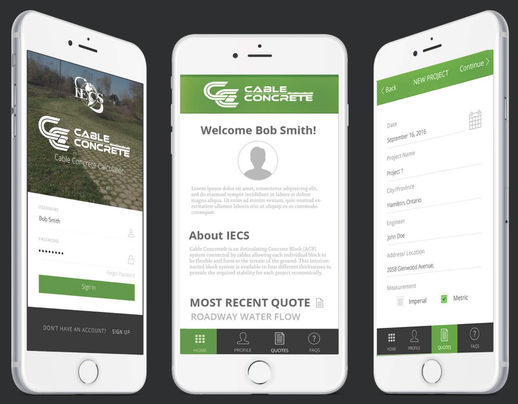
ABSTRACT

International Erosion Control Systems' (IECS') Cable Concrete Calculator is a Web portal and digital tool to assist engineers in developing and planning for water flow control systems in areas around the world. Currently, IECS utilizes an MS-DOS program to calculate safety factors for each of the different products they offer, and as such, lack a meaningful way to interface with potential clients aside from email, phone and in-person interaction. A modernized Web-based tool with expanded functionality was the focus of the collaborate partnership with Reactr.

The Cable Concrete Calculator was designed to not only make it easier for engineers who are interested in IECS' products to get estimates, but also to enable IECS to manage and view their potential and current client estimates in a more organized and effective way.

By using the online Calculator, engineers who wish to calculate the erosion control system(s) for use within their development projects will now have a way of directly engaging with the estimate process, reducing the need for lengthy email chains and manual estimate processing times. The tool also enables administrators at IECS to directly contact clients after they fill out an estimate, and to track and monitor the state of all estimates generated through the site, so as to better understand the economic and environmental conditions that might affect their business. This will also allow IECS to identify potential clients, as each submitted estimate requires contact information that will allow IECS to communicate directly with prospective clients who use the Calculator.



BACKGROUND

International Erosion Control Systems (IECS) has been producing, marketing and implementing soil stabilization and erosion control products since 1984, and has since become an international industry leader in erosion control, flow control and concrete placement solutions.

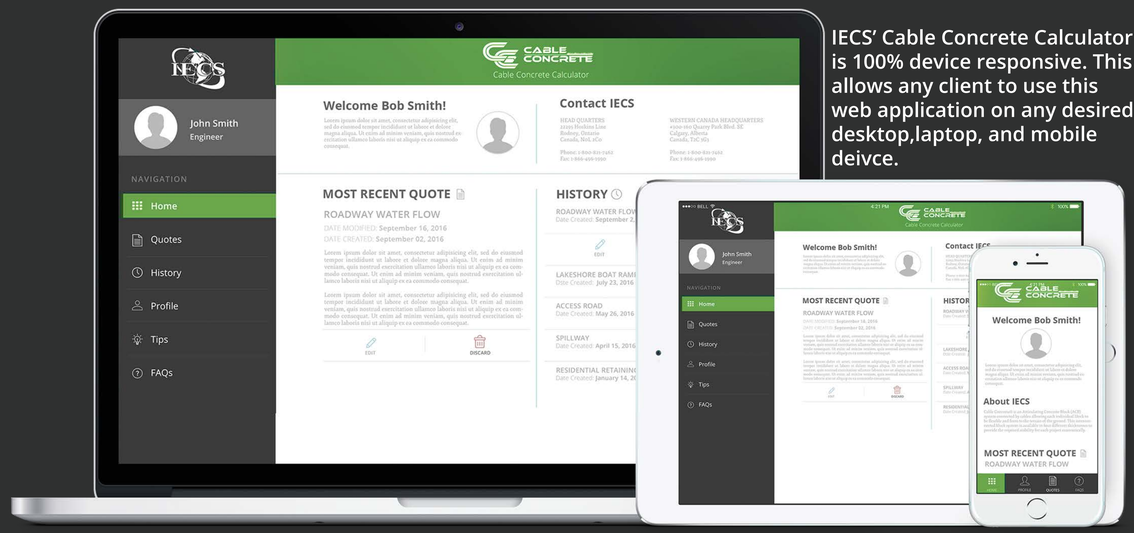
At International Erosion Control Systems we are continuously striving to improve our products and services, while offering the latest, most efficient, and cost effective ways to meet your project needs. We will ensure that all our customer requirements are met and will deliver the material in a timely manner, using a management process designed to ensure continuous improvement, and the achievement of our corporate goals and objectives.

