4. Usage of facility

4.1 Users

4.1.1 The following user groups have committed to using the pitch, together with an indication of the minimum usage anticipated. We have taken this as a starting point.

Sleat and Strath Football Club	-	twice a week
Sabhal Mor Ostaig Gaelic College	-	min. 5 hours per week
Junior Rugby Club	-	weekly
Broadford Youth Club	-	fortnightly
Skye Camanachd	-	weekly
Sleat Primary School	-	weekly
Broadford Primary School	-	weekly
Kyleakin Junior Shinty Club	-	monthly
Kyleakin Football Club	-	monthly
Elgol Primary School	-	monthly

However it is reasonable to assume that actual usage will be considerably higher than this as there are a number of organisations that have not yet responded to our survey, and as the Gaelic College hopes to develop its sports provision, especially in shinty, over time.

4.2 Market Research

4.2.1 A feasibility study was carried out in 2007, updated in 2009, and is available on request.

4.3 Competitors

4.3.1 There is currently no all-weather pitch facility in South Skye, and no shinty-sized all-weather pitch facility in Skye and Lochalsh. While South Skye is currently almost completely lacking in sports facilities, this proposal is one of a number of development projects in the pipeline that together will aim to provide a co-ordinated range of basic facilities.

5. Employment and Training

5.1 Construction Phase

5.1.1 Local consultants, contractors and suppliers will be used wherever possible during the construction phase in order to maximise the benefits to the local population.

5.2 Maintenance

5.2.1 Some of the maintenance will be carried out as an in-kind contribution by the constituent organizations of Ceann Loch. However the project will generate two part-time paid jobs, one for a cleaner and another for a groundsman in charge of repairs and maintenance. It is hoped in this way to boost employment for local people.

5.3 Coaching

5.3.1 The presence of a training and match facility in South Skye will attract additional resources for coaching, both on a voluntary and paid basis, in the area. The Active Schools co-ordinator and Coaching Highland hope to be able to assist in sourcing grant funding for coaches and coach training.

6. Capital Costs

6.1 Costs

6.1.1 Refer to feasibility study for basis of cost estimates.

Synthetic Pitch/Pod/Services	-	£847,989.00
Training pitch	-	£82,294.00
Professional fees 7%	-	£65,119.81
Total Cost	**-**	**£995,402.81**

6.2 Funding Sources

6.2.1 See feasibility study for capital funding strategy

7. Cashflow forecasts and profit projections

7.1 Annual operating costs

These can be summarized as follows:

	Annual Cost*	
Changing Room weekly cleaning	£2,000	
Occasional maintenance and repairs for changing room pod, perimeter fence, car park, landscape areas, and access road	£2,500	
Pitch Maintenance: grass		£10-12,000**
Pitch Maintenance: synthetic	£3,000	
Floodlighting maintenance	£2,000	
Energy Costs: Electric boiler with solar panels		£1100p.a.**
Energy Costs: Heat Pump	£400	
TOTAL	**£9,900**	£11,100 - £13,100

*Cost estimate assuming maintenance tasks are carried out professionally. There is considerable potential for some of these tasks to be carried out by the constituent organizations of Ceann Loch, sharing responsibility for maintenance and cleaning, and leveraging skills within the football club and other constituent organizations.
**Operating costs depending on energy option selected.

7.2 Baseline annual income

7.2.1 The company is very fortunate in being able to secure agreements from its constituent organizations to provide a fixed 'baseline' income in return for use of the facility for a fixed period of time. As can be seen below, this covers most of the annual maintenance costs, so only 'top-up' income will be required from other sources.

Income source	Guaranteed annual income
SMO annual contribution based on 5 hours/week usage*	£4,050
Football club contribution based on 3 hours/week usage	£2,400
50/50 club**	£2,000
TOTAL	**£8,450**

*This would be reviewed and increased as the college sports programme expands
** The company already manages this fund which is run by the football club and will continue to run it.

7.3 Projected additional income

7.3.1 We would anticipate a charging model for other users similar to that used at Plockton artificial pitch:

	Junior		**Mixed** At least 25% school age children		Adult		Commercial	
Charges per hour	Full pitch	½ pitch	Full pitch	½ pitch	Full pitch	½ pitch	Full pitch	½ pitch
Pitch and changing room	£15	£7.50	£20	£10	£25	£12.50	£50	£25
Pitch, floodlights, changing room	£20	£10	£25	£12.50	£30	£15	£60	£30

Income source	Estimated annual income
Minimum income from pitch fees	£3,500*
Possible additional income from pitch fees	£3,500**
TOTAL	**£3,500-£7,000**

*this is based on only those who have already committed to using the facility (see above), assuming all pay children's rates and operate 40 weeks a year.
**potential income from additional use by other clubs, matches and events, who have not so far committed to using the facility.

Thus even if income from pitch fees is at the lowest bound of our projections, Ceann Loch should be able to cover running costs.

7.4 Extraordinary Income

7.4.1 We would also anticipate the raising of further funds from the following on an 'as-needed' basis:

Fundraising - would estimate Ceann Loch Ltd could raise £2000 a year by holding events/open days.
Sponsored forest –individuals will pay money for individual trees planted on the site. Scottish Woodlands and Forest Enterprise have given their commitments to this scheme. Will help to mitigate environmental impacts and prevent erosion.
Private donations
Maintenance grants – building on the football clubs expertise in this area.
In-kind work being done by local members to maintain facility, such as grass cutting and equipment maintenance. Members of football team currently do this already.

4.3 Phase 2 Feasibility Study

Other ideas for future development at Kinloch have been raised throughout the phase 1 consultation. This includes a large indoor sports arena, and development of further outdoor activities.

Phase 2 would seek to do a wider consultation to identify:

1) Requirement for indoor sports hall in area and the activities it would provide.
2) Identification and comparison of available sites to see if Kinloch is most appropriate location.
3) Feasibility of raising capital and running costs for indoor sports hall.
4) Best methods for integrating Kinloch park in to wider recreation and activities events based at Kinloch forestry.

It is believed that the experience of phase 1 of the Kinloch development would help inform and support the development of phase 2.

Costs of phase 2 feasibility can be ascertained following a more specific appraisal of the scope of works, but may be notionally budgeted at £10,000.

5 Appendices

5.1 Standards of Community Engagement

The National Standards for Community Engagement were designed by Communities Scotland to develop and support better working relationships between communities and agencies delivering public services. Consultation should be well-informed, rational, considered, focused on purpose, and equitable by giving a fair voice to all sections of communities, and tackling any barriers that may exclude people.
The ten national standards for community engagement are set out below:

(1) Identify and involve the people and organisations who have an interest in the focus of the engagement
Ceann Loch Ltd. drew up a wide list of local and regional contacts with a stake in the area and communicated this to the consultants. These contacts include landowners, elected members, public bodies, interest groups and community bodies.

(2) Identify and overcome any barriers to involvement
We have used email, telephone, letters, face to face discussions, and the regular meetings of constituent community-based organisations to give all stakeholders a barrier free opportunity to engage.

(3) Gather evidence of the needs and available resources and use this evidence to agree the purpose, scope and timescale of the engagement and the actions to be taken
Through their constituent organisations, Ceann Loch Ltd. has a large local membership which supports their course of action. In addition to this specific stakeholders were identified and targeted to establish a broad consensus on Phase 1 – for Phase 2 these consultations will be extended and supplemented by public meetings to further develop the scope.

(4) Agree and use methods of engagement that are fit for purpose
Ceann Loch Ltd. has selected consultants with extensive local knowledge and experience in this field of work.

(5) Agree and use clear procedures that enable the participants to work with one another effectively and efficiently
Participatory consultation is designed to identify the appropriate stakeholders and ask them the right questions. Background briefing has been sufficiently detailed for participants to understand what is being proposed.

(6) Ensure that necessary information is communicated between the participants
Material is designed to give people information which is accurate and jargon free.
Participants have been referred to public bodies, such as the Scottish Government, to access source documents where relevant.

(7) Work effectively with others with an interest in the engagement
Stakeholders have been invited to participate via email, telephone, face to face meetings and one to one meetings.
Stakeholders have been provided with briefing information prior to consultation.

