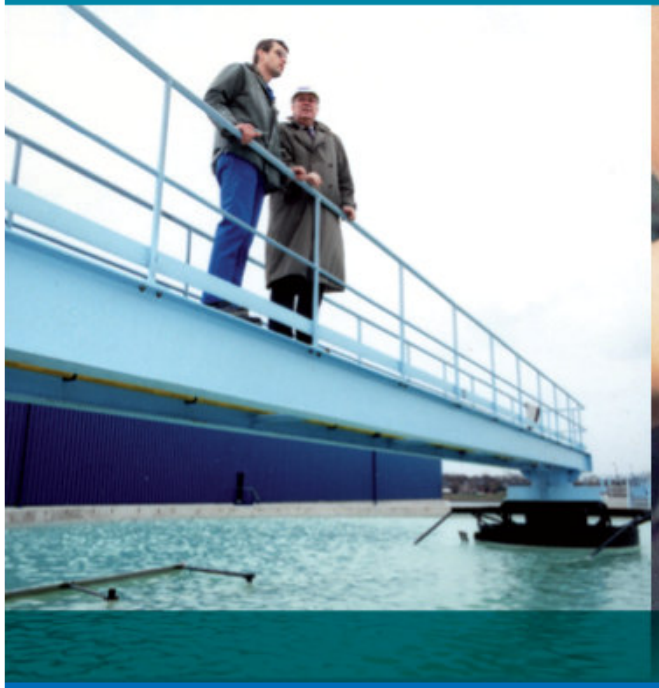
Water Treatment



Gateway to solutions

Advies- en ingenieursbureau

Community of Practice
Costs calculation
6 feb 2009

Marcel Bakker
Consultant Water Treatment

Gateway to solutions

Advies- en ingenieursbureau

Calculator for costs regarding drinking water-plants

Objectives of the tool

Benefits?

How does it work?

Calculation tool explained

On-line Demonstration

Goals 2009

Obtain password / memory stick

Objectives of the tool

Construction costs realised projects
Verified data into costfunctions

<u>For drinking water treatment</u>
Calculation of investments costs
Calculation of exploitation costs

Benefits of the tool

Accessible online
Quick
Transparant
Independent
Can be used in strategic decisions
Support costs saving

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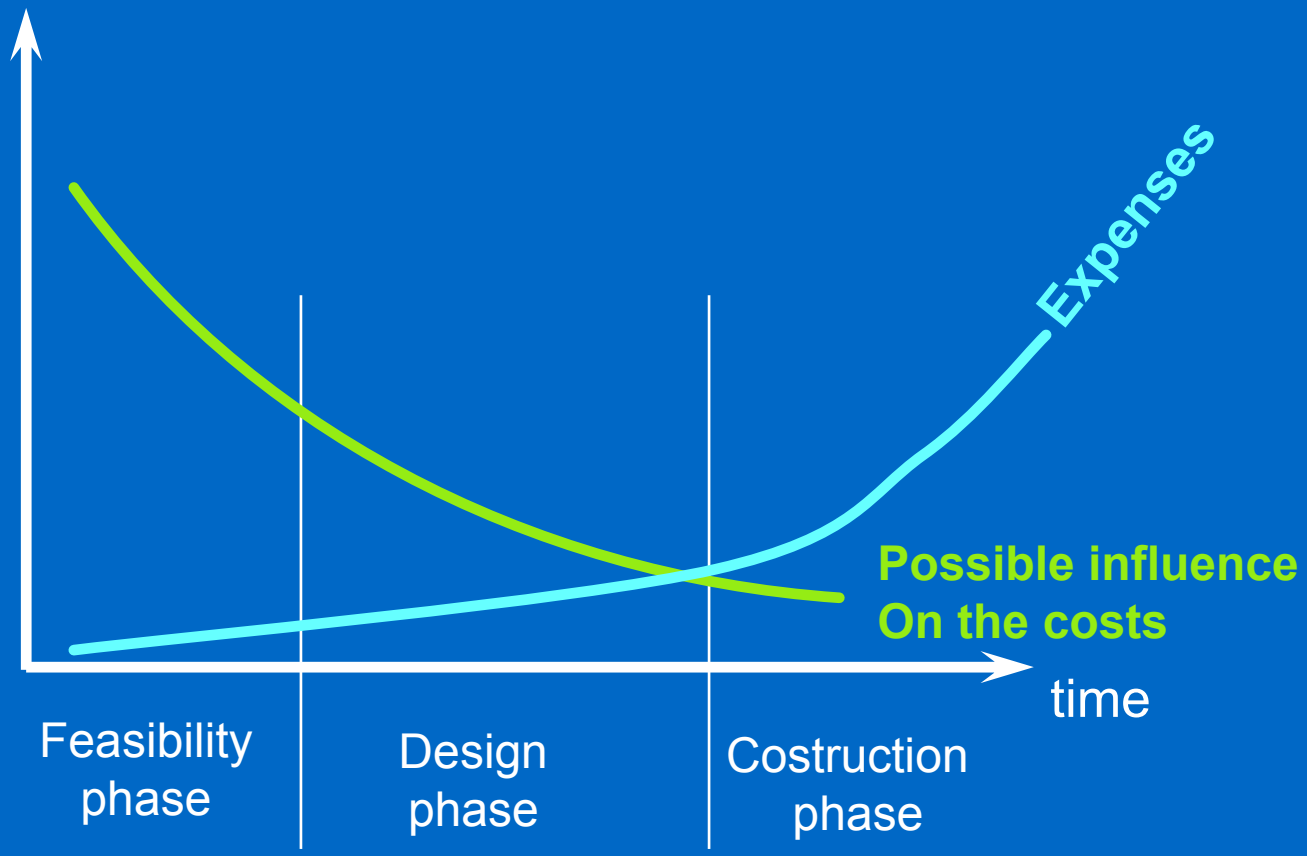
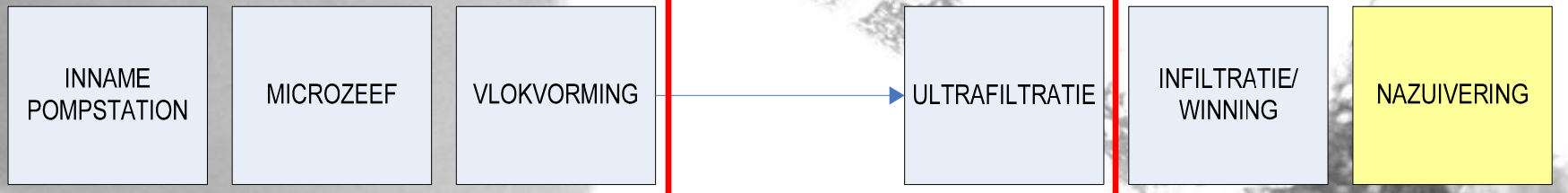


