1 TRANSPORT ANALYSIS & MODELING

Over the course of a decade, Masterconcept has gained a wide range of experience in the field of transport master planning, with a special emphasis on regional and urban planning, public transport system development and the management of individual transport systems used in special cases such as the Sochi 2014 Olympic and Paralympic Games.

The relevance of mobility has increased significantly over the past decades and will become even more important in the future. A major increase in traffic flow, conflicts between motorized and non-motorized traffic participants and annoyances based on noise, dust and emissions will be some of the negative results of this need for increased mobility and independence. Transport master planning is the fundamental basis for each decision-making process of transport infrastructure planning to counteract the aforementioned impacts.

The sustainability of infrastructure planning is a main focus of Masterconcept's work. Masterconcept will calculate the most sustainable economic solution for each task in the main fields of transport master planning, and it will do so in the very special field of landside operations, airport master planning or urban city development.

Today's infrastructure planning lacks the full consideration of an intermodal view. Masterconcept has developed a tool that can assess the right balance of transport demand in relation to an intermodal transport system supply. This tool is called the **I**ntermodal **T**ransport **S**imulation & **O**peration **S**ystem (**ITSOS**) and it can provide precise people flow simulation and high detailed evaluations for a wide range of transport planning tasks.


S-Bahn, Salzburg


World Cup Hahnenkamm, Kitzbühel


Bus Lane in Vertou, France

ITSOS – INTERMODAL TRANSPORT SIMULATION & OPERATION SYSTEMS

1 | Infrastructure input
The basis of the development of an integrated, intermodal transport master plan is the infrastructure network. This is managed in ITSOS by GIS-based information completed with a wide range of basic transport data that can respond to a high number of different case studies.

2 | Simulation
Well-developed simulation methods are at the heart of ITSOS. Based on highly detailed input data of geographic and transport levels, the various simulation methods can provide a realistic distribution of people movement in comparison to all relevant transport systems.

3 | Wide-ranging evaluation
The evaluation tools of ITSOS provide a highly detailed picture of all the relevant information required for decision-making processes and other detailed projects.
Additional tools can create different types of tailor-made schedules for all considered transport systems.

Services

* Infrastructure project control & management
* Macro transport simulation & modeling
* Operational transport master planning
* Transport feasibility studies
* Cost-benefit studies focusing on transport
* Regional & urban development master planning
* Master planning focusing on pedestrians & non-motorized traffic
* Intermodal transport master planning

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2 SDIM: SPATIAL DATA INFRASTRUCTURE MANAGEMENT SYSTEM

What is SDIM?

SDIM is master planning based on geographically referenced spatial data. Managing, analyzing and displaying all forms of relevant planning data are conducted in an integrated environment based on a geographic information system (GIS).

Geography plays a role in nearly every master planning decision: choosing site locations, targeting market segments, planning transport infrastructure networks, responding to natural hazards or emergencies and redrawing boundaries.

SDIM has the capability to analyze, query, question, interpret and visualize master planning data in the form of maps, globes, reports and charts. It assists in decision-making and problem solving by presenting data in a way that is intuitive and easily understood.

Moreover, SDIM can be integrated into any enterprise information system framework.

THREE ASPECTS OF SDIM

1 | Database
SDIM is built on a single database that combines project and geographic features (Geodatabase), an information system for spatial master planning.

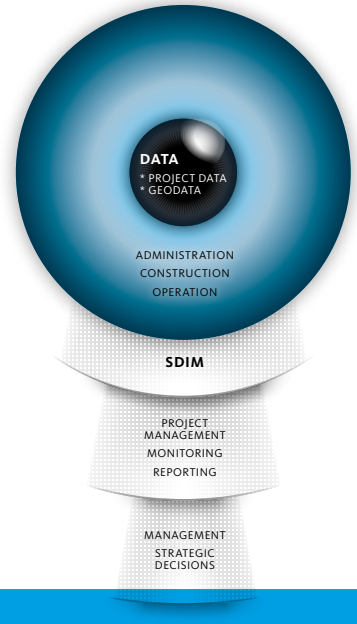
2 | Mapping
SDIM visualizes data as intelligent maps and other views displaying features and feature relationships on the earth's surface. Maps of the underlying geographic information can be created and used as "windows into the database" to support queries, analysis and present master planning information.

