

## Peat Extraction on Lenzie Moss

Lenzie (or Mountain) Moss lies on the western boundary of the village of Lenzie in East Dunbartonshire and is divided by the Glasgow to Edinburgh railway line. The bulk of the moss, covering 40 hectares, lies north of the railway and, since 2009 has been designated as a Local Nature Reserve. As well as being host to a diverse range of flower and fauna, the paths in the moss are both a popular recreational area and an alternative route to Lenzie Station for the inhabitants of the Gallowhill area. <sup>1</sup>

The moss itself is a raised peat bog, which was harvested both as a fuel source and for agricultural purposes for many centuries. The first surviving record of authority to remove peat dates from 1226, although it is certain that the activity would have been in operation to some extent for some time previous. Then the Scots king, Alexander II, gave charter to the monks of Cambuskenneth Abbey, near Stirling, providing them with the right to extract peat from the moss. Given the lack of proper transport links and the distance between the two areas, it is doubtful that the monks themselves would have been involved directly in the work. The moss would have been leased out locally and, given the later operations there of the burgesses of Kirkintilloch, some of them may have been the tenants during this time. <sup>2</sup>

The area around Kirkintilloch had been under the control of the Comyn family but, following Bruce's victory in the First War of Independence, it came into the ownership of Malcolm Fleming, son of one of his most stalwart supporters. In 1630 the burghers of Kirkintilloch transferred the rights of the tithes of part of their common muir, which may have included the Moss, to Fleming, by then Earl of Wigton. He returned them twelve years later for a period of '19 by 19', (361) years. One of his relatives, Robert Fleming, was the tenant at Boghead, immediately north of the Moss and, following his death, on 27<sup>th</sup> December 1655, part of it passed to his daughter Margaret and her husband, George Ralstone. She was given it as caretaker, until her brother, Patrick, who was the rightful heir, should appear. The reason for his absence is not known but he had not returned by 28<sup>th</sup> May 1667, when it passed to another sister, Agnes, and her husband, James Winterson. Although their tenancies covered the Mountain Moss, both documents confirmed the continued right of the Kirkintilloch burgesses to extract peat there. <sup>3</sup>

This privilege did not extend to the ordinary population of the parish, they being required to obtain their peat supplies from the burgesses. On 2<sup>nd</sup> January 1673 the burgh court heard complaints that 'idle women' from Kirkintilloch had been found extracting peat illegally in the area, possibly including on Lenzie Moss. The solution was to place several of them into the employ of some of the burgesses and to deduct four pence Scots from their wages for each day they had spent cutting peat. Another problem was outbreaks of fire, a situation that has continued right up until the present day. In June 1675 Walter Rankine was the tenant at Boghead and, while burning off some of his own ground, he allowed the blaze to spread onto the moss. It appears this had occurred repeatedly over several years and, as a deterrent, the burgh court fined him £10 Scots. The fire risk may have been the reason for cutting of peat to be banned during the summer of 1679, perhaps due to drought conditions. <sup>4</sup>

With the arrival of the Industrial Revolution and the opening of several coal mines around the area the dependence on peat as a fuel probably diminished and, in 1841 the Glasgow to Edinburgh Railway was driven across the southern third of the Moss. The extraction of peat probably continued on a reduced scale, including for personal use by less prosperous individuals. The latter may have been the purpose of Colin Graham, who was on the moss

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about 400 yards west of Moncrieff Avenue on Wednesday July 1880. He had dug down about 4 feet when, suddenly, he exposed a human head, partially preserved, including the hair. When it was extracted it was identified as that of a female but further exploration around the area by the police failed to produce the remainder of the body. The victim was never identified, although it was suggested it might be that of a domestic servant, employed some years earlier by Mr Lang at Gallowhill House. She had disappeared without explanation, a fact confirmed by Lang, but in circumstances that were described as ‘suspicious.’<sup>5</sup>

