Climate Audio Trail

myclimate Audioguide
English version

RG = Ron Grünig; male voice
PH = Pamela Hunter, female voice
V = Dialect from the Valais

	LOCATION 1
F	Location 1: Gornergratbahn ticket hall
RG	Welcome to Zermatt – or "Tag wohl" which is how we greet people here. Our climate path starts in the Gornergratbahn station and takes you up to the new Monte Rosa hut. The idea is to use the Gorner glacier and the Zermatt region as examples to explain the impact that the climate change is having on the Alps. The hike we're going to take together ends at the new Monte Rosa hut. When we get there we'll show you what this astonishing building has to do with protecting the climate. But before I tell you any more, I'd like to introduce Lina Bader to you. She will be your guide on this climate path to the new Monte Rosa hut. And you'll hear quite a lot from me as well. My name is Pius Anthamatten. I am a forester, a father and a photographer. Lina Bader runs her own business, she has a son, she is passionate about hiking in the mountains, and is a skilled story teller.
PH	Hullo, and Grüezi. My way of greeting you gives the game away. By saying "Grüezi" I show that I am an outsider, what the locals here call an Üsserschwiizeri, one of the "Grüezi lot", from Zurich. I'm glad that you are coming with us and listening to what we have to say. The audioguide is very simple to use. At each of the nine locations we'll tell you something about this unique region. There are forty minutes of audio altogether. We will always tell you when one listening text comes to an end and where you should start listening again. To pause and continue just press the pause and play button. The trip begins in the Gornergratbahn. We will take it as far as Rotenboden. From there we will hike together to the new Monte Rosa hut. The hike takes three hours. The last part goes over a glacier. If you are feeling a bit shaky, or if you are wearing your best high-heeled shoes, take the train straight up to the Gornergrat. From the Gornergrat you can see over to the new Monte Rosa hut. Sit down on a rock or a bench, or go into the nice restaurant, and listen to all nine parts in one go. Before we set off, I'd be interested to know something. When did you first see the Matterhorn? Today? For me the first time was last summer, on August 3rd. I was overwhelmed. The locals call the Matterhorn simply Hore. Wherever I was, my eyes were always drawn to the Hore. Again and again – until there was a sudden wind. The clouds drew huge shadows on the rock face. The mood changed in an instant with a powerful clap of thunder. It was as if the Matterhorn disappeared by magic, hidden by heavy cloud.
RG	So Lina had to wait until she was 45 before she saw the best known landmark of her

STERNENSTRASSE 12 8002 ZÜRICH TEL +41 44 500 43 50 FAX +41 44 500 43 51 WWW.MYCLIMATE.ORG INFO@MYCLIMATE.ORG

www.climateaudiotrail.ch

	native country for the first time. Of course she already knew the Matterhorn – from chocolate wrappers, from photos, from drawings and so on, but she had never been there.
PH	Have you had the same experience, that you feel something is really familiar but you've never actually seen it in the flesh, so to say?
RG	Lina was enchanted with her first meeting with the Matterhorn and the local region. Wonderfully real, disturbingly beautiful – that's how she described the scenery to her family back home. Now get into the Gornergratbahn. Here Lina will tell you why the ride suddenly gave her that tingle factor. You must get out at the Rotenboden station. From there you should follow the signpost to the new Monte Rosa hut. And – collect some unique moments, try to catch them. Now listen to a few bars of music, and then turn off the audio guide. Turn it on again once you are sitting inside the Gornergrat train. That's where you should listen to the second part of the climate guide. The player will show that as „Location 2".

