

STARA PLANINA REVISION OF APPLE PLATEAU BASE AREA DEVELOPMENT

1.0 Assumptions

Successful mountain resort design is derived from analysing the flow and circulation of guests to and within the resort. Determining the particular numbers of guests arriving from surrounding real estate or personal vehicles and busses is critical in establishing the necessary capacity of the base area facilities.

Experience has shown that there is a wide variety of user groups and that it is important to determine the ratio of these guests that will ski. This calculation is what we refer to as “skier yield.”

Factors such as the overall unit occupancy, bed occupancy and the percentage of guests who choose to go alpine skiing and snowboarding on any given day relate to the type of accommodation they tend to inhabit and therefore must be considered when calculating the skier yield. For example, hotels have the highest skier yield and private chalets the lowest, as listed in Table 1.

Table 2 lists the planning assumptions for the Stara Planina Base Area Development.

**TABLE 1
ACCOMMODATIONS ASSUMPTIONS – PEAK PERIOD**

ASSUMPTIONS	Unit Occupancy Rate	Bed Occupancy Rate	Skier Participation Rate	Skier Yield Rate
Hotels & Public Apartments (TA)	90%	90%	80%	65%
Multi-Family (50% Public/50% Private)	70%	80%	80%	45%
Single Family (Private)	50%	80%	60%	24%

**TABLE 2
PLANNING ASSUMPTIONS**

	Units/ Ha.	Beds/ Unit	Beds/Ha.
Village/ Condotel/ TA/ Family Hotels	100	4.0	400
Destination Hotel	125	3.0	375
Pension/ Mini Hotel	6	15.0	90
Townhouses	25	5.0	125
Single Family Chalet	12	6.0	72
Parking	330		
Bus Parking	70		
Guests per car	2.8		
Guests per bus	40		
Skier Participation Rate	80%		
Parking Stalls Required per Hotel Unit	0.7		
Parking Stalls Required per Condotel/ TA Unit	1.0		

2.0 Village Revisions

Phase 1 of the Jabucko Ravniste Turist Resort Central Area (The Apple Plateau) development is to occur in 3 steps; 1AA, 1A and 1B. Figure 3, the “Phase 1AA Village Schematic and Phasing Plan” illustrates the first phase of development, along with the overall phasing of the Apple Plateau’s base development.

2.1 Phase 1AA (Immediate Action Plan)

SCC of 1,500 Skiers per Day

This phase consists of the construction of a temporary parking area, construction of the two technical base sites and maintenance buildings, skier service facilities within Building O at the Apple Plateau, and the Mountain Top Restaurant.

The Phase 1AA mountain development consists of the construction of the beginner ski area in front of the SP Hotel, Lift 4 and the snow tubing, area in addition to the existing lift system that is in place as of 2013. At present, the level of public and guest services is restricted to hotel guests. The hotel does not provide skier services to the public and hence, Ski Resorts of Serbia are missing out on up to 50% of the revenue that would normally be earned by the main ski resort operator. There is a significant commercial opportunity to earn revenue and profit from ski and snowboard rentals, ski school classes, children’s programs and food and beverage offerings. There is also a need to provide basic warmth, shelter and toilet facilities to the skiing public. Hence, we have recommended that a “Mini Ski Center,” Building O, is needed immediately to service the public until such time as the resort village is further developed.

We also propose development of a temporary gravel surface parking lot on the site of future Buildings P and Q so that daily visitors can park as close as possible to the access gondola and the skier services available in Building O.

Table 3 summarizes the extent of the Phase 1AA development. Table 4 outlines the additional skiers generated from the temporary parking lot adjacent to Building O, which along with the existing lots at the Zubaska Base bring the total skiers to 1,596 which closely matches the Phase 1AA Mountain SCC of 1,500.

