

An architectural rendering of a modern urban development. The scene features multi-story residential buildings with a mix of grey and dark green facades. Some buildings have balconies with plants. In the foreground, there's a paved area with people walking and cycling. A large, leafy tree stands on the right, and a field of yellow wildflowers is in the bottom left. The entire image is framed by a large, light green semi-circle on the right side.

Distrito [Ab]

**Abroñigal
Regeneration
Project**

**Where Abroñigal
meets the city *& the world***



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shaping thriving cities

ABOUT US

We are an urban development and strategy firm, specializing in regeneration projects.

Born in London in 1985, **COMMON GROUND** has been designing solutions to shape thriving, inclusive, and resilient cities for over three decades.

With our holistic and multidisciplinary approach, we have contributed to the transformation of streets, neighborhoods, and cities across four continents. Through collaboration with public institutions, local governments, and private partners, we enhanced the built environment and contributed to shaping a better future for people living in cities.

Our expertise includes:

- Strategic Planning & Master Planning
- Mobility & Connectivity
- ESG Integration & Sustainability
- Stakeholder Engagement
- Financial Structuring & Investment models
- Development Management
- Business Development
- Legal and Regulatory Affairs
- Infrastructure & Digital Systems
- Urban Design Guidance

In this report, we present our proposal for the regeneration of Adif's Abroñigal railway dry port in Madrid. As in all our consultancy work, we have approached the project through a holistic framework and multidisciplinary strategies. Our proposal is rooted in deep research, which helped us unleash the full potential of the district, creating a positive and term-term impact in the city.



Our purpose is to shape thriving, inclusive and resilient cities

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COMMON GROUND brings together global perspectives and diverse
backgrounds with a shared passion for city-making

PART I

THE ANALYSIS



ABROÑIGAL: CONTEXT OF THE SITE

Abroñigal is a centrally located logistics and rail freight hub in Madrid with a long history of shaping the city's development. Once an open stream marking Madrid's boundary, it became a key railway terminal in the 1970s, covering over 320,000 sqm. Today, plans are underway to relocate freight operations to Vicálvaro, freeing Abroñigal for major urban regeneration. The site's strategic location and excellent connectivity make it a prime candidate for transformation into a vibrant, mixed-use urban district.



A BRIEF HISTORY

Medieval and Early Modern Periods

The site's story begins with the natural stream called Abroñigal, which flows into the Manzanares River. Located outside Madrid's medieval walls, it served as a geographical and social boundary, separating the poorer neighborhoods from the wealthier areas of the city. Two historic waterworks, the Abroñigal Alto and Bajo supplied Madrid with water from the 17th to the 19th century.



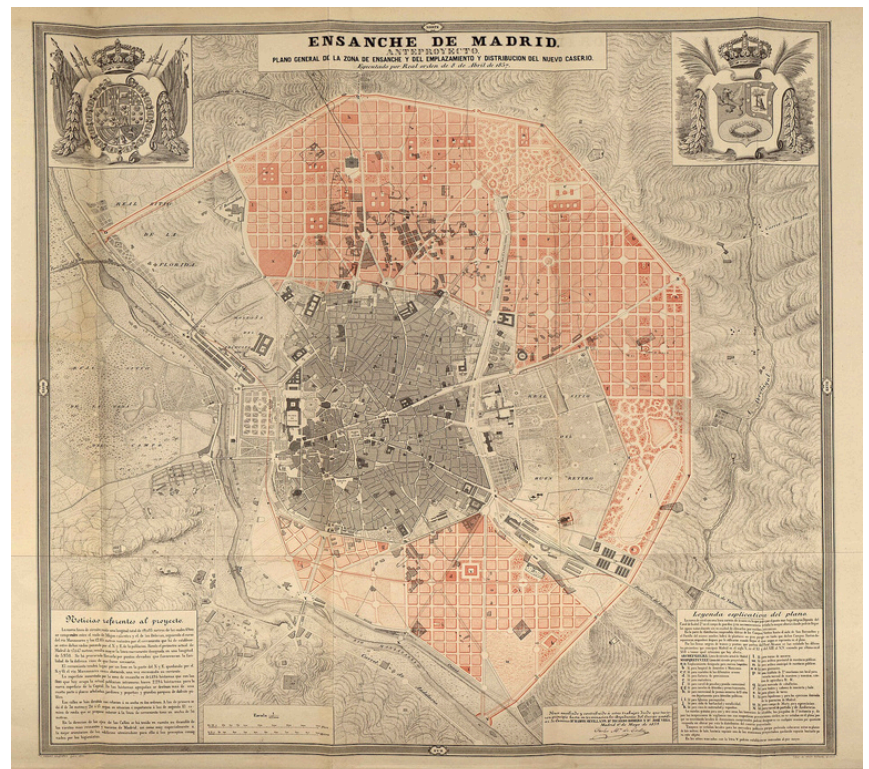
1900 photo of the old Abroñigal stream, also known as the Valnegral stream, which was a tributary of the Manzanares River. Source: Wikipedia

19th Century

By around 1870, the stream's flow was artificially increased by drainage from the Canal de Isabel II's eastern irrigation channel, enhancing its water volume.

20th Century

In the 1970s, the Abroñigal stream was covered and diverted underground in order to make way for the M-30 highway and its southern junction (Nudo Sur).



Map of Madrid's expansion, 1861. To the right, outside the city walls, the course of the Abroñigal stream is visible. Source: Wikipedia

This highway was designed as a key urban ring road to improve traffic flow and connect radial highways around Madrid. The car-centric planning priorities led to the burying of the stream beneath the new infrastructure.

In the same decade, plans were made to build a dedicated freight railway station to relieve congestion at Madrid's main passenger station, Atocha. As a result, the Madrid-Abroñigal station opened in 1974, which today defines the targeted area for regeneration.

Located near the former mouth of the Abroñigal stream, the station covers approximately 320,000 square meters up to this day.

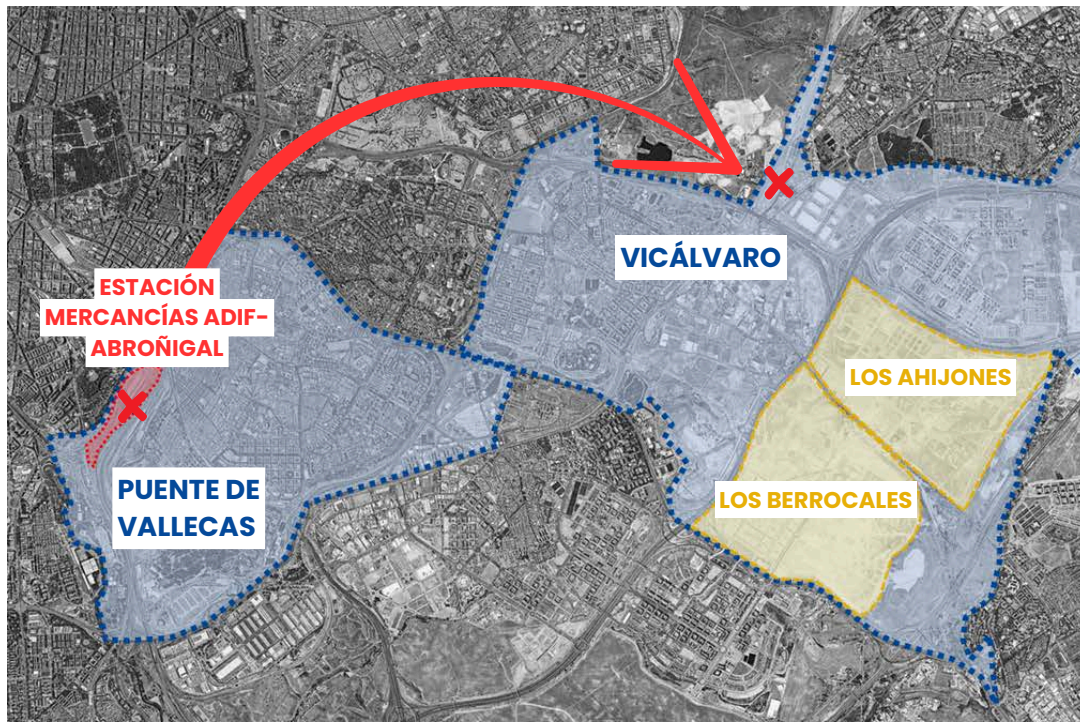


News from the press of the time about the inauguration of the Abroñigal station. Source: ADIF Centro Logístico Ferroviario de Madrid-Abroñigal, April 2016. Image from: Caminando Ingeniería, 2019.

21st Century

Today, the Abroñigal area is managed by ADIF (Administrador de Infraestructuras Ferroviaria) and functions as one of Spain's main logistics and freight hubs. The site includes large warehouse spaces, railway maintenance infrastructure, and key freight lines. In 2023, the terminal processed 2,776 trains and nearly 87,000 intermodal transport units.

Since 2014, Abroñigal has served as the departure and arrival point for the Madrid-Yiwu freight train, the longest railway route in the world, connecting Spain to China through eight countries.



ADIF RELOCATION

Over the past couple of decades, the Abroñigal freight terminal grew into the largest logistics center in Spain, occupying a 320,000 sqm parcel. Equipped with 15 tracks, it manages loading and unloading operations for up to 18 trains daily. Despite its central role, the terminal has been operating at maximum capacity for some time, prompting the need for expansion.

Urban planning discussions around the site have a long history. In the early 2000s, the city proposed building a new AVE station at Abroñigal to supplement Atocha. However, the project was ultimately abandoned, with the focus shifting to other key areas like Chamartín.

Today, a major strategic shift is underway: the relocation of freight operations from Abroñigal to a new terminal in Vicálvaro. This move will integrate the facility into Adif's network of key logistics nodes and enhance multimodal freight connections across Spain. The Madrid-Vicálvaro terminal is being developed through a €300 million investment, rolled out in several phases. Integration efforts began in late 2022, with full completion expected between 2026 and 2027.

Once operational, the Vicálvaro terminal is set to streamline freight operations, alleviate pressure on Abroñigal, and strengthen Spain's rail freight competitiveness in line with EU transport growth forecasts.

RESEARCH & ANALYSIS

The research phase explored Abroñigal's strategic location in Madrid and the drivers shaping its future development. The analysis covered the site's excellent connectivity, its industrial past, and current plans to relocate freight activity. Local real estate trends were reviewed, highlighting strong demand for modern office space in Méndez Álvaro, varied co-living and residential options, and a growing opportunity in the higher education sector. Market benchmarks, price ranges, and energy certifications were compiled to inform feasible uses and target audiences. This comprehensive study defines the context for transforming Abroñigal into a mixed-use urban district with high-quality, sustainable development.

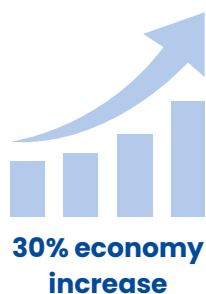


MACRO-ANALYSIS: MADRID



Economy

Madrid's economy accounts for almost 20% of Spain's total economic output. Therefore placing Madrid as Europe's fourth-largest metropolitan economy by GDP.



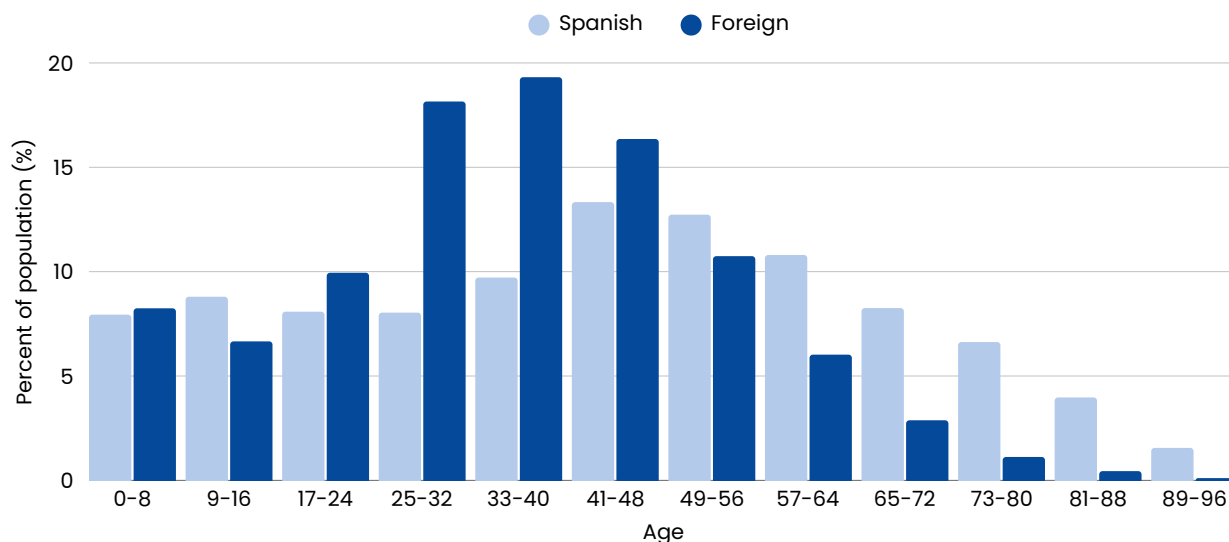
Madrid's economy has seen a 30% increase in the last 10 years and is expected to keep growing at this pace. While Madrid's GDP has been reaching new high record figures, the city's unemployment rate dropped to below 9%. Thus showcasing a strong post-pandemic recovery. This upward momentum by the city has made the capital an attractive destination for domestic and foreign investments. Particularly the sectors of real estate, technology, finance, and logistics.



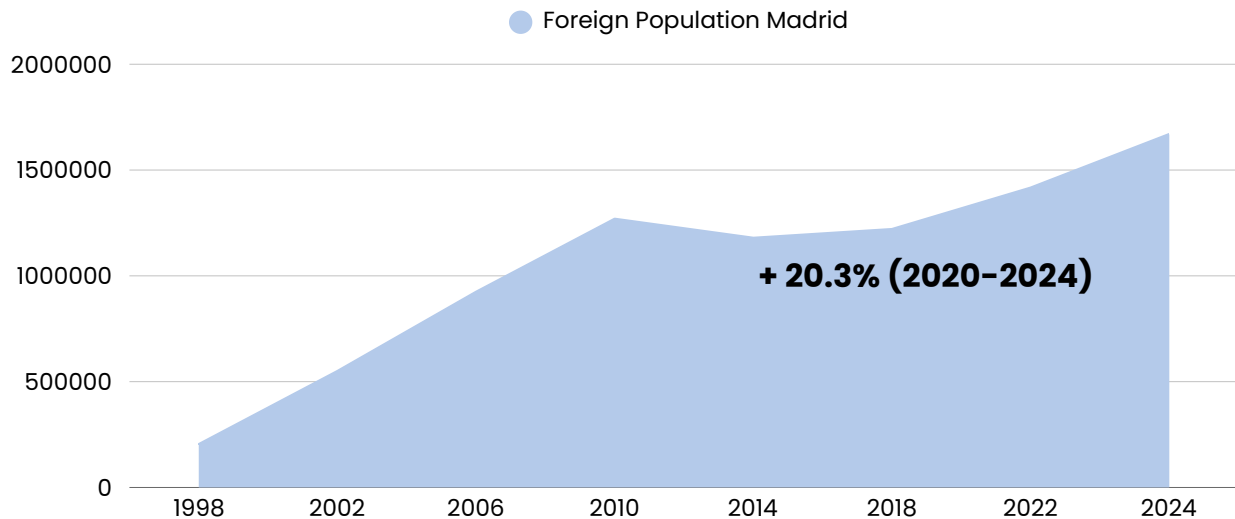
In 2024 alone, the municipality attracted over 24 billion euros in Foreign direct investment (FDI). Marking a 30% increase from its previous record high in 2023, representing almost 70% of the total FDI inflows to the entire country. These positive economic fundamentals have promoted a high demand for modern office space, residential developments, and urban regeneration within Madrid.

Demographics

Looking at the demographics, the municipality of Madrid has reached a population of over 3.5 million people. Despite the negative natural growth rate, the city has been experiencing it for quite some time now.



Madrid's continued population growth is driven by strong internal migration from other Spanish regions and steady international immigration, particularly from Latin America and Eastern Europe. While the native population is gradually aging, the influx of younger, working-age residents is helping to renew the labor market and offset the demographic decline. This dynamic is fueling consistent household formation and sustaining demand for a wide range of housing typologies. Ranging from family apartments to student residences, co-living spaces, and micro-units.

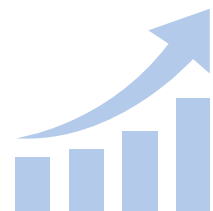


Education



**~ 320,000
students**

Madrid is Spain's leading higher education center, enrolling over 320,000 university students across six major public universities, such as Universidad Complutense de Madrid (UCM), Universidad Politécnica de Madrid (UPM), and Universidad Autónoma de Madrid (UAM). As well as more than 30 private universities, specialized institutes, and prestigious business schools.

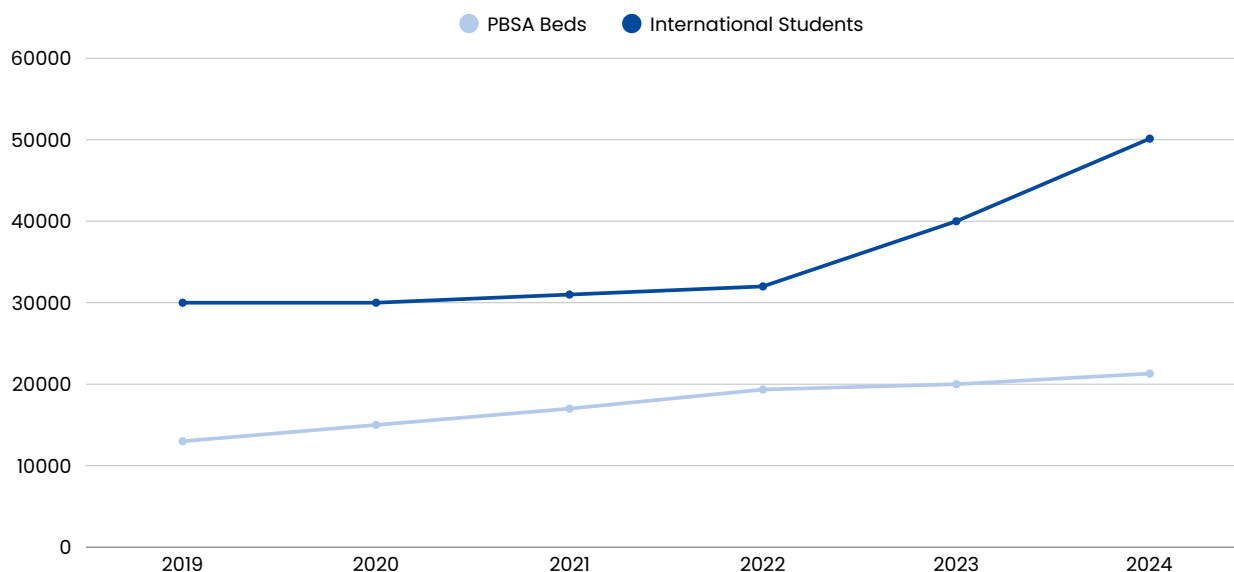


**60% increase of
international
students**

Where around 40% of students in Madrid come from other Spanish regions, while 11-13% are international. Which is a rapidly growing share due to the rise of English-taught programs, Erasmus exchanges, and global university partnerships. Over the past decade, the number of international students has increased by 60%, reinforcing Madrid's position as one of Europe's top student cities.

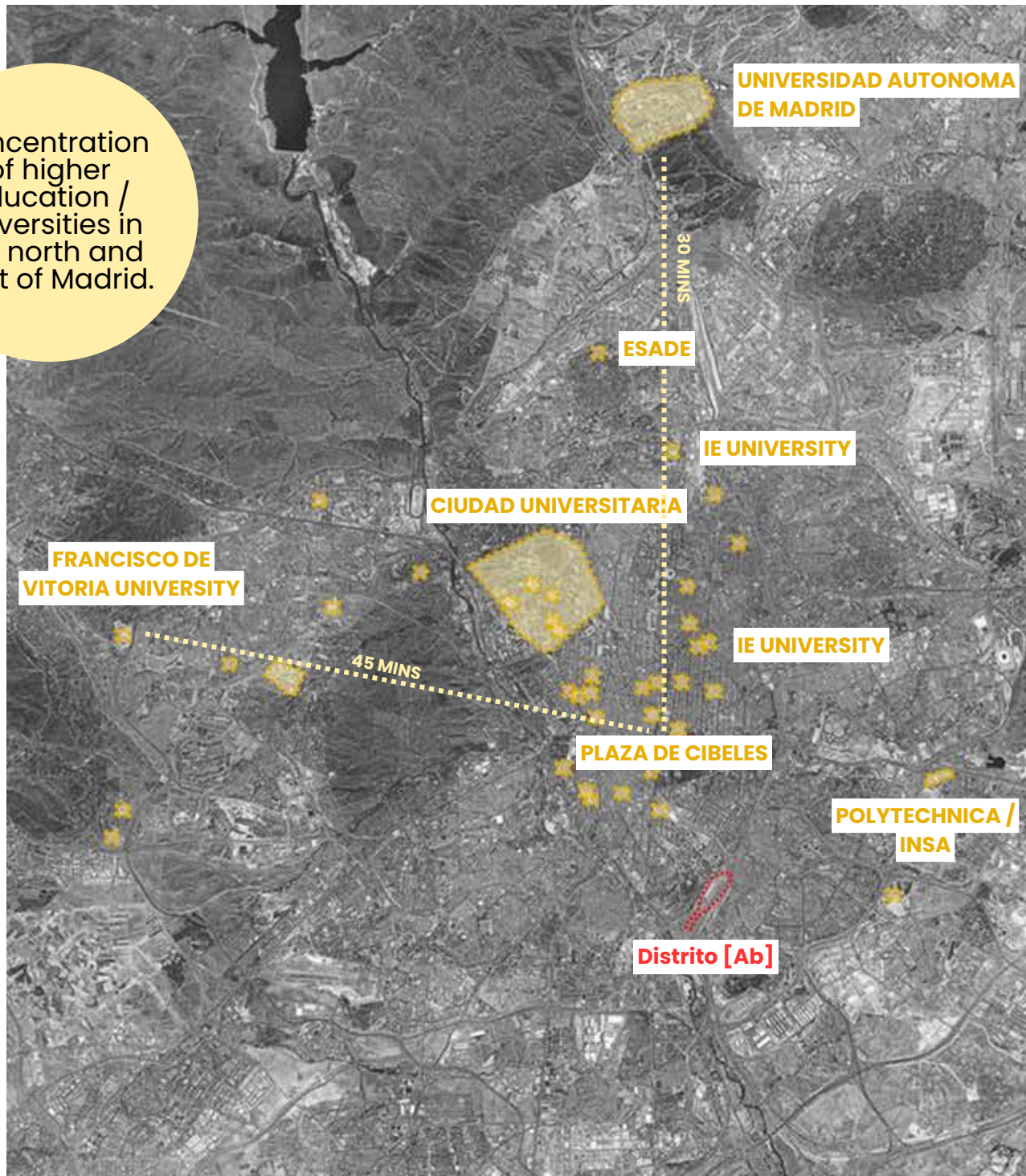
This trend has also been accelerated by Brexit, which has prompted several U.S. universities to seek a presence within the EU. In order to maintain access to research and mobility frameworks like Horizon Europe. Institutions such as St. Louis University have strengthened their Madrid operations, while others have launched new programs in the city. Positioning them in Madrid as a strategic alternative to London for transatlantic academic expansion.

Madrid's growing student population has created a persistent undersupply of purpose-built student accommodation (PBSA). Where only 16–18% of students are housed in dedicated student residences. While the majority rely on informal rentals or other forms of accommodation. Occupancy rates for student residences in Madrid consistently reach 95–100%, with waiting lists common across both public and private providers. This imbalance has drawn increasing attention from institutional investors and international PBSA developers across the globe. In the past five years Madrid has become a key investment hub alongside Barcelona. Causing major players like The Student Hotel, Resa, Nexo Residencias, and Greystar to enter the market. Despite an active pipeline of over 5,000 new beds, analysts estimate that the city Madrid still needs at least 15,000–20,000 more to match supply levels seen in the UK or northern Europe.



MAPPING OF UNIVERSITIES

Concentration of higher education / universities in the north and west of Madrid.



