

CAMPUS_Asia Plus::SUAES_Asia Program_Summer School Workshop 2024

CAMPUS_Asia Plus::SUAES_Asia Program is an intensive international academic exchange program between universities in Asia as the platform for dual degrees between the Architecture Department of Kyushu University(KYU), Tongji University(TJU), and Pusan National University (PNU). This collaboration aims to enhance the education of urban and architectural environments by developing knowledge and skills to achieve sustainable cities and buildings in Asia. The program is also a Korea UNESCO ESD (Education for Sustainable Development) Official Project assigned by the Korean National Commission of UNESCO. CAMPUS_Asia Plus::SUAES_Asia Program currently extends the platform covering Asian countries, focusing on present urban and architectural issues and enlarging educational opportunities to promote resiliency and sustainability in architectural design. It also promotes accessibility and inclusive urban design and development, which are being ardently addressed in UNESCO events, outcomes, and publications. The world demands greater cooperation and diversity. Therefore, society, cities, and people need to be adequately responsive to the direction of how the world is moving. Through a wide range of activities, such as Summer and winter school design workshops, CAMPUS_Asia Plus::SUAES_Asia Program promotes opportunities for exploring adequately responsive alternatives to the existing urban and architectural environment through cooperative cooperation between students from various countries.

Topic of 2024 Summer School & International Workshop:

Architecture and Sport: Sustainable Venue Design

Sustainable Architecture in Winter Sports:

Building for the Nordic World Championship in 2031 in Ramsau am Dachstein

Project Background

Ramsau am Dachstein, the most famous location for Nordic ski disciplines in Austria, is applying for the Nordic World Championship for a second time. After the first event in 1999, this place, which is located roughly in the geographical center of Austria, was awarded the State Environmental Prize in 2001 for “The environmental concept of the World Championship.” The mission statement at the time described well the potential behind the place: “Ramsau am Dachstein combines sport and culture for the first time in the modern history of the World Ski Championships, keeps nature and tourism in harmony, establishes cross-country skiing as an active and popular healthy sport and thus sets a long-term trademark for the positioning of Ramsau am Dachstein as a sports-oriented tourist resort and host for top-class sport.

This guiding principle was lived out both in the planning and in the subsequent use. In 1994, an environmental department was set up specifically for the Nordic World Championship, which developed and implemented 21 environmental projects in the run-up to the World Championship. Even back then, the core issues were the priority use of public travel, minimizing waste, and sustainable energy management. Ramsau am Dachstein has earned the renowned title of climatic health resort through the development of a sustainable environmental air quality information system. The World Championship organic farming village increased regional catering, and the use of local materials in construction projects has also increased the positive impact on the regional economy.

After the World Championship is before the World Championship:

The infrastructure has been used efficiently since the first World Championship in 1999. It inspires top-class and popular sports in winter and summer and is regularly used to hold FIS World Cups. As a result, the media perception of Austria as a center of sports excellence increases and reaches far beyond national borders. The successful youth work of WSV Ramsau am Dachstein is also based on the foundation that was created before the first World Championship. Through long-term investments in a promising future, the town and the region will continue to benefit for many years to come. The Nordic World Championship 2031 will be carried out as a green event. In the spirit of sustainability, Ramsau am Dachstein positions itself as a natural and forward-looking destination.

Winter sports, particularly Nordic disciplines like cross-country skiing, ski jumping, and biathlon, require specialized infrastructure to host events like the World Championships. As the world becomes increasingly conscious of environmental sustainability, it is imperative to explore architectural solutions that not only meet the demands of these sports but also minimize ecological impact and promote post-event utility.

Nordic disciplines are deeply rooted in the natural landscape, often taking place in pristine forests, mountains, and valleys. The architecture of sports venues must reflect this connection to nature, preserving the integrity of the environment while providing athletes with world-class facilities. Cross-country skiing trails, for instance, should follow the natural contours of the land, minimizing disruption to flora and fauna.

