

New and alternative planning methods - Visualisation and simulation -



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"Recreational objects - Golf courses"

26. 06. 2008 - BRATISLAVA, Slovakia

golf course planning



sample courses



SITE ANALYSIS

- BASE DATAS: CADASTRE, AERIAL PHOTO, SURVEY DATAS
- ANALYSIS PLANS:
 - TERRAIN LEVEL
 - SLOPE ANALYSIS
 - SURFACE WATER RUN OFF

DESIGN PROCESS

- PRELIMINARY ROUTING SKETCH
- PRELIMINARY ROUTING CAD PLAN
- PRELIMINARY LAYOUT (WITH FAIRWAY SHAPES)
- STRATEGY AND CONCEPT PLAN
- SAFETY ANALYSIS PLAN
- MASTERPLAN

THEMATIC PLANNING FOR PERMISSION PHASE

- CONCEPT DRAINAGE PLAN
- CONCEPT SHAPING PLAN
- CONCEPT IRRIGATION PLAN

WORKING DRAWINGS

- SKETCHES OF THE GREENS, BUNKERS a.s.o
- ROUGH CONTOURING (1 METER CONTOURS)
- GENERAL ANALYSIS PLANS:
 - CUT AND FILL
 - SLOPE ANALYSIS
 - SURFACE WATER RUN OFF

PLANNING EXAMPLE - FROM SKETCH TO FINISHED GREEN

WORKING DRAWINGS

- DETAIL DESIGN PHASE:
 - HOLE BY HOLE, 50 cm CONTOURS
 - DETAIL GREEN DESIGN, 25 cm CONTOURS:
 - SLOPE ANALYSIS
 - 3D-VIEW

TENDER DOCUMENTS

- DEVELOPMENT PHASES
- QUANTITY TAKE OFF

SPECIALS

- 3D - VISUALISATION / ANIMATION
- BIRDIE BOOKS
- SCORE CARDS

CONSTRUCTION

- STAKING ON SITE FROM SURVEYER
- CONTROL OF THE STAKING
- FREQUENT SITE VISITS

PLANNING EXAMPLE - FROM SKETCH TO FINISHED GREEN

- Phase 1 - Site analysis
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PHASE 1: SITE ANALYSIS

CADASTRAL

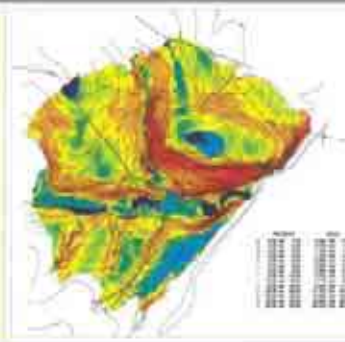


SITE ANALYSIS
CADASTRAL WITH
CONTOURS

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INCLINATION



SITE ANALYSIS
EARTH
RELIEFPLAN

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AERIAL PHOTO WITH CADASTRAL



SITE ANALYSIS
AERIAL PHOTO WITH
CADASTRAL

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SURFACE WATER RUNOFF



SITE ANALYSIS
SURFACE
WATER RUNOFF

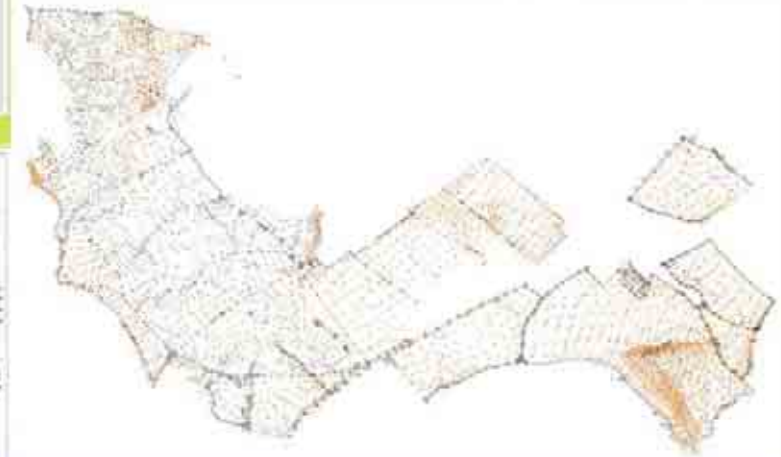
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TERRAIN LEVELS