Gateway to solutions

SCHEMA 1

SCHEMA 2



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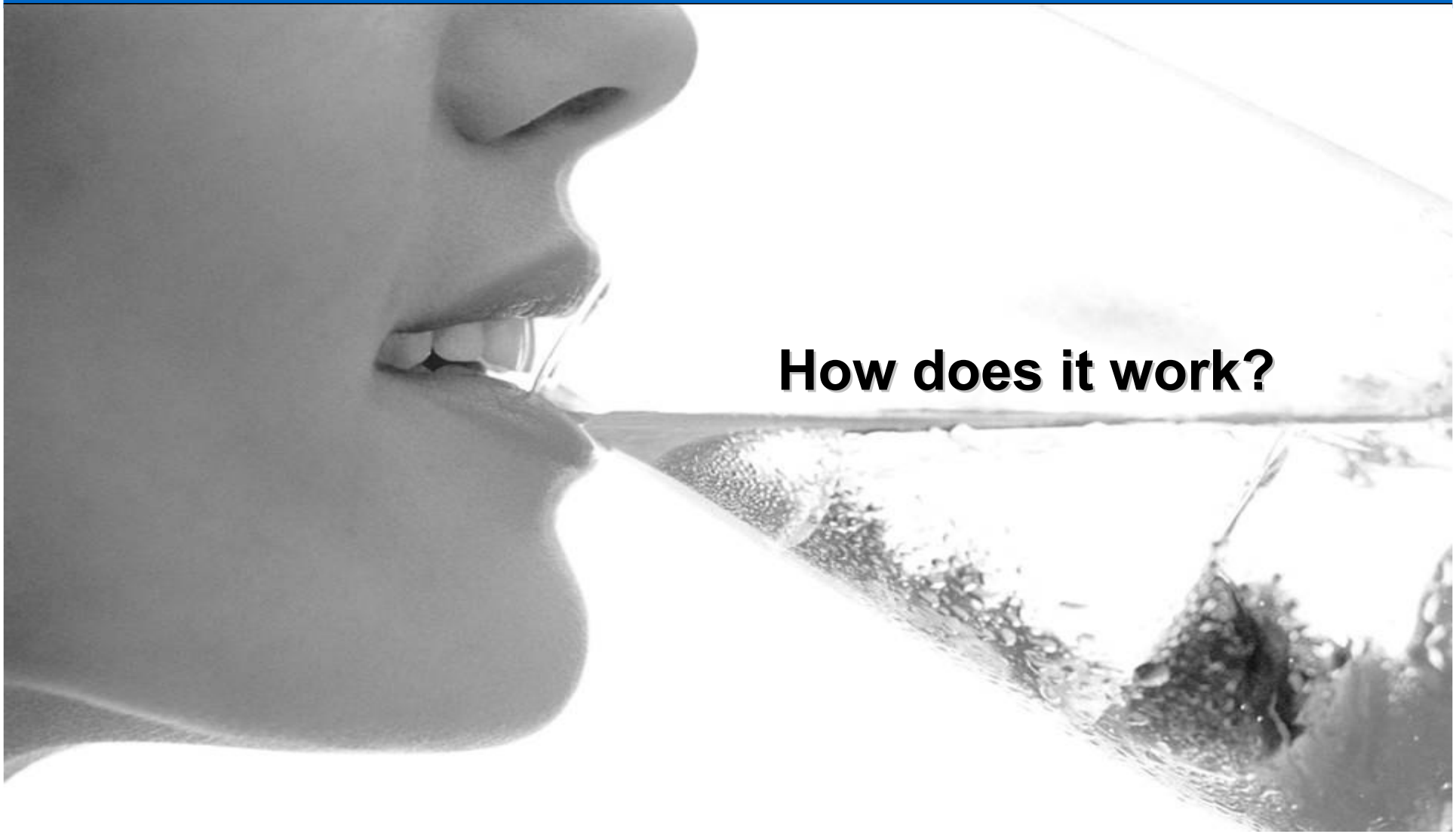


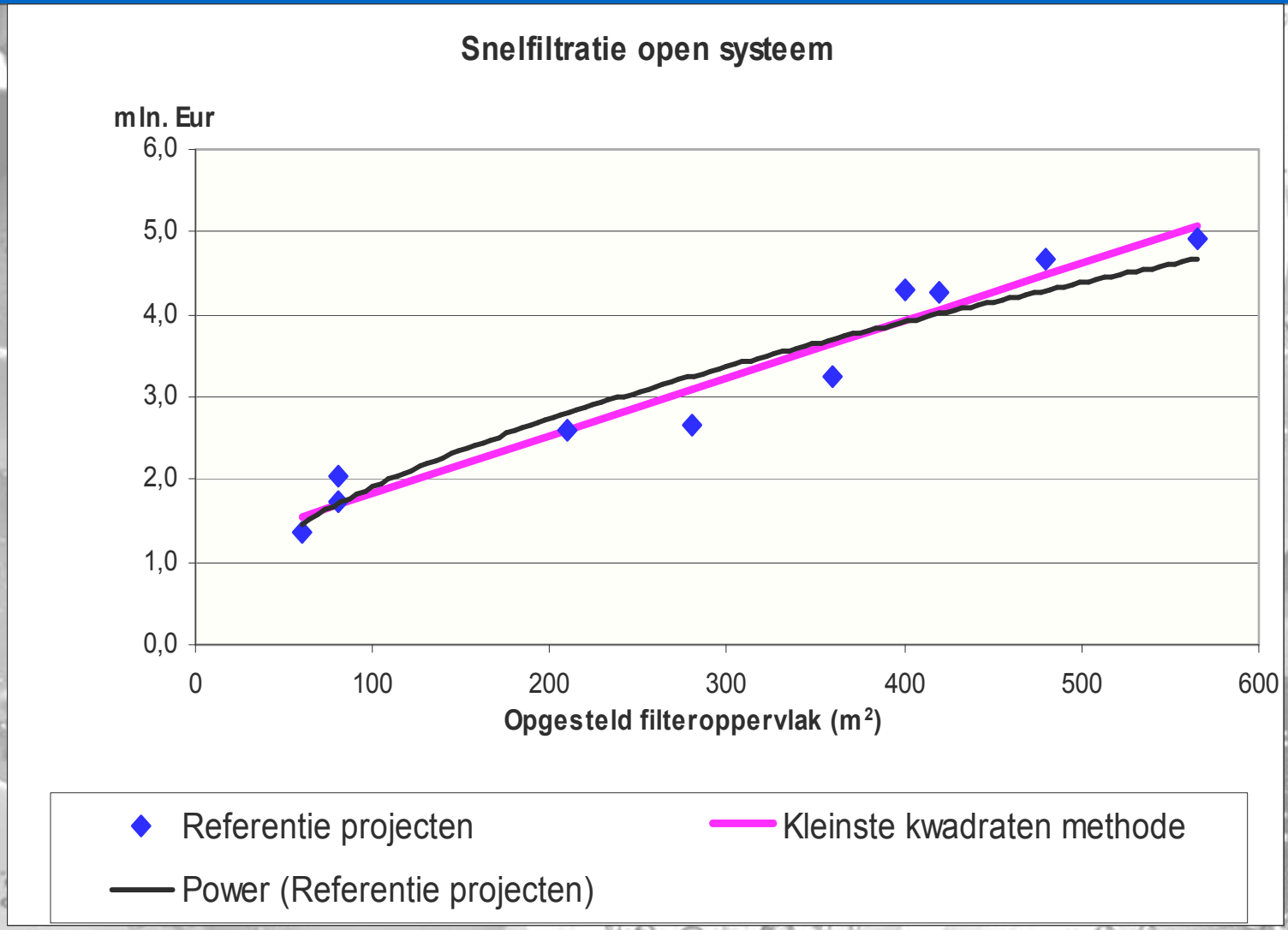
How does it work?

