



Stewart Memorial Fountain Heritage Trail



Kelvingrove Park



Between 1852 and 1854, the City purchased 66 acres of land forming Kelvingrove and Woodlands Estates for the sum of £77,945 to create an area which is now known as Kelvingrove Park.

The Park was created in the then rapidly growing West End of the city for the recreation and amusement of the citizens of Glasgow. It was one of many Victorian parks created in response to the then appalling conditions created by rapid urban growth resulting from the industrial revolution.

Kelvingrove Park was laid out between 1852 and 1867 it is commonly recognised as the first purpose designed and constructed park in Scotland. This new park was intended to be middle class in its aspirations, functions and surroundings, and the pursuits of its visitors altogether more genteel. It was originally known as 'The West End Park'.

The layout of Kelvingrove was designed by Sir Joseph Paxton, architect of Crystal Palace and Glasgow's own Botanic Gardens. His work was received with great enthusiasm by the City's fathers and Paxton received two further commissions – Queens Park in the South of the City and Alexandra Park in the East. Thus the hand of one man, with considerable assistance from the city architect John Carrick, produced the whole suite of Glasgow's early Victorian parks, setting a standard for design and making a mark on the Glasgow townscape as effectively as Frederick Law Olmstead had in New York and Chicago.



An interesting link with New York is the bronze sculpture group in Kelvingrove Park of a Lioness with a Peacock' - Nicolas Cain (1821-94), presented to his native City by John.S. Kennedy of New York. A duplicate of this sculpture stands in Central Park.

Kelvingrove is one of the city's best loved historic parks, an enduring and much loved legacy of urban parks from the Victorian era which has a special place in the hearts and minds of the people of Glasgow. It has twice been used for International Exhibitions in 1888 and 1901 as well as being used for the Scottish National Exhibition in 1911.

The magnificent Art Gallery and Museum, which was completed wildly over budget at a cost of £257,000 is a prominent feature of the park built for the 1901 Exhibition and was subsequently taken over by the City and remains well used to the current day.



*Arguably the centrepiece of the
park and the jewel in the
Kelvingrove crown remains the
magnificent
Stewart Memorial Fountain*



As the engineer of the Loch Katrine scheme, John F. Bateman, said in 1859:

"I leave you a work which I believe will, with very slight attention, remain perfect for ages, which, for the greater part of it, is indestructible as the hills through which it has been carried; a truly Roman work, not executed, like the colossal monuments of the East, by forced labour at the command of an arbitrary Sovereign, but the free will and contributions of a highly civilised and enlightened city and by the free labour of a free country."

The Stewart Memorial Fountain

The Stewart Memorial Fountain was erected by the Water Commissioners in 1872, to commemorate the public services of Robert Stewart of Murdostoun; Glasgow's Lord Provost. Robert Stewart (Lord Provost 1851-1854) was the driving force behind the implementation of a municipally-owned water scheme to provide clean water to Glasgow's rapidly increasing population. Loch Katrine was identified as a suitable and plentiful supply of pure water after objections from various parties, an Act of Parliament authorising the scheme was passed in 1855.



The 1855 scheme was opened by Queen Victoria on 14th October 1859 and was fully operational by 1860. An additional Act was passed in 1885 enabling a creation of a second aqueduct.



Following Robert Stewart's death in 1866 there was a general agreement in the Glasgow Corporation that a memorial should be erected to commemorate the huge contribution this notable man had made to the advancement of the City of Glasgow. It had also been decided that a monument was required to celebrate the completion of the water supply scheme in which Stewart had been so heavily involved. After much discussion it was agreed to combine these two memorials in a single fountain. In the early stages the preference of the Water Commissioners was to locate it in St Enoch's Square, as it would be accessible to more people than in a park in a residential area. However, in the end the case for Kelvingrove Park prevailed, created during Stewart's term of office as convener of the West End Park Committee. Robert Stewart is interred in the magnificent Glasgow Necropolis (Omega Division). His grave is marked by an outstanding Roman Doric monument which displays an Elizabethan upper section with four arches surmounted with a cinerary urn designed by architect James Brown.

An architectural competition was held in the summer of 1870, which attracted 50 entries from architects and sculptors from all parts of Britain. James Sellars won the first competition for the Stewart Memorial Fountain. James Sellars who was unknown became famous overnight. When the result was quashed for cost reasons the competition was re-advertised at half the original outlay. James Sellars drew even greater attention to himself by winning that competition also on 31 January 1871.

The fountain built in granite, sandstone, marble and bronze is often described as a French Gothic fountain, incorporating a reference to Scottish architecture. Although very much an early masterpiece of the young Sellars, substantial credit for this glorious ornate structure must be given to local sculptors John Mossman and James Young.

Their combined artistic talents produced what, as *The Building News* noted at the time, was "the subject of universal admiration."



The fountain is based on themes from Sir Walter Scott's narrative poem 'Lady of the Lake' and its imagery around the romantic folklore associated with the Trossachs, the geographical area in which Loch Katrine is located. The prominent feature of the design is a crown or lantern formed or cross ribs, as in ground arching, which meet over the principal basin. This architectural feature belonged exclusively to Scotland in the 1800s. It did not occur farther south than Newcastle. In Scotland it was only found at St Giles, Edinburgh, King's College, Aberdeen, and in the Tollbooth Steeple a focal point of Glasgow Cross and Calton & Bridgeton Heritage Trails. The Stewart fountain consists of four stepped buttresses grouped around a massive 40ft high central pier rising from the fountain basin 60 feet in diameter. The crowning feature standing atop the central cluster is a gilt bronze statue by Mr John Mossman of the heroine of the poem, Ellen Douglas the 'Lady of the Lake' as she listens for the hunting horn of Fitz-James. The large curved expanses of masonry between the buttresses is enriched with circular panels containing ceramic signs of the zodiac.

Aquarius & Scorpio and a continuous frieze of stylized bull-rushes, symbolic to the shores of Loch Katrine, and into which various gaming scenes have been inserted.



Among the animals depicted here are a heron, a moorhen, a frog and a dog chasing a duck. Perhaps the most distinctive feature of the work, however, is the sheer abundance and range of its references to the natural history of the Trossachs.



A final acknowledgement of the geography of the Trossachs appears in the pedestal of the terminal statue, with the names of the four principal lochs carved in a series of small triangular panels:



It is on the base of the structure, however, that the more important decorating occur facing the four cardinal points are placed what maybe termed ornamental trophies. That on the south, consisting of a lunette – shaped panel, containing a bust in alto – relievo of the late Lord Provost Stewart, and to the right and left of it are the city arms and the arms of Stewart. The trophy to the west contains an allegorical subject representing the source of the water; and is flanked by the shields flanking the other are the arms of ex-provost Galbraith and Bailie Hannan. While that to the east represents the introduction of the water into the city and is flanked by shields containing the arms of Sir Andrew Orr and Bailie Gourlay – To the North, within a panel flanked by



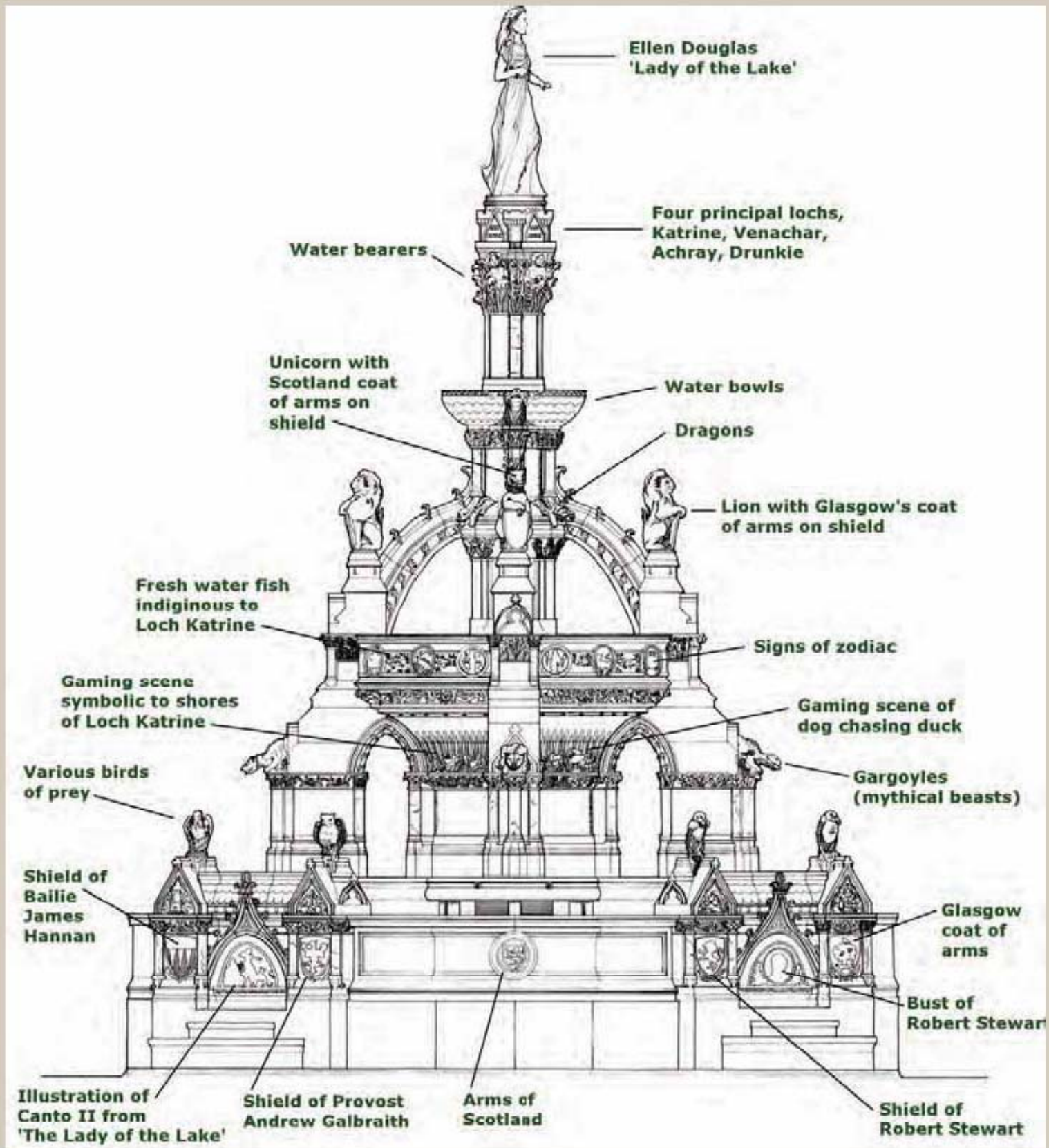
shields in which the city arms and the arms of Stewart are repeated, is the inscription plate bearing that the monument has been erected. The base of the structure is further enriched with circular panels containing the arms of Scotland and by the heraldic lion within the double tressure on the rim of the lowest basin. The fountain originally imparted water to the citizens of Glasgow by means of its four historic drinking fountains surmounted by cast-iron cherubs leaning on paddles.



