The River Torrens—friend and foe

Part 2: The river as an obstacle to be crossed

RICHARD VENUS

Richard Venus BTech, BA, GradCertArchaeol, MIE Aust is a retired electrical engineer who now pursues his interest in forensic heritology, researching and writing about South Australia’s engineering heritage. He is Chairman of Engineering Heritage South Australia and Vice President of the History Council of South Australia. His email is rjv@esc.net.au

Beginnings

In Part 1 we looked the River Torrens as a friend—a source of water vital to the establishment of the new settlement. However, in common with so many other European settlements, the developing community very quickly polluted its own water supply and another source had to be found. This was still the River Torrens but the water was collected in the Torrens Gorge, about 13 kilometres north-east of the City, and piped down Payneham Road to the Valve House in the East Parklands. Water from this source was first made available in December 1860 as reported in the South Australian Advertiser on 26 December.

The significant challenge presented by the Torrens was getting across it. In summer, when the river was little more than a series of pools, you could just walk across. However, there must have been a significant body of water somewhere — probably in the vicinity of today’s weir — because in July 1838 tenders were called ‘For the rent for six months of the small punt on the Torrens for foot passengers, for each of whom a toll of one penny will be authorised to be charged from day-light to dark, and two pence after dark’ (Register 28 July). This implies that the service had already been established, as does an advertisement placed the same month which describes a location as being on the ‘Bank of the River, near the Punt.’ It was certainly in the recollections of Old Colonist James Chittleborough who told Quiz and the Lantern of 21 October 1897:

If you want to test the claims of an old colonist ask, ‘Do you remember the punt? Very few do remember it. A man named Rogers had a punt on the Torrens, and by means of a rope stretched from bank to bank of the river used to take passengers across.

Patrick Coglin, then the Member for Light, added his own recollections in the Register of 3 June 1865:

... he had in the early days of the colony crossed the river from Morphett-street in a small boat which was kept there. From that period until the time that the Government impeded the course of traffic there had always been a crossing-place in that locality.
On 3 June 1837, Colonel Light wrote to James Hurtle Fisher, the Resident Commissioner, pointing out the easy access between the town and the harbour and noting: ‘the only thing wanted, is to construct a temporary wooden bridge over the river near the town, or perhaps half a mile from it’.

Within weeks, Fishers’ eldest sons, James and Charles, responded to the call. (James and Charles Brown Fisher are better known for their pastoral pursuits and were almost as influential in sheep as Kidman was in cattle, having purchased Bundaleer Station in 1854. Their early bridge-building exploits did not warrant mention in their biographies!) They had set up in business as merchants and carters and, not surprisingly, found crossing the Torrens on the way up from the Port with their bullock carts a challenge. On 8 August 1837 they wrote to Robert Gouger, the Colonial Secretary (Chief Secretary 1837/277):

Messrs Hack [John Barton Hack and his brother Stephen] and ourselves having come to a determination to build a temporary though substantial bridge across the Torrens so as to enable carts to cross without difficulty, we request you to grant us 16 uncut deals [planks] for the purpose.

Governor Hindmarsh expressed concerns about ‘private persons’ undertaking what was clearly a Government responsibility and without any guarantees that the structure ‘might be approved by the competent authorities’. However, he decided to approve the undertaking and Robert Gouger told the brothers: ‘... I am directed to inform you that His Excellency highly approves of the undertaking and has instructed me to apply to the Resident Commissioner for deals to be placed at your disposal’ (Chief Secretary 1837/136). Gouger also increased the number of ‘deals’ from 16 to 24.

There are reports that George Kingston had started work on a bridge in April 1837 (Durrant 2015) but then he returned to England, leaving it ‘scarcely begun’. However, a bridge of sorts must have been constructed. Reference was made in the Register of 24 March 1838 to a site ‘near the wooden bridge’ although whether this was the Fisher-Hack bridge or another is hard to tell from the sketchy records available to us today. In the same issue, tenders were called ‘for building a certain number of Stone Piers, for a Bridge across the Torrens’. This new bridge appears to have been finished by October when a letter to the Register of 13 October referred to ‘crossing the bridge and walking up the river on the north side’.