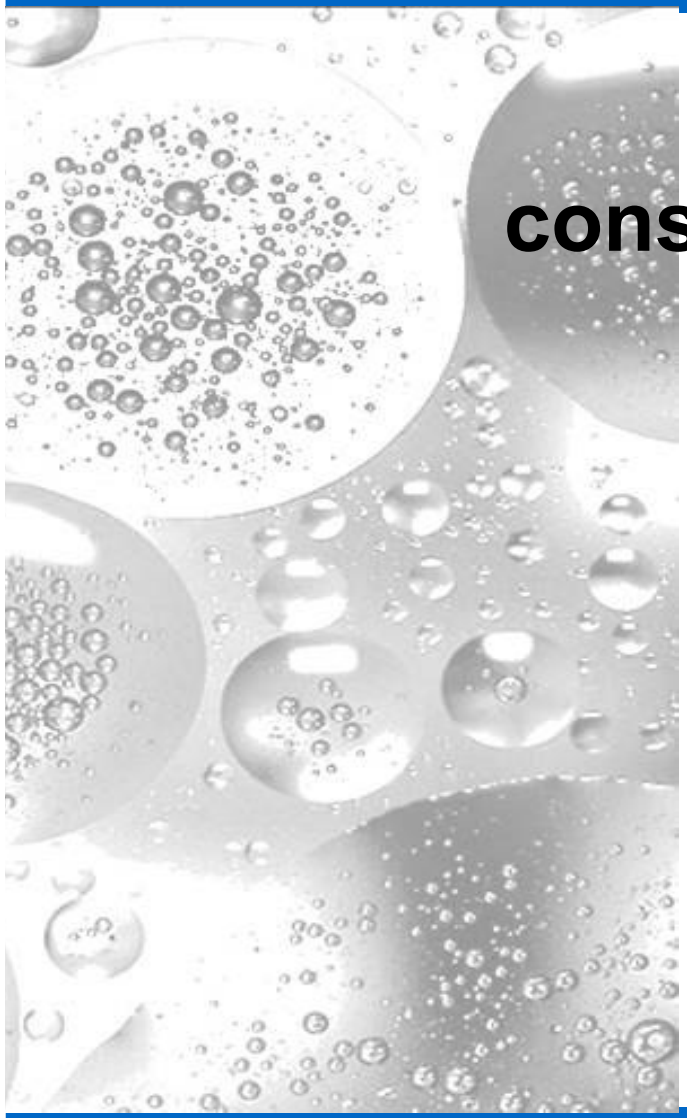
Gateway to solutions

Construction costs

Completed reference projects

Statistic ‘best fit’ function


Snelfiltratie open systeem
mln. Eur
6,0
5,0
4,0
3,0
2,0
1,0
0,0
0
100
200
300
400
500
600
Opgesteld filteroppervlak (m²)
Referentie projecten
Kleinste kwadraten methode
Power (Referentie projecten)



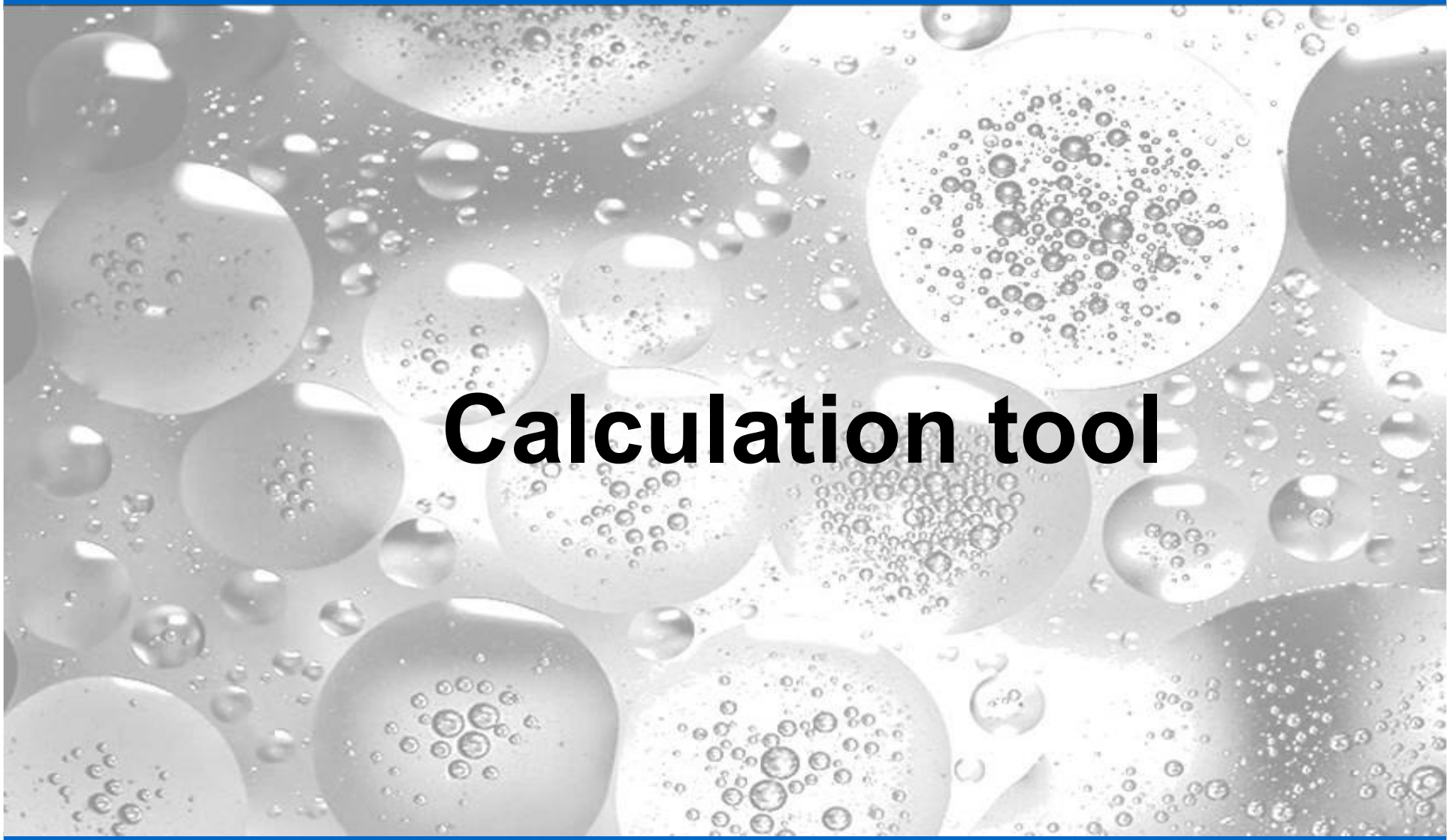
Additional costs to get from construction to investment costs

% design-preparation-supervision costs
% interest costs during construction
% Unforseen expenses
% General facilities
% General equipment costs
% Permit costs
% Start up costs
% Insurance costs
% inflation during construction