As citizens partook of the waters they were intuitively aware of the significance of the fountain and all that it celebrated and, indeed, they took part in that celebration by taking the waters. The materials of the structure are of the most substantial character. The large basin and the base of the fountain are of granite. The superstructure is chiefly built of a free stone from the east country, which has been carefully selected for its durability, while coloured marble columns from Cornwall add variety and grace to the general effect.

The surrounding figure of the Lady of The Lake is of Bronze, richly gilded was originally executed by Mr Mossman. Altogether, this beautiful monument forms a most interesting and graceful addition to the attractions of Kelvingrove Park.

**TO COMMEMORATE
THE PUBLIC SERVICES OF
ROBERT STEWART
OF MURDOSTOUN
LORD PROVOST OF THE CITY OF GLASGOW
FROM NOVEMBER, 1851, TO NOVEMBER, 1854,
TO WHOSE UNWEARIED EXERTIONS
THE CITIZENS ARE MAINLY INDEBTED FOR THE ABUNDANT
WATER SUPPLY FROM LOCH KATRINE
THIS FOUNTAIN WAS ERECTED 1872**



THE GLASGOW HERALD THURSDAY, AUGUST 15, 1872 REPORTED ON THE INAUGURATION OF THE LOCH

KATRINE MEMORIAL FOUNTAIN as;

Yesterday the Loch Katrine memorial fountain, which has been erected in the West – End Park (Kelvingrove) to commemorate the services of the late Lord Provost Stewart, and others who were associated with him in carrying out the Loch Katrine water scheme, was publicly inaugurated. The weather was fortunately of a very favourable character, brilliant sunshine prevailing throughout the proceedings and showing the fountain under the most cheerful auspices. A well dressed company of spectators, numbering several thousands assembled on the terraces over-looking the fountain and the band of the 11th Regiment, who were stationed on one of the slopes, played a selection of pieces before the arrival of those who were to take part in the inaugural ceremonial. This addition to the attractions of Kelvingrove Park has been erected in the centre of the floral circle, around which also were crowds of onlookers.

Shortly before two o'clock, the gentlemen who were to assist at the inauguration assembled in Kelvingrove Museum, from which they marched in procession to the fountain, where a platform was erected for accommodation.

The procession, which was preceded by the Town-officers in scarlet uniform, and headed by the Lord Provost, comprised a large number of members of Town Council. A good representation of ex-councillors including ex-Lord Provost John Blackie, jun., as well as several Clyde Trustees, and other gentlemen interested in municipal matters. The fountain being reached.

The Chair was taken by The Lord Provost, who said – Before proceeding to the proper business of the day, I may mention that we have letters of apology from ex-Lord Provosts Sir Andrew Orr and Sir James Lumsden, as also from Mr James Couper and Mr John Frederic Bateman. I shall only ask Mr Watson to read the letter from Mr Bateman, the engineer of the water scheme.



Mr Wm. West Watson, City Chamberlain, accordingly read as follows:-

“George Hotel Glasgow”

12 August, 1872

“My dear Lord Provost,- I have to thank you for the invitation to be present at the inauguration of the beautiful fountain erected in the West End Park in memory of the late Mr. Robt. Stewart. I very much regret that in my previous engagements will prevent my availing myself of so favourable an opportunity of showing the great respect which I entertained for the gentlemen, in testimony of whose worth and services this tribute is raised by the ties that I had of witnessing the unwearied zeal with which, in the face of all difficulties and opposition of many kinds, he steadily promoted the great and beneficial measure with which his name will ever be associated. He was only one of many others who resolutely fought the same fight, but the position he held at the time of the great battle of the Loch Katrine water works enabled him to exercise a larger amount of influence, and to stand out more prominently conspicuous. The great benefit of his exertions and the wisdom and value of the undertaking he so largely assisted in establishing is now acknowledged and appreciated by all; and proud, indeed the citizens of Glasgow may well be of the great work which is due to the enterprise which I was the fortunate instrument to carry out. – Believe me, “My dear Lord Provost,

Yours very faithfully,

“J. F. Bateman.”

It is impossible to overlook the assistance given throughout the whole by those who acted on the various committees.

To the late Bailie Gourlay, Mr James Hannan, Sir Andrew Orr, ex-Lord Provost Galbraith, Mr James (now Bailie) Moir, the late Mr William Murray of Monklands, Mr Wm. M’Adam, Mr Alex. Harvey, Mr Gray, Mr Dreghorn, Mr Scott, and others, the public have been much indebted.

It is worthy of notice that our supply of water from Loch Katrine was first suggested by Professor Macquorn Rankine and Mr John Thomson CE. For the able manner in which the whole scheme was carried out and the works executed,

as well as for its moderate cost when compared with that of other cities, we are indebted to Mr John F. Bateman and those employed under him.

The Lord Provost then said – the memorial fountain now before you, and which I am about to hand over, as Chairman of the Water Commissioners, to the Parks and Galleries Committee, by the hands of their Chairman has been erected to the memory of one who for fourteen years devoted his best energies to the public interests as a member of the Town Council.

For many of these years he acted as a magistrate both of the River and Burgh, and for the usual term as Lord Provost of the city. I could mention several Public Services rendered by Mr Stewart – some of them during times of great popular excitement and disaffection – but it is chiefly for his long and meritorious struggle in connection with, and as the Head of the Committee appointed by the Town Council in procuring a supply of water from Loch Katrine. That this monument is now to be inaugurated (Applause) The work will, I think commend itself to you as one of great architectural beauty. (Hear, hear, and applause.) It was designed by Mr James Sellars, Jun, executed by Mr James Roberston, Builder; and the carving was done by Mr James Young; and to these gentlemen the best thanks of the community are due (Applause.) The figure on the top, representing the Lady of The Lake as she emerged from Ellen's Isle, is by our townsman Mr Mossman, and refers great credit upon him (Renewed applause) It is curious to contrast our present water supply with what is was at the beginning of the present century. If we look back seventy years we find that Glasgow was supplied by Wells, which were supplemented by a large tank or reservoir, formed by the late William Harley, and from which water was sold to the inhabitants at one halfpenny per stoup.





Historical Background

15th - 17th Century

Until the beginning of the 19th century Glasgow's water supply came from the River Clyde which washed its southern boundary, by its tributary streams and from a large number of wells, both public and private. Amongst the earliest recorded is St Ninian's Well in St Tenew St (i.e. the Trongate) in 1433, and the Deanside Well (1530) off Rottenrow in Balmanno St. St Mungo's Spout (1556) was located near the Gallowgate; St Kentigern's Well (1572) was possibly the same well under the saint's proper name.



It was located behind the Saracen's Head Inn. The Town Council minutes of 1574 refer to the Glenhornis Well, complaining that it had become 'fillit up with stanes'. The Trongate Well (1630) was a slated and pumped well –the first mention of a pump well rather than the usual draw well.

A new well was opened in the Stockwellgate in 1638 and the Stinking Vennel had its well in 1655. In 1664 the Council ordained that the Barrasyett Well (at the foot of the Saltmarket) was to be *'heightit twa stanes round about, for preservatioune of childerin falling therin'*.

18th - 19th Century

Around 1730 all the draw wells began to be replaced by pump wells. Despite this, by 1822, the public wells had become so inefficient that it was proposed to tax the showmen at the Glasgow Fair so as to supply the cost of fitting cast-iron pump frames, and by 1834 only 14 wells, out of 30, were in good repair. An 1848 report lists 41 wells, of which 38 were located in the city centre, the east end and south of the river, with only three in the west end (two of which were out of repair).

There were four important Glasgow wells, The twin-spouted **West Port Well**, located in the Trongate (probably the earlier **Trongate**, **St Tenew's** or **St Ninian's Well**), Virginia Street, was the most used of all the city's public wells, and those wanting to draw water could often wait several hours before their turn came. The next most frequently used was **Bell's Wynd Well** in High Street, followed by the **Spout Mouth** in the Calton (perhaps **St Mungo's Spout**) and the **Lady Well** in Ladywell Street, Drygate. Use of the latter was discontinued, for



obvious reasons, when the first graves were dug in the bank of the Necropolis immediately behind it.

