

## Model 15

# Rotterdam Green Buildings (*Rotterdamse Groene Gebouwen*)

## Rotterdam – The Netherlands

OWNERSHIP	PUBLIC
<b>Program authority</b>	Municipality of Rotterdam
<b>Program Delivery unit</b>	Project Management Bureau
<b>Implementation Model</b>	Energy Performance Contracting (EPC)
<b>Operating Services</b>	Facilitator Assessor Aggregator
<b>Projects Financed</b>	Energy Efficiency (building retrofits)
<b>Ambition/targets</b>	Enhance the sustainability of the municipality's whole core municipal property (about 1700 buildings)
<b>Beneficiaries</b>	Municipality of Rotterdam's owned public buildings: sports halls, swimming pools, schools, offices, theatres and museums
<b>Funding Vehicle</b>	ESCOs Financial institutions
<b>Financial Instruments</b>	EPC Financing Loans Grants

## Summary

*Rotterdamse Groene Gebouwen* (Rotterdam Green Buildings) relates to the retrofitting of Rotterdam's municipal property and is an important component of the Municipality of Rotterdam's approach to climate mitigation in Rotterdam. The programme intends to enhance the sustainability of the municipal property by improving its energy performance and reducing its CO2 footprint, by optimising its maintenance and by improving indoor climate and comfort based on the principle of Energy Performance Contracting (EPC).

It is one of the programmes of the Rotterdam Climate Initiative (RCI), a climate programme started in 2007 by the Municipality of Rotterdam, the Port of Rotterdam, Deltalinqs (employers' organisation) and DCMR (Environmental Protection Agency Rijnmond). With this programme the municipality contributes to the ambition of the Rotterdam Climate Initiative which targets to reduce the emissions of CO2 with 50%, for the city as well as for the port, by 2025 relative to 1990, to become 100% climate change resilient and to strengthen the Rotterdam economy.

The programme's ambition is to enhance, in the long run, the sustainability of its whole core municipal property or social purpose real estate. The whole municipal property is relates to about

3500 buildings and some 1700 buildings are considered to belong to the core portfolio. This core portfolio includes swimming pools, sports halls, offices, schools, museums and theatres.

Its approach is to pool or cluster buildings of the same type in order to increase the scale of the project, thus increasing its purchasing power and allow for transaction costs and energy efficiency optimisation.

The municipality planned to have 4 clusters tendered for retrofitting by 2014.

The pilot project of the programme related to a first cluster of buildings to be made sustainable through building retrofit and EPC contracting. It concerned 9 swimming pools considered to be major energy consumers within the municipal property. This first cluster was tendered in 2010 and got awarded to the ESCO in 2011.

After execution and experiences with the pilot project the municipality launched in 2014, with two other municipalities, two additional tenders relating to one cluster offices/workplaces (with the municipality of Schiedam) and one cluster of buildings with public function (with the municipality of Vlaardingen). So far only the municipality of Rotterdam's portion of the cluster offices/workspace has been awarded.

The programme received European Regional Development Funding through INTERREG North-West Europe (NWE), a Programme of the European Union to promote the economic, environmental, social and territorial future of the North-West Europe area.

