

## wout zweers

10-feb-58  
single

Arnhem

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on this site you can find pictures of my work

present work

sculpture, design in own studio, freelancer

## study

1977 VWO Rembrandt scholengemeenschap  
1977 - 1984 Wageningen Agricultural University  
1987 - 1992 academy of fine arts AKI Enschede  
2006 - 2011 university of twente

Leiden  
Wageningen  
Enschede  
Enschede

beta orientation VWO, best of class  
Ir.Tropische Cultuurtechniek specialisation irrigation and watermanagement  
mixed media  
MSc Industrial Design Engineering, design and styling. Graduation with outstanding marks

## awards

1990 award by Aeronautic service Netherland (RLD) second price for wing1, about flying  
1995 nomination award Dutch Centre for Amateur drama NCA for set "Patstelling"  
1997 nomination Hans Snoek award for set "oceanvlucht"  
2008 award for Brinktheater (LPB national award best community theater)

## materials and technics

sculpture, product modelling and prototyping, scenography  
metal, wood, plastics  
own studio for building sets, models and sculptures, prototypes  
metal and wood working facilities

## specialty:

designing: creative work, combining technology and art, multidisciplinair thinking, kinetic sculpture, mechanical design, sculptures using water

## skills

hand- and technical drawing, presentation drawing, design sketching.  
Solidworks (for part and assembly creation, basic simulation, rendering), Rhino3D ( for 2d drawing, exporting for CNC work, simple rendering)  
capable to deliver cad files for machining and tooling  
Illustrator, Photoshop, Bryce, Indesign, Premiere for visualisations and lay-out  
calculation of statically determined structures (bending, stability, flexion, strength), Working Model for simulations  
3d printer, lasercutting and -engraving  
welding (stainless steel and carbon steel, MIGMAG), woodworking (constructional), modelmaking  
cnc milling (wood, plastics)  
good overview of production technology  
good contact skills with engineers and artistic management

## languages

dutch	native speaker
english	good skills in writing and speaking
german	basic level
spanish	basic level
italian	started in 2015 to learn italian as a hobby. Designers and artists should speak italian :-)

## travelling

1979 Spitsbergen (3 months)	Arctisch Centre University of Groningen RUG: surveyor and soil scientist, construction work and assisting archeologists
1980 Peru (1 year)	stageperiod in Peru for agricultural university, land rehabilitation project Arequipa, watermanagement study in Carhuaz
1982 Surinam (6 months)	MSc research in watermanagement in rice production in district Nickerie
1991 India (8 months, Nuffic exchange)	stageperiod in India for academy of fine arts AKI, study of sculpture and literature, extensive touring
USA (3 months)	visiting friends and touring in the east of USA
2004 Bosnia (1.5 months)	summercamp for children in Srebrenica:making sets and teaching

## teaching

1980 agricultural university	wageningen	student assistant,	KB2 project
1990-ies prego zeilzwerfen	friesland	various sailing camps	coaching children
2004 concordia	enschede	set design course	24 lessons, realisation of set
concordia	enschede	set design classes	for 12 - 14 year old children
kottenparkcollege	enschede	set design classes	for 12 - 14 year old children
2004 werkgroep nederland srebrenica	srebrenica	summercamp: making sets with children about 12 years old	
2009 artez	enschede	theaterclass	for freshmen at conservatorium
2011-2014 various classes in fablab:	enschede	coordinating, teaching	introduction classes in 3d printing and lasercutting classes nanotechnology and sustainability mentoring students mechatronics and electronics
2016 wowlab:	enschede	home school classes: workshops with parents and children	

## light, lighting

constructed lighting-objects for use in theater (functional or as part of the set design),  
graduation project: design of a led-lamp: cooling, choice of materials, light sources, styling, idea's about new uses  
close collaboration with light designers or designed simple light plans in theater  
incorporation of light in consumer products such as kitchen ware in design sketches during product drawing classes:  
lighting photos

## sheet working experience

making mock ups (paper) and optimising shape/contours, making molds for hand plasma cutting, folding and bending in sculpture  
making laser cutting files for lettering  
making paper models from cad files using specialised software (pekapura) and lasercutter

## study industrial design engineering at university of twente

this study was started to deepen knowledge of serial production, production on industrial scale and to understand how to make a product suitable for serial production.  
it also renewed interest in technology and science as source of inspiration for new work.  
selected courses on design visualisation, design methods, mechanical engineering principles, computer programming, cadcam methods, mathematics, ergonomics  
were followed in the premaster study

the master program Industrial Design Engineering, track Design and Styling, consisted of classes in production and material technology, design and innovation methods and management, scenario making, design history, life cycle analysis, visualisation skills  
subjects were, amongst others, a welding torch redesign, a machine for packing vegetables in gas protected packaging,  
a study for a better layout of an MRI ward and how to test this in a virtual environment, a short video documentary about evolutionary product design, an underwater tracking device for divers.

the graduation project involved designing a new sustainable luminaire for the future office, a led lamp which was also realised as a working prototype,  
a study how to design with sheet material (with router and laser) and a study of new, contemporary patterns that can be used for individualized products.