Work started on yet another bridge, still being described as ‘temporary’, in May 1839 and in June calls were made for contributions to its cost: ‘One hundred and twenty pounds have been already expended on the work, and it is estimated that a further sum of about one hundred pounds will be necessary to complete the bridge in a satisfactory manner’ (Register 15 June). The Resident Commissioner agreed to meet half the cost of the bridge from public funds and on 17 August the Register reported the bridge as ‘now completed, and in full use’. Credit for the work was given to Alfred Hardy, the Town Surveyor (Register 24 August). There is a plaque on the southern bank of the river, below the Convention Centre, marking its position.
Sketches show a timber structure resting on wooden piers with diagonal members, or understruts, supporting the deck—the stone piers were clearly never built. And, despite the praise given Hardy for ‘the judicious manner in which the work has been carried on and completed’, a few months later, on 6 February 1840, the Southern Australian was calling attention to ‘its dilapidated condition’. Thomas Worsnop, the Town Clerk, said the bridge was ‘never of a first class character [and] had fallen into a bad state from neglect and heavy traffic’ (Worsnop 1878). Once again the citizens took matters into their own hands and raised subscriptions to repair the structure. The refurbished bridge was opened on Saturday 17 June 1843 by Adelaide’s first elected Mayor, Thomas Wilson, who named it the ‘City Bridge’ (Southern Australian 20 June).

By now, Adelaide had two other bridges across the Torrens. On 19 February 1841 the Southern Australian said it was pleased to report that its suggestions for a chain bridge had been ‘complied with, and the ladies therefore who chose this way of crossing the river may now do so with perfect ease and safety’. It was probably a simple suspension bridge with the deck supported from chains strung across the river. A scathing report some years later headed ‘The disasters of the bridges’ in the Register of 20 August 1851, described it as ‘an artistical bridge improperly called The Swing Bridge’. The other bridge was a timber structure built on a bend in the river near the present-day Frome Road. Named the Frome Bridge, in honour of its designer, Colonial Engineer Captain Edward Charles Frome, it was officially opened on 18 August 1842. This provided a more convenient crossing for business people in the east-end who often

Plinth in front of the Convention Centre reads: ‘This stone marks the site of the first bridge across the River Torrens in the City of Adelaide. It was constructed of wood in 1839 under the supervision of the Town Surveyor Mr Alfred Hardy. The bridge was twice damaged by floods and finally destroyed in 1844.’

Courtesy Richard Venus
felt they were at a disadvantage compared to the west-end (Hindley Street). It also provided an alternative crossing for farmers bringing their grain to the South Australian Company’s Mill at Hackney on those few occasions when the bridge there (built in 1844) was out of service. When the Frome Bridge was opened, Frome placed an advertisement in the papers saying that ‘the Chain Bridge is closed, except to foot passengers’ which suggests that the latter was a reasonably substantial structure able to accommodate animals as well as people (Southern Australian 26 August and Register 27 August). These three bridges all suffered significant damage in the great flood of 1844 which—sadly—also destroyed Shand’s brewery on the banks of the Torrens, about where the rotunda now stands. Floods in July undermined the banks at the City and Chain Bridges and the City Bridge needed repairs after sections of it collapsed in August. On Sunday morning, 22 September, the city awoke to find:
... that the Frome Bridge, recently erected over the Torrens in the neighbourhood of Adelaide, had sustained considerable injury, that the Chain Bridge, a little lower down the river, had been lifted up, and floated away en masse, and that the City Bridge, the great thoroughfare from Adelaide to the Port, although recently repaired by the Sappers and Miners, and pronounced to be safe, had been completely undermined, and that huge masses of it had been borne down the stream (Register 25 September).