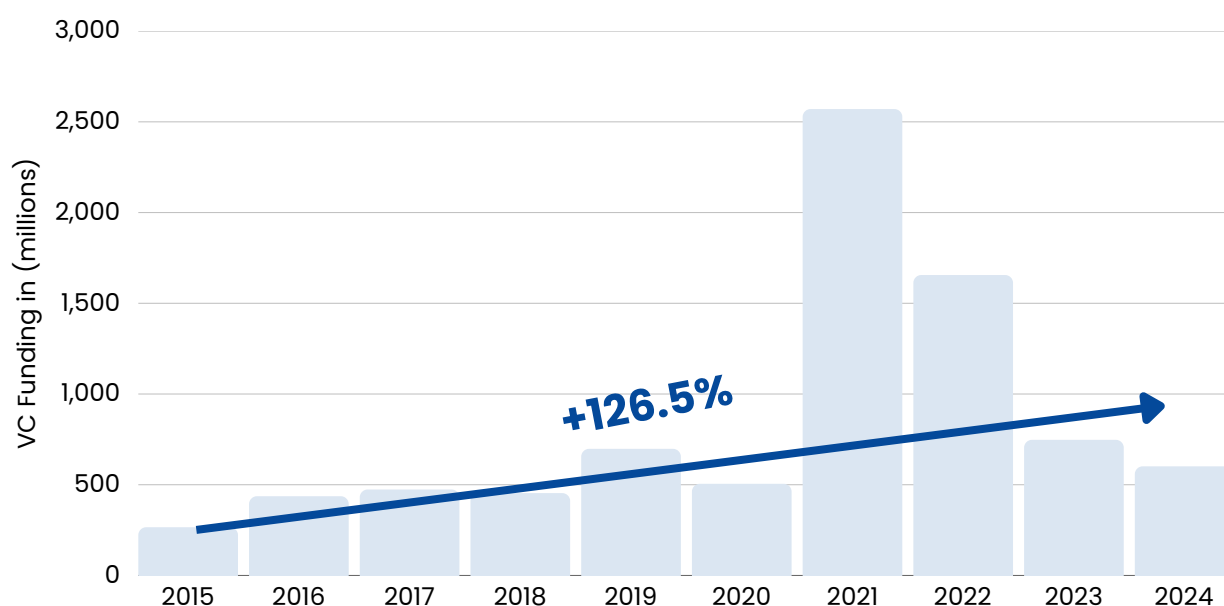
Other universities

- CEU San Pablo University
- CIS University
- Comillas Pontifical University
- ESIC University Pozuelo
- European University of Madrid (Universidad Europea)
- Francisco de Vitoria University
- IEB (Instituto de Estudios Bursátiles)
- IE Business School
- IE University
- ISDE (Instituto Superior de Derecho y Economía)
- La Salle Centro Universitario
- Menéndez Pelayo International University
- Rey Juan Carlos University
- Technical University of Madrid (Universidad Politécnica de Madrid)
- Universidad Autónoma de Madrid
- Universidad Carlos III de Madrid (UC3M)
- Etc....

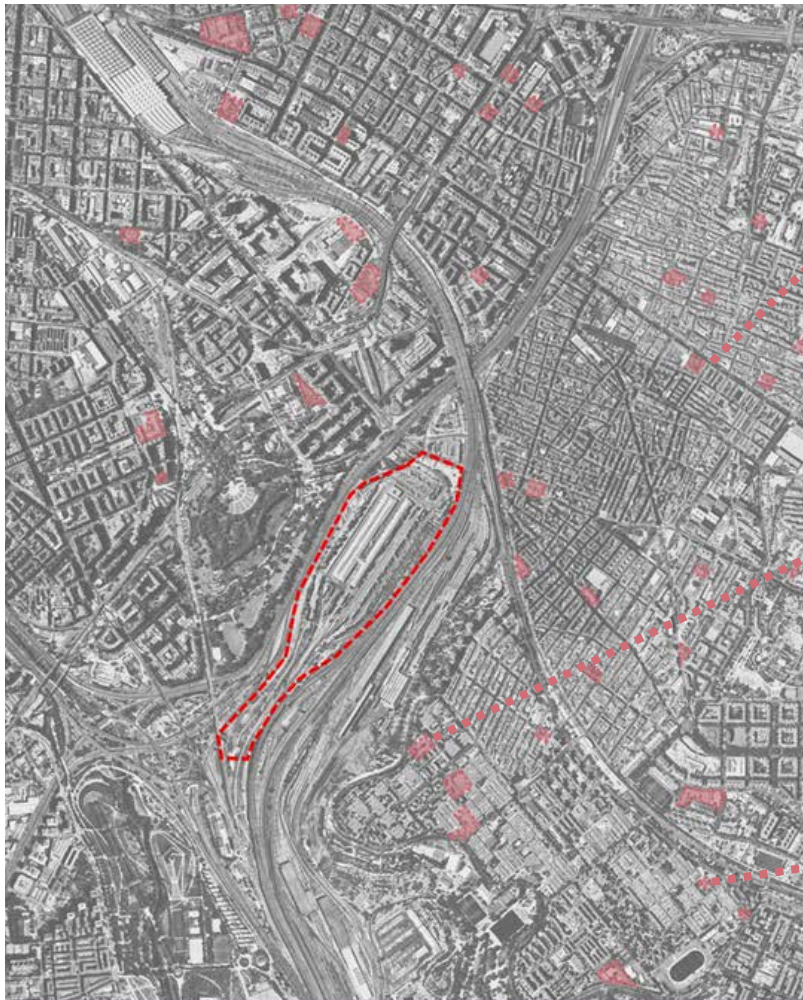
Start-Up

Madrid is experiencing a surge in startup activity, with over 2,100 tech startups founded in the past 15 years, thus generating roughly 21,000 jobs. By mid-2025, Madrid will host more than 8,500 active tech companies, which is up 22% year-on-year. These companies are contributing an estimated €14.8 billion in annual economic output and employing over 108,000 people. The city's startup ecosystem is now the second fastest growing in Europe, with a record of 249 funding rounds in 2023, placing Madrid sixth in Europe by number of deals and eighth by total VC volume.

Most importantly, Madrid attracts over 60% of Spain's total venture capital funding. Showcasing Madrid's clear leadership in the national innovation landscape. Early-stage funding has also grown to approximately €391 million, which was invested in 2023 alone. This represents a threefold increase over six years, supported by Madrid's dense university network, incubators, and business-friendly policies. The most notable sectors are fintech (€128 million raised), health tech (€77 million), transport and logistics (€25 million), and energy (€54 million). Madrid is also home to many fast-scaling companies such as Multiverse Computing, which recently secured €25 million and is valued near €100 million in the quantum software sector. Additionally, the South Summit 2025 highlighted Madrid as Spain's leading region for sustainable and climate tech, with startups such as Captoplastic, Altrove, Pyratex, Lumio, and Methanol Reformer raising €11.5 million collectively and reinforcing Madrid's contribution of over 25% of Spain's sustainability-focused startups.



MICRO-ANALYSIS: SOCIAL INFRASTRUCTURE



Education

Abroñigal sits next to Puente de Vallecas, a densely populated and young neighborhood with significant social inequality. While there are nine public secondary schools in the neighbourhood (Vallecas I, Palomeras Vallecas, Numancia, Tirso de Molina, Madrid-Sur), drop-out rates remain the highest in the city. A polytechnic university district in the area, as suggested in the District 4.0 plan, will fill a gap in post-secondary education and offer vocational training opportunities. There is also GSD Vallecas, a private school that offers early childhood through secondary levels, and Mater Clementissima, a concerto (semi-private) option. Nevertheless, there is an evident need for educational capacity: extensions to existing schools like CP Fray Junípero Serra show the need for more space. The introduction of specialized programs such as a district-level music school or a vocational training center could provide cultural richness and economic alternatives for local youth.

Health & Services

Health infrastructure is somewhat more developed but still insufficient. Within two kilometers of the site are two major hospitals: Hospital Universitario Infanta Leonor, with 264 beds, and the medium-stay Hospital Virgen de la Torre. The district also relies on a network of smaller clinics, including six primary care centers (e.g., Buenos Aires, Entrevías), two mental health centers, two specialty clinics (Federica Montseny, Vicente Soldevilla), and several addiction and drug dependence centers. Nonetheless, residents continue to report long wait times and shortages in services, especially in mental health and geriatrics. The urban redevelopment should include a modern health center or 24/7 clinic with mental health and elderly day-care services. Residents have long expressed a desire for senior facilities in neighborhoods like El Pozo, and integrating these services into the urban redevelopment would benefit both new and existing populations.



2 major hospitals (264 beds)

6 primary care centers

2 mental health clinics

2 specialty clinics



€17 million investment in 2022 in public services and civic infrastructures



Unmet needs: 24/7 Clinic, Espacio de Igualdad, youth and senior care centers, and cultural facilities

Civic and emergency services in the area have improved with the new municipal complex opened in 2022, which includes a police station, a SAMUR ambulance base, and the relocated Junta Municipal of Puente de Vallecas. Despite this €17 million investment, concerns remain regarding safety and inclusion. Residents still demand an Espacio de Igualdad (women's and family center), youth centers, and expanded cultural and library infrastructure.

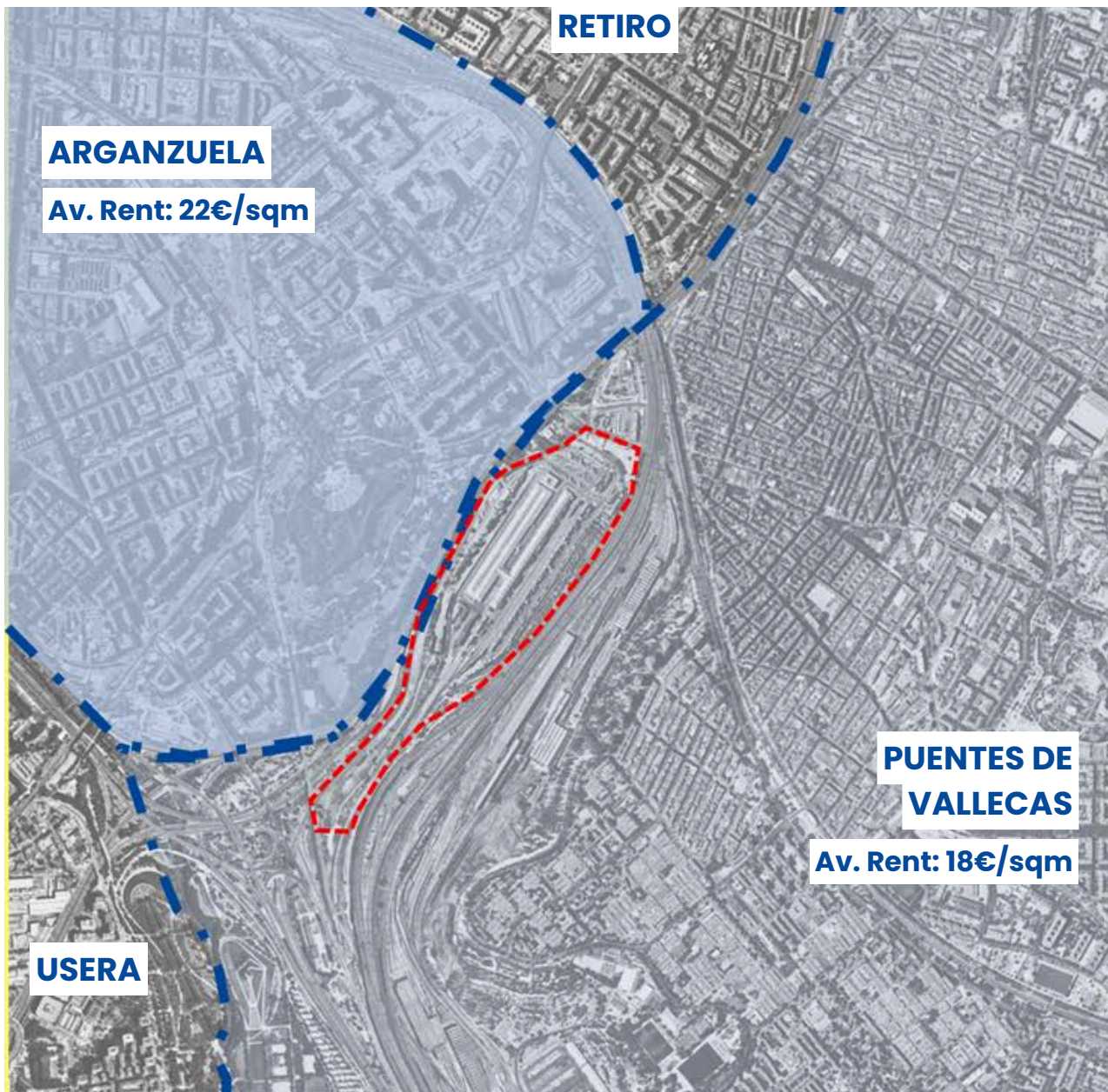
Culture & Public Space

Cultural infrastructure remains limited despite the area's strong communal fabric. The Lope de Vega Cultural Center serves as a central venue for theater and library access, but more community spaces are needed.

Community centers offering youth programs, adult training, and inclusion services are essential. The repurposing of the historic town hall on Avenida de la Albufera for employment training provides a strong precedent (Portal Vallecas), and the urban redevelopment could complement this with modern civic amenities.



Public space in the area is limited. Although the Abroñigal site is located between Parque Enrique Tierno Galván and Parque Forestal de Entrevías, the surrounding neighborhoods lack accessible green areas and plazas. Sports and recreational facilities are also scarce, with Polideportivo Palomeras serving as the main public option. A new multi-use sports facility built over decked rail infrastructure could help meet community needs.



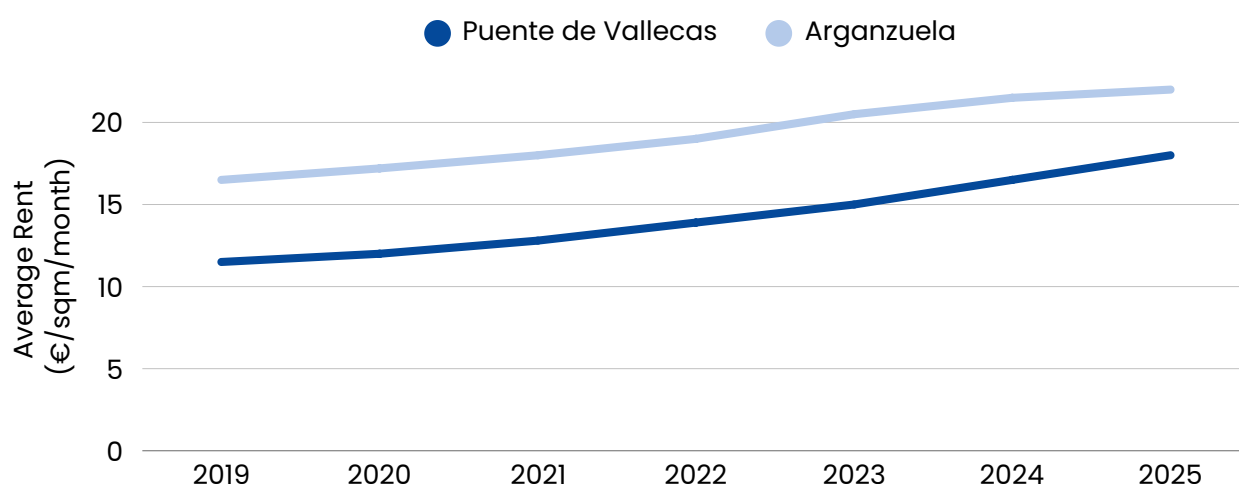
HOUSING

Residential areas near the Abroñigal site are mostly working-class, made up of aging social housing and private apartments. Rising rents are pushing younger residents out of the area. While developments like the Eco-barrio of Puente de Vallecas have emerged, they have not included the complementary services necessary to ease the strain on existing infrastructure.

DEMAND FOR SOCIAL & AFFORDABLE HOUSING

Rents in Puente de Vallecas have risen by approximately 27% year-on-year. Current average rental prices range from €15 to €18 per sqm per month, translating to about €1,050 per month for a typical 70sqm apartment. Arganzuela is experiencing higher rental prices at around €22 per sqm per month, translating to approximately €1,540 per month for a 70 sqm apartment. This increase is driven by limited housing supply in the district and growing demand, as rising costs in other areas make Arganzuela a comparatively more attractive option.

Rent Price Trends:



Especially in Vallecas, there is a strong demand for subsidized/public housing. Even though the city's Empresa Municipal de la Vivienda y Suelo (EMVS) agency has offered affordable housing in a nearby area, political factions are still proposing and advocating for more new units in the Abroñigal development as affordable housing.

Some of the policies include rent controls introduced under the 2023 National Housing law. In designated stressed areas, regional governments can limit rent increases to a maximum of 2% in 2023 and 3% in 2024. Since January 2025, a new index has been in effect, capping rent increases at levels below the consumer price index. However, Madrid has not yet applied these rent control measures regionally, limiting their impact locally. Additionally, regulations in Madrid require that around 30% of new residential developments be reserved for protected housing.

Regarding housing tenure and market dynamics, owner-occupancy remains high in Vallecas, but rising prices are pushing many newer households into the rental market. Adding new affordable units at Abroñigal could help relieve this pressure and improve housing access for the community.

Another challenge is the large income disparity across the Abroñigal divide. In 2019, the average personal income in Entrevías (Vallecas) was around €9,450 per year, while in Méndez Álvaro it was nearly four times higher at €35,390. Puente de Vallecas as a whole had an average personal income of roughly €10,941, placing it among the lowest in the city. By contrast, the Arganzuela area had nearly double that income at €17,586. Arganzuela is considered among Madrid's upper-middle-class districts, while Puente de Vallecas ranks near the bottom alongside Usera and Villaverde. These figures highlight the extreme socio-economic divide, with Abroñigal acting as a boundary between a more gentrified, affluent Madrid and a lower-income district.

Indicator	Puente de Vallecas	Arganzuela
Avg. Personal Income (€)	~ 10,941	~ 17,586
Owner-Occupancy Rate (%)	High	Medium
Education (Uni Degree %)	Low	High
Rent €/sqm/month	€ 15-18	€ 22

When looking at the *Social* and *Education* Indicators, it is important to note that education seems to be lower in Puente de Vallecas, where there is a larger number of adults who don't have secondary diplomas in comparison to Arganzuela. Arganzuela also has more university graduates. In correlation, they have a larger amount of cultural amenities. Even though Vallecas has a larger amount of social challenges, it also has a strong community identity and tradition of activism, meaning many locals are pushing for improvements in the area.

These social and income challenges lead straight into the next challenge of cost and housing burden. Since many residents of Vallecas live in already paid-off and older apartments, the cost of living has stayed pretty low. However, they have the highest rent increase in the city with over 24% year by year. Due to this, the cost burden on more low-income families has become worse over the years.

When analyzing the housing landscapes and needs, knowing what the existing housing stock is, is crucial. The Abroñigal site has no housing, but the surrounding areas have different housing typologies. The Arganzuela side has residential blocks as well as high-rise apartments, while Puente de Vallecas consists mainly of older mid-rise apartment blocks that are either worker housing or government-subsidized housing from the Franco era. The housing stock in Vallecas needs to be renovated since the structures are aging. While Arganzuela has a fast-growing rental sector due to 'newcomers', owner occupancy is higher in Vallecas, as mentioned above, since many residents bought their homes decades ago.

This directly leads to housing demand and affordability which go hand in hand. Puente de Vallecas has one of the fastest-growing rent increases in the city. This is because a lot of people are being driven out of central districts and require cheaper options. Even though the area is seeing steep price increases, the area is still more affordable than Arganzuela or central Madrid.

There is an enormous amount of demand for social and/or affordable housing in the area. Thousands of residents citywide are applying to the municipal housing waitlist. Even though the city has been adding to the stock through its energy-efficient rental housing developments in the 'Ecobarrio' of Puente de Vallecas, there is still demand for more affordable housing. The city has also offered a lottery for 77 new affordable rental apartments in Vallecas, meaning the rents are capped at 30% of their income. Projects such as these illustrate the area's desire for affordable housing as well as green design, which is directly in line with the goals of Abroñigal's project.

SUMMARY OF TRENDS

Madrid's Growth Drivers

The Abroñigal development is connected to multiple economic, urban, and social trends that are currently shaping Madrid.

We are seeing fast economic growth, with the city contributing to almost 20% of the GDP in Spain - € 24 billion in FDI in 2024 - and an increase of 30% from 2023. Real Estate, logistics, finance, and the technology sector are thriving, which is a driver in the urban regeneration demand.

Additionally, Madrid is seeing increasing internal and international migration, especially among the younger demographic. Currently, the student enrollment is over 230,000 students, and the number of international students has increased by close to 60% in the past decade.

Student Demand

Due to the above-mentioned trend of students, there is a severe shortage of PBSA, with only 16-18% of them living in dedicated residences. The current shortage of beds is reaching 15,000-20,000 beds, even though there is an active pipeline.

The rising number of students, as well as the thriving tech startup industry also illustrates an opportunity, since Madrid is hosting more than 8,500 tech companies that have €391 million in 'early-stage VC funding as of 2023.

Housing and Inequality

Nevertheless, Madrid is seeing a housing affordability crisis. Alone in Vallecas, the rents have grown nearly 27% year-on-year, with the rates reaching €15-18/sqm/month on average. With this comes a big disparity of income with the average annual income in Vallecas being €10,941 versus the €17,586 in Arganzuela. This ties in with the underdeveloped social infrastructure which includes higher drop-out rates, and unmet needs for elderly care, mental health care, and clinics.

The Abroñigal uses are backed by strong data including the PBSA shortage, low incomes in neighboring areas, rising rent, a thriving tech sector, gaps in the social and cultural infrastructure, and more, justifying a mixed-use development with education, innovation, housing, and public services.

Strengths

Strengths:

- Prime location & transport links
- ESG-driven, mixed-use
- Addresses education & housing needs
- Iconic brownfield
Regeneration potential
- Tech Eco system in Madrid
- Strong investor interest in PBSA

Weaknesses

Weaknesses:

- Exposure to pollution & noise
- High remediation costs
- zoning (legal) delays
- Poor integration with surrounding low-income neighborhoods
- Aging adjacent infrastructure and housing stock
- Currently, open and green spaces on the site are limited

S.W.O.T

Opportunities:

- Increasing demand for student & social housing
- Placemaking & community building potential
- Eligibility for EU & ESG green funding
- Policy alignment & political momentum
- 15,000 - 20,000 student beds in currently unmet demand
- Vallecas rents rising 27% YoY - big affordability gap
- Demand for healthcare, cultural, and youth facilities
- Start-up growth in Madrid (126% VC increase - second fastest in Europe)

Opportunities

Threats:

- Resistance or political shifts
- Gentrification risk
- Disruptions related to construction
- Environmental compliance cost
- Impact on PPP through market volatility
- Community pushback over displacement and affordability
- Policy inconsistency regarding uncertain rent control application in regions in Madrid

Threats

DIAGNOSIS OF THE AREA

Abroñigal is currently dominated by extensive railway freight infrastructure, creating a major physical and visual barrier within Madrid. The site suffers from significant fragmentation, with disconnected street networks and weak links to surrounding neighborhoods such as Retiro, Arganzuela, and Puente de Vallecas. Pedestrian and bicycle access is poor, and there is little integration with nearby green spaces like Madrid Río or Tierno Galván Park. The area has limited public space, minimal urban activity, and poor environmental quality due to noise and air pollution from rail and road traffic. Despite these challenges, its large scale, central location, and upcoming relocation of freight operations provide a unique opportunity to transform Abroñigal into a well-connected, vibrant mixed-use district that stitches the city back together.



URBAN CONTEXT: CONNECTIVITY

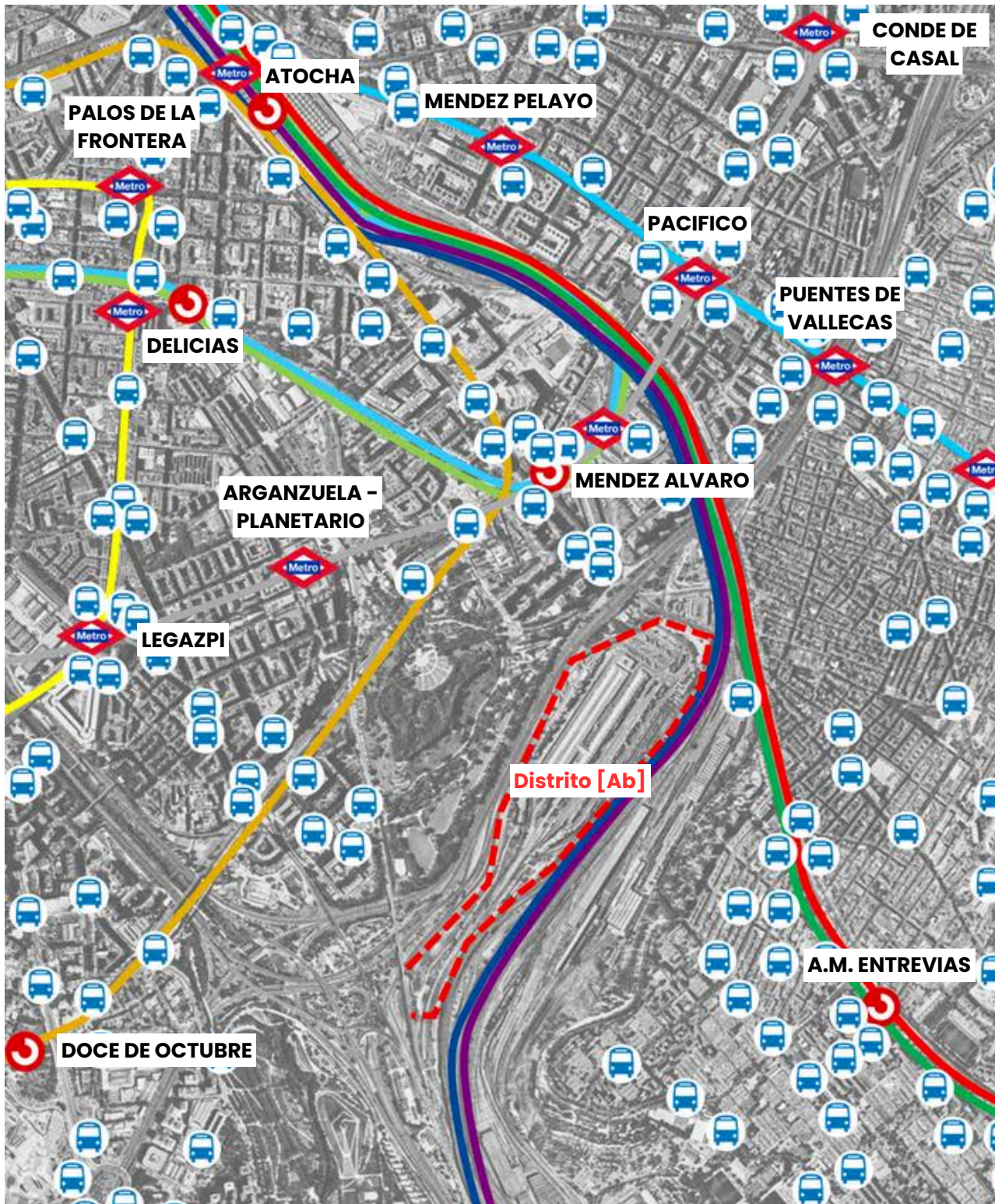


The Abronigal terminal has a strategic location of only four km from Puerta del Sol. Even though it is a logistics asset, it is also a physical barrier to the city fabric. Additionally, pedestrians as well as vehicles have limited crossings.