## working experience

a wide variety of work and projects has been realised from 1980, material handling, design and construction skills evolved over the years

most of the work was design and construction for theater, sculpture and design  
and also teaching (set design, presentation on stage) and advice (about construction, materials and safety) projects

after graduation in 1984 at the agricultural university assistance work for scientific research was done.  
presently scientific work is picked up through collaboration with university of twente in construction of installations for fluid experiments

worked as coordinator in Fablab Enschede:

Starting a new fablab and coordinating the activities. Education, promotional activities, social network with other fablabs,  
consultancy (about construction and use of digital machines), brainstorming and developing models, designs and prototypes  
giving introduction lectures and workshops on digital production, 3d printing, sketching with the computer and designing for 3d.  
setting up the hardware (computers, furniture), bookkeeping, publicity (website, flyers, posters) and daily management.

After one year of expanding activities work shifted to managing and mentoring assistants, volunteers and trainees , technical and creative processes. 3d printing processes and investigating and i

work and projects, overview per category:

scientific work

1980 Wageningen agricultural university

wageningen

student assistant KB-2 project:

assisting in organising education project, working out method for project based education

1985 Wageningen agricultural university

wageningen

assisting chemical research work : organizing testpanel, preparing field work, surveying

2010	twente university / impact	enschede	building wave tank for research of deposition of granular materials on beaches.
2011	free flow foundation	enschede	building experiment installation for simulation of magma flow experiments
2011	saxion	enschede	advising and assisting in lab on a chip construction with laser
2012	saxion	enschede	3d printing on textiles
2012	twente university	enschede	assisting with wave experiments, building wave tanks (soliton splash)
2013	twente university	enschede	collaborating with O.Bokhove in hydrodynamic experiments
2015	Kitt engineering	enschede	expertise and designing led panel encasings
2015	Kitt engineering	enschede	graphic design and mold design for encasing leds in user products
2015	university of Leeds	Leeds, UK	rotating platform design and construction for fluid experiments
2015	free flow foundation		improved construction of wave tank
2016	university of leeds	Leeds UK, Edinburgh	wetropolis: riverbasin flood demonstrator

#### construction work

1990ies	prego	friesland	assisting in renovating and maintenance of steel bargues (skutsje)
2000	C-Dive	enschede	design and realisation of stainless steel platfoms in dive centre welding, designing a practical assembly method, under water assembly work

#### stage design and construction

much of this work consisted of technical projects: either designing and constructing (steel constructions, calculations for strength and fluid), several sets took technology as inspiration and used this in the sets  
 Most sets were constructed in the own studio, usually as steel and wood construction  
 Materials used were steel, wood, bamboo, ship's hardware, rope.  
 Some projects were advisory tasks such as risk analysis (RIA) and strength calculations.  
 For Dogtroep and Het filiaal (jeugdtheater) several projects were done, all inspired by technology.  
 Community projects were done in Enschede (two times) and Srebrenica  
 between 1992 and now more than 20 sets were realised

complete list of theater projects and -design is provided in appendix

#### freelancer in Opera of Nationale Reisopera Enschede

1996-2006 theatertechnician, stagehand and extra in 13 productions  
 most work was constructing (wood and steel) in the NRO shop and on tour.  
 Specialty: constructions where accuracy was demanded.  
 Light: designed a tubelight luminaire (for multiple use) and a (one - off) luminaire for SOX lights and mercury lamp  
 a special light "cube" containing 350 tubelights for use on the stage was worked out and built

complete list of theater projects for NRO is provided in appendix

#### performances, sculpture

several stainless steel sculptures were realised, all made in own studio.  
 wind and water are important in some of the sculptures. material treatment and use of technology is always an important element  
 Machines and mechanisms were made, often inspired by mechanical and scientific constructions or theories

Some performances, on the edge of sculpture and theater were done  
complete list of performances and sculptures is provided in appendix

## design

2008	!pet	hoogeveen	design and working prototype of computer casing
2010	municipality of Enschede	enschede	bike cab (fietstaxi) together with valerie zwart and edwin dertien
2010	municipality of Enschede	enschede	design and realisation house style rozendaal ateliers
2010	!pet	hoogeveen	led lamp design and realisation
2012-2013	fablab	enschede	various designs using laser and 3d printing: examples, tokens, presentation products for fablab
2015	wood joinery with cnc router	enschede	development of wood joints to be made with 3d router
2015	bookshelf design	enschede	mahogany bookshelf, parts will be made using 3d router
2015	paper designs	enschede	development of paper assembly / folding system for education, using laser cutter
2016	paper designs, furniture	enschede	

## technical advice

most advice work concerns strength calculations, safety reports or fluid calculations

1994	dogtroep	amsterdam	calculation of dimensions of syphon in "Noordwesterwals"
1996	viv a vis	amsterdam	statical calculations for safety
2000	dogtroep	amsterdam	statical calculations and RIE "Onno"
2000	diveworld	enschede	advise on construction of stainless steel support structure
2003	sonnevanck	enschede	technical expertise and welding for theaterset

