International trends in development of Innovation Entrepreneurship Infrastructures: Innovation Districts & Technology Parks. Prospects for Greece

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Visiting Prof of International Hellenic University of Innovation Entrepreneurship

The Role of STPs and Areas of Innovation

Areas of innovation, of which science, technology and research parks (STPs) are a highly specialized type, play a key role in the economic development of their environment. Through a dynamic and innovative mix of policies, programmes, quality space and facilities and high value-added services, they:

- stimulate and manage the flow of knowledge and technology between universities and companies
- facilitate the communication between companies, entrepreneurs and technicians
- provide environments that enhance a culture of innovation, creativity and quality
- focus on companies and research institutions as well as on people: the entrepreneurs and 'knowledge workers'
- facilitate the creation of new businesses via incubation and spin-off mechanisms, and accelerate the growth of small and medium size companies
- work in a global network that gathers many thousands of innovative companies and research institutions throughout the world, facilitating the internationalization of their resident companies

EUROCONSULTANTS SA

…one of the leading groups worldwide in designing, building and managing Science Parks fostering innovation, technology and entrepreneurship

Euroconsultants is an international consultancy group of Greek origin with presence in the broader SEE region and beyond

Euroconsultants presence (selected areas)

- Euroconsultants SA is an Athens Stock Exchange Technology and Development Advisory and Management Group, established in 1990 as a spin out of an Energy Research Unit
- Euroconsultants offers services in all stages of planning and management of Science and Technology Parks at an international level. It has designed and managed numerous structures enhancing Country Innovation Environments, Innovation Entrepreneurship infrastructures and other tangible and intangible Research and Development (R&D) projects.
- Euroconsultants has extensive know-how in establishing and operating Incubators and managing Venture Capital Funds at an international level. The company has developed and owns the first and most successful privately owned and operated technology incubator with 4000 sqm. Pre-incubation and Incubation buildings and a 3 m euro capital fund in Greece, Incubation for Growth - i4G, is shareholder of the Technopolis ICT Park and the Thessaloniki Science Park and has extensive experience in the management and execution of similar projects at an international level, in East Europe, the Gulf Region and Asia;
- Euroconsultants supports the development of knowledge based business Innovation Clusters in South- East Europe in domains such as IT, agro food, energy, health, etc. bringing in key regional and national stakeholders under a common vision, policy and action plan;
- Euroconsultants develops large international Innovation capacity building and training projects for Universities, Research entities and SMEs in the European Union, GCC and CIS countries, including Russia, Ukraine, Belarus, Azerbaijan, Armenia, Georgia, Moldova, etc. funded by European Framework Programmes for RTD (FP5, FP6, FP7, H2020) and supports International Science and Technology Cooperation and Dialogue;

EUROCONSULTANTS

Innovation Support Services

Delivery of viable and added-value innovation policies and structures

Indicative Projects

Science and Technology Park development

- Oxagon- NEOM, Saudi Arabia, Innovation Ecosystem Strategy Development and Tenant Attraction Support
- Dominican Republic Innovation District Strategy and Roadmap
- ThessINTEC- Business Plan and Support in the implementation of Thessaloniki's 4th generation Science and Technology Park
- Andorra Area of Innovation Strategy and Roadmap
- EIB- Business Plan for Măgurele Science Park in Bucharest, Romania
- TETAPOLIS Science and Technology Park in Cluj, Romania
- Sofia Tech Park, redefinition of Strategy and Focus
- Armenia Technology Parks, support in the development of portfolio of added- value services

Innovation Policy and Strategy development

- Strategy and Roadmap for the development of the Andorra Area of Innovation
- Supporting the development of the National Smart Specialisation Strategy of Greece, 2020
- Strategy for the development of Innovation Agency of Greece, 2021
- Strategy for the development of Greece New Industrial Strategy and Industrial Transition Strategy and Action Plan, 2022-2023
- Supporting the development of regional and national Innovation Clusters, 2019-2022

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Innovation Support Services

Delivery of viable and added-value innovation policies and structures

Focus on GCC countries

Strategy for the development of the **Oman** Science and Technology Park

Business Plan for the development of the Education City in **Bahrain**

INCONET-GCC 2
شبكة التعاون الدولية لعلوم التكنولوجيا (الاتحاد الأوروبي - دول مجلس التعاون الخليجي)
EU-GCC Science & Technology International Cooperation Network

INCONET GCC I & II: **EU and Gulf Countries** Science and Technology International Cooperation Network, 2010-17

Advisory services and new Strategy for the KOM (Knowledge Oasis Muscat) ICT Park of Muscat, **Oman**

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Innovation Support Services

Delivery of viable and added-value innovation policies and structures

Focus on GCC countries

Oxagon- NEOM, Saudi Arabia,

Innovation Ecosystem Strategy Development and Tenant Attraction Support

EUROCONSULTANTS

Innovation Support Services

Delivery of viable and added-value innovation policies and structures

Focus on GCC countries

Oxagon- NEOM, Saudi Arabia,

Innovation Ecosystem Strategy Development and Tenant Attraction Support

EUROCONSULTANTS

Science and Technology Parks and Areas of Innovation

Excellence in supporting innovation at a global level

Focus

THESSINTEC- Thessaloniki Innovation & Technology Center

Thessaloniki Innovation & Technology Center, a 4th generation Science and Technology Park, that will stimulate and host synergies amongst universities, R&D institutions, companies, the public sector, and local communities.

Waterfront location of a total area of 760,000 sqm.

