

Dossier

BIBLIOKEPOS

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Starting point

Seville is one of the southern European cities most threatened by climate change. It is no coincidence that some libraries had to open as climate shelters during the heat waves of 2022 and 2023. Interestingly, Eric Klinenberg recounts in his book "Palaces for People" how during the great heat wave that devastated Chicago in 1995, neighbourhoods with public libraries were more resilient in combating the effects of extreme heat, functioning as shelters for many groups of people, as those with high levels of unchosen loneliness (homeless, elderly, etc.).

Bibliokepos is a project that started in 2023 to rethink the network of public libraries in Seville as facilities in a climate emergency scenario. Libraries are democratic places, open to people of all conditions and classes, as the entrance to Epicurus' kêpos (κήπος means garden) stated: "Stranger, your stay here will be pleasant".

Los refugios climáticos, una carencia y necesidad en Sevilla

ABC de Sevilla

Sevilla abrirá tres centros cívicos como refugios climáticos ante ola calor

• Sevilla, 29 jul (EFE).- El Ayuntamiento de Sevilla abrirá tres centros cívicos de zonas vulnerables de la ciudad las tardes del lunes y martes de la próxima semana como refugios climáticos ante una nueva ola de calor con riesgo para la salud detectada por el proyecto proMETEO.

LA VANGUARDIA

Refugios climáticos sí, pero ¿cómo deberían ser?

Los refugios climáticos están abiertos a cualquier persona que lo necesite, pero están particularmente pensados para niñas y niños, personas mayores o con patologías preexistentes así como personas sin hogar o que residen en edificios en malas condiciones

ABC de Sevilla

Bibliotecas, parques, colegios y hasta centros comerciales: cómo son y dónde hay refugios climáticos en España

Barcelona ha estructurado una red pionera con 227 espacios públicos donde refrescarse, Bilbao ha seleccionado 130 e incluye recintos privados, mientras en otras ciudades el concepto es todavía incipiente

EL PAÍS

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Co-design workshops

Bibliokepos explores the future of public libraries as climatic shelters, imagining them as lush gardens, comfortable, sustainable and accessible to anyone during heat waves.

The project has been prototyped in 4 of the 13 libraries that make up the municipal network of Seville, which receive approximately 68,597 visits a year.

The design has emerged from a co-creation process carried out between the library communities and 42 creators (12 teachers and 30 students) associated with the Climate Comfort Chair of the University of Seville and the Fablab.

Designed specifically for each of the libraries, the devices operate as topographies that encourage the encounter between people, books and plants, generating new landscapes inside the libraries.















