

Swell!

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'Swell!' is a magazine which is published four times a year for all the members of 'Het Waterbouwdispuut' and her relations.

Het Waterbouwdispuut is the student association of the department of Hydraulic Engineering and Environmental Fluid Mechanics of the Delft University of Technology.

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FROM THE EDITORS

Dear members,

While we're encountering a late heatwave and everyone is gasping for some cool air, the first swell of 2016/2017 is finished. So sit down and enjoy the first Swell of the new academic year!

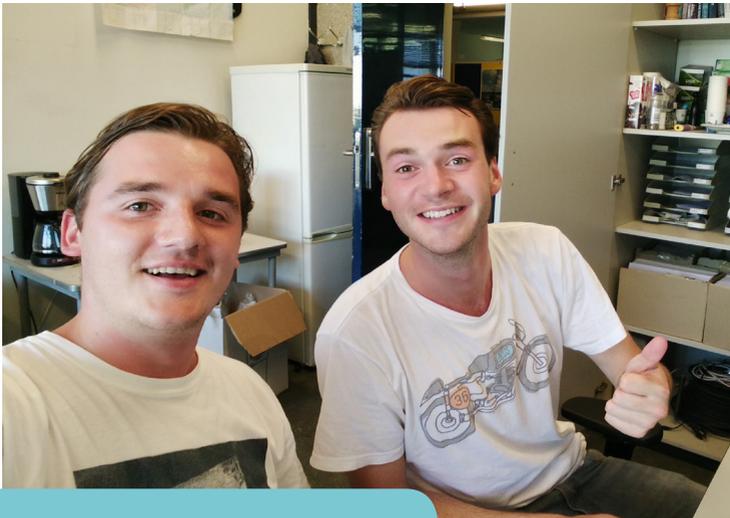
This Swell contains a number of reports and updates of our various activities in the last months as well as some hydraulic adventures from all around the world. And many more, check it out!

We would like to thank everyone who helped us making this Swell. We couldn't have done it without you!

Enjoy,

Editors of the 'Swell!'

Onne van der Graaf
Piebe Koster



The editors: Onne van der Graaf & Piebe Koster

From the President

Dear members of 'het Waterbouwdispuut',

The autumn is upon us and the academic year 2015/2016 has just started. Which, for the first time, means a complete new board for the Hydraulic Engineering student association. A new organizational structure will be used, were the board will renew itself completely every year. Sadly, this means that we have to say goodbye to the former board. Therefore, I want to thank Coen, Tymen, Elisabeth, Niels, Raoul, Oxana and Thijs for their input, enthusiasm and hard work this year. With the leaving board members, the new board has taken their places and as new president of the Hydraulic Engineering student association, I'm very proud to announce the completely new board for the academic year 2016/2017!

President – Piebe Koster

"Hi there! I'm Piebe, 23 years old and a Hydraulic Engineering "rookie". In September I will be baptized in the "world" of Hydraulic Engineering, which I'm very keen to be. Especially after my final thesis on the "Dordtse Wijnhaven". For the past few months, together with my mentor Gerrit Jan Schiereck, I have done research on the critical wash inside the harbor, caused by nearby shipping. After doubting for months about my choice of MSc programme, this research project truly convinced me: Hydraulic Engineering it was going to be! Although a long and tough two years are ahead of me, my favorite 'water quote' will hopefully give me the needed support."

'The cure for anything is salt water: sweat, tears or the sea.'

Secretary - Jenske Kroes

"My name is Jenske Kroes and I am 23 years old. This June I finished my bachelor Civil Engineering and I am very excited to start with Hydraulic Engineering in September. Furthermore, I love avocados, sunbathing and playing soccer! I found it hard to determine what my favorite Hydraulic quote is, because there are so many sharp water-liners. In the end I choose for a 'Louis van Gaal'-ish one:

'It stands as a pole above water!'

See you soon at the Hydraulic Coffee!"

