

# FUTURE WATER



SUSTAINABILITY AT AMIBLU  
PRESSURE PIPES FOR  
LONG-TERM VALUE  
SUCCESSFUL PROJECTS  
AROUND THE WORLD

# FUTURE WATER

## Message from the CEO



Nick Crofts, CEO Amiblu Group

**Amiblu's first full year begins with a record backlog in terms of orders and projects.** *There are some great examples in this edition of how Amiblu's customer focus really delivers customer success.*

*Eric Albaret took on the challenge to clearly explain our mission and how we can achieve it. It's exciting to see that so many of the building blocks are in place. We will speed up the world's transition to sustainable water solutions.*

*Our combined product portfolio has removed some of the contradictions and confusion that exist in the GRP industry. Amiblu Product Director Victor Cid shows us what's critical. Abrasion resistance, stiffness, impact resistance? The reality is that our different sectors have their own requirements, whether it is the uncertainties of urban soil conditions or the harsh environments and handling challenges for many pressure pipe applications. Now we present exactly what our customers need rather than focusing on out-specifying GRP competitors.*

*You can also read about our transition towards world-class operations and improving quality and working environments for our teams.*

*Enjoy this month's Future Water!*



Team spirit at the Lean Excellence Program kickoff meeting

## The Amiblu Business System (ABS)

The 3 building blocks of the Amiblu Strategy

- **Sustainable water solutions**
- **Customer focus**
- **Continuous world class innovations**

will be supported by excellent business processes to service our customers in the best way in future.

Many people imagine a fancy toolset when thinking about the concept of Lean, but it is much more than this: It's a way of thinking, a culture!

To prepare the organization for this new way of working, Amiblu kicked off a Lean Excellence Program supported by the consultants of KCTS UK with a leadership review in the Katowice factory in February.

A modern safety culture and the drive for continuous improvement require strong leadership and trained experts with the right toolset (Value Stream Mapping, 5S etc.) to improve all processes towards excellence. →

As a lean transformation is largely build on the cooperation between excellence specialists and the employees in the respective business areas, communication is the next large step of this journey.

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Next to this and the new safety culture with zero accidents, our goals will include improved workplaces for our employees, and a team of internal lean facilitators who will be trained in a 15-day customized training to support the business in this lean transformation.

I am very much looking forward to participating in this journey with a highly motivated and skilled team.

Our new fitting production in Poland will start in July 2018, already with an optimized working area and streamlined workflow to represent the new generation of working standards within Amiblu. Beside this key milestone of the new production footprint, improvement projects with a focus on optimized planning and internal logistics processes will be initiated.

The success lies within us!

All the activities listed above are only the preparation and start of a neverending journey on the way to business excellence and an improved customer experience worldwide.



Maik Altendorf, COO Amiblu Group

## Amiblu's product portfolio

Customers often ask what is important in a project. Our sales and engineering teams try to answer the technical, social and economic needs to offer our most competitive solution. This results in a long-term customer value. We want to delight customers and create champions for Amiblu.

GRP pipes are challenging an established market. Each material has its place today. The inherent corrosion-free characteristics together with the high abrasion resistance of today's plastic pipes often make them the most suitable solution for the sewer and pressure projects of

our modern infrastructures. Concrete pipes are so stiff that when soil conditions in urban environments vary, it does not matter as they can absorb the load. Ductile iron and steel pipes bring impact and pressure resistance. With Hobas and Flowtite technologies together, Amiblu now has the product portfolio to challenge these traditional materials. The right answers are critical when we want to sell and market solutions that are engineered for 150 years and more.

The majority of sewer and gravity installations are going into urban areas or high traffic loading areas. In this market,

GRP replaces heavy concrete pipes that corrode and are expensive to install. A GRP pipe can be more cost effective with a low stiffness class – but is it the right solution? The uncertainties around the natural soil conditions and the current and future traffic loads together with the handling and compaction challenges in tight urban environments make it a risk. Unknown future works in the same area can concern our costumers. From now on, we will not specify sewer and gravity pipes below SN 10000.

