Esch-Belval, Luxemburg

BACKGROUND INFORMATION	
PROJECT TITLE	**Esch-Belval: conversion of a derelict iron and steel manufacturing area: creation of a business incubator in Belval** *Opération de reconversion des sites sidérurgiques d'Esch-Belval: Incubateur d'entreprises de Belval* Case study title : Blast off for new businesses
Beneficiary	The Fonds Belval is a public body and the contracting authority for the construction of all state facilities in the flagship Science Research and Innovation Park *(Cité des Sciences, de la Recherche et de l'innovation)* to which the incubator belongs.
Duration of project	October 2009 - December 2011 (end of construction): 26 months
Member State	Luxembourg; Southern Terres Rouges ("Red Lands") region; The Belval site is located 25 km south of Luxemburg City, close to the French border; Municipalities of Esch-sur-Alzette and Sanem
Geographic size	The incubator will supply 4 240 m² of office space and workshops for business start-ups. It is part of the new 27.34-hectare Science Park and national University, in Belval, a new urban district under construction in Esch-sur-Alzette (30 000 inhabitants), within the broader conversion operation of the derelict iron and steel area. The area is part of the cross-border European Development Pole and of the Greater Region (*Grande Région*), the "home market" of firms from 4 EU Member States, with 11.2 million inhabitants.
Funding	Total budget: €6m ERDF funding: €4.5m (25%) Fonds Belval: 75%
Operational Programme	OP Luxemburg The project has been selected under the National OP's **Measure 1** dealing with "Improvement of basic infrastructures in order to foster economic growth and promote new economic activities" of **Axis 1** defined as **"**contribution to make Luxembourg a more attractive place for foreign investment and employment". **CCI no.:** 2007LU162PO001
Managing Authority	The Luxembourg Managing Authority operates at national level, within the Directorate for Regional Policy of the Ministry of Economy and Foreign Trade
Cohesion Policy Objective:	Regional competitiveness and employment
Theme	Europe 2020 sustainable growth – important component of a large scale brownfield redevelopment programme where the project itself can also make a significant contribution to smart growth.
Main reason for Highlighting this case	The termination of steel production in the south of Luxembourg in 1997 led ultimately to abandonment of a huge industrial area covering some 640ha (stretching across 10 individual sites, 500ha in Luxembourg and 140ha in France). The scale, structural complexity of the site, pollution issues and cross-border dimension required a comprehensive but multi-faceted approach to redevelopment. It was recognised that in order to achieve a viable new functional pattern, regeneration would need to address economic, social, environmental and cultural aspects. Many diverse projects would need to combine in these fields within a coordinated and sustainable concept. In this context ERDF funding was sought to support one economic impulse in this massive intervention, to establish a business incubator in a former blast furnace. The project represents one component in this global, sustainable initiative guided by a master planning framework but is equally emblematic of a smart growth approach. It focuses on the creation of high-tech start-ups whose products or services will spin

	off from research and innovation centres of the nearby Science Park within what is the largest current EU industrial conversion operation of Esch-Belval.
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Keywords/Tags	Business incubator, science park, technological innovation, industrial conversion.

1. PROJECT DESCRIPTION	
Overall objective / goals	The objectives of the project should be seen within the context of a global initiative to redevelop the whole industrial brownfield area where the following considerations were the prime foundations of the approach: - To tackle the totality of the abandoned industrial areas and their territorial extension (cross-border); - To integrate all possible land-uses (economic activities, public and private services, housing, leisure, culture and conservation initiatives; - To adopt a multi-partner, multi-level participation (i.e. State, Municipality, land-owners); - To accommodate governmental decentralisation; - To cooperate with and contribute to other relevant, targeted and long term policy initiatives (i.e. Regional Plan South) and in the short term to support intervention in the designated 4 priority sites (Belval Ouest - West, Ehlerange, Terre-Rouge and Rodange). For the site Belval Ouest these principles were translated into a master plan (2002) for the development of a Cité des Sciences (Science Park) in conjunction with districts locating educational institutions, housing neighbourhoods, music centre and a site to accommodate the National Archive office – all set within a green framework of public open space. A key building block of the economic component of site development is the establishment of the business incubator in a former office and locker room building, part of the blast furnace complex of the steel works The objectives of this ERDF part of the global project are: - to support the creation and foster the development of innovative high-tech start-ups, as new sources of growth and jobs and to strengthen the economic fabric of the region; - to give an additional boost to start-ups and to entrepreneurship especially within the research and engineering communities of the Science Park; - to promote R&D activities and increase technological transfers from the main national Public Research Centres (CRP) located in the Science Park and from private research centres expected to locate within or near this Park; - to encourage spin-off from existing firms and development units of foreign