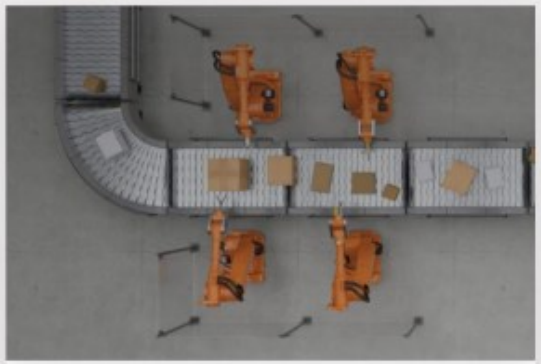
- ✓ **Understanding Current State**
- ✓ **Local Market Research**
- ✓ **Strategy Validation**
- ✓ **Operating Model**
- ✓ **Marketing Strategy, Communication Plan and Location analysis**
- ✓ **Technical studies and Preliminary Construction Cost Estimation**
- ✓ **Financial Plan**

https://www.thessintec.eu/

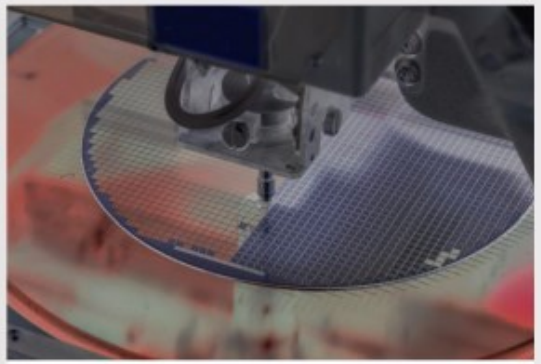
EUROCONSULTANTS

Science and Technology Parks and Areas of Innovation

THESSINTEC- Thessaloniki Innovation & Technology Center



Advanced Materials and Manufacturing Processes



Flexible Organic Nanotechnology Applications

Competence Center for Logistics & Business Challenges

Artificial Intelligence and Simulation Applications

Clean Energy Innovative Solutions

Future Mobility Applications

EUROCONSULTANTS

Advisor in the design and development of Science and Technology Parks

Excellence in supporting innovation at a global level

Focus

European Investment Bank- Business Plan for Măgurele Science Park

- ✓ Development of a comprehensive business plan
- ✓ Business model including the marketing strategy, competitive advantages of the MSP business proposition.
- ✓ Risk assessment and possible mitigating factors
- ✓ Key performance indicators and financial ratios
- ✓ Development of a financial model
- ✓ Profit and loss statement, balance sheet and the cash flow statement of the project
- ✓ Terms of reference for additional managerial advisory services

https://www.magurelesciencepark.ro/en/

Planning for the next generation of STP

USA ´60

W. Europe, Canada & Japan ‘80

Asia Pacif. ‘90

L. America ’95

W. Asia & Africa ´2000

Early Parks: Stand-Alone Physical Space

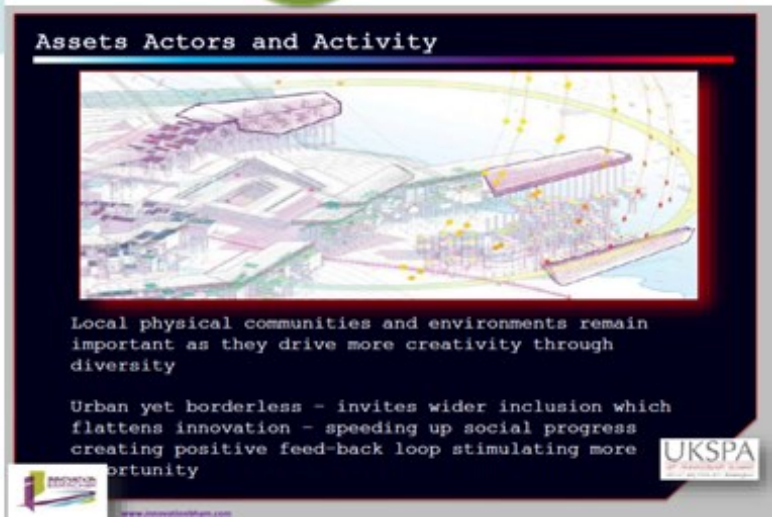
- Real estate operations
- Campus-like environment, selling single parcels of land
- Focus on industrial recruitment
- Few, if any, ties between tenants and university or federal laboratories
- Little provided in terms of business assistance or services