Exploitation costs

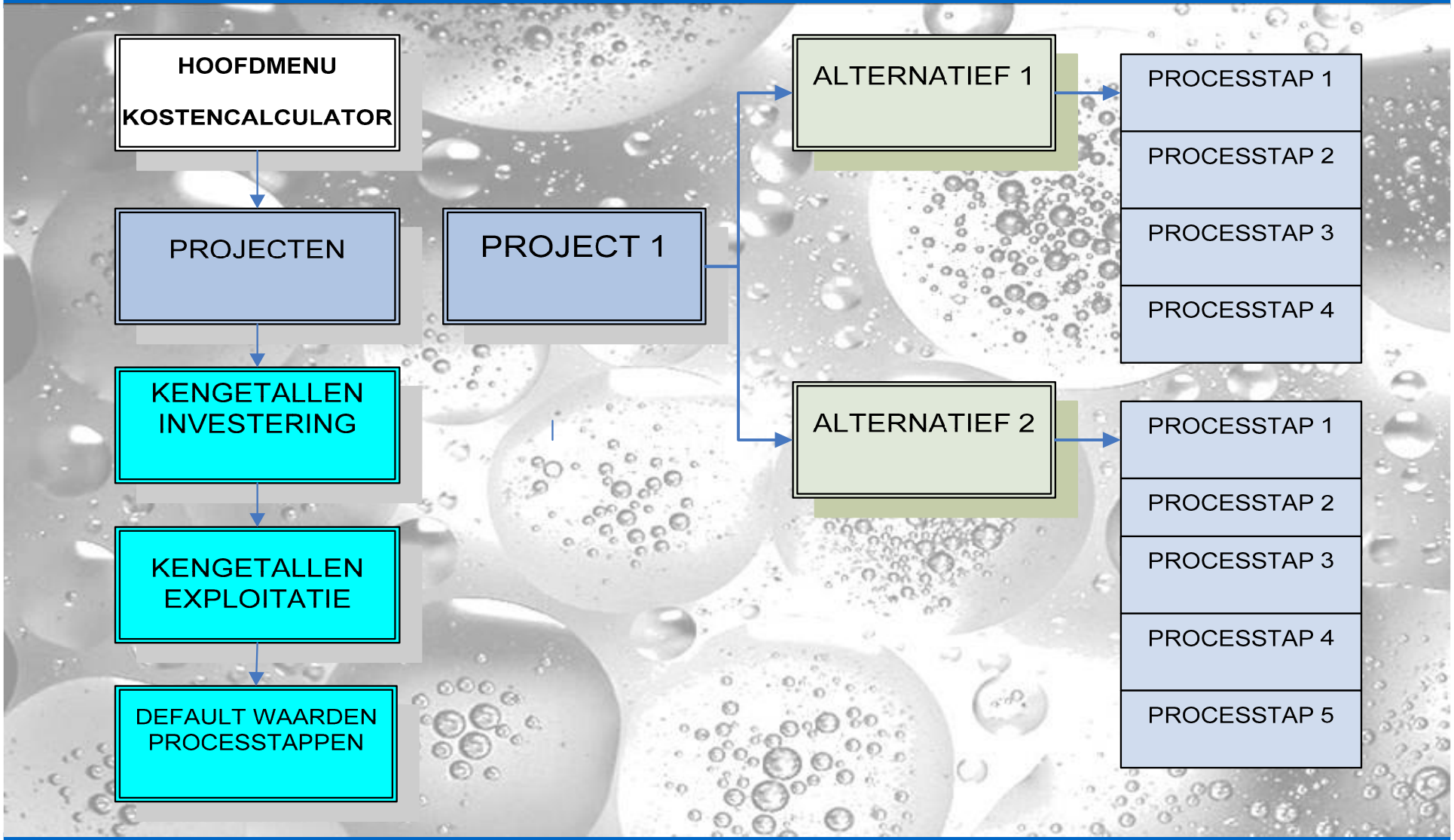
Fixed costs
Depreciation period, Interest rate
Consumables costs
Energy, Chemicals, Consumption materials,
Waste streams, Levies
Maintenance costs
Usage, maintain, cleaning
Administration costs
Specific costs
Wages
Costs for analysing

