A Walk with Visionary Charles Todd

On 15 May 2022, as part of the History Festival, Keith Conlon OAM, chair of the SA Heritage Council, and Richard Venus conducted a guided walk "from clock to clock" through central Adelaide in Charles Todd's footsteps, looking at heritage buildings and telling stories of his contributions to South Australia.

OT 150
Overland Telegraph
150th Anniversary
1872-2022

Charles Todd, Superintendent of Telegraphs, was the planner, designer, and driving force behind Australia's greatest infrastructure project, the Overland Telegraph. To commemorate its 150th anniversary in 2022, let's take a walk in his footsteps through Adelaide.

1. The GPO (the first clock)

The Adelaide GPO is literally the centre of South Australia; from 1874, distances were measured in "Miles from the GPO". A number of architects had a hand in its design. A competition was held in 1865 and first prize was awarded to Edmund Wright and Edward Woods; second prize went to Edward Hamilton and Robert Thomas. Hamilton later joined Wright & Woods to work on the project which was then taken over by Thomas who had been appointed Colonial (Government) Architect in 1868: to rein in costs, he reduced the height of the building by 6 feet and the tower by 16 feet. A key feature of the design is the large central hall where services were provided at various counters rather than at exterior windows; it is covered by a glass roof which provides natural light.

To make way for the building, the old Police and Insolvency Court, as well as a small portion of the old single-storey post office to the north, were demolished. The Duke of Edinburgh laid the foundation stone of the Victoria Tower on 1 November 1867 and the capstone was laid on a wet day in May 1870. Eagerly awaited was the clock, "so that henceforth there should be one time all over Adelaide".

The central hall of the new Adelaide GPO
[Illustrated Adelaide Post, 23 February 1873, p1]
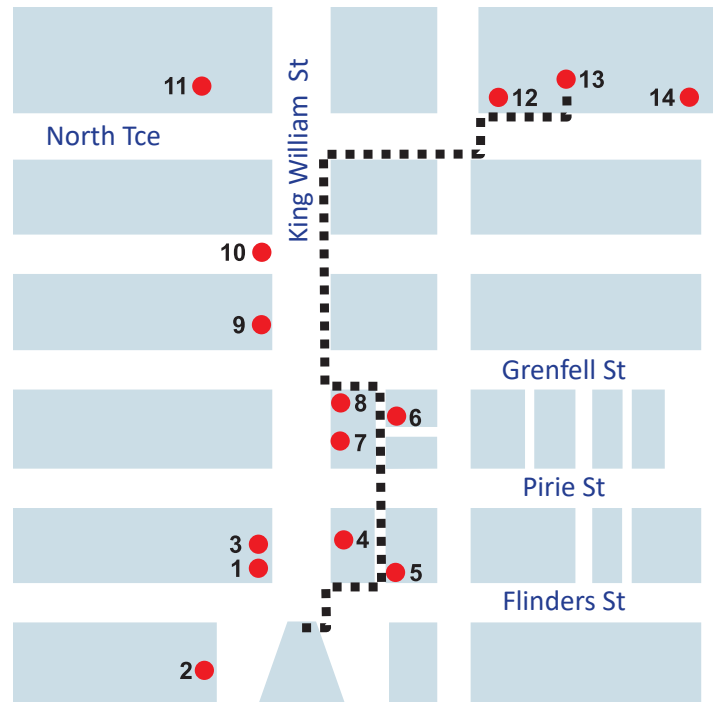
The building was open for business on Monday 6 May 1872 with no official ceremony but crowds of curious visitors. For the first time, the two communication departments – Posts and Telegraphs – occupied the same building. Todd, at the time, was two days out in his voyage from the Roper River to Port Darwin in order to inspect the Northern Section of the Overland Telegraph Line (OTL). His new office was on the first floor corner: Alice had a peek while he was away and told him in a letter that the Belgian carpets had been covered with a cloth and camphor put down "so the moth may not touch it". He occupied the office from his return from the OTL in October 1872 to his retirement in December 1906.

Above that is the clock, built by Joyce & Son to Todd's specifications, which was ordered in September 1873 and assembled by Todd himself. The clock was started by William Morgan, the Chief Secretary, on 13 December 1875. Presumably Todd was also responsible for the choice of chimes, the same as St Mary's in Cambridge where he was Assistant Astronomer at the University Observatory.

