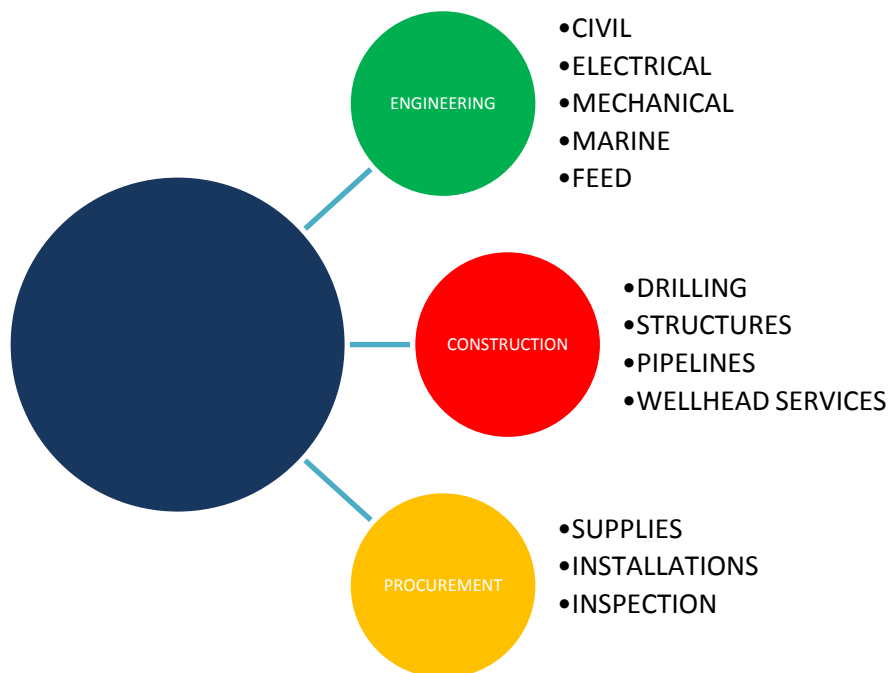




PROFILE





OVERVIEW



Welcome to 3D Hitech systems Limited, 3D Hitech Systems Limited is a wholly owned Nigerian Oil & Gas service company incorporated in Nigeria to offer engineering and specialist services to Oil & Gas/allied companies of the Nigeria economy. It was established as a one stop engineering service firm to meet the business goal of our clients. Throughout our short period of operations, we have proven this fact by the quality of projects executed so far.

We are simply into engineering, designs & fabrication, construction & consulting services, haulage, oil and gas, implementation and strategy. We are heavily invested in the present Nigerian gas revolution, and are poised to actively participate in piping and Gas pipeline construction network across the nation.

Our employees work in a future oriented and quality conscious way to ensure effective and efficient service delivery in all parts of the country.

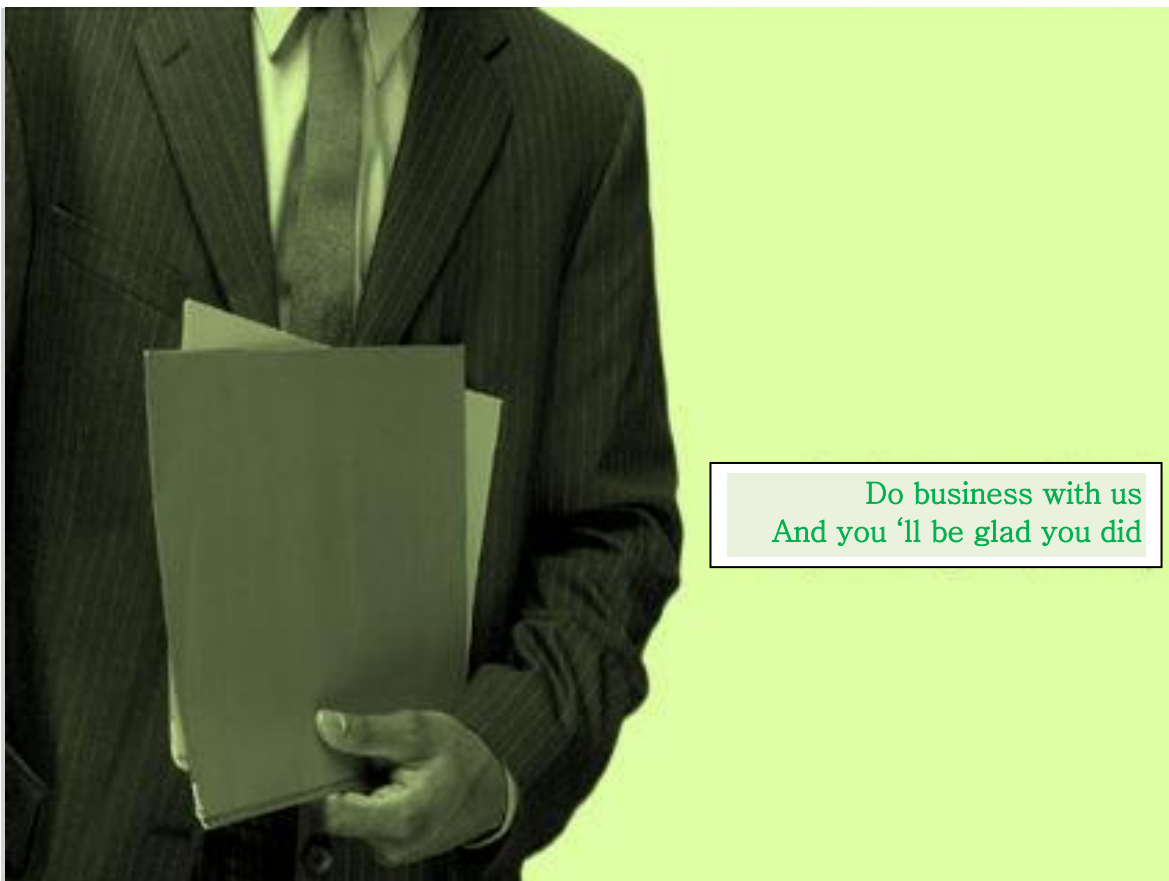
We offer an entire performance spectrum in the fields of project development, structural engineering, industrial construction, urban planning, water, transport and environment.

Little wonder, that we are able to plan and competently execute projects at all stages according to required specification, thus giving us the National and international recognition and accolade that we enjoy today. Our services are tailored to the needs of our clients. We do this by proffering innovative/original solutions and deploy best in standard equipments/employs the services of highly experienced professionals to execute projects. We conduct our operations with reliance on the latest technology.

Safety in all areas of our operations is critical and therefore ensures that necessary precautions and training are offered to everyone in our employment.

3D Hitech Systems Limited believes in the viability and sustenance of projects and guarantees this by laying a solid foundation at the onset, starting with project identification, screening through feasibility studies and engineering design to project commissioning, conduct post project execution evaluation, maintenance and audit services. We have established close working relationship with architectural, surveying and other engineering firms, whose services are often elicited and complimented with in-house skills, thereby, making available to the client the broadest range of expertise. Our rich database on project executed in-house and projects executed by our Technical partners serves as invaluable reference materials for new project design and execution. This is of course supported by technology for feasibility analysis and reporting, computer aided design (CAD), software in the areas of engineering, architecture and project management all of which ensure that most assignments are concluded in record time and to approved standards. The company believes that the proper monitoring and control of project is just as important as well as formulating and designing projects.

The primary drivers of our business are cost consideration coupled with deep concern for environmental impact, safety, security and community relations. We are highly sensitive to the environment by ensuring that necessary assessment is carried out in line with international practices before embarking on any project Customers demand results and we deliver. 3D Hitech Systems' commitment and dedication to deliver quality results to our customers is our single goal.



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**Vision:**

The Company's vision is to be the leading Oil and Gas Services Solution provider in our areas of operation.

Mission:

To be an oil & gas industry leader, offering effective services using high level technologies and motivated professionals to deliver quality projects to our clients and benefits to our stakeholders



Company Objectives

- To promote a culture of outstanding quality service and to be recognized as an industry leader in the area of quality.
- To maintain, as the cornerstone of our business, the health and safety of our employees and the protection of the Environment.
- To actively involve and empower all employees in a continuous improvement process.
- To listen and respond to our customers/stakeholders and exceed their expectations.
- To adapt quickly and appropriately to changing business conditions and market opportunities.
- To hire and train Nigerians, which is an integral part of the company's joint venture agreement.
- Deliver quality projects to the satisfaction of our clients
- Deliberately manage company resources through waste avoidance and cost control
- Achieve tangible results and profitability for the benefits of all stakeholders



VALUES

3D Hitech Systems Limited is a wholly owned Nigerian Oil & Gas service company incorporated in Nigeria to offer engineering and specialist services to Oil & Gas/allied companies of the Nigeria economy. It was established as a one stop engineering service firm to meet the business goal of our clients. Throughout our short period of operations, we have proven this fact by the quality of projects executed so far.

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Local Content Policy

The company is committed to the development of the local content policy by incorporating the plan into its business as part of her immense contribution to the sustainable development of Nigeria and project bearing communities in particular.

Therefore in line with our community relations and social response and contracting policies, we have established the following principles: We shall utilize goods and services produced in Nigeria and project host communities in Nigeria, especially Niger Delta.

The company shall continue to develop indigenous contractors and utilize local labour and locally manufactured materials wherever possible as enshrined in the contract policy. The company shall provide training to develop human capital and building competencies in the management field of sustainable local development.

The company shall extensively ensure protection of environment, respect of human and social rights employee and contribution to local economic development



manner and in line with the agreement signed between us and our client

HSSE POLICY (Health, Safety, Security and Environment Policy).

The management of the company is committed to health, safety, security and environment policy by ensuring:

To provide adequate control of the health and safety risks arising from our work activities.

To consult with our employees on matters affecting their health, security and safety.

To provide and maintain safe hardware, tools and equipment.

To ensure safe handling of equipment and use of PPE'S

To ensure all employees are competent to do tasks, and give them adequate training

To prevent accident and cases of work related ill health

To maintain safe, secured and health working conditions

To review and revise this policy as necessary at regular intervals.

Core Values

- Earn trust and respect
- Timely service
- Take pride in what we do
- Be proud to sign our name to each job
- Never do a job if it cannot be done safely

Due to the nature of the work undertaken the company has very high standards and guidelines of Safety Management and HSE Systems.

The company carries out regular monitoring of all its Systems and Operating Procedures to ensure that all works undertaken or materials supplied through its approved major suppliers are carried out in full compliance with the very latest legislation and Oil & Gas recommendations.

In line with this Total Quality Commitment the company has in-house Quality Assurance Systems to monitor and control all aspects of our work including materials, welding standards, pipeline work assembly, testing and commissioning.

Coupled with its in-house specialized personnel and the logistical, manpower and plant support, we have the capacity to tackle any specialized oil/gas project including Pipelines, Terminal & Refined Product Storage Tanks, Shutdowns, Hot Tapping, Diversions and other related projects.

3D Hitech Systems has the equipments, manpower, resources and expertise work force for providing Industry solutions for the transmission and distribution of OIL & GAS Pipeline and Pipeline Installation. Our work force mainly concentrate on HSS & E, cost-effective & time bound budgetary solutions to project.

The 3D Hitech Value

Highly proactive // Continually refining our approach to anticipate stakeholder needs

Impeccably accountable with high integrity// Taking responsibility for our actions and performance as individuals and as a company








Total customer Oriented // Striving to exceed customer expectations

Efficiently financially Responsible // Maximizing long term value creation for our shareholders

Community Focused // Ensuring a sustainable and positive impact on the communities where we work

Highly Innovative // Seeking creative solutions in every aspect of our business

Services Offered

-  Turnkey (EPC) Contracts
-  Cross Country Pipelines Laying
-  CNG Station Contract
-  City Gas Distributions
-  Pipeline Pre-commissioning
-  Pipeline Commissioning
-  Pipeline Operation & Maintenances

TEAM



Welcome to the team!!

Our Team

At 3D Hitech Systems Limited we have an energetic and highly motivated team who enjoy completing projects to the highest of industry standards.

Currently, we have 45 staff in our team with a wide range of experience and skills to ensure we can successfully deliver on any project. Very high average employment duration of 7.25 years signifies the devotion, reliability, experience and commitment that customers can expect us to provide on every job we undertake.

At 3D Hitech Systems Limited we fully believe the adage "Your staff are your most important asset". We realise that the personal and professional development of our team is imperative in ensuring the successful delivery of projects, and thus the success of our business. We therefore invest in our staff through comprehensive training programmes, mentoring and coaching. The rewards of this philosophy are inevitably shared with customers through increased satisfaction and better quality service.

Our in-house design team provides site and master planning, architectural, electrical, plumbing and HVAC consultation, specifications and design criteria specifically tailored to your company's requirements. Every project is "value-engineered" to meet your budget.

Our project management staff delivers results you can count on. Our field crews self-perform the following trades: masonry, concrete, rough and finish carpentry, electrical, plumbing, HVAC, interior painting and finishes.

Our real estate team offers comprehensive analysis of your existing and future real estate needs. We manage office, warehouse and manufacturing space in Nigeria, maintaining a continual commitment to your complete satisfaction through the value enhancement of each property.

When you build with 3D Hitech Systems Construction, you can relax knowing that your home is in the hands of a highly skilled, hand-picked team. We want you to benefit from our tradesmen's years of experience building and renovating across the country.

To bring fresh, innovative ideas to the table, we have hired top apprentices to work alongside our tradesmen. Each apprentice is closely supervised by one of our experienced staff to make sure that all of their skill and efficiency is being passed on to the next generation. These are the people you want on your project.





Management

Directors & Management

Patrick Azi CEO

Patrick Azi has worked with reputable companies locally and abroad, bringing wealth of experience, spanning 15 years from Shell petroleum development Company (spdc west) Daewoo Engineering the dorsche gruppe and 3D Hitech Systems Oil Company (to mention a few) to bear in Business development and execution.

Patrick azi holds a degree in engineering from University of Benin, Nigeria.

Otah Mariere

General Manager (Commercial & Communication)

He has BSc in Industrial Relations & Personnel Management from the University of Lagos, Akoka and MBA in International Business Management from the Lagos State University. He is a member of several professional associations including the Chartered Institute of Management Consultant. He has attended both local and International training programmes including the prestigious Lagos Business School

He has acquired about 24years practical experience at middle and senior management levels which span through manufacturing, management consulting, Media & Entertainment, Communications and banking. Some of the companies he worked with are Michael Steven Consulting, Silverbird Group and Union Bank Plc. A prolific writer with about fifty published articles in human resources and general management in some leading Nigerian newspapers, He is a resource person and

has facilitated and presented papers in several training workshops on human resources and general management

Emenuwe Emmanuel

Chief Finance Officer

He has BSc in Accounting and MBA Financial Management from the Lagos State University. He is a Fellow of Institute of Chartered Accountants of Nigeria with over 25 years practical work experience which cut across various sectors of the Nigerian economy. He started his career with Glaxo Nigeria PLC as a Cost Accountant and helped in redesigning the costing system. He later joined Rosabon Investment Group as the Group Accountant. The company has interest in financial services, Oil and Gas, Telecommunication, Information Technology and Real estate. He successfully set up the accounting and internal control system of the entire group.

He later joined the Insurance Brokers Association of Nigeria and later and Minet insurance Brokers as Financial Controller where he worked a couple of years before joining 3D Hitech Systems as Chief Finance Officer. He recorded verifiable record breaking achievements in various organizations with lots of awards to his credit. He is an author of one of the bestselling books on Personal Money Management. He is a Financial Intelligence instructor and trainer with series of life changing seminars.

Akpa Jide

General Manager, JV Operations & New Business

He has first degree in Estate Management from the University of Lagos. He worked in several organizations including Ikonoba Industries Limited Lagos and Precious & George Investment Limited, Abuja at both middle and senior level management positions before he joined Cold & Chill Properties Limited Abuja as Executive Director.

He has excellent knowledge of government relations, a good business strategist with strong negotiating skills. While at Cold & Chill Properties Limited Abuja, he made major contributions towards the company's profitability and growth. He has made significant contributions in the organizations he worked for before joining 3D Hitech Systems limited as Executive Director, JV Operations & New Business.

Ishani Isaac

General Manager, Engineering & Projects

He has HND from Rivers State Polytechnic, Bori, River State with about 16 years practical experience in the oil and gas industry. He has worked in several organizations including, Southern Gas Construction Nig Ltd, Hyundai Nigeria Limited, EC / Delattre-Bezons Nigeria Limited, TSKJ Nigeria Limited / Techint Cimimontubi Nig Ltd, Oversea Technical Services) / Nigeria Liquefied Natural Gas, BRT Exxon Mobil / Daewoo E&C Nigeria Ltd, (DN 49& DN 25), Japan Gas Company (JGC) / Exxon Mobil Production Nigeria,

A hand on professional who has participated/supervised several projects in the oil and gas sectors. Some of the projects he participated/supervised include the following

- ExxonMobil OSO II NGL BRT Project
- NLNG Train 1& 2 (Base Project-Piping)
- NLNG (New Expansion Project)
- NLNG Plant Shutdown (Overhauling/Maintenance)
- NLNG Trains 4 & 5 (NLNG Plus Project)
- EPC 3 East Area BRT Mobil NGL-Plant Expansion Project
- NLNG Train 6 (Nigeria Liquefied Train Six Project)
- Escravos Gas Project- 3 Solar Taurus 60 for GTG/MARS 100 for GTC
- EGTL-Escravos Gas To Liquid Project (Main Process Area, Tank Farm Area, Pipe Fabrication, Workshop Fabrication ,Tie in to EGP- 3,Precommissioning & Commissioning

He is a highly motivated professional, hard working and a good team player. During the past few years, he attended several professional training courses in process engineering, metal fabrications, piping, construction, installation & safety training.

Mamudu Faruk

Senior Project Manager

He graduated from the University of Benin with honours in Mechanical Engineering. With over 13 years hand-on engineering experience in Project Management, Piping, Industrial Procurement, Quality Assurance and Quality Control, HSE, Metal Fabrication and Steel Structures, Telecom Infrastructure and Production. Faruk is Steel & Metal fabrication expert, he worked for EL-Paal Engineering Limited as project engineer where he managed the fabrication of several 100m heavy duty telecom tower, pressure tanks and line pipes. As a Project manager in Lucratel Limited, he managed the construction and building of various turnkey sites for Ericsson, Motorola, VMobile and MTN. He also worked as Head, QA/QC and HSE

with Biddy OSA Oil and Gas Limited where he managed all QA/QC and HSE issues in oil and gas facilities. He attended several professional training courses in metal fabrications, steel fabrication, piping, construction, installation & safety training.

ENGINEERING

3D Hitech Systems's combination of global resources, and engineering capabilities are what deliver world-class facilities to our clients' while meeting their demanding business needs. Our streamlined global engineering process - from concept to completion - produces consistent results in some of the most difficult and challenging locations on earth by using robust, data centric and technologically advanced engineering methods.

Our time-tested design approach is based on a logical sequence of processes that focus on stakeholder input and reducing redesigns that impact cost and schedule. We provide a full range of services including EPC, grassroots facilities and revamps, offshore engineering, FEEDs and conceptual studies, start-up and commissioning, and logistics planning and simulation.

One of 3D Hitech Systems's key strengths is the ability to communicate to our clients and projects teams through our information management systems and virtual work environments. We are able to utilize our entire vast expertise, regardless of their physical location. 3D Hitech Systems clients benefit both from our cost effective distributed project execution and our ability to utilize 3D Hitech Systems's wealth of niche experts efficiently and effectively.