When analysing the road network it is important to note that the area is dominated by the M-30 motorway. This path runs along the former Abroñigal stream that was culverted sometime in the 1970s. The M-30 and its Nudo Sur interchange which connects to the A-3 Valencia highway are close to the western edge of the site, thus opening it up to heavy traffic. Even though this offers very good access by vehicles, it comes with air pollution and a lot of noise.

In terms of public transport, the Méndez Álvaro transport hub is in the west of Abroñigal. Included is Madrid's main inner city bus station Estación Sur, as well as the Méndez Álvaro commuter rail station. Asamblea de Madrid-Entrevías and Puente de Vallecas Metro Line 1 serve the east side. This is served by Cercanías line C-5 and metro line 6. Through this, the area is connected to regional buses, suburban trains as well as the metro network. The closest rail stop on the eastern side is Asamblea de Madrid-Entrevías, about 800 m away, as well as Puente de Vallecas Metro station, in particular Line 1, which is sitting just north of the A-3 junction.

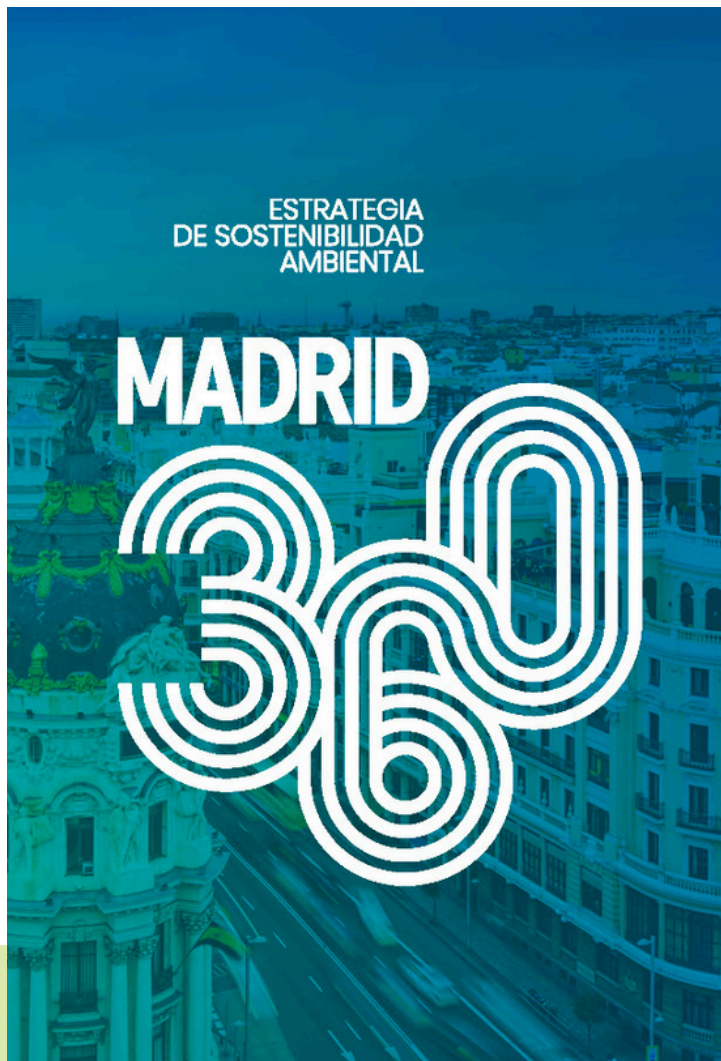
MAPPING OF PUBLIC TRANSPORT



The site is well-suited for transit-oriented development, being adjacent to Metro Line 1 and 6, as well as the Mendez Alvaro bus terminal (Estación Sur de Autobuses), and several Cercanías. Internal and east-west mobility is currently lacking, especially in neighborhoods such as San Diego and Entrevías.

Madrid 360

Madrid 360 is a detailed, environmental sustainability plan launched by the city's City Council on September 30, 2019, to improve the air quality in the Spanish capital. With that goal in mind, the city is also promoting a more sustainable urban development with mobility at the center of its strategies.



Key Strategies

- **Air Quality Improvement.** At its core, the Madrid 360 project aims to reduce the levels of nitrogen oxides (NOx) to provide healthier air.
- **Mobility and Traffic.** To improve the air, tackling the kind of mobility and the amount of traffic is crucial. Madrid is expanding its low emissions zones (LEZ), promoting public transport, and attempting to reduce traffic.
- **Safety and Sustainability.** By promoting safer mobility infrastructure, the city plans to decrease road incidents and fatalities and optimize urban transport.
- **Network Transformation.** With health, mobility, and sustainability in mind, Madrid is transforming its road network and going as far as placing major, polluting sources, like the A-5 highway underground, to free up space for green areas. These road infrastructure cover-ups have become an important topic of discussion in Madrid since the success of the Madrid Río project.

These strategies are also key to Common Ground's proposal and redevelopment strategy of the Abroñigal site, where we will provide the framework for a seamless integration with Madrid 360.

Organización de Consumidores y Usuarios (OCU). "Nuevas Medidas Ambientales en Madrid: Qué Cambia para los Coches." OCU, 25 Jan. 2024,

Source: <https://www.ocu.org/coches/coches/noticias/nuevas-medidas-ambientales-madrid>.

ECOLOGY, CLIMATE, AND ENVIRONMENTAL QUALITY

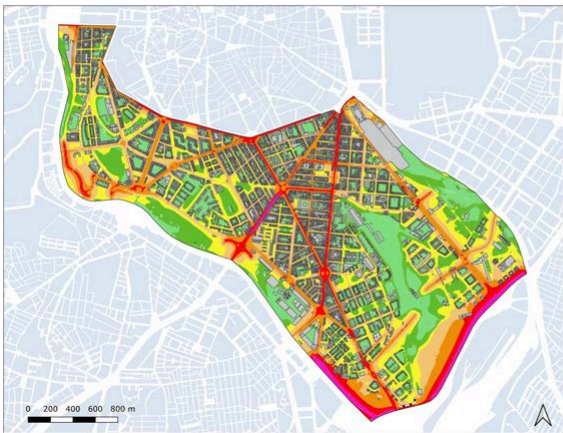
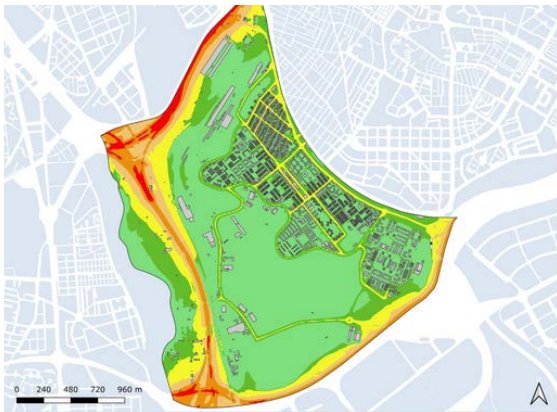
Design Strategies to Mitigate Urban Noise Exposure

Sector D13, a layer from the Madrid Geoportal, shows that 10–15% of the Puente de Vallecas population is overexposed to nocturnal noise, especially in and around the M-30 and Abroñigal rail freight lines. ADIF, therefore, has stated that housing should not be considered for the area due to the noise produced, which is the main reason the consultation process foresees the site's exclusion. This should not be seen as an insurmountable barrier to design but rather an important starting point for creating an intervention that fits the needs and conditions of the area.

Decking, as with the M-30, could achieve a reduction in background noise of 10–15 decibels. Vegetated berms and acoustic fences, as well as the strategic placement of commercial buildings to act as a buffer for residential areas, and the use of sound insulation and specific façade materials and designs, can all improve the usability of the area for housing.

A Major Public Health Challenge

One of the greatest threats to public health, and therefore one of the urban redevelopment's most important contributions to Madrid's ecological transition, is noise. As shown by the Ayuntamiento's 2021 Mapa Estratégico de Ruido, the Abroñigal site, and its surroundings, which include the M-30 and the railway tracks, are characterized by a high L_{den} (65–75 dB). The EU's standard for residential exposure is 55 dB L_{den} , with L_n (nighttime noise) levels often exceeding 60 dB compared to the 45 dB EU limit. The negative effects of noise include high blood pressure, cardiovascular disease, sleep disorders, and impaired childhood development.



Ayuntamiento de Madrid. Mapa Estratégico de Ruido: D13 Puente-Vallecas (Entrevías). 2021. Transparencia – Ayuntamiento de Madrid,

M-30 “COVER-UPS”

Madrid Río

Madrid Río has transformed the M-30 by covering up certain parts of the highway. The development included a 10 km park along the Manzanares river. This development was able to reconnect neighbourhoods, add green public spaces, and improve overall air quality. The development is a key example of sustainable urban regeneration in Madrid.



Villacorta, Javier. “Madrid Río, Origen de un Éxito Inmobiliario.” El Mundo, 8 Mar. 2016, [Madrid Río, origen de un éxito inmobiliario, El Mundo](https://www.elmundo.es/blogs/elmundo/entorno-habitable/2016/03/08/madrid-rio-origen-de-un-exito.html) <https://www.elmundo.es/blogs/elmundo/entorno-habitable/2016/03/08/madrid-rio-origen-de-un-exito.html>.

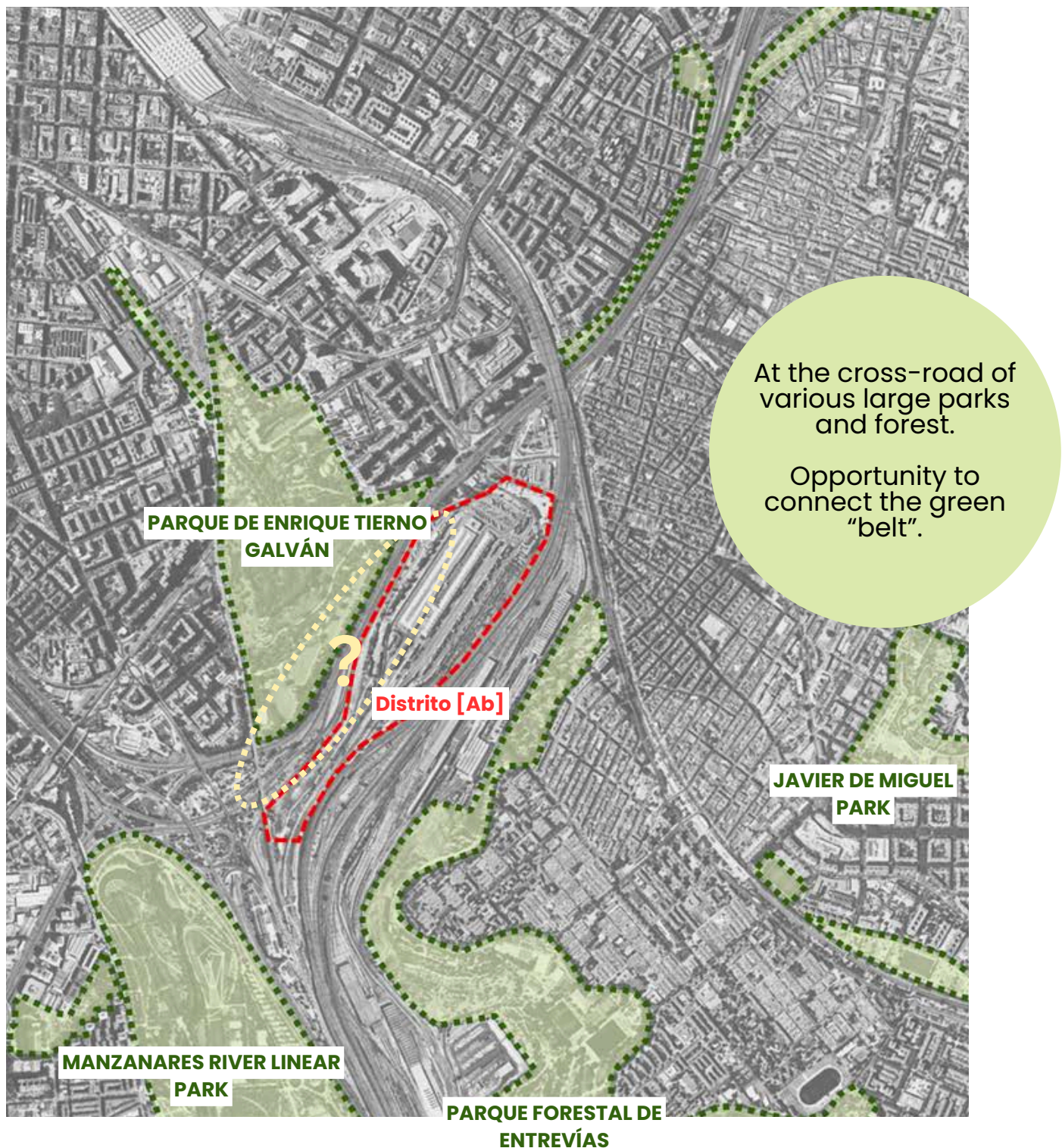
M-30 a la altura del puente de Ventas

The M-30 cover-up close to Puente de Vallecas is supposed to create a 17,000 sqm ‘platform’ that connects Ciudad Lineal and Salamanca. Walkways, parks, and public spaces are added over a 200 m section on the M-30. The construction phase already begun in 2025 and is said to last 22 months in total.



La cubrición de la M-30 a la altura de Ventas comenzará a finales de 2024.” Madridiario, 17 Jan. 2024, [Source: https://www.madriario.es/cubricion-m30-ventas-finales](https://www.madriario.es/cubricion-m30-ventas-finales).

EXISTING GREENERY & “COVER-UP”

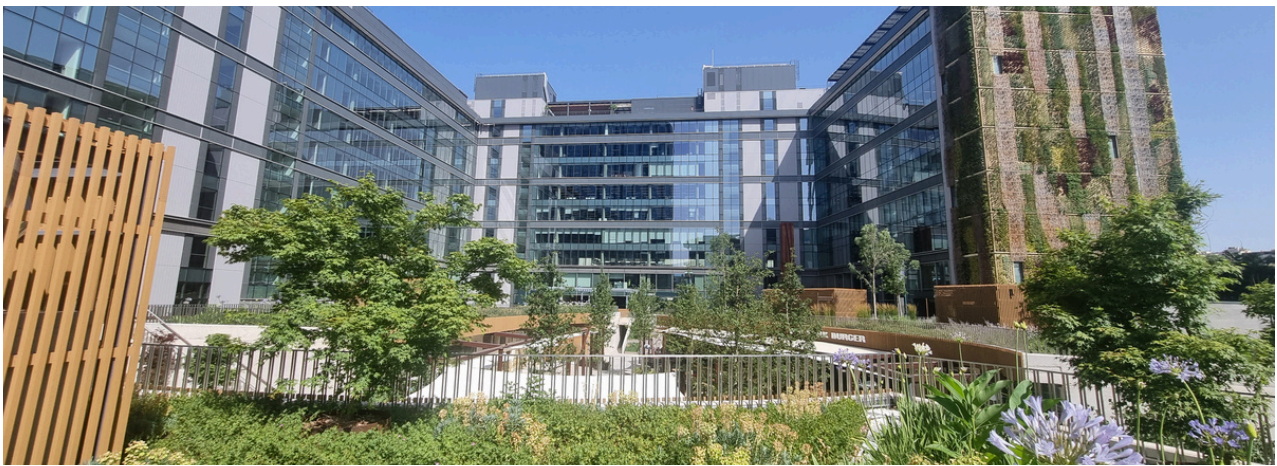


Currently, the Abroñigal yard is empty, however according to research of trends, as well as other similar sites, we can see that there is an opportunity to create a cover-up connecting the two neighbourhoods.

The urban redevelopment must address this through a landscape-led strategy. It can form a central segment of the Bosque Metropolitano, connecting Tierno Galván and Entrevías parks into a single ecological corridor. This corridor should include tree planting (native holm oaks, ash, pines), green buffers, and ecological bridges to mitigate both pollution and fragmentation.

URBAN CONTEXT

As part of our research, we conducted several site visits to understand the urban context surrounding the Abroñigal site. What became evident during these visits is the transformation occurring along the axis between Méndez Álvaro and Atocha, which has become a hub for new developments and redevelopments. The area hosts major corporate landmarks such as the Repsol headquarters (inaugurated in 2013) and the Mahou headquarters (completed in 2020), and has seen a growing number of flexible living and co-working projects in recent years. A notable example is Madnum, a new mixed-use development by Colonial that opened just weeks ago. Additionally, there are two ongoing redevelopments directly north of our site, where two of the four towers facing the M-30 are currently being upgraded, indicating strong investor confidence and rising demand for office and tertiary activities in the area.

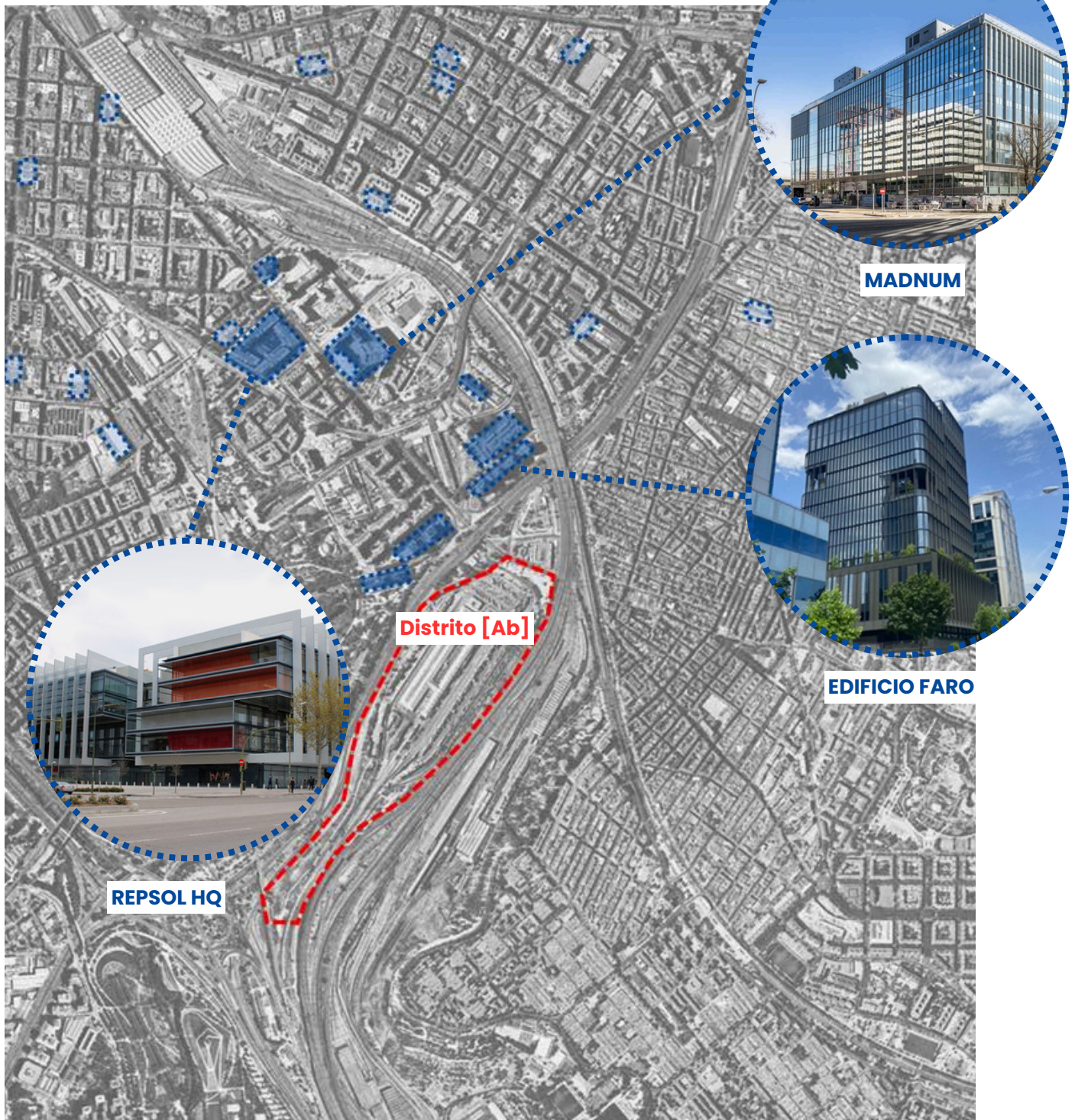


Picture from the Madnum courtyard.

From a residential perspective, we explored the Méndez Álvaro apartment complexes, characterized by mid-2000s construction, swimming pools, and fast-food retail at the ground level. While the architecture is relatively uniform, the area benefits from proximity to Parque Enrique Tierno Galván, offering a key green amenity. In contrast, the Legazpi neighborhood revealed a more traditional, human-scaled urban fabric, with narrow streets, diverse uses within blocks, and a vibrant, lived-in atmosphere. We also visited the social housing developments in Puente de Vallecas, located near the Central Térmica de Vallecas, where newer housing projects prioritize soft mobility and pedestrian-friendly layouts, with car traffic pushed to the perimeter, though these areas lack active ground-floor uses.

These visits highlighted the diversity of the surrounding context: a territory in movement, with contrasting development speeds, typologies, and priorities. From corporate-driven urban renewal to socially-oriented housing initiatives. This complexity reinforces the need for a master plan that is responsive, adaptable, and capable of integrating Abroñigal into a broader urban ecosystem already in motion.

AREA STUDY: OFFICES & CO-WORKINGS



The area around Abroñigal is a key tertiary corridor, with a growing concentration of office and co-working spaces—including recent developments like Madnum by Colonial, the Repsol, and upgrades to towers along the M-30. This clustering reflects increasing investment and demand for flexible workspaces and corporate infrastructure close to central Madrid.

AREA STUDY: RESIDENTIAL



We focused our visits and analysis on three nearby neighborhoods: Puente de Vallecas (new social housing), the new BTR flex-living north of Méndez Álvaro, and the established Legazpi area. Studying these adjacent environments helped us understand how design choices affect livability, community interaction, and urban vitality, providing valuable insights for future urban development.

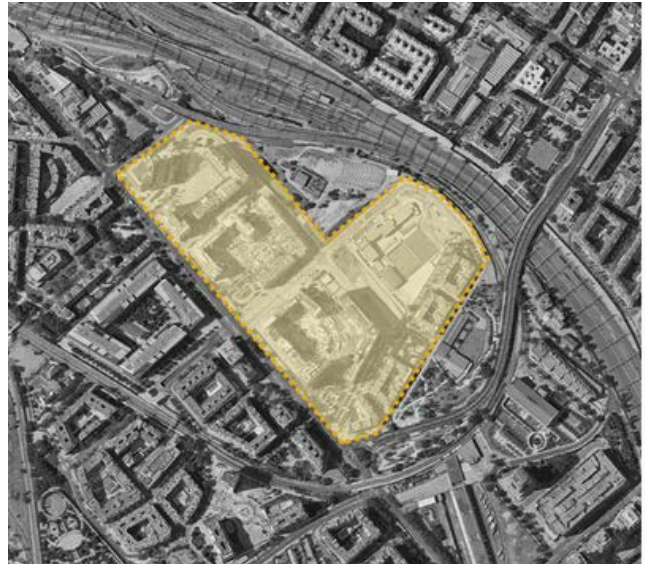
PUENTE DE VALLECAS – NEW



- ✓ Prioritizes pedestrians and cyclists, with no cars allowed inside the development.
- ✓ Diverse architecture and bright facade colors create visual interest.
- ✓ Integrated green spaces enhance livability.
- ✓ Housing is aimed at solving the affordability crisis Madrid is facing.
- ✗ Some ground-floor areas look public but are fenced off, reducing true accessibility.
- ✗ Buildings are massive in scale, which can feel overwhelming.
- ✗ Public spaces facing the street lack welcoming features and activation.
- ✗ Absence of ground-floor retail limits street-level vibrancy.