Two of the best-known wells were the Pear Tree Well in Kelvingrove Park and the Arne Well in Glasgow Green. The name of the former is doubtful –other forms were Pier Tree Well, Three Tree Well or Pea Tree Well. Its proper name may be indicated by a sketch of the well by Thomas Fairbairn which shows a laburnum or pea tree growing next to it. The Arne Well (arne, an alder tree) was said to supply the best water of all the Glasgow wells and was always in demand for preparing the celebrated Glasgow cold rum punch. The recipe for this required rum, cold water, sugar, lemons and limes. The sugar (one tablespoon to each lemon) was melted with a little water (as cold as possible) in a large bowl. About a dozen lemons were squeezed into the bowl



which was then filled up with more water. This was known as sherbet and the final quality of the punch depended on this stage. Rum was now added (about one to seven) and finally a few limes were cut and squeezed into the mixture.



Urban Squalor

A look at the city's buildings provides evidence of the great wealth which was still being generated as the 19th century gave way to the 20th, but for many industries growth was faltering. The social problems too were mounting. According to the Glasgow Story by the 1820s and 1830s comments were being made on the difficulties being experienced in coping with the very rapid growth of population. What were once elegant squares were getting built up. What were once mansions for a single family were being made down to house a dozen or more.

Public Health and Disease

By the 1840s some of the city's housing conditions were regarded as among the worst in Europe. Overcrowding and a highly mobile population made the city vulnerable to epidemics. Cholera came in lethal waves. Typhus and typhoid struck with depressing regularity in foul housing "backlands" or in dingy lodging houses.

Polluted water supplies, a smog-laden atmosphere and a lack of sunlight provided ripe conditions for chronic illnesses, as well as epidemics. Campaigners persuaded the corporation that intervention was necessary to tackle the worse conditions. A pioneering programme of slum clearance was embarked on under the City Improvement Act of 1866. The town council took the lead in trying to remove the middens and dung heaps which were recognised as a prime source of infection. Yet the problems continued to grow.

The smoke, the inadequate water supply, the polluted burns and rivers, the broken down and overcrowded houses, the filthy streets and closes, all contributed to a serious public health problem. These were the direct consequences of industrialisation and a rapidly growing population.

Typhus fever

Typhus fever is a dangerous, often fatal illness. It is carried by the body louse which lives off the human skin and it thrives in personal and bed clothing which is not washed regularly. Typhus victims suffer fever for about ten days, and then develop a rash over their bodies and limbs after five days.

Cholera

In 1832 and again in 1848, outbreaks of cholera killed thousands of people in Glasgow, with the worst areas being those with the poorest water supply. The 1848 outbreak led directly to the move of Glasgow University from the polluted High Street to the leafy suburbs of Gilmorehill and also provided the inspiration for a clean water supply from Loch Katrine.

Cholera is a disease which is carried in water. People catch cholera by eating or drinking food or water tainted with the excreta of a cholera victim. It can spread much further and much quicker than typhus and relapsing fever, particularly where the water supply is poor and there is no proper system of sewage disposal.



Industry and Pollution

As industrialisation built up in the city people were aware of the unpleasant effects of the increase in smoke from furnaces and other industrial processes. In the 1820s the city did get power to regulate the type of furnace used in factories, but this was only done if there was a complaint. In 1850 a Smoke Abatement Committee was set up who appointed an inspector who encouraged factory owners to use efficient furnaces and chimneys. The development of Glasgow's parks and green spaces was the Council's far sighted attempt to reduce the effects of pollution, effectively using parks as a 'green lung' to provide a healthy environment for the population to walk, play and experience passive recreation. Within 50 years Glasgow was again recognised as 'the dear green place' – a reputation it holds to this day.

Increase in Population



In the first half of the 19th century, Ireland was a predominately rural society. By 1841 the population had burgeoned to over 8 million (around twice as many people as live in Ireland today). There was little manual work and it is estimated that as many as three quarters of men did not have regular employment. Between 1815 and 1845, over 1 million Irish, emigrated, mostly to North America.

The situation became critical in 1845 when an airborne fungus devastated the potato crop. Potatoes were the stable diet of the population and the failure of the potato harvest caused widespread famine, starvation

and death. The famine lasted for six years during which time it is estimated that 1 million Irish emigrated and 2.5 million died of starvation.

While North America was the principle destination of Irish immigrants, some of the poorest headed towards Scotland and England. Between 1790 and 1850, over 300,000 Irish men, women and children arrived in Scotland.





Glasgow's need for an abundant water supply

In the early years Glasgow's water needs were easily satisfied by the River Clyde which washed its southern boundary, by its tributary streams and by the city's wells.

However, even before the population explosion of the 19th century made the problem acute, early attempts were made to improve the supply. The first indication of the Town Council's interest was in 1574; thereafter references to it were frequent, being mainly concerned with the repair and maintenance of the existing facilities.

In 1636 we first hear of piped water, for there was a suggestion 'to set up pipes or conduits for conveying water to any place in the burgh', although there is no evidence of any action being taken. One reason for particular anxiety was the almost complete lack of water for fire-fighting – two great fires in 1601 and 1652, which had raged unimpeded through Glasgow's wooden houses, destroyed large areas of the city. Towards the end of the 18th century various attempts were made to augment the supply. In 1775 an engineer was appointed to search for fountains, springs and water of good quality in the contiguity of the city'. Another one in 1788 found only two new sources worthy of consideration, the Garngad Burn (supplemented by the Monkland Canal) and the Forth and Clyde Canal. Such was the rapidly growing inadequacy that the citizens became vocal and active, and in 1798 they held a public meeting to voice their complaints. Another survey, in 1800, put before the Town Council five different sources from which might be supplied. A census of 1801 revealed a population of almost 100,000 with only 30 public wells – one for every 3,000 persons. This was obviously quite inadequate – apart from queues and daily disturbances, many of the wells were considered to be unhealthy.

The only consistent attitude shown by the Council over the years towards these various proposals had been apathy, but it was not entirely to blame, for the crux was the inability of the authority to raise the necessary finance. So, private enterprise took over, in the person



of an eminent and philanthropic citizen, William Harley, who owned land in the Blythswood area of the city and constructed a waterworks there. On his estate of Willow Bank, near Charing Cross at the west end of Sauchiehall Street, there were numerous springs

which he channelled into a small reservoir near West Nile Street. The impounded water he then conveyed throughout the city in large barrels, charging half-apenny ($\frac{1}{2}d$). per stoup. It is said that he made a profit of £4,000 each year.

The water was also used to supply his hot and cold public baths as well as four small swimming pools – hence the name Bath Street.



In 1806 came the first serious attempt at introducing a general supply, when a parliamentary Bill was obtained sanctioning the setting up, with the advice of James Watt and Thomas Telford, of the Glasgow Water Works. The intention was to pump water from the Clyde into reservoirs at Dalmarnock (about two miles upriver from the city centre and hence fairly unpolluted). After



filtration, the water would be pumped to reservoirs at Sydney Street, Drygate and Rottenrow, and from there to the city and its suburbs. In 1807, a system came into operation but could only provide a poor supply to the western end of the city. So, in 1808, a second Act was passed which established the Cranstonhill Water Works. Located near Anderston, in the west of the city, it managed for a time to supply a somewhat better service for the area around it. Ominously, however, in less than ten years it had to move, lock, stock, and barrel, to Dalnarnock in the east, a short distance away from its rival, the Glasgow Water Works. The reason for this enforced move was that the combined effluents of an increasing population and industrial activity were turning the river passing through the city into an open sewer.

In 1834 we hear of the very first proposal for a public water supply, when a motion was put before the Town Council that 'it would be for the benefits of the public that the works for supplying the City with water should be conducted by the Corporation'.

The Cranstonhill establishment, proving neither successful nor profitable, was amalgamated with its rival, and the entire piped water supply of the city was now in the hands of the Glasgow Water Works. Although it was now supplying about six million gallons a day (about 26 gallons per person), the situation was deteriorating. The demands on it were now so great that often, to maintain the supply, the necessary filtration was either reduced or omitted so that Glasgow water often resembled sherry in colour. In addition, many parts of the city, particularly the poorer areas, still had no piped water whatsoever. The alternative supply, the 30 public wells, was becoming, like the river, unfit for human consumption and the two cholera outbreaks of 1832 and 1848 had indicated that the health of the city's population, rich as well as poor, depended on a city-wide supply of good water.

The pressing anachronism being obvious – the polluted river and wells – the search for new sources was speeded up, and the Town Council began an eight-year search for better water. Several new sources were suggested by private sponsors – the Earn Water (a tributary of the

White Cart), the North Calder (near Airdrie), the Clyde at Stonebyres and at Hyndford Bridge, the Avon below Stonehouse, the Rowbank and Cowdenmill Burns (near Loch Lebo), Loch Lomond, the Kelvin, and the Endrick and Allander Waters –but none found favour with the Town Council.



The south side of the city still lacked an adequate water supply and in 1848 the Gorbals Gravitation Water Company began to supply Gorbals, Pollokshaws, Govan and places intermediate and adjacent in the counties of Lanark and Renfrew with pure and wholesome water. The source was 350ft up on the lower slopes of the Renfrewshire uplands, about six miles south-west of the city boundaries. The year it started was also the year when the Gorbals became an integral part of the city, and seven years later the Corporation took over the Gorbals Water Works.

‘The benefit to the public’ convinced the Corporation that it should now search out on its own behalf the best possible supply for the city. It appointed John Frederic Bateman, CE, of London and Manchester for the purpose in December 1852, and the following autumn he reported that ‘Loch Katrine seems to stand alone in the field. No other will meet all the requirements of the case.’ But the Bill to sanction Glasgow’s use of Katrine water ran into considerable and surprising opposition.