	multinationals expected to be attracted to Belval; - to bring together scientific research and the business sector in order to facilitate and promote the transfer of public sector knowledge to the private sector.
Description of activities	The main government objective is to build a university/research complex creating innovation centres, not within a recognised Campus structure but rather at the core of a new mixed-use urban district. The scale of site conversion is clearly a strong determinant factor in the planning of the former industrial districts in terms of functional zoning, while there has been a conscious decision to preserve certain buildings of industrial heritage value to keep the memory of an industrial past and maintain its specific identity in a future and sustainable development model. As part of this the incubator is introduced to support starters and SMEs who primarily wish to locate on site and take advantage of proximity and connection with the research base - or market opportunities related to serving this new urban area, it's businesses and population. It also represents one of the principal opportunities to re-use a former iconic structure to house a completely new and essential function. When the project is operational (April 2012), it will offer to start-ups 4 400 m² devoted to: - space (offices, meeting rooms and attached premises) for managing the incubator itself; - the private rental of fully equipped offices or workshops suitable for use with functional independence, made available to business creators for development of their business idea, feasibility study, prototype development or market study; - collective space for industrial and commercial use, as well as support services with logistical and technological infrastructures, which will be used by new entrepreneurs. In addition to physical premises, the incubator will provide "soft" support such as business counselling advices and networking, including: - basic business services (secretariat, communication, safety, meeting rooms, teleconferencing, etc.); - technical and organisational services from experts, advisers, researchers, venture capital networks, business networks and clusters, the public innovation agency and other incubators, including training, protection of intellectual property and location of companies.
Recipients	Engineers and researchers working in the research centres in the nearby Science Park and other research centres expected to locate in the future or in existing firms, especially multinational firms which want to develop new products or services from spin-offs. During the first operational phase, close links with the CRP Henri Tudor, to be located in the nearby Innovation House, and with the existing Technoport incubator, lead to a certain priority being given to projects in ICT and new materials developed by engineers or researchers from this centre and from the existing incubator.
Mainstreaming of gender equality and non discrimination	No references are made to gender equality or to non-discrimination but one indicator – the number of jobs to be created – asks for men and women to be distinguished.
Intended outputs and results	The specific intended outputs and results of the ERDF funded project are the following: - attract, host and support innovative start-ups from labs or by spin-off from companies, during the "business planning and feasibility study stage" (3 to 6 months rent-free) and during the product development and consolidation stages (3 to 5 years with a lease); - support the creation of 6 to 8 new businesses per year, with a potential of 15 to 20 highly qualified jobs created annually and with a total capacity of about 30 start-ups and about 120 people.
2. POLITICAL AND STRATEGIC CONTEXT	

