Graduation Plan

Master of Science Architecture, Urbanism & Building Sciences



Graduation Plan: All tracks

Personal information	
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Studio	
Name / Theme	Architectural Engineering
Teachers / tutors	Design tutor: Monique Smit
	Building technology tutor: Maarten Meijs
	Research tutor: Siebe Broersma
Argumentation of choice of the studio	The technical aspects of architecture has always interested me. One of the things that attracted me to study architecture in the first place was the mixture between design and technique. Furthermore has sustainability in architecture in its whole been of an interest to me and especially the performance of a building during its period of use. After I learnt that the graduation studio of Architectural Engineering offered me the freedom to fully define my graduation project myself, so that I could define a project with a technical focus on
	sustainable building performance while also maintaining all the other aspects of architectural design and even incorporate other personal fascinations such as the
	implementation of old existing buildings or structures in a new architectural designs, my choice for the studio was easily made.

Graduation project								
Title of the graduation project	Fix-up the Walk-up: The renovation of 1960's walk-up flats into social and energy-efficient fix-up dwellings / De renovatie van Jaren '60 portiekflats tot sociale en energiezuinige kluswoningen							
Goal								
Location:	IBA Parkstad, Limburg (Hoensbroek)							
The posed problem,	The IBA Parkstad area is a region with a rich and vibrant history. It once was the 'energy centre' of the Netherlands and known for its coal mining. However, things have changed. The mines have since been closed and the area has lost its identity. Also, the area has to deal with problems as population ageing, population decline, an outdated building stock and a large scale building vacancy. In most cases these vacant buildings have a bad energetic performance due to for instance bad insulation, insufficient building quality, bad solar orientation, lack of							

	solar shading and energy spilling ventilation systems. This creates a large ecological footprint and results in high energy costs. The large scale building vacancy, together with a high unemployment percentage and the loss of a regional identity due to the closing of the coal mines also has a decline of the social cohesion in the area as a consequence.							
research questions	Overall research question:							
	How can existing walk-up flats in the IBA Parkstad area be redesigned into attractive and comfortable energy neutral dwellings, while also improving the social cohesion in the neighborhood? Thematic research question (for research paper): In what ways can an existing walk-up flat, dating from 1960's, be made energy neutral, and which ways are more suitable?							
design assignment in which these result.	The goal of this graduation project is to create a redesign for an existing walk-up flat in the IBA Parkstad area. Besides a sufficient design in all common fields of architecture, the objective focuses on a realization of an energy neutral design and on the social improvement of the neighborhood, while staying both comfortable and attractive.							
Process								
Method description								
The to be used method	ologies during the research and design process are:							
Literature studies on the to	opics:							
- Energy neutral build	lings							
- Energy labels	311195							
- Passive heating co	oling and ventilation							
- Sustainable active h	peating cooling and ventilation							
- Renewable energy	leating, cooling and ventilation							
- Renovating bad end	praetic buildings							
- Social community a	rchitecture							
Case studies/reference stu	idv on the tonics:							
- Energy neutral buildings								
- Renovated bad energetic dwellings								
- Redesigned walk-up flats								
- Fix-up dwellings (kluswoningen)								
- Materialization								
Discussion/consulting/brain	nstorming with:							
- Monique Smit, abou	ıt overall design							
- Siebe Broersma, ab	out energy neutrality and building performance							
- Maarten Meijs, about building technology								
Research by design, in the	e form of:							
Research by design, in the form of: - Overall design sketching								
- 3D modelling								

- Physical modelling

Literature and general practical preference

Literature:

- Agentschap NL. (2011). *Voorbeeldwoningen 2011: Bestaande bouw*. Sittard: Agentschap NL.
- ENDIS. (2011). Endis portiekflat renovatie. Retrieved 9 June, 2015, from http://www.endis.nl/endis-portiekflat-renovatie/aanleiding/170-aanleiding2.html
- Garritzmann, U., Poiesz, P., & Snijders, K. (2015). Kansen voor de naoorlogse portiekflat: Het specifieke van de middenniveau renovatie. Rotterdam.
- Groenewegen, P. P., Van den Berg, A. E., De Vries, S., & Verheij, R. A. (2006). Vitamin G: effects of green space on health, well-being, and social safety. *BMC public health, 6*(1), 149.
- Kristinsson, J., & Dobbelsteen, A. A. J. F. (2012). *Integrated Sustainable Design*: Delftdigitalpress.
- Vloet, F. (2014). Klushuizen verbeteren leefbaarheid in kwetsbare wijken. Retrieved on 30 april, 2015, from: http://www.denieuwedraai.nl/klushuizenverbeteren-leefbaarheid-in-kwetsbare-wijken/
- Wakefield, S., Yeudall, F., Taron, C., Reynolds, J., & Skinner, A. (2007). Growing urban health: community gardening in South-East Toronto. *Health promotion international*, *22*(2), 92-101.
- Woude, H. V. D., & Dorst, M. V. (2012). *Community architecture in Nederland*. Bussum: Thoth.
- Yanovshtchinsky, V., Huijbers, K., & Dobbelsteen, A. v. d. (2013). *Architectuur als klimaatmachine: Handboek voor duurzaam comfort zonder stekker*. Amsterdam: SUN.