STERNENSTRASSE 12 8002 ZÜRICH TEL +41 44 500 43 50 FAX +41 44 500 43 51 WWW.MYCLIMATE.ORG INFO@MYCLIMATE.ORG

	LOCATION 2
F	Location 2, Gornergratbahn
RG	You are now sitting in the Gornergratbahn. Look out of the windows and let your eyes sweep over the landscape. Lina loves the fresh green of the larches in the spring, the fragrant herbs just peeping out from between the stones, and the gnarled Swiss stone pines with their beards of matted lichen.
PH	The Gornergratbahn was the first electrically powered cog railway in Europe. When a train goes downhill, its braking force generates energy. This energy is recovered for use. Two trains going down provide the power for one train going up. Isn't that amazing? Every 24 minutes a train travels 9,339 meters up to the Gornergrat. That's almost 6 miles. I once met a researcher here in the train. She was travelling up to the glacier, and she talked to me about climate change - how it affects the mountains. She talked very fast. She had a lot of figures. It was very impressive! Let me and Pius sum up what she said.
RG	Until well into the 20th century, people were worried that a major new ice age was about to begin, this researcher said. But Svante Arrhenius, a Swede who lived in the 19th century, worked out that an increase in greenhouse gases would warm the planet up. He was delighted: this discovery seemed to rule out the possibility of a new ice age once and for all. He dreamed of how we could warm up our planet ourselves, and so be sure of a comfortable future.
PH	Today the warming of the Earth gives us all grounds for concern. It's a long time since it's been a comfortable idea.
RG	The ice is melting. Here and in the Himalayas. Here and in Greenland. Here and in Peru. Reservoirs of drinking water are disappearing. Mountain slopes are becoming insecure. Rockfalls are more and more frequent. We must succeed in limiting global warming to not more than 2 degrees higher than its preindustrial level.
PH	There I was, going to what I thought was an unspoiled paradise, and suddenly I was confronted with this critical issue. Of course I knew what climate change is. Who doesn't?
RG	Climate change is THE issue of the 21st century, it's our biggest challenge.
PH	Of course I do my best in my everyday life. I take a shower instead of a bath. Whenever possible I avoid using the car. I only leave the window open for a short time. I turn the heating down one degree, and have the fridge one degree warmer. I never leave things on standby, and our windows and attic are insulated. We might even instal solar panels. It's all become a habit, and actually I enjoy not living quite so hectically, and being more aware of things. Even so, I sometimes ask myself what the point is. Climate change seems so abstract. So far away, despite the clear signs. How can I worry about tomorrow, or the day after tomorrow? I'd rather worry about today. But the passion of that researcher, her concern for the mountains and the glacier – that really did shake me.

STERNENSTRASSE 12 8002 ZÜRICH TEL +41 44 500 43 50 FAX +41 44 500 43 51 WWW.MYCLIMATE.ORG INFO@MYCLIMATE.ORG

RG	If there were no greenhouse gases at all, it would be uncomfortably cold on Earth. In the 19th century the British physicist John Tyndall discovered the existence of a natural greenhouse gas effect. John Tyndall – as it happened – was also often here in the montains. He even set a record here in Zermatt, as the first person ever to climb alone to the Monte Rosa massif. It was a brilliantly fine day. John Tyndall woke up and was overwhelmed by the light. He was filled with a consuming desire. He wanted to see the world from the highest peak. He decided on the spot to attempt to make the climb alone. John Tyndall put a ham sandwich and tea from the previous day in his bag and set off. Many hours later he was up there enjoying the view from the Dufour peak.
PH	John Tyndall investigated the greenhouse gas effect by using a simple tube. He filled the tube with various gases – for example with CO2 or with water vapour. Then he sent heat rays through it and measured the proportion of the rays which came out again on the other side. From that he concluded that CO2 and water vapour are greenhouse gases, that's to say, they are able to trap heat rays. Planet Earth is surrounded by these gases, which is just as well. Without the protective layer of these greenhouse gases all plants would freeze to death. So the natural greenhouse gas effect is extremely necessary. But in moderation. The greenhouse gas effect caused by humans goes far beyond the limit of what it was like before.
RG	To tell the truth, I just caught myself wishing for a moment that climate change could produce slightly warmer weather, at least for today.
PH	Pius, you can't be serious? You want a warmer climate to bring you warmer weather? Weather and climate are two quite different things. We talk about climate when we have a long set of data with temperature, air humidity etc etc, and want to describe a long-term situation.
RG	Of course, I know: in the rain forest you have a tropical climate, on the Cote d'Azur a Medierranean one.
PH	Exactly. But weather is something completely different! My geography teacher always used to say: "Weather is what you feel or are experiencing now – or rather, aren't because you are slumped like a couch potato in front of the TV and never go outside. Weather is when your neighbour moans that the sun isn't shining again today, even though she sits inside all the time and waters her house plants."
RG	So look out of the window. Try to recall a day outside in the fog, outside in the snow, outside in the wind – for the sake of Lina's geography teacher – and enjoy the ride. Don't forget to get out at Rotenboden. At Rotenboden Lina will tell you about an amazing meeting she had. After the music you can switch off your audioguide and switch it on again at Rotenboden. There you can listen to part three.