SITE ANALYSIS
TERRAIN
LEVELS

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PHASE 1: SITE ANALYSIS

BOUNDARIES



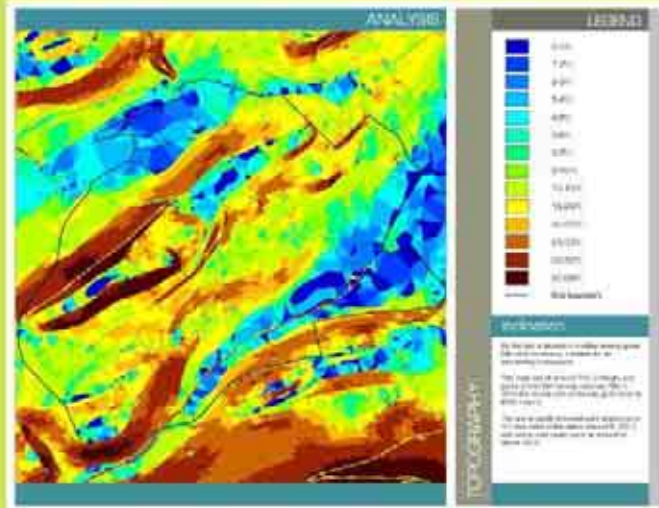
VEGETATION



INFRASTRUCTURE



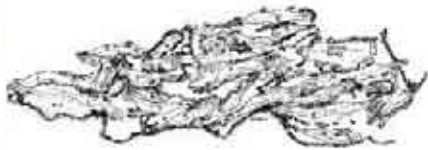
INCLINATION



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PHASE 2: DESIGN PROCESS

SKETCH GOLFCOURSE



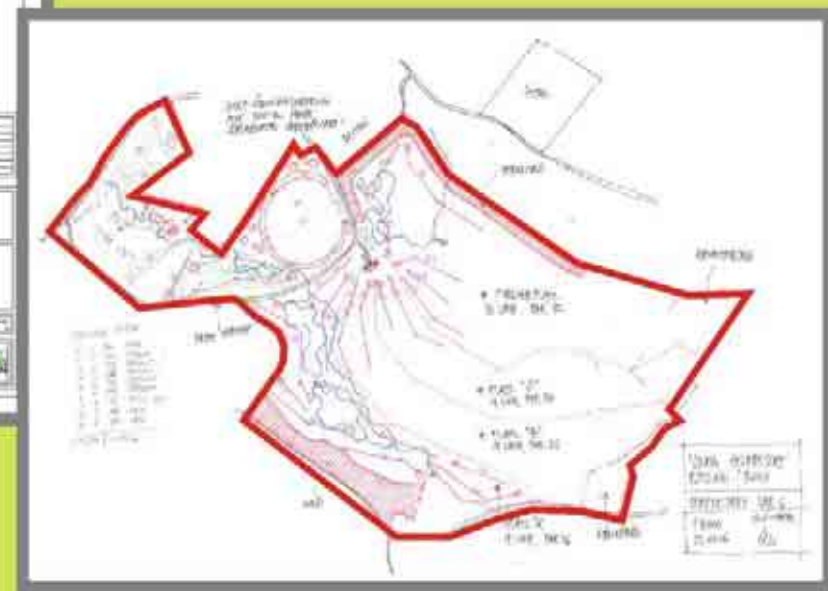
PRELIMINARY LAYOUT



MASTERPLAN



PHASE 2: DESIGN PROCESS - BASIC CONCEPT



PHASE 2: DESIGN PROCESS - ROUTING PLAN

LAYOUT 1

LAYOUTS

Layout 1 - Current course

1. B	Par 55	2227 m
1.1	Par 57	2247 m
1.2	Par 56	2247 m
1.3	Par 55	2227 m

There are 4 main reasons for the routing plan in this area:

- The routing is very simple and clear.
- The routing is very simple and clear.
- The routing is very simple and clear.
- The routing is very simple and clear.