(8) Develop actively the skills, knowledge and confidence of all the participants
The consultants have carried out a skills audit for the Board which identifies skill gaps.

(9) Feed back the results of the engagement to the wider community and agencies affected
Consultants are producing reports on their work (including this Stage 1 report).

(10) Monitor and evaluate whether the engagement achieves its purposes and meets the national standards for community engagement
The engagement process is being monitored, evaluated and reported as part of the feasibility study.

5.2 Details of Pitch Improvement Options

Option 1: Outline Design Specification and Indicative Construction Costs for Synthetic Grass Pitch

1. Synthetic Pitch - General

The synthetic pitch shall comply with the requirements of the FIFA 2 Star Standard.

The pitch construction profile will typically be graded crushed stone sub-base, open textured bitumen macadam base course, porous polymeric insitu shockpad and synthetic grass carpet with sand/rubber infill.

Alternative constructions, as specified by carpet manufacturer, should be detailed with the tender submitted for consideration.

The pitch drainage system will comprise of perforated land drainage pipes, laid in granular filter material, across the pitch at regular centres. A main collector drain will connect these pipes and take the run-off to the main storm water drainage system.

The synthetic grass carpet will be lined for football(and shinty).

2. Synthetic Pitch - Materials and Construction

The synthetic surfacing system for the football pitches shall comprise of a sand/rubber filled synthetic grass carpet and a flat insitu shockpad (required in all submissions).

The synthetic surface at Kinloch should be a new generation sand/rubber filled carpet developed specifically for football, should this be the primary use for the pitch. If other ball sports are to be played then consideration should be given to synthetic carpets that offer a 'multi-use' functionality and a short pile surface more suitable to the movement of a shinty or hockey ball.

The design, performance and installation of the synthetic surfacing system shall Comply with all requirements of the standards set out in the FIFA 2 Star Standard. Only systems with the full FIFA accreditation will be considered and the system will be tested and certified on completion.

The construction profile of the pitch will typically be:-

- Geotextile
- 250mm graded crushed stone sub-base
- Open textured bitmac base course
- Insitu polymeric shockpad
- Sand/rubber filled FIFA 2* Compliant synthetic carpet

3. Geotextile

The geotextile shall be a free draining woven fabric Lotrak 2300 as manufactured by Dun and Low or equal approved.

4. Stone Layer

The stone layer shall be of sufficient depth to avoid frost damage - minimum depth 250 mm. The stone layer shall consist of MOT Type 1 with the dust fraction at the low end of the range. It should be noted that the use of dust or fine materials to consolidate the stone layer will not be permitted.

5. Bitumen Macadam

The upper bitmac layer shall consist of 45mm deep, 10mm nominal stone size open textured Bitumen Macadam and shall be laid and consolidated evenly to achieve a surface tolerance of +or- 6mm under a 3 metre straight edge.

6. Polymeric Shockpad

Tender Particulars

With this tender the tenderer shall submit the following information.

- The arrangements the tenderer proposes to ensure no deterioration of materials delivered to th is site.
- Full details of the method to be used for installing the synthetic surface including level checks, methods of adjusting level inaccuracies, priming operations, temperature and relative humidity limits within which the surface must be installed.
- Frequency and type of quality control checks.
- The extent and type of weather protection, heating, etc proposed to permit the works to continue under adverse weather conditions, if any.
- The method to be adopted to monitor and control any toxic or other hazards.
- A sample 300 x 300 mm of shockpad stating the particle size range and source of the rubber, quality and percentage binder used in the installation.

Site Samples - Shockpad

During construction the Contractor shall prepare samples of the synthetic elastromeric shockpad measuring 300 x 300 mm. One sample is to be prepared on each day of the installation at the thickness and location within the system and be left in position adjacent to the area that it represents. The samples to be prepared following the same procedures as used in the installation of the shockpad and shall remain exposed to on-site conditions for not less than ten days until collected by the Engineer. Each sample to be clearly identified as to the area it represents, the dates on which it was cast and with the raw material batch numbers. If required by the Engineer the Contractor shall also take up to 50 core samples 25 mm diameter, where instructed, to check the thickness of the surfacing. Where the core sample indicates a thickness less than that specified additional core samples shall be taken to identify the extent of the thin area that shall then be cut out and recast. All core holes are to be made good to the satisfaction of the Engineer.

The tensile strength and ultimate elongation shall match the sample submitted with the tender. Should any of the samples tested be found, in the opinion of the Engineer, to be unsatisfactory or likely to produce unsound work the whole consignment that the sample represents shall be removed from the site. Notwithstanding that any sample which has been accepted by the Engineer may subsequently be rejected if he shall decide that the quality has in any way deteriorated.

The Contractor shall, at his own expense, remove and replace all rejected materials. Any delays consequential upon the rejection of any sample shall not in any way relieve the Contractor from his responsibility with regard to completion within the contract period.

Materials – Storage

Materials shall be stored by approved means to prevent contamination or deterioration.

The Contractor shall provide and maintain as necessary, within a secure fenced compound, dry fireproof stores for the storage of all flammable or toxic materials, and shall exhibit warning notices as to the nature of the products stored therein.

A notice explaining decontamination procedures to be adopted in the event of spillage of isocyanate containing compounds is to be prominently displayed in both English and in the principal language of the operative if this is different. Materials required for such decontamination processes are to be readily accessible at all times and to be clearly identified within both the storage and the mixing areas.

The Contractor's attention is drawn to the extract from "Isocyanates in Industry - Operating and Medical Codes of Practice" published by the BRMA (1978).

Should any samples tested be found in the opinion of the Consultant to be unsatisfactory or likely to produce unsound work the whole consignment which the sample represents will be rejected and shall immediately be removed from site.

Notwithstanding that any sample may have been approved the Consultant may subsequently reject any material if he shall decide that such materials have in any way deteriorated or become contaminated.

Any delay caused by such rejection shall not be operated in any way to relieve the Contractor from his responsibility with regard to completion within the Contract Period.

Protection of the Works

The whole of the works and materials shall be adequately protected against the harmful effects of the weather or deterioration or damage due to use by personnel, vehicles or plant.

If specified in the contract, the Contractor shall provide suitable and approved temporary structures to enable the mixing and laying of the synthetic surface to proceed without delay during inclement weather conditions.

The Contractor to include for ensuring suitable and safe working conditions, all heating, humidity control and temporary surface water drainage.

Throughout the contract, the Contractor shall monitor and record the following information.

In each 24 hour period commencing 8.00 am.

(a) The periods of rain and total rainfall.

(b) The maximum and minimum temperatures at ground level in the shade.

(c) Additionally, the temperature and relative humidity at ground level in shade conditions adjacent to the site continuously 24 hours per day throughout the course of the installation of the polymeric shockpad and for seven days following completion.

All test equipment, methods of operation and location shall be approved by the Consultant who shall be handed copies of these test results within 36 hours of the monitoring taking place.

Installation of Elastomeric Layers

Installation of polyurethane compound shall not take place when the air temperature at the site, or the surface temperature of the substrate, are outside the range 10oC to 40oC, nor when the relative humidity exceeds 85% unless the raw material manufacturer has previously provided a written assurance that this range can be exceeded without detriment to the product. If such details are provided then the limitations to be applied may be based on those data, subject to the prior consent of the Consultant. Installation of Polyurethane shall not take place unless the surface of the substrate is completely dry.

Disposal of Surplus Hazardous Materials

All toxic and flammable surplus and waste materials and containers are to be removed and disposed of by methods approved by the Consultant. Toxic waste shall only be disposed of at licensed sites.

7. Sand Filled Synthetic Grass Carpet

The carpet will comprise of tufted UV stabilised synthetic yarn on a two stage backing and will be a monofilament or monofilament/fibrillated or fibrillated yarn.

The installation will be suitable for football and is likely to be heavily used. It will conform fully with FIFA 2 Star Standard.

