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OSLO'S FJORD CITY

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After controversy forced a redesign, an ambitious harbor redevelopment plan is proceeding in Norway's capital city.

LIKE MANY CITIES in the last few decades, Oslo, Norway, has seized an opportunity to create a civic and economic asset in its older industrial waterfront area. It has launched a series of ambitious redevelopment projects aimed at creating what municipal officials call a new "Fjord City": a walkable waterfront district comprising cultural amenities and anchored by a new opera house. But the redevelopment, now entering its final major phase, has not come without delay or controversy.

Oslo, in fact, has two main harbor areas, separated by the rocky peninsula atop which sits the original medieval castle, the Akershus. The western harbor area saw development first, beginning with the closure of the Aker Brygge shipyard in 1982. Shortly thereafter, the city, together with private partners, launched a competition called "The City and the Fjord: Oslo Year 2000," soliciting entries for redevelopment plans. Some 170 entries were received. The winning plan, approved in 1988, proposed relocating the waterfront motorway into a tunnel below a new pedestrian promenade. The motorway was relocated in 1992, and the plan was implemented soon afterward. The urban plan for the shipyard included a traditional urban street grid of walkable streets and squares, with mixed-use buildings combining harborfront restaurants and shops with offices and residential units above.

The development proceeded under a public/private partnership, with the Aker group of companies taking the lead on building development, and the city and other agencies taking the lead on the motorway relocation, a new tramline, and a major new waterfront plaza next to Oslo's historic city hall. City residents, officials, and private interests all participated in a series of public workshops to develop consensus on the plans. By most accounts, planning and development in the western harbor area was a great economic and popular success, and fueled more ambitious plans for the next major phase of development.

Planning did not go as smoothly in the second phase, which included the large eastern neighborhood known as Bjorvika. The area was not opened for development until 2000, when an existing container shipping port facility was finally slated for relocation, and funding for a costly extension of the motorway tunnel under the sea was approved. Initial concepts for the area were included in the original 1982 competition, but development was delayed by the relocation of the container port, and by financing delays for the tunnel construction. But in 2000,

Oslo is undertaking the creation of a new "Fjord City"—a waterfront district with an unbroken chain of 12 new development areas with promenades, marinas, and mixed-use projects. The western harbor area of the Norwegian city was developed first with an urban street grid of walkable streets and squares and mixed-use buildings, combining harborfront restaurants and offices and residential units above retail.

the city and other stakeholders held a series of community workshops and a final competition. Bjorvika became the anchor of a long 556-acre (225-ha) chain of 12 new development areas dubbed "Fjord City."

Remaining undeveloped areas in the west included an island development south of Aker Brygge known as Tjuvholmen. That district, now partly complete, is lined with canals and flanked by waterfront parks, with a series of pedestrian axes. Also north of Aker Brygge was the Vestbanen area, adjacent to the historic rail terminal, the subject of a competition-winning entry by the Office of Metropolitan Architecture, the firm of Dutch architect Rem Koolhaas. Now in the early stages of development, it will include a library, art galleries, and the new Nobel Peace Center, located within the refurbished historic rail station.

Other smaller harborfront parcels are slated to include marina developments, public waterfront parks, residences, and a redeveloped ferry terminal area. The new developments are planned to tie together the earlier development and fill in the gaps, creating an unbroken chain of waterfront promenades, marinas, and mixed-use developments.

The largest area, Bjorvika, flanks the Akerselva River, which traditionally divided the more affluent western neighborhoods from the eastern working-class neighborhoods of Oslo. The project was therefore seen as an opportunity to create greater economic activity for the east, and to give the area its own vibrant downtown district in an area that is currently dominated by industrial and transportation infrastructure. Where the highway, railway, and container facility now create a triple barrier between the city and the fjord, the vision was to relink the existing eastern neighborhoods to the fjord, giving them parks, squares, and retail districts along a dramatic harborside development.

Sustainable design was a central goal. To that end, the project includes a high-efficiency district heating system that will use seawater as a heat exchange medium. Seventy percent of all waste is expected to be recycled. Compact, mixed-use development, located close to transit links, is designed to reduce dependence on cars. Buildings will be designed to high standards of energy efficiency and sustainable materials, and many will comprise solar energy collectors. The opera house's glass facade, for example, integrates the largest solar photovoltaic array in Norway.

The opera house, designed by Oslo's own Snøhetta Architects, creates a public open space in its own right, with tiered layers of waterfront plazas, ramps, and balconies leading to a rooftop terrace offering views of the harbor. The structure, which has been likened to an iceberg floating in the fjord, actually houses two separate auditoriums, a larger one holding 1,358 attendees and a more intimate space for 440.

