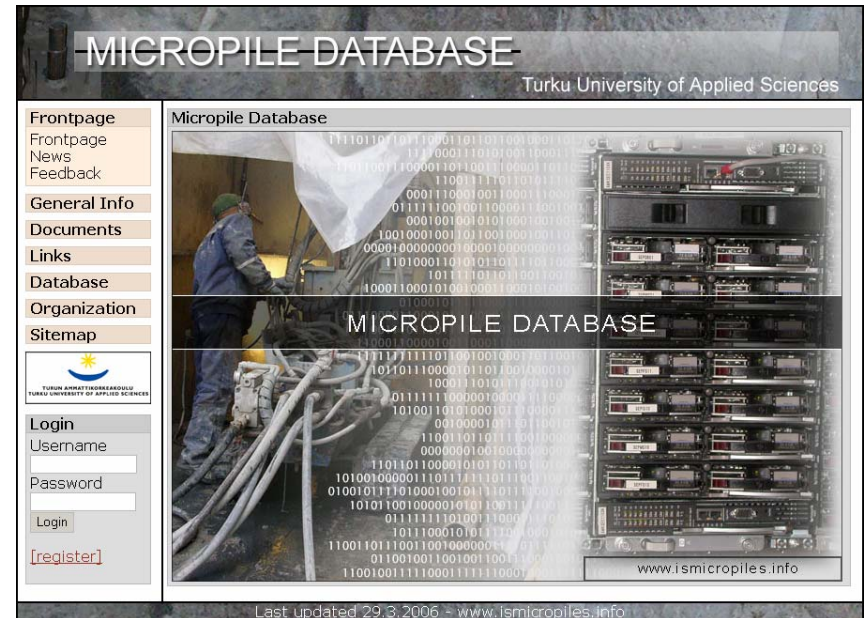


# MICROPILE DATABASE

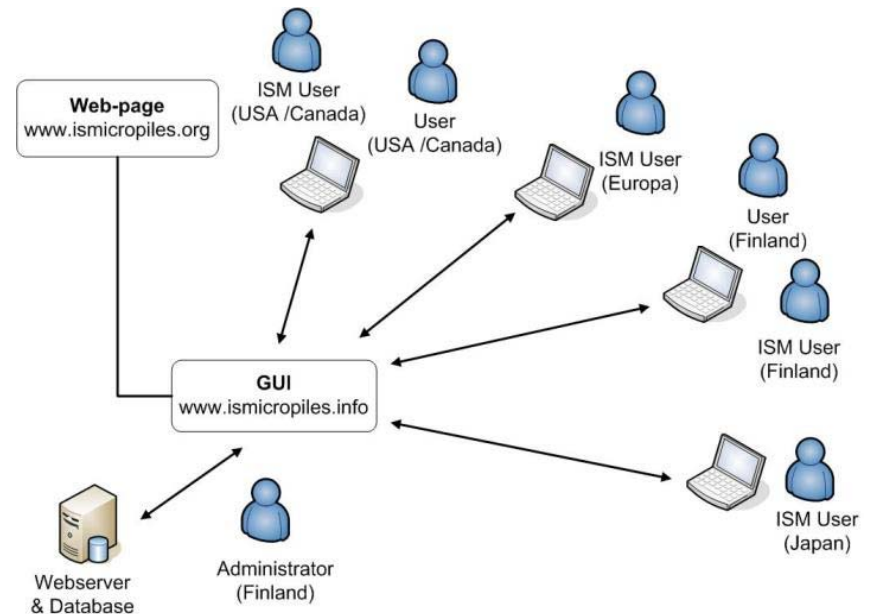
- Jouko Lehtonen  
project manager
- Ville Hyypä  
researcher
- Jussi Hattara  
researcher



[www.ismicropiles.info](http://www.ismicropiles.info)

# WHAT IS MIDA?

- International database on micropile load tests
- Introduced in IWM 2006
- Utilizes World Wide Web
- MIDA project is linked to DATU and MITRA projects

