



Highlands and Islands Enterprise
Iomairt na Gàidhealtachd 's nan Eilean

PLANNED MAINTENANCE CONDITION SURVEY REPORT

ON

**BUILDING CODE:
WASTE WATER TREATMENT PLANT (BOTTOM
CAR PARK) CAIRNGORM MOUNTAIN
CAIRNGORM**

FOR

HIGHLANDS AND ISLANDS ENTERPRISE

AS AT

MARCH 2011

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Cairngorm Ski Centre
**Condition Survey of the Property &
Infrastructure at Cairngorm Mountain**

Report on Maintenance Procedures for the Ski Tows and Funicular
October 2013

New Job Number: 47067575

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Introduction

1.1 Brief

1.1.1 Historical Brief

Davie and McCulloch Ltd, Consulting Engineers (M&E) were appointed by King Sturge, who in turn were appointed by Highlands & Islands Enterprise (HIE), to undertake a conditions survey of the property and infrastructure at Cairngorm Mountain.

Scott Wilson Ltd, subsequently acquired by URS Infrastructure & Environment UK Ltd in August 2010 were appointed by Davie & McCulloch as their sub-consultant to assist them in this exercise, with the specific brief to address sections (viii) Ski Tows and (ix) Funicular of Section 3 of the Scope of Service as set out in the invitation to tender dated 6 August 2010. The specific requirement in respect of ski tows and funicular was to “verify that the operators current arrangement represent a suitability comprehensive inspection, maintenance and documentation regimes, fit-for-purpose and compliant with all relevant legislation”.

The exercise was carried out in two stages. The first stage comprised an initial desk-top appraisal of relevant legislation together with a review of the selection of documents supplied to Scott Wilson. These included inspection and maintenance plans and a series of inspection reports.

Following completion of the initial appraisal, from which an number of items were identified requiring further investigation, a visit was arranged to the offices of the Cairngorm Mountain Ltd (CML) at the ski centre with the purpose of questioning members of staff regarding procedures and examining further documentation held at this site.

On completion of staged reviews of information Scott Wilson Ltd issued the final report March 2011.

1.1.2 Current Brief

URS Infrastructure and Environment UK Ltd have been appointed by Highland & Island (HIE) to carry out a review of the current operational / maintenance regime as per the original historic brief itemised above and to provide comment on the same based on the conclusions / recommendations made within the original Scott Wilson Ltd report dated March 2011.

Once again the current review exercise was carried out in two stages. The first stage comprised of a site visit carried out on Tuesday 7th July 2013 with the stated aim of questioning member of staff regarding existing procedures together with examination of available documentation onsite.

The second stage comprised a desk-top review of documentation forwarded to URS which was not previously available for viewing during the site visit together with the

same from sub-contractors and from various specialist organisations / individuals concerned with the ongoing maintenance / inspections regime operated within the facility.

1.2 Executive Summary

We are satisfied that our investigations have served to confirm that Cairngorm Mountain Ltd's current arrangements represent a comprehensive inspection, maintenance and documentation regime, and in our opinion would appear to be fit for purpose and compliant with relevant legislation.

We are satisfied, in so far as we can be from the information made available to us, that CML are operating an inspection and maintenance regime sufficient to ensure that the ski tows and funicular are being properly and adequately maintained in accordance with relevant regulations.

We did however identify a small number of relatively minor issues within their procedures where improvements can be made in order to provide greater clarity with reporting procedures, record keeping and effective timeous targeting of inspections and repairs. We would stress that this is largely a book-keeping exercise and is not intended as a criticism of the actual inspection and maintenance work or safety procedures which have been observed / noted as being of high overall standard.

2. Initial Findings

2.1 Introduction

The visit to Cairngorm Mountains Ltd (CML) took place on Tuesday 2nd July 2013 where we met with [REDACTED] and [REDACTED] all of CML. We would record our thanks and appreciation for the great assistance and clarity of explanation that we received from all parties.

2.2 General

At the onset we established that in addition to the existing very detailed separate operation and maintenance manuals and procedures currently in place and as noted in our original report a new master schedule by Turner Townsend has been introduced to log / monitor planned maintenance, progress and operational procedures. It was also noted / explained that a Norton Waugh planned maintenance program is used for confirming that all planned maintenance is carried out specifically with regard to ski tows. This dual management system whilst working satisfactory leaves the possibility for items to be missed / not entered into system and as such, as per our original report we would recommend introduction of a single overall program, in effect a "master diary" to collate all details. As per our previous report a comprehensive system of daily checks is carried out prior to any equipment being put into operation. The check lists for individual items of equipment (e.g. ski tows and the funicular) are retained at the individual tows and are transferred periodically to the base station for archiving. Once the daily checks have been completed, the individual responsible contacts, by radio, the Duty Manager to report that the checks have been completed. Only one

party, the Duty Manager, designated as Chief of Operations for the day, can authorise the opening up of the ski tows for use of members of the public. Thus, there are clear lines of control with a single point of responsibility to ensure all equipment has been checked on a daily basis before the tows are opened to the public.

Examples of the check lists adopted and viewed onsite are noted within later sections 2.3 (Ski Tows) and 2.4 (Funicular Railway)

2.3 Ski Tows

The ski tows are maintained by CML's own staff.

Separate O&M manuals are available for each ski tow, the master (paper) copy (seen but not examined in detail by URS) of each is held within the admin block, the detailed content of which is also available on line (not seen by URS) and readily accessible by maintenance staff.

CML utilise computer software to control and manage the planned maintenance of ski tows. These are broken down into a series of maintenance activities, identified as such on the maintenance plans. Each maintenance activity is further broken down into a series of individual tasks which are printed out to form worksheets for individual maintenance staff. The worksheets are issued to maintenance staff on a daily basis, the maintenance staff carry out the tasks and record the details on the worksheets before returning the completed forms to the admin department where the data is entered onto the computer records. The maintenance activities can only be closed off when all of the tasks for each individual activity have been completed.

Line work Inspection Master Sheets were viewed for all ski tows and samples of completed sheets were also provided by CML staff for inspection. Inspection sheets cover all major components individually with fault, work done and date completion sections included. A number of relatively minor shortcomings were noted within the viewed inspection sheets namely:

- The name / signature of the fitter carrying out the remedial tasks were not always recorded on the sheet.
- Qualifications of the fitter carrying out the remedial tasks were not recorded on the sheet.
- Target dates for completion of remedial tasks were not present on inspection sheets.

Maintenance reports were viewed for the Ptarmigan Tow which received a complete overhaul in 2012. Reports viewed included T-Bar maintenance Return Tower, T-Bar maintenance Towers and Annual Electrical Inspection. Scheduled work carried out as itemised on report sheets were cross referenced with recommended maintenance schedule for Tow and no discrepancies were observed between the information viewed. Minor tower base remedial works were noted as being scheduled for August /

Sept 2013 on sheets which is cross referenced with same contained within A.F Crudens' Funicular and Tows Report 2013.

For the Fiacail Ridge Tow both repair schedules and maintenance sheets were viewed and inspected. The sheets covered both electrical and mechanical works.

In our original report the qualifications / experience of CML staff carrying our maintenance procedures on the Tows were not able to be verified at that time. Verification of qualifications / experience was confirmed – refer to later section 3.5

All tow ropes are visually inspected annually by CML staff and repairs carried out as necessary. One member of the maintenance team is an expert in splicing tow ropes. Non-destructive testing (NDT) is then undertaken by a specialist if the visual inspection indicated defects or after any remedial splicing work has been carried out. (Refer to later section 3.3) If new ropes are installed they are of galvanised construction.

Two number recently completed wire rope inspection reports by Reel Europe were viewed and inspect for 2 no ski-lift counter ropes. Both inspection sheets confirmed that both ropes were acceptable with regard to the criteria laid down in BS ISO 4309. The following short comings were noted with the viewed reports namely:

- Exact tow rope location not identified i.e. which ski tow inspected
- Details of certifying authority and client not in filled on sheet
- Signature of engineer not in filled on sheet

2.4 Funicular Railway

2.4.1 General

Annual inspections and testing are carried out by Garavanta (Mechanical Installations), Frey (Electrical Installations) and A.F Cruden Associates (Consulting Civil Structural Engineers). Regular daily, weekly and monthly inspections are undertaken by CML staff.

2.4.2 Garaventa (2012 Inspection)

The inspection by Garaventa is undertaken each year by the same engineer who built and commissioned the system and who returns each year to carry out the same. We are advised that he has developed a good relationship with the staff on site and is readily contactable by email and/or telephone. This was demonstrated by our own email discussions with the same. Following completion of his inspection, the Garaventa engineer is de-briefed by [REDACTED] and any items requiring immediate attention are identified. Following on from that, the hard copy of the Garaventa Report is issued. In our previous report the lack of timeous issue of report was noted. We can confirm that for the 2011 and 2012 reports viewed that these were issued timeously to CML.

Garaventa's Report lists a summary of actions required; however we are concerned that no timescale is allocated to these actions. It may be these actions ate not time-

critical, if so, this should be stated. We would recommend that CML ask Garaventa to provide such information in all future reports.

We noted in Garaventa's 2012 report that in Section 3, under the heading Review of Maintenance Incidents 2011-2012, an entry was made for vibration analysis with the comments "So far no measurements of the drive components have taken place and no analysis as to the condition of those components had been carried out". There is no indication as to whether or not this item is critical or overdue and, indeed, it is not flagged up in the summary of actions. We are advised from further enquiries made by CML that this work should be undertaken by CML and that appropriate equipment needs to be purchased in order to carry out the testing. CML should establish from Garaventa the frequency and time intervals for undertaking the vibration analysis to allow analysis to proceed.

Once the Garaventa report is received by [REDACTED] he addresses the action list and passes the details on to the works foreman for appropriate action. Thereafter the foreman reports back on completion. We saw no written record of these actions. We have concerns that there does not seem to be any formal overall checking procedures in place other than the review undertaken by Garaventa at the subsequent annual inspection. We would recommend that a system be developed to record that appropriate instructions have been passed to the works foreman, that the works foreman has reported completing the work and that the whole process has been followed through to completion, thereby clearly demonstrating that any defects identified by Garaventa during their annual inspection have been properly addressed within the required time frames. It should be possible to devise a computer based record system that will automatically flag up any missed target dates thereby avoiding placing too much reliance on administrators manually checking for target dates.

2.4.3 Frey

The Frey inspections are generally carried out at the same time as the Garaventa inspections.

No specific issues were identified arising from the report that we examined or from our discussions with CML staff. The electrical drive system was noted as being in good condition and with this function check completed and with the daily, weekly and monthly test done by CML maintenance crew the safety of the system is ensured.

We would recommend that similar procedures are set up to deal with the annual test reports (2011-2012) produced by Frey. We would note that in passing that there are no outstanding actions identified in the Frey report for year 2011 or 2012.

The Frey Report for 2013 was not available for viewing.

2.4.4 A.F Cruden Associates

A.F Cruden are appointed directly by Highland & Island Enterprise (HIE) to carry out structural engineering services on both the funicular railway and the ski tows. A.F Cruden report direct to CML and advise on any structural defects requiring remedial actions. From evidence viewed (e-mail trail) subsequent works packages are tendered and let based on “lowest tendered price”. A.F Cruden monitor and inspect completed remedial works and sign off same when completed to their satisfactions (again verified by e-mail trail between A.F Cruden and CML).

From our previous report some ambiguity existed over the status of some noted defects highlighted in earlier A.F Cruden reports titled “Lifts and Tows 2010”. Subsequent scrutiny of later report by A.F Cruden / Garaventa confirms that repairs noted have been inspected and closed out. Scrutiny of Garaventa reports 2011 confirmed also that concrete beam remedials at cross over points and rail bases (plinths) had all been closed out.

Copies of reports by A.F Cruden Associates pertaining to Funicular & Tows condition Survey 2013 and Tunnel Monitoring Project Report June 2012 were examined on site and passed to use via e-mail 6/9/13.

The Funicular and Tows report 2013 is a comprehensive document which records all the lift and tower bases on Cairngorm Mountain in terms of their location and identify together with any required remedial works which are required to be carried out as part of the ongoing scheduled maintenance of the current company assets. The report is limited to the supporting mechanisms of the lifts and tows and does not address the tow towers themselves which are inspected by CML on a regular basis and by Allianz as part of their independent annual report to address inspection requirements as laid down by the insurers of the company assets.

The report incorporates a grading system applicable to the holding down bolts in the concrete bases. The adoption of this methodology will give some form of condition grading on the bolts and in the absence of physical testing on the bolts allow for comparison in future years.

Remedial recommendations are currently being actioned as part of planned maintenance.

The Tunnel Monitoring Report presents the results of a 12 month monitoring period within same together with the specification of required remedial works and further actions. The report confirms that the tunnel is stable and is not undergoing any ongoing movement. Subsequent repairs have been specified by A.F Cruden, tendered and installed onsite with all remedial works signed off / closed out by A.F Cruden 26th June 2013.

This report specifically makes reference to previous remedial waterproofing contracts carried out by the contractor ROK (now defunct) in 2010 and noted within our original report. The remedial repair in 2010 had improved the situation with regard to water ingress but had not totally resolved the issue.

It is evident from the contents of the viewed reports that there are robust and comprehensive measures in place for addressing the ongoing maintenance of the infrastructure.

2.4.5 Maintenance Procedures

A comprehensive Inspection and Maintenance Plan exists for the funicular railway which was viewed in house 2/7/13. Principle electrical and mechanical elements are covered by a comprehensive schedule of maintenance checks. Schedules viewed, itemised checks to be carried out on a daily, weekly, monthly, 3 monthly, 6 monthly, yearly, 2 yearly and 4 yearly cycles.

The primary structural support structure namely bases, crossheads, bearings, beams, welds and bracing are all scheduled for yearly inspections.

A guided tour of the top station by [REDACTED] allowed physical examination of both most current (2/7/13) log together with historic logs. The daily log sheets are noted hereunder:-

1. Cairngorm Funicular Counter Station Weekly Maintenance Record Sheet
CML Mech 5
2. Daily electrical check for drive and counter stations
3. Daily mechanical check for carriages (car one and car two)
4. Daily control room log sheets
5. Funicular Fault Reporting log
6. Carriage attendants Funicular Fault log

All of the above log sheets were noted to be in-filled, dated, signed with any comments noted.

