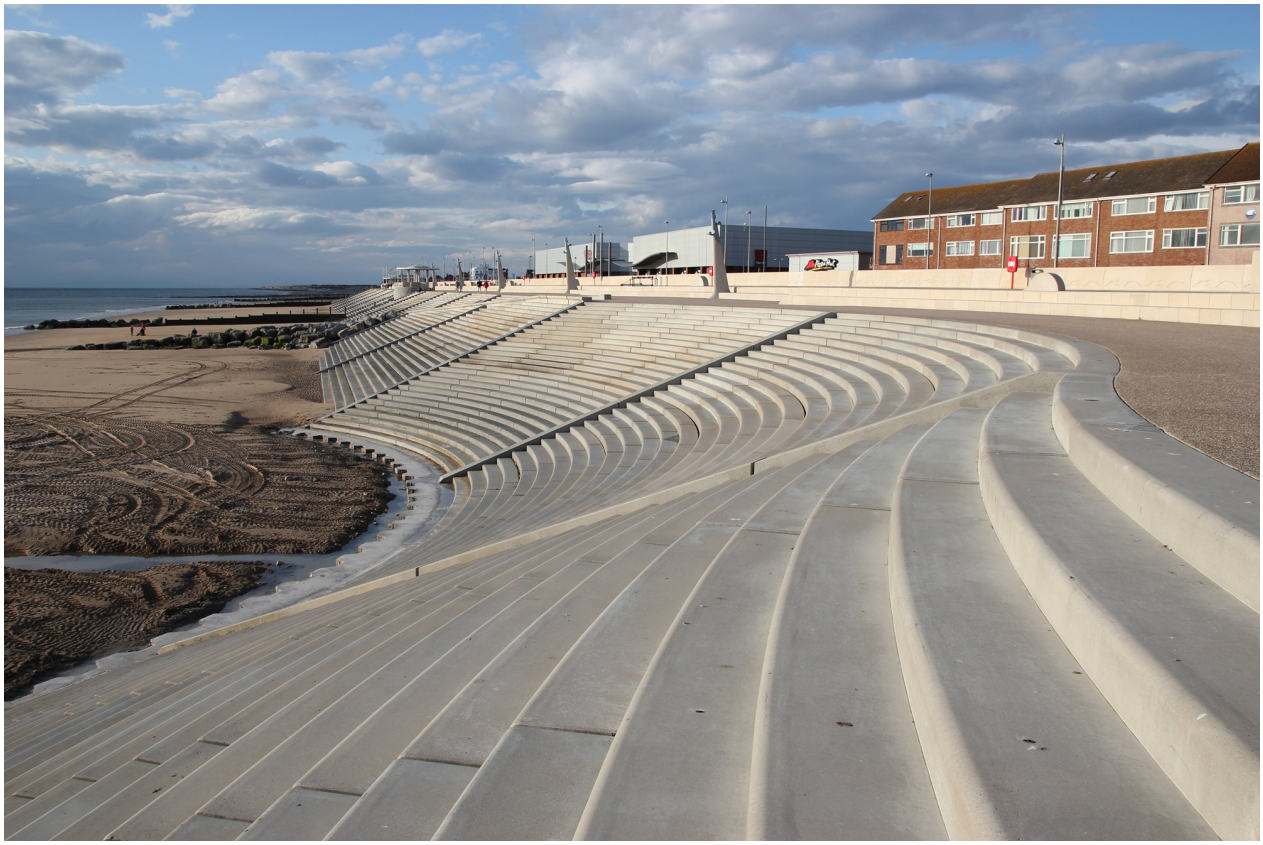
New Civil Engineer

Skills erosion, or a change of tide?