From the President

Internal Affairs - Vibeke van der Bilt

"Last year, while I was busy obtaining my bachelor's degree in Civil Engineering, I have organized the study tour to Panama for this summer. This gave me already a little insight in participating to the hydraulic study association and the work that the board members achieve together. Therefore, I look very much forward to fulfil my function as 'Internal Affairs', with the highest focus on organize an inspiring Symposium."

'Thousands have lived without love, no one without water.'

External Affairs- Wijnand IJzermans

My name is Wijnand IJzermans and I will be the board's vice-president this year. Starting my BSc. Civil Engineering here in Delft back in 2011, I know what it is like being part of the water community and I'm looking forward to getting started.

Being responsible for our association's public relations, my work will mainly consist of being the link between our students and the companies within our sector. Establishing a good relationship with our partners enables us to take part in activities and allows our members to focus on their career after graduation.

"I think this will be a good hydraulic year, I can feel it through my water"

Treasurer - Onne van der Graaf

I started Civil Engineering in 2011 knowing that becoming a member of the board of the Hydraulic Student Association was the only way I could make my family proud. And what do you know. I actually did it. Never give up on your dreams people.

Favourite quote: *"There will not always be frogs where water is, but where frogs are, there will always be water".*

This is an actual quote by Johann Wolfgang von Goethe.. Let that sink in.

From the President

Education - Stephanie Lanphen

My name is Stephanie Lanphen and I will be focusing on education this year. I am 23 years old and I like to travel, especially to Asia. I am looking forward to next year and I think it will be a great year.

"What did the ocean say to the other ocean nothing they just waved."

Coming year we will do our best to organise a lot of interesting activities for our members and we hope to see you at one or all of these activities!

See you water,

Piebe Koster

President of the Hydraulic Engineering Student Association



By Raoul Tutein Nolthenius, Jenny Pronker, Servaas Kievits and Floortje Roelvink

After months of preparation, the big day, May 19th, was finally there. With the right amount of stress the last tasks were fulfilled and already at 12 o'clock the first visitors poured in, eager to see this year's symposium, which theme was: Hydraulic Engineering in Developing Countries. Empowering local communities by education and participation was the key element in the symposium, and throughout the day many experiences, thoughts and visions were shared on this subject!

After everyone had enjoyed a healthy lunch, the participants filled the auditorium of the Culture centre. There we were welcomed by Henk Nieboer, Director of Witteveen+Bos and our chairman of the day. He elaborated on the theme of the day and explained the importance of this. To end his story, he invited the three members of the discussion panel to the stage.

Firstly, Cynthia Boll shared her experiences that she obtained in Jakarta, a city that is sinking by the year, of which the inhabitants are rarely aware of. As the only woman of the day and a journalist instead of scientist, she stood her ground perfectly well and gave a refreshing look on the subject. The public enjoyed her view and overloaded her with questions. Then Dano Roelvink was asked to present himself. He gave a detailed overview of his work and his interests and motivation for his work at Unesco-IHE. It is clear that this man is committed to his job. He highlighted the educational part of the story and proved himself a fan of the attitude of Dutch students, their enthusiasm and their dare to make mistakes. He gave well-thought answers to questions from the public and dared to ask critical and ethical questions to other speakers.

The last member of the discussion panel was William van Niekerk, board member of Tauw group and former director in CSR of BAM. He represented the Engineering Consultant, a field of work where it can be more difficult to integrate communities in the different construction phases, as this can complicate processes and increase the costs. But according

Symposium

to William, even in big projects local communities are essential to builders and should be included during all phases of a project.

After an hour or so, with still many burning questions from the enthusiastic public, Henk had to make an end to the discussion to introduce our speaker from Wetlands International, Merijn van Leeuwen. Although hydraulic engineering is not exactly his field of study, he came across as a specialist with his energetic story about the Senegal Delta, the complexity of projects and the way of achieving your desired impact.

