

Rotterdam, Netherlands

Docking with the future

The development of the RDM Campus is a fundamental part of creating a new use for the historic RDM dry dock complex in Rotterdam's inner harbour area. It brings vocational education, research and innovative industry together under one roof and has created a unique opportunity to improve the economic environment of the city, by regenerating the abandoned docklands infrastructure and supporting the neighbouring village of Heijplaat – a community which formerly relied on the dock for employment.

Docking with the future

The RDM Campus is located in the City Ports area of Rotterdam on the site of a former and historically important shipyard. The initials RDM, which used to mean Rotterdamsche Droogdok Maatschappij (Rotterdam Dry Dock Company), now stand for Research, Design and Manufacturing. Shipbuilding virtually collapsed in the 1980s with the loss of 1 370 jobs. The site was finally abandoned in 2002 – a major setback for the neighbouring community of Heijplaat.

There was a major risk of the wharves becoming a no-go area. In 2004 the Port of Rotterdam (owner), Albeda College (regional vocational training centre) and the Rotterdam University of Applied Science (Hogeschool Rotterdam) came together to explore the potential to redevelop the site. While the city was interested in improving its economic profile by regenerating the dockland environment, the educational institutions were looking for more space to house their research, learning and training activities, and also wanted to make links with the business community.

The result of this partnership was the creation of the RDM Campus as a primary component in a process of revival of the city ports area. The campus occupies the former 'Dokhaven' (Dock Harbour) complex, notably the former machinery hall and the 'Droogdok' building which was originally the head office of the Rotterdam Dry Dock Company. The monumental 23 000m² machinery hall now houses the 'Innovation Dock', divided into two parts: the 'education hall' for the two colleges, and a 'business hall' – supported by the ERDF – of 12 000m². This provides space for small innovative companies in the construction, mobility and power sectors – forming a dedicated knowledge alliance with the educational institutes. The former head office building houses administrative offices, a restaurant and event and meeting space.

The project, supported by a crucial but modest ERDF input, has turned a problematic brownfield area into an important city location where traditional and new approaches to education and enterprise can support each other and the wider business community.

Docking with the future

'My grandfather worked in the dockyard, my father worked in the dockyard and I worked in the dockyard before the closure. I didn't want to leave home in Heijplaat or the workplace. The opening of the RDM Campus has allowed me to carry out my business, doing something worthwhile in this special building, part of our community, our roots. My life is here – it's as simple as that'.¹

The comments of a foreman of one of the new business ventures located in the former, machine shed of the Rotterdam Dry Dock Company provides a valuable insight into the underlying significance of the RDM Campus initiative. The Heijplaat neighbourhood was built 'philanthropically' as a garden suburb tied to the RDM shipyard and located on the left bank of the Nieuwe Maas channel, on the south side of Rotterdam's inner harbours. Today it is home to around 1 500 inhabitants, completely surrounded by port activity, physically isolated from the rest of the city, but even now still without any real structural employment link to its surroundings.



Fig. 1. The Rotterdam City Ports (1 600ha) Photo: Port of Rotterdam

The decline and fall of an economic giant

In 1902 the Rotterdamsche Droogdok Maatschappij (Rotterdam Dry Dock Company) was established on the left bank of the Nieuwe Maas.² In the post-war recovery years in the 1950s it grew to be one of Europe's major shipyards, linked to the economic growth of the port of Rotterdam, occupying 40 hectares and providing employment for 5 000 people in 850 houses. Just as the company experienced sustained expansion over decades, developing a

¹ For information on the Heijplaat neighbourhood, see the website of Heijplaat Community Group at <http://www.heijplaat.com/algemeen.html>

² *The adaptive reuse process of the industrial heritage of the former Rotterdam Dry Dock Company*, Vivian Zuidhof, Erasmus University Rotterdam, 2009

garden village (Heijplaat) for its workforce from 1914 onwards, its demise was abrupt. In common with the collapse of heavy industry and mining across Europe the shipyard filed for bankruptcy in 1983 with 1 400 people made redundant as result. The company was re-launched to supply the defence industry (notably submarine production and maintenance) down-scaling and struggling on until its final closure in 2002. A real-estate vacuum forced the city, via the Port of Rotterdam, to acquire the abandoned property. This left it with a monumental hangover in terms of how to revitalise this important part of the city's heritage – and Heijplaat – which posed serious constraints for market intervention. Linked to these changes, port activity in Rotterdam was in a state of transition, once again in response to global developments. The scale of marine traffic and vessels required in contemporary marine transportation could no longer be accommodated (in terms of channel depth and wharf capacity) in the original inner harbours of the city of Rotterdam. Like Helsinki, Antwerp, Liverpool, Varna and many other port cities across the world, the primary port functions have moved out to deep water where open and more accessible docks were built away from the confines of the original city.

