

GEOSPATIAL ENGINEERING

Smart Precise Solutions



Central Engineering Services (Pvt) Ltd.

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COMPANY BACKGROUND

Central Engineering Services (Pvt) Ltd (CESL) is a state-owned organization incorporated under the laws of Sri Lanka, headquartered at No 415, Bauddhaloka Mawatha, Colombo 07. As a leading Engineering and Construction enterprise, CESL has marked a quarter century of dynamic presence in the Sri Lankan Construction Industry.

CESL expanded and enabled its services to the Geospatial Engineering sphere by enabling the industry to utilize the Ground Penetrating Radar Technology, LiDAR Technology and other Geospatial Science for clients. To provide professional services to the client, CESL established a fully-pledged unit with all resources.



WHO WE ARE

As the only government agency to provide new technology services in the 21st century, CESL is at the forefront of providing Surveying and mapping services at local as well as international level.

Our company is the only company that has modern, accurate and efficient surveying and mapping equipment with Qualified and experienced staff available today

VISION

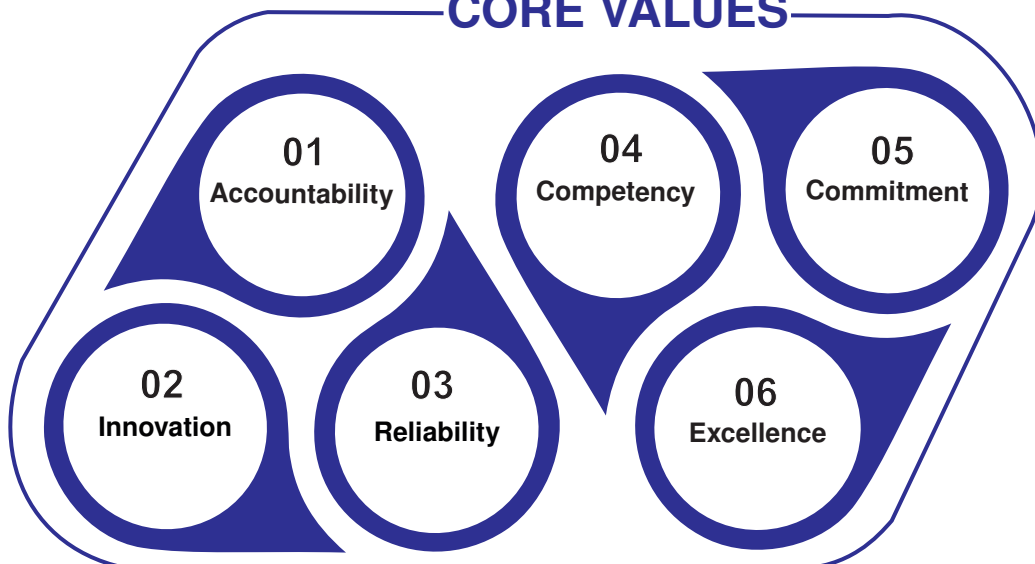
To pioneer Geospatial Engineering excellence through innovative technologies and Sustainable Practices, aligning with CESL's commitment to Industry Leadership.

MISSION

To achieve excellence in Geospatial Engineering by integrating Advanced Technologies and Innovative Processes, while empowering and recognizing our highly motivated and trained staff.



CORE VALUES



OUR TEAM



WE ARE COMPETENT ON ALL

We are always ready to streamline operations, enhance productivity, and optimize a full range of geospatial technologies that enable surveying, mapping