Points 5 and 6 are recently added safety logs which have been introduced by CML to help identify small (non-safety) issues which can be included within planned maintenance programmes.

2.4.6 Inspection Report Not Provided

The following inspection reports at time of report were not provided for inspection:-

1. Structural inspection of Funicular support structure, foundation, column, crossheads, beams
2. Structural inspection of winding support gear and foundations.

2.4.7 Aquaterra Solution Ltd

The July 2011 Report on Structural Inspection of Connection Welds was inspected onsite at Funicular Base Station 2/7/13. A comprehensive testing regime of welds was noted with all defects contained / identified within the reports executive summary. Report contained inspectors full technical qualifications with all necessary pages dated, signed and stamped.

Further in-depth scrutiny of the documentation noted however that the welds inspected have not been passed or failed. Indeed the report states “No technical specification or defects criteria were provided so defects are reported as per ASMEVIII criteria but welds have not been passed or failed”.

Confirmation is required regarding weld status and to provide clarity over what remedial works are required and over what time frame they have to be carried out over.

2.5 Financial Authority

As per our original report, we made enquiries about the financial authority to authorise repairs as and when required. We are satisfied that sufficient authority exists. We are advised that [REDACTED], as Maintenance Manager, has approval to authorise small items of expenditure and is actively involved in the preparation of the annual budgets. Authorisation for expenditure of larger sums of money needs to be signed off by the Chief Executive and the Finance team; again we are advised that this approval is normally forthcoming.

3.0 Further Investigation / Submissions

3.1 Introduction

Further documentation requested at initial site visit were forwarded by e-mail to allow desk-top appraisal of same. We would wish to record our appreciation to [REDACTED] [REDACTED] Keith Bryers and [REDACTED] for their assistance in this task.

3.2 Rexroth May 2012 Service Visit Report

Comprehensive report submitted for review regarding Funicular cars main braking system. Report states extent of inspection / remedial works carried out together with recommendation for future remedial work to be carried out. Chemical analysis reports relating to oil samples taken from cars braking reservoir were appended to report – all samples were noted as being acceptable.

Reference is made to meeting with CML representatives to discuss purchasing of critical spare parts that would be needed in the event of a component failure during the load test. No evidence was noted that they spare parts were purchased prior to commencement of load test. Full load test carried out successfully. (reference to be made to Garaventa report of 2012).

With regard to future reports we would request that a definite timescale for future remedial works be included within the report together with the addition to same of the engineer's qualifications.

3.3 Allianz Nov 2012 Report

This is an independent report carried out specifically to address inspection requirements laid down by the insurers and does not form part of the routine or regular maintenance of the ski tows. Notwithstanding this, the reports do serve to provide a degree of independent confidence in the work done by CML staff. Previously this report was provided by Bureau Veritas.

The Allianz Report as per the previous Bureau Veritas Report identifies a number of defects and observations and allocated them to categories A, B and C. Category A requires immediate attention, category B requires attention as soon as practical and category C being a recommendation for good house keeping

In our previous report CML were unable to produce any demonstrable system to address the actions identified by Bureau Veritas and to keep on top of progress through completion. This has been addressed in the Allianz Report. All actions identified within the report have been closed out with signed / dated description of remedial work appended to the original Allianz Report.

A general concern raised within our previous report concerned the need for timely issues of inspection reports. It was noted that the Allianz report was issued within 3 weeks of site inspection and that all subsequent remedial works orders were carried out by CML within 2 weeks of receipt of final report from Allianz.

3.4 Rope Life

Within our previous report comprehensive comment was made regarding the general requirements and statutory regulations pertaining to the maintenance procedure afforded to the rope structures and the subsequent effect on their lifespan due to same. The regulations considered were Approved Code of Practice on the Mines (Shafts & Winding) Regulations 1993 under Section 16 of the Health and Safety at Work Act 1974, Lifting Operations and Lifting Equipment Regulations 1998 and Cableway Regulations 2004.

Our understanding and interpretation of guidelines led us to our recommendation, contained within our previous report, that Haul and Balance rope structures should be replaced every 5 years. Discussions onsite, with specialist rope manufacturers and with [REDACTED] of Garaventa confirmed the enormity of this operation not only in purely financial terms but also in the large scale engineering works involved.

Unlike other systems such as building lifts and cranes, the tow and funicular ropes, with the exception of tensioning ropes are not changed periodically. The ropes are maintained, cleaned and lubricated as well as being visually checked with NDT periodically carried out. Discard criteria according to the respective codes EN 12927-6 in the case of the Funicular Railway are applied.

The common behaviour of a rope during its life is known thanks to empirical studies/physical testing which forms the basis to allow prediction of the life time, or

number of bending cycles of a rope when certain test data e.g. NDT results is gathered and analysed.

CML currently operate a verifiable comprehensive maintenance, cleaning, lubricating regime with regard to rope structures together with collation of NDT results and as such are building up an accurate life history of the rope structure which will as mentioned previously give accurate prediction regarding anticipated rope life.

3.5 Competency of Operatives

One crucial element of the regulations is that the onsite equipment is inspected and tested by competent persons.

With respect to the annual inspections of the funicular, these are undertaken by contractors, specialists in their fields, and as such it is to be presumed that they employ suitable competent personnel. From our industry enquiries we find no reason to dispute this assumption.

The inspection and maintenance of the ski tows, likewise the daily and weekly inspections of the funicular, are undertaken by CML and we must therefore look to CML to ensure that competent persons are employed on these operations.

We have been forwarded copies of the Maintenance Teams trade skills, qualifications and certificates obtained from ongoing training courses, direct from CML Head of Human Resource Dept which confirm that the staff employed are competent to discharge their individual duties.

The present staffs include a time-served mechanic and an ex-lift engineer with rope splicing expertise.

CML make regular use of recognised companies who are specialists in their individual fields. These companies are normally listed in the operation and maintenance manuals which designate specific suppliers, contractors and manufacturers equipment.

On the basis of the evidence we have seen we would conclude that the inspection and the maintenance of equipment would all appear to be carried out by competent persons familiar with the operational requirements of these assets.

3.6 Health and Safety Executive (HSE)

The HSE visited site early July 2013 and carried out an extensive inspection of the facility. At a later de-brief meeting with CML senior management HSE inspectors confirmed that a fully Compliant Performance Assessment rating had been achieved.

4. Conclusions

- With regard to the Lifting Operations and Lifting Equipment Regulations 1998, the crucial elements of the Regulation are to be:-
 - Examination at 6/12 month intervals.
 - In accordance with a suitable scheme drawn up by a competent person.
 - Inspected by a competent person at suitable intervals.
- There is a master schedule program by Turner Townsend which logs, monitors all planned maintenance for assets together with program and operational procedures. It is not a master diary.
- There is a secondary Norton Waugh planned maintenance programme which is used to monitor ski tow operations. This programme is used in turn to augment the Turner Townsend master programme.
- Discard criteria according to EN12927-6 is applied to the Cairngorm Funicular Railway.
- Certain daily checks are carried out prior to the equipment being put in operation. These check lists are kept at the equipment and are periodically transferred to the base station for archiving.
- Only one party, the Duty Manager, can authorise the opening up of the equipment to the public.
- There are clear lines of control with a single point of responsibility to ensure all equipment has been checked on a daily basis before the tows are opened to the public.
- All funicular and tow manufacturers provided an O & M Manual
- Fitters have "Procedures and Guidance" though this was not seen.
- Maintenance Plans/master sheets have been provided and give a detailed breakdown of the tasks to be carried out against each item of equipment.
- Hand written or typed notes are prepared in conjunction with the activity schedules (though it is not always clear who produced them)
- The name of the fitter undertaking the tasks is not always recorded on the returned form.
- The date on which each task is completed is not always recorded
- The worksheets do not provide target dates to complete the tasks
- Ropes are subject to visual inspection annually.
- One of the maintenance team is "expert" on rope splicing and repairs are carried out if damage observed. All splice repairs are recorded and subjected to non-destructive tearing (NDT)
- There is no routine replacement of the ropes; instead all ropes are cleaned, lubricated and checked visually and periodically, NDT
- All replacement ropes are now galvanised.
- The independent report carried out by Allianz specifically addresses inspection requirements laid down by the insurers and does not form part of the routine or regular maintenance of the ski tows.

5.0 Reccomendations

5.1 General

- Consider implementation of one overall management program to allow co-ordination of all planned maintenance items and in effect create an overall “master diary”.

5.2 Ski Tows

- The name / signature of the fitter undertaking remedial tasks should be entered on all worksheets.
- Qualification of the fitter undertaking remedial tasks should be entered on all worksheets.
- Target dates for completion of remedial tasks to be recorded on all inspection sheets.
- All tow inspection sheets to identify location of tow under inspection.
- Ensure details of certifying authority and clients details to be in filled on all inspection sheets.

5.3 Funicular

5.3.1 Garaventa

- All proposed remedial works to be allocated a time scale noted within annual report by which time, same requires to be closed out and formally signed off.
- CML / Garaventa to carry out vibration analysis of car drive units.
- We would recommend that a system be developed to record that appropriate instructions have been passed to the work foreman, that the works foreman has reported completing the work and that the whole process has been followed through to completion, thereby clearly demonstrating that any defects identified by Garaventa during their annual inspection have been properly addressed within the required time frame.

5.3.2 Frey

- Implement similar procedures and processes as recommended above in respect of Garaventa.

5.3.3 Aquaterra Solutions Ltd

- Technical specification / defects criterion to be supplied to Aquaterra by CML.
- Status of existing welds to be confirmed i.e. pass / fail to be clearly identified within report.
- Time scale for remedial works to be included within report document.

5.3.4 Rexroth

- Time scale for remedial works to be included within report documentation.
- Documented report system to record that all critical spare parts are held within the facility prior to the commencement of any critical test operations (load test for example).

URS



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Condition Survey of the Property &
Infrastructure at Cairngorm Mountain**

Report on Maintenance Procedures for the Ski Tows and Funicular
December 2010

Prepared for

**Highlands and Islands Enterprise
Iomairt na Gàidhealtachd's nan Eilean**

Revision Schedule

Report on Maintenance Procedures for the Ski Tows and Funicular December 2010

Rev	DATE	Details	Prepared by	Reviewed by	Approved by
01	22/12/2010	DRAFT			
02	20/01/2011	FINAL			
03	23/03/2011	FINAL (REVISED)			

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1 Introduction

1.1 Brief

1.1.1 Plan of Action

Davie and McCulloch Ltd, Consulting Engineers (M&E) have been appointed by King Sturge, who in turn have been appointed by Highlands & Islands Enterprise (HIE), to undertake a conditions survey of the property and infrastructure at Cairngorm Mountain.

Scott Wilson Ltd have been appointed by David & McCulloch as their sub-consultant to assist then in this exercise, with the specific brief to address sections (viii) Ski Tows and (ix) Funicular of Section 3 of the Scope of Service as set out in the invitation to tender dated 6 August 2010. The specific requirement in respect of ski tows and funicular is to "verify that the operator's current arrangements represent a suitability comprehensive inspection, maintenance and documentation regime, fit-for-purpose and compliant with all relevant legislation".

The exercise has been carried out in two stages. The first stage comprised an initial desk-top appraisal of relevant legislation together with a review of the selection of documents supplied to Scott Wilson. These included inspection and maintenance plans and a series of inspection reports. This initial appraisal is discussed in Section 2 of this report.

Following completion of the initial appraisal, from which a number of items were identified requiring further investigation, a visit was arranged to the offices of the Cairngorm Mountain Ltd (CML) at the ski centre with the purpose of questioning members of staff regarding procedures and examining further documentation held at the site. This is discussed in Section 3 of this report.

1.2 Executive Summary

We are satisfied that our investigations have served to confirm that Cairngorm Mountain Ltd's current arrangements represent a comprehensive inspection, maintenance and documentation regime, and in our opinion would appear to be fit for purpose and compliant with relevant legislation.

We are satisfied, in so far as we can be from the information made available to us, that CML are operating an inspection and maintenance regime sufficient to ensure that the ski tows and funicular are being properly and adequately maintained in accordance with relevant regulations.

We did however identify a number of issues within their procedures where improvements can be made in order to provide greater clarity with reporting procedures, record keeping and effective timeous targeting of inspections and repairs. We would stress that this is largely a book-keeping exercise and is not intended as a criticism of the actual inspection and maintenance work or safety procedures.

2 Initial Findings

2.1 Funicular Railway

2.1.1 Inspection and Maintenance Plan

Funicular Structure (2 pages)

Electrical (3 pages)

Mechanical (9 pages)

Sets out Inspection schedule and intervals

Does not specify credentials of inspector

Should probably specify in more detail the extent of inspection.

i.e. Bases – signs of settlement / heave?

Columns / crossheads / beams – reinforcement rust staining?

Similar items might apply to Electrical and Mechanical

2.1.2 Wire Rope Inspection Report

Carried out by Reel Europe 12 November 2009

- Haul Wire Rope
- Counter Wire Rope

2.1.3 Electrical System Annual Test Report

Carried out by [REDACTED] 17 – 21 November 2009

Work carried out by [REDACTED] Senior Engineer (whilst credentials not stated it is anticipated that he is suitably qualified).

It would be advantageous if this Report was cross referenced with the Inspection Plan to ensure all items are covered.

There does not appear to be any Daily, Monthly....6 monthly Reports for the other items on the schedule.

2.1.4 Mechanical Annual Inspection

Carried out by Garaventa 17 – 19 November 2009

Work carried out by [REDACTED] and [REDACTED] (again whilst credentials not stated it is anticipated that they will be suitably qualified).

It would be advantageous if this Report was cross referenced with the Inspection Plan to ensure all items are covered.

There does not appear to be any Daily, Monthly....6 monthly Reports for the other items on the schedule.

A defect in the concrete beams at "Passing Loop" was identified but does not appear to be picked up on "Structural Inspection"

2.1.5 Inspection Reports not Provided

From the Inspection and Maintenance Plan the following inspections have not been carried out or, not provided.

