Aquaterra is a professional software for canal and river engineering design that is comprehensive, full-featured and easy to use.

Besides providing users with commands and tools to support the entire design process – everything from the initial input of survey data and complex 3D river/canal models with analysis tools to documentation and publishing features – Aquaterra also includes functionality for DTM, alignments, profiles, sections, modelling and hydraulic computations and can easily handle large projects with alignment lengths of several hundred kilometres.

Aquaterra packages

Aquaterra is available in two different content packages. Aquaterra Standard includes the HEC-RAS interface, which enables designers to exchange data between the CAD and the HEC-RAC hydraulic software; plus it includes all the design and drafting tools for: river and/or channel design; river bank design based on flood analysis; irrigation systems design; and dam reservoir designs. Aquaterra Ultimate offers the same features as the Standard package, but adds 3D canal and river works design features and implements the MIKE 11 and MIKE 21 interfaces for bi-directional data exchange between CAD and MIKE FLOOD software.

Aquaterra Standard

A complete 2D/3D surface canal and river works design solution that includes the HEC-RAS module. Aquaterra Standard offers:

- Survey data import / export.
- Lidar data import and analysis (Civil 3D platform only).
- Google Earth interface.
- Civil 3D interface.
- Digital terrain modelling tool (DTM) including grading.
- Alignment design.
- Riverbanks design.
- Profile views with profile design.
- Display of one or more water levels.
- Riverbanks representation in profile views.

Aquaterra features

Aquaterra assists users in the preparation of professional drawings and technical documentation, like volume calculation reports. The 3D model environment enables users to apply various types of design analyses to the design, including flooding simulations, river flow, and more.

Aquaterra supports the most widely used hydraulic models (e.g. MIKE11, MIKE21, HEC-RAS, etc.) and many country specific design standards as well. It has also been localized and used in several countries for projects ranging from small streams to large irrigation schemes with canals several hundred kilometres long.
Aquaterra Advantages

**Intuitive workflow**
Aquaterra’s workflow consistently follows standard, civil engineering processes used for river, or channel design in Europe, which intuitively leads designers through projects, from start to finish.

**Unique cross-section design concept**
The “design in one, draw in several cross-sections” concept allows for the efficient processing and editing of cross-sections. Different levels of automation allow for the faster design of segments with similar cross-sections, as well as the handling of cross-sections where the conditions change frequently... so each cross-section can be treated individually using Aquaterra’s interactive drafting and editing commands.

**Easy to learn and use**
Well-structured ribbons, menus, and simple dialogues enable fast learning for first-time users, while toolbox and command line options are provided for the convenience of experienced users.

**Handling of large data sets**
Aquaterra is capable of handling large projects with long alignments and thousands of cross-sections within seconds, but also allows users to easily work on alignment changes without the need to cut them into smaller pieces.

**Support for local design standards**
Aquaterra, which has been translated into several languages, supports country-specific drawing layouts and allows customers to use any country-specific version of the software if designing projects for the foreign countries.

**Teamwork support**
River and channel regulation projects can be easily (and efficiently) divided amongst multiple team members, who can then work simultaneously on the project, especially since projects can be split into layout and horizontal alignment drawings, longitudinal-section drawings, and cross-section drawings.

**Alignment design tools**
Aquaterra contains powerful alignment methods and tools, perfect for design and/or editing with intelligent, best-fit algorithms that allow you to automatically design alignments based on surveyed points.

**Aquaterra Ultimate**
This is a 3D solid canal and river works design solution, which includes both MIKE 11/21, and HEC-RAS modules. Besides the features of Aquaterra Standard, Aquaterra Ultimate also offers:

- Representation of river or channel within 3D model.
- Representation of 3D river banks in layout.
- MIKE 11 features/tools, such as:
  - Exporting geometric data (e.g. stations and geometry of the cross-sections, channel banks, and levees) from Aquaterra to MIKE 11 cross-section files.
  - Reading MIKE 11 results files and importing the data back to Aquaterra (e.g. water levels, cross-section views, including existing ground and channel views.
- Displays in 1D, 2D, or combined water surfaces.
- Take-off quantities and mass haul diagrams.
- Plan production tools.
- Labelling and dimensioning tools.
- HEC-RAS hydraulic interface, which includes the ability to:
  - Prepare the HEC-RAS geometric input file based on cross-sections, bank, and/or Manning coefficient data.
  - Transfer the resulting water levels back to Aquaterra for display in cross-sections, longitudinal sections, and/or layout.
  - Transfer geometry data from HEC-RAS to Aquaterra.

For design and/or editing with intelligent, best-fit algorithms that allow you to automatically design alignments based on surveyed points.

**Unique cross-section design concept**
The “design in one, draw in several cross-sections” concept allows for the efficient processing and editing of cross-sections. Different levels of automation allow for the faster design of segments with similar cross-sections, as well as the handling of cross-sections where the conditions change frequently... so each cross-section can be treated individually using Aquaterra’s interactive drafting and editing commands.

**Easy to learn and use**
Well-structured ribbons, menus, and simple dialogues enable fast learning for first-time users, while toolbox and command line options are provided for the convenience of experienced users.

