

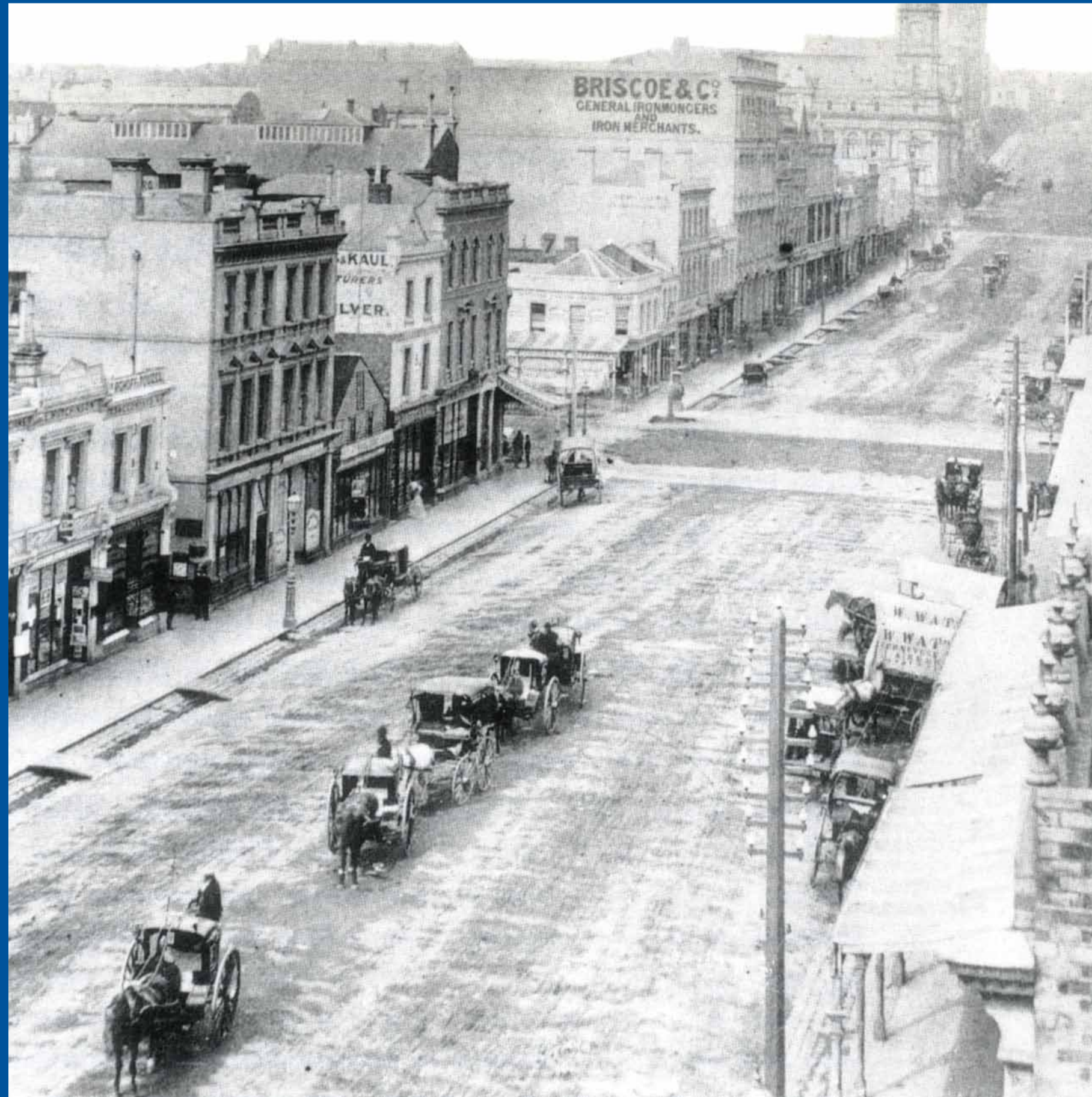
# Development of Melbourne's Sewerage System

## HISTORY

For all the grandeur that was 'Marvellous Melbourne' in the 1880s, the city was nicknamed 'Smellbourne', and for good reason.

In the early days of settlement, most waste water from houses and businesses would simply drain into street channels formed at either side of most streets, which were usually lined with bluestone pitchers. Usually, bridges or gratings would span the drains to allow pedestrians to cross them safely.

Most street channels never went underground. They discharged instead into nearby watercourses and in turn, into the Yarra. The natural watercourses became open sewers.



