



Enhancing climate resilience with smarter steel solutions



DANA 2024, Spain

- Over 300 mm of rainfall in 4 hours
- Over a year of rainfall in 8 hours in some areas
- More than 200 fatalities
- Close to €11 billion damages
- Nearly 140,000 insurance claims*



Climate change impacts are already here

The devastating flood that struck Paiporta during the October 2024 DANA event highlighted the growing vulnerability of urban areas to extreme rainfall and

flash flooding. The event underscored the need for infrastructure solutions that strengthen resilience and support long-term climate adaptation.

Climate adaptation... a possible future

A flood-resilient urban corridor that safely conveys and temporarily stores floodwaters during extreme events.

It serves as a valuable public space for recreation, active mobility and community life throughout the year.

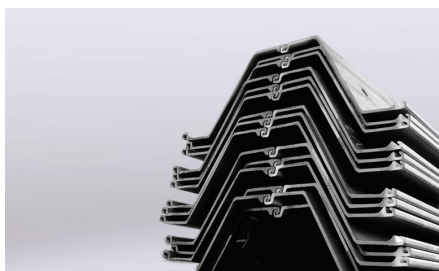


Top photo: Poyo ravine, Paiporta, Spain © Biel Aliño 2024

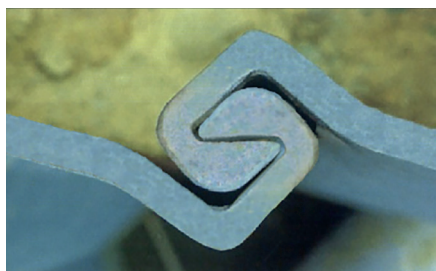
Bottom pictures: 3D simulation images © INCREA

* Guy Carpenter. (2024). Post-Event Report: Eastern and Southern Spain: October 2024 DANA Floods.

Steel sheet piles can save lives and prevent damages



Hot rolled sections of sheet materials ...