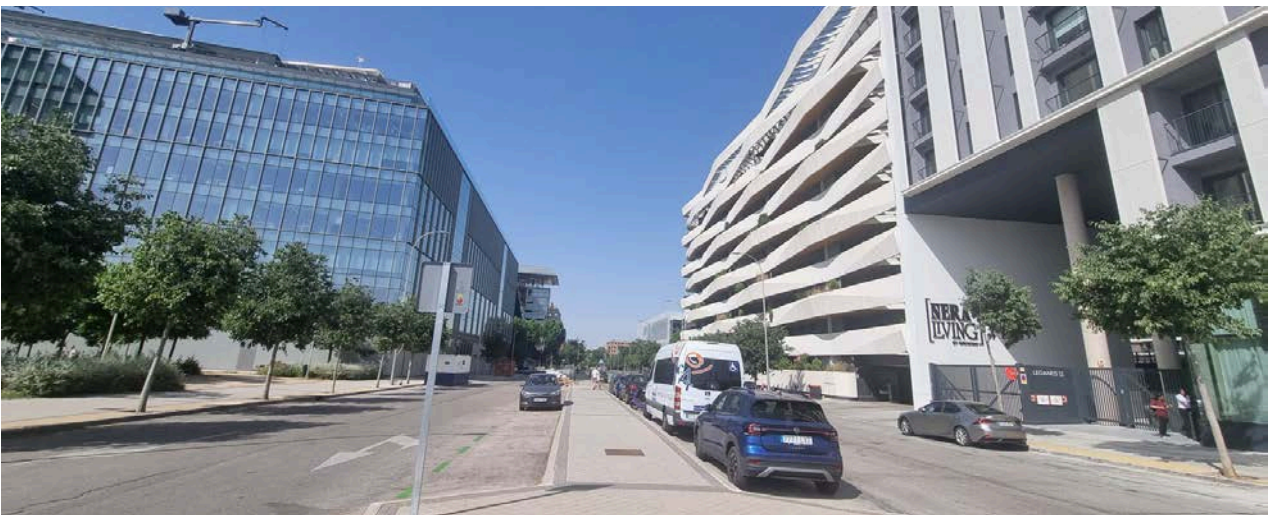


MÉNDEZ ÁLVARO – NEW

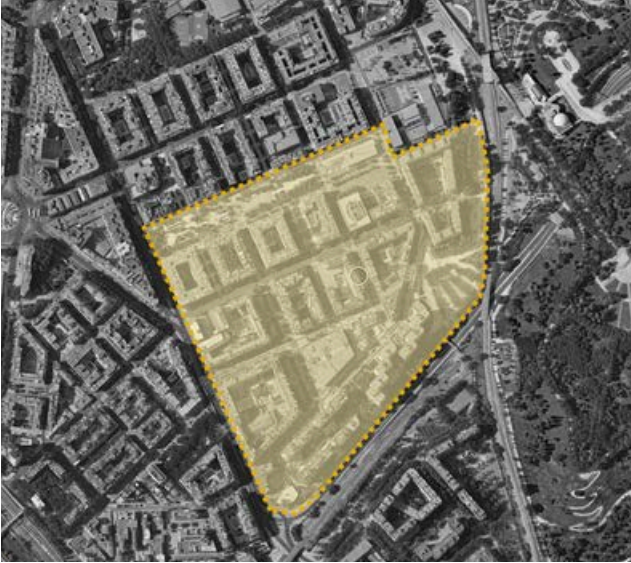


- ✓ Offers alternative housing options, catering to different lifestyles.
- ✓ Contemporary design meets the latest building standards.

- ✗ Urban design is car-centric, with wide streets that encourage fast driving.
- ✗ The lack of shade and greenery contributes to the urban heat island effect.
- ✗ No street or ground floor activation, leading to lifeless public spaces.
- ✗ Building facades are monotonous and grey, lacking visual appeal.
- ✗ Large building scale can feel impersonal.



LEGAZPI – OLD



- ✓ Streets prioritize pedestrians and cyclists, with small, one-way roads.
- ✓ Warm facade colors and integrated green areas create a welcoming environment.
- ✓ Ground floor uses activate the street, making it lively and engaging.
- ✓ Streets and buildings are scaled for humans, promoting comfort and community.

- ✗ Facades can appear messy due to a lack of uniformity.
- ✗ Buildings have an older, less contemporary appearance.
- ✗ Proximity to highway and tracks.



Google. Google Maps, 2017, [Source: Google Maps, 2017](#). Screenshot.



URBAN CONTEXT: BEST PRACTICES

Human-Scale Design Fosters Community

Typical “old-school” Spanish-style developments, such as the Legazpi example, create welcoming and pedestrian settings. Narrow streets and one-way streets help maintain a human scale, which encourages social interactions.

Street Activation is Essential

Ground-floor retail and open, accessible public spaces are vital for vibrant street life. Developments lacking these features, such as the new BTR and flex-living models, tend to feel less inviting and lively.

Diversity in Architecture and Color Enhances Identity

Variation in facades and the use of warm/bright colors, as seen in Puente de Vallecas and Legazpi areas, contribute to a sense of place and neighborhood identity, making areas more visually appealing.

Integrated Green Spaces Improve Quality of Life

Although all three areas benefit from green spaces, their integration and accessibility vary and create more or less enjoyable spaces. Public green areas should be truly open and inviting, not fenced off or hidden.

Avoid Car-Centric Urban Design

Wide streets and car-focused layouts, as observed in the BTR development, can undermine pedestrian safety, increase heat island effects, and reduce social cohesion. Prioritizing pedestrians and cyclists leads to healthier, more sustainable neighborhoods.

Balance Scale with Context

While higher-density buildings can address housing needs, excessive scale without thoughtful design can feel overwhelming and impersonal. Attention to proportion, facade articulation, and street-level detail helps maintain comfort and character.

The comparison of these three nearby areas highlights the importance of prioritizing people over cars, activating street life, and designing with diversity and human scale in mind. Future developments should draw on these best practices to create more livable, vibrant, and sustainable urban environments.

DIAGNOSIS OF THE SITE

The site analysis reveals gentle slopes suitable for stormwater management but also highlights buried hydrology and contamination from decades of rail use. Air and noise pollution from nearby highways and tracks add challenges. Still, the large scale, potential for reusing industrial structures, and links to green corridors offer opportunities for remediation, sustainable design, and circular strategies to transform the area into a resilient urban district.

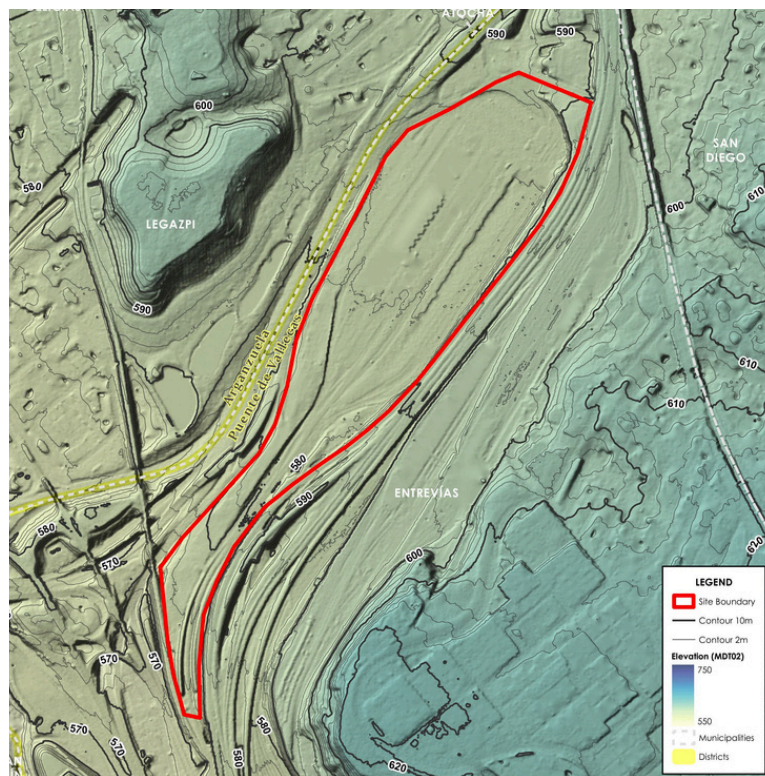


EXISTING PHYSICAL CONDITIONS

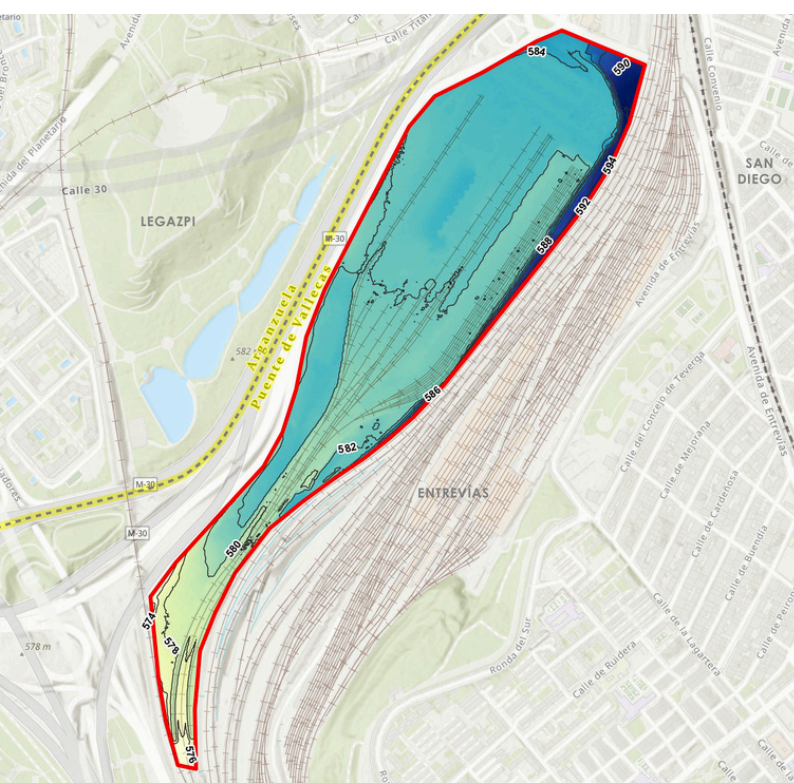
Topography

The topography of Estación Abroñigal reflects its dual role as a transport hub and a key point in Madrid's former hydrological system. Located at 580–590 meters above sea level, the site slopes gently westward toward the Manzanares River, with an average gradient of 2–4%. This natural slope supports stormwater management and offers the potential for integrating green infrastructure.

The southward slope toward the M-30 and the Manzanares provides both challenges and opportunities for sustainable redevelopment. Decades of industrial and rail use have flattened much of the terrain, creating a suitable brownfield site. The existing drainage pattern can be leveraged for passive water management solutions.



Source: Spain National Geographic Institute

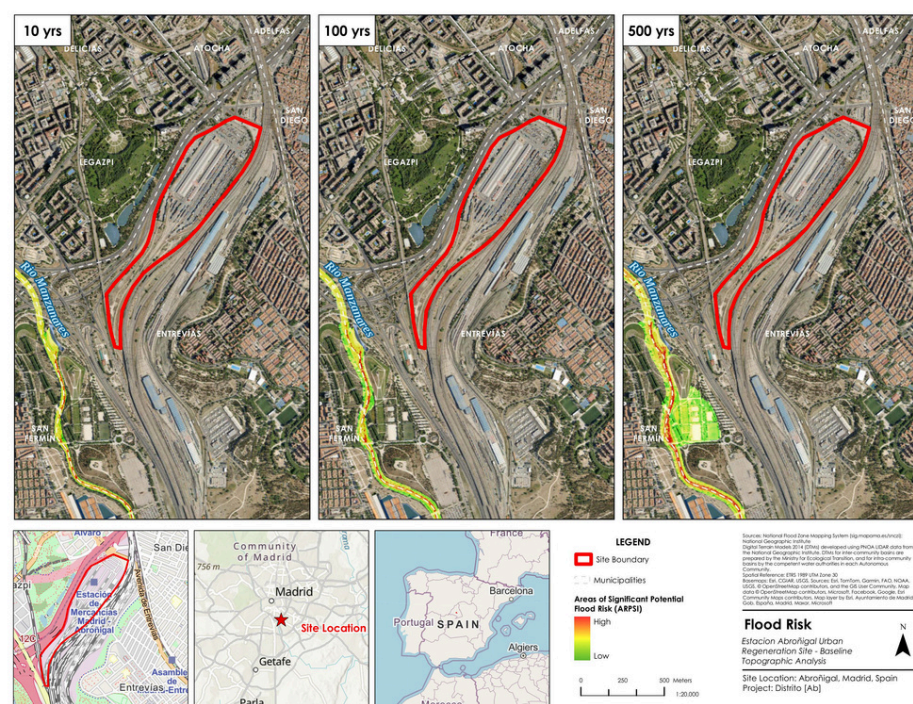


Hydrology

Historically, the Arroyo Abroñigal flowed from Chamartín to the Manzanares, passing through this site. It was buried in the 20th century to make way for the M-30, a common practice that disrupted natural water systems.

As a result, development here must address noise, air quality, and the lasting effects of subsurface hydrology, such as groundwater flow, foundation stability, and flood risks during extreme weather.

Source: Spain National Geographic Institute



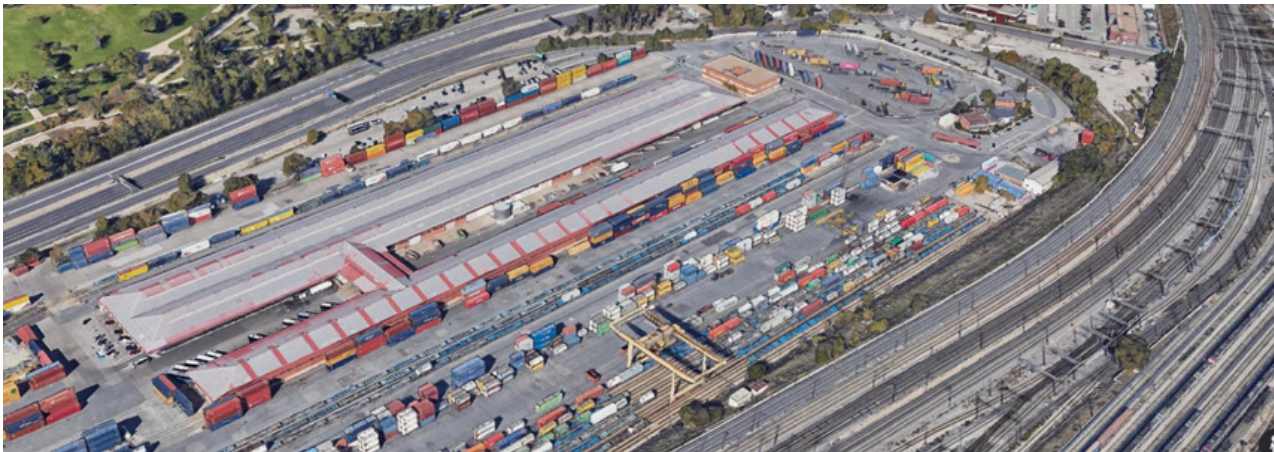
The site lies near the former confluence of the arroyo and the Manzanares, a zone reshaped by the Madrid Río project (2007–2015). This intervention renaturalized 7.5 km of river by removing dams, reducing water depth from 4 m to 0.3 m, and restoring natural flow rates. These changes continue to influence surface and groundwater conditions at Abroñigal.

Source: Spain National Flood Zone Mapping System

Environmental Impact

The environmental profile of Estación Abroñigal, a railway facility operating for over five decades, includes significant pollutants such as potential soil contamination from diesel fuel and hydraulic fluids. Pan-European research on urban soils shows lead, copper, and zinc as the most common metals exceeding safety thresholds due to historical transport and industrial activities. Elevated copper levels – up to 386.6 mg/kg in Spanish urban soils, are linked to the degradation of electrical equipment and brake components. With 22% of urban sites in Europe exhibiting anthropogenic metal enrichment, and Spain ranking among the top countries with urban soil contamination, Estación Abroñigal should be prioritized for comprehensive remediation.

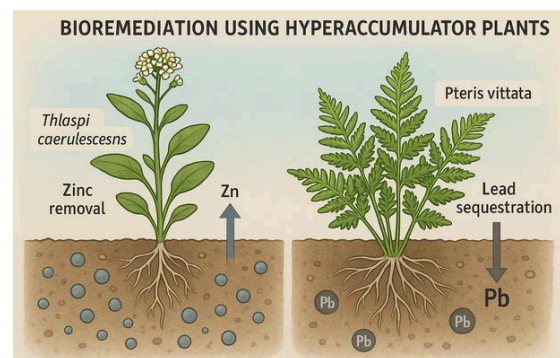
Railway sites typically contain complex contamination beyond heavy metals, including petrochemical pollutants such as petroleum hydrocarbons, polycyclic aromatic hydrocarbons from fuel combustion, and solvents from maintenance activities. This environmental challenge presents a primary opportunity for regenerative urbanism rather than a secondary remediation task. By implementing proactive soil remediation, phytoremediation strategies, and transparent soil quality monitoring, the Abroñigal project can serve as a flagship model for embedding ecological risk assessment and remediation into urban regeneration, potentially setting a precedent for pan-European soil monitoring standards.



Source: Google Earth, 2025

Estación Abroñigal's large size and low tree cover offer opportunities for large-scale carbon sequestration and strategic positioning as a key link in Madrid's green infrastructure, connecting Tierno Galván Park with the Madrid Río linear park system. However, the site lies within a "pollution convergence zone" where the M-30 ring road's 200,000 daily vehicles emit nitrogen oxides, particulate matter, and carbon monoxide frequently exceeding EU health guidelines, compounded by noise pollution from highway traffic, rail operations, and aircraft regularly above 65 decibels during the day. Despite these challenges from transportation emissions, industrial contamination, and urban runoff, innovative urban design strategies—including strategic building placement, green noise barriers, mixed-use development, and transit-oriented design—can mitigate pollution impacts, provide natural air filtration, reduce automobile dependency, and capitalize on the site's ecological connectivity. Specialized plant species can address petroleum hydrocarbon contamination while supporting urban biodiversity and stormwater management. Bioremediation using hyperaccumulator plants such as *Thlaspi caerulescens* for zinc and *Pteris vittata* for lead can remediate soil contamination while creating temporary habitat and carbon sequestration during construction.

Specialized plant species can address petroleum hydrocarbon contamination whilst contributing to urban biodiversity and stormwater management objectives, transforming environmental liability into a community asset. Bioremediation using hyperaccumulator plants such as *Thlaspi caerulescens* for zinc removal or *Pteris vittata* for lead sequestration could address soil contamination whilst creating temporary habitat and carbon sequestration during the development's construction phases.



Generated by ChatGPT 4o prompt:
a realistic graphic showing how Bioremediation using hyperaccumulator plants such as *Thlaspi caerulescens* for zinc removal or *Pteris vittata* for lead sequestration works

ESTIMATED COST OF COMPREHENSIVE ENVIRONMENTAL REMEDIATION

Hydrological pollution concerns center on the historical contamination of both surface and groundwater systems throughout the Manzanares watershed. The river itself, whilst dramatically improved through the Madrid Río restoration project, continues to receive treated wastewater discharge from multiple treatment facilities serving the metropolitan area. This creates elevated conductivity levels and nutrient loading that affect groundwater quality throughout the floodplain, including areas beneath the Abroñigal site.

The theoretical soil contamination would likely have created groundwater plumes of dissolved metals and petroleum products extending 200–500 meters beyond the most contaminated areas, requiring ongoing monitoring and potential treatment through permeable reactive barriers or pump-and-treat systems integrated into the development's stormwater management infrastructure.

The pollution impact assessment reveals the potential for environmental remediation to become a cornerstone of the development strategy rather than merely an obstacle to overcome. The scale of the site, combined with its strategic location within Madrid's emerging green infrastructure network, presents opportunities for phytoremediation techniques that can address soil contamination whilst simultaneously creating habitat and recreational amenities.

A Critical Review of Developers' Decision Criteria for Brownfield Regeneration: Development of the Brownfield Research and Innovation Centre (BRIC) Index		
Site Contamination Scenario	Examples of Previous Use → End Use	Remediation Cost Estimates in Euros
Low contamination, low-sensitivity end use	Minor rail sidings → industrial park	€50k–€150k per hectare
Moderate contamination, high-sensitivity use	Rail yard w/ soil contamination → residential	~€300k–€800k per hectare
Severe contamination, high-sensitivity use	Major depot w/ extensive pollution → residential	€1 million+ per hectare

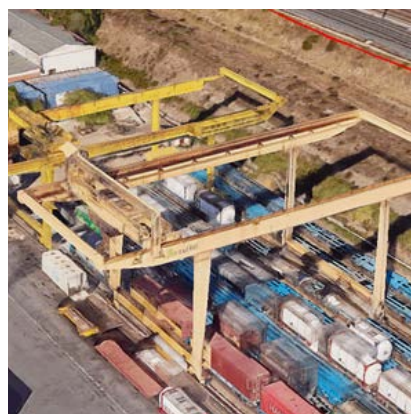
Source: Okeyinka, O. M., et al. "A Critical Review of Developers' Decision Criteria for Brownfield Regeneration: Development of the BRIC Index." Sustainability, vol. 15, no. 9, 2023, p. 7105, doi.org/10.3390/su15097105.

Existing Site Condition & Demolition

The Abroñigal site contains substantial railway infrastructure including steel-framed sheds with blue-painted trusses, historic passenger cars, gantry crane systems, and extensive rail networks. The steel structures show excellent condition with large clear spans suitable for adaptive reuse. Historic rolling stock consists of blue and cream passenger cars with significant heritage value. The site's industrial infrastructure represents approximately €8-12 million in recoverable material value.

Circular Economy Approach

A selective dismantling strategy will prioritize heritage preservation and material recovery over traditional demolition. Steel structural elements can achieve 85-90% recovery rates, while concrete foundations offer 95% aggregate recovery potential. This approach reduces CO2 emissions by 60-70% compared to conventional demolition while diverting 85-90% of materials from landfills.



1

Complete structural assessments, heritage documentation, detailed dismantling sequences and QC protocols.

2

Selective dismantling with priority high-value component recovery. Establish on-site material processing facilities

3

Complete site preparation while maintaining material stockpiles for integration into construction.

Material Sales: Architectural salvage markets will pay €200-400/tonne for structural steel, while heritage railway items command €5,000-50,000 per car from collectors and museums. Standard scrap steel generates €80-120/tonne, with concrete aggregate selling at €15-25/tonne locally.

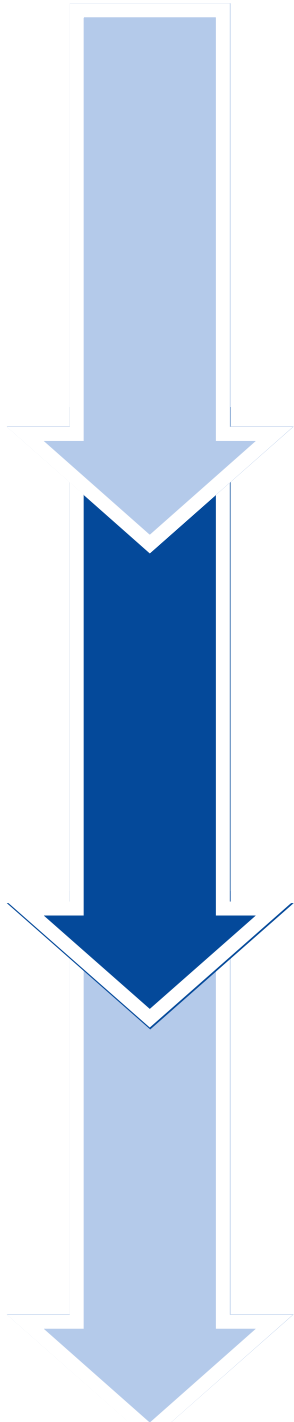
Cost Savings: On-site reuse eliminates €3-5 million in new material costs while generating €2-4 million premium for cultural integration. Total material recovery value ranges €8-12 million, significantly offsetting development costs.

LEGAL DUE DILIGENCE

The legal analysis focused on ensuring compliance with urban planning regulations, verifying ownership, assessing environmental liabilities, and identifying required permits. The land is currently zoned for transport infrastructure, requiring a formal PGOU amendment to enable mixed uses. The process involves environmental assessments, zoning studies, and public consultations, estimated to take up to 24 months. Additional steps include securing construction, activity, and first occupancy licenses, and planning urbanization works. Altogether, the legal and permitting procedures represent a complex, multi-stage timeline crucial for unlocking the site's development potential.



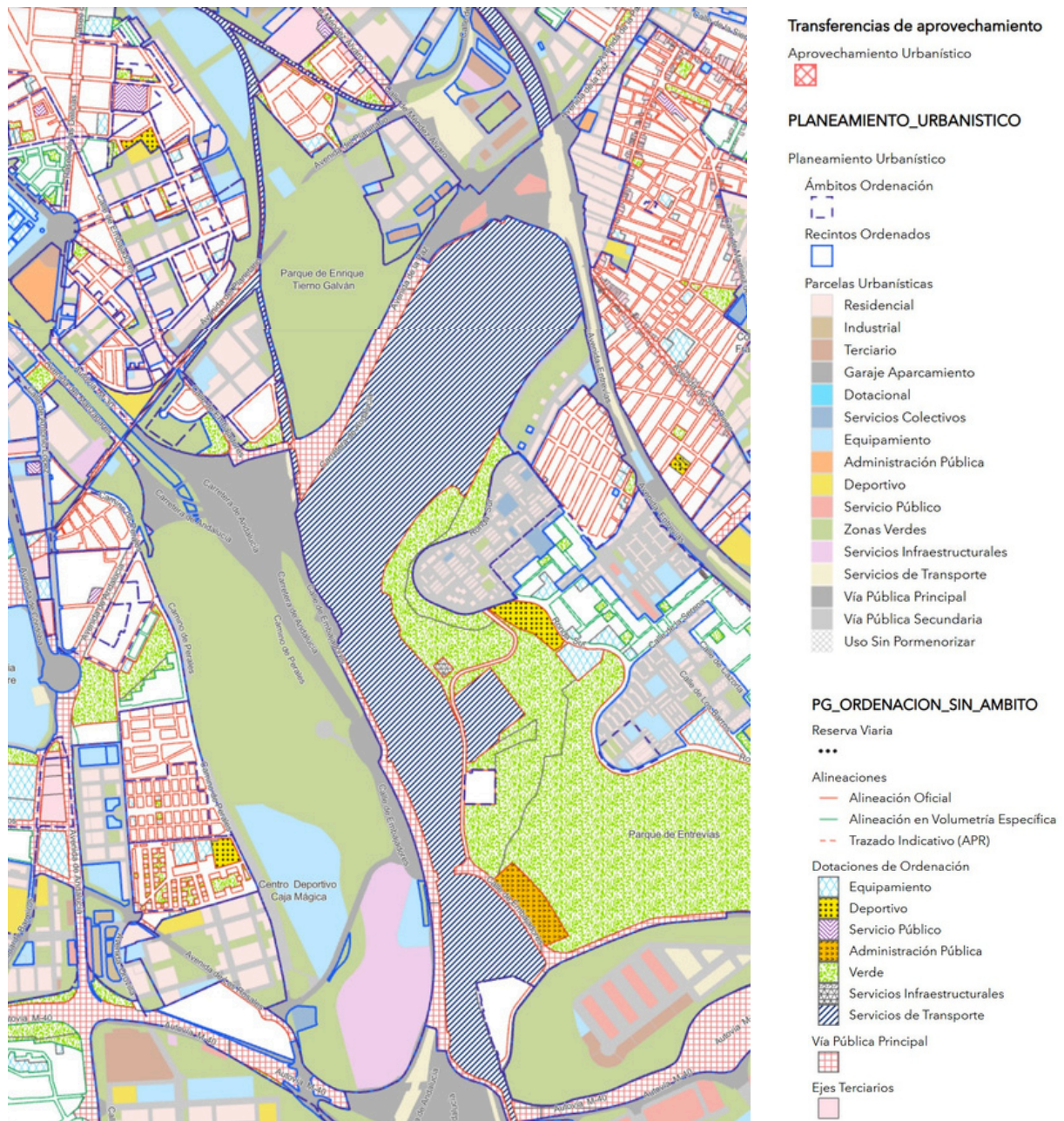
LEGAL DUE DILIGENCE STEPS



To obtain the **Title Verification** we have to make sure to confirm the status and restrictions of the public land concession, and identify any encumbrances such as easements or mortgages. Bidders may want to obtain a 'Nota Simple' from the 'Registro de la Propiedad (the land registry) to understand the property record. This can take up to two weeks and includes the cost of roughly € 10-30 per property. We must make sure that the title is in the name of those leasing us the property, so that they have the right to give us the right to develop on their land.