Safety buffer 50m

ROUTING PLAN & SAFETY BUFFERS

LAYOUT 2

LAYOUTS

Layout 2

1. B	Par 55	2227 m
1.1	Par 57	2247 m
1.2	Par 56	2247 m
1.3	Par 55	2227 m

The routing is very simple and clear.

Safety buffer 50m

ROUTING PLAN & SAFETY BUFFERS

LAYOUT 3

LAYOUTS

Layout 3

1. B	Par 55	2227 m
1.1	Par 57	2247 m
1.2	Par 56	2247 m
1.3	Par 55	2227 m

The routing is very simple and clear.

Safety buffer 50m

ROUTING PLAN & SAFETY BUFFERS

LAYOUT 4

LAYOUTS

Layout 4

1. B	Par 55	2227 m
1.1	Par 57	2247 m
1.2	Par 56	2247 m
1.3	Par 55	2227 m

The routing is very simple and clear.

Safety buffer 50m

ROUTING PLAN & SAFETY BUFFERS

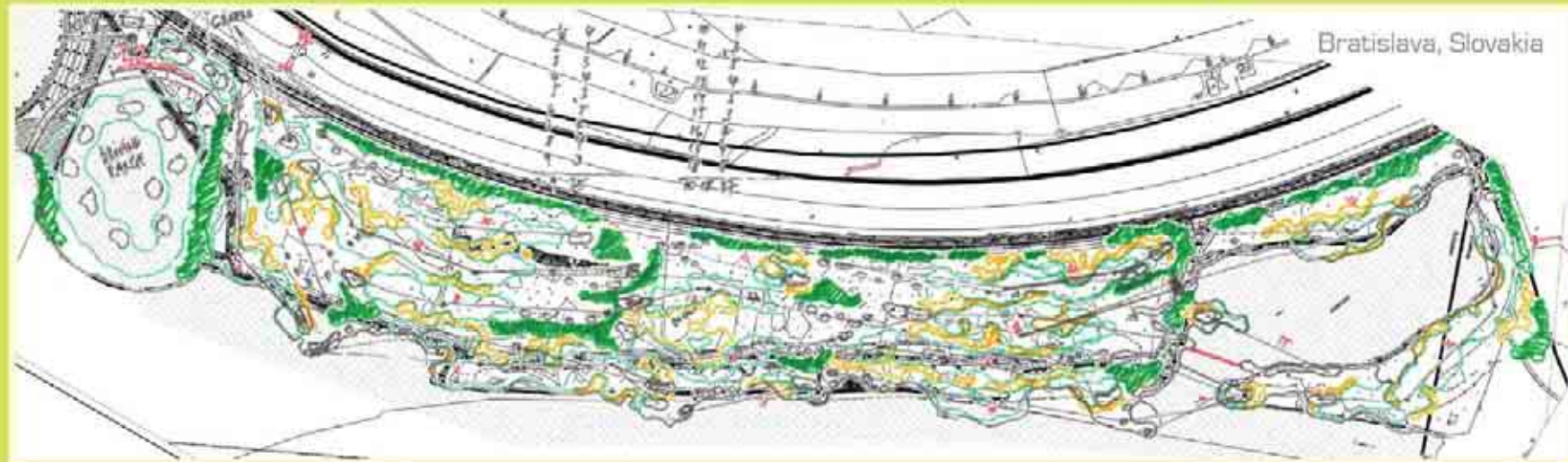
PHASE 2: DESIGN PROCESS - ANALYSIS OF THE ROUTING PLAN