Five years later there was a right of way dispute relating to Woodilee Asylum, during which it was revealed that this route was used by Waterside residents to access the moss. That it included transporting of peat was confirmed by Mr Cochrane of Duntiblae, who extracted the material for use on his farm. Although it is possible this was used for soil conditioning, it was very common at this period to employ dried peat as a soft bedding for cattle.<sup>6</sup>

As early as 1847 proposals had been put forward in Ireland to introduce peat processing for the extraction of mineral oils and, in 1858 Sir James Matheson had an experimental plant built on the Isle of Lewis. Although it operated until 1877, it proved unable to compete with cheaper imported American oils and was abandoned. Further progress was made in Europe, particularly in what was termed moss litter, an exhibit in Vienna in 1899 including carpets and wallpaper manufactured from peat. In September 1900 the *Kirkintilloch Herald* carried an article praising these developments and prophesying that it could be used in producing electrical appliances, textiles and newsprint. The *Herald* pointed out the large expanses of peat bog, both in Ireland and Scotland which could be utilised, although no mention was made of Lenzie Moss or other similar areas around the district.<sup>7</sup>

Indeed, the Moss was considered by many as being of little value to the district, it being suggested in 1901 that part of it be given over to a public coup. This was rejected, following strong opposition from the householders now infringing on the eastern edges of the Moss, several of whom may have taken over parts of it without official permission. However, there is evidence that dumping did take place, with various types of rubbish having been uncovered on the north east part of the Moss outwith the cut area.<sup>8</sup>

Although the proposals for peat utilisation appear to have had little direct effect within Kirkintilloch, it had aroused the interest of at least one person who was prepared to pursue it. This was Carl Adolph Sahlstrom, a Swedish chemist who had become interested in the subject while living in Canada. Sahlstrom appears to have been one of these characters who, although of high intelligence, tend to live in their own universe. As a young man he had travelled Europe as secretary to the Duke of Tuscany but, by 1885 was involved with Thorsten Nordenfeldt in developing a new form of fish processing, based in Aberdeen. By 1890 he had left this organisation and had gone to Alaska, then Newfoundland but, by 1897 was back in London. There he was interviewed by *Pall Mall Gazette*, a meeting which appears to have ended badly, Sahlstrom being described by the interviewer as ‘truculent.’ Until then he had continued to promote novel methods of processing fish and, in 1902, was interviewed again in London by the *Toronto Mail and Empire*. By now he had changed his interests, arguing for a new method of carbonising peat, which would allow the various by products such as ammonia and acetic acid to be drawn off. The interview was copied by the *All Ireland Review*, which claimed that Sahlstrom intended to come to that country to put his theory into practice.<sup>9</sup>

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At some point, probably around the time of his interview with the Toronto Mail, Sahlstrom came into contact with a young Scots civil engineer. Eoghan Kennedy Carmichael. The latter had been born in South Uist in 1872 was the son of the noted Gaelic folklore collector, Alexander, known as Carmina Gadlica. After qualifying, Eoghan had spent several years in East Africa, working on the developing railway system. In disagreement with the Boer War, he had returned to the United Kingdom in 1898, then joined his brothers, Ian and Alexander, in a new venture in Spain. They were mining engineers and, sometime after 1900, formed the Estamadura Mining Co., developing three copper mines in the Extramadura region. Then, in 1902 the Spanish Peat Co Ltd., was founded, apparently a project headed by Eoghan, who was designated a director. Sahlstrom appears to have been engaged to carry out analysis of peat samples, an acidity which brought him into contact with Eoghan.<sup>10</sup>