Engineering, Procurement & Construction (EPC)

3D Hitech Systems has a strong capacity to handle highly complex engineering, procurement and construction projects for clients in remote and challenging locations across the country. Whether it is a commercial initiative, or a secure government defence project, we deliver solutions that cater to the needs of each customer. From concept through commissioning and turnover we focus all of our efforts on the final delivery of our customers' projects - the result is a high value facility that meets your business needs.

3D Hitech Systems delivers engineering, procurement and construction (EPC) solutions in every region of the country under some of the most demanding conditions. When customers have difficult EPC challenges, they count on 3D Hitech Systems to deliver. Whether we are providing EPC for an LNG facility, small capital construction, or a government building, 3D Hitech Systems delivers world-class service and performance.

Our EPC expertise can successfully execute challenging projects in the areas of power and industrial, infrastructure, downstream markets, oil and gas, LNG/GTL, and government and defence.

Front End Engineering Designs (FEED)

3D Hitech Systems helps to lay the foundation of an engineering project with best-in-class FEED solutions for clients. Our combination of technical expertise and

workforce delivers a multi-disciplinary approach to FEED and FEL work processes for large or small-scale engineering initiatives.

3D Hitech Systems aims to provide front-end engineering and design (FEED) of the topsides for any proposed development facility.

Our seasoned staff of engineers and FEED specialists ensure that the design of a project meets the project's time frame, ROI, operating costs and budget, while sustaining our commitment to operational excellence.

Pipeline Integrity And Rehabilitation

3D Hitech Systems Limited, performs pipeline integrity work across the United States. We offer a wide variety of services on Natural Gas, LPG and Crude Oil pipelines with-out service interruptions, including (but not limited to) excavation, re-coating, painting, Clock Spring installation, welding of sleeves, cut outs, line lowering, and hot taps. We also perform DOT hydro testing and pipeline displacement.

3D Hitech Systems, through its years of experience in pipeline construction, has developed a strong special services division which can offer qualified personnel and the necessary equipment to perform construction services for

1. the replacement of pipelines;
2. the electronic pigging of pipelines;
3. the hydrostatic testing of pipelines; and
4. the double-jointing of pipe.

As the World's network of gas and oil transmission lines becomes older, the need to revalidate these lines, and rehabilitate segments of these lines, becomes increasingly important. 3D Hitech Systems's special services division has the capability to inspect, test, and replace when necessary all sizes of pipelines.

3D Hitech Systems has tested over 3,500 miles of in-place pipelines, and replaced approximately 1,000 miles of 10-inch to 36-inch pipelines. Using the most advanced technology, Associated is fully qualified to provide inspection, testing and replacement services which meet the stringent of requirements.

INSPECTION SERVICES

3D Hitech Systems supports procurement, materials and engineering with innovative and efficient inspection services that are in compliance with purchase ordering, customer and company requirements. Our Inspection Services team provides value with effective inspection task planning, efficient testing and reporting methods, budgeting of resources to demand and providing assurance to customers that the product meets their requirements.

We organize, plan, execute, control and verify the quality of the work in accordance with customer requirements and the 3D Hitech Systems Management System and take action to identify, report, correct and prevent nonconformity.

LOGISTICS OPTIMISATION & MANAGEMENT

3D Hitech Systems provides efficient, economic, and on time transportation services to difficult locations around the country. We utilize innovative resources and technology to produce the appropriate solutions allowing us to be proactive, avoid delays, and achieve the utmost in constructor and end-customer satisfaction.

Our Logistics Simulation group also executes material delivery strategies for proposals and projects. Using discrete event simulation technology, we have the ability to simulate storage, loading, transportation, and delivery systems to balance the capacity for materials movements against risk, unforeseen events, and the overall project schedule requirements for materials delivery and usage.

Our clients turn to us for logistics management in the refinery industry, crude and refinery product blending, LNG storage and shipping, batch processes and our own internal work processes.

As regards gas-to-liquids, we have demonstrated our capability to develop specific strategies for incident free work environments including more than a million work hours by our freight forwarder without a lost time incident and two million kilometers driven by our transporters without a lost time incident.

The combination of 3D Hitech Systems' expertise in logistics, materials management, simulation analysis, and project execution in challenging environments allows us to uniquely quantify risks and analyze schedule and cash flow performance.

MATERIALS MANAGEMENT

Over the past several decades, 3D Hitech Systems has worked to help minimize our clients' total material costs through innovative planning and logistics systems. We ensure the correct quality and quantity of materials, timely delivery of equipment to be installed, and subcontracted resources obtained at a reasonable cost, all available on-time and under budget.

We offer the expertise, processes and tool utilization needed to facilitate frequent status updates on all material control information including quantities required, materials allocated, requisitioned, received and issued. Our processes provide cost control through rigorous materials management.

We also tailor materials control programs to our clients' project needs by leveraging a network of tools to achieve competitive pricing, flexible sourcing, timely delivery and efficient distribution of materials to the end-user.

PROCUREMENT MANAGEMENT

3D Hitech Systems provides innovative contract management and control process solutions necessary to administer purchase orders and subcontracts. Our procurement team brings unparalleled leadership and experience to developing proven supply chain solutions, ensuring that our clients receive what it promised, when it is promised, in a timely, well-executed manner.

Our procurement management examines expenditures - product-by-product and vendor-by-vendor - to gain a thorough understanding our client's operations and purchasing culture.

3D Hitech Systems effectively manages the procurement of global projects large and small, creating top-to-bottom consistency throughout the entire logistics, delivery and installation process.

SUBCONTRACT SERVICES

For decades, 3D Hitech Systems has successfully managed subcontracted activities in a highly dynamic business world. Our subcontracts unit supports 3D Hitech Systems and its clients by being integral to every part of the Engineering, Procurement and Construction (EPC) process. We are also dedicated to performing work in a safe and ethical manner, every day.

Our team is comprised of a diverse, experienced group of professionals who are supported by a highly communicative management team.

3D Hitech Systems utilizes its Contract Management System (CMS) to facilitate all subcontracted activities. Accessible via the internet, CMS is scalable for use on small engineering or construction projects and is built primarily for large-scale initiatives requiring a high degree of standardization, organization, security, and collaboration. Our clients turn to us for support - provided with 24 hour coverage.

Through four integrated modules, CMS is designed to enforce appropriate business practices, yet is highly customizable. Using the full suite of role-based and task-based training materials, Subcontract Administrators and contractors learn our innovative system within a relatively short period of time. CMS also provides valuable data to management via standard and customizable reports four areas: Prequalification and Vetting, Contract Authoring, Contract Inquiry and Post Award Administration.

SUPPLY CHAIN MANAGEMENT

3D HITECH SYSTEMS's supply management services leverage today's technologies and logistics methods to make efficient decisions which streamline the supply management process.

We have a global track record of ensuring timely and accurate material receipt through innovative expedition and quality assurance with vendors to minimize

receiving delays and errors. We optimize transportation networks, operating hand-in-hand with global freight forwarders with dedicated assets.

We also leverage the latest supply chain technology to ensure our customers' material is accurately tracked throughout its journey to its destination and installation.

Commissioning and Start-up Services

3d Hitech Systems has the tools needed to ensure the proper installation and operation of systems prior to the handover to the end user. Our successful track record of testing and commissioning procedures helps develop a steadfast facility commissioning plan and comprehensive schedule to meet our client needs.

Establishing milestones and identifying critical paths to accomplish the successful integration of commissioning activities have helped us become an industry leader in construction projects. With a company-wide focus on safety and quality, our capabilities include design, procurement and construction execution in addition to the start-up required to create a thriving project.

Construction Management

3D Hitech Systems has brought a vast source of diversified experience in the construction project management industry to meet the discerning needs of our clients. We have shown the willingness to go beyond our customers' expectations by providing industry veterans with decades of project management experience who are responsible for implementing innovative construction programs.

We provide services which include the management of design and construction team activities, process installations, coordination of utility and infrastructure and contingency construction. Our seasoned management team can facilitate benchmarking analysis and provide assistance in the development of best-in-class facilities programs through the asset-specific maintenance programs, supply and demand-side energy programs and asset lifecycle analysis.

Major Construction

3d Hitech Systems has provided major construction services on large scale, global projects for the petrochemical, refining, power, manufacturing, infrastructure and forest product industries. From government buildings to complex refineries, we have the people, equipment, construction materials, and experience to complete any sized project on time and on budget.

We are committed to providing quality construction services to private companies and public agencies alike. With operations around the country, 3D Hitech Systems has the resources to take on facility global construction initiatives virtually anywhere.

Segmented Construction (Mechanical, E/I)

As one of Nigeria's premier construction service providers, 3D Hitech Systems offers a solid foundation in mechanical and segmented construction. We have successfully worked on commercial, government, institutional, and industrial projects, and have satisfied the most rigorous quality standards, while meeting high-pressure deadlines and managing cost-effective budgets.

Whatever the size and complexity of a construction project, we have met challenges with optimism and experience whether it is a large and refined university to a small retrofit project, we have the tools, resources and experience to deliver a project on time and on budget.

Our teams of skilled project managers are experts at scheduling and tracking the progress of all segmented construction trades, equipment delivery and phases of construction. Additionally, our client base ranges from school districts and transportation authorities to federal facilities and healthcare organizations. We are committed to delivering high-quality solutions at the best value to our customers.

Small and Mid-Capital Construction

3D Hitech Systems' small and mid-capital construction services provide clients with a variety of cost-effective services, from minor renovations to major expansions or relocations. With our continuously present on-site teams, we meet customer needs from project startup to completion.

Scoping, estimating, planning and scheduling, construction of all disciplines, start-up assistance and follow-up maintenance are all handled by our teams, reducing the need for multiple outside contractors as well as overall costs.

With our experience in providing construction services to the petrochemical, refining, power, manufacturing and forest product industries in the country, 3D Hitech Systems mitigates risk from project concept and design to construction and commissioning, overseeing every detail along the way. Understanding project needs and innovative solutions distinguishes 3D Hitech Systems from our competitors and gives clients the confidence they need, knowing that their projects will be managed with professionalism backed by a company with a rich and powerful construction legacy.

Advanced Chemical Engineering (ACE)

3D Hitech Systems is unique in combining expertise in the design and construction of energy and petrochemical projects, while also incorporating the latest and best process technology with value added Advanced Chemical Engineering services. ACE provides services in the area of Operator Training Simulator (OTS), Operations Management Systems (OMS), Technical Services, Advanced Simulation (dynamic simulation, logistics simulation, computational fluid dynamics and energy studies) and Advanced Process Control (APC).

The choice to invest in process technology, at a new or existing process facility, is based on an assumption of feasibility and potential profitability. However, each facility provides unique challenges brought about by uncertainties around design sufficiency, construction and operability.

3D Hitech Systems combines its Advanced Chemical Engineering (ACE) expertise with a comprehensive series of predictive and analytical value added process technology tools. By merging the two elements together, 3D Hitech Systems is able to analyze, identify and overcome any shortfalls that may exist between the performance goals of the facilities management and the actual outcomes seen in plant operations.

3D Hitech Systems has provided Advanced Chemical Engineering services and has an established track record of bringing tangible economic and efficiency benefits to customers.

3D HITECH SYSTEMS's Advanced Chemical Engineering Services Include:

- [Operator Training Simulators](#)
- [Operations Management Systems](#)
- [Technical Services](#)
- [Advanced Simulation](#)

The Plant Lifecycle

- **Front End Design**
- **EPC**
- **Commissioning/Start-Up**
- **Operations/Maintenance**
- **Troubleshooting**

Advanced Chemical Engineering services from 3D Hitech Systems support clients throughout all the phases of a process facilities' design, construction and operation.

3D Hitech Systems is one of the country's leading engineering, procurement, construction and technology companies. We have evolved into a prominent part of the energy, petrochemicals sectors.

Project & Program Management

3D Hitech Systems has significant experience with a number of large, complex project management endeavors, many of which are located in some of the most remote and challenging environments. As part of our integrated team approach with our clients, we adhere to a simple strategy: innovative, on-time and on-budget delivery regardless of the size and scope of the program.

We offer effective contract administration, cost and schedule control, work order management, quality control and design supervision to our client base. We have

worked with a number of organizations to provide the most inventive and refined solutions for key initiatives in services including preconstruction, purchasing, field supervision, project scheduling and subcontractor management and security.

3D Hitech Systems' portfolio of project and program management solutions encompasses an array of integrated capabilities that is designed to give our clients the full support they need to meet their objectives.

Operations & Maintenance

In a global economy where budgets are carefully crafted and expenses closely monitored, our clients depend on us to provide total maintenance services projects of any scale that align with their business goals and our professional commitment to excellence and safety.

Our maintenance services include plant site management, planning/scheduling, preventative/predictive maintenance, professional safety, and stores/spares/integrated supply and craft personnel and supervision. 3D Hitech Systems has experience in providing integrated maintenance management systems.

Our efforts to ensure the safety of our customers through dedicated maintenance work have helped us develop some long-lasting partnerships.

For us, clients are more than projects; our reputation hinges on the continued satisfaction of each one. Through every step of our partnership, 3D Hitech Systems will assemble the right workforce, with the right skills, to meet your short and long-term maintenance goals.

Logistics Support

With a full range of responsive, effective and reliable planning, procurement and supply chain management services, 3D Hitech Systems is a leader in field of global logistical support. We move people, products and vital supplies from one side of the globe to the other through a variety of effective delivery methods.

3D Hitech Systems manages complex manifesting as well as loading, unloading and distribution of equipment and material. We use state-of-the-art tracking and scheduling tools to ensure products and services get where they need to be at the right time and in the right quantity. We transport everything from mail to essentials such as food and water, beds and laundry facilities.

3D Hitech Systems specializes in applying our renowned on-time, on-budget approach to special projects in secure environments. We invest in the equipment, facilities and government-approved personnel needed to ensure that our clients' individual needs are securely supported.

We have the capability to provide security assessments and upgrades, facilities modifications, asset protection, threat analysis and utilities and power generation.

3D Hitech Systems has an unsurpassed ability to deliver all aspects of special maintenance execution, including project management, direct hire labour, subcontracts and an extensive support organization for systems, equipment and tools. Our long-tenured and widely dispersed staff also delivers facility services to remote or harsh environments all over the country in a safe, timely and cost-effective manner.

Lifecycle Services

From commissioning and procurement to total maintenance management and supply chain solutions, Lifecycle Services is part of an expansive and expertly woven business designed to give clients the best in quality services and skilled personnel who continue to advance 3D Hitech Systems' already rich legacy of success and innovation.

We have capacity to provide on-site maintenance; turnarounds and capital upgrade projects to the petrochemical, refining, pulp and paper and energy industries around the country. Our wide-ranging scope of services offers clients the best in talent, and experience, as well as an unyielding commitment to safety and patented, cutting-edge technologies for optimal solutions to plants and facilities projects.

This full spectrum of services during the life cycle of any project can only be offered by a company like 3D Hitech Systems with the history and ability to deliver quality services through our aggressive recruitment and hiring of a highly-trained, multi-craft workforce focused on safe and timely delivery.

As part of our goal of being the country's leading contractor, we deliver an array of services to our clients' project needs