We engineer our pressure pipes for 150 years of service under our ideal installation conditions. Last year, Flowtite Grey was introduced because the world is not ideal. We added ten times the impact resistance and dramatically increased the design safety factors compared to our standard pipes. We know this is the best pressure pipe and we market it as a premium solution. Amiblu wants to simplify the message for our customers and enable them to move away from corrosion-sensitive, ferrous solutions. We are therefore making Flowtite Grey our new standard pipe without changing the price list. Why should our customers compromise when they can have the best?

This policy targets traditional pipe materials rather than fueling internal competition within the relatively small GRP industry. It adds value to our customers and helps our operations to be more competitive and responsive. An all-round win-win situation!



Victor Cid, Product Director Amiblu



## Sustainability at Amiblu

*Interview with Eric Albaret, Sales Director | Western Europe – Québec – Asia – Australasia, Amiblu Group*

The concept of sustainability is widely used in all kinds of contexts. What does sustainability mean to you and Amiblu?

Sustainability is a key and priority target for Amiblu’s activities. Our pipes allow potable and used water to be transported and delivered over long distances, therefore contributing to urbanization, safe agriculture, effective industry and, globally, the construction of crucial long-term infrastructure. We need to supply products and services which contribute to sustainable development in all countries and areas where they are required. But, beyond such a cogent objective, which is shared today by most if not all industries, Amiblu believes that its own activities and operations have to incorporate a demanding and evolving sustainability effort and content. In short, aiming at incorporating critical public interest considerations within the product and service cycle is an essential part of our mission and a foundation of our values.

Sustainability is secured through achieving the best possible balance between its environmental, economic, and social objectives. Environmental sustainability involves all practices that contribute to the long-term quality and safeguarding of the environment. Companies must strive to protect natural resources and develop alternative sources of power which reduce pollution. The environment must be given top priority. It is a prerequisite for both social and economic sustainability. Economic sustainability requires employing existing resources optimally and protecting scarce resources at all stages of a product’s life cycle. Social sustainability is the ability of a country to maintain social wellbeing for an indefinite time. Future generations should have the same or greater access to social resources as the current generation. There should also be equal access to social resources within the current generation.

All these factors overlap, interact, and if any of them is missing, a system cannot be deemed sustainable. We seek, through our organization, a combination of resources and research, to further each aspect and thus attain within, and contribute to obtaining for our customers, a high degree of sustainability by our activities, products and services. Amiblu shall be equated with unique and best sustainable water solutions. We continuously look closely at the many different processes and actors that shape a system and increase our understanding of how they influence each other. In short, we seek to improve the “pathway to sustainability”, which is known as sustainable development. The World Commission on Environment and Development defines sustainable development as "development which meets the needs of current generations without compromising the ability of future generations to meet their own needs". We wish to take this definition further and set a unique standard and record of sustainability for our industry. An expected product and system life-span of more than 150 years is the first and foremost expression of our ambition. There are many other parameters which shall together create the reference of the sustainability we intend to stand for.



Eric Albaret, Sales Director

Amiblu’s mission is to “speed up the world’s transition to sustainable water solutions”. Which factors are tackled in this approach?

All of them. The preservation of resources, environmental protection, and social wellbeing are all key combined targets for Amiblu. In addition, the level of sustainability Amiblu shall stand for will be defined by demanding and high-level standards which we shall actively promote.

Let’s take environment: How does Amiblu realize environmental sustainability?

Amiblu GRP pipes further sustainability in production and transport. This is particularly salient if comparisons are made with other traditional pipe system materials as well as with other more recent solutions. GRP pipes feature a small carbon footprint in production, low transport costs thanks to their light weight, fast installation, and an efficient operation. Our pipes easily tackle all challenges involved in installation and operation such as soil, traffic, and longitudinal loads, abrasion and corrosion, internal and external pressure. They preserve resources and the integrity of flow thanks to the excellent leak-tightness of their couplings. They also protect the integrity of networks and efficiency of flow thanks to their resistance against corrosion, abrasion, weather and root infiltration, as well as excellent hydraulic characteristics. All this helps maintain a sound environment on a very long-term scale. →



What about the economic side of the coin?