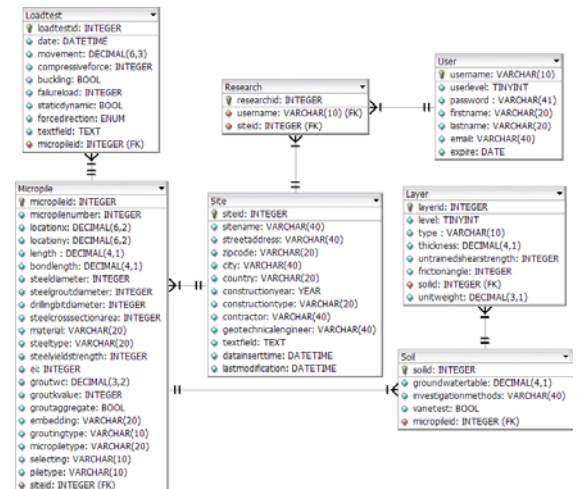
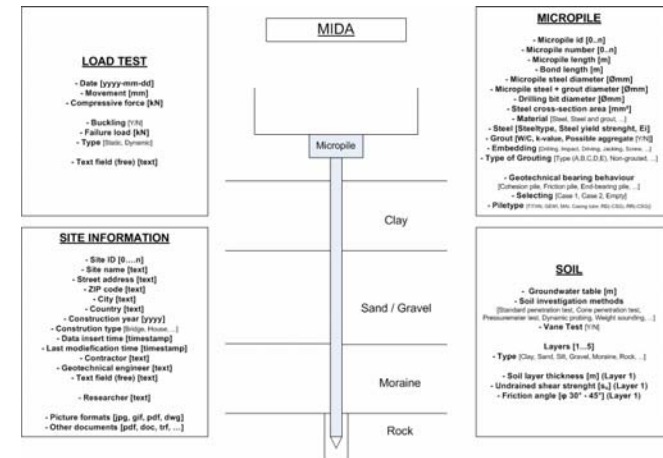


# DATU & MITRA

- DATU – Database on Turku Underpinning Projects
  - An extensive database on underpinning projects of Turku
- MITRA – Micropile Training
  - A new project aimed to give internationalization assistance to local small and medium-sized enterprises operating in micropile industry

# DATABASE STRUCTURE

- 50 parameters in 5 tables
  - site, micropile, loadtest, soil, layer
- An option to add external documents (e.g. images or text documents) will be added



# GUI: REGISTRATION

- Fill out the form
- Press 'Register' button
- Notification will be sent to administrators
- Account will be activated within few days
- Start using database

The screenshot shows a web interface for the 'MICROPILE DATABASE' at Turku University of Applied Sciences. The page is titled 'MICROPILE DATABASE' and 'Turku University of Applied Sciences'. On the left, there is a navigation menu with the following items: Frontpage, General Info, Documents, Links, Database (with sub-items: User Info, View Database, Edit Database), Organization, Sitemap, and Login (with sub-items: Username, Password, Login, and a red link for Register). The main content area is titled 'Database registration' and contains a form with the following fields: Username (with a question mark icon), First name, Last name, E-Mail (with a question mark icon), Password (with a question mark icon), and Confirm Password. A 'Register' button is located below the form. At the bottom of the page, it says 'Last updated: 29.3.2006 + www.ismicropiles.info'.

# GUI: INSERTING DATA

- After logging into the database you may add a new case or edit existing data
- Fill out forms and press 'Submit'
- Fields marked with \* are compulsory
- Site information 5 min
- Micropile information approx. 10 minutes / pile

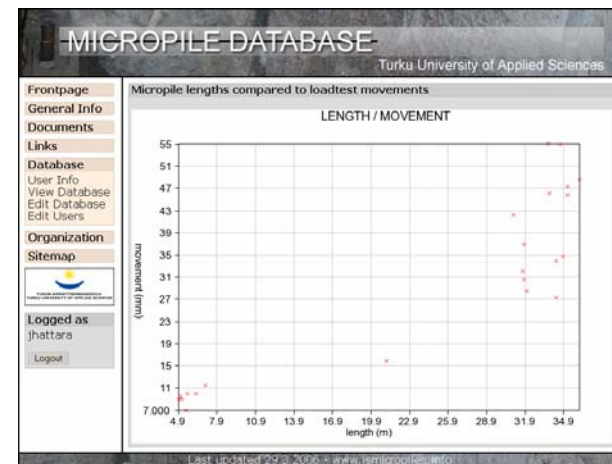
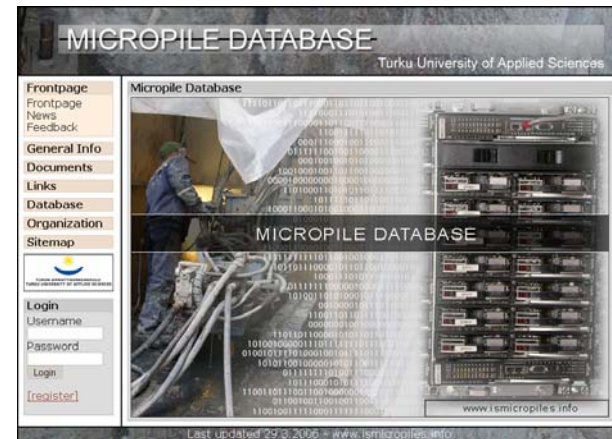
The screenshot displays the 'MICROPILE DATABASE' interface from Turku University of Applied Sciences. The main content area is titled 'Edit Data: Enter micropile #1 data' and contains a form with the following fields and values:

Field	Value	Compulsory
Micropile number:	63	*
Length [m]:	21.1	*
Bond length [m]:	2.3	
Steel + grout diameter [mm]:	103	*
Steel diameter [mm]:	78	
Drilling bit diameter [mm]:	103	
Steel cross-section area [mm <sup>2</sup> ]:		
Material:	Steel and Grout	
Steeltype:		
Steel yield strength [MNm <sup>2</sup> ]:		
EI [kNm <sup>2</sup> ]:		
Grout W/C [0.00 .. 1.00]:	0.55	
Grout k-value:		
Grout aggregate:	NO	
Embedding:	Drilling	*
Type of grouting:	Type E	
Geotechnical bearing behaviour:	Friction pile	
Selecting:	- select selecting -	
Piletype:	TITAN	

Navigation buttons include 'Previous Pile', 'Next Pile', 'Delete Pile', 'Submit', and 'Back'. A footer note states: 'When filling out forms fields marked with \* are compulsory.' The page is last updated 29.3.2006, with a URL [www.ismicropiles.info](http://www.ismicropiles.info).

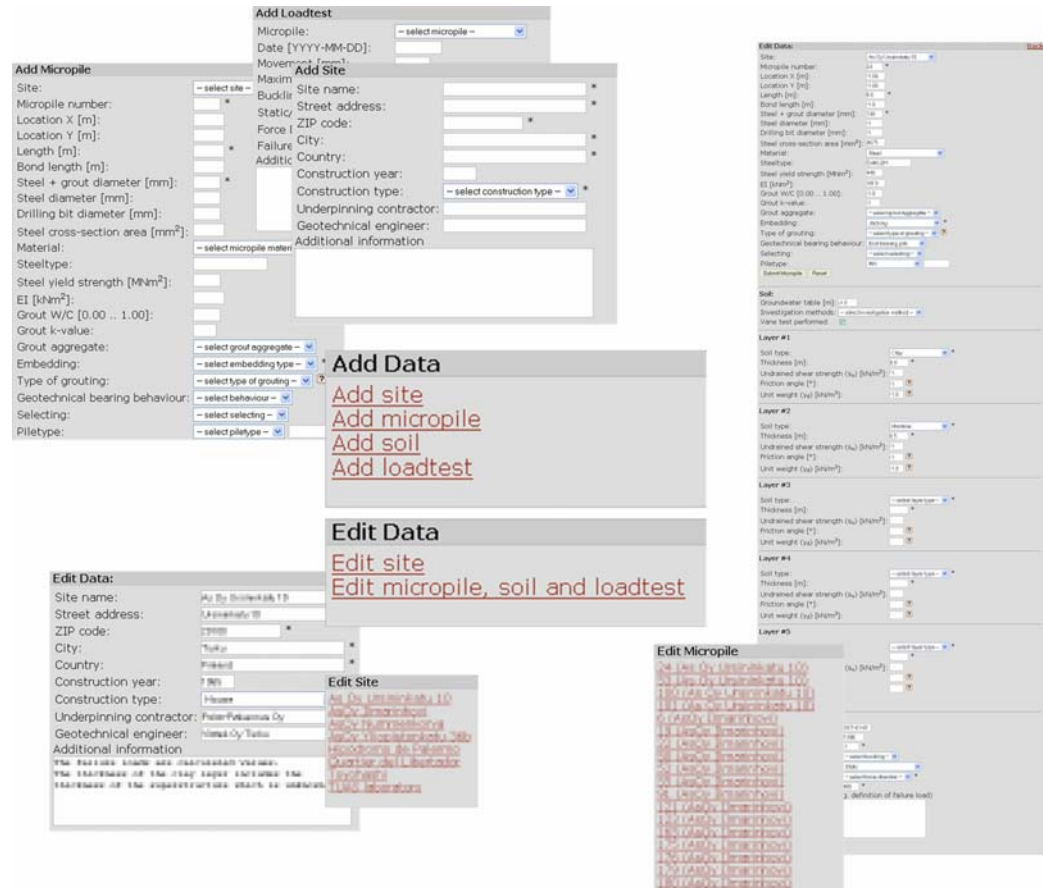
# GUI: OUTPUT

- Database is accessed with any Internet browser
  - (e.g. Internet Explorer, Firefox, Opera)
- Graphical and textual representations are generated from the database



