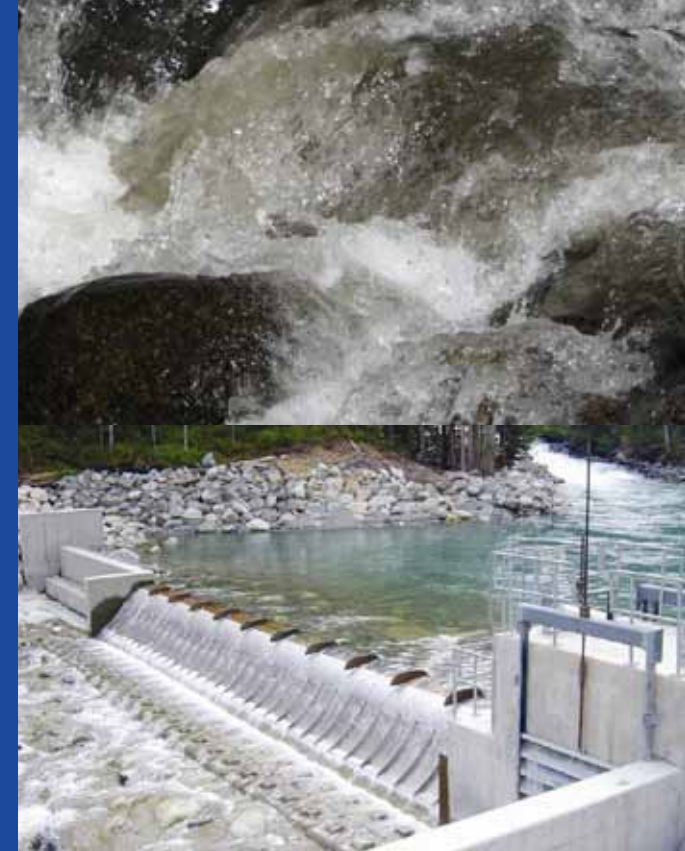




Coanda Power Systems
small hydro made simple



 **EEG** Elgin Equipment Group





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The world needs power.

Across the globe, people are looking forward and saying, “I want power to do that.”

To pump water; to run small industry; to charge my phone; to watch my team; to connect to the connected world emerging around me.

This power source needs to be clean, needs to be cost effective, and needs to simply work.

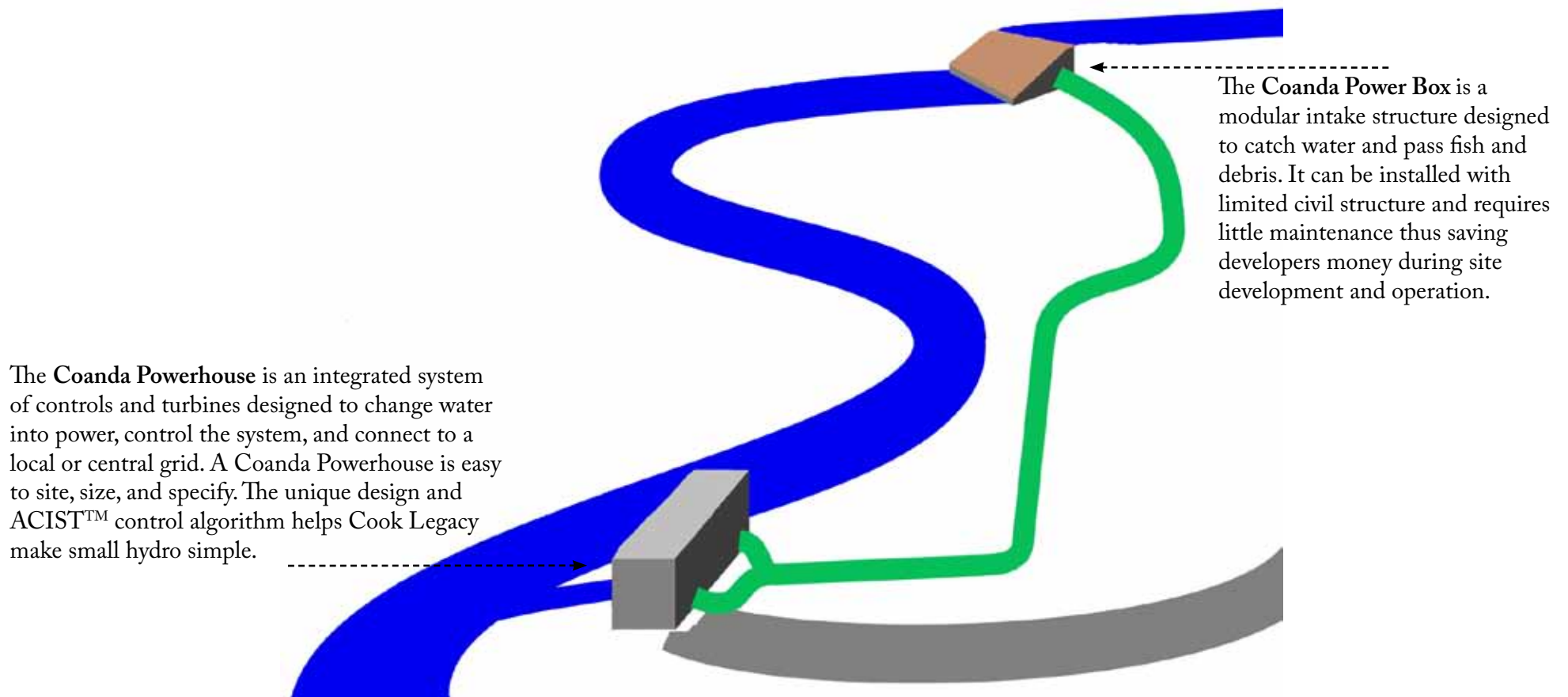
Coanda Power Systems are a tool to help reach this need.