The Gorbals Water Works opposed it, the ratepayers opposed it, the landlords opposed it; but what brought it to a halt, for the moment, was an unexpected report from Dr Frederick Penny, Professor of Chemistry in the Andersonian University, Glasgow. The soft Katrine water, he said, 'if led and stored in lead pipes and cisterns would be exceedingly hazardous to use and indeed highly poisonous'. It would appear, in the light of latter-day knowledge, that the doctor was a prophet before his time. A bevy of professional gentlemen were found who proved beyond all shadow of scientific doubt that Penny's conclusions were completely without foundation. The opposition to the next attempt to push the Bill through came from an unexpected quarter. The Admiralty claimed that the abstraction of Katrine water by Glasgow Corporation would interfere with the navigation of the Firth of Forth which, it claimed, was the only war port north of the Humber. Recourse was had to the most famous of all engineers, Isambard Kingdom Brunel, who roundly declared that 'the Loch Katrine project is decidedly to be preferred' and the Bill, which had cost the Corporation over £25,000, received the royal assent on 2 July 1855.

At the ceremonial commencement of the Loch Katrine works in May 1856, the Lord Provost was presented with the tools for the job, described as follows: 'The steel of the hammer and the drill are made from Scotch iron, the handle of the hammer from a piece of oak, part of the old Glasgow Bridge, and the box to contain them is made of the oak of the Glasgow Cathedral.' A work which surpassed for the first time the building of great Roman aqueducts took only three years. From Loch Katrine 360ft above the Clyde at Glasgow, the 8ft-diameter aqueduct ran a distance of about 26 miles to the northern outskirts of Glasgow with a fall of 10in in the mile. The water was fed into a service reservoir (62 acres, capacity 548 million gallons) at Mugdock, near Milngavie, and was then distributed throughout the city by 46 miles of pipes.

It was found, however, that because the aqueduct could only deliver 40 million gallons per day (instead of the expected 50 million), an extension of the system was urgently required. This extension took the form of increasing the capacity of Loch Katrine, adding to

it water from Loch Arklet, building a parallel aqueduct and constructing a second reservoir at Craigmaddie, all of which allowed 110 million gallons per day to be drawn. This ambitious addition was completed by 1896. It was not without problems, though: the nature of the underlying rock at Craigmaddie required the digging of a 195ft trench – it took six years to complete and two serious fall-ins of the trench killed 20 navvies.





**As the engineer of the scheme,
John F. Bateman, said in 1859:**

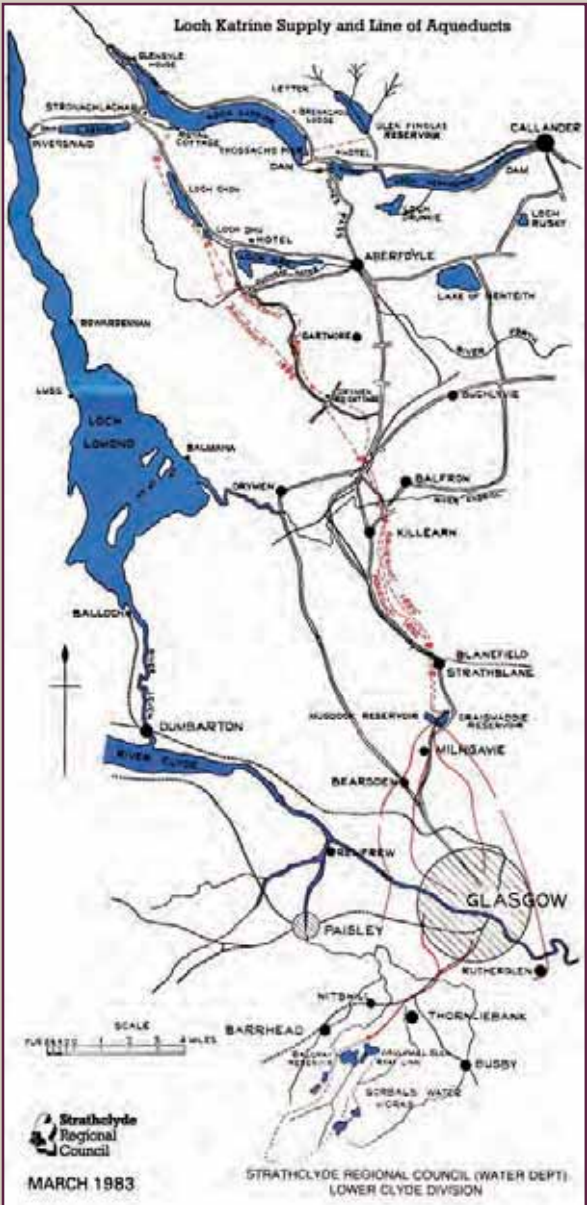
"I leave you a work which I believe will, with very slight attention, remain perfect for ages, which, for the greater part of it, is indestructible as the hills through which it has been carried; a truly Roman work, not executed, like the colossal monuments of the East, by forced labour at the command of an arbitrary Sovereign, but the free will and contributions of a highly civilised and enlightened city and by the free labour of a free country."



1855 – 1926

LOCH KATRINE WATER WORKS

The construction of the Loch Katrine Water Supply Scheme included a masonry dam to raise the level of water in the loch, a 42km (26 mile) aqueduct, a storage reservoir at Milngavie (Mugdock) and the laying of miles of mains and distribution pipes from Milngavie into the city.





Loch Katrine, which derives its name from the Gaelic 'Cateran' meaning a Highland robber, is just under ten miles long and over a mile wide. The loch is located on the southern edge of the Highlands, giving easy access from the central belt. The Loch Katrine Water Works were originally designed on a scale sufficient to supply the city with 50 million gallons of water a-day. The storage provided in the lochs that fed Loch Katrine, was sufficient to ensure the constant supply.

Prior to the water supply being established Loch Katrine flowed into Loch Achray then to Loch Venachar, the River Teith and finally the River Forth. To engineer the scheme Loch Katrine's water level had to be raised and restrict the flow into the adjoining loch.

Loch Arklet and Glen Finglas are each directly connected to Loch Katrine so that all the water taken for use in the City of Glasgow and its surroundings from these catchment areas flows into Loch Katrine before being discharged into the two aqueducts at Royal Cottage and delivered to the two reservoirs at Milngavie (Mugdock and Craigmaddie).

Loch Katrine Dam



The present masonry dam is 73m (240 feet) long, contains 13 sluices and has an overflow weir 21.3m (70 feet) long. The works were constructed under a Parliamentary Act of 1855, the loch being raised to its present level under an Act of Parliament in 1919.



In all, the original water level has been raised three times, amounting to 4.3m (14 feet), and making a total depth of 5.18m (17 feet) available for supply.



At the beginning of the last war, a subsidiary mass concrete dam was constructed some little distance upstream from the existing dam. This was a safeguard against enemy action but also proved extremely useful in day-to-day maintenance of the original dam.



Draw-off Works, the Royal Cottage



Water is drawn from Loch Katrine for supply at the Royal Cottage. Three sluices control the flow of water from the loch to the first aqueduct draw off basin and five sluices control the flow to the second aqueduct draw-off basin.

From the draw-off basins, the water is passed through nylon wire strainers into the aqueducts along which it flows to the service reservoirs at Milngavie.

In the aqueducts themselves, there are also two emergency control sluices, installed in 1939. Access to these is provided by a short tunnel nearby. On the granite tablet built into the pediment over the entrance to the first Aqueduct at Loch Katrine, there is the following inscription:-

GLASGOW CORPORATION WATER WORKS

DESIGNED IN 1853, ROBERT STEWART, LORD
PROVOST

ACT OF PARLIAMENT, 1855

ANDREW ORR, LORD PROVOST

WORK COMMENCED, 1856

WORK COMPLETED, 1859, ANDREW GALBRAITH,
LORD PROVOST

OPENED BY HER MAJESTY QUEEN VICTORIA,

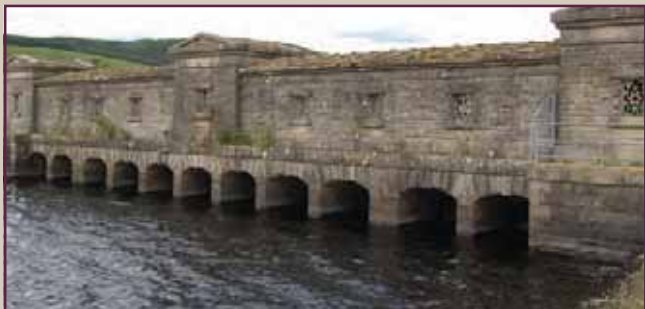
14TH OCTOBER, 1859

JOHN FREDERIC BATEMAN, ENGINEER

Three successive Lord Provosts had their energies devoted to the forwarding of this undertaking, while many who were interested or took an active part in the scheme in its early progress did not live to see its completion. Five out of seven engineers who were engaged in promoting or opposing the scheme died during the four years the works were in progress.

1855 – 1859

Loch Venachar





Located 4 miles east of Callander, Loch Venachar is approximately 4 miles long and has a surface area of about 1½ square miles. Constructed at the same time as the original Loch Katrine Works in 1859, the masonry dam at Loch Venachar contains 11 sluices and 2 salmon ladders for controlling the compensation water supplied to the Firth of Forth via the River Teith.

The catchment areas supplying Loch Venachar includes Loch Drunkie and 9,665 acres in Glen Finglas.