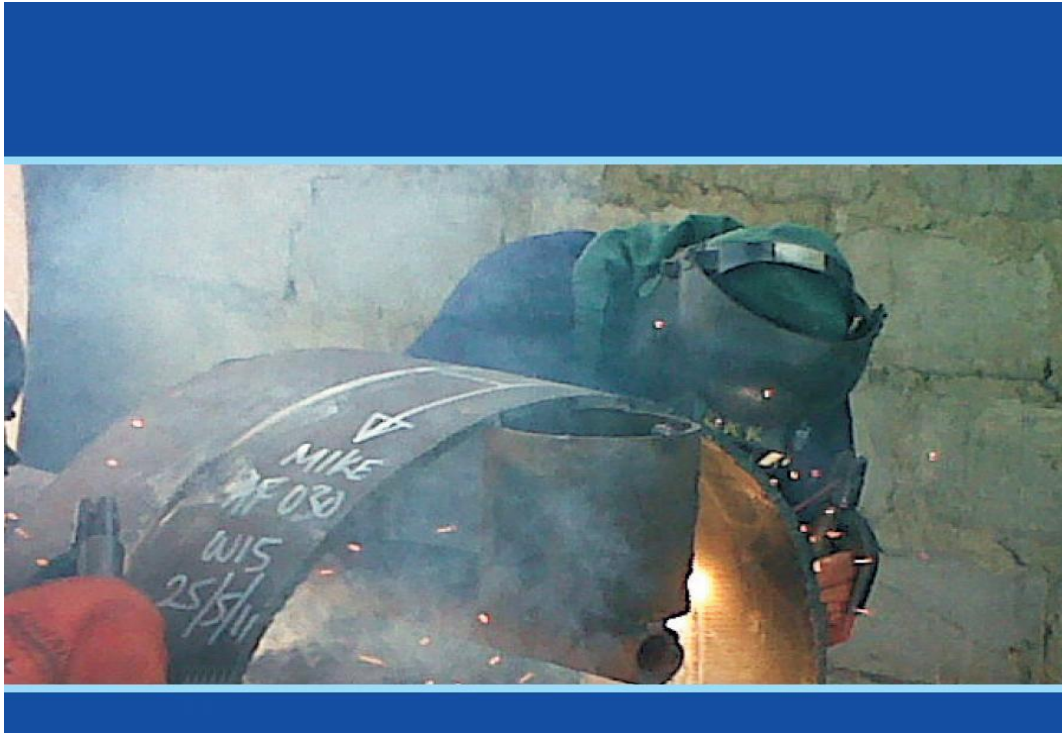
PIPELINE PROJECTS

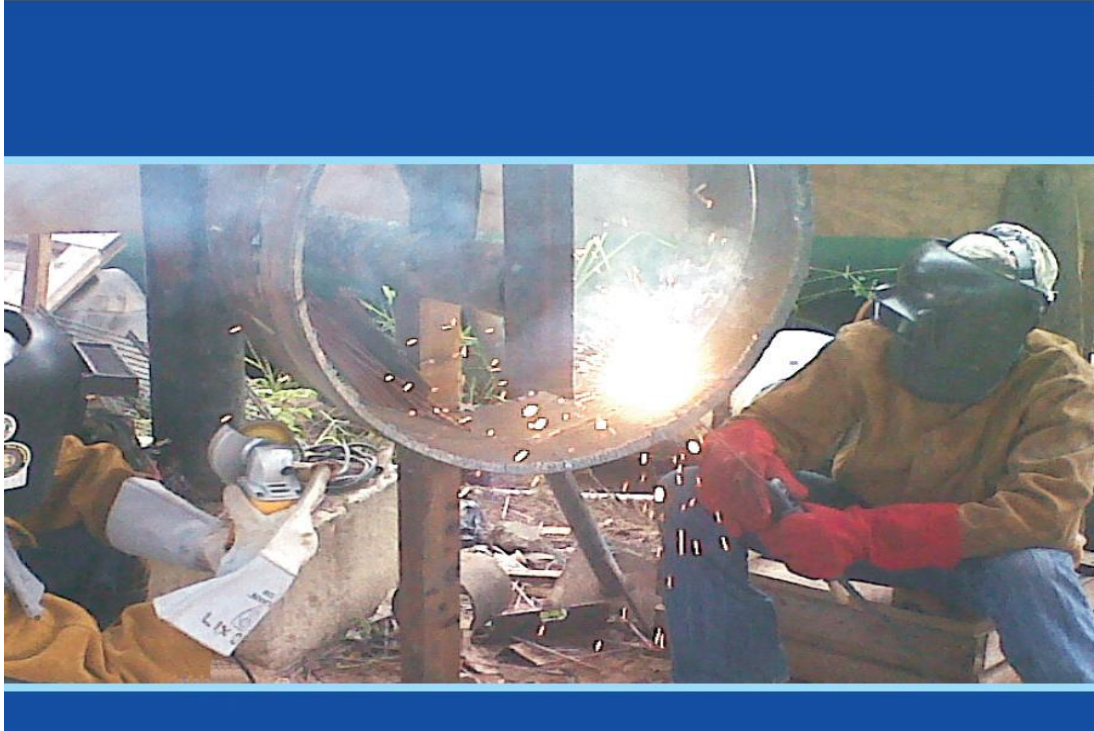




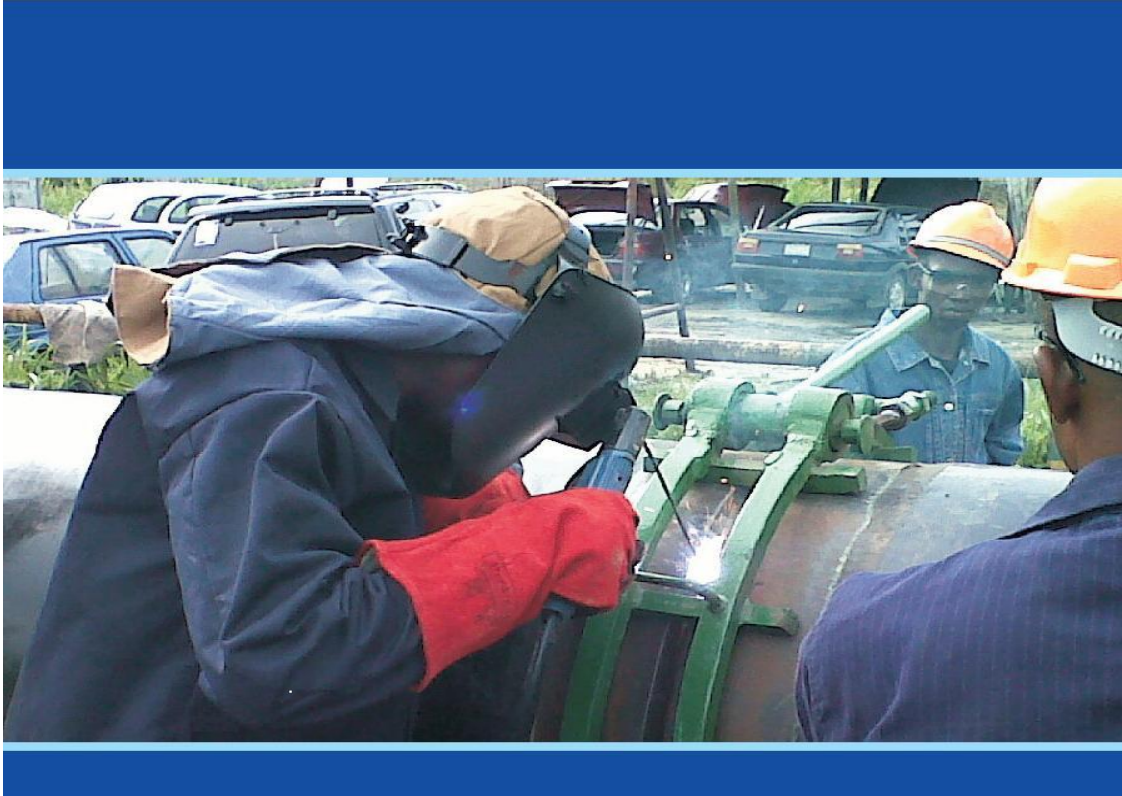
Some Executed Projects













ASME Code Stamps

3D Hitech Systems also carries The “U”, “S”, and “R” Code Stamps. This allows us a full Turnkey Services to the Oil and Gas industries, providing an ability to perform any re-pairs, alterations and/or fabrication of coded vessels or equipment. Copper-head is run by a highly experienced management team who have spent their lives in the Oil and Gas industries and understand the unique require-ments that are critical to delivering quality service and product on time and on budget.

MARINE

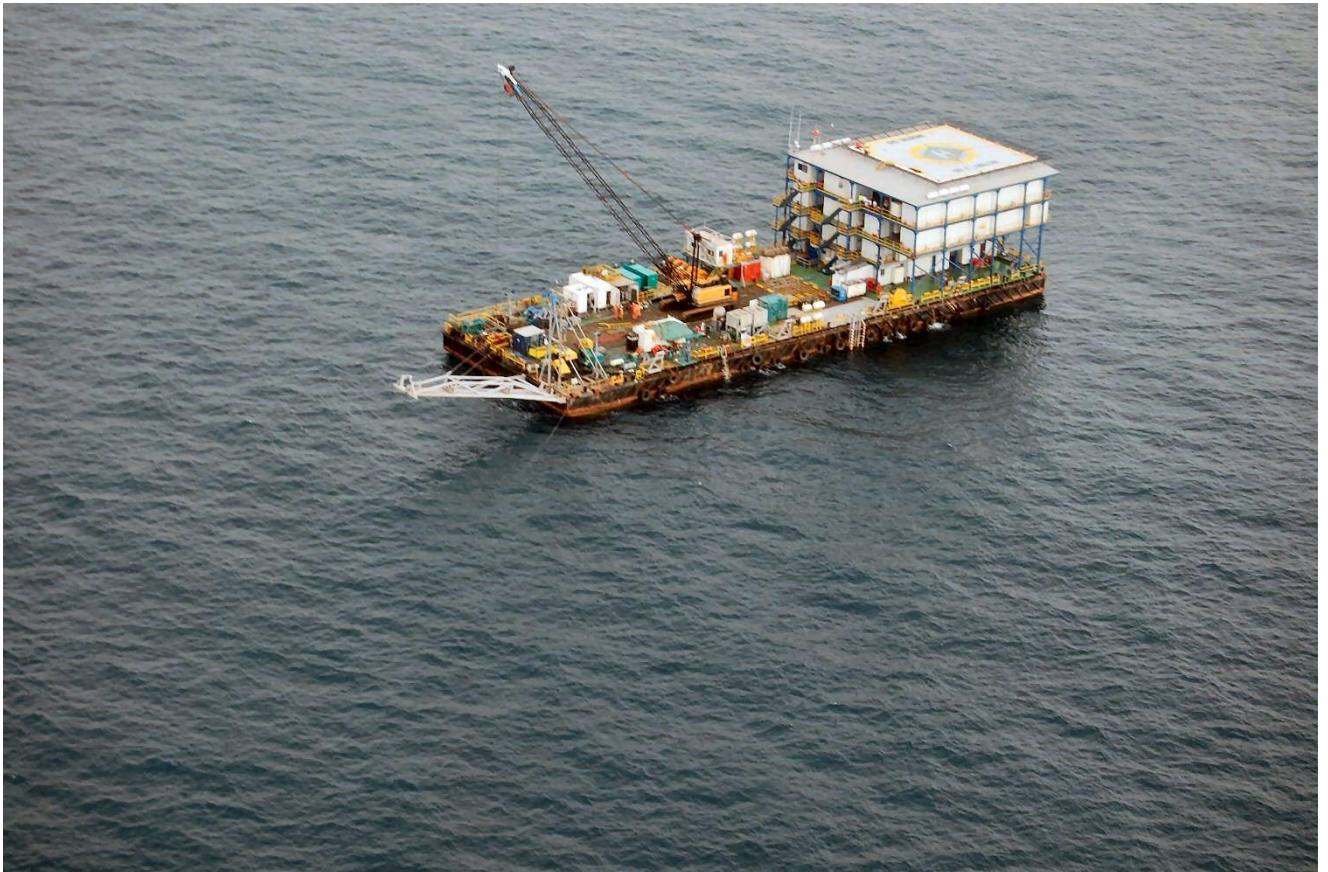
3D Hitech Systems Limited, offers a variety of Marine services to the offshore and maritime industries

Some of our present senior personnel have been active in the company since its inception. 3D HITECH SYSTEMS LIMITED's strength lies within its in-house team of Master Mariners who are fully conversant with the technical and operational skills required in today's offshore environment.

The qualifications and experience of our Mariners coupled with the complementary skills of our offshore broking staff, maritime work ethic, and philosophy of providing a superior service to our customers, enables 3D HITECH SYSTEMS LIMITED to offer the wide range of integrated services which centres around the movement of Mobile Drilling Units and Offshore transportation and installation in general.



MOORING SYSTEM









CIVIL AND MECHANICAL

The 3D Hitech Systems Limited Commitment

A commitment is only as good as the company that makes it, building facilities that are economical, reliable and efficient has been 3D Hitech Systems Limited's commitment. Our team of construction professionals offers a single source solution for all of your construction related needs. Whether it's restoration, site preparation, a new facility or facility renovation, we have the experience and personnel to provide the highest quality construction on schedule and within budget.

A Passion For Building

Building Construction

3D Hitech Systems Limited currently provides the following core services:

- Building Surveying Consultancy
- Building Surveying Projects
- Cost Consultancy
- Project Management
- PPP & Public Sector Consultancy

Its scope of work covers the whole spectrum of building and construction consultancy, technical due diligence, management and compliance and incorporates a wide range of building types: commercial, industrial, retail, residential, public and historic.

3D Hitech Systems Limited takes an active role in setting the standards within the local market and actively seeks to adapt its skills to meet the constantly changing needs of its clients. Deepocean Fluid Limited enjoys a unique reputation, not only for the high standard and quality of work, but also for a forward-looking approach to changing times.

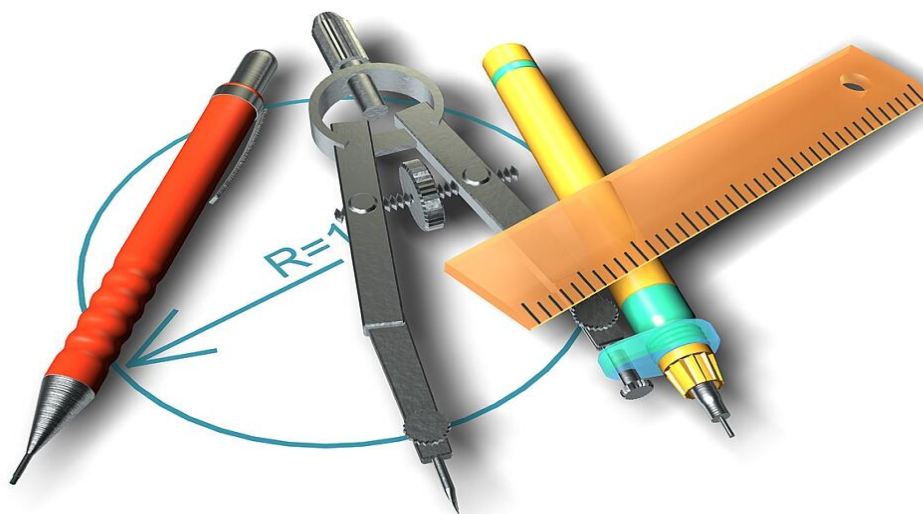


The practice is widely recognised in the Nigerian market for the breadth of its service areas in property. Professional services are enhanced by ISO 9001:2000 Quality Assurance systems and supported by a locally managed library and information centre, extensive investment in information technology and ongoing research and development activities.



3D Hitech Systems Construction's Building Surveying team provides professional consultancy services to a wide range of sectors, including education, commercial property, residential and public bodies. Our aim is to provide essential Building Surveying consultancy advice for vendors, purchasers and occupiers of all property types.

The Building Surveying team specialise in providing proactive advice throughout the life cycle of the building and with a dedicated team of highly skilled individuals, our success has been our ability to provide focused commercial advice tailored individually to suit our Client's needs, with the aim of maximising the value and managing Client risk.



We have a wide range of expert knowledge available in-house and by understanding our Client's needs, we have developed long-term relationships and generate a huge proportion of repeat business spread geographically across the country by consistently providing first class service in line with our status.

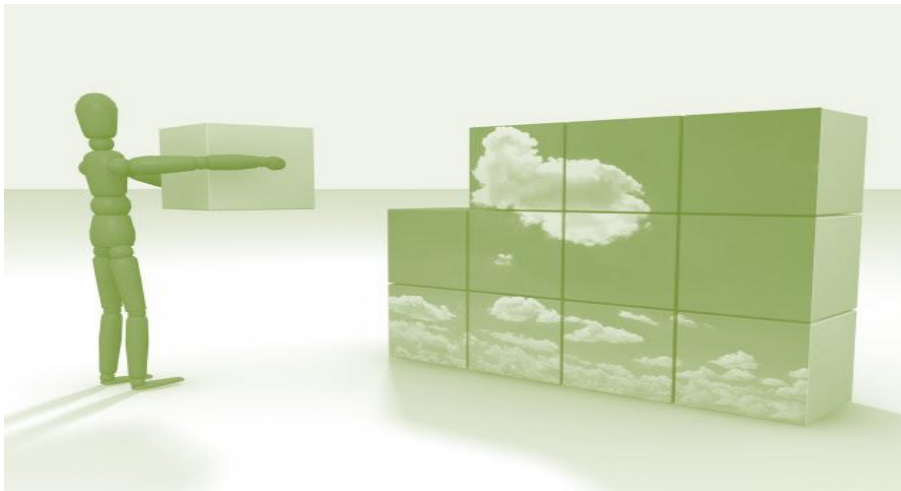
Our full range of Building Surveying Consultancy services are as follows:

- Acquisition Building Surveys and Due Diligence
- Building Inspection Reports
- Planned Maintenance and Life Cycle Costing
- Dilapidations
- Development Monitoring
- Fire Risk Assessments
- Measured Surveys
- Schedules of Condition
- CDM Co-Coordinator
- Defects Analysis
- Health and Safety Audits
- Fire Certification and Means of Escape
- Asbestos Management and Surveying

The plain fact is we love to build buildings. Maybe it stems from the pleasure of overcoming the intricate challenges of construction. Or the feeling of accomplishment when a project has been successfully completed. But most likely it simply comes from the delight we share with the building's owners and with all the project team members at a job well done.

That passionate energy and aggressive enthusiasm for a construction project begins even before you award it to us. Prior to making a presentation, we analyze every project down to the last detail to ensure that it matches our capabilities. Fact is, 3D Hitech Systems Limited will submit a proposal only if we are certain we can do a first-rate job.

More importantly, that analysis also allows us to discover potential problems, develop ways to address them in advance and give you a more realistic construction plan. In the end, that means being able to build more efficiently.



Resources

The Integrated Management System (IMS) integrates quality, occupational health & safety and environmental practices that 3D Hitech Systems Limited has developed and used successfully. The IMS specifically outlines the following:

- Policies (Quality, OHS&R, Environmental, Rehabilitation & Industrial Relations)
- OHS&R and Environmental Aspects
- Legal and Other Requirements
- Objectives and Targets
- Management Program and Planning
- Structure and Responsibility
- Training, Awareness and Competence
- Communications
- Document Control
- Product Realisation
- Operational Control

- Emergency Reaction and Response
- Monitoring and Measurement
- Integrated Management System Audit
- Non-Conformance and Corrective and Preventative Action
- Records
- Management Review

We have an extensive fleet of machinery and equipment including the following:

- Heavy Transporter (75 Tonne capacity)
- Watercarts
- Six-wheeler Tippers with Trailers
- Tractor Units
- Tractors
- Crew Trucks / Small Tippers
- Bulldozers and Scoops
- Excavators and Skid Steel Excavators
- Graders
- Mowers
- Rollers
- Drainage Shields
- Crawler Crane (50 Tonne)
- Forklifts
- Other related small plant (plate compactors, etc)

Please note that if we do not currently have any equipment that is required for a project we will hire it for the duration of that project at discounted prices and these savings are passed on to the customer.

Equipment is available for hire subject to availability. Please contact us with your requirements.

It is the combination of these capital resources and our valuable human resources that enables us to deliver a successfully completed project on budget and on time.

What We Do

Civil Engineering/Construction

- Design of Roads, Bridges, Building & Sewage System
- Road & Bridge Construction
- Hydraulic Design & Water Supply
- Geotechnical Analysis
- Preparation & Installation of Pre-Cast Elements

Building Constructions

Major Building includes works completed at:

- Shopping centres
- Office blocks
- Retail outlets
- Residential
- Churches

Our Services

Building trusting relationships with our clients by being responsive to their expectations and providing the highest quality possible is the cornerstone of our corporate culture. Our attentiveness to our clients and all aspects of every project has resulted in long-term client relationships just within our one-year history.

3D Hitech Systems Limited has been providing services under the CM-at-Risk and Design-Build umbrellas, in addition to the traditional Agency CM and General Contracting methods. You can trust that we have "been there-done that." We understand the ins and outs of each project delivery method and will apply our knowledge and lessons learned to your projects.

3D Hitech Systems Limited practices open and honest communication, with our clients' trusts a priority from the get-go. By being held accountable for our actions and offering complete transparency throughout the construction process, our clients have received not only higher quality projects on time and on budget, but also peace of mind that we acted as their agent with their best interests at heart.

Not sure which construction delivery method is right for your project?

Below is a list and a short description of our services, all of which are available no matter the construction delivery method you chosen.



3D Hitech Systems Construction.–Civil Works Services offers of supply, install, design/build, maintenance, planning, and management of the projects such as highways, bridges, tunnels, residential, commercial and industrial buildings.

CIVIL WORKS SERVICES

Today's requirements of building constructions have become extremely stringent, but we have met these requirements head-on. Our Civil Works Services, 3D Hitech Systems Limited can construct many types of pre-engineered metal buildings. We perform the underground, site preparation, concrete, and the final walk-in structure. Civil Works Services has performed this operation for both public and private sectors of business.

Summary of Building Construction Services

Design

- ARCHITECTURAL
- STRUCTURAL
- ELECTRICAL
- PLUMBING
- HVAC
- INTERIOR FINISHES

Build

- CONCRETE • MASONRY
- ROUGH CARPENTRY
- FINISH CARPENTRY
- ELECTRICAL • PLUMBING • HVAC
- PAINTING • INTERIOR FINISHES

Manage

- BROKERAGE • MARKETING
- PROPERTY MANAGEMENT
- ASSET MANAGEMENT
- DEVELOPMENT
- FACILITIES MANAGEMENT



Construction Management Service

We coordinate and monitor the activities of all trades and subcontractors on a project. Our Weekly job progress meetings are scheduled with all

trades and subcontractors. 3D Hitech Systems Limited – Civil Works Services attends all project meetings with the architects/design team and clients to discuss job progress, procedures, scheduling and coordination issues, maintaining a high standard quality, raising the performance level of the entire team. To construct durable, functional facilities while effectively managing the scope of work, cost / budget, and the construction schedule.

Project Analysis (Pre-Construction Cost Analysis)

For 3D Hitech Systems Limited – Civil Works Services the pre-construction services it is not only estimating services, these are important, but we believe that a more proactive management of the design phase will help to assure that the design reflects the budget, schedule, and the design needs of the clients. The 80% of the control of the budget and schedule are within the design phase of the project. As project designers 3D Hitech Systems Limited Civil Works offers a Pre-Construction Technical Analysis Services approaching client's goals.

Construction and Operations

3D Hitech Systems Limited .- Civil Works Services offers professional skill technicians to performance any single job and process of each project of structures involves in excavation, construction, finishing, raw material test, safety of urban highways, bridges, buildings, industrial building, tunnels, residential buildings, commercial buildings, industrial buildings. The 3D Hitech Systems Limited - Civil Works Services represents civil building tradition and new technology to execute any phase of the construction operations.

Quality Control and on Site Material Testing

As part of 3D Hitech Systems Limited – Civil Works Services quality policy our technicians designed, executed and implemented a comprehensive Quality Control Program for the Testing and Monitoring of all materials and construction projects. We have Certified Engineer Inspectors to verify earthwork, mix concrete, steel, reinforcements, precast, concrete, masonry, fireproofing, roofing, pavements, sub-grades and foundation of any construction project.