The **Urban Planning Compliance** objective means ensuring that the land use goes hand in hand with the development that is intended. This process entails reviewing the 'Plan General de Ordenación Urbana' (PGOU), which is followed by obtaining a certificate called ' Certificate Urbanístico'. Madrid City Council Urban Planning Department is responsible for this step in the process, and they take about one or two months with a cost that varies - consultation with local authorities is beneficial.

Next would be the **Environmental Assessment** which is supposed to identify all the environmental liabilities as well as the required remediation. It is a necessity to have an Environmental Impact Assessment (EIA), which the Environmental Department of the Community of Madrid is responsible for. This has an estimated duration of three to six months, with costs that are dependent on the scope of the project - it would also be beneficial to consult environmental consultants at this stage.



Legal Procedure for change of zoning

Firstly, the General Urban Plan must be modified, through making a formal amendment to the land-use designation. This could either be 'triggered' by a private developer or ADIF, the land owner. To achieve this, drafting a zoning plan, doing feasibility studies, an urbanistic justification, an environmental impact assessment, and public participation must be achieved. Following that, approval from the Comunidad de Madrid and City Council is necessary. The required documents are a social impact analysis, if applicable, an environmental report, a planning justification, and the sectorial laws and compatibility with the Madrid General Plan. The involved authorities would be ADIF, Comunidad de Madrid (Dirección General de Urbanismo), and the Madrid City Council (Department of Urban Development).

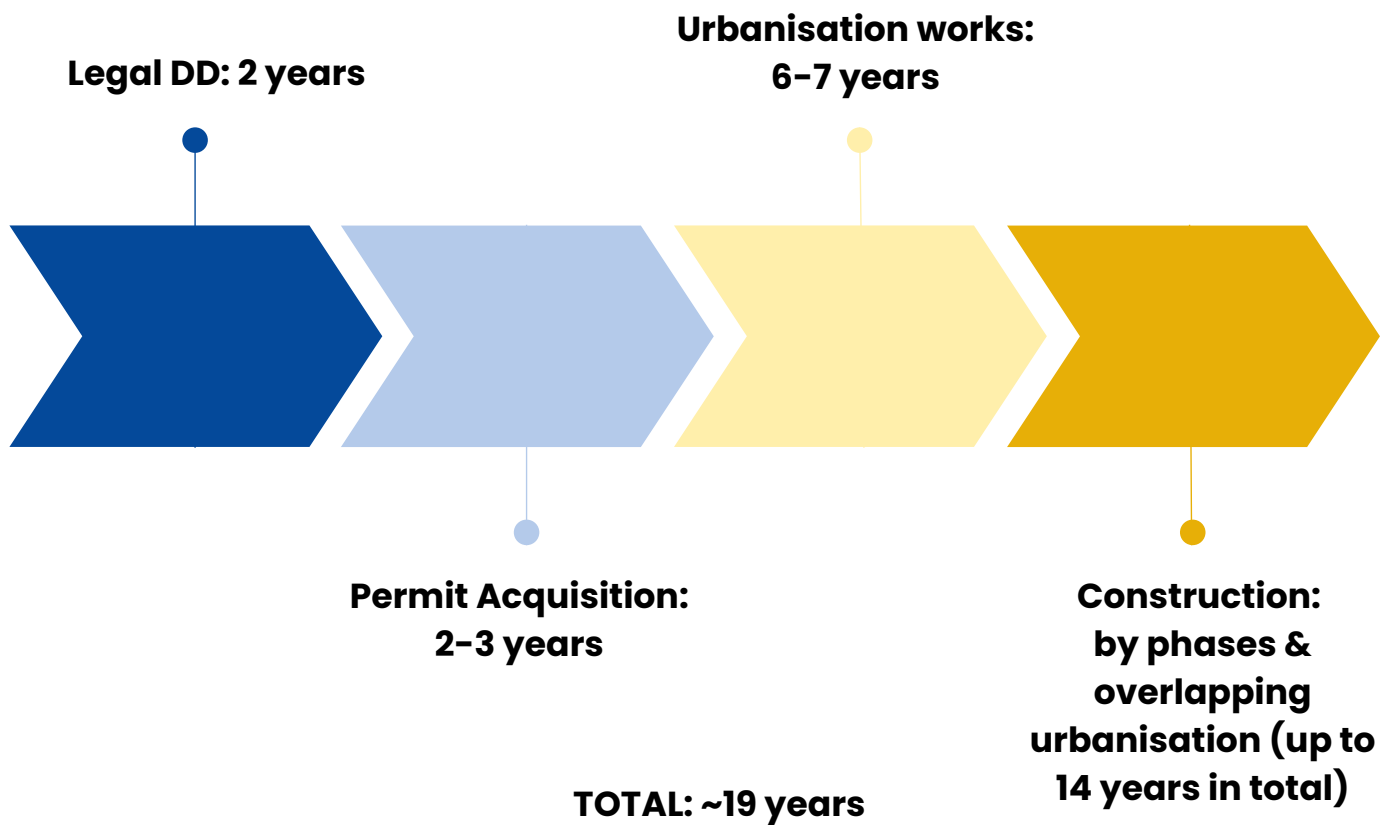
AUTHORISATIONS & PERMITS

The re-zoning would have to be from Transport Infrastructure to Residential, Tertiary, Green areas, and Dotadional público. The estimated timeline for this involves a technical study, as well as coming to a consensus, which would take roughly 6–9 months. The PGOU amendment process includes drafting and public consultations which would take 6–8 months. Formal approval by the city is needed, which would take another 6–9 months. Assuming the development has political support, a realistic plan of duration for this process would be 18–24 months.

The first permit is for **Urban Development**, and the objective is to authorise construction activities through the submission of technical documentation and architectural plans by the Madrid City Council. The time estimation for this is up to a year while the cost is based on project size, including the municipal fees.

Second, the **Activity Licence**, which is needed for permitting specific uses such as educational institutions and/or retail, is obtained through the submission of a detailed explanation of the intended activities. The Madrid City Council usually takes about one to two months and the cost of this licence varies. As before, it would be beneficial to consult local authorities.

Lastly, the **First Occupancy Licence** is supposed to be a certification that the construction is complying with the approved plans. This is obtained by an inspection post-construction by the Madrid City Council and can take up to a month. As above, the estimated cost is normally based on the specifics of the project.



When considering the Urbanisation Works, the objective is developing an infrastructure, such as roads and utilities, that are supporting the new campus. This is achieved by the drafting and approval of an Urbanisation Project, as well as aiming to execute the works in phases. The two possible parties in this phase are the Madrid City Council as well as the chosen entities for Urban Planning Collaboration. Sufficient time must be allocated to this phase since it can take anywhere from six to twelve months, depending on how complex the project is. In addition to the allocated time, there is a significant cost allocation as well, which is also based on the materials and scope of the project.

Since we are planning on including university use, we must ensure that the zoning permits include educational facilities. Special authorizations from certain educational authorities might be needed as well. In addition, it is crucial to consider and prioritize compliance with safety, space, and accessibility requirements needed for educational institutions.

BENCHMARKS

A selection of European regeneration projects provides valuable precedents for Abroñigal's transformation. Examples such as Köpenicker Rails in Berlin, Refshaleøen in Copenhagen, and Spoor Noord in Antwerp showcase how former industrial or rail sites can become vibrant, mixed-use districts prioritizing sustainability, green mobility, cultural activation, and social inclusion. These cases illustrate phased development, adaptive reuse, strong public-private partnerships, and ambitious environmental targets, offering practical lessons for delivering resilient, high-quality urban regeneration in Madrid.



KÖPENICKER RAILS (BERLIN, GERMANY)

The Guterbahnhof Köpenick project is similar in terms of scale (~30 ha) and objectives, as it aims to transform a former railway area situated at the edge of the city.



The holistic approach to sustainability and urban regeneration closely mirrors our own vision for the Adif-Abroñigal transformation

This project proposal succeeds in blending a large-scale transformation with a strong sense of place and community. The master plan integrates gracefully green spaces and public amenities while creating inviting environments that encourage social interaction and active lifestyles. The commitment to soft, sustainable mobility and ecological restoration sets a benchmark for contemporary urban regeneration projects.

REFSHALEØEN (COPENHAGEN, DENMARK)

Refshaleøen demonstrates how a former industrial site can be transformed in phases into a vibrant, mixed-use district focused on creativity, innovation, sustainability, and public life, serving as a catalyst for urban regeneration and new city identity.



The masterplan includes adaptive reuse of industrial heritage, the integration of green mobility, circular economy principles, and measurable sustainability goals

The regeneration of this 80-hectare site started in 2010 following a phased development that is still ongoing today. The early phases focused on temporary, low-impact uses, such as the creation of the Reffen street food market. The project prioritizes cycling and pedestrian infrastructure and will be connected by a new metro line, reducing car dependency. The area hosts frequent events in collaboration with Copenhagen's academic and creative sectors, attracting students, young professionals, artists, and entrepreneurs. Over time, Refshaleøen has evolved into a hub for innovation and cultural exchange.

MILANO INNOVATION DISTRICT (MILANO, ITALY)

MIND transforms Milan's former exhibition site into a net-zero innovation district, blending housing, research, and business to create a sustainable urban ecosystem driven by science, knowledge, and creativity.



MIND fosters collaboration between academia, industry, and public institutions, positioning Milan as a leader in innovation and knowledge economy

This is a landmark regeneration project converting the 100-hectare site of the 2015 Milan Expo into an innovation district through a phased development continuing through 2025 and beyond. The project integrates research centers, university campuses, life sciences, technology companies, residential buildings, and public spaces. MIND targets operational and embodied net zero carbon emissions by 2025, with a strong focus on green building standards, renewable energy, and sustainable mobility. The project is guided by Arup's strategic advisory on innovation ecosystems and sustainable urbanism and is developed through a public-private partnership (PPP) led by Lendlease.

HAFENCITY (HAMBURG, GERMANY)

One of Europe's largest and most ambitious urban regeneration projects, transforming 157 hectares of former port and industrial land into resilient, mixed-use eco-district, integrating climate adaptation, cultural vibrancy, and high-density urban life



HafenCity addresses port-related noise through smart urban design, including sound-insulating façades, green buffers, and strategic building orientation.

Launched in the early 2000s and planned for completion around 2040, HafenCity is being developed in phases as a dense, mixed-use district that integrates residential, office, cultural, educational, and leisure spaces. The project started in the early 2000s, led by a public agency, and is expected to be completed around 2040. With key public-private partnerships, the redevelopment aims to revitalize and connect a formerly inaccessible area. The district prioritizes sustainable mobility, energy-efficient infrastructure, and climate-adaptive urban design. It also promotes social diversity, ensuring that at least one-third of all housing is affordable, fostering an inclusive and mixed community in the heart of the city.

IESE MADRID CAMPUS (MADRID, SPAIN)



The IESE Madrid expansion shows how a cohesive, green-integrated institutional campus can serve as an anchor use and model for part of the Abroñigal regeneration.

Google. Google Maps, 2017, <https://maps.google.com>. Screenshot.

This benchmark helps envision high-quality educational anchors supporting our broader mixed-use strategy.

The €52million IESE Madrid Campus expansion, completed in 2023, transformed a fragmented site near Madrid's Casa de Campo into a unified, high-quality academic environment. By integrating newly acquired land with existing facilities, it created 33,600m² of landscaped grounds with two large, connected buildings for executive and master programs. This project demonstrates how thoughtful planning, flexible educational spaces, and natural integration can increase an area's value and strengthen its character. It offers a strong precedent for the Abroñigal redevelopment, showing how carefully designed educational anchors can help unify a large site and support its evolution into a vibrant, mixed-use district.

SPOOR NOORD PARK (ANTWERP, BELGIUM)

Spoor Noord transformed a 24-hectare former railway marshalling yard and maintenance depot into Antwerp's largest urban park



Image Source: Emmers, Sam

After 128 years of railway operations ending in 2001, the site was heavily contaminated with mineral oils, PAHs, BTEX, and heavy metals from locomotive servicing. The remediation required excavating approximately 100,000 m³ of contaminated soil for off-site disposal, a logistically complex operation equivalent to over 5,000 truckloads that had to be coordinated with ongoing nearby rail operations. The project spanned 14 years from initial planning to completion (1999–2013), with a critical seven-year planning phase that enabled comprehensive stakeholder engagement and innovative financing arrangements. The Belgian federal government and EU subsidized the effort, while Belgian Railways sold 18 hectares to the city for a symbolic €1 in exchange for funding the soil remediation.

As part of this cost-sharing arrangement, the railway company retained commercial development rights for the remaining 6 hectares. The entire regeneration cost approximately €40 million over a decade (roughly €1.6 million per hectare), though the remediation portion represented only a fraction of this total, with most costs going toward park construction and amenities. While exact cost breakdowns remain private, the project demonstrates how large-scale rail brownfield developments can attract significant public funding support. Today, Spoor Noord Park is fully remediated and safely used for recreation, surrounded by high-rise housing and offices, representing a successful model for urban brownfield transformation.

KING'S CROSS (LONDON, UK)

King's Cross shows how a coordinated, mixed-use masterplan can transform former rail lands into a vibrant urban district with housing, offices, heritage, and public space.



Urban Land Institute. "King's Cross." UrbanPlan, Source: <https://urbanplan.uli.org/resources/overview/project-snapshots/kings-cross/>. Accessed 5 July 2025.

Model for transforming brownfield rail lands into a vibrant, mixed-use urban district with housing, offices, heritage and green space.

King's Cross is a major brownfield regeneration project in central London, transforming 67 acres of former railway lands and industrial yards into a vibrant mixed-use district. Beginning in the early 2000s, the plan focused on reusing historic structures, creating over 20 new streets, and delivering public parks and plazas. The redevelopment includes 2,000+ homes (including affordable housing), over 3 million sq ft of office space, retail, cultural institutions, and a university campus. A strong emphasis on sustainability, heritage conservation, and walkability has turned King's Cross into a model for urban regeneration.

BENCHMARKS COMPARISON

Refshaleøen

Location: Copenhagen, Denmark

Size: 80 hectares

Asset Classes: Temporary cultural and food uses (Reffen), Planned mixed-use redevelopment, Event and creative spaces

Delivery Model: Private operators + city partnerships

Key Highlights: Reuse of containers, circular economy, cultural activation



Köpenicker Rails



Location: Berlin, Germany

Size: 30 hectares

Asset Classes: ~1,800 residential units, green corridor, Innovation and commercial spaces

Delivery Model: Private-led development

Key Highlights: Carbon-neutral targets, brownfield regeneration

Milano Innovation District (MIND)

Location: Milan, Italy

Size: 100 hectares

Asset Classes: Research centers, university campuses, life sciences, technology companies, residential buildings, public spaces

Delivery Model: Public-private partnership (PPP) led by Lendlease

Key Highlights: Net-zero carbon targets, innovation ecosystem, sustainable mobility



BENCHMARKS COMPARISON

HafenCity



Location: Hamburg, Germany

Size: 157 hectares

Asset Classes: Residential, office, cultural, educational, leisure spaces

Delivery Model: Public agency-led with strong private partnerships

Key Highlights: Climate-adaptive design, sustainable mobility, energy efficiency, 1/3 affordable housing for social inclusion

IESE Madrid Campus

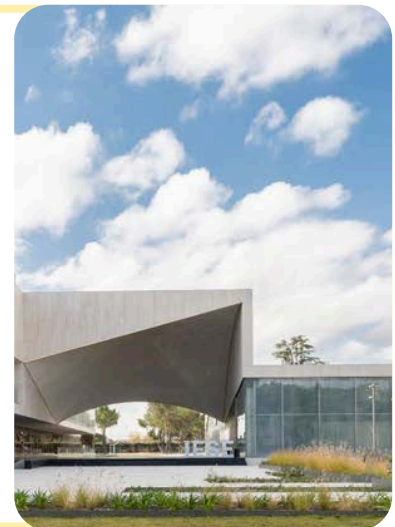
Location: Madrid, Spain

Size: 33,600 m² grounds (campus expansion)

Asset Classes: Academic facilities, landscaped public space

Delivery Model: University-led development

Key Highlights: Green-integrated design, flexible learning spaces, strong place-making anchoring mixed-use strategies



Spoor Noord Park



Location: Antwerp, Belgium

Size: 24 hectares

Asset Classes: Urban park, surrounding high-rise housing and offices

Delivery Model: Public-private cost-sharing, city acquisition and remediation partnership

Key Highlights: Contaminated rail site remediation, public funding support, green space activation, social inclusion

PART II

THE PROPOSAL





DISTRITO[Ab]

**Where Abroñigal
meets the city *& the world***



Distrito[Ab] is a next-generation innovation district that brings new visibility and momentum to Southern Madrid. With a vibrant academic university district hosting at least three universities, the project combines high-quality office spaces, social and affordable housing, and a new Cercanías station that seamlessly connects the area to the rest of the city.

A walkable, inclusive urban fabric enriched with generous green spaces and public plazas promotes community well-being, environmental responsibility, and new opportunities for learning, entrepreneurship, and collaboration. Through sustainability strategies that prioritise energy efficiency, climate resilience, and responsible resource use, Distrito [Ab] sets a new standard for sustainable urban regeneration in Madrid.

THREE DRIVERS OF TRANSFORMATION

Climate-Smart Regeneration

Distrito [Ab] turns a high-emission logistics district into a climate-smart development. Rooftop solar, geothermal heating and cooling, rain gardens, and green roofs put this project above today's sustainability standards. Not only are these systems environmentally responsible, they are economically efficient, future-proofing the district from climate risk and reducing operating costs.

Equity & Urban Inclusion

The urban redevelopment infuses protected social and affordable housing in one of Madrid's most underserved neighborhoods. Public health, childcare, education, and mobility are rooted in a walkable urban grid that fosters equitable access to opportunity. This recalibration of city resources addresses specific, immediate needs in Puente de Vallecas while strengthening the social fabric in the long term.



Transparent & Resilient Management

The project has a multi-stakeholder governance model, agreed upon since its origins, which allows for alignment among ADIF, municipal agencies, and the local communities. Legal declassification and zoning are already underway, which will also serve to bring them in line with PGOU and EU standards. Transparency tools (real-time emissions, infrastructure data, etc.) make for higher accountability and less risk for investors, among other benefits.

Transparent governance ensures coordination, legal clarity, and trust among all stakeholders.



MARKETING STRATEGY

This section presents the marketing strategy for Distrito [Ab], focusing on attracting a diverse mix of residents, families, young professionals, and students. It emphasizes inclusivity, placemaking, and sustainability to build a vibrant new neighborhood. Communication channels, stakeholder engagement, and expected business outcomes are detailed to support long-term success and integration into the urban fabric.



TARGET AUDIENCE

Distrito [Ab] is a community-centered urban future development that was designed to be more than 'just' a neighborhood - it is an inclusive, future-forward, and vibrant ecosystem. The vision of our development is primarily guided by the aspirations and needs of a (diverse) urban community - a community that shares a wish for connectivity, opportunity, and sustainability.

Families that are seeking belonging and stability:

Due to rising housing costs and the wish for dignified living, Distrito [Ab] responded by dedicating almost one-third of its residential space to protected, affordable housing. Young families seeking a nurturing and secure environment for their children could find a home that offers access to opportunities, education, green parks, community gatherings and events, and other essential services supporting long-term wellbeing, while also being close enough to the city center.

Young Talent and Students:

With a 2.3% increase in students in Madrid each year for the past couple of years, and rising demand for PBSA - Distrito [Ab] is positioning itself as a top destination for international and local students. Green spaces, PBSA, and on-site university facilities are empowering our future - the next generation. Through Distrito [Ab] amenities, individuals can thrive socially and academically, embracing campus life and community engagement.

The demand for innovation and tech hubs in Madrid is surging with 22% year-on-year growth in the tech start-up sector, which illustrates a great market opportunity. This is also an opportunity for students who can work in the incubator, getting internships in the business district at [Ab], which serves as great exposure to certain fields of work.

Co-living and young professionals:

In addition to the other types of living, the development introduces co-living models that align with more modern lifestyles - socially engaged, well-connected, and flexible. All, especially younger individuals must navigate life transitions, and could benefit from a more seamless commute to jobs like Repsol HQ, shared amenities, and spaces that are there to encourage community feeling, well-being, and a balance between work and life.

Local Residents:

Distrito [Ab] is not displacing - it is empowering - this development should strengthen the already existing ties while making an effort to bridge the divides that have existed for a long time. With these integrations of healthcare, education, culture, and recreation, Distrito [Ab] aims to transform the former freight zone into a new heart of the beautiful city Madrid - one that is resilient, inclusive, and full of opportunities.

TARGET RESIDENT PROFILES

Ana Martínez



20-year-old living in Puente de Vallecas and studying in Distrito [Ab].

Key Needs:

- Affordable solo living, reliable public transit
- Access to internships, study-friendly spaces

Ana is balancing full-time university studies with a recently acquired internship in a local energy startup; she is driven, independent, and fully focused on building a solid professional path. Her internship was secured through university placement services, and it marks her first step into the industry.

She commutes by bus daily, sometimes staying late at the office and catching the night bus back home. Her social life is often shaped around study groups or weekends spent with her friends in Vallecas.

Antonio Lopez

Divorced 40-year-old living in the new flex-living apartments in Distrito [Ab].

Key Needs:

- Flexible housing, work-life balance
- Child-friendly parks, cultural access

Recently separated, Antonio chose to move into an apartment in the district for its flexibility, walkability, and proximity to his office at the Repsol HQ. He's currently in a transitional phase, renting while considering a home purchase once his finances stabilize post-divorce.

On weekends with his children, he maximizes quality time: they cycle, visit nearby parks, and take outings to museums and galleries in the city. He values the neighborhood's safety and kid-friendly environment.



TARGET RESIDENT PROFILES

Lorenzo Ricci

22 year old Italian student living in a [Ab] PBSA.



Key Needs:

- Affordable student housing, incubator access
- Green areas, bike paths, sustainable transport

Lorenzo moved to Madrid to study renewable energy with a focus on hydrogen technology. He lives in student housing within the district and is part of a cleantech incubator where he's developing a small-scale fuel cell prototype. Sustainability is central to his lifestyle — he eats locally, commutes by bike or public transport, and spends sunny days running or working out in the green spaces around the district. Though focused on his studies and project work, he enjoys exploring Madrid with university friends on weekends and regularly uses shared communal areas in his residence.

Carmen, Carlos and Lucia Ruiz

Couple in their 30's with a 4 year olds living in one of the affordable apartments at [Ab]

Key Needs:

- Affordable housing near transport
- Local childcare, safe green spaces

This working-class family relocated from Puente de Vallecas to the district for better access to public transit and more green space. Their two-bedroom apartment is close to both Cercanías lines and Lucia's on-site kindergarten.

Though Carmen endures a long daily commute, the couple has struck a routine that works: she drops their daughter off in the morning, and Carlos, who works on-site, picks her up. Evenings and weekends are cherished family time, often spent in local parks or community events.



COMMUNICATION & ENGAGEMENT CHANNELS

In order to create an inclusive and thriving environment, authentic communication on a multi-level, as well as active stakeholder engagement is key. The communication channels below are supposed to be tailored to trust, participation and visibility throughout the life of the project.

Community & Digital Communication Channels

Through a project website that is dynamic and multilingual to be inclusive for everyone, this digital platform can feature updates on the masterplan and development timeline, as well as include feedback options, brochures that can be downloaded, as well as virtual tours. The platform also includes a portal for events in the area, local job postings, as well as news that is connected to the development.

Institutional & Stakeholder Engagement

Press and Media Engagement by using local and national press for community features, policy shifts as well as milestones in the development.

Having partnership meetings with NGO's and universities that will help align objectives such as affordable housing, education integration, sustainability, etc...

On-Site & In-Development Communication

Signs and/or visuals on construction site.

Feedback stations, which are placed at some of the major mobility nodes like Méndez Álvaro and Puente de Vallecas – this will aid ongoing feedback from the community.