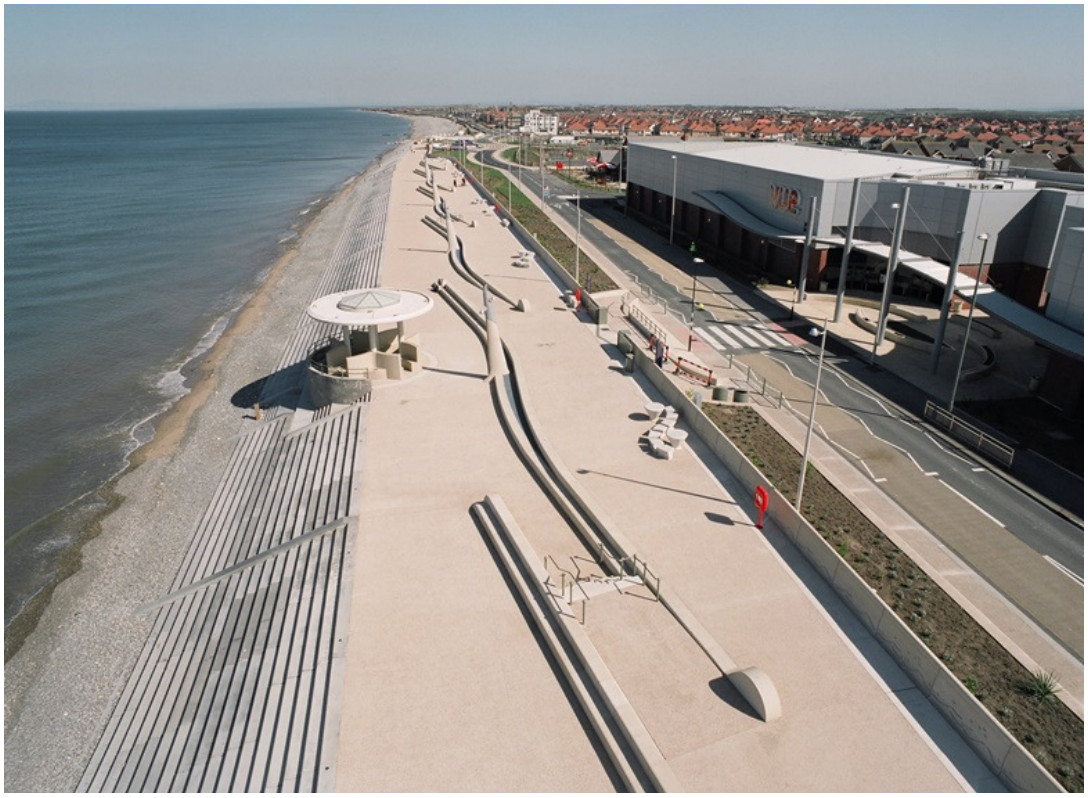
15 February, 2017 **By** Robert Henson



Skills in coastal engineering are eroding, say those in local authorities. But out of these constraints have come creative partnerships.

Since the Coast Protection Act 1949 the management of England's coast has been nominally split between what is now the Environment Agency (floodable coasts), maritime local authorities (erodible coasts) and private land owners.This is logical in theory, but in practice the sea has little respect for whoever has powers or duties.

The recent focus has rightly been on flooding issues across the country but fresh in the memory of many coastal engineers will be the North Sea tidal surge down the east coast that caused significant flooding in 2014. Indeed, that was the precursor to four months of battering storms in the south and west of England and the north and south west of Wales. Certainly there has been a reprieve from Mother Nature, but with rising seas and weather effects from climate change, the next event cannot be far away.



Cleveleys promenade

Source: Balfour Beatty

The Cleveleys beach promenade on the Fylde Peninsula.

“Councils are under continued and significant budget pressure and have gradually reduced their coastal engineering capacity as coastal management is a power, not a duty, to deliver and therefore competes against other priorities,“ says Local Government Association coastal special interest group lead officer Bill Parker.

Outside London there are 89 local authorities in England – borough, district and unitary councils – which exercise coastal protection act powers. County councils are classed as lead local flood authorities, which means that they have responsibilities under the Floods & Water Management Act for ordinary watercourses and surface water flooding but have no coastal responsibilities.

But the numbers of engineers working for local authorities in this area is undergoing a worrying decline.

“Many local authorities are entirely dependent on a rapidly ageing cohort of highly experienced coastal engineers, but have not invested in succession planning and resilience for the future,” says Parker.

This is not a new problem, as Parker points out. In 2009, the Environment Agency undertook at review of local authority skills and capacity and it was estimated that “coastal risk management staffing…..has reduced by around a third since 2005”. In looking forward “less than a third of authorities had a high level of confidence that they would be able to secure and develop adequate staff over the next 10 years,” it said.