Jan van Overeem, professor at the TU Delft and Director Business Development Water at Arcadis was next in line. He told us about the receding coastline of Colombia and the sometimes troubling relationship with local communities and institutes. He brought in the cultural dimensions of Hofstede and tried to explain the difference in way of working using these characteristics.

Last but not least was Hans van Duivendijk, a spirited older man with many stories to tell. What began as a lecture on tidal closures soon resulted in an inspiring story of tidal closures in Bangladesh, where up to 10.000 local people contributed to the construction of these closures. Not only his story was interesting but also his numerous old pictures of these gigantic projects.

I said last but not least but as you all know, a symposium is nothing without hydraulic drinks afterwards. The beer flowed and wine bottles were opened and many positive remarks were made about the symposium. Even the speakers stayed and enjoyed the attention of the many interested students. We look back on a very nice and fruitful day and hope that all participants do this as well.

We hope to see you next year!

Symposium Committee 2016

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Van Oord 

Marine ingenuity



Study Tour Panama 2016

By Vibeke van der Bilt

Saturday 2nd of July, after a very busy period with lots of exams and finalizing the studytour together with the STUCO the day was there: we were leaving to Panama City! After a long flight from Amsterdam Istanbul Bogota we had to wait for several hours in the airplane on Bogota airport. Because our rhythm was messed-up anyway we decided that beers in the morning where not a bad idea at all. We had the full Sunday to make ourselves at home in our hostel and recover from the trip. At 10 pm almost everybody was so tired they went to bed, which was pretty good because the next day we had a full program with Boskalis. The next five days were fully planned with study related visits. We did a company case at Boskalis about the artificial islands they are making just offshore the coast of Panama City. We visited the local technical university and the Dutch ambassador who told us very interesting things while enjoying a Heineken beer in his residence Wednesday we visited the Panama Canal, both the new and old Locks. Especially the old locks were very interesting because we were allowed to stand in the control room such that we had a first class view of the vessels entering/leaving the locks. Besides the locks we also visited the training center for the pilots that are guiding the vessel through the locks. They had a 360° simulator and a real life scaled version of the locks with little boats that they can sail.





Thursday we went on DEME's dredging vessel 'De Langewapper'. We stayed on the boat for one full dredging cycle (dredging/ sailing to the dumping area and back again). This gave us the opportunity to ask/see everything we wanted. The next day we visited Maersk whom welcomed us with pizza, which was a very good treat for the ones who were hangover. They gave us a very impressive presentation with a lot of interesting pictures of all their vessels and distribution routes. Finally we also got a tour around the Port of Balboa whereafter we went back to our hostel to celebrate the birthday of one of the participant with a drink of two. After this busy week with interesting visits during the day and very good parties during the night (72nd rooftop bar of Hard Rock Hotel and a party bus with unlimited drinks) it was time to relax for 3 days at the idyllic San Blas islands in the Caribbean Sea. These were three amazing days with sandy white beaches, crystal blue water, lots of volleyball and back flips in the ocean. After everybody was totally Zen we headed back to the city for one more day at the dredging division of the Panama Canal Authority (ACP). They showed us some presentations and took us on a boat ride over the canal where we could see a backhoe dredger in action, dredging 13 m³ of sediment at once.

Study Tour Panama 2015

That night we were picked up by two busses that brought us to Boquete where we arrived the next morning. After some chilling in the hostel we went to a canyon + hot-spring tour. We dived from the rocks, did some flips and some of us (tried to) climb on the rocks up again. After returning to the hostel 13 of us made themselves ready to climb that night the Baru Vulcano. While the other 7 were sleeping they climbed up the volcano and despite the cold cloudy weather at the summit they still enjoyed it while the others had a good night sleep and went horseback riding the next morning. When the volcano climbers returned they were able to sleep a few hours before departing again by bus & boat to our final destination: Bocas del Toro. The last few days we spend here. This was again a really nice group of islands in the Caribbean Sea. We saw dolphins, sloths and did lots of snorkeling. In the evening we went out for a fancy dinner where the STUCO and the supervisors (Mark Voorendt and Gonzalo Duro) were thanked with some nice souvenirs. The next day everybody relaxed and we had delicious burritos but unfortunately almost half of us got really bad stomachs of it, which was perfectly timed because we needed to be in the bus for 10 hours and in the airplane for 15 hours. Finally after a long trip we arrived back in Amsterdam on the 18th of July where we played some Pokémon Go at the airport.