**TABLE 3
STARA PLANINA APPLE PLATEAU VILLAGE BUILDING PROGRAM
PHASE 1AA**

<i>Stara Planina Apple Plateau Village</i>	Building	Avg. #	Gross	Total	#	#	#	#
	Foot-print m²	of Floors	Floor Area m²	Comm. Space m²	of Units	of Beds	of Guests	of Skiers
Phase 1AA (Immediate Action Plan)								
Building O - Skier Services/ Bistro/ Admin. Mountain Top Restaurant Technical Base (SROS) Technical Base (PCSP) Existing Hotel Stara Planina	812	2.0	1,215	1,215	146	380	308	246
Total Phase 1AA Development	812		1,215	1,215	146	380	308	246

**TABLE 4
PARKING SUMMARY
PHASE 1AA**

	Area (Ha.)	Total # of Stalls	Total Skiers
Existing Zubska Base Area			
Surface Car Parking	N/A	100	220
Shuttle/ Charter Bus		4	128
Total Existing Zubska Base		104	348
Apple Plateau Base Area			
Temporary Day Skier Car Parking (Bldgs. P, Q)	1.2	396	890
Charter Bus Parking	0.1	4	112
Total Apple Plateau	1.2	396	1,002
Total Parking		500	1,350
Total Skiers from Accom. and Parking			1,596

2.2 Phase 1A

SCC of 4,200 Skiers per Day

Phase 1A consists of developing Buildings A, B, C, D, E and F, as well as the construction of two Day Skier Lots P1.

Lift 11, a platter lift is required to transport guests from the new parking areas up to the snowfront.

Table 5 shows that the 6 new buildings will supply 1,327 skiers. With the addition of new single-family and multi-family developments, the overall number of skiers from overnight accommodation is 2,191, as shown in Table 6.

**TABLE 5
STARA PLANINA APPLE PLATEAU VILLAGE BUILDING PROGRAM
PHASE 1A**

<i>Stara Planina Apple Plateau Village</i>	Building	Avg. #	Gross	Total	Gross	Net	Avg.	Net	#	Avg. #	#	#	#
	Foot-print	of	Floor	Comm.	Accomm.	to	Net Unit	Accomm.	of	of Beds	of	of	of
	m²	Floors	Area	Space	Space	Gross	Size	Space	Units	per	of	of	of
	m²	m²	m²	m²	m²	Ratio	m²	m²	Unit	Unit	Guests	Skiers	Skiers
Phase 1A													
Building A - Condomotel / Commercial*	1,600	4.0	6,400	600	5,800	0.75	55	4,350	79	4.0	316	256	205
Building B - Condomotel / Commercial*	1,900	3.5	6,650	1,000	5,650	0.75	55	4,238	77	5.0	385	312	250
Building C - Condomotel / Commercial*	1,800	4.0	7,200	1,000	6,200	0.75	50	4,650	93	4.0	372	301	241
Building D - Condomotel / Commercial*	1,900	3.5	6,650	1,000	5,650	0.75	50	4,238	85	4.0	340	275	220
Building E - Condomotel / Commercial*	1,750	3.5	6,125	900	5,225	0.75	45	3,919	87	4.0	348	282	226
Building F - Condomotel / Commercial*	1,400	3.5	4,900	700	4,200	0.75	55	3,150	57	5.0	285	231	185
Total Apple Plateau - Phase 1A	10,350		37,925	5,200	32,725			24,545	478		2,046	1,657	1,327

*Footprint sizes derived from Previous Ecosign Masterplan 2011

**TABLE 6
SKIERS FROM OVERNIGHT ACCOMMODATION
PHASE 1A**

Apple Plateau Base Area				
	Parcel	Land Use Designation	Beds	Skiers
PH1AA	10	Skier Services and Existing Hotel	380	246
PH1A	1	MFU - Pension Accommodation	450	292
	3	MFU Townhouse Accommodation	140	63
	10	Village / Condomotel Accomm. (Bldgs A, B, C, D, E, F)	2,046	1,327
	15	Single-Family Accommodation	348	84
	16	MFU Townhouse Accommodation	400	179
Total Accommodation Apple Plateau			3,764	2,191

Table 7 summarizes the Phase 1A parking summary.

**TABLE 7
PARKING SUMMARY
PHASE 1A**

	Area	Total	Total
	(Ha.)	# of	Skiers
		Stalls	
Existing Zubska Base Area			
Surface Car Parking	N/A	100	220
Shuttle/ Charter Bus		4	128
Total Existing Zubska Base		104	348
Apple Plateau Base Area			
P1 - Surface Car Parking Lot (Parcel 12)	1.2	396	890
Temporary Day Skier Car Parking (Bldgs. O, P, Q)	1.2	396	890
Total Apple Plateau	2.4	792	1,780
Total Parking		896	2,128
Total Skiers from Accomm. and Parking			4,319

2.3 Phase 1B

SCC of 6,150 Skiers per day.