More controversial has been the area to the north of the opera house, designed for mixed office and residential uses. Planners struggled with ways to preserve view corridors down to the fjord, while maintaining floor/area ratios that would prove lucrative enough to offset the expensive project economics, including the relocation of the motorway. What emerged was a concept for a parallel series of narrow stepped buildings that planners dubbed the "Barcode" for its likeness to a series of parallel bars divided into fragments of varying lengths.

According to planners, the project economics suggested that these structures needed to be up to 30 stories tall. But local residents, and some on the local council, disagreed, and argued that the additional height was only an opportunistic effort to generate excess profits. They reacted with anger that the Barcode plan violated the overarching goal to connect the neighborhoods to the east to the fjord, in effect creating a wall of buildings with only a few narrow slots in between. Planners conceded that the scheme had undergone less than ideal compromises, but insisted they were necessary to make the challenging economics work.

"The local [neighborhood] council is not very happy with the planning that has been going on in the planning department of Oslo, and in city hall," says Audun Engh, an Oslo resident active in the redevelopment. Engh says he thinks the original vision has been lost, and that it is up to planners to present a clear choice to the residents about the character of their new neighborhood. "Should it be only

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Planning did not go as smoothly in the second phase, which included the large eastern neighborhood known as Bjorvika, which is the anchor of "Fjord City." The area currently is dominated by industrial and transportation infrastructure; a highway, railway, and container facility create a triple barrier between the city and the fjord.

a business district with high-rise buildings, or should it be a more traditional neighborhood with street patterns, mixed uses, and a social mix of people living there?" he asks.

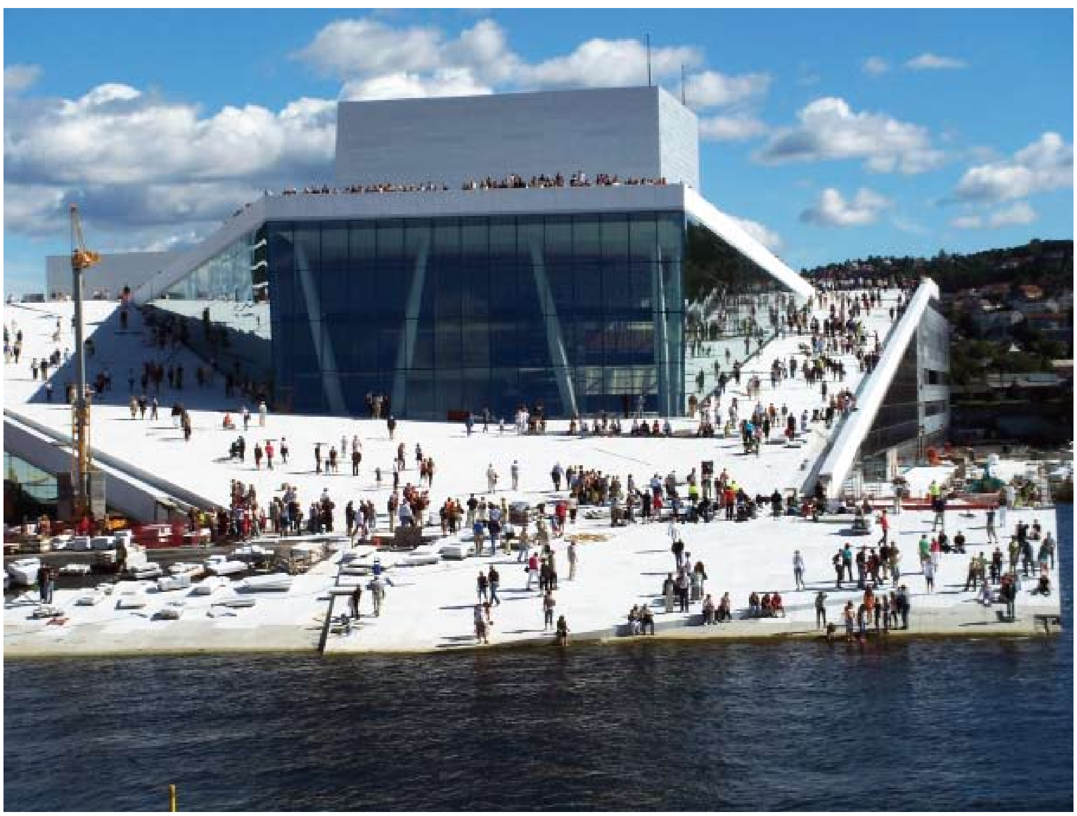
Residents and stakeholders began to object to other aspects of the scheme, too. The ruins of medieval Oslo lie on the eastern flank of the Akerselva River, and in a choice part of the project. The site is now an archaeological park with a dramatic view of the fjord. Some of the original buildings have been re-created in part, and there are plans to re-create a larger part of the historic village as part of the Fjord City project. But under the new plan, the village's essential link to the fjord would be blocked by a wall of new development. That upsets some heritage activists and local residents.