1990s: Connections

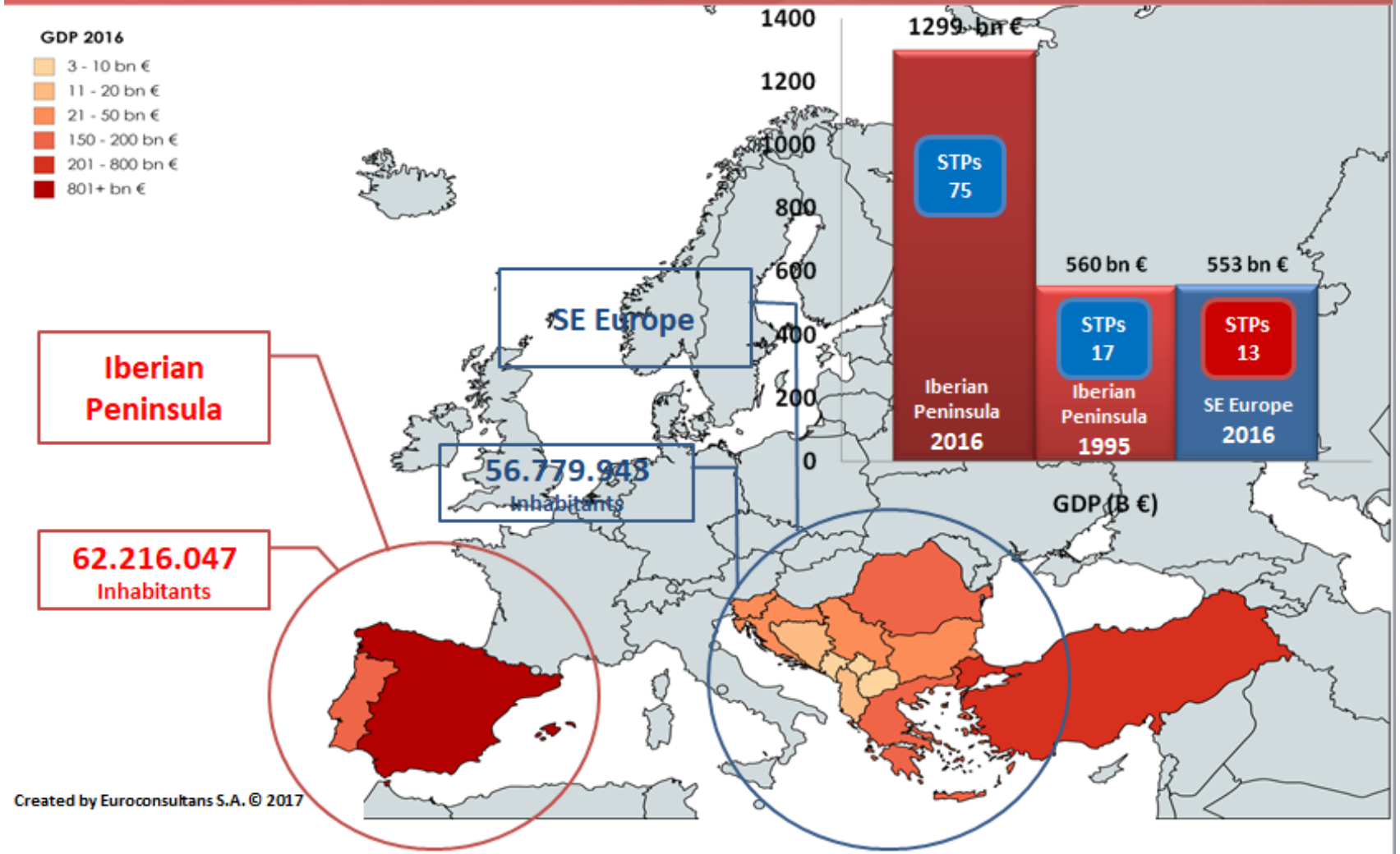
- Anchor with R&D facilities aligned with industry focus of park
- Innovation Centers and technology incubators more common
- Multitenant facilities constructed to accommodate smaller companies
- Some support for entrepreneurs and start-up companies provided directly

2000 and Beyond: Economic Driver for the Region

- More and more mixed-use development, including commercial and residential
- Increased focus and deeper service support to start-ups and entrepreneurs
- Less focus on recruitment
- Formal accelerator space and plans for technology commercialization roles emerge
- Greater interest on part of tenant firms in partnering with universities
- Universities more committed to partnering with research park tenants
- Amenities from day care to conference and recreational facilities added



SE Europe vs Iberian Peninsula



SE Europe - STPs

Science Park in Thessaloniki (90ies)

Science Park in Heraklion (90ies)

New Science and Technology Parks other SE Countries

"Areas of Innovation"