3 | Modeling
SDIM consists of transformation tools that can derive new geographic and project datasets from existing datasets. These geoprocessing functions apply analytical functions and write results into newly derived datasets and the analyses can assess data and make planning recommendations.

Why Use SDIM?

When organizing a major event, designing a resort or undertaking urban planning, master planning requires many major on-site decisions, such as infrastructure types and dimensions and impacts on the environment. Multiple diverse data has to be integrated and analyzed in order to make critical planning decisions.

SDIM can integrate and relate any data with spatial components, regardless of the date source. Its functionality can create a "virtual geographic world" and run simulations for many different thematic questions and regions. In combination with non-geographic applications and calculation programs, this can lead to significant savings in time and money during a master planning process.



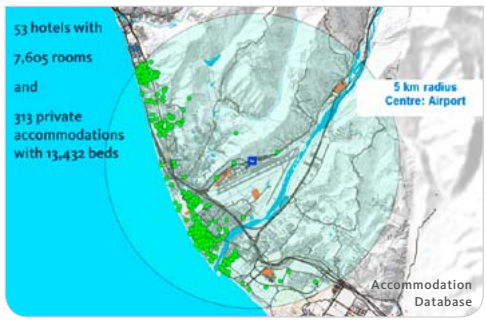
SDIM Eye

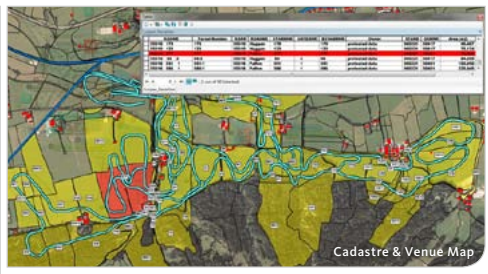
SPATIAL DATA INTEGRATED MASTER PLANNING

Planning, viewing, controlling and monitoring process based on geographic and project data to be used by multiple stakeholders and responsible entities (Organizing Committees & Infrastructure Delivery Authorities, Investors, Public Planning Authorities)

SDIM'S BENEFITS
* Common database for all stakeholders (operations, infrastructure, legal, finance, etc)
* Common project management, monitoring and controlling process
* Visualization of project's progress for all stakeholders
* Basis for strategic decision-making (venues, environment, properties, transport, etc)
* Long-term benefits for the development of a region (management, environment, tourism, public maintenance)
* Transparency of project circumstances (geology, natural risks, local requirements)
* Special tools for security, emergency and healthcare planning
* E-learning for staff, volunteers and other stakeholders

SDIM'S APPLICATIONS
* Operational plans
* Security plans
* Transport models and spectator flow simulations
* Accommodation database
* Landowner agreements and cadastral legal issues
* Resort master plans
* Facility management
* Geographic Data Management (GDM)
* Raw material and labor force procurement (transport & logistics support)
* Urban redevelopment and regeneration





Services

* Geodata capturing and project management
* Data structuring and project buildup
* Web and mobile solutions
* Mapping
* Project Development
* Data Processing

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3 HAZARD ZONING & MANAGEMENT

INTEGRATED RISK AND NATURAL HAZARD ZONING & MANAGEMENT

What is Hazard Management?

Hazard Management is a systematic process for analyzing hazards in a defined area. The process includes 4 different steps:

1 | Identifying any potential hazard.

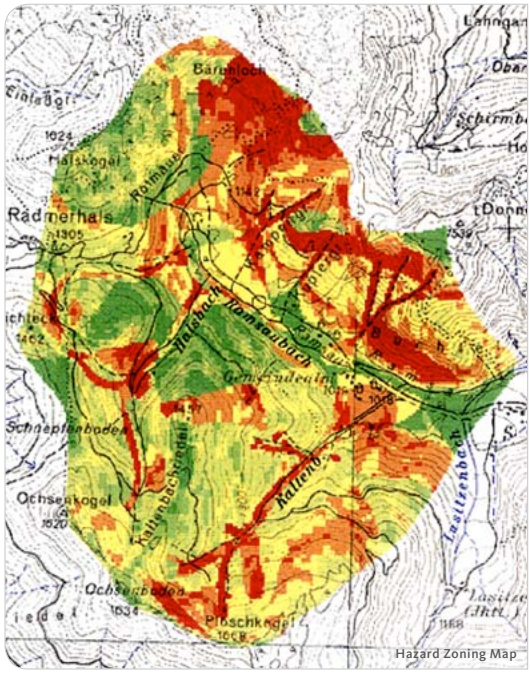
2 | Assessing the potential risk from the respective hazard: how significant is the risk?