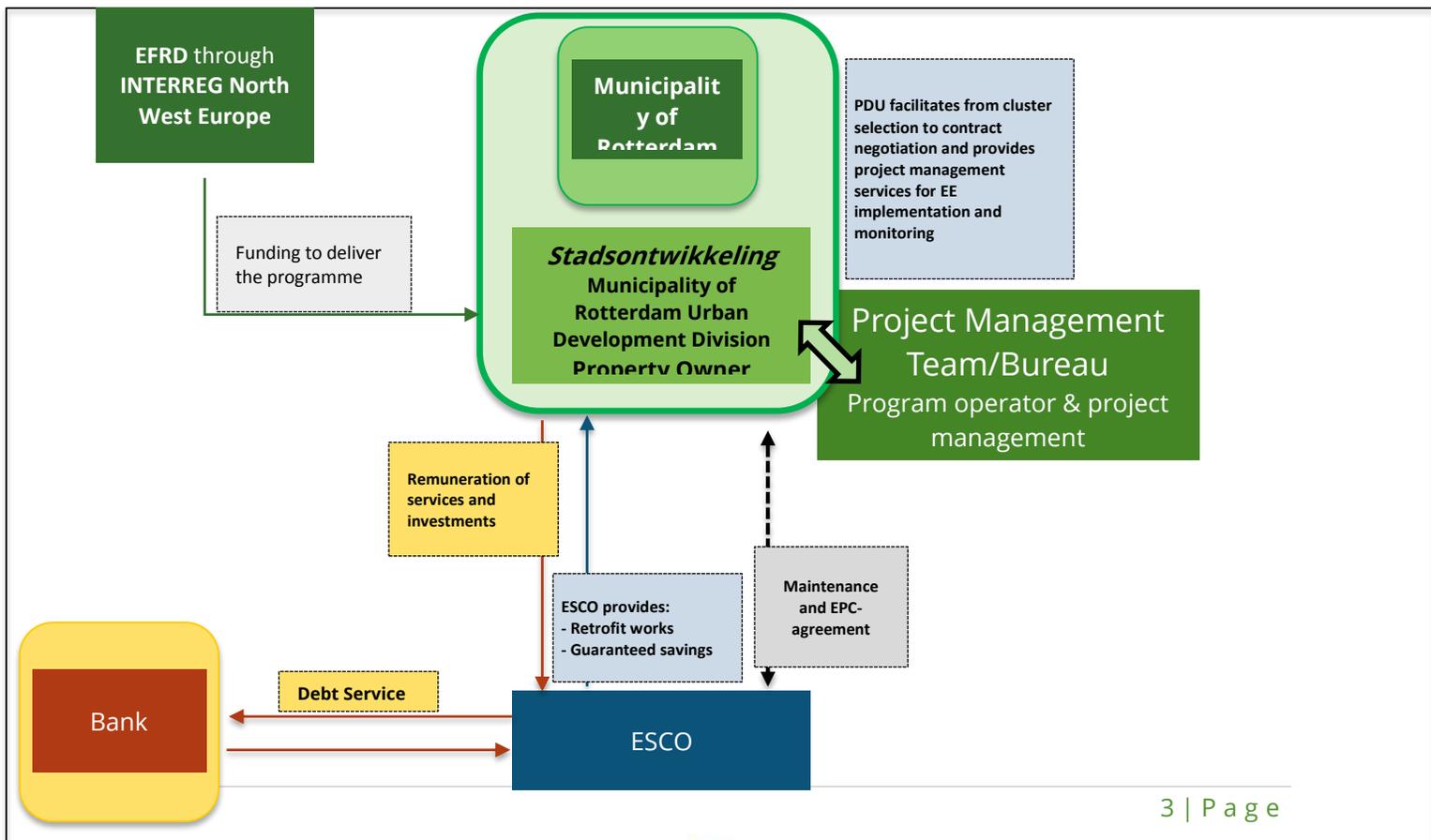
The City of Rotterdam has invested about 1M € in the process costs of the pilot project.

## How does it work?

- The Municipality of Rotterdam, through its Urban Development Division (today *Stadsontwikkeling*) is considering the retrofitting of its municipal property based on the principle of clustering of buildings.
- To this end, and based on the experiences with the pilot project, the clusters to be retrofitted are being identified and prioritised by the Urban Development Division based on an own developed assessment framework considering different technical, organisational, financial and legal criteria.
- Once the cluster to be retrofitted based on EPC contracting has been defined and has received approval for execution the procurement process of an ESCO can start.
- In this programme standard procurement rules apply and the UDP needs to initiate a tender process. The municipality has chosen for the competitive dialogue. The UDP has facilitated this tendering process by providing a series of standardised documents covering all the stages of the tendering process. The documents have been published and are available for use by any interested third party.

- The contract is awarded on the basis of most economically advantageous tender and a Maintenance and Energy Performance Contract (M-EPC) is concluded between the ESCO and the UDD.
- The selected ESCO installs the guaranteed energy efficiency measures and indoor climate improvement measures, delivers the service and carries out measurement and verification during the agreed contract period. Service also includes regular maintenance and management of the property.
- The Municipality has favoured a project financing structure based on third party financing and more specifically financing by the ESCO. The starting point is that the guaranteed reduction in energy charges will cover the investment and maintenance costs and, where possible, the improved end-user quality. The ESCO has the liberty to finance the investments based on its own funds or, at its discretion, with funding from a financial institution.
- The first retrofit cluster of 9 swimming pools, for instance, has for 10% been financed based on equity provided by the ESCO and for 90% by loans provided by a bank to the ESCO .