The architecture of sports venues for Nordic disciplines presents a unique opportunity to showcase sustainable design principles while celebrating the natural beauty of winter landscapes. By prioritizing environmental stewardship, integrating renewable energy sources, and planning for post-event legacy, architects can create venues that harmonize with their surroundings and leave a positive legacy for future generations. Through collaboration between designers, environmental experts, and local communities, we can ensure that winter sports thrive in harmony with the environment they depend on.

Achieving Environmental Impact Assessments: Before construction begins, thorough environmental impact assessments should be conducted to identify sensitive habitats and ecosystems. By integrating feedback from environmental experts, architects can mitigate potential harm to wildlife and habitats while maximizing the venue's sustainability.

Sustainable Architecture

Adaptive Reuse and Legacy Planning: Sustainable architecture extends beyond the event itself, emphasizing sports venues' long-term usability. Designs should consider post-event adaptations, such as converting competition tracks into recreational trails or repurposing facilities for community use. Engaging stakeholders early in the planning process ensures that venues remain valuable assets for years to come.

Renewable Energy Integration

Harnessing renewable energy sources like solar, wind, and hydroelectric power reduces reliance on fossil fuels and mitigates greenhouse gas emissions. Sports venues can incorporate solar panels, wind turbines, and geothermal heating systems to minimize their environmental footprint and promote energy independence.



Site and Topics

3 TOPICS:

- 1. Cross-Country Spectator Arena:**
- 2. Ski Jumping Facilities:**
- 3. Transportation Infrastructure Hub:**

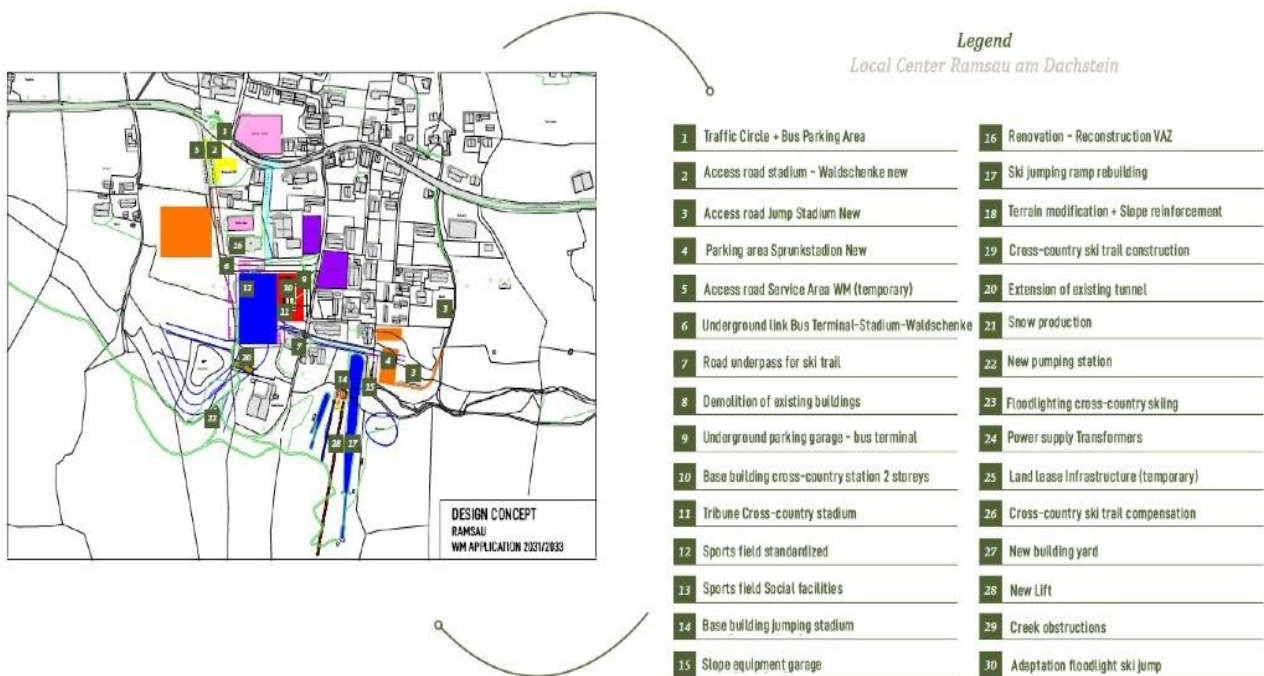
Hosting a World Championship in Nordic disciplines requires comprehensive infrastructure to accommodate the various sports involved and ensure a seamless experience for athletes, officials, and spectators. Overall, the successful hosting of a World Championship in Nordic disciplines relies on the coordinated planning, construction, and operation of these infrastructure facilities to create an optimal environment for athletes to showcase their skills and for spectators to enjoy the excitement of world-class competition. Here are some essential infrastructure facilities needed for such an event:

- **Cross-Country Spectator Arena:** Modular designs using wood timber construction allow for easy assembly and disassembly, ensuring minimal environmental impact. Furthermore, rainwater harvesting systems can irrigate the surrounding landscape, promoting biodiversity and ecosystem health. Cross-Country Skiing venues feature is equipped with electronic infrastructure, spectator stands, and facilities for athletes, coaches, and officials. The stadium should also have a network of cross-country skiing trails integrated with the

shooting range, allowing for seamless transitions between skiing and shooting segments. Large spectator arenas are essential for accommodating the influx of spectators during competitions. These arenas should offer comfortable seating, amenities such as food and beverage concessions, restrooms, and facilities for persons with disabilities. Adequate transportation and parking arrangements are also necessary to manage visitor traffic effectively. Spectator areas should provide comfortable viewing experiences while minimizing their ecological footprint. For example, incorporating green roofs, which are covered with vegetation, helps regulate temperature and manage stormwater runoff. Additionally, using locally sourced materials for seating and amenities supports regional economies and reduces transportation-related emissions. Media and Broadcast Facilities equipped with high-speed internet, press rooms, interview areas, and broadcast studios are vital for covering the event should be included. These facilities enable journalists, photographers, and broadcasters to report on the competitions and provide live coverage to audiences worldwide.

- **Ski Jumping Facilities:** These include large ski jumping hills (K-90, K-120, etc.) with associated in-run tracks, outruns, and judges' towers. Ski jumping venues also require spectator seating, athlete facilities, media centers, and areas for officials and support staff. Ski jumping hills require careful design to ensure safety and fairness for competitors. Sustainable materials such as locally sourced timber can be used in construction, blending the structures seamlessly into the surrounding landscape. Additionally, incorporating renewable energy sources like solar panels can power lifts and lighting systems, reducing the venue's carbon footprint. Media and Broadcast Facilities equipped with high-speed internet, press rooms, interview areas, and broadcast studios are vital for covering the event should be included. The requirements for sports infrastructure have evolved. In order to keep up with the competition, it is essential to further develop the ski jumping facility in the Nordic destination Ramsau am Dachstein. In the future, the modernized ski jump with HS 109 will be available in excellent condition for FIS competitions, from youth competitions to continental cups to world cups and also for future world championships.
- **Transportation Infrastructure hub:** An efficient transportation hub is crucial for ferrying athletes, officials, and spectators between venues, accommodations, and other key locations. This includes shuttle services, public transportation options, and designated parking areas for vehicles. Environmental Considerations: Sustainable Practices should be integrated into the design and operation of all infrastructure facilities, minimizing environmental impact and promoting conservation efforts. This may include using renewable energy sources, implementing waste reduction and recycling programs, and preserving natural habitats and wildlife. Environmentally friendly arrival to Ramsau am Dachstein: The preferred route is via the two state roads covering the eight-kilometer distance from Schladming. Travel via Schladming is the most favorable route because Schladming is easily accessible by train from large cities such as Munich, Salzburg, Klagenfurt, Graz, and Vienna. Alternative routes to Ramsau am Dachstein lead via Filzmoos, Pichl-Vorberg and Haus im Ennstal. During the 1999 World Championship, around 70% of fans traveled by train and bus. This quota is to be increased even further in the 2031 World Championship by offering attractive public transport options. On the one hand, the focus is on means of mass transportation, and on the other, on local public transport, which is to

