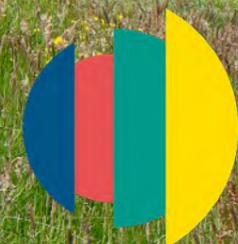


Mytholmroyd Flood Alleviation Scheme

EXCELLENCE IN FLOOD AND WATER MANAGEMENT

ATKINS
Member of the SNC-Lavalin Group

As a part of



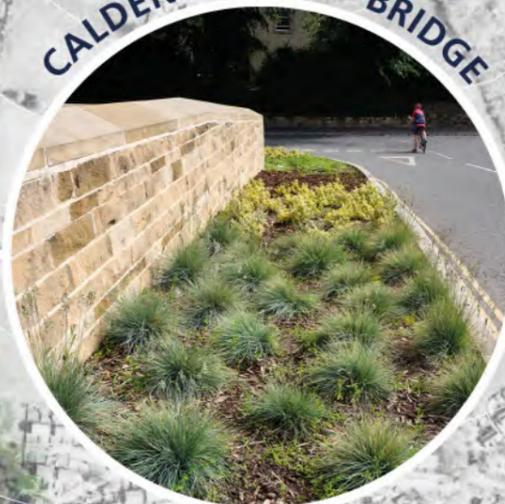
LANDSCAPE
INSTITUTE
AWARDS 2022

FINALIST

BURNLEY ROAD WALL - RECLAIMED STONE



CALDENE 'GREEN' BRIDGE



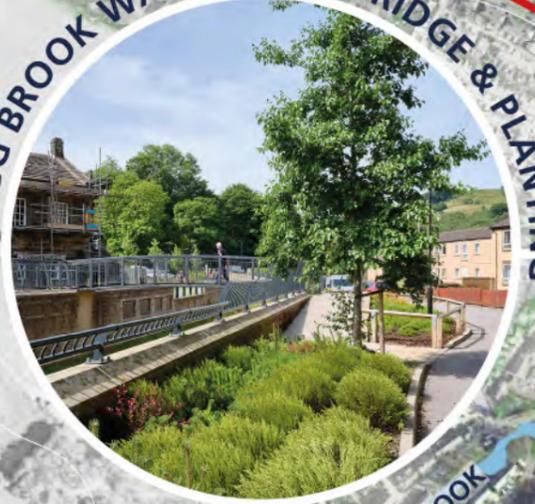
MYTHOLMROYD VILLAGE CENTRE PUBLIC REALM



CANAL OVERSPILL & TOWPATH FOOTBRIDGE



CRAGG BROOK WALLS, FOOTBRIDGE & PLANTING



MYTHOLMROYD VILLAGE CENTRE

RECREATION GROUND

ROCHDALE CANAL

RIVER CALDER

ST. MICHAEL'S CHURCH GROUNDS & RIVERSIDE WALK



BREARLEY FIELDS MANAGED FLOODPLAIN / WETLAND 'PARK'



RESIDENTIAL FLOOD WALL



Masterplan

Overview

Located at the confluence of two waterways Mytholmroyd experienced its highest ever recorded flood following the devastating event of Boxing Day 2015, which caused millions of pounds of damage and undermined the confidence of this community. Approximately 300 properties and 70 businesses were flooded as well as the church, church hall, two schools and the community centre.



Getty Images - Christopher Furlong

PROJECT

Mytholmroyd Flood Alleviation Scheme

CLIENT

Environment Agency

PROJECT TEAM

SNC-Lavalin's Atkins business as part of VBA joint venture (VolkerStevin, Boskalis Westminster and Atkins)

SIZE OF SITE (HA)

10.5 hectares (approx.)

PRACTICAL COMPLETION DATE

Officially opened October 2021

CONTRACT VALUE

£41 million

LOCATION

Mytholmroyd, West Yorkshire, UK



For Mytholmroyd's flood alleviation scheme, SNC-Lavalin's Atkins business provided the design as part of VBA - a joint venture between VolkerStevin, Boskalis Westminster and SNC-Lavalin's Atkins business. Working with our client, the Environment Agency, we overcame the challenge of providing enhanced protection to 400 homes and businesses, as well as local infrastructure, schools, the church and other public amenities.

The scheme encompasses a series of engineered and natural flood risk interventions at a number of locations throughout Mytholmroyd, including new raised flood walls, demolitions which open up wider views and the creation of new public realm/open space as well as bridges including a green bridge, waterside walkways, wetland habitat and amenity planting. All of which has been seamlessly integrated into a constrained and complicated environment.

Mytholmroyd's flood alleviation scheme was developed from an extensive optioneering and consultation process in conjunction with the local community, local interest groups, key stakeholders and statutory consultees. It was a complex scheme in a narrow, steep-sided, restricted urban valley environment, which we designed and delivered during a pandemic and two major storms. We overcame each of these challenges without compromising on quality of design or delivery. Its success is testament to our collaboration with our client and stakeholders and our steadfast commitment to design quality.

"Mytholmroyd Flood Alleviation Scheme is now complete and one which we are immensely proud of... The overall project has been place changing to Mytholmroyd."

Paul Swales, Project Stakeholder Engagement Lead, Environment Agency

The completed scheme has enhanced the character, quality and diversity of the natural, historic and cultural environment in Mytholmroyd. In particular the setting of its waterways and their adjacent spaces including the first phase of a new wetland / managed floodplain. This comprehensive but sensitive waterside project has restored the local community's confidence in the future whilst providing a more inviting and attractive centre to the village by enhancing its sense of place and worth.

"This scheme is a brilliant example of how the Combined Authority, Calderdale Council and the Environment Agency can work together to protect thousands of homes and businesses from the ever-growing threat of extreme flooding caused by climate change."

Tracy Brabin, Mayor of West Yorkshire

The project recently won the Centenary Award at the Institution of Civil Engineers Yorkshire & Humber Awards 2022. It won the top prize for projects valued at £5m and over across the region.

"Climate change is increasing the frequency and the severity of floods everywhere and everyone needs to adapt. The combination of engineered and natural approaches to flood risk here should inspire future projects all over the country."

