



Northern Ireland
Assembly

Committee for Regional Development

OFFICIAL REPORT (Hansard)

Water and Sewerage Services Bill:
Welsh Water

4 November 2015

NORTHERN IRELAND ASSEMBLY

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Members present for all or part of the proceedings:

Mr Seán Lynch (Deputy Chairperson)

Mr Adrian Cochrane-Watson

Mr John Dallat

Mrs Brenda Hale

Witnesses:

Mr Fergus O'Brien

Welsh Water

The Deputy Chairperson (Mr Lynch): I welcome Mr Fergus O'Brien, the RainScape strategy manager. I thank you for yesterday's tour, which was informative and valuable. If you would like to give your presentation, we will then open up the meeting to questions.

Mr Fergus O'Brien (Welsh Water): You should have a copy of the presentation. I will first cover who we are — I mentioned yesterday how we are set up — what RainScape actually refers to and what our investment plans are. I will then expand on some of the challenges that we were talking about yesterday and how customers and partnerships are fundamental to dealing with them.

Dŵr Cymru is one of the 10 water and sewerage undertakers in England and Wales. Since 2001, we have been the UK's only non-shareholder utility company. All our gains, amounting to about £300 million since then, have gone to customers through a customer dividend, investment in better service and, most recently, in social tariffs for worse-off customers. We supply safe and reliable drinking water and deal with waste water for about 1.4 million households — about three million customers. We have 110,000 business customers of various sizes across Wales. Our vision is to earn the trust of our customers every day. We want to be the most trusted utility company or supplier of services in the UK in the next five years.

RainScape is our name for sustainable drainage. We needed to provide our customers with a name to describe sustainable drainage that did not sound scary, like SuDS or surface water elimination and reduction (SWEAR), as we used to call it. We also wanted to introduce the idea from international sites such as Malmö that sustainable drainage should be a feature of the landscape; you do not have to cram it away underground. We felt that RainScape was a name that engendered that idea in our customers' minds among the local population where we are doing the work.

RainScape is really all about the separation of surface water run-off from our combined sewers, whether or not green infrastructure is involved. The fundamental idea is to take surface water out of the combined system. Our objective is to safeguard our communities and the environment from the impact of climate change and growth, both growth through new housing and growth from what is called "urban creep", as people pave over their front gardens and so on.

The example that we showed you yesterday — it is only an example — was in Llanelli. The problem there is that we have hills and rapid run-off from the impermeable areas that are drained to the network. It is a former industrial area. I have shown you a picture of Marblehall Road, just to give you an example of the tightest streets that we have, and it is fairly typical of some areas in Llanelli. The sewer network was started in the 19th century, as in most industrial areas of the UK, and we had problems with sewage flooding into customers' houses and also environmental concerns for shellfish in the estuary. Conventional storage was not technically feasible because it does not work. The treatment processes cannot cope with the rate at which you need to empty the storage tanks.

I will give you a little more background on the Loughor estuary. Slide 6 is an overview of the various environmental designations in that estuary. Llanelli is on the north side, and the Gowerton area is on the southern side. There are shellfish waters and designated beaches just outside the area. There are two very large sewage works that treat the effluent for the whole area at the top end of the estuary, and this area is also designated as a sensitive area under the urban waste water treatment directive, so these works have to meet total nitrogen consents. It is a bit like you have in Northern Ireland. Under the habitats directive, it is also part of the Carmarthen Bay special area of conservation. It is a highly designated and very sensitive area environmentally.

As we could not use conventional storage, we did an awful lot of analysis to look at an alternative. We came up with the idea of using widespread retrofitting of sustainable drainage or, as we call it, RainScape. We have been installing these solutions around Llanelli, based on that international best practice. The best-known example is at Augustenborg in Malmö, where this was done in the late 1990s. Crucial to this was partnership, both with other organisations such as the local authority, Natural Resources Wales and our customers. Communication with our customers was fundamental. So far, we have distributed solutions across the whole area, and that work was recognised last year as the civil engineering project of the year by the British Construction Industry Awards, so it is now recognised in the UK as a leading example of how to do this.