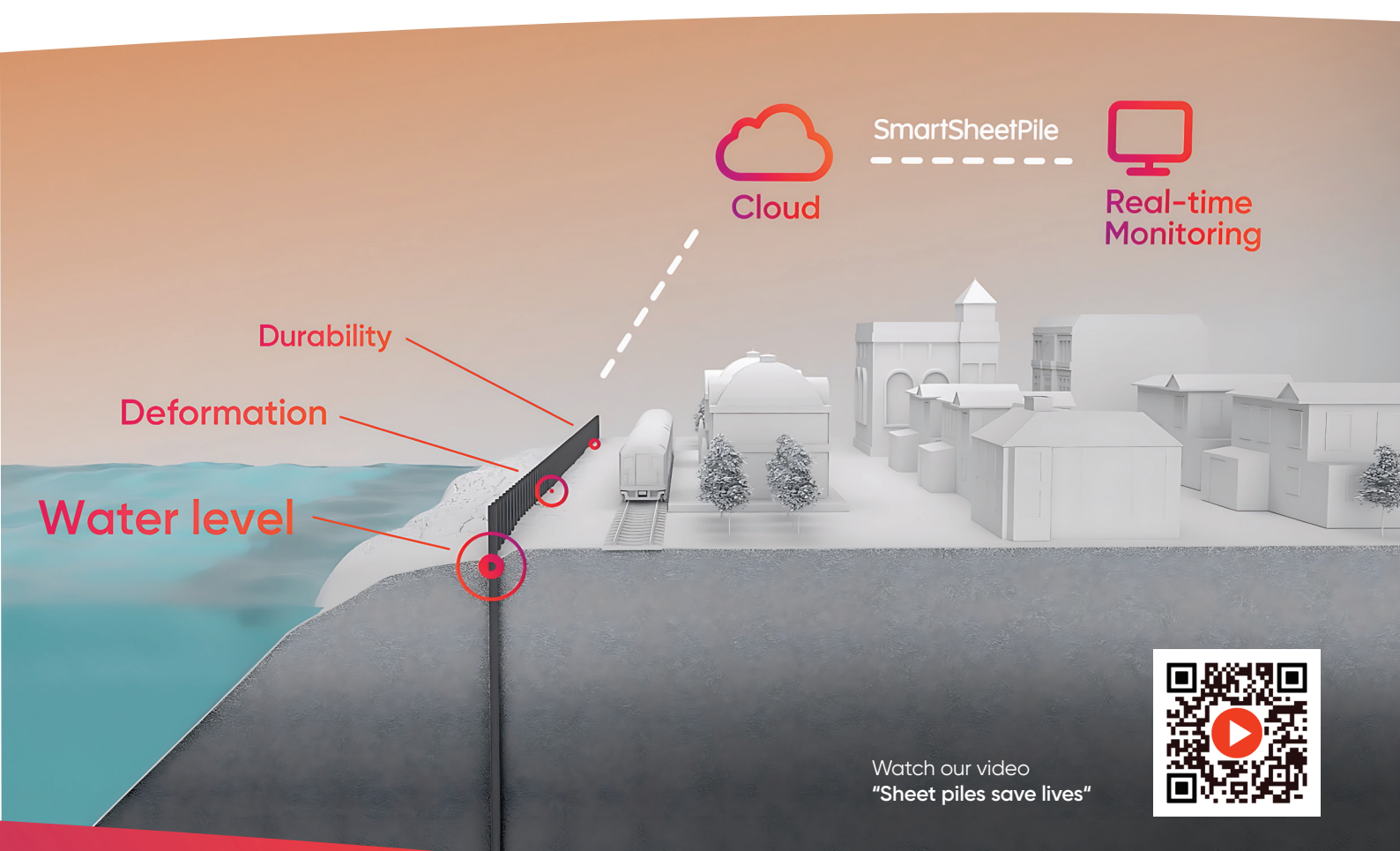
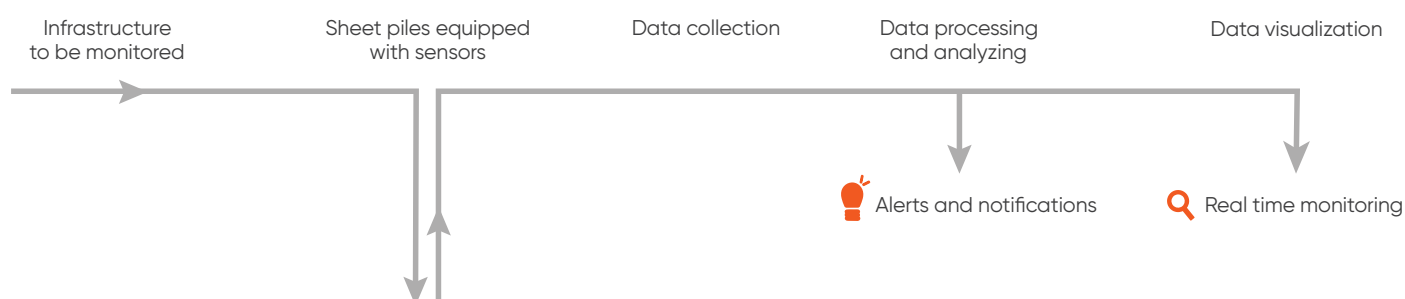


... with interlocking edges ...



... to provide water containment, earth retention and excavation support.

Driving Innovation: SmartSheetPile



Smart, resilient and sustainable steel sheet piles for climate resilience



Time and cost efficiency

Prefabricated sheet piles offer consistent quality. They enable fast construction with minimal preparation and equipment.



Low-noise

Convenient for urban areas using low-noise and low-vibration piling equipment for less disturbance during installation.



Durability

Sheet piles have a long design life of more than 100+ years, protecting communities for current and future generations.



Smaller footprint, larger capacity

Cantilever floodwalls increase flood conveyance capacity in space-constrained urban areas. Their minimal footprint preserves urban space, while modern installation techniques minimize disruption.



Seismic design

Adequate for use in seismic areas thanks to the intrinsic properties of steel (ductility and flexibility: lighter structures have lower inertia).



Sustainability

Reduce-Reuse-Recycle: reduce the carbon footprint with low-emission steel and reuse sheet piles up to 10 times. Steel is 100% recyclable.

XCarb®

Recycled and renewably produced

EcoSheetPile™ Plus

Investing in Climate Resilience Pays Off

An independent cost-benefit analysis of a flood protection concept for the Chiva Ravine demonstrated the value of proactive climate adaptation. The EDHEC Business School used internationally recognised climate-resilience and investment appraisal frameworks.

The study found that **every €1 invested in flood protection could prevent approximately €7.75 in future damages and losses.**

The results show that climate resilience investments can help protect communities, infrastructure and economic activity while delivering substantial long-term benefits.

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