Emma Howard Boyd, Chair of the Environment Agency

Design

Atkins Landscape Architects were at the heart of this project, working extensively with the local community, stakeholders, contractor and engineering partners, delivering a sensitive and thoughtful scheme, significantly reducing flood risk at Mytholmroyd. Our designs have reinvigorated the village, which can now celebrate its riverside location in the heart of a Pennine valley, with new and enhanced protective riverside walls, natural habitat spaces, riverside streetscapes, footbridge links, waterside paths and handsome gardens.

The scheme uses appropriate materials and creates new views and public realm that reflect and enhance the village's local character.

Burnley Road and adjacent Church grounds have been designed to create an attractive and better defined village centre. This has been achieved by generating a sense of arrival through bold decisions to demolish riverside buildings, which was advocated through the landscape appraisal. This has not only improved protection but celebrates the unique landscape context by opening up selected views of the river, village and the wider valley. The use of quality natural materials including Yorkstone and local native and ornamental planting also unifies new and existing spaces.

New interventions have been inclusively designed, including seating types, a replaced footbridge and ramps and glazed sections of wall, plus a new towpath cycle/footbridge, significantly improving access. Through close collaboration with Calderdale Council the scheme has overcome substantial site challenges and has now implemented phase 1 of a long-term project to create a wider managed and more connected floodplain and wetland, creating extensive new habitat from former unused waterlogged sports pitches.



2



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1. **Mytholmroyd Bridge / Burnley Road public realm** helping to define the village centre
2. **Cragg Brook accessible footbridge** and amenity planting
3. **Bespoke 'heritage' railings and stone copings** to riverside walk

- 4. St. Michael's Church riverside walk and public gardens
- 5. Before – Mytholmroyd Bridge / Burnley Road
Buildings prior to demolition
- 6. After – Mytholmroyd Bridge / Burnley Road public realm
Opening up views of church, village centre landmark
- 7. Mytholmroyd Bridge / Burnley Road public realm
Planning elevation
- 8. Mytholmroyd Bridge / Burnley Road public realm
Early consultation sketch illustrating expected church views



BEFORE 5

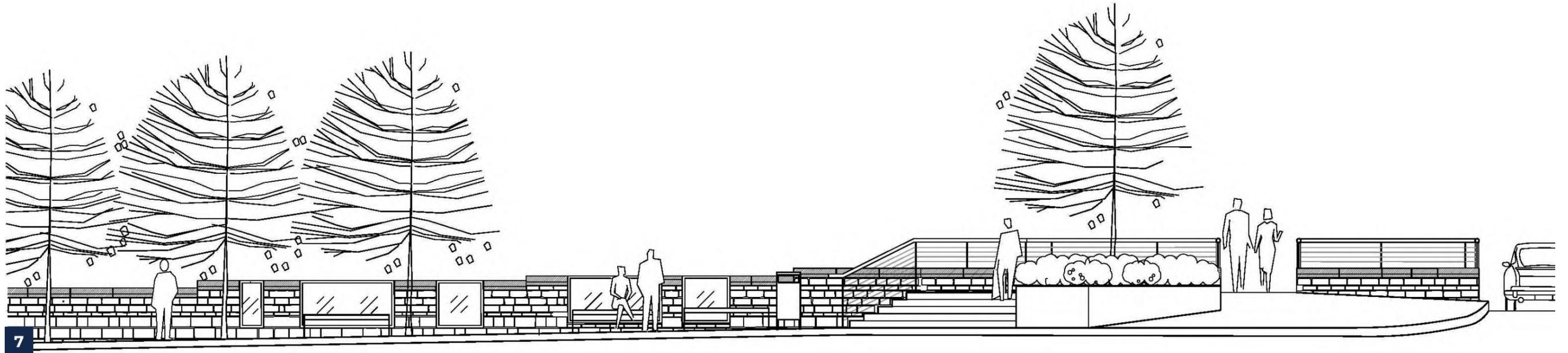


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AFTER 6

Project Illustrations



Sustainability

The scheme has contributed towards carbon reduction, mitigating climate change and other environmental harms, primarily by protecting lives and property. The proposals also create a more stable and sustainable community by promoting active travel with new riverside and wetland walks, footbridge links and attractive public open space destinations in the village. A new green road bridge has been installed centrally within the village and materials sourced through local quarried and reclaimed stone. Finally new tree planting exceeds a 2:1 replacement ratio.

To maximise climate change resilience, the majority of Brearley Fields frequently waterlogged sports pitches, were returned to managed floodplain, creating a wetland meadow to 'Slow the Flow'. Our tree planting strategy, developed with the Environment Agency, prioritised native trees with consideration for local character. In the more urban areas trees were chosen to be more drought resistant.

This first phase of the wetland 'Park' has enabled an expansion of the riverside habitat, benefitting the environment and providing a peaceful attraction for both the community and visitors. This has included new areas of wet grassland and wet woodland, as well as new native mixed woodland along the edge of the site on the canal embankment, plus a new grass reinforced canal spillway.

Over 300 trees and 6,200 shrubs, hedging, native scrub and ground flora and 1,700 bulbs have been planted throughout the corridor, in addition to also installing many bat and bird boxes.

Mytholmroyd FAS was shortlisted for the Climate Resilience Project of the Year in the 2021 British Construction Industry Awards.



- 9. Brearley Fields managed floodplain and wetland 'park'
- 10. Rochdale Canal towpath bridge with views across floodplain
- 11. Grass reinforced canal spillway and towpath bridge
- 12. Brearley Fields wetland habitat grassland, scrub and trees

Scheme Corridor Planting No's:

- 305** Trees
- 2,017** Native Scrub & Ground Flora
- 3,542** Shrubs, Herbaceous & Grasses
- 674** Hedging
- 1,793** Bulbs



