

Committee(s): Planning & Transportation Committee	Date: 24 th May 2019
Subject: Millennium Inclinator Report	Public
Report of: City Surveyor CS:	For Decision
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Summary

In 2003 an Inclinator was installed along the steps from the river embankment at the bottom of Peter's Hill to the Millennium Bridge. Due to persistent poor performance the original Inclinator was replaced in 2012 in time for the London Olympic Games. Initially satisfactory, the maintenance and management of the Inclinator has been problematic. In 2015 the City Surveyors Department have taken a new approach to maintaining the Inclinator which is now resulting in service performance improvements.

However, Member's remain concerned about the Inclinator and have questioned whether it is the best option for the City. The original Inclinator was installed in 2003, approximately £1.3m has been spent on maintaining the facility, the bulk of which was £752,000 which was the replacement of the Inclinator in 2012.

Up until 2015 the Inclinator has been the only one known within the UK, since then Transport for London (TFL) has installed an indoor Inclined Lift at Greenford Station. The make of this inclined lift is the same as the City's external Inclinator. TFL have confirmed that it has been a difficult journey to achieve their current reliability rating of 99.6% (excluding planned maintenance downtime) and this has remained stable over the last 12 months.

As part of the recent Lift and Escalator Contract re-tender due to the specialist nature of the Inclinator it was given a Lot on its own. Unfortunately, no compliant bids for this Lot were received it is therefore being proposed that we adopt the same maintenance regime undertaken by TFL and go back out to the market to obtain a new contractor to maintain the Inclinator. This is likely to result in a higher annual planned maintenance cost but would give assurance that a suitable company was maintaining the Inclinator and allow for a greater reliability in the service. As a result, reducing reactive repair costs.

In March 2015 this committee was presented with alternatives to the Inclinator, these ideas have been revisited in this paper. Officers still in the current circumstances consider that the Inclinator is the best approach for assisted access in this area and with the further enhanced maintenance contract in place this should allow a more reliable service to be provided.

Whilst it is accepted that the Inclinator continues to cost the City money to maintain it is considered that this option is more cost effective than providing alternatives, for example a ramp access which would involve a significant initial capital outlay, assuming planning requirements can be satisfied at all.

Recommendation

Members are asked to:

- Agree that the City can adopt the same approach as TFL to maintain the Inclinator and go back out to the market with very specific requirements. We would also invite Kone, who maintain the Inclined Lift at Greenford Station, to bid for the contract.
- Agree that the City can obtain a quote from Kone to replace the inclinator with one of their own manufactured ones to assess whether it is better value for money to do this or to continue to maintain the current one
- Allow the City Surveyor to open discussion with the developer of the Millennium Bridge Development to deliver the long-term option of replacing the Inclinator with a more suitable alternative.

Background

1. The original Millennium Inclinator was provided under a contract between the London Borough of Southwark, Momberg & Thorsen McAlpine and the Millennium Bridge Trust. It was manufactured and installed by the Italian company Maspero Elevatori. Upon completion in 2003 it was handed to the City of London Corporation to maintain going forward.
2. The original inclinator had a history of persistent breakdowns and up to the time it was replaced in 2012 an additional £285,000 had been spent on maintaining the lift including costs of remedial works.
3. In May 2011 this committee gave approval to replace the Inclinator at the Millennium Bridge in time for the London 2012 Olympic games. The understanding was that the inclinator would have the same footprint and profile as the previous inclinator but be more robust. It was manufactured by the German company Hutter Aufzuge and installed by Axis Elevators. The work started on site in January 2012 and was completed by June 2012 in time for the start of the games.
4. The cost to replace the Inclinator was £752,000 and it was funded from the Bridges Repairs, Maintenance and Major Works Fund.

Current Position

5. Since the new Inclinator has been in use it has broken down 146 number of times (July 2012 – April 2019). 2018 was a poor year with the inclinator out of

service for 91 days mainly for planned refurbishment works. Performance this year has been better, the clear majority of the down time being associated with cyclical maintenance works before Easter.