The carpet will be to the following minimum standards and will be tested prior to installation to ensure these standards are met – its source, full specification, sample and details of accreditation, warranty and guarantee will be supplied with the tender:

- The carpet colour shall be green.
- The pile shall be non-directional.
- When tested in accordance with BS 5229 tuft withdrawal must not occur below 20 N.
- There shall be no head joints within the playing area. There shall be no seam closer than 300 mm to any parallel inlaid line.
- The seam strength shall be greater than 0.25 N/mm when tested in accordance with BS 7044 sub section 2.5.
- When tested there shall be no deviation greater than 2 mm under a 300 mm straight edge on the seams.
- When laid there shall be no creases or wrinkles in the carpet.
- The carpet will be part filled with round or sub round grained sand as a ballast and EPDM rubber granules, or equal, colour brown or approved alternative, all in accordance with the manufacturer's recommendations. The Contractor must specify the method of application and the quantities of backfill materials to the carpet, with his tender.
- Contractor must allow for two visits 6 months and 12 months after practical completion to top up infill levels.
- The primary backing shall be a woven polymer fabric UV stabilised.
- A secondary backing (woven or mesh material) is preferred and full details of the type of backing, method of incorporation and fixing must be included with the returned tender.
- The pitch lining will be permanently installed woven lines (colour – white).

The costs for the works involved in constructing such a Synthetic Grass Pitch would be as follows and these costs are based on a 105 x 68 m or 7,140 m2 pitch which reflects the FIFA 2 Star Standard.

Bulk Earthworks to formation level 75,900
Drainage Installation 27,400
Pitch Construction 290,937
Fencing 39,600
Floodlighting 34,000
Commission for play includes posts, lining etc.5,200
£ 473,037.00

Option 2: Outline Design Specification and Indicative Construction Costs for Grade 3 Natural Grass Pitch

A model Grade 3 natural grass pitch has been assumed to be a piped drained pitch with a sand amended topsoil and secondary drainage system of sand/gravel slits on a reasonably level undeveloped site. It has been assumed that the indigenous topsoil has been evaluated and is suitable for the purpose.

It has been assumed that the design of the pitch is based on a full topographical survey and appropriate site investigation and takes account of planning and statutory requirements, the desired use of the facility and the proposed management arrangements.

It has been assumed that the design will form the basis of a Contract Document which is issued for tender by specialist contractors.

It has been assumed that the Schedule of Works to which an appointed contractor will have to work will be as follows:

1) Cut the vegetation back to approximately 25 mm and remove debris. This will allow the existing sward to be easier dealt with when rotovating prior to topsoil strip and will reduce the amount of organic material incorporated.

2) Spray the area with a systemic herbicide, e.g. Glyphosate; this will kill of broad leave weeds and the existing sward. The site, dependent on the time of year should be left for approximately two weeks after spraying.

3) Chop the existing sward by shallow rotovating at high rotovator speed and low forward speed. This action will make the topsoil easier to deal with when it is lifted for respreading. The shallow depth and fast rotovator speed allied to the crawl forward speed will maximise the break up of the existing sward.

4) Strip the existing topsoil and store for re-use. The size of the topsoil storage bund has to be carefully considered – a long, wide low bund will minimise the degradation of the topsoil.

5) Adjust the subsoil levels the design levels by cut and fill. The method of work will to a large extent depend entirely on how much material has to be moved. Greater depths on larger area, say in excess of say 500 mm, may make the use of excavators and dumpers more efficient than a dozer and box. Shallower depths and limited distances may make pushing the material with a bladed dozer more efficient. This choice is very site specific.

6) Subsoil cultivate to remove compaction – normally, dependent on subsoil, this would be carried out by a tractor and 'finned' subsoiler at 600mm depth and at 900mm centres.

7) Trim and grade the formation, regulate the surface by back blading with a Low Ground Pressure dozer.

8) Lift from store and respread topsoil to required depth. This operation is again dependent on how far the store is from the pitch area. It can be carried out either by box scraper or again by excavator and dumper.

9) Cultivate, trim and grade the surface – once spread the topsoil should be cultivated by tractor and power harrows, or equivalent, stone picked and trimmed to the finished grade.

10) Amend the topsoil by ameliorating with carefully selected sand. The choice of sand and the quantity will depend to a large extent on the mechanical analysis of the topsoil. In general terms however approximately 50 – 70 mm depth of a carefully selected even graded sand is applied to

the surface of the topsoil and incorporated by power harrowing into the top 30 – 50 mm exact figures depend on analysis.

11) Set out and install piped drainage system. The timing of this operation is very dependent on site conditions and it is possible that the drainage would be installed into the formation prior to importation of topsoil.

12) Subsoil cultivate once more to relieve compaction and trim and grade the surface – this is designed to remove disruption caused during the drainage works and care must be taken not to disturb the installed drains.

13) Prepare seed bed, achieved by a final shallow cultivation, trimming to final grade and raking.

14) Apply pre-seed fertilisers and any other additives that are required following study of chemical analysis of topsoil.

15) Sow the selected seed mixture in several passes – normally 1 pass broadcast and 3 by approved mechanical means, total application of 35 g/m2.

16) Maintain moisture levels – this can only really be effective where there is an installed irrigation system as bowser applications have little impact.

17) After germination and when grass has reached 50 mm in height stone pick the surface and lightly roll – this a manual exercise to remove the stones etc. which may have come to the surface, the pitch is then rolled using a flat agricultural roller in suitable conditions to regulate the surface and encourage the grass plants to 'tiller'.

18) Start a regular grass cutting regime and never remove more that 30% of the foliage of the plants at a single cut – this should involve regular mowing keeping the height of sward between 40 –60 mm in the first 8 weeks or so which will assist in developing the sward. After this period the height of cut can be reduced if the sward is growing strongly it may require cutting on a 4 day cycle.

19) Dependent on the time of year apply a granular fertiliser and any liquid requirements determined after studying the topsoil analysis and growing conditions. The granular fertiliser will be designed to optimise the growing conditions and very high nitrogen applications should be avoided in this initial period.

20) Once sward has established sufficiently – in normal conditions this should be approximately 12-14 weeks after seeding – the pitch can be sand/gravel slit at 1 metre centres or to suit the design requirements. This establishment period is very season dependent for example slits installed in September may not establish fully until June the following year.

21) Apply a sand top dressing allow 12 kg/m2 this sand topdressing is designed to start the build up of a sandy layer on the surface which will prevent the eroding of the topsoil under play and maintenance. The sand should be carefully selected and be part of a regular maintenance regime to ensure that slits are not capped by an impervious topsoil layer.

22) Vertidrain or Terraspike the pitch to remove compaction. This operation is designed to remove much of the compaction caused by the machinery installing the slits. The operation should be carried on a drying pitch and not in wet conditions the machinery should be set to penetrate to the full depth of topsoil if possible.

23) Drag brush the surface – once the vertidraining is complete the site should be brushed to move the sand application into the sward and holes created by the vertidrain. This operation should be carried out by a light tractor with low ground pressure grassland tyres to avoid consolidating the surface.

24) The items 21, 22 and 23 above should be repeated twice at say 6 week intervals during the first growing season with the sand application rate being reduced to 10 g/m2 for each application.

25) Apply a further application of fertilisers again taking into account the chemical analysis of the topsoil, condition of sward and the growing conditions at that time.

26) Maintain sward by regular cutting weekly or more if conditions require it and by irrigating when required a cylinder mower will produce a better quality sward and clippings should be removed while establishing the sward over the slits.

27) Once sward has re-established over the slits – this period depends on time of season if works carried out in good growing conditions anticipate some 10 –12 weeks the pitch should be ready for play.

28) Install equipment – goals etc.

29) Commission pitch for use by walking the surface and making sure there are no hazards and that the sward is well enough established to sustain play.

30) White line the pitch and take bookings.

A simplistic breakdown of costs under more easily recognisable headings would be as follows:

Bulk Earthworks to formation level 14,200
Drainage Installation 15,000
Pitch Construction 40,800
Establishment of sward 7,860
Sand/Gravel slits, topdress, vertidrain etc. 11,820
Establishment of sward over slits 11,640
Commission for play includes posts, lining etc.2,400
£ 103,720

Option 3: Outline Design Specification and Indicative Construction Costs for Grade 4 Natural Grass Pitch

A Grade 4 Pitch model has been identified as one which is built to a higher specification than a Grade 3 pitch using a manufactured screened rootzone rather than indigenous or imported loams. The rootzone construction specified and costed is based on a system with a gravel raft over the installed drainage.