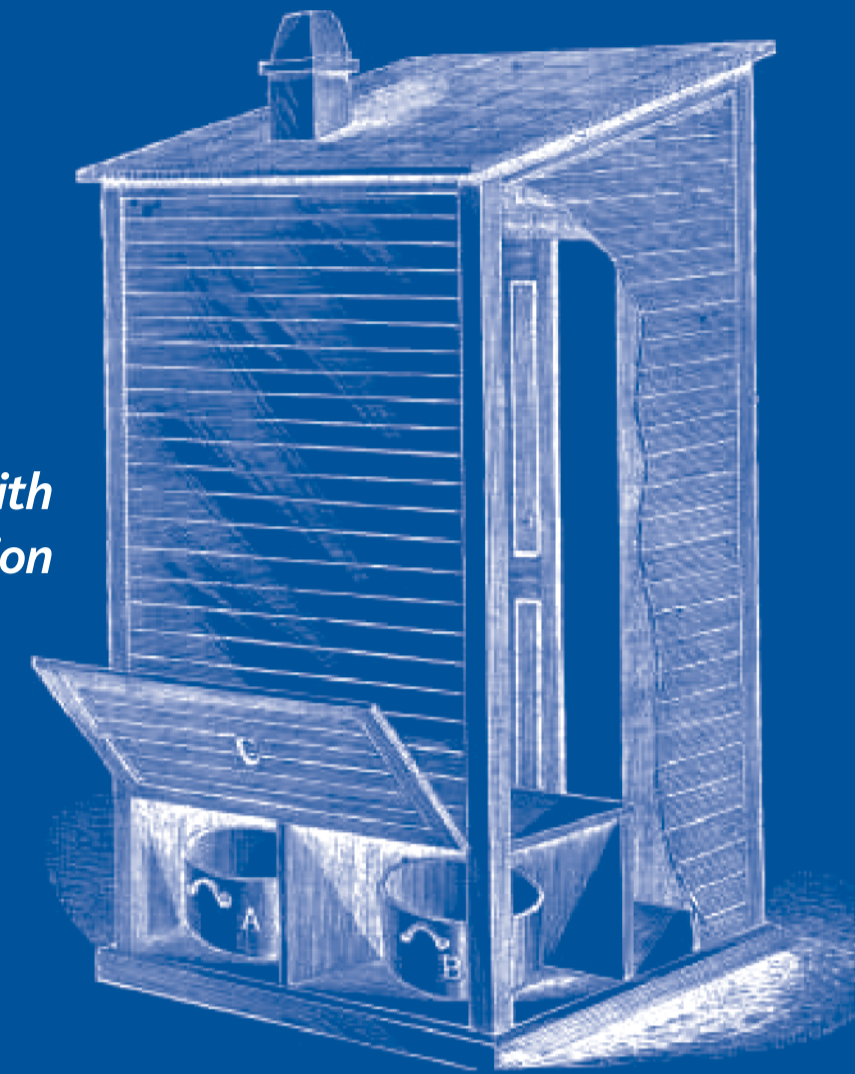
Collins Street

## EARLY SYSTEMS

### Pit Toilets

The pit toilet was the first attempt to cope with these problems. Making a pit toilet was simple and involved putting a seat over a hole dug in the ground. The most important part of building a pit toilet was to make sure that you had a lid to keep the smells in and the flies out. When the hole was full, all you had to do was dig another one – the deeper the better.

Thunderbox with buckets for collection



### Thunderboxes

Before the 1890s, a toilet was a bucket or pan in a wooden shed. This is commonly known as a pan closet toilet or a thunderbox

Thunderboxes were emptied about once a week by a nightman (so called because he collected the pans at night). The nightman would reach through a small door in the back of the shed for the pan. He would then empty the pan into his own bucket and return it to the closet.

Because the wastes stayed in a pan for up to a week, thunderboxes were very smelly. They were built as far from the house as possible and usually backed on to a lane.

The waste, called nightsoil was carted to an area outside Melbourne where it was often used as fertiliser by market gardeners.

By the late 1880s Melbourne faced a big pollution problem. The city's waste disposal habits were damaging our rivers, creeks and bays, making them unhygienic and unsightly. Epidemics of the fatal typhoid became frequent, and one in four children did not survive past their second year.



Nightsoil collection waggon



Burying nightsoil at one of the Board's depots

## ROYAL COMMISSION

The origins of Melbourne's sewage system can be traced to the findings of an 1888 Royal Commission into Melbourne's public health.