5<sup>th</sup> March 1903 saw them being granted a joint British patent for a process designed to treat peat 'for the production of fuel and utilisation of the bye-products obtained.' To pursue this they formed Sahlstrom Carmichael Patents (Limited) in August 1904, with a total share capital of £3000, although they declared that the 'public are not invited to subscribe.' Its objectives included 'improved material for packing and preserving fruit' and also the manufacture of paper and cardboard. The original intention of the Spanish Peat Co had been to extract peat from Laguna, near Granada in Spain but, when the 1903 patent was submitted, both men gave their business address as 8 North Bank St in Edinburgh. Nothing is known of any activities in Spain, although the mining operations continued until 1910. Therefore, it is possible that they considered operating in Scotland might prove a lesser financial risk than Spain. By October they had gained access to Lenzie Moss, where it was their intention to establish their processing plant, adjacent to the Glasgow to Edinburgh Railway line. By this time, it appears that Sahlstrom had returned to Canada, giving his address as Ottawa in a patent application of April 1904. This had been submitted in Canada in his own name and, in the following month, Carmichael applied for a new patent in the UK, greatly modifying the original specification but with no mention of his Swedish partner. <sup>11</sup>

The October 1904 report noted that a processing area had been constructed, as well as a concrete platform and a loading bank adjacent to the railway but gave no details. The loading bank and concrete platform survive today, the latter being about 35 yards north west of the ruins of the processing plant. It is not known if the latter dates from 1904 but it is probable that it formed the basis on which the later operation was constructed. It is assumed that the machinery erected in 1904 was in accordance with the specification of Carmichael's August 1904 patent. This consisted of four parts. All linked together with conveyers, permitting the smooth transfer of material from one stage of the process to the other. No details are given in the patent of the type of power required to operate all the machines, this being left to the operator. At Lenzie there is no evidence of any boiler house or steam engine, so it is possible that they were operated using one or more petrol engines, with a system of pulleys or gearing connecting different elements. No information remains either about the layout of the plant but, from the individual drawings, it appears that some must have been positioned at right angles to the others to permit the transfer of material. Nor are any scales provided in the drawings so it is impossible to be certain about the overall sizes of the individual machines. <sup>12</sup>

When the cut peat arrived at the processing area, the first operation was to break down the packed material and remove excess water. The machine involved in this consisted of three parts, operating in a linear fashion. The peat blocks were dropped into the first section through

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a vertical hopper, below which was a chamber containing two horizontal cylinders, equipped with numerous spikes on their outer faces. These could rotate in the opposite direction, or the same direction as necessary, while it was possible also to vary the speed of one against the other. Operating in opposite directions, it appears the peat was forced into the narrow space between the two cylinders, with the spikes tearing apart the fibres as they did so. From there they dropped onto a horizontal conveyor, which passed them into the central section of the machine. This consisted of two horizontal linked metal belts, covered with canvas, rotating forwards continuously over powered drums at either end. The metal plate links on the lower belt were perforated, permitting water to pass through and be discharged from the machine. Above the upper belt was a pair of longitudinal beams, holding a series of metal rollers, each of which had hydraulic or spring loaded sections pressing down on them. The lead end of the beams was fixed to the machinery frame but the other end was free to pivot downwards under pressure. Thus, as the shredded peat passed along the bottom belt, the pressure on the rollers above squeezed it tighter, pushing out the water as it did so. Once through the central part, the partially dried peat dropped off the end of the lower belt onto two more pairs of shredding drums. These were of smaller diameter than the first set but one pair was positioned immediately below the other, ensuring the passing peat was subject to two further phases of shredding. From there the material dropped into a pit, through which a bucket conveyor belt was passing, to pick up and transfer it to the next stage in the process. <sup>13</sup>

The second stage completed the drying of the peat, while drawing off some of the chemical substances that were to be extracted from it. The original patent had combined this stage with the later carbonisation, both to be carried out within the same structure. As each required heat to be provided at different temperatures, it must have been realised that the joint unit was impracticable and they were separated in the later submission. These were carried out in vertical brick built furnaces, fed through a firebox at ground level from one end. The temperature in the first furnace was limited to 150<sup>0</sup>C, while that in the latter was regulated to 250<sup>0</sup>C. Within both furnaces were five horizontal cylinders, placed above each other and all bar the top one offset from the one above, allowing a vertical downpipe to connect sequentially between each cylinder. The top cylinder was of a larger diameter than the others and was connected to a hopper on top of the furnace by a short length of horizontal pipe and another downpipe at one end. Within each cylinder was a helical screw, plus intermittent devices, the purpose of these being to keep the peat moving along the cylinders, while turning it to ensure even heating. The helical screws protruded from the end of the furnace opposite the firebox and were connected through sprockets to a vertical chain drive, which kept them rotating. At the firebox end of the furnace, the second and fourth cylinders were connected to external piping, through which vaporised chemicals could be drawn off. This piping was connected to external chambers to collect and condense the chemicals. At ground level, opposite the firebox was a long external tube, connected by another down pipe, through which the dried peat was discharged onto a conveyor for transfer to the third process. To ensure the dried peat could be handled, this pipe was surrounded by a water jacket, which cooled the material as it passed through. <sup>14</sup>