National and regional framework for implementing ERDF funded urban development projects	This high-tech business incubator project has been developed within two distinct frameworks: **i) At the national level:** within the government's higher education, research and innovation policy of consolidation of Luxembourg's innovation system: - In 2003 the government decided to create a national university, to be located in Belval; - Public research was boosted by the creation of the National Research Fund, the rapid increase in public spending on R&D and personnel and by the expansion of three existing Public Research Centres (CRP); - the Ministry of Economy (Department of Research and Innovation) and the national agency for innovation, Luxinnovation, have encouraged companies to increase their innovation efforts in close cooperation with activities to promote entrepreneurship, enterprise creation and clusters. The two first public business incubators (Technoport and Ecostart) were created in this context. II) **At the regional level:** the Belval Science Park will host and bring together the expanding national university. It now has 5,000 students including interdisciplinary research teams and units within its Science Faculties and the major CRPs, such as Gabriel Lippman (190 researchers), Henri Tudor (340 researchers from 30 countries), the International Network for Studies in Technology, Environment Alternatives and Development (INSTEAD; 40 international researchers) and a new Innovative Pole including the planned construction of a third incubator. According to the Ministry of the Economy's Department of Innovation which is the promoter of innovation policy and of this project, start-ups nurtured within incubators will diversify the regional economic basis, foster the endogenous development of new economic activities within clusters of firms, create highly skilled jobs with a high learning content, improve the technological and innovative capacities of firms and promote applied research.
The planning context	A three-level planning context can be identified for this incubator: 1. The restructuring of the major urban project of the **Belval wasteland** carried out in 2001 by the public development agency AGORA, which organised a land planning competition. The selected master plan defined four districts: the first contains a mix of housing, services, retail, culture, restaurants and hotels; the second is a park with leisure and recreation areas; the third is a residential district with various types of housing; and the fourth, in the former raw cast iron production unit, is devoted to training and research and is where the Science Park is located. 2. The **Science Park** is a major €1 billion public investment, including the completion of 25 buildings to be built between 2005 and 2020. According to the plan which won the architectural competition, it is organised around five thematic poles: a teaching pole (university undergraduate level), a social and cultural pole, a human sciences pole, a natural sciences pole and an innovation pole. 3. The **Innovation Pole** is made up of three buildings: (1) a €6.8m Research Centre for Systems Biomedicine of 3 300 m² has laboratory capacity for 100 researchers; (2) the €26.5m House of Innovation has 13 700 m² of offices and a capacity for 500 people involved in theoretical research (the R&D activities of the CRP Henri Tudor on ICT and materials analysis will locate here); (3) the closely linked **business incubator.**

3. IMPLEMENTATION	
3.1. PROJECT DESIGN AND PLANNING	The idea for this incubator arose 10 years ago within the Ministry of Economy and Foreign Trade and within the Henri Tudor Research Centre, as a way to consolidate and expand the innovation system and to promote business R&D and technological innovation. The government's plan for the Belval Science Park, which was to become the site of the national university and the main Public Research Centres, led to the decision to locate this incubator within the Science Park and near these centres.
	A feasibility study was commissioned by the Ministry of Economy in 2002. It helped to define the terms of reference for the architectural competition organised by the Fonds Belval in 2003 and within the framework of the Masterplan. Nine out of 54 competitors were selected and the 1st prize was awarded by an 11-member jury of 6 architects and 5 representatives from the Fonds Belval, AGORA and the Ministry of Economy. The project was selected in December 2003 but postponed because priority was given to other projects and to buildings related to the prior relocation of the university faculties and research centres. The decision to build the incubator was taken on 21st January 2006 by the Parliament, on the basis of the feasibility study and architect's plan, passed a three-article law which: authorises the renovation of a building close to the blast furnace and its conversion into an incubator; defines a cost ceiling of €12 990 000, and; asks the Fonds Belval to act as the contracting authority (*maître d'ouvrage*). It was decided to locate the incubator in a restored building (the former office and locker room of the steel mill) listed as a national monument in order to preserve this industrial heritage. The project was selected by the ERDF committee in October 2009. Construction started in 2010 and was completed in December 2011. the official opening and operational start will take place in April 2012. The decision to create a high-tech business indicator is completely in line with the 'Science City' ambitions of the site which today is a recognised formula within the triple-helix concept. Therefore the incubator itself is not necessarily innovative in terms of developments across Europe, but provides an innovative response for this particular site within the global development ambition and as an entity within a very mixed-use development scenario. The master planning approach means that in an interim period, buildings and land-uses are being developed in juxtaposition. The key initial goal is to get diversity of functions operating on-site in the short term while true integration of land use and interactive relationship between community and business education will be a longer term result. It is interesting to compare the example of the new town of Louvain-la-Neuve in Belgium conceived as a University town with spin-offs in the early 70s. It is only in the 21st century that we could really (begin to) describe it as a mature urban community representing a normal cross-section of civic society in its broadest sense.
	The MAs Selection Committee is composed of 9 representatives from different ministries: four from the Ministry of Economy, two from the Ministry for Sustainable Development, Infrastructures and Environment and one from each of the following three other ministries: Equality of Opportunities, Interior and Culture, Higher Education and Research. According to the representative of the Ministry of Economy who is in charge of monitoring the project and is a member of the Fonds Belval's Board of Directors, the application was "submitted" by the