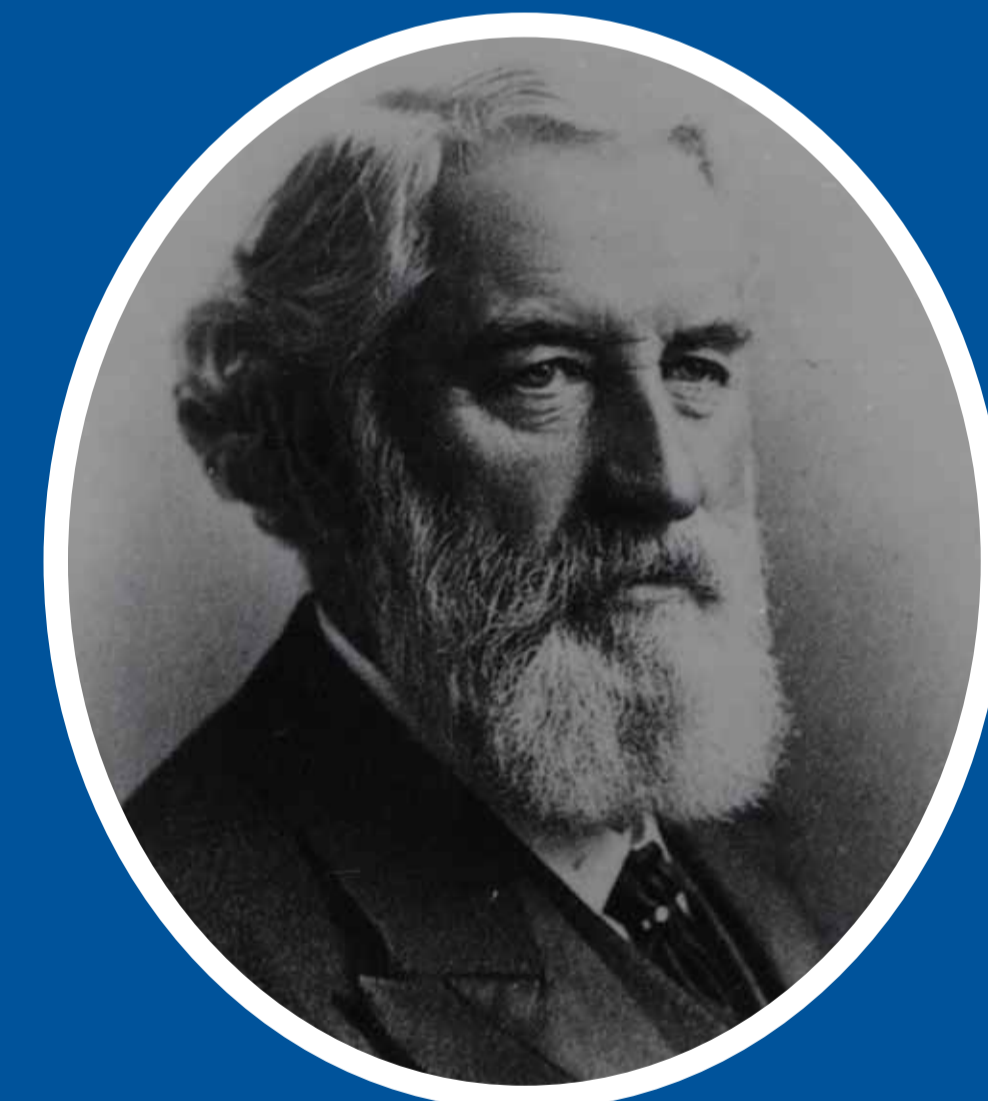
The Commission looked briefly at alternatives to water-borne systems devised by local engineers, including William Thwaites who would later assume the role of first Engineer in Chief of the Melbourne and Metropolitan Board of Works.

James Mansergh, an eminent British sanitary engineer asked by the Victorian Government in 1889 to visit and recommend the most appropriate plan. Mansergh advocated a water-borne sewerage system, which local engineers had long asked for too, but the Government listened to Mansergh.

The Royal commission recommended a sewerage system - a system of pipes, sewers and drains that are used to carry sewage from houses and factories to a sewage treatment plant - to be built.

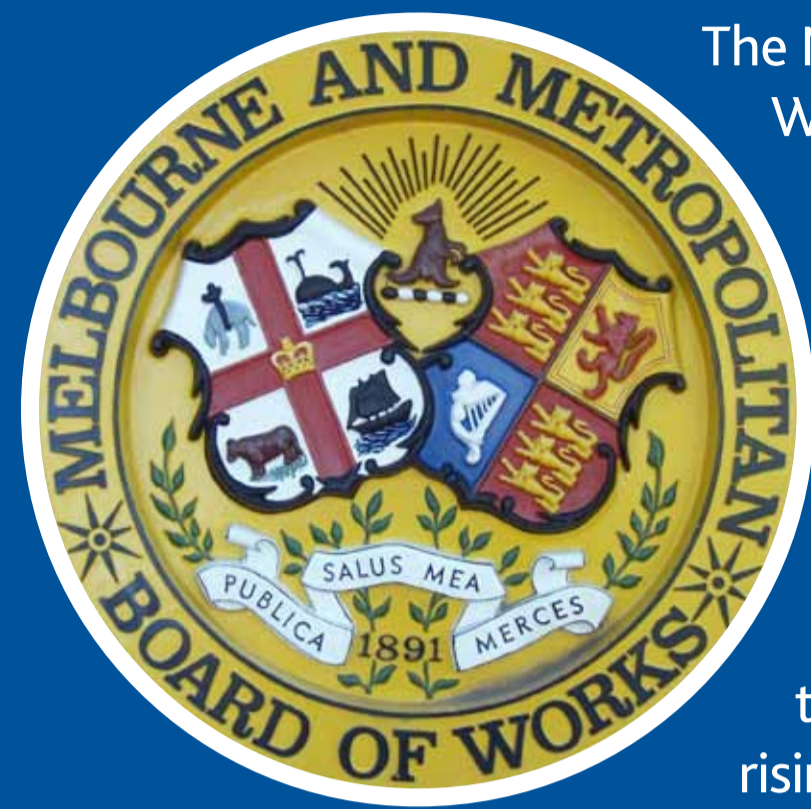
Importantly, the commission also supported the establishment of a Board of Works, which would have the authority to build sewers and run Melbourne's water supply.