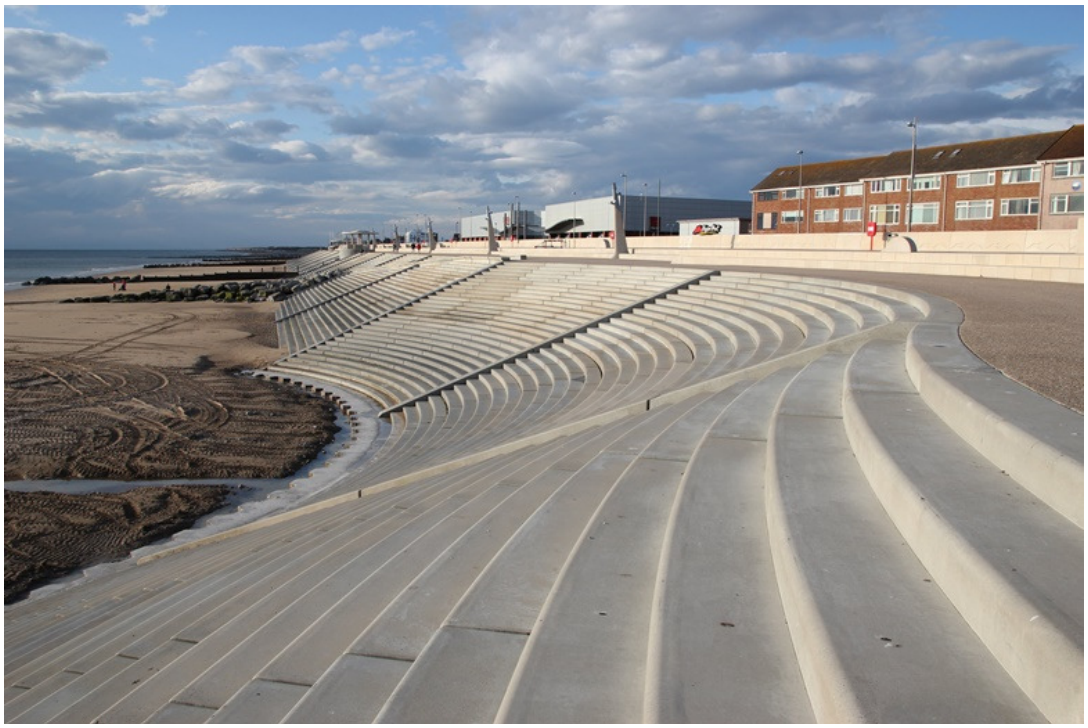
> This is a distinctly gloomy forecast…
>
> Local Government Association Coastal Special Interest Group lead officer Bill Parker

Nor is it a problem unique to coastal risk. In late January, the Local Government Association made a plea for more cash to the Treasury, warning that councils could collectively face a £5.8bn funding gap by 2020. But cuts to libraries and community care have grabbed the majority of the headlines.

Parker says there are fears that the public sector will be more heavily reliant on external consultants to undertake larger portions of work, which could be more expensive, and deplete expertise in the public sector.

“This is a distinctly gloomy forecast, especially when government is looking to invest £2.3bn in the six year programme; 45% of which is being invested on the coast. In Wales the government is investing £150M to take forward between 30 and 40 coastal schemes between 2018-21,” he says.

However, sparked from adversity or not, some remarkable and exciting developments are happening among local authorities, some of which are creating cross authority teams.



Cleveleys revetment

Source: Balfour Beatty

The new revetment at Cleveleys, near Blackpool.

“The more enlightened local authorities with progressive senior management and politicians are tackling this head on and have started to turn the tide,” says Parker.

“These new teams are expanding, taking on more work and creating exciting career paths for those wanting to work in the ever dynamic world of coastal management and in particular coastal engineering.”

One of the leading examples of this is East Kent Engineering Partnership (EKEP) undertaking work across no less than 12 local authorities around the Kent and East Sussex coastline. Another leader Parker mentions is the Eastern Solent Coastal Partnership (ESCP) working for four local authorities.

Their success lies in their ability to develop a continuous pipeline of projects that no single local authority would ever have, and that gives continuity of work for staff and confidence of funding.

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> Bill Parker

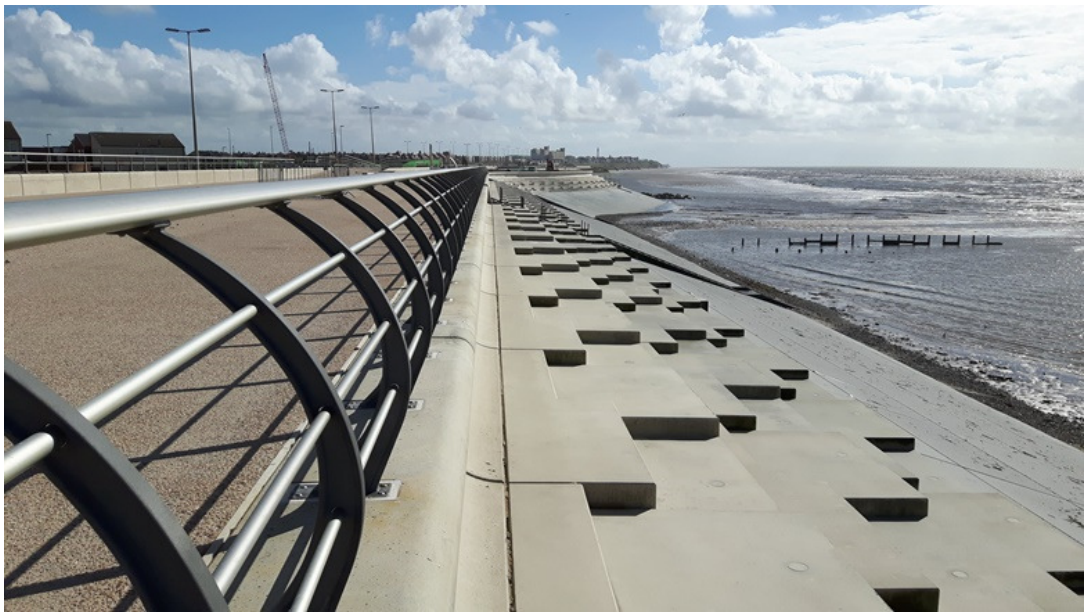
“This has, for example, enabled ESCP to invest in staff and their processes, enabling their team to double in size just in four years.