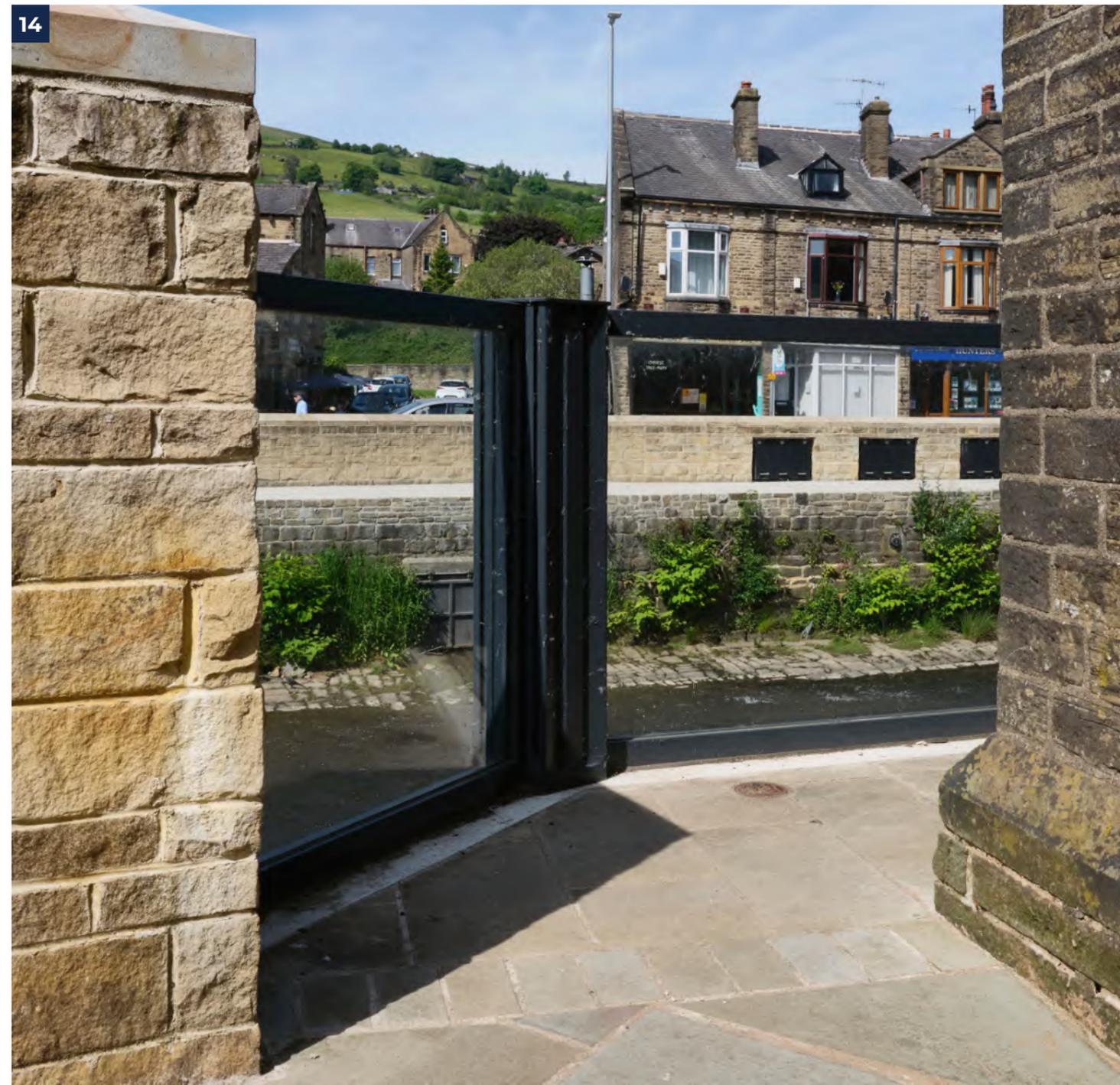
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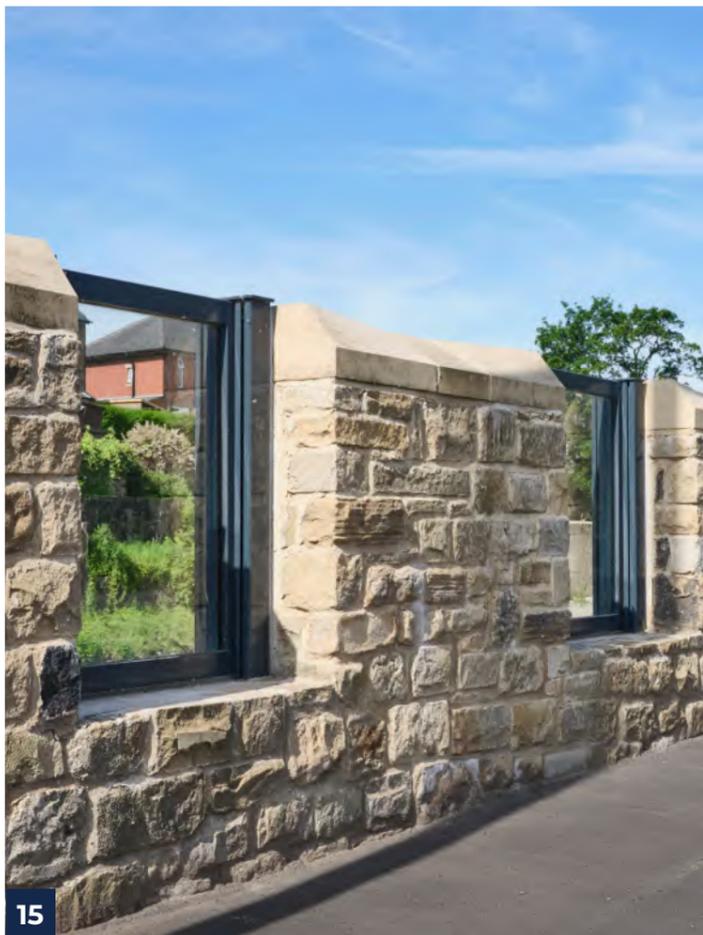


- 13. Cragg Brook footbridge access ramp
- 14. Village centre riverside walkway and flood wall with local quarried stone and glazed section to encourage use
- 15. Burnley Road reclaimed stone flood wall with glazed sections for a bus stop waiting area
- 16. Residential flood wall protection in floodplain
- 17. Caldene 'Green' Bridge – New road bridge