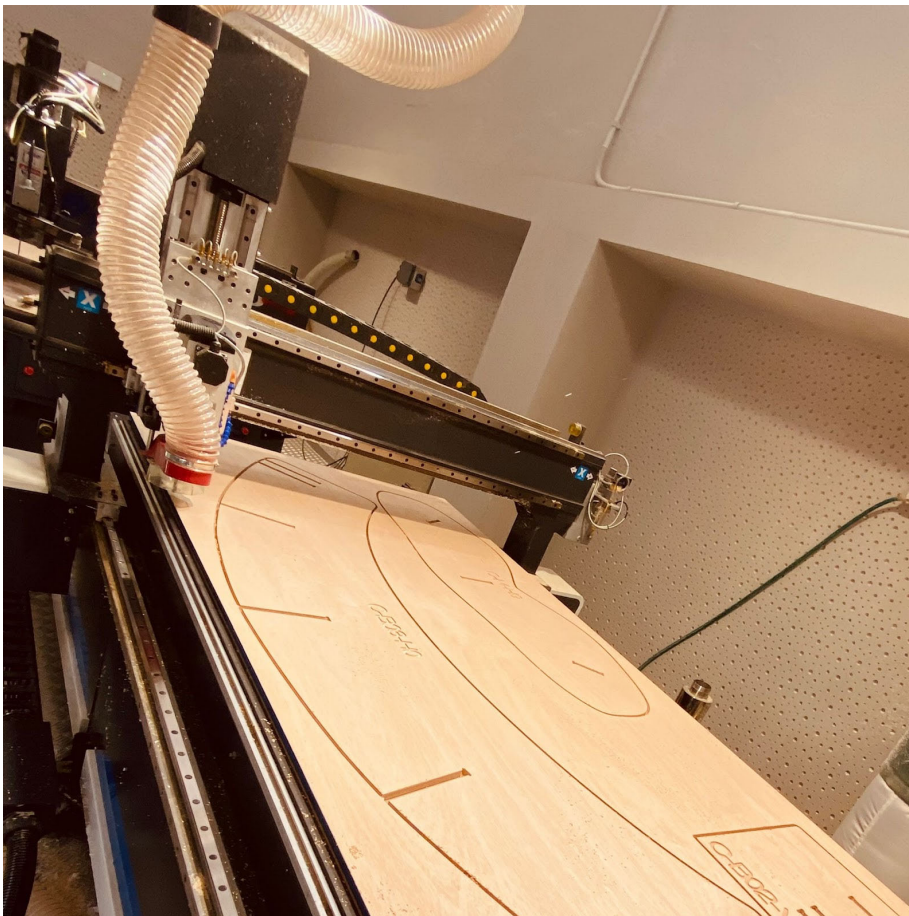
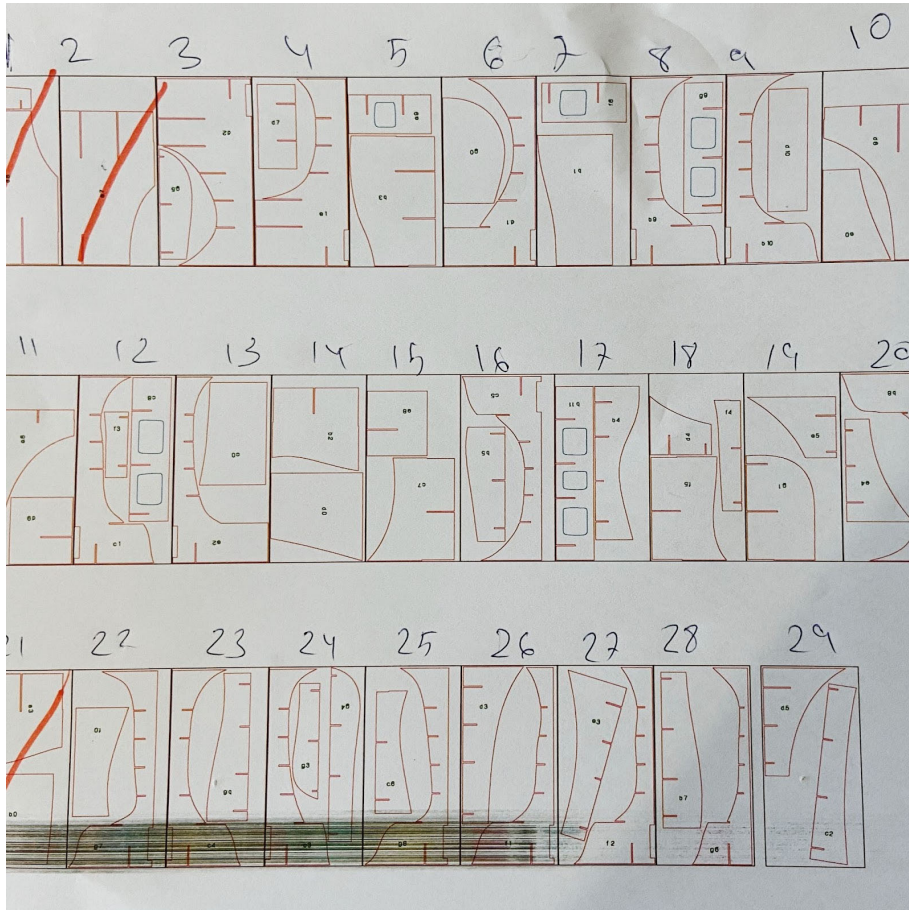
3

Fabrication

The design and construction of the devices has been carried out paying special attention to the carbon cycle. The material used for the construction has been wood (due to its negative balance of CO₂ emissions).