GEOINFORMATICS SOLUTIONS

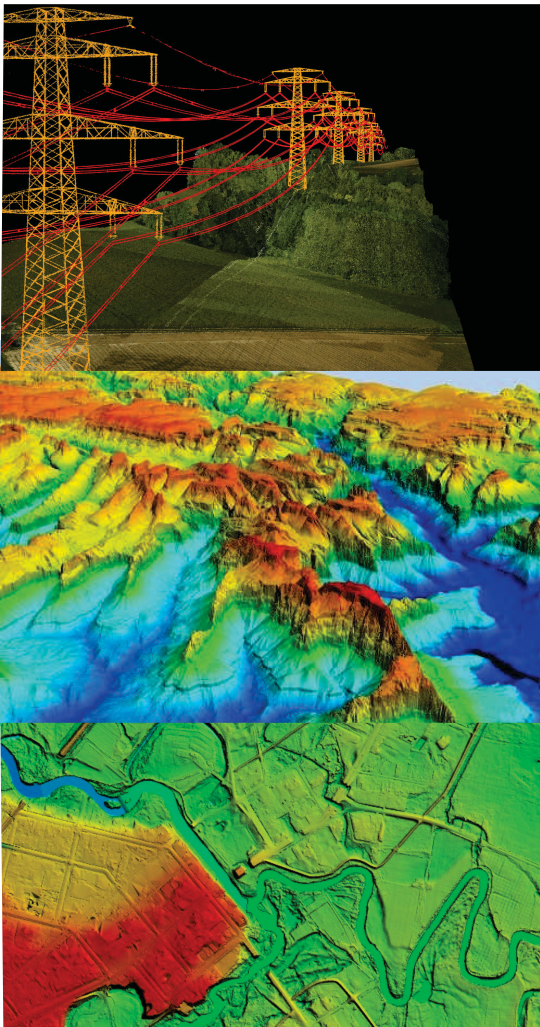
growth with our high-end precise Geospatial Engineering Solutions. CESL offers designing, environmental Engineering and modeling, and analytics services



HIGH-PRECISION AERIAL LiDAR SYSTEM

We provide you the most precise active Remote Sensing Technology for your Industries, such as Construction, Oil and Gas, Infrastructure, Archaeology, Mining, Forestry, and Agriculture.

Our solutions provide more precise, efficient, and reliable Geospatial data acquisition facilities for land surveying and mapping, Electricity, Forestry, and Infrastructure management, as well as other scenarios.



We have Integrated LiDAR Solution Supported by its powerful hardware, L2 can allow for a precise scan of complex subjects within an extended range and faster point cloud acquisition.

- High Precision (Vertical Accuracy: 4 cm, Horizontal Accuracy: 5 cm)
- Exceptional Efficiency
- Superior Penetration
- Detection Range

3D MEASUREMENT, IMAGING & REALIZATION SOLUTIONS

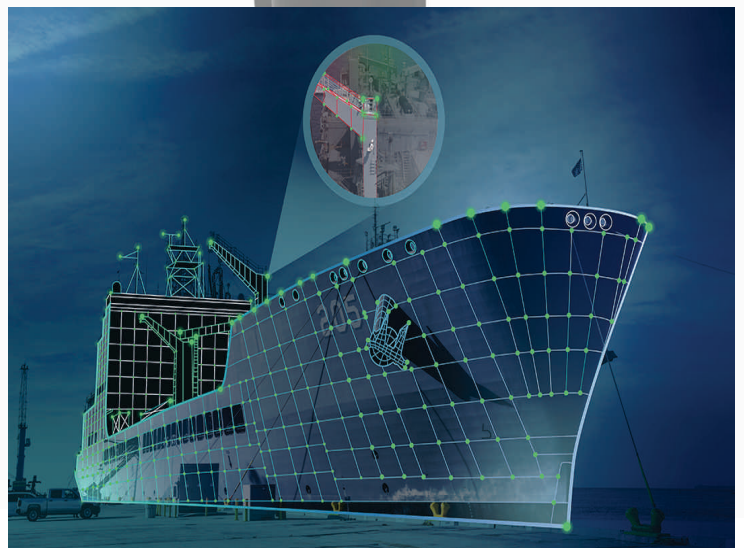
Very fast and cheap way to detailed 3-dimensional data acquisition of objects to produce 3D Models, high-resolution mapping of terrain, vegetation, and other landscape features over limited distances in the range of 50–300 m.

