

Relocating a City



A small mining town in northern Sweden is rejuvenated through relocation

BY KATE SHIRLEY

Relocating an entire city center may seem like a truly insurmountable task, but one town in northern Sweden is finding that in order to ensure the safety of thousands of residents, it doesn't have much of a choice.

Kiruna, the northernmost city in Sweden, is well-known for its deep ties to the mining industry, which largely supports this town of just over 23,000 residents. Sitting directly on top of a valuable streak of iron ore, the town is home to the world's largest iron-ore mining operations under the state-controlled mining company, Luossavaara-Kiirunavaara AB (LKAB). When the company expanded its operations to access more of the valuable mineral, fracturing and deformation of the ground below Kiruna's city center occurred, rendering much of it unstable. In 2003, LKAB sent a letter alerting town leaders of this, and proposing an intriguing solution to the problem.

THE SOLUTION

One might imagine that the easy answer would be to simply halt the Kiruna mining operations indefinitely, but the

city residents are highly dependent on the jobs that result from the mining operations, so closure was simply not a viable option. Instead, LKAB proposed relocating the town center two miles away from its current location, to land that is removed from mining operations and safe from the type of ground deformations that prompted the relocation.

A development group comprised of representatives from the city, LKAB, the Swedish Transport Administration and the County Administrative Board is planning the design and relocation implementation, and is taking suggestions from affected property and business owners into consideration. To educate citizens about the coming move, the group also publishes a newspaper eight times a year on the urban transformation and maintains an open office in the city center.

THE PLAN

In March, the Stockholm-based architectural firm White arkitekter AB won a competition to relocate the city with its proposal that is referred

to as a Model City 2.0. "To design what basically is a completely new city is a historic task and an unparalleled opportunity for us as architects," said Monica von Schmalensee, CEO of White arkitekter.

The new Kiruna city center will showcase many of the ideals popular in present-day city planning, including sustainability, a bustling, densely-built city center and mixed-use developments. A new cable-car system and train station have also been planned, with hopes of reducing the city's dependency on cars. The new town hall is expected to be complete by 2016, and the revamped city center will feature a scooter arena and a new recreation center in addition to an updated city plaza, city hall and public buildings.

"The current city center is sparse and spread out, said Göran Cars, a Professor of Urban Planning who is a project manager with the development group. "The new city center will be more densely laid out, including a main street where residential housing, stores and cultural facilities will coexist. A main square is also on the residents' wish list."

Establishing a new sustainability standard based on the symbiotic relationship between the city and mining operations has been of paramount importance as well. In addition to wind power, creating the energy to power and heat the town will focus on utilizing the enormous amounts of waste heat produced by the mine, with the goal of creating a carbon-neutral city. The relocation of Kiruna has truly provided a unique opportunity to create flexible, holistic energy management strategies in all stages.

THE CHALLENGES

The project has taken almost decade to plan, and is expected to take two more to execute, no surprise considering the relocation includes more than 3,000 apartments and houses, several hotels, and 2.2 million square feet of office, school and health-care space. While much of the infrastructure is already in place in the new location, including roads, new railroad tracks and utilities, the massive relocation is raising a range of thorny issues, including how to compensate property owners and businesses that must relocate.

Stores located in the old downtown area have been given a decade to complete their moves. Understandably, the logistics of completing the relocation of an entire city's operations are intricate, and the difficult task of determining how much to

compensate owners for their properties values has left the final price tag for the project up in the air. Under the current plan, owners of real estate that is slated for demolition will have the value of their properties assessed independently, and LKAB will compensate them with a 25% premium. Still, many storeowners are concerned their businesses may be hurt if they move too early or too late, and wonder how profits will be affected while the downtown district takes its time to shift to the new location.

According to Swedish law, LKAB is economically responsible for the move. The company has committed \$527 million to move Kiruna and has set aside over a billion dollars more for the remaining transformation, which will mostly include tearing down existing structures and rebuilding in the new locations. About a dozen landmark buildings, including the city's main church, which was voted Sweden's most beautiful building in 2001, will be dismantled and reassembled in their entirety in the new city center.