be supplemented during the World Championship by well-developed footpaths, well-prepared winter hiking trails, and sufficient mobility on cross-country skis for shorter distances. The town center of Ramsau am Dachstein will become a traffic-free pedestrian zone during the World Championship. However, access for residents remains guaranteed. A direct footpath to the sports facilities should be built from the Awards Plaza and Steiermark Dorf. The new bus terminal is a central arrival point for fans. Temporary parking spaces will also be available outside of the town. From there, fans can also get to the sports venues on foot. In order to ensure easy mobility for the core groups, authorities plan to place enough local quarters at the disposal of employees, media, athletes, and the entire FIS family. There are also around 800 parking spaces available next to the bus terminal (see the plan).



The Site (Source : https://en.wikipedia.org/wiki/Ramsau_am_Dachstein)

Nestled in the heart of the Austrian Alps, Ramsau am Dachstein stands as a beacon of winter sports excellence. With its breathtaking mountain vistas, pristine snow-capped peaks, and world-class facilities, Ramsau has become synonymous with athletic achievement and sporting camaraderie.

Ramsau am Dachstein has been a host venue for numerous prestigious sports events, drawing athletes and spectators from around the globe. Among the most notable ones is the Nordic World Ski Championship in 1999. Furthermore, Ramsau has welcomed athletes for various FIS World Cup events in Nordic disciplines (biathlon, ski jumping, and cross-country skiing).

Central to Ramsau's success as a winter sports destination are its world-class venues, meticulously designed to meet the needs of elite athletes while offering unparalleled experiences for recreational participants. The Ramsau Nordic Center, situated amidst majestic alpine scenery, boasts an extensive network of cross-country skiing trails catering to all skill levels. From gentle winding paths for beginners to challenging ascents and descents for seasoned pros, the Nordic Center provides a haven for enthusiasts seeking to explore the beauty of the Dachstein region on skis.

Moreover, Ramsau's ski jumping facilities, including the K-90 and K-125 ski jumps, have played host to countless thrilling competitions. Looking ahead, Ramsau am Dachstein is poised to continue its legacy as a hub for winter sports excellence, with plans for hosting a diverse array of events. Ramsau aims to run for hosting the FIS Nordic World Ski Championship in 2031, reaffirming its status as a leading destination for cross-country skiing, ski jumping, and biathlon. However, the infrastructure in Ramsau needs to be modernized and expanded for the World Championship, including possibly building a new access route.

Furthermore, Ramsau is committed to expanding its portfolio to include emerging winter sports disciplines, such as snowshoeing, ski mountaineering, snowbiking, and fatbiking. By diversifying its event portfolio, Ramsau seeks to appeal to a broader audience of athletes and spectators, ensuring that its sporting legacy continues to thrive for generations to come. All of this needs to be taken into account when designing new venues.