- 3D modeling analysis work.
- 3D model data creation,
- CAD model creation
- As-Built, Site verification
- Intelligent 3D Models development
- As-Built Piping
- Equipment Layouts
- Accurate Tag Database
- As-Built Inspection Isometrics



We bring your vision to reality with 3D scanning technology

We generate an extremely accurate virtual rendering of the as-built environment. The technology also reduces the amount of time spent on-site gathering these measurements while eliminating the need to return to the site for additional data acquisition or to fine-tune initial estimates.



GEOPHYSICAL SOLUTIONS FOR GEOTECHNICAL INVESTIGATIONS

ERT (Electrical Resistivity Tomography)

We provide ERT solutions for locating groundwater, minerals, and geological structures. ERT is ideal for applications in geological mapping and environmental surveys



Our user-friendly and rapid survey techniques deliver precise resistivity models directly in the field, supporting the research, mapping, and monitoring of groundwater, mineral deposits, and environmental changes. This geophysical exploration method is highly accurate, capable of reaching significant depths and covering extensive areas..

Most precise Geophysical exploration technique capable of reaching significant depths and covering large area.

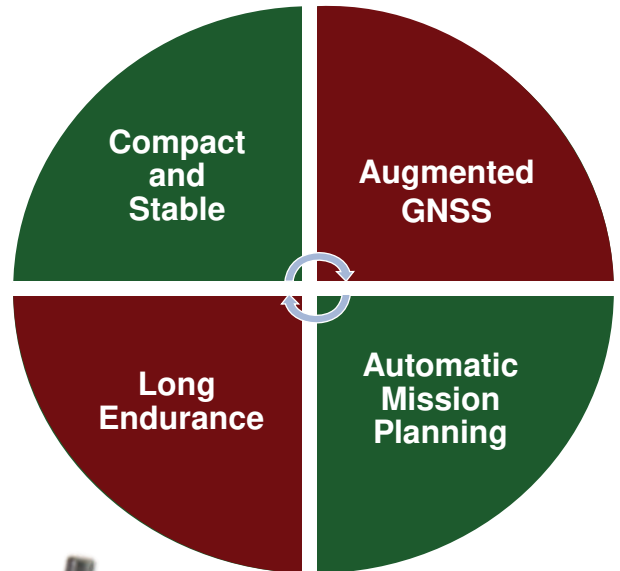
- Groundwater Contaminants and Salination
- Groundwater Prospection and Mapping
- Groundwater Exploration
- Environment and Engineering Studies
- Reservoir Monitoring
- Base and Precise Metal Exploration



AUTONOMOUS HYDROGRAPHIC SURVEY SOLUTIONS

High-Performance GNSS Positioning Echosounder for Bathymetric Survey

- Autonomous Bathymetric Surveys in Shallow Waters
- Underwater Bathymetry
- Multibeam Mapping
- River Measurement
- Obstacle detection
- Hydrology Investigation



AERIAL IMAGING SERVICES-HIGH-RESOLUTION PHOTOGRAPHY AND DATA COLLECTION



High-Resolution Orthomosaics and detailed 3D models of areas where low-quality, outdated or even no data, are available highly accurate cadastral maps to be produced quickly and easily, even in the complex or Difficult-to-Access Environments

ONE MISSION Catch up Everything

High-Resolution Photography and Data Collection for

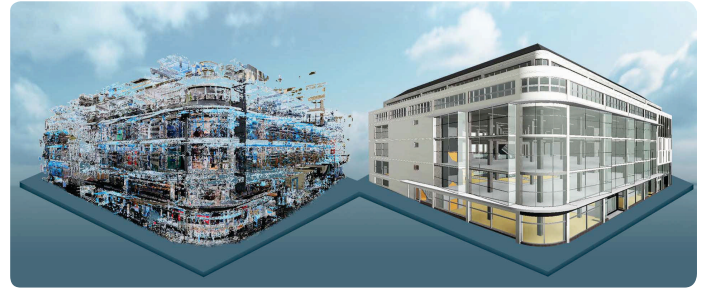
- Precise Measurements
- Stockpile Volumetric Measurements
- Slope Monitoring
- Urban Planning
- Hydrology Investigation