International Association of Science Parks and Areas of Innovation

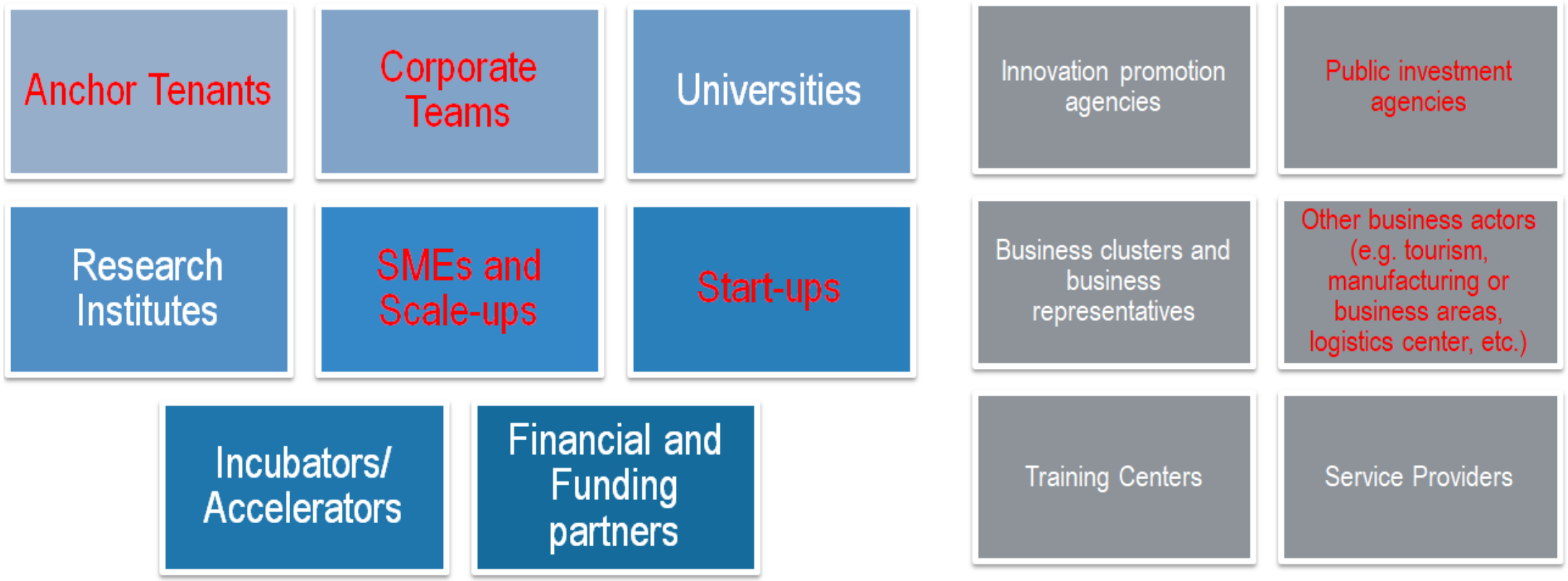
Definition by IASP

"Areas of innovation" are places designed and curated to attract entrepreneurial-minded people, skilled talent, knowledge-intensive businesses and investments, by developing and combining a set of infrastructural, institutional, scientific, technological, educational and social assets, together with value added services, thus enhancing sustainable economic development and prosperity with and for the community."

AOIs and STPs stimulate and manage the **flow of knowledge and technology between stakeholders**

Areas of Innovation

Types of Tenants At Innovation district Punta – Bergantin Dominician Republic

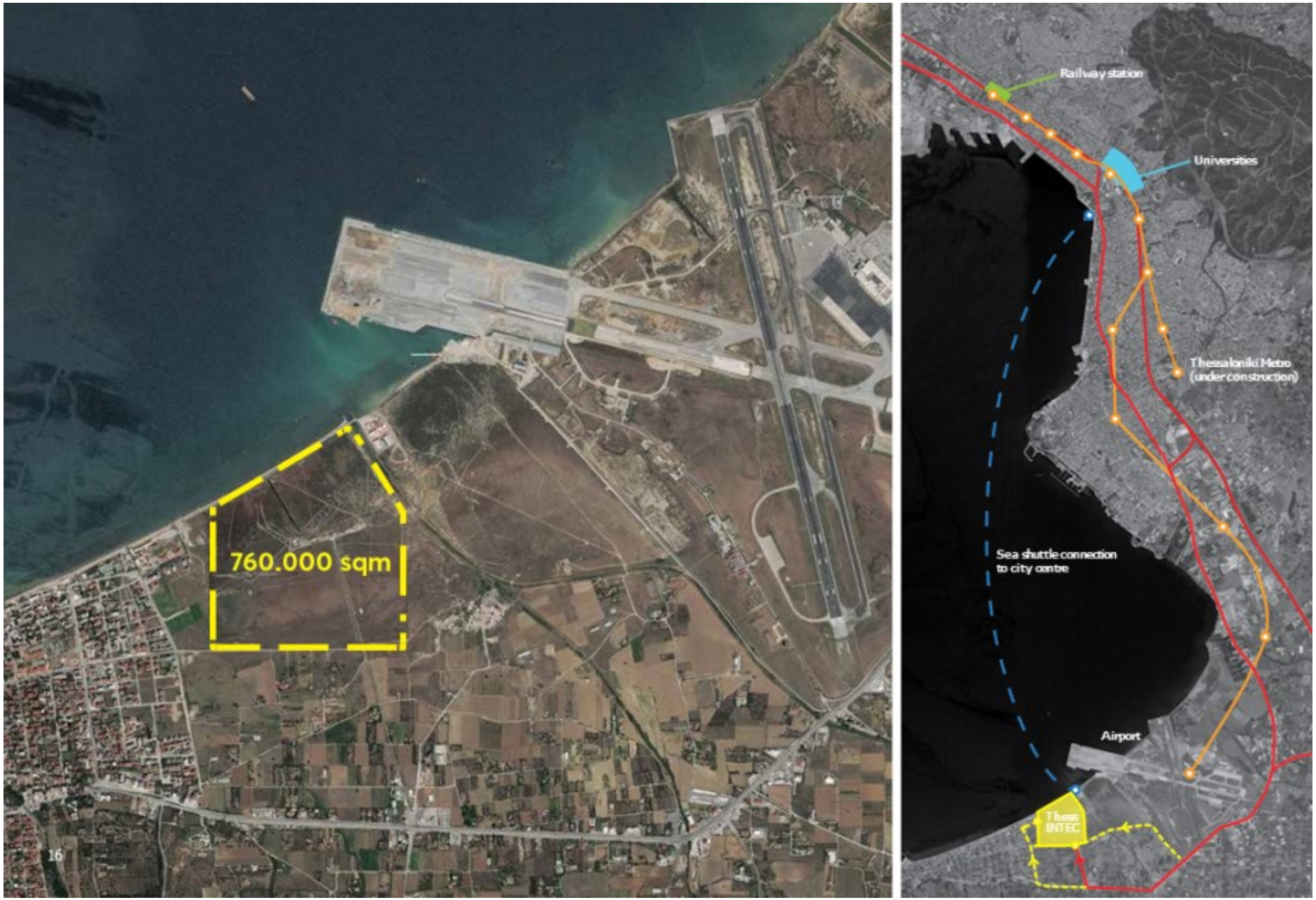


BUSINESS MODEL CASE STUDY: THESS INTEC

THESS INTEC

- It is a 4th generation STP and presents a perfect synergy of academia, research, high-tech industries, facilities and geopolitical location. Interest from international investors is already growing.

- It will be the first large-scale science and technology infrastructure in Greece.