- Structural Inspection of Funicular support structure, foundations, columns, crossheads, beams.
- Structural inspection of "tunnel structure"
- Structural inspection of winding support gear and foundations

2.2 Typical Tows

There does not appear to be an Inspection and Maintenance Plan for the Tows

2.2.1 Ptarmigan Tow

Equipment History Report

T Bar maintenance Drive Unit

Carried out by [REDACTED] – Qualifications unknown, Company unknown Date 30 October 2009

Cross refers to a "ROK Report" and "Electrical Work Sheet" – not provided

2.2.2 T Bar maintenance Return Tower

Carried out by [REDACTED] – Qualifications unknown, Company unknown Date 30 October 2009

2.2.3 T Bar Maintenance Towers

Carried out by [REDACTED] – Qualifications unknown, Company unknown Date 30 October 2009

2.2.4 Tows Annual Electrical Inspection

Carried out by [REDACTED] – Qualifications unknown, Company unknown Date 30 October 2009

Various comments including "All towers remade but require replacing" The meaning of this statement is unknown.

2.2.5 T Bar Maintenance Towers

Carried out by [REDACTED] – Qualifications unknown, Company unknown Date 30 October 2010

2.2.6 T Bar Maintenance Return Tower

Carried out by [REDACTED] – Qualifications unknown, Company unknown Date 30 October 2010

2.2.7 T Bar Maintenance Drive Unit

Carried out by [REDACTED] – Qualifications unknown, Company unknown Date 30 October 2010

2.2.8 Fiacaill Ridge Tow

Bureau Veritas "Report of Examination" dated 01 October 2009 carried out by [REDACTED]

2.2.9 Limitations of Report

Haulage Rope

Tower Hangers

Foundations

Inaccessible fixings

Where is the Report on these elements (with the exception of the last)

The Report does not detail what is covered.

The last page of the Report appears to be an Electrical Report but it does not state as such.

2.3 Regulations

Several Regulations are considered appropriate to the equipment:-

2.3.1 Cableway Regulations 2004

Any cableway put into service post 3 May 2004 or modified post 3 May 2004.

The actual date that the Funicular Railway was commissioned is unknown and it is likely that the document is not applicable.

However the taking down and replacing of a tower on the Ptarmigan Tow probably constitutes a modification.

2.3.2 Shafts and winding in mines

Approved Code of Practice on the Mines (Shafts and Winding) Regulations 1993 under section 16 of the Health and Safety at Work etc. Act 1974

This document may be deemed to apply to the Funicular Railway as a result of the upper section passing into a short length of tunnel just before the summit. It is not considered to apply to the Tows.

2.3.3 Safe use of lifting equipment

Lifting Operations and Lifting Equipment Regulations 1998

This document would appear to be the general requirements for the Funicular Railway and the Tows.

2.3.4 General Requirements

Clearly all equipment associated with the Ski Centre should be "installed, operated and maintained in accordance with the manufactures instructions"

The starting point for all equipment is to obtain a maintenance schedule from the suppliers of the equipment. This document could vary for each manufacture of the tow.

It is therefore recommended that a comprehensive Inspection and Maintenance Plan as already prepared for the Funicular Railway is prepared for each tow.

The harshness of the winter environment would probably dictate that a comprehensive inspection takes place at the start up of each season with intermediate maintenance inspections as dictated by the manufactures of the equipment.

2.3.5 Discussion

Turning to the **Safe use of lifting equipment** document Lifting Operations and Lifting Equipment Regulations 1998

The crucial elements of the above Regulation would appear to be:-

- Examination at 6/12 month intervals
- In accordance with a suitable scheme drawn up by a competent person.
- Inspected by a competent person at suitable intervals.

With Regard to the Funicular Railway only

The **Shafts and winding in mines** document states under Regulation 17, Examination, inspection, maintenance and testing of winding apparatus

(1) So far as is necessary to ensure compliance with these regulations the manager shall ensure that winding apparatus is regularly and adequately examined, inspected, tested and maintained in accordance with a suitable written scheme.

(2) The manager shall appoint sufficient competent persons to regularly and adequately examine, inspect, test and maintain the winding apparatus.

(3) Each person appointed under paragraph (2) shall write a report of the examinations, inspections, tests or maintenance which he carries out setting out any defects he finds.

In addition under **Regulation 13 Ropes and associated equipment**

(1) The owner shall specify the type of rope intended for use in any winding apparatus and any attachment or connection intended for use with such a rope and shall ensure that any such rope, attachment or connection is suitable for the use for which it is intended.

(2) Before any winding rope is put into service in a shaft, the owner shall specify in writing the maximum life expected for any winding rope in that shaft, taking into account the conditions under which the winding rope will be used.

(3) If there is any change in the conditions under which a winding rope is used in a shaft, the owner shall review the life specified under paragraph (2) and reduce it if necessary.

(4) The owner shall ensure that the specification made under paragraph (2), as amended under paragraph (3) where appropriate, is kept at the office of the mine while any rope is in use as a winding rope in the shaft to which the specification relates and for 6 months thereafter.

(5) The manager shall ensure that no rope is used for winding after the expiry of the life specified under paragraph (2), as reduced under paragraph (3) where appropriate, except in accordance with directions which may be given by an inspector appointed under section 19 of the Health and Safety of Work etc Act 1974.

Also under the ACOP

Rope life

Clause 128 Ropes used in winding apparatus must be inspected and examined in accordance with Regulation 17 and paragraphs 193 to 203 to assess their condition. Any rope showing signs of significant deterioration should be taken out of service.

Clause 129 Unless other directions have been given by an inspector the rope life specified under Regulation 13(2) should not exceed:

- (a) 3½ years as winding ropes on drum winders, except for Blair twin rope systems where the life should not exceed 2½ years;
- (b) two years as winding ropes on friction winders;
- (c) five years as winding ropes on lift apparatus;
- (d) five years as balance ropes on drum winders, including any period during which it was used for any other purpose; or
- (e) three years as balance ropes on friction winders, including any period during which it was used for any other purpose.

This would tend to indicate the Haul and Balance Ropes should be replaced every 5 years.

3 Further Investigations

3.1 Introduction

The visit to Cairngorm Mountain Ltd (CML) offices at the ski centre took place on Monday 12 December 2010 where we met with [REDACTED] and [REDACTED] of CML. We would record our appreciation and thanks for the great assistance and clarity of explanation that we received from both [REDACTED]

3.2 General

At the outset we established that, whilst there are very detailed separate operation and maintenance manuals and procedures in place for each ski tows and the funicular, there was no overall masterplan in place pulling the maintenance of these facilities together into one single document. We understand that Turner Townsend are developing a master schedule, in effect a master diary, covering all aspects of the maintenance regime. Whilst we have been advised that this is expected to be a very comprehensive document, the detail is not available at this stage, nor is a delivery date known.

A system of daily checks is carried prior to any equipment being put into operation. The check lists for individual items of equipment (e.g. ski tows and the funicular) are retained at the individual tows and are transferred periodically to the base station for archiving. Once the daily checks have been completed, the individual responsible then contacts, by radio, the Duty Manager to report that the checks have been completed. Only one party, the Duty Manager, designated as Chief of Operations for the day, can authorise the opening up of the ski tows for use of members of the public. Thus, there are clear lines of control with a single point of responsibility to ensure all equipment has been checked on a daily basis before the tows are opened to the public.

3.3 Ski Tows

3.3.1 Maintenance Procedures

The ski tows are maintained by CML's own staff.

Separate O&M manuals are available for each ski tow, the master (paper) copy (seen but not examined in detail by Scott Wilson) of each is held within the admin block, the detailed content of which is also available on line (not seen by Scott Wilson) and readily assessable by maintenance staff.

Until such times as the master diary is completed and brought into use, CML utilise computer software in the form of interlinked excel spreadsheets to control and manage the planned maintenance of the ski tows. These are broken down into a series of maintenance activities, identified as such on the maintenance plans. Each maintenance activity is further broken down into a series of individual tasks which are printed out to form worksheets for individual maintenance staff. The worksheets are issued to maintenance staff on a daily basis, the maintenance staff carry out the tasks and record the details on the worksheets before returning the completed forms to the admin department where the data is entered onto the computer records. Within the spreadsheet, the maintenance activities can only be closed off when all of the tasks for each individual activity have been completed. A number of relatively minor shortcomings have been identified in these procedures:

- The name of the fitter undertaking the tasks is not always recorded on the returned form

- The date on which each task is completed is not always recorded
- The worksheets do not provide target dates to complete the tasks

Separate maintenance plans exist covering electrical and mechanical aspects of the maintenance. Electricians use one style of form for reporting on completed tasks, fitters use a different style, in both cases best suited to the individual trade.

The maintenance plans identify a series of activities to be carried out at varying time intervals including daily, weekly, monthly, 6 monthly and annually.

The completed task report forms are held in archive in the admin department.

Tow ropes are inspected annually and repaired if any damage is noted. One member of the maintenance team is an expert in splicing ropes. All ropes are subjected to non-destructive testing after any slicing work has been done. CML do not operate a policy of routine or regular replacement of ropes, only replacing them as and when required, this being based on the experience and knowledge of the individuals responsible. CML have advised that they are now only using galvanised rope for replacement.

3.3.2 Bureau Veritas Report

This is an independent report carried out specifically to address inspection requirements laid down by the insurers and does not form part of the routine or regular maintenance of the ski tows. Notwithstanding this, the report does serve to provide a degree of independent confidence in the work done by CML staff.

The Bureau Veritas Report identifies a number of defects and observations and allocated them to categories A, B and C. Category A requires immediate attention, category B requires attention as soon as practical and category C being a recommendation for good house keeping.

██████████ and ██████████ were unable to produce any demonstrable system to address the actions identified by Bureau Veritas and to keep on top of progress through to completion. Notwithstanding this, they were clear that the actions raised by Bureau Veritas have been or are being addressed. Our concern is not so much that necessary actions have not been followed through, more that there is no paper trail to record the actions taken.

3.4 Funicular

3.4.1 General

Annual inspections and testing are carried out by Garaventa (Mechanical Installations), Frey (Electrical Installations) and Crudens/ROK (Civil/Structural Installations). Regular daily, weekly and monthly inspections are undertaken by CML staff.

3.4.2 Garaventa

The inspection by Garaventa is undertaken each year by the same Engineer who built the system and who keeps coming back each year. We are advised that he has developed a good relationship with the staff on site and is readily contactable by email and/or telephone. Following completion of his inspection, the Garaventa engineer is debriefed by ██████████ and any items requiring immediate attention are identified. Following on from that, the hard copy of the Garaventa Report is issued; however we have identified that there can be a considerable time gap between completion of the inspections and the report being formally

issued. For example, the 2010 inspection was undertaken between 30 June and 3 July 2010 with formal report being issued on 30 September 2010, some 2 ½ months later. The need for timeous issue of the report should be impressed on Garaventa.

Garaventa's Report lists a summary of actions required; however we are concerned that no timescale is allocated to these actions. It may be that these actions are not time-critical, if so, this should be stated. We would recommend that CML ask Garaventa to provide such information in all future reports.

We noted in Garaventa's 2009 report that in Section 3, under the heading Review of Maintenance/Incidents 2008-2009, an entry was made for vibration analysis with the comments "So far no measurements of the drive components have taken place and no analysis as to the condition of those components has been carried out". There is no indication as to whether or not this item is critical or overdue and, indeed, it is not flagged up in the summary of actions. We are advised from further enquiries made by CML on the day of our visit that this work should be undertaken by CML and that appropriate equipment needs to be purchased in order carry out the testing. CML should establish from Garaventa the frequency and time intervals for undertaking the vibration analysis.

Once the Garaventa report is received by [REDACTED], he addresses the action list and passes details to the works foreman for appropriate action. Thereafter the foreman reports back on completion. We saw no written record of these actions. We have concerns that there does not seem to be any formal overall checking procedures in place other than in the review undertaken by Garaventa at the subsequent annual inspection. We would recommend that a system be developed to record that appropriate instructions have been passed to the works foreman, that the works foreman has reported completing the work and that the whole process has been followed through to completion, thereby clearly demonstrating that any defects identified by Garaventa during their annual inspection have been properly addressed within the required time frames. It should be possible to devise a computer based record system that will automatically flag up any missed target dates thereby avoiding placing too much reliance on administrators manually checking for target dates.

3.4.3 Frey

The Frey inspections are generally carried out at the same time as the Garaventa inspections.

No specific issues were identified arising from the report that we examined or from our discussions with CML staff.

We would recommend that similar procedures are set up to deal with the annual test reports produced by Frey. We would note in passing that there were no outstanding actions identified in the Frey report for year 2009.

3.4.4 Rok/Cruden/Synergie

We understand that Rok were appointed by HIE (being HIE's framework contractor at the time) with chartered civil & structural engineering firm A F Cruden Associates, Inverness, being appointed as sub-contractor to Rok for some elements of work and directly by HIE for others. Other works (notably the tunnel waterproofing works, 2010) were also undertaken by Rok (and their sub-contractors) and were supervised by Synergie Scotland Ltd.

Copies of reports prepared by A F Cruden Associates and Synergie Scotland Ltd were passed to us on 23 March 2011. The Cruden report refers to an earlier inspection report 'Lifts & Tows 2010' issued in July 2010 covering the defects on the bases of all lifts and tows at Cairngorm

and providing a comprehensive condition report on all the bases. This earlier report provided a basis for planning works in 2010 and to inform the requirement for works in subsequent years. The Cruden report, dated February 2011, prioritises the work, reports on progress and identifies for review/action in subsequent years. The works include, but is not restricted to, concrete repairs, repairs to grout under baseplates, installation of Halfen bolts and infilling voids with lean-mix concrete.

The Synergie report, dated 25 October 2010, reports on various elements of remedial works arranged by Rok through a number of subcontracts, specifically works undertaken around the top station to limit water ingress, including waterproofing works, installation of a new drain and extension of existing drains.

It is evident from the tone and content of these reports that there are robust and comprehensive measures in place for addressing the maintenance of the infrastructure. However, whilst we can understand the logistics of HIE appointing a term contractor to undertake some of the maintenance works, we have a slight concern that this leaves no one single party in overall control of the management and maintenance of the facility.

At the time of our visit to CML in December 2011, we were advised that reports on the work and inspections undertaken by Rok and A F Cruden Associates had not been seen by CML personnel responsible for managing the ski centre, despite requests. We have subsequently been advised by HIE that CML were provided with close-out reports; it would appear that these had not been cascaded down timeously to site personnel. This is an issue that needs to be addressed by CML.

3.5 Competency of Operatives

As noted in the initial appraisal, one crucial element of the regulations is that the equipment is inspected and tested by competent persons.

With respect to the annual inspections of the funicular, these are undertaken by contractors, specialists in their fields, and as such it is to be presumed that they employ suitable competent personnel.