These types of construction have a much better performance in terms of surface water drainage though a consequence is that the maintenance associated with them is more complex and expensive. The pitches will sustain more play though this is only true if the sward is maintained.

The works as detailed previously for a Grade 3 model pitch construction would be common through items 1 – 7 in a Grade 4 model pitch but, as the topsoil would be stripped and not stored for re-use, it would not be sprayed with herbicide or rotovated. The stripped topsoil would most likely be used on site or delivered elsewhere for landscape purposes but, for the purposes of this model, it has been assumed that the stripped material cannot be reused and that there will be a cost associated with removal from site which has been added to the total cost of the project.

1) Strip the existing topsoil and remove from site.

2) Adjust the subsoil levels to the design levels by cut and fill. The method of work will to a large extent depend entirely on how much material has to be moved. Greater depths on larger area,

say in excess of say 500 mm, may make the use of excavators and dumpers more efficient than a dozer and box. Shallower depths and limited distances may make pushing the material with a bladed dozer more efficient. This choice is very site specific.

3) Subsoil cultivate to remove compaction – normally, dependent on subsoil, this would be carried out by a tractor and 'finned' subsoiler at 600mm depth and at 900mm centres.

4) Trim and grade the formation, regulate the surface by back blading with a Low Ground Pressure dozer.

5) Install a new drainage system with gravel backfill to the surface of the formation. The drainage tracks should lined with Geotextile and the backfill can be a 10 – 20 mm clean crushed stone.

6) The surface of the formation should be covered by a layer of Geotextile to assist in retaining the integrity of the gravel raft.

7) Install a perimeter kerb or timber edge to retain the construction profile.

8) Spread a gravel raft over the Geotextile 100 mm deep of a carefully selected grit or crushed stone. The material must be selected after laboratory tests to prove that the layer above will 'bridge' on the raft and not integrate. This material should be trimmed and graded carefully.

9) Spread a base sand layer of a laboratory tested and approved sand 200 mm deep over the grit layer and evenly consolidate and trim.

10) Apply chemical additives to the sand layer to provide optimum conditions for grass establishment. These additives will be designed to meet the requirements of each individual circumstance in the case of this model we have allowed a basal fertiliser to promote rooting and a water retention agent.

11) Spread an approved sand based rootzone material over the base sand layer. The rootzone will laboratory test and approved prior to importation and will be compatible with the sand in the base layer. The rootzone depth will be 100 mm evenly consolidated and trimmed to the designed grade.

12) Apply the same chemicals as described in 10 above and carefully cultivate to a depth of 125 mm thereby integrating the rootzone with the top 25 mm of the base sand layer.

13) Install an automatic irrigation system incorporating storage tank, pump, perimeter sprinklers and manual take off points to allow portable sprinklers to be used in the centre of the pitch. The system will require portable sprinklers on stands, hoses and reels for ease of use. It is essential that an automatic irrigation system is used for these types of construction.

14) Apply pre-seed fertiliser and lightly rake the surface.

15) Seed the pitch using a carefully selected seed mixture to meet the high wear and performance requirements of such a construction. The seed should be applied in four passes the first broadcast and the following three by approved mechanical seeded.

16) The moisture levels must be maintained at optimum levels after seeding and several light applications of water per day should applied. It is essential however that once the sward is growing that the pitch is not over watered.

17) Once the sward reaches 40 mm lightly roll the surface – this can be achieved by using a mower with the cylinder not operating.

18) When the sward reaches 50 mm and in suitable conditions it should lightly clipped the first 2 cuts should be carried out with a well serviced and sharp rotary mower and the clippings should be removed.

19) Approximately 4 weeks after seeding or earlier if conditions demand it apply a granular fertiliser from a carefully calculated fertiliser programme.

20) The sward should be cut as required to maintain it at 40 mm allowing a minimum of 2 cuts per week and allowing for additional should they be required to prevent the need to remove any more than 30% of foliage on a single cut. The clippings should all be collected.

21) Apply fertiliser at 6 week intervals though after established this could amended to 3 – 4 week intervals with the application rate halved.

22) Install equipment – portable equipment should be considered.

23) The pitch could be commissioned for play given optimum growing conditions 14 weeks after seeding.

The costs for the works involved in constructing such a Grade 4 Pitch would be as follows and these costs are based on a 105 x 68 m or 7,140 m2 pitch which reflects the UEFA standard.

Bulk Earthworks to formation level 16,900
Drainage Installation 17,850
Pitch Construction 119,880
Automatic Irrigation System 29,600
Establishment of sward 4,000
Commission for play includes posts, lining etc.3,600
£ 191,830

Maintenance

Proposed Maintenance Specification for: Kinloch Grass Football Pitches

Proposed Maintenance Specification for Purpose built soil based pitches of known construction, which include sand amelioration. Field drainage supplemented by the use of gravel rafts and/or sand slits.

These pitches, if maintained adequately will sustain medium frequencies of use over the longer term.

ACTION	Per year	Per Week
Grass Cutting	30	
Grass Cut to lines	0	
Scarify	1	
Drag Brush	0	
Rake, tractor mounted	0	
Herbicide	1	
Fertiliser	4	
Pesticide	1	
Outfield Spike	13	
Roll	0	
Solid Tine	13	
Hollow Tine	0	
Top Dress	1	
Verti Drain	1	
Overseed	1	
Measure & Mark	2	
Overmark		3 (36 weeks)
Pre-match inspection		2 (22 weeks)
		3 (14 weeks)
Post match inspection		2 (22 weeks)
		3 (14 weeks)
Maintain goalposts	0	
De-litter		3

The sand slit drainage will require some maintenance to prevent them from being capped over as well as including grass-cutting, topdressing, verti-draining, fertilising etc.

Total cost if carried out by a professional groundsman is estimated at around **£10,000.00-12,000.00** per year depending on the amount of play and what the final pitch specification is.

However a possible advantage of the grass pitch option is that part or all of this maintenance could be carried out on a voluntary basis by team members or by the College.

Artificial Grass Pitch Indicative Costed Indicative Maintenance Schedule

1. POWER GROOMING

Using Power Grooming machinery undertake the following operations:

- Sweep the pitch surface with rotating brush
- Remove debris and leaves
- Remove fine contaminates and dusts from the surface

Frequency: Quarterly

2. CONTRA BRUSHING

Utilising a patented Contra Brush undertake the following operations:

- Penetrate the top 2 - 3 mm of sand infill
- Break up the formed crust of contaminant and compacted silica sand
- Drag brush the surface to provide even coverage

Frequency: Annually

3. MOSS AND WEED TREATMENT

Utilising an approved moss and weed killer to a 3m band on the pitch perimeter apply regulation dosages in accordance with manufacturer's instructions and current Health and Safety Legislation. The application will generally carried out using tractor mounted applicators dependent on the severity of infestation more than one application may be required.

Also dependent on the severity of infestation the treated area may be restricted to the perimeter margin or a full application across the total playing surface may be required.

Frequency: Twice per year

4. ANNUAL COST

Annual Maintenance to Synthetic Pitch……**£ 3,000.00**
(includes power grooming, contra brushing and moss and weed treatment)
Annual Maintenance to Floodlighting……**£ 2,000.0**

An Cuilionn Consultancy
An Cuilionn, Achmore, By Kyle, Ross-shire, IV53 8UU
t: 01599 577323 f: 01599 577288 e: acc@ancuilionn.co.uk

Kinloch Clubhouse Feasibility Study

The new building will be used for changing and showering for football, shinty and other games. Therefore, there will be a small space heating and a large, intermittent water heating requirement with showering for 25 persons. Because of the pattern of use, the space and water heating can each be treated separately or the two can be combined and supplied by one heat source. The final choice will depend on the capital cost of the equipment, the projected running cost and environmental impact of the heat source/s.

Heating & Hot Water Services

Space Heating

The building has an approximate floor area of 120 square metres, giving a heating loss of 6 – 7 kW with an annual heating requirement of approximately 6,200 kWhrs. Assuming underfloor heating is to be installed, the options are either low temperature electric cables, as mats, or low temperature hot water in pipes, both buried in the concrete floor slab.