Meanwhile, the methods of nightsoil disposal remained unchanged in their essentials into the 1920s



James Mansergh

# Melbourne and Metropolitan Board of Works



The Melbourne and Metropolitan Board of Works (MMBW) was created, largely in the image of its London namesake, and began its work in 1891.

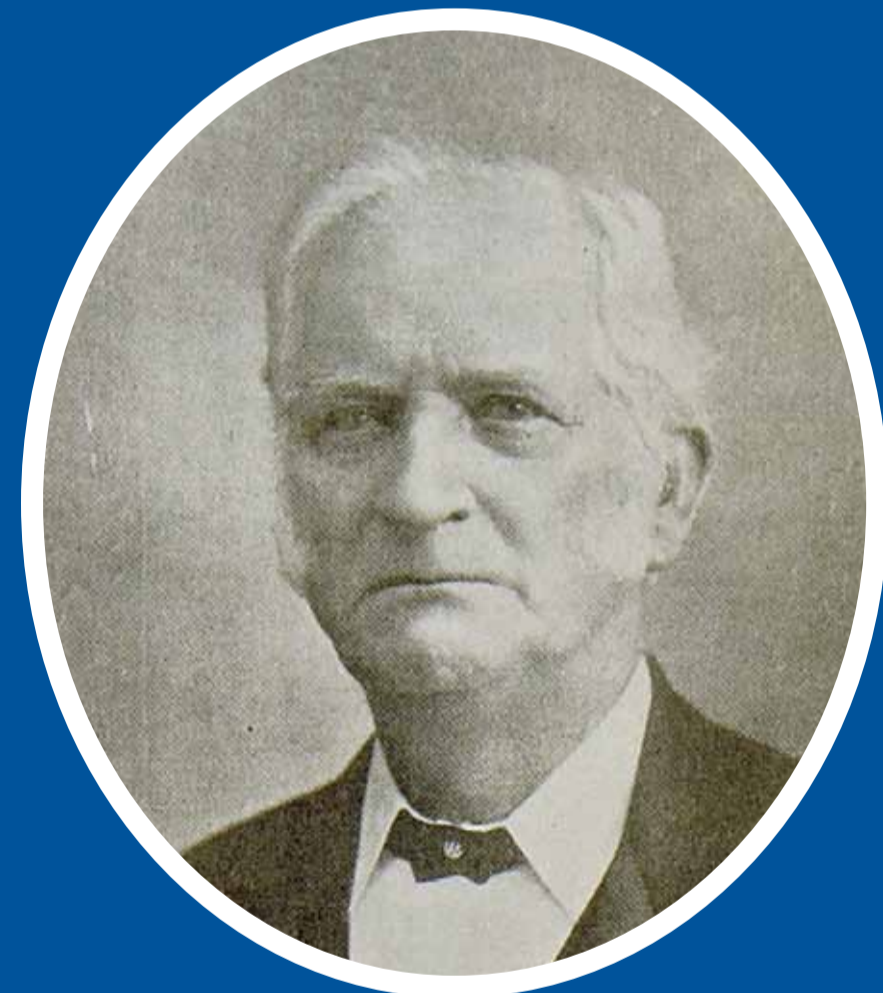
It immediately began plans to build an underground sewerage system linked to a pumping station at Spotswood, located on the western banks of the mouth of the Yarra River. The sewage flowed by gravity to Spotswood, where it was then pumped via rising mains to the Main Outfall Sewer in Brooklyn from where it would then gravitate to the Metropolitan Sewage Farm (today known as the Western Treatment Plant).

The Board comprised thirty nine unpaid Commissioners, all drawn from Melbourne and Metropolitan Councils, and a full-time elected Chairman.

The first Board meeting was held 3:00pm on 18th March, 1891.

E.G. Fitzgibbon became the Board's first Chairman.

William Thwaites was appointed first Engineer-in-Chief of the MMBW. Dedicated, hard working and a master of facts and figures, he would prove the right choice for the over-due and monumental task of planning and constructing the sewerage system for Melbourne.