760.000 sqm
16
Railway station
Universities
Thessaloniki Metro
(under construction)
Sea shuttle connection
to city centre
Airport
Thess
INTEC

MAIN SERVICES

Office/ Lab Spaces

Pre-incubation, incubation, equipment allocation, common workshops, meeting rooms, auditorium, sports, cafe, etc.

Consultancy services

Legal, R & D grands, administration support

Networking

with public and private sector, supporting access to European R & D funding

Synergy platforms

with Thess INTEC Mega projects, tenants and international partners

Identifying local HR

Offering business community access to internationally competitive R&D labs and vast pool of STEM and engineering graduates, as well as, tailor made training programs

Land space lease

for developing own technology infrastructure in accordance to Thess INTEC specifications

MISSION AND OBJECTIVES

- **Sustainable - Emerging Technologies**

for academia, hand in hand with internationally competitive businesses

- **Open / living labs**

within Thess INTEC physical space and Mega project clusters

- **Smart P.P. Partnerships**

and financial engineering for developing R & D infrastructures

- **Industry 4.0 EU initiatives**

for regional, national, and international businesses

- **Smart City - Research Demo Platforms**

for smart grid and autonomous vehicle technologies

- **Holistic environmental and minimal carbon footprint**

across all scales of intervention, from the use of materials to energy management and consumption

THESSINTEC LAND AND INFRASTRUCTURE DEVELOPMENT MODEL

State contributes nonurbanized land to Thessintec Non for profit PPP SA and supports by speeding up urbanization of land and licensing

Thessintec shareholders/ stakeholders finance all maturing studies, urbanization, Park licensing and engineering construction studies

↓

Value is increased tenfold by land use transformation , uses and construction maturity

↓

Phase I (10% of project) Development to be financed 50% by RRF- Recovery Fund, and 50% by a combination of Greek Foundations and CSR Company donations, and Development bank loans to be repaid by tenants already prebooked at design phase I (almost 100% prebooking).

↓

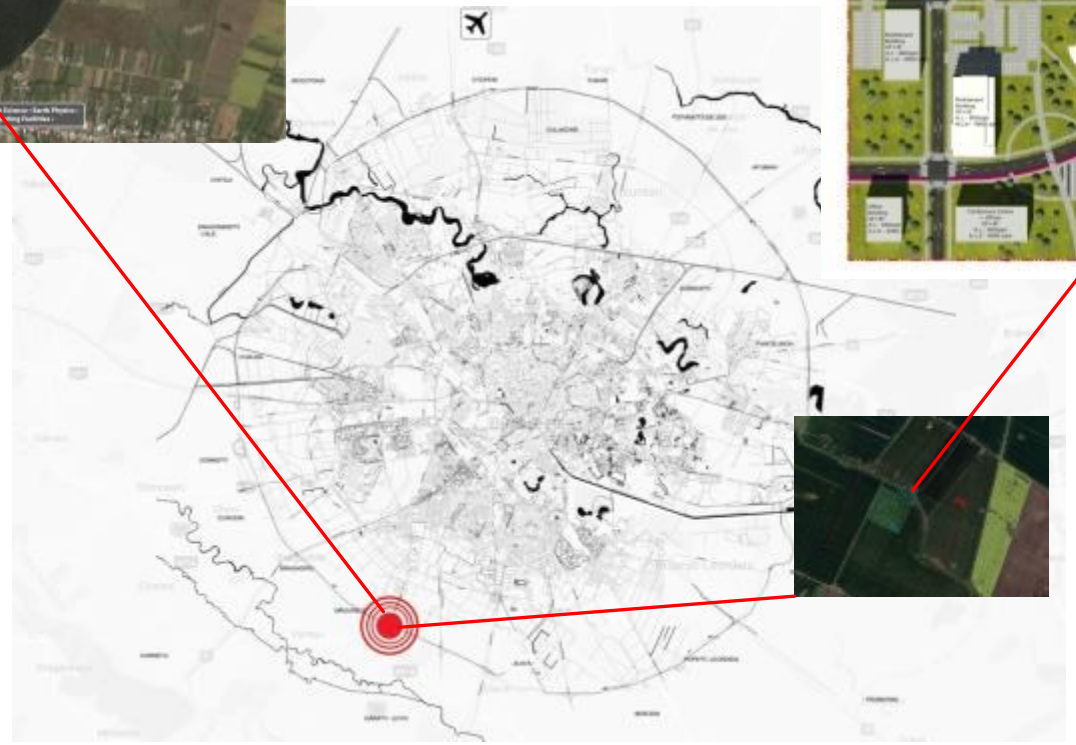
Phase II/III/IV (90%) Development is financed fully by private Sector (specialized International Innovation Infrastructure developers, Multinational's R&D Departments with their Developers, Public Sector Research/ Academic tenants), paying a land lease fee to Thessintec Company. Lease contacts are signed by Thessintec for up to 50 years.

↓

Excess income of Thessintec (after repaying loan of Phase I), is reinvested to the ecosystem in form of equipment for technology platforms, proof of concept, seed and pre VC mechanisms, open Innovation/ test bed activities, innovation entrepreneurship and start-up ecosystem support, Industrial PhD, etc.