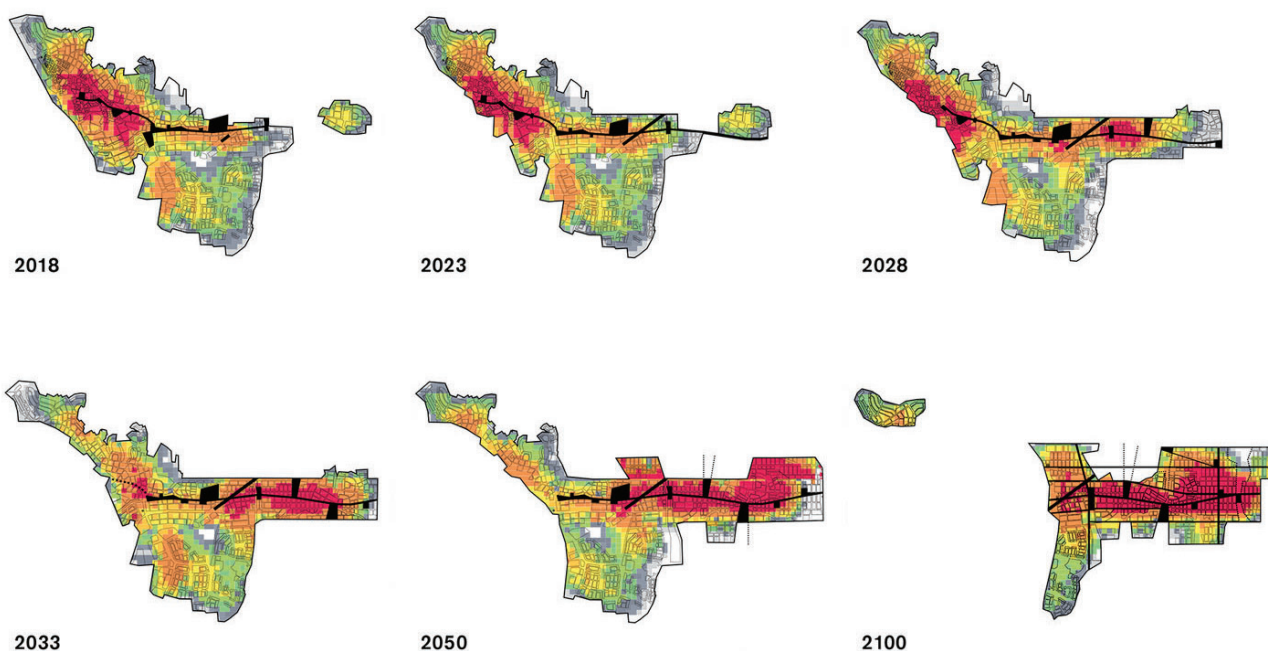
But new challenges are being discovered all the time. When the train tracks were moved from one side of the mine to the other, Sweden's population of indigenous people voiced worries about their reindeer. The 15,000 Sami people who live in Sweden own tens of thousands of reindeer. In the spring, they allow the reindeer,

individually tagged, to wander up into the hills. When the snow returns, the reindeer come back. But the new tracks were placed perilously close to the reindeer's migration path. To mitigate this environmental concern, LKAB, the town and the Swedish transport ministry agreed to build a bridge over the tracks with grass and dirt on it, for the reindeer to cross. However, this once-promising solution must now be reconsidered. When the bridge iced over in winter, it left the reindeer unable to cross, and the Sami herders were forced to drive up and down the mountains, carting the reindeer in trucks.

THE RESULTS

With this relocation, town leaders hope to turn the city's long-standing reputation as a mining town on its head. While Kiruna's identity will always be inextricably tied to the iron extraction industry, the design plan aims to challenge this connection by invigorating the local tourism industry by attracting new businesses and hotels to the area and transforming the current town center into a nature park.

While the project certainly has a long way to go, hopefully this process that was started out of an unfortunate need will end up as a unique opportunity for reinvention, transforming what was once a small, cold mining town into a true model city of the future. ♣



These maps demonstrate how Kiruna and its population density is going to shift as the relocation progresses.