1855 – 1859

Loch Drunkie



The two dams on Loch Drunkie were constructed at the same time as the dam on Loch Venachar. Both dams consist of earth embankments with puddle clay cores. In 1960 major repairs were undertaken to both embankments which had settled considerably. This resulted in their restoration to the original level, and made available again the full storage capacity of the reservoir. This has been the only major item of repair that has been required since the project begun 124 years ago.

1909 – 1914

Loch Arklet



The waters from Loch Arklet are used to augment Loch Katrine and are conveyed to the loch by an aqueduct about 0.8km (half a mile) long which passes under the public road from Stronachlacher to Aberfoyle then are discharged into Loch Katrine.



Work on the Loch Arklet Waterworks commenced in June 1909 and was completed in June 1914.

The dam at Loch Arklet is a concrete structure faced with red sandstone and is 320m (350 yards) long, 10.6m (35 feet) high and 3.4m (11 feet) wide at the top. Material for the dam was ferried up Loch Lomond to Inversnaid Pier and then elevated to the site by aerial ropeway.



1958 – 1965

Glen Finglas

The top water level of the Glen Finglas reservoir is 157m (515 feet) above sea level, and the water is conveyed to Loch Katrine by means of a 2.44m (8 feet) diameter tunnel aqueduct, 3.8km (2 1/3 miles) long beneath Ben A'an.



This was completed and inaugurated by Her Royal Highness, Princess Margaret, on the 23rd October 1958 almost a century to the day after her great-grandmother, Queen Victoria, inaugurated the Loch Katrine supply.



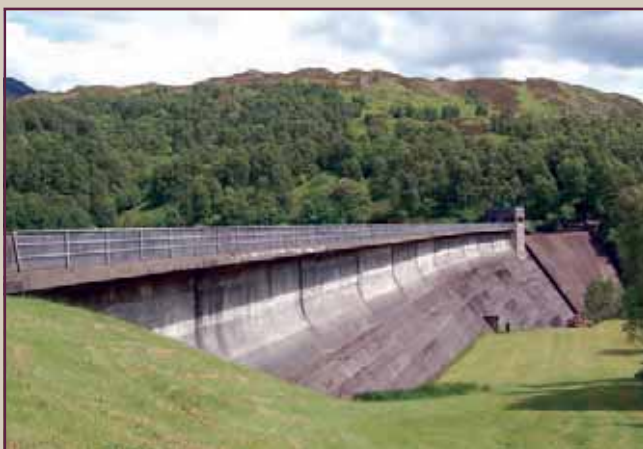
The concrete dam at Glen Finglas is 35m (115 feet) high; about 240m (800 feet) long at crest level was completed in 1965.

It was inaugurated by The Right Honourable William Ross, MBE, MP, Secretary of State for Scotland, 22 September 1965.



The reservoir formed by the dam extends 3.2km (2 miles) up the Glen and has a maximum width of 1km (just over ½ mile).

A turbine generator was installed at the base of the dam; electricity is produced from the energy available in the water drawn from the reservoir. The combined cost of both stages of the Glen Finglas Scheme was £1.3 million.



1855 – 1859

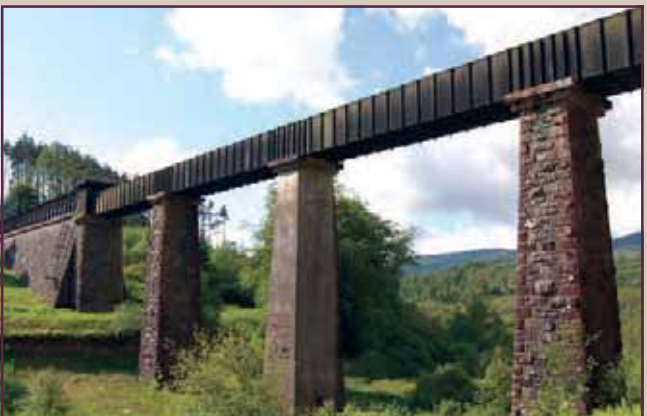
The Loch Katrine Aqueduct

Constructed as part of the works authorised by the 1855 and 1885 Acts respectively, the water from Loch Katrine is discharged into two aqueducts at Royal Cottage.

The first aqueduct and second aqueduct bring water from the draw-off works at Royal Cottage, Loch Katrine to Mugdock and Craigmaddie Reservoirs, Milngavie by gravity.

The first aqueduct, constructed between 1855 and 1859 was designed to carry 50 million gallons of water a day to Glasgow. It has large lengths of cut and cover sections where it followed the ground contour to avoid tunnelling.

The 42km (26 miles) long works which included 22 bridges some of which were 60 – 80 feet in height was completed in the short time of three years by employing vast numbers of men who worked on a large number of simultaneously worked faces.



Eighty tunnels were built along the route, excavated and blasted through soil and hard rock by an army of approximately 3,000 navvies.



There are two principal tunnels; the Loch Katrine Tunnel from Loch Katrine to Frenich at the start of the aqueduct is 2,325 yards long and sits 500 feet below the summit of the hill, and the Mugdock Tunnel at the end of the aqueduct from Blanefield to Milngavie which flows into the Mugdock Reservoir is 2,640 yards long.



Some parts of the aqueduct, such as the cut and cover sections, were lined with masonry and others were lined with brick. After the construction of the second aqueduct, the tunnel invert of the first aqueduct was concreted throughout. Also particular sections were strengthened by lining the roof and/or haunching the walls.

The first aqueduct has an average gradient of about 10 inches per mile. This work required the greatest engineering accuracy and skill and was seen as the engineering marvel of its day. When John Bateman visited the site during the construction of the aqueduct, he stayed at Tigh na Traigh, near Kinlochard on the shore of Loch Ard.



Turf-roofed timber huts were erected along the route during construction to house the navvies who worked on the aqueduct. Some of these navy camps had schools, shops and churches. One, at the head of Loch Chon, was nicknamed “Sebastopol” (the location of a famous battle of the Crimean War) due to the incessant blasting operations that were required to complete a tunnel. Local legend suggests that during this era, the Teapot, a supposed inn which stood beside a hump-back bridge between Kinlochard and the Loch Dhu, sold illicitly distilled whisky, enjoyed a period of prosperity.





Mr James M. Gale, from the Institute of Civil Engineers wrote:

“It is a work indeed which surpasses the greatest of the Nine Famous Aqueducts which fed the City of Rome; and it is one which any city may well be proud.”



1885 – c. 1925

As Glasgow’s population and industries grew, the demand for fresh water continued to increase. It was found that because the aqueduct could only deliver 50 million gallons per day an extension of the system was urgently required. This extension took the form of increasing the capacity of Loch Katrine, building a second aqueduct alongside the existing aqueduct and constructing a second reservoir at Craigmaddie which would increase the capacity of Glasgow’s water supply by an additional 70 million gallons to around 120 million gallons per day. This second aqueduct took almost 20 years to build, starting in 1885. Improvements in tunnelling techniques made it possible to shorten the total length to 37.5 km (23 1/2 miles) by constructing more tunnel sections. The number of bridges and aqueducts necessary to cross streams and valleys was considerably reduced to 8 and the need for pipelines across the Duchray Valley avoided altogether. The average incline of the second viaduct was 1 1/2 inches per mile.

1855 – 1896

Milngavie Reservoirs





The water treatment works at Milngavie consists of two reservoirs, Mugdock and Craigmaddie. Mugdock Reservoir was constructed under an Act of Parliament of 1855 and completed in 1859. Craigmaddie Reservoir, constructed under an Act of Parliament in 1885, took much longer and was not completed until 1896.



The two reservoirs receive the discharge out of the first and second aqueducts respectively from Loch Katrine via stilling basins and measuring pools. When full, the reservoirs contain 5.7 million cubic metres of water which supplies the City of Glasgow and surrounding districts.

The cut-off trench in Craigmaddie Reservoir has a maximum depth of 58.7m and the difficulties involved were so great that two contractors failed before the work was finally completed.

Due to the high quality of water, full chemical treatment is not required. Water flows from the reservoirs through the draw-off towers where chlorine and orthophosphoric acid are added, then into the straining wells where it passes through polyester mesh screens. Lime is also added to the water downstream of the straining wells. Chlorine disinfects the water and orthophosphoric acid and lime help in reducing the lead content. Thereafter, the water is discharged into five 900mm diameter trunk mains from Craigmaddie well and five 900mm diameter trunk mains from Mugdock well from which the distribution network for the Glasgow area is supplied.

1859

INAUGURAL CEREMONY

At a meeting of the Lord Provost, Magistrates, and Council of Glasgow, as Water Commissioners, held in the Council Hall on 21st July, 1859, the Lord Provost announced the gratifying fact, that there was now every reason to believe that these important Works would be completed early in the following month of October, and suggested the propriety of soliciting Her Majesty Queen Victoria to honour the citizens of Glasgow with her presence at an Inaugural Ceremony on the auspicious occasion of opening the Works. This suggestion was no sooner made than it was unanimously and enthusiastically applauded by the meeting, and a special committee was appointed to carry it into effect, to consist of the Lord Provost, Sir Andrew Orr, James Hannan, James Howie Young, and William McAdam, Esquires, Chairmen of Committees. The whole of the City Magistrates were afterwards added to this Committee, with full discretionary powers to make all necessary arrangements.





