

Arnhem Design Workshop RE SUITE & DECISION SUPPORT TOOL





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1. RE Suite – Real Estate Suite





1. IT architectuur RE Suite



STREAMER 2nd Design Workshop – Arnhem, September 20, 2017



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2. Background





2. Current practice before STREAMER





3. DST & STREAMER WORKFLOW



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3. Description of Decision Support Tool

a decision-support tool that also addresses LCC considerations

Included research scope:

- KPIs for energy-efficient hospitals, focused on the building level
- BIM interoperability solution for existing energy simulation tools
- User-friendly dashboard for KPI analysis and decision-support







3. The process and information exchange





3. Workflow - CMIS on SharePoint / PLM



CMIS site: https://cmis.demobv.nl



3. Workflow - via CMIS in RE Suite

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4. Functionalities of RE DST Streamer

- A. Case definition
- B. Case alternative definition
- C. Viewing and analysis of generated designs (IFC)
- D. Indicator calculation
- E. Import of energy calculation
- F. LCC analysis
- G. KPI importing and calculation (Energy, Financial, Quality)
- H. Constructing dashboards with KPI's
- I. Multi criteria analysis



4. A. B. Case and case alternatives





4. C. Viewing generated designs





4. D. Indicator calculation

KPIs can consist of multiple performance indicators to define and calculate the KPI. In this way PIs can be regarded as 'sub-KPIs'.

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4. E. Import of energy calculation





4. F. Calculation of LCC





4. G. Calculation of Energy and Quality

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5. Do it yourself

Energy Efficient Building (EEB) optimization at the early design phase by simulation and evaluation:

- MEP/HVAC systems for hospitals
- Envelope and spatial layout
- Characteristics
 - An extension of the north-east wing
 - Floor area: approximately 5.000 m²
 - To be built on and in between the existing hospital buildings
 - Check the results and discuss





5. Do it yourself – Workshop structure





5. Do it yourself

- Koppel het verrijkte model aan het gekozen gebouw alternatief
- Bekijk de resultaten van het gegenereerde model
- Bekijk hoe de KPI's scoren op het hoogste abstractie niveau
- Bekijk hoe de KPI's scoren op het op een na hoogste abstractie niveau
- Bekijk hoe de LCC gekoppeld is aan het model
- Bekijk de energie resultaten van het model





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7. The Integration in RE Suite