At one side of the long face of the furnace a vertical air vent was located, through which the heated air from the furnace exited just below the top cylinder, ensuring that the heat level would not build up excessively. As the warm air rose from above the firebox, contact with the metal cylinders and absorption of heat by the peat would reduce the temperature as it rose. The

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chemicals that were to be drawn off had different vaporisation points and this system was designed to ensure only the targeted one was activated. The condensation chambers were located at ground level and filled with water, this being displaced by the chemicals, presumably because they were of greater density. No details are given on the drawing off of these chemicals but there must have been some form of valve or tap to allow this. <sup>15</sup>

From the drying furnace the peat was transferred by conveyor to a separating machine, where the fibrous material was removed and the fine dust remaining collected for further processing. The conveyor passed peat into a chute which led downwards onto an inclined revolving screen, or sieve, which allowed the powdered substance to drop onto another horizontal conveyor. The fibres fell off the end of the screen, where a fan pushed into the second section of the machine. During this process, material which was too large and heavy to be blown through, fell into a rotary disintegrator, where it was broken down into smaller pieces. From there it was taken back up to the top of the machine by another conveyor, then dropped back onto the screen for re-processing. The fibres that entered the second part of the machine passed into three chambers, at the bottom of which were chutes to which sacks were attached, the fibrous material dropping into these automatically. While this is happening the powder passes another fan, which blows it into a large balloon shaped canvas bag, suspended at the end of the machine. At the bottom of this balloon is a canvas funnel, through which the powder can be collected for passing onto the carbonisation process. The fibres collected in the sacks are bound and can be sold for use as bedding or 'litter' for animals, following which, mixed with the resultant manure it completes its process as soil conditioner. <sup>16</sup>

The process of the powder through the carbonising furnace is identical to that in the drying one, apart from the temperature being raised to 250°C. This allows the remaining chemicals with higher vaporising points to be drawn off into condensing chambers in the same manner as the earlier process. Once the peat powder has passed through this furnace, it was transferred to a press, where it was formed into briquettes, which could be sold as fuel. <sup>17</sup>

Following the October 1904 announcement, nothing more was heard from the press until July of the following year, when it was announced that the undertaking had been sold. The reasons for the sale are unknown but it is possible that the partnership had broken down, although it was not dissolved for a further four years. Alternately, the initial capital may have proved inadequate for construction of the equipment required on site, while the process itself may have been found to be flawed. As late as 1923 there was mention of the Sahlstrom Carmichael process in some articles but no examples of operational sites were identified. Both filed revised patents independently, although it is worth noting none contained any mention of the squeezing machine.

Nothing more was known of Sahlstrom, who died in 1912 but it is thought he remained in Canada until that date. Eoghan retained his Edinburgh address for several years, having another partner J R Sharman by 1907. He continued his connection with the mining project in Spain until it ceased in 1910 and, by 1913, also had moved to Vancouver, where he married in 1914. During the First World War he served in the Canadian army and was awarded a military cross in 1917 but returned to Scotland when peace returned. Eoghan died in 1926, having worked as a land surveyor in Beaulieu. He retained an interest in Celtic art and produced several excellent designs, following in the footsteps of his father.