SCAN TO BIM SOLUTION

Fast and accurate 3D Laser Scanning and Modelling

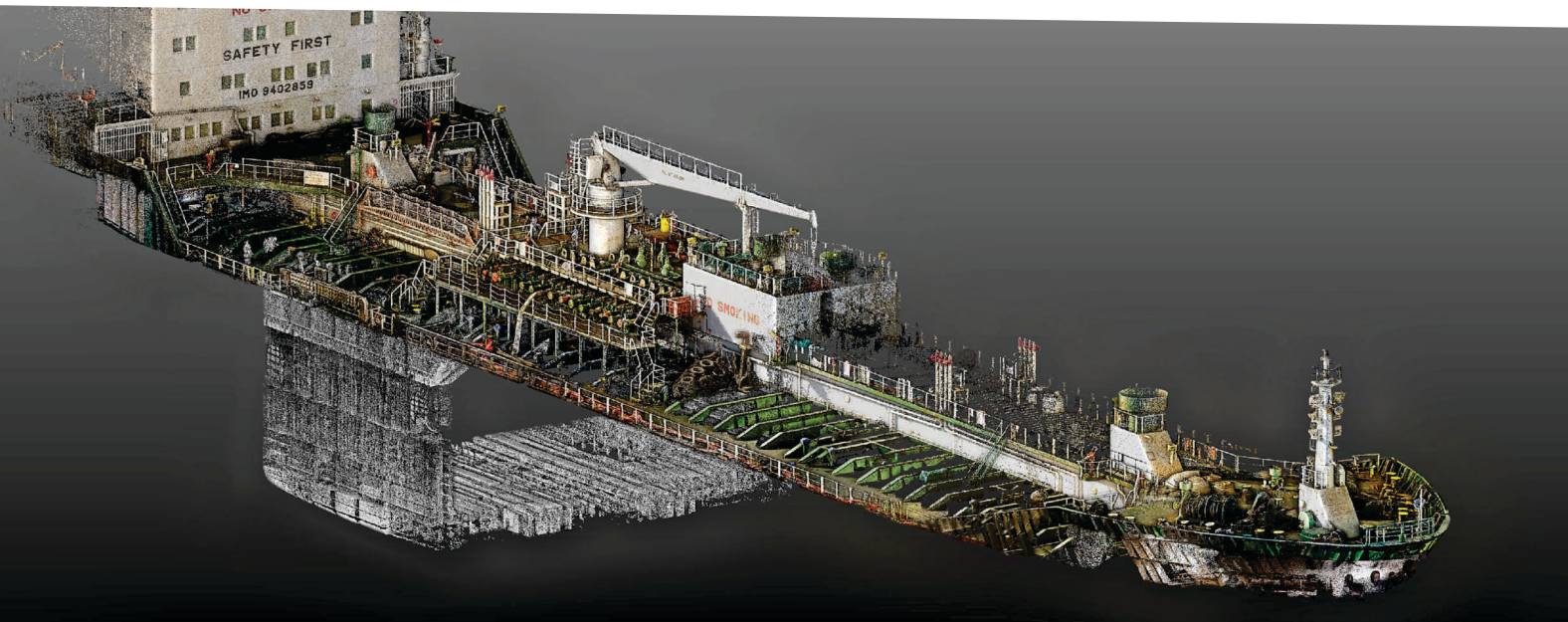
3D Scanning technology to capture an actual place and turn the scanned data into a Digital Model that can be edited and reviewed in BIM

- Experienced staff will perform 3D Laser Scanning
- 3D Modeling Analysis
- 3D Model Data Creation
- CAD Model Creation



Effectiveness and Accuracy are essential for the successful completion of a project in the Fast-Paced Construction Industry. With its advanced features, Laser Scanning Technology has become known as an essential tool for modern building methods.

