the road to the Virgin, we aim to reestablish an axis that brings together various ways of traveling the park: pedestrians, bicycles and light vehicles, organizing the circulations and directly defining the plain-hillside relationship. In addition, a north-south axis includes the various roads, accesses, and programs that are proposed in the area of the park’s edge and interior. Finally, a third path links the northern access, environmental center, boldo forests, water gardens, ravine and summit, constituting an environmental avenue that runs through the different ecologies proposed for the park.

Bottom of the Ravine

The central area of the park, in this first stage, is constituted by the bottom of the ravine, an area with a slight slope in which the clays from the hill accumulate; protected between the two peaks that limit this extension of the park. It’s the privileged space where the
Mediterranean sclerophyllous forest sits: soap bark tree and liter forest, peumos and acorns towards the southern slope, and thorns and colliguay towards the northern hillside. Passing through the center, the proposal restores a natural creek that will carry water intermittently.

**Slopes**

The slopes are the place of vegetation and contemplation. In them, careful paths are drawn that ascend diagonally to the top, completing the circuit in the portezuelo. In this first stage the slopes are of east and north exposure, therefore, the vegetation recreates the thorn bush and the associations of chaquial and quisco.

**Summits**

The tops are the quintessential definition of a park such as Cerros de Chena; they are the target spaces, viewpoints of the valley, the city, and the mountains. In this case, they
Plains and Meadows  
In this area, the trees will correspond to the park’s conformation terms, that is, solidity and clearness with introduced species such as oaks, cedars, melias, jacarandas, cork oaks, peumos, quillayes, ceibos, and zelkovas. A fundamental role will be played by Chilean palms as formal landmarks, guiding or marking roads, either in rows or in groups, as well as peumos, quillayes and acorns.

Pond / Lagoon  
Just where the slope changes between the bottom of the valley and beginning of the hill, in that line where the channels that irrigate the valley are drawn, a channel-pond-lagoon is proposed in the traditional manner of bodies of water for valley irrigation. This channel widens and narrows following the topography and will serve both for recreation and for the irrigation of the areas that are located under that elevation.

Program  
In order to respect and consolidate the intimate relationship between topography and vegetation, program and topography have been associated as a general plan in five fundamental areas:
1. An access and protection line between the highway and the park for parking lots, service buildings, barriers, and protection tree lines. The parking lots are located parallel to the highway, forming a wooded barrier, while the service buildings (gateways, warehouses, offices, administration, and operational units) are arranged next to the accesses developing an area parallel to the highway that, in conjunction with dressing rooms and formal sports fields, build a protection area in relation to the expressway and the east urban sector.
2. The development of the current occupied flat zone, proposed around a new central avenue, orders in an almost urban grid the different uses that accommodate different magnitudes and intensities without losing the human scale. For this, the main rites, festivities, and activities of the symbolic or intangible heritage of the community within the area have been identified: courts, streets, and passages in hard squares and landscaped spaces, where shaders, diverse stations, children’s games, are located, sports infrastructure and water games.
3. Elliptical events and meadow plains that mediate between the flat gridded area and the slight slope of the alluvial cones of the hill, meadows, forests, and amphitheaters that culminate in a terrace enclosing the lagoons. As a center an event-meadow of 400 per 200 meters is proposed, which might be used for the celebration of the “dieciocho chico” and to host massive activities, games, and events. These meeting spaces are proposed as courts: large plains for mass
events, while their edges might be used to organize prunings, kiosks and fairs.

4. Embankment and lagoon. As a body of water or wide canal, a lagoon that surrounds the foot of the mountain is proposed. It will serve both for the accumulation of irrigation water and for the use of boats, becoming a promenade-lookout of the park and the landscape on the slope that contains it. At the same time, its base is used as support for infrastructure services such as public toilets, warehouses, and space for park operators.

5. Slopes. In this case, three slopes are distinguished with different characteristics. They are the most environmentally sensitive areas of the system. In them, a circuit of paths for pedestrian and bicycle walks is established. In intermediate spaces between the tops, in a ‘trail of the Inca’ manner, a circuit of different lookouts is assembled. ARQ

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The plain between two meeting slopes is the topographic condition that Cerros de Chena Park project has recognized in order to create a large irrigated ravine. This operation of water distribution and accumulation is at the service of the introduction of a green mantle. In this manner, the proposal of this project is to generate a condition that did not exist before, that is, a new landscape.

Behind this strategy is a particular vision of ecology at stake: that of man as a creative entity capable of modeling nature, man as a catalytic force of continuous transformations and invention of new forms and programs, doubting nature’s role as a carrier of an intrinsic knowledge that should be apprehended and enhanced through restoration measures. In this movement, which questions the relationship between humankind and nature, there is a crisis in the notion of ‘natural balance’ that breaks the worldview of an ecology that can repair itself. Nature, then, is in itself disturbed, which raises a suspicion about the normative power that is inscribed in it when it is affirmed on a universal principle. In this way, the natural is rejected as something granted and as a solid and functional basis that would support the ethical judgments of social and territorial practices. From this perspective, the sustainable planning activities that are legitimized are called into question, referring to the fact that ecology must return to its ‘natural balance’.

Faced with this notion, the commitment of the Cerros de Chena park projects produces a new landscape that triggers an entirely artificial ecology. This grand ravine is sustained by making clear that ecology is not objective, but responds to an ideological issue. Well, if the implementation of parks would always be something intrinsically positive and in support of city balance, then we would be witnessing a depoliticization of ecology.