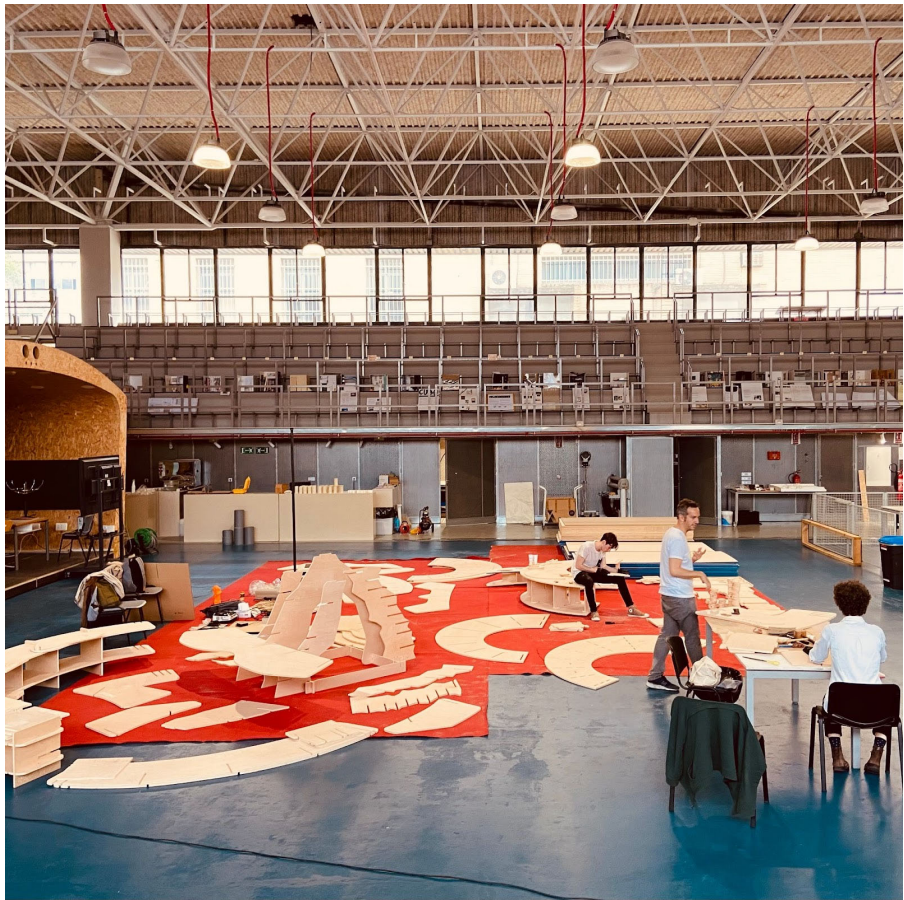
The cutting and assembly process was carried out locally, using parametric design techniques, without screws or secondary elements. The FabLab and the chair of climatic comfort of the ETSAS of the University of Seville collaborated in this process.

The parametric design has been carried out with the commitment to leave the production files open (open source). If anyone is interested in them, please contact...















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Garden

The devices have been designed not only as infrastructures, but also as biotopes capable of generating a healthier environment inside the libraries. To this end, 29 plant species have been selected to promote indoor air filtering. A botanical palette identified by research such as those carried out by NASA's Clean Air Study research project, or more recently, by the University of Seville's Urban Plant Life and Biosystems Engineering group, aimed at the phytoremediation of indoor air and water. These species have the capacity to absorb indoor pollutants such as benzene, formaldehyde, xylene, toluene or trichloroethylene, as well as to increase the proportion of O₂, improving the concentration capacity of library users.