The capital cost of the electric matting would be £5,000-00 - £5,500-00 (including installation). Buried heating pipes and all accessories would cost £4,000-00 - £4,500-00 (including installation). Prices do not include VAT.

The choice of heat source for low temperature hot water heating is:

1. An electric direct acting boiler.
2. An oil fired boiler.
3. A gas (LPG) fired boiler.
4. An air sourced heat pump.
5. A ground sourced heat pump.

I have discounted a wood-chip or pellet boiler as the heat demand is too small for the units available.

Water Heating

As the demand will be for large amounts of hot water for showering, the choice is between electric showers, a high output heat source or a sufficiently large hot water store.

There would be a maximum number of electric showers, either 6 with a 100 amp three phase supply or 12 with a 200 amp supply. The larger supply capacity would be reflected in the connection charge from Scottish & Southern Electric.

A high output heat source, assuming a small amount of hot water storage, would need a capacity of approximately 10 kW per shower, i.e. an 80 kW output for 8 showers. A boiler of this size undertaking this duty would be operating very inefficiently, which may lead to maintenance problems at a later date.

A large hot water store, sufficient for 25 people to each have a 4 minute shower, will need to have a capacity of 660 litres, assuming the water is stored at 65ºC. As the heat source will begin operating as soon as hot water is drawn off, two 600 litre tanks should suffice. Heat source sizing will then depend on the recovery time required of the hot water tanks. To reheat the water in the tanks to 65ºC in one hour will require an input of 42 kW, with a proportionately higher input, or more storage, should the period be shorter.

I will assume the 600 litre tanks are to be recharged in 1¼ hours, 34 kW input.

The choice of heat source for stored hot water is as the heating system but with the addition of a biomass boiler.

Heat Sources

Direct Acting Electricity

This would be the easiest installation, with electric showers and one electric boiler supplying the underfloor heating.

Alternatively, a bank of electric boilers would supply the underfloor heating and hot water tanks (direct acting immersion heaters would not have sufficient capacity to recharge the tanks in sufficient time). Approximately 36 kW of boiler capacity would be required.

Oil Fired Boiler

A small boiler would supply the underfloor heating should electric showers be installed.

For a stored hot water installation, an oil fired boiler with a capacity of 30 kW could be required. The boiler could be sited either inside or outside the building, and would also provide heat for the underfloor heating.

Gas (LPG) Fired Boiler

Similar to the oil fired boiler above but with the boiler having the ability to vary (modulate) its output.

Air Sourced Heat Pump

The maximum heat output for the size of unit that would be used in this building is approximately 25 kW. The unit could be sited either with the building, if there was sufficient space, or close to the building outside. Should a higher output be required, two smaller units would be coupled.

A buffer tank (100 to 200 litres) would be required as well as larger hot water storage tanks, designed to the specific heat pump output. High output temperature (70ºC) heat pumps are an option but two would be required to provide sufficient heating capacity with two tanks or one heat pump with additional tank/s. Medium temperature heat pumps, 55 - 60ºC output, would require additional tank/s and immersion heaters. Immersion heaters are required to periodically raise the water temperature above 60ºC, to eliminate legionella bacteria.

Ground Sourced Heat Pump

A ground sourced heat pump would be sized to the capacity required by the heating/hot water installation. If there was sufficient land and soil cover, 1.0 metre deep, a ground loop could be buried (not under the pitches or land that might be used at a future date) and would provide the heat source. Alternatively, bore holes would be sunk 60 to 90 metres into the ground, using the rock as the heat source.

A buffer tank would be required, as with the air sourced unit, together with additional immersion heaters for domestic hot water. Some GSHPs are manufactured having output temperatures of 70ºC and if they are suitably sized and can meet the system requirements, would dispense with the need for additional immersion heaters. High temperature heat pumps have high compressor starting currents, their use would depend on the outcome of discussions with Scottish & Southern Electric.

Biomass Boiler

A biomass (wood chip or pellet) boiler would be sized as the ground sourced heat pump. A buffer tank, with an additional heat source for use during times of high heat demand, would be required. Space would also be needed for a hopper to contain the chips/pellets, together with vehicular access to the hopper. The final choice of boiler (size, type and degree of sophistication) would depend on its eventual duty cycles and ease of use.

Solar Panels

There is the option of adding hot water solar panels to the installation. Adding solar panels to electricity, oil and gas systems are a benefit in terms of saving running costs, displacing fuel and improving the carbon footprint. As heat pumps are more efficient in their use of fuel, the benefits of adding solar panels are reduced and have to be assessed on a project by project basis.

Some heat pump manufacturers can incorporate solar panels into the design of their installations. However, if solar panels are used intermittently, a heat dump has to be incorporated into the system to dissipate solar energy when it is not required.

Typically solar panels collect between 350 and 450 kWhrs/sq. metre of surface area/year. A dedicated solar storage tank, sized at 50 litres per square metre of collector area, could be included in the system design. A collector area of between 4 and 8 square metres would be the optimum, depending on the final design.

Capital Costs

Space Heating only

1. An electric boiler for underfloor heating only would cost approximately £1,000 - £1,300 installed.
2. An air sourced heat pump would cost approximately £9,500 installed.
3. A ground sourced heat pump would cost approximately £9,200 installed, with additional bore hole costs (the most expensive option) of approximately £8,500.

Water Heating only

The sole option for water heating only, electric boilers and two 300 litre storage tanks, would cost approximately £5,900 including installation.

Space & Water Heating Combined

1. An electric boiler and hot water storage tanks would cost approximately £6,100 installed.
2. An oil fired boiler, oil storage tank and hot water storage tanks would cost approximately £8,300 installed.
3. A gas (LPG) fired boiler and hot water tanks (the gas storage tank is hired from the supplier) would cost approximately £6,800 installed.
4. A high temperature air sourced heat pump and hot water storage tanks would cost approximately £18,500 installed.
5. A high temperature ground sourced heat pump and hot water storage tanks would cost approximately £39,000 installed, including bore holes.
6. A biomass boiler, including hopper and hot water tanks would cost approximately £11,000.

Solar Panels

Supply and installation costs for solar panels are £700 to £900 per square metre. Dedicated solar tank costs are between £400 and £950, depending on size.

Running Costs

Below are comparative costs for fuels and their methods of use. The electricity cost include an off peak element, as it should be possible to design the installation to take advantage of the tariff. The off peak element reduces the costs of the electricity, air and ground sourced costs for space heating, and possibly water heating. Maintenance of oil, gas and biomass fired boilers has not been included in the running costs, for which a sum of £150 per annum should be allowed.

Space heating assumes intermittent use, with a lower set-back temperature when the building is not being used. Water heating assumes five shower sessions per week.

							Costs		
	Unit	Price	kWHr	Pence	Efficiency	Space	Water	Total	
		per Unit	per unit	per kWHr		Heating	Heating		
						(kWhrs)	(kWhrs)		
		(£)				6200	11000	17200	
Electricity	kW	0.075	1.00	7.50	100%	£465.00	£825.00	£1,290.00	
Oil	Litre	0.420	10.20	4.12	91%	£280.54	£497.74	£778.28	
Gas (LPG)	Litre	0.340	5.80	5.86	92%	£395.05	£700.90	£1,095.95	
ASHP	kW	0.075	1.00	7.50	300%	£155.00	£275.00	£430.00	
GSHP	kW	0.075	1.00	7.50	350%	£132.86	£235.71	£368.57	
Biomass	Tonne	90.000	4250	2.12	95%	£138.20	£245.20	£383.41	

Table 1 Comparative running costs for different fuels

Carbon Dioxide Emissions

The CO_2 emissions per kilowatt hour of useful energy for the above options are given below. Base figures are taken from the Energy Efficiency Best practice Programme, published by the Scottish Government.

