



The light rail option through the city centre as proposed by the City of Bergen

Drawing: Jon Hamre

# The proposed light rail system threatens Bryggen – the UNESCO World Heritage Site

Bergen’s narrow city centre, once a busy harbour, has become a major traffic node. The proposed Light Rail may solve some problems, but the day option will significantly affect contact between Bryggen and Vågen, threaten the outstanding universal value (OUV) of the UNESCO World Heritage Site (WHS) and severely restrict public use of the area. The only viable solution for the Light Rail is to bypass the area completely and divert it through a well-planned tunnel!

## Bryggen – World Heritage Site in an urban landscape

The pointed gables of Bryggen Wharf are widely recognised along with the silhouettes of other outstanding World Heritage Sites.

When Bryggen was inscribed as a UNESCO World Heritage Site, it was noted that: *“It is a type of northern “fondaco”, unequalled in the world, where the structures have remained within the cityscape and perpetuate the memory of one of the oldest large trading ports of Northern Europe.”*

The name Bryggen (Wharf) describes a place for loading and unloading. From around 1100, a mediaeval harbour town was established here, with churches, alleys, a marketplace and a town hall. Traces of the mediaeval structures are still visible, including the oldest street in Norway, Øvregaten (High Street).

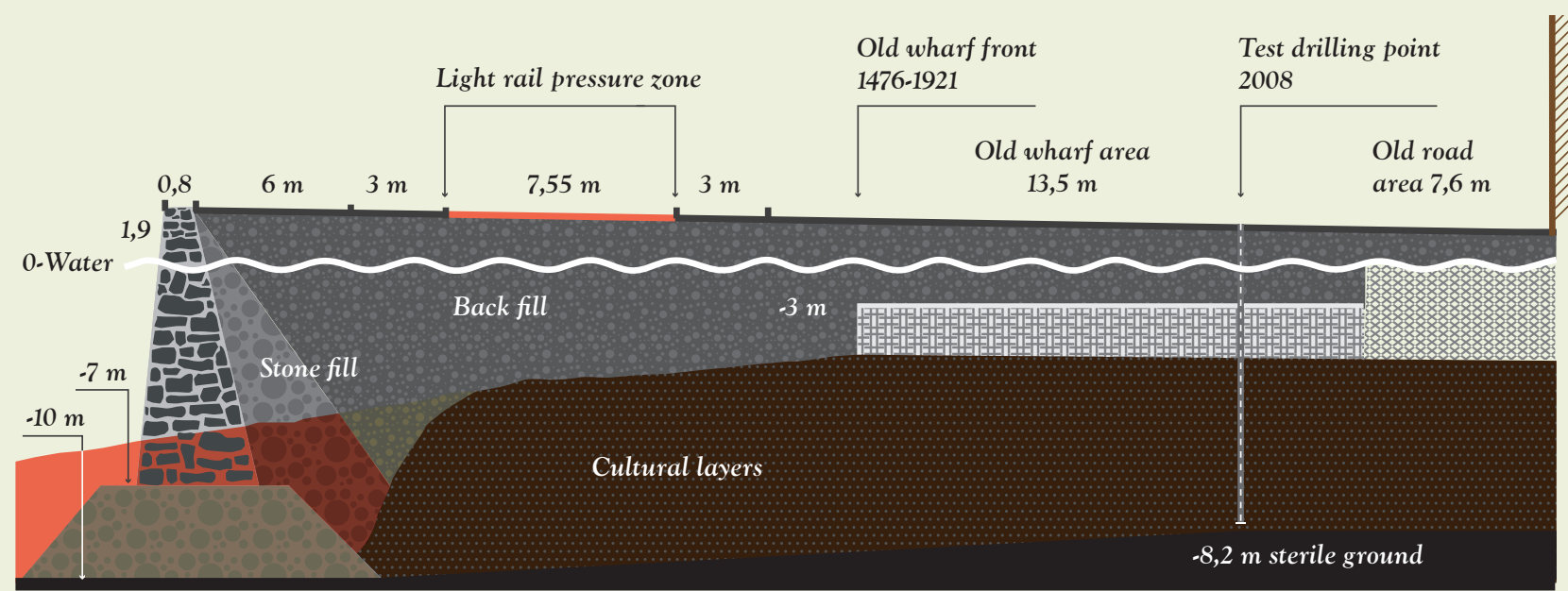
The built-up area from the market to the Royal Castle features many architectural periods and represents urban qualities that are hardly surpassed by any other townscape. These qualities have been cultivated over nine centuries and are irreplaceable.

## Bryggen is subsiding

Ground settlement in the front area varies in speed, intensity and location, with no indication of halting or slowing down. Average ground settlement over the last 100 years is 3–4 mm/year, ranging from 1.7 to 7 mm/year. Level surfaces quickly become uneven, as revealed by numerous modifications.

