

## **The forgotten engineer?**

**Sir Osbert Chadwick, C.M.G., M.Inst.C.E., M.I.M.E.**



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Not many of my colleagues have any experience of the Maltese language and to say I am a bit rusty is an understatement. I spent most of my primary school days on the island and have many fond memories that I cherish.

In the run up to the EU accession vote I made a number of trips to Malta, as a member of the Government's 'First Steps Team', speaking to key political players about the benefits of membership. This was a little fraught on occasions as my friends in the Malta Labour Party were, to say the least, agnostic towards the EU as well as being opposed to membership and to find myself in agreement with the ruling Nationalists was something new to me!

Nearly all of my parents' old friends are of the nationalist persuasion and this came up in my first meeting with Prime Minister (now President) Eddie Fenech-Adami. I had just visited a family who were our landlords in the 1950's who told me to tell the PM that they wouldn't vote for him at the referendum if he didn't sort out their planning problem. I re-counted this to the PM who, realising these people were near neighbours, looked at me sternly then burst out laughing asking, "How do you know these people?".

It was on the same trip that I first met shadow agriculture minister Noel Farrugia MP. A serious man with a passion for his brief and a determination to restore Chadwick Lakes, a refurbishment project he had started when in government in 1998. The "lakes", a partly man made environment, is the only permanent surface water on Malta, which is why it stuck in my mind at the age of five or six. What didn't know then was that the "lakes" were named after Sir Osbert Chadwick, a colonial engineer who is an important part of Malta's history. His father Edwin, built part of Britain's Victorian sewage systems in Manchester, but Osbert's work has never really been recognised. When I started digging around the archives in Kew I realised that this man was one of the most prolific civil engineers of his age. Added to this, his energy and determination put him in the

premier league of civil engineers who have changed the world for the better. But why has nobody ever heard of him? Surely the name of a man who had such an impact on public health, not just in Malta but in Hong Kong, Mauritius<sup>1</sup> and elsewhere, should be spoken by school children in the same breath as Telford and Brunel?

Osbert Chadwick was admitted as a Member of the Institution of Civil Engineers on November 28<sup>th</sup> 1871. The Institution's records refer to this briefly as follows:

*“Because after studying at the R.M.A., Woolwich, he got his commission in the Royal Engineers in 1864, and after completing the requisite course of instruction at Chatham, was appointed to make special experiments on submarine mining and telegraphy. In 1868 he came to India, and after a short service with the sappers and miners was appointed to the P.W.D., in which he is now an assistant engineer 1<sup>st</sup> Grade, and was engaged in various works in the Deasa and Aboo districts until August, 1869, when he joined the Government Reclamation Works, Bombay, where he was employed in making reclamations, wharf walls, and other marine works, under Mr. J. H. E. Hart, M. Inst. C.E. and Mr. T. Ormiston, M. Inst. C.E.,*

*until September, 1871, when he was appointed to the Aden district under Capt. Ducat, R.E., Assoc. Inst. C.E.”*

On October 13<sup>th</sup> 1898 he delivered the inaugural address, in opening the course of municipal engineering and Chadwick lectures and demonstrations of municipal hygiene, instituted by the trustees of his father Sir Edwin Chadwick. This was the beginning of a trust that exists today at University College London (UCL).

The Times of October 3<sup>rd</sup> 1913 records his death as follows:

**Mr. Osbert Chadwick, C.M.G.**

*Mr. Osbert Chadwick, C.M.G., M.Inst.C.E., M.I.M.E., who died on September 27 at the house of a friend in Kirkcudbrightshire, was the son of the famous sanitary reformer, Sir Edwin Chadwick.*

*Born in 1844, Mr Osbert Chadwick was intended for the Army, and after passing through Woolwich joined the Royal Engineers in 1864. But in 1873 he left the service,*

*and followed in his father's footsteps by becoming a civil engineer. Before long he was regularly employed as consulting engineer to the Colonial Office, principally in connexion with sanitary work in the Crown Colonies. For this purpose he spent many years in Grenada, Malta, Hong Kong and Mauritius. But he will be remembered chiefly for his services during the eighties in Malta, where he constructed the waterworks, for which he was made a C.M.G. in 1886. Chadwick was a man of great energy and force of character, as well as independence of thought, and was recognised as one of the great sanitary engineers of his time. For the last ten years he had been an invalid. He was unmarried.*

It is that obituary that gives a hint of the importance of Chadwick's work in Malta, but from the time he left the army in 1873 till about 1903 he achieved an extraordinary amount in many places around the world.