From the railed platform above the cupula, Todd demonstrated electric light on 31 August 1881, using equipment he had borrowed from his former assistant, Edward Cracknell, in Sydney; his demonstration in 1867 was powered by batteries but this time he used an engine-driven dynamo. The light reached as far as the City Bridge

*Charles Todd, in the light-coloured suit, stands in the Telegraph Room on the first floor of the Adelaide GPO, 1872
[State Library of SA, B8026]*

*The Criterion Hotel started life as the Family Hotel and was also known as the Post-Office Hotel before the licensee changed its name in 1864; next door can be seen the signage for the Telecommunications Museum which was set up in the basement of Electra House and operated from 1978 to 1992
[Messenger Press photo: State Library of SA, B70869/18563]*

but Todd thought that four of them would be needed to effectively light King William Street from north to south. The lighting plant was then taken down to the Exhibition grounds on Frome Road where it "shed a radiance over the grounds and vicinity almost equal to daylight". Todd repeated the demonstration for the City Council on 19 October 1881.

During the Russian scare in 1885 (ships were reported in the Gulf), an electric light was hung from the flagpole to be switched on at night if war was declared. Some citizens were alarmed on 14 April when the light was switched on – they didn't know it was just being tested (the fact that it could be seen during the day indicates how bright 1200 candlepower was – about 1600 watts). A month later, the tensions in Afghanistan had settled down and the equipment, no longer needed, was taken to Adelaide Oval for the first night football match. On 1 July 1885, about 8000 people saw Adelaide beat South Adelaide, 1 goal 8 to 8 behinds. (It hadn't helped that, by the second half, the white paint had washed off the ball.)

Down in the basement, there were a couple of "electric contact torpedoes" (we'd call them mines today). As a telegraph engineer, Todd would have known how to detonate them electrically – which was why they'd been put in his charge. One was sent to Port Adelaide and one was given to Simpson & Son to copy in their "manufactory" over in Grenfell Street on the north-east corner of Gawler Place. The "colonial product" attracted a great deal of interest when one was exhibited in London.

At one o'clock on 22 August 1872, when word came down the line that the Overland Telegraph had been completed, a red ensign (which Chief Secretary Henry Ayers had had made especially for the occasion) was flown from the flagpole. The Telegraph Room on the first floor became the hub of Australia's communication with the world. Along the King William Street frontage is an Engineering Heritage plaque commemorating the OTL which was placed on 22 October 1999, the modest ceremony on the footpath enlivened by the presence of a couple of camels.

The big doors in the middle of the frontage were originally the archway giving access to the quadrangle where Todd and his men assembled on the morning of 15 November 1872 before marching down King William Street to the celebrations at the Exhibition grounds.

The extension built over the site of the previous single-storey post office was completed in March 1893 and, finally, Todd was able to have an electric lighting plant installed. The successful tenderer was the Brush Electrical Engineering Company, the South Australian agent for which was his son Hedley. This was the year in which Todd also received his knighthood.

Above the windows are five carved heads: the 9th Earl of Kintore, then the Governor, is easy to spot – he's the only one with a moustache – but the four bearded blokes look much the same: Thomas Playford, the Premier; Charles Cameron Kingston, the Chief Secretary; William Copley, then Minster of Education (Todd's parliamentary boss, the only one who was considered able to understand the technicalities of the Telegraph Department); and Todd. Apparently, Kingston wasn't impressed with his "representation in stone".

2. Marine & Harbors

Before we leave Victoria Square, the SA Harbors Board building (which was shifted 34 metres north in 1979 – or its façade was) is part of the telegraph story. Originally built for the National Mutual Life Association and opened on 23 May 1884, it became the first office for the Eastern Extension Australasia and China Telegraph Co Ltd which had taken over the Java-Darwin cable. They handled the overseas telegraph traffic through their own cables, part of the Red Route (linking Commonwealth countries); the cable from Durban in South Africa came ashore at Grange via Cottesloe in WA. It was completed on 22 February 1902. A few years later, they moved to the new Advertiser building, on the corner of King William and Waymouth Streets.