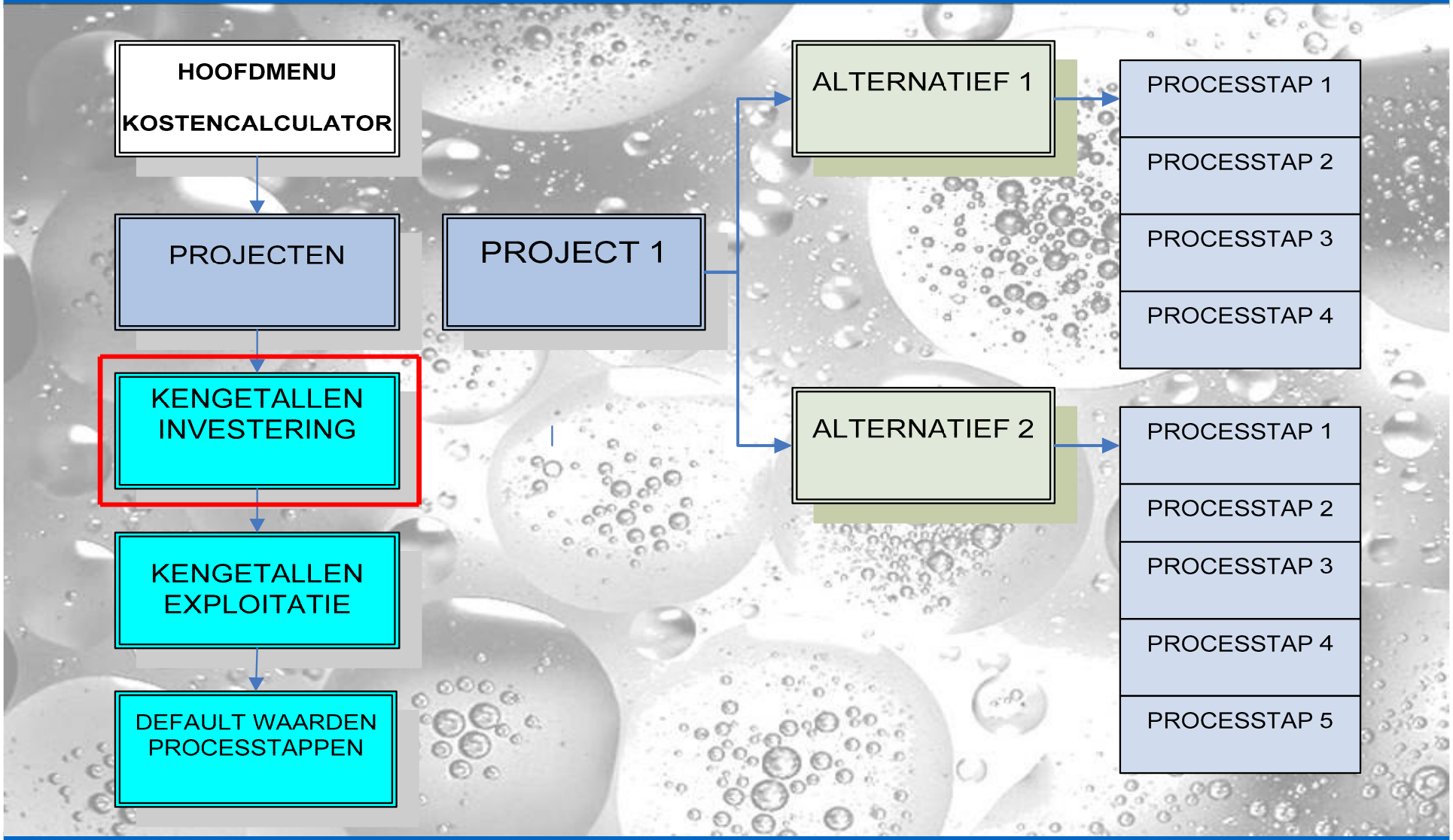
Advies- en ingenieursbureau



Calculation tool

Gateway to solutions


HOOFDMENU
KOSTENCALCULATOR
PROJECTEN
KENGETALLEN INVESTERING
KENGETALLEN EXPLOITATIE
DEFAULT WAARDEN PROCESSTAPPEN
PROJECT 1
ALTERNATIEF 1
ALTERNATIEF 2
PROCESSTAP 1
PROCESSTAP 2
PROCESSTAP 3
PROCESSTAP 4
PROCESSTAP 1
PROCESSTAP 2
PROCESSTAP 3
PROCESSTAP 4
PROCESSTAP 5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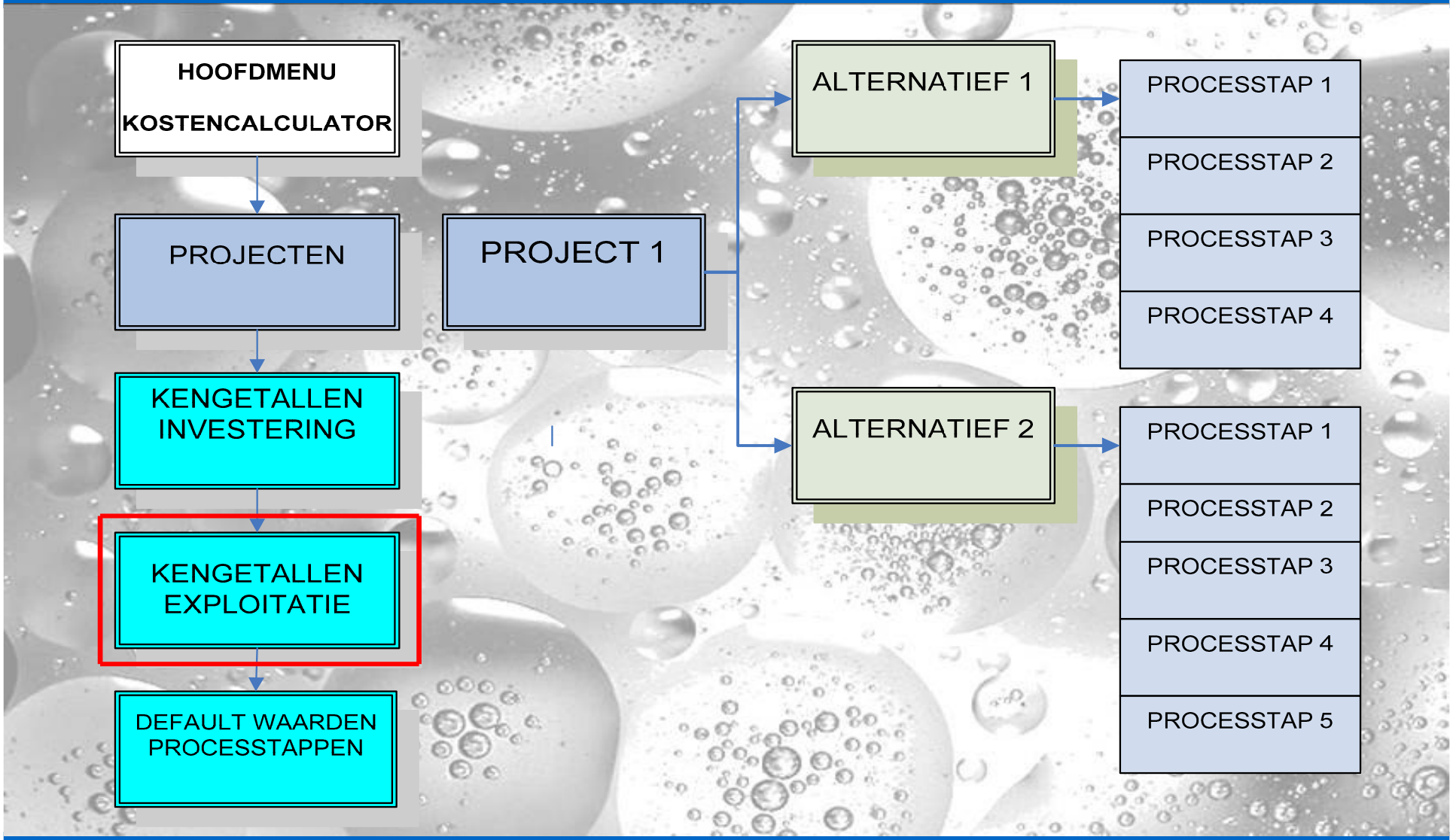
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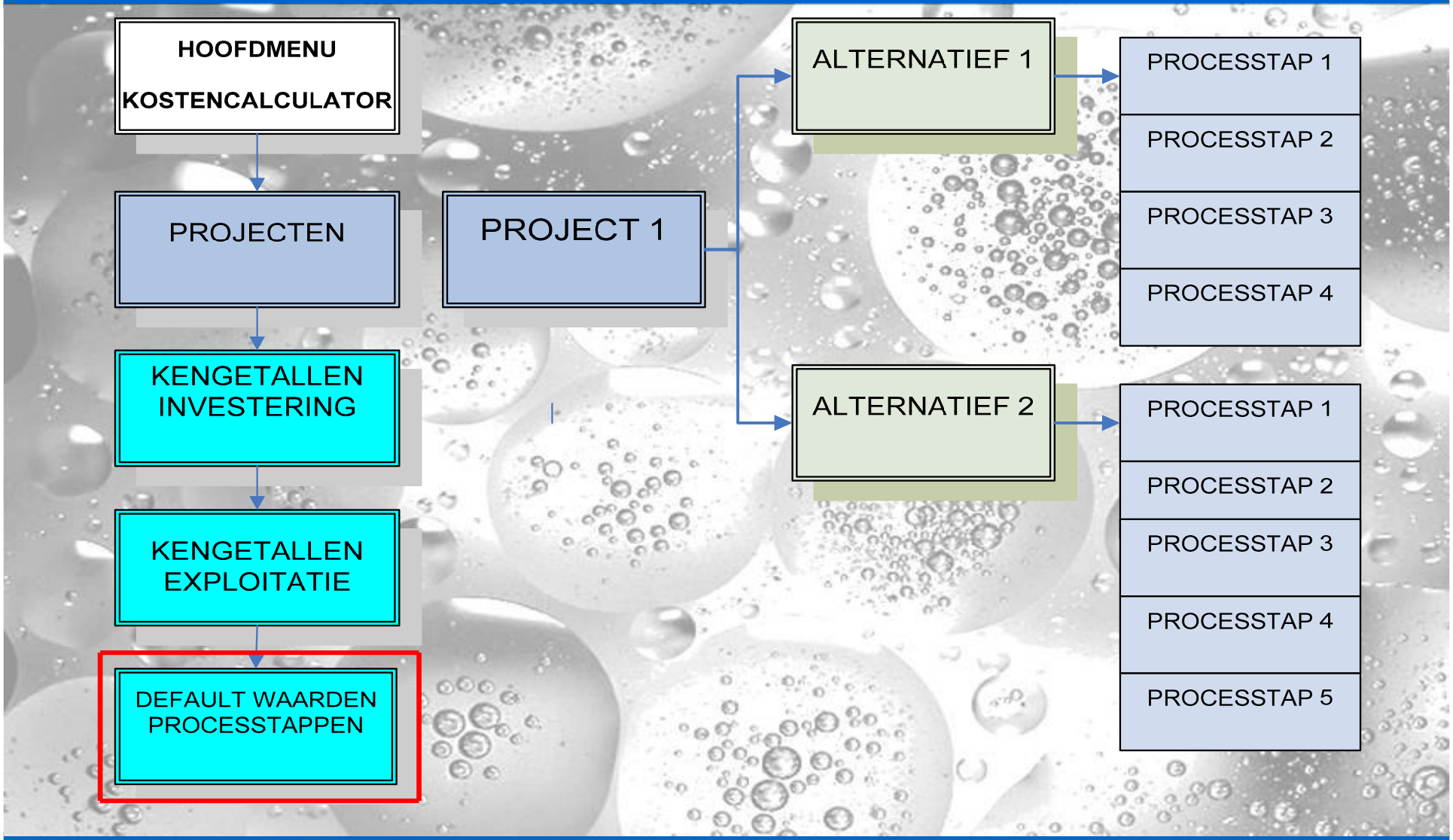
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PROCESSTAP 4
PROCESSTAP 5

