

By answering the questions for each point, you will learn everything about the ATES on campus.

QUESTIONS AND FACTS



You can see the top of one of the wells here! Can you point out the followir 1) Flow meter, 2) Pilot (injection valve control), 3) Control valve, 4) Emerge 5) Wellhead, 6) Level filter, 7) Pressure gauge, 8) Temperature gauge.



At first, this well was planned elsewhere. Do you know where, and why this one ended up being placed at another location?



You are now at the northernmost warm well on campus. If you draw an imaginary line to Vitae (in the southwest of the campus) you will only encounter warm wells. This we call the warm street. Do you know why the warm wells are aligned?



If heat or cold is required, the wells do not always have to be used. Do you know how this is possible?



Did you know that the WUR data center is located here? A place that has a lot of heat surplus and needs to be well cooled!



During the construction of the ATES loop, the longest horizontally directed drilling was made here, do you know how long it was?



You are now at one of the cold wells. Do you know how many degrees the water is, which we pump up here?



Aurora is WUR's first completely natural gas-free building on campus. And did you know that Aurora already used the ATES before the building was completed and in use. Also during construction of Aurora they benefited from the ATES.



This well has been here since 2011. In 2006 the first wells have been constructed for Forum. In 2011 the wells for Orion were added. And in 2021 six more wells have been added and the ATES loop has been constructed. Do you know what is different with this ATES loop compared to the old situation?



You are now at one of the warm wells. Do you know how many degrees the water is, which we pump up here?



The ATES loop was constructed in 2021. Do you know by whom? And any idea how long both loops are together?



Walking along the ATES loop is good for you! And this ATES is good for the WUR. With this, WUR wants to save more than 1.3 million m³ of natural gas and 2,400 tons of CO_2 annually.

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rgency	stop,

By Heijmans. The length is 3.2 km! And Haitjema drilled the wells. 14-17 degrees. With each other and the capacity is much higher. -8 degrees. .920m, from Axis all the way to Impulse. The WUR campus has many different types of buildings: greenhouses, office spaces, data center, there may be stables, etc. These buildings do not have the same heat and cold need. As a result, there may be heat left from the greenhouses and with which a lecture hall is heated. This goes directly through the warm up at the warm wells. Therefore we place them in line with the movement of the groundwater. year. But of course we do not want the warm well to cool down at the cold well or vice versa the cold The groundwater at the depth of the well (approx. 90m) does not move much, but still about 1m per But Heijmans, who installed the ATES, has indicated to the WUR that this is a waste of all nature in and around this pond. Together Heijmans and the WUR looked at a different location and that is where you are now. The well would actually be exactly on the other side of the building in the middle of a natural pond. 8= Temperature gauge = Emergency stop $\lambda = Pressure gauge$ S= Control valve 2= Pilot (injection valve control) 6= Level filter - FIOW METER eaniiaw =

Answers