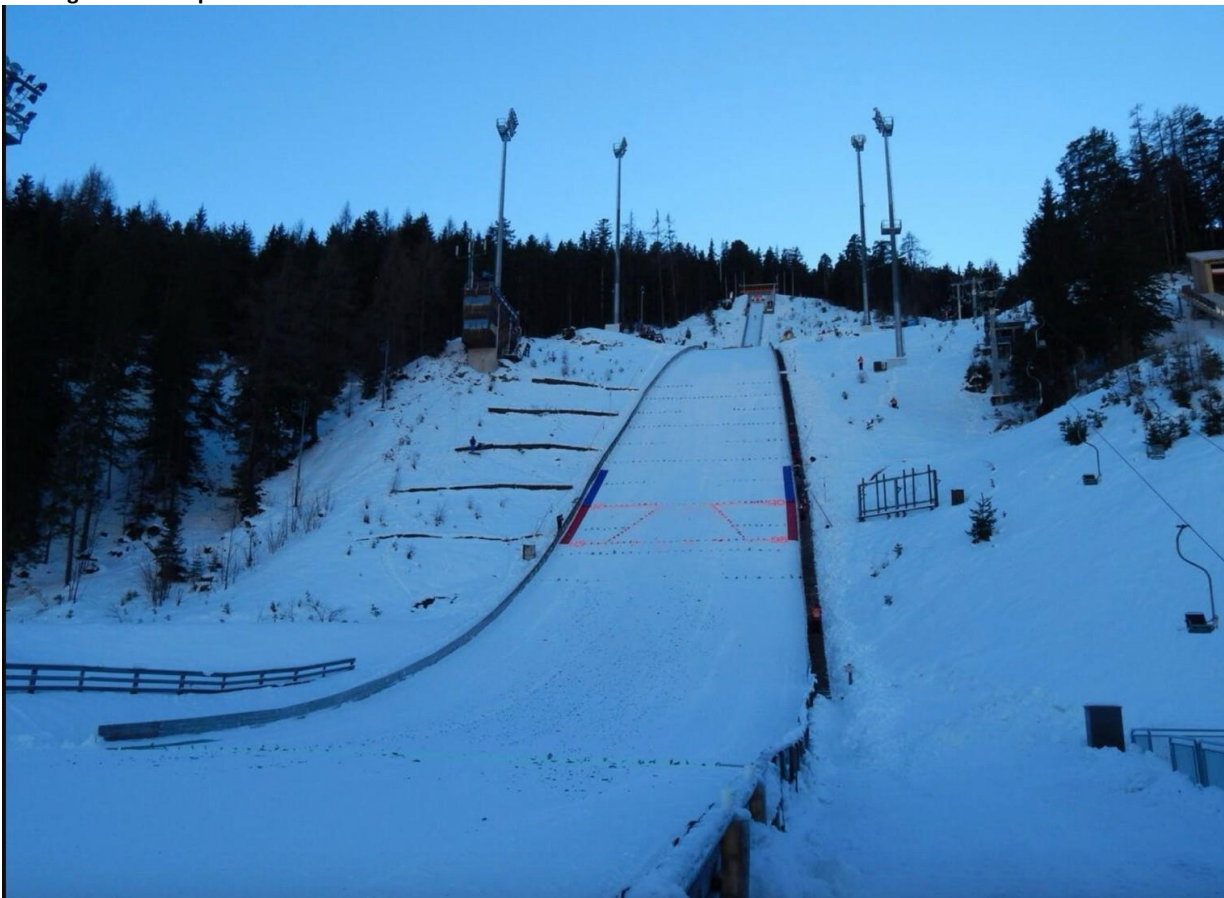
RAMSAU _ THREE PLACES OF THE FUTURE

Location and sport meet well in Ramsau am Dachstein, but must be perfectly coordinated for upcoming major projects. The sports infrastructure, like the local infrastructure, should be further developed within the existing framework. This avoids additional sealing of the areas and greatly enhances the entire townscape and center. The idea is to green the sports infrastructure to integrate it into the picturesque landscape.

Individual transport is to be bundled in a central parking concept in Ramsau Ort in a newly built underground car park, which will, therefore, represent a transport hub for shuttle services. This will result in less car traffic in the entire Ramsau area, which is a great added value, and better quality of life. The development of the sports field in Ramsau Ort also contributes to the revitalization of the town center. The reactivation of the town center and the sports field means that life in the center becomes more attractive. To do this, it is necessary to move the building yard out of the town and to enable higher-quality use of the area after the World Championship.



Existing Nordic disciplines stadium and media facilities in Ramsau



The ski jump on Kulmberg

COMPETENT SHORT PATHS DURING WORLD CHAMPIONSHIP:

Ideally located and easily accessible, the town center of Ramsau am Dachstein will be the center of the World Championship. This is where, among other things, the stadium for all cross-country skiing competitions and the normal hill for jumping competitions are located. All areas for the central stakeholders such as media, VIPs, employees and volunteers are also located here. The Awards Plaza and the Steiermark Village are also located in the center of the town. The existing facilities in Bischofshofen also contribute to the overall concept of the World Championship bid as a central element.

The World Championship is to be held from 19 February to 2 March 2031. But the Schladming-Dachstein region should also be recognized as a promising training and sports center. Meanwhile, the existing sports infrastructure has served sports-loving audiences for more than 25 years. It has to be revamped for the next Nordic World Championship and remain in excellent condition for the next 25 years. Even in 2050, Ramsau am Dachstein should be the Austrian home for all generations in all seasons and all Nordic disciplines. Below, the respective infrastructure areas are examined in more detail, and future investments are specified.