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Hydraulic hacking

The current drought alert in Seville prevents the use of drinking water for irrigation and street washing. Therefore, together with the engineer Pablo Pujol, we have hacked the toilets of the libraries, with the aim of recycling grey water for watering the plants in the garden. A strategy that requires rethinking not only technologies, but also everyday practices.

In Seville, each inhabitant consumes 20.88 litres per day in the toilet. This means that the city discharges more than 14 million litres per day or 5 hm³ per year of water that could be reused for irrigation or cleaning. If we extrapolate this strategy to other similar effluents such as showers and kitchen sinks, we could achieve inputs of around 16.5 hm³ per year, approximately the same volume of water contained in the Guadalquivir inner harbour in Seville. These quantities, under conditions of reduced rainfall, will allow the city to be seen not only as a sink, but also as a spring.







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Soap

Hierbos is a hand soap, designed for Bibliokepos by Bosque Anxanar, which is free of industrial surfactants and artificial chemicals, allowing the water stored by the hydraulic hacking to be used to water garden plants without compromising their health.

The soap has been composed under the fundamentals of phytocosmetics based on the application of active plant ingredients, which are obtained from different parts of plants. Biological plant extracts are rich in vitamins, mineral salts and active ingredients whose molecules have pharmacological activity suitable for cosmetic use.

In a circular way, some of the components used in the composition of the soap belong to extracts from the plants selected for the garden, such as ivy. It also contains coconut betaine, glycerine, olive oil and essential oils of orange, lemongrass, cinnamon and sandalwood. The chlorine from the network guarantees the hygiene of the stored water until its subsequent use.











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Bibliographic collection

In parallel to these actions, the team of librarians in Seville has made a bibliographic compilation of 419 books related to the climate emergency under a common hashtag #Accionporelclima.

To update and enrich this catalogue, "Ecosystem 41" invited activists, academics, civic collectives and local experts to select new books they considered relevant to climate change adaptation and mitigation. This open campaign, which has already added 40 new titles, not only seeks to expand and enrich the library collection, but also to explore new, more participatory and democratic channels for shaping library collections.

The collection is accessible to all citizens, especially to the 330,627 users of Seville's libraries. They can also be accessed through the autonomic interlibrary loan system by 8,531,941 users of Andalusian libraries.















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Dialogues and rituals

Around the actions and contents treasured during the process, different meeting formats have been propitiated, combining the presentation of recommended books (offerings), with dramatised readings, scientific-cultural debates or musical performances (prayer) that explore, from different languages, common challenges.

The rituals have counted on the participation of agents from nearby institutions such as the School of Dramatic Art, the "Manuel del Valle" Conservatory of Music, the ConFuoco Quartet and the Vientosur theatre company. Also participating were members of scientific institutions such as Ernesto Rodríguez from AEMET, or cultural institutions such as Isabel Ojeda (ICAS), Pablo de Soto from the LABoral art centre in Gijón or Amanda Masha from the Mutant Institute of Environmental Narratives of the ITD-UPM in Madrid.

The aim of these activities is double: to complement the scientific narrative on climate change with more inclusive, shared cultural narratives; and to transform neighbourhood libraries into key places in this process of awareness-raising and action from the local level.



















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Audiovisual storytelling

Finally, we share the link to a video where the whole process linked to Bibliokepos is shown, including the journey of the different devices from the inaugural exhibition to the four libraries where they will begin to fulfil their function.

The audiovisual narration of Bibliokepos is by Javier Vila (direction and production). Eduardo Sánchez, Eduardo Álvarez and Juanma Carmona (camera operators) and Tres Gatos Sonido. Sound composition: 'Planetary Bands, Warming World' - Daniel Crawford and Scott St. George.