The systems are based on things like swales, planters and permeable paving. They are based on simply disconnecting current surface water connections to the combined sewer and connecting them to new outfalls, watercourses and the sea. We put monitoring in all these systems to make sure that they function as they should.

In slide 8, the graph on the left shows one area that is hatched blue and another that is hatched green, with a solid blue line and a solid red one. The hatched blue area shows rainfall over the course of a few minutes. It got up to over the equivalent of one inch per hour for a very short period during this rainfall event in December. The red line shows what would have happened if we had had a rainfall event like that in that Glevering Street area and we had no RainScape. That was where we had all the distributed basins and planters with which we intercepted all that drainage on the streets. The blue line shows what happened as soon as we put RainScape in, so the blue line is the rate at which water ran off. The solid green hatch shows the rate at which one of the basins was draining. It is holding the water back quite nicely, draining down very steadily over a very short time, but enough to protect the network.

The network is improving over time, as the planting matures. In slide 8, in the graph on the right, the horizontal dashed lines show you how the performance is improving over time. This graph covers the period from when the systems were installed in early November last year to late May. Over that period, there has been a very steady improvement in performance, which has been more rapid than we expected.

Following our discussion yesterday, I have given you an extra set of performance graphs for the Queen Mary's Walk swale to give you more information. It shows how the performance changed between January and October last year. You can see that the performance has improved. It is a similar graph to the one in slide 8. We have put in fairly widespread monitoring of how effective the system is, so we have confidence that it works.

To go back to RainScape, that is generally our approach to sustainable service improvement. How will we maintain and improve our service in the face of climate change and growth? This is how we will do it sustainably. We plan to do around £60 million of this work across Wales in the next five years; we will do it by 31 March 2020. Our target or aim in reducing our sensitivity to climate change is to remove 25,000 roof equivalents. Imagine that impermeable area draining into our network: we will remove that much by 2020 and will keep doing that every five years until 2040. That is our initial

plan, but we are refining it as it is quite coarse. We are trying to work out exactly the best place to do that and when we need to do it, because

[Proceedings from 2.44 pm until 2.45 pm were not recorded due to technical difficulties.] It is a question of when we do that and where we target that investment over the coming years.

There are other benefits, and, although we have not measured them, there are the obvious flood protection benefits from fluvial flooding. However, there are also environmental improvements caused by a reduction in sewage spills from our combined through overflows. We get greener communities, enhanced biodiversity, a reduced carbon footprint because we are pumping less, and better air quality. There is plenty of evidence now to show that these kinds of systems improve air quality in urban areas. We get the local community involved. We believe that getting our local communities to feel ownership for their infrastructure is very important.

Over the course of this exercise, we dropped over 13,000 letters to our customers. We had 5,000 customer visits at drop-in centres, customers contacted us, and we did leaflet drops and a whole range of things. We now have a drop-in centre in Llanelli that we occupy two days a week, but the point that I made to you yesterday is very important. That gets some customers, and the customers are interested, but there are still quite a number of customers who will not be interested. When we turned up to do our work in the highway outside people's houses, at first, we regularly had people coming out to us and asking, "What are you doing? Why are you here?" In spite of what we have done, we found that it was not enough. In my experience, there is no substitute for knocking on doors and seeing people in the run-up to doing the schemes and making sure that you talk to them about their concerns.

Slide 11 details our other challenges and presents some pictures taken during construction. The first picture on the left shows the kind of installation that we put in just under the surface to take the surface water out and to allow us to intercept the surface water before it got into the combined sewer. It is a relatively straightforward piece of engineering, but you are installing it in a very tight area. It is an urban area: all these customers need to be able to get in and out of their houses; they need to be able to get rid of their bins weekly; there are all those things that they have to live with. You have to manage within those constraints.