PHASE 2: DESIGN PROCESS - CONCEPTUAL GOLF SHAPES

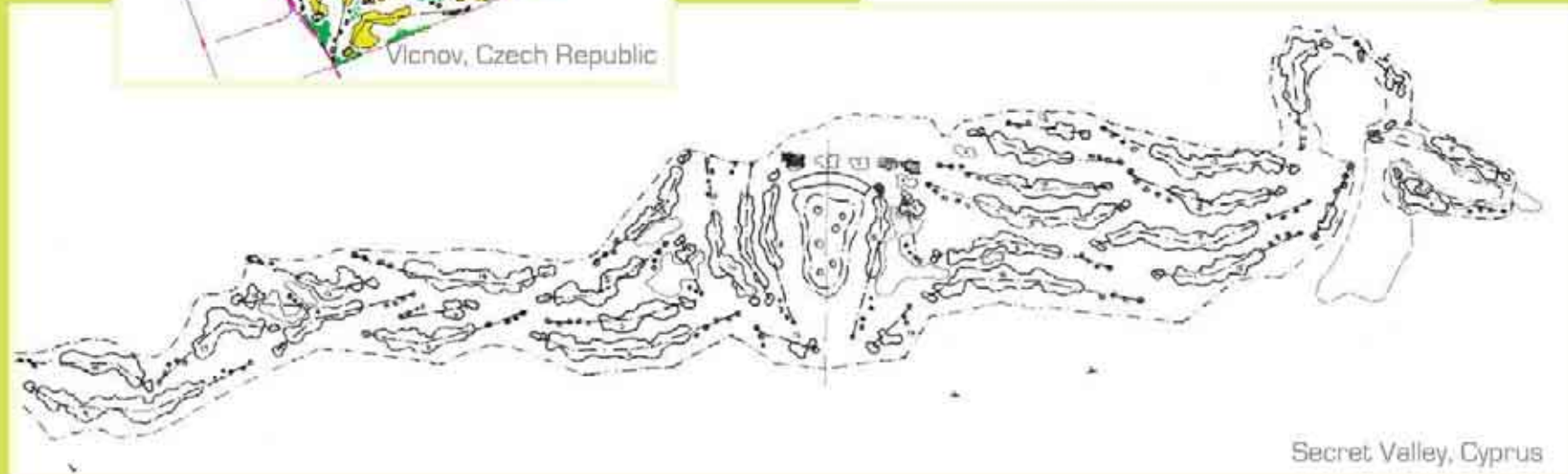


Rovinj, San Marco

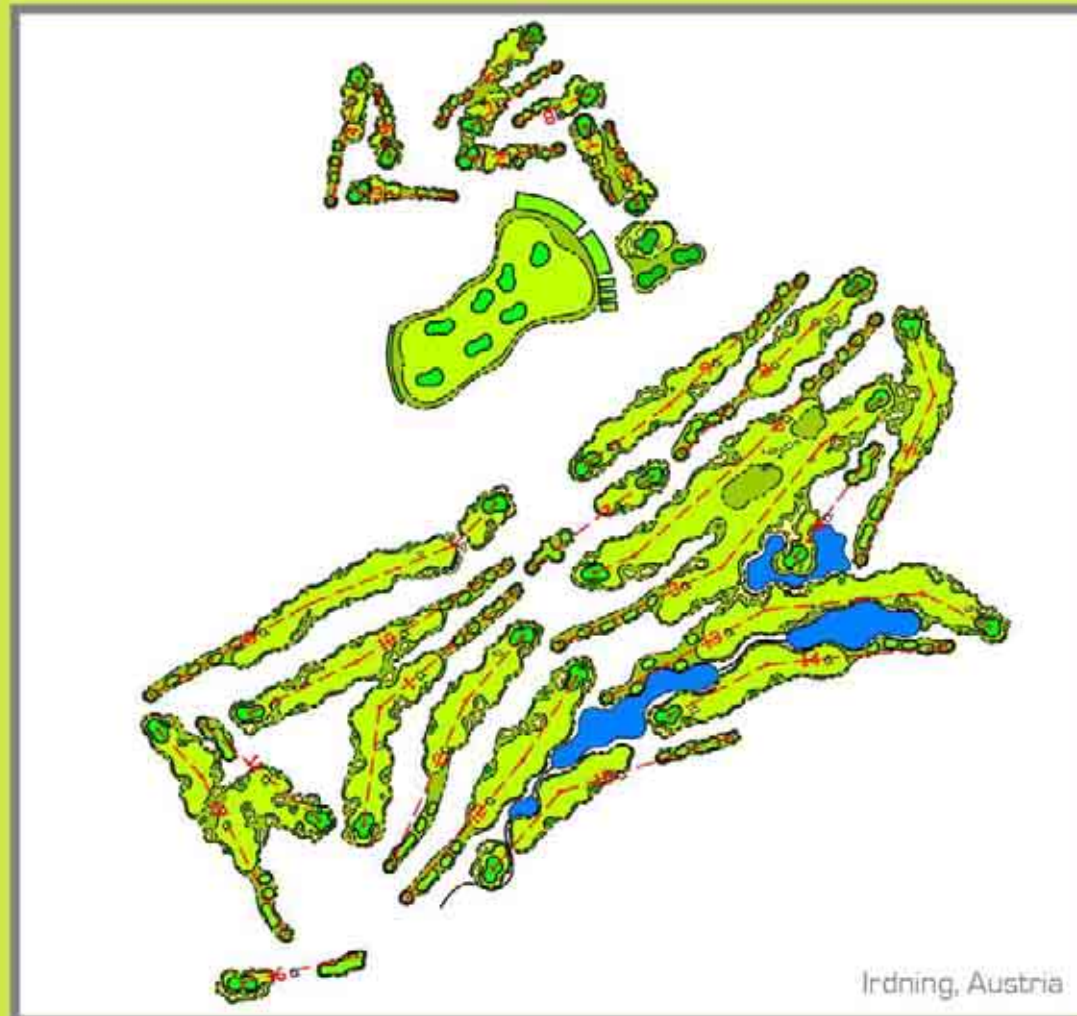


Bratislava, Slovakia