We take this opportunity to recognise and celebrate all those who have participated in the creation of this initiative.

Link video: <https://www.youtube.com/watch?v=TCIetCHLoHQ>





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Credits

Promoters

ICAS - Ayuntamiento de Sevilla
Red Municipal de Bibliotecas Públicas de Sevilla
Cátedra de Confort Climático de la Universidad de Sevilla
Ecosistema 41

Collaborators

Escuela Técnica Superior de Arquitectura (Universidad de Sevilla)
Fablab Sevilla (Universidad de Sevilla)

Prototype library Felipe González

Professors: José Sánchez Lauhlé, Adriano Jiménez
Students: Daniel Bilbao, María Morales, Belén Ramírez López, Juan Carlos Cañada López y Marisa de Guzmán
Librarians: María del Valle de Vaya y Juan A. Conde

Prototype library Julia Uceda

Professors: Estudio 14:30, Javi Navarro
Students: Emilia González, Melanie Jiménez Chunga, Sayen Labra o, Agustín Rausei
Digital design: Adriano Jiménez
Librarians: Yolanda Gómez y Rocío Parrilla

Prototype library Los Carteros

Professors: Miguel Hernández Valencia, Rafa Herrera
Students: Antonio Manuel Castro Carmona, Blanca Gómez-Millán Ruiz, Cristina Madrid Morales, Juan Gilles Domínguez, Alfonso Ruiz Robles
Digital design: Adriano Jiménez
Librarians: Carla Sanchez Moliní, Mercedes Aguilar y Carmen Llácer

Prototype library Torreblanca

Professors: Esther Mayoral y María Carrascal
Students: Ana Abril Prieto, Lorena Iáñez Costela, Juan Carlos Rodríguez López, Pedro Tordera Arillo, María José González Ruiz
Librarians: Carmen Serrato, Nuria Cerrero y Paco Herrera
Coordinación general Red Municipal de Bibliotecas: Miguel Ángel Garfia

Parametric design

Adriano Jiménez

Digital fabrication

Juan Carlos Pérez y Enrique Vázquez (Fablab Sevilla). Student: María Bautista

Sanding and varnishing

Pablo Alcántara (Crew)

Transport

Antonio Morón

Botanical design

Nomad Garden

Aljibe 2.0 (water device)

Pablo Pujol (Hackeo circuito hidráulico)

Hierbos (soap)

Bosque Anxanar (diseño jabón)

Nomad Garden (paleta botánica)

Musical composition

"Planetary Bands, Warming World": Daniel Crawford and Scott St. George

Musical performance

Cuarteto Con Fuoco

Stage director:

Fran Pérez, Teatro a pelo

Dramatised Reading

Comunidad educativa de la Escuela de Arte dramático de Sevilla Viento Sur Teatro: Ángela Olivencia (dirección artística), Lola Hernández (Ayudantía de dirección), Nora Ternero Cano, Carmen Höfert, Valeria González Gómez, Margarita Rodríguez Martínez de León, Lucía Santos Lozano, Paula Vallejo Bernal, Paula Sanjuan Quiróz, Laura Guerra Real, Daniela Zapico Lacourt, Mateo Triana Montes, Sofía Managadze, Ángel Ligerero, Cristian Angel Nita.

Dialogues

Ernesto Rodríguez (AEMET)

Isabel Ojeda (ICAS)

Pablo de Soto (LABoral)

Amanda Masha (Instituto Mutante de Narrativas Ambientales)

Collaboration with the dialogues

LABoral Centro de Arte

Instituto Mutante de Narrativas Ambientales itdUPM

Photography

La Marga

Lolo Vasco

Audiovisual piece:

Javier Vila, Alberto García. Eduardo Sánchez, Eduardo Álvarez,

Juanma Carmona.

Tres Gatos Sonido

Leader team

Ecosistema 41

Communication

Surnames

Production

El Mandaito

Idea and curatorship

Nomad Garden

Sevilla 2023