Fig 1. Operational and financial model



## The program delivery unit

A Project Management Team (today Project Management Bureau - PMB) is the program delivery vehicle of the Rotterdam Green Buildings energy retrofitting programme. It acts as the project and programme management office of the programme under supervision of its steering group. The steering group is, headed by the director Real Estate (today Director Cluster *Stadsontwikkeling*) and represents the Municipality of Rotterdam. The steering group is the authority taking strategic decisions such as go/no go, it decides on risks, staffing, communications, etc.

The PDU takes care of the preparation and execution of the decisions of the steering committee.

It is responsible for the realisation of the project planning within the defined budget and the energy efficiency objectives set-forth. It is also responsible for the drafting of the ambition document and the tendering strategy and the development and continuous fine-tuning of best practice approaches, templates and standards.

The PDU has a major role as facilitator and project manager, this means, to manage and coordinate the entire retrofit process from cluster identification and contract tendering and negotiation to the implementation of energy efficiency measures and service delivery.

The PDU receives the support from other disciplines and various departments of the municipality of Rotterdam and from external specialists and consultants.

Today the cluster *Stadsontwikkeling* (Urban Development) of the municipality of Rotterdam has a full-fledged project management organisation known as the Project Management Bureau (PMB). PMB is part of the Project Management and Engineering Administration within the cluster Urban Development. PMB is the common home base for all physical projects related to Rotterdam's urban development. The Rotterdam Green Buildings programme is just one of the many programmes that they run.

The cost of the PMB are fully supported by the municipality of Rotterdam.

<b>Legal structure</b>	N/A
<b>Shareholder description</b>	N/A
<b>Equity</b>	N/A
<b>Shareholders</b>	N/A
<b>Program dedicated staff</b>	Unknown
<b>Program operational costs</b>	Unknown

## Organization and partnerships

**City of Rotterdam:** programme owner and political initiator

**Project Management Bureau (PMB):** is the permanent project management office of the municipality of Rotterdam. It provides staff, procedures, tools and services for the Green Buildings programme. It offers program delivery unit services such as project facilitation and project management.

**ERDF ( European Regional Development Fund):** aims to strengthen economic and social cohesion in the European Union by correcting imbalances between its regions.

**INTERREG North-West Europe (NWE):** programme of the European Union to promote the economic, environmental, social and territorial future of the North-West Europe area.

## Beneficiaries

<b>Beneficiaries</b>	Municipality of Rotterdam's owned public buildings: sports halls, swimming pools, schools, offices, theatres and museums
<b>Type of projects</b>	Energy Efficiency (building retrofits)
<b>Operational support</b>	Project facilitation through the Project Delivery Unit
<b>Financial support</b>	N/A

## Funding mechanism

<b>Program delivery unit funding</b>	Received funding from European Regional Development Funding through INTERREG North-West Europe (NWE),
<b>Projects Funding</b>	Projects are being funded by the ESCO.
<b>Funding Vehicle</b>	ESCO Financial institutions
<b>Fund size</b>	Not applicable
<b>Fund type</b>	Not applicable
<b>Fund sources</b>	Not applicable
<b>Financial Instruments</b>	EPC Financing

## Achievements

The Rotterdam Green Buildings programme has seen the following retrofitted until today:

A first retrofit of a cluster consisting of 9 swimming pools:

Investment amount of 2,6M €

Energy efficiency of 34%

Saving of 43% gas, 56% electricity, 35% heating and 9% water  
 CO2 emissions decrease of nearly 2000 tonnes  
 Maintenance cost saving of 15%  
 Improvement of water quality in 7 of 9 swimming pools.

The second retrofit project relates to a cluster of buildings, ownership of the municipality of Rotterdam, consisting of offices and workspaces for a total of 36.740 m<sup>2</sup>. The contract started in January 2015.