PHASE 2: DESIGN PROCESS - CONCEPTUAL GOLF SHAPES



PHASE 2: DESIGN PROCESS - CONCEPTUAL MASTERPLAN



PHASE 2: DESIGN PROCESS - MASTERPLAN

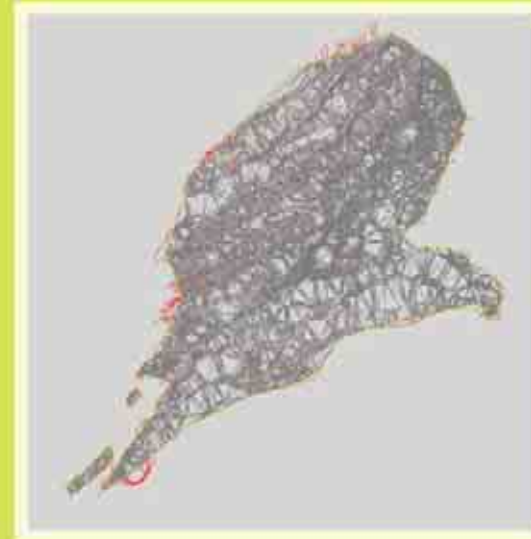
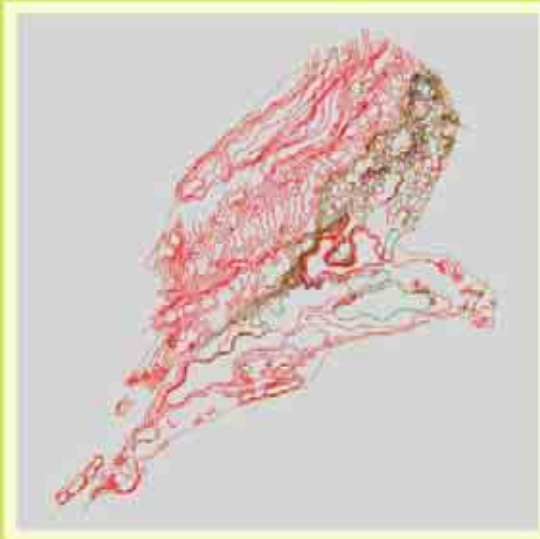