With a patented system of interlocking concrete blocks, branded Cable Concrete, IECS offers a rare and effectual service that features many applications, such as overflow control, bank protection, and access roads. Currently, in order to estimate the weight and size of the block necessary to control flow for a particular project, IECS relies on a Fortran-based, MS-DOS calculator to calculate estimates for each individual project's needs. This outdated tool, while usable, is not an effective way to approach a large client base such as IECS' – therefore, the upgrade to an online Web app is a necessary step. The overarching goal of the Web Calculator was to improve not only estimate turnaround times, but also client satisfaction and usage rate. By promoting self-usage and taking a step back from the estimate process, IECS provides clients with a sense of ultimate control over their purchase and decision, but with input from IECS readily available as needed.

CABLE CONCRETE

INTERNATIONAL EROSION CONTROL SYSTEMS
CONCRETE BLOCK CALCULATOR

Developed by: Nick Ireland, Shannon Enwright, Adam Luxton



IECS' Cable Concrete Calculator is 100% device responsive. This allows any client to use this web application on any desired desktop,laptop, and mobile deivce.

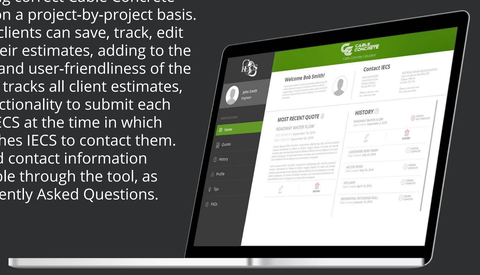
reactr

FEATURES

The Cable Concrete Calculator includes multiple useful features for IECS clients and administrators alike.

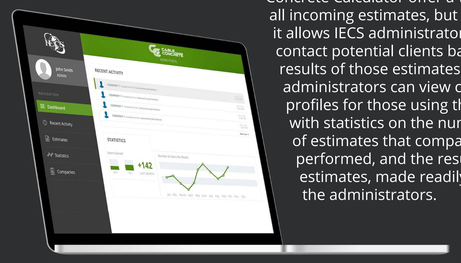
CLIENTS

For clients, the tool offers a new way to interact with the IECS product line, and enables a more visual and direct means of interaction with the process of determining correct Cable Concrete block usage on a project-by-project basis. Additionally, clients can save, track, edit and delete their estimates, adding to the functionality and user-friendliness of the tool. The tool tracks all client estimates, and adds functionality to submit each estimate to IECS at the time in which the client wishes IECS to contact them. Company and contact information is also available through the tool, as well as Frequently Asked Questions.



ADMINISTRATORS

For IECS administrators, the tool offers an entirely new way to interact and track their existing and potential client base. Not only does Cable Concrete Calculator offer a way to track all incoming estimates, but in addition, it allows IECS administrators to directly contact potential clients based on the results of those estimates. In addition, administrators can view company profiles for those using the Calculator, with statistics on the number of estimates that company has performed, and the results of those estimates, made readily available to the administrators.



METHODOLOGY

Cable Concrete Calculator was built using multiple modern frameworks and industry standard Web technologies. The Foundation 6 framework was utilised to create a fully responsive, customized experience for users on all types of devices. Harnessing the power of JavaScript and PHP, the site uses a complex formulae and the CodeIgniter PHP framework to fully expose the raw potential of client data to IECs, allowing for outreach and customer interaction on a level that was not previously possible.

As the core team designing and developing the IECS Cable Concrete Calculator, students utilised the Scrum team management framework to plan, develop and implement solutions to problems presented by the client. The resultant deliverables, the IECS Cable Concrete Calculator Web App, were developed using the principles of teamwork and transparency embodied by this framework to effectively collaborate on the project. Additionally, students were required to learn and develop skills in their respective team positions that were not a part of their program curriculum, included new programming languages and frameworks, workflow and timeline planning, and effective collaboration. Furthermore, students developed ancillary skills in addition to the hard skills obtained via research and practice, including client interaction and presentation skills. Finally, students were also required to adopt a 'scalable' approach to development, ensuring ease of future development should other coders need to make adjustments or add functionality, and therefore had to become well versed in industry standard technologies and procedures, many of which were not covered in their core classroom curriculum.

CSS3 · HTML5 · Javascript · PHP · CodeIgniter · Foundation