The stadium main facilities, Eurolopet cross-country run



Dachstein panorama, a view from Kulmburg

| SCHEDULE| PNU Summer school_Online Session (2 weeks) lecture & workshop

July 22 – July 31 Online lecture & workshop

- organised by TU Wien & PNU

*** Schedule that requires Zoom access : 22-25 July, 31 July (the bold dates below)**

Online Session (2 weeks) Program includes :

- 1) Opening, Introduction and welcome greetings from the *CAMPUS_Asia & TU Wien*
- 2) Five Lectures : Local Cases, Policies, Theories: 22.07.2024 - 24.07.2024

WELCOME SPEECH: 22.07. Welcome Lecture by Mayor of Ramsau am Dachstein, Mr. Ernst Fischbacher
Mr. Sebastian Scholz, Bauamt and Dr. Alois Stadlober Chairman of WSV Ramsau am Dachstein

LECTURE 1: 22.07. Materials for the Future, Lecture by Mladen Jadric & Inhee Lee-Topic TU Wien -PNU

LECTURE 2: 22.07. Ramsau am Dachstein and Architecture of Sport Facilities - Mr. Scholz Sebastian,
Bauamt, Ramsau am Dachstein

LECTURE 3: 23.07. A closer look at wood as a building material, Mr. Henry Lackner and Mrs. Caroline
Rodlauer

LECTURE 4: 23.07. Artscape-& Landscape Architecture, Prof. Renzo Lecardane, University of Palermo
(Italy)

LECTURE 5: 24.07. Future of Wintersport - Case studies in Asia and Europe Prof. Jaehoon Chung,
Pusan National University (South-Korea)

LECTURE 6: 24.07. Wintersport and Climate Change, Univ.Lektor, Mr. Nikolaus Punzengruber, TU Wien
(Austria)

PRESENTATION 1 : 25.07.(thu.) Team's 1st proposal and Critique

STUDENT ADVANCEMENT : 26.07. (fri.) ~ 30.07. (tue.) Team-work

PRESENTATION 2 : 31.07. (wed.) Team's 2nd proposal and Critique

**Assignment : Site analysis and Team's proposal*

**Submission Format : a PowerPoint Presentation File of 10-15 sheets for each group*

(1) Zoom Meeting Room :

<https://pusan.zoom.us/j/83115865138?pwd=T3JqdmZGRmMxTnVWVWVleUQ3VzMxQT09>

(Meeting ID : 831 1586 5138/ Password : 174970)

(2) The standard time is conveniently set at 17:00 (PM) in Korea.

(17:00 Korea & Japan = 16:00 China = 10:00 Italy and Austria = 04:00 NY, USA)

(3) Contact : suaasia@pusan.ac.kr(PNU)

| SCHEDULE| International Workshop_On-site Session

Sept. 7 – Sept. 14 On-site workshop program

- organised by TU Wien, PNU, and Ramsau am Dachstein Municipality

- 07.09 (sat.) 4:30 p.m. ★1st Meeting Point ★ The Train Station in Schladming

Check-in at accommodations in Ramsau am Dachstein

- 08.09 (sun.) Workshop 1st day 11:00h – Kick-off in Ramsau am Dachstein

Welcome speech by Mayor of Ramsau am Dachstein, Mr. Ernst Fischbacher,
Mr. Sebastian Scholz, Bauamt and Dr. Alois Stadlober Chairman of WSV Ramsau am Dachstein
Other activities : Discussion in the municipal conference room

- 09.09 (mon.) Workshop 2nd day

Workshop

Other activities : Discussion in the municipal conference room

- 10.09 (tue.) Workshop 3rd day

Workshop

Other activities : Discussion in the municipal conference room

- 11.09 (fri.) Workshop 4th day

Workshop

Other activities : Discussion in the municipal conference room

- 12.09 (fri.) Workshop 5th day

Workshop

Other activities : Discussion in the municipal conference room

- 13.09 (fri.) Workshop 6th day

Presentation & Exhibition of Student groups' works
Community gathering & Closing ceremony