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7. The whole life cycle









7. BIM / IFC





7. Energy

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abstraction 0 <td< td=""><td>leidslabels</td><td>02.01.02</td><td>Mutatieonderhoud</td><td></td><td>0</td><td>0</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></td<>	leidslabels	02.01.02	Mutatieonderhoud		0	0													
02.02 Overige exploitatieuitgaven 273 7.156 22.140 278 288 293 298 303 309 314 320 326 331 337 437 Amiterdam 02.020 Overige exploitatieuitgaven 10 2.722 8.627 102 104 100 110 113 115 117 120 122 124 127 438 Binnenstad-kampen Delt 0.00 0	aatregelen	02.01.03	Klachtenonderhoud		0	0													
1 1		02.02	Overige exploitatieuitgaven	273	7.156	22.140	278	283	288	293	298	303	309	314	320	326	331	337	
437 Amsterdam 438 Amsterdam 438 Binnenstad-kampen Delt 430 Overige belastingen 50 1.20 2.72 8.62 102 104 100 108 110 113 115 117 120 122 124 127 438 Binnenstad-kampen Delt 0 0.27.2 8.62 1.06 55 56 57 59 60 61 62 63 440 Overage belastingen 0 0 0 0 64 63 <td>el Id Buurt Gemeente Objee</td> <td>02.02.01</td> <td>Administratie en beheer</td> <td>123</td> <td>3.058</td> <td>9.199</td> <td>125</td> <td>127</td> <td>129</td> <td>131</td> <td>133</td> <td>134</td> <td>137</td> <td>139</td> <td>141</td> <td>143</td> <td>145</td> <td>147</td> <td></td>	el Id Buurt Gemeente Objee	02.02.01	Administratie en beheer	123	3.058	9.199	125	127	129	131	133	134	137	139	141	143	145	147	
437 Amstedam 100 2.7.2 8.6.27 102 104 105 100 110 113 115 117 120 122 124 127 438 Ennenstad-kampen Deff 0 0.0 0 <td></td> <td>02.02.02</td> <td>OZB</td> <td></td> <td>0</td> <td>0</td> <td></td>		02.02.02	OZB		0	0													
438 Binnentad-kampen Delft 60 1.060 4.01 4.034 51 52 53 54 55 56 57 59 60 61 62 63 440 Out-assenddorg Amsterdam 4.01 4.024 Matterdam 0 <td< td=""><td>437 Amsterdam</td><td>02.02.03</td><td>Overige belastingen</td><td>100</td><td>2.732</td><td>8.627</td><td>102</td><td>104</td><td>106</td><td>108</td><td>110</td><td>113</td><td>115</td><td>117</td><td>120</td><td>122</td><td>124</td><td>127</td><td></td></td<>	437 Amsterdam	02.02.03	Overige belastingen	100	2.732	8.627	102	104	106	108	110	113	115	117	120	122	124	127	
440 Oud-assenddor, Amsterdam 62.02,0 Erbpachtanon 0 0 442 Wazpe-noord Amsterdam 0 0 0 443 Wazpe-noord Amsterdam 0 0 0 0 443 Wazpe-noord Amsterdam 0 0 0 0 0 445 Broadbard Amsterdam 0	438 Binnenstad-kampen Delft	02.02.04	Verzekeringen	50	1.366	4.314	51	52	53	54	55	56	57	59	60	61	62	63	
442 Wazep-noord Amsterdam 443 Roerdalen Amsterdam 443 Roerdalen Amsterdam 443 Roerdalen Amsterdam 443 Roerdalen Amsterdam 445 Baginewide Amsterdam 03 Baten (overige) 0 04 Kosten (Overige) 0 04 Kosten (Overige) 126 05 Inkomsten o.b.v. maatregelen -20.464,969 -58.887.246 -74.510 -152.000 -232.559 -336.886 -1.064.369 -1.025.656 -1.107.369 -1.129.517 -1.182.107 -1.175.149 -1.198.652 -1.222.625 - 05 Inkomsten o.b.v. maatregelen -20.464.969 -58.887 -74.510 -152.000 -232.559 -336.886 -1.064.369 -1.025.656 -1.107.369 -1.129.517 -1.182.107 -1.175.149 -1.198.652 -1.222.625 - 06 Uitgaven o.b.v. maatregelen 271.461 -390.821 233.143 130.724 -35.147 -1.02.34 -2.206 -4.257 -7.669 -58.221 -63.392 -8.186 09 Saldi 0 <td< td=""><td>440 Oud-assenddorp Amsterdam</td><td>02.02.05</td><td>Erfpachtcanon</td><td></td><td>0</td><td>0</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></td<>	440 Oud-assenddorp Amsterdam	02.02.05	Erfpachtcanon		0	0													
443 Roardalen Amsterdam 444 Roardalen Amsterdam 444 Oud-assenddorg Amsterdam 445 Baginewide Amsterdam 445 Baginewide Amsterdam 03 Baten (overige) 0 04 Kotonsten o.b.v. maatregelen -20.464.969 -58.872.46 -74.510 -152.000 -232.559 -336.886 -1.064.369 -1.129.517 -1.152.107 -1.175.149 -1.198.652 -1.222.625 - 06 Ultgaven o.b.v. maatregelen -20.464.969 -58.872.46 -74.510 -152.000 -232.559 -336.886 -1.064.369 -1.025.656 -1.107.569 -1.129.517 -1.188.652 -1.222.625 - 06 Ultgaven o.b.v. maatregelen 271.461 -590.821 233.473 238.143 130.724 -35.147 -10.234 -2.206 -4.257 -7.669 -36.221 -63.392 -8.186 09 Saldi 0 0 0 - - - - - - - - - - - - - - - - -	442 Wezep-noord Amsterdam	02.03	Overige uitgaven		0	0													
444 Out-assendoor Amsterdam 02.03.02 Net verhaabare service/solsten 0 0 445 Bagineweide Amsterdam 03 Baten (overige) 0 0 04 Kosten (Overige) 126 132 44 44 05 Inkonsten 0.b.v. maatregelen -02.046/4569 -58.872.46 -74.510 -152.000 -232.559 -336.886 -1.065.656 -1.107.569 -1.125.107 -1.175.149 -1.198.652 -1.222.625 - 06 Uitgaven o.b.v. maatregelen 201.451 -390.821 233.473 238.143 130.724 -35.147 -10.234 -2.206 -4.257 -7.669 -36.221 -63.392 -8.186 09 Saldi 0 0 0 0 - - - - - - - - - -8.186 - -8.186 - - - - -8.186 - - - - - - -8.186 - - - - - - - - - -8.186 - - - - -	443 Roerdalen Amsterdam	02.03.01	Overige uitgaven		0	0													
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04 Kosten (Overige) 126 132 44 44 44 05 Inkomsten 0.b.v maatregelen -20.646.969 -58.887.246 -74.510 -152.000 -232.559 -336.886 -1.085.856 -1.107.369 -1.129.517 -1.152.107 -1.175.149 -1.128.652 -1.222.625 - 06 Uigsven o.b.v maatregelen 20.446.450 -58.887.246 -74.510 -152.000 -232.559 -336.886 -1.085.856 -1.107.369 -1.129.517 -1.152.107 -1.175.149 -1.128.652 -1.222.625 - 06 Uigsven o.b.v maatregelen 271.461 -390.821 233.473 238.143 130.724 -35.147 -1.02.34 -2.206 -4.257 -7.669 -36.821 -63.392 -8.186 09 Saldi 0 0 -	445 Bagijneweide Amsterdam	03	Baten (overige)		0	0													
05 Inkomsten o.b.v maatregelen -20.464.969 -58.887.246 -74.510 -152.000 -232.559 -336.886 -1.064.369 -1.129.517 -1.152.107 -1.175.149 -1.198.652 -1.222.625 - 06 Uitgaven o.b.v. maatregelen 271.461 -390.821 233.473 238.143 130.724 -35.147 -10.234 -2.206 -4.257 -7.669 -36.221 -63.392 -8.186 09 Saldi 0 0 0 - - - - - - -7.669 -36.221 -63.392 -8.186 10 impact 0 0 -		04	Kosten (Overige)		126	132	44	44	44										
06 Ultgaven o.b.v. maatregelen 271.461 -390.821 233.473 238.143 130.724 -35.147 -10.234 -2.206 -4.257 -7.669 -36.221 -63.392 -8.186 09 Saldi 0 <		05	Inkomsten o.b.v maatregelen		-20.464.969	-58.887.246	-74.510	-152.000	-232.559	-336.886	-1.064.369	-1.085.656	-1.107.369	-1.129.517	-1.152.107	-1.175.149	-1.198.652	-1.222.625	-1.
09 Saldi 0 0 10 Impact 0 0	<u> </u>	06	Uitgaven o.b.v. maatregelen		271.461	-390.821	233.473	238.143	130.724	-35.147	-10.234	-2.524	-2.206	-4.257	-7.669	-36.221	-63.392	-8.186	
10 Impact 0 0	1	09	Saldi		0	0													
		10	Impact		0	0													