	Fonds Belval to the Selection Committee together with the feasibility study, the detailed architect's plan and the parliamentary law. So it is not quite appropriate to say that the project was subject to a "selection process" by a committee of representatives from ministries, as the Fonds Belval is a public body committed to implement the project by a government and parliamentary decision.
	Two types of risks have been mentioned, related to the innovative character of the building and the future functioning of the incubator: - on the construction of the incubator building, risks of delays and overspends have been mentioned as consequences of the decision to construct the incubator within a building listed as a national monument to be renovated, close to the preserved blast furnace which is also. This listing with obligations in respect of restoration is coupled to ongoing discussion on the conservation or dismantling of the so-called 'highway' (a roadway 7-8 m above factory level serving the casting hall of the blast furnaces). These risks were the consequence of the decision taken in 2000 by the Ministry of Culture, Higher Education and Research to preserve and upgrade this industrial monument, as part of the National Centre for Industrial Culture and as a central hub of the Science Park, not only spatially, but on a conceptual, cultural and semantic level. However finding a just solution to this conditionality also represents an asset for the project, providing the incubator with a special location, an attractive workspace and unique visibility and therefore promotional advantage. This contradiction between regulation of intervention in a heritage context and innovative response to accommodate new functions is a well known phenomenon which makes the development process more complex and sometimes longer and more costly. When managed correctly the risk is often more perceived than real in terms of the final result. - on the functioning of the incubator, the feasibility study pointed out the risk of not reaching a critical mass of development ideas within a modest and recently-founded university and within public research centres where researchers may have a weak propensity to become entrepreneurs. No published responses have been made on how to deal with these risks, but priority has been given to create the 'platform' and rather adapt accordingly should targets not be achieved in the manner expected.
	The definition of the "energetic concept" was mentioned in the terms of reference of the architectural competition for all Science Park buildings. This was true for the incubator building and the winning architect emphasises energy efficiency aspects in the plans. In terms of future activities, economic sustainability was confirmed by the feasibility study, which pointed out a real and growing demand for R&D valorisation and commercialisation and making assumptions as to the attraction of foreign private research units and innovative companies to the Belval site. This also provided a certain assurance in respect of the risks mentioned in the previous section. Result exploitation was not mentioned in a project presented as a public initiative and investment. No reference was made to transferability.
	According to the representative of the Fonds Belval and to the project officer from the Ministry of Economy, the project would have been implemented without ERDF funding but the size of the incubator would have been reduced.
	The project is only co-funded by ERDF.
3.2. MANAGEMENT,	The project is managed by the Fonds Belval as a public contractor.

