



# Development of an Alpine Style Ski Area and Resort Complex in the Yorkshire Dales, Great Britain



## Concept Study for Aprilscherz A.G. Executive Summary

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## Introduction:

Aprilscherz A.G.(AS) have recently commissioned research by the Universität Tegernsee (UT) into the impact of climate change on the alpine ski resorts of Austria, France & Switzerland. This highly secret report shows that by 2025 the skiable area of the alpine resorts will have shrunk to less than 50% of the current area. By 2040 it is forecast that this will have reduced to less than 10%. In the light of these findings, Aprilscherz believe there is significant potential to develop ski resorts in new areas as the European climate changes. Further research by UT has identified that the impact of climate change in Northern Europe in the period 2020 – 2075 will result in a shift in the climate of Great Britain from a temperate to a continental climate, with hotter dryer summers and much colder winters. In the light of this research Bockhöhle have been commissioned by AS to investigate the feasibility of developing an alpine style ski resort in Great Britain.

This report will demonstrate that the concept is certainly worthy of further investigation; the report will propose the development of a “Trois Vallées” style resort complex centred on Buckden in North England, and recommends that Bockhöhle should undertake a full technical and commercial feasibility study on behalf of Aprilscherz.



**Bockhöhle Consulting g.m.b.h.** provide environmentally sensitive and market oriented solutions for Mountain Resort Development. Our unique competence is to combine highly specialised expertise in all fields such as environmental impact analysis, ski lift and ski run design, planning & installation, planning of artificial snow making, architectural design of mountain resorts, developing of operational structures including Mountain Management & Destination Marketing, developing quality standards for ski schools, sport shops, avalanche control, security, etc. We cover all technical fields related to Mountain Development.

## Location:

The climatic research by UT combined with Bockhöhle's own topographic analysis shows there are three potential areas of Great Britain where the right conditions for a ski resort will exist by 2025. These are the Scottish Highlands, Snowdonia in Wales and Northern England. Of these areas the Scottish Highlands have been discounted both on grounds of distance and because there is already a semi-developed ski industry in Scotland. Snowdonia is ideal from a number of points of view but has been discounted because it is in Wales. This leaves Northern England – two potential areas have been investigated: the Lake District & the Yorkshire Dales. Of these The Yorkshire Dales is clearly the preferred choice on account of being in Yorkshire.

A detailed analysis has been undertaken to identify an area with the optimum inherent characteristics for the project. These were:

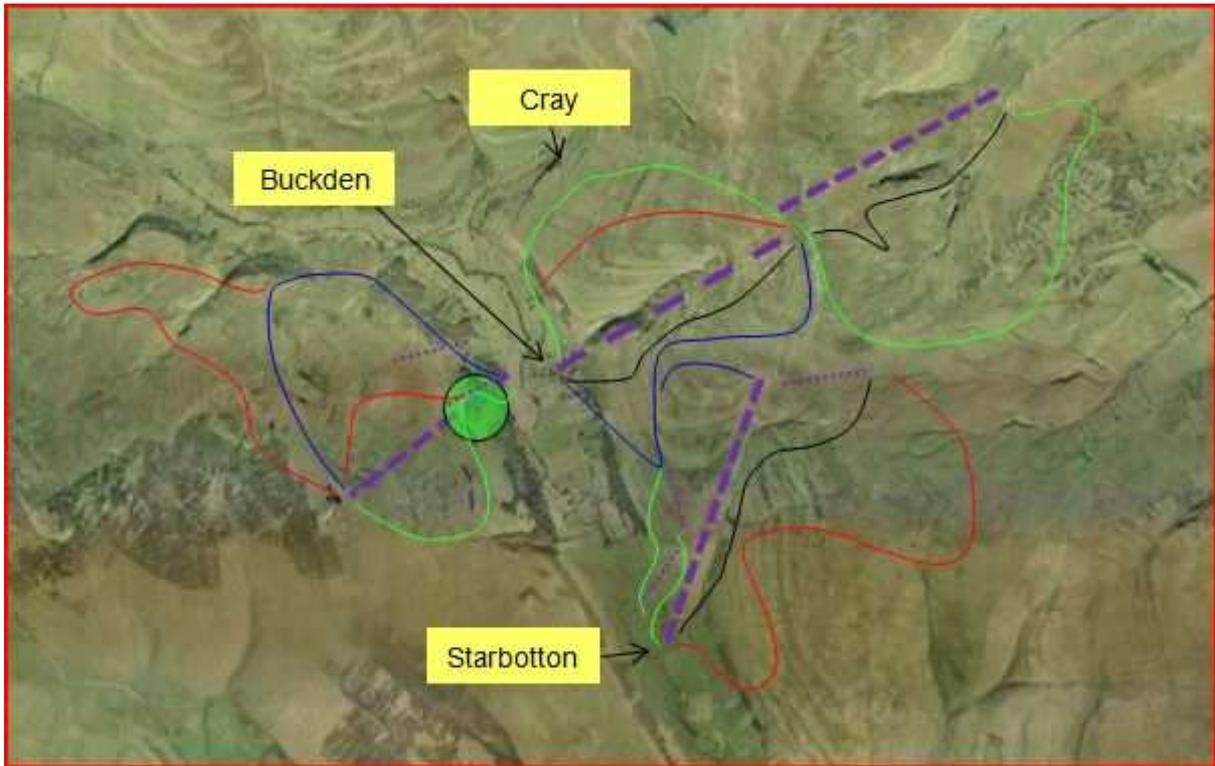
- Projected snowfall – 2025 through 2075 based on climatic modelling
- Topographic suitability – the ability to create a minimum of 25 km of skiable piste in Phase 1, rising to 145 km of skiable piste by Phase 3
- Infrastructure considerations – including transport links, power, water and sanitation
- Resort development potential
- Socio-political factors