Quality Commitment and Safety

We at 3D Hitech Systems Limited - Civil Works Services realize the value of total commitment to a true quality program. We have many fundamental quality practices in place and continue to expand our company and has grown through dedication – just as our company. Our quality improvement process is based upon the principles of management-oriented planning, commitment, and building interpersonal relationships between clients and employees. We focus on areas of motivation, teamwork, and problem solving skills. We do not discriminate against, but encourage, new philosophies and improved methods.



Our fundamental belief in Quality Commitment is applied to all tasks. It applies to all employees, procedures, equipment, state of mind and attitude. It is one of the bases that separate us from any other company – the true base that we endeavor to find quality in our employees and teach them to seek quality in all other tasks.

Safety is a primary focus of our working fundamentals. We strive daily to implement new fundamentals, to increase the safety of our employees and our lives. Our employees hold value in their work, in their lives, and in their families. We will honor the value of safety at all times. It is our foremost priority to all our customers, employees, and their families.



We at 3D Hitech Systems Limited – Civil Works Services have had the pleasure of an impeccable safety record in the past, and we look forward to continuing these efforts for a safe future. This very idea is the base support of investing time and effort into our safety program. We are committed to improving ourselves in the total safety commitment in not just our jobs, but in our lives.

Safety Procedures and Officers

3D Hitech Systems Limited is committed first, to the elimination of occupational injuries and illnesses and the damage to equipment and property throughout its operations to the protection of the general public whenever it comes into contact. Second, 3D Hitech Systems Limited operations also committed to the prevention pollution and environmental degradation and to continuous improvement of its Environment, Safety and Health Management System. This commitment is reflected in our Safety and Health Management System applied to our international projects.

Company Projects

3D Hitech Systems Limited project portfolio includes a variety of types and size of the project from the smallest stand alone fire alarm installation fully to integrate electrical and mechanical installations. Projects include work for private and public sector clients on a number of commercial, leisure, and, light industrial projects.

OUR PLUMBING SERVICES

A schematic representation of the workflow for plumbing design services is depicted below.

PLUMBING DRAFTING & DETAIL DRAWINGS

Plumbing Drafting - Plumbing Detail Drawings - Plumbing Engineering Drawings
At Mechanical, Electrical and Plumbing, we provide high quality plumbing drafting and detailing service meeting with International Standards at reduced costs. We have expertise in preparing to plumbing layout design and detailing, piping & plumbing shop/coordination drawings, piping construction drawings, material take-offs for various components, etc.

We specialize in plumbing drafting and detailing services ranging from design, drafting to roughing. We add value to our customer business by offering them the competitive edge by providing high quality plumbing drafting products and plumbing design services at effective prices.

We provide the following Detailing and Drafting Services in Plumbing including supply, install and Maintenance:

- Domestic Cold and Hot Water System layouts
- Waste Water System layouts
- Storm Water System layouts
- Riser Diagrams of Domestic Hot / Cold Water Diagram, Sanitary Drainage and Vent Diagram, Storm Water Drainage Diagram, Compressed Air Diagram, Fuel / Medical Gas Diagram, Fire Protection Diagram, Laboratory / Radioactive Drainage and Vent Diagram, Oral / Laboratory Vacuum Diagram
- Typical Enlarged Diagram showing all the details of the plumbing accessories and

- connection to plumbing fixtures
- Details and Schematics

DUCTILE IRON PIPES

SUPPLY, INSTALL, DESIGN & MAINTENANCE



Preconstruction Services

Preconstruction Estimating

Provide project estimating and a reliable cost model drawn from our extensive cost histories.

Feasibility Studies

Analyze life cycle costs for building system alternatives.

Scheduling

Develop a complete team schedule showing who and what goes where and when.

MEP Review

Evaluate evolving mechanical, electrical and plumbing system concepts and coordinate

engineering services.

Constructability Review

Help determine the ease and speed of the building process.

Risk Management

Control cost, schedule and owner objectives to mitigate risk.

Market Analysis

Understanding the unique requirements of your project in the context of market conditions and trends.

Cost Control

Provide the most efficient design and construction methods to achieve value.

Quality Control

Monitor methods, procedures and checks from start to finish with the goal of meeting established standards.

Construction Services

LEED™ Certification

Meet sustainable design and construction criteria for Leadership in Energy & Environmental Design certification and recognition.

Progress Monitoring

Monitor actual versus forecasted schedule/budget.

Change Order Management

Limit the need for revisions.

Quality Control and Testing

Validation of actual to specifications.

Labor Relations

Proactive resolution of potential issues.

Post-Construction Services

Commissioning

Ensure that building systems are designed, installed and activated according to owner's operational needs.

Lien Releases

Severing of contractual ties to vendors.

O&M

Development of operations and maintenance instructions.

Final Closeout

Completion of punch listed items.

One-Year Walkthrough

Final verification of operational status.

3D Hitech Systems Limited Culture`

3D Hitech Systems Limited culture begins with our people; we like to think of ourselves as one big family working together toward one goal - Building Excellence. Our company culture is a mix of hard work, fun, mutual respect and a strong commitment to our clients and community. There is close friendship among the employees of this family-oriented company that adds value to their working and personal lives. We strive to maintain an open, family-like atmosphere in our offices and on our job sites. Like most families, our expectations are high. We recruit and retain only the most talented and enthusiastic employees, many of whom have been with 3D Hitech Systems Limited for over 8 years.

We encourage teamwork and collaboration. We support and reward individual initiative and resourcefulness. We value problem solvers and effective communicators and acknowledge and celebrate the contributions and accomplishments of others - fellow employees as well as our project partners.

Each year everyone looks forward to planning and attending the many traditional 3D Hitech Systems Limited events like the annual family picnic and annual meeting, as well as group outings, holiday parties and retreats.

Safety

"Safely, the only way to work!" That is the motto by which we live.

We are committed to safety above all else, and this commitment is central to everything we do. Our proactive approach creates value for our clients and safeguards our most important asset: our employees. Our entire team is dedicated to maintaining a safety-focused and environmentally sound business; our safety culture is promoted by each member of our team through planning, implementing and evaluating safety practices on a daily basis.

Our safety program is proactive and action-oriented; everyone from management to trades people is involved in making a zero-incident workplace a reality. We use daily pre-task planning sessions, ongoing safety inspections, weekly safety meetings, safety seminars, special equipment training, safety manual reviews and email updates to assist in attaining our goal of zero incidents.



Our supervisors receive training in the 30-hour Construction Out Reach Program, as well as classes in Fall Protection, Excavation and Trenching, First Aid, CPR and Confined Space Entry Procedures, Substance Abuse Awareness and Recognition. New employees are required to complete our New Hire Safety Orientation Program.

Our substance abuse program includes Pre-hire, Post Accident, Fitness for Duty, For Cause and Random Drug and Alcohol Testing. All employees, including management, are subject to random testing equal to 25% of our annual workforce.

Our safety culture at 3D Hitech Systems Limited focuses on keeping motivational messages and emotions at the forefront of everything we do - every day. Family-oriented messages remind us to keep safety at the top of our minds with posters and banners placed throughout our projects. Bringing our families to the jobsites with these visual reminders positively impacts how we approach and value safety.

3D Hitech Systems Limited is involved in civil construction and engineering in the following areas:



Bridging & Structural

3D Hitech Systems Limited specialise in the construction of bridges, piling, foundations, wharves, marinas and other such structures.



Road & Pavement

3D Hitech Systems Limited manages major roading contracts throughout the Upper North Island. We undertake projects ranging from large transit and council roads to small rural roads including bridging, culverts, signage, and traffic management. We also manage the surfacing of roads, driveways, car parks, sports facilities and footpaths.



Specialist Pile Driving

3D Hitech Systems Limited specialise in piling and foundation works. We have carried out foundation works for bridges and structures as well as dynamic compaction for foundations.



Bulk Cartage & Heavy Transport

3D Hitech Systems Limited has a number of six wheeler plus trailer units with highly skilled drivers available for bulk cartage work. We also have tractor units and a heavy transporter able to cart up to 75 Tonne.



Water & Wastewater

3D Hitech Systems Limited have extensive experience in reticulation projects, rising mains and pump stations as well as new water and wastewater treatment plant and upgrades of existing plants. We have the technical expertise on top of our project management experience to co-ordinate the multi-disciplinary demands that come with managing projects of this nature.



Plant Hire

3D Hitech Systems Limited has an extensive fleet of machinery and equipment all available for hire subject to availability.



Site Works

3D Hitech Systems Limited provides a wide range of earth and site work services including; house site construction, driveway construction, landscaping, drainage and trenching.



Subdivisions

3D Hitech Systems Limited has extensive experience in the construction of subdivisions including; earthworks, drainage, service relocation/installation, footpaths, pavements, surfacing and landscaping.



Construction

With a passion for construction, we provide the highest level of service to every client by dedicating our time and energy to producing only the finest quality of workmanship to enhance the lifestyles of our customers.

3D Hitech Systems Limited specializes in Luxury remodeling and Fine Home Building.

Whether we are supervising a small remodel, or building a custom estate, our success stems largely from a dedication to two factors: organization and communication.

3D Hitech Systems Limited features the following specialty services:

- Design Build Construction
- Residential Remodeling
- Project Management
- Hard scape Construction
- Landscape Construction
- Swimming Pool and Spa Construction
- New Home Construction

All 3D Hitech Systems Limited projects are assigned a supervisor from the initial survey through to project completion. On-site personnel carry cell phones, Black Berry PDA computers, and laptops – making all 3D Hitech Systems Limited supervisors and project managers available at any time throughout the project. We go to extraordinary lengths to insure that each job flows smoothly, efficiently, and on budget.

Our unwavering attention to the business side of building benefits everyone: The Owner and Design Team see a final product that follows the spirit of the original vision, the subcontractors get in and out with no down time, increasing their profit margin and providing incentive to offer their services at lowest possible price, and the client knows exactly what the job will cost and precisely when it will be finished.

3D Hitech Systems Limited - Design



How do I start designing my home?

Start with understanding your tastes.

Get some scissors and a stack of magazines. Try magazines like Architectural Digest®, Elle Décor®, Sunset®, House Beautiful®, In Style® or even National Geographic®. Cut out any picture that intrigues or inspires you.

Snip swatches of color, too, using everything from ads to feature articles. Then separate them into piles along with any color chips and material samples (ribbon, fabric, tile, wallpaper) you may have collected.

For your bathroom, you might have a picture of a bamboo forest, another of Windsor Castle, and a chip of tile. Look at the colors and textures and see if they agree. Perhaps you will end up with a granite finish on the tub and muted green walls, and decide to save the tile for the kitchen.

Create an Inspiration File and bring it to us where we have design consultants available who are happy to make your final decisions.

Check out these online resources:

[Waverly's "How To's" for Decorating your Home](#)

[Furniture Arranging 101 with printable graph planner](#)

[Decorating Worksheet](#)

[Arranging Furniture Tips from Loews](#)

[Tips for choosing the right paint](#)

[Designing with Light](#)

[Rearranging Furniture](#)

3D Hitech Systems Fluid Limited - Build

Each home by 3D Hitech Systems Limited has an assigned superintendent responsible for constructing your home, overseeing all the workers and ensuring the final product meets all expectations. The team concentrates on a logical, step-by-step process. "There is a natural flow to the work. We won't start something until the previous phase comes to full completion," says one of our superintendents. "It's all very linear...one thing at a time." The process is methodical, but moves along briskly, aimed at getting your home move-in ready as soon as possible.



The process is divided into eight phases:

- Foundation
- Framing
- Rough Mechanicals
- Finishes
- Trims
- Finals
- Final Orientation

Pre-Construction

During the pre-construction meeting, you are invited to sit down with your sales person, superintendent and possibly a customer service representative to do a final review of your Dream Home package. Together, you'll verify the placement of the house, review the blueprints, and find out what to expect during the building process. Once city and county permits are cleared, construction can begin.

Your sales rep will remain your primary contact throughout the process, but make sure you have contact information for your superintendent as well.



Civil engineering construction services include:

- Bulk earth works
- Drainage – commercial, sub-division, public & private
- Water/sewage pumping structures & wells
- Retaining walls - emergency & temporary earth stabilisation
- Lightweight concrete & void filling
- High voltage industry civil & building work
- Site works – including footings, floor preparation, services etc
- Foundations & piling
- Pipelines – including storm-water & sewage
- Grouting – including pressure grout stabilisation of foundations and beams
- Rock/earth drilling & anchoring
- De-watering



Electrical

Our skilled teams of staff ensure that the most intricate electrical work is carefully and correctly completed, ensuring guaranteed peace of mind.

Partitioning

Drywall, Chip Board, Vitrex Toilet Partition System and demountable types? we have the expertise required to complete each and every installation.

Project Management

From planning, costing and coordination, through to execution and handover. 3D Hitech Systems Limited has the capability to see every project successfully executed from start to finish.

Building Alterations

We have the expertise to complete both exterior and interior building alterations for any requirements.

Turnkey projects

Having handed over a number of projects fully completed and in a ready to use condition, whatever the client's requirement, we deliver.

Shop fitting

Star Contractors supply the services in manufacturing and installation of shop fitting projects, using the best possible quality raw materials and supplying the most appropriate fittings to the full satisfaction of its clients.

Suspended Ceilings/Specialised Ceilings

Suspended Ceilings are hung from the ceiling joints with a metal grid. This creates a cavity between the joints and the ceiling where pipes, wires and ductwork can be installed and worked on. We use Gypsum boards with a standard thickness from 6mm-15mm or any type of acoustic materials. Specialised designs can also be created utilising these materials.

Moldings

A moulding is a strip of material with various cross sections used to cover transitions between surfaces or for decoration, made from wood plaster or plastic. We create definition by applying light and dark shaded stripes to a structure or object, without having to change the material or apply pigment.

General Construction

- 3D Hitech Systems Limited has a range of capabilities and resources to provide their clients with a variety of services in the commercial, industrial and private sectors.
- Earthworks involve the excavation, removal/importation and trucking of fill for surface scrapes, trenching and battered slopes. 3D Hitech Systems Limited can undertake both heavy earthworks for major construction purposes and small scale residential and tight spaces handworks.
- Drainage including storm-water & waste-water drainage, water reticulation, de-watering installation, private & public drainage, and soakage systems. Whatever your requirements 3D Hitech Systems Limited can solve your particular drainage problem using a range of specialised equipment and techniques.
- **Foundations** concrete raft pad and piled foundations for anything from small equipment stands to heavy bearing structures and abutments.
- **Concrete Construction** 3D Hitech Systems Limited construct a range of both pre-cast and poured on site concrete structures, and take pride in achieving both accuracy and a high standard of finish.
- **Building Construction** 3D Hitech Systems Limited has extensive experience in the construction of high end houses and light commercial buildings (e.g. shops, warehouses and factories). The fully qualified building arm of the company can undertake the entire building project from foundations & piling to finished structure.
- 3D Hitech Systems Limited also uses Foamcrete (thermal insulating concrete) from Canterbury Foam Concrete Ltd as an insulation screed beneath new floor construction and to protect against rising damp in existing timbered floored homes.



Retaining Walls & Anchoring

Retaining Walls

3D Hitech Systems Limited can provide certified soil and rock anchors for a range of applications including retaining walls, uplift tie down and emergency soil stabilisation by overburden removal, pore-pressure dewatering and manta ray anchors.

ANCHORING

3D Hitech Systems Limited has the specialist equipment for drilling/placing anchors, as well as a range of earth anchors. They are approved South Island installers of Stingray and Manta Ray anchoring systems from Ancorloc NZ Limited

- Stingray & Manta Ray Earth Anchors – driven tipping plate soil anchors for reaction of tensile loads. Fast and easy to install, they require no grout or excavation and are environmentally friendly.
- Duckbill Earth Anchors – used to secure any objects that may be stolen, moved or blown down (e.g. fences, trees, sheds, playground equipment, towers, antennae etc)
- Soil Nails – usually steel reinforcing bars inserted and grouted into place to reinforce soil slopes, excavations and retaining walls
- Anchored pole type walls
- Shotcrete construction – sprayed concrete used in conjunction with rock & soil anchor systems which provides immediate reinforced ground support for underground tunnel openings, rock slope stabilisation and the protection of bridge abutments etc
- Gabion walls – robust wire mesh rock-filled baskets used for retaining walls



Specialist Services

GROUTING

3D Hitech Systems Limited has extensive experience in grouting techniques including the following:

- Ground improvement & Soil Stabilisation grouting
- Fissured Rock grouting
- Void filling to eliminate collapses, sink holes or depressions
- Foundation grouting
- Tube-a-machette grouting to improve uplift resistance of bridge structures and foundations
- Annulus grouting

3D Hitech Systems Limited also uses Foamcrete (thermal insulating concrete) from Canterbury Foam Concrete Ltd as a suitable product for void filling or annulus grouting.

DE-WATERING

3D Hitech Systems Fluid Limited have extensive experience in de-watering using Wellpoint de-watering systems to allow the ground water table to be lowered on construction sites to enable deep drainage, underground structures and foundation works.

At 3D Hitech Systems Limited we are regularly engaged in the design and execution of highly specialised civil engineering solutions. We have the capability to research, design and build equipment and attachments to specifically meet new requirement applications.

SEWAGE TREATMENT & WATER RETICULATION SYSTEMS

3D Hitech Systems Limited has the specialty knowledge and expertise in sewage treatment plants and water reticulation systems including:

- upgrades
- pump installations
- screen structures
- **Other Services**

Renovations: We thrive on helping our clients modify their existing buildings to suit their needs. Our skill is in working with the existing buildings strengths to create something new that complements and enhances the existing structure.

Additions: Our team can make an extension to your home feel as if the house was built that way from the very start. The team will make sure that any extension to your home will be a perfect fit for your needs and your budget.

New housing: Is your dream building a brand new house, customized to your specific needs? Then we should be the first place you call. Our team combines the best in design with our practical knowledge of building to avoid potential problems before they arise. You can have peace of mind knowing that your new home will be on time, on budget and exactly what you want.

Pools and Landscaping: With our diverse range of skills our team also specialise in swimming pool construction, garden design and landscaping services. We customise solutions for your specific back yard needs.

GALLERY



WAREHOUSE CONSTRUCTION



L&T COMPACTOR



MOBILE HOT ASPHALT MIXER



CAT AP 800B



CAT AP 800D



VOLVO GRADER



EXCAVATOR AND DUMP TRUCK



COMPACTORS



VOLVO PAVER



CAT 950



CAT DIESEL GENERATOR

ELECTRICAL

CENTRAL ELECTRICAL WATER HEATER

Water heating is a thermodynamic process using an energy source to heat water above its initial temperature. Typical domestic uses of hot water are for cooking, cleaning, bathing, and space heating. In industry, both hot water and water heated to steam have many uses.

In household and commercial usage, most water heaters are of the tank type. Furthermore, called storage water heaters, these consist of a cylindrical vessel/container in which water is kept continuously hot and ready for use.

Tank less water heaters, also called instantaneous, continuous flow, inline, flash, on-demand or instant-on water heaters, are also available and gaining in popularity. These water heaters instantly heat water as it flows through the device, and does not retain any water internally except for what is in the heat exchanger coil.

STEAM BOILER



3D Hitech Systems Limited with years of experience in steam, Controlled Flame Boilers has changed and produced its range of boilers to keep abreast of the latest technology. With today's advances in combustion and electronics, Controlled Flame Boilers has developed a system to increase efficiency, to help optimize fuel consumption even further.

Controlled Flame Boilers' very popular range of Series 4VT uses 30% less fuel and considerably less time to reach full pressure.