VERENIGING VAN
WATERBOUWERS



Kom jij het maken in de waterbouw?

Waterbouw

De Nederlandse waterbouwers zijn wereldmarktleider op het gebied van baggeren, havenontwikkeling en landuitbreiding en worden wereldwijd geroemd om de waterbouwkundige werken die zij realiseren. Werken die landen en hun inwoners beschermen tegen overstromingen. Werken die gebiedsontwikkeling en transport mogelijk maken. Werken die economieën laten groeien. Niet voor niets heeft de Nederlandse overheid de waterbouw tot een van de meest kansrijke sectoren van de Nederlandse economie benoemd.

Bedrijven

In Nederland zijn zo'n 250 bedrijven als aannemer of dienstverlener actief in de waterbouw. Zij voeren in Nederland projecten uit voor Rijkswaterstaat, waterschappen, gemeenten, provincies en havenbedrijven. Internationale opdrachtgevers zijn onder andere grote oliemaatschappijen en projectontwikkelaars. Bedrijven in de waterbouw houden zich bezig met de aanleg en het onderhoud van havens en waterwegen, landaanwinning, aanleg van kunstmatige eilanden, bouwen met de natuur en infrastructuurprojecten. Voorbeeldprojecten zijn de aanleg van Maasvlakte 2, het 'waterproof' maken van New Orleans en de bouw van een stormvloedkering in St. Petersburg.

Interesse?

Kom dan werken in de waterbouw, een branche met een breed carrièreperspectief zowel in binnen- als buitenland met aandacht voor je persoonlijke ontwikkeling en begeleiding gedurende je hele carrière.

Facts & Figures

- Totale werkgelegenheid:
10.000, verspreid over de hele wereld
- Totale omzet per jaar voor deze branche:
Meer dan 11 miljard euro wereldwijd
- Aantal bedrijven:
Ongeveer 250
- Aantal werknemers:
Ongeveer 6.000 in Nederland

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The Recovery of Barrier Islands - Testing the AeoliS aeolian sediment transport model against the observed recovery of Fire Island

By Tom Janssen

October last year I started as graduate research intern at Deltares to write my thesis. Deltares was and is for me the right place to finish my Masters. The combination of focus on applied research and a different environment than the Delft University of Technology appeals to me greatly. It is also very helpful that Deltares and DUT are on excellent terms.

The subject of my thesis is testing the AeoliS aeolian sediment transport model against the observed recovery of Fire Island, USA. Fire Island is a barrier island in the state New York. The first couple months consisted of a literature study and get to know the AeoliS model. The role of aeolian sediment transport in the recovery of barrier islands is not well understood. AeoliS has been tested at the Sand Motor, Kijkduin, the Netherlands. Those tests demonstrated the role of aeolian sediment transport in the accretion of dunes. From these studies it is (1) not known whether AeoliS would have the same predictive skill at new locations and (2) not clear what parameters at a new site would affect skill and model sensitivity the most. Fire Island differs from the Sand Motor in that the



Graduation Project Tom Janssen

beach width of Fire Island is significantly smaller. Therefore, the focus in this thesis is on the beach width and its effect on the aeolian sediment supply and transport.