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The new owners were the Scottish Peat Fuel and Litter Co of Edinburgh, apparently formed to obtain the Lenzie workings and those at Bathgate in West Lothian. It seems that their objective in purchasing the Lenzie operation consisted only of a requirement to obtain the machinery erected there. By September 1905 this was being dismantled and transferred into wagons lying in the railway siding, west of Lenzie Station. On the afternoon of 8<sup>th</sup> September, three pupils from Lenzie Academy ventured up to the site during their lunch hour. The equipment was being transferred along a short railway on a small bogie and the boys thought a quick trip on this would be a good idea. Unfortunately, the bogie ran out of control and, one of them, James Wilson, had his leg broken when the bogie struck the side of one of the wagons. Wilson was pitched forward but his leg was trapped between the two vehicles, causing the injury.<sup>18</sup>

By July 1908 Scottish Peat Fuel had disposed of their business to a Leith merchant and, in November of that year they were declared bankrupt. There was a brief sequel just after World War I broke out, when the Lenzie site became the subject of one of the many hysterical "German plots." Although Sahlstrom was Swedish, his foreign name and allegedly Germanic forenames, led to claims that the 1904 operation was undertaken by German saboteurs. It was claimed that the buildings were designed to permit German agents to dominate and control traffic on the adjacent railway line. Some well meaning citizen with a vivid imagination, reported it to the Lanarkshire Police, who passed on the report to the military authorities. Nothing is known of their response but it is probable it was filed away and ignored.<sup>19</sup>

Another consequence of the short extraction period may have been the cause of an accident to a cow on Wednesday 25<sup>th</sup> July 1906. It belonged to John Shearer, of Gallowhill Farm, who was one of the so called 'peat lairds,' and it had fallen into a deep hole on the moss. Fortunately, it was reported quickly to the local police and, assisted by them, Shearer and some of his employees were able to use ropes to hoist the poor animal back to safety.<sup>20</sup>

Little more occurred on the Moss for several years, although in October 1912 the Fourth Ward Committee complained about it being 'slowly stolen.' Trees would be pulled down followed by the quiet erection of a fence and, within a year, the enclosed area had become part of some private owner's garden. They protested that both the council and proprietors of the moss had rights there and that a grant should be sought to drain and reclaim it. This was raised again in October 1918 when discussing the coal seams known to be under the Moss. It was claimed that it had been divided between three families on 22<sup>nd</sup> May 1913, namely, Shearer, McCash and Taylor. Once more the council was allowing their heritage to 'slip through their fingers' and action should be taken to preserve public rights and privileges.<sup>21</sup>

Coal had also been the subject in the previous month, when Tom Johnston raised the subject of obtaining peat from the Moss. At this time there was a threat of what he referred to as a 'coal famine' and, to counter this, suggested that the council should be organising cutting and drying of peat for use by the householders of the burgh. Despite the earlier complaints, a further effort as made in 1921 to obstruct access on to the Moss. This time the culprit was William McCash, who farmed at Wester Gallowhill, having erected a barbed wire fence along the boundary between the public road and the northern edge of the Moss. Early on Thursday 25<sup>th</sup> June and the afternoon of Sunday 28<sup>th</sup>, groups of men equipped with saws and axes marched from Kirkintilloch the Moss. There they dismantled the fences and sawed them into small pieces, before returning peacefully to the town. No one interfered at the time but, subsequently, the police were brought in to investigate, although it appears no arrests were made.<sup>22</sup>

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As the government began to make economic plans following the end of the Second World War peat was one of the commodities that came to their attention. A Peat Development Association was established with the North of Scotland Hydro Electric Board as one of its constituent partners. Thus the emphasis of the Association was the exploration of peat as a fuel source, particularly in electricity generating plants. However, probably outwith the scope of the Association, others were looking at alternative commercial exploitation of peat, not least at Lenzie Moss.