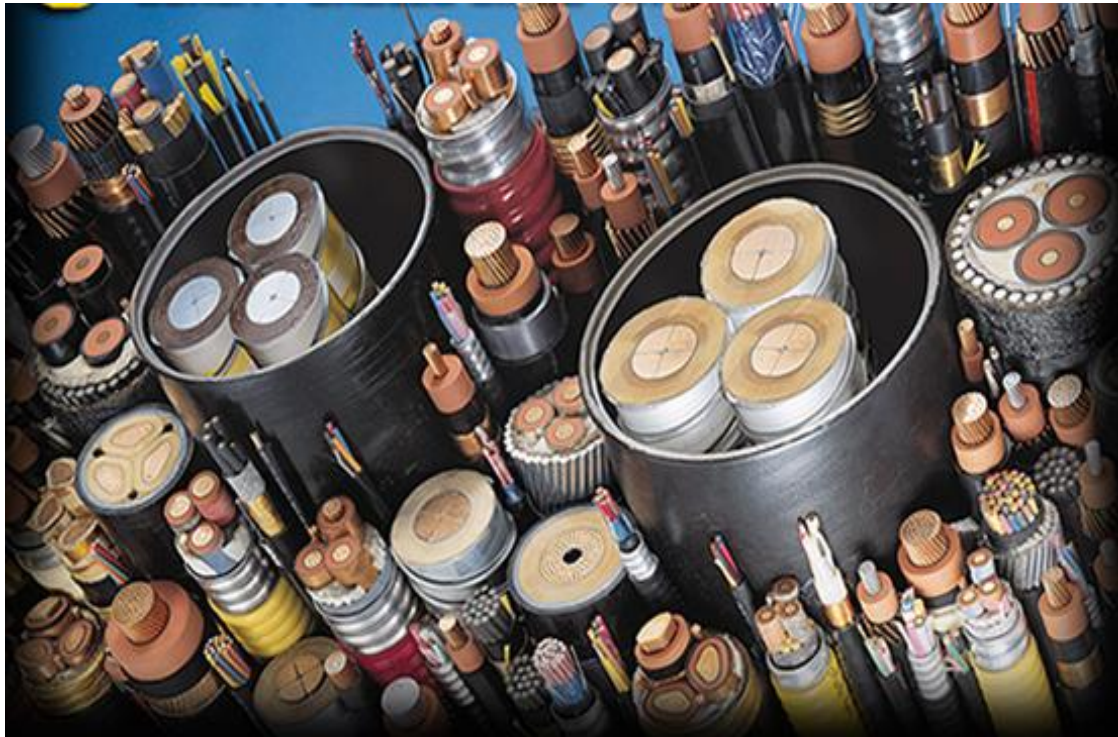
Controlled Flame Boilers horizontal ranges of boilers are designed to give maximum efficiency, particularly if used with a built in Economizer.

The range can accommodate all requirements for high quality steam and give a very fast response to high peak demands.

ELECTRICAL

Our Sources:

OKONITE CABLE USA & NIGERCHIN NIG



CABELS & WIRES

FTP CAT6 Cable



Products description:

Model No:112

Specification: Copper conductor solid polythene insulated communication cable with laminated Al-plastic composite sheath
Standard: IEC 11028, EIA/TIA568
Conductor: Solid Annealed Copper Conductor, Copper Clad Aluminum Conductor
Color: Grey, White
No. of Pairs: Up to client's requirement
Application:...

FTP CAT5e Cable



Products description:

Model No:113

Specification: Copper conductor solid polythene insulated communication cable with laminated Al-plastic composite sheath
Standard: IEC 11028, EIA/TIA568
Conductor: Solid Annealed Copper Conductor, Copper Clad Aluminum Conductor
Color: Grey, White
No. of Pairs: Up to client's requirement
Application:...

Earth Bonding Cable



Products description:

Model No:015

Specification: Annealed copper stranded circular, PVC insulated Standard: 227IEC, BS6004, AS5000.1 Conductor: Copper Conductor Rated Voltage: 450/750V Color: Green/Yellow Package: Coils, Plywood reel Application: Used in electric equipment, household electrical appliances, small electrical tools;...

PVC Insulated Cable



Products description:

Model No:016

Specification: Annealed copper stranded circular, PVC insulated Standard: 227IEC, BS6004, AS5000.1 Conductor: Copper Conductor Rated Voltage: 450/750V Color: Green/Yellow Package: Coils, Plywood reel Application: Used in electric equipment, household electrical appliances, small electrical tools;...

UTP Cable



Products description:

Model No:114

Specification: Copper conductor solid polythene insulated communication cable with laminated Al-plastic composite sheath
Standard: IEC 11028, EIA/TIA568
Conductor: Solid Annealed Copper Conductor, Copper Clad Aluminum Conductor
Color: Grey, White
No. of Pairs: Up to client's requirement
Application:...

FTP Communication Cable



Products description:

Model No:115

Specification: Copper conductor solid polythene insulated communication cable with laminated Al-plastic composite sheath
Standard: IEC 11028, EIA/TIA568
Conductor: Solid Annealed Copper Conductor, Copper Clad Aluminum Conductor
Color: Grey, White
No. of Pairs: Up to client's requirement
Application:...

Communication Cable



Products description:

Model No:117

Specification: Copper conductor solid polythene insulated communication cable with laminated Al-plastic composite sheath
Standard: IEC 11028, EIA/TIA568
Conductor: Solid Annealed Copper Conductor, Copper Clad Aluminum Conductor
Color: Grey, White
No. of Pairs: Up to client's requirement
Application:...

LAN Cable



Products description:

Model No:119

Specification: Copper conductor solid polythene insulated communication cable with laminated Al-plastic composite sheath
Standard: IEC 11028, EIA/TIA568
Conductor: Solid Annealed Copper Conductor, Copper Clad Aluminum Conductor
Color: Grey, White
No. of Pairs: Up to client's requirement
Application:

UTP Communication Cable



Products description:

Model No:120

Specification: Copper conductor solid polythene insulated communication cable with laminated Al-plastic composite sheath
Standard: IEC 11028, EIA/TIA568
Conductor: Solid Annealed Copper Conductor, Copper Clad Aluminum Conductor
Color: Grey, White
No. of Pairs: Up to client's requirement
Application:...

FTP Cable



Products description:

Model No:121

Specification: Copper conductor solid polythene insulated communication cable with laminated Al-plastic composite sheath
Standard: IEC 11028, EIA/TIA568
Conductor: Solid Annealed Copper Conductor, Copper Clad Aluminum Conductor
Color: Grey, White
No. of Pairs: Up to client's requirement
Application:...

Communication Cable



Products description:

Model No:122

Specification: Copper conductor solid polythene insulated communication cable with laminated Al-plastic composite sheath
Standard: IEC 11028, EIA/TIA568
Conductor: Solid Annealed Copper Conductor, Copper Clad Aluminum Conductor
Color: Grey, White
No. of Pairs: Up to client's requirement
Application:

High Voltage Power Cable



Products description:

Model No:088

Specification: Aluminum Conductor XLPE Insulated Power Cable
Standard: IEC 60840, IEC62067
Voltage: 50/66KV, 64/110KV, 76/132KV, 127/220KV, 290/500KV
Conductor: Plain circular compacted copper or aluminium conductor
Conductor screen: Extruded semiconductive compound
Insulation: Extruded...

High Voltage Copper Cable



Products description:

Model No:089

Specification: Copper Conductor XLPE Insulated Power Cable
Standard: IEC 60840, IEC62067
Voltage: 50/66KV, 64/110KV, 76/132KV, 127/220KV, 290/500KV
Conductor: Plain circular compacted copper or aluminum conductor
Conductor screen: Extruded semi-conductive compound
Insulation: Extruded super-clean...

Single Core XLPE Cable



Products description:

Model No:092

Specification: Aluminum Conductor XLPE Insulated Power Cable Standard: IEC 60502 Voltage:

0.6/1KV, 3.6/6KV, 6/10KV, 8.7/15KV, 12/20KV, 18/30KV, 19/33KV, 26/35KV Conductor: Aluminum

Conductor Insulation: Extruded super-clean cross-linked polyethylene (XLPE) Cross Section: Based on client's...

INSTRUMENTATION

FLOW METERS

Our Sources:



HY-FITT Glycerine Gauges and Accessories

WIKA Glycerine Gauges



HNL Air Horns and Indicators



AIR-PRO Temperature Gauges



Counters



WIKA Temperature and Dry Gauges



Professional Range

KELM Air Preparation



KUNKE Miniature, High Precision Regulators

AIR-PRO Workforce Range



Regulators



AIRCOMP Air Preparation Equipment

VALVES:

We engaged in sales & installations

Our Sources:

FLOWTECH UK & WARREN ALLOY USA



Cast Gate Valve of superior quality is available with us. The Cast Gate Valves are fabricated with the best quality Cast steel with smooth flowing contours, uniform metal sections and generous radius fillets to prevent stress concentrations. Designed for structural stability, mechanical strength and safe weld ability, the Cast Gate Valve is highly demanded in the industry. The magnetic particles in the Cast Gate Valves are inspected for special applications.



Cast Check Valves are designed to suit the clients for various industrial and commercial applications of their business. The Cast Check Valves are fabricated from the premium quality high grade steel to ensure high tensile strength and durability. The Cast Check Valves are extensively used to prevent the back flow of liquid in gas lines.



Avail the high performance **Butterfly Valves** at Flow-Tech Industries, manufactured in various types that include Slim Seal (centre) disc type, Offset (Eccentric) disc type and Lugs type. FLOWTECH Butterfly valves are applicable for tight shut off service, low leakage rate and/or flow control. Easy operation, absence of sliding parts, low head loss, savings in weight, space etc. is some of the key features of the Butterfly Valve. We use different grades of optimum quality cast iron, cast carbon steel and cast stainless steel for high performance yielding Butterfly Control Valves. Butterfly Valves offered by our company are economical along with that they come with Lever, Worm Gear and Pneumatic Actuator for handling operation. We are enlisted as one amongst the forefront Butterfly Valves Manufacturers.

3D Hitech Systemss activities concentrate around Instrumentation and Control equipment. Our expertise is in looking beyond the single product to the complete control application and its effects.

The core of the companies business comes through the distribution and commissioning of selected Principle products which are well established, technically advanced, price competitive and well supported.

Offered Services

- Instrumentation Repair and Calibration / On Site Work
- Instrument Calibration / Installation by our fully trained Instrumentation / Technicians
- Flow Calibration

- On site / offsite flow calibration services
- Load Cell / Vessel Weighing
- Unique Load Cell / Weigh vessel calibration service

IT Services & Consultancy

- Bespoke Data Acquisition Software Design
- Infrastructure Design, Implementation & Support
- Forms and Web based Application Development
- Profibus, Fieldbus and PLC System Design & Configuration

Panel Building

- The design and build of Control Panels, Marshalling Boxes / Junction Boxes
- Specifications or to our standard designs, drawings

Service and Support

At 3D Hitech Systems, our goal is to provide every customer with the ideal flow, pressure, vacuum or level solution for their application. We back up that commitment with industry leading products and customer centric service and support that builds strong relationships that continue long after the sale.

We make it easy for you to get the get technical assistance and training services you want to get the most out of your 3D Hitech Systems product. And, we make it easy to stay in touch with your 3D Hitech Systems representative to handle your questions and requests.



3D Hitech Systems Factory Certified Service

Advantage

- Ensuring optimum performance of your instrumentation throughout its life
- The 3D Hitech Systems Factory certified service advantage
 - Same high quality metrology standards as manufacturing process
 - New factory parts
 - Copy exact processes
 - 3D Hitech Systems quality system

- Class 100/1000 clean room capabilities
- Factory Warranty on all service work
- Extended warrantee and service contracts
- Onsite, web and factory based customer training
- Onsite commissioning and start up support services

Service and Technical Support

Supporting you after the sale

Our dedicated Technical Service and Repair Group is always ready to provides after-sale technical, warranty repair as well as a full range of paid services. Our expert staff includes managers, technical service engineers, coordinators, instrument technicians, and calibrators all dedicated to after sales support for our customers.

As a valued 3D Hitech Systems customer, you'll receive:

- After sales phone support for all products
- Calibration of liquid and gas measurement products to recognized standards (NIST/NMI)
- Calibration of Glass Tube Primary Standards
- Native gas calibrations on N₂, Ar, H₂, He, and CO₂
- Product firmware upgrades
- Field service at customer's site
- Customer training, product and software
- Refurbishing of Quantim Coriolis products
- Refurbishing of Variable Area products (Rotameters)
- Refurbishing of Thermal Mass Flow products
- Refurbishing of Secondary Electronic products
- 90 Day Warranty on all serviced products

Why Recalibrate?

Why is it necessary to recalibrate my flow meters? All instrumentation and process equipment is subject to wear and tear from their environment. This includes temperature, mechanical stress, component tolerance shift, contaminant buildup, oxidation, and other influences.

The effects are gradual, but over time the changes can affect the accuracy of even the best equipment. Ensuring the success of your process 3D Hitech Systems Instrument understands your need to keep your flow meters and flow controllers working at their best – accurate and reliable. That is why we have improved and expanded our operations to offer the most complete recalibration and repair service available.

Periodic calibration from 3D Hitech Systems Instrument will:

- Verify and ensure accuracy and reliability
- Increase production yields

- Optimize process resources
- Ensure process consistency
- Provide repeatable results
- Provide peace of mind

Create a recalibration schedule that's right for you

We recommend starting with a 6-month “as found/as left” schedule to determine the ongoing stability of your devices' accuracy. Use the data you collect to determine if it is necessary to continue on a 6-month schedule or extend it out to a 1-year interval. For high-contaminant areas, you may want to consider shortening the interval to 3-months. The flow process experts at 3D Hitech Systems are always ready to help out. Contact us to assist you with determining what recalibration period is right for your process.

Coriolis Mass Flow Controllers and Meters

The first Coriolis device with built-in control

Quantim® is the first miniaturized Coriolis mass flow controller that measures and controls flow directly, without any need to compensate for fluid properties or process conditions. Quantim's Coriolis technology, internal control valve and PID bring a new level of measurement accuracy and control all in one compact package.

The Coriolis principle is not new to process flow measurement. It is a proven technology that has been employed in a wide variety of markets and applications for over 30 years. Although Coriolis has been widely used in high-flow processes, Quantim brings precise flow measurement and control to lower-flow applications.

Quantim Coriolis controllers and meters provide unsurpassed performance, reliability, repeatability and control in demanding low-flow applications. The 3D Hitech Systems Coriolis portfolio covers virtually every need you may have, including:

- Metal seal devices for the vacuum thin film and semiconductor industry
- NEMA 4X/IP66 MFCs for wash down applications
- Downport MFCs for installation and service ease
- High-pressure capability for demanding research applications

Our products also have an array of certifications and approvals for ingress protection

and use in hazardous areas. Plus, we have the best trained and most responsive flow experts with application experience in virtually every industry, all over the world. They make sure your Coriolis mass flow device is selected correctly and maintained properly.

Thermal Mass Flow Controllers and Meters

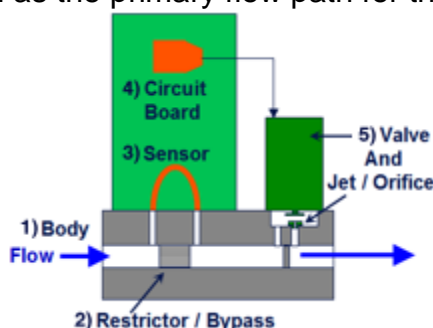
Thermal mass flow technology uses thermodynamic principles to derive actual mass flow. A thermal mass flow sensor can be combined with an integral valve and PID controller in one compact, efficient instrument that can accurately control the flow of gases or liquids over a wide range of flow rates.

TMF products exhibit high repeatability and accuracy, providing an effective way to ensure a reliable and stable process.

Principle of Operation

There are five primary elements to a mass flow controller:

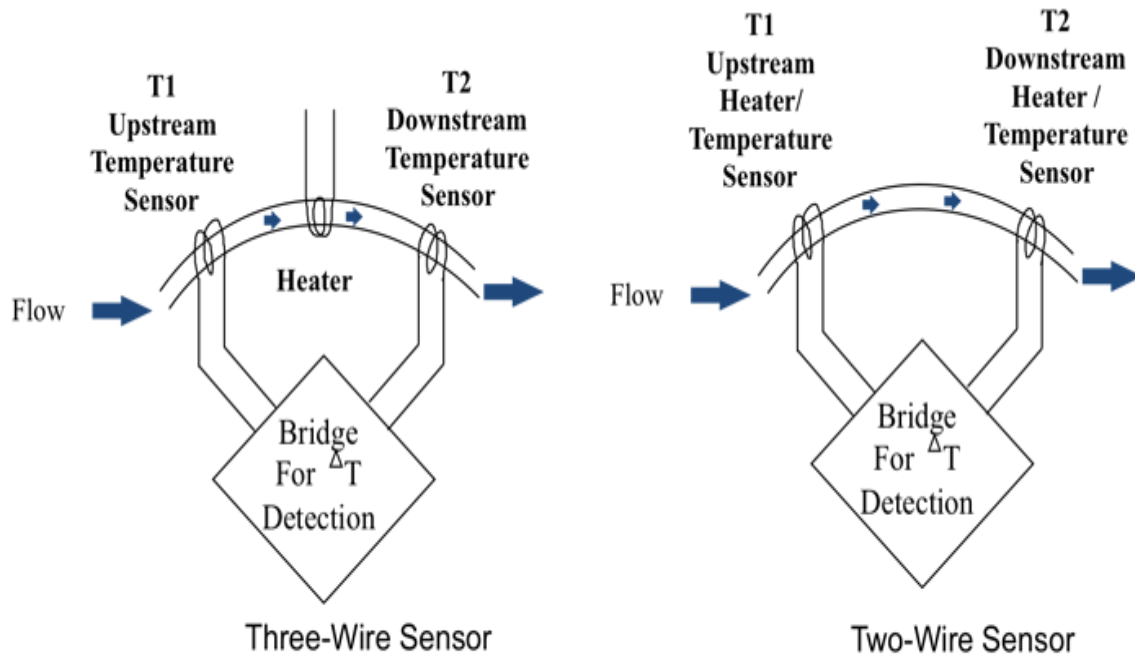
1) Body: The body provides a compact platform for all of the other mass flow controller elements, as well as the primary flow path for the fluid being measured.



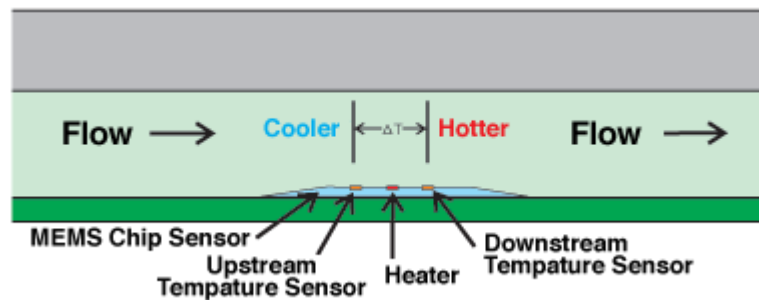
2) Restrictor/bypass: The restrictor (bypass) causes a restriction in the flow path, causing a reduced flow through the sensor. It is important that the ratio of flow through the restrictor vs. the flow through the sensor be constant. A variety of bypass techniques can be employed depending on the flow rate and application.