The controversy intensified as the proposed buildings grew taller, with mounting opposition from the surrounding neighborhood, and from some sympathetic officials. Critics charged that the view corridors established between buildings were extremely narrow, and did not function unless one happened to be positioned exactly on their axis—which applied to only a handful of locations. Even city planners admitted the project economics had produced a "less than ideal" form.

To explore alternatives, the local council decided to conduct a public charrette, working with local residents, students, and national and international experts; the results would be presented to the city of Oslo as a win-win alternative. Oslo architect and planner Arne Sodal was hired to run the charrette, which occurred last January. Sodal and his team set up a temporary planning office with a professional staff in a building on the edge of the site, and for five days planners, traffic engineers, government officials, residents, and students worked furiously on alternative scenarios.

A group of students from the European School of Urbanism and Architecture (ESUA) worked alongside the planners, producing several schemes of their own. The ESUA project is a partnership of several schools funded by the European Union, exploring new educational models to teach public involvement, regional research, and sustainable community planning. For this workshop, the students had the luxury of being able to work in a more ideal environment, while still considering the realities of the project. That actually helped the hard-nosed planners, Sodal says: the students were free to consider options that the planning team, supervised by local residents, could not. The students fed their ideas to the charrette leaders, who could make what Sodal called an "optimal compromise," and some were incorporated into the final proposal.

The waterfront district is anchored by a new opera house with tiered layers of waterfront plazas, ramps, and balconies leading to a rooftop terrace with views of the harbor.



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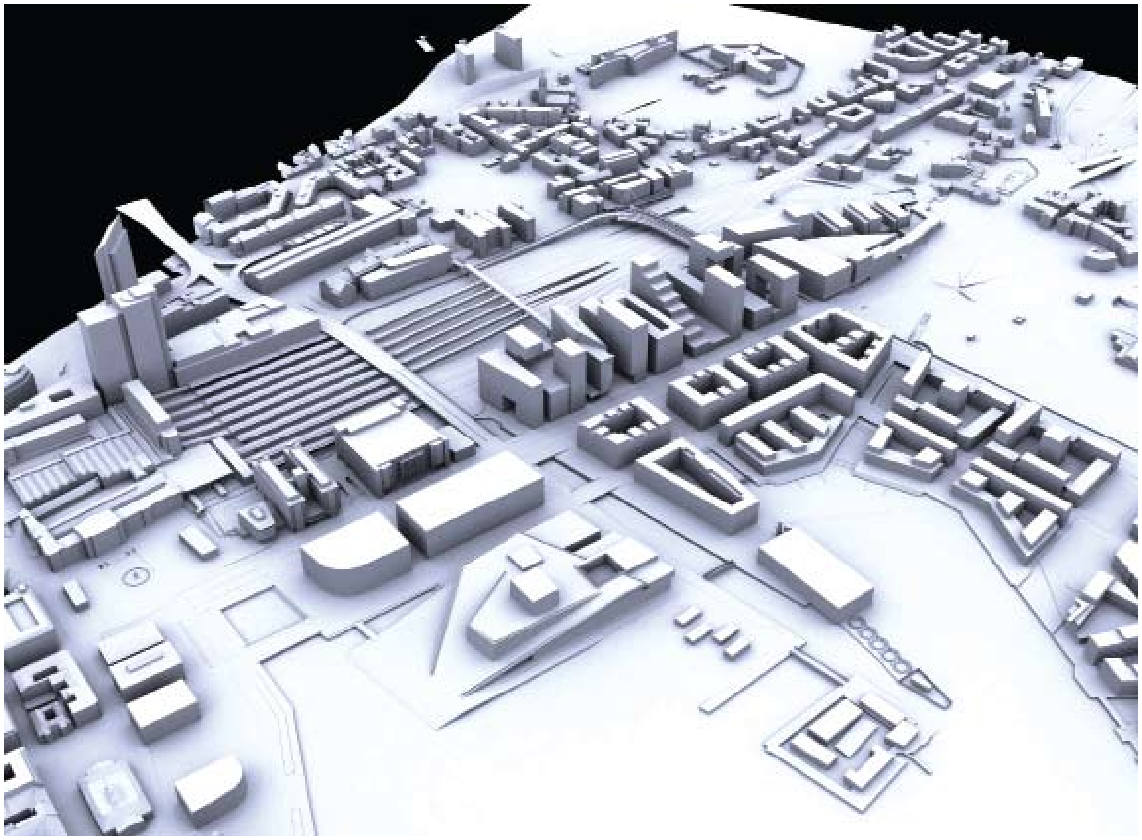
The charrette team's key goal was to identify ways to establish stronger links to the fjord, while keeping to the same overall floor/area ratios. A key concept emerged to strengthen the connection along the Akerselva River, and two smaller rivers to the east. These would be restored, and brought back into the urban grid with view corridors flanked by new public open spaces. A street grid would be established to afford views of the harbor in the public spaces between buildings.