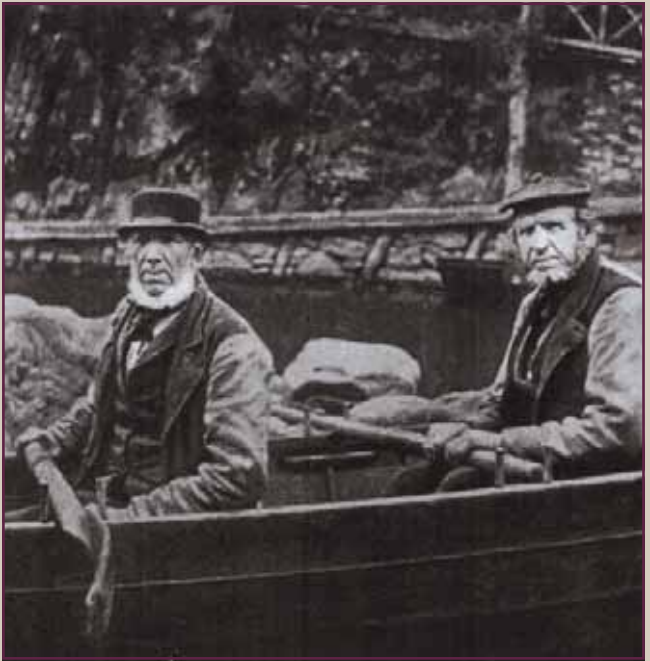
This Committee, having immediately met on the subject of the remit to them, resolved to communicate the resolution of the Commissioners to the City Member, Mr Dalglish, and through him, to Lord Elgin and other influential noblemen and gentlemen, in order to ascertain whether an application to Her Majesty to honour the citizens, as proposed, was likely to be favourably entertained; and if so, to learn the most fitting and suitable time to make the application. Having done so, the Committee were glad to learn that, if the application was made soon after Her Majesty's arrival at Balmoral for her usual autumnal residence there, it would no doubt be graciously received, and the desire of her loyal subjects, the citizens of Glasgow, complied with.

The Committee immediately thereafter took steps to secure that the ceremony should be in all respects worthy of the occasion. The duty of advising as to and superintending the necessary preparations and decorations, was assigned to James Graham, Esq., a member of the Town Council and Master of Works, and John Carrick Esq., the City Architect, - who afterwards received a vote of thanks from the Commissioners for the manner in which they fulfilled the trust reposed in them. The Queen's Own Regiment of Glasgow Yeomanry Cavalry and the Glasgow Volunteer Rifle Corps, at an early period, tendered their services as an escort and guard of honour to Her Majesty; and their offers were at once cordially accepted by the Commissioners.

The Queen, the Prince Consort and the Princess's Alice and Helena came from Holyrood via Callander to the foot of Loch Katrine where they boarded the beautiful little screw steamer "Rob Roy" which conveyed the royal party up Loch Katrine to the landing platform at



Royal Cottage where local legend suggests they were taken ashore by row boat crewed by Peter McGregor and John McDonald who were boatmen on Loch Katrine. Unfortunately the weather was appalling and prevented Her Majesty fully witnessing the unparalleled scenery of this romantic district. Other members of the royal party and Water Commissioners took various routes via Loch Lomond and Aberfoyle to Loch Katrine for the ceremony. The Lord Provost Galbraith and a number of the Commissioners proceeded to the Trossachs the day before the inauguration to make sure that the arrangements had been carried out.



'Peter McGregor and John McDonald boatmen on Loch Katrine, Trossachs for 52 years. They rowed Her Majesty, the late Queen Victoria from the 'Rob Roy' steamer to the Royall Cottage to turn the water on to Glasgow in the year 1859'



THE ROYAL OPENING OF THE LOCH KATRINE WATER WORKS



The Glasgow Courier of 15th October 1859

reported on the event:-

At length we are able to announce that the gigantic works for supplying Glasgow with Loch Katrine water are finished, and that the hand of Queen Victoria has sent the limpid stream on its way to the City of St Mungo.

At five minutes past two the Rob Roy arrived at the platform with its royal freight. Immediately on the vessel being moored, the Lord Provost, followed by the Magistrates, Sir A. Orr, Robert Stewart, Esq. of Omoa, Mr Dreghorn, Mr Bateman, and Mr Burnet, stepped on to the platform, and formed on each, side of the way from the steamer to the dais. On the Queen stepping ashore, leaning on the arm of the Prince Consort, she was received with the most enthusiastic cheers. The salutations of the bystanders were graciously acknowledged by the royal pair. Her Majesty looked exceedingly well, and although not favoured with her usual good weather, appeared to enjoy her trip. The Princess Alice and the Princess Helena accompanied the Queen. The Duke of Newcastle of Newcastle attended as the Secretary in waiting; the ladies in waiting were Lady Churchill and the Hon. Miss Cathcart. General Grey and Lieut. Colonel Ponsonby were other members of the royal suite. The Queen and party passed on to the dais, the band meanwhile playing the National Anthem: after which the Lord Provost and Magistrates formed round to the further side, and Mr



Burnet, the secretary to the Commissioners, read the following address:

TO THE QUEEN'S MOST EXCELLENT MAJESTY

(Extract)

"It is with no ordinary feelings of pride and satisfaction that we are enabled this day to state to your Majesty that we have completed one of the most interesting and difficult works of engineering, and, at the same time, the largest and most comprehensive scheme for the supply of water which has yet been accomplished in your Majesty's dominions.

The deficient and unsatisfactory condition of the water supply, on which so much of the health and comfort of the inhabitants depended, determined the Corporation of Glasgow, some years ago, to purchase the works of the Water Companies then existing, and to take the supply of water into their own hands".

"Her Majesty then, in clear and distinct voice, read the following reply:-"

"I accept with great satisfaction your loyal and affectionate Address, and thank you sincerely for the expression of your attachment to my throne and person, and for the cordial welcome with which you have received me.

It is with much gratification that I avail myself of this opportunity of inaugurating a work which, both in its conception and its execution, reflects so much credit on its promoters, and is so calculated to improve the health and comfort of your vast population, which is rapidly increasing round the great centre of manufacturing industry in Scotland.

Such a work is worthy of the enterprise and philanthropy of Glasgow, and I trust it will be blessed with complete success.

I desire that you will convey to the great community which you represent my warmest wishes for their continued prosperity and happiness."

The Divine blessing having been thus invoked, Her Majesty turned the handle placed for the purpose, and amid the booming of cannon and the applause of thousands of spectators, the Loch Katrine Water Works were declared duly inaugurated. The rushing of the water was distinctly heard by those around. At the request of Her Majesty, the royal party were conducted to the sluice that might themselves see the water flowing for the first time from Loch Katrine towards Glasgow. The band played "Rule Britannia." The salutes of cannon which announced the completion of the ceremony were repeated at the Trossachs and again at Callander. The telegraphic wires conveyed the gratifying intelligence to Glasgow, where the city bells rang merrily in celebration of the event; and also to Edinburgh and Stirling, which at once sent forth from their Castles salvos of artillery.

After inspecting the mouth of the tunnel, Her Majesty was conducted to the cottage, where luncheon was served; and shortly thereafter the royal party re-embarked on board the "Rob Roy," when Her Majesty was again cheered by her loyal subjects; and the party returned to Holyrood by the same route by which they travelled from Edinburgh in the morning.

Thus was completed, and Royally Inaugurated, one of the noblest municipal schemes ever, it is believed, devised and executed for supplying to a large and important commercial and manufacturing community one of the first necessities of life, by works which will doubtless transmit to future ages an enduring testimony to the enlightened wisdom, enterprise, and zeal of the Civic Rulers by whom, from time to time, they were projected, carried on, and ultimately brought to successful completion. Already, in a sanitary point of view, their influence has been sensibly felt, they have become the object of universal admiration, and their success in a financial point of view has been fully tested and proved. It is therefore with no ordinary feelings of gratitude and pride that they may be regarded by the citizens of Glasgow, and appreciated by all who take an interest –and who does not? – In the sanitary condition of the people.



The event was celebrated in indifferent verse by John Wilson, ballad-singer:

*To Glasgow it will be a blessing
I'm sure
The Loch Katrine water so
Wholesome and pure,
What fevers and plagues it will
From us keep,
And we hope its promoters a
Blessing will reap*

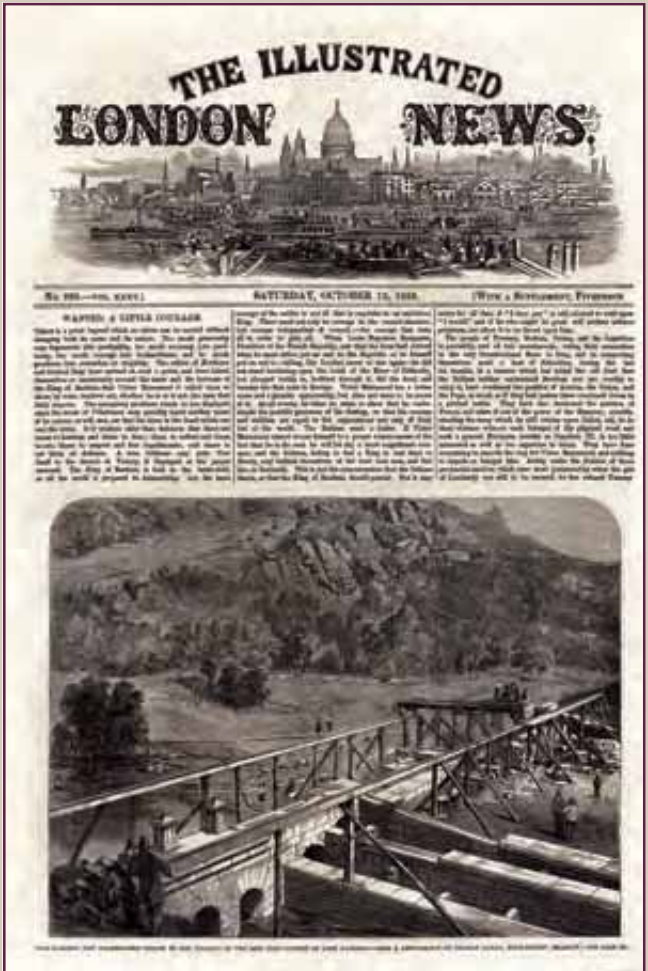
“Not everyone was happy; one elderly Glasgow woman insisted on continuing to draw her water from the polluted Arns Well on Glasgow Green. When asked why she did this, she relied: ‘I just canna thole that new water, it’s got neither taste nor smell.’”

