HIE and the funicular at Cairn Gorm – re-thinking the options

Description

Webcam images courtesy of CMSL webcams 21/10/2022.

It is more than apparent that HIE will never allow the dysfunctional monstrosity of a funicular, so abhorred by snow sports enthusiasts and environmentalists, to be dismantled, especially after the huge repair bill funded by the Scottish Government, unless something goes so catastrophically wrong that they have no choice.

But there is another option, just keep part of it!

Looking at all the repairs being done the greatest expense is obviously from the Shieling to the tunnel ([see the webcam image above). This is likely to be two, three or four times the cost for the lower half (see webcam image below). We won't know the exact answer until the repairs are finished and the final bill tallied up.

When the repairs were being costed, HIE should have known this and yet couldn't or wouldn't explore a viable alternative. The solution was actually quite simple and most importantly far more affordable. Remove the uphill section of the funicular from the Shieling, Anchor Block 48 shown below:

Then build a new passing loop between the base station and the Shieling and replace the top half with a chair /gondola hybrid from the Shieling to the Ptarmigan.

What this would do is enable snowsports to be concentrated on the upper half of the mountain, as I proposed in my last post (see here), while retaining a means of access from the car park to the bottom of the area with the most reliable snow.

There would be at least two options for removing the upper part of the funicular:-

(1) Use the bogies to remove the rails, plinths, etc. from the top downwards to a point where a crane can be used to lift them away for re-cycling, or,

(2) Reinstall the cableways used to build the track in 1999/2001. The anchor points are still there according to Morrison's Health and Safety file:

2.2 CABLEWAY ANCHOR POINTS

The cableway system erected comprised of two separate systems with a change over point at the Shieling. This was necessary due to the curved line of the Funicular.

The lower cableway was an all terrain system pulled into an S shape over the centre line of the Funicular. The gradient of the ground here was not steep enough for the cheaper gravity system.

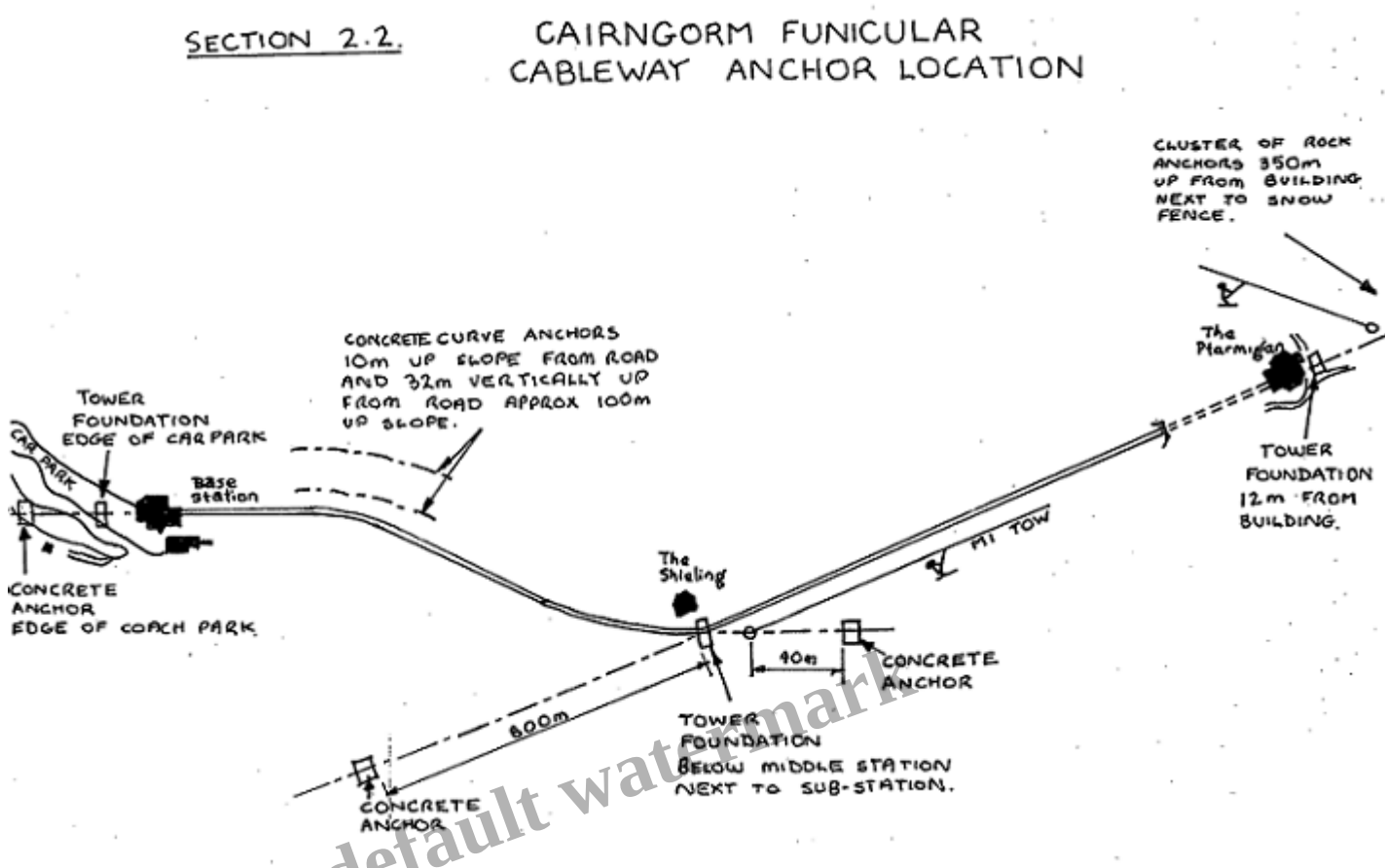
The upper cableway was over steep terrain allowing a gravity system to operate.