→ Development returns to state Alexandria Innovation Zone of Thessaloniki in 99 years

MSTP LOCATION MAP



MSTP STRATEGY PRINCIPLES - COMPONENTS

Have a clarity of vision and value proposition both for stakeholders and all types of tenants, and develop a strong identity based on the above

Employ in its developments the principles of 4rth Generation STPs

Include as basic components:

- **Innovation, Incubation, proof of concept lab workshops , common amenities**
- **Science Museum for engaging youth in science innovation**
- **Multitenant tech SME buildings**
- **Allow space / field for future growth and be developed in phases**

Allow a balance among stakeholder's expectations / different type of tenant's expectation

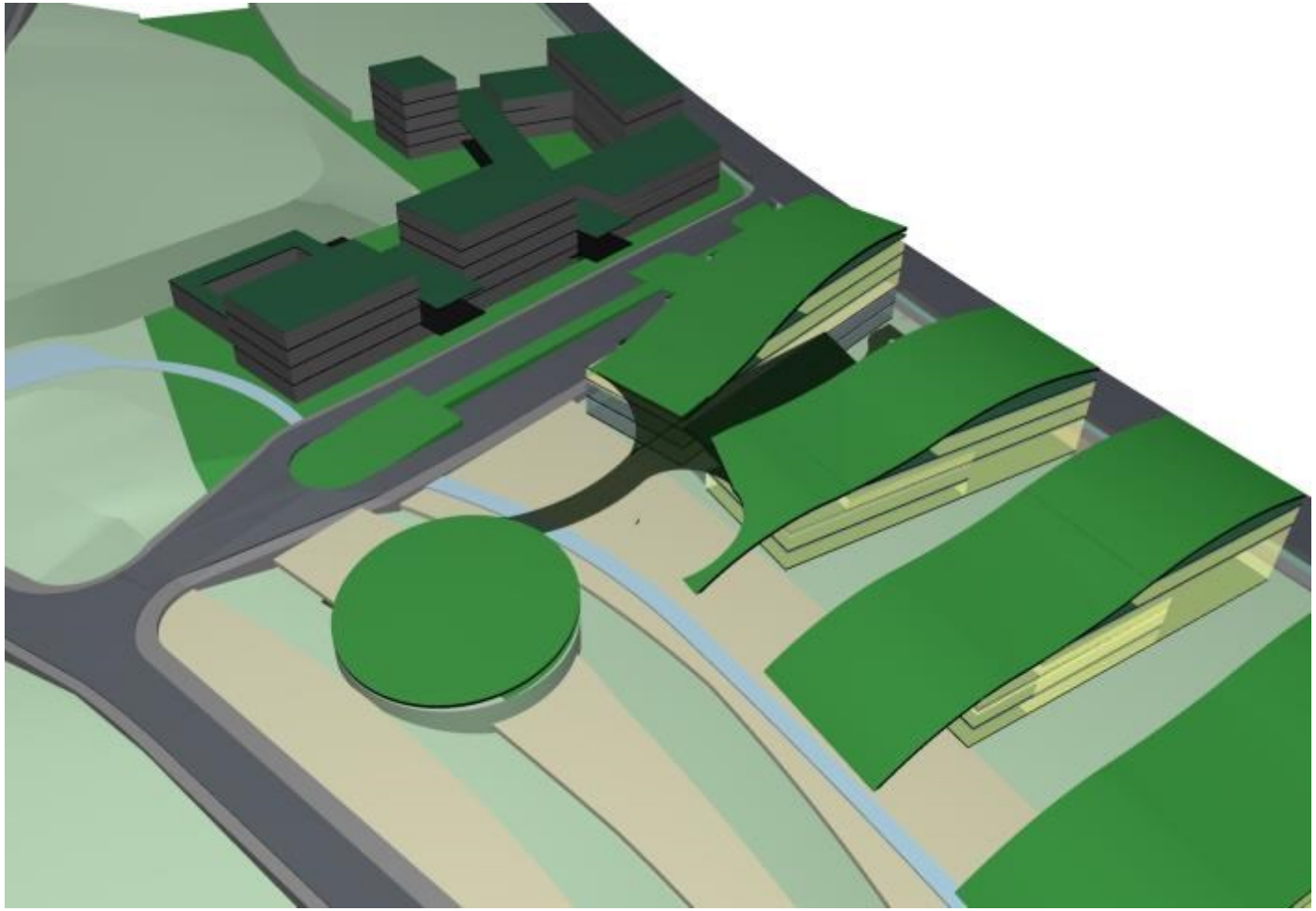
Have strong management teams Organization that will act as a single window both for stakeholders and tenants.

MSTP PHASE I – MASTER PLAN

Urban Indicators:

Land surface - 5 ha
POT - 22% *(11 020 sqm)*
CUT - 0.84 *(42 240 sqm)*

BUSINESS MODEL CASE STUDY: TETAPOLIS STP PARK / CLUJ – ROMANIA



MASTER PLAN

FUNDING

Total Budget Phase 1: €43.910.179,00 (incl. VAT)

For the purpose of the present Project Financial Analysis, the projected scenario regarding the financing is the following:

Debt (EIB Loan) / Structural Funds: 50% / 50%

Required EIB Loan: ~€20M on EIB terms including a grace period.