The next two pictures in slide 11, showing Sams Cabs, explain just how important parking is for our customers. In this case, the customer is just a normal local businessman, but he is struggling to park where he would have parked previously, and we have put a planter behind there. It is important that you engage with your customers to make them understand that they will still have enough parking and that they can still manage. We have more than one way to do this. An alternative to that might have been a permeable surface that would have allowed the car to be parked on top of it while it drains the water away. There is not only one way of doing it; it is not just about planters, and there are multiple ways to do this.

The two pictures to the right show that there are a lot of services in urban areas. It looks like a relatively simple thing to dig down in the highway, but you have to be very careful. The top picture shows the number of different services running down an ordinary street in Llanelli. The bottom picture shows how we have to work around other services — in this case, gas services — to make sure that we do not disrupt them and can keep working with other utility providers in the area.

Slides 12, 13 and 14 are all about the need to be flexible in design. You may have great ideas about how you will deliver a project, but, when you get to site, you find that it just will not work. In that case, we were going to put some geocellular storage under one of the basins that we showed you yesterday, but slide 12 shows a cross section, and we found that that would not work. Instead of using geocellular storage, we planted trees and used devices that I describe as silva cells. Those are voids that we created in the ground that we sealed off so that the trees can sit in them without their roots penetrating out and causing damage. The trees take out an awful lot of water. That is what we did in that case. We got rid of the geocellular storage and put those trees in, and slide 14 shows those units going in. We filled those with soil, put in trees and covered over those basin structures — those depressions in the ground — that you saw yesterday.

The last few slides emphasise the point about partnership. You saw the Grangetown scheme, which is the most developed partnership arrangement that we have and is being led by the City of Cardiff Council. The Glevering Street scheme in Llanelli cost £2.3 million, but there was a £600,000 grant contribution from the European regional development fund, which was administered via the Welsh Government. That was a significant contribution to that scheme. There are other grant funds and

European funds available in areas that are designated for development or where we are trying to deal with highway drainage for which we are not liable in the first place but which is connected into our sewer system. There are opportunities to reduce the amount of money that is needed or to use other sources of funding to help with what we need to do.

Another example that is not in Llanelli is in Excelsior Street in Waunlwyd in the Valleys. In that case, we were working with Blaenau Gwent County Borough Council. The work was in an area with a very steep-sided hill — the valleys are steep and have a lot of water and rainfall. We had a lot of sewage flooding, and there was a lot of fluvial flooding that the local council had to deal with. We dealt with it by building a new sewer for foul-only and converting the old sewer into a land drain and connecting it into the ditch that provided land drainage locally. We divested ourselves of those land drains. We made improvements to them and handed them over to the local authority, which now runs them, and we operate the new foul-only sewer. That has dealt with all the flooding problems that we and the council had in that immediate area. It was a very successful scheme.

Thank you. Do you have any questions?

The Deputy Chairperson (Mr Lynch): Thank you very much, Fergus. I noticed that your role is termed the RainScape strategy manager: was that created especially for the new SuDS project and idea? How important was political will?

Mr O'Brien: The role was created especially. I was appointed to the role in October last year. Prior to that, I was Welsh Water's coastal waters manager, which is why I got involved in the Llanelli area in the first place. I promoted the idea internally that we should use sustainable drainage approaches. When the business recognised how big our plans are and that we were moving to a £60 million programme, I was asked to focus on the sustainable drainage and RainScape area. That includes talking to organisations and committees like you and promoting the idea with others. It is not just work that we can do but work that the City of Cardiff Council, other local authorities, private organisations, landowners and property owners can do.