Cultural & Placemaking events

The development can be activated quite early through open-air events, art installations, and exhibitions in pop-up style – in collaboration with Vallecas, this could engage different communities.

DISTRITO [AB]: THE MASTERPLAN

The master plan for Distrito[Ab] defines a comprehensive vision to transform Abroñigal into a lively, mixed-use district. It combines housing, offices, retail, green spaces, and university facilities with sustainable transport links and new public spaces. The design prioritizes connectivity, high-quality landscapes, and human-scale development to support social life, environmental goals, and long-term urban value.



DISTRITO [AB] MASTER PLAN



The Distrito [Ab] master plan transforms the 32-hectare Estacion Abroñigal site into a strategic urban connector that bridges the historically fragmented southern districts of Madrid. By positioning this mixed-use development as a central hub between Puente de Vallecas, Arganzuela, and Usera, the masterplan creates a vital link that extends the successful Méndez Álvaro business district southward while establishing new green corridors. The integrated Cercanías station serves as the transit-oriented development's heart, providing enhanced connectivity across the M-30 barrier that has long divided these communities. The master plan's emphasis on walkable, car-free zones and extensive green spaces establishes a new model for sustainable urban living that radiates outward, improving quality of life and economic opportunities throughout the southern districts while addressing the historic lack of quality public amenities in this area of Madrid.

PROGRAM BREAKDOWN

Tertiary Uses

60 %

166,965 sqm

Uses	Split (%)	Area (sqm)	Notes
University District	40%	66,782	Includes Start-Up Incubator &
Student Housing	% of university		
Co-living & Other Residential Uses	35%	58,435	Shared living for youngprofessiona
Tech Offices	15%	25,043	Flexible offices, co-working
Retail	10%	16,696	Shops, food court (old containers in
- Parking (north next to Entrevías)	Included in Tertiary	Included	Multi-level, EV charging

Social Housing

28 %

77,913 sqm

Uses	Split (%)	Area (sqm)	Notes
- 100% Social / Affordable Housing	100%	77,913	Mixed unit sizes integrated with other parts

Social Infrastructure

12 %

33,391 sqm

Uses	Split (%)	Area (sqm)	Notes
- Higher Education (overflow if	~12% of SI	~4,000	Expansion of campus if
- Library	~7.5%	2,5	Community learning hub
- Plazas (2 major + smaller distributed	~18%	6	Social gathering, events, markets
- Health Center	~7.5%	2,5	Outpatient and preventive care
- Kindergarden / Primary Schools	~18%	6	Education for neighborhood
- Community/Cultur	~9%	3	Multipurpose events,
- Sports/Recreation	~9%	3	Indoor/outdoor sports
- Childcare/Daycare	~4.5%	1,5	Early childhood care
- Other (elder care, flexible community	~6%	2	Future-proofing social needs
- Small Plazas/Playground	~9%	2,891	Distributed across the site

Green Areas

12 %

33,391 sqm

Uses	Split (%)	Area (sqm)	Notes
Parks, greenways, green roofs, rain gardens	N/A	41,74	Integrated with plazas and public spaces

USAGE BREAKDOWN

Plazas

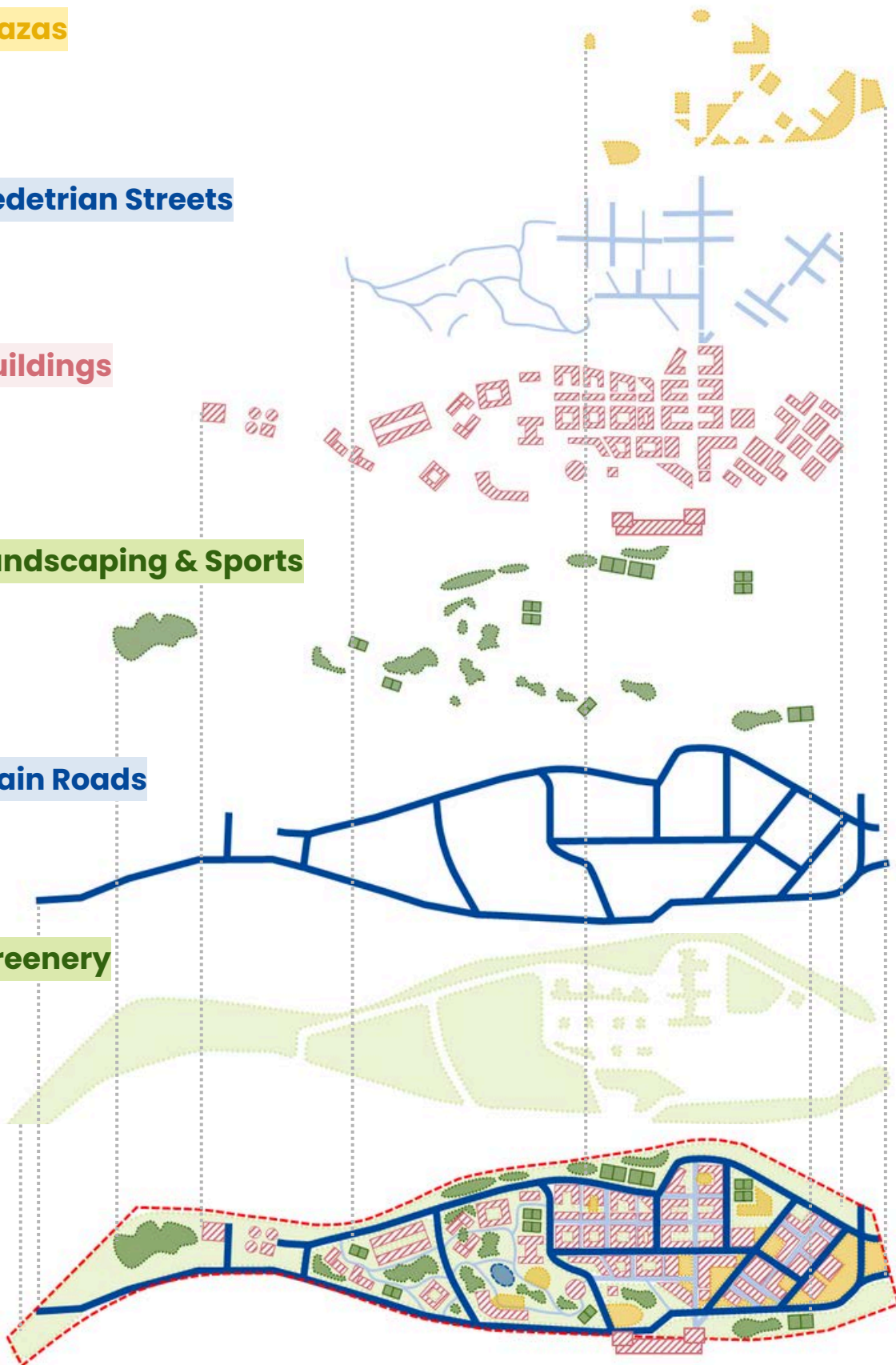
Pedetrian Streets

Buildings

Landscaping & Sports

Main Roads

Greenery



PUBLIC TRANSPORT STRATEGY

Distrito [Ab] redevelopment is designed to integrate seamlessly with Madrid's existing public transport network, ensuring high connectivity and accessibility for residents, workers, and visitors.

Regional Access

The site is located within a 10-minute walking distance from Méndez Álvaro, a major intermodal hub with Metro, Cercanías, and regional bus services. This proximity connects the site efficiently to central Madrid, the wider metropolitan area, and beyond.

Cercanías Integration

A proposed Cercanías station on the eastern edge of the site will provide a direct link to Atocha Station in under 5 minutes, significantly enhancing the site's appeal for commuters from across the city and surrounding regions.

On-Site Bus Network

To ensure full internal accessibility, two dedicated bus routes will be implemented within the site. These routes are strategically planned to:

- Serve all residential and commercial zones within a short walking distance;
- Connect the new Cercanías station with Méndez Álvaro and surrounding districts;
- Facilitate last-mile connectivity and reduce dependency on private vehicles.

Wider Connectivity

The new routes will complement the existing bus and metro infrastructure surrounding the site, offering residents multiple transit options. Combined, these measures position Abronigal as a transit-oriented development, supporting sustainable mobility and reducing traffic congestion.

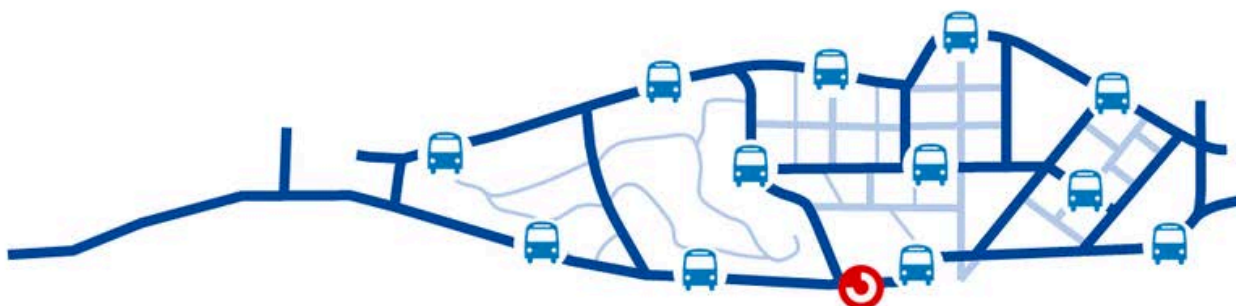
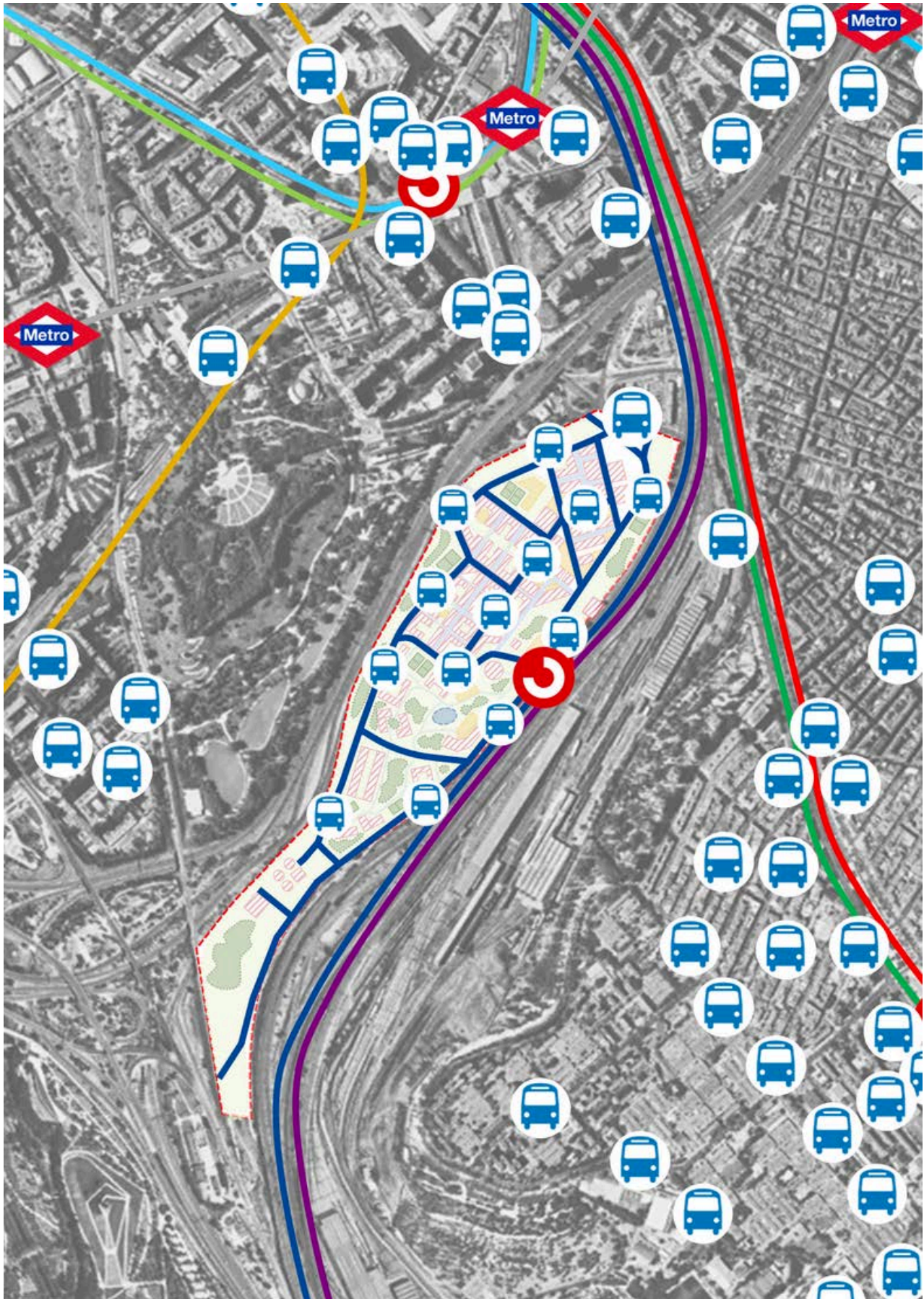


Diagram showing the Cercanías station, bus stops and pedestrian paths

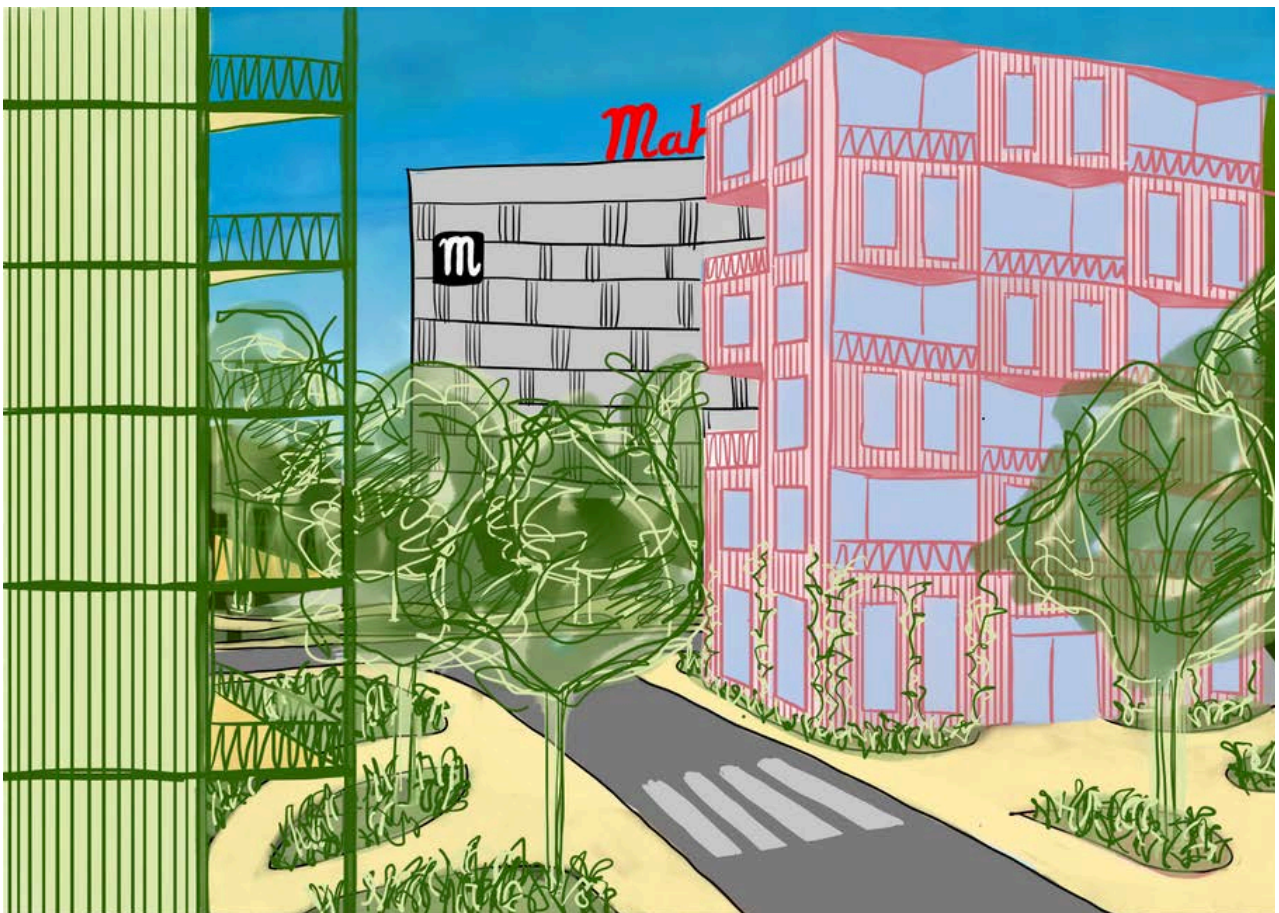
PUBLIC TRANSPORT INTEGRATION



[Ab] RESIDENTIAL



A mix of social housing, BTR, parks, and schools creates an inclusive, green, and connected new district for all residents.



[Ab] RESIDENTIAL

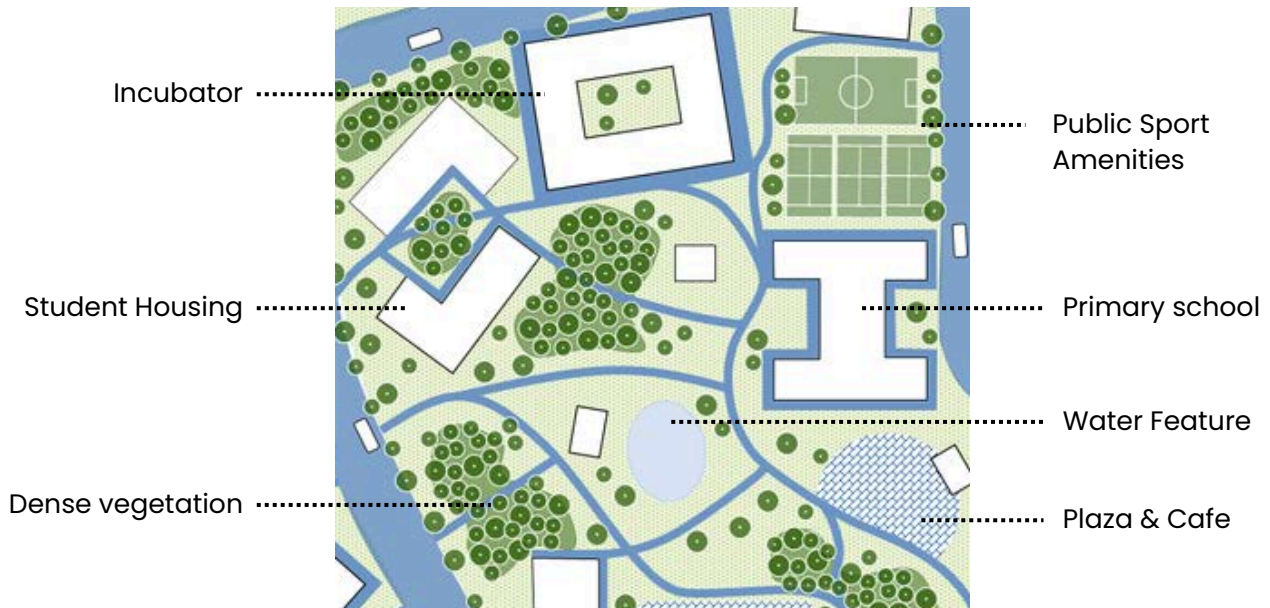


Integrated within the parc

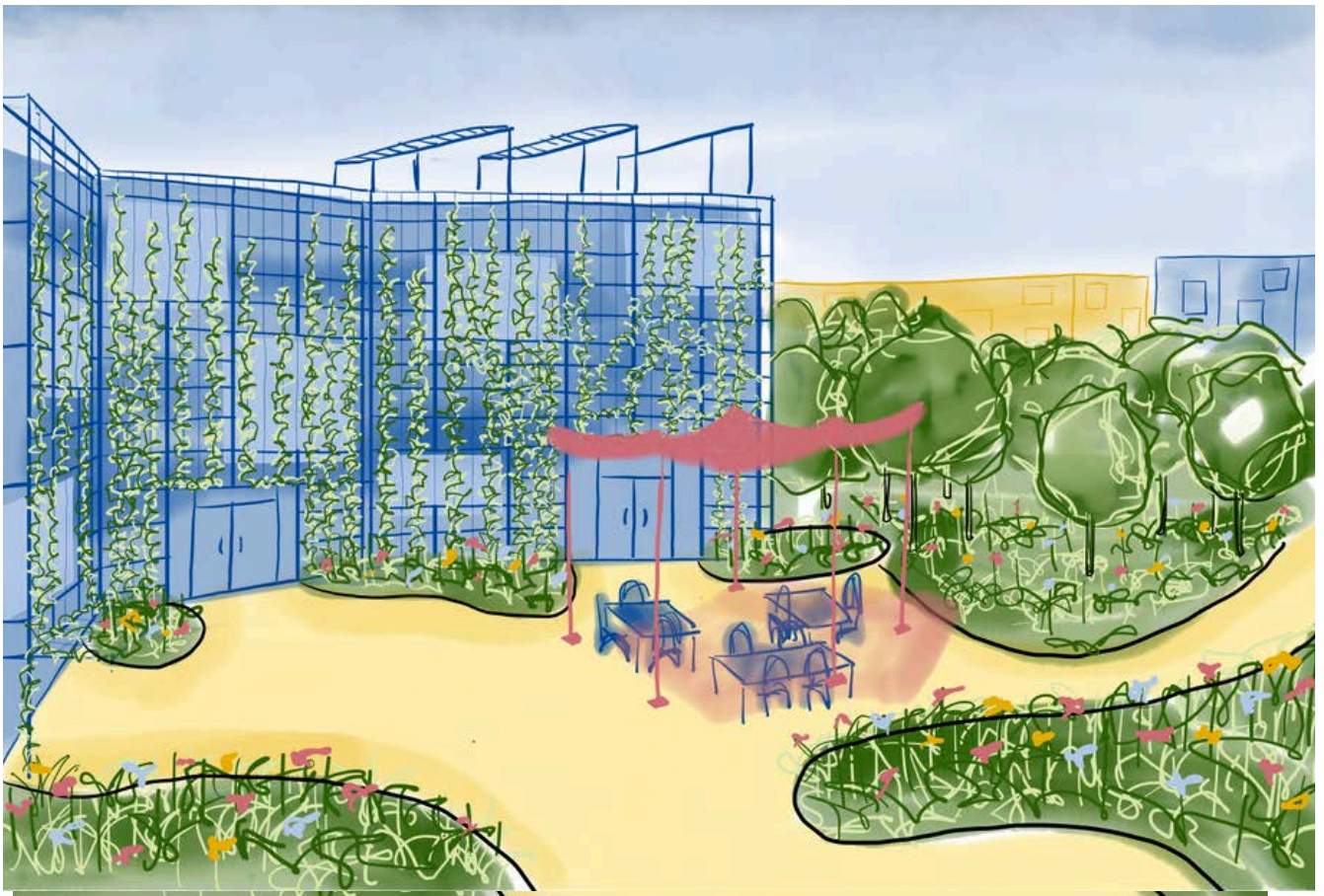
Activated street level



[Ab] UNIVERSITY DISTRICT



A vibrant university district with student housing, green spaces, incubators, and amenities supporting learning and community.



[Ab] UNIVERSITY DISTRICT



Contemporary take on industrial heritage

Activated plaza within green park



[Ab] TERTIARY



Offices, retail, plazas, and food courts create a lively, connected area supporting business, services, and daily life.



[Ab] TERTIARY



High-rises with linear design



Ground-floor retail and Dry-Port Food Court



LANDSCAPING STRATEGIES



A coherent landscaping strategy is essential to establish Distrito [Ab]’s identity as a next-generation urban district, supporting wellbeing, sustainability, and placemaking. High-quality public space not only creates a recognizable character but also contributes to social connection, environmental performance, and the long-term value of the development.

The proposal combines natural materials and elements that respect Madrid’s climate and heritage. The historic yellow crane, once used to handle containers and freight trains, is retained as a landmark that preserves the memory of the Abroñigal terminal, similar to industrial relics integrated into urban parks in cities like Tokyo. Throughout the district, wooden benches and an undulated sitting platform invite rest, social interaction, and informal gatherings, encouraging a vibrant street life.



Diagram showing green areas, denser vegetation areas and integrated sport facilities



Compact gravel (grava compactada) and fine gravel are selected for paths and plazas as cost-effective, permeable surfaces that allow water infiltration and are easy to maintain. These materials, combined with wild-grown grasses and flowering meadows, reduce irrigation needs and maintenance while providing a sense of immersion in nature and supporting biodiversity.

Wayfinding signage and district maps made of wood integrate seamlessly into the environment, guiding users intuitively while reinforcing the project's visual identity. To address Madrid's high summer temperatures, pergolas and pleached tree structures will provide shade along main walking paths and gathering spaces, ensuring comfort especially while trees grow to maturity.

The design also incorporates a rainwater retention pond, which combines stormwater management with biodiversity and visual amenity, creating an attractive landscape element inspired by dry riverbeds. Play spaces are integrated into the same natural language, playground areas that blend into the greenery and materials palette.

Finally, some of the selected tree species are *Quercus ilex* (Holm Oak), *Celtis australis* (European Hackberry), *Sophora japonica* (Pagoda Tree), and *Platanus hispanica* (London Plane). These are drought-tolerant, native or adapted to Madrid's climate, and capable of providing generous shade canopies, supporting a resilient and comfortable public realm.