The station master's home at Grange, known as "Jarrah House", still stands in the Cable Station Reserve.
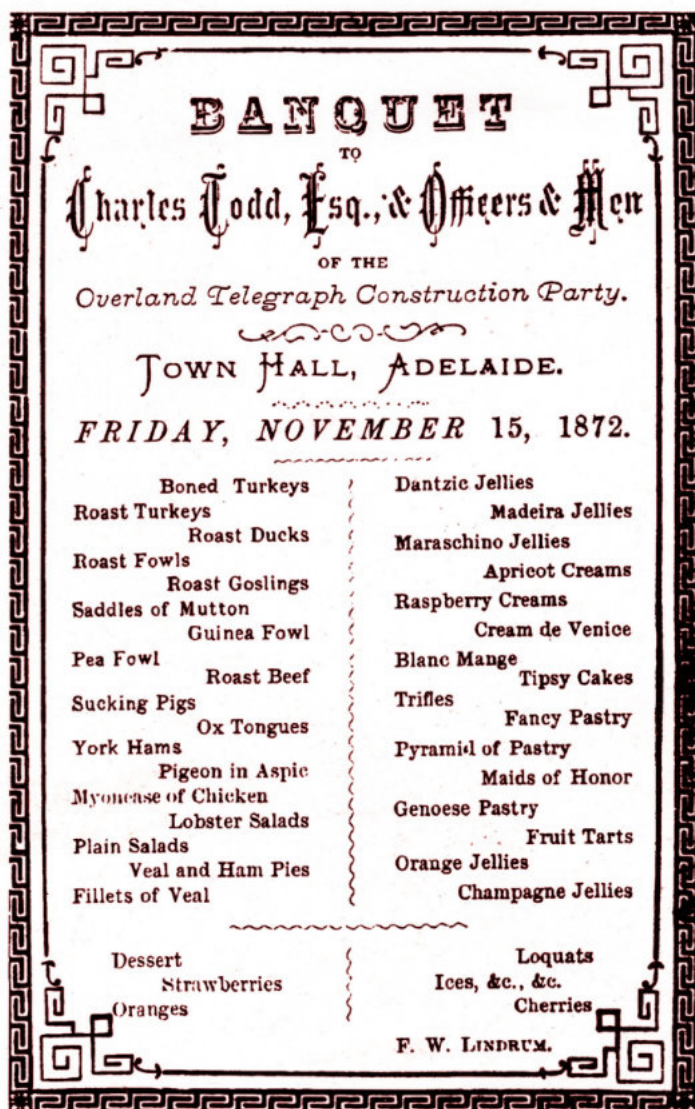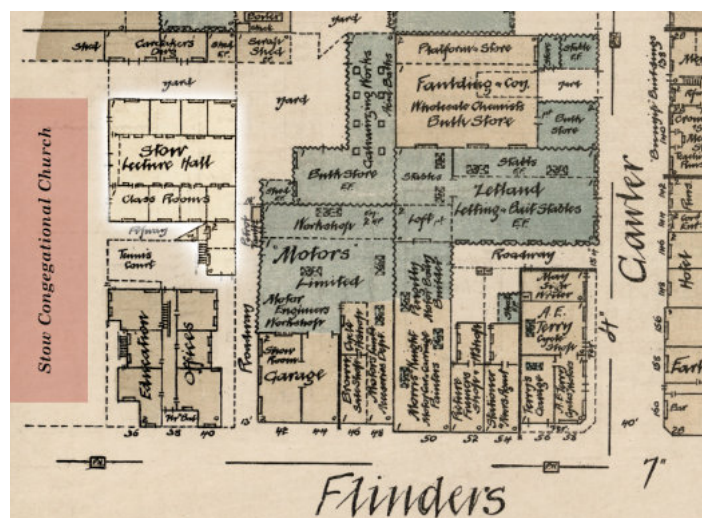
Menu for the Overland Telegraph celebratory banquet at the Adelaide Town Hall, 15 November 1872
[Richard Venus collection]

Tucked behind the Education Offices to the east of the Congregational Church was the Stow Lecture Hall where Charles Todd gave his talk on the Overland Telegraph on 28 July 1873
[Ferguson Fire Map No 23, 1913, State Library SA C112/08]

3. Electra House

Next to the GPO is Electra House, originally built for the Citizens' Life Assurance Company. Work started in 1900 and included the installation of one of Adelaide's first electric passenger lifts. (Locally built, this lift was replaced after only a few years by one made by the American Otis company.) It was completed in March 1902 and the company transferred its operations there on 2 April. The Eastern Extension Company acquired the building in 1921 and renamed it the "Eastern Telegraph" building. In 1940 they changed the name to Electra House, the same as that of the parent company's headquarters building in London. In between Electra House and the GPO was the Criterion Hotel, a convenient watering hole for telegraph operators who could slip out the side door for refreshments.

4. The Town Hall

The Adelaide Town Hall has welcomed many famous people such as the Beatles (minus Ringo) on 12 June 1964. On the evening of 15 November 1872, a banquet was given for "Charles Todd, Esq., and Officers and Men of the Overland Telegraph Construction Party". (The caterer, Fred Lindrum, was the grandfather of Wally Lindrum, one of the world's most successful billiard players.)