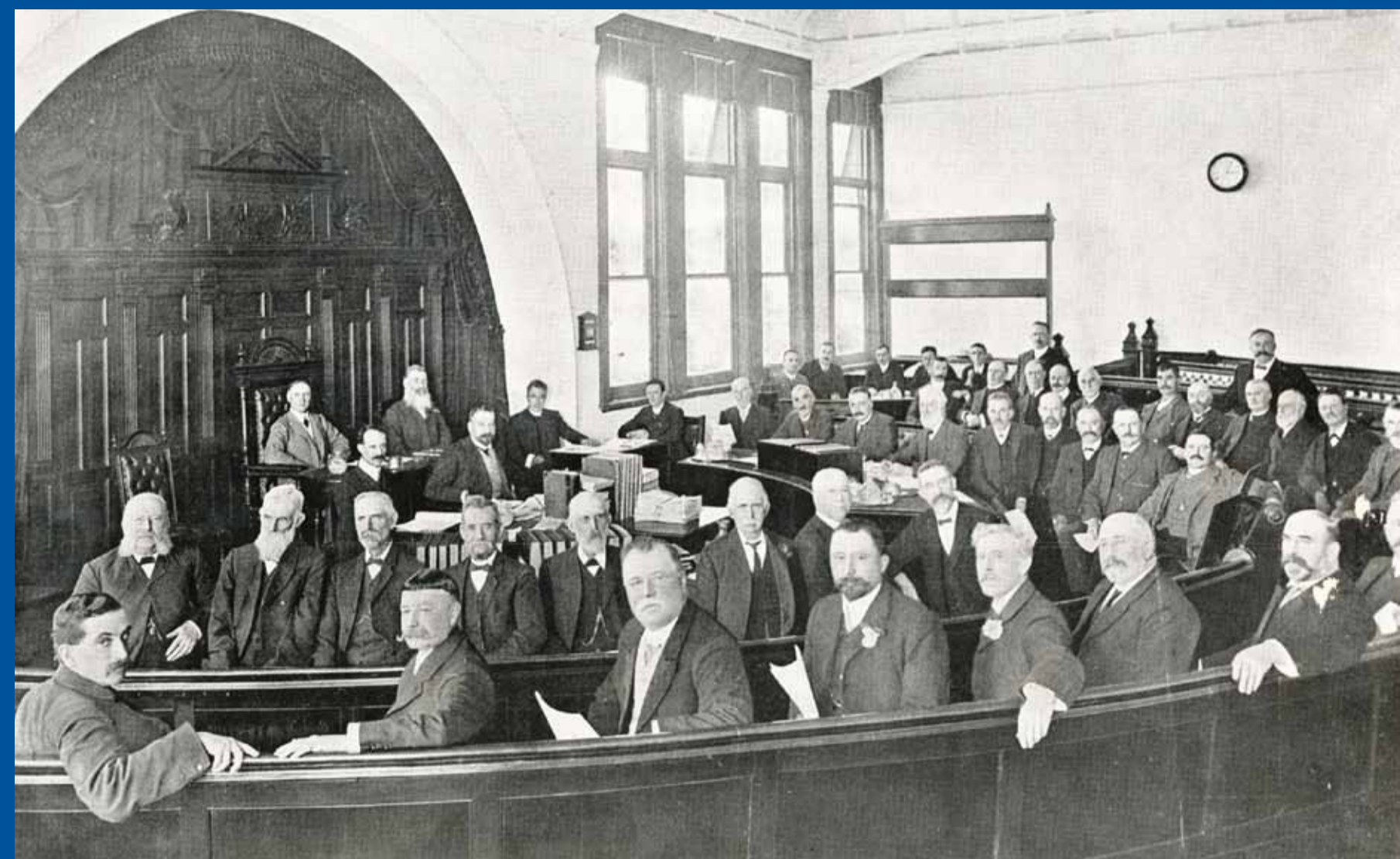


*E. G. Fitzgibbon*



*William Thwaites*

Thwaites immediately analysed the schemes that had been submitted by Mansergh and proceeded to convince the MMBW to abandon Mansergh's recommended scheme and to adopt an alternative, simpler scheme that in all essential aspects was identical to the scheme he had proposed to the 1889 Sanitary Commission.



*A board meeting in 1906. Most commissioners are of mature years. The Boardroom was 60 feet long by 29 feet wide and there was accommodation for both the press and the public.*

Thwaites's changes not only led to lower capital and operating costs but also removed a design fault in Mansergh's scheme that would have led to embarrassing blockages.

Over time, the M.M.B.W. subsumed water authorities in surrounding areas which were progressively swallowed up in Melbourne's urban sprawl.