The scale of the undertaking was commented in; The Illustrated London News, expressed surprise that: “..... a provincial city four hundred miles off, wholly occupied with manufacturers, merchants and shipbuilders, with hardly the pretence of a West-End or an aristocracy, and with nothing to show but an old cathedral and some remarkably tall chimneys, had received the waters of several noble lakes for supply of its inhabitants”.

The paper went on to compare the Loch Katrine plan to the water supply schemes of ancient Rome and then asked why London did not display the same spirit of enterprise.

The Queen, in her remarks expressed her delight in “..... Inaugurating a work which, both in its conception and its execution, reflects so much credit on its promoters, and is so calculated to improve the health and comfort of your vast population, which is rapidly increasing round the great centre of manufacturing industry in Scotland. Such a work is worthy of the enterprise and

philanthropy of Glasgow and I trust it will be blessed with complete success.”





HISTORIC STEWART MEMORIAL FOUNTAIN IN FULL FLOW AGAIN 2009



The fully functioning and restored Stewart Memorial Fountain was unveiled in Kelvingrove Park, on 14 October 2009, the 150th anniversary of the day fresh water flowed into the city for the first time.

The Team who led the £500,000 project to restore the ‘A’ listed structure, originally erected in 1872, to its former glory said:” It took years of planning and just over five months to carry out the restoration, which involved cleaning and repairing the stone and bronze work, carrying out remedial and renewal work to sculptures, including some missing since the 1930’s, drains were renewed, a new underground water recycling system and a new water proof lining was also added to the water basins”.

“Now for the first time in its long history the fountain will operate in a sustainable manner.”



Lord Provost Bob Winter, who switched on the fountain and officially unveiled a new commemorative plaque said: “The Stewart Memorial Fountain is a lasting legacy to the late Lord Provost Robert Stewart whose drive, determination and energy brought clean water to the people of Glasgow. I believe that single deed made the biggest impact on the citizens of this city in terms of health, wealth and improvement of social conditions, than any other.

“I am certain it will become a wonderful attraction in much the same way as the Doulton Fountain in Glasgow Green.”

THIS PLAQUE WAS UNVEILED BY

THE RIGHT HONOURABLE

THE LORD PROVOST

COUNCILOR BOB WINTER

ON OCTOBER 14th 2009

**TO CELEBRATE THE SUCCESSFUL RESTORATION
OF THE STEWART MEMORIAL FOUNTAIN
ON THE 150th ANNIVERSARY OF QUEEN VICTORIA
INAUGURATING GLASGOW’S WATER SUPPLY AT
LOCH KATRINE**



Descendants of Provost Stewart who died in 1866 attended the Unveiling/switch on ceremony as did the relatives of John Frederic Bateman, the Yorkshire-born civil engineer in 1852 who was employed as the scheme's engineer to deliver Glasgow's need for fresh water.

Celebrations at the official unveiling ceremony included traditional Scottish music inspired by Sir Walter Scott's "Lady of the Lake", performed by 3rd year students of R.S.A.M.D. Re-enactment performances led by Tram Direct Theatre Company featured the '1872 inauguration of the Stewart Memorial Fountain' and the 'Royal Opening of the Loch Katrine Water Works 1859', famously opened by Her Majesty Queen Victoria.

The Stewart Memorial Fountain restoration project was overseen by Glasgow City Council in partnership with Glasgow City Heritage Trust, the Heritage Lottery Fund (HLF), Scottish Water, Better Glasgow Fund and The Pilgrim Trust.

The Fountain has not operated on a regular basis since the early 1990s, only



switched on for events such as the West End Festival and the Mela. The structure effectively had become a climbing frame used by vandals. The grotesques, birds and nearly all the fountain nozzles were removed with substantial damage to stonework as the stepped structure rendered all but the highest features accessible.

In 2005 Land and Environmental Services Parks and Scottish Water agreed to fund the restoration of the fountain as part of the major water treatment improvement works contract at Milngavie.



Works involved cleaning and restoring the stone work and bronze work, installing an underground water re-circulation system with power, water and sewer connections.

As built the fountain was linked directly to a water main and only operated at prescribed times during weekends and bank holidays in the summer. The water passed through the system once before flowing into the River Kelvin. This system was unsustainable. If the fountain was operated continuously it would have cost £250,000/annum in water rates alone.



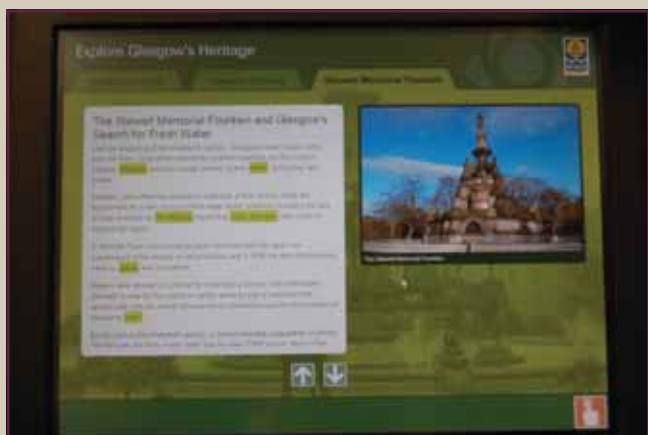
The new re-circulation system has enabled the fountain to operate sustainably and continuously throughout the year for the first time in its long history.

Throughout the delivery process detailed consultations took place with Development & Regeneration Services, Heritage & Design and Historic Scotland, particularly during restoration, to ensure compliance with the conditions of Planning and Listed Building Consent approvals. Because the structure is Category 'A' Listed detailed consultations also took place with Historic Scotland technical experts.

An Interpretation Plan was created in partnership with the Woodlands & Park Community Council, The Friends of Kelvingrove Park, Culture and Sport Glasgow Trust and Land & Environmental Services Parks Development Team. The Heritage Lottery Fund 'Your Heritage' application required activities that would achieve Conservation, Learning, Participation and Working with Young People goals. In order to deliver these LES Parks Development Project Officers assembled a huge data base that included the history of the Loch Katrine water supply to Glasgow, the Stewart Memorial Fountain and the unprecedented benefits to the health and development of the city. Without this water supply Glasgow would not have become the 'Second City of the Empire'.

The vast Interpretation Plan included production of 20,000 Progress Bulletins, a 150th Commemorative Heritage Trail, with a second edition heritage trail including 2010 Stewart Memorial Unveiling celebrations, Workshops aimed at young people, production of 210 digital Education Packs (Challenge Glasgow's Need for Water) written by a school teacher and educational officer, made available to all primary schools in Glasgow, meeting the Curriculum for Excellence, capture of historic photography and film of the 2009 restoration process for archive record held by the Mitchell library.

Feature Scottish musical recital of Sir Walter Scott's Lady of the Lake which relates to Loch Katrine and the Stewart Memorial Fountain (the figurine of The Lady of the Lake being the terminal of the fountain) The Royal Scottish Academy of Music and Drama were commissioned as a single source supplier to perform in a DVD of the restoration and at the opening ceremony. R.S.A.M.D. also provided, free of charge, music to assist Stewart Memorial Fountain DVD production. Commemoration Materials and articles on the Council, Friends and Community Web sites.



The story of Glasgow's Water Supply and the Stewart Memorial Fountain is also comprehensively told on two educational touch screens with historic images, text and modern photographs. The touch screens include more detailed information about the key people and significant characters involved.



Information was exchanged and shared with Scottish Water and the Institute of Civil Engineers who commissioned a pamphlet which became available on 14 October 2009 explaining how the aqueduct was built and describing what a colossal engineering feat the Loch Katrine water supply scheme to Glasgow was.

In addition the Mitchell Library, Culture and Sport Glasgow held a 'Loch Katrine Exhibition' and a series of talks aimed to share some of the magnificent history of Loch Katrine Waterworks and the history of Glasgow's water supply, this was displayed in the Glasgow Room in the Mitchell Library between 14 October 2009 and December 31st 2009.

The Lord Provost also hosted a Civic Dinner in the City Chambers for the Institution of Civic Engineers on 14th October 2009 to celebrate the the outstanding engineering achievement of the Loch Katrine aqueduct and Glasgow's water supply and the unveiling of the restored Stewart Memorial Fountain coinciding with the 150th anniversary of Queen Victoria opening the first sluice gate at the entrance to the aqueduct at Loch Katrine.

In conjunction with the official opening of the Stewart Memorial Fountain, restoration works to several statues in the park took place. The Lord Kelvin, the Lord Lister and the Bengal Tigress were all restored complementing recent restorations to the Cameronians Scottish Rifles and the Highland Light Infantry monuments.