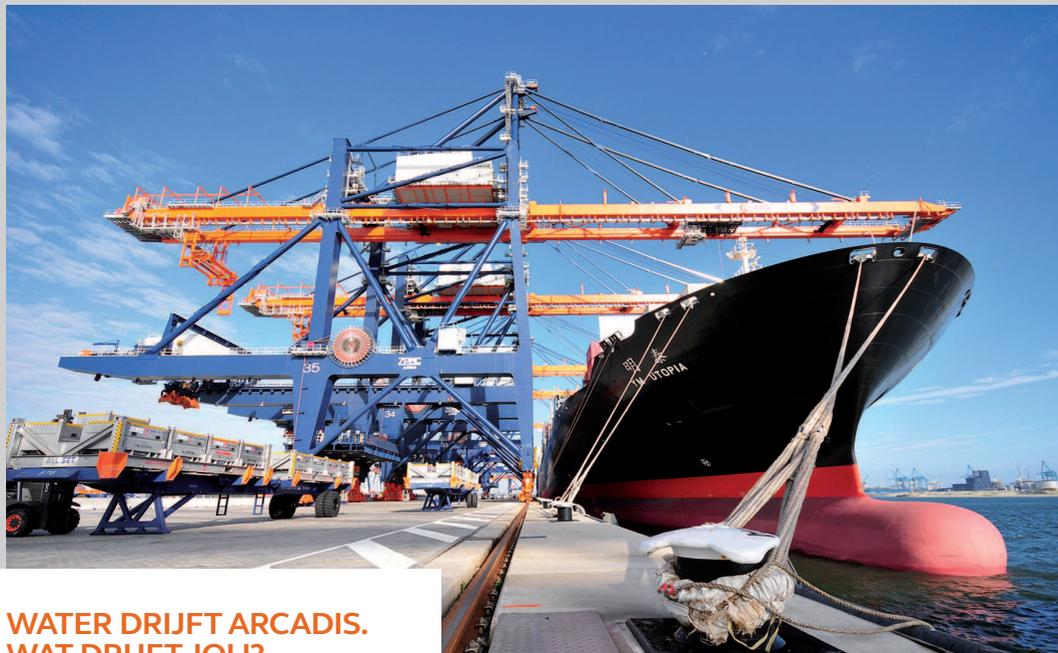
The second stage of my graduation consisted of a data analysis. I was able to visit the USGS in Saint Petersburg in Florida. The USGS assisted me during my 12 week stay in the United States. They had more knowledge about the case study site and are performing on-going field measurements on Fire Island. Both for my thesis and myself, it was a very interesting and informative period. In the data analysis it was found that that during the period, 7 November 2012 until 26 September 2013, accretion occurred in the areas of interest. During this accretion period a welding bar was observed. The welding bar could be the source for accretion of Fire Island by aeolian sediment transport due to an increasing fetch or the newly available grains originating from the welding bar.

Back in the Netherlands, my focus was on a hindcast study. Was the AeoliS model able to predict the same results as measurements showed in the data analysis? Further, the sensitivity of the model to the beach width and effect of different grain size distributions was part of further research. As the AeoliS model is only introduced last year, it was also important to guide future model development. Right now, I am trying to solve those last problems to finish my thesis. So hopefully, I can tell you all about it during my thesis defence!

If you have any further question about my thesis or finding a subject, feel free to contact me!

Tom.Janssen@deltares.nl





WATER DRIJFT ARCADIS. WAT DRIJFT JOU?

Ondernemen in een complexe termijn omgeving maar met overzicht, betrokkenheid en verstand van zaken. Resultaatgericht: iedereen zegt het, slechts enkelen maken het waar. ARCADIS: infrastructuur – water – milieu – gebouwen. Los van elkaar maar ook integraal. We geven de samenleving vorm door creatief te zijn in onze oplossingen en daadkrachtig in de uitvoering.

Als medewerker van ARCADIS verlaat je gebaande paden. Je bent onderdeel van een netwerk van zakelijke professionals. Ingericht rondom klanten, zodat deze direct profiteren van onze kennis en ervaring. Wij brengen ideeën tot leven.

MAAK JIJ HET MEE?