STERNENSTRASSE 12 8002 ZÜRICH TEL +41 44 500 43 50 FAX +41 44 500 43 51 WWW.MYCLIMATE.ORG INFO@MYCLIMATE.ORG

	LOCATION 3
F	Location 3, Rotenboden
PH	You are now at Rotenboden. I have been here plenty of times. The first time I came, the first thing I saw were the cairns, that look like stone men, and then I saw a bearded man, placing the stones one on top of the other. Stones that seemed to defy all the laws of gravity. As soon as I saw him I was totally fascinated. His fingers seemed to feel exactly where each rock had its centre of gravity. He was able to get the most misshapen, impossible stones to balance each other out.
V	My stone figures are pointers to the future. Where are you going? Over the glacier? They have to keep re-laying the path over the glacier to the new Monte Rosa hut. Did you know that? The ice is melting away. You'll see that the path suddenly leads you very steeply down to the glacier surface. Only a few years ago it was quite different. The path used to lead almost straight over the glacier to the Monte Rosa hut, practically without your having to climb down and then climb up again on the other side. Path, glacier, Monte Rosa hut – they were all three at almost the same level. You'll see for yourself how radically that has all changed. The Gorner glacier is melting. In 2008 it shrank by 29 meters. 18% of the canton of Wallis is covered by glaciers. Who knows what per cent will be left in twenty years' time. Wait a moment, don't go yet. Build a cairn here. You know the Inuit? The Eskimos? They call their cairns Inuksuk, which means "like a person". Perhaps you know the Inuksuk as the symbol of the 2010 Winter Olympics in Vancouver. My cairns stand here like the people who have it in their hands to decide which direction the world will take. Every stone in an Inuksuk has a meaning. I particularly like the boulders that stand upright; they are like reminders. They are called Nalunaikkutaq, which means: "One who takes away spiritual confusion." Roll the words around on your tongue. "One who takes away spiritual confusion." How wonderful. That's something all of us are in great need of. Well, the Gorner glacier has been there for thousands of years, and it is a supremely gifted story teller. As the Earth's ancient diary, it contains secrets about our past. Man is curious, and wants to read the glacier.
PH	In order for us humans to be able read what these stories are telling us, we have to drill ice cores out of the glacier, like that researcher I met in the Gornergratbahn train. Imagine a tree's annual rings. An ice core also has annual rings – only they're not circular, but horizontal. The lower the layer, the older it is, and the older the air bubbles are trapped in it. These air bubbles tell us about the composition of the air in earlier times, and how that composition has changed over the course of time. You can find all the greenhouse gases in the air bubbles – like methane, CO2, and nitrous oxide – but also solid matter, like the dust from ancient volcanic eruptions.
RG	Make your own cairn here, leave a mark of your presence behind and build a symbol. We must make sure that we and our environment find a balance, just like the stones that we pile up on top of each other. How great it would be if lots of cairns were to spring up here. Here, or somewhere else along the way. Each one of them a symbol of our determination to put all our conviction and inventiveness into campaigning for the

STERNENSTRASSE 12 8002 ZÜRICH TEL +41 44 500 43 50 FAX +41 44 500 43 51 WWW.MYCLIMATE.ORG INFO@MYCLIMATE.ORG

	future.
PH	If you have finished your work of art, continue a few hundred yards along the path, till you get to a spot where you see some hardy plant which attracts your attention. Stop at any place where you see a plant that particularly strikes you. I would like to tell you something there – yes! right there! about the plants in this region. That's the place where you can listen to the fourth part of the story.