The skyline on the lower cableway was anchored at both ends by reinforced concrete deadman anchors as the placing of rock anchors was not possible. The upper cableway skyline was anchored at the lower end by a concrete deadman anchor and by a cluster of rock anchors at the upper end. All these anchors are exactly in line with the funicular structure and are shown on the accompanying sketch.

The main end towers were founded on concrete bases with one in the upper car park, one at the Shieling and one just behind the Ptarmigan. These foundations are still in place as are the skyline concrete anchors but they have been buried and landscaped.

The intermediate towers were anchored by Ischbeck Titan ground anchors. The first curve towers were the only exception with any type of ground anchor being impossible to place in the steep talus slope above the access track. Holes were carefully excavated by hand and then filled with concrete via helicopter. Bars were cast into these concrete and boulder deadman anchors. These bars were cut off at the end of the Contract but the concrete still remains. These anchors are vertically 32m above the first curve i.e. the height of the towers.

Extract from page 9 of Morrison's Health and Safety file



Extract from page 13 of Morrison's Health and Safety file

These anchor points could be tested for strength as they have been lying unused for 20+years and if suitable then this would NOT require a totally new cableway as suggested in the 2019 BAM/COWI report into dismantling the funicular railway (see here). These same cableways would be used to build the new uplift.

HIE have always claimed that the cost of demolition was more expensive than re-instatement of funicular, conveniently forgetting to mention that at some time in the future it will have to be removed. How they came to that conclusion with the high end demolition costs being in the region of £13m (see screenshot below) and the repair bill now heading towards £30m is anyone's guess?

Summary of Conclusions

Based on the work done to date BAM has determined that:

- The cost of dismantling the funicular railway, excluding the removal of the carriages and rope system, is expected to lie in the following range (based on current prices):

Probably Best Case	£8,500,000	Assumes 4 weeks weather downtime. 2 seasons required.
Most Likely	£10,500,000	Assumes 7 weeks weather downtime 2 seasons required.
Probably Worst Case	£13,300,000	Assume 11 weeks weather downtime 3 seasons required.

- It is expected that two seasons will be required for the dismantling work, based on a contract award being made in the autumn of the preceding year.

  The cable crane supplier has advised us that there is an option for a larger cable crane, which would then allow the beams to be removed from the structure in pairs, thereby speeding up the dismantling process. It is possible that this will allow the work to be completed more rapidly such that it can be undertaken in a single season; however it is thought that this would be very challenging to achieve. In order to assess the feasibility of this option a more detailed analysis would need to be undertaken of the work involved in rigging the crane, with further input from the crane supplier, plus the likely time saving that could be achieved with the greater lifting capacity.