A light rail track at 1,75 m above sea level in 2035 can expect to be lowered to between 1,56 and 1,49 m by year 2100. Mean sea level is assumed to rise with 0,70 m.

Subsidence has been ignored in official risk assessments of sea level changes, storm flooding, stability and other issues concerning the Light Rail and its future use.



- |            |   |           |   |
|------------|---|-----------|---|
| 1918-1921  | Outer quay wall. Large boulders, dry masonry  | 1920-1921 | Back fill. Masses from the fire site 1916 |
| 1918-1921  | Stone fill. Large rocks under quay wall (jete), smaller rocks and pebbles behind wall | 1100-1920 | Old seabed. Cultural layers               |
| 1917, 1921 | Dredged area  |           | Remains of bulwark                        |

Vertical section of the quay of the German Wharf in front of Bredsgården, 1917-1922

Version 1.0, Arne Skivenes, 07.09.2022

## Save Bryggen from this ill-founded light rail plan!

The light rail system that is planned to run close to Bryggen will be built on unstable ground, not on a stone foundation, as claimed, but a compound of soft soil, gravel, stone and other substances, excavated from the site of the 1916 fire. The compound was not deposited on a sterile and solid seabed, as claimed, but on top of 4–5 metres of the marine sea floor from 1917, which dates back to mediaeval times. No dredging was carried out below the zone designated for the Light Rail. The quay is not a stable stone foundation without historical value, but has two cultural layers, with the possibility of settling damage and a potential for archaeological findings.

The true picture is illustrated in the drawing. The current layout is based on unsubstantiated assumptions and must be reversed.



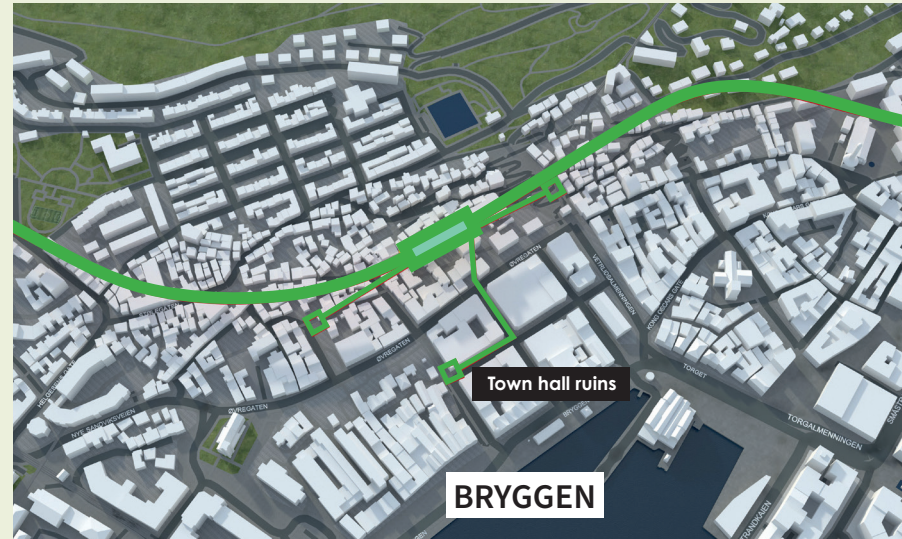
## Damaging vibrations, noise and 6+ years of construction work

A light rail carriage is 42 m long, weighs 60+ tonnes, runs on electricity and has an calculated speed of 30km/h. During peak hours, a carriage will pass Bryggen every two minutes, creating noise levels above the accepted limits. Negotiating the sharp curves through the city centre will cause disturbing curve squeal noise. In addition to vibrations and visual intrusion, this noise will drastically reduce the recreational, cultural and commercial value of the historic surroundings.

Bryggen and Torget attract a wide variety of people, often in huge numbers, engaging in leisure activities, or moving to and from work, events, tourist attractions, shops, bars and restaurants. Many of them will need to cross the track – a 13-metre wide barrier including two cycle lanes – which cuts through the city centre and separates Bryggen from the waterfront. The mix of light rail, other traffic, cyclists and pedestrians represents a significant safety risk.

Unless it is out of service for extended periods, the Light Rail will disrupt between 12 to 20 traditional festivals and events, such as the recent World Cup Triathlon and the Veteran Steam Ship Festival, visited by 100,000 people. Safety concerns would probably require fencing along the track, otherwise events would be at risk of being cancelled. This would reduce the outstanding universal value of Bryggen World Heritage Site (WHS). Banning festive events would harm the cultural identity of Bergen

If this plan is implemented, Bergen city centre, Torget and Bryggen will be a construction site for 6–8 years, possibly more. The harmful consequences for the WHS have not been sufficiently analysed.