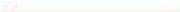


The outcome of this analysis has identified an area centred on the village of Buckden in Wharfedale. The detailed analysis is available as an annex but the Buckden proposition was a clear winner in all categories other than infrastructure where significant investment will be required (n.b. It is likely that funding will be available through the E.E.C. Regional Development fund). The village is some 70 km north of Leeds and approximately 100 km from Manchester.

### The Ski Area:

It is envisaged that the Ski area by the end of the three phase development will encompass the areas of Upper Wharfedale, Littondale, Waldendale & Langstrothdale. The area will be known as the Three Dales (by analogy with the “Trois Vallées” in the French Alps). Phase 1 will focus on the areas immediately around Buckden known as Buckden Pike & Birk’s Fell. The map below shows the Phase 1 development area, and illustrates the proposed piste and lift routes.



<b>Key:</b>	 Nursery slopes
<u>Lifts</u>	
	Gondola
	Chair lift
	Drag lift
<u>Pistes</u>	
	Black run – very difficult
	Red run – difficult
	Blue run – medium
	Green run – easy

### Project phasing:

It is intended to develop the Three Dales area in three phases. Phase 1 (targeted to open 2025) will cover Buckden Pike, Waldendale & Birk’s Fell and will centre on Buckden village together with Starbotton. Phase 2 (target 2032) will extend to Cray and across into Langstrothdale. Phase 3 (target 2040) will extend into Littondale and will open up Arncliffe & Litton as satellite ski centres.

**Ski Facilities:**

It is proposed that, as temperatures in the Alpine resorts increase & the snow line rises accordingly, so there will be a significant surplus of plant & equipment. This equipment which will include lift infrastructure, piste-bashers, snow blowers etc. will be progressively re-deployed to the Three Dales in line with the three phase strategy. This should significantly reduce the capital investment requirement which will be critical in the early years of the project.

**Infrastructure & Transport Links:**

Buckden is well served by air links with two international airports within less than two hours drive. Road links are less good however and the project will have to fund the cost of an improved road link from Kilnsey up to Buckden – a distance of some 10 km.

The project will impose significant incremental demands on electricity supply both in terms of the lift infrastructure and the increased accommodation. It is proposed to install a wind farm above Kettlewell which will clearly help the environmental profile of the project.

**Visitor projections:**

Projected visitor numbers are as follows:

Year	Phase	Length season Weeks	Peak visitor numbers per week	Total visitor numbers per season
2025	1	15	2000	27000
2026	1	15	2500	33750
2027	1	16	3000	43200
2028	1	16	3500	50400
2029	1	16	4000	57600
2030	1	17	4500	68850
2031	1	17	5000	76500
2032	2	18	10000	162000
2033	2	18	10500	170100
2034	2	18	11000	178200
2035	2	18	11500	186300
2036	2	19	12000	205200
2037	2	19	12500	213750
2038	2	19	13000	222300
2039	2	19	13500	230850
2040	3	20	16000	288000
2041	3	20	16500	297000
2042	3	20	17000	306000
2043	3	20	17500	315000
2044	3	20	18000	324000
2045	3	21	18500	349650

### **Accommodation:**

These visitor numbers will clearly require significant investment in accommodation. It is estimated that there are currently in the region of just 350 holiday beds in the Phase 1 area. A building programme will clearly be required – current trends in the alpine resorts suggest that a mix of 30% hotel accommodation to 70% chalet accommodation represents the optimum balance.

### **Entertainment – “Après Ski” potential:**

Our undercover investigators established that there is a lively social scene in Buckden with a variety of activities including whist, quizzes, old time dancing etc. While these activities may appeal to some visitors, it is felt that they may not be to the taste of snow boarders whose taste in après ski activity may be somewhat more adventurous!

Buckden is a well known cultural centre – the celebrated Buckden Singers, as featured on BBC TV, come from the village and Buckden is popular with British celebrities not least the international cinematic legend & cultural icon, Mr John Cowpe, who lives in the village. It is anticipated that the presence of such “A-List” celebrities will help to establish the profile of the resort as the natural successor to St Anton or Klosters.

There are a number of local bars none of which seemed particularly busy to our surveyors but again there is insufficient capacity to accommodate projected visitor numbers and additional capacity will be required.

### **Sources of funding:**

As previously mentioned significant capital funding will be available from the European Union Regional Development Fund with further potential for targeted funding from other bodies – this area requires more investigation.