Revival of a prime asset

The glory days when RDM was a flagship for the city and its population, and built the trans-atlantic liners *Nieuw Amsterdam* and *Rotterdam*, had long since disappeared as the Rotterdam port authority assumed responsibility for the shipyard site. Instead of an asset the dockland had become a liability, incurring maintenance costs and attracting marginal, even criminal, interests as an abandoned and difficult to secure area, a sort of 'no-man's land' on the city fringe. Three main elements combined to deter market intervention. First, the scale of the site and its buildings were difficult for alternative land uses. Secondly, the poor and outdated condition of the physical infrastructure and the obligations imposed by the site's heritage value made it an expensive proposition. And finally uncertain economic prospects made private sector redevelopment and regeneration a remote prospect.

Through a €900 million EIB loan, even more port activity is to be moved downstream to a reclaimed site on the coast, Maasvlakte 2, and the Dutch state has designated the whole declining inner harbour area of the city as an area of national importance. The City of Rotterdam and the Port of Rotterdam joined forces to develop a comprehensive regeneration strategy set out in the project 'Stadshavens Rotterdam'.³ This initiative would explore the needs and opportunities in the four key central dockland areas: Merwe-Vierhavens, Rijn-Maashaven, Waal-Eemhaven and the RDM site at Heijplaat. The role of the Port of Rotterdam as an arms-length agency of the city has traditionally been to manage and facilitate port-related activities in the areas of the city designated for this use. In contrast the 'Stadshavens' project created an important opening to allow City and Port to imagine a more mixed, sustainable development pattern, with the possibility to transfer land between the two authorities where demand (or lack of demand) or development opportunities should arise.

In the case of the RDM site no such transfer occurred, but the definition of the 1 600 hectare site as a priority for both city and port raised awareness of both authorities' intentions and highlighted their willingness to support a fundamental redevelopment. As early as 2004 this transparency brought together the Port of Rotterdam and two institutes of further (vocational)

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http://www.stadshavensrotterdam.nl/files/Files/structuurvisie_vastgesteld/11442%20Structuurvisie%20Stadshavens%202011%2008%20LOWRES.pdf

education to explore possibilities. Both the Rotterdam University of Applied Science (Hogeschool Rotterdam) and the Albeda (Technical) College already had sites on the south bank of the river, and were looking for expansion space as well as connections with businesses that would bring opportunities for research and in-work training.

A triple-helix solution

The concept of an 'RDM Campus'⁴ was born as a result of this cooperation. Its manager has described the deal struck between the port authority and the educational institutes as follows: *'the Port of Rotterdam would supply the hardware and the colleges would provide the software of the redevelopment project, creating space for collaboration with businesses and firms (SMEs, starters) locating on-site'*.⁵ Today the campus is established but at the same time a process of development and extension is under way. Physically it consists of the buildings around the former 'Dokhaven' (Dock Harbour), which include:

- the massive machinery hall, which had also housed the shipyard's apprentice training facility
- the RDM company offices which now house the campus management and joint reception, meeting and conference space
- the works canteen transformed into a dockside café for students, employees and visitors
- the submarine production and maintenance shed which lends itself to cultural events and contemporary art exhibitions



The jewel in the crown is the conversion of the monumental machinery hall, now known as the 'Innovation Dock'. The building, with a minimum floor-to-ceiling height of 12m and 23 000m² of floor space, now fulfils two functions. The 'education hall' houses the faculties and workshops of Albeda College and Rotterdam University of applied Science. Meanwhile the 'business hall' provides 12 000m² of space for small innovative companies specialising in construction, mobility and power technologies and a business incubator. This new incubator – Dnamo – supports innovative and sustainably oriented businesses, especially start-ups, by providing office space and networking services, legal advice, coaching and training, some limited funding, and prototyping facilities.

⁴ <http://www.rdmcampus.nl/media/downloads>

⁵ *RDM Campus: An innovative learning and working environment in the Port of Rotterdam*, Bert Hooijer and Gabrielle Muris, Rotterdam, 2010



Fig. 2. Inside the 'Innovation Dock'

Six hundred students from both colleges make use of the learning and training facilities, while the 14 companies installed in modular plots within the building ensure that around 300 students can benefit from in-work training in their production or service activity. Each firm is required to sign a 'knowledge contract' which confirms their commitment to work with the education, training and research stakeholders by linking to research, engaging trainees from the colleges or providing in-house work experience.

Although work is continuing to complete ancillary office space and other services, to prepare new interventions and to arrange the public open space, this somehow only seems to add to the buzz of activity and dynamism already established in this remodelled facility. Teachers, students, employers, employees and visitors are convinced that 'this is really a unique environment in which to learn or work or simply just sit and enjoy the harbour passing by'.

Why ERDF?

The City, via the Port of Rotterdam, and the colleges have made a considerable contribution to the preparation of the site and the installation of facilities – phases 1 and 2 of the campus project have involved €10 million of public funding and €14 million of college investment. While the results on the ground are impressive, the redevelopment and renovation process was not without difficulty. The really poor condition of the infrastructure and services and particularly the discovery of asbestos in one of the buildings created unforeseen costs which meant that the project faced a deficit in equipping and completing the business hall. This critical component of the whole triple-helix construction therefore required an extra funding push. This was achieved by a relatively modest ERDF subsidy through the 'Kansen voor West' operational programme (the ERDF co-financed €2 150 000 of the total budget of €7 760 000).⁶ The ERDF funding went to implement phase 3 of the global site regeneration, to develop and prepare the business hall for occupation by innovative private companies. This completed the investment needed to deliver education and training opportunities stemming from the collaboration between education/research and industry. The colleges provide vocational education and training (Hogeschool Rotterdam also runs two masters' courses) in architecture and urban design, industrial product design, metallurgy and maintenance, water management, automotive engineering, and civil engineering.