Defaults values treatment steps

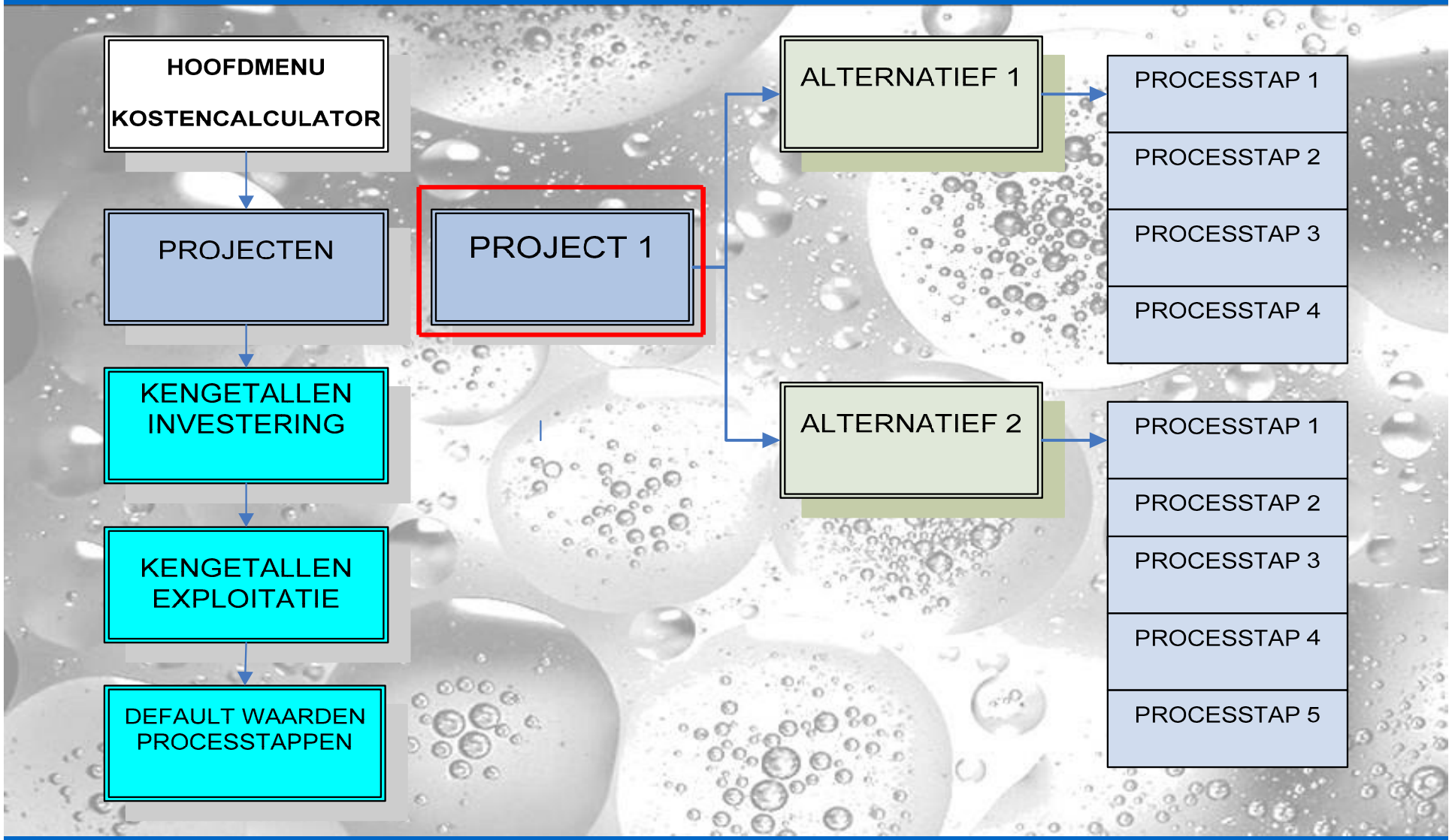
Filtration velocity

Losses

Buffertime

Height filtration bed

Etcetera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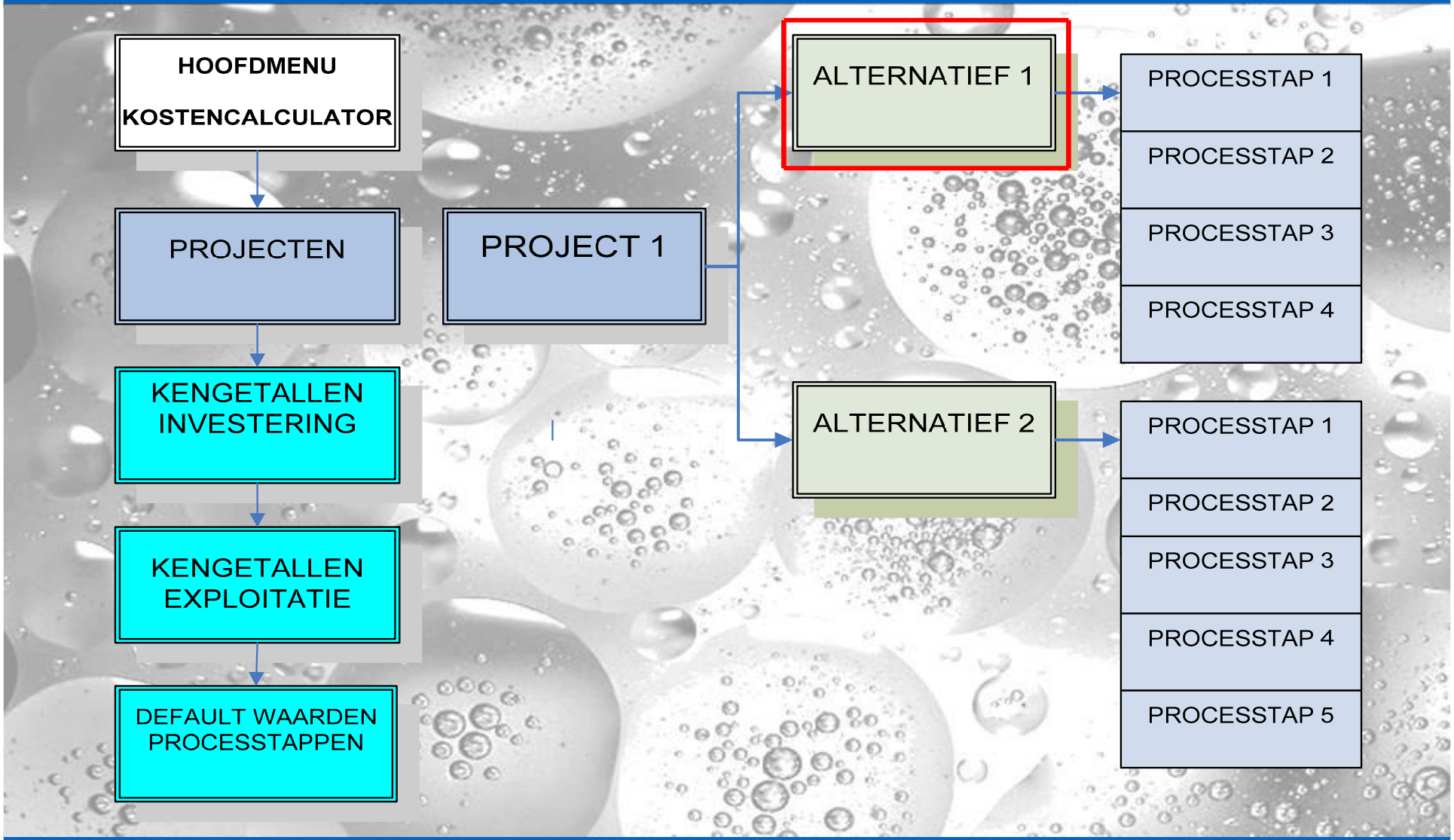
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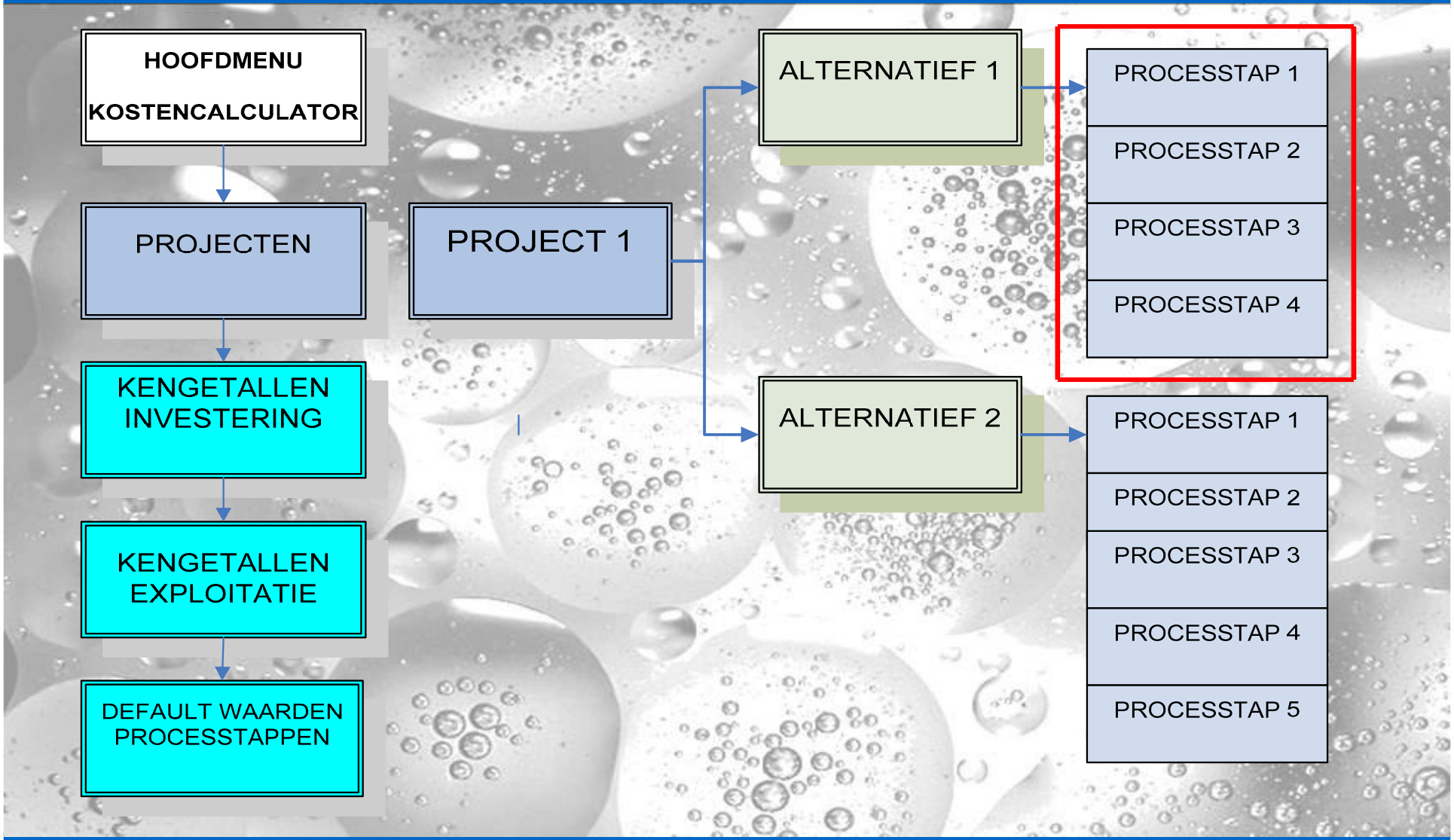
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PROCESSTAP 5