STERNENSTRASSE 12 8002 ZÜRICH TEL +41 44 500 43 50 FAX +41 44 500 43 51 WWW.MYCLIMATE.ORG INFO@MYCLIMATE.ORG

	LOCATION 4
F	Location 4, Plants
PH	Are you standing by a plant that has particularly struck you? Good. We want to take a closer look at the things growing up here. Alpine flowers are brightly coloured. Violet and yellow are the favourites. The alpine aster, for example, attracts insects with its striking flowers.
RG	Leopard's bane, whose German name "Gemskraut" means "chamois weed", is bright yellow. Some people think it has special powers. Chamois love the sweet stems and flowers of this plant. Perhaps this treat even gives the animals secret powers for their daring leaps. You may not believe it, but more than one climber has eaten the roots of the leopard's bane in order to be as vertigo-free as the chamois as he climbed from rock to rock. It would be interesting to know if it helped!
PH	And I would love to know which plant you have just stopped at. I wonder if it's the endangered alpine alyssum, which is now only to be found here, around Zermatt. It's a small plant with tiny yellow flowers and spatulate – or spade-shaped – leaves. The hairs arranged in star shapes all over the plant protect the alpine alyssum against drying out and also against the sunlight.
RG	Have you noticed how many plants grow in cushions? It's amazing how hard the cushion of the moss campion is, for example. If you try pressing it, you'll hardly make a dent at all. The plant makes its own humus inside this cushion. When it has enriched enough of this fertile soil, the moss campion is pushed out by other kinds of plants.
PH	But perhaps you are standing by a stretch of penny cress. My goddaughter Laura would say it's a bit of a girly flower. Laura is five years old, just beyond the age where everything pink is somehow magical. She is liberating herself from this stage by describing everything pink and everyone wearing pink as "girly". The umbellate penny cress is certainly girly. With its sweet smelling lilac-pink flowers it dominates the unstable scree, where it is one of the first plants to grow.
RG	The plants that grow up here have a lot in common with each other: hairs that reflect light to protect them from the sun, fleshy leaves to store water, roots that can hold the loose rock together and penetrate deep down below the surface, cushions to create the best possible micro-climate. Plants which grow in the high mountain regions are specialists.
PH	I'm always astonished at the unbelievably clever strategies plants at this altitude have developed. What are the strategies you can see being used by the plant you have stopped at? Have you noticed how closely most of them cling to the rock? Their dwarf stature enables the plants not only to make the best possible use of the warmth of the ground, but also protects them against the winds that could dry them out.
RG	Here – with just the rock and the air for its environment – a mountain plant has to invest in energy intensive measures to protect itself against frost. Short summers, not much soil, the wind and the cold – it's a tough life! So what are we to think? Why do the plants stick it out here? Why on earth do they put up with it?
PH	Plants which grow in the mountains are here because in cracks in the rock and in the scree they have found a niche where no others can survive. For example, these specialists are able to cope with winds that would flatten other plants. They are born

STERNENSTRASSE 12 8002 ZÜRICH TEL +41 44 500 43 50 FAX +41 44 500 43 51 WWW.MYCLIMATE.ORG INFO@MYCLIMATE.ORG

	survivors. If these conditions change – in other words, if it becomes milder – other plants will be able to conquer the Alps. They grow faster than the plants with these adaptations, and spread further. In the short term there could be greater biodiversity on the rocks here. But then what would happen? How would such an unusual summit meeting end? In the battle between specialists and generalists the mountain plants would come off worse. They would have to give way – and either move upwards, or else go to the more north facing sides of the mountains, which were formerly too extreme even for them.
RG	Climate change creates more favourable conditions for all species, and for that very reason makes life difficult for high mountain species.
PH	Now walk on, but keep looking back, until you have a really good view of the Matterhorn. When you have found such a place, listen to the fifth part of the climate path. If the weather is bad, in your mind's eye simply imagine the Hore, as the people of Zermatt call it.