The inspection and maintenance of the ski tows, likewise the daily and weekly inspections of the funicular, are undertaken by CML and we must therefore look to CML to ensure that competent persons are employed on these operations.

We understand that full records of the competency on individual members of the maintenance staff are held on file by Human Resources (HR) at the Cairngorm Ski Centre. These records include details of trade skills, qualifications and certificates held by the individual fitters and electricians. Records are also kept of college courses attended by staff. We have not actually seen written evidence of the competency of individuals and therefore must place reliance on information given to us by an intermediary [REDACTED] in interview.

The present staff include a time-served mechanic and an ex lift engineer.

CML make regular use of recognised companies who are specialists in their individual fields. These companies are normally listed in the operation and maintenance manuals which designate specific suppliers, contractors and manufactures of equipment.

Much of the electrical work is contracted out to a third party, Grants (Dufftown) Ltd, a long established company and recognised experts in their field and now part of the Forsyth Group based in the north east of Scotland.

The repairs of a civil & structural engineering nature have been contracted out to Rok, with inspections and structural engineering expertise being undertaken by A F Cruden Associates, consulting engineers and supervision by Synergie Scotland Ltd. As with Grants (Dufftown) Ltd, these companies are all recognised experts in their respective fields.

On the basis of the foregoing, we conclude that the inspection and the maintenance of equipment would all appear to be carried out by competent persons familiar with the operational requirements.

3.6 Financial Authority

Finally, we made enquiries about the financial authority to authorise repairs as and when required. We are satisfied that sufficient authority exists. We are advised that [REDACTED] as Maintenance Manager, has approval to authorise small items of expenditure and is actively involved in the preparation of the annual budgets. Authorisation for expenditure of larger sums of money needs to be signed off by the Chief Executive and the Finance team; again we are advised that this approval is normally forthcoming.

4 Conclusions

- With regard to the Lifting Operations and Lifting Equipment Regulations 1998, the crucial elements of the Regulation are to be:-
 - Examination at 6/12 month intervals
 - In accordance with a suitable scheme drawn up by a competent person.
 - Inspected by a competent person at suitable intervals.
- Approved Code of Practice on the Mines (Shafts and Winding) Regulations 1993 under section 16 of the Health and Safety at Work etc Act 1974 may be deemed to apply to the Funicular Railway as a result of the upper section passing into a short length of tunnel just before the summit. It is not considered to apply to the Tows.
- There is a Master Schedule for the maintenance of the equipment currently being prepared by Turner Townsend
- Certain Daily checks are carried out prior to the equipment being put in operation. These check lists are kept at the equipment and are periodically transferred to the base station for archiving.
- Only one party, the Duty Manager, can authorise the opening up of the equipment to the public.
- There are clear lines of control with a single point of responsibility to ensure all equipment has been checked on a daily basis before the tows are opened to the public.
- All funicular and tow manufactures provided an O & M Manual
- Fitters have "Procedures and Guidance" though this was not seen.
- There is currently some software running which lists all tasks to be carried out as part of the Planned Maintenance.
- Maintenance plans have been provided and give a detailed breakdown of the tasks to be carried out against each item of equipment.(Currently in its second year of running)
- Hand written or typed notes are prepared in conjunction with the activity schedules (though it is not always clear who produced them)
 - The name of the fitter undertaking the tasks is not always recorded on the returned form
 - The date on which each task is completed is not always recorded
 - The worksheets do not provide target dates to complete the tasks
- Ropes are subject to a visual inspection annually.
 - One of the maintenance team is "expert" on rope splicing and repairs are carried out if damage observed. All splice repairs are recorded.
 - There is no routine replacement of ropes; however we feel that it is probably unlikely that this would be required.
 - All replacement ropes are now galvanised.
- The independent report carried out by Bureau Veritas specifically addresses inspection requirements laid down by the insurers and does not form part of the routine or regular maintenance of the ski tows.

- There was no demonstrable system to address the actions identified by Bureau Veritas and to keep on top of progress through to completion.
- The Funicular is inspected annually by Garaventa and Frey who installed the apparatus. Their Reports cover the electrical and mechanical installations and make reference to structural engineering issues which would appear to be addressed by others. There has been on occasion a 2 1/2 month delay from inspection until receipt of the Report.
- The main issue with these reports is that there would not seem to be a system that advises targets for the rectification of issues and notes when they are closed off.
- The structural inspections and repairs have been carried out by Rok and Crudens who were appointed by HIE, with supervision by Synergie Scotland Ltd. From the reports provided, it is clear that there is a comprehensive and robust process in place, with future actions identified. The only issue of concern is the length of time taken for these reports to reach CML maintenance staff at the ski centre.
- CML employ competent persons familiar with the operational requirements to carry out the inspection and the maintenance of equipment.
- There are adequate levels of financial authority in place to ensure that necessary work can be instructed.

5 Recommendations

5.1 Ski Tows

- Improve the form of work sheets and reporting procedures for maintenance staff to address the following:
 - The worksheets should show target dates to complete the tasks
 - The name of the fitter undertaking the tasks should be recorded on the returned work sheet
 - The date on which each task is completed should be recorded
- Introduce a system to record progress of actions identified by Bureau Veritas.

5.2 Funicular

5.2.1 Garaventa

- The need for timeous issue of the report should be impressed on Garaventa.
- We would recommend that CML ask Garaventa to provide such information in all future reports.
- CML should establish from Garaventa the frequency and time intervals for undertaking the vibration analysis.
- We would recommend that a system be developed to record that appropriate instructions have been passed to the work foreman, that the works foreman has reported completing the work and that the whole process has been followed through to completion, thereby clearly demonstrating that any defects identified by Garaventa during their annual inspection have been properly addressed within the required time frame.

5.2.2 Frey

- Implement similar procedures and processes as recommended above in respect of Garaventa.

5.2.3 Civil/Structural Inspections of the Funicular

- Review the process for appointing of specialist contractors to ensure that there is one single party in overall control of the management and maintenance of the facility.
- Improve the lines of communication with the contractors undertaking the inspections to ensure that outcome reports are distributed timeously to all parties requiring sight of them.
- As a consequence of the collapse of Rok as a trading company, review the works undertaken by Rok to ensure that adequate records and reports are held on file.

5.2.4 Cable Rope

- Consider replacing the funicular rope after 5 years to comply with the spirit of the ACOP on the Mines (Shafts and Winding) Regulations 1993.
- It might be beneficial to discuss this issue with Garaventa.



Highlands and Islands Enterprise
Iomairt na Gàidhealtachd 's nan Eilean

PLANNED MAINTENANCE CONDITION SURVEY REPORT

ON

BUILDING CODE: 001
DAY LODGE
CAIRNGORM MOUNTAIN
CAIRNGORM

FOR

HIGHLANDS AND ISLANDS ENTERPRISE

AS AT

JANUARY 2011
REV – MARCH 2011

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DAY LODGE, CAIRNGORM MOUNTAIN, CAIRNGORM



FRONT ELEVATION

DAY LODGE, CAIRNGORM MOUNTAIN, CAIRNGORM

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APPENDICES

1 10 YEAR MAINTENANCE PROGRAMME	
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1 INTRODUCTION

In accordance with your instructions, confirmed in the contract document dated 14 September 2010, we have undertaken a building surveyor's inspection of the Day Lodge building at Cairngorm Mountain, Cairngorm, to advise you on its condition with the objective of providing a ten year maintenance programme. The inspection was carried out between 18 and 21 October 2010; and at the time of the inspection the weather was varied including snow, wet, fog and strong winds.

In accordance with your invitation to tender our survey inspection has included for all Mechanical and Electrical services within the premises and as-built drawings have been produced both of which are included in the appendices along with the layout drawings.

The inspection of the Mechanical & Electrical (M&E) building services was carried out on the 27th October 2010.

We must stress that this report is only for the use of the party to whom it is addressed and no responsibility is accepted to any other party for the whole or any part of its content. Neither the whole nor any part of this report or any reference thereto, may be included in any document or statement, nor published or reproduced in any way, without our prior approval in writing as to the form or content in which it will appear.

2 GENERAL DESCRIPTION & TENURE

The Day Lodge, located adjacent to the main car park and Base Station at the foot of the Cairngorm ski area was constructed in circa 1980's as part of the original infrastructure of Cairngorm. The property has been constructed to make use of the topography of the site and as such extends over four levels, each one offset further back as the building ascends the mountain.

The building has been formed around an in situ cast large concrete frame incorporating columns, beams and floor slabs providing lower and upper levels with the roof of similar construction.

DAY LODGE, CAIRNGORM MOUNTAIN, CAIRNGORM

Externally the main roofs are mono pitched and clad with an factory finished profiled sheeting draining to aluminium trough box gutters feeding into uPVC rainwater downpipes while the perimeter soffits and edge trims are clad with treated timber boarding, which has been decorated.

The main elevations have mainly been constructed using red granite rubble walls to lower levels and around the main entrances with treated timber weatherboarding, which has been decorated, to all upper elevations.

A mixture of metal factory finished double glazed, uPVC and timber windows are provided to the elevations with double leaf timber formed doors fitted to the majority of main entrances and fire escapes with single leaf timber formed doors utilised for ancillary access and egress.

The external areas around the base station consist of the tarmacadam roadway/pedestrian area and a compacted hardcore/sand composite roadway to the north east between the Day Lodge and mountain garden area.

The premises internally have been were originally constructed to provide a ticket office, restaurant at levels 1 & 2 ski equipment hire at level 3 and ancillary office space at level 4. The property has now been reconfigured and extended to provide ancillary office accommodation at level 4, ski equipment hire at level 3, kitchen and large seating area at level 2 with café, shop and a separate disabled ski centre office located within the extended level 1 floor plate. A large storage area is also present at level 1, which extends under the majority of level 2.

Generally the areas are finished with painted blockwork or plaster walls with painted plaster ceilings, concrete floors which are painted or finished with vinyl or quarry tiles and gloss finished doors. The main access staircase is of in situ concrete construction with a paint finish.

Toilet facilities for both male and females along with an accessible toilet for the disabled are located at levels 1 and 2, with all areas finished with painted plasterboard

ceilings, mixture of painted blockwork or plasterboard walls with ceramic walls tiles, quarry tiled flooring, vitreous china wc's and whb's and preformed board cubicles and vanity units.

The Mechanical & Electrical (M&E) services installed were found to be in a reasonable and operational condition, but were showing signs of age. A number of plant and system replacement/repairs have taken place in recent years; e.g. domestic water systems pipework (in plant-room) and boiler upgrade.

The mechanical services consist of heating, ventilation, domestic water and drainage systems. These include central ventilation plant and distribution ducts, domestic hot & cold water storage systems & distribution pipework, controls systems, cold room refrigeration systems, oil storage tanks and oil fired boilers serving a wet heating system (radiators). Our survey included inspections of the main central plant, distributions systems, terminal devices and appliances. The heating systems emitters consist of radiators, radiant panels and fan convector heaters.

There is a central automatic controls system installed serving the heating and ventilation systems. The main incoming water supply is thought to come from a local water supply and the below ground drainage is understood to discharge to a local sewage treatment plant – reported separately.

Our surveys indicated that the materials used for the installed domestic water pipework systems were copper, the above ground drainage systems were plastic (UPVC), and the ventilation ductwork systems were galvanized steel. We believe from discussions with maintenance staff that water services pipework is showing signs of deterioration internally, which is thought to be the result of slight acidity in the cold water supply to the buildings.

The electrical systems consist of a mixture of surface and recessed installations. The lighting installation uses decorative, accent and fluorescent luminaires in the various areas of the building. All areas appeared in reasonable condition with little or no issues reported regarding lamp failure / replacement.

Fire alarm and security systems are installed throughout the building.

The main switchgear for the building is located in the undercroft area with distribution boards generally on each level serving local installations.

The as built drawings shown in Appendix 3 provide the layout for the premises which show individual room references which are referred to within this report and the maintenance schedule.

Access was available to all parts of the premises with the exception of the disabled ski school area and a limited number of secured rooms. In addition, we were unable to gain access to the roof areas due to the lack of suitable internal access points. All other parts of the building including the landscaped and hardstanding areas were accessible.

We understand that Highlands and Islands Enterprise lease the properties, infrastructure, ski tows and funicular railway to Cairngorm Mountain Limited under an FRI Lease.

3 TERMS OF REFERENCE

The 10 Year Maintenance Programme describes the condition of the building fabric of each referenced room as shown on the as built plan, with associated budget costs and detailed within Appendix 1. To clarify the definition of description frequently used in the schedule, we give below a detailed description of their meaning: -

1. **SOUND:** Denotes almost perfect condition having regard to all circumstances of age, locality and use.
2. **GOOD:** Indicates that, although suffering from blemishes and faults attributable to wear and tear, the item is of reasonable standard and there are no major defects and that the particular item does not require attention unless it is specifically stated otherwise.

3. **FAIR:** Of a lesser standard than might reasonably be expected, having regards to the age and location of the property, its users and the type of tenants likely to occupy it, although not seriously defective, the item requires attention to bring it to a reasonable standard.
4. **POOR:** Have exceptionally low standard, having regard even to the age and location of the property, its user and its tenant likely to occupy it.

Each item of repair to the building has been prioritised and the attached repair schedules provide the following classifications: -

PRIORITY A: Repair or replacement required immediately for health & safety reasons or to maintain structural integrity of the building, fabric or services.

PRIORITY B: Repair/replacement required within the next 1-2 years maintaining building elements and preventing further degradation.

PRIORITY C: Repair/replacement required within the next 3-5 years.

PRIORITY D: Repair/replacement required within the next 6-10 years.

The rates used within the report have been taken from a mixture of the Spon's Architects' and Builders' Price Book 2011 and the BCIS Maintenance Price Book 2010. The costs are budget costs only and do not form part of a contract for works. The building fabric rates are assessed at January 2011 rates and therefore do not account for inflation over the 10 years and exclude contract preliminaries, professional fees and VAT.

The life expectancy periods for the M&E services elements within the report have been taken from the Chartered Institute of Building Services Engineers (CIBSE) - Maintenance & Engineering Management Guide M 2008. The costs are budget costs and for information only. The services replacement costs are assessed at January

2011 rates and therefore do not account for inflation over the 10 years and exclude contract preliminaries, professional fees and VAT

Annual planned preventative maintenance requirements have been based on CIBSE Guide M recommendations. Costs have been averaged across the estate and are based on the assumption that an element of the routine tasks will be undertaken by an 'in-house' team along with specialist contractors input.