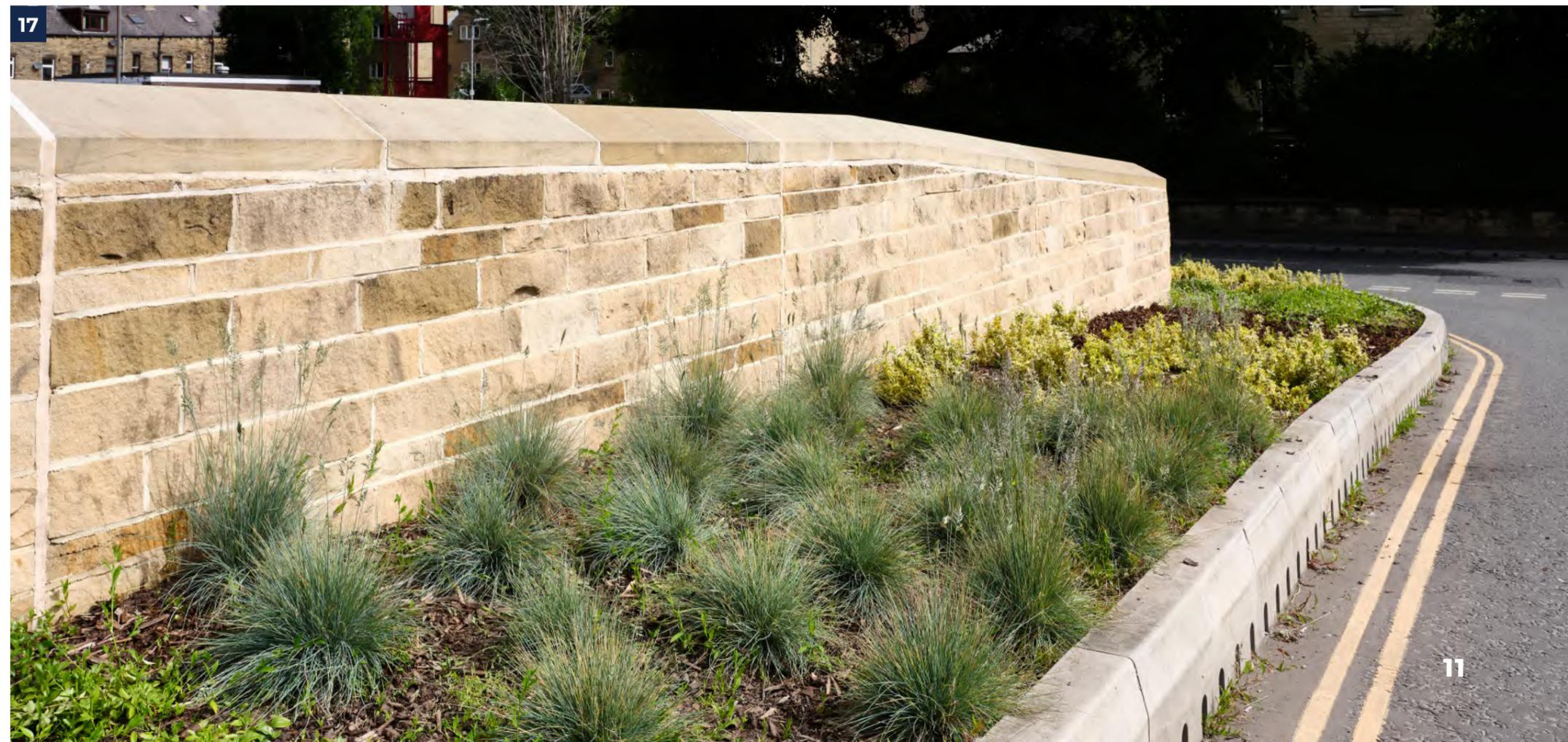




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Local northern stone suppliers:

- PG & Son Stone Ltd, Huddersfield
- Stainton Quarry, Barnard Castle
- Steptoes Yard Ltd, Accrington (Reclaimed Stone)

Value

Recognising how urgently Mytholmroyd needed protecting after the devastating 2015 flood event, the scheme was fast-tracked through intensively resourced design stages which included Early Contractor Involvement (ECI). With this phase of the project being delivered in 1.5 years as opposed to the estimated four.



Workshops were held from the outset to understand the community's requirements and explain the process. Following this, further consultation included a staffed visitor centre, regular Open Day events, including a community vote to choose the stone wall coursing. There were also talks to local institutions as well as regular electronic leaflet drops.

In a village, where land management opportunities were limited, the hard engineering was mostly kept within the waterside banks by purposely minimising how much the scheme encroached upon public and private space. However, new public space was provided through the demolition of several buildings and relocation of their previous uses to create a more defined village centre.

We received two CCS Gold awards in recognition of our team's efforts. Judges said,

Promoting active travel, new and improved footways and footbridges maximise the schemes ongoing impact on human health and wellbeing. In addition we have created a contemplation garden for the people of Mytholmroyd and tree planting improvements to the 'Recreation Ground' and 'Wetland Park' with new space provided for café spill out, that is currently being maximised by a bar on Burnley Road.

Providing permanent flood defences in Mytholmroyd, has provided security for many who are still suffering the emotional and financial strain from the floods, whilst leaving a lasting legacy for the community to enjoy.

"This project showcased an exceptional approach to considerate practice through fantastic external appearances and brilliant work with the local community."



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- 18. **Garden of contemplation**
with reclaimed Yorkshire standing & sitting stones
- 19. **Mytholmroyd Bridge / Burnley Road**
public realm creating a more defined village centre
- 20. **Garden of contemplation**
planting and seating
- 21. **Caldene Bridge / Burnley Road**
- 22. Public realm with room for café spill out.
Stone wall coursing and glazing panels as voted for by the local community