STERNENSTRASSE 12 8002 ZÜRICH TEL +41 44 500 43 50 FAX +41 44 500 43 51 WWW.MYCLIMATE.ORG INFO@MYCLIMATE.ORG

	LOCATION 5
F	Location 5 View of the Matterhorn
PH	Can you see the light-coloured patch of rock on the side of the Matterhorn, which has not properly weathered yet? In the hot summer of 2003, 1500 cubic meters of rock broke off there. 1500 cubic meters – that's a tidy amount. Something like 10,000 bathtubs full of rock. 84 climbers had to be rescued by mountain guides from the unstable face. Access to Zermatt's local mountain was blocked for many days, and since then – despite there being a new route – the mountain has not been regarded as completely safe.
RG	The Matterhorn and its surroundings will go on changing. In 2003 Zermatt's mountain railway company built a chairlift up to the Furggsattel, at an altitude of 3370 meters. The station at the upper end was on Italian soil. But since then the Swiss border has moved southwards because of climate change. During the second world war an agreement was reached with Italy that on glaciers the border would run along the watershed. If a glacier melts, its highest point falls. At the Furggsattel the line of the border has thus moved by 150 meters. That's why the upper station now stands on Swiss territory.
PH	The Matterhorn does not consist only of rock and glaciers, but is also held together by ice. This is called permafrost. Permafrost is ground which remains frozen throughout the year.
RG	If the permafrost melts, the ground becomes unstable. Buildings standing on it lose their solid foundation.
PH	Whenever you build on permafrost, it's important to be aware of this danger. This is true of houses in Siberia, where the permanently frozen ground is suddenly no longer permanently frozen, it's true of the upper stations of lifts in the Alps, and it's true of more and more places all over the world.
RG	So a mountain isn't simply a huge, compact lump of rock. Rather, the permafrost acts like putty, holding together lots of individual boulders – and if this bonding material isn't there, the whole lot will crumble.
PH	While I think of it, I've just remembered a stability exercise my son proposed a little while ago. Why don't you try it, and test and see how well balanced you are yourself! Stand on one leg, looking upwards, and close your eyes. Our sense of balance and our awareness of the relative positions of the parts of our body make it harder than you'd think.
RG	Can you do it? Our main aim must be to create a world that is in equilibrium. How can we succeed in ensuring that the generations to come don't look back at us in anger and despair? How can we be sure that our children and grandchildren can be proud of us?
PH	Between 1890 and 2008 the Gorner glacier retreated by more than 2,400 metres, one and a half miles!, and it is still retreating.
RG	Glaciers shaped the surface of the ground beneath your feet. Look at the lines in the rock, the colours, the glitter, the rust. Walk on a bit further and stop at a spot where

STERNENSTRASSE 12 8002 ZÜRICH TEL +41 44 500 43 50 FAX +41 44 500 43 51 WWW.MYCLIMATE.ORG INFO@MYCLIMATE.ORG

	you feel you'd like to yodel. Yes, you heard right: yodel!... First of all we'll play you a few bars of music. Then switch off the audioguide and listen to part six when you have found a suitable place for yodelling.

STERNENSTRASSE 12 8002 ZÜRICH TEL +41 44 500 43 50 FAX +41 44 500 43 51 WWW.MYCLIMATE.ORG INFO@MYCLIMATE.ORG

www.climateaudiotrail.ch

	LOCATION 6
F	Location 6, Yodel
PH	You are now standing at a place which is suitable for yodelling. Do you know the feeling when a landscape is breathtaking – in the literal meaning of the word? When inside you somehow everything stops for a few seconds, and it almost hurts, it's so beautiful?
RG	In the old days when the cowherds used to walk over the glacier they would say in the local dialect that you mustn't step on the ice too hard – "nitz trungg", because there were "poor souls" trapped inside. And every evening the herdsmen up here would call out a blessing over the meadows, asking God to protect the place where they were living.
PH	Why don't you test out the power of the sound. Do you dare? Try different notes. As far as the sound carries, that's how far the protection extends. One more voice calling for our glaciers to be protected.
RG	When I look up at the glacier like this, I am reminded of Mark Twain, whom I'm sure you know.
PH	In case you've forgotten, Mark Twain was an American humorous author, the creator of Tom Sawyer and Huckleberry Finn.
RG	He was fascinated by the mountains, and here in Zermatt he decided to climb the Riffelberg, which is 2,582 meters high. If you remember, you passed the Riffelberg station on your way from Zermatt to Rotenboden.
PH	Above all, Mark Twain enjoyed the good things in life. Even on the mountain he didn't want to deprive himself of any of the pleasures to which he was accustomed. So he took more than a hundred people with him: confectioners, waiters, chaplains, guides and cooks. They were all in their Sunday best and equipped with umbrellas – just in case an avalanche should sweep down on them. But the dynamite which they took to clear any boulders out of the way was eaten by a mule, which then exploded.
RG	His guide book said it should take three hours to get from Zermatt to Riffelberg. Mark Twain and his team needed seven days.
PH	When he finally got to the top, Mark Twain didn't feel like walking the whole way back down again. He had read that glaciers move, so he sat down on the ice with the entire team and all their luggage – mattresses, tents, bags of flour and saucepans and so on – and waited.
RG	He waited and waited. It grew dark. He went on waiting. He didn't seem to be getting to Zermatt. Rather annoyed, he looked to see what his guidebook had to say. He learned that glaciers move only very slowly. He did his calculations and came to the conclusion that he would have to find a different way to get home.
PH	Perhaps he would have had more luck in Pakistan. In 1953 the highest speed ever measured for the flow of a glacier was recorded there. At that time the Kutiah glacier was moving at a speed of 12 km in three months, the equivalent of 112 meters per day. Alpine glaciers, on the other hand, flow at a rate of between 30 and 150 meters a year.