4 CURRENT MAINTENANCE

As part of our remit we assessed the current building fabric maintenance regimes being undertaken by Cairngorm Mountain Ltd on the property and found that only reactive maintenance was being undertaken albeit some decoration works were being carried out on a cyclical basis. In addition a basic survey of the doors to the premises was recently completed with some repairs noted. However we have noted that the doors are in need of substantial overhaul which has not been noted within their schedule. The lack of maintenance to areas is as a direct result of no funding being available or allocated to other areas, however we did note during our inspection that more significant infrastructure maintenance and alterations were being undertaken as a result of funding being available following a successful ski season.

Our planned maintenance schedule attached at Appendix 1 highlights the maintenance requirements over the next ten years and the associated costs. You should endeavour to ensure that these works are carried out to prevent any further deterioration of the property.

It has been reported that on-going maintenance is being carried out, including electrical systems inspection & testing, water quality monitoring, etc. There were no records available to confirm if maintenance procedures are being completed and we recommend that future costs are included in the 10 year plans.

5 STATUTORY MATTERS

5.1 FIRE

Current fire safety legislation imposes various obligations on both owners and occupiers of property to assess, manage and reduce the risk of fire together with providing adequate means of escape. Whilst we have not undertaken a fire risk assessment for the property, this section highlights any associated issues that require attention. We would stress that that this does not obviate the need for a full Fire Risk Assessment to be undertaken.

Comments

1. We have not been provided with a fire risk assessment or fire certificate for the premises as they stand at present. We would recommend that you obtain a copy of the fire risk assessment which should be carried out by Cairngorm Mountain Ltd, as Tenants, to cover the premises.
2. During our inspection we noted that the premises are provided with portable fire extinguishers. Cairngorm Mountain Ltd should be requested to provide confirmation of maintenance to ensure these are regularly tested for operation. It is understood that fire extinguishers should be checked annually and a certificate provided to demonstrate compliance.
3. Upon inspecting the doors throughout the premises we noted that in the majority of cases these either do not appear to have been fitted with appropriate smoke seals/intumescent strips as we would normally expect in a property of this nature or the existing ones are in poor condition or missing. Consideration should be given to installing appropriate seals and intumescent strips to all appropriate doors while also undertaking general repairs to the doors.
4. A number of fire exit doors appear to open against the flow of traffic in the event of a fire. We understand that this may be due to the build up of snow externally

prevent the doors from opening, however this should be taken account of within the Fire Risk Assessment and Management of the property.

5. At level 4 the internal office configuration appears to have been altered by CML, as a result the means of escape is no longer compliant with escape being from a room to a room to a further room prior to reaching a place of safety, this should be rectified by removing a office and reverting the area back to an open plan area to ensure compliance.

6. The property appears to lack sufficient running man fire exit signage and we would recommend that this is reviewed as part of the Fire Risk Assessment.

7. At level 4, it would appear that the CML have installed single glazed windows between the office accommodation and the only fire escape staircase, which is open to level 3. The glazing and construction would not appear to be fire rated and as part of the Fire Risk Assessment we would expect that these are replaced with new fire rated construction and glazing.

8. There appears to be a number of areas of varnished timber within escape routes and alike. As part of the Fire Risk Assessment we would expect to see demonstration of the use of Class 0 varnish.

5.2 THE EQUALITY ACT 2010

The Equality Act 2010 is designed to provide disabled people with rights in the areas of employment, access to goods, facilities and services, and buying or renting land and property. It imposes, directly and indirectly, responsibilities and obligations on the part of service providers as occupier, to ensure that those with disabilities are not unduly disadvantaged.

We have made reference below to principal deficiencies within the building:

Comments

1. The premises are provided with level access through the main entrance together with a ramped access to the disable ski school premises. The main entrance in turn provides access to the shop however access to the café is via three steps. There is another means of accessing the Café area, which involves an external route and access via a fire escape, however signage needs to be improved and consideration should be given to the installation of an access ramp if the Café or Shop are refurbished in the future.
2. Levels 2 and 3 can be accessed externally via existing access and egress entrances; however we would recommend further signage to highlight the alternative access points.
3. There are two accessible toilets located at levels 1 and 2 which are provided with appropriate handrails although no disabled alarms. Consideration should be given to the installation of disabled alarms in both toilets.

Generally, we found that the premises are acceptable for disabled persons at present although some minor improvements require consideration. We have included appropriate costs within the 10 year maintenance plan attached in Appendix 1.

5.3 HEALTH AND SAFETY

5.3.1 WORKPLACE REGULATIONS

Under the Workplace (Health, Safety and Welfare) Regulations 1992, employers and building owners have a duty to ensure that the workplace under their control complies with the provisions set out therein. The Regulations describe a number of matters which have to be addressed to ensure that the workplace meets the health, safety and welfare needs of each member of the workforce, including people with disabilities.

We have not specifically assessed the premises in order to ensure full compliance with the Regulations. A comprehensive Health & Safety Audit would be necessary on a separate visit should you wish to establish whether any works may be required, in order to ensure that your obligations under the regulations are fulfilled.

Comments

1. The kitchen facility at level 2 is not in use and is currently used for storage of materials. We would recommend that the area be cleaned and all old redundant plant and equipment should be removed and disposed from site to ensure the area is free from obstacles in the event of a fire.
2. No fixed access ladders appear to be present to access the area above the office accommodation at level 4. We would recommend that a fixed access ladder with safety hoops be installed for safe access.
3. We understand that CML in-house staff undertakes the annual Portable Appliance Test, however we did not see sight of any certification to confirm that this is up to date. We would recommend that CML are requested to provide certification of the annual PAT Testing and that this is held centrally.

5.3.2 HEALTH & SAFETY AT WORK ACT 1974

We have not undertaken an Audit to assess the suitability of the premises and the associated working practices to ensure compliance with these regulations.

However you should ensure that a water hygiene risk assessment of all water sources within the premises is undertaken and the water tested regularly. These will confirm whether Legionellas is present or not within the premises.

We would recommend that water samples are taken every year along with the formulation of a management plan in relation to the water supplies in the building.

5.3.3 CONTROL OF ASBESTOS REGULATIONS

The Control of Asbestos Regulations 2006 places a duty on occupiers, employees and owners to ensure that a suitable and sufficient assessment is carried out to determine whether asbestos containing materials (ACMs) are likely to be present in the premises. This information should be recorded by means of a Management Survey (Formally referred to as a Type 2 Survey) and the associated results contained within an Asbestos Register for the building. This should include essential information relating to location, condition, recommendations and implementation for management of the ACMs.

We have been provided with a copy of schedule of what Asbestos reports have been carried out at Cairngorm. It appears that the Asbestos Survey has highlighted that Asbestos Containing Materials are present within the bitumen pad to the underside of the kitchen sink at Level 3.

We would recommend that the tenant be requested to ensure that this is included within any contractor Health and Safety File and debrief prior to any contractor commencing works onsite. You should ensure that this is provided in early course.

6 SUMMARY AND RECOMMENDATIONS

6.1 PRINCIPAL CONSIDERATIONS

The premises have been constructed to an average standard and specification commensurate with their use and age. We did not note any evidence of significant differential structural movement or settlement within the building. We did however note a number of minor items, which should be considered as part of your 10 Year Maintenance Programme, as highlighted below: -

1. The internal decorations to the property are in a fair condition with general minor marking and soiling noted to areas as would normally be expected. The back of house areas and access corridors are showing signs of heavy wear at this time. Redecoration should be carried out on a cyclical basis, which we have identified in Year 5 with the exception of the retail shop at ground floor level, which has been included within Year 3.
2. Generally, the external parts are in fair condition with maintenance works being required to maintain a wind and watertight property and to prevent further or future building fabric decay. However we did note that further repair works are required to the external doors, flat roof finishes, rot damaged external timber formed guard rails and cut edge corrosion of the roof sheets.
3. The internal doors are all showing signs of heavy wear and tear particularly the double leaf doors leading to the externals with Ironmongery generally requiring attention. In addition the smoke seals and intumescent strips are missing to the majority of doors leading from the main access staircase. We have included costs for overhauling all of the doors and installing appropriate smoke seals and intumescent strips in year 1 where deemed to be required.
4. Within level 4 we noted that a fire escape route has been altered to provide further office accommodation. We do not believe that these have been built with the appropriate statutory consent to comply with the Building Regulations in particular in terms of fire containment/escape. You should ensure that the works as installed receive a Building Warrant Completion Certificate or are removed.

5. The rear access roadway between Day Lodge and Base Station was being finished with Tarmacadam at the time of inspection together with upgrading the drainage through the addition of channels to prevent water run off from the mountain corroding the surfaces or causing debris to be washed onto the car park.

6. The condition of the pipework, ductwork & plant thermal insulation inspected was poor. The heating systems radiators, radiant panels and fan convector heaters also appeared to be in poor condition, as expected for their age. We noted that a radiator in the level 2 male toilets had been removed and that a fan convector in the café/shop area had been cut off by a partition. A hose attached to the air vent on a Level 4 radiator indicates that the system has air vent problems.

7. The condition of the Mechanical & Electrical (M&E), building services were found to be commensurate with their age and as such, beyond their recommended economic life expectancy.

8. The water supply to the building is slightly acidic. To minimize any potential on-going effect this may have on pipework distribution systems, costs have been included for the installation of local water treatment equipment.

6.2 FUTURE MAINTENANCE OPTIONS

Following our review, there appears to a lack of robust process in place to review the maintenance and health and safety statutory requirements for such premises.

At the present time it would appear that CML undertake repairs to the properties on a reactive basis with planned works being limited to the redecoration of the externals using in-house labour.

We would suggest that CML are encouraged to review the condition survey on a yearly basis and appoint a professional representative to produce tender documentation to cover all works required and obtain competitive tenders from four local contractors. This will result in economies of scale in procuring the works as one entity and provide consistent quality.

The in-house labour force can then deal with day to day reactive repairs and possible external redecoration. It may also be possible for CML to employ the services of a centralised management company for reactive repairs, whereby the repairs required are reported to the company who then manage the works along with health and safety issues, this would incur a percentage mark-up on all repairs and therefore costs would be slightly higher, but the benefit is better allocated resources internally.

We would also suggest consideration is given to a central electronic system, such as 'TrackRecord' which provides a management tool for CML and HIE. The system provides an electronic diary which records the actions required for CML such as statutory requirements (Fire Risk Assessments, Water Risk Assessments, Health and Safety Review, Test Records for the Funicular Railway, Test Records for the Ski Tows, Electrical Tests, PAT Tests, and Water Temperature Readings etc). The system also acts as an electronic storage device for all records to be held in one place, which can be viewed by HIE.

Furthermore, such a system can monitor the progress of CML and provide data recording the compliance using charts and percentage readings that can be easily reviewed and followed up by HIE.

Our recommended on-going maintenance costs include for the required statutory testing and monitoring procedures.

6.3 SUMMARY OF COSTS

The attached maintenance programme provides budget costing for expenditure in 2010 and the following ten years to 2020. These costs, assessed at 2011 rates, are budget costing only and in many instances the cost will vary once opening up and further investigation works have been carried out. The costs exclude contractor's preliminaries, professional fees to manage the work and VAT.

We recommend that a sum in the order of £400,000 which excludes VAT and Professional Fees, is included in the Year 2011 repair budget to undertake the works included in the 10 Year Maintenance Plan.

A summary of the costs are shown within Appendix 1.

6.4 RECOMMENDATIONS

Overall the Day Lodge premises at Cairngorm Mountain are in fair condition; however we would recommend that you undertake the remedial maintenance repairs in line with the 10 Year Maintenance Plan with a full redecoration internally in Year 5 and external redecoration in Year 2.

The Mechanical & Electrical (M&E), building services were found to be in an operational condition although the installations are generally at the end of their normal life expectancy and will require major upgrading works in the near future.

DAY LODGE, CAIRNGORM MOUNTAIN, CAIRNGORM

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<p><i>Date of Issue</i> 28 January 2011 Rev March 2011</p>		<p><i>Authorised by</i> [REDACTED]</p>	
<p><i>Report Status</i></p>		<p>FINAL</p>	
<p><i>Other Consultants Involved</i></p>			
<p><i>Name</i></p> <p>Davie and McCulloch</p> <p>Scott Wilson</p>		<p><i>Discipline</i></p> <p>Mechanical and Electrical Transport Engineers</p>	



Highlands and Islands Enterprise
Iomairt na Gàidhealtachd 's nan Eilean

REFERENCE INDEX

PLANNED MAINTENANCE CONDITION SURVEY REPORT

ON

CAIRNGORM MOUNTAIN CAIRNGORM

FOR

HIGHLANDS AND ISLANDS ENTERPRISE

AS AT

JANUARY 2011

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CAIRNGORM MOUNTAIN, CAIRNGORM

REFERENCE INDEX

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- 1 BUILDING REFERENCE**
 - 2 SUMMARY COSTS**
 - 3 SCOTT WILSON - FUNICULAR AND TOWS**
-

CAIRNGORM MOUNTAIN, CAIRNGORM

<u>REF.</u>	<u>BUILDING NAME</u>
001	DAY LODGE
002	BASE STATION
003	PTARMIGAN
004	SHEILING BUILDING
005	COIRE NA CISTE
006	KASSBOHRER GARAGE
007	GLENMORE GARAGE
008	EXTERNALS

1 INTRODUCTION

In accordance with your instructions, confirmed in the contract document dated 14 September 2010, we have undertaken a building surveyor's inspection of the Waste Water Treatment Plant at Cairngorm Mountain, Cairngorm, to advise you on its condition with the objective of providing a ten year maintenance programme. The inspection was carried out on 20th & 27th October 2010; and at the time of the inspection the weather was varied including snow, wet, fog and strong winds.

We must stress that this report is only for the use of the party to whom it is addressed and no responsibility is accepted to any other party for the whole or any part of its content. Neither the whole nor any part of this report or any reference thereto, may be included in any document or statement, nor published or reproduced in any way, without our prior approval in writing as to the form or content in which it will appear.

2 GENERAL DESCRIPTION & TENURE

The Waste Water Treatment Plant is located to the South of the lower Day Lodge Car Park at the foot of the Cairngorm ski area was constructed in 2000 as part of the major redevelopment of Cairngorm at that time to allow the introduction of the Funicular Railway.