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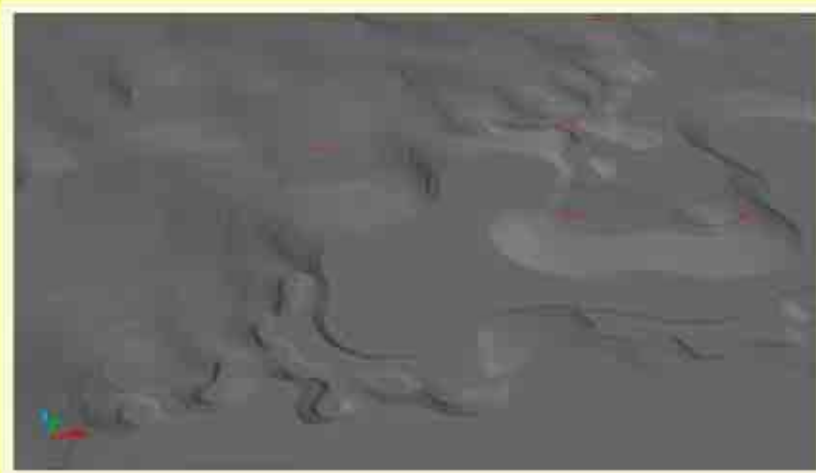
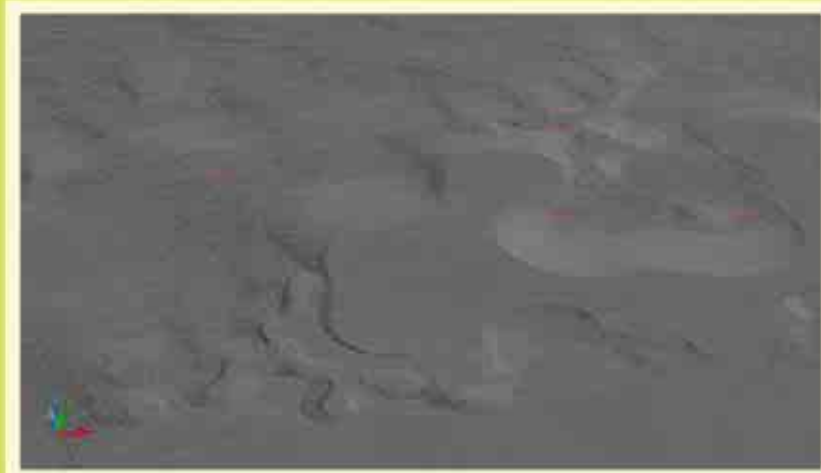
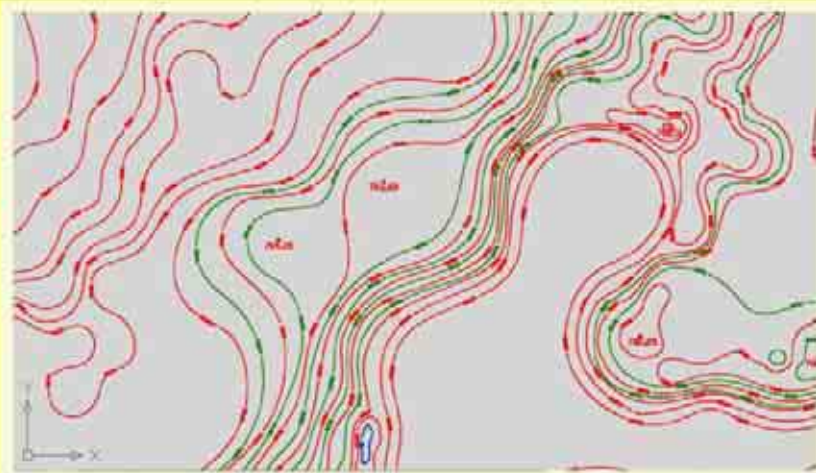
PHASE 3: IMPLEMENTATION PHASE - CAD MASTERPLAN