Precedents/Case Studies:

- Vanschagen Architecten. (2014). *Klussen op de Klarenstraat*. Amsterdam. Retrieved 27 March, 2015, from
- http://www.urbannerdam.nl/werkvelden/projecten/klussen-op-de-klarenstraat/
- hp architecten. (2013). *Renovatie portiekflats*. Rotterdam. Retrieved 7 April, 2015, from http://www.hparchitecten.nl/portfolio/renovatie-portiekflats/
- Archivolt architecten. (2010). *De Koningsvrouwen van Landlust*. Amsterdam. Retrieved 30 April, 2015, from http://www.kennishuisgo.nl/voorbeeldprojecten/ProjectPage.aspx?id=699
- Frencken-Scholl Architecten. (2004). *Lienaertsstraat appartementen*. Geleen.
- Retrieved 1 May, 2015, from http://www.kennishuisgo.nl/voorbeeldprojecten/ProjectPage.aspx?id=242
- KOW Architecten. (2011). Passive House renovation Nieuwkuijk. Nieuwkuijk. Retrieved 30 April, 2015, from http://www.kennishuisgo.nl/voorbeeldprojecten/ProjectPage.aspx?id=830

Reflection

Relevance

In current day society, where there is more and more awareness of the vital importance of sustainable building development which results in more and more sustainable architecture, the biggest part of our society still lives and works in energy wasting buildings. Due to for instance bad insulation, insufficient building quality, bad solar orientation, lack of solar shading and energy spilling ventilation systems these buildings have a bad energetic performance. The combination of this immense stock of bad energetic performing buildings and the growing demand for sustainable energy efficient buildings result in a pressing need to upgrade these buildings and its energetic performance so that its ecological footprint will shrink. The value of this graduation project lies in both its choice of building typology, the walk-up flat, and its answer to the pressing demand from society for sustainable buildings and dwellings. The choice of the building typology is of value, because of its generic nature. The typology is widespread throughout the Netherlands and therefor can its new sustainable energy neutral design philosophy be transferred to other walk-up flat, so that it can answer to the problem on a big scale.

Time	planning																										_
Graduation		9 feb - 15 feb	16 feb - 22 feb	23 feb - 1 mar	2 mar - 8 mar	9 mar - 15 mar	16 mar - 22 mar	23 mar - 29 mar	30 mar - 5 apr	6 arp - 12 apr	13 apr - 19 apr	20 apr - 26 apr	27 apr - 3 may	4 may - 10 may	11 may - 17 may	18 may - 24 may	15 may - 31 may	1 jun - 7 jun	8 jun - 14 jun	15 jun - 21 jun	22 jun - 28 jun	29 jun - 5 jul		6 jul - 12 jul	13 jul - 19 jul	20 jul - 26 jul	27 jul - 2 aug
Plan	Weeknumber	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	21	5 3	27	28	29	30	31
	Studyweek number	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9	3.10	4.1	4.2	4.3	4.4	4.5	4.6	4.7	4.8	4.9	4.10	0 4.:	11	5.1	5.2	5.3	5.4
Writing	Graduation Plan								P1	_		-									P2						
Research	Research paper Context/ site observation Literature studies Case studies																										
Design	Overal Design 3D modelling 3D Physical modelling																										
Presentation	Pavilion pitch Fascination poster Presentation preparation 3D presentation model Reflection																										
Graduation		3 aug - 9 aug	10 aug - 16 aug	17 aug - 23 aug	24 aug - 30 aug	31 aug - 6 sep	7 sep - 13 sep	14 sep - 20 sep	21 sep - 27 sep	28 sep - 4 oct	5 oct - 11 oct	12 oct - 18 oct	19 oct - 25 oct	26 oct - 1 nov	2 nov - 8 nov	9 nov - 15 nov	16 nov - 22 nov	23 nov - 29 nov	30 nov - 6 dec	7 dec - 13 dec	14 dec - 20 dec	21 dec - 27 dec	28 dec - 3 jan	4 jan - 10 jan	11 jan - 17 jan	18 jan - 24 jan	25 jan - 31 jan
Plan	Weeknumber	32	33	3 34	35	36	37	38	39	40	41	42	43	44	45	5 46	47	48	3 49	50) 51	52	53	1	2	1	3
	Studyweek number	5.5	5.6	5 5.7	5.8	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	1.10	2.1	2.2	2.3	3 2.4	2.5	5 2.6	5 -	-	2.7	2.8	3 2.5	2.
Writing	Graduation Plan						_						P3	_		_	-			P4					_	_	P5
Research	Research paper Context/ site observation Literature studies Case studies research by design																										
Design	Overal Design 3D modelling 3D Physical modelling								-																		
Presentation	Pavilion pitch Fascination poster Presentation preparation 3D presentation model Reflection																										