3 TERMS OF REFERENCE

The 10 Year Maintenance Programme describes the condition of the plant with associated budget costs detailed within Appendix 1. To clarify the definition of description frequently used in the schedule, we give below a detailed description of their meaning: -

1. **SOUND:** Denotes almost perfect condition having regard to all circumstances of age, locality and use.

2. **GOOD:** Indicates that, although suffering from blemishes and faults attributable to wear and tear, the item is of reasonable standard and there are no major defects and that the particular item does not require attention unless it is specifically stated otherwise.
3. **FAIR:** Of a lesser standard than might reasonably be expected, having regards to the age and location of the property, its users and the type of tenants likely to occupy it, although not seriously defective, the item requires attention to bring it to a reasonable standard.
4. **POOR:** Have exceptionally low standard, having regard even to the age and location of the property, its user and its tenant likely to occupy it.

Each item of repair to the building has been prioritised and the attached repair schedules provide the following classifications: -

- PRIORITY A:** Repair or replacement required immediately for health & safety reasons or to maintain structural integrity of the building, fabric or services.
- PRIORITY B:** Repair/replacement required within the next 1-2 years maintaining building elements and preventing further degradation.
- PRIORITY C:** Repair/replacement required within the next 3-5 years.
- PRIORITY D:** Repair/replacement required within the next 6-10 years.

The costs included within the report are budget costs only and do not form part of a contract for works. The costs are assessed at January 2011 rates and therefore do not account for inflation over the 10 years and exclude contract preliminaries, professional fees and VAT.

4 CURRENT MAINTENANCE

As part of our remit we assessed the current maintenance regimes being undertaken by Cairngorm Mountain Ltd on the property and found that this was generally on a reactive maintenance basis albeit some works were being carried out on a cyclical basis. The lack of maintenance to areas is as a direct result of funding being unavailable or allocated to other areas, however we did note during our inspection that more significant infrastructure maintenance and alterations were being undertaken as a result of funding being available following a successful ski season.

Our planned maintenance schedule attached at appendix 1 highlights the maintenance requirements over the next ten years and the associated costs. You should endeavour to ensure that these works are carried out to prevent any further deterioration of the plant.

4.1 HEALTH & SAFETY

4.1.1 WORKPLACE REGULATIONS

Under the Workplace (Health, Safety and Welfare) Regulations 1992, employers and building owners have a duty to ensure that the workplace under their control complies with the provisions set out therein. The Regulations describe a number of matters which have to be addressed to ensure that the workplace meets the health, safety and welfare needs of each member of the workforce, including people with disabilities.

We have not specifically assessed the premises in order to ensure full compliance with the Regulations. A comprehensive Health & Safety Audit would be necessary on a separate visit should you wish to establish whether any works may be required, in order to ensure that your obligations under the regulations are fulfilled.

4.1.2 HEALTH & SAFETY AT WORK ACT 1974

We have not undertaken an Audit to assess the suitability of the premises and the associated working practices to ensure compliance with these regulations.

However you should ensure that a water hygiene risk assessment of all water sources within the premises is undertaken and the water tested regularly. These will confirm whether Legionellas is present or not within the premises.

We would recommend that water samples are taken every year along with the formulation of a management plan in relation to the water supplies in the building.

4.1.3 CONTROL OF ASBESTOS REGULATIONS

The Control of Asbestos Regulations 2006 places a duty on occupiers, employees and owners to ensure that a suitable and sufficient assessment is carried out to determine whether asbestos containing materials (ACMs) are likely to be present in the premises. This information should be recorded by means of a Type 2 Survey and the associated results contained within an Asbestos Register for the building. This should include essential information relating to location, condition, recommendations and implementation for management of the ACMs.

Despite the above regulations still require a statement to be kept on site to confirm that there is no asbestos containing materials on site. You should ensure that this is provided in early course.

5 SUMMARY AND RECOMMENDATIONS

5.1 PRINCIPAL CONSIDERATIONS

The plant was constructed to an average standard and specification commensurate with their use and age. While there have been various historical issues with regards the operation of the plant, Operations staff have confirmed that the system is currently operating well and meeting the SEPA discharge consent level. We did however note a number of minor items, which should be considered as part of your 10 Year maintenance programme, as highlighted below: -

1. Maintenance records indicated that there may have been a recent problem with the build up of sludge in the Final Settlement Tank. Sludge level controls and RAS pump controls should be checked / upgraded to ensure these are fully operational and allow regular removal of RAS from the settlement tank.
2. Due to the relatively low load on the plant consideration should be given to returning a percentage of the RAS to the Distribution Chamber / RBC inlet to increase the efficiency of the RBC plant.
3. Operations personnel have advised that all RBC main bearings have been recently replaced however the motor / gearbox assemblies on the units appear to be the original equipment. Manufacturers recommend a normal life expectancy of 5-10 years and it has therefore been assumed that these shall require replaced / refurbishment in the near future. Costs for the work have been included in the maintenance program.
4. The pump, pipework and associated controls in both the Balance Tank transfer pump chamber and RAS pump chamber have a limited life expectancy and will require refurbishment within the next five years.
5. Chemical dosing pumps and associated control have a limited life expectancy due to the corrosive material of the chemical and will require refurbishment / replacement in the next few years.

In addition chemical storage facilities should be reviewed to ensure that chemicals are being stored in accordance with manufacturers recommendations.

6. Automatic Controls, instrumentation and telemetry systems require major refurbishment, calibration and re-commissioning to ensure that all equipment is fully operational and giving accurate readings.

7. Consideration should be given to installing temperature monitoring equipment at the Final Effluent Sampling Chamber to record discharge temperatures as this would assist to demonstrating compliance with the discharge consent.

5.2 SUMMARY OF COSTS

The attached maintenance programme provides budget costings for expenditure in 2011 and the following ten years to 2020. These costs, assessed at 2011 rates, are budget costings only and in many instances the cost will vary once opening up and further investigation works have been carried out. The costs exclude contractor's preliminaries, professional fees to manage the work and VAT. The cost also excludes any costs associated with regular sludge removal and chemical usage.

We recommend that a sum in the order of £31,000 which excludes VAT and Professional Fees, is included in the year 2011 repair budget to undertake the works included in the 10 Year Maintenance Plan.

A summary of the costs are shown within Appendix 1:-

5.3 RECOMMENDATIONS

Overall the Waste Water Treatment Plant at Cairngorm Mountain is in reasonable condition; however we would recommend that you undertake the remedial maintenance repairs in line with the 10 year maintenance plan.

WASTE WATER TREATMENT PLANT, CAIRNGORM MOUNTAIN, CAIRNGORM

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		<p><i>Property Inspected by</i> ██████████</p>	
<p><i>Date of Issue</i> 29 March 2011</p>		<p><i>Authorised by</i> ██████████</p>	
<p><i>Report Status</i></p>		<p>Final</p>	
<p><i>Other Consultants Involved</i></p>			
<p><i>Name</i> Davie and McCulloch</p>		<p><i>Discipline</i> Mechanical and Electrical</p>	
<p>Scott Wilson</p>		<p>Transport Engineers</p>	

**APPENDIX 2
PHOTOGRAPHS**



RBC Unit



RBC Media



RBC Motor / Gearbox



RBC corner damaged



Final Settlement Tank



RAS Pump Chamber



Final Effluent Settlement Chamber



Balance Tank Pump Chamber



Highlands and Islands Enterprise
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PLANNED MAINTENANCE CONDITION SURVEY REPORT

ON

BUILDING CODE: 003
PTARMIGAN
CAIRNGORM MOUNTAIN
CAIRNGORM

FOR

HIGHLANDS AND ISLANDS ENTERPRISE

AS AT

JANUARY 2011
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PTARMIGAN, CAIRNGORM MOUNTAIN, CAIRNGORM



FRONT ELEVATION

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APPENDICES

1	10 YEAR MAINTENANCE PROGRAMME
2	PHOTOGRAPHS
3	AS-BUILT DRAWINGS

1 INTRODUCTION

In accordance with your instructions, confirmed in the contract document dated 14 September 2010, we have undertaken a building surveyor's inspection of the Ptarmigan building at Cairngorm Mountain, Cairngorm, to advise you on its condition with the objective of providing a ten year maintenance programme. The inspection was carried out between 18 and 21 October 2010; and at the time of the inspection the weather was varied including snow, wet, fog and strong winds.

In accordance with your invitation to tender our survey inspection has included for all Mechanical and Electrical services within the premises and as-built drawings have been produced both of which are included in the appendices along with layout plans.

The inspection of the Mechanical & Electrical (M&E) building services was carried out on the 13th December 2010.

We must stress that this report is only for the use of the party to whom it is addressed and no responsibility is accepted to any other party for the whole or any part of its content. Neither the whole nor any part of this report or any reference thereto, may be included in any document or statement, nor published or reproduced in any way, without our prior approval in writing as to the form or content in which it will appear.

2 GENERAL DESCRIPTION & TENURE

The Ptarmigan, located at the head of Cairngorm mountain ski area was constructed in 2000 as part of the major redevelopment of Cairngorm at that time to allow the introduction of the Funicular Railway, which terminates at the Ptarmigan building.

The building has been formed around a large structural steel frame incorporating columns, beams and roof trusses providing lower and upper levels, with some beams noted to be clad in plywood. The funicular railway tunnel which abuts the Ptarmigan building has been constructed using large insitu cast reinforced concrete walls and floor with the upper wall sections and ceiling formed using profiled metal sheeting to create a tunnel.

Externally the roofs are multi pitched and clad with aluminium ribbed sheeting to all areas with aluminium snow bars located uniformly to all pitches. Perimeter aluminium trough gutters feed aluminium rainwater downpipes while the perimeter soffits and edge trims are clad with an aluminium cladding sheet.

The main elevations have been constructed using red granite rubble walls to lower levels and around the main entrances with treated timber weatherboarding, which has been decorated, to all upper elevations.

Metal factory finished timber core double glazed windows are provided to the elevations with double leaf timber formed doors fitted to all entrances along with insulated roller doors being provided to the main funicular vehicle entrance and the rear workshop entrance.

The external areas around the ptarmigan consist of compacted hardcore/sand composite roadways and footpaths around the perimeter and providing access to the rear workshop and footpaths to the summit.

The premises internally have been constructed to provide access to the funicular railway and provide a large café area with access to the balconies and toilet accommodation. A workshop is located to the rear of the premises which is utilised by the Outdoor Maintenance Team and also houses the plant and equipment working the funicular railway.

Generally these areas are finished with painted blockwork or plaster walls with suspended or painted plaster ceilings, concrete floors which are painted or vinyl finished and veneered doors. To the exhibition areas the main steel structural frame is exposed and decorated along with the inner roof linings.

Toilet facilities for both male and females along with an accessible toilet for the disabled are located at Levels 1 and 2 for both staff and the public, with all areas finished with suspended ceilings, painted blockwork walls, quarry tiled flooring, vitreous china wc's and whb's and preformed board cubicles and vanity units.

The Funicular Railway ends within the ptarmigan with the concrete and steel base and running rails passing through a vehicular opening to the west elevation. The funicular railway is provided with an access tunnel towards to summit and abutting the Ptarmigan. The tunnel is constructed using in-situ reinforced concrete floor and half height walls with the remaining walls and ceiling construction using overlapping curved profiled metal sheets fixed at regular centres. Externally, the tunnel has been covered using granite stones and turf.

The mechanical services consist of heating, ventilation, domestic water, drainage and sprinkler fire suppression systems. These include central ventilation plant and distribution ducts, domestic hot & cold water storage systems & distribution pipework, controls systems, sprinkler system tanks, pumps and distribution system, and electric heating/heaters. Our survey included inspections of the main central plant, distributions systems, terminal devices and appliances.

The main incoming water supply is from the mid-station collection, storage and boosted system and this serves both the fire fighting and domestic water systems. The below ground foul drainage is understood to discharge to the on-site sewage treatment plant, located at the base station – reported separately.

Our surveys indicated that the materials used for the installed domestic water pipework systems were copper, the above ground drainage systems were plastic (UPVC), and the ventilation ductwork systems were galvanized steel. Generally the condition of the pipework, ductwork & plant thermal insulation inspected appeared reasonable, although we believe from discussions with maintenance staff that water services pipework is showing signs of deterioration internally. This is thought to be the result of slight acidity in the cold water supply to the buildings.

The heating systems consist of local electric convector heaters and these appeared to be in a reasonable condition for their age. There is also a central automatic controls system installed serving the ventilation systems.

The electrical systems consist of a mixture of surface and recessed installations and these appeared to be in a good condition for their age. The main electrical distribution equipment is located in the main plant room area and is in good condition. There are 2

supplies, 1 for the Ptarmigan Building and 1 for the Funicular Railway Invertors. The switchgear was inspected in February 2010 and the next inspection is due in February 2015.

The lighting installation uses decorative, accent and fluorescent luminaires in the various areas of the building. All areas appeared in good condition with little or no issues regarding lamp failure / replacement.

Fire alarm and security systems are installed throughout the building.

There is also a lift installed within the building serving the lower and upper levels but not the plant room level. The lift appears to be in good condition and regularly maintained.

The as built drawings shown in Appendix 3 provide the layout for the premises which show individual room references which are referred to within this report and the Maintenance Schedule.

Access was available to all parts of the premises with the exception of limited secured storage rooms. In addition, we were unable to gain access to the roof areas due to the lack of suitable internal access points. All other parts of the building including the landscaped and hardstanding areas were accessible.

We understand that Highlands and Islands Enterprise lease the properties, infrastructure, ski tows and funicular railway to Cairngorm Mountain Limited under an FRI Lease.

3 TERMS OF REFERENCE

The 10 Year Maintenance Programme describes the condition of the building fabric of each referenced room as shown on the as built plan, with associated budget costs and detailed within Appendix 1. To clarify the definition of description frequently used in the schedule, we give below a detailed description of their meaning: -

1. **SOUND:** Denotes almost perfect condition having regard to all circumstances of age, locality and use.
2. **GOOD:** Indicates that, although suffering from blemishes and faults attributable to wear and tear, the item is of reasonable standard and there are no major defects and that the particular item does not require attention unless it is specifically stated otherwise.
3. **FAIR:** Of a lesser standard than might reasonably be expected, having regards to the age and location of the property, its users and the type of tenants likely to occupy it, although not seriously defective, the item requires attention to bring it to a reasonable standard.
4. **POOR:** Have exceptionally low standard, having regard even to the age and location of the property, its user and its tenant likely to occupy it.