PHASE 3: IMPLEMENTATION PHASE - DIGITAL TERRAIN MODELL



PHASE 3: IMPLEMENTATION PHASE - DIGITAL TERRAIN MODELL



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PHASE 4: PROJECT ANALYSIS - VISUALISATION WITH SIMULATOR



PHASE 4: PROJECT ANALYSIS - VISUALISATION OF PLAY STRATEGY

Par 4 - 380 m



Par 4 - 340 m



Par 5 - 525 m



Par 3 - 170 m



Par 4 - 320 m



Par 5 - 485 m

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PHASE 5: THEMATIC PLANNING FOR PERMISSION PHASE

- Hauptleitung 1 - PE 100, DA 250 - SDR 11 PN 16
- Hauptleitung 2 - PE 100, DA 200 - SDR 11 PN 16
- Hauptleitung 3 - PE 100, DA 150 - SDR 11 PN 16
- Nebenleitung 1 - PE 100, DA 80 - SDR 11 PN 16
- Nebenleitung 2 - PE 100, DA 63 - SDR 11 PN 16

- Toongrön 14 Meter
- Gröngrön 20 Meter
- Ferweggrön 22 Meter

Alle Röhren mit Exzelsphäuerung !!

- Bereichsausgangsmärkte
- Hydrant
- Schleuse
- Pumpe



IRRIGATION, SPRINKLER AND PIPES



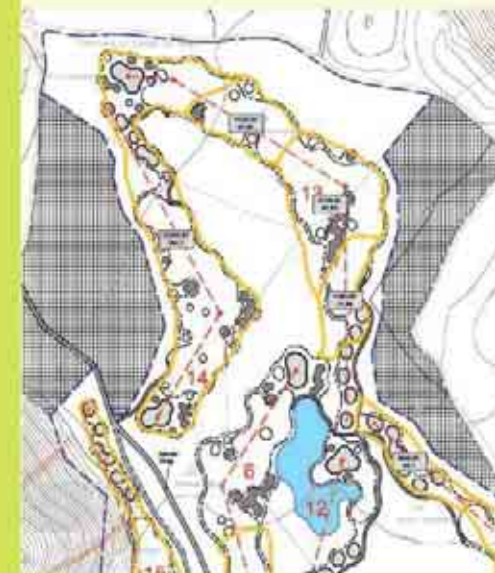
ROUTING



DRAINAGE

- Entwässerungsrohr DN 80
- Entwässerungsrohr DN 100
- Entwässerungsrohr DN 150+
- Entwässerungsschacht
- Versickerungsmulde
- Wasserentzugsbereich
- Angaben Wasserentzugsbereich