Amiblu provides cost-effective solutions for all stakeholders involved in a project. Designers benefit from our flexible angular cut joint system, which makes a high angular deflection possible. This way, the trajectory is optimized without bends and costs are saved. Contractors are pleased about the pipes' light weight, their quick and easy jointing, the ability to accommodate small misalignments or settlements, and the uncomplicated installation with trenchless technologies such as relining and microtunneling. Installation costs compare very favorably to those of other solutions and allow to balance the price of cheaper pipes using different materials. Operators and end-customers benefit from a product service life of more than 150 years, minimum consumption of resources, maximum energy output for hydropower, and low maintenance thanks to self-cleaning properties even at low flow. The overall life-cycle cost of GRP pipe systems is amongst the lowest available today, if not the lowest, and this trend will be confirmed with the passage of time.

Combining social sustainability with pipe systems seems to be a long shot. How does Amiblu succeed in this task?

Our focus on the long-term performance of our systems and determination to meet public interest demands involved in building and operating water infrastructures are key attitudes to achieve social sustainability.

Our GRP pressure pipes ensure the secure transport and availability of water and play a significant role in social and economic prosperity. We provide sustainable solutions for agriculture and industry, the biggest users of water, thus preserving our natural resources. Our hydropower solutions generate clean and renewable energy for generations to come. We build leak-tight sewer networks, which are essential for protecting our drinking water which originates from surface and ground water. Storm water retention tanks and Combined Sewer Overflow chambers are also part of our portfolio and help manage floods and droughts.

With no-dig technologies, we can significantly reduce disturbances from noise, dust, and road closures in modern cities while providing a structural long-term solution. We provide tailor-made solutions, for instance for wastewater treatment plants and double-pipe systems for tram line crossings. Our GRP pipes would be equipped with

real-time monitoring systems that improve water management and help detect leakages.

Amiblu seeks to ensure that not a drop of valuable potable water is lost and not a square meter of soil is contaminated with sewage water, while ensuring that operators and society as a whole benefit from a reliable, truly sustainable pipe system. This is our responsibility and contribution to a sustainable development.

The value of our systems will accrue for at least a century and a half. The benefits of current innovation attached to procuring GRP pipe systems will be felt at purchase, installation and operation time throughout the unique life expectancy of Amiblu products. Such an achievement will not be easy to match with other piping solutions.





## Large diameter sewer relining with Amiblu NC Line in Southern France

In the surroundings of Toulon on the Mediterranean coast of France, a 6400-m long sewer channel is being rehabilitated. The challenging relining installation include works in more than 100 m depth. While the installation of tailor-made, non-circular HOBAS GRP half profiles by Amiblu is completed, the last phase of the project has started and should be finished by mid-2018. In September 2017, it earned the construction company SADE the prestigious ISTT Rehabilitation Project Award.

La Seyne-sur-Mer, St-Mandrier-sur-Mer, Toulon, Le Revest-les-Eaux, Évenos, Six-Fours-les-Plages and Ollioules: The 288,000 people living in these seven communes in Southern France are all connected to the 6.4 km long sewer channel leading from Chateaubanne to the Cap Sicié's Amphitria Sewer Treatment Plant in La Seyne sur Mer. The resulting 22 million m<sup>3</sup> wastewater per year of course require a perfectly functioning discharge system. Built around the time of World War II in the middle of the 20<sup>th</sup> century, the

structure of the old sewer had deteriorated considerably over the years, despite many renovations by means of shotcrete seal applications in the 80's. In 2014, a complete renovation of the aged channel was therefore initiated to give it a second life.