Heat Source	CO_2 per kilowatt	Efficiency	Actual CO_2 output (kg/kWhr)
Electricity	0.43	100%	0.430
Oil	0.25	91%	0.275
Gas (LPG)	0.21	92%	0.228
ASHP	0.43	300%	0.143
GSHP	0.43	350%	0.123
Biomass	0.008	95%	0.008

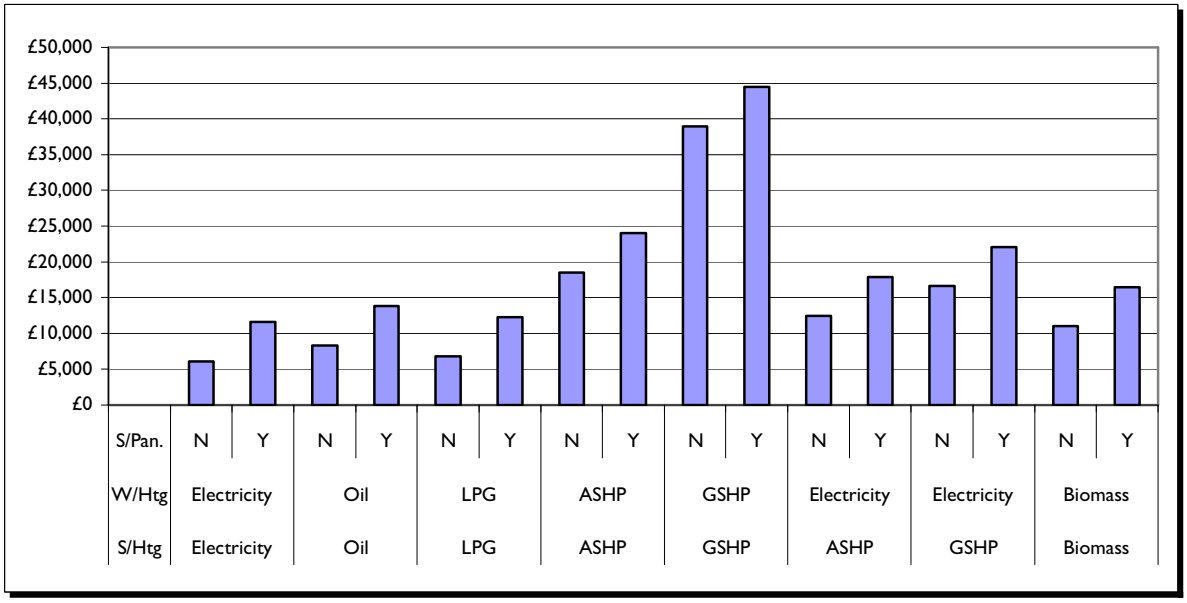
Table 2 Carbon dioxide emissions for different heat sources

Conclusions

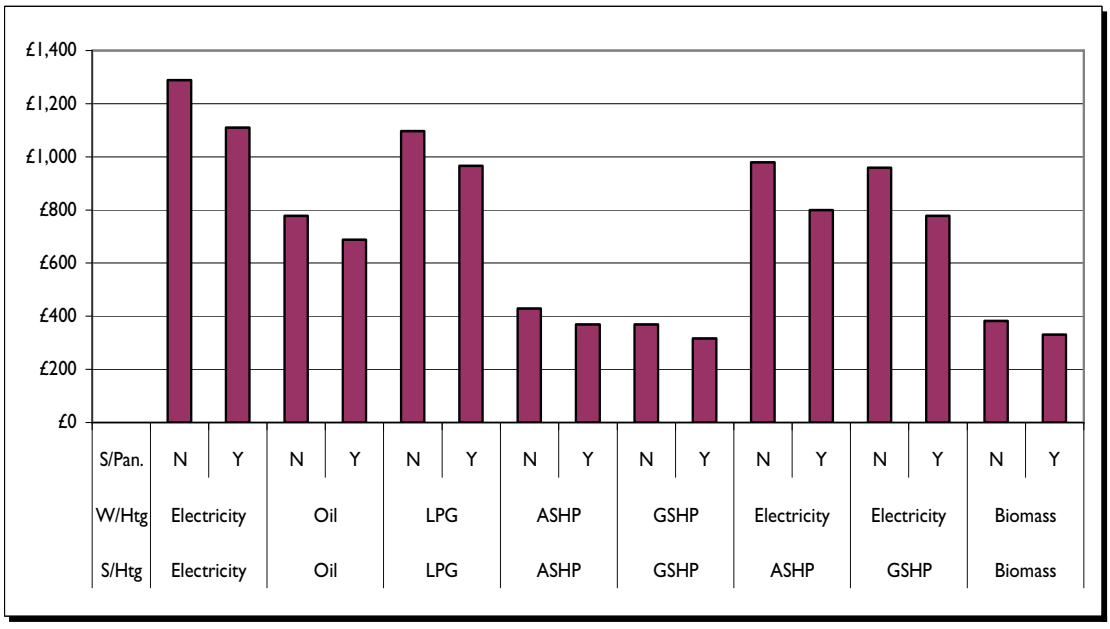
The table below shows the capital and running costs for various options, together with their CO_2 emissions. Account must be taken of the assumptions made in calculating the figures but they give a good indication of what can be expected for the various scenarios.

Space Heating	Water Heating	Solar Panels	Capital Cost	Running Cost	CO_2 (kg) Emissions
S/Htg	W/Htg	S/Pan.			
Electricity	Electricity	N	£6,100.00	£1,290.00	7396
		Y	£11,600.00	£1,110.00	6364
Oil	Oil	N	£8,300.00	£778.28	4725
		Y	£13,800.00	£688.35	4066
LPG	LPG	N	£6,800.00	£1,095.95	3926
		Y	£12,300.00	£966.52	3378
ASHP	ASHP	N	£18,500.00	£430.00	2465
		Y	£24,000.00	£370.00	2121
GSHP	GSHP	N	£39,000.00	£368.57	2113
		Y	£44,500.00	£317.14	1818
ASHP	Electricity	N	£12,400.00	£980.00	5619
		Y	£17,900.00	£800.00	4587
GSHP	Electricity	N	£16,600.00	£957.86	5492
		Y	£22,100.00	£777.86	4460
Biomass	Biomass	N	£11,000.00	£383.41	52
		Y	£16,500.00	£329.91	52

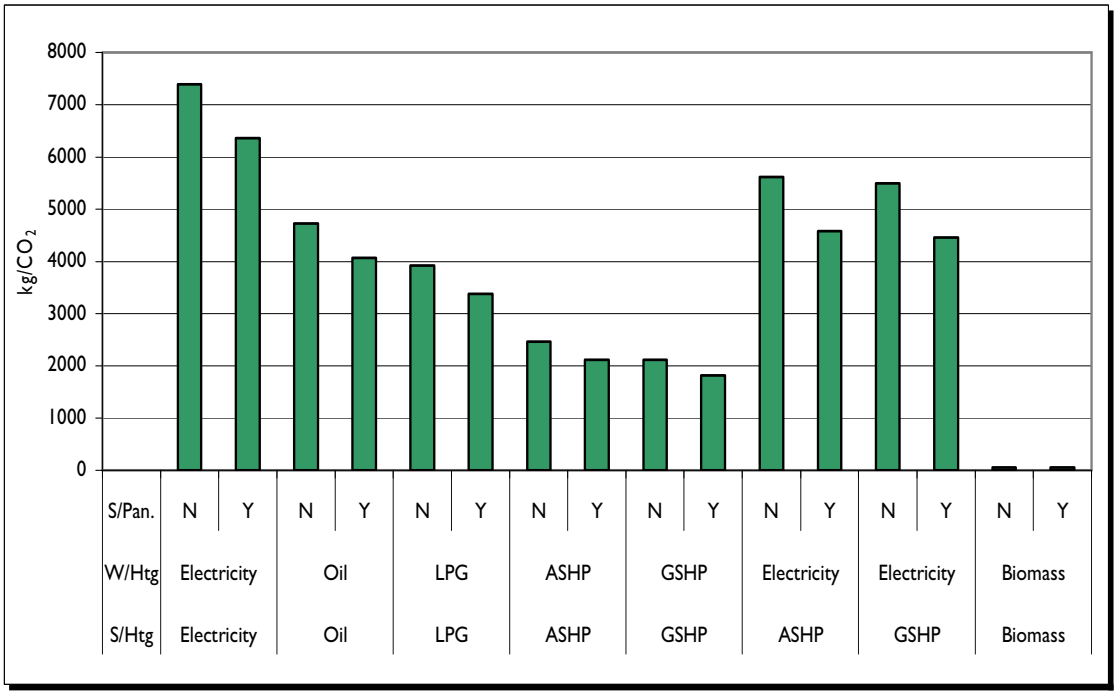
Table 3 Capital and running cost with CO_2 emissions for various heat source combinations



Graph 1 Heat Source Capital Cost



Graph 2 Heat Source Running Cost per Annum



Graph 3 Heat Source CO_2 Emissions per Annum

With regard to capital cost the least costly option is an electric boiler installation with low temperature hot water underfloor heating. The running costs and CO_2 emissions would, however, be the highest. Solar panels give the greatest saving of CO_2 emissions when used with electric installations. It may be possible, with a suitable heating and hot water usage pattern, to reduce the electricity costs further by greater use of the off-peak part of the tariff.