- As-built, Site verified As-built
- Intelligent 3D Models
- As-built Piping
- Equipment Layouts
- Accurate Tag Database



EXPERT SOLUTION ON CLIMATE ANALYSIS AND ENVIRONMENT ASSESSMENT

- Environment Impact Assessments (EIA)
- Initial Environment Examinations (IEE)
- Environmental Site Assessments (ESA)
- Ecological and Biodiversity Assessments
- Carbon Foot Print Calculations
- Identification and Calculations of Catchment area
- Identification and Calculations of Tree Types and Number of trees
- Waste Management Assessments
- Sustainability and Carbon Foot print Assessments
- Risk Assessments and Management Plans
- Compliance Audits and Monitoring



WHERE WE WORK

**We Provide Professional Services
To Connect Your World Faster**

Solutions for Multiple Industries

- Civil Engineering
- Deposits Survey
- Utility Monitoring
- Public Road Systems
- Water Resource Engineering
- Energy Industry
- Environmental & Geotechnical Investigations

OUR HIGH-END TECHNOLOGY



LiDAR



**Ground
Penetration
Radar
(GPR)**



GNSS



**3D
Terrestrial
Laser
Scanner**




**Transient
Electromagnetic
Geophysical
Solutions**



**Echosounder
For
Bathymetric
Survey**

CIVIL ENGINEERING (ROAD, RAILWAY AND CONSTRUCTION)

Geospatial solutions, along with our modern equipment enable us to plan, design, and manage Civil Engineering and Construction Projects through site features and Spatial Connections.

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- Feasibility Study
 - Street Mapping
 - Profile Survey
 - Topographic Survey
 - Volume Measurements
 - 3D models of sites
 - Tracking Construction Progress
 - Street Furniture Inventory
 - Predictive maintenance and Planning
 - Railway Track Monitoring
 - Railway Surrounding Mapping

Our cost-effective LiDAR solutions can help you create accurate 3D maps of highways and railway corridor projects quickly, putting no one at risk. Our solutions are ideal for Network Surveillance, Vegetation Trimming, and Railway Lines or Road Monitoring and Planning.

SURVEYING

Our high-end GPS has indeed reshaped the landscape of modern Surveying, providing tools that allow for faster, more accurate, and more efficient survey processes, fundamentally changing how surveyors approach their work. A LiDAR-equipped Aircraft can survey Large Tracts of land in minutes, capturing topographic data that would take months to collect with Ground-Based methods.