William Bennett Hays, who was appointed Colonial Architect and Engineer in 1852, summarised the problems of early bridge building, pointing out that they (like the polluted water supply) were mostly of the colonists’ own making (Hays 1965):

Before the occupation of the colony, the channel of this river ... was overgrown with accumulated vegetation, which protected it from the scour of its waters ... the protecting vegetation became gradually withdrawn, and the light sandy soil, being thus exposed to the winter torrent, began to be removed, and the channel thereby enlarged ... numerous bridges have been built and swept away again, and the short history of bridge building has been here that of a series of failures.

In January 1845 a new bridge was planned at the old location but no tenders were received (Southern Australian 31 January). A new site was then chosen, this time in line with Morphett Street. The more westerly location was influenced by the

The Frome Bridge painted by ST Gill circa 1845. On the far left a water carter with his barrel can be seen, while a businessman in a top hat hurries home to North Adelaide; behind him, a woman is riding a horse
State Library of South Australia B 16063
subscription of £150 from Hindley Street businessmen, although there seems to have been a shortfall in subscriptions because, a few months later, a deputation to the Governor only handed over £115. And now, they seemed to have learned something from the bitter experience of bridge failures. This time, instead of building a bridge on piers driven into the river bed, the specification called for a single arch or trussed beam bridge which would span above the river, clear of damaging flood-swept debris. However, again, no offers were received, the more complicated construction perhaps being beyond the skills and knowledge then available in the colony.

On 2 February 1845 in the Register there was a new call for tenders for either a stone or timber bridge. The job was given to Samuel Lewis, a stone mason who had recently completed the monument to Colonel Light in the eponymous square: not surprisingly, he proposed a stone bridge—an imposing arch spanning 60 feet. Lewis started work in March 1845 but soon encountered problems with the banks collapsing around the work site in the winter rain. He abandoned the contract after six months, by which stage he had only raised the southern abutment about ten feet. A sketch by Captain Frome shows the extent of the work completed by Lewis, and gives an idea of the scale of the bridge. In the meantime, to provide a crossing, the ford at the site of the Old Chain Bridge was repaired and opened for use.

On 21 November 1845 tenders were called for the completion of the bridge and Robert Bowen took over the contract. He made good progress and on 12 June 1846 the South Australian reported that the 'new City Bridge is now rapidly approaching completion'. Then a big flood in July caused ‘serious damage’ to the structure which delayed completion. On 9 February 1847 the South Australian reported that the arch had been completed and predicted that the bridge ‘will probably be ready for opening
in a couple of months’. In fact, people started walking across it in April. But then rain started at the end of May which delayed completion. The bridge survived floods in June and early July, by which time it seems to have been completed. The Register of 17 July 1847 said ‘its first ordeal has passed through the City Bridge’. But then, on the evening of 22 July 1847 it gave way:

The fate of the new City Bridge was sorrowfully predicted upon the occasion of the first great flood of the present winter, and which occurred soon after its completion a few weeks ago; and the prediction was sadly verified on Thursday night last by the partial prostration of an elliptic arch of solid masonry ... and the utter ruin of a costly specimen of colonial engineering (Register 24 July).

People, however, continued to use it as a crossing, a situation so dangerous that the Colonial Engineer was ordered to blow it up! On 29 September 1846 Frome placed 200 pounds of gunpowder under the crown of the arch but all it did was frighten the cattle grazing on the banks of the Torrens and shatter some windows. Another charge was placed behind one of the abutments the next day and this time achieved ‘the complete prostration of the arch’ (Register 2 October 1847).

Adelaide was now left without a permanent crossing, and so from 1844 until 1856 people just had to get across the Torrens as best they could. Discussion (and argument) went on for years about the materials and location of a new bridge: in the meantime, various temporary solutions were thrown across the river and failed to inspire confidence: ‘The planks forming a crossing-place for foot-passengers at the Ford, are ... partially loose, and swing up and down while the person is crossing over a rapid and deep torrent ...’ (Register 3 October 1849).