*Site of Spotswood Pumping Station - 1893*



*Tunnel shield in compressed air under Port Melbourne. Hobson's Bay Main - 1893*



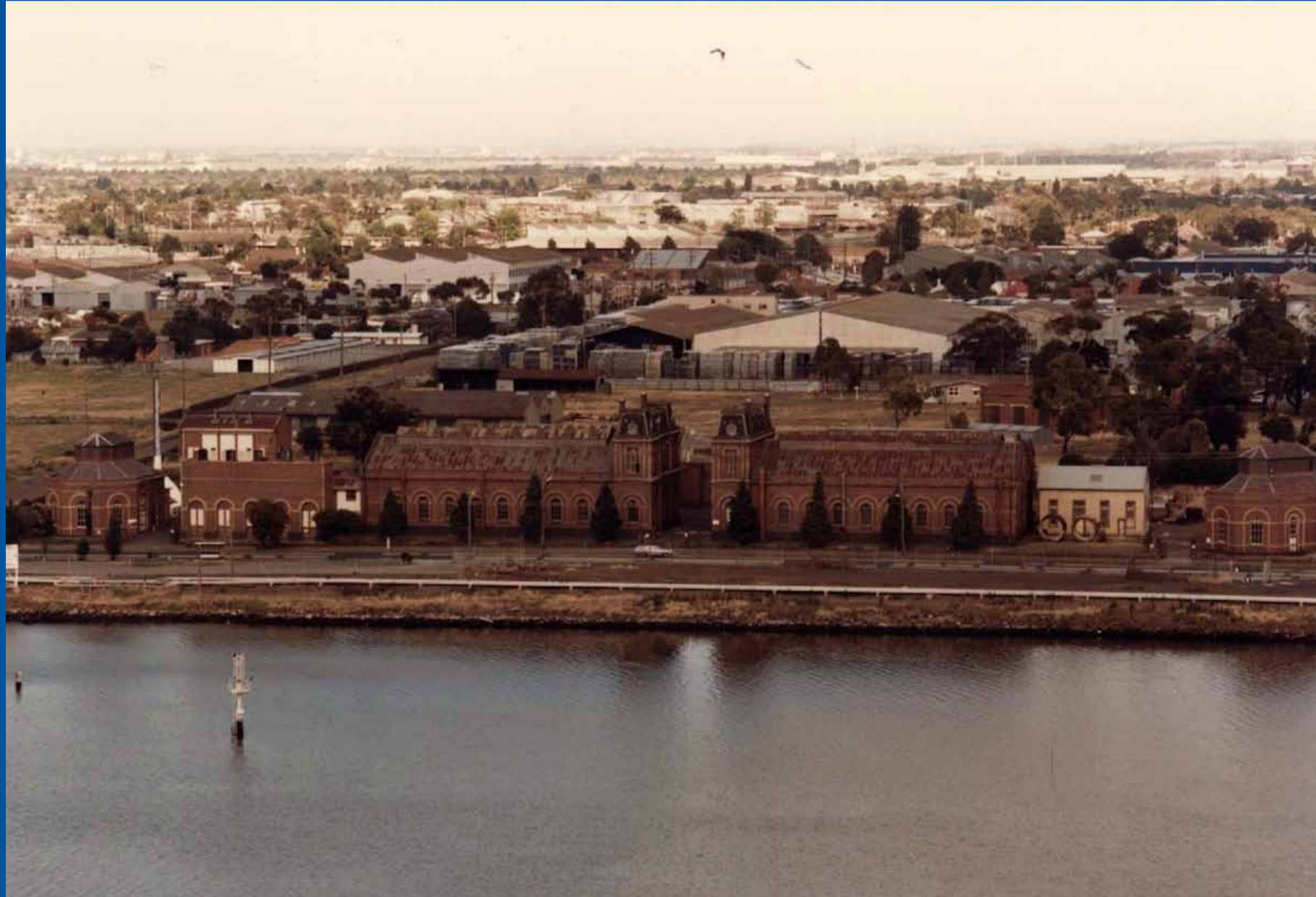
*Inspector conducting hydrostatic testing on new house connections*

# The birth of Melbourne's sewerage systems

## SPOTSWOOD (SPOTTISWOODE) PUMPING STATION

Spotswood Pumping Station built to pump Melbourne's sewage to Werribee, was finished in 1897.