In both the screenshot above and the one below mention is made of an aerial cableway. While the cost of the cableway option was acceptable for the demolition of the funicular it was considered to be too expensive for the repairs! If the helicopter option was the cheaper of the two then why was that not used to cost the demolition? The obvious answer, that would have brought down the cost of demolition, which would not have suited HIE's agenda to repair the funicular at any cost.

6 Budget estimates

6.1 Estimating method

The strengthening cost estimate is based on the extents described in section 4.3 above and the details described in section 5 above.

The cost estimate for the strengthening has been determined with the assistance of BAM construction. Two versions have been considered, one with construction spread across two summer seasons and one with construction in a single summer season only. The full report including all assumptions and outline programmes are given in Appendix F.

The following key assumptions were made:

- In the two season option the strengthening is constructed over 2 summers: 2020 and 2021, the summer season extending from late May to late October. This includes approximately 5 weeks terminal float.
- In the single season option the strengthening is constructed in the summer of 2020, from early April until late November. This also includes 5 weeks float.
- A review of using a temporary cableway similar to that used in construction proved prohibitively expensive. Helicopters are used to transport materials from a base at the bottom car park to the work sites. In the version with construction in one season, two helicopters would be required at peak periods. The funicular is not available to assist with construction, and no temporary cableway is installed. The single season option relies on the use of purpose built rail mounted lifting trolleys.
- Excavations for foundations are generally carried out by low ground pressure excavators below the passing loop and spider type excavators above the passing loop. All excavations are made good after completion of the works to restore the existing surface material.
- Surplus excavated material is not disposed off-site.

6.2 Construction cost

For either the two season or one season versions, the estimated cost is £5.6 million with a +/-20% margin of error excluding the material cost of the vertical load bearings. This is estimated to add £0.25 million giving a total of £5.85 million +/-20%. The estimate includes 5% for risk and is based on 3.7% Retail Price Index.

How were those estimates so far off the actual figure, which are already well above that but the final amounts will not be known for several years? Maybe HIE should have taken more notice of Morrison's Health and Safety file.

The costs of this alternative option

(1) Follow the plans shown in my previous post.

(2) Remove the upper part of the funicular, cost at a very rough guess half of £13m = £6.5m.

(3) Replace the upper half of the funicular with a chair/ gondola hybrid. The quote from Doppelmayr in 2019, and carried forward to 2020, for a chairlift from the car park to the Shieling was approx. £6m, so about the same price from the Shieling to the Ptarmigan? Add those two figures together and you get £12.5m, far less than the current estimates for the repaired funicular.

This plan would effectively double the hourly capacity of the funicular, which a chair/ gondola hybrid could easily handle for people wanting to go to the Ptarmigan, and possibly have been in operation two years ago.

But then, what do I know? After all I'm just a mechanic whereas HIE are the experts! With a little bit of thought and effort Cairn Gorm could and should become the great ski resort it used to be.

"*Where it will all end, who can guess? I have seen the coming of all the lifts and ski facilities in the U.K, in particular in Scotland, and am proud to have been a part of what it is today. I really hope to see Scotland's first mountain railway. If I see that, I will witness the start of the rebuilding of Cairngorm.*

That is one of my "Wee Dreams".

Yours Aye in skiing,

Frith Finlayson

Aviemore, Scotland. 9.30 pm. 3rd May 1995."

The quote is from someone who didn't consider himself as a pioneer in skiing, but along with so many no longer with us, he certainly was. My thanks to his grandson Craig Frith Finlayson for permission to use it. Well Frith, all I can say is, with no disrespect, how wrong you were! Your "Wee Dream" has turned into an absolute nightmare for snow sport enthusiasts! Not what you expected or wanted.

In any customer based business the way forward is to listen to what your customers want and then provide this in the best way you can. From 347,000 skier days in 1986 to the 30,000 forecast now, reduced parking facilities, a reduced ski area and reduced poor quality uplift? That is never going to be successful.Are HIE deliberately trying to close the Cairn Gorm ski area? It certainly looks that way to me.

Category

1. Cairngorms

Tags

1. Cairn Gorm
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