23. Finished reclaimed stone wall

24. Stone coursing panel
used for consultation

25. Stone coursing elevations
used for planning

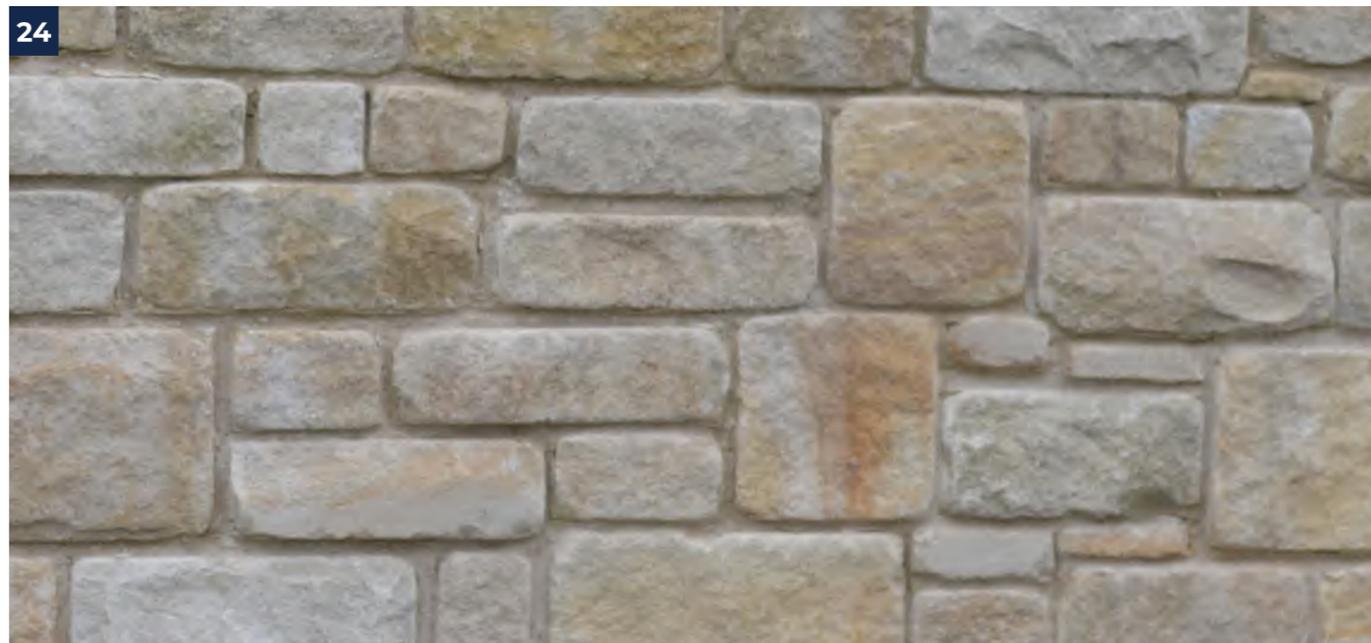
26. Local school talks

27. Community consultation event

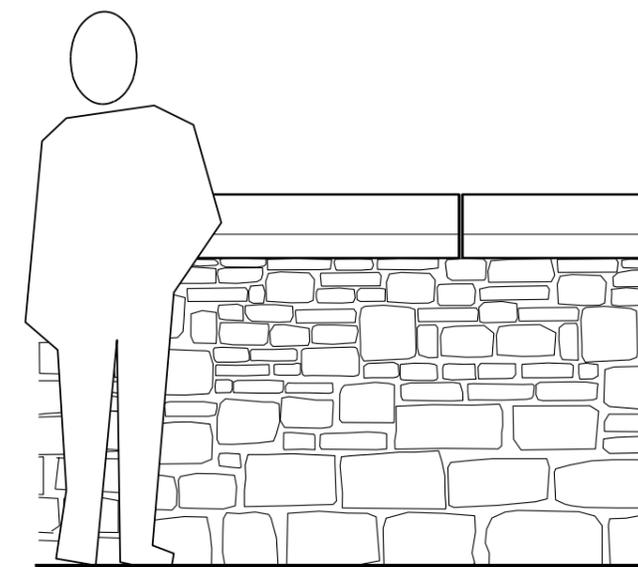
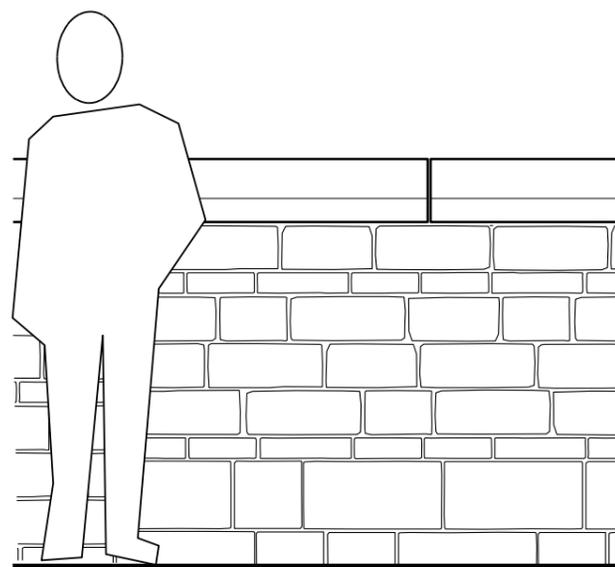
28. Landscape presentation extract
used for consultation

29. Public space concept plan
used for consultation

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25





VBA 26



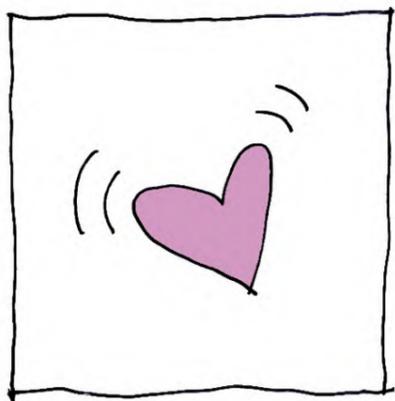
VBA 27



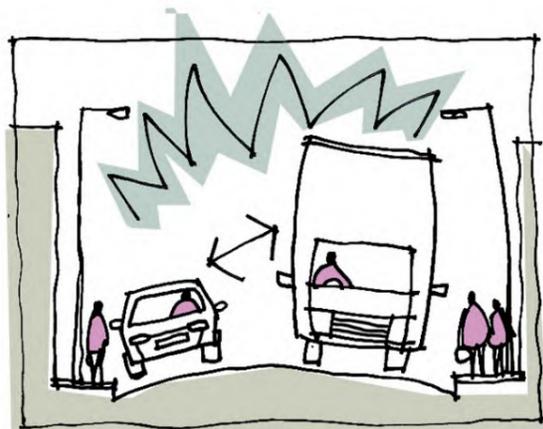
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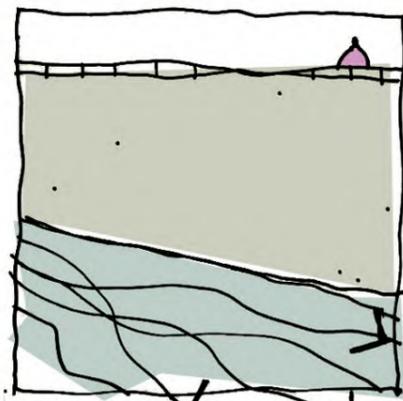
landmark