Telegraph messages were exchanged with other banquets around the world, a reply being received from London in two hours, and the Governor announced Charles Todd's CMG (the same award later given to James Bond).

5. Stow/Pilgrim Church

Along Flinders Street was the Stow Congregational Church (now the Pilgrim Uniting Church) where the Todds, particularly Alice, were active members. Todd himself was a founder of this and the Congregational Church in Brougham Place, North Adelaide. There are two brass plaques on the Nave wall, just south of the eastern transept, in memory of Charles and Alice.

It was in the Stow Lecture Hall behind the church that Todd finally gave his long-awaited lecture on the OTL to raise funds for the school room (front seats 1/6, back seats 1/-). The lecture was originally planned for 17 December but wasn't delivered until 28 July 1873. It included telegraph demonstrations; his handwritten lecture notes are in the State Library (PRG 630/9).

The Hall was demolished in 1973 to make way for the present Pilgrim Centre.

6. The Stock Exchange

So urgent was the need for information – and so unreliable the telegram boys – that the Stock Exchange had a pneumatic tube system installed; blowers in the GPO basement propelled cylinders containing telegrams under the streets (remember the stores that had them?).

Other tubes connected the GPO to Electra House and the Advertiser building which was then on the corner of Waymouth and King William Streets.

This is yet another example of "mail anxiety": the message might have taken hours or even days to be transmitted across the globe but no stone was left unturned to shave minutes or even seconds off its final delivery!

7. White's Assembly Room

We're behind what was the Majestic Theatre; before that, it was the Tiv; before that it was the Bijou Theatre; and before that it was George White's Concert and Assembly

The Bijou Theatre interior in 1892 [State Library SA B 13272]

Green's Exchange in King William Street, 1867: behind the tree can be seen the ladder by which Charles Todd could access the roof for his demonstrations of electric street lighting
[State Library SA, B2120]

Rooms, the principal meeting room of the colony – the Convention Centre of the day.

White's opened in June 1856. In 1880, Arthur Garner, of the London Comedy Company, leased White's Rooms for a term of 21 years, and converted it into the Bijou Theatre, adding a gallery (with gods) for additional seating (making a total of 1020), a wider proscenium, and a spectacular hand-painted backdrop. It opened on 17 May 1880. The manager was Wybert Reeve, a significant character in SA's theatrical history.

In 1899, Sydney impresario Harry Rickards took over the lease, carried out extensive renovations, and opened it as the Tivoli on 20 June 1900. (The opening night bill included contralto Neva Carr-Glynn. Those who remember the Golden Age of radio plays might recognise the name: this actress was her great-niece.)

Some disastrous fires in crowded theatres around the world led to the Places of Public Amusement Bill in SA and Adelaide theatres required extensive alterations to improve public safety, including changing from gas to electric lighting and adding a heavy asbestos fire curtain which had to be tested every night in view of the audience. The Tiv reopened on 1 March 1904.

Such was the popularity of the theatre that Rickards needed larger premises and the New Tivoli Theatre (originally to be named "The Princess"), with seating for 2000 people, opened in Grote Street on 6 September 1913. The same promoters, Bert Sayers and Bert Lennon, then knocked down the old Tiv. The new Majestic, still with an opening roof, opened on 3 June 1916.

It was in White's Rooms, on 2 October 1860, that Charles Todd gave a lecture to 800 people, including the Governor; his promised demonstration of the telegraph to Mount Gambier (the intercolonial link to Victoria which opened in 1858) ran into technical difficulties but his demonstration of an electric light – for the first time in the colony – was literally dazzling.

8. Duryea's Studio
Past the site of the Register building on Grenfell Street was a two-storey building on the corner of King William Street where Townsend Duryea had his photographic studio on the first floor. Styling himself *Monsieur* Duryea, the American-born photographer had introduced the "Art of Daguerreotyping, with all its most modern styles and improvements" to Adelaide in April 1855.

9. Green's Exchange
Diagonally across the road from Duryea's studio was George Green's Exchange, a forerunner of today's Stock Exchange: at the front on the lefthand side was the Telegraph Office (the main telegraph line came up Port Road to the Railway Station and then ran underground along King William Street).