Here the prime mover was an organisation called the Peat Development Co, with its head offices in Cadogan St. in Glasgow. One source suggests it may have been a subsidiary of Universal Pulp Products, although this has not been confirmed and connection to Universal Pulp Packaging at Milton of Campsie appears improbable. Another suggests it, along with workings at Bargeddie and Douglas Water, were part of the Howlet Group but, again, no definite evidence of this has been found. There are no written records of the establishment of this undertaking, either in local authority or national records, while it appears to have gone almost un-noticed by the local media. The only reference is to a report in October 1947, requesting permission from the burgh council for a water supply for a short period for building purposes. This was to be obtained from the resources of the London and North Eastern Railway, by tapping their pipe, presumably at Lenzie Station. This report appears to have been taken as evidence of the arrival of the company at Lenzie in that year, but it is possible it had been planned much earlier. May 1943 saw an advert in the *Scotsman* for peat cutters to work in an area near Glasgow, while the first small locomotive, to haul the peat to the processing plant, was built in 1944<sup>23</sup>

Lenzie Moss is the remains of a raised peat bog, whose origins go back to the end of the Ice Age. As the ice retreated small lochs and hollows remained, which silted up gradually over the ensuing centuries. Gradually sphagnum mosses began to dominate as the fertility of the area decreased and the other flora died out. These mosses relied primarily on rain water for their nutrition, so grew steadily upwards, while their lower roots decayed and began to form peat. Eventually the moss rose higher than the surrounding area, eventually forming a dome shape that became known as a raised bog. The bog consists of different layers, the top level containing live moss and other bog plants, possibly down to a depth of 12 inches, the first task in extraction being its removal to access the more suitable material beneath. The lower layers vary according to the composition of the original trees and plants that have decomposed over the years, giving each bog individual characteristics. In general terms the upper layer, beneath the turf covering, tends to be that which is more suitable for use in provision of animal bedding, this extending to a depth of around four feet. Beneath this may be found the darker dense material, which provides the main supply of fuel. Again, depending on the constitution of the peat, this may contain turpentine and even wood tar, these being targeted for extraction by many operators towards the end of the 19<sup>th</sup> century.<sup>24</sup>

It is not possible to separate the activities of 1905 from those of the later operations but it is probable that the drains surrounding the remains of the peat cuttings today originated in the earlier period. From the very brief description of the structures erected at that time, it appears the contemporary ruins also date from this time. Although the 1905 accident confirms that some form of railway existed, it is not known how extensive it was but, probably, did not reach the extent of the latter operations.

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Four structures have been identified, although details of their precise use remain unclear. The easiest to define is the loading bank, adjacent to the railway, which allowed transfer of processed material to wagons positioned on the former sidings, lying on the north side of the main line. These sidings appear in an 1894 OS map of Lenzie, so were not constructed initially for the peat workings, although their existence would have been a factor in the location of the processing plant. The bank consists of a U shaped brick built structure, whose upper corners are reinforced by iron straps, probably to deter outward movement of the upper brick layers. On the east side is a flight of steps, providing access to the sidings below. From the outer edge of the loading bay, two sets of rails ran northwards to the southern wall of the processing area. These have a small set of points near their north end, probably manually operated, and permitting a couple of wagons to be in operation simultaneously. The shape of these wagons are not known but some photographs taken in April 1962 may provide a clue. One of these shows a small wagon with a flat top and no sides, which would be ideal for loading of bales of peat. Given the short distance of this track, and the comparative lightness of the load, it is probable these wagons were moved by hand from despatch area to the loading bank. As the bales were designed to be handled by one or two men, they could be transferred easily from the loading bay onto the waiting railway wagons below.

Opposite the loading bay on the north side of what is known today as the railway path, lies the main processing area, consisting of a four bay structure, measuring by . Built on concrete beams mounted between substantial pillars at each division, with brick infill, it is improbable that these consisted of a closed building. Photographic evidence of small peat processing plants in Europe and North America suggests they tended to be open structures, with little or no protection from the weather. Several of the concrete beams have metal strips running along the top edge, while there is a lack of residual mortar on the remainder and in the centre of the columns are the stumps of vertical iron girders, both U and H section. In the western bay are two large oblong concrete blocks, in whose surface are embedded iron studs, each of 1 inch diameter, indicating that this must have formed the base for machinery. In the second bay from the west, the southern brick wall provides interest, due to the construction of its central section. The bricks have been inserted in such a fashion that a 32 inch section slopes inwards (to the south,) although the exterior has an even finish. On the western side of the main structure are two smaller enclosures, opposite the area where the machinery mounts are located, while to the east on the north line of the processing area is a single metal base, obviously for some form of upright.