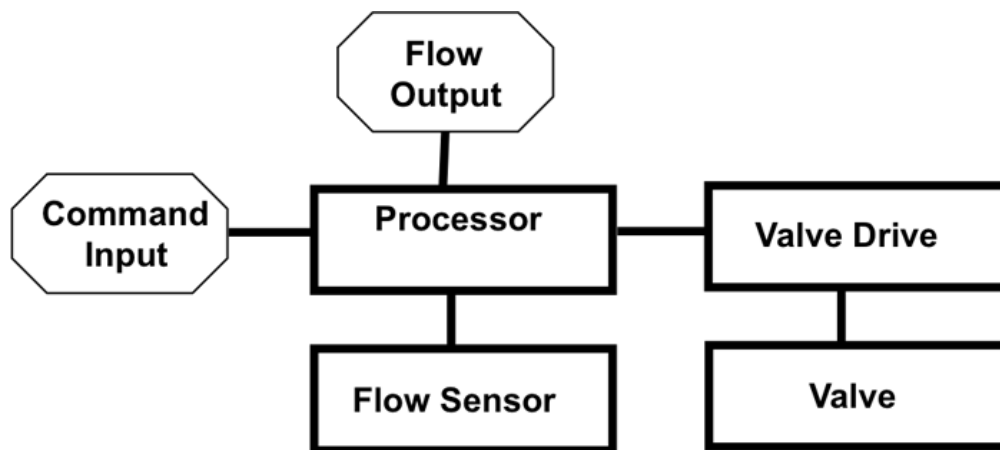
3) Sensor: The sensor is the heart of the mass flow controller. It uses heat and a differential temperature measurement to provide a signal that is proportional to mass flow. There are two-wire, three-wire and MEMS sensors available. The type of sensor used depends on the supplier and the application.



THE SENSOR IS NOT MEASURING MASS FLOW.
IT IS MEASURING DIFFERENTIAL TEMPERATURE.

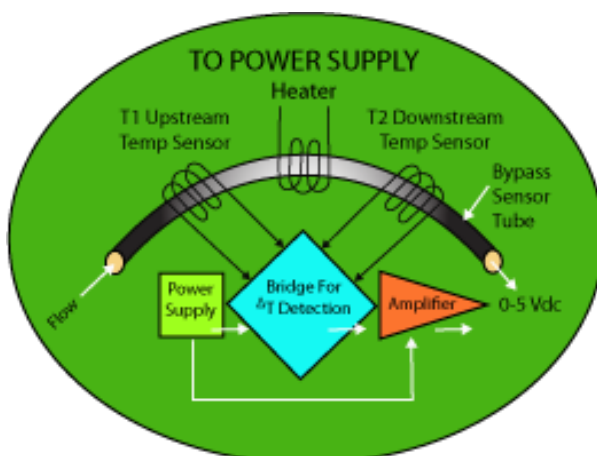


4) Circuit board: The circuit board is the brain of the mass flow controller. It manages the external inputs and outputs (I/O) to and from the device, as well as the internal I/O with the sensor and control valve. If the flow signal does not match the set point signal (command input), the valve drive is adjusted to reposition the valve as required.



Command > Flow = Open Valve

Command < Flow = Close Valve



5) Valve + orifice/jet: The valve combined with the orifice (jet) is the flow control element. There are several types of valves used on mass flow controllers depending on the flow rate and application. The majority of flow controllers use a normally closed solenoid-type control valve. This valve has a coil winding around a valve stem. When the coil is energized, it creates a magnetic field that is modulated to adjust the height of the plunger and valve seat assembly inside the valve stem. When energy is applied, the plunger is attracted to the top or pole piece in the valve stem, raising the valve seat off the orifice and allowing fluid to flow through the device. From full closed to full open, the valve seat only moves a few thousandths of an inch. While these valves control flow, it is not recommended that they be used as a positive shut-off valve.

When you put all of these elements together, you have a fully functioning mass flow controller.

For a typical mass flow sensor, a precision power supply provides a power heat input

(P) at the heater, which is located at the midpoint of the sensor tube. At zero (no flow) conditions, the heat reaching each temperature sensor is equal. The temperatures T1 and T2, therefore, are equal. When fluid flows through the tube, the upstream sensor is cooled, and the downstream sensor is heated, which produces a temperature difference. The temperature difference T2-T1 is directly proportional to the gas mass flow.

The equation is: $DT = A * P * Cp * m$, where:

- DT = Temperature difference T2 - T1 (°K)
- Cp = Specific heat of the gas at constant pressure (kJ/kg-°K)
- P = Heater power (kJ/s)
- m = Mass flow (kg/s)
- A = Constant of proportionality (S²-°K²/kJ²)

A bridge circuit interprets the temperature difference, and a differential amplifier generates a linear signal directly proportional to the fluid mass flow rate. The flow restrictor performs a ranging function similar to a shunt resistor in an electrical ammeter. The restrictor provides a pressure drop that is linear with flow rate. The sensor tube has the same linear pressure drop/flow relationship. The ratio of the restrictor flow to the sensor tube flow remains constant over the range of the meter. Different restrictors have different pressure drops and produce controllers with different full-scale flow rates. The span adjustment in the electronics affects the fine adjustment of the controller's full-scale flow. In addition to the mass flow sensor, the mass flow controller has an integral control valve and control circuit. The control circuit senses any difference between the flow sensor signal and adjusts the valve to increase or decrease the flow.

- Hydraulic systems test
- Ventilation R&D
- Hardening canopies for jet aircraft
- Silicon carbide for aircraft brakes

Analytical/Gas Analyzers

- Sample gas preparation and measurement
- Calibration gas control

Automotive

- Engine test
- Emissions test
- Leak test
- Verification of SHED (Sealed Housing for Evaporative Determination) operations



Biotechnology Biotech/Pharmaceutical

- Reactor gas control for fermentation
- Bioreactor gas control of dissolved oxygen and pH
- Tablet coating

Chemical/Petrochemical

- Measurement of gases in chemical processes and manufacturing
- Catalyst research
- Pilot plant flow control

Electronics Manufacturing

- Manufacture of computers
- Monitors
- Memory devices and other electronic equipment



Food & Beverage Food & Beverage

- Aeration
- Blending
- Process control in bottling, drying, mixing, cooling
- Protective gases for packaging
- Control of additives and pigments
- Flavor dosing

Fuel Cells

- Control fuel delivery
- Atmospheric simulations
- Production efficiency testing

Furnaces

- Flame control
- Gas mixing and blending
- Gas distribution
- Gas consumption measurement for internal accounting purposes

Heat Treating

- Burner control
- Blanket gas control

LED Lighting

- Metal organic chemical vapor deposition
- Vapor control

Medical

- Equipment performance validation
- Anesthesia
- Medical equipment manufacturing
- Specialty coatings

Metal Processing

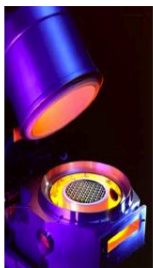
- Blank gas control
- Sparging
- Improved quality of manufactured metals

Packaging

- Protective gases in packages

Solar/Photovoltaic

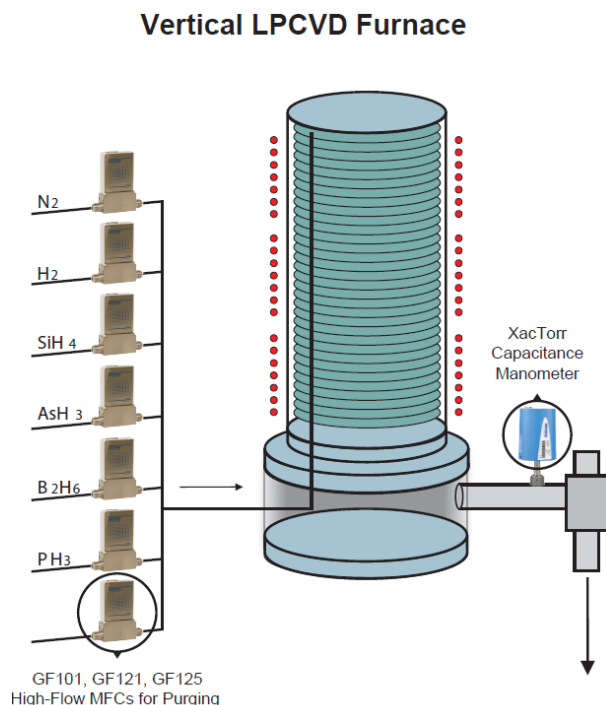
- Chemical deposition
- Thin film coatings



Semiconductor Semiconductor Manufacturing

- Chemical vapor deposition
- Etch
- Back-side wafer cooling and other critical processes in the production of semiconductor chips

High Flow Purge



Semiconductor wafers are manufactured using chemical and epitaxial processes, and are extremely sensitive to the presence of oxygen, humidity and other contaminants. In order to avoid damage during processing, the GF101, GF121 and GF126 high-flow MFCs are used in systems where the surrounding environment of the wafers and /or reticles are purged with a clean inert gas like nitrogen or clean dry air.

High-Flow Front Opening Universal Pods (FOUP) Applications

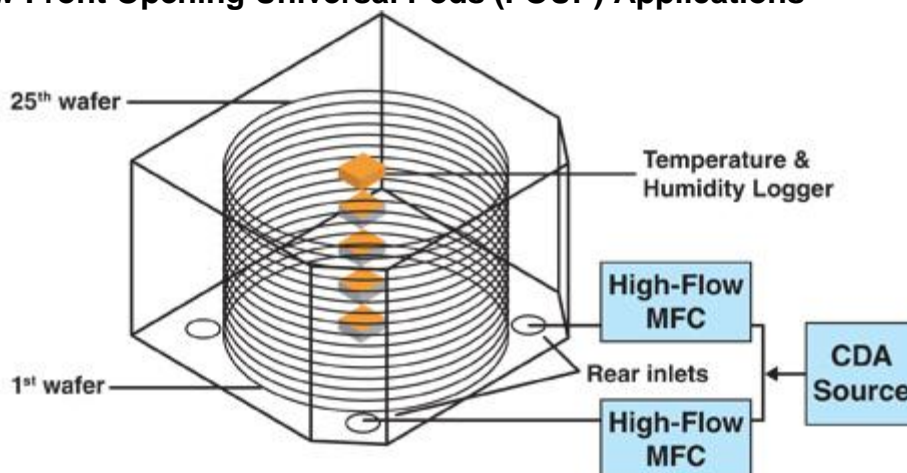


Fig. 1. Experimental setup for CDA purging of 450 mm FOUP

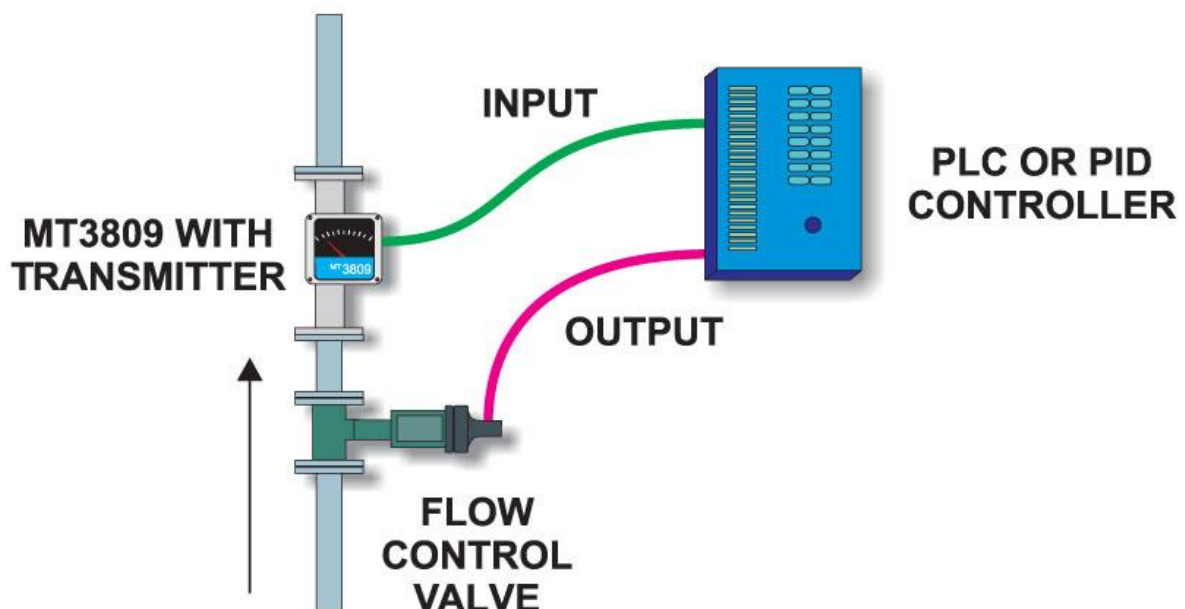
These specialized Front Opening Universal Pod devices hold 300mm wafers securely and safely and need high flow purge between etch and post-etch clean steps, which must be carefully controlled because exposure to moisture and oxygen immediately begins to destroy nanometer-scale critical dimensions of features on the wafer surface.

Variable Area Technology

Variable area (VA) flow meters, commonly called rotameters, are a cost-effective solution for flow measurement of liquids and gases. The VA meter has excellent measurement repeatability, which provides process stability and consistency.

External power is not required for operation; therefore, they deliver a fail-safe flow rate under any circumstance.

VA flow meters can be made from a variety of wetted materials for process fluid compatibility, high-pressure and high temperature conditions, and hazardous locations.



3. Principle of Operation – Variable Area



There are five primary elements to a variable area flow meter (rotameter):

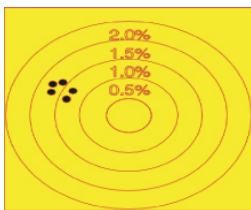
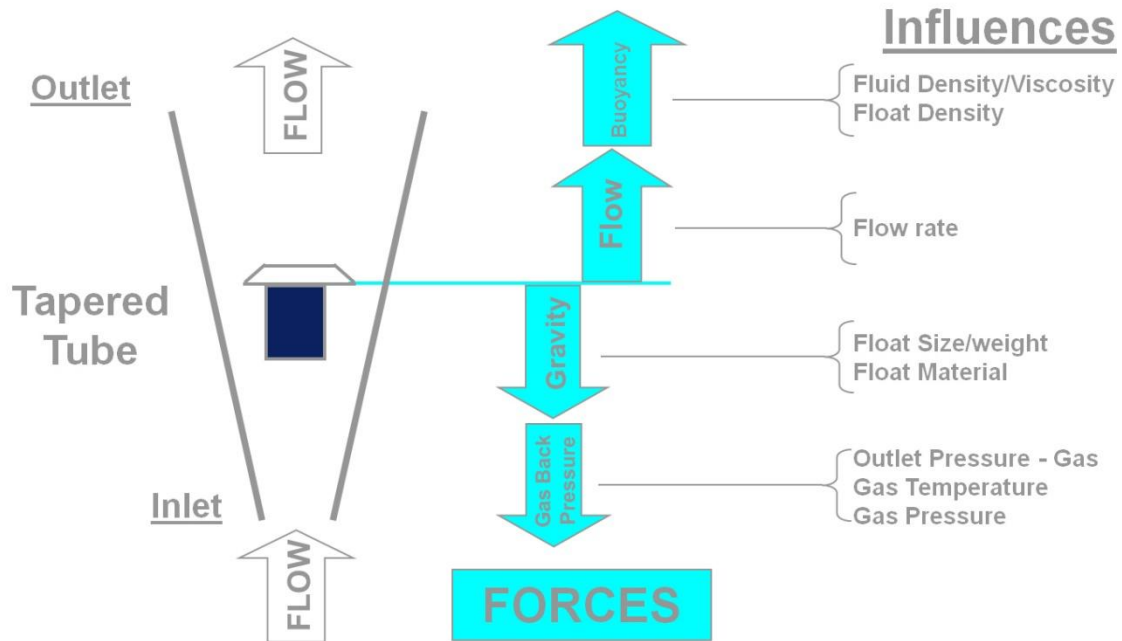
1. **Metering tube** – a tapered chamber that contains the fluid and the float
2. **Float** – a spherical or symmetrically shaped object that moves up or down based on flow rate
3. **Scale** – a device marked with increments of the flow units used to read the flow rate
4. **Process connections (end fittings)** – the flanged or threaded assembly that the customer uses to connect the process fluid lines – along with meter size, this is very important to the customer
5. **Body or housing** – the frame or structure that contains the metering tube, float, scale and customer connections

A variable area meter (rotameter) is a flow meter that measures volumetric flow of liquids and gases. Its operation is based on the variable area principle, where flow raises a float in a tapered tube, increasing the area for passage of the fluid flow. The float will reach a stable position when the force exerted by the flowing fluid + the buoyancy equals the gravitational force.

A change in flow rate upsets this force balance and the float will move up or down until it again reaches a position where the forces are in balance. The pressure drop across the float is low and remains essentially constant as the flow rate changes.

Float response to flow rate changes is linear and usually a 10 to 1 flow range is standard. Variable area meters can be installed directly after pipe fittings or valves without adverse effects on the meter accuracy. The meters are also inherently self-cleaning since the flow of gas or liquid between the tube wall and the float provides a scouring action that discourages the build-up of foreign matter.

The forces or influences involved in the rotameter can be seen in the diagram below.

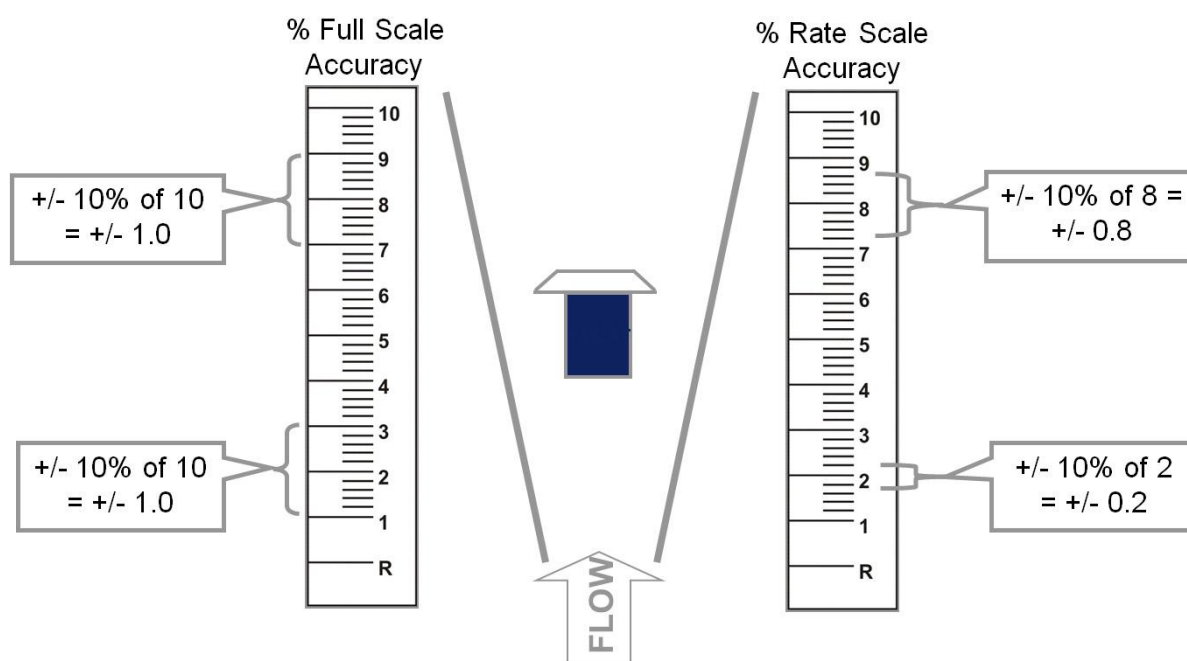


Repeatability

It is common to use rotameters for their repeatability, which is defined as the closeness of the measurement points taken under the same process conditions. The diagram at right illustrates this principle.

Accuracy

Accuracy of a variable area meter is calculated using the full scale accuracy method as opposed to the percent of rate method. The difference is shown in the diagram below.



VA meters are widely used in a diverse range of applications, from simple to sophisticated.

Here are details of a few typical applications:

Process Analyzers

[Process analyzers](#) are designed to accurately and continuously measure a target analyte in a process stream. Sampling is the single most critical issue for process analysis. When the sampling system becomes plugged, it can cause big problems and costly, unscheduled maintenance.