These courses complement the business space and have contributed to the ambition to maintain some form of marine-related activity in such an appropriate environment. This has

⁶ Complete 'Kansen voor West' operational programme 2007-2013
http://www.kansenvoorwest.nl/images/stories/nl-totaal%20operationeel%20programma%20landsdeel%20west_pdf%2016%20juli%202007.pdf

been a win-win situation, exploiting the mutual benefit for businesses and research agencies looking to access skilled labour and collaborative partnership (while both are scarce in the marine sector), and for young people looking to develop skills that will lead to good jobs. This collaboration between research and business also supports companies developing new and sustainable technologies (and patents) to reduce the ‘time to market’ from prototype to sale, which poses a certain financial risk.

Open question, open solution

The RDM site presented a difficult challenge for the City and the Port of Rotterdam and one might be excused for thinking that the new use pattern was simply the result of a lucky coincidence. This is partially true in the sense that the site, with all its particularities, became available just at the time when the educational establishments had a real need for additional space. However another important factor in bringing the key stakeholders together is a context of open governance, whereby the ‘Stadshavens’ project could clearly set out the priorities for the inner harbour area. Ambitions were not only identified but widely communicated in a drive to attract potential partners and establish dialogue on redevelopment options. The fact that province, city, port and other potential players have a close working relationship (a common understanding and a generally shared vision) meant that major players could meet and negotiate around a ‘free zone’. In this concept land-use regulations could be relaxed somewhat, and this was translated into the sensible approach to the heritage conservation of the site – based on collaboration rather than confrontation. The open source basis for campus cooperation was already reflected in putting together the partnership and programme for redevelopment, and the notion of opening the site to exploit opportunity and to invite the wider world in is almost a *leitmotiv* of the project.



Fig. 3. In-work trainees: Albeda College



Fig. 4. Gateway to Heijplaat

This contrasts with the situation during the shipyard’s working days, when access was severely restricted because of security concerns. Management and white collar workers each had their own entrances, while the blue collar workers went in and out through a large gateway which was shut during working hours, so that even the Heijplaat families had little contact with the harbour area unless they actually worked within the confines of the yard. After the abandonment of the site this situation became more extreme. But today the huge main workers’ gateway opens directly into

the Heijplaat community but also to the rest of the city. The area between the buildings has become public open space and the submarine hall is today a site for cultural events and exhibitions which attract visitors from Rotterdam and beyond. A fast 'Aqualiner' ferry connects with the city centre in 15 minutes, cheaply transporting passengers, bicycles and scooters across the Nieuwe Maas and providing new opportunity for both Heijplaat residents and Rotterdammers in general.



The campus on the other hand is also moving out into the Heijplaat community, and sustainable building technology students have designed a Concept House to be located on an empty plot of land in the neighbourhood. This prototype building is intended to test and present sustainable compact construction and housing solutions, a sort of living laboratory and unique learning environment. It is too early to talk of a full revival for the Heijplaat community but the first important steps in revitalising this district have undoubtedly been taken, catalysed by the development of the RDM Campus.

From sustainable development to sustainable growth

The conservation and transformation of this dockyard brownfield site to accommodate a potentially strong economic and learning force for the city makes the RDM Campus a valuable contributor to sustainable growth. In this perspective it is important to remember that the focus for the site as a technical innovation centre is to achieve sustainable product development in the market areas of construction, mobility and energy. Activities on site are aimed at stretching innovation in the field of mechanics, high-tech marine engineering, delta technology, and carbon-responsible mobility solutions including the production and sale of electric scooters (engaging young workers from the Rotterdam's Antilles community). Low-carbon and renewable technologies are used, and in the near future the climate of the campus complex will be regulated by a heat exchange system using water from the Maas pumped up by wind and/or solar energy. So not only is the reuse, reclaiming of identity and renovation of existing buildings a factor of sustainability, but equally the activities which the buildings accommodate provide an impulse for a more sustainable future – which is also ultimately bound to green economic production.

The real distinction however is the fact that the renovation of the RDM site combines aspects of smart and inclusive growth – in its business and labour market focus, but also in its offer of opportunities for young people, and particularly disadvantaged groups, to access skills and jobs. Here the concept of sustainable growth is fundamentally reinforced by a truly integrated approach to brownfield redevelopment underpinned by a highly effective application of the triple-helix model.

May 2012

AEIDL has been contracted by the European Commission in 2012 in order to provide 50 examples of good practice in urban development supported by the European Regional Development Fund during the 2007-2013 programming period (contract reference 2011.CE.16.0.AT.035). The views expressed by AEIDL remain informal and should not under any circumstance be regarded as the official position of the European Commission.