Bij ARCADIS gebruiken we onze kernwaarden als toetssteen voor onze dagelijkse werkzaamheden. Deze waarden (integriteit, ondernemerschap en alertheid) bepalen mede onze activiteiten en beslissingen. Wij zoeken studenten, starters en professionals die zich herkennen in deze kernwaarden, hun kennis in de praktijk willen brengen en willen (samen)werken binnen projecten.

Je wilt graag ontdekken wat ARCADIS doet en inzicht krijgen in onze organisatie in al haar facetten. Je wilt ondervinden wat ruimte, verantwoordelijkheid en ondernemerschap betekenen. Je ziet mogelijk heden om je eerste netwerk op te bouwen.

Herken jij jezelf hierin? Dan zijn wij op zoek naar jou! Regelmatig organiseren wij Inhouse dagen, zodat je zelf de cultuur, werkwijze en sfeer kan ervaren. Als water ook jouw drijfveer is, neem dan contact op met Silke Wekema, recruiter divisie Water, tel 06-27060697.

Volg ons op:



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Internship at RHDHV

Internship at RHDHV;
coastal protection strategy for Tacloban & Palo

By Jonas Harding

Have you ever ask yourself what you want to do after you graduate? I have. As I didn't have a clear vision, I wanted to get some "working experience" during my internship. This is rather vague. So when I was applying for an internship I described my wishes as "working in a project team on an integral flood risk project". This again was not that clear and might be a reason I had trouble finding the right internship.

Luckily I got help from an unexpected corner, as I had written to several companies without success I eventually spoke to Bas Jonkman. He had heard of an internship at Royal HaskoningDHV that would suit my wishes perfectly. It did. The internship was aimed at designing and brainstorming about flood risk reduction measures for a project in the Philippines. I was fully part of the team and had my own assignments on which I could work on during the internship. The case RHDHV was confronted with was the result of a disastrous event on 8 November 2013 as the devastating super typhoon Yolanda hit the Philippines, killing more than 6000 people and causing 2 billion euro's in damage. The area of Tacloban and Palo was the most affected region, or as an eyewitness told me; 'it looked like a modern day Hiroshima'. To prevent this disaster from happening again the Netherlands Enterprise Agency (RVO) commissioned a tender for a coastal protection strategy. The consortium led by Royal HaskoningDHV won



Internship at RHDHV

the bid and together with Arcadis, Deltares, van Oord, REBEL Group, the Netherlands Red Cross and Wetlands International the consortium started working two years after the disaster had happened.

On my first day I was told I had two hours to read about the project and after that we would brainstorm about possible measures for the area, in a very similar way as the assignment the students from het Waterbouwdispuut got when they did a company case a few weeks later. It was very nice to get sucked into a project like that. I immediately felt like part of the team. During my internship my tasks varied broadly; I had my own project to counter fluvial flooding (floods caused by rivers and precipitation) on which I wrote a report, I learned to use ArcMAP to make land-use maps and models, had meetings with the other partners within the consortium, made cost estimations and did a lot of other things like helping the organisation of the company case. I liked the variety of my tasks and the fact that I was involved in every step of the process; from the brainstorming, the decision making until the actual writing of the report. Although I was an intern I was included in the normal working life; I attended the bimonthly advisory group meetings which gave me the opportunity to provide the director with some 'advice' on how to do his job better (which I graciously did), had an ice-skating crash course from colleagues, visited the Oosterscheldekering with a client, had lunch lectures on relevant subjects, brainstormed on innovative flood defences, had a lot of Vrímibo's and even got invited to the skiing holiday.

During my internship I took the opportunity to learn how my future job could look like and whether this is something I like to do when I start my career. I learned that I like to design and create conceptual solutions and not getting into too much detail, thinking about the whole problem and the possible solutions like in this project is something I appreciate.