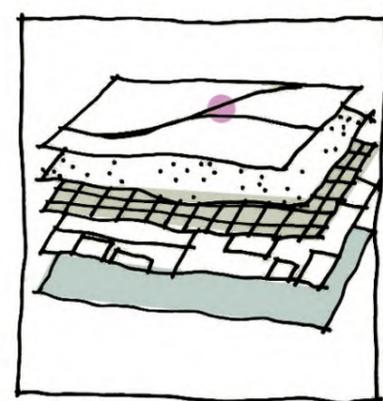
beating heart



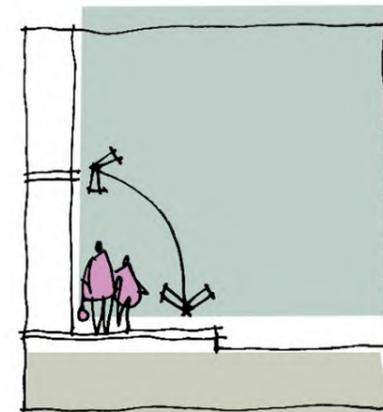
traffic dominated



flaw



layers



human scale

Professionalism

Atkins Landscape Architects developed a landscape and visual appraisal which guided and tested the evolving measures as they were developed. We also inputted to an area specific Heritage Statement to define the impacts and benefits the scheme would make to the Conservation Area and Grade II listed Church.



- 30. **Passive flood defence walls**
low maintenance reclaimed stone
- 31. **Stone wall photomontage**
used for consultation
- 32. **Environmental Site Appraisal Plan**
used to inform early design

- 33. **Consultation site walkover**
with local councillors
- 34. **Public space concept plan**
used for consultation

Our Landscape team in consultation with our client the Environment Agency ensured that the scheme was consistent with their policies for:

- carbon reduction in sourcing local quarried stone and reclaimed stone;
- exceeding 2:1 tree replacement;
- delivering natural flood risk solutions by creating a wetland meadow to store and 'Slow the Flow'; and
- meeting their 'Access for All' Design Guide and all relevant local planning policy and British Standards.

In addition to the standard deliverables, many visuals were developed to explain the proposals for stakeholder consultation. The potential of collaboration and multi-stakeholder working was maximised by establishing a stakeholder working group, which included the local community, Natural England, Historic England, the Canal and River Trust, the Leeds Diocese and Calderdale Council. Specifically, several landscape workshops with this group, chaired by an independent Built Environment Expert, were held to look at shaping the public open space and wall design.



"I have had a very close relationship to the Mytholmroyd Flood Alleviation Scheme and worked closely with the Environment Agency throughout the lifetime of the project. It's a brilliant example of collaborative working, from partner organisations delivering the scheme right through to the community who ultimately benefit from the improved level of protection."

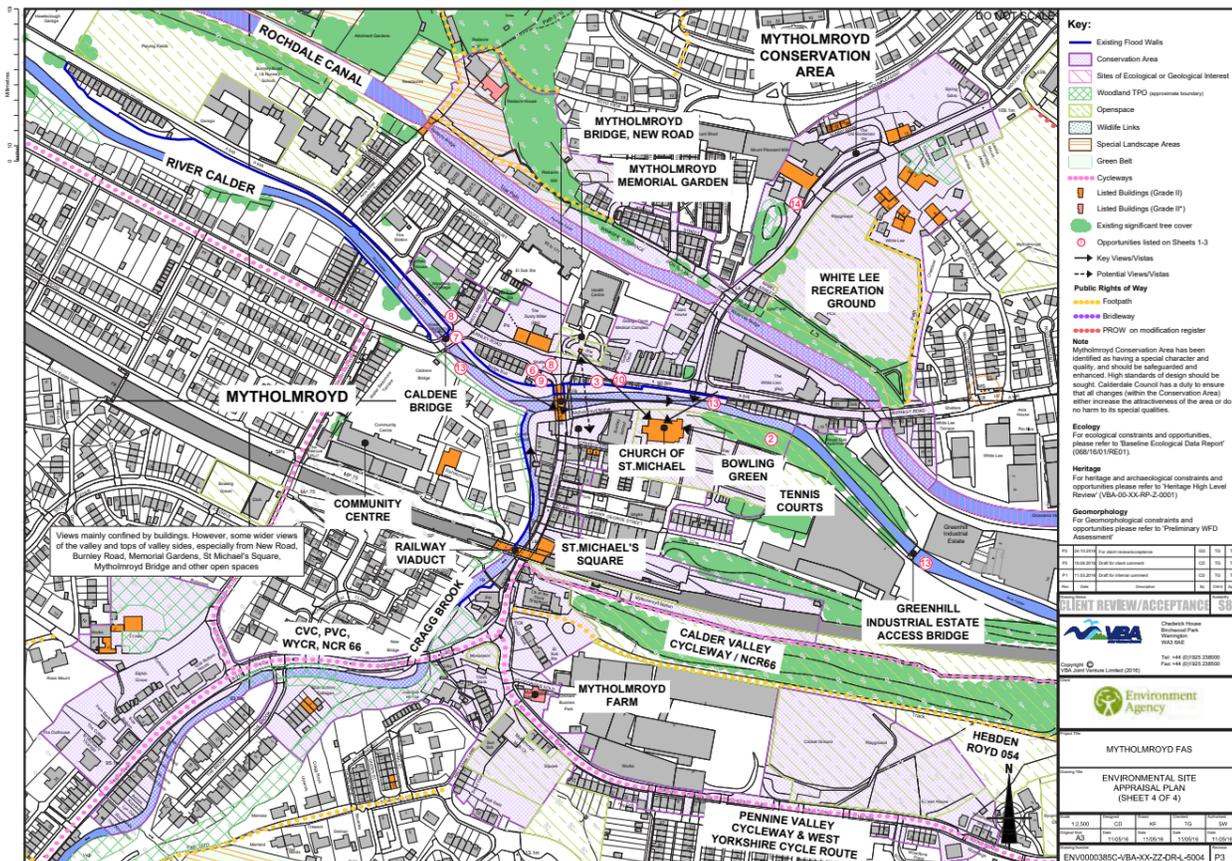
Katie Kimber – Calderdale Community Resilience Chair, Flood Warden and resident