STERNENSTRASSE 12 8002 ZÜRICH TEL +41 44 500 43 50 FAX +41 44 500 43 51 WWW.MYCLIMATE.ORG INFO@MYCLIMATE.ORG

RG	Walk on a bit, but be alert to your surroundings: keep switching from looking into the distance to looking at your immediate surroundings. Notice the stones around you, the rock faces, the boulders, the flakes of rock. They are covered with rough, dimpled lichens, which look like tiny maps. Lichens are slow growing organisms consisting of fungus cells and algae. Can you see any creatures, or the tracks of anything, on the lichen?
PH	Stop when you come to a rock where you think that a small, whitish-grey alpine bird would like to sit and sing its heart out. Listen there to the seventh part of our story. So switch off your audio guide after the music and set off to look for the bird rock.

STERNENSTRASSE 12 8002 ZÜRICH TEL +41 44 500 43 50 FAX +41 44 500 43 51 WWW.MYCLIMATE.ORG INFO@MYCLIMATE.ORG

	LOCATION 7
F	Location 7, animal life
PH	You are standing by a rock on which a small alpine bird would be happy to sit. What traces of your presence have you already left behind you today? Footprints? Flattened grass? A scrap of paper you have dropped? Perhaps a cairn?
RG	Many mountain animals are very shy. They live a secret life, hidden from view, and yet they leave traces of their presence behind them, like tracks, droppings, feathers, leaves they have nibbled at, something they've built. Look carefully. There is more life here than you might perhaps think at first glance.
PH	My most impressive animal observation was an observation where I didn't see an animal at all. In a patch of summer snow I found the impresssion of a snow grouse. You could make out the print of its feet very clearly. Even the feathers on the individual toes had left their traces in the snow. It was August. The cold white patch was a last surprising remnant of snow at the height of summer. I could imagine this stocky bird making its way up the slope. Not far from the foot prints I found a pile of droppings, like dry, brown sausages.
RG	Old droppings can tell tales. In the droppings of the snow grouse you can see what the bird has been eating, whether it's winter or summer, whether it has eaten berries or tough bits of wood. The snow grouse is vegetarian. In its blind gut, which is up to 25 cm long, it has a special kind of bacteria. These bacteria can digest lignin, a chemical found in wood. For all herbivores, and for humans too, lignin is indigestible. But the bacteria are able to dissolve it.
PH	In winter the snow grouse has to be satisfied with the tough shoots of dwarf bushes. That's where its long blind gut is particularly useful. It is kept very busy. The snow grouse sits in a hollow in the snow to digest what it has eaten and to rest. Like the plants, the birds and animals which live at this altitude are adapted perfectly to the cold and wind.
RG	Now you have the last stretch ahead of you, the path over the glacier to the new Monte Rosa hut. As you climb down to the glacier, just think about the fact that until a few years ago this descent was much shorter. The surface of the glacier came up much, much higher. You can see the sharp edges that it left in the rock face. Just imagine the huge masses of melted ice. As you walk across, listen to the sounds of the glacier. The gurgling of the meltwater. The crash, when a lump of rock comes loose, pounds into the depths and disappears. The crunching of the pellets of ice under your feet.
PH	Then climb up to the new Monte Rosa hut, and stand in front of this very unusual building to listen to the eighth story of the mountain. Turn the audio guide off after the music, and turn it back on again when you have reached the hut.