The second structure is approximately 35 yards north west of the processing area and, probably dates from the 1904 project. This was described as including a concrete platform and this consists of such a construction, measuring 14 ft by 11 ft and with no indication of having any vertical walls on or around it. To the east is a long L shaped brick built box, whose purpose is unknown, as is that of the platform, while a narrower brick box is located to the west.. There is nothing to indicate that anything was located on the platform at any point. The third ruin is that of a wooden platform, surrounded by slim iron vertical girders, cut off a short distance above the ground, lying to the east of the packing area. It is covered by thick vegetation and much of the wood has rotted away. It appears to be around the eastern terminus of the railway, so may have been associated with the engine, either as a shelter or to provide maintenance facilities. Scattered around this area are several heavy wooden sleeper like pieces of timber,



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while, further east, there are some of these standing upright, suggesting they formed some type of perimeter fence at one point.

The railway by which peats were transferred from the bog to the processing area was a 2ft gauge line, whose permanent track ran from a point east of the wooden structure, approximately along the line of the railway path, before curving round to pass along the eastern flank of the processing area. There it turned west once more with points dividing it into two tracks, one of which passed into the northern end of the processing area, while the other ran outside past the northern edge. It is possible this arrangement was to provide a run around for the locomotive to reposition it at the head of the wagons once more. From the western end of this loop the railway runs in a north westerly direction for a short distance, before turning north to gain access to the bog. Emerging from the tree line, it alters west once more, running along the Southern lateral division of the cut area. Thereafter the track led north once more crossing the centre and northern lateral divisions just beyond their mid point. As necessary, this permanent railway could be extended by the laying of temporary sections, consisting of rails connected together by steel strips, rather like the sections of a traditional toy clockwork train set. This enabled improved access to the particular section of the bog then being worked. Today the permanent track bed can be traced easily along the cut area and for part of the north south section at its eastern end, all forming ideal paths for walkers. Unfortunately, in the process of installing dams to promote conservation of the bog, one has been inserted along the line of the eastern leg, making access from there to the processing area more difficult.

Power for the railway was provided by two small petrol driven engines, manufactured by R A Lister & Co. These were R Type engines, the power units themselves being manufactured by J A Prestwich in London, who were involved also with Morgan cars. No 26286 was built in 1944 and, in the 1950s was transferred to the company's site at Bargeddie and, presumably has been scrapped. The other engine, No 29890, built in 1946, has gone through several owners since operations ceased at Lenzie and is preserved, in working condition, at the West Lancashire Light Railway. Both locomotives were very basic with the driver sitting at right angles to the direction of travel and being exposed to the weather, although other preserved units of this type do indicate that a rudimentary top covering was available.

The cut peat was transported in open top wagons, whose bodies resemble wooden crates, the loaded units often carrying blocks stacked about six layers above the top edge of the wagons. From the 1962 photographs it appears that each train consisted of four wagons and, videos of other similar Lister engines in operation indicate that 3 – 4 wagons was their maximum capacity. At least one flat bodied wagon was provided and, as mentioned above, this may have been used for transfer of completed bales.<sup>25</sup>

The first stage of the cutting operations would be to drain off the excess water from the section being worked. It is probable that the later operations were able to utilise drains provided by the 1904 undertaking, although it would be necessary to carry out some maintenance on them to provide a proper flow. Various papers on peat extraction suggest that drains were cut, or improved only as necessary for immediate cutting operations, thus preventing excess drying out of the entire area. As the Lenzie drains tend to run from west to east, this might indicate that the first peat to be cut was at the latter end of the site, although there is no local documentation to confirm this. Once the drains had been prepared and allowed to remove the excess water, then removal could commence. Again, literature suggests that this could

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necessitate leaving the peat uncut for a minimum of a year, so the first part of this may have been undertaken while the processing plant and any construction necessary was being undertaken.