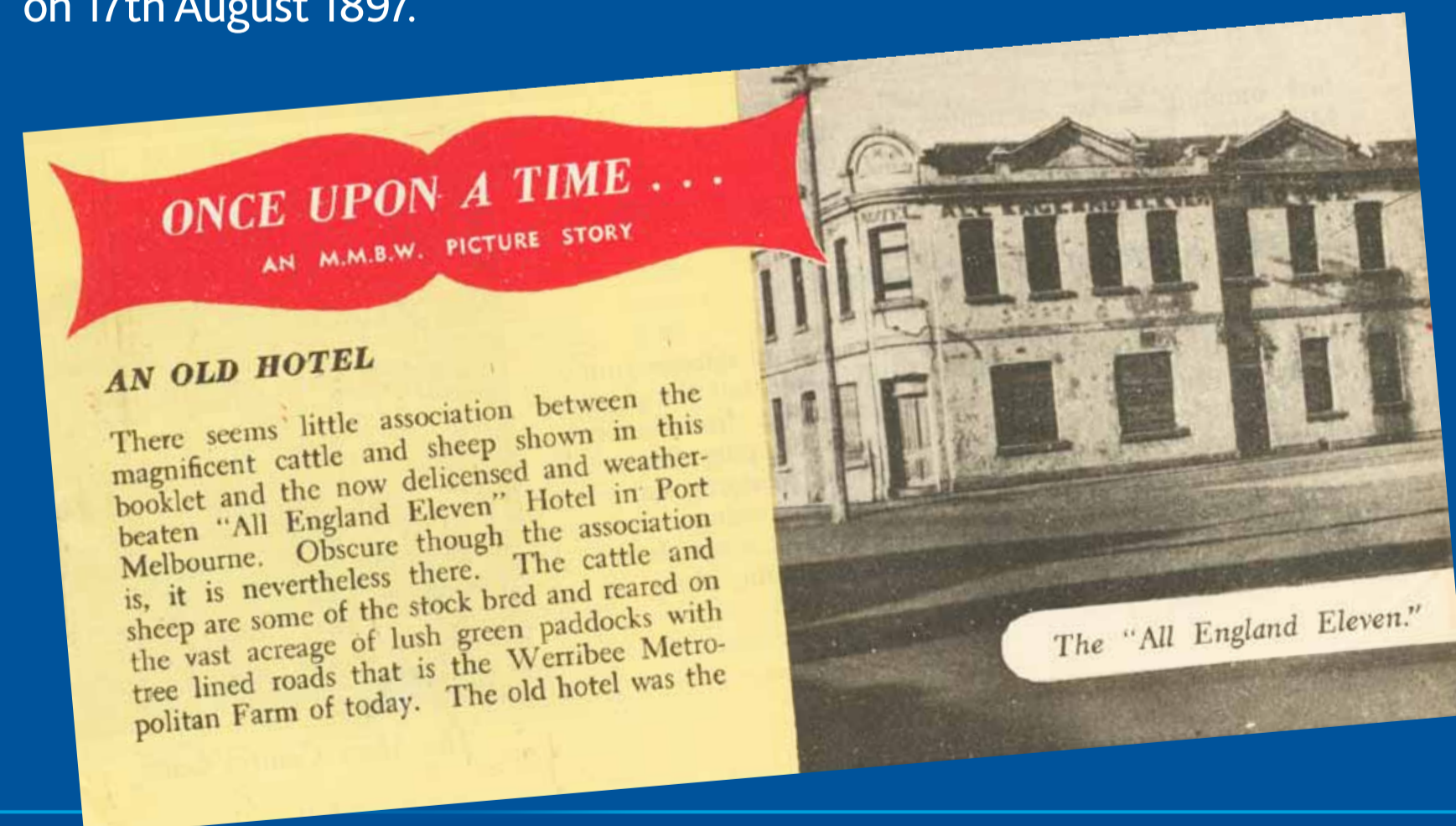
At the pumping station, steam engines (later replaced by electrical ones) worked to pump the sewage up a rising main to join the major sewer outfall at the head of the rising mains near Millers Road at Brooklyn. The outfall sewer then carried the sewage to the Metropolitan Sewage Farm (today known as Western Treatment Plant) where it was purified and discharged into the sea.



Spotswood Pumping Station was replaced by the Brooklyn Pumping Station in the mid 1960s and today is part of the Scienceworks complex managed by Museum Victoria.

## ALL ENGLAND ELEVEN HOTEL

All England Eleven Hotel (which formerly stood at the corner of Rouse and Princes Streets, Port Melbourne) was the first property to be connected on 17th August 1897.