More challenging was to develop an economically feasible alternative to the so-called Barcode scheme. Planners looked at several alternative scenarios, including relocating the buildings along the harborfront to the south, where they would not block views from the city. They also briefly considered a smaller number of taller structures, though residents did not seem fond of this idea.

A more daring proposal would remove the railroad tracks to a subterranean tunnel and build out over the new area. Though costly, it would allow the now low-rise buildings to spread out over a much larger area, recouping the investment and then some. Moreover, planners argued, it was probably only a matter of time before train service would outgrow the current tracks anyway, and subterranean relocation would become an attractive alternative, as it had in other European cities looking to increase buildable land in the more valuable, more ecologically sustainable urban core.

Moreover, a lower-rise mixed-use area would give the eastern neighborhoods their own downtown, similar to the character of the downtown areas to the west. Instead of serving as an "office ghetto," says Engh, "this will hopefully be the new heart of Oslo: a neighborhood center and a kind of downtown, which will take some of the energy from the established downtown area in the west [and extend it] to the east and the fjord."



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Planners initially suggested that a way to preserve view corridors down to the fjord would be a parallel series of narrow stepped buildings up to 30 stories tall (left)—dubbed the "Barcode" scheme because the group of structures resembles a barcode pattern—grouped along the existing railroad tracks. Local opponents of the plan maintained that a wall of buildings would go against the original goal of connecting neighborhoods to the fjord.

An alternative plan developed in a community charrette would extend lower buildings and streets over the train tracks, making a better connection to the existing neighborhoods to the north and east (below). In the end, the city of Oslo compromised, and lowered the Barcode structures' height to 22 stories and agreed to explore adding buildings over the tracks and other recommendations in a later phase.

Defenders of the Barcode plan argued that taller buildings were better at combating greenhouse gas emissions, citing recent research on the advantages of urban density. But, as critics pointed out, research is showing that it is not density per se, but the mix of uses and the proximity of a variety of daily activities that is key to reducing emissions. A mixed-use district of residences and offices, even if comprising shorter buildings, they say, could be just as good or better at combating emissions. Indeed, critics argued, there are drawbacks with taller structures to consider as well, such as heat island effects, inefficient floor plates (caused by egress and elevator requirements), and the high embodied energy of materials typically used in tall-building construction.

In Oslo, as in many cities, the debates about sustainability, density, and tall buildings seem likely to continue, as research begins to clarify the factors involved and their interactions. For the Bjorvika charrette, the bigger challenge seemed to be sheer economics. The proposal to add low-rise buildings over the relocated railroad tracks did make up most of the extra project income needed from buildings—but the infrastructure required to span the tracks also added extra cost.

That seemed to be the conclusion of Oslo's city council, which earlier this summer agreed to scale back the Barcode plan, limiting its height to 22 stories, and to move forward with the project. They also pledged to incorporate other elements of the charrette as it goes forward, including enhanced view corridors and strengthened connections to the rivers, and to avoid the planning mistakes that had plagued the process earlier. Residents of the Bjorvika neighborhood were, not surprisingly, disappointed with the city's decision to keep the modified Barcode scheme, but they seemed pleased with the public process that occurred in the charrette, and many suggested it become the standard model for future planning work.

The students from the European School of Urbanism and Architecture also seemed enthusiastic about the charrette process, not only as a public planning model, but also as a way for them to learn on the job. "The knowledge we acquired during the workshop seems enormous to us," notes one student. "It has been a unique experience to participate in such a large-scale, real project. Of course, nothing can replace experience." UL

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