MONITORING AND EVALUATION SYSTEM	The Fonds Belval was created by law in 2002 to oversee the Esch-Belval conversion operation. It is managed by a Board of Directors of 13 members, all representatives of different ministries, plus two consultative members from the two municipalities of Esch-sur-Alzette and Sanem, where the Science Park is located. Its main tasks are the following: - drawing up detailed construction programmes and feasibility studies; - setting terms of reference for studies; - organising an architectural competition; - supervising and leading studies and the completion of projects; - financial management and accounting. Unlike contracting authorities in the private sector, the Fonds Belval is required to submit a draft bill to Parliament which authorises each construction project. It funds these buildings with government subsidies or loans from banks. It becomes the owner and maintains them until the state, a ministry or a public institution takes them over. The incubator building was constructed according to the national public procurement rules under a single prime contract (*contrat de maîtrise d'oeuvre unique*). Following a tendering process and competition, organised by the Fonds Belval acting as contracting authority (*maître d'ouvrage*), the jury selected a general contractor (*maître d'oeuvre*). This contractor is a consortium of building companies (*groupement de maîtres d'oeuvre*) led by a project manager (an architect) and by civil and technical engineers. The Fonds Belval with a staff team of three professionals, led by an in-house architect with two engineers, supervises the process, including the evaluation of technical documents, timetables and plans and by making weekly site visits. This Fonds Belval team works with a consultative and "informal" monitoring group of partners involving such representatives as the Ministry of Economy (who is a member of Fonds Belval's Board of Directors), the CRP Henri Tudor (the main research centre concerned) and the municipality. This group monitored the public procurement and construction work, visited the construction site, discussed problems and delays; and is involved in the acceptance of work delivery.
	The three-member team supervised the incubator construction over the two years but not always on a full-time basis. No estimate of people/months is available.
	An average of 6 to 8 people were involved in the consultative committee. Meetings – mostly construction site visits – took place every 3 or 4 weeks and on request. *(Responses to these questions were extremely imprecise).*
	Every ERDF project is subject to a monitoring process by a (national) Monitoring Committee (*Comité de suivi*) with the following functions: to suggest required project adjustments, to define selection criteria, to review achievement of objectives, to approve progress reports and read evaluation reports. It comprises six representatives from ministries, one from the national association of municipalities, one from each chamber (craft, commerce, employees) and from the Economic and Social Council - plus a representative from the European Commission with a consultative voice. The project was selected on the basis of outcome indicators (4 400 m² and 6-8 new firms created annually) and of an impact indicator (15 to 20 new jobs every year).

	Ongoing monitoring was done by the Fonds Belval management team in consultation with the monitoring committee. An annual feedback report called a “questionnaire report” was submitted to the Managing Authority. The audit authority made a check in mid-2011; no problems were detected.
	The beneficiary had prepared a mid-term and a final evaluation report, but the final evaluation report was not yet available at the time of field work. The management structure seems to have operated in quite a flexible way to react to any unexpected obstacles. The Fonds Belval has a highly qualified staff of architects and engineers and most technical problems have been solved by dialogue between the contracting and management teams.
	The project was co-funded by ERDF only.
3.3 GOVERNANCE: PARTNERSHIP, PARTICIPATION AND EMPOWERMENT	As it is a government project, defined as a public investment, decided by Parliament and managed by a public body acting as the contracting authority, using instruments such as public procurement contracts and tendering procedures, without any private stakeholders (except the general contractor and its subsidiary building firms), the governance is not based on a formal partnership. It could be defined as far as monitoring is concerned as an informal public partnership or a cooperation between several public administrations and agencies, in charge of the implementation of a government and parliamentary decision.
	As a principal partner in the future incubator, the CPR Henri Tudor was involved and consulted in the construction of the building. How future entrepreneur users might be involved has not yet been defined.
	The city also plays a consultative role. According to its representative, the city has no financial capacity to act as a co-funder. As a consultative member of the board of the Fonds Belval, the city representative and the city architect are invited to monitor the construction work on each building. The city is indirectly involved because major local leaders are members of parliament and of its committees, which have discussed the law authorising the project. The city warmly welcomes and strongly supports the location of the university, the Science Park and the incubator. Its main concern and role is to provide accommodation for the new population of students and researchers. The new Belval area is an important extension of the city. By 2015 this new district will host 7 000 inhabitants, and economic activities are expected to attract from 20 000 to 25 000 commuters daily from southern Luxemburg and from the French and Belgian border areas.
	The construction process is led by the Fonds Belval, a small team of professionals and by its project manager. But the project promoters are officials in the Department of Innovation of the Ministry of Economy.
4. INNOVATIVE ELEMENTS AND NOVEL APPROACHES	
4.1 INNOVATION	In terms of project design, the incubator is located in a former blast furnace office and cloak rooms and the high quality of the design, based on an architectural competition, is respectful of this industrial heritage. The competition winner suggested creating a “building within a building” enabling the external appearance of the existing building to be retained with a second functional layer being built inside it. In terms of implementation, the process is not highly innovative but designed to