In September 1849 the Colonial Engineer, Arthur Freeling, proposed that a footbridge, 338 feet long, be constructed ‘immediately below the Ford’ (Chief Secretary 1849/1678). He also presented his design for a permanent bridge. It consisted of a central arch spanning 120 feet with two side arches spanning 36 feet; the central arch would be of timber but the masonry piers and abutments would be ‘of sufficient strength to bear at a future time the substitution of iron or masonry for the centre arch, should the decay of the timber render such a proceeding hereafter desirable’ (Chief Secretary 1849/1732). He estimated the cost at £25 000 which caused Captain Charles Bagot to leap on his horse and fetch plans for another bridge which had been designed by Francis Duval and John Forsayth (Register 26 September 1849). Forsayth and Duval were architects and civil engineers who had opened their office in King William Street in 1848. Forsayth had been Superintending Engineer on Brunel’s Great Western Railway and was named as Superintending Engineer for the South Australian Colonial Railway which was floated in 1849 (South Australian 24 January 1849).

In the end, no decision was made on either design, but work on Freeling’s new footbridge and repairs to the ford started on 27 March 1850 and were completed on 12 June; new approaches on both banks were completed by 18 December.
Freeling presented another design for a permanent bridge across the Torrens on 18 August 1851 in response to a request from the Lieutenant Governor for a structure ‘not exceeding in cost £6 000, on such site as may be determined most suitable, both as respects security and the public convenience’. Noting the particular engineering challenges of the Torrens, Freeling said that his recommended position ‘is such as to afford the most direct communication between the central portions of North and South Adelaide’ and added the comment: ‘The site is, indeed, that originally marked out by the first Surveyor-General, Col. Light; and appears to be the one most generally approved of by the inhabitants of the City’ (Chief Secretary 1851/2506). Freeling is presumably referring to a crossing about half way between Morphett and King William Streets reached by two roads curving down the river banks—and about where Hardy built his bridge.

In December 1851 John Bentham Neales (well-known businessman and member of the Legislative Council) presented a petition signed by ‘upwards of 100 persons’ that the bridge be built ‘on a line of road … leading from the end of King William-street towards the winding road at the Montefiore, in North Adelaide’ (Register 5 December). Light had placed Government House in a prominent position at the head of King William Street but Dr Chris Durrant points out that there would have been space for a road to leave North Terrace at an oblique angle and follow this route to Light’s crossing point and thence to the bottom end of Jeffcott Street. In the end, the bridge would be placed in a direct line with an extension due north of King William Street. Fortunately Government House itself was build a little to the east which would allow a piece of the Government Domain to be taken for the new road to the City Bridge.

The bridge that Freeling was proposing was a series of arches—similar to the Pont d’Avignon but made of timber—seven in all, each spanning 58 feet 4 inches, extending across the Torrens valley for a total distance of 520 feet. In order to keep the superstructure of the bridge out of harm’s way, Freeling would use ‘the bow string principle’ which places the arch above the deck and roadway, rather than beneath it (Chief Secretary 1851/2506). The bridge was actually designed by Freeling’s Clerk of Works, Bennett Hays.

Still unable to make a decision, the Legislative Council placed an advertisement in the Government Gazette of 4 September 1851 ‘inviting plans, specifications, and estimates for public works. One is for the erection of a bridge over the Torrens, to connect North and South Adelaide, the other for providing suitable accommodation for the Legislative Council’. In December, a Select Committee recommended that Edmund Wright’s design for a stone arch bridge spanning 90 feet be adopted (Adelaide Observer 13 December 1851). While the Council was in recess, the plans along with several models were put on display but there was no commitment to construction.

In April early rains continued to undermine the banks of the river and, according to Hays, Wright’s design was no longer suitable (Hays 1865). Portions of the footbridge were carried away and planks had to be laid to provide temporary crossings. At a
meeting of the Central Road Board on 12 July 1852, options were being considered for the South Australian Company’s Bridge at Hackney, and Freeling remarked (Register 15 July):

... nothing could be done till summer time; and as labour would then be very scarce, he thought the best way would be to have an iron bowstring bridge from England. It could readily be made there if a section of the river were sent home; the expense would be trifling, and it could be put up with very little labour. He had seen drawings of such bridges made by Fox, Henderson, and Co.