The variable area flow meter – with 4-20 mA output – continuously monitors sample flow to the analyzer, unlike a flow alarm or flow switch. When flow starts to drop – indicating the onset of plugging – users can schedule maintenance to clear the problem before the analyzer is starved of the sample. Rotameters without 4-20 mA output are often used for sample flow in analyzer applications.

Rotating Equipment

Large [rotating equipment](#) requires effective and reliable flow monitoring on a number of fluid supplies – like lubrication fluids, coolants, and dry gas seal gasses – to ensure efficient and safe operation. Metal tube variable area meters are commonly used to monitor lube oil and coolant flows. The optimum solution is using a 4-20 mA transmitting variable area meter so that flow can be continuously monitored. But glass tube or plastic body variable area meters are frequently used to ensure proper

flow to dry gas seals.

Offshore Oil Platforms

Operators of offshore platforms require reliable products that operate under extreme conditions such as high pressure and difficult environmental conditions. Common offshore applications involve injecting a fluid (many times a proprietary fluid) into the high pressure extraction fluid to either prevent corrosion, prevent freezing of the extraction fluid, or add lubrication. In all cases, the goal is to provide local monitoring of the extraction process, which improves the overall process yield. Since the extraction process normally operates under very high pressures, the flow meter choices are limited. The model 3809 variable area meter is an excellent choice because it is simple, proven, reliable (only one moving part) and is available for operating pressures to 20,000 psi/1350 bar. The unique 3809 meter will have heavy wall construction with stainless steel indicator housing. If remote monitoring is required, the model 3809 can be supplied with 4- 20 mA analog output and worldwide approvals.



Additional variable area meter applications:

1. [Chemical injection/dosing](#) – controls the flow rate of the fluid to be mixed (added) to the primary fluid
2. Boiler control – measures steam flow to a boiler or measure the gases that heat the boiler
3. Purge applications –controls the purge gas or liquid to keep process lines clear, to create a positive pressure and/or be the shielding gas in a contained welding application, or to create a positive pressure where electrical components are installed in an area where hazardous gases could explode if they entered the electrical compartment
4. Tank blanketing – inert gas is the “blanket” over the liquid in a tank, which prevents the liquid from giving off vapors which could ignite and then explode
5. [Simple flow measurement](#) – options such as flow switch (alarm) or continuous electronic output (4-20 mA output with HART) allow flow conditions to be monitored

and controlled remotely; a valve is also available to maintain flow at a given set-point.

Pressure and Vacuum Products

3D Hitech Systems now offers a very diverse line of pressure and vacuum products including pressure/vacuum controllers, pressure gauges, pressure transducers, pressure regulators, capacitance manometers, and more.

- Pressure/vacuum controllers that are flexible enough to manipulate the pressure of gas or liquid upstream or downstream of the device
- Pressure gauges to meet rigid cleanliness and safety guidelines
- Remote transducers that provide stability and reliability using proven sensing technologies
- Seal-free pressure transducers for measurement in corrosive mediums
- Compact and economical high-precision pressure regulators
- Heated and unheated capacitance manometers that meet unique requirements for any application

Level Measurement Technology

3D Hitech Systems magnetic level gauges provide reliable liquid level measurement with a proven magnetic float technology that does not require external power. That means your plant personnel can continue to monitor material levels despite planned or unplanned power cuts. Optional alarms and transmitters are available to permit remote monitoring as well.

Here's how it works – a float equipped with a 360° permanent magnet follows the level variation of the liquid to be measured. Because the only moving part in contact with the fluid is the float, these instruments are highly rugged and durable. And many process connection options are available to enhance application flexibility.

All 3D Hitech Systems magnetic level gauges feature sealed measurement chambers constructed of non-metallic materials – such as stainless steel, PVC, PPH, PVDF, PTFE. This enables the device to reliably provide level measurement of a wide assortment of liquids, including those that are corrosive, toxic, or hazardous.

WELLHEAD SERVICES

3D Hitech Systems. Provide 24/7 services to the oil, gas and petrochemical plants. 3D Hitech Systems specializes in providing Bolting Solutions, including Joint Integrity, Bolt and Flange Inspection, Internal and External Casing Cutting and In Situ Machining for the Wellhead Manufacturers and Installers, Rig and Platform Operators.

We aim to deliver a Quality Job, whilst ensuring the Safety of our People and our Client's Property. We will add value to the customers' business by delivering our jobs on time, at the most competitive price, backed by professional engineered designs and experienced technicians using the best designed tools available on the market. Our aim is to reduce "down time", have no "NPT", work efficiently, and perform all our services as "cold work".

We have performed In Situ/In Place Bolting and/or Machining Services on: Choke valves, Choke-and-kill manifolds, Christmas trees, Blowout Preventers, Diverters, Marine Risers, Gate Valves, SSV, Surface and Platform Wellheads, Fas-lok Clamps and Connectors, Butterfly Valves, Annular BoPs, Blind Flanges, Check Valves, Wing Valves, Bonnet, Bleed Rings, Flowlines, Production lines, Casing Head, Casing Spools, Double Stud Adaptors (DSAs), Single Stud Adaptors (SSAs), Adaptor Spools, Top Connectors, Ring Gaskets, Hubs, Companion Flanges, Adaptor Flanges, "5 bolt" or Dual Flanges, Swivel Flanges, Crown Flanges, Tree Caps, etc.

Our primary focus is the sale and installation of wellhead equipment, ancillary product lines which include valves, manifolds, frac trees, repair, remanufacture, and field service. Our products are used both in the drilling and completion phases of the oil and gas industry. 3D Hitech Systems has in-house machine capabilities which allows us to quickly and efficiently repair existing customer owned wellheads. We maintain computer generated inventory programs that enable us to utilize our customers inventory while providing them with detailed accurate inventory reports.

3D Hitech Systems is committed to bringing all of our customers worldwide innovative, high-quality oil tools products and the best technical services currently available to the oil and gas industries. We strive to exceed customers' expectations and have implemented ISO 9001:2000.

3D Hitech Systems employs highly skilled technicians and engineers to ensure quality workmanship and superior oil tools products. All team members undergo a regular cycle of rigorous orientation, training and evaluation programs from the time of initial hire throughout their career with 3D Hitech Systems.

SERVICES

Habitat™ Portable, Inflatable Welding Isolation Chamber

The 3D Hitech Systems Habitat™ Welding Isolation Chamber is a patented, portable, inflatable structure specifically designed to facilitate field welding. It is

designed to be placed on off-shore platforms and eliminates the need for costly, time-consuming shut-downs.

The 3D Hitech Systems Habitat's walls expand to suit the available space on the platform and isolate the welding area, safely containing the heat-source by maintaining a positive air-pressure within. This positive-pressure system works in the same way as that of the accommodation block on an off-shore platform by creating a virtual air-lock within the Habitat and is maintained by means of continuous air-flow input and extraction. The ratio of 2:1 input to extraction guarantees that the 3D Hitech Systems Habitat is inflated at all times and that the air inside is always clean and free of outside contaminants.

Our patented welding chamber's airtight-construction gives a positive barrier between welding and flammables or adverse weather conditions. Perpetual movement of air within the 3D Hitech Systems Habitat also ensures a comfortable and stable offshore working environment.

Fumes circulating around the weld area are quickly dispersed outside to a safe, non-flammable area of the platform through flame-retardant, spiral ducting. This allows the occupants to carry out welding and fabrication safely, while working in an enclosed environment.

The welding chamber's floor and walls are manufactured from a light-weight, heat-resistant fabric which confines sparks and splatters. Custom-built sleeves slip easily over pipes and around beams to create a seal.

The Habitat is placed around or over the area to be welded and secured and inflated using a blower which applies an air-input of between 700 and 1200 CFM and a positive pressure of between 10 and 20 Pascals. An additional exhaust blower provides positive pressure and constant air circulation inside the welding chamber. The blowers are available as air or electrically-driven units and can be located away from the Habitat itself.



Wellhead Testing - Xmas Tree Cavity Testing - Test HPHT Wells

3D Hitech Systems' Press-Test® is an economical system which utilizes a compressed, air-driven gas intensifier and an inert gas with a tracer gas for field testing well head and christmas tree cavities.

The self-contained, easily transportable unit has been successfully utilized on several HPHT wells in remote locations. Qualified 3D Hitech Systems technicians are provided as part of our Press-Test Wellhead Testing Service.

Conventional methods of testing wellhead and christmas tree cavities on High Pressure/High Temperature(HPHT) wells employ water or oils. This use of water or oils can ultimately cause corrosion to metal parts or degrade elastomers.

In addition, temperatures generated during flowing conditions of HPHT wells have the potential to heat these fluids to a degree that fluid expansion can potentially collapse the metal seal sleeves and seals.

Our Press-Test eliminates the use of these damaging substances and utilizes a pressure testing system which is reliable, safe and accurate.

Once flanges and cavities are pressurized, a Hot-Chek® Sniffer, used in detecting weld leaks, is used to 'sniff' flanges and lockdown screws to establish the presence of any leaks. Wellhead leak repairs can then be conducted as necessary. Holding the pressure for a specified amount of time also enables the detection of any internal leaks.

Upon completion of testing, the gas is vented to atmospheric pressure. This allows the gas to expand during well flow conditions and be within the acceptable pressure limits of the sealing mechanisms.



Hydraulic Bolt Tightening Services - Hydraulic Torque Tools

3D Hitech Systems offers available, first-class, on-site hydraulic bolt tightening services. From a simple bolt-up of a single flange connection or nipple up / down to maintenance and major-shutdown site services, we utilize only the best equipment and tools and employ only the most experienced engineers available in the industry.

Our Torque Tools cover a full range of sizes from 1/2" to 5" studs and 7/8" to 7-5/8" a/f nuts. Torque capacity is from 20 lb/ft (34 N/m) to 59,400 lb/ft (80,524 N/m) with manual and hydraulic equipment. All 3D Hitech Systems Torque Tools are tested

and supplied with applicable test or calibration certificates.

We offer Hydraulic Torque Tools with both air and electricity-driven power packs which can be used within hazardous environments such as off-shore platforms, eliminating the need to shut down.

3D Hitech Systems also offers a range of Low-height Ratchet Torque Tools that can be utilized in confined spaces or areas with restricted clearance where a socket and conventional square-drive tool would not fit.



Hydraulic Bolt & Stud Tensioning Services & Equipment Rentals

3D Hitech Systems Hydraulic Bolt Tensioning offers the quickest, safest, most accurate means of applying a specified residual load to stud bolts.

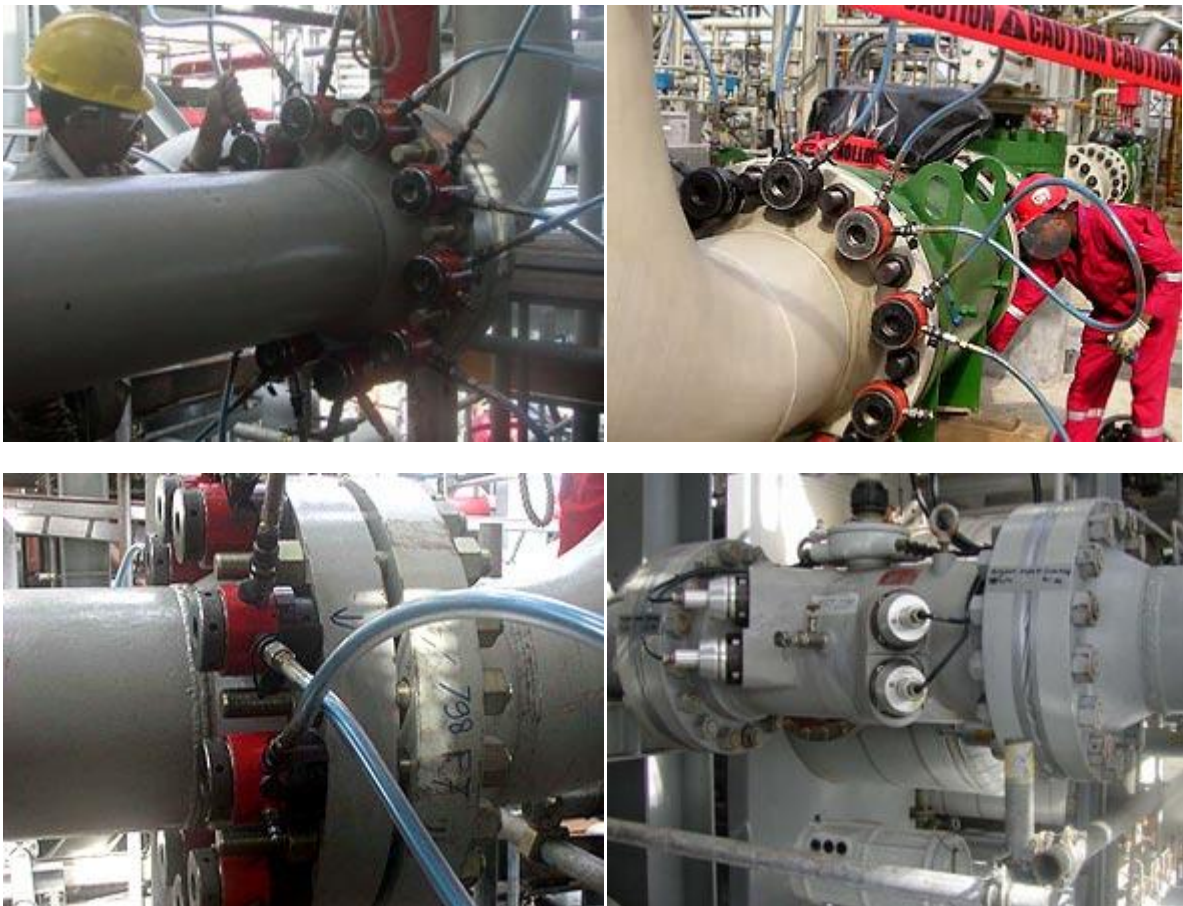
Hydraulic Bolt Tensioning can be used to easily achieve an accurate and predetermined bolt loading in a single, simultaneous operation, providing the uniform gasket compression essential for the integrity of critically bolted connections in a wide variety of top-side applications such as:

- pipeline flanges
- ■ heat exchangers
- ■ pressure vessels
- ■ compressor covers
- ■ boiler feed pumps
- ■ anchor bolts
- ■ many others

All 3D Hitech Systems hydraulic bolt tensioners are designed for easy, multiple-tensioner connections with user-friendly operations and maintenance procedures.

Assembly of the tensioners to the bolts is quick and easy, providing that bolts are clean, well-lubricated and in good condition.

3D Hitech Systems has substantial experience in providing precise calculations of the correct bolt load to be applied, ensuring an accurate residual load is imparted to bolts, no matter which simultaneous tensioning procedure is used.



Hot Bolting Service for Removing Corroded Bolts and Studs

Hot Bolting is a proven, effective method of preparing bolted joints for disassembly prior to shutdown.

Bolts are loosened one bolt at a time (while in service and hot). Lubricant is applied and Bolts are reassembled or replaced in order. This allows the flange assembly to be easily disassembled cold at a later stage, saving time during the shutdown period for gasket replacement.

Hot Bolting also allows corroded studs or bolts to be removed and replaced, while maintaining the integrity of the joint, as well as eliminating the need for shutdown.



Cold Cutting Service - Cold Cutter Equipment

The 3D Hitech Systems split frame cold cutters are air driven and capable of both cutting and beveling all grades of pipe and casing. Capacity covers a range of sizes between 7" to 32" O.D. and wall thickness up to 2-1/2".

In addition to eliminating the need for hazardous flame cutting, the cold cutting method enables operators to meet all potential requirements, both onshore and offshore.

Our cold cutting system produces a lathe-type beveled finish on casing ends without altering metallurgical properties. Cutting equipment quickly splits to mount to casing O.D. and requires minimal radial and axial clearance. The cold cutter can be set up and operational in less than 30 minutes.

3D Hitech Systems's cold cutters are portable, lightweight and compact, allowing for easy transport of equipment to any site.



Hot Tapping Service - Manual & Pneumatic Hot Tapping Drills

The 3D Hitech Systems Hot-Tap is a drilling machine used to make connections to pipelines, tanks and plant piping without the need to shutdown. The Hot-Tap is also utilized in making hot taps in preparation for plugging machine operations.

We provide hot tap drilling tools and equipment which are manually or pneumatically power-driven and are capable of making 1/2" through 4" (DN15-DN100) taps. This allows 3D Hitech Systems Service Crews to tap into pipe and tanks while they are still under pressure, without the need to shutdown. Our Hot Tapping tools are also used to install 2" and 3" completion plugs in tapping nipples to permit recovery of tapping valves.

Diesel Piling Hammer Rentals - Free Fall Diesel Hammers

3D Hitech Systems Diesel Piling Hammers are single-acting, free-fall hammers utilizing the principle of impact atomization.

Our Diesel Pile Hammer consists of upper and lower cylinders in which the piston is led. The Hammer is equipped with a rope-controlled, adjustable fuel pump with 4 settings. This serves to regulate the stroke of the piston and therefore the impact energy. This is a particular advantage when soil formations change. The maximum stroke of the piston is 3.7M, dependant on soil conditions. The Diesel Hammer utilizes a tripping device to lift the piston and start the Hammer.

Since 3D Hitech Systems Diesel Hammers do not have any piston rods, crank shafts, cams or bearings, they have little wear and are extremely reliable. Our Piling Hammers are nearly maintenance free and can be used on various pile types.

Other advantages to 3D Hitech Systems's Diesel Pile Hammers are the unmatched ratio of total weight to impact energy (which allows the use of lighter rigs) and the extremely low fuel consumption.

The rugged design, the reliability and minimal maintenance time has convinced thousands of customers around the world that the 3D Hitech Systems Diesel Pile Hammer is always the right choice.



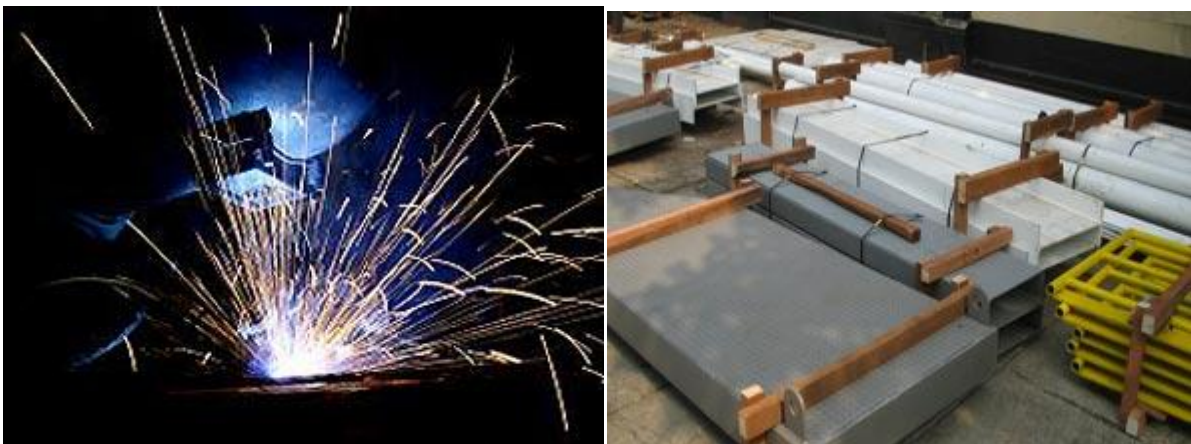


Welding Services - Fabrication Services - Custom Welding

3D Hitech Systems offers a wide range of offshore fabrication and welding services for the petroleum and gas industries. Our welders are certified to AWS-D11/6GR standards and are capable of taking on any welding job - large or small - worldwide.