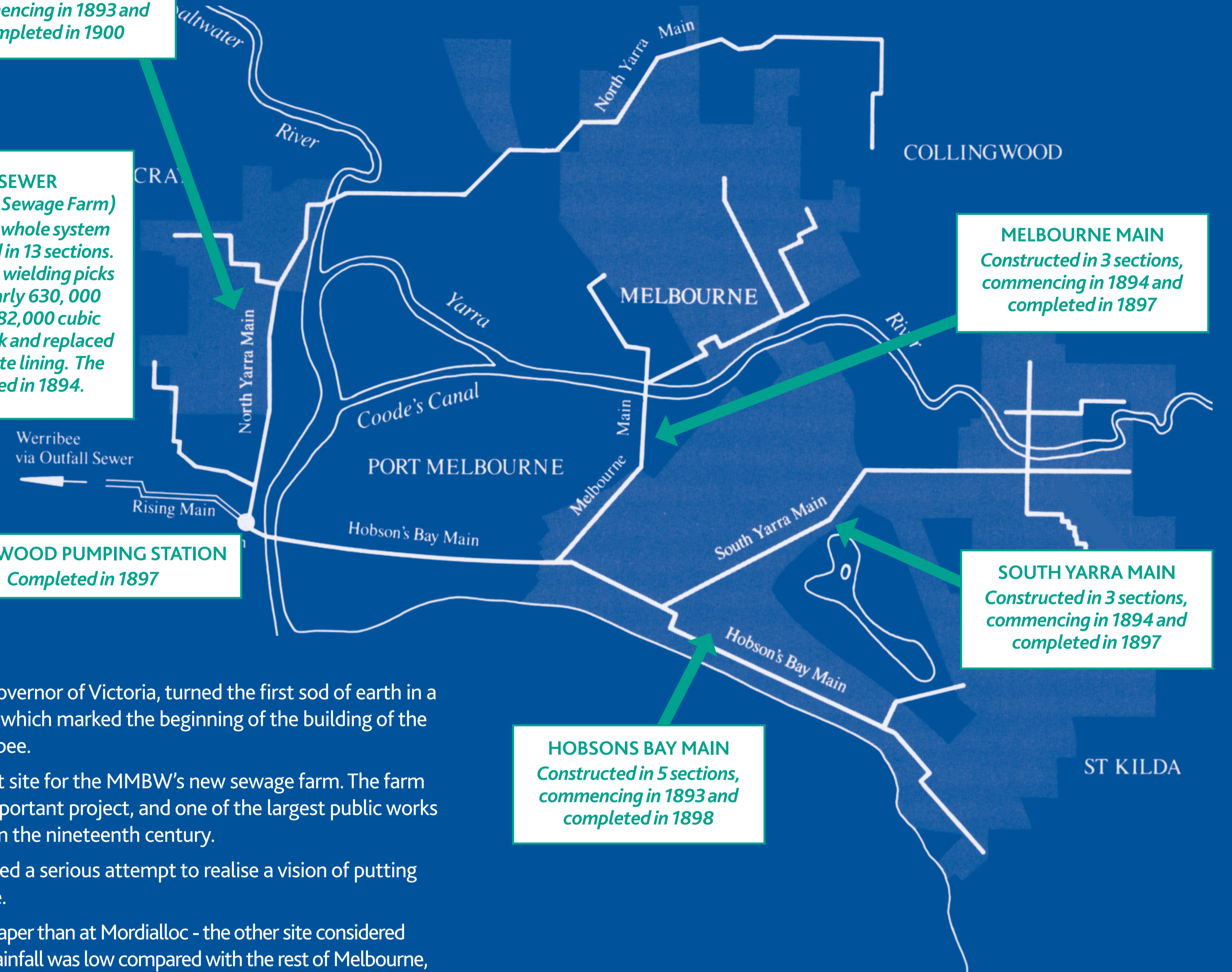


**NORTH YARRA MAIN**  
Constructed in 8 sections,  
commencing in 1893 and  
completed in 1900

**MAIN OUTFALL SEWER**  
(Spotswood to Werribee Sewage Farm)  
The largest sewer in the whole system  
at the time. Constructed in 13 sections.  
Over 1300 hundred men wielding picks  
and shovels moved nearly 630,000  
cubic yards (approx. 482,000 cubic  
metres) of earth and rock and replaced  
it with brick and concrete lining. The  
project was completed in 1894.

**SPOTSWOOD PUMPING STATION**  
Completed in 1897

THE SEWERAGE SYSTEM SHOWING THE MAIN SEWERS AND THE PUMPING STATION AT SPOTSWOOD. THE SHADED AREAS HAD BEEN CONNECTED TO THE SEWERS BY 1900.



**MELBOURNE MAIN**  
Constructed in 3 sections,  
commencing in 1894 and  
completed in 1897

**SOUTH YARRA MAIN**  
Constructed in 3 sections,  
commencing in 1894 and  
completed in 1897

**HOBSONS BAY MAIN**  
Constructed in 5 sections,  
commencing in 1893 and  
completed in 1898

## WERRIBEE FARM

The Earl of Hopetoun, Governor of Victoria, turned the first sod of earth in a ceremony on May 1892, which marked the beginning of the building of the outfall sewer near Werribee.

Werribee was the perfect site for the MMBW's new sewage farm. The farm was the Board's most important project, and one of the largest public works undertaken in Australia in the nineteenth century.

Importantly, it represented a serious attempt to realise a vision of putting wastes to productive use.

Land at Werribee was cheaper than at Mordialloc - the other site considered originally by Mansergh. Rainfall was low compared with the rest of Melbourne, which meant the land would adapt well to irrigation. Werribee was also 9 miles (14.4 KM) away from the nearest boundary of the metropolitan district (Williamstown), and 24 miles (38.6 KM) away from the influential and well-to-do suburb of Brighton.

The Chirside family sold 8,857 acres (3.2 hectares) to the Board for 17 pounds per acre. However, the early years of operation would see the Farm expand to cope with population growth.

An additional 2,850 acres were purchased between 1912 and 1918, 10,980 acres in the 1920s, and 4,170 acres in the 1940s

## OTHER INTERESTING FACTS:

- On 5th February 1898, another ceremony marked the official connection of Melbourne to the new sewerage system.
- The last three pan closet toilets in Frankston were removed in April 1991 and hailed as a small milestone in the city's history.