Chadwick left his mark in libraries with works including;

- “A Treatise on Surveying.” First published in 1899-1902. The sixth edition was in print in 1955. <sup>2</sup>
- “Mr. Chadwick’s Reports on the Sanitary Condition of Hong Kong; with appendices and plans.” Published, 1882.<sup>3</sup>

## Malta

By 1911, by which time Chadwick was an invalid, his work was extensive. From Pembroke to the three cities and inland to Rabat and Mdina drainage works were completed and almost all residential areas were, by then, incorporated into the plans. These and other works were preceded by painstaking research, such as his report “*On the water supply of Malta*” in 1884. Incidentally, this was published by the Government Printing Office in Malta and was available for 1s.6d, the princely sum of 7½p! It is a fifty plus page report describing the proposed works and setting out costs to the nearest old penny.

This was not simply a grand colonial design. Chadwick knew from the work of others, including his father, this would save lives.

He said, *“In the text of my report I state that the death per rate of Malta was too high. I made this assertion on the basis of the death rate of past years, quoted at 26 per thousand. I am glad to see that in late years the death rate is much lower namely:*

*In 1882 ... .. 24.39*

*In 1883 ... .. 23.92*

*The reduction in the death rate, from 26 to 24 per thousand, means a saving of about 300 unnecessary deaths annually.”*

These deaths would of course be largely indigenous people and although he went on to describe progress so far as “satisfactory” he went on to argue,

*“It is not sufficient, however. There is no reason why the death rate should not be reduced to 20 per thousand, a result which already been attained in many places.”*

His strong views demonstrate his commitment to public health and he didn't pull his punches. In the lengthy introduction to his 1884 report he says:

*“In accordance with the views of every sanitarian and engineer, of any experience, I wholly condemn the storage of water in or about dwellings, above or below ground, as an unsanitary abomination,*

*only to be justified by absolute necessity. The constant system of supply is the only system that is satisfactory, and worthy of a civilised community.”*

Perhaps here we are seeing some justification to the words in his obituary which described him as a man with, “...force of character, as well as independence of thought...”

That independence led him to challenge his father from time to time, in a letter from Rabat, found in the UCL archive, he says;

*“I was sorry that I had not the opportunity of looking over your paper before you printed it. The sketch of the method of converting large main water sewers, contains to my mind many serious defects.”*

So much for Victorian attitudes to ones elders and betters! What is not clear is why at the beginning of this letter he refers to having no intention of abandoning his interesting work for a seat in a government office, he obviously had some suggestion from either his father or the Colonial Office as to his future. Again his position is abundantly clear below, in a paragraph that would today cause uproar amongst Ministers:

*“I have been too long my own master and a nomad, to give up my freedom and accept a subordinate position under a minister, and that minister, in the present instance a member of the most mischievously incapable government, that has ever disgraced Great Britain.”*

I think we can safely assume that his politics were not those of Salisbury!

### **Valley of Fiddien**

The stretch of the Valley of Fiddien (spelt Fidden in Chadwick’s day), from the point where it crosses the Rabat to Bingemma Road down to the crossing of the Mdina to St Paul’s Road, is now known as Chadwick Lakes. The stream does not flow all year round and is known as Wied tal-Qlejgha. The lakes are created by a series of three dams and the sides of the valley. The sides are dry stone walls and are in various stages of decay shown in picture 1.

At the higher end one can see the restoration work started in 1998 by Noel Farrugia MP, (picture 2). It was in this valley that Chadwick conducted some experiments that led him to determine that surface stores for domestic

water should not be recommended. His certainty in the accuracy of his work is again expressed here when he says:

*“The conclusions which I have arrived at, must be proved to be erroneous by several years of accurate experimentation, before the construction of such works will be justifiable.”*

It is a little ironic that the only monument to his work is a valley comprising several surface water stores, albeit not for human consumption today!

In bringing the work of this great man back into the public consciousness, I hope that Malta (with a little help from it's friends) will carry on with the work in the Valley of Fiddien. The pictures show how simple ideas well executed can help restore the natural beauty of the area. A programme like this will help meet one of the islands greatest challenges of “greening” some of the landscape when so much water is being extracted for other purposes. It would also provide a lasting tribute to this extraordinary man who was responsible for improving the life chances of tens of thousands of people as a result of his work across the world.

<sup>1</sup> Richon E., “*Loteldevil Curepipe - L'Hotel de Ville Curepipe*”, [http://www.palli.ch/~kapeskreyol/ki\\_nov/moris/loteldevil.php](http://www.palli.ch/~kapeskreyol/ki_nov/moris/loteldevil.php) accessed 2<sup>nd</sup> March 2006

<sup>2</sup> Middleton R. and Chadwick O., *A Treatise on Surveying*, E. & F. N. Spon: London, 1899 1904 1911 1920 1935 and 1955.

<sup>3</sup> Chadwick O., *Mr Chadwick's Reports on the Sanitary Condition of Hong Kong; with appendices and plans*, Colonial Office, London, 1882.



Picture 1. Side walls collapsing into the valley



Picture 2. Restoration work undertaken between 1996 & 1998