Hershell Babbage, an experienced engineer and now in charge of the Government Assay Office, had a different view and on 3 August 1852 wrote to the Governor forwarding a design for a wooden bow string girder bridge ‘which might be readily executed here ... and made almost entirely of baltic deals thus obviating the alleged difficulty of procuring seasoned timber in this country suitable for bridge building’. The design had been entered in the previous year’s competition by John Southam, an Old Colonist and inveterate inventor, and Babbage offered to prepare ‘working drawings of a bridge of this class with such modifications as may be suggested by my experience of Italian torrents’ (Chief Secretary 1852/2190). This didn’t please Hays, who added this note to the above correspondence file:

... did my establishment possess but a portion of the apparently abundant strength of the Assay Department, I should have much pleasure in making the same offer as that of the Government Assayer with reference to the preparation of working drawings for its construction.

By March 1853, yet more repairs to the footbridge had been completed, the Register on 9 March remarking:

They consist principally of an elongation of the platform on the northern side, making the extreme length of the compound structure full 220 feet. The addition which has been made is said to be on a new American principle. How far the greater durability of the structure has thus been secured can best be determined by practical engineers and the ‘moving accidents’ of a Torrens ‘flood.’ At any rate the hitherto not ungraceful appearance of the bridge has been sadly marred by this peculiar excrescence. It may also be remarked that the present course of the river gives but too much reason to fear that before the end of another winter the communication between North and South Adelaide will be again interrupted by the further falling in of the north bank.

Responsibility for crossing the Torrens had now passed to the Municipal Council which had been re-established in June the previous year. In April 1853, Henry Peryman, newly appointed as the City Surveyor, presented plans for a stone arch bridge (Register 22 April) which, like the actual bridges before it, failed to survive the floods of criticism which ensued. Chief among the critics was Babbage who wanted the Corporation to ‘judge whether it would be judicious to expend the city funds upon so costly a scheme’ (Register, 21 May).
Finally, it fell to Hays who drew up plans for a wrought-iron bridge of bow-string design resting on stone abutments (Register 27 July 1853):

He proposes to continue the line of King William-street, cutting off a small piece of the western end of the Government Domain, and crossing the river in a direct line about a hundred yards west of the footbridge. ... The advantages offered by this plan are a direct road to the river, an easy descent by means of some trifling cutting and embanking, a more central approach to North Adelaide than has yet been attempted, and a particularly suitable spot for crossing the river. It is proposed to erect stone abutments and groins upon a foundation of piles, for which the banks at that place are said to be well adapted, and to throw across the river a wrought-iron bow-string bridge of about 100 feet span, giving a clear waterway of 10 feet about the highest flood levels. The stonework may be completed during the approaching dry season, and the ironwork, if ordered immediately from England, during the summer following, so that only one more winter need pass without the convenience of a bridge.

The Legislative Council allocated £12 000 for the ‘Bridge over the Torrens’ (later increased to £14 000) and tenders were called for what today we would call the ‘civil works’. The contract was awarded to Richard Custance and Thomas Hinckely and by mid February they were advertising for planks that were ‘wanted immediately’ at the river below Government House. A few weeks later the Register of 4 March 1854 reported that men were working day and night:

Already the 12-feet piles on the southern side are nearly all driven, and preparations are commencing for the laying of the floor, 7 feet below the bed of the river, upon which the stone-work is to rest. This will probably be begun in about a week, and it is confidently expected that the contract will be completed by the end of May, when the work will stand still till after winter. It will then be ready, with very little further labour, to receive the iron-work, which may be expected about that time from England.

Despite the early start, the work was delayed by flooding and landslips through winter. In September additional funds were allocated by the Government because...
'it was thought desirable to give the bridge a greater elevation than was at first intended. That alteration would not only make it a work of greater beauty, but it would considerably diminish the slope from King William-street' (Register 6 September). In January 1855 a citizen made a good-natured remark about the inconvenience caused by the construction of the embankment which cut across the path to the footbridge. Richard McClure, the contractor (who had replaced Custance as Hinckley's partner following the former's death in July 1854), immediately had steps cut in the banks and built a plank footbridge across the river. The Register praised the public-spirited response: ‘The almost instantaneous and gratuitous accomplishment of this public convenience, and the kind feeling which suggested it, have won golden opinions from the citizens on both sides of the Torrens’ (Register 11 January 1855).