## Proposed new tunnel option will save Bryggen

An independent expert group has developed a new tunnel option in the mountain behind Bryggen/Øvregaten, in solid rock well above sea level, and avoiding groundwater problems.

A station behind Øvregaten will have three passenger exits, one of them beneath Rosenkrantz car park, giving public access to the Town hall ruins.

The construction work will affect neither the World Heritage Site nor other archaeological sites.

The tunnel option will also be less costly.



Stiftelsen Bryggen

*Bryggen Foundation (est. 1962) owns and manages 40 of the 62 buildings within the World Heritage Site and has highly skilled staff whose sole purpose is to preserve and restore the Heritage Site. The Foundation played a key role in inscribing Bryggen on the UNESCO list in 1979.*

[www.stiftelsenbryggen.no](http://www.stiftelsenbryggen.no)

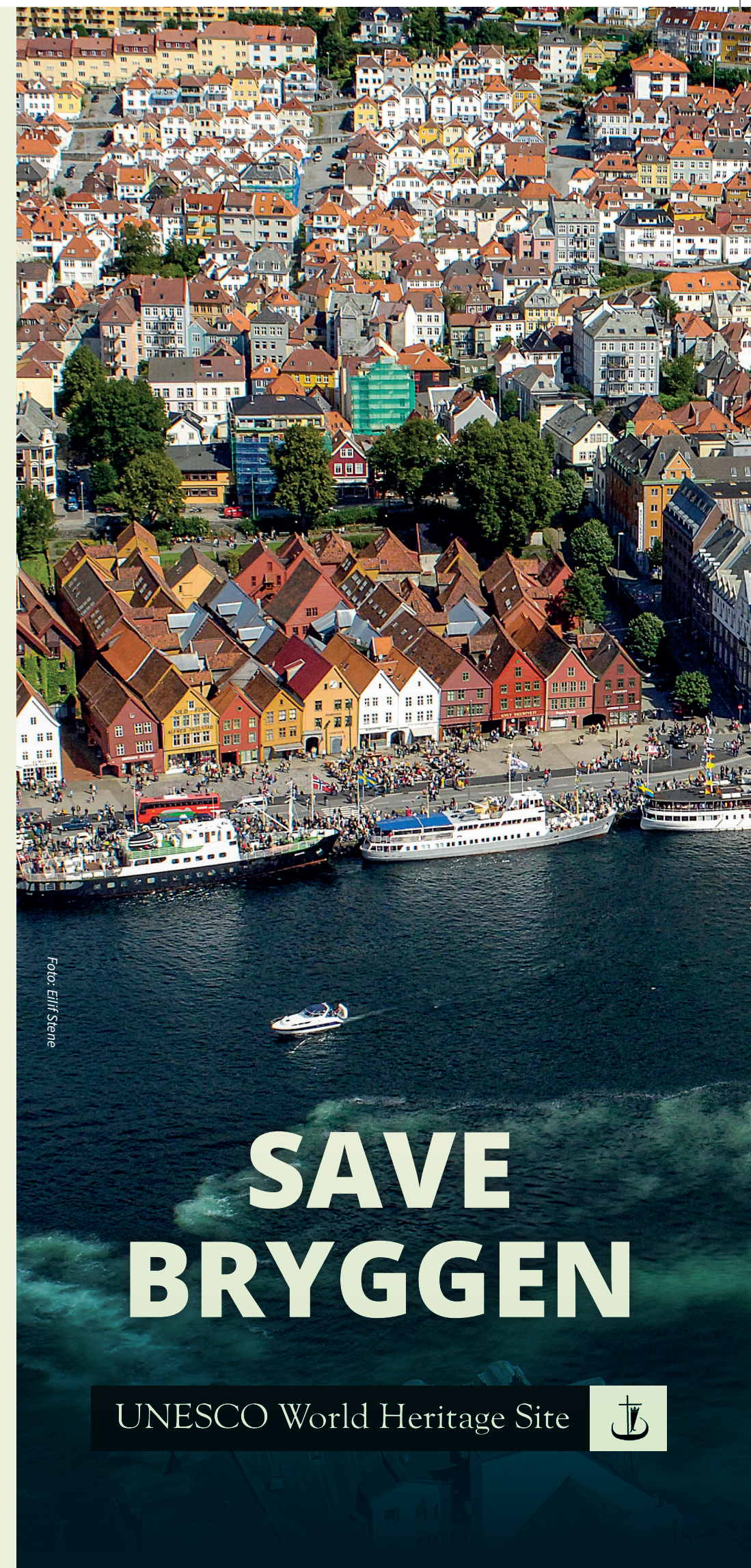


Foto: Eilif Stene

Foto: TIF VIKING/BCM