The final step of Phase 1 includes the development of Buildings K, P, Q, R, S, T, V and W.

The Pedestrian street terminates at the village green and Building V - the new Sports Center, while the initial Temporary Parking lot at the snowfront will be replaced by Buildings Q and P, as listed in Table 8. Additionally a temporary parking lot, P3, can be used for extra guest parking stalls and could be located at the future site of building FF.

**TABLE 8
STARA PLANINA APPLE PLATEAU VILLAGE BUILDING PROGRAM
PHASE 1B**

<i>Stara Planina Apple Plateau Village</i>	Building	Avg. #	Gross	Total	Guest	Gross	Net	Avg.	Net	#	Avg. #	#	#	#
	Foot-print m ²	of Floors	Floor Area m ²	Comm. Space m ²	Service Space	Accomm. Space m ²	to Gross Ratio	Net Unit Size m ²	Accomm. Space m ²	of Units	of Beds per Unit	of Beds	of Guests	of Skiers
Total Apple Plateau - Phase 1A	10,350		37,925	5,200		32,725			24,545	478		2,046	1,657	1,327
Phase 1B														
Building K - Snow Tubing Tickets/ Storage	100	1.0	100											
Building P - Condotel/ Commercial	2,300	3.5	8,050	1,150		6,900	0.75	45	5,175	115	3.0	345	279	223
Building Q - Destination Hotel and Conf. Center	1,900	4.5	8,550	1,200	700	6,650	0.70	35	4,655	133	2.5	333	270	216
Building R - Condotel	1,200	3.0	3,600		300	3,300	0.75	45	2,475	55	3.0	165	134	107
Building S - Condotel/ Commercial	3,200	3.0	9,600	1,400	900	7,300	0.75	55	5,475	100	4.0	400	324	259
Building T - Condotel/ Commercial	3,200	3.0	9,600	1,200	500	7,900	0.75	45	5,925	132	4.0	528	428	342
Building V - Multifunctional Sports and Rec Center	3,880	3.0	9,260											
Building W - Recreation Concession	100	1.0	100	100										
Total Apple Plateau - Phase 1B	15,880		48,860	5,050	2,400	32,050			23,705	535		1,771	1,435	1,147

Table 9 summarizes the total number of skiers generated from the proposed overnight accommodation, and Table 10 lists the total number of skiers generated from the day skier parking based on our assumptions.

**TABLE 9
SKIERS FROM OVERNIGHT ACCOMMODATION
PHASE 1B**

Apple Plateau Base Area				
	Parcel	Land Use Designation	Beds	Skiers
PH1AA	10	Skier Services and Existing Hotel	380	246
PH1A	1	MFU - Pension Accommodation	450	292
	3	MFU Townhouse Accommodation	140	63
	10	Village / Condotel Accomm. (Bldgs A,B,C,D,E,F)	2,046	1,327
	15	Single-Family Accommodation	348	84
PH1B	16	MFU Townhouse Accommodation	400	179
	10	Village / Condotel Accomm. (Bldgs K,P,Q,R,S,T,V,W)	1,771	1,147
	20	MFU Townhouse Accommodation	90	40
	21	Single-Family Accommodation	78	19
	23	Single-Family Accommodation	108	26
	24	MFU Townhouse Accommodation	110	49
Total Accommodation Apple Plateau			5,921	3,472

**TABLE 10
PARKING SUMMARY
PHASE 1B**

	Area (Ha.)	Total # of Stalls	Total Skiers
Existing Zubska Base Area			
Surface Car Parking	N/A	100	220
Shuttle/ Charter Bus		4	128
Total Existing Zubska Base		104	348
Apple Plateau Base Area			
P1 - Surface Car Parking Lot (Parcel 12)	1.20	396	890
P2 - Sports Center Parking (Parcel 11)	0.28	98	220
P3 - Temp. Surface Car Parking Lot (Parcel 6)	1.7	561	1,260
Total Apple Plateau	3.18	1,055	2,370
Total Parking		1,159	2,718
Total Skiers from Accom. and Parking			6,190

The Phase 1B village schematic is illustrated on Figure 1, Phase 1B Village Schematic Plan.