However, the iron work for the bridge was still a long way away, in terms of both distance and time. The contractors therefore designed and built a temporary wooden structure, only 12 feet wide (just enough for a single dray), which was opened on 26 April 1855.

The connection to North Adelaide still had to be resolved. By now, O’Connell Street (rather than Jeffcott Street) had become the principal thoroughfare in North Adelaide but a direct path from the river was obstructed by a block of 24 Town Acres (701-725). The Municipal Council wanted to take the road to the east to avoid

![The original Adelaide City Bridge, painted by Emily Sophia Clegg in 1876 showing both the iron bow string bridge and the temporary wooden bridge with its deck supported by diagonal traces. State Library of South Australia B 42972](http://example.com/Adelaide-Bridge-Painting.jpg)
the expense of purchasing land, while the Governor wanted to continue the road from the bridge in a more or less direct line north using John and Poole Streets; this required the purchase of part of four Town Acres (Register 30 May 1856). Given that the Government would pay for it, this was an offer the Municipal Council didn't refuse (Register 3 June). The iron work arrived on the Albermarle in February 1856 but it took until April before it had all been transported to the northern bank. The temporary bridge was closed on 22 April—the same day that the railway to the Port opened—and the City Bridge was finally completed on 2 October 1856. It opened sometime thereafter—surprisingly without ceremony, given the bunfights normally associated with these occasions—and in January 1857 it was handed over to the Municipal Council which was now responsible for its future care and maintenance. And now the city was graced with not one but two new bridges. When the decision was made to raise the height of the City Bridge to make it level with the northern bank, the southern approach from North Terrace past Government House had to be made equally high. Work began on this embankment in December 1854 and required the movement of several thousand cubic yards of earth. To avoid dividing off the southern banks by this huge wall of earth, Hays included a small bridgeway ‘to admit of communication with the police paddock’. The Register of 6 January 1855 described the bridge: ‘Two massive parallel stone walls intersect this road

The City Bridge photographed by Townsend Duryea circa 1866 There is a reasonable amount of water in the river but the banks are bare of vegetation. Note also the height of the bank on the North Adelaide side at left
State Library of South Australia B 73319/5

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embankment, and a platform thrown across the opening, leaves the requisite space for a cross road from east to west beneath the approach.’ The passageway can be clearly seen in the famous 1876 engraving by Samuel Calvert of Albert Cooke’s birdseye view of Adelaide. Some thirty years later it provided a convenient path under King William Road for the railway line to the Jubilee Exhibition grounds (Register supplement 7 February 1887) and the ‘cattle arch’ has entered folklore as one of Adelaide’s many purported ‘tunnels’.

The City Bridge served the City until the early 1870s when concerns began to be expressed that it was too narrow to carry the growing volume of traffic. A new wider bridge was built on the same stone abutments and opened on 26 April 1877. It was called the Adelaide Bridge and the approach road over Hays’ bridge was renamed King William Road (Register 26 April 1877). However, some of the pressure had been taken off the City Bridge when the Victoria Bridge, built over the ruins of Lewis’s masonry arch, was opened in June 1870 (Register 22 June). A third iron bridge to the east was opened in May 1879 (Register 8 May); named the Albert Bridge it has undergone refurbishment over the decades and still carries its share of traffic 136 years later. These three sturdy iron bridges had finally bonded together the two halves of the City.

Portion of a bird’s eye view of Adelaide, taken from a point on Pennington Terrace North Adelaide. Engraving by Samuel Calvert from Albert Cooke’s drawing. Supplement to The Illustrated Australian news published in Melbourne July 1876
State Library of South Australia Periodicals Collection
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