STERNENSTRASSE 12 8002 ZÜRICH TEL +41 44 500 43 50 FAX +41 44 500 43 51 WWW.MYCLIMATE.ORG INFO@MYCLIMATE.ORG

	LOCATION 8
F	Location 8, the New Monte Rosa hut
RG	The path leading up here is pretty steep, isn't it? You've come across the glacier, across the fissures and the snow, and you've reached the new Monte Rosa hut. You are now standing in front of this five-storey building, which looks like a highly polished futuristic crystal.
PH	Beneath the shiny outer layer of aluminium, is a one-foot thick insulating layer. Huge amounts of heat get lost when houses are poorly insulated. The new Monte Rosa hut shows how this can be tackled. Houses with thick wrapping all the way round them are an important step into the future. In the new Monte Rosa hut a system of controlled ventilation is an extra measure to stop warmth being dissipated in the surroundings because the windows are open.
RG	But it is not only in this regard that the new Monte Rosa hut is a trailblazer. It uses renewable solar energy to produce warm water and electricity. For the sake of maximum efficiency, the hut has been placed in the best possible position for the sunlight. The large photovoltaic system integrated into the south façade provides the electricity which powers the wastewater treatment, the ventilation, the lighting and the household appliances. Extra energy is stored in accumulators. That means that the building has electricity even when the sky is overcast. Because the rays of the sun are more intense here in the mountains, you can get twice as much energy per square meter up here, as you can from a solar panel down in the Swiss plateau.
PH	In the western world it's our homes, along with our mobility and our consumption, that are mainly responsible for our large ecological footprint. People have always tried to build their houses so they were warm in winter and cool in summer. The old houses typical of this region have thick walls and small windows, simple methods to give them a good indoor climate. In the old days, often only one room was heated, and it was normal for several people to sleep in the same bed. In the cold winter nights the childen snuggled up to their grandmother like cuddly hot water bottles, or they slept in their parents' beds.
RG	In other places in Switzerland, for example the Engadine, the cowshed was integrated into the house, and on cold days warmed up the bedrooms above it.
PH	When the supply of fossil fuels seemed to be endless, people built without thinking at all about energy consumption. Most houses in Switzerland have oil-fuelled heating. When oil is burnt, it produces CO2.
RG	So that makes it all the more impressive that the new Monte Rosa hut uses solar energy so comprehensively. Just think, the same sun that warms the water here, could also warm your showers at home. In your everyday life, use renewable energy sources wherever you can! It's your choice, even if you are only a tenant.
PH	Turn the audioguide off after the music and walk around the hut, until you get back to the terrace. Then listen to the ninth and last part of the guide.

STERNENSTRASSE 12 8002 ZÜRICH TEL +41 44 500 43 50 FAX +41 44 500 43 51 WWW.MYCLIMATE.ORG INFO@MYCLIMATE.ORG

	LOCATION 9
F	Location 9, on the terrace
PH	You are now standing on the terrace of the new Monte Rosa hut. The idea for building the new Monte Rosa hut came up in connection with the 150th anniversary of Zurich's Federal Institute of Technology. The hut should stand in the midst of this spectacular scenery, between the Grenz glacier, the Gorner glacier and the Monte Rosa glacier, framed by the Matterhorn and the Dufourspitze. The hut should be durable and point the way to the future.
RG	For four semesters more than thirty students worked on designing it. We are now standing in front of the impressive result. In the new Monte Rosa hut the CO2 emissions per overnight stay have been reduced by more than two thirds in comparison with the old hut.
PH	An energy management system controls all the processes, even taking into account the weather forecast and the number of visitors. So the warden knows, for example, whether it is better to cook with gas or with electricity. The air that is extracted is also used. It contains heat, which can be recycled. Even visitors to the hut become small power stations. The warmth given off by the people makes a significant contribution to meeting the demand for heating the rooms.
RG	So the house of the future has definitely become the house of the present. Enjoy your visit to the hut and its surroundings. Inside the hut we have prepared seven puzzles for you. We'd be delighted if you wrote to the climate protection organisation myclimate to tell us what you think of the puzzles, and also give us your impression of the audio path as a whole. The climate protection organisation myclimate was responsible for the concept and implementation of the audio path. The project was made possible thanks to financial support from the insurance company "smile direct" and Bosch Household Appliances. Many people from the region, from the Federal Institute of Technology in Zurich and from the Swiss Alpine Club gave us their valuable time and useful information. We hope you had fun on the audio path and will go home with a few new ideas. Thank you for your attention, and enjoy the rest of the day.

STERNENSTRASSE 12 8002 ZÜRICH TEL +41 44 500 43 50 FAX +41 44 500 43 51 WWW.MYCLIMATE.ORG INFO@MYCLIMATE.ORG