Robert Stewart
(1810 - 1866)



John Bateman
(1810 - 1889)

SIGNIFICANT CHARACTERS

Robert Stewart (1810 – 1866)

Robert Stewart was born in 1810 in Glasgow. He trained in accountancy before acquiring his father's iron and coal business. He joined the Glasgow Town Council in 1842 where only after a year he was appointed to the office of River Baillie. Shortly after his elevation to the office of Lord Provost in 1851, Mr Stewart applied himself to the important question of a water supply for Glasgow. It has been claimed that fierce resistance from private bottled water manufacturers delayed the project and this dogged struggle lead to Provost Stewart's untimely death. Although his Provostship terminated in 1854, Mr. Stewart remained in the Town Council until the end of 1855, in order that, as Chairman of the Water Scheme, he might give the town the benefit of his services in carrying the Bill through Parliament which allowed the construction of the Loch Katrine Water Supply Scheme. Mr. Stewart died suddenly, of heart disease, on 12th September, 1866, survived by his wife, daughter and two sons.

John Fredric La Trobe Bateman (1810 – 1889)

John Bateman was born at Lower Wyke, near Halifax, on the 30th May 1810, and was the eldest son of Mr John Bateman, of Ockbrook, Derbyshire, and his wife Mary Agnes La Trobe.

When he was fifteen years old he was apprenticed to Mr Dunn, of Oldham, with a surveyor and mining engineering practice who also executed other engineering works, such as new roads, waterworks. This is where John Bateman learned the rudiments of his career. Other works credited to John Bateman are the waterworks of Thirlmere, Manchester, Belfast and Dublin. He also prepared proposals to supply London from the River Severn in Wales, but this was never built. In addition Mr. Bateman had a large and extensive connections abroad where he was engineer on a large



James Sellars
(1843 - 1888)



John Mossman
(1817 - 1890)

graving-dock at Halifax, Nova Scotia, and was also the engineer to some reclamation schemes in Spain and in the Island of Majorca. He earned a substantial international reputation and was invited to the opening of the Suez Canal. John Bateman died at his residence, Moor Park, Farnham, on the 10th of June, 1889, aged seventy-nine years.

James Sellars (1843 – 1888)

James Sellars was born in the Gorbals on the 2nd December 1843, the son of a house-factor of the same name and his wife Elizabeth McDonald. In 1857, records show that he was bound as an apprentice to Hugh Barclay at the age of 13 where he remained until 1864. He then joined the office of James Hamilton of Glasgow for the next three years. In 1870 he joined the office of Campbell Douglas and was made a partner by 1872. He had earned his partnership by winning the first competition for the Stewart Memorial in 1870, and awoke to find himself famous. Sellars was influenced by fellow Glasgow architect Alexander “Greek” Thompson as well as other Neo styles of the time. At the 1888 Glasgow International Exhibition site a rusty nail pierced James Sellars boot causing an injury that failed to clear up and was neglected from want of time. He died of blood poisoning, a direct consequence of his injury at the exhibition, on 9 October 1888 and was buried on the 11th at Lambhill Cemetery where a very Greek memorial by Keppie marked his grave. A portrait of him by Georgina M Greenlees is in the Glasgow Art Gallery collection.

John Mossman (1817 – 1890)

Born in 1817, John Mossman was the eldest brother in a family of sculptors. The Mossman family have been famous Glasgow sculptors for generations. Their work adorns many of Glasgow’s parks, cemeteries, statues and friezes for public buildings and spaces in Glasgow. These include Mossman’s first major public commission of Sir Robert Peel (in bronze) in George Square and David Livingston re-erected 1960 and



Sir Walter Scott
(1771 - 1832)

Images of Sellars, Mossman and Sir Walter Scott courtesy of *Culture and Sport Glasgow (Museums)*. Image of Bateman courtesy of *Manchester Archives and Local Studies*.

1990 in Cathedral Precinct. Mossman was a founder member of the Glasgow School of Art where he taught modelling. After his death in 1890, he was buried in Sighthill Cemetery, Glasgow.

Sir Walter Scott (1771 – 1832) –

Lady of the Lake

Sir Walter Scott was born in College Wynd in the old town of Edinburgh on the 15 August 1771, the ninth child of Walter Scott, a solicitor and his wife Anne Rutherford. Scott began writing poetry at an early age, and in August 1809 whilst holidaying with his wife, Charlotte, and daughter, Sofia, in the Trossachs he began writing the *Lady of the Lake*. The shores and islands of Loch Katrine provide the poem's setting. The poem which was first published on May 8, 1810, has three main plots: the contest among three men, to win the love of Ellen Douglas; the feud and reconciliation of King James V of Scotland and James Douglas; and the war between the highland clans (led by Roderick Dhu) and the lowland Scots (led by James V).

The *Lady of the Lake* marked the pinnacle of Scott's popularity as a narrative poet. With 25,000 copies sold in eight months, it broke all records for the sale of poetry, and Scott's fame spread beyond Great Britain to the United States. The popularity of the poem inspired an opera by Rossini and the famous 'Ave Maria'. It is recognised that Scott's romantic novels contributed greatly to Scotland's international reputation and he has been credited by many with unwittingly creating the Scottish tourist industry. After suffering a series of strokes, Scott died on 21 September 1832 at Abbotsford, Roxburgh. He is buried beside his beloved wife at Dryburgh Abbey, near St Boswells.



OUTLINE CHRONOLOGY OF IMPORTANT HISTORICAL DATES

1175 The city of Glasgow is founded

1433 The first documented reference to a Glasgow Well

1574 The first indication of the Town Council's interest is mentioned-being mainly concerned with repair and maintenance of existing facilities.

1601 The first great fire of Glasgow is recorded with the complete lack of water for fire fighting.

1636 The first mention of piped water, suggestion 'to set up pipes or conduits for conveying water to any place in the 'burgh'.

1649 The first documented reference to pump wells in the city. By 1804 there were 30 public wells in the city.

1652 The second great fire of Glasgow recorded, destroying many parts of the city.

1775 The first of several attempts to find new sources of water.

1788 The Council found only two new sources worthy of consideration for the supply of water, Garngad Burn supplemented by the Monkland Canal and the Forth and Clyde Canal.

1798 Public meeting held in Glasgow to voice the residents concerns.

1800 The City Council considered five different sources from which water might be supplied.

1801 A census of the City revealed a population of almost 100,000 with only 30 public wells –effectively one for every 3,000 persons. Many of the wells were considered to be unhealthy.

1806 Parliamentary Bill obtained sanctioning the setting up of the Glasgow Water Company, with the

advice of James Watt and Thomas Telford.

1808 A second Act was passed which established the Cranstonhil Water Works.

1810 Robert Stewart born

1810 John. F. Bateman born

1810 The 'Lady of the Lake' narrative poem published and sold 25,000 copies

1832 Glasgow's first cholera outbreak. A serious outbreak of cholera in the city, public wells were polluted

1834 The very first cogent proposal for an integrated public water supply is mentioned, when a motion was put before the Town Council that 'it would be for the benefits of the public that the works for supplying the City with water should be conducted by the Corporation.

1843 James Sellars, architect of Memorial Fountain born

1848 Second cholera outbreak

1848 The Public Health Act was passed which gave local authorities responsibility to provide a separate clean water supply from sewage disposal.

1851 – 1854 Robert Stewart, Lord Provost

1852 - 1867 66 acres of land purchased and Kelvingrove Park laid out

1853 The details of a Loch Katrine scheme to supply Glasgow's water supply were presented by J. F. Bateman

1854 The first Parliamentary Bill for this scheme failed due to opposition from ratepayers, the private water companies, the Admiralty, concerns about the effect on the navigation of the Forth and an unfavourable chemical report pointing out the effect of soft water on lead pipes.

1855 The second Bill was approved. The earlier



arguments against the scheme had been defeated. The town council was granted all necessary powers to bring water from Loch Katrine and to buy out the private water companies. Work commenced on the first aqueduct.

1859 Queen Victoria officially opened the Loch Katrine Water Supply Scheme on 14th October

1860 The first water from Loch Katrine is introduced to the city of Glasgow

1870 Competition to design monument to the late Lord Provost Robert Stewart

1872 Stewart Memorial Fountain built in Kelvingrove Park, Glasgow

1885 Parliamentary Act for second aqueduct. Work commenced on the second aqueduct which took around 20 years to complete

1888 Glasgow's first international Exhibition of Science and Art held in Kelvingrove Park

1901 Glasgow's International Exhibition of 1901 in Kelvingrove Park was intended to mark the Golden Jubilee of the Great Exhibition held at the Crystal Palace in 1851

1911 Scottish Exhibition of History Art and Industry held in Kelvingrove

1988 Restoration programme for the fountain was initiated by the Bridgegate Trust, at a cost of £158,000, enabling 'the water to flow once more, for the pleasure of all who see it'. Sadly, the pleasure turned out to be short-lived, and by the middle of the 1990s a combination of persistent vandalism and recurring difficulties with the pipework forced the council to disconnect the water supply and suspend all further maintenance activity.

2005 – 2009 In 2005 Land and Environmental Services Parks and Scottish Water agreed to fund the restoration of the fountain as part of the major water treatment improvement works contract at Milngavie. The works involved cleaning and restoring stone work and bronze work, installing an underground water re-circulation system with power, water and sewer connections.

Travel Information

Underground - Kelvinbridge Underground Station is a 5 minute walk

Train - Charing Cross Rail Station is a 10 minute walk from the Park and Glasgow Central Station is approximately a 20 minute walk

Bus - Various routes operate from the city centre to Sauchiehall Street (www.firstgroup.com)

Car - The Park can be accessed from the Clydeside Expressway following the signs for the Kelvin Hall, Museum and Art Gallery. Parking is available at the Transport Museum and Art Galleries off Sauchiehall Street.

Walking/Cycling - Kelvingrove Park is a twenty-minute walk from the City Centre. It also forms part of the Kelvin Walkway, which links with the Glasgow Loch Lomond Cycleway and the West Highland Way





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