ENVIRONMENTAL, SOCIAL & GOVERNANCE

The project integrates Environmental, Social, and Governance considerations throughout. Environmentally, it targets low emissions and energy use with green building standards, renewables, and sustainable mobility in line with Madrid 360. Socially, it promotes inclusivity with affordable housing, public amenities, and community engagement. Governance focuses on transparency and collaboration among ADIF, local authorities, and stakeholders, ensuring regulatory compliance and aiming for certifications like BREEAM Communities.



ENVIRONMENTAL

At Distrito [Ab], we value environmental sustainability and minimal impact above all, thus our strategy of green roofing and solar panel installations across the 32 ha site will generate 15-20 MW capacity, covering 60-80% of energy needs. While reducing operational costs by €2-3 million annually. This dual strategy reduces urban heat island effects by 3-5°C, generates €800,000 - 1.2 million annual energy revenue, adds €50-80/sqm property value, and qualifies for EU Green Deal funding covering 30-40% of installation costs.



Image Source: Tomic, Nikola

Digital Twins

Real-time monitoring of energy, water, waste, air quality, and maintenance across 32 ha

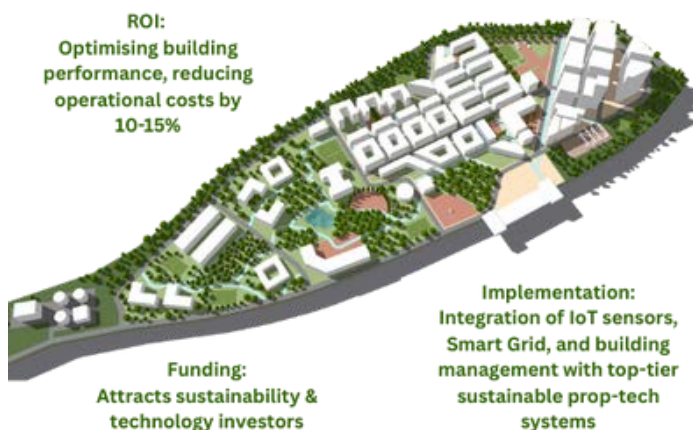


Image Source: Ng, Jonathan

Digital twins will help Distrito [Ab] reach environmental sustainability goals by providing real-time monitoring and predictive modeling of the development's integrated green systems. The technology will enable continuous optimization of energy consumption across geothermal systems, integrated photovoltaics, and district heating/cooling networks. This data-driven approach will ensure the project meets its benchmark status for sustainable urban regeneration through measurable environmental performance optimization.

Greywater recycling works by capturing and treating wastewater from sinks, showers, and laundry facilities for reuse in the irrigation of green roofs, parks, and green spaces. This closed-loop water management system will reduce potable water consumption by up to 40% and support the district's goal of creating a self-sustaining ecosystem. Supporting the landscaped areas during Madrid's dry periods, while reducing strain on municipal water systems and supporting the project's benchmark status for sustainable urban regeneration.

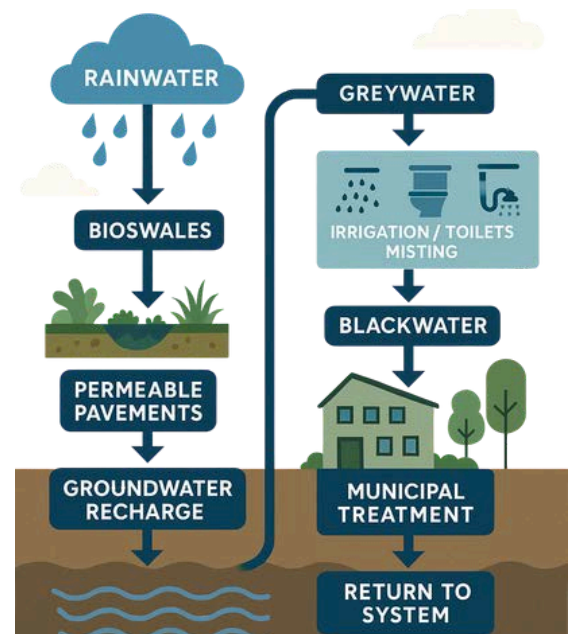


Image Source: Generated by ChatGPT 4o

SOCIAL

Equity: The Abroñigal project contributes to resolving the territorial imbalances that have characterized the city of Madrid over the last decades by providing public equipment, educational facilities, and low-cost housing in one of the most deprived neighborhoods of the city. By incorporating the university district, protected homes, and public green areas, the development guarantees equitable access to facilities and services. This has allowed a rebalancing of opportunity between the city center and the south of Madrid, in favour of inclusive growth and social cohesion over the long term.



Awareness: The district's regeneration strategy is informed by a core commitment to education and literacy on the topic of sustainability and environmental awareness. Built and programmatic elements of the district will form a template for resilient design as well as provide a forum for community engagement around issues of climate change, green innovation, and systems-based thinking. On a day-to-day basis, built elements such as visible green infrastructure and on-site renewable energy generation, as well as ongoing education and programming focused on the natural environment, will work to foster an increased level of awareness and engagement around the principles of sustainable living.

Social Cohesion: From the site's point of view, the importance of this social objective ranges from the infrastructural no-man's-land to a consolidated district with multiple connections with its surroundings, introducing urban equipment such as plazas, parks, and cultural facilities where there are currently none. This new arrangement of spaces aspires to unite different user groups that until now have been separated for a long time, and thus allow greater coexistence and interaction between the different people who live in Vallecas and other adjacent neighborhoods, through greater walkability, public transport integration and the creation of active public space, which is expected to increase the sense of safety and, above all, a sense of belonging and social cohesion.

Community participation has been a guiding principle in the planning of Abroñigal from the beginning. Local stakeholders, neighborhood associations, and city agencies have all played a role in key decisions about land use, housing typologies, and public services. Proposed elements including cooperative housing, cultural center, and youth facilities are directly responsive to community needs. This inclusive approach also helps to build local ownership, minimize social friction, and ground the project in the needs of its surrounding neighborhoods.

GOVERNANCE

The governance of the Abroñigal project is founded on a comprehensive **stakeholder engagement** plan. This begins with ensuring that municipal, ADIF, and community-level institutional objectives are consistent with local demand. For example, housing, youth center, and park design have been steered from the outset through active participation between these agents. Partnerships are being developed with education and business/economic stakeholders in the conception and implementation of the polytechnic university district and innovation center. The coordinated, multi-level approach to stakeholder relations and commitment underpins the social license to operate and minimises project risk. These actions align with BREEAM's governance credits.



Transparency is an integral value of the Abroñigal project. It must ensure that the confidence of investors and the trust of the general public is won and retained. It will do this by publishing information and consultation about key project milestones, master plans, and policy changes via official city platforms and communication channels, stakeholder briefings, and public forums. The construction of the new municipal service complex (including the relocated district town hall) gives a civic face and on-site interface for stakeholder engagement and project transparency. In the future, urban redevelopment will be able to offer transparency for its monitoring systems, with open access to data on energy consumption, mobility flows, and environmental performance.

The operational transparency commitment outlined here also assists with meeting the BREEAM Communities' transparency criteria, in addition to de-risking through compliance, facilitating inspection and auditing, and being able to evidence accountability to all stakeholders, including investors, institutions and residents.

The Abroñigal project's regulatory matrix is in full **compliance** with the relevant legal parameters, as ADIF has already given the legal declassification to the site of the freight terminal and the freight terminal function is being moved to Vicálvaro, so the surface area is already freed up for urbanization in compliance with the new General Urban Plan of Madrid (PGOM). The regeneration, ecological, environmental and landscape criteria of the project also comply with the environmental legislation of the Community of Madrid and the European Union in terms of noise reduction, air quality and rainwater control, as well as the technical requirements that might be associated with the Green Infrastructure measures and actions set out in the Bosque Metropolitano or Madrid 360, in the framework of the long term decarbonisation and climate adaptation of Madrid. In other words, its systems of sustainable urban drainage (SUD), renewable energy production and low-emission mobility solutions fully respect the regulatory standards and the performance standards of BREEAM.

CERTIFICATIONS

BUSINESS OBJECTIVES	DISTRITO [AB] OUTCOMES
Liquidity in Exit	Projected valuation premium (~20%) through ESG-driven investor interest via BREEAM Communities, GRESB, and EU Taxonomy alignment.
Command Higher Rents	Anticipated rent premiums (~11%) compared to local uncertified assets, driven by sustainability certifications (BREEAM, WELL, WiredScore).
Lower Vacancies	Target occupancy rates consistently ~4% above Madrid's market average, achieving near-100% occupancy in comparable certified projects.
Reduced Operational Expenses	Estimated 25% energy and 11% water savings from renewable energy infrastructure, smart grids, and advanced water management systems.
Compliance with EU/Spanish Net Zero Regulations	Early compliance (100%) with Madrid 360, PGOM, and EU Taxonomy criteria, significantly reducing regulatory risks and associated compliance costs.

Energy Management



Certification Structure



Indicator



UN Sustainable Development Goals

		3 GOOD HEALTH AND WELL-BEING	4 QUALITY EDUCATION	6 CLEAN WATER AND SANITATION	7 AFFORDABLE AND CLEAN ENERGY	8 DECENT WORK AND ECONOMIC GROWTH	9 INDUSTRY, INNOVATION AND INFRASTRUCTURE	10 REDUCED INEQUALITIES	11 SUSTAINABLE CITIES AND COMMUNITIES	12 RESPONSIBLE CONSUMPTION AND PRODUCTION	13 CLIMATE ACTION	Certification
E	Energy Production via Solar Panels & Biomass as well as Smart City integration with IoT sensors for predictive maintenance				✓				✓	✓	✓	LEED / BREEAM / WiredScore / ISO 37101
	Water conservation through the use of greywater recycling, green roofs, bioswales, and permeable pavements			✓						✓	✓	LEED / BREEAM / WiredScore / ISO 37101
	Integration of circular economy strategies during construction, and usage of Digital Twins						✓		✓		✓	LEED / BREEAM / WiredScore / ISO 37120
S	Community-oriented urban planning, encouraging pedestrian and bike travel, use of electric shuttles	✓					✓	✓	✓		✓	BREEAM / WELL / ISO 37101
	Increased community engagement and fostering cultural networking through accessible public spaces		✓			✓		✓				BREEAM / WELL / ISO 37101
	Focus on health, well-being, and safety of all stakeholders or residents of Distrito Ab	✓				✓		✓				BREEAM / WELL / ISO 37101
G	Stakeholder engagement plan for increased transparency and accountability					✓		✓	✓			BREEAM Community / WELL / ISO 37101
	Full regulatory compliance to BREEAM Community standards					✓		✓	✓			BREEAM Community / WELL / ISO 37101

Industry Certifications

Certification	Indicator
Human Experience (WELL Community)	Enhanced wellbeing through air quality, natural lighting, acoustic comfort, and walkable spaces.
Environmental Responsibility (BREEAM)	Measurable CO ₂ reductions (50-70%), 25% energy savings, 11% water savings, biodiversity net-gain through native species planting.
Optimized Connectivity (WiredScore)	Advanced digital infrastructure ensuring district-wide high-speed Wi-Fi, broadband, and mobile connectivity.
Social Strategy (ISO 37101)	Comprehensive stakeholder engagement, affordable housing (100%), community cohesion and inclusive accessibility planning.
Sustainability Outcomes (GRESB & EU Taxonomy)	Alignment with EU Taxonomy sustainability high GRESB scoring for ESG benchmarks, early regulatory compliance.

LEGAL & ORGANIZATIONAL STRUCTURE

The project is structured around a long-term land concession model that balances public ownership with private sector expertise. By granting phased development rights to selected partners through subconcessions, this approach ensures coordinated planning, attracts investment, and delivers high-quality housing, infrastructure, and public spaces in line with regeneration goals.



Development Model

The Abroñigal redevelopment will be structured under a land concession model, led by Common Ground as the designated strategic masterplan developer. The project will not utilize a Special Purpose Vehicle (SPV) but instead, a standard Spanish limited company (S.L.) will be created to deliver the development and manage contractual relationships.

Legal Framework

Ownership of the land remains with ADIF, who will issue a long-term development concession or lease agreement to the new project entity. Provisionally named Empresa Distrito Abroñigal S.L. This entity will act as the sole vehicle for executing the masterplan, controlling phasing, subleasing, and coordination across all parcels.

- **Ownership:** The company will be 100% owned by private investors, with Common Ground operating as the strategic advisor and project manager.
- **Authority:** It will sign the land sublease with ADIF, securing full development and commercialization rights over the concession period.
- **Function:** Empresa Distrito Abroñigal will issue subleases or JV agreements to tertiary developers, oversee compliance with planning covenants, and manage centralized services.

Land Use and Development Rights

ADIF will retain land title, while Empresa Distrito Abroñigal S.L. holds 80–85% of the development rights under a concession framework. These rights include:

- Subleasing buildable plots for education, housing, and commercial uses.
- Controlling program mix, site phasing, and innovation integration.
- Monetizing rights through JV agreements or revenue participation (20% of gross developer revenue)

If ADIF does not deliver a decontaminated site, a remediation budget of €5–10M will be built into the investment model and considered in equity negotiations.

Governance & Oversight

To maintain coherence and quality across the site, the project entity will enforce strict development rules through:

- A binding “White Book” of design, sustainability, and mobility guidelines
- Integration with a Digital Twin to manage real-time energy, transport, and lifecycle data
- A three-layer compliance framework:
 - Pre-approval: Urban Design Board review
 - Construction bonds: 5% held for post-completion compliance
 - Penalties: 1.5% of value for noncompliance

These controls ensure urban cohesion and adherence to ESG and innovation targets.

SUBCONCESSIONS

Land Concession Approach

ADIF will keep the ownership of the land while granting a long-term development concession to the master developer, Empresa Distrito Abroñigal S.L. This entity will oversee planning, phasing, and coordination across the site.

Role of Subconcessions

Empresa Distrito Abroñigal S.L. will divide the project into phases or plots, issuing subconcessions to selected private developers through transparent tender processes. Then these developers will have the right to build, operate, and commercialize their parcels over the agreed term.

Key Functions

- Fully ensure delivery of housing, commercial, and public amenities in line with the planning goals.
- Enforce affordable housing quotas and ESG standards.
- Integrate infrastructure, public space, and mobility solutions across phases.
- Collect agreed concession fees or revenue shares from developers.

This structure will balance public control and private investment, thus attracting high quality partners while ensuring cohesive, sustainable regeneration of the Abroñigal site.

MARKET ANALYSIS

The market analysis outlines trends across key sectors relevant to Abroñigal's regeneration. It examines demand for modern office space, evolving co-living and student housing offers, and new social and affordable housing initiatives. Understanding these dynamics helps shape a mixed-use strategy that meets local needs, supports inclusivity, and delivers sustainable urban growth.



MARKET COMPARABLES

Offices

This selection shows modern office rents from €17 to €28/sqm/month. Newer assets like Madnum command top rents, supported by strong ESG credentials (LEED, BREEAM). Most stock is recent or refurbished, reflecting demand for quality space.

Name	Address	Year	Rent/sqm	Energy Labels
Calle Titán 8	Calle Titán 8	2008	23	LEED Platinum
Calle Méndez Álvaro 9	Calle de Méndez Álvaro 9	1996	17	-
Calle Vizcaya 12	Calle de Vizcaya 12	2022	22	LEED Platinum
Calle Kentia	Calle Kentia, Delicias	2017	20	-
Madnum	Calle Méndez Álvaro 61	2024	28	BREEAM Excellent
Torre Ombú	Calle Ombú 3	2017	19,75	LEED Gold

Co-Living

This overview highlights recent co-living developments, mostly built post-2022. Projects typically offer studio, 1-bedroom, and 2-bedroom units, with monthly rents ranging from €700 to over €2,100. Higher-end schemes like Madnum and Nera Living achieve top rents, reflecting new-build quality and amenities.

Name	Adress	Region	Year	Monthly Rent Studio	Monthly Rent 1-bedroom	Monthly Rent 2-bedroom
Madnum	C. de la Jacaranda, 10	Méndez Álvaro	2024	1.085	1400	2100
Nera living	C. de Leganés, 11	Méndez Álvaro	2025	1376,5	1660,5	1982
Méndez Álvaro Residential	C. de Leganés, 3	Méndez Álvaro	2025	825	825	1045
Méndez Álvaro, 43	C. de Méndez Álvaro, 43	Méndez Álvaro	2024	-	1635	2150
Bext Vallecas	C. de José Antonio Rebolledo y Palma 23	Vallecas	2024	1200	1325	1900
Node Living	P. I. del Aguacate, Carabanchel	Carabanchel	2022	960	-	1297,5
Kanso Living	C. de María Bosch 15	Puente de Vallecas	2023	800	-	-
Erasmusu	Av. de la Albufera	Puente de Vallecas		700	-	-

Market Comparables

PBSA

Student residences in Madrid range from €650 to €2,448/month, with higher prices in central areas like Salamanca. Most assets are new or refurbished, meeting strong student demand.

Name	Adress	Region	Monthly Rent range
AmberStudent	C. del Principe 10	Centro	650-1,000
DoveVivo	C. San Lorenzo 10	Centro	800 - 1,370
Kanso Living	C. de María Bosch 15	Puente de Vallecas	820-1,200
Canfranc's Student Residence	C. del Puerto Canfranc	Puente de Vallecas	650-1,000
MiCampus Wynwood	C. de Foronda	Quatro Torros	900-1,200
Resa Claudio Coello	C. de Claudio Coello, 141	Salamanca	1,285 – 2,448
Resa Colegio Mayor	Av. Séneca, 8	Moncloa	1,300 – 1,500
Resa Emilia Pardo Bazán	C. de Ramírez de Arellano, 29	Chamartin	1,200 - 1,400
Resa Galdós	C. Ramiro de Maeztu, 2	Ciudad Universitaria	950 – 1,500
Resa Reina Cristina	P. de la Infanta Isabel, 13	Retiro	900 – 1,300

Social Housing

Recent social and affordable housing projects in Madrid focus on expanding supply through both public and private initiatives. Most are new developments aimed at addressing growing demand and supporting more inclusive urban growth.

Name	Adress	Year	Public/Private	Social/Affordable	#units
Ingenieros 1 (EMVS)	Villaverde (Madrid)	2025	Public	Social Housing	120
NSA 14 (Ecobarrio)	Puente de Vallecas (Madrid)	2025	Public	Social Housing	205
Cañaveral 01	Vicálvaro – El Cañaveral	2023	Public	Social Housing	82
Cañaveral 3	Vicálvaro – El Cañaveral	2024	Public	Social Housing	116
Iberia Loreto 1	Barajas (Madrid)	2025	Public	Social Housing	52
Valdebebas Plan VIVE	Hortaleza – Valdebebas	2025	Private	Affordable Housing	441
Espartales Norte (PV)	Alcalá de Henares (Madrid)	2024	Private	Affordable Housing	154

TENANTS & DEVELOPMENT PARTNERS

Potential partners include universities, incubators, PBSA operators, and developers aligned with Abroñigal's vision. Academic institutions bring innovation and global networks, while incubators and corporate sponsors can anchor tech and green industries. PBSA operators and experienced developers ensure high-quality, sustainable housing and mixed-use delivery that supports the site's regeneration goals.



ACADEMIC SPACE



RIT is a university that has a strong international presence, with campuses in Dubai, Kosovo, Croatia, and Albania. The university highly focuses on practical, design-oriented, and tech-driven curricula. The university's urban campus model aligns well with co-working and incubation spaces. This makes RIT ideal for developing hands-on technical labs and a project-based learning campus at Abroñigal.



CMU is internationally highly ranked for excellence in computer science, robotics, and design. It operates campuses in Silicon Valley, Doha, and Rwanda, emphasizing R&D and applied innovation. With a student population of over 17,000 students, CMU prioritizes global tech collaboration. A Madrid-based lab or campus centered around AI or advanced design would support their international research ambitions and complement the incubator's presence on-site.



Northeastern University is a fast-growing global campus network. With campuses in London, Berlin, Toronto, and several U.S. cities, Northeastern is known for co-op learning models, entrepreneurship, and STEM education. The school has seen rapid enrollment growth and is good at opening satellite campuses co-located with tech hubs. Northeastern would benefit from Abroñigal's innovation environment and could operate a master's program hub focused on entrepreneurship, AI, and applied engineering there.



Webster University Webster is a mobile and internationally focused university with campuses in Europe, Asia, and Africa. It offers programs in international relations, media, and business to a student body of about 7,600. Its agile model allows fast deployment in leased or JV-based urban campuses. Abroñigal could host a rotating global undergraduate or postgraduate track, targeting international students and professionals.

ACADEMIC SPACE



Università
Bocconi
MILANO

Bocconi University, based in Milan, is one of Europe's most prestigious institutions in business and economics. With over 14,000 students and a recent €300M urban campus expansion, it has the capacity and precedent to open a Madrid executive training hub. Their focus on fintech, entrepreneurship, and policy complements the innovation goals at Abroñigal.



IE University With its headquarters already in Madrid and global standing in business and innovation education, IE University has 7,000 students from 140 countries. It recently opened the IE Tower and has strong ties to startup and policy ecosystems. IE is an ideal anchor tenant and could bring both prestige and community integration to the Abroñigal development.



Universidad
Europea

Universidad Europea is a leading private university in Spain, best known for its international outlook and strong industry ties. With campuses in Madrid, Valencia, Tenerife, and the Canary Islands, it serves over 16,000 students. Of which nearly 25% of whom are international. The institution offers programs in business, engineering, health sciences, and communication, with a practical, market-oriented pedagogy. Its modern campus formats and flexible academic delivery make it a prime candidate for off-site or hybrid campus expansion. An Abroñigal location could serve as a high-visibility extension for graduate programs, corporate education, or cross-disciplinary innovation labs—especially in tech, entrepreneurship, or design. Its willingness to partner with public and private entities aligns with the campus model envisioned at Abroñigal.

TENANTS: INCUBATOR SPONSOR



Iberdrola is one of Europe's largest energy utilities and a recognized leader in clean energy innovation. It operates a global startup accelerator: PERSEO, investing over €100 million in energy-focused startups and scale-ups. While it already has a significant Madrid presence with R&D operations, it does not yet operate a dedicated innovation campus. Abroñigal could serve as a flagship space for energy transition innovation and a showcase for smart infrastructure and green tech collaboration with universities and student founders.



Repsol, is another majorly big Spanish energy player headquartered in Madrid, has heavily invested in innovation and sustainability. Their Repsol Technology Lab near Móstoles focuses on materials, circular economy, and hydrogen tech. Yet there is no current central incubator exists in Madrid. An incubator at Abroñigal would allow Repsol to engage with urban tech startups, launch open innovation programs, thus strengthen its ties with international students and universities on campus.



AWS Activate is a global cloud startup program offering credits, mentorship, and scale-up services. While Amazon has no physical startup labs in Madrid, their involvement at Abroñigal could provide foundational tech services and sponsor cloud-based innovation tracks. Their global reach, startup engagement, and education outreach make AWS a high-value partner.

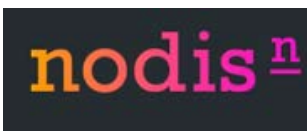


Plug and Play is a global innovation brand that has a hub in Barcelona and Valencia, but Madrid still lacks a comparable flagship. Focused on mobility, fintech, and energy, it could partner with public and private players to create a Plug and Play Abroñigal accelerator. This would instantly attract international visibility and anchor cross-sector startup collaboration.

PBSA



Resa is Spain's biggest and most recognized PBSA operator. RESA manages over 11,000 beds in more than 40 residences across just about 20 Spanish cities. Their commitment to quality student living and partnerships with public and private universities makes them a sector leader. Beginning 2024, Resa opened a new residence in Madrid's Chamartín with 320 beds, a rooftop, coworking areas, and wellness spaces. The Chamartín residence achieved a 100% occupancy almost right away for the 2024–2025 academic year and was built to BREEAM sustainability standards. RESA's portfolio includes a mix of full-service dorms and hybrid residences. This allows them to cater to both domestic and international students. Resa's ESG policies and continued expansion reinforce their alignment with the sustainable and inclusive community values, which we seek and plan to embed in Abroñigal.



Nodis is also a fast growing Spanish PBSA operator but manages just over 4,000 beds in the Spain. Nodis is active in Madrid, Barcelona, Málaga, Granada, Zaragoza, and Sevilla, Nodis has quickly positioned itself as a forward looking player in the student housing sector. Nodis achieved this solely by focusing on sustainable, design led residences that are tailored to modern student lifestyles. Their recent openings in Pozuelo (448 beds) and Vicálvaro (162 beds) show their strategic commitment to the Madrid metropolitan area. Even though they currently lack a flagship presence in the central urban core of the city. Creating a unique opportunity at Abroñigal: a centrally located, mixed-use regeneration site where Nodis could develop a high-profile residence integrated with a university campus and startup ecosystem. Such a flagship project would align with their model of offering shared living environments with premium amenities while expanding their brand visibility to both Spanish and international students. Their operational agility and focus on community-building position them as an ideal PBSA partner in a project that aims to combine academia, innovation, and sustainable urban living.

TERTIARY DEVELOPERS



Profile: Spain's largest SOCIMI, managing a €12B portfolio across office, retail, logistics, and data infrastructure.

Track Record: Key player in Madrid's urban landscape; notably involved in "Distrito Castellana Norte," one of Spain's most ambitious regeneration projects.

ESG Leadership: 95% of the portfolio certified under BREEAM, LEED, or WELL. Ranked in the top 1% globally for ESG performance (Sustainalytics).

Relevant Experience:

- Extensive work in concession-based public-private partnerships.
- Developer of large-scale innovation hubs and sustainable commercial precincts.

Strategic Fit for Abroñigal:

- Strong candidate for commercial, retail, and tech-integrated office parcels.
- Opportunity to expand their urban innovation and ESG-driven investment thesis.
- Would view Abroñigal as a strategic platform to influence Madrid's next innovation corridor



Profile: One of Spain's most established developers, with a legacy dating back over 100 years and a land portfolio exceeding 5.6 million m².