6. Under the current contract the Inclinor costs £9,500 per annum to maintain this includes all planned preventative maintenance (PPM) visits, minor parts and works. The other public lifts cost the City £4,000 per annum to maintain.
7. At the beginning the Inclinor was managed like all the other public lifts i.e. parts were replaced on failure or at the end of the normal expected service life for similar parts.
8. In March 2015 a report was presented to this Committee to consider options on the future of the Inclinor as it was still not considered to be a reliable lift. It was agreed that an enhanced maintenance regime should be undertaken to improve on the reliability of it. The enhanced maintenance regime included:
 - A stock of critical spares which are made to order should be purchased and kept at the Guildhall. These critical spares would be used as required and meant that the long lead time for parts to arrive from Germany would be reduced. Once critical spares were used, they would be ordered again. The initial cost to stock the spares was £17,000.
 - A new maintenance approach should be adopted, and a shorter service life assumed so parts would be replaced early before they fail to ensure that the Inclinor is maintained more like a commercial aircraft.
9. The table details the use of three key public lifts and shows that the Inclinor is now more closely aligned with the other public lifts than previously. However, it needs to be noted that the Inclinor has a totally different operating environment which is more demanding being open and almost maritime in nature.

10.

Lift	Monthly Usage
Millennium Inclinor	3,470
Blackfriars	4,765
East Pavilion	4,153

11. Since the agreement in 2015 to adopt the new maintenance regime there have been several significant projects which have been undertaken on the Inclinor these works have now meant that the majority of key parts have been replaced, these include:
 - Open protocol machinery control panel
 - Complete rewire of the electrical system
 - New car door operators
 - Replacement of main hoist ropes
 - Replacement of the car and landing push buttons and indicators
 - Replacement of the car and counterweight rollers
 - Replacement of door gears
 - Replacement of guide shoes

12. The total cost of these works is approximately £143,000 and has been funded from the 50-year maintenance budget for the Millennium Bridge.

13. The details of all costs to date on the Inclinator are in the table below:

Works	Cost
Maintenance and Remedial Works spent on the Original Inclinator	£285,000
Replacement of Inclinator in May 2012	£752,000
Annual Maintenance 2012 – 2019 (9,500 per annum)	£76,000
Initial stock of critical spares bought in 2015	£17,000
Replacement of Critical Spare Parts	£12,100
Project Works	£143,000
Total	£1,285,100

14. Lift installations typically have a service life (with appropriate maintenance) of 25 years however due to its increased usage and exposed location this would reduce to 18 years. Therefore, there is potentially another 12 years of service for the Inclinator before we should consider replacing it in its entirety.

Greenford – Inclined Lift

15. When the original Inclinator was installed in 2003 and its replacement in 2012 it was considered to be the only one within the UK, so it was difficult for the City to compare the performance of the Inclinator with others.

16. In 2016 TFL installed an Inclined lift at its Greenford Station, they replaced a wooden escalator with the lift which serviced the exit of the station from the platform.

17. After encountering design and install problems which have now been overcome, TFL have stated that the Inclined Lift works at a reliability level of 99.6% over the last twelve months. That does, however, require quite intensive planned preventative maintenance and downtime.

18. TFL are so pleased with this inclined lift they have arranged for 4 more to be installed at Crossrail stations (2 at Liverpool Street and 2 at Farringdon).

19. A visit by City representatives has allowed a comparison of the two inclinator to be undertaken and has identified the following similarities with how the two organisations operate the machinery:

City	TFL
Undertaken modification works to bring the German technology to a more recognised industry standard product	Similar
Various contractors have maintained the Inclinor over the years it has been operating. Current 6-year contract ends July 2019.	Kone maintain the Inclined Lift and installed it. Kone now manufacture an Inclined Lift of their own which will be installed in the Crossrail stations. The maintenance contract is for 30 years giving more consistency of service.
£9,500 per annum to maintain	£12,000 per annum to maintain
Response within 2 hours for a breakdown	Response within 1 hour for a breakdown
Monthly Service Visit which requires downtime of 1 hour per visit	Enhanced Maintenance Regime which requires 4 hours per month
3470 trips per month	3200 trips per month
2012 Design	2015 Design which is now more heavy duty and has been modified to cope with the level of use
Open to the Environment and elements which affects its operation	Enclosed within the station
Door Operators on the bottom due to the line of sight (not standard)	Door Operators on the top which is standard practice
Lift Contractor uses a wider team of engineers to support the City's contract which means lots of different engineers could be working on the Inclinor which does not give consistency.	Kone have a dedicated small team of engineers that just work on the TFL contract due to its size