Gesamtfläche m² 5527,27
Mischgröße/Min. m² 40,75



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PHASE 6: PROJECT VISUALISATION - 3D - SIMULATOR SCREENSHOTS



PHASE 6: PROJECT VISUALISATION - 3D - SIMULATOR SCREENSHOTS



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PHASE 7: WORKING DRAWINGS

PERSPECTIVE SKETCH



GREEN CONTOURS



GREEN STAKING



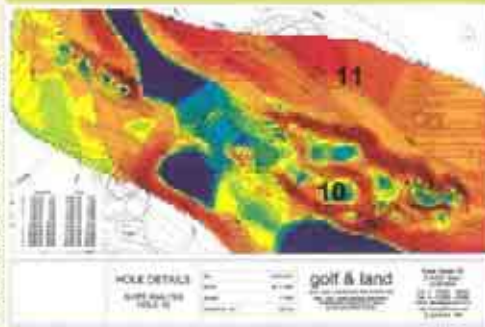
HOLE CUT & FILL



HOLE IRRIGATION AND DRAINAGE



HOLE SLOPE ANALYSIS



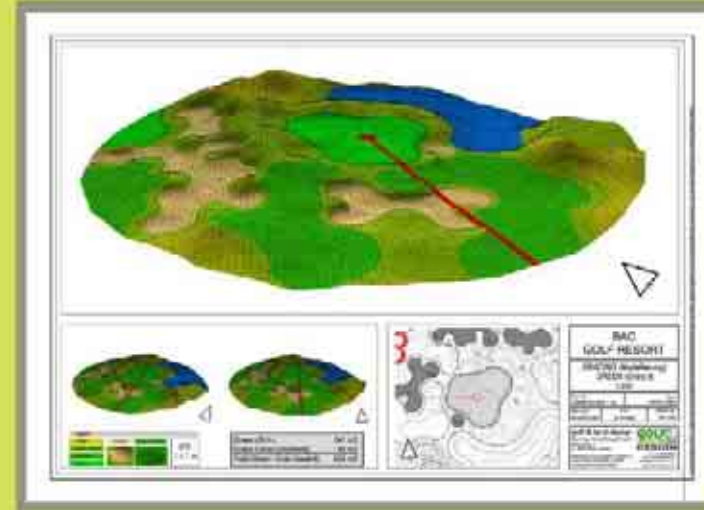
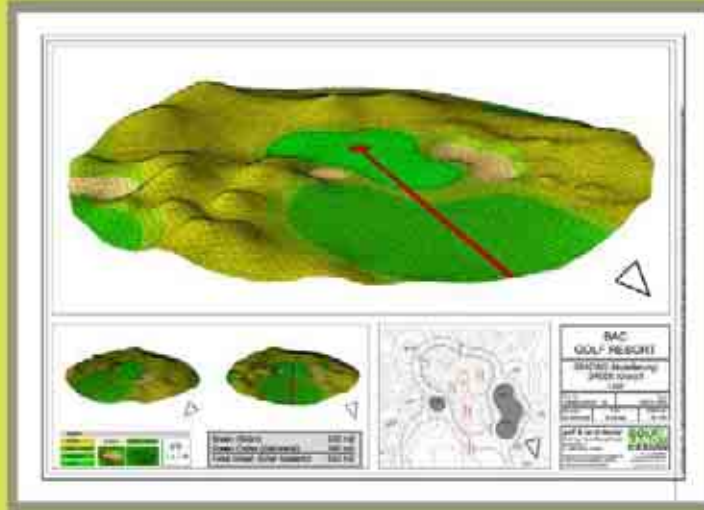
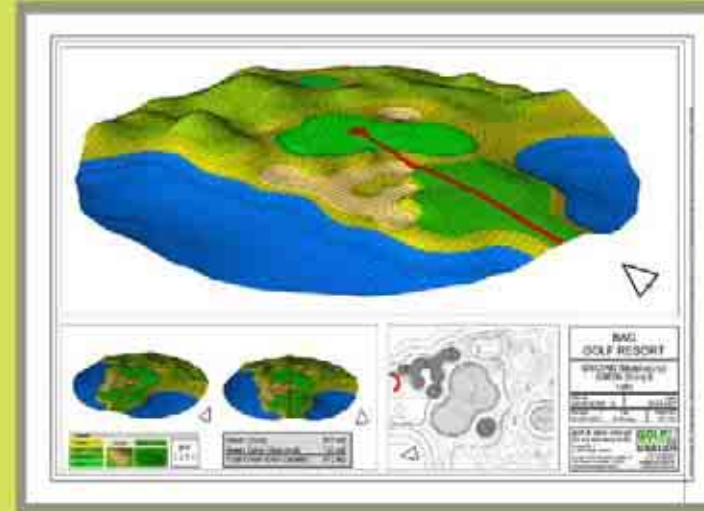
GREEN FINABLE AREAS



GREEN PERSPECTIVE



PHASE 7: WORKING DRAWINGS - ADDITIONAL 3D DRAWINGS



Thank you for your attention!

Questions are welcome!



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DESIGN

Member of the European Institute
of Golf Course Architects



Member of the Austrian
Landscape Architects (ÖGLA)



Member of the Bavarian
Chamber of Architects



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