Coanda Power Systems are a package of green, robust, and proven equipment designed to harness small hydro potential simply, quickly, and cost effectively. Cook Legacy, Norris Screen & Manufacturing, and Gilbert Electrical Systems, provide the breadth and depth of experience to design and build small hydro for your site using Coanda Power Systems.

Coanda Power Systems Team

Cook Legacy, Norris Screen & Manufacturing, and Gilbert Electrical Systems are widely experienced companies in the processes used to create and implement small hydro. Cook Legacy specializes in solving difficult in-water problems with innovative solutions. Norris Screen & Manufacturing is the world leader in the development of Coanda intake structures. Gilbert Electrical Systems draws on decades of experience to provide customized electrical solutions for power generation in tough areas.

These companies' partnership allows for a single source of supply to capture flow with the Coanda Power Box and convert that flow into power with the Coanda Powerhouse. These components can be integrated into a larger hydro scheme with a penstock and civil infrastructure as shown in the schematic below.



The **Coanda Powerhouse** is an integrated system of controls and turbines designed to change water into power, control the system, and connect to a local or central grid. A Coanda Powerhouse is easy to site, size, and specify. The unique design and ACIST™ control algorithm helps Cook Legacy make small hydro simple.

The **Coanda Power Box** is a modular intake structure designed to catch water and pass fish and debris. It can be installed with limited civil structure and requires little maintenance thus saving developers money during site development and operation.