- 14.09 (sat.) Check-out the accommodation

[PARTICIPANTS]

6 students (3 students per one team) with 2 professors from each university :

50 participants in the workshop are expected, including students, professors & tutors, and staff from the international universities of Vienna University of Technology/TU Wien, (Austria), Tongji University (China), Kyushu University (Japan), Palermo University (Italy), Pusan National University (South Korea)

Vienna University of Technology (Austria)
Palermo University (Italy)

6 ~ 9 students with 2 professors
6 ~ 9 students with 2 professors
(22 participants from Italy, Austria)

Tongji University (China)

6 students with 2 professors

Kyushu University (Japan)
Pusan National University (South-Korea)

6 students with 2 professors
6 students with 2 professors, and 2 directors
(26 participants from China, Japan, Korea)

[ORGANISATION]

- TU Wien (Vienna University of Technology, Austria)
- The community Ramsau am Dachstein
- CAMPUS_Asia::SUAE_Asia Program, Pusan National University (South-Korea)

DISTRIBUTION OF TASKS AND GROUPS WILL FOLLOW THE FOLLOWING PATTERN:

- 1. 5 Groups each 3 members will be assigned to Project: Cross-Country Spectator Arena:**
- 2. 3 Groups each 3 members will be assigned to Project Transportation Infrastructure Hub:**
- 3. 2 Groups each 3 members will be assigned to Project Ski Jumping Facilities:**

***Submission of Team's Preferred Project :**

When submitting the application form, each team from each university should choose ONE of the three projects as their first priority, and the teams within the same university can NOT select the same project as their first priority.

Each team's project will be finalized by the organization based on preferences, and will be announced during May.

MATERIALS:

All officially registered participants of the workshop will receive the following documents before the start of Workshop:

- Drawing from the cadastral section showing the course of the boundary lines
- Layer lines for 3D topographic models
- Pictures of all three project areas.

Additional Information

The community of Ramsau am Dachstein is very spacious. Therefore, all students will move into shared rooms that have already been reserved for this purpose. Two buses provided by the community will take all participants to work at certain times in the morning and back in the evening free of charge. You will receive more detailed information in this regard in a timely manner.

Costs for overnight stays are fixed with 245 euros.

The meeting point for all participants (please be sure to be on time) is on Saturday at 4:30 p.m. at the train station in Schladming.

[COMMUNITY BOARD RAMSAU AM DACHSTEIN]

Mr. Ernst Fischbacher, Mayor of Ramsau am Dachstein

Mr. Dr. Alois Stadlober, Chairman of Sport Club Ramsau am Dachstein

Mr. Scholz Sebastian, Bauamt, Ramsau am Dachstein

Mrs. Caroline Rodlauer, Architect

Mr. Henry Lackner, Ramsau am Dachstein

[DIRECTOR]

Prof. Inhee Lee, Pusan National University (South-Korea)

Prof. Mladen Jadric, Vienna University of Technology (Austria)

[SCIENTIFIC COMMITTEE]

Prof. Mladen Jadric, Vienna University of Technology (Austria)

Prof. Renzo Lecardane, University of Palermo (Italy)

Prof. Zeila Tesoriere, University of Palermo (Italy)

Prof. Li Zhang, Tongji University (China)

Prof. Divigalpitiya Prasanna, Kyushu University (Japan)

Prof. Inhee Lee, Pusan National University (South-Korea)

Prof. Shinkoo Woo, Pusan National University (South-Korea)

Prof. Jaehoon Chung, Pusan National University (South-Korea)

Univ.Lektor, Mr. Nikolaus Punzengruber, Vienna University of Technology (Austria)

[SCIENTIFIC ASSISTENT Vienna University of Technology]

Cand.Arch.Christian Dröszler, Vienna University of Technology (Austria)

[SCIENTIFIC SECRETARIAT Pusan National University]

Prof. Yoonjeong Kim, Pusan National University (South-Korea)

Ms. Yeongin Lee, Pusan National University (South-Korea)