**Handling of large data sets**
Aquaterra is capable of handling large projects with long alignments and thousands of cross-sections within seconds, but also allows users to easily work on alignment changes without the need to cut them into smaller pieces.

**Support for local design standards**
Aquaterra, which has been translated into several languages, supports country-specific drawing layouts and allows customers to use any country-specific version of the software if designing projects for the foreign countries.

**Teamwork support**
River and channel regulation projects can be easily (and efficiently) divided amongst multiple team members, who can then work simultaneously on the project, especially since projects can be split into layout and horizontal alignment drawings, longitudinal-section drawings, and cross-section drawings.

**Alignment design tools**
Aquaterra contains powerful alignment methods and tools, perfect for design and/or editing with intelligent, best-fit algorithms that allow you to automatically design alignments based on surveyed points.

**Aquaterra Ultimate**
This is a 3D solid canal and river works design solution, which includes both MIKE 11/21, and HEC-RAS modules. Besides the features of Aquaterra Standard, Aquaterra Ultimate also offers:

- Representation of river or channel within 3D model.
- Representation of 3D river banks in layout.
- MIKE 11 features/tools, such as:
  - Exporting geometric data (e.g. stations and geometry of the cross-sections, channel banks, and levees) from Aquaterra to MIKE 11 cross-section files.
  - Reading MIKE 11 results files and importing the data back to Aquaterra (e.g. water levels, cross-section views, including existing ground and channel views.
- Displays in 1D, 2D, or combined water surfaces.
- Take-off quantities and mass haul diagrams.
- Plan production tools.
- Labelling and dimensioning tools.
- HEC-RAS hydraulic interface, which includes the ability to:
  - Prepare the HEC-RAS geometric input file based on cross-sections, bank, and/or Manning coefficient data.
  - Transfer the resulting water levels back to Aquaterra for display in cross-sections, longitudinal sections, and/or layout.
  - Transfer geometry data from HEC-RAS to Aquaterra.

For design and/or editing with intelligent, best-fit algorithms that allow you to automatically design alignments based on surveyed points.

**Unique cross-section design concept**
The “design in one, draw in several cross-sections” concept allows for the efficient processing and editing of cross-sections. Different levels of automation allow for the faster design of segments with similar cross-sections, as well as the handling of cross-sections where the conditions change frequently... so each cross-section can be treated individually using Aquaterra’s interactive drafting and editing commands.

**Easy to learn and use**
Well-structured ribbons, menus, and simple dialogues enable fast learning for first-time users, while toolbox and command line options are provided for the convenience of experienced users.

**Handling of large data sets**
Aquaterra is capable of handling large projects with long alignments and thousands of cross-sections within seconds, but also allows users to easily work on alignment changes without the need to cut them into smaller pieces.

**Support for local design standards**
Aquaterra, which has been translated into several languages, supports country-specific drawing layouts and allows customers to use any country-specific version of the software if designing projects for the foreign countries.

**Teamwork support**
River and channel regulation projects can be easily (and efficiently) divided amongst multiple team members, who can then work simultaneously on the project, especially since projects can be split into layout and horizontal alignment drawings, longitudinal-section drawings, and cross-section drawings.

**Alignment design tools**
Aquaterra contains powerful alignment methods and tools, perfect for design and/or editing with intelligent, best-fit algorithms that allow you to automatically design alignments based on surveyed points.
sections, longitudinal sections, bank and levee positions, and axes).

- MIKE 21 interface features, such as:
  - Connecting AutoCAD Civil 3D with the most widely used 2D hydrodynamic computation program.
  - Interactively create and edit numerical grid.
  - Exporting AutoCAD Civil 3D surfaces to MIKE 21 bathymetry (dfs1 format).
  - Importing velocity and/or flow fields and scalar fields (e.g. depth, water surface, flow magnitude) from MIKE 21 results.

Table: Aquaterra is available in two different content packages to accommodate specific design requirements and needs.

<table>
<thead>
<tr>
<th></th>
<th>DHI MIKE 11 &amp; MIKE 21</th>
<th>HEC-RAS</th>
<th>Survey</th>
<th>Alignment</th>
<th>Profile</th>
<th>Cross Sections</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aquaterra Ultimate</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Aquaterra Standard</td>
<td>-</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
</tbody>
</table>

Some Aquaterra references:

CGS Infrastructure Design Suite

Ask for CGS Infrastructure Design Suite, which integrates CGS plus products Plateia (Roadway design), Ferrovia (Railway design), Aquaterra (River engineering) and Electra (Power line design) into one single design environment!

Get more information online!

About CGS plus

Founded in 1990, CGS plus is a leading developer of software solutions and tools in the fields of transportation, infrastructure, and AEC. Besides providing a family of high-end civil engineering applications, CGS plus also offers Civil 3D and Revit software tools for civil engineers and architects, as well as customized CAD and BIM solutions for other companies and software vendors. With offices in Europe and the United States, there are more than 8,000 customers in 33 countries currently using CGS plus software solutions worldwide.