“They are now undertaking tasks that previously would have been subcontracted to consultancy companies, reducing costs, building in-house expertise and retaining locally the trust that is built with local communities.”

Others also adopting this route include Coastal Partnership East with four local authorities from Norfolk and Suffolk combining their teams. The Fylde Coastal Partnership is also pioneering new approaches.

In addition, the advent of public sector co-operation agreements between risk management authorities will help local authorities address short term issues and these are now being used to share expertise and capacity between local authorities, the Environment Agency, internal drainage boards and others.

It comes as Balfour Beatty – which carries out some of the UK’s largest coastal risk management projects – has released a report on “driving efficiencies” in the sector.



Anchorsholme 2

Source: Balfour Beatty

Anchorsholme work, part of the Fylde peninsula works providing defences to about 4,500 properties.

The UK government is looking for 10% in efficiency savings across the six-year water sector asset management program (AMP-6) from 2015-2020.

The headline for Balfour’s 10-step guide is: “taking a collaborative approach, allowing contractors to suggest ideas throughout the project, can deliver significant efficiencies”.

And Balfour Beatty business development director for flood and coastal risk management Jim Hutchison says this has worked in real scenarios.

“On the Humber for example, we managed to package six projects (30 months total duration across the projects, defending 22,000 homes) and they were packaged up in such a way that we took away 19% in efficiency savings, about £5M.”

Hutchison says Balfour’s reputation in the sector – 20-odd years, and about 75 projects – has shown its intention to work with communities and environmental authorities, and it was all about building up long-term work.

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Balfour Beatty business development director for flood and coastal risk management Jim Hutchison

“What we’re saying is that, given that we’ve been able to do that (efficiency gains) for the six-year programme, we think it would be even better if they could give us another six years, or even better 10 years, of works which would allow us to work much closer with the communities, customers, to get in early with contractors and the supply chain, and get all the great ideas that everybody has.”

Speaking of the future of local authority coastal engineering and coastal authorities, Hutchison says the relationships have been built to stand the test of time.

“We’ve been part of the Fylde Partnership, including the Environment Agency, for 10 years or more. It’s been great to work with them and better programme the works there. There are a huge amount of low lying properties, certainly up the Fleetwood end, and near Anchorsholme and at Rossell. It’s currently the largest coast protection scheme in the country ongoing at the moment – about £50M in all, protecting about 8,000 homes.

“We’ve brought in expertise to help look at how to best deliver the work. As part of that we’re also training graduate engineers, five apprentices, and 69 local employees, so we’re bringing all those up to speed to coastal engineering for the future.”

But Parker says while some schemes are bringing new workers into coastal management and coastal engineering, it is apparent that this will not reverse the current trend.

“Local authorities need to develop expertise and knowledgeable practitioners to be able to intellectually challenge contractors’ and consultancy proposals and be the guardians of the best use of public monies,” he says.

“Coastal management is a long-term issue that requires long-term planning, succession and resilience. Risk management authorities need to look at a more sustainable approach and future generations of engineers need to be developed. Local authorities are key to delivering this as well.”

And in a final pitch for new blood to join local authority coastal engineering, Parker says there are plenty of arguments to counter the lure of bright city lights, and consultancy.

“For those engineers who haven’t yet worked for a local authority, they may not appreciate the benefits: of being based in some of the most desirable parts of the country, having a great work life balance and also a pipeline of exciting projects. It is recognised that they may not get paid the highest rates, but the job satisfaction of working with and protecting local communities should not be underestimated.”