On-line Demo

Login

Adjust general ratios

Start a new project

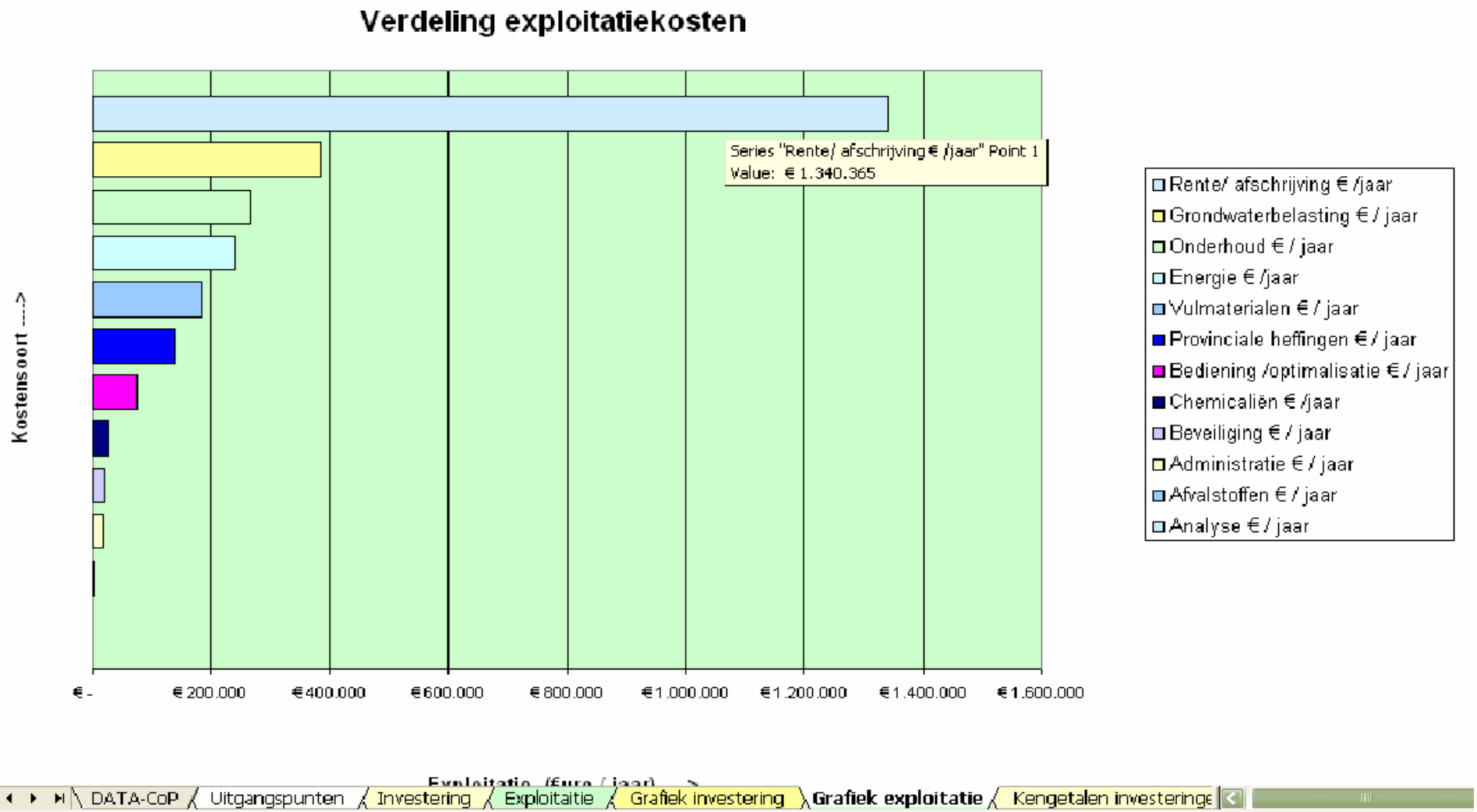
Making alternatives

Adjust/complement alternatives

Export calculations to Excel templates

1									
2	Opdrachtgever	Naam							
3	Projectnummer	P1234							
4	Projectnaam	Projectbenaming							
5	Onderdeel	Raming exploitatiekosten							
6	Niveau raming	Systeemkeuze							
7	Opsteller	M.J.W.M. Bakker DHV Water							
8	Datum	sep-08							
9									
10			1	2	17	18	21		
11	EXPLOITATIEKOSTEN /jaar	Kostenbepalende parameter	REINTE/ AFSCHRIJVING	VERBRUIK	ONDERHOUD	specifieke bedrijfskost Bediening	Beheerskosten	EXPLOITATIE	
12	Processtap benaming	range	Rente/ afschrijving € /jaar	Energie € /jaar	Onderhoud € / jaar	/optimalisati € / jaar	Administratie € / jaar	TOTAAL € / jaar	Bandbr
13									
14	TOTALEN		€ 1.340.365	€ 240.555	€ 266.356	€ 75.654	€ 19.042	€ 2.698.000	+/- 30%
15									
16	Transportleiding	leidingdiameter 200< D(mm) < 1600 + lengte (km)	€ 211.563	€ 11.241	€ 14.175	€ -	€ -	€ 236.979	
17	Microzeving	zeefoppervlak (20-120m2)	€ 48.375	€ 6.745	€ 10.642	€ 3.193	€ 770	€ 73.194	
18	Boosterpompstation	opgestelde capaciteit (500 - 1.200 m3/u)	€ 64.410	€ 67.445	€ 31.726	€ 9.518	€ 2.838	€ 180.611	
19	Vlokvorming	netto inhoud vlokvorming (300-3500m3)	€ 93.268	€ 11.241	€ 20.542	€ 6.162	€ 1.489	€ 150.706	
20	Lamellenbezinking	netto bezinkoppervlak (1000-10000m2)	€ 194.304	€ 2.810	€ 37.588	€ 11.276	€ 2.805	€ 251.534	
21	Actieve kool filtratie / Snelfilter	koolvolume (72 - 5.760 m3)	€ 357.490	€ 4.496	€ 74.781	€ 22.434	€ 5.484	€ 652.844	
22	Infiltratieputten	aantal putten (3-26 #)	€ 125.937	€ 50.584	€ 26.967	€ 8.090	€ 1.971	€ -722.293	
23	Winputten	aantal putten (3-26 #)	€ 77.459	€ 59.015	€ 16.587	€ 4.976	€ 1.212	€ 1.623.756	