	ensure maximum respect of the heritage value and preserve a certain industrial identity so that local people continue to connect with the area, but now in a different relationship. The Science Park within which the project is designed and implemented – and to a larger extent, the whole Belval conversion operation – are impressive and innovative in many ways: integration of a university and research community within a new city district; mix of urban functions (housing, work, leisure, learning and culture etc.); conservation of the industrial heritage in a modern learning city; urban project based on sustainable development and civic engagement; quality of life induced by architectural and urban planning; energy efficiency; and – for the Luxembourg innovation system – greater integration of teaching, research, innovation and knowledge-based economic activities.
4.2. KEY IMPLEMENTATION CHALLENGES AND PROBLEM-SOLVING PRACTICES	While the vision is innovative – at least in Luxembourg – the implementation does not embody a revolutionary new approach.
	The design, planning and management of the project follow common public practices used in the country: feasibility study, architectural competition, selection of the best project, authorisation by law, implementation via public procurement and supervision by a public contracting authority.
	No new approach to communication and dissemination has been identified. The only glossy report published is the presentation of the nine selected architectural projects by the jury in the *Cahiers* collection of the Fonds Belval. The incubator was the subject of several articles in the *Fonds Belval* Magazine and in the national and local press. The Science Park as a whole benefits from a broad communication campaign, and the Belval operation attracts a lot of interest and many visits from all over Europe, but references to the incubator are quite limited as one minor project within this impressive and vast operation.
	The exploitation of results and mainstreaming will be relevant when the incubator becomes operational and can claim results in terms of high-tech enterprises created.
	Challenges experienced during the project implementation, i.e. the construction, were related to the constraints created by the conversion of a building listed as national monument, by the proximity of the "highway" which was finally dismantled in 2011, and by a legal challenge to a tendering process. All these problems have created delays and overspends.
4.3. THEMATIC FOCUS	**Europe 2020 smart growth:** The specific project is emblematic of a smart growth approach but is part of a much wider targeting of primarily sustainable but also inclusive growth. It focuses on the creation of high-tech start-ups whose products or services are expected to spin off from research and innovation centres in the nearby Science Park, within which the incubator is located and to which it belongs. The project is also part of the conversion of the derelict Belval steelworks, successively operated by Arbed, Arcelor and ArcelorMittal, the first brownfield site to be rehabilitated and currently the largest conversion operation in the EU in the years 2000-2020.
	Europe 2020 sustainable growth: Links with this theme are obvious. In addition to its strong links with the cultural heritage of the region, "the construction of new or restored buildings provided a unique opportunity to ensure that the concepts of energy efficiency and sustainable development are integrated into the design of the Science