UPCOMING EVENTS

The upcoming events are dated on:

Hydraulic Drinks	10 November
“Waterbouwdag”	10 November
MEX Study Trip	25-27 November

Tjerke Verhalen

Kafka's beer

A swelling engine roar, suggesting the fast approach of a hormonally distorted biker mouse, made me hesitate to cross the street. I didn't want to risk the six special beers in the cardboard box dangling from my arm. I looked to my left where I expected this midlife crisis to appear at the horizon, but all I saw were two deep black eyes. They belonged to a young lady with just a little bit too much make-up to match with her otherwise agricultural outfit.

"And which is your supplier of green energy?" she wanted to know.

"Green energy? Well, I'm afraid my energy is more like your eyes."

"What?"

"Nothing green about it" I explained.

"Then we from Farmers Green have the solution for you" she exclaimed cheerfully.

"Do you?"

"Yes" and she emphasized it with an enormous smile.

"What an amazing delight" I said, "just like that, a solution to a problem I wasn't even aware of."

She diplomatically disregarded this display of ignorant sarcasm and continued her sales pitch about a group of farmers wanting nothing but to improve the quality of life by looking at the environment from their perspective. While their herds cheerfully search for fresh grass in a jungle of windmills, these farmers carefully collect all cow droppings and process them into electrical power.

"And you want me to buy that power, I presume."

"Not just you" she said, "but everybody, starting with you."

"Sounds rather ambitious."

"What sounds rather ambitious" she asked slightly agitated, "everybody or starting with you?"

"Both, I'm afraid."

She took an aggressive pose by folding her arms together.

"How can you not like this concept?" she inquired.

"It is not about the concept" I started, "but about the numbers behind it. Have you any idea how many cows are required to supply a single average household with electrical power? And do you know the number of households?"

She paused for a second or two.

TJERKE VERHALEN

"One day" she said, "one day exactly that attitude will stop the world from spinning around."

"Excuse me?"

"This abuse of technicalities to hide your fear to change. Don't you realise that change is inevitable?"

The sales pitch had turned into a sermon.

"But I do" I said, "I see it right before me."

"What do you see?"

"The inevitable change" I spoke, "I just saw the persuasive happiness fade from your face and I truly regret that."

"You're impossible" she concluded and went for another potential convict.

I crossed the street and continued my walk home. As the beers seemed to have gained weight during the energetic discussion, I moved them to my other hand. When I passed a butchery, a greying lady addressed me. She presumed that I was about to buy a piece of a carefully dismantled animal and felt the urge of persuading me not to.

"Meat is disastrous to your health" she stated, "and piteous for animals and very bad for the environment."

I waited for a second, looking at her, to ensure she had finished.

"Do you happen to know the young woman across the street" I asked and pointed, "the one next to the poster of Farmers Green?"

My question clearly surprised her.

"Why do you ask?"

"Because you have the same eyes" I said.

"Yes, she's my daughter. Isn't she great, so committed to improving the world. We share that, you know?"

"Indeed" I continued, "you two form an exquisite team. If you are successful, she runs out of fuel."

I left the mother and continued my walk toward the corner of the street where a bedraggled man tried selling newspapers of the homeless. He just stood there, waiting for a customer to approach him. I did and gave him my special beers.

"But never open them" I instructed.

"Why not?"

"As that will release a greenhouse gas. That is bad for the environment" I explained.

"So what?"

SUDOKU

Puzzle

Dear members of the Watberbouwdisput, this edition of the Swell is almost at an end. But before you close this booklet, take some time to crack your brain by solving the next sudoku..

Thank you for reading!

Here is the puzzle. Good luck!

3	8				5		6	
						3	1	2
7	1		6				4	
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	2			5			9	
5				1	8			6
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2	5	6						
	7		5				3	4

PARTNERS

Primary Partners

Royal Haskoning DHV



Van Oord



Partners

Witteveen + Bos



ARUP



Boskalis



Secondary Partners

NMDC



Heijmans



PARTNERS

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CDR

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TECHNIEK
EN MANAGEMENT

Vereniging
van Waterbouwers



HKV



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Donateurs

Allseas



Antea Group