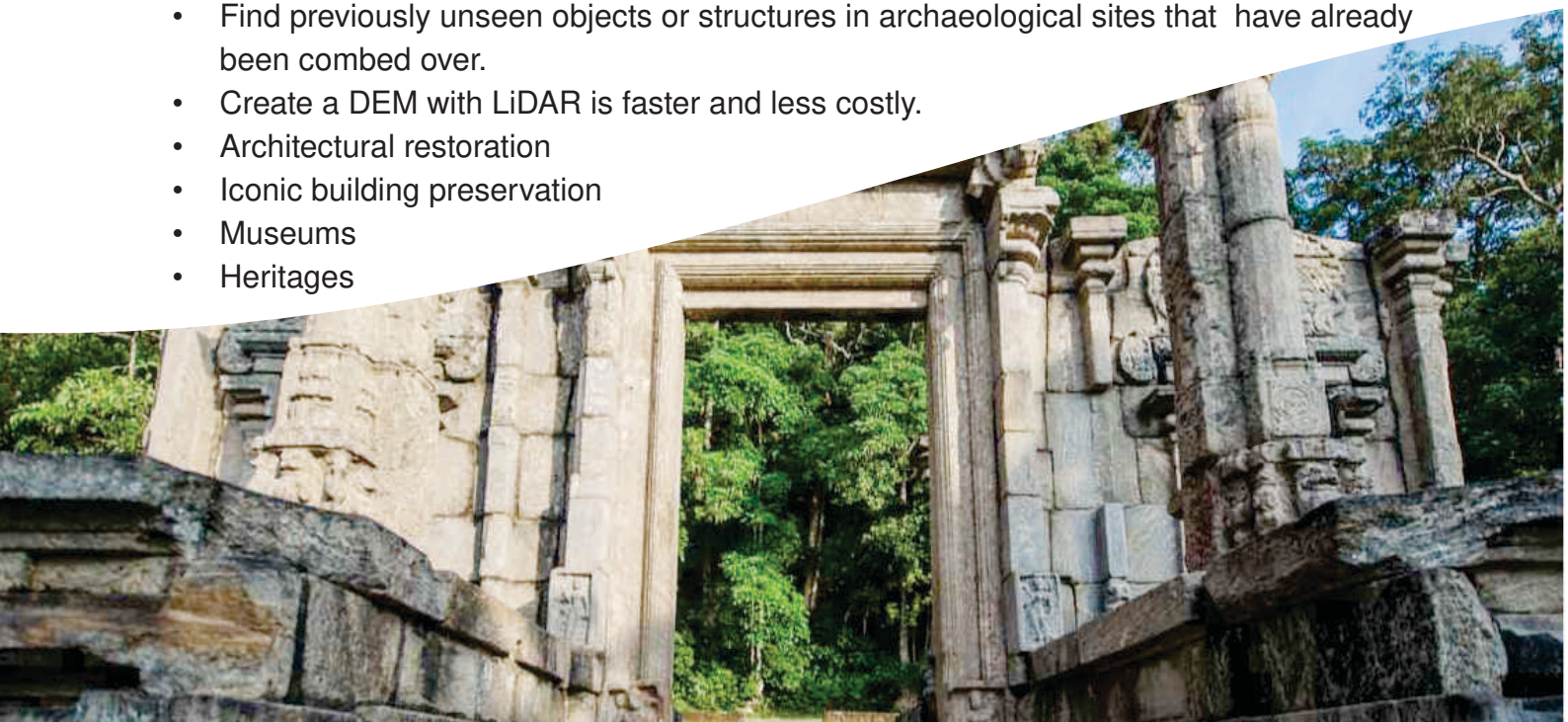
- Land Surveying
- Cadastral Maps
- Topographical Surveys
- Precise Measurements
- Land Management and Development
- Urban Planning



ARCHEOLOGY

Creating new opportunities for powerful discoveries of ancient human societies, at previously unattainable details and depth of analysis.

- Find previously unseen objects or structures in archaeological sites that have already been combed over.
- Create a DEM with LiDAR is faster and less costly.
- Architectural restoration
- Iconic building preservation
- Museums
- Heritages



POWER AND ENERGY

We will enhance the construction of power grid to supply the national needs for Electrical Power applying modern technology. Quickly acquiring of high precise point clouds and digital photos LiDAR technology makes the new powerline trend choosing and the checking, asset management and analysis of constructed lines more convenient than the conventional Remote Sensing methods.

- Site Identification
- Assessment of the potential of Renewable Energy sources
- Profile Mapping
- Power Supply Monitoring
- Analysis, design and manage Electrical Distribution System

Our LiDAR solutions are the most efficient tools for acquiring highly accurate, dense data in energy and utility applications.