	Park and each of its 25 buildings". The University and the Science Park designed a strategic action plan for reducing CO_2 emissions, energy and water use, inspired by the Climate Action Plan adopted by Cornell University. The actions recommended in the plan will help the University and Science Park to improve the energy efficiency of its facilities, reducing operating expenses and realising savings. A Sustainable Development Unit has been set up whose aim is to foster learning, research and action to address complex environmental challenges. One overarching strategic goal is to foster the application in practice of research and teaching centred on environmental issues.
5. FUNDING	
	The ERDF funded 25% of the total project cost, a maximum according to the OP. No additional funding came from ESF. Total co-funding of this non-revenue project came from the Fonds Belval with equity funds and from a long-term loan from a bank on the basis of a public call for applications (*appel public à candidatures*). As an entirely public investment, the leverage of funding from the private sector was not considered. It is clear that the project, as a contribution to the successful exploitation of the Science Park, is designed as a public sector impulse (capital output softened by the utilisation of loan opportunity). This represents a leverage to bring in more private sector, high-tech business activity based on an expected turnover from incubator starter to established business location, in turn leaving space for new starter. The hard return on investment is therefore not immediately to be found within the activity pattern of the building itself but drawn back indirectly from the enterprise created as a result. In a new development area of this scale, with certain risk perceptions in an initial phase for SMEs this level of leverage in relation to complementarity would seem to be justifiable but remains difficult to evaluate at this point in time.
6. PROJECT ASSESSMENT	
6.1. FINANCIAL SUSTAINABILITY	No precise written regulation on the management and funding of the operational project has yet been defined. According to a Ministry of Economy official in charge of research and innovation projects, the incubator, which is owned by the Fonds Belval, might be jointly managed with the existing Technoport incubator located in Esch and a new legal entity established with the CRP Henri Tudor. Its property (with transfer of loans) being transferred to the Ministry of Higher Education and Research.
	Some early expenses such as the feasibility study and the organisation of the architectural competition were funded in a previous phase by the Ministry of Economy and by the Fonds Belval. The entire construction was funded during the present programming phase. The public funding of the future operational entity has not yet been defined.
	The project did not start as an EU-funded pilot action or action plan.
	Transferability of a project such as a building is quite limited because most innovative elements are specific to the site and its environment. A few of those of the current project can be applied or are already in place elsewhere, such as proximity to research centres or its architectural characteristic of being a building converted from a past manufacturing phase. A possibly transferable but wider concept is that of being a high-tech business incubator integrated within an Innovation Pole of a Science Park which is integral part of a 'city'. The transferability of the future operational incubator will depend on its

	performance and value for money based on benchmarking analysis, as suggested by the European Business and Innovation Centres Network. See www.ebn.be
	Conflicts and barriers encountered during project implementation related to the constraints created by the conversion of a building listed as a national monument and by litigation related to a challenge to a tendering process. They have been solved at the expense of long delays and overspends. But information on the length of these delays or the size of the extra costs for either aspect have not been given.
6.4 PROJECT OUTPUTS & RESULTS	As a building the incubator supplies 4 240 m² of space including 2 000 m² of offices and 1 000 m² of workshops for start-ups, plus 500 m² of common space and 400 m² for its own management. Its potential capacity is 30 start-ups and 120 people. No results have yet been achieved in terms of enterprises created and the only assumptions are those of the feasibility study (6 to 8 new high-tech firms hosted annually with a potential to create around 15 highly skilled jobs). It is expected that its proximity to research centres will generate new forms of cooperation between researchers and start-ups or create incentives for researchers to apply the results of their research and become entrepreneurs.
7. CONCLUSIONS: KEY SUCCESS FACTORS AND LESSONS LEARNED	
	The business incubator project has two dimensions: the building co-funded by ERDF and just finalised, and a future operational unit. Very little is known or has officially been defined (or communicated) about this next stage, which is supposed to start in April 2012. The business incubator is a classical facility with several characteristics which the promoters define as innovative or as potential success factors: - its proximity to and close links with research and innovation centres which will facilitate transfer of technology, valorisation and commercialisation of research together with support and cooperation between researchers and start-ups; - its existence within the Science Park as one component of this flagship operation and as a link with the economic development of the city, the state of Luxembourg, and the cross-border region more generally; - the symbolism of its location in a former steelworks building converted for use as a basis of a knowledge-based economy. Further elements related to the building only and not to the smooth functioning of the incubator might be necessary but cannot yet be evaluated as success factors, such as: - The capacity of the Research Centres – and of the future innovation pole – to obtain, detect, protect and exploit basic applied innovative results (in terms of licensing, selling patents, protecting property rights, stimulating spin-offs, creating enterprises, etc.); - The capacity to adapt knowledge results and capabilities acquired in research units to fit the economic environment; - The inventiveness and entrepreneurial spirit of researchers and engineers which would enable them to turn fundamental research results into applications; - The feasibility and market opportunities of new products and services developed by these start-ups; - The quality of support services in the incubator, the cooperative support provided by the nearby research community and

	availability of venture capital; - A critical mass of innovative research results which is not easy for a young and small university to achieve.
8. FURTHER INFORMATION	
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