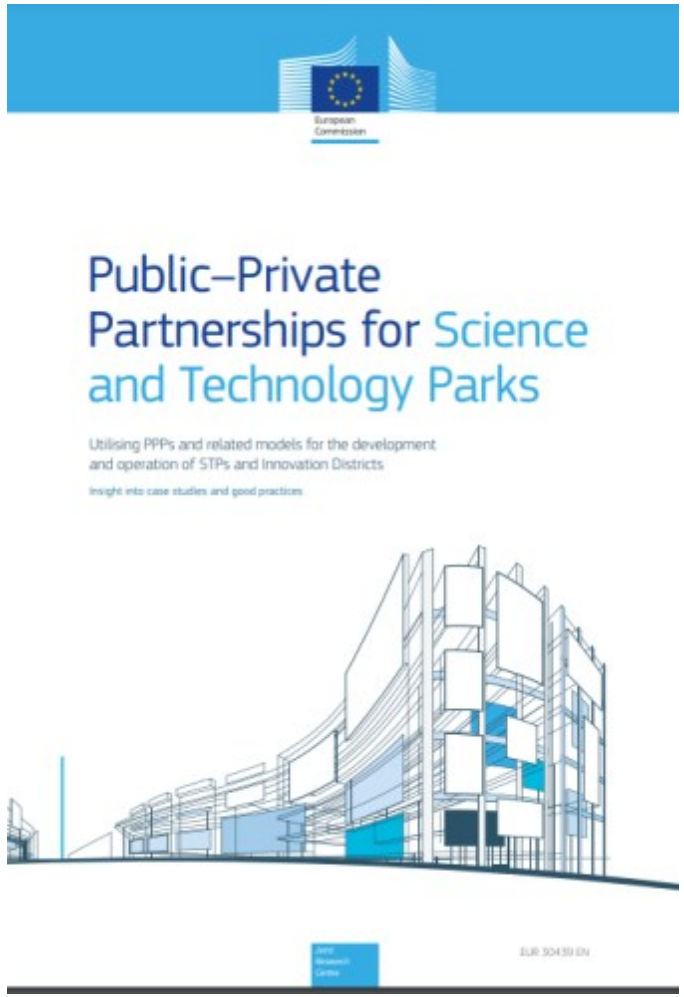
TETAROM will also contribute the required land – an independent valuation is ongoing.

LEADING INNOVATION AREA IN EUROPE 22@BARCELONA

IDEM, Vue vol d'oiseau, modifiée, Zone 22@, RP 2005.


TORRE AGBAR
ZONES VERDES
EDIFICI INTERFACE:
IMI, Indra & ACC
T-SYSTEMS I
BARCELONA DIGITAL
BARCELONA TV
VIVENDA PÚBLICA
EDIFICI MEDIA-TIC
INDRA
RNE
RBA
BARCELONA ACTIVA
EDIFICI IMAGINA
Mediapro, CIBM, Yahoo!, TCI,...
CENTRE DE PRODUCCIÓ
AUDIOVISUAL
FACULTAT DE COMUNICACIÓ
(UPF)
MUSEU D'ART
CONTEMPORANI
VILA CASAS

PPPs FOR STPs



Three broad models for public-private collaboration for the development of STPs and AOIs

MODEL 1: PPP	PPP often refers to projects with a strong collaboration between public and private and a significant risk sharing of the private partner. The definition as proposed by OECD: "long term contractual arrangements between the government and a private partner whereby the latter delivers and funds public services using a capital asset, sharing the associated risks".
MODEL 2: Jump–in Model or late stage private investement	The park or district is launched and owned by a public agent. At a certain point, private investors are given the opportunity to develop some elements of the park and exploit these. In most cases the private investors build offices and/or workshop space to rent it out to tenants.
MODEL 3: Management partnership	The park or district is promoted, launched and owned by the public sector but the owners outsource the management of the project to a private company, or invite the private sector to participate (with capital increase or other forms of contribution) in the management company of the STP, or take over the management entirely. The responsibilities, risks and profits of the parties are fixed by a negotiation between the public and the private partners.

REVENUE MODELS

	CAPEX	OPEX
1. PUBLIC FINANCED	No CAPEX retrieval	Payment of added value services and Management Company OPEX by rents, services to tenants, management on innovation programs
2. PUBLIC FINANCE + LOAN	Repayment of loan by revenue from rents + land building rights in next phases	Payment of added value services and Management Company OPEX by rents, services to tenants, management on innovation programs ***Note:*** *This could be viable above a certain size of an STP in order to allow repayment of CAPEX loan plus OPEX*
3. PPP on PUBLIC LAND EQUITY + LOAN	ROI and loan repayment by revenue from rents + land development	Payment of added value services and Management Company OPEX by rents, services to tenants, management on innovation programs ***Note:*** *This model is applicable in mature innovation ecosystems with a legacy and critical mass that can offer reduced risks to PPP investors*
4. SEVERAL STAGES OF DEVELOPMENT ABOUT COMBINING ALL MODELS	Repayment of loan or CAPEX takes place after successful PHASE 1 Fully financed by public sector/ or partially financed	Payment of added value services and Management Company OPEX by rents, services to tenants, management on innovation programs ***Note:*** *This model tends to prevail today in new STPs development*

What about Athens?

The only EU capital without STP and / or Innovation District

STP & Innovation District

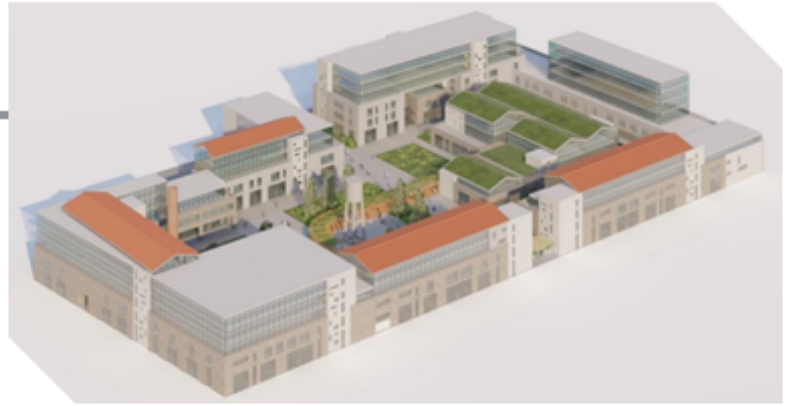
CHROPEI

Hellinicon Business Area

B. Property of XROPEI

Property Specs

- Located in an area of about 18 acres, with 17 building complexes
- Maximum permissible construction of approximately 46,000 sq.m.
- Permitted coverage of approximately 10,000 sq.m.
- 63% or about 24,400 sq.m. is intended for office and communal spaces
- 425 sq.m. for laboratories
- 1,394 sq.m. for conference center
- 1,298 sq.m. for library