3 | Approach on how to eliminate the hazard or if not possible, controlling the hazard's impact.

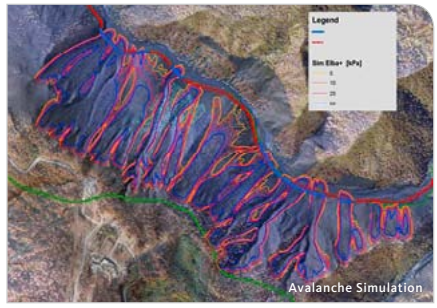
4 | Reviewing risk assessment: permanent monitoring and improvement of measures

Natural Hazard Management takes an integrated approach to hazard assessment and risk management, in which an overview and basic working knowledge of processes, methodology and decisions are required to undertake natural hazard risk management for five major hazards threatening Alpine areas (e.g. landslides, rock falls, torrents, floods and snow avalanches).

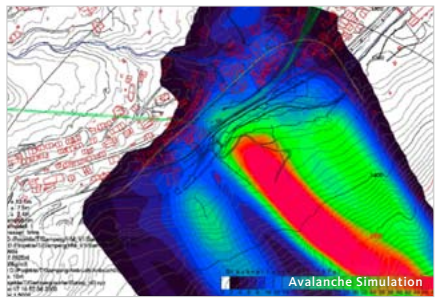
Different tools based on geographic information systems, spatial databases and high-resolution elevation and orthoimage data are required for the planning of mountain infrastructures such as mountain roads, villages, land use and ski resorts.

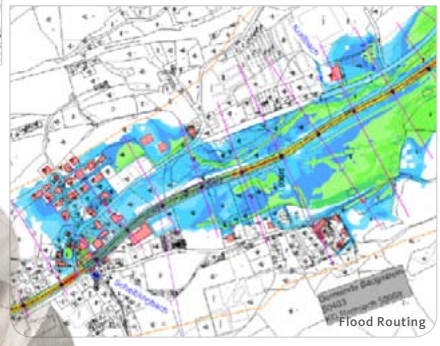


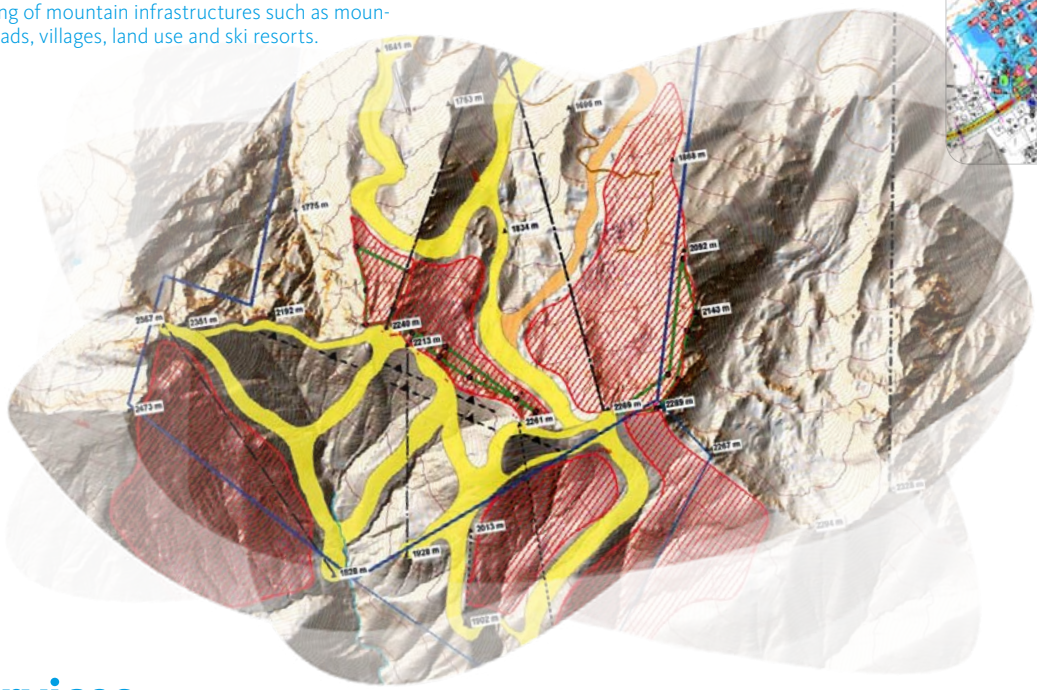
Hazard Zoning Map



Avalanche Simulation


Avalanche Simulation


Flood Routing



Services

* Preliminary natural hazard risk assessment
* Zoning plans
* Laser scan based avalanche & flood simulation
* Protection measures