Peat Development were looking for peat cutters for 'an area near Glasgow' as early as 1943 but it is not known at which site. Although it appears straightforward, efficient cutting of peat blocks requires skill and, if doing so over a long period, considerable stamina. It is probable that the men worked in teams of two, with one cutting the blocks and the other one stacking them at the side of the cut area for drying. Normally, peat is cut by a specialised tool, known in England as a slane, some areas of Scotland referring to it as a tusker, while its Gaelic equivalent is trisgear. It consists of a long narrow spade like blade, with a sharp cutting blade on the left at right angles to the blade. At the top it may have a flat iron piece sticking out from the right side of the tool, on which a foot is placed to improve the cutting stroke. The blocks would be stacked in such a manner that air and wind was able to pass between them, aiding the drying process, photographs indicating that at Lenzie they were placed in rows up to five blocks high. In domestic circumstances, peat blocks will be turned after about a couple of weeks, to enable the sides in contact with each other to be exposed for drying. Where peat is being cut commercially, it appears partially dried blocks are transported from the cutting beds to an area close to the processing site, for further drying. This may consist of a structure with a series of horizontal shelves, whose lower surface consists of chicken wire or steel mesh, on which the peats are placed with intervals between them. There is no evidence of such a structure at Lenzie, although there is a long wide trench immediately to the north of the processing area. This is situated well away from the other trenches, so may have played some role in the drying process.

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The prime objective of the mid 20<sup>th</sup> century operation was the supply of peat for agricultural purposes and not for domestic gardening use. Although farming had become mainly mechanised by the late 1940s, it is possible some of the material continued to be used as litter for livestock, while the other main use would be as a soil conditioner. To achieve this the operators would have to carry out at least two processes, shredding and baling. As stated previously, there are many types of shredding machine but they all follow the same broad principles. The blocks are raised, possibly by a short conveyor belt, to an upper level, where they are fed into a hopper. From where they drop into the cutting section, which may either be vertical or horizontal. Within this section there are a series of sharp rotating knives, which shred the blocks as they pass through. In some processes, the shredded peat is divided after cutting by passing over a fine sieve, through which the smallest pieces, defined as dust, pass into a collecting bin. At one time this material was used by florists for packing of flowers among other uses, although it is probable this had become obsolete by the time Lenzie was operating.<sup>27</sup>

Once the shredding was complete, the peat would require to be formed into bales, ready for despatch to the customer. By the end of the 20<sup>th</sup> century such bales were wrapped in plastic but in the 1940s, the covering probably consisted of jute sacking. One form of doing so was to feed the peat through a hopper down into a vertical press, within the lower part of which the sacking had been placed. When the required quantity of peat had entered the lower section, a vertical piston, at the bottom end of which a horizontal plate was positioned, was lowered and the bale compressed until the desired pressure was reached. With the piston released closure of the sacking could be completed, possibly with some wire reinforcement and wooden laths attached

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to the bottom to ease movement. Alternatively, if a press was not present, the peat could be loaded into sacks direct from the shredding machine, although this would result in lesser quantities of material being held in each sack.

As with the earlier undertaking, little else is known about this venture, although at one point they had a local office in a small shop at 27 Alexandra Avenue. The only other reference is in June 1956, when some boys were brought into the Police Court, accused of knocking over the stacked peat, apparently a recurring problem on the Moss. They were dismissed after a severe telling off from the provost, who was on the bench. When the 1962 photographs were taken, the authors considered that the rate of the operation was decreasing, although there appeared to be considerable stocks of peat drying during their visit. Even the exact date of the cessation of activity is not known, although it is considered to have been around 1966.<sup>28</sup>

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