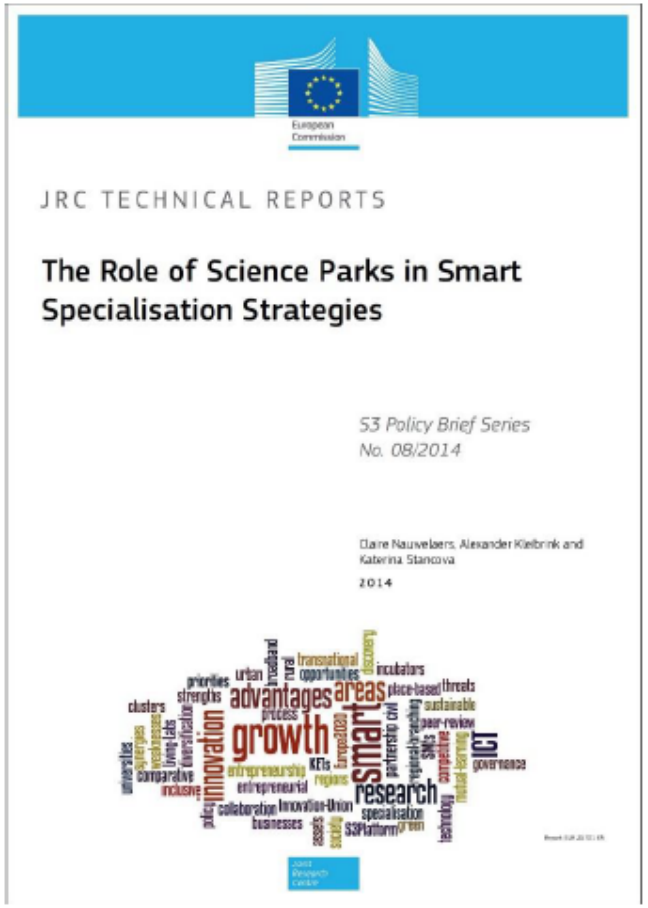
SPACE DISTRIBUTION	SPACE	SPACE NET SURFACE	%
	CULTURAL VENUE	1,554.76	4.06
	OFFICE AND COMMUNAL SPACES	24,400.71	63.70
	LOBBY	1,278.83	3.34
	BOOTHS	123.70	0.32
	LIBRARY	1,298.91	3.39
	TRAINING ROOMS	2,001.16	5.22
	PATIOS	1,031.71	2.69
	GYM	1,152.49	3.01
	LABORATORIES	425.09	1.11
	CONFERENCE CENTRE	1,394.31	3.64
	ADMINISTRATION	800.19	2.09
	DINING AREAS	2,842.69	7.42
	TOTAL	**38,304.55**	**100.00**

DISTRIBUTION OF SPACE MUST BE **REVISITED** – DURING NEGOTIATION PHASE

Master Plan (Years 0-25)
Total Project Investment €8bn

Potential Site of an Innovation District

Contribution to EC's Joint Research Centre Policy development



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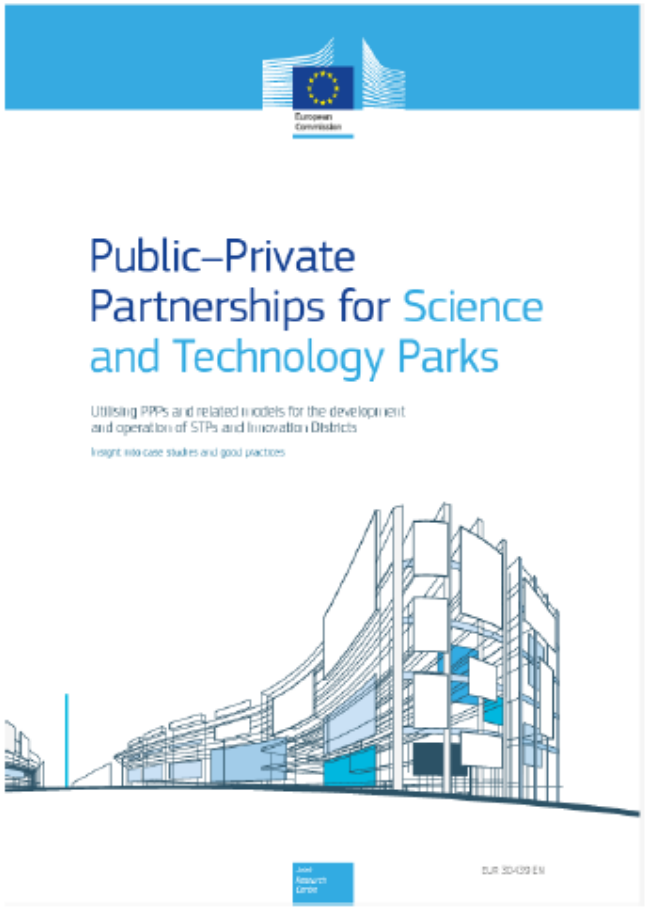
JRC
EUROPEAN COMMISSION



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THANK YOU

25 – 26 OCTOBER 2023