Aprilscherz AG are committed to maintaining control of the development, but equally see that it is necessary both to raise additional capital and to gain the active support of the local community. It is felt that this is most likely to be achieved through giving the locals a financial stake in the development. We were advised by one local tradesman that “there’s a few round here who aren’t short of a bob or two” so an injection of local capital is almost certainly feasible. It is thought that this is best achieved by two approaches:

Firstly, local people should be encouraged and supported to develop tourist services on their own account. These are likely to be in the areas of accommodation, restaurants, bars, nightclubs etc. as well as “fringe” ski resort activities such as health spas and an ice go-karting track.

Secondly, AS will establish a new operating company “Three Dales Services” to manage the core winter-sports activity, covering the management of all specialist aspects such as infrastructure installation and maintenance, piste development and care, marketing, avalanche control etc. While AS will clearly wish to maintain control through a majority shareholding in this company, it is intended to make 25% of the shares available to local people.

### **Local Resources:**

The current indigenous population is small; current principal economic activity is sheep farming and tourism. The future of sheep farming given the change of climatic conditions is uncertain, though it has been suggested that sheep may be able to play a role as mobile moguls. Tourism is largely centred on provision of hospitality; there is little in the way of added value leisure services, and the main tourist activity currently in the area is walking. It is clear that, to develop a resort of this scale, it will be necessary to bus in additional labour from nearby Skipton.

There are specific skills in the area which may be of significant value to the developers. Clearly the local farmers have an unsurpassed knowledge of the local terrain, which will prove invaluable.



In addition there is evidence of considerable capability in agricultural machinery engineering, which will be invaluable to support the significant fleet of piste bashers which will be required. Indeed our investigators talked to a Mr Ted Salmon who had some interesting ideas for a new form of Piste Basher based on a “Fordson Dexter” which is apparently the

last word in tractor engineering in the UK.



It will also be necessary to provide a ski patrol service to help those holiday makers who unfortunately have accidents while on the Piste. It is understood that there is a local “First Responder” team in the village who provide such services though it is not yet known whether they already have their own skidoo.

## Critical Project Issues:

The critical issues facing the project at this point can be categorised as either technical or socio-political.

Of the technical issues there is only one remaining concern - avalanche control. Avalanches only occur when the stress on the snow exceeds the shear, ductile, and



tensile strength either within the snow pack or at the contact of the base of the snow pack with the ground or rock surface. A study has been undertaken evaluating the morphological characteristics of avalanches including the potential types of snow, failure mechanisms, sliding surfaces, propagation mechanisms, triggers, slope angles, direction and elevations.

Avalanche size, mass, and destructive potential have been rated on a logarithmic magnitude scale from 1 to 5. The village of Buckden is relatively risk free. Property at the immediate base of Buckden Pike may be considered at moderate risk, but application of well established alpine style avalanche management techniques, using daily controlled explosions to trigger minor avalanches before major snow-pack build-up occurs, should enable this risk to be effectively mitigated.

The village of Starbotton however is a more difficult problem, the topography of the valley above the village presenting some exceptionally challenging features; indeed some years ago the village was devastated by a significant land slip. A further study is required to determine whether effective avalanche barriers can be constructed. If this is not feasible it may be necessary to re-locate the village to the other side of the river Wharfe. The financial projections for the project have included this risk and the contingency budget is sufficient to cover this eventuality.

More concerning are the socio-political factors. Acceptance by the locals is a primary concern but our experience is that the best solution to this is enlightened self interest. If the local population can be given a significant financial stake in the project, it is likely that the project will be embraced with enthusiasm.

The National Trust & the National Park are more significant obstacles. The National Trust are the major landowner in the area while the National Park is the local planning authority. Both organisations have a remit to preserve the essential character of the Dales environment. Our planning lawyers will argue that the impact of climate change is so significant that the essential character has already fundamentally changed and that economic activity has to reflect this; as a concession, we will offer to build dry stone ski lift pylons. It is not clear that this will be sufficient however, and addressing these concerns must be a priority.

### **Next Steps:**

The next steps therefore need to focus primarily on addressing the acceptability concerns as there is no point in investing in further technical evaluation if these obstacles cannot be overcome.

It is recommended that the local mayor, who is also a farmer, be approached informally and asked to arrange a meeting for local people at which the plans can be explained.

In parallel, discussions should be initiated with both the National Park and the National Trust, to gauge the strength of their opposition.

It is felt that that a figurehead for the project would be helpful. It has been suggested that Buckden film star John Cowpe could be a good candidate for this role, fulfilling the same sort of iconic status for the Three Dales that Prince Charles has for Klosters.

### **Conclusion:**

The Three Dales proposal is certainly worthy of further development. There remain significant challenges, but the underlying concept is sound, and represents a very attractive financial proposition.

Subject to satisfactory exploratory discussions with the local mayor, the National Park & the National Trust, it is recommended that a full feasibility study be undertaken. Bockhöhle is uniquely qualified to undertake this study and would be delighted to submit a proposal.

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