Very importantly, it is not just about what we are doing now but what we want to get from the RainScape approach. That means thinking ahead about how we protect our customers and the services that we deliver in the long run in the face of climate change and growth. We have to do that. That is our approach and is probably a key part of my role. It is not just the day-to-day delivery of projects. I advise on that and support it, and my colleague whom you met this morning, Michelle Russ, our RainScape regulation manager, does that too. It is also my role to look ahead and say what we should be doing for the future, what our plans are for the next 25 years and how we can do it in the best way to protect our customers.

The Deputy Chairperson (Mr Lynch): Yesterday, one word that came up quite often was "trust". If you do not get off to a good start — we used Irish Water as an example — it is a major challenge to sell it to people. It was interesting how much leafleting and canvassing you did, to the extent that you thought that you overdid it, but you cannot overdo things like that. Communication is important.

Mr O'Brien: It is very important to communicate with your customers and to get their trust. The point that I made to you yesterday was also very important. Some customers were interested in the environmental impact. Some, but not all, customers were affected by sewage flooding. Quite a few customers were not interested in that but were worried that we would be digging up outside their houses and could take away their car parking. They had concerns about the level of disruption that we would cause. We have to answer and resolve their issues as much as the customers who are directly affected or who benefit from the project that we are delivering.

Trust is important for that, which is why we went to the effort of coming up with the nice brand name of RainScape and producing nice artwork. We commissioned work that was not very expensive at all; it was relatively cheap and easy to do, but, by doing that, we presented it in a friendlier way to our customers. We targeted the right customers first: in Llanelli, we went to Stebonheath Primary School in one of our very early schemes, and that has been very successful. The school has become a real advocate for what we have done, which has really helped us.

The Deputy Chairperson (Mr Lynch): Travelling on the bus yesterday, you said that you spent so many years burying water, but now it is so important, as Bob Vaughan said earlier, that SuDS is the way forward. Do you favour hard SuDS over softer systems?

Mr O'Brien: I can hardly think of a situation in which we would put in only green infrastructure — soft SuDS. It would always be a combination. We will put in green infrastructure where there is a benefit to having it there. I am commissioning work to see how green infrastructure adds to the effectiveness of the scheme. I am thinking particularly about its ability to adapt to climate change and how it will take more water out of the system during heavy rainfall as a result of increasing temperature. It needs to have an adaptive quality, and it takes only a few per cent of improvement over grey infrastructure alone for that to pay for itself many times over with the addition that you might have for any green infrastructure. We have the evidence now, apart from what we have already installed in those first schemes in Llanelli.

Mr Dallat: Thanks, Fergus. There has been a lot of information to absorb, if that is the right term, over the last couple of days. You placed great emphasis on the involvement of the local community, but, back at home, in east Belfast or wherever, people just understand that the drains are not big enough and that they need to be bigger. Is there an earlier stage at which you can involve the local community to want SuDS rather than at the point at which you discuss parking arrangements or the inconveniences that they might endure? The schemes that we saw were great, but would it not be much better if the local community, at an earlier stage, understood that they need it in the community? Is there a way in which that can be done?

Mr O'Brien: We thought that we were doing that by having open days and drop-in centres, but it did not get the level of engagement that we needed. In the Greener Grangetown approach, far more effort was put into the consultation there. We learned from that and fed it into the combined process. We contributed to that and got involved. The Greener Grangetown example, with the consultation and the repeat consultation, is a good model. It was a far more effective way to do it. If you have people who are just not interested in getting involved until you turn up outside their door, it is quite difficult to do anything about that.

Mr Dallat: Sitting here, my mind wandered back to Aberfan. You probably know about the disaster that happened there. Does SuDS have a role outside the urban area and, as Brenda mentioned, the farming community, where there are landslides that often go onto railways? Maybe they are man-made — I do not know. Is there a role for SuDS that is greater than what we have seen?