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4 MOUNTAIN MASTER PLANNING

Masterconcept specializes in year-round mountain resort development and covers key necessary competencies such as Mountain Master Planning, Natural Hazard Management, Mountain Architecture & Urban Planning, Transport Planning, Tourist Positioning and and Slope & Cable Car Planning under ONE ROOF.

The complexity of mountain resort development is often underestimated and Masterconcept's strength is that we can identify the right steps at the right stage of each respective project. The success or failure of a mountain project depends on many decisions that are not always linked to financial models and calculation parameters.

The Masterconcept team has many years of hands-on experience with high-profile international clients from Austria, Germany, Japan, Korea, Russia and Ukraine, among other countries.

The main part of the necessary workflow is done in-house, thus allowing for a lean, cost-effective process for the client.

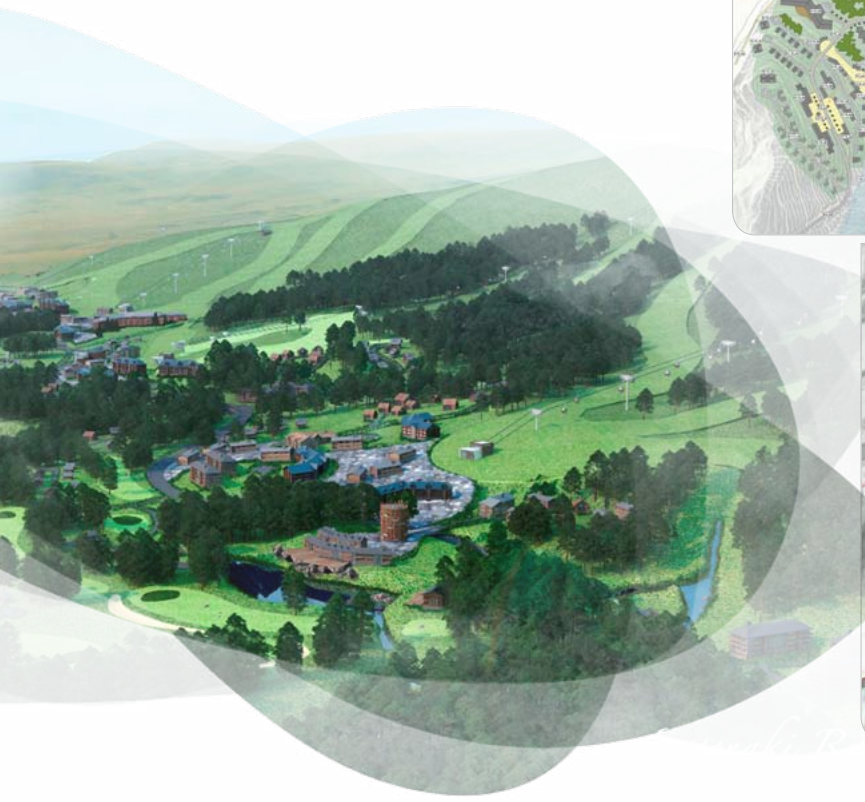
Masterconcept works closely with both investors and construction companies to deliver specialized 360-degree master planning services for mountain resorts.