7. In depth insight in data and information





7. Risk management

RE Suite							
Vastgoedsturing Maintenance BrandScan	RisicoAnalyse	Energie GIS Rapportage Beheerplann	en Administratie	e Opname	Cartofheek		
Bestand Bewerken Voorraad Inspecties Analyses	is Configuratie H	telp					
Voorraad Objecten	Risicokaart financ	cieel Risicokaart veiligheid Risicokaart imago	Risicokaart tota				
Inspecties	Financieel	< 10% 10%-30%	30%-50%	50%-70% >	70%		
Opname specificatie Opname Analyses Id Id OpnameCode Naars V 10 1301DM3546 Lauvers/luts/leie 11 1302DM3547 Morra 12 1303DM3548 Hoelsth/varmoes	Meer dan € 100 Tussen de € 50 Tussen de € 10 Tussen de € 2.5 ~ € 2.500 per lo	0.000 per keer 1 0.000 -€ 100.000 per keer 1 0.000 -€ 50.000 per keer 1 500 -€ 10.000 per keer 1 seer 1					
	Nr. Comple	x Ongewenste gebeurtenissen of tekortkomingen	Kansklasse	Gevolg finar	cieel Risico financieel		
	1 DM3546	Vallen van hoogte tijdens onderhoudswerkzaamhe	iden 2	2	4		
	7 DM3546	Slachtoffers bij brand	3	4	12		
	8 DM3546	Uitbreiding brand	2	4	8		
	12 DM3546	Stachtoffers door electrocutie of brand	2	5	10		
	9 DM3546	instortingsgevaar	2	4	8		
	2 DM3546	Vtijkomen van asbest	2	3	6		
		DIA Constants					



7. Dashboard



Colophon

PowerPoint:Decision Support ToolIssue Date:20-09-17Author:André van Delft & Sander Bruinenberg (DEMO Consultants)Version:1.0

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