Landscape quality has been at the forefront of all stages of the scheme:

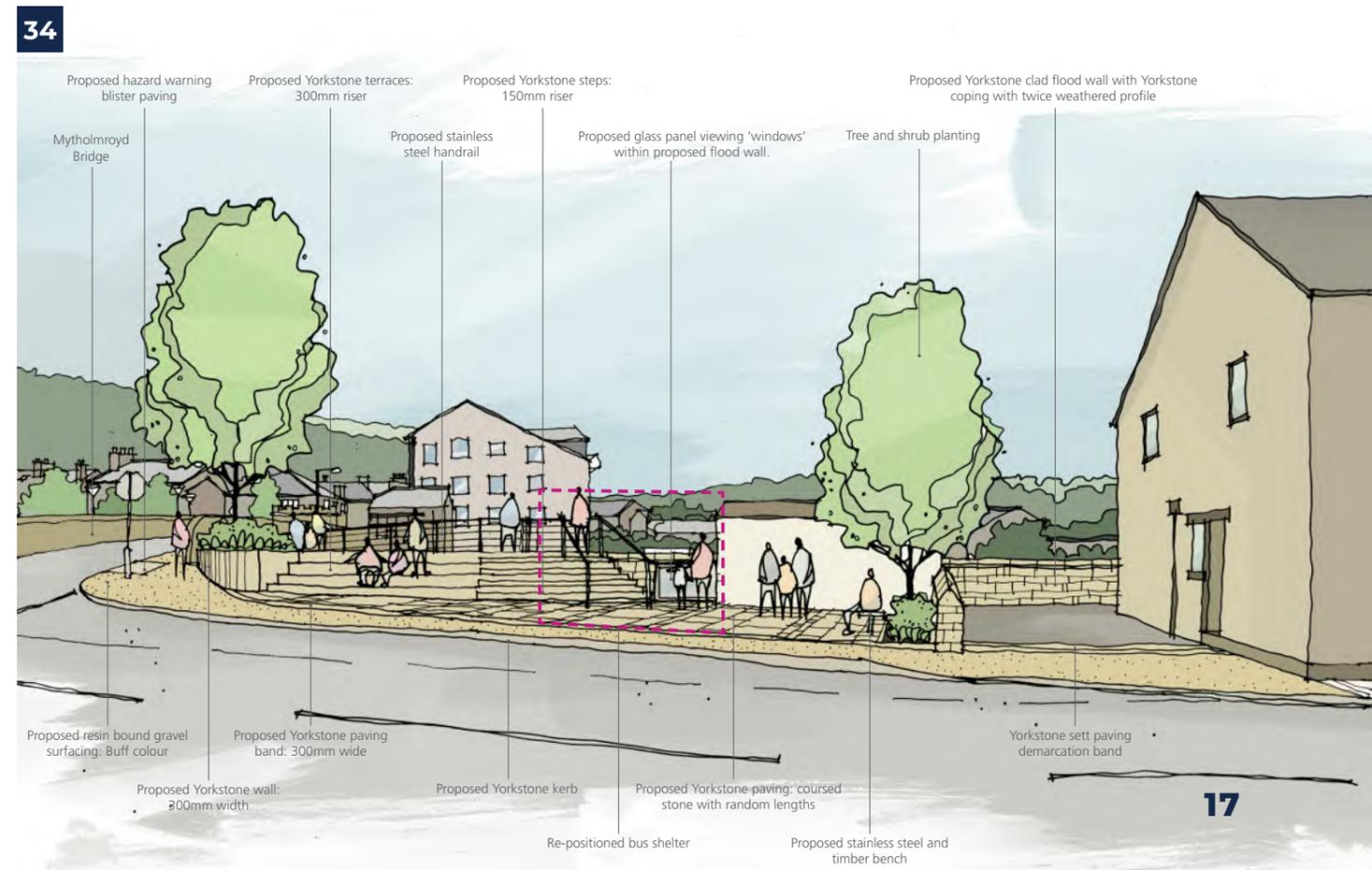
- from the design of long-lasting attractive infrastructure able to withstand extreme weather conditions;
- detailed planning and consultation; and
- by providing a low maintenance, engineered and natural passive flood defence solution that will protect the community for years to come.



33 VBA



32



Relevant Plans

[Communities in Calderdale 'traumatised' by 2015 floods](#) - BBC News

[Flood defences promised for Calder Valley](#) - BBC News

[Mytholmroyd flood defence action plan published](#) - BBC News

[Minister promises town hit by floods 'best possible protection'](#) - Yorkshire Post

[Mytholmroyd's new flood defences officially opened](#) - GOV.UK

[Mytholmroyd's new flood defences officially opened | News Centre](#)

- Official news site of Calderdale Council

[Mytholmroyd Flood Alleviation Scheme](#) - Eye on Calderdale

[Flood defence schemes scoop top prizes at Yorkshire and Humber Awards](#)

- Institution of Civil Engineers (ICE)

Former Environment Secretary Elizabeth Truss made the promise of new defences while visiting the area following the devastating 2015 boxing days flood.