At the completion of Phase 1B, the Mountain SCC is 6,150 skiers per day and based on our assumptions, the total proposed base area development can supply 6,190 skiers from overnight accommodation and day skier parking which closely balances with the Mountain capacity.

Note: The Buildout phase is outlined in Ecosign’s previous 2010 Masterplan report.

3.0 Technical Base and Real Estate

The Ski Resorts of Serbia (SROS) and Public Company Stara Planina (PCSP) technical base areas are illustrated on Figure 4, the “Technical Base and Real Estate Schematic Plan”. These proposed developments are located to the northeast of the Apple Plateau Village. To the east of the technical bases is a high end real estate development for private chalets which also benefit from ski-in/ski-out access. Ecosign has revised a portion of the road alignment and added a shorter loop road that accesses the slope side real estate parcels with the overall number of real estate lots in this area remaining unchanged. Detailed conceptual floor plans for the two technical Maintenance buildings are illustrates on Figures 6 and 7.

3.1 SROS Technical Base

- Separate gated entry to a completely fenced compound covering 5,000 square meters.
- Over-snow access for grooming machines and skidoos for maintenance workers.
- The maintenance building is designed to accommodate 3 grooming vehicles in the initial phase and ultimately 7 grooming vehicles when fully completed.
- A mezzanine level has space allocated for: administration, parts storage, restrooms, mountain operations and dispatch / ski patrol and employee lockers and dining area.
- A wide asphalt apron for rubber tire vehicles and parking and circulation lies on the sunny western side of the maintenance center, while a gravel surface with snow apron lies on the cooler east side of the building.
- Fuel depot area for both rubber tire vehicles and over snow vehicles.
- Constructed in 2 phases. PH1 = 646m² ground floor and 431m² upper floor; PH2 = additional 424m² footprint.
- Total GFA = 1500m²; total building footprint 1,070 m².

3.2 PCSP (Public Company Stara Planina) Technical Base

- Separate gated entry to completely fenced compound with 2,500 m² ground area.
- Fence and 1.5m retaining wall separating the two technical bases.
- Surrounding treed buffer to screen technical bases from public view and from the nearby real estate development.
- Single-level building consisting of 3 bays; 2 of which are used for the maintenance of vehicles and the third for employee facilities, restrooms and parts storage.
- One vehicle maintenance bay equipped with a hoist and crane and the second bay has a vehicle hoist only
- Vehicle maintenance bays have drive through access
- Finished Floor Elevation (FFE) 1486.0m
- Total GFA = 600 square meters.
- Gravel / Asphalt apron for employee parking, vehicle and equipment storage.
- Fueling Station

4.0 Building O – Skier Service and Bar / Cafe



View of proposed Building O from the Southeast Mountain Side

4.1 General Description

The skier service building is planned for the first phase of development and is intended to supply the required skier service space for Phase 1AA within the Apple Plateau. The general layout of Building O is shown on Figure 8, the Building O Site Plan. Figures 9, 10 and 11 show further detail regarding building O with conceptual floor plans, sections and 3D views.

- Building O consists of 1,215m² of GFA over 2 levels.
- **Main Level:** Tickets and Guest services, Rental and Retail, Bar and Café, Food seating, and a First Aid room.
- **Basement Level:** Kitchen storage with Dumb Waiter connection to Bar/Café area above, Children Facilities, Lockers and Restrooms. The lower level has an outdoor ramp connection up to the ground level.
- The main level has 3 main entrance's that are at grade and located so that they are visible from all major lines of sight and via main circulation routes.
- Private Interior and exterior access to the first aid room. Injured guests can be placed in this area for first response treatment and then be transferred to an ambulance at the nearby drop-off outside Building Q.
- Ticket windows have been orientated to draw people around building towards the snowfront and are located to be in the morning sun.

4.2 Proposed Program

Table 11 summarizes the building program for Build O, the Ph1AA Daylodge Building.