MARINE ENGINEERING

- Monitor Beach Erosion
 - Sea-level rise
 - Measure the depth of a Water Body
 - Map the Underwater Features of a Water Body
 - Determine the feeding locations of fish and other marine life
-
- 3D Modeling analysis work
 - 3D Model data creation
 - CAD Model creation
 - As-built, Site verification
 - Intelligent 3D Models Development
 - As-built Piping
 - Equipment Layouts
 - Accurate Tag Database
 - As-built Inspection isometrics
 - Better asset management for maintenance and future expansions

TELECOMMUNICATION

Transform you to the Telecommunication Industry through Location Intelligence. industry

- Network planning & deployment
- Optimize network operations and resources
- Identifying Pole Information
- Analyzing Cable Infrastructure
- Effective network management
- Locating specific addresses

Streamline workflows and Informed decision-making. We provide you best solutions on three major components

- Topological Design
- Network Synthesis
- Network Realization



MINING & GEOTECHNICAL INVESTIGATIONS

Transient Electromagnetic Geophysical Exploration Technique provides a precise subsurface mapping facility to,

- Detect potential landslides and prevent catastrophes
- Perform detailed structural analysis
- Analyze the structural integrity of tailings dams
- Inventory and management of stockpile volume
- Mine or quarry monitoring and operation planning
- Assessment before drilling or blasting
- Monitor mining sites in real-time



TRANSPORT AND INFRASTRUCTURE

Revolutionize the way we move people and goods, making transportation more efficient, safe, and sustainable. Geospatial Technology can play a critical role in this regard by providing real-time data on Traffic Conditions, road infrastructure, and vehicle movement. You can optimize routes, reduce congestion, and improve safety on the roads.

- Highway Management
- Route Planning
- Environmental Assessments
- Construction Management
- Transportation Safety



WATER RESOURCE ENGINEERING

Empower your organization for mapping the water resources and assets, monitoring water availability, and water quality, identifying potential zones of groundwater, water supply system management, and analyzing the impact of human activities on water resources effectively and efficiently.

- Ground Water Management
- Water Supply Management
- Water Resource Management for Agriculture
- Watershed Management
- Water Quality Monitoring
- Infrastructure Management



FORESTRY AND ENVIRONMENTAL ENGINEERING

- Mapping and monitoring of water pollution
- Monitoring environmental effects of man's effects
- Assessing the drought impact
- Determination of water boundaries and surface water areas
- Mapping of floods and floodplains and many other such environmental applications
- Forest Assessment
- Forest Carbon Management
- Waste Water Management

RENEWABLE ENERGY

CESL Geospatial Technology services play a pivotal role in optimizing the planning, deployment, and management of these Renewable Energy Systems.

Wind Power

- Wind Resource Assessment
- Site Suitability Analysis
- Environmental and Social Impact Assessments
- Turbine Layout Optimization
- Infrastructure and Grid Integration
- Operations and Maintenance

Solar Power

- Site Selection and Assessment
- Resource Assessment
- Environmental Impact Analysis
- Infrastructure Planning
- Performance Monitoring and Maintenance

EDUCATION - PROFESSIONAL DEVELOPMENT

We designed our professional development program outline the steps and resources an individual can use to achieve specific goals, acquire new skills, or expand their knowledge. It serves as a roadmap for continuous learning and personal growth.



WHY YOU CHOOSE US

CESL-GSEU provides precise and reliable solutions for clients by using 21st century High-End equipment and experts in surveying and mapping. Create Precise Solutions from a state-owned organization with confidence and connect your world faster.

We provide professional services to the client with the latest generation of professional High-End Terrestrial Surveying and Mapping Technology and stand for extreme versatility, high productivity, ultimate performance, and additional mobility – providing an excellent return on investment.

Central Engineering Services (Pvt) Ltd (CESL) is a state-owned organization incorporated under the laws of Sri Lanka.

OUR CERTIFICATION

- CIDA CS-2 (Highest Grade Registration)
- ISO; 9001 -2015
- ISO; 14001-2015
- ISO; 45001-2018
- ISO/IEC 17025-2005
- Accredited as a major and specialist contractor NCASL
- Authorized registration for Sustainable Energy
- Green Building Certification
- GCF accreditation for grants (in progress)
- SLAB accreditation for Geotechnical & Laboratory Services





CONTACT US

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