Ms Truss said: *"I saw first-hand the devastation caused in Mytholmroyd by the floods.... It was heartbreaking to see, but also inspiring to witness the community rally round, especially as someone who grew up in Yorkshire... I am determined the people of Mytholmroyd have the best possible protection against future flooding and this plan is a key step to making that happen... The local geography is challenging and there are no simple answers, but we will not shy away from the task in hand.... the Environment Agency has developed a plan that will have the biggest impact on saving people's homes, businesses, and ultimately lives, from future flooding."*



Yorkshire Post

There is a significant list of reports which all pertain to this project, but the key ones which are of relevance to this entry include:

- **The Calderdale Flood Action Plan** - Intended to assist in discussions over land use, natural flood management measures and the use of reservoirs in the upper valley to complement the programme of more traditional flood alleviation schemes.
- **The Mytholmroyd Flood Alleviation Scheme Action Plan** - Sets out the proposed measures and included a commitment to move at pace to implement the proposed Scheme and reduce flood risk.
- **Preliminary Environmental Information Report** - Sets out the environmental baseline for the scheme including Environmental Site Appraisal Plans.
- **Planning, Design and Access Statement** - Draws together and explains the key elements of the planning application and makes the case for planning permission including how the proposal has evolved, the factors that have influenced its design, and how it conforms to policy.
- **Consultation Outcomes Report** - Reports the outcomes of the consultation undertaken as part of the public engagement on the scheme.
- **Landscape and Visual Appraisal** - Provides an appraisal and overview of the landscape and visual impacts of the proposed Scheme in support of the planning application process.
- **Heritage Statement (Part One) and Scheme Area specific Heritage Statement (Part Two)** - Part One is an overarching Scheme-wide document providing an overview of heritage design principles, a history of the village, and a description of heritage assets etc. Part Two relates to impacts to the Mytholmroyd Conservation Area and the Grade II listed St Michael's Church.
- **Ecological Impact Assessment** - Describes the ecological baseline and evaluates the nature conservation value of ecological features present within the Ecological Zone of Influence for the entire proposed scheme area.
- **Arboricultural Report** - Details the existing tree resource present on site prior to the development and to help inform the design of the site where existing trees present may potentially be incorporated into the design.
- **Landscape NBS** - Landscape specification including section on maintenance in accordance with Environment Agency guidance.
- **Landscape Drawings** - Including concept design, consultation visuals, listed building consent, planning application and construction. Construction was over 50 drawings.
- **Environmental Action Plan** - Summarises the actions required to implement the environmental mitigation and outcomes contained within the environmental reports prepared and submitted as part of the planning applications for the Scheme.



Photograph credits – All Atkins unless otherwise stated

Front cover - Brearley Fields managed floodplain / wetland 'park'

This page - Mytholmroyd village centre public realm

Back cover - Church grounds new riverside walk,
garden of contemplation, green space and flood wall

CONTACT

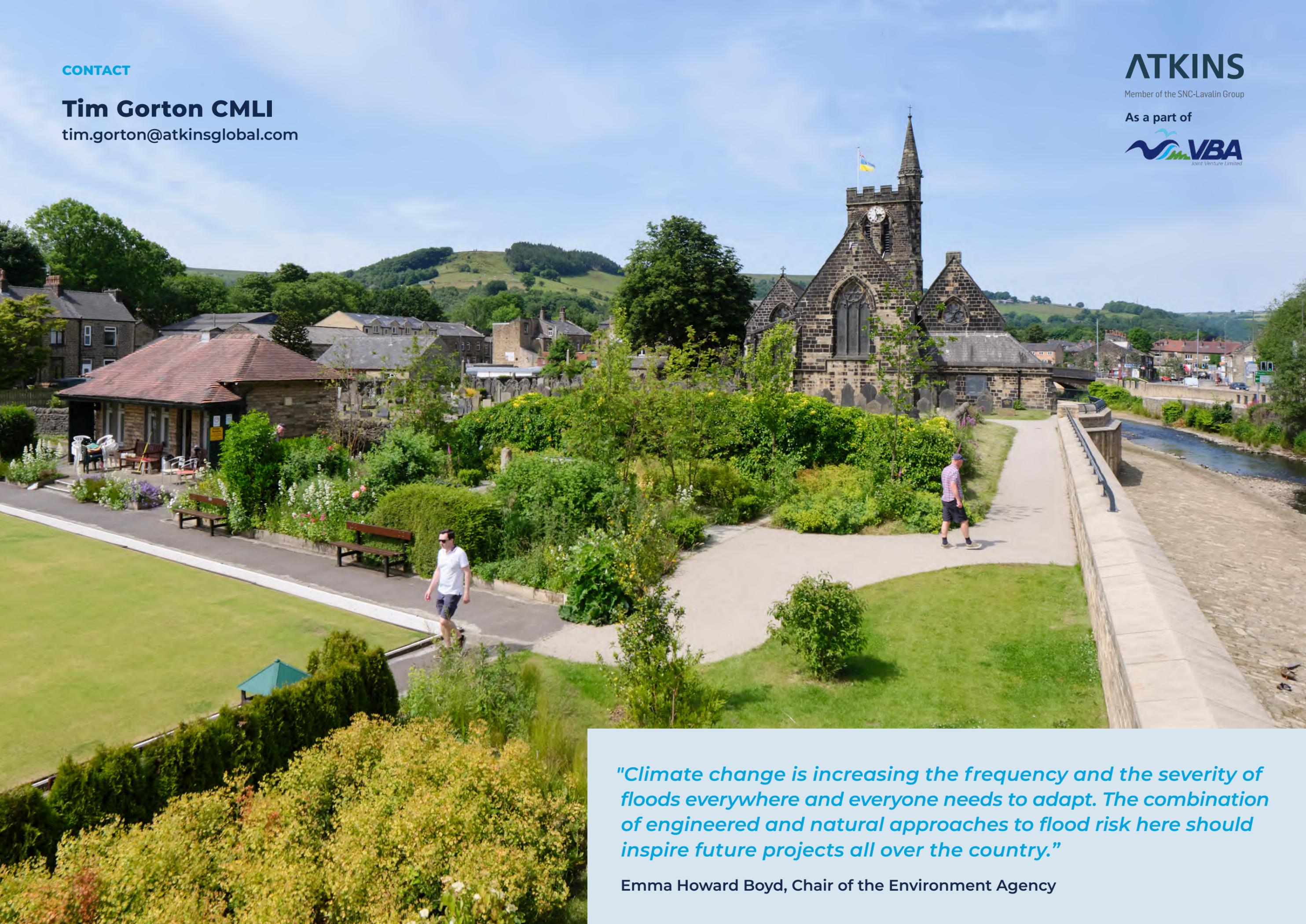
Tim Gorton CMLI

tim.gorton@atkinsglobal.com

ATKINS

Member of the SNC-Lavalin Group

As a part of



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