Each item of repair to the building has been prioritised and the attached repair schedules provide the following classifications: -

- PRIORITY A:** Repair or replacement required immediately for health & safety reasons or to maintain structural integrity of the building, fabric or services.
- PRIORITY B:** Repair/replacement required within the next 1-2 years maintaining building elements and preventing further degradation.
- PRIORITY C:** Repair/replacement required within the next 3-5 years.
- PRIORITY D:** Repair/replacement required within the next 6-10 years.

The rates used within the report have been taken from a mixture of the Spon's Architects' and Builders' Price Book 2011 and the BCIS Maintenance Price Book 2011. The costs are budget costs only and do not form part of a contract for works. The building fabric rates are assessed at January 2011 rates and therefore do not account for inflation over the 10 years and exclude contract preliminaries, professional fees and VAT.

The life expectancy periods for the M&E services elements within the report have been taken from the Chartered Institute of Building Services Engineers (CIBSE) - Maintenance & Engineering Management Guide M 2008. The costs are budget costs and for information only. The services replacement costs are assessed at January 2011 rates and therefore do not account for inflation over the 10 years and exclude contract preliminaries, professional fees and VAT.

Annual planned preventative maintenance requirements have been based on CIBSE Guide M recommendations. Costs have been averaged across the estate and are based on the assumption that an element of the routine tasks will be undertaken by an 'in-house' team along with specialist contractors input.

4 CURRENT MAINTENANCE

As part of our remit we assessed the current building fabric maintenance regimes being undertaken by Cairngorm Mountain Ltd on the property and found that only reactive maintenance was being undertaken albeit some decoration works were being carried out on a cyclical basis. In addition a basic survey of the doors to the premises was recently completed with some repairs noted. However we have noted that the doors are in need of substantial overhaul which has not been noted within their schedule. The lack of maintenance to areas is as a direct result of no funding being available or allocated to other areas, however we did note during our inspection that more significant infrastructure maintenance and alterations were being undertaken as a result of funding being available following a successful ski season.

Our planned maintenance schedule attached at Appendix 1 highlights the maintenance requirements over the next ten years and the associated costs. You should endeavour to ensure that these works are carried out to prevent any further deterioration of the property.

It has been reported that on-going maintenance is being carried out, including electrical systems inspection & testing, water quality monitoring, etc. There were no records available to confirm if maintenance procedures are being completed and we recommend that future costs are included in the 10 year plan.

5. STATUTORY MATTERS

5.1. FIRE

Current fire safety legislation imposes various obligations on both owners and occupiers of property to assess, manage and reduce the risk of fire together with providing adequate means of escape. Whilst we have not undertaken a fire risk assessment for the property, this section highlights any associated issues that require attention. We would stress that that this does not obviate the need for a full Fire Risk Assessment to be undertaken.

Comments

1. We have not been provided with a fire risk assessment or fire certificate for the premises as they stand at present. We would recommend that you obtain a copy of the fire risk assessment which should be carried out by Cairngorm Mountain Ltd, as Tenants, to cover the premises.
2. During our inspection we noted that the premises are provided with portable fire extinguishers. Cairngorm Mountain Ltd should be requested to provide confirmation of maintenance to ensure these are regularly tested for operation. It is understood that fire extinguishers should be checked annually and a certificate provided to demonstrate compliance.
3. Upon inspecting the doors throughout the premises we noted that in the majority of cases these have been impact damaged in the majority of locations. We would recommend that the doors are repaired and replaced in the near future to ensure fire integrity.

5.2. THE EQUALITY ACT 2010

The Equality Act 2010 is designed to provide disabled people with rights in the areas of employment, access to goods, facilities and services, and buying or renting land and property. It imposes, directly and indirectly, responsibilities and obligations on the part of service providers as occupier, to ensure that those with disabilities are not unduly disadvantaged.

We have made reference below to principal deficiencies within the building:

Comments

1. The premises are provided with level access through the main entrance together a lift to provide access to each floor level within the property. In addition the stepped area within the main restaurant also incorporates a ramp for wheelchair access.
2. Internally, the property is provided with a lift to enable access to the upper floor however no tactile signs or colours exist to any areas to highlight escape routes and stairs.
3. There are accessible toilets located at Levels 1 and 2A, which are provided with appropriate handrails although no disabled alarms. A disabled alarm should be installed in both toilets.

Generally, we found that the premises are acceptable for disabled persons at present although some minor improvements require consideration. We have included appropriate costs within the 10 year maintenance plan attached in Appendix 1.

5.3. HEALTH & SAFETY

5.3.1. WORKPLACE REGULATIONS

Under the Workplace (Health, Safety and Welfare) Regulations 1992, employers and building owners have a duty to ensure that the workplace under their control complies with the provisions set out therein. The Regulations describe a number of matters which have to be addressed to ensure that the workplace meets the health, safety and welfare needs of each member of the workforce, including people with disabilities.

We have not specifically assessed the premises in order to ensure full compliance with the Regulations. A comprehensive Health & Safety Audit would be necessary on a separate visit should you wish to establish whether any works may be required, in order to ensure that your obligations under the regulations are fulfilled.

Comments

1. Timber fixed access ladders to the retail shop store are not compliant with regulations; we would recommend that a fixed compliant access ladder be installed.

2. We understand that CML in-house staff undertakes the annual Portable Appliance Test, however we did not see sight of any certification to confirm that this is up to date. We would recommend that CML are requested to provide certification of the annual PAT Testing and that this is held centrally.

5.3.2. HEALTH & SAFETY AT WORK ACT 1974

We have not undertaken an Audit to assess the suitability of the premises and the associated working practices to ensure compliance with these regulations.

However you should ensure that a water hygiene risk assessment of all water sources within the premises is undertaken and the water tested regularly. These will confirm whether Legionellas is present or not within the premises.

We would recommend that water samples are taken every year along with the formulation of a management plan in relation to the water supplies in the building.

5.3.3. CONTROL OF ASBESTOS REGULATIONS

The Control of Asbestos Regulations 2006 places a duty on occupiers, employees and owners to ensure that a suitable and sufficient assessment is carried out to determine whether asbestos containing materials (ACMs) are likely to be present in the premises. This information should be recorded by means of a Management Survey (Formally referred to as a Type 2 Survey) and the associated results contained within an Asbestos Register for the building. This should include essential information relating to location, condition, recommendations and implementation for management of the ACMs.

We have been provided with a copy of schedule of what Asbestos reports have been carried out at Cairngorm and no asbestos containing materials were noted.

Despite the above a regulations still require a statement to be kept on site to confirm that there is no asbestos containing materials on site. You should ensure that this is provided by CML in early course.

6. SUMMARY AND RECOMMENDATIONS

6.1. PRINCIPAL CONSIDERATIONS

The premises have been constructed to an average standard and specification commensurate with their use and age. We did not note any evidence of significant differential structural movement or settlement within the building. We did however note a number of minor items, which should be considered as part of your 10 Year maintenance programme, as highlighted below: -

1. The internal decorations to the property are in a fair condition with general minor marking and soiling noted to areas as would normally be expected. The kitchen and back of house areas are showing signs of wear at this time. Redecoration should be carried out on a cyclical basis, which we have identified in year 3.

2. Generally, the external parts are in fair condition with maintenance works being required to maintain a wind and watertight property and to prevent further or future building fabric decay.
3. The external windows and doors of the property are generally in a poor condition with the different thermal characteristics of the metal facings and timber core resulting in loose and debonding materials due to the climate at Cairngorm Mountain. We would recommend immediate wholesale repairs to the external windows with further wholesale repairs in the latter years due to the extreme weather conditions.
4. The tunnel created for the funicular railway was noted to be leaking with water run off down the concrete formed tunnel. At the time of inspection further works were being undertaken to the joint between the tunnel and Ptarmigan in an attempt to prevent further water ingress but we believe that further works are likely to be required to address this issue. We would advise that costs included within the Maintenance Plan are for the investigation only and does not cover any remedial works.
5. During our site inspection we noted surface water to be running down the face of the concrete formed floor of the tunnel for the funicular railway. It is understood that there are significant issues with the drainage from the Ptarmigan with debris and disjointed section of pipework. This area could not be viewed during the inspection therefore we have allowed costs within the 10 Year Maintenance Plan to undertake further and detailed investigations of the drainage. We would advise that costs included within the Maintenance Plan are for the investigation only and does not cover any remedial works.
6. Water ingress was noted to the property to the underside of the balconies resulting in extensive efflorescence and temporary internal suspended drainage channels to attempt to reduce the amount of water ingress and standing water. By marking on the drawings the locations of the water leaks we suspect that the likely source is the external metal box gutters which do not appear to run to falls and may not have sufficient water proof membranes to their underside. Further

investigation and remedial works are required. We would advise that costs included within the Maintenance Plan are for the investigation only and does not cover any extensive remedial works.

7. Above the main balcony viewing platform there would appear to be temporary 'nail' repairs to the aluminium soffit cladding to prevent these from falling to ground. Given that this area is open to the public we would recommend that this is addressed as soon as possible to prevent possible personal injury.
8. The internal doors are all showing signs of heavy wear and tear particularly the double leaf doors leading to the externals with ironmongery generally requiring attention. We have included costs for overhauling the majority of the doors and replacement of some in Years 1/2.
9. There are a number of areas where penetration damp was noted particularly within Level 1 Exhibition and Kassbohrer Shed, we have allowed for the installation of water resistant render to prevent this penetration from occurring in the future, but would recommend further investigation to try and establish the cause of the penetrating damp.
10. The water supply to the building is slightly acidic. To minimize any potential on-going effect this may have on pipework distribution systems, costs have been included for the installation of local water treatment equipment.
11. Electric convector heaters have a recommended economical life expectancy of 10 years so we have included replacement costs – to be spread over the 10 year period (as and when they fail).
12. Main architectural works associated with redecoration / refurbishment are taking place in years 3 and 8 of 10 year cost plan and allowance has been made for the lighting to be upgraded in year 3 with the general electrical installation upgraded in year 8.

6.2. FUTURE MAINTENANCE OPTIONS

Following our review, there appears to a lack of robust processes in place to review the maintenance and health and safety statutory requirements for such premises.

At the present time it would appear that CML undertake repairs to the properties on a reactive basis with planned works being limited to the redecoration of the externals using in-house labour.

We would suggest that CML are encouraged to review the condition survey on a yearly basis and appoint a professional representative to produce tender documentation to cover all works required and obtain competitive tenders from four local contractors. This will result in economies of scale in procuring the works as one entity and provide consistent quality.

The in-house labour force can then deal with day to day reactive repairs and possible external redecoration. It may also be possible for CML to employ the services of a centralised management company for reactive repairs, whereby the repairs required are reported to the company who then manage the works along with health and safety issues, this would incur a percentage mark-up on all repairs and therefore costs would be slightly higher, but the benefit is better allocated resources internally.

We would also suggest consideration is given to a central electronic system, such as 'TrackRecord' which provides a management tool for CML and HIE. The system provides an electronic diary which records the actions required for CML such as statutory requirements (Fire Risk Assessments, Water Risk Assessments, Health and Safety Review, Test Records for the Funicular Railway, Test Records for the Ski Tows, Electrical Tests, PAT Tests, and Water Temperature Readings etc). The system also acts as an electronic storage device for all records to be held in one place, which can be viewed by HIE.

Furthermore, such a system can monitor the progress of CML and provide data recording the compliance using charts and percentage readings that can be easily reviewed and followed up by HIE.

Our recommended on-going maintenance costs include for the required statutory testing and monitoring procedures.

6.3. SUMMARY OF COSTS

The attached maintenance programme provides budget costings for expenditure in 2010 and the following ten years to 2020. These costs, assessed at 2011 rates, are budget costings only and in many instances the cost will vary once opening up and further investigation works have been carried out. The costs exclude contractor's preliminaries, professional fees to manage the work and VAT.

We recommend that a sum in the order of £220,000 which excludes VAT and Professional Fees, is included in the Year 2011 repair budget to undertake the works included in the 10 Year Maintenance Plan.

A summary of the costs are shown within Appendix 1.

6.4. RECOMMENDATIONS

Overall the Ptarmigan premises at Cairngorm Mountain are in fair condition; however we would recommend that you undertake the remedial maintenance repairs in line with the 10 Year Maintenance Plan with a full redecoration internally in Year 2.

The condition of the Mechanical & Electrical (M&E), building services were found to be reasonable, however, we would recommend that remedial and maintenance works are undertaken in line with the 10 year Maintenance Plan.