Mr O'Brien: Speaking for myself rather than Welsh Water, I think that there is. There is evidence now that improved grasslands, particularly those that are heavily farmed, and the run-off from what we would normally think of as permeable ground is far greater than we thought. The best example was the Somerset levels last year and the continuous flooding there at the same time as there was a storm surge in the estuary. There is a role for a SuDS-type solution there, but it will be different from what has to be done in an urban area. Coed Cymru worked with farmers to plant narrow bands of trees near watercourses. The effect of the roots, even as very young and newly planted saplings, was to allow water to penetrate below the hard cake on the surface and reduce the run-off from those areas quite significantly. That was a really good example of that.

Mr Cochrane-Watson: I asked plenty of questions yesterday, and your presentation, Fergus, was excellent. Who owns Welsh Water? Is it a Go-co?

Mr O'Brien: It is a private organisation, but, unlike other water companies that are owned by shareholders or financial institutions, we are owned by Glas Cymru, which is an organisation limited by guarantee. There are 70 or so members of Glas Cymru. Its liability is limited to £1. It is made up of everybody from councillors to businesspeople to ordinary folks and customers who live in Wales — there is a whole range. We operate the company on their behalf, and they get to elect our directors every year.

Mr Dallat: Is it a mutual —

Mr O'Brien: Yes, we are a mutual. That is the best way of describing it. If you would like more information, I can get you a much more definitive version. I can provide that to the Committee if you wish to see it.

Mr Cochrane-Watson: I am keen to see that.

Mr O'Brien: We raise money, as all the other companies do, on the open market, with bonds and so on, but, because of our structure and success over the last 14 or 15 years, our credit rating is very

high, and we can raise funds at very low cost. That delivers significant savings in what we have to do. The cost of financing our debt is a very significant proportion of our customer bill.

Mr Cochrane-Watson: Historically, why were you set up in that way? Why is it not the shareholder model that England has?

Mr O'Brien: Between 1989, after privatisation, and 1999, when there was a regulatory review, the company invested in various other non-regulated businesses and joined up locally with the electricity utility. The joint review for funding of electricity and water in 1999 meant that the business would not have been capable of continuing; it would, in effect, have gone bankrupt. That gave the incentive to separate the business out and for the water business to set itself up purely as a mutual. That model was put together and delivered by the people who then became the managing director, Nigel Annett — a Northern Ireland man, by the way — and the finance director, who is our current chief executive, Chris Jones. They put the model together with funding from the city, and that is how the business has been set up since then.

Mrs Hale: Fergus, as I said, I am really disappointed that I missed the site visit; I was stuck in the Assembly on votes. The whole presentation has really caught my attention. I just looked at your slide on the Loughor estuary. A colleague of mine has constituents whose gardens run on to the beach on the County Down coast. Would an individual or private householder be able to take advantage of advice from something like RainScape to know what to plant? Those houses got caught during the last storm surge. Driveways and houses were flooded, because they are situated directly at the beach, with no protection there. The local councils are saying that it is private land and they cannot do anything about it.

Mr O'Brien: They had an inundation from coastal water.

Mrs Hale: Yes, because the garden is literally on the beach. It just rolls on to the beach.

Mr O'Brien: It will not have any effect on that, I am afraid, unless you build up a flood defence on the coast. This is all about what runs off the hills and down off land, running over impermeable areas like roads and pavements, rather than sea defence, I am afraid. It is a different problem that we are trying to deal with. It would possibly help to reduce the effect of wave damage or something like that. It might stabilise the structure of the coast, but I am not a flood defence expert by any means. You would need to talk to somebody who has that kind of expertise.

Mrs Hale: I suppose that even people living on the Welsh coast would not be able to go to RainScape and ask for help. They would have to go through the local authorities.

Mr O'Brien: Yes. If the problem is as a result of inundation from high sea level or storm surges, this kind of solution is not really going to do anything for you.

Mrs Hale: They will be flooded, literally.

The Deputy Chairperson (Mr Lynch): Fergus, on behalf of the Committee, thank you very much for your evidence, particularly for the information yesterday. I have a small gift for you on behalf of the Committee.

Mr O'Brien: Thank you very much.