On the occasion of the Duke of Edinburgh's visit in 1867, Charles Todd set up an arc lamp on the roof; cables ran down to the basement cellar where a battery consisting of 120 cells had been set up. He first used the apparatus on 1 November and operated it again on 5 November for an hour and half. During the evening, Todd and Duryea had exchanged flashes of "the magnesium light" (a recent innovation used by photographers); then Todd stunned Adelaide when he switched on the arc lamp – it lit up King William Street from the gates of Parliament House to Victoria Square!

10. Hindley Street
We shouldn't go past this junction without mentioning Adelaide's first electric street light, powered by the lighting plant at the Theatre Royal which was installed by Irish engineer Maurice Grant who later became engineer for Todd's son Hedley's electrical contracting business – and was therefore the installer of the lighting plant at the GPO. One of the latest street arc lamps was suspended between the Monster Clothing Palace on the southern corner of Hindley Street and a 50-foot pole on the other. The light was switched on by Mayor Charles Tucker at 8 o'clock on Saturday 12 October 1895. Everyone agreed it was a great idea but it would take another five years and the turn of the century before Adelaide would finally get electric street lighting.

Artist's (fanciful) impression of what it might have looked like on the night Charles Todd demonstrated an electric arc lamp inside the SA Institute building [Richard Venus collection]

11. Parliament House

In 1883, Charles Todd had an idea for installing a central generating plant at the Government Printing Office which was then on King William Road, about where the City Baths used to be. From here, other buildings along North Terrace could be supplied: Parliament House, the Railway Station, Government House, the SA Institute and the Museum and Library. Todd was asked to prepare plans but the cost was considered too great.

When they decided to build the new House of Assembly (the West Wing) in 1887, Todd was asked to report on electric light but, again, the Government decided the estimated cost of £6000 to £7000 was "too heavy". A few years later, MP Roland Rees (architect of the Newmarket and British hotels) was appalled to discover that the new building would be lit by gas, a decision made on the casting vote of Henry Ayers, chairman of the Gas Company! In October 1889, Rees moved, "That it is desirable to at once, adopt the best system of electric-lighting in the Houses of Parliament" and proposed a Royal Commission on the subject. An "Electric Lighting Board of Enquiry" (it was given various names) was appointed on 30 January 1890: Todd, of course, was co-opted onto it.

Meanwhile, Maurice Grant (installer of the Theatre Royal's lighting system) had been appointed, on Todd's recommendation, to run SA's first course in electrical engineering and had set up an electric lighting plant in the basement of the Exhibition Building. The Commissioners inspected it and were suitably impressed by it and other installations they had seen in Melbourne. Not surprisingly, they recommended electric light for Parliament House and Todd was asked to take control of the project. The actual supervision was undertaken by Todd's chief electrician, Carl Unbehaun (whose son later set up the well-known Adelaide contracting firm of Unbehaun & Johnstone).

Not without foresight, electrical wiring had been installed in the new building (Ayers' gasoliers were actually ignited electrically) but Unbehaun found that the heat of the gas lamps had damaged the insulation and it had to be replaced. The lighting system was successfully trialled on 3 June 1891.

12. The SA Institute

At the opening evening of the SA Institute building on 29 January 1861, Todd demonstrated another arc lamp – indoors! The new premises had all the mod cons, even its own gas plant which the beadle had to stoke up every morning. But there were concerns about the damage caused by the fumes to books and paintings and the ever-present risk of fire. For this reason, Todd, with the full support of the Board of Governors, made constant attempts to get electric lighting for the Institute buildings but was frustrated by the Government's reluctance to embrace what was – to be fair – still new and relatively unproven technology.

13. The Mortlock Chamber (the last clock)

Charles Todd was a member of the Libraries Board and is, in fact, the longest serving member: 44 years from 1866 to his death in 1910 (when he was still Vice-President).

During his one and only trip back to England in 1885/86, Todd purchased a clock for the Mortlock Chamber; it cost £50 (about $3000 today) and was made by Edward Dent & Son to Todd's own specification. (Dent had made the iconic "Big Ben" clock and were London's leading clockmakers). It was installed in 1887 and had the capacity to be regulated by the master clock at the Observatory although there is no indication that this was actually done. Wound once a week, it still keeps perfect time.

14. The Jubilee 150 Plaque

In 1986, during SA's previous significant sesquicentenary – better known as Jubilee 150, a series of 150 bronze plaques was placed along North Terrace to honour people who had made a significant contribution to the community or who had gained national and international recognition for their work. The plaques are in alphabetical order from King William Road and Todd's is almost at the end, opposite Pulteney Street.

Charles Todd's plaque in the Jubilee 150 Walk, North Terrace [photo: Richard Venus 17407]