An LPG boiler for both space and water heating would be the next cheapest capital cost option, an oil fired boiler being only slightly more expensive. The running costs for an oil boiler would soon recover the extra capital cost of an LPG installation but would have higher CO_2 emissions.

A biomass boiler would be the next choice if capital costs were the only consideration, slightly more expensive than the LPG alternative. However, running costs are comparable with heat pumps and CO_2 emissions are extremely low, both being from the overall manufacturing of wood chips/pellets, their transport to site and the electricity used in running the boiler.

An air or ground sourced installation would be the next option. Although they both have high capital costs (the ground sourced costs are for bore-hole collectors) there are grants available that would cover most if not all of the purchase and installation costs. As can be seen from Table 3 and Graph 3, the running and CO_2 emissions are considerably lower than an electrical, gas or oil installations.

Combinations of heat pumps for space heating and electric water heating do not produce the outcomes that would be hoped for, in that there are still relatively high capital costs with very little saving in running costs or CO_2 emissions.

Recommendations

Assuming grant funding was available for renewable energy sourced heating, the first choice would be between a biomass boiler or a ground/air sourced heat pump.

Ground sourced heat pumps require no maintenance and they have only one moving part, the compressor motor. Air sourced heat pumps have the additional fan and motor and in this instance would probably be sited outside the building, open to the elements (though they are robust enough to withstand coastal climates). An air-sourced unit would therefore need some maintenance.

Biomass boilers require regular ash removal, maintenance and fuel deliveries. The efficiency of the boiler is also governed by the quality of the fuel, size of chips, moisture content etc. There are also currently issues of particulate emissions, but these have to be weighed against the emissions from alternative fuels. Biomass has the great advantage of negligible CO_2 emissions.

If grant funding for was not available and there were restrictions on costs, the second choice would be between a biomass boiler, an oil fired or all electric installation, the oil and electric installations with solar panels. Whilst an LPG installation would be cheaper to install it would be more expensive to run, and servicing can be expensive and difficult to obtain.

If renewable heat source grants were not available and funds allowed, an air sourced heat pump would be the third choice.

Appendix

Ground-source (or Geothermal) heat pumps.

What are ground source heat pumps?
Ground-source heat pumps are very efficient and cost effective at extracting heat stored from within the ground. They can do this in one of two main ways – either by extracting the solar energy that heats the near-surface soil layer, or by utilizing the practically constant heat trapped in the bedrock. A ground-source heat pump requires no maintenance once the system is installed and commissioned.

How do they work?
They're like a refrigerator in reverse – an environmentally-friendly water/anti freeze mix is circulated at low temperature through a closed pipe circuit, either buried 0.75 – 1.0m deep in subsoil, or contained in a borehole. The fluid absorbs heat from the soil or rock, which is carried back to the heat pump unit. The heat is then extracted using the refrigeration principle and the cooler fluid pumped back into the pipe circuit to absorb more heat. The extracted heat is transferred to water which is then used in the building's heating system and to heat domestic hot water for showers, baths and taps.

Buried circuit or borehole?
The type of installation required depends on the space available and soil cover. Should there be insufficient area to lay out the circuit needed, or inadequate soil depth, a borehole will be necessary, requires much less space. However, this is a more expensive option due to the drilling operation involved.

Air source heat pumps

Air source heat pumps use the same refrigeration principal as ground source pumps, the difference being, instead of extracting heat from the ground, heat is extracted from air passing through a heat exchanger.

Stand-alone air to water units are located either inside or outside the building, using fans to pass air over the heat exchanger, which heats the refrigerant. The refrigerant then transfers the heat via the heat pump and a refrigerant to water heat exchanger, to water. The heated water is then pumped into the building to heat both the building, through underfloor or radiator systems, and hot water storage cylinders for hot water taps, showers etc. The units have sensors, which monitor the air to refrigerant heat exchanger, automatically de-frosting when required.

5.4 Budget Cost Breakdowns

Analysis submitted by Torrance Partnership

QS 03.052

CEANN LOCH LTD

PROPOSED SPORTS FIELD AND CLUBHOUSE AT KINLOCH, SLEAT, ISLE OF SKYE - PHASE 1

Rev B
Option 1 Synthetic

FEASIBILITY COST

SUMMARY

Multi use sports pitch		£	474,810.00
Changing room pod		£	185,520.00
Drainage, services & siteworks		£	73,860.00
		£	734,190.00
Preliminaries	10.00%	£	73,419.00
		£	807,609.00
Contingencies	5.00%	£	40,380.00
AMOUNT OF BUDGET COST		**£**	**847,989.00**

Notes:

This Feasibility Cost excludes Value Added Tax which will be applicable at the standard rate for all works except the provision of additional facilities for persons with a disability.

It may be possible to gain a zero rated status for the total development if it can be classified as a 'Relevant Charitable Building' under the terms of the VAT Notice 708 and specialist advice should be sought in this respect.

This Feasibility Cost excludes Professional Fees in respect of this works

This Feasibility Cost Estimate is based on a site start during the first quarter of 2010.

This Feasibility Cost is based on Feasibility Drawings 118_005 & 010 from Dualchas Building Design, Duisdale, issued on 6th November 2007, adjusted per discussions with DBD 15/11/07.

This Feasibilty Cost Estimate excludes: loose fittings, furniture and office equipment, white goods, crockery, loose racking and shelving, specialist gym exhibition equipment, sauna, displays and the like.

Loose fittings and furniture
Office equipment
Gym equipment
Outdoor activity equipment and facilities

Multi use sports field

Prepare ground and lay on free draining material, sythetic FIFA 2 Star surface with 2m margin all round Per Campbell of Doune cost info to DBD for 105x68m pitch	m2	7,140	£	66.50	£	474,810.00
Floodlighting allowance Included	m2	0	£	-	£	-
4.8m high metal fence with access gates and timber rebound at base Fencing included	m	0	£	-	£	-
					£	**474,810.00**

Changing Room Pod

Timber frame, timber clad single storey facility - simple construction, fins and services	m2	120	£ 1,450.00	£ 174,000.00
Environmental provisions per ACC report Cost allows options of Elec/solar; Oil/solar; LPG/solar and Air Source electric	m2	120	£ 96.00	£ 11,520.00
				£ 185,520.00

Drainage, services and siteworks

Allowance for drainage comprising local treatment system and surface water to ground	No	1	£ 4,000.00	£ 4,000.00
Ground drainage, ditches etc	No	1	£ 2,000.00	£ 2,000.00
Allowance for electrical, water, BT and ext lighting tracking	No	1	£ 13,000.00	£ 13,000.00
Power supply	No	1	£ 13,500.00	£ 13,500.00
Water supply - assumes well If borehole will be £16-£17k	No	1	£ 7,000.00	£ 7,000.00
Car parking - bitmac at bellmouth	m2	150	£ 84.00	£ 12,600.00
Car parking - scalping redress elsewhere & minor upgrading	m2	850	£ 20.00	£ 17,000.00
Landscaping and planting	No	0	£ 10,000.00	£ -
Stock fence to boundary - deer - repair only existg	m	680	£ 7.00	£ 4,760.00
				£ 73,860.00

Other Works

Training Area

Strip topsoil, install drainage, provide soil/sand mix, grass seed, sand slit in Year 2, import topsoil - Grass Grade 3	m2	2,850	£ 20.00	£ 57,000.00