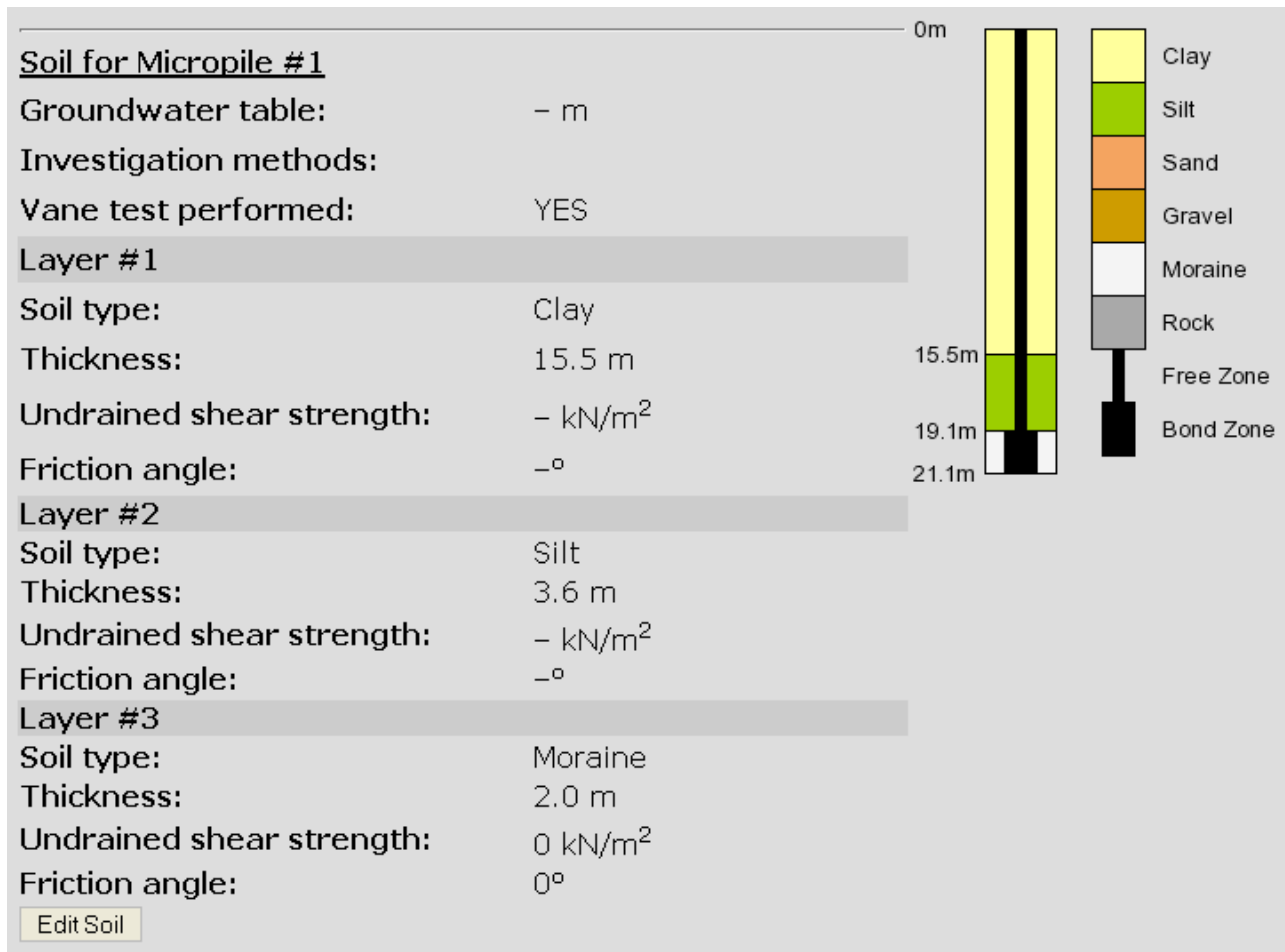
# NEW INTERFACE & FEATURES

- Interface for adding and editing data has been changed to ease the use of MIDA
- Clarifications and additions to the database
  - Maximum test load
  - Unit weight of soil



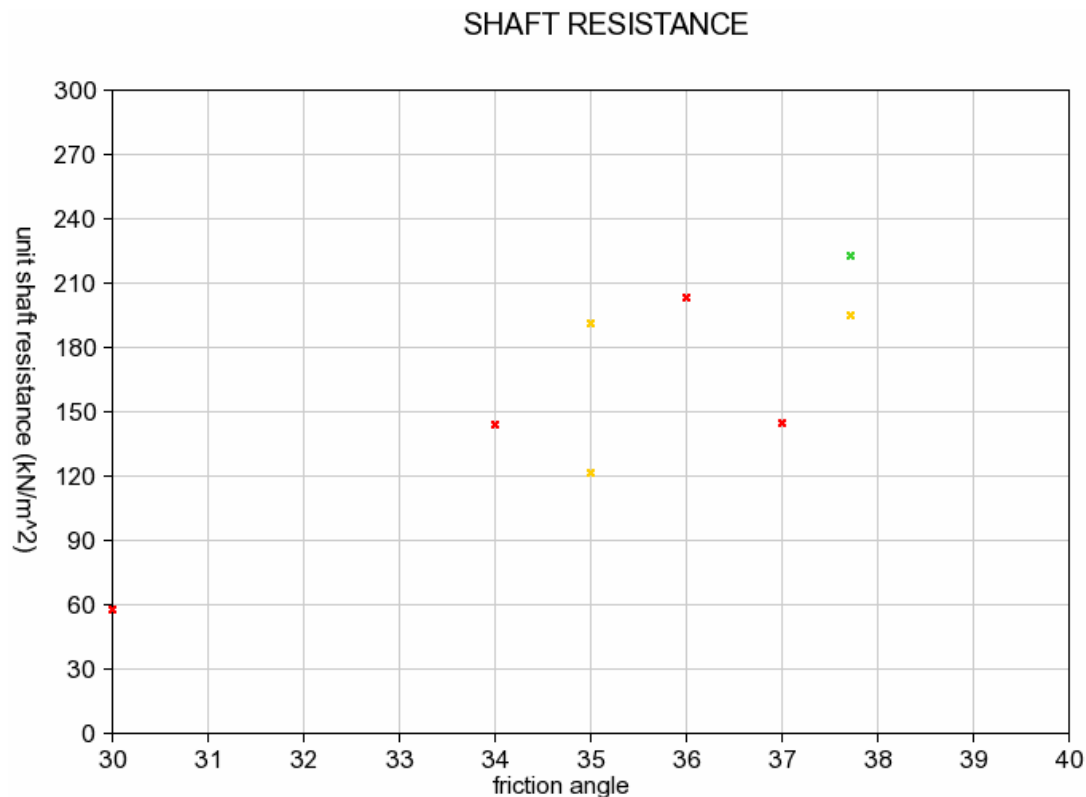


# GUI: VISUALIZATION



# NEW VISUALIZATIONS

- Unit shaft resistance of micropiles



- Tested to failure
- Not tested to failure
- Failure load unknown

# MIDA WORKSHOP

- Laptop with access to the database
- Participants have the opportunity to be instructed in the use of database and add their own load test observations into it

# SECURITY

- All data communicated between MIDA server and user client is secured
- Database connection is secured with SSL encryption using https-protocol
- SSL certificate is currently a self-made temporary certificate, which will be replaced with an official certificate once the project gets properly under the way

# REQUEST FOR ASSISTANCE

- To become a fully fledged tool for the micropile industry MIDA needs more load test data.
- ISM members are encouraged to send load test data into the database.

# CONCLUSIONS

- Usability has been an essential part in design and development.
- Development of MIDA will continue in TUAS along with other projects