24	Splw. hergebruik (conventioneel)	debiet (60 - 350 m3/u)	€ 127.546	€ 22.482	€ 27.082	€ 8.125	€ 1.978	€ 197.130	
25	Spoel- / Slibwaterbuffer	indik/ opslagvolume (300 - 900m3)	€ 40.013	€ 4.496	€ 6.267	€ 1.880	€ 494	€ 53.737	
26	0	0	€ -	€ -	€ -	€ -	€ -	€ -	
27	0	0	€ -	€ -	€ -	€ -	€ -	€ -	
28	0	0	€ -	€ -	€ -	€ -	€ -	€ -	
31									
32									
33									
34	Costdriver percentage	Kosten sorteren	49,7%	8,9%	9,9%	2,8%	0,7%	100,0%	
35									
36		Sorteren ongedaan maken							

DATA-CoP | Uitgangspunten | Investering | **Exploitatie** | Grafiek investering | Grafiek exploitatie | Kengetalen investeringe


Verdeling exploitatiekosten
Series "Rente/ afschrijving € /jaar" Point 1
Value: € 1.340.365
Kostensoort --->
€ -
€ 200.000
€ 400.000
€ 600.000
€ 800.000
€ 1.000.000
€ 1.200.000
€ 1.400.000
€ 1.600.000
Exploitatie (Euro / jaar) --->
Rente/ afschrijving € /jaar
Grondwaterbelasting € / jaar
Onderhoud € / jaar
Energie € /jaar
Vulmaterialen € / jaar
Provinciale heffingen € / jaar
Bediening /optimalisatie € / jaar
Chemicaliën € /jaar
Beveiliging € / jaar
Administratie € / jaar
Afvalstoffen € / jaar
Analyse € / jaar

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Goals 2009

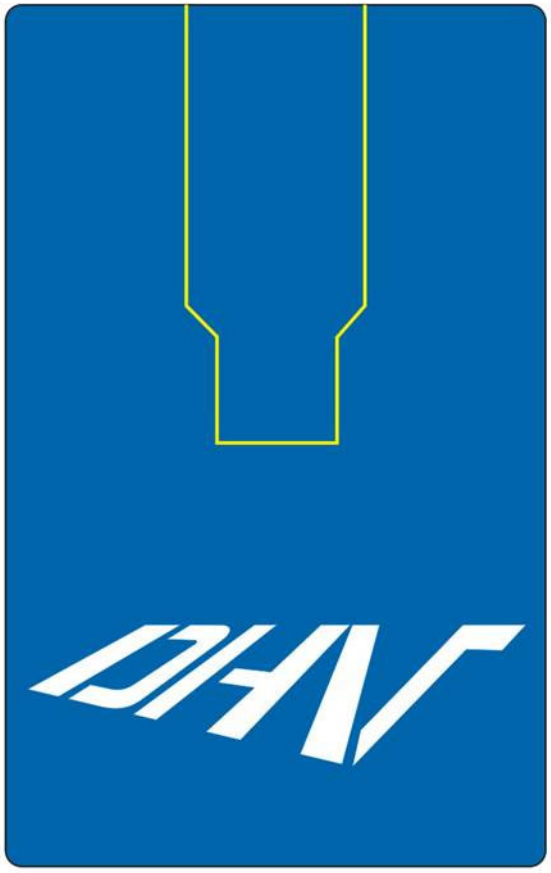
More data from projects

Calculation of building area, volume

Optimisation tools

CO_2 footprint calculation for strategic purposes

Gateway to solutions



On the memory stick

Introduction to DHV

Presentation
Excel template

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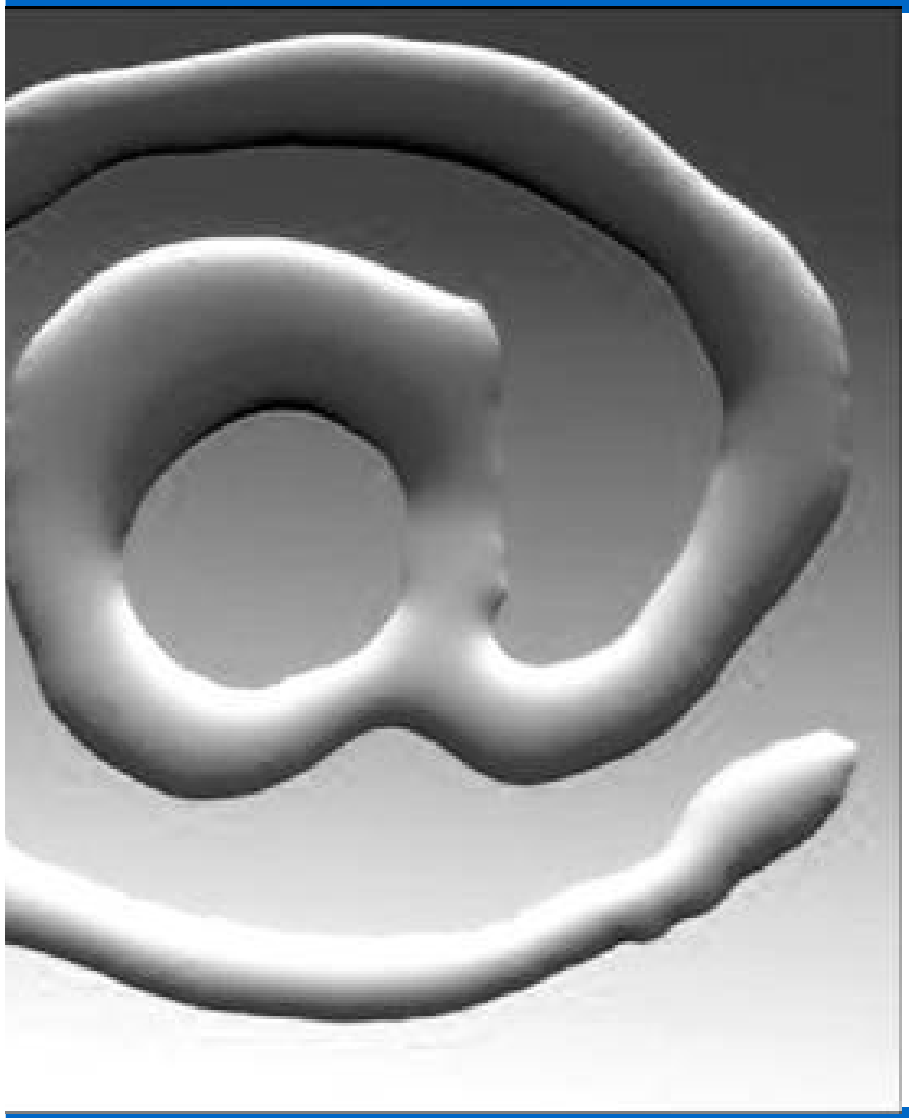

How to obtain a password

On list of students L. Rietveld

You will receive a password by e-mail

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Gateway to solutions