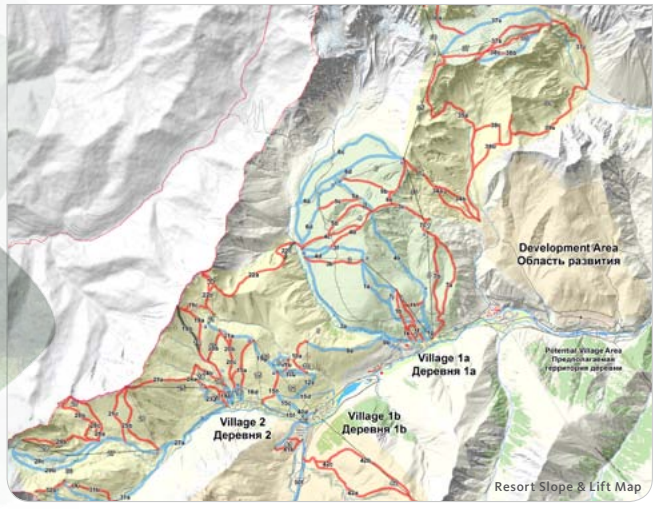
We develop architectural concepts and landscaping designs rooted in the local cultural and natural heritage for targeted customer groups.

Our team of experienced professionals designs all architectural and engineering details of a mountain resort master plan in an integrated fashion.


Alpine Village

Matlas Master Plan





Resort Slope & Lift Map

Services

* Zoning analysis
* Lift & slope concepts
* Technological concepts, utilities and services plans
* Sporting venues and recreational facilities
* Building programs and types, as well as master site plans
* Full logistics integration and transport infrastructure solutions
* Project Development

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5 RESORT & EVENT OPERATIONS MANAGEMENT

RESORT MASTER PLANNING

Masterconcept specializes in 360-degree operational master planning services for mountain resorts and sporting venues, working with both private investors and public infrastructure development companies. This comprises the evaluation of sites based on the assessment of natural risks in mountain environments and accessibility by transport modes.

We develop architectural concepts and landscaping designs rooted in the local cultural and natural heritage, as well as the needs of the targeted customer group.

* Integrated infrastructure design of urban spaces, hotels, mountain chalets, restaurants, parking spaces, roads, competition infrastructure, resort operations buildings and utilities
* Development of resort zoning and orientation
* Functional zoning and organizational concepts
* Development of sporting concepts for recreational use and venues for competition use, coordinating the homologation procedures with international sporting federations

EVENT OPERATIONS MANAGEMENT

Integrated Operations and Venue Planning for major events is one of Masterconcept's core competences. Masterconcept assists event operators and owners in developing effective and consistent operational plans and venue designs, integrating both the process and output across departments within the organization, as well as with external stakeholders (public administration, law enforcement agencies, venue communities).


Air & Style World Cup, Salzburg


Olympic Bid Project, Flachau


Air & Style World Cup, Salzburg

Services

* Event strategy and operational concept
* Authoring and development of program and venue operational plans
* Contingency and incident response plans
* Venue operational designs and venue agreements
* Tourist resort operational plans
* Resort transport logistics

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6 ARCHITECTURE & URBAN PLANNING

Masterconcept carefully considers site contextual parameters and constraints, transport logistics and stakeholders' programmatic and operational needs to develop commercially successful urban planning and architectural design concepts.

Our understanding of the unique characteristics of the future development of a location ensures authentic urban integration of existing or renovated projects with new ones.

We focus on creating a cohesive design for the overall project to ensure smooth connections between outdoor and indoor spaces, as well as between the multiple facilities and uses: transport, sports, recreation, hospitality, retail, entertainment, office and residential.

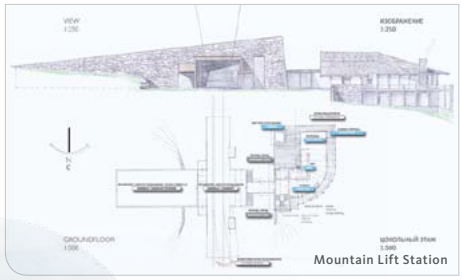
Masterconcept aims at creating sustainable and legacy oriented urban planning and architectural projects.

Masterconcept is a multinational engineering, architectural and design consultancy, providing expertise to help resolve complex challenges presented by constructed and natural environments. We PLAN, DESIGN and ENABLE solutions for the urban redesign of cities, the concept for a new ski resort or the design of transport hubs.

Our design capability extends across all our business divisions, from innovative architecture for the hotel and leisure sectors to detailed master planning for major developments or engineering and design for infrastructure projects.


Matlas Village


Lagonaki Hotel


Mountain Lift Station


Alpine Village

Services

* Project development
* Master planning and urban design
* Transport planning and environment
* Geospatial solutions
* Landscape architecture
* Management consultancy

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