Track Record: Leads numerous large-scale residential and mixed-use urban plans, including public-sector collaborations in Madrid, Valencia, and Seville.

ESG Leadership: Guided by its "Urbanismo Sostenible" strategy, Metrovacesa focuses on energy efficiency, sustainable mobility, and biodiversity integration.

Relevant Experience:

- Deep experience in regenerating underutilized urban zones.
- Strong planning capabilities for masterplans and affordable housing.

Strategic Fit for Abroñigal:

- Excellent fit for residential or mixed-use components requiring masterplan integration.
- The project aligns with its goal of sustainable city-building and long-term land transformation.
- Would benefit from reinforcing its leadership in green regeneration projects in Madrid.

TERTIARY DEVELOPERS



Profile: A listed national developer with over 14,000 homes delivered since 2017 and a market-leading presence in Madrid.

Track Record: Expert in scalable housing projects using modular and industrialized methods, including key urban developments in Orcasitas and El Cañaveral.

ESG Leadership: Drives the “Live-In ESG” framework across projects—focusing on low-emission materials, digital energy tracking, and life-cycle sustainability.

Relevant Experience:

- Specializes in affordable, mid-market, and energy-efficient housing.
- Strong public-private credentials in land planning and urban delivery.

Strategic Fit for Abroñigal:

- Ideal for residential phases targeting young professionals, students, and families.
- Abroñigal offers AEDAS the chance to innovate in a highly visible, centrally located regeneration zone.
- Likely to see it as a flagship to showcase climate-responsive housing at scale.

CULMIA

Profile: National developer backed by Oaktree Capital, with over 14,000 homes delivered and a pipeline exceeding 11,000 units.

Track Record: Key player in Spain’s affordable housing and Build-to-Rent (BTR) segment, including delivery of Plan Vive projects in Madrid under public-private partnerships.

ESG Leadership: Focuses on energy-efficient, socially inclusive, and affordable residential models. Notable for participation in EU-funded urban development schemes.

Relevant Experience:

- Specialist in PPP concession-based housing delivery.
- Experienced in BTR and public-service-oriented residential formats.
- Strong partnerships with public agencies across Spain, especially Madrid.

Strategic Fit for Abroñigal:

- Ideal for housing parcels oriented toward affordability, long-term rental, or public benefit.
- Offers proven ability to deliver within municipal policy frameworks and co-investment structures.
- The project would support Culmia’s ambition to scale its presence in Madrid and strengthen its position as a national leader in socially impactful urban development.

FINANCIAL STRATEGY

The financial strategy for Distrito Abroñigal combines public land concession with private investment to reduce upfront costs and share value. A 75-year concession model with ADIF is proposed, ensuring long-term returns for both public and private partners. The phased approach includes early infrastructure and institutional anchors, with residential, retail, and office components delivered in stages to support financial sustainability and community development.



FINANCIAL OVERVIEW

ADIF Partnership

Our firm, Common Ground, will be presenting this redevelopment proposal to ADIF who are the current landowners. We initially considered a joint venture SPV structure with ADIF in which ADIF would have contributed the land as their equity contribution into the JV with the remaining equity being fundraised externally. Considering the scope and timeline of the project, we instead opted for a long-term land concession proposal in which we would take ownership and control of the site for a period of 70 years after which we would return full control of the site to ADIF

Financial Highlights



€25 million contribution to M30 Integration
€320 million total investment
15 year exit or long-term hold
Sub-concession strategy with local developers



13.5% IRR
860 affordable housing units created

Financial Strategy Overview

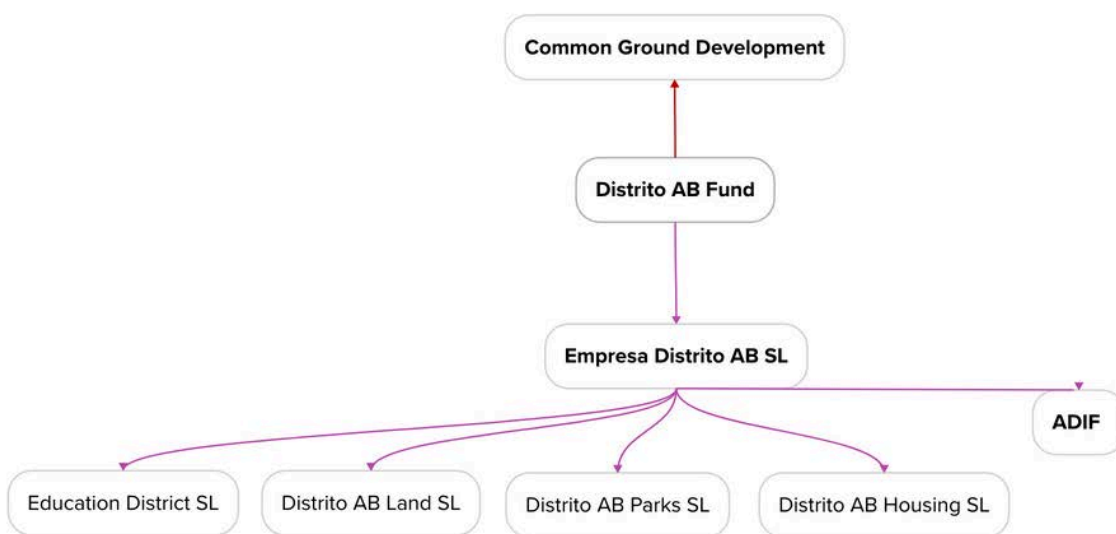
The financial strategy for Distrito AB is grounded in the belief that urban regeneration can produce strong financial returns while delivering social and environmental value. The complexity of a brownfield rail yard transformation, paired with a public land concession model, demands a multi-layered capital strategy that de-risks early-stage investment, attracts long-term partners, and supports innovation in delivery.

To accomplish this, Distrito AB will adopt a layered financial structure that combines public support with private capital, structured around a long-term land concession with ADIF. This model provides development rights for a fixed term of 75 years, allowing value creation without full land acquisition. This concession approach unlocks a lower upfront capital requirement while providing long-term income visibility for both the developer and ADIF as the public landowner.

Land Concession

The project anticipates a fixed base concession fee with a progressive variable component indexed to net operating income. This hybrid approach ensures predictable returns for ADIF while aligning public benefit with project success. Based on benchmarks from comparable projects across Europe, an initial fixed fee of €18,000,000 is proposed, with a fixed annual canon of €3,200,000. Over the lifetime of the project this will yield €242,000,000 in payments to ADIF.

Organizational Structure



Development Scope

Under our delivery strategy, the capital requirement for the project company is significantly reduced. The estimated total capital expenditure now stands at approximately €320 million, focused exclusively on the design, construction, and commissioning of the following components:

- Institutional buildings, including the university district, incubator, library, and cultural facilities
- District-wide infrastructure such as roads, utilities, stormwater systems, and internal transport
- Green and public spaces including major plazas, landscaped parks, and ecological corridors

Initial site remediation and decontamination will be completed prior to the commencement of the concession period by ADIF and/or public authorities, thereby removing a major upfront cost from the developer's scope. Additionally, housing, retail, PBSA, and tertiary office assets will not be funded by the project company but by individual sub-concessionaires under separate financial arrangements.

Capital Stack Summary

The total capital structure for the €280 million investment program is designed to balance equity investment, infrastructure debt, and targeted public finance instruments. It reflects the lower-risk profile of the development scope and the ESG alignment of the assets under direct delivery. Approximately €70 to €80 million will be contributed as sponsor equity from the project company and its partners, representing 25 to 28 percent of the total capital stack. This equity will secure the early stages of infrastructure rollout and institutional construction, and position the project for eligibility for debt and blended finance.

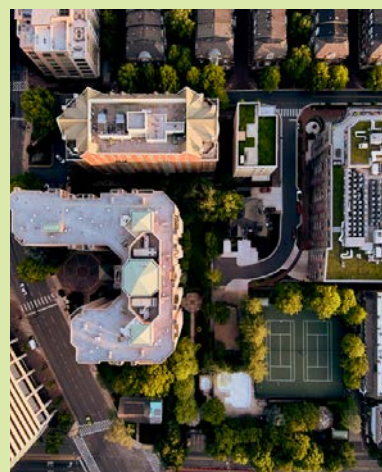
Public grants and subsidies are expected to contribute between €70 and €85 million, or 25 to 30 percent of the total capital requirement. These will come from sources such as the European Union’s Recovery and Resilience Facility (RRF), the Madrid Urban Innovation Fund, and national-level sustainability and infrastructure support programs. These funds will be allocated primarily to climate-smart infrastructure, decarbonized energy systems, public spaces, and social amenities.

The remaining 30 to 35 percent of capital, approximately €90 to €110 million, will be raised through long-term infrastructure debt. This will likely include green bonds, loans from public infrastructure banks, and PPP-aligned financing for institutional buildings and utilities. The revenue stability provided by institutional leasing and sub-concession income streams supports an attractive debt profile with an expected debt service coverage ratio (DSCR) exceeding 1.4x by Year 7.

A smaller layer of mission-aligned or impact equity, approximately €30 to €40 million, is planned as subordinated or preferred capital from ESG investment funds, university foundations, or philanthropic institutions supporting educational infrastructure and public benefit real estate. This layer can enhance the overall risk profile and create flexibility in structuring returns for senior equity investors while acting as a buffer for the overall development

Capital Stack Breakdown

Source	Amount (€M)	%
Sponsor Equity	€80	25%
Public & Blended Finance	€80	25%
Impact / Institutional Equity	€30	10%
Senior Infrastructure Debt	€130	40%
Total	€320	100%



Development Outlook

CAPEX Requirements

Our capital expenditure projection for the master developer reflects a disciplined, mission-aligned approach to public investment, limited to foundational infrastructure and non-speculative civic assets. In total, the estimated cost envelope ranges from €295 million to €320 million, with variability driven primarily by the complexity of motorway integration works along the western edge of the site.

Considering the large scale of the project, our capex strategy was to focus majority of our capital investment in infrastructure and urbanization works as well as public spaces. Our primary investment asset would be the educational district assets. In order to mitigate the financial risk and reduce the extreme capex required to develop the entire site, we've chosen to sub concession land to private developers who will be responsible for developing majority of the site.

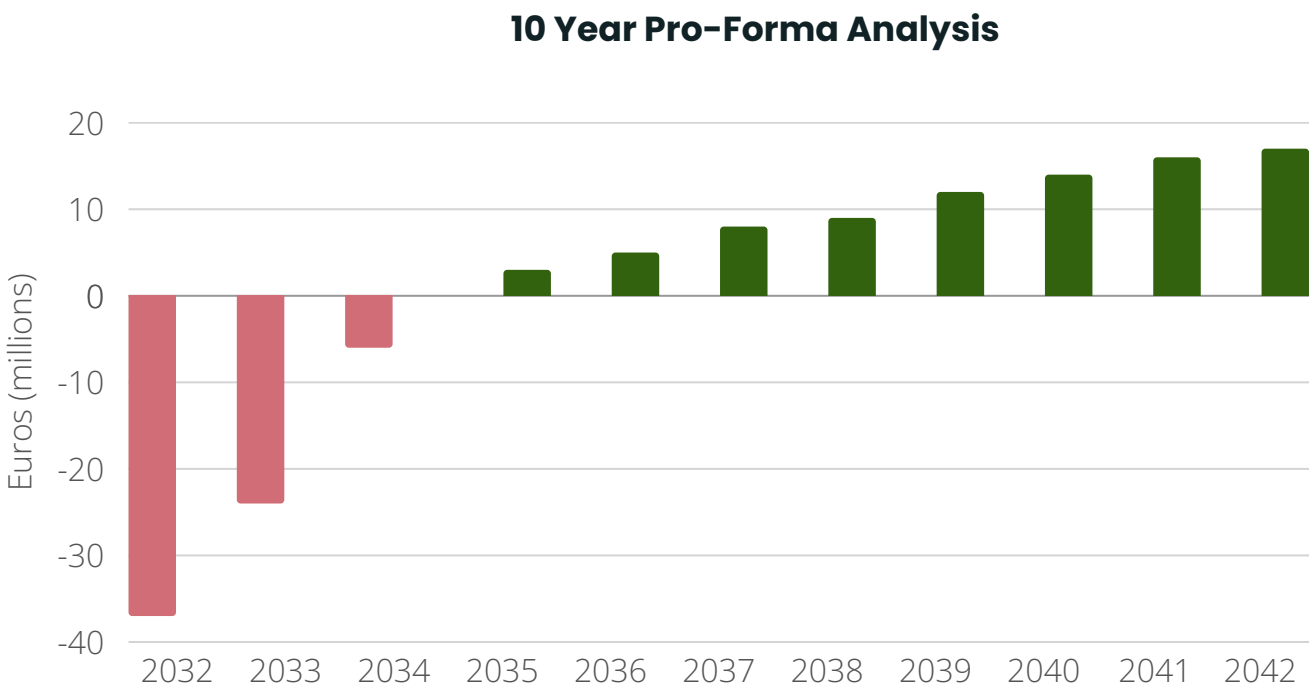
This approach helps reduce financial risk, by leveraging local developer expertise and allowing us to spread the overall risk of the project. This approach also ensures healthy capital deployment and ensures that the project remains financially feasible.

Our CAPEX breakdown for this project is as follows:

- **Institutional Buildings (€165M):** This includes the construction of a polytechnic university campus, an innovation incubator, a public library, and other civic and cultural facilities that serve as long-term educational and social anchors for the district.
- **Core Infrastructure (€85M):** This covers roads, water and energy networks, stormwater systems, and internal mobility features required to enable vertical development and district functionality.
- **Green and Public Spaces (€25M):** This encompasses major plazas, linear parks, rain gardens, and pedestrian corridors designed to restore ecological continuity and deliver climate-adaptive urban space.
- **Complex M-30 Integration Works (€20M):** These investments enable the reknitting of the site into the broader city fabric. They include structural decking, noise buffers, ramp reconfigurations, and environmental infrastructure needed to mitigate the physical and acoustic impacts of the motorway.
- **Soft Costs & Contingency (€25M):** This includes design, permitting, project management, and financial contingency buffers to account for inflation, regulatory delay, or scope flexibility.

Financial Projections & Metrics

The financial analysis of the project company has been modeled across a 15-year horizon although the term is longer than that up to 70 years through our land concession structure. This pro forma assumes a phased rollout of infrastructure, institutional buildings, and public realm assets over the first 13 years, with full operational stabilization projected by Year 18. The longer timeframe accounts for the complexity of institutional lease negotiations, multi-phase infrastructure works, and the gradual absorption of private sub-concessions.



During the initial five years, capital expenditures dominate cash flow, and income remains limited to early institutional leasing and select sub-concession premiums. By Year 6, core civic buildings are operational and producing modest lease income, while the first generation of sub-concession parcels reaches construction readiness. From Years 7 through 12, the project sees a steady ramp-up in recurring revenue as additional institutional tenants are onboarded and sub-concession

ground rents begin contributing meaningfully to cash flow. Performance royalties from third-party developments, tied to private NOI thresholds—are modeled to initiate in Year 10, ramping through Year 15. Stabilized operations are expected by Year 13, at which point the majority of leasable institutional assets are fully occupied and all major sub-concession parcels are generating recurring lease or royalty income.

Returns and Financial Performance

The projected financial performance of Distrito AB under the proposed delivery model reflects a compelling balance between long-term profitability and capital discipline. Over a 15-year horizon, the project is expected to deliver a stabilized net operating income of approximately €17.5 million by Year 13, driven primarily by institutional lease agreements and recurring ground rents from sub-concessioned parcels. The income profile is underpinned by low vacancy risk, inflation-indexed lease structures, and a diversified tenant base that includes universities, public agencies, and private operators. Assuming an exit capitalization rate of 4.85%, the terminal value of the project is estimated at around €360 million. Combined with cumulative net cash flows of approximately €80 million generated during operations, the project yields a total financial return of €120 million above the initial €320 million capital investment. This equates to a return on capital of roughly 38%, and a cash-on-cash multiple of 2.1x for equity investors.

Key Metrics

- Total CAPEX: €320 million
- Net Operating Income (NOI) at Year 15: €17.5 million
- Internal Rate of Return (IRR – Equity): 13.2%
- Project-Level IRR: 10.6%
- Cash-on-Cash Return (Cumulative): 2.1x
- Payback Period (Full Equity Recovery): Year 11
- Debt Service Coverage Ratio (Average Years 7–15): 1.51x
- Exit Valuation (at 4.85% Cap Rate): ~€360 million
- Cumulative Net Cash Flow (Years 1–15): ~€80 million
- Estimated Total Profit: €120 million
- Stabilization Year: Year 18



From an investment performance perspective, the financial structure supports strong long-term outcomes with manageable risk. The internal rate of return (IRR) to equity holders is projected at 13.2%, with a project-level IRR of 10.6%. The average Debt Service Coverage Ratio (DSCR) between Years 7 and 15 is forecasted at 1.51x, reflecting solid capacity to service long-term infrastructure debt. In discounted terms, the project achieves a net present value (NPV) of €72.4 million using a 7.5% discount rate. Taken together, these indicators confirm that the development is not only financially viable but capable of delivering resilient, predictable returns within a capital structure aligned to ESG priorities and public benefit outcomes.

EXIT STRATEGY

15 Year Packaged Sale

The first exit strategy under consideration is a 15 year exit once the project has reached partial stabilization to be able to return capital to investors. This can be a packaged sale of the project approximately 360 million given a 4.85 cap rate which would net a total estimated profit of 120 million. Exiting at this point would yield a healthy 13.2% IRR which meets several financial benchmarks and allows for attractive returns while having immense social benefit and impact

Long-Term Hold

Alternatively, also under consideration is a long-term hold strategy as the project reaches full stabilization to be able to continue benefitting from healthy cash flow while property valuations continue to increase. A stabilized NOI of approximately 18 million ensures that the project will remain an attractive investment asset and could be considered for a long-term hold until maturity. A full exit may be considered at Year 30 after which it may be difficult to sell due to the land concession agreement having only 40 years left.



Given the long-term nature of the concession and the high capital cost of undertaking projects of this scale, we've proposed a lean development strategy where we outsource majority of the site development to more established and larger developers with the size and capacity to undertake developments within the district. By entering into sub-concession agreements nested under our land concession with ADIF, we will be able to begin partial exits from year 2 of development once primary urbanization works are complete. This allows us to manage project cash flow and leverage our concession agreement to begin exiting partially in stages, reducing the overall risk and shortening the investment recovery timeline for this project.

Development Phases

Phase 1 Development: 5 and ½ years

The first phase of the development of Distrito [Ab] will focus on the urbanization of the plot, a process that will extend into the first year of Phase 2. Urbanization will include constructing the main road network for vehicles and the primary pedestrian paths, prioritizing the main car access roads and the peripheral connections to integrate the site with Calle de Méndez Álvaro. This stage also involves installing essential infrastructure and utility services across the development area.

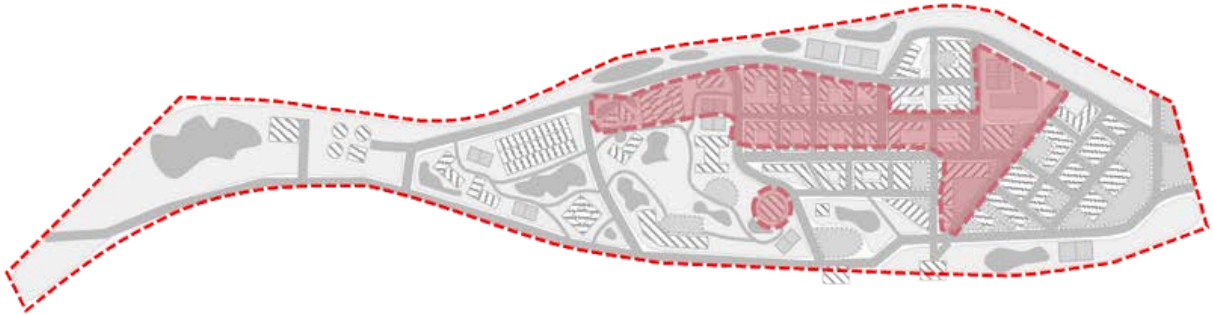


During this phase, the Cercanías rail infrastructure will be built, including an open-air train station. As the future heart of the district, this station will anchor the construction of a central public plaza and the main streets connecting the Cercanías stop to the university district. Additionally, around 25% of the residential and retail assets, specifically those located around and adjacent to the station, will be developed to activate the central area and support an early sense of place.

The educational buildings (and their facilities), representing approximately 40% of the total university district development, will also be delivered as part of this stage, together with the business incubator and innovation hub located within the campus area. This cluster will consolidate Distrito [Ab] as a reference for learning, entrepreneurship, and innovation in southern Madrid from the outset.

Phase 2 Development: 4 years

The second phase will focus primarily on the northern part of the district and the development of residential buildings. During the first year of this phase, urbanization works will be completed, finalizing the secondary road network and smaller streets in the northern sector.

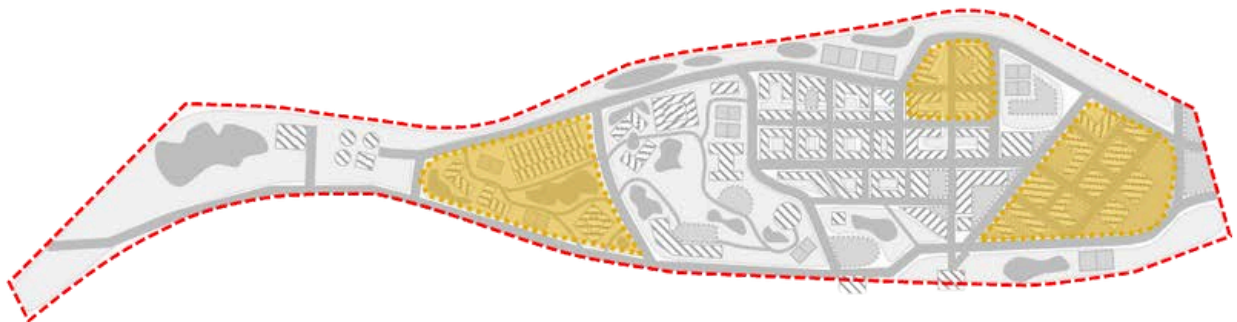


Approximately 45% of the residential and retail assets will be delivered in this phase, ensuring that new residential areas are activated with local services and retail spaces to encourage walkability and reduce car dependency.

Another 40% of the campus development will also be completed during Phase 2, including the construction of the district's central library and additional academic facilities that will further consolidate the area's role as a hub for learning and innovation.

Phase 3 Development: 5 years

Phase 3 will mark the completion of the district, delivering the remaining assets to reach 100% of the planned development. This phase will be primarily focused on constructing the final 60% of the office assets, consolidating a business district in the eastern part of the site. This area, which benefits from excellent connectivity to Calle de Méndez Álvaro and convenient access by car, is strategically positioned to attract companies and generate economic activity that complements the residential and academic components established in earlier phases.



It is important to note that the Cercanías infrastructure will be developed separately by Adif as part of their own scope of work.

[illegible]

IMPACT



Distrito [Ab] Urban Regeneration Development is a significant redevelopment project in Madrid, aiming to address social inequality, sustainability, and economic development in the city's south, specifically in the districts of Arganzuela, Puente de Vallecas, and Usera. The area is to be redeveloped following the relocation of freight traffic from the historic Abroñigal terminal at the heart of Madrid, creating a unique opportunity to convert an isolated piece of brownfield land near the city center into a model of sustainable, high-quality, compact, mixed-use urban development, featuring affordable housing, green spaces, and tertiary uses to create jobs.

The Distrito [Ab] Regeneration project prioritizes sustainability and ESG standards, with the goal of emissions reduction and the integration of large-scale green infrastructure across the urban design. The development is seeking funding and investment from both the public and private sectors, while meeting key ESG standards and certification requirements, such as BREEAM Communities and ISO 37101, to ensure its long-term economic and social resilience.

The project is designed to incorporate tertiary uses, including a polytechnic university district, flexible co-working, and business incubators, to support the creation of new jobs and the attraction of entrepreneurs and innovators. The development's masterplan is also fully inclusive in terms of public spaces, offering a high-quality built environment with a mix of green spaces, low carbon mobility, and comprehensive facilities for housing, education, and culture.

Distrito [Ab] is also highly committed to stakeholder engagement, transparency, and participation from community organizations, a key factor in its long-term success. As an all-in-one urban regeneration plan, Distrito [Ab] is a once-in-a-generation development that promises to become a reference for sustainable and inclusive urban planning in Europe. It presents a unique opportunity for investors to be part of a project that will not only generate significant returns but also transform Madrid's urban fabric for years to come.

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Acknowledgement of Generative AI Use

In accordance with IE University's guidelines for Final Projects and use of Artificial Intelligence, we, Group 3 of Section 2 MRED, acknowledge the use of generative AI tools to support specific aspects of our research and development process. The following tools were used: ChatGPT, Claude (Anthropic), Midjourney, and Grammarly AI were utilized for the following purposes: research assistance; generating initial outlines and structuring our approach; proofreading and editing textual content for clarity and coherence; and generating images or graphs.

All AI-generated content has been critically reviewed, fact-checked against authoritative sources, and adapted to reflect our team's analysis and understanding of the Abroñigal site's specific context and requirements. The core design decisions, financial modeling, stakeholder engagement strategies, and critical analysis presented in this capstone project represent our original work and synthesis of knowledge acquired throughout the Master's in Real Estate Development program. Where AI tools were employed, the outputs served as a starting point for further development rather than final content, ensuring that all arguments and recommendations reflect our professional judgment and understanding of sustainable urban development principles.

Distrito [Ab] 3D Model of Masterplan via GoogleSites