### THE COMPLETE RENOVATION OF THE AGED CHANNEL HAS STARTED TO GIVE IT A SECOND LIFE

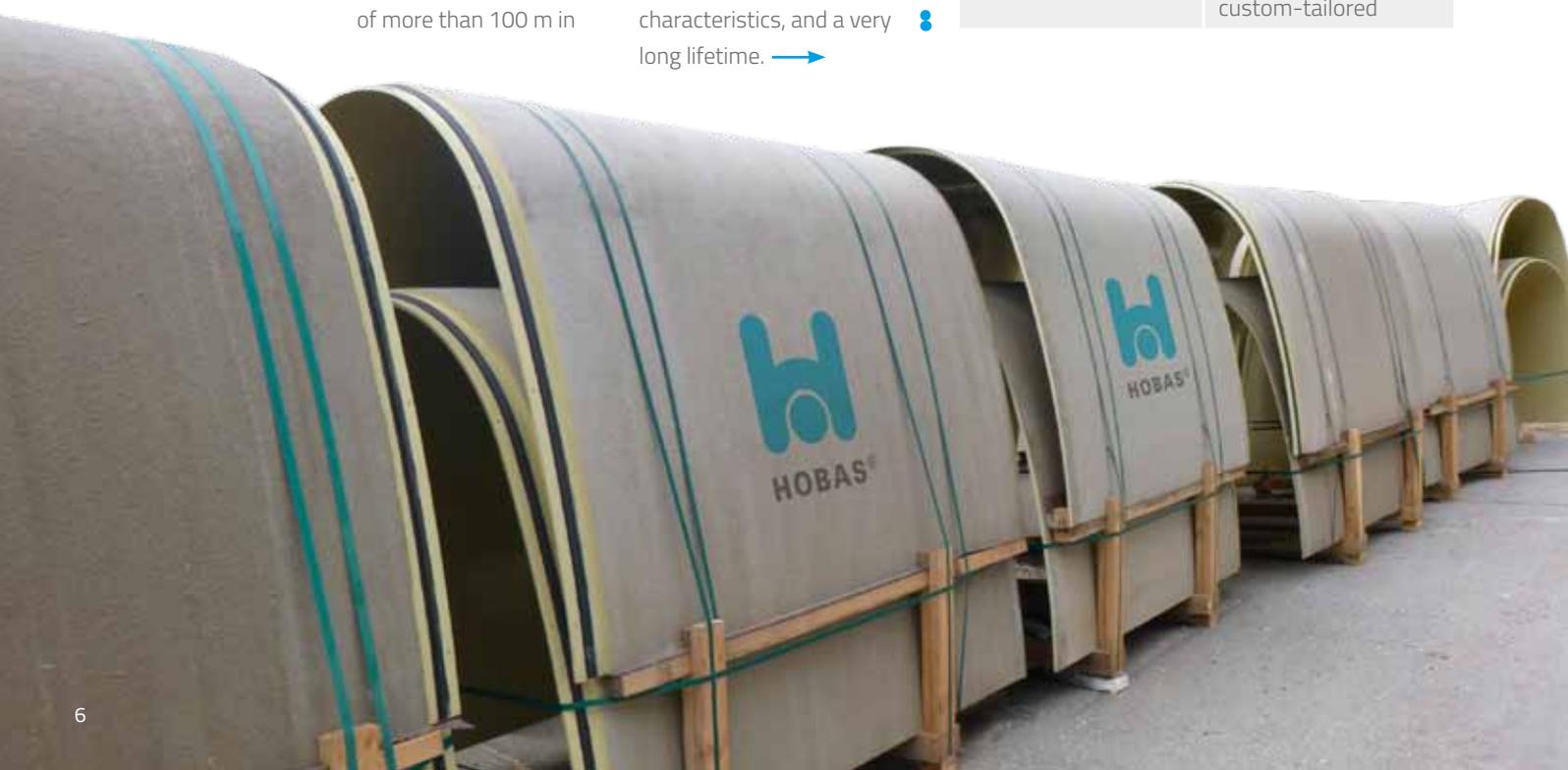
The project was very challenging: very limited space conditions on site, flexible deliveries due to the urban environment, a channel depth of more than 100 m in

some places – and the demands of building an efficient, corrosion-resistant system that will reliably last for at least half a century was also very ambitious. GRP experts from Amiblu came up with a solution that took everything into account: Easy to handle,

light-weight, non-circular pipes (Amiblu NC Line) with a high chemical resistance against hydrogen sulfide, excellent mechanical and hydraulic characteristics, and a very long lifetime. →

#### PROJECT PARAMETERS

Year of construction	2017-2018
Installation time	ongoing
Length of pipeline	6400 m
Application	Sewer, NC Line
Installation	Relining
DN	1500 x 1678 mm
PN	1 bar
Client	SADE
Consultant	SADE
Contractor	SADE
Features/benefits	Easy handling, light weight, high chemical resistance, excellent hydraulic characteristics, long service life, custom-tailored