<p>[REDACTED]</p> <p>Partner King Sturge LLP</p> <p>T [REDACTED] (Direct) F [REDACTED] (Direct) M [REDACTED] (Mobile) [REDACTED]@kingsturge.com</p>		Prepared by [REDACTED]	
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Date of Issue	28 January 2011 Rev March 2011	Authorised by	[REDACTED]
Report Status	FINAL		
Other Consultants Involved			
Name	Davie and McCulloch	Discipline	Mechanical and Electrical
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Highlands and Islands Enterprise
Iomairt na Gàidhealtachd 's nan Eilean

**PLANNED MAINTENANCE CONDITION
SURVEY REPORT**

ON

**BUILDING CODE: 002
BASE STATION
CAIRNGORM MOUNTAIN
CAIRNGORM**

FOR

HIGHLANDS AND ISLANDS ENTERPRISE

AS AT

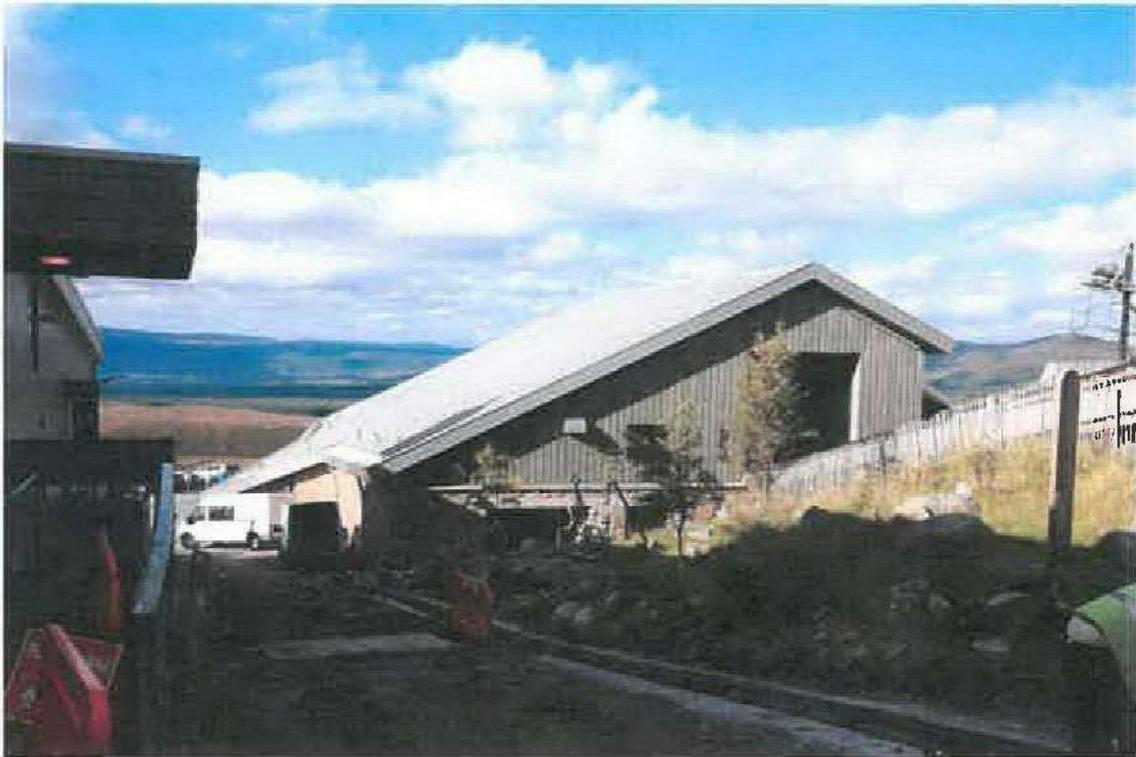
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BASE STATION, CAIRNGORM MOUNTAIN, CAIRNGORM



BASE STATION, CAIRNGORM MOUNTAIN, CAIRNGORM

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1 INTRODUCTION

In accordance with your instructions, confirmed in the contract document dated 14 September 2010, we have undertaken a building surveyor's inspection of the Base Station building at Cairngorm Mountain, Cairngorm, to advise you on its condition with the objective of providing a ten year maintenance programme. The inspection was carried out between 18 and 21 October 2010; and at the time of the inspection the weather was varied including snow, wet, fog and strong winds.

In accordance with your invitation to tender our survey inspection has included for all Mechanical and Electrical services within the premises and as-built drawings have been produced both of which are included in the appendices along with the layout drawings.

The inspection of the Mechanical & Electrical (M&E) building services was carried out on the 26th October 2010.

We must stress that this report is only for the use of the party to whom it is addressed and no responsibility is accepted to any other party for the whole or any part of its content. Neither the whole nor any part of this report or any reference thereto, may be included in any document or statement, nor published or reproduced in any way, without our prior approval in writing as to the form or content in which it will appear.

2 GENERAL DESCRIPTION & TENURE

The Base Station, located adjacent to the main car park and Day Lodge at the foot of the Cairngorm ski area was constructed in 2000 as part of the major redevelopment of Cairngorm at that time to allow the introduction of the Funicular Railway.

The building has been formed around a large structural steel frame incorporating columns, beams and roof trusses providing lower and upper levels with the main funicular railway starting from within this building.

Externally the roofs are multi pitched and clad with an aluminium ribbed sheeting to all areas with aluminium snow bars located uniformly to all pitches. Perimeter aluminium

trough gutters feed aluminium rainwater downpipes while the perimeter soffits and edge trims are clad with an aluminium cladding sheet.

The main elevations have been constructed using red granite rubble walls to lower levels and around the main entrances with treated timber weatherboarding, which has been decorated, to all upper elevations.

Metal factory finished double glazed windows are provided to the elevations with double leaf timber formed doors fitted to all entrances along with insulated roller doors being provided to the main funicular vehicle entrance and the rear workshop entrance.

The external areas around the base station consist of the tarmacadam roadway/pedestrian area and a compacted hardcore/sand composite roadway around the perimeter and providing access to the rear workshop.

The premises internally have been constructed to provide access to the funicular railway and ticket office along with providing offices and staff areas for the mountain rangers and cairngorm mountain staff. A large workshop is located to the rear of the premises which is utilised by the Outdoor Maintenance Team.

Generally these areas are finished with painted blockwork or plaster walls with suspended or painted plaster ceilings, concrete floors which are painted or vinyl finished and ash veneered doors. To the upper floors the main steel structural frame is exposed and decorated along with the inner roof linings.

Toilet facilities for both male and females along with an accessible toilet for the disabled are located at lower level, ground, with all areas finished with suspended ceilings, painted blockwork walls, quarry tiled flooring, vitreous china wc's and whb's and preformed board cubicles and vanity units.

The Funicular Railway starts from within the base station with the concrete and steel base and running rails passing through a vehicular opening to the south gable elevation.

The mechanical services consist of heating, ventilation, domestic water and drainage systems. These include central ventilation plant and distribution ducts, domestic hot & cold water storage systems & distribution pipework, controls systems, cold room refrigeration systems and electric heating/heaters.

The main incoming water supply is thought to come from the neighbouring day lodge building water supply system and the below ground drainage is understood to discharge to a local sewage treatment plant – reported separately.

Our surveys indicated that the materials used for the installed domestic water pipework systems were copper, the above ground drainage systems were plastic (UPVC), and the ventilation ductwork systems were galvanized steel. We believe from discussions with maintenance staff that water services pipework is showing signs of deterioration internally, which is thought to be the result of slight acidity in the cold water supply to the buildings.

The heating systems consist of local electric convector heaters and these appeared to be in reasonable condition for their age. There is also a central automatic controls system installed serving the main systems. Trace heating has been installed on the incoming cold water pipework below the station platform as a frost protection measure.

The electrical systems consist of a mixture of surface and recessed installations. The lighting installation uses decorative, accent and fluorescent luminaires in the various areas of the building. All areas appeared in good condition with little or no issues regarding lamp failure / replacement.

Fire alarm and security systems are installed throughout the building.

There is an 8 person lift installed within the building serving the upper and lower levels. The lift is in good condition and appears to be regularly maintained.

The as built drawings shown in Appendix 3 provide the layout for the premises which show individual room references which are referred to within this report and the maintenance schedule.

Access was available to all parts of the premises with the exception of limited secured storage rooms. In addition, we were unable to gain access to the roof areas due to the lack of suitable internal access points. All other parts of the building including the landscaped and hardstanding areas were accessible.

We understand that Highlands and Islands Enterprise lease the properties, infrastructure, ski tows and funicular railway to Cairngorm Mountain Limited under an FRI Lease.

3 TERMS OF REFERENCE

The 10 Year Maintenance Programme describes the condition of the building fabric of each referenced room as shown on the as built plan, with associated budget costs and detailed within Appendix 1. To clarify the definition of description frequently used in the schedule, we give below a detailed description of their meaning: -

1. **SOUND:** Denotes almost perfect condition having regard to all circumstances of age, locality and use.
2. **GOOD:** Indicates that, although suffering from blemishes and faults attributable to wear and tear, the item is of reasonable standard and there are no major defects and that the particular item does not require attention unless it is specifically stated otherwise.
3. **FAIR:** Of a lesser standard than might reasonably be expected, having regards to the age and location of the property, its users and the type of tenants likely to occupy it, although not seriously defective, the item requires attention to bring it to a reasonable standard.
4. **POOR:** Have exceptionally low standard, having regard even to the age and location of the property, its user and its tenant likely to occupy it.

Each item of repair to the building has been prioritised and the attached repair schedules provide the following classifications: -

- PRIORITY A:** Repair or replacement required immediately for health & safety reasons or to maintain structural integrity of the building, fabric or services.
- PRIORITY B:** Repair/replacement required within the next 1-2 years maintaining building elements and preventing further degradation.
- PRIORITY C:** Repair/replacement required within the next 3-5 years.
- PRIORITY D:** Repair/replacement required within the next 6-10 years.

The rates used within the report have been taken from a mixture of the Spon's Architects' and Builders' Price Book 2011 and the BCIS Maintenance Price Book 2010. The costs are budget costs only and do not form part of a contract for works. The building fabric rates are assessed at January 2011 rates and therefore do not account for inflation over the 10 years and exclude contract preliminaries, professional fees and VAT.

The life expectancy periods for the M&E services elements within the report have been taken from the Chartered Institute of Building Services Engineers (CIBSE) - Maintenance & Engineering Management Guide M 2008. The costs are budget costs and for information only. The services replacement costs are assessed at January 2011 rates and therefore do not account for inflation over the 10 years and exclude contract preliminaries, professional fees and VAT.

Annual planned preventative maintenance requirements have been based on CIBSE Guide M recommendations. Costs have been averaged across the estate and are based on the assumption that an element of the routine tasks will be undertaken by an 'in-house' team along with specialist contractors input.

4 CURRENT MAINTENANCE

As part of our remit we assessed the current building fabric maintenance regimes being undertaken by Cairngorm Mountain Ltd on the property and found that only reactive maintenance was being undertaken albeit some decoration works were being carried out on a cyclical basis. In addition a basic survey of the doors to the premises was recently completed with some repairs noted. However we have noted that the doors are in need of substantial overhaul which has not been noted within their schedule. The lack of maintenance to areas is as a direct result of no funding being available or allocated to other areas, however we did note during our inspection that more significant infrastructure maintenance and alterations were being undertaken as a result of funding being available following a successful ski season.

Our planned maintenance schedule attached at Appendix 1 highlights the maintenance requirements over the next ten years and the associated costs. You should endeavour to ensure that these works are carried out to prevent any further deterioration of the property.

It has been reported that on-going maintenance is being carried out, including electrical systems inspection & testing, water quality monitoring, etc. There were no records available to confirm if maintenance procedures are being completed and we recommend that future costs for this are included in the 10 year plan.

5 STATUTORY MATTERS

5.1 FIRE

Current fire safety legislation imposes various obligations on both owners and occupiers of property to assess, manage and reduce the risk of fire together with providing adequate means of escape. Whilst we have not undertaken a fire risk assessment for the property, this section highlights any associated issues that require attention. We would stress that that this does not obviate the need for a full Fire Risk Assessment to be undertaken.

Comments

1. We have not been provided with a fire risk assessment or fire certificate for the premises as they stand at present. We would recommend that you obtain a copy of the fire risk assessment which should be carried out by Cairngorm Mountain Ltd, as Tenants, to cover the premises.
2. During our inspection we noted that the premises are provided with portable fire extinguishers. Cairngorm Mountain Ltd should be requested to provide confirmation of maintenance to ensure these are regularly tested for operation. It is understood that fire extinguishers should be checked annually and a certificate provided to demonstrate compliance.
3. Upon inspecting the doors throughout the premises we noted that in the majority of cases these either do not appear to have been fitted with appropriate smoke seals/intumescent strips as we would normally expect in a property of this nature or the existing ones are in poor condition or missing. Consideration should be given to installing appropriate seals and intumescent strips to all appropriate doors while also undertaking general repairs to the doors.

5.2 THE EQUALITY ACT 2010

The Equality Act 2010 is designed to provide disabled people with rights in the areas of employment, access to goods, facilities and services, and buying or renting land and property. It imposes, directly and indirectly, responsibilities and obligations on the part of service providers as occupier, to ensure that those with disabilities are not unduly disadvantaged.

We have made reference below to principal deficiencies within the building:

Comments

1. The premises are provided with level access through two of the main entrances with a level platform giving access to the Ranger Station. These in turn provide access to the main ticket office and Funicular Railway. A passenger lift is also provided providing access between both lower and upper levels. However no

level access is available through the main entrance to the ticket office due to a significant change in level and although access is available through the other entrances the existing signage requires improvement to highlight the alternative access points.

2. Internally, the property is provided with a lift to enable access to the upper floor however no tactile signs or colours exist to any areas to highlight escape routes and stairs.
3. There are two accessible toilets located within the lower level with one to the entrance/exit lobby and one to the rear staff corridor which are provided with appropriate handrails although no disabled alarms. A disabled alarm should be installed in both toilets.
4. We have noted that at the present time under Statutory Instrument 2002 No.657 (The Rail Vehicle Accessibility (Cairngorm Funicular Railway) Exemption Order 2002 the funicular railway is exempt from Regulation 4 and Regulation 13 of the Disability Discrimination Act 1995 but this order is due to expire on 31 December 2011. Accordingly by 2011 the following works require to be completed, although this is not all encompassing:
 - a. Contrasting colour to be achieved between doors and the vehicle body.
 - b. System for visual announcements on the front exterior of the vehicles.
 - c. Contrasting colour between the floor surface of the passenger apartments and the platform surface at Base and Ptarmigan stations.

To date these works have not been undertaken and you should make allowance for these works in your budget for 2011.

Generally, we found that the premises are acceptable for disabled persons at present although some minor improvements require consideration. We have included appropriate costs within the 10 year maintenance plan attached in Appendix 1.

5.3 HEALTH & SAFETY

5.3.1 WORKPLACE REGULATIONS

Under the Workplace (Health, Safety and Welfare) Regulations 1992, employers and building owners have a duty to ensure that the workplace under their control complies with the provisions set out therein. The Regulations describe a number of matters which have to be addressed to ensure that the workplace meets the health, safety and welfare needs of each member of the workforce, including people with disabilities.

We have not specifically assessed the premises in order to ensure full compliance with the Regulations. A comprehensive Health & Safety Audit would be necessary on a separate visit should you wish to establish whether any works may be required, in order to ensure that your obligations under the regulations are fulfilled.

Comments

1. We did not note any areas of significant concern in relation Health and Safety issues at the premises.
2. We understand that CML in-house staff undertakes the annual Portable Appliance Test, however we did not see sight of any certification to confirm that this is up to date. We would recommend that CML are requested to provide certification of the annual PAT Testing and that this is held centrally.
3. In general a number of works require to be completed prior to opening the building to public use.

5.3.2 HEALTH & SAFETY AT WORK ACT 1974

We have not undertaken an Audit to assess the suitability of the premises and the associated working practices to ensure compliance with these regulations.

However you should ensure that a water hygiene risk assessment of all water sources within the premises is undertaken and the water tested regularly. These will confirm whether Legionellas is present or not within the premises.