## Contact details

### Municipality of Rotterdam Contact Stadsontwikkeling

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## Factsheet

### General Info

Country	The Netherlands
Model Name	Rotterdam Green Buildings ( <i>Rotterdamse Groene Gebouwen</i> )
Date of creation	2009

### Model Description

Onwership	Public
Program authority	Municipality of Rotterdam
Program delivery unit	Project Management Bureau
Operating services	Facilitator Assessor Aggregator
Implementation model	Energy Performance Contracting (EPC)
Types of projects financed	Energy Efficiency (Buildings retrofit)
Beneficiaries	Municipality of Rotterdam's owned public buildings: sports halls, swimming pools, schools, offices, theatres and museums

Geographical coverage	Local 0,61 Million inhabitants
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### Financial Model Description

Project funding	Private
Project funding vehicle	ESCOs
Financial instruments	EPC Financing Loans
Repayment model	Guaranteed savings agreement

### Project risk Profile

Performance risk	ESCOs
Recourse	n/a
Financial risk	ESCO Financial institutions

### Model Requirements

Staff Requirements	Moderate
Equity Requirements	n/a
Funding Requirements	Moderate Less than 5M €

### Model Key indicators

Investment volume since creation	<10M €
Size of project (or project portfolio)	>2,6M €
Level of average energy savings	34%

### Development maturity

Development/implementation stage	Mature
Operational development maturity	Mature
Financial development maturity	Mature

### Model Qualification

Level of establishment	Well established
Growth potential	Large
Scalability of the model	High
Replicability of the model	High
Impact on public balance sheet	Low

## Sources

[www.rotterdam.nl/groenegebouwen](http://www.rotterdam.nl/groenegebouwen)

<http://www.ppsnetwerk.nl/projecten-Database/179/>

<http://www.rotterdam.nl/projectmanagementbureauomb>

Lindenbergh Jako, ESCo en Financiering. Voorbeeld Rotterdamse Groene Gebouwen, CoreNetbijeenkomst, 16 May 2012

Factsheet Rotterdamse Groene Gebouwen –cluster zwembaden, [www.rotterdam.nl/groenegebouwen](http://www.rotterdam.nl/groenegebouwen)

Green Deal Rotterdam Climate Initiative, [www.rotterdamclimateinitiative.nl](http://www.rotterdamclimateinitiative.nl)

Uitkomsten marktconsultatie Rotterdamse Groene Gebouwen, Gemeente Rotterdam Ontwikkelingsbedrijf, 1 March 2010 [http://www.rotterdam.nl/uitkomsten\\_marktconsultatie](http://www.rotterdam.nl/uitkomsten_marktconsultatie)

Rotterdam Swimming Pools ESCo, project description, 2015, <http://www.strukton.com/projects/rotterdamswimmingpoolsesco/>

The Rotterdam Green Buildings Programme, 2015 [http://www.rotterdamclimateinitiative.nl/en/projects/the\\_rotterdam\\_green\\_buildings\\_programme?portfolio\\_id=81#](http://www.rotterdamclimateinitiative.nl/en/projects/the_rotterdam_green_buildings_programme?portfolio_id=81#)

Model Financieringsstructuur ESCo. Formule Rotterdamse Groene Gebouwen cluster zwembaden, Gemeente Rotterdam Ontwikkelingsbedrijf, 1 June 2011

Model Afwegingskadervoor toepassing OEPC. Formule Rotterdamse Groene Gebouwen cluster zwembaden, Gemeente Rotterdam Ontwikkelingsbedrijf, 1 June 2011

Procesbeschrijving aanbestedingprocedure Formule Rotterdamse Groene Gebouwen cluster zwembaden, Gemeente Rotterdam Ontwikkelingsbedrijf, 1 June 2011

Press release Rotterdam maakt zwembaden groener, [www.rotterdam.nl/pers](http://www.rotterdam.nl/pers), 7 April 2011

Press release Rotterdam selecteert drie partijen voor verduurzamen Rotterdams vastgoed, Gemeente Rotterdam Ontwikkelingsbedrijf, 15 June 2010

Press release Aanbesteding voor duurzaam Rotterdams vastgoed van start, Gemeente Rotterdam Ontwikkelingsbedrijf, 31 March 2010

Selectieleidraad 1-501-14 Groene Gebouwen, Cluster Kantoren/werkplaatsen en Cluster gebouwen met publieke functie, College van burgemeester en wethouders Rotterdam, 20 January 2014