The NC pipes could be perfectly tailored to the customer's requirements and the technical specificities of the network. Following several preparatory works, the French construction specialist SADE started with the installation of the half-pipes on the channel's vault in November 2015. It can be accessed from four pits, from 40 to 105 meters deep, one of which is the Gabrielle's pit from where the half pipes are transported to be installed. Due to the narrow space on the storage area

**SADE WAS PRESENTED WITH THE PRESTIGIOUS REHABILITATION PROJECT AWARD**

located in the city, the GRP half-shells 1500 x 1678 mm with 2.35 m length each were supplied successively and strictly on time at defined hours – around 128 NC pipes, equaling 300 m pipe were delivered per week. The NC elements were inserted into the old sewer channel with



Marc Sadok, Sales Manager Amiblu France  
Representative of Sade America Latina  
Arlex T. Rodriguez, Executive Director CISTT

the help of lifting rings and a transport cart and then connected to each other with pre-mounted EPDM joints to assure a leak-tight system. A total of 2724 GRP half-shells were used to repair the 6400 m long old sewer channel. SADE employed special safety measures for the workers involved in the construction works. Once all works will be completed by mid-2018, the people in the surroundings of Toulon can rely on a perfectly efficient sewer system for at least the next half century.

On September 26<sup>th</sup>, 2017, at the International Society for Trenchless Technology conference in Medellin/Colombia, SADE was presented with the prestigious Rehabilitation Project Award for their work.

**Plenty of room, regulated runoff**

In late 2017, Amiblu supplied a 1450 m<sup>3</sup> GRP retention tank to the FASA Renault Suppliers Park in the Spanish city of Valladolid. The tank consists of three 120 m long GRP lines DN 2200 that are connected to a 12 m long module DN 2600, a



vertical manhole DN 3000 that is linked to the pipe network, and three additional chambers for cleaning. Installed by the UTE ARCOR-COPSA for the ICE Institute for Business Competitiveness of the Junta de Castilla y León, the tank retains stormwater flows when they reach their maximum level and regulates the runoff. Amiblu once again provided a sustainable solution with the unbeatable advantages of GRP: corrosion resistance, leak-tightness, excellent hydraulic and chemical properties, light weight, and quick and easy installation.



## Hobas GRP pipes for Siemens mega project

For a giant 4.8 GW combined cycle power plant that Siemens is currently constructing in the Egyptian Burullus region, Amiblu provided the main GRP cooling water lines. The power plant is part of a giant project implemented by Siemens with the aim to boost Egypt's power generation capacity by 50 % upon completion in 2018.

Three natural gas-fired combined cycle power plants (CCPP), each with a capacity of 4.8 GW, and 12 wind parks with a total generating capacity of 2 GW, adding to enough electricity for 16 million homes: This is the impressive size of Siemens' ongoing mega-project for significantly increasing power production in Egypt. The project will underpin the country's growth and economic development and benefit the citizens by providing new jobs and allowing for long-term reliable power supply.

Since the signature of contracts mid-2015, the comprehensive building works have been constantly progressing. In early 2016, Hobas came on board of the impressive project as supplier of a sophisticated cooling water pressure pipe system for one of the new CCPPs. Approximately 230 m GRP Pipes DN 2500, PN 4, SN 5000 as well as 25 m GRP pipes DN 600 were manufactured as spools, each divided in three sections, at the production plant in Austria. By means of trucks and ships, the pipes were transported to the construction site in the Burullus lagoon area.

Starting in April 2016, the pressure pipes were installed as main cooling water pipelines for all four generating units of the CCPP, running below the power house (flow and return lines). Additionally, a parallel line DN 600 with 25 m length was installed for one unit. Together with the company Rotec, specific flanges DN 2500, PN 4 were developed and produced for this project – the biggest of their kind that had been used in projects with Hobas pipes so far. →

### PROJECT PARAMETERS

Year of construction	2016-2017
Construction time	11 months
Length of pipeline	~260 m
DN	2500, 600
PN	4
SN	5000
Installation	Open trench / buried installation
Application	Cooling water pipeline for combined cycle power plant
Client	Siemens AG
Contractor	Elsowedy Electric, Orascom Construction
Advantages	Low weight of pipes and easy handling on site, optimal hydraulic properties, very long service life

The pipelines were manufactured in Austria and delivered to the construction site as spools in three sections.