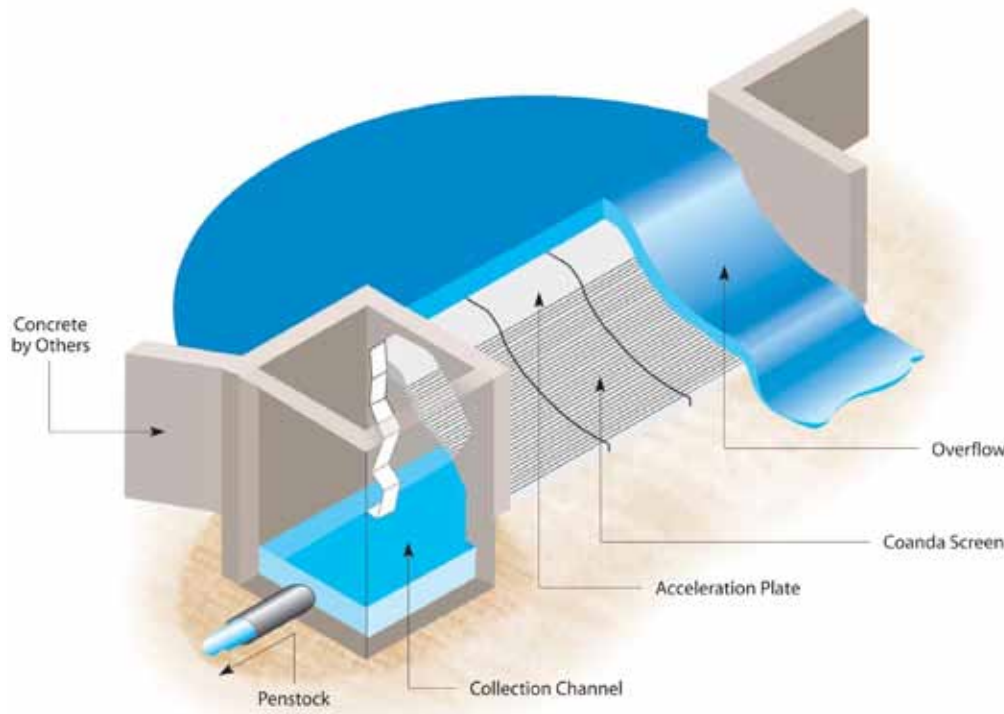
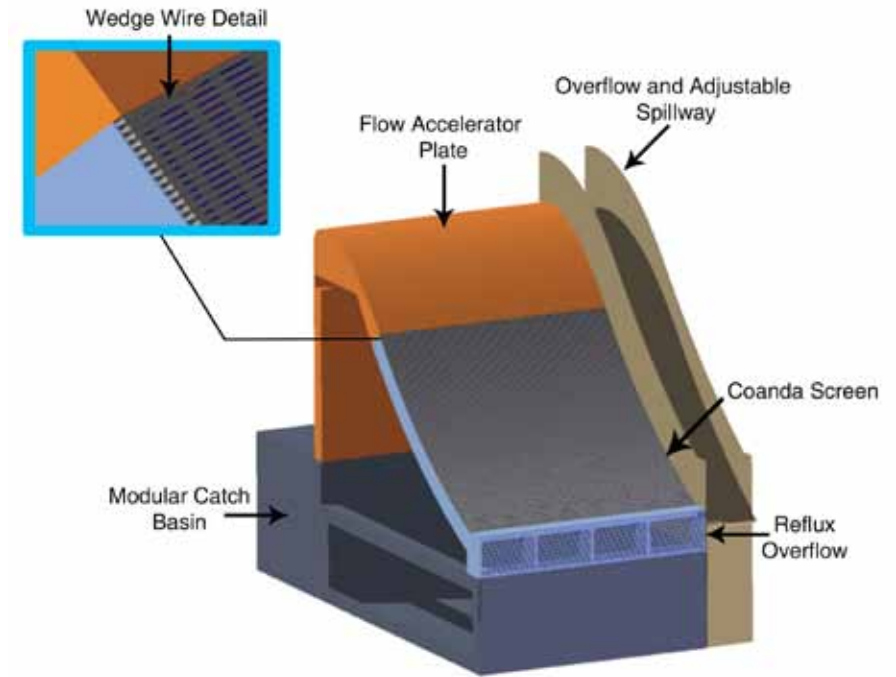
Coanda Power Systems Schematic

Coanda Power Systems

Cook Legacy provides a full scope of work in order to incorporate a small hydro solution into a site. Cook Legacy will provide engineering support to help integrate the Coanda Power System into a potential site.

The major technical components of Coanda Power Systems are the Coanda Power Box and the Powerhouse.

The Coanda Power Box is the key to the concept. Because of the unique design, the screens are low maintenance and have no moving parts, limited civil structure, and no power supply. The screens remove debris — eliminating the need for additional downstream filtration and allowing fish to pass over to downstream habitats.



The Coanda Power Box

The Coanda Power Box features a complete intake structure including a Norris Screen Coanda Effect Screen, accelerator, adjustable spillway, and catch basin. The modular design allows for fast and economical site development. For sites with flows larger than 2.0 CMS, Norris Screen will evaluate the use of Coanda Screens integrated into a concrete structure supplied by others.