Floodlighting allowance	m2	2,850	£	5.00	£	14,250.00
					£	71,250.00
Preliminaries		10.00%			£	7,125.00
					£	78,375.00
Contingencies		5.00%			£	3,919.00
AMOUNT OF BUDGET COST					**£**	**82,294.00**

Heating Options

From Information in ACC Report

		Additional costs
Air Source Heat Pump	approx	£ 7,500.00
Air Source Heat Pump/solar	approx	£ 15,000.00
Ground Source Heat Pump	approx	£ 32,000.00
Ground Source Heat Pump/solar	approx	£ 38,000.00
Air Source Heat Pump - electric/solar	approx	£ 7,500.00
Ground Source Heat Pump - electric	approx	£ 6,000.00
Ground Source Heat Pump - electric/solar	approx	£ 12,000.00

QS 03.052
Revised 29th October 2009

OPTION 2

QS 03.052

CEANN LOCH LTD

PROPOSED SPORTS FIELD AND CLUBHOUSE AT KINLOCH, SLEAT, ISLE OF SKYE - PHASE 1

Rev B

Option 2 Grade 3 Grass

FEASIBILITY COST

SUMMARY

1	Multi use sports pitch		£	238,000.00
2	Changing room pod		£	185,520.00
3	Drainage, services & siteworks		£	73,860.00
			£	497,380.00
	Preliminaries	10.00%	£	49,738.00
			£	547,118.00
	Contingencies	5.00%	£	27,356.00
	AMOUNT OF BUDGET COST		**£**	**574,474.00**

Notes:

1 This Feasibility Cost excludes Value Added Tax which will be applicable at the standard rate for all works except the provision of additional facilities for persons with a disability.

It may be possible to gain a zero rated status for the total development if it can be classified as a 'Relevant Charitable Building' under the terms of the VAT Notice 708 and specialist advice should be sought in this respect.

2 This Feasibility Cost excludes Professional Fees in respect of this works

3 This Feasibilty Cost Estimate is based on a site start during the first quarter of 2009

4 This Feasibility Cost is based on Feasibility Drawings 118_005 & 010 from Dualchas Building Design, Duisdale, issued on 6th November 2007, adjusted per discussions with DBD 15/11/07.

5 This Feasibilty Cost Estimate excludes: loose fittings, furniture and office equipment, white goods, crockery, loose racking and shelving, specialist gym exhibition equipment, sauna, displays and the like.

Loose fittings and furniture
Office equipment
Gym equipment
Outdoor activity equipment and facilities

1 **Multi use sports field**

Prepare ground and lay on free draining material, Astroplay surface with 2m margin all round	m2	9,520	£	14.00	£	133,280.00
Floodlighting allowance	m2	9,520	£	5.00	£	47,600.00
4.8m high metal fence with access gates and timber rebound at base	m	9,520	£	6.00	£	57,120.00
Future work						
					£	**238,000.00**

2 **Changing Room Pod**

Timber frame, timber clad single storey facility - simple construction, fins and services	m2	120	£	1,450.00	£	174,000.00

	Environmental provisions	m2	120	£	96.00	£	11,520.00
						£	**185,520.00**
3	**Drainage, services and siteworks**						
	Allowance for drainage comprising local treatment system and surface water to ground	No	1	£	4,000.00	£	4,000.00
	Ground drainage, ditches etc	No	1	£	2,000.00	£	2,000.00
	Allowance for electrical, BT, water and ext lighting tracking	No	1	£	13,000.00	£	13,000.00
	Power supply	No	1	£	13,500.00	£	13,500.00
	Water supply - assumed well If borehole will be £16-£17k	No	1	£	7,000.00	£	7,000.00
	Car parking - bitmac at bellmouth	m2	150	£	84.00	£	12,600.00
	Car parking - scalping redress elsewhere & minor upgrading	m2	850	£	20.00	£	17,000.00
	Landscaping and planting	No	0	£	10,000.00	£	-
	Stock fence to boundary - deer - repair only existg	m	680	£	7.00	£	4,760.00
						£	**73,860.00**
	Future Works						
a	**Training Area**						
	Strip topsoil, install drainage, provide soil/sand mix, grass seed, sand slit in Year 2, import topsoil - Grass Grade 3	m2	2,850	£	20.00	£	57,000.00
	Floodlighting allowance	m2	2,850	£	5.00	£	14,250.00
						£	71,250.00
	Preliminaries		10.00%			£	7,125.00

		£	78,375.00
Contingencies	5.00%	£	3,919.00
AMOUNT OF BUDGET COST		**£**	**82,294.00**

QS 03.052
19th February 2008

OPTION 3

QS 03.052

CEANN LOCH LTD

PROPOSED SPORTS FIELD AND CLUBHOUSE AT KINLOCH, SLEAT, ISLE OF SKYE - PHASE 1

Rev C

Option 3 Grade 4 Grass

FEASIBILITY COST

SUMMARY

1	Multi use sports pitch		£	333,200.00
2	Changing room pod		£	185,520.00
3	Drainage, services & siteworks		£	73,860.00
			£	592,580.00
	Preliminaries	10.00%	£	59,258.00
			£	651,838.00
	Contingencies	5.00%	£	32,592.00
	AMOUNT OF BUDGET COST		**£**	**684,430.00**

Notes:

1 This Feasibility Cost excludes Value Added Tax which will be applicable at the standard rate for all works except the provision of additional facilities for persons with a disability.

It may be possible to gain a zero rated status for the total development if it can be classified as a 'Relevant Charitable Building' under the terms of the VAT Notice 708 and specialist advice should be sought in this respect.

2 This Feasibility Cost excludes Professional Fees in respect of this works

3 This Feasibilty Cost Estimate is based on a site start during the first quarter of 2009

4 This Feasibility Cost is based on Feasibility Drawings 118_005 & 010 from Dualchas Building Design, Duisdale, issued on 6th November 2007, adjusted per discussions with DBD 15/11/07.

5 This Feasibilty Cost Estimate excludes: loose fittings, furniture and office equipment, white goods, crockery, loose racking and shelving, specialist gym exhibition equipment, sauna, displays and the like.

Loose fittings and furniture
Office equipment
Gym equipment
Outdoor activity equipment and facilities

1 **Multi use sports field**

Prepare ground and lay on free draining material, Grade 4 grass with a 3m margin on sides and 4m margin at ends	m2	9,520	£	24.00	£	228,480.00
Floodlighting allowance	m2	9,520	£	5.00	£	47,600.00
Chain link fence - allowance	m	9,520	£	6.00	£	57,120.00
Future work						
					£	**333,200.00**

2 **Changing Room Pod**

Timber frame, timber clad single storey facility - simple construction, fins and services	m2	120	£	1,450.00	£	174,000.00

	Environmental provisions	m2	120	£	96.00	£	11,520.00
						£	**185,520.00**
3	**Drainage, services and siteworks**						
	Allowance for drainage comprising local treatment system and surface water to ground	No	1	£	4,000.00	£	4,000.00
	Ground drainage, ditches etc	No	1	£	2,000.00	£	2,000.00
	Allowance for electrical, BT, water and ext lighting tracking	No	1	£	13,000.00	£	13,000.00
	Power supply	No	1	£	13,500.00	£	13,500.00
	Water supply - assumed well	No	1	£	7,000.00	£	7,000.00
	If borehole will be £16 - £17k Car parking - bitmac at bellmouth	m2	150	£	84.00	£	12,600.00
	Car parking - scalping redress elsewhere & minor upgrading	m2	850	£	20.00	£	17,000.00
	Landscaping and planting	No	0	£	10,000.00	£	-
	Stock fence to boundary - deer - repair only existg	m	680	£	7.00	£	4,760.00
						£	**73,860.00**
	Future Works						
a	**Training Area**						
	Strip topsoil, install drainage, provide soil/sand mix, grass seed, sand slit in Year 2, import topsoil - Grass Grade 4	m2	2,850	£	30.00	£	85,500.00
	Floodlighting allowance	m2	2,850	£	5.00	£	14,250.00
						£	99,750.00
	Preliminaries		10.00%			£	9,975.00

		£	109,725.00
Contingencies	5.00%	£	5,486.00
AMOUNT OF BUDGET COST		**£**	**115,211.00**

QS 03.052
19th February 2008

5.5 Letters from stakeholders