The 4.8 GW combined cycle power plant Burullus is one of three giant power plants Siemens is currently constructing in Egypt.

The GRP experts of Amiblu custom-tailored the pipes to the project requirements according to a sophisticated design and supplied a comprehensive project documentation. In collaboration with the subcontractor Nessler Plastics, valuable support and supervision on site was provided during the whole installation process – from laminating the spools to grouting, pressure testing, and a thorough overall quality control. The installation of the Hobas GRP cooling water system was realized step by step in several stages, always in precise coordination with other construction works.

Installation works have been completed in March 2017 and a final leak tightness test has been successfully passed. Now the pipe system is ready for operation as part of the Burullus CCPP. The entire Siemens mega-project will be completed in 2018 and reach a total power generation capacity of 16.4 GW.

[Click HERE](#) for more information on the Siemens mega project



## First Hobas CSO chamber south of the Alps successfully installed

In October 2017, the municipality of Castel San Pietro in the Swiss Canton of Ticino has been provided with a sustainable, environmentally friendly solution for its sewer system: More than 40 interested people watched a Hobas CSO chamber being installed in the astonishing time of merely one day. The structure reliably separates suspended solids from the wastewater transported in the local combined sewer.

When rain, stormwater runoffs and municipal wastewater flow together in a combined sewer channel, strong precipitations can lead to critical situations: Wastewater treatment plants are overloaded and large amounts of polluted water run into ecologically sensible lakes and rivers. Overflow structures offer a solution for this problem. With the Hobas CSO (Combined Sewer Overflow) chamber, Amiblu provides a particularly reliable and efficient option.

Early in 2017, the first CSO chamber on Swiss soil was installed in the Canton of Schwyz. A few months later, the second one was realized 200 km further to the south, in Castel San Pietro, Canton of Ticino. Once again, the municipality was looking for a solution to manage overloads of its combined sewer during heavy rainfalls in an efficient and environmentally friendly way. Amiblu produced a CSO chamber with 8 m length, which consists of a main pipe DN 800 and an overflow pipe DN 450. Additionally, a GRP valve chamber DN 1200 was supplied to throttle the outlet to the WWTP.

The installation of the chamber on October 19, 2017, attracted many interested visitors: More than 40 persons from the surrounding cities, people involved in the project, and representatives from politics and industry watched the construction works with excitement. And the inhabitants of Castel San Pietro are now happy to count on a reliably functioning sewer overflow system for several decades.

### PROJECT PARAMETERS

Year of construction	October 2017
Construction time	1 day
Application	Overflow structure for combined sewer
Total length	8 m
DN	800 mm (main pipe) 450 mm (overflow)
PN	1 bar
SN	10000
Client	Municipality of Castel San Pietro
Contractor	CPA, Lugano
Designer	Comal.ch, Mendrisio



Left: The CSO chamber was successfully installed in 1 day only. Top right: The project team did a great job and is pleased with the optimal result. Bottom right: The modular CSO chamber with a GRP main pipe DN 800 and an overflow pipe DN 450.

## Amiblu wins large-scale NC project in Bucharest

Amiblu is currently supplying over 5 km of NC pipes with cross sections ranging from 800 x 1200 mm to 1400 x 2100 mm to a large-scale project in Bucharest, Romania. In total, seven different NC profiles will be used to rehabilitate the sewer main of the city.

Excellent technical support from Amiblu organizations in Romania and France was the main reason for the customer to opt for Amiblu NC pipes. The very challenging construction works started early this year close to the parliament house and the old city center of Bucharest. The project will be realized over the upcoming months and close supervision from Amiblu experts on site will make sure that it is a full success.