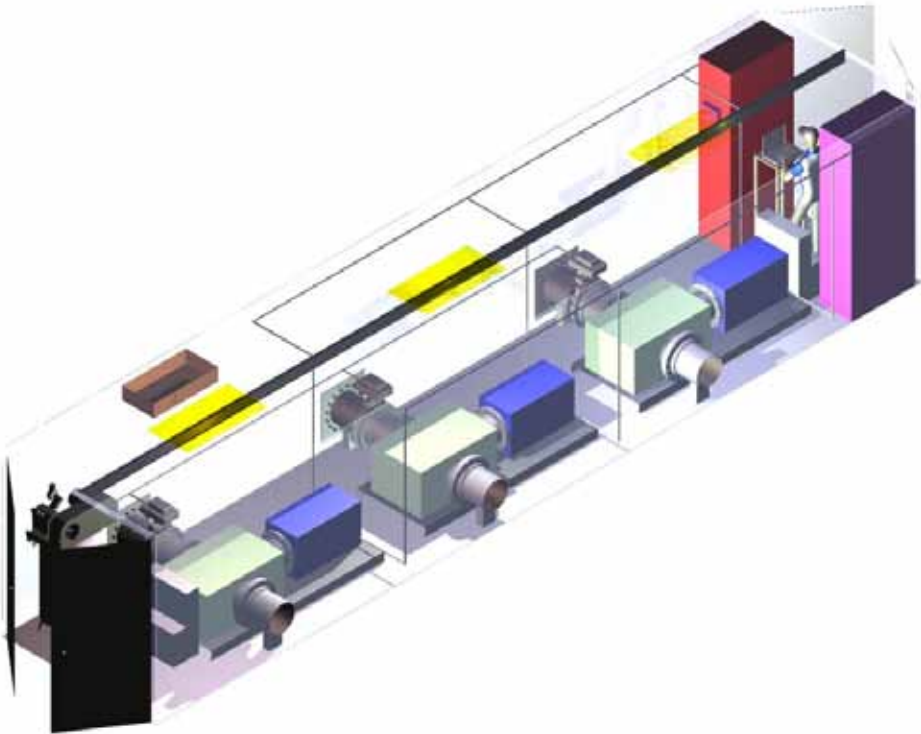
How a Coanda Screen Works

The tilted profile wires of the Coanda Screen slice off thin layers of water, allowing debris and fish to pass safely over the screen. Cook Legacy has developed an algorithm to identify the flow performance of Coanda Screens based on site and flow conditions.

The Coanda Powerhouse

The Coanda Powerhouse transforms the hydroelectric potential of the site into power for the grid. Each Powerhouse is sized for a total power capacity of 0.5 MW.

The site includes up to four Turbines integrated into the power scheme. The Cook Legacy ACIST™ algorithm is used to monitor controls, integrate the turbines, and meter generated power. Gilbert Electrical Systems will supply all the site electrical components from the logic controllers to the power grid.



The Coanda Powerhouse includes:

- Turbine generator - Equipment for water-to-wire transition
- Controls - Algorithm, software, and hardware to monitor and control the turbine and switchgear
- Control valves - Pneumatically actuated butterfly valves to isolate turbines
- Back-up diesel generator - Secondary diesel generator for commissioning and plant emergency service
- Transfer Switch - Switches to move power supply from hydroelectric generator to secondary power

COANDA POWER SYSTEMS: A GREEN, TOUGH, AND PROVEN ENERGY SOLUTION

green

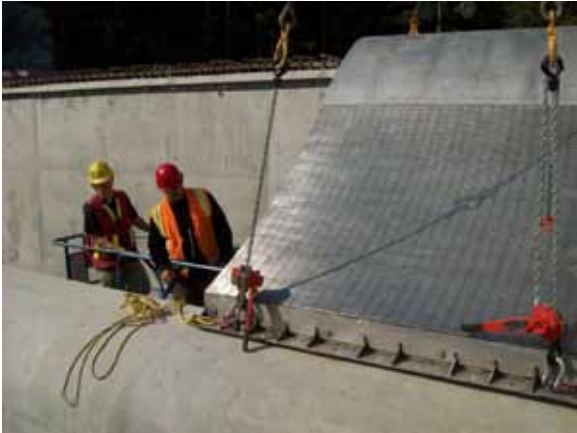
Coanda Power is a proven renewable energy solution. The use of the Coanda Power Box allows fish to safely swim over the intake. The Coanda Power Box allows the river to behave naturally. Thus, no habitat is destroyed. Because the systems are modular and easy to install, even construction is low impact.

tough

Coanda Power provides a robust source of power. While utilizing a small physical footprint and low capital and construction costs, Coanda Power installations can provide consistent and high energy output. Because Coanda Power systems have few moving parts and use water as fuel, the operating cost is very low. The payback for a Coanda Power plant is nominally five years.

proven

The technical challenges associated with this green and robust solution have been met. Cook Legacy and Norris Screen & Manufacturing have provided several systems around the world — where the problems of building and scaling green technology in harsh environments have been identified and solved.





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The Next Step...

Contact Cook Legacy to determine how Coanda Power Systems can help you harness small hydro potential simply, quickly, and cost effectively.

The challenges of repowering the world are not only about solving technical problems, but also about imagining these solutions and how they apply around the world.

You might be wondering why the first and last photograph in this booklet is of a light fixture. Here's the story: When Cook Legacy visited Ilundo, Tanzania, we had dinner at the village chief's house. At some point in the evening, the chief pointed to his ceiling. He had installed that light fixture and wired it to a light switch, ready for power. He said, "Hurry up."



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Information supplied in this brochure is not intended to be used for actual site design. Please contact Cook Legacy with specific site data for a detailed review, analysis, and specification for your project.



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