20. The City is seeking advice from Kone on the best way to maintain the Inclinor and that service regime will form part of the new tender exercise which will shortly be undertaken to set a new maintenance contract in place.

21. The TFL Inclined lift has the following maintenance enhanced regime:

Month 1	Operational Check (4 Hours)
Month 2	Machine Room Service (4 Hours)
Month 3	Operational Check (4 Hours)
Month 4	Lift Car Service (4 Hours)
Month 5	Operational Check (4 Hours)
Month 6	Lift Shaft Service (4 Hours)
Month 7	Operation Check (4 Hours)
Month 8	Machine Room Service (4 Hours)
Month 9	Operational Check (4 Hours)
Month 10	Lift Car Service (4 Hours)

Month 11	Operational Check (4 Hours)
Month 12	Annual Service (12 Hours over 3 Nights)

In addition to the above the Inclined Lift has two cleans per annum, this includes all aspects of the Lift Car and Glass Housing.

Going Forward

22. There following options have been considered as an alternative to the Inclinator and discounted as not feasible.
23. Replacement with a vertical lift:
A conventional lift would impact on the views of St Pauls from the river Thames and the Millennium Bridge. Therefore, it is unlikely to be given planning permission as it was previously refused. Even if possible, this would cost in the region of £275,00.00 purely for the lift installation plus substantial costs for associated civil and structural work.
24. Replace with a ramp:
Due to the limited space between the riverside walkway and the millennium bridge there is not enough room to provide a ramp that meets the accessibility requirements. Any possible ramp location is likely to be so far away from the bridge to not be a feasible alternative as it would lead to a route up to Queen Victoria Street and back down to the bridge.
25. There is the potential for Millennium Bridge House which is adjacent to the Inclinator to be developed in the next few years, it is considered an attractive option for the replacement of the Inclinator with a vertical lift to be incorporated into this development. This approach would remove the planning difficulties with maintaining the sight line of St Paul's from the river.
26. Therefore, this report is proposing that the City continues to maintain the Inclinator to the current standard with the following changes:
 - At the recent Lift and Escalator contract re-tender the Inclinator was categorised as a separate lot on its own. Unfortunately, due to the specialist nature of the equipment no bidder was successful in winning this lot. It is therefore proposed that after discussions with TFL as to how they maintain their Inclined Lift, we adopt the same approach and go back out to the market with very specific requirements. We would also invite Kone, who maintain the Inclined Lift at Greenford Station, to bid for the contract.
 - Obtain a quote from Kone to replace the inclinator with one of their own manufactured ones to assess whether it is better value for money to do this or to continue to maintain the current one
 - With the long-term option of the replacing the Inclinator with a vertical lift which would be part of the Millennium Bridge House development.

Conclusion

27. Whilst it is acknowledged that the operation of the Millennium Inclinor since it has been installed has not always been as reliable as it should be, reliability is improving.
28. Over the last 16 years £1,285,100 has been spent on the Inclinor of this figure 59% or £752,000 represents the replacement in 2012.
29. Going forward maintaining the Inclinor is still the most cost-effective option and by working closely with TFL and their maintainer to ensure we have the right maintenance regime in place it will allow the City to reach an availability rating of circa 99% for our Inclinor.

Appendices

- None

Background Papers

- Millennium Inclinor Project (Dec-April 2018) – Planning and Transportation Committee 20th February 2018
- Millennium Bridge Inclinor Options Paper – Planning and Transportation Committee 17th March 2015
- Evaluation Report on the Replacement of the Millennium Inclinor – Planning and Transportation Committee 11th May 2011

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