### PROJECT PARAMETERS

Year of construction	2018
Application	Rehabilitation of sewer main
Total length	5 km NC, 60 m pipe
Cross section/DN	800/1200, 900/1350, 1000/1500, 780/1580, 1200/1800, 200/1752, 1400/2100, DN 1600
Owner	Bucharest City Hall
Contractor	Tahal Consulting Engineers Ltd

## Reference database

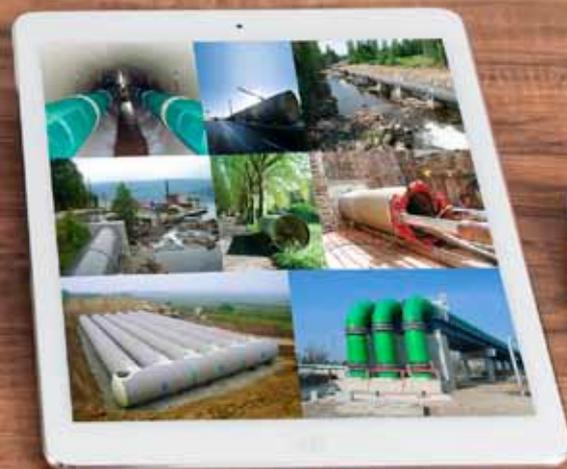
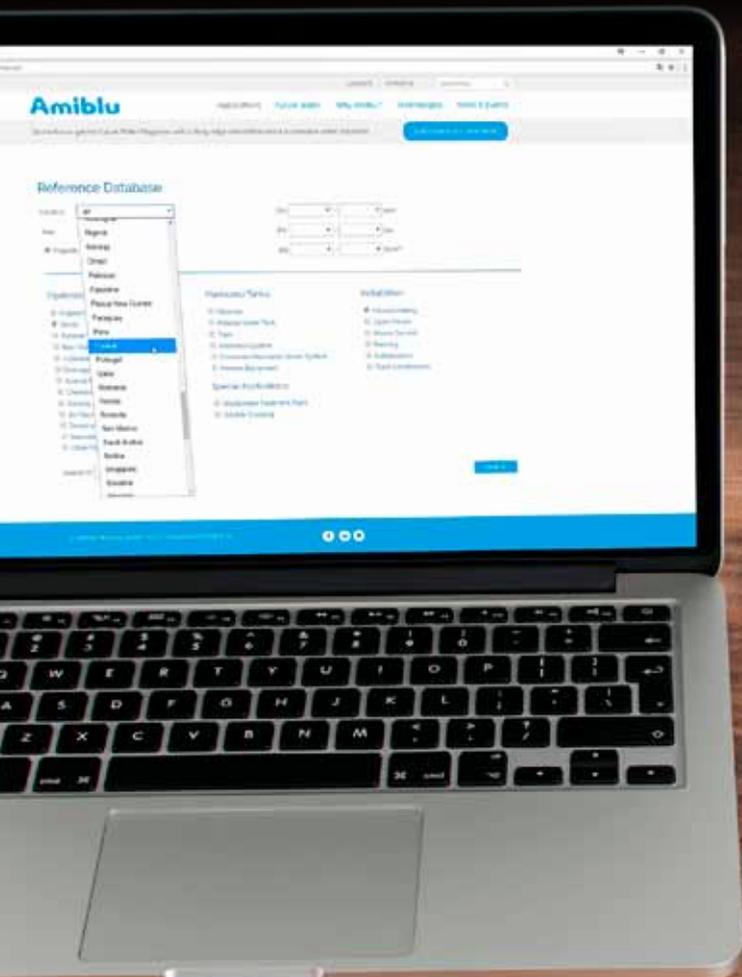
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**30,000 reasons for choosing Amiblu always right at your fingertips.**

In our international reference database on the Amiblu website, you find a vast collection of projects from all around the world that have been realized with Hobas and Flowtite GRP technology – including many case studies, impressive pictures, and all relevant details.

Click [HERE](#) to start browsing the Amiblu project database



## Fresh thinking: Amiblu water facts

Stunning, remarkable, exciting, and curious facts about our most precious resource: Click on the pictures to watch our Water Facts video clips, and stay tuned on our [YouTube](#) and social media channels – there's more Amiblu Water Facts to come!



**#1** What is 11x the distance between Earth and Moon?



**#2** What could span the world 75 times?



**#3** How much water do you eat every day?



**#4** What saves 2.8 billion tons of CO<sub>2</sub> every year?



Amiblu is a 50:50 joint venture whose goal is to develop and deliver fully sustainable water solutions. Amiblu combines Amiantit Europe and its Flowtite Technology, and Hobas Europe, part of WIG Wietersdorfer Holding, and is the specialist in drinking water, irrigation, wastewater, hydropower and industry.