## expositions

attended in various expositions, most had technology or flying as subject or inspiration

complete list of exhibitions is provided in appendix

## various activities

these are social functions, often technology and art -related

1995-1999	tart	enschede	member of board. Tart (technology and arts) promoted artistic projects that used or commented on technology
2000-2001	siena	enschede	production and redaction of artist's monthly "siena" after fireworks disaster in Enschede
2000-2001	association of affected stakeholder business	enschede	member of board (after fireworks disaster)
2001-2003	restarting after may 13th	enschede	member of redaction "13 mei, opnieuw beginnen"
2004-2006	werkhaven, studios for visual artists	enschede	member of board, treasurer
2004-2007	athletic club AC TION	enschede	chair of redaction, layout
2008-2009	Vrienden van kultuurstraat wesselerbrink	enschede	chair
2010		enschede	facilitating two guest artists in studio
2013	maker fair Twente	Hengelo	board member
2014-2015	maakfestival twente	Enschede	board member
2015 - 2016	preparations Makerfestival enschede 2016	Enschede	board member
2016	wowlab	Enschede	workshops making things for home teaching group

Present work and activities 2015 -2017

2015 luminoso	Enschede	own brand for light design
2015 wowlab	Enschede	started fablab in own studio
2015 qua art qua science	Enschede	lecture on cooperation of artist and scientist during making of her sculpture
2015 academie van de verbeelding	Enschede	lecture about light and expressive possibilities of light
2015 university of leeds	Leeds	prototype of rotating platform for hydrodynamical experiments
2015 saxion	Enschede	mentoring / classes on use of digital production for maquette making, building maquette with students
2015 kitt engineering	Enschede	design and realisation led panel thermal balance test installation
2015 kitt engineering	Enschede	mold design for embedding electronics on textile, graphic design
2015 maker festival Twente	Enschede	mold, equipment and chocolat casting "Chocopuzzel", give away for VIP-guests of makerfestival
2015 Andre Boone	Enschede	3d printing of sculpture prototypes, assisting making construction drawings for laser cutting steel
2015 various	Enschede	various assistance jobs (sketching, machining) for artists
2015 zomergoed	Enschede	cardboard construction workshop "building your city"
2015 frankenstein festival	Enschede	paper construction workshop
2015 kitt engineering	Enschede	preparing and lasercutting assembly molds for mounting led's
2015 university of leeds	Leeds	redesign lightweight wavemaker with electric and variable pumps
2015 hannah de vries	Enschede	small sculpture "Loggerhead"
2015 development of workshops for laser and cad drawir	Enschede	
2016 Innovatiepark Enschede	Enschede	Nova 1000- proposal track / landscape design innovatiepad
2016 university of Leeds	Leeds	Wetropolis, river basin flood demonstrator
2016 Math Forsees Conference	Edinburg	demo Wetropolis on maths conference
2016 PC Nautic	Losser	development of 3D printed enclosures for electronics
2016 Susteq	Enschede	CNC router work (production work)
2016 Jurgen Kuipers	Enschede	foam model for bike gear
2016 Nazomertuin Lonneker	Lonneker	exhibition sculpture
2016 Maand van de grafiek 2016	Enschede	exhibition sculpture and graphic art
2016 Stadsherberg Enschede	Enschede	workshops papercraft
2016 Makerfestival enschede 2016	Enschede	play and learn dagen: workshop chocolate making
2017 Clear flight solution	Enschede	3D CNC milling of full scale bird foam models
ongoing:		
Rob Lucas	enschede	designing and constructing bookshelf

fablab contributions and collaboration

2011-2015

green finger:	electronic device for plant keeping
lab on a chip	3d printed and lasered loac in various designs
electronic circuits on textile	study of making foldable electronic circuits on textile, prototyped
3d printing of watermarks in paper	feasibility study for paper mill Schud
lectures and presentations about digital production	



classes introduction to 3d printing  
classes drawing on the computer for 2D and 3D  
coaching students at designing 3D printer for concrete printing  
3D visualisation of AFM pictures  
booklet 3 year fablab: overview of projects  
designing various tools for lab use  
designs for customers of fablab  
class life cycle analysis for nanotechnology course  
shop floor design  
coaching trainees in Fablab  
2015 vision on fablab opportunities in NL

fablab standard classes  
fablab standard classes  
mechatronics, electronics and IPO students

varius designs, 3D prints and laser cut objects  
short introduction in LCA  
efficient and workable lay out of Fablab

participating in online discussion about development of fablabs

#### publications

2011 O.B., Elena Gagarina, Wout Zweers, Anthony Thornton 2011:  
Ned. Tijdschrift voor Natuurkunde. Popular science version in Dutch. 77/12, 446-450  
Anthony Thornton, Martin Robinson, Elena Gagarina, Wout Zweers, O.B. 2011  
2013 Wout Zweers, Valerie Zwart and Onno Bokhove Bridges 2013  
2013 3d printing and lab on a chip presentation enschede  
2013 3d printing and lab on a chip presentation interview

Bore Soliton Splash -van spektakel tot oceaangolf?  
Bore Soliton Splash.  
Making Waves: Visualizing Fluid Flows  
micro nano conference  
product







using these









with laser,