**TABLE 11
BUILDING 0 BUILDING PROGRAM
PH1AA**

Skier Service					
PHASE: 1AA	Ski Area Standard m²/skier	Recomm. Floor Space (m²)	New Daylodge (Building O) Built for Phase 1AA		
Guest Service Function			Lower Floor Level 74.0 (m²)	Main Floor Level 78.0 (m²)	TOTAL Daylodge
Staging Facilities					
Ticket Sales	0.009	11.8		16.0	16.0
Public Lockers	0.065	82.9	100.0		100.0
Equipment Rental & Repair	0.074	94.8		100.0	100.0
Guest Services / Ski School	0.023	29.6		27.0	27.0
Children's Programs (nursery)	0.033	41.5	49.0		49.0
Subtotal Staging Facilities	0.204	260.6	149.0	143.0	292.0
Commercial Facilities					
Food Service Seating	0.400	510.0		400.0	400.0
Prep Kitchen	0.200	255.0	30.0		30.0
Bar / Café	0.046	59.2		61.0	61.0
Restrooms	0.070	88.8	136.0		136.0
Accessory/Retail Sales	0.037	47.4		43.0	43.0
Subtotal Comm. Facilities	0.753	960.4	166.0	504.0	670.0
Operational Facilities					
Administration	0.056	71.1			-
Employee Facilities	0.028	35.5			-
First Aid & Ski Patrol	0.023	29.6		25.0	25.0
Subtotal Operations Facilities	0.107	136.2	-	25.0	25.0
Total Functional Space	1.065	1,357.2	315.0	672.0	987.0
Storage	0.107	136.4	5.0	-	5.0
Circ./Walls/Waste/Mech.	0.160	204.6	83.0	140.0	223.0
Total Built Space	1.332	1,698.2	403.0	812.0	1,215.0

Number of Indoor Seats

333

5.0 Building V – Multifunctional Sports and Recreation Center



View of proposed Building V from the Southeast

5.1 General Description

Building V, the Multifunctional Sports and Recreation Center is based on the Program outlined by MACE and received by Ecosign on the 2nd October 2013.

- Building V consists of 9,260m² of GFA over 3 levels.
- **Main Level:** Reception/Offices, Storage Area, Changing Rooms, Retail, Access to the Tennis
- **Basement Level:** Bowling lanes, Bar, Billiards room, Small Theatre/Cinema, Storage and mechanical/plant room, parking stalls for 10 vehicles.
- **Upper Level:** Running track with space for activities inside running loop. Gym / Fitness Room, and Yoga or other group activity room.
- A separate, air bubble covered tennis facility is located to the west of the sports center. Access is through the main building via a covered walkway. The tennis facility includes a small changing and restroom area and two full sized tennis courts. An air-dome roof structure could be considered so that the tennis facility can be utilized throughout the winter months.
- Guests can access the Sports and Recreation Center via 2 main entrances both which have vestibules to protect the interior environment. One access is at grade from the Village square side of the building. The other access is off the parking lot to the northwest side of the building with short steps and a ramp to arrive at the main floor elevation.
- An outdoor skate park is located on the south-west side of Building V and could feature skate bowls, ramps, rails and stairs for a variety of challenges.

- Underground access for vehicles is located on the North-east side of building V.
- A small recreation concession building (100m²) is located in the village green park area on the village side of the building. Here guests could buy snack food to enjoy in the park and rent skateboards and equipment for the adjacent skateboard park.

5.2 Proposed Program

BUILDING V				
Multifunctional Sports and Recreation Center	Recreation Center			Total
	Lower Floor Level 83.5 (m²)	Main Floor Level 89.0 (m²)	Top Floor 96.5 (m²)	
Sports Facilities				
Guest Services / Office		50.0		50.0
Bowling Lanes	1,100.0			
Bar	140.0			
Theatre / Cinema	365.0			
Billiards	240.0			
Volley Ball		317.0		317.0
Handball		968.0		968.0
Basketball		530.0		530.0
Tennis Courts		1,030.0		1,030.0
Running Track and Other Activities			2,330.0	2,330.0
Gym			155.0	155.0
Yoga / Other Activity Room			125.0	125.0
Restrooms / Changing Rooms		210.0		210.0
Accessory/Retail Sales		80.0		80.0
Parking Area	320.0			
Storage and Mechanical Plant Room	400.0			400.0
Total Functional Space	2,565.0	3,185.0	2,610.0	6,195.0
Storage	60.0	110.0	30.0	200.0
Circ./Walls/Waste/Mech.	65.0	585.0	50.0	700.0
Total Built Space	2,690.0	3,880.0	2,690.0	9,260.0