Past offshore fabrication jobs for Clients include Rig Modifications and Upgrades, custom-made mud tanks, cargo boxes with valid certification, completion baskets and trash boxes that are inspected and load tested.

3D Hitech Systems also specializes in repairing wellheads and is well-known for its other services such as offshore barge repairs, top drive installation, stand pipes and custom welding services.





Wellhead Installation - Well Head Services

3D Hitech Systems is one of the few oil tool companies in the oil industry that has installed and repaired wellheads for various large petroleum and gas companies around.

3D Hitech Systems installs well heads utilizing a pre-engineered, controlled heat source that helps produce superior welds, regardless of weather, quickly and efficiently.

Our Wellhead Installation Services are guaranteed to be provided onsite by our fully-qualified and extensively-experienced engineers and technicians.



Leak Off Testing Service - Offshore Leak-Off Testing Equipment



Hydrostatic Testing Services - Hydro Test Equipment Rentals

Hydrostatic testing is the most common procedure used to qualify newly manufactured cylinders, spheres, tubes and pipe spools used for the transportation of dangerous goods. Hydro testing is also required periodically to re-qualify these pressure vessels for continued service.

3D Hitech Systems's hydrostatic testing complies with API and ANSI standards and can detect leaks as small as 5 scf/yr. 3D Hitech Systems uses Nitrogen,

Nitrogen/Helium or Air/Helium tracer gases as required.

During a 3D Hitech Systems hydrostatic test, the pressure vessel or pipe spool is placed inside a closed system, and a specified internal water pressure is applied. The hydrostatic testing procedure is used to determine if a pressure vessel is safe for continued use, or has suffered from a degradation in its structural integrity and must be condemned.

Some pressure vessels may be re-qualified by means of a proof-pressure test. A 3D Hitech Systems modified hydrostatic test consists of subjecting a pressure vessel to a specified internal pressure and inspecting the pressurized container for leaks, bulges or other defects. This method is permitted only when the applicable regulations do not require the determination of volumetric expansion measurements.



Hydraulic Nut Splitters - Safely Remove Corroded Nuts & Bolts

3D Hitech Systems's Hydraulic Nut Splitters are a fast, positive, safe method of removing corroded or seized nuts or bolts of any grade up to HRC-44 hardness.

All sizes of nuts, from 1/2" to 5-3/5" A/F, are covered by our wide range of nut splitting tools designed to fit all API and ANSI flanges.

Nuts are removed quickly and safely, avoiding such hazardous and time consuming removal and replacement procedures such as grinding, sawing and flame cutting. Nuts can be removed without any damage to the studs; easy set up means cuts are made in only seconds.

Our Nut Splitters are powered by a manual 10,000psi hydraulic pump, which means they can be used in the field or at any remote onshore or offshore location without the requirement of an additional power source.



Joint Integrity Tracking System (JITS)

Asset Integrity for specifically dealing with Joint Integrity for In-service or New installation.

Our Joint Integrity Tracking System (JITS) is aimed as document management on each joint on the asset, for present information details, future planning and incident predicting, and for past history for “shared learnings”. It includes for P&IDS, Isometric Drawings, Joint ID specifications for each individual joint, certificates for the hardware on the joint, QA/QC for the all aspects of the installation process and preparation for a leak-free joint. It differs from other Joint Integrity programs, as it also includes for Bolt and Flange Inspection, which evaluates in-service/in situ joints which may have limited life due to corrosion, erosion, cracking, etc.

Outline for implementation:

- P& IDS are obtained on the particular asset.
- Isometric Drawings as well to support the P&IDS.
- A site walk through including pictures.
- P&IDS and ISOs are uploaded on the JITS .

How does it work?

The JITS software features a P&ID interface that allows P&ID drawing files in both Autodesk DWG and Adobe Acrobat PDF to be opened and navigated in order to select joints. The software will allocate and number joints automatically and relate to Flange Master register. Each unique number will be one-of-a-kind, and will not be reused/repeated.

The designated labeled/”unique Number” connections on the JITS appears “colour-coded” as per Flange tag illustrating real time status of scope both onshore & offshore at any one time. Example: Joints that are open, can appear in “RED”, and those that are blinded can appear “yellow”. Those that are completed appear “Green”.

Joints can be organized into projects and work packs to reflect the physical maintenance activities occurring on the asset. This means that over a number of

years a joint may belong to multiple projects and work packs.

The software reflects this giving the users the ability to search and retrieve joints either within or across work packs. The search facilities within the software are powerful and flexible. Different parameters can be researched. For example: Visibility of all activities carried out by a specified competent technician(s), or for a particular type of stud fastener, or for a particular rating flange, flange size, etc.

It also allows visibility of high level detail to historical joint information.

At any stage, the software allows the recording of information relating to irregularity. This forces the user to enter comments which are then compiled into a concise report format can be configured in any way client wishes which best suits project. By flange rating , workpack , test pack , flange size , Work order, Nut size, Critical flanges, or those that “Pass”, etc.



The software will not allow progress to be made when anomalies are identified until solution confirmed. From these Anomalies trends are analyzed and gathered to action preventative measures. The JITS allows data to be imported from and exported to MS Excel.

It features a secure database and a security model that allows software features to be locked out, depending on user access level. The system will regularly (based on administrator-defined settings) prompt the user to take data back-ups and to indicate the type of back-up being taken.

Not only can we identify trends, but analyze them and agree/implement preventative measures relating to our shared 100% safe and Leak free objective.

The system can be stored on site, or offsite, or at our site, and managed by ourselves.

The JITS software allows for the input of the certificates of conformance for the hardware (eg: Mil Certs. for the studs, certs. for the gasket manufacturer, etc). All supporting certification on equipment as regards to the People resource

(Competency Training, HSSE, etc.), Service provider (third party equipment) such as Tools (gages, pump, calibration, test, hoses, wrenches, calipers, camera, etc.) are captured. Certification that is expired or not approved will be highlighted. Approved Procedures for Joint Integrity will be logged and stored, as well as Delivery Notes, MOCs, etc.. All specifications on the flange, studs, nuts, gaskets, and conditions therein are captured and inputted into the JITS. Torque values cross referenced with the Gasket and stud specifications will be generated, and compared with the QA QC Checklist.

3D Hitech Systems products

Products

- **Casing Heads**
- **Casing Spools**
- **Casing Hangers**
- **Tubing Heads**
- **Secondary Seals**
- **Tubing Hangers**
- **Adapters**
- **Tees & Crosses**
- **Tree Caps**
- **Gate Valves**
- **Chokes**
- **Frac Stacks**
- **Mobil Test Units**
- **Portable Greasing Skids**
- **Surface Safety Systems**
- **Hydraulic Torque Wrench Systems**

DRILLING

With our best-in-class drillships, and highly experienced team, 3D Hitech Systems is determined to be the preferred ultra-deepwater drilling contractor.

We are committed to becoming the industry's preferred ultra-deepwater drilling contractor in Nigeria.

Our business and global footprint

3D Hitech Systems conducts three principal drilling activities: exploration-stage drilling (principally exploration diamond-core and percussion drilling), capital project-stage drilling (principally raiseboring) and production-stage drilling (principally raiseboring and blast-hole drilling). In addition, our services division undertakes design, engineering, manufacturing, customisation and maintenance support for our drilling activities.

Drilling services

The following services are provided:

- Raiseboring
- Blind-hole boring
- Exploration drilling
- Value-added services

Raiseboring

3D Hitech Systems provides raiseboring services for civil and mining projects, with shafts up to 7.3m in diameter and 1,300m in depth.

Raisebore drilling is a method used to drill ore passes and ventilation shafts required for production in an underground mine, without the use of explosives.

Raiseboring entails the creation of a pilot hole of approximately 250mm to 410mm in diameter from the surface or an upper horizontal tunnel in a mine to a lower tunnel. The pilot hole is then reamed to a larger size of 660mm to up to 7.3m diameter by attaching a reamer head to the end of the drill rods at the lower tunnel and pulling the head up in a rotatory motion. The head comprises a series of tungsten-carbide cutters that cut the rock as the head is rotated. Debris falls to the lower level where it is removed using existing mine loading and hauling services.

The raisebore drilling machine is set up on the upper level of the two levels to be connected. A small pilot hole (circa 300mm in diameter) is drilled to the level required. The pilot hole is then reamed to a larger diameter (up to 6m in diameter) by attaching a reamer head to the drill rods at the lower shaft and pulling it back towards the drilling unit in a circular motion.

The tungsten-carbide cutters cut the rock during the circular motion. The drill cuttings from the reamer head fall to the floor of the lower level and are removed by a standard loader.

The boring principle is attractive because it offers the following advantages over conventional drilling and blasting methods:

- Safer working conditions
- Speed of completion
- A hole with a more stable structural shape
- A hole with smooth sidewalls and low frictional loss in ventilation airways, reducing the likelihood of blockages in the ore-passes.

Typical applications of raiseboring holes include:

- Service ways for drainage, cables, pipes, etc
- Ventilation
- Mineral transport
- Shafts for the transport of men and material
- Mine production
- Penstocks and surge shafts for hydroelectricity projects
- Horizontal and low-angle drilling

Boxhole boring

To excavate raises where access to the upper level is limited, boxhole boring is employed.

With the machine at the lower level, a full-diameter raise is bored upward. At the same time, stabilisers are added to the drill string at intervals to reduce oscillation and bending stress.

The cuttings are carried down the hole by gravity, deflected from the machine and then removed at the lower level.

Boxhole boring can be completed with or without a pre-drilled pilot hole.

Exploration drilling

Our wide range of drilling services have been designed for greenfield exploration, ore-body definition, reserve evaluation and ground investigation, **grade control and cover drilling**.

Auger drilling

With auger drilling, the rotation of a helical screw causes the blade of the screw to lift the sample to the surface. This can be used for shallow environmental drilling, geotechnical drilling, soil engineering and mineral deposits where the formation is soft and the hole does not collapse.

Percussion rotary air blast (RAB) drilling

Percussion drilling is used most frequently for mineral pilot drilling, water-bore drilling and blast-hole drilling.

Air-core drilling

To drill holes in fairly soft ground, air-core drilling generally uses hardened steel and tungsten blades in coal formations. The head of the drill is surrounded by blades, which cut the coal. The rods are hollow and the sample is fed through the rod.

Reverse-circulation (RC) drilling

With RC drilling, cuttings are returned to the surface within the rods. The drilling mechanism is a downhole hammer and cuttings are collected through a cyclone and bagged. This method is generally used to a maximum depth of 250m (groundwater will affect efficiency).

Diamond-core drilling

For exploration drilling worldwide, the mining industry uses diamond coring almost exclusively with wireline systems that enable the core to be retrieved without retracting the drill rods.

Diamond-core sizes

Core sample can be obtained in different sizes and vary from 3mm diameter to 116mm. The core is removed from the tube and washed, measured, marked and placed into sample trays.

Direct-push samples

Direct-push is done with Selby tubes, which advance a drill string by pushing or hammering without rotating the drill string. While this does not meet the proper definition of drilling, it does achieve the same result of core recovery. This method is ideal for very shallow sampling in soft material.

Hydraulic rotary drilling

Tri-cone, carbide-embedded or diamond-impregnated drill bits are used. With this method no sample is recovered. It is normally used for exploration of oil and gas.

Sonic (vibratory) drilling

The sonic drill head uses high-frequency resonant vibrations of 50Hz to 120Hz (cycles per second). This technology is ideal for dumpsites and wetland drilling environments.

Underground drilling

Underground core drilling is conducted to identify sufficient ore reserves above the main haulage level and for the safety of the mines in establishing the position of possible gas or water intersections.

Grade control

During exploration, grade control is the process used to check quality and control the grade and variability of ore. The purpose of grade control is to develop mining plans and the budgeting process. Drilling samples are further analysed to establish the mineral content of the drill area.

The grade of an ore body and the mineral being mined are rarely constant. It can be more concentrated near the surface and dissipate in other areas. Grade control drilling helps to define the economic limits and mine planning.

Blasthole drilling

Blasthole rigs are used to drill blastholes into benches in quarries and opencast mines. They achieve high production rates and are used for either rotary or down-the-hole drilling.

Value-added services

We offer a range of value-added services: through-pass boring, drain-hole drilling, ventilation and pressure shafts, and more.

- Support options:
 - **Long-range dry crete system:**
Currently used successfully in Mexico, this system allows for shaft-lining with a dry crete mix, which can be loaded on surface and mixed with water in a nozzle body to minimise wastage. A camera and a control device, lowered into the shaft, enable remote operation of the machine. The advantages of this system include a reduction in safety risk as no people are in the shaft when the process is underway; there are no limitations in terms of the depths it can reach; the thickness of the shaft lining is measured by laser; the entire process is controlled from surface; a core log is used as reference for inspection before spraying begins; a “skin” layer is applied to high-risk areas; and hole depth is recorded on a video.
 - **Short-range wet crete system:**
The wet-crete mix is loaded on surface and fed into a nozzle body via a hose system. The system is also controlled remotely using a camera and control device. This short-range wet crete system presents similar advantages to the long-range dry crete system. It is used successfully in South Africa.
 - **Headgear and stage application support:**
As with conventional sinking, a working stage is accessed by means of a winder, headgear and kibble arrangement. From the stage, the shaft side walls can be supported with steel mesh, mechanical and cable bolts, as well as shotcrete or formed concrete lining. This service is suitable for all raiseboring depth and diameter requirements. It is used where shaft equipping or complex support work is required.

3D Hitech Systems seeks to support its customers' varied exploration drilling requirements, 3D Hitech Systems provides all types of drilling services including surface and underground coring, directional, reverse circulation, sonic, geotechnical, environmental, water-well, coal-bed methane and shallow gas

Over the years, the Company has positioned itself by leveraging its main competitive advantages: specialized equipment, long-standing relationships with the world's largest mining companies, access to capital and skilled personnel.

During the last several years, the Company has achieved strong growth while remaining focused on the long-term objective of building a solid company for the future.

Our corporate strategy remains to:

1. be the world leader in specialized drilling and expand our specialized capacity;
2. modernize our conventional fleet and expand our footprint in strategic areas;
3. diversify our services within the drilling field;
4. maintain a strong balance sheet and a sustainable dividend;
5. be the best in class in safety and human resources.

. We provide a variety of top quality drilling services to extract oil and gas safely and efficiently for our clients and we are well positioned to handle the most challenging drilling programs.

We Specialize in:

- Providing a variety of top quality drilling units on land and offshore.
- Providing our clients, drilling services to find oil and gas efficiently and safely.
- Handling the most challenging drilling programs.
- Training and developing our own people.

Our Commitments:

- To be a leader in the drilling contracting business
- Customer service
- Technology & Quality
- To be second to none in QHSE performance
- To the optimum protection of the environment in which its operations are conducted
- To make an excellent return for shareholders

Our Offshore units including ultra heavy-duty Jack-up outfitted with high specification equipment and capable of drilling in 375ft of water. Also available are a self propelled Multi Purpose Service Vessels (MPSV) – AD20 & AD40 providing well intervention and well testing services. The onshore fleet ranges from medium to ultra-heavy rigs, capable of handling the most challenging drilling programs and designed to work in harsh climatic conditions supported by a highly qualified and experienced staff.

Drilling Services

Drilling Methods

Surface Wireline Core Drilling

Underground Wireline Core Drilling

Multi-Purpose Drilling

Reverse Circulation Drilling

Directional Drilling

Water-Well Drilling

Grade Control Drilling
Environmental Drilling
Geotechnical Drilling
Coal-Bed Methane - CBM Drilling
Shallow Oil and Gas Drilling

Standard Wireline Sizes

Size	Core Diameter	Hole Diameter
	(inches / millimeters)	
AO-AQ-U	1.064 / 27.0	1.890 / 48.0
BQ-BQ-U	1.438 / 36.5	2.360 / 60.0
NQ-NQ-U	1.875 / 47.6	2.980 / 75.7
HQ	2.500 / 63.5	3.782 / 96.0
PQ	3.345 / 85.0	4.827 / 122.6
NQ-3	1.775 / 45.0	2.980 / 75.7
HQ-3	2.406 / 61.1	3.782 / 96.0
PQ-3	3.270 / 83.0	4.827 / 122.6

Thin Kerf Wireline Sizes

Size	Core Diameter	Hole Diameter
	(inches / millimeters)	
AQ-TK	1.20 / 30.5	1.890 / 48.0
BQ-TK	1.601 / 40.7	2.360 / 60.0
AGM	1.193 / 30.3	1.890 / 48.0
BGM	1.654 / 42.0	2.360 / 60.0
NGM	2.248 / 57.1	2.980 / 75.7

Supply Chain



The mission of supply chain management is to purchase the right materials and services at the proper time , in the proper place , at the lowest cost , considering the guide lines of quality , delivery and services.

SUPPLY CHAIN FUNCTIONS

Procurement Management

- Suppliers Identification and Assessment.
- Cooperation with Internal & External Supplier.
- Negotiation with supplier.
- PO order placement (JDE).
- Expediting.
- Supplier Audit.
- Supplier Management (KPI).

Inventory Management

- Dhahran Central Warehouse.
- Rigs Warehouses.
- Consignment.
- Stock Control .

Logistic Management

- Import & Export Material.
- Custom Clearance.
- Cooperation with freight forwarder.
- F. Asset tracking & Capitalization.





POLICIES

Damage Prevention Policy

A risk analysis has been undertaken and effort expended on Public Awareness, Marine Risk Mitigation strategies and Marine Protection measures which culminated in the offshore Damage Prevention Programme (DPP).

Since April 2007, 3D Hitech Systems has been part of the campaign initiated by WAPCo and the WAGP Authority, who have been conducting Safety Awareness Publicity across the region to sensitize the maritime communities on the safety and security precautions for safe transmission. WAPCo's awareness campaign has been well established in the four main ports on the pipeline route. All Port and Naval officials are cognizant of the pipeline and the need to ensure it is protected from marine damage. The campaign is also a continuous process intended to cover all coastal communities especially the fisher folks along the pipeline route. WAPCo has additionally trenched the two branches of pipeline in Togo and Benin under the sea bed that were recognized as vulnerable pipeline sections. In conjunction with WAGP Authority Regulations, and as part of the risk mitigation measures a one nautical mile Exclusion Zone either side of the pipeline known as Pipeline Protection Zone (PPZ) has been adopted across the four countries to minimize the chances of causing damage to the pipeline. This zone and the pipeline are published in new editions of Admiralty charts especially Chart Number 1383 and 1384 which all mariners are encouraged to consult when operating within the West Coast of Africa. Special marker buoys equipped with AIS transmitters and MMSI numbers are also installed at selected sections of the pipeline where shipping traffic is relatively heavy such as close to the ports of Takoradi, Tema, Lome, Cotonou and the Benin/Nigeria frontier.

Activities which constitute potential risk to offshore pipeline damage and which are strictly forbidden within the PPZ include but not limited to:

- a. Anchoring
- b. Ship Anchor Drag and trawl board impact.
- c. Bottom Trawling
- d. Illegal Fishing Methods such as use of dynamite
- e. Mining including sand winning
- f. Construction
- g. Any activity that risk the chance of making physical contact with the sea bed within the zone and involves a risk of damaging the pipeline.

In line with our offshore pipeline safety requirements, 3D Hitech Systems and WAPCo deem it important that the maritime community is made aware of the inherent dangers to human lives and property as well as the safety of the pipeline, should there be any violation of the identified safety precautions.

Mariners are particularly advised not to anchor or trawl within the PPZ as gas from a damaged pipeline could cause an explosion, loss of vessel buoyancy or other serious hazards. It must also be noted that the main pipeline is not buried and it may

reduce charted depths by up to 2 meters especially at the Tees where the valves are encaged. The pipeline has also spanned seabed undulations and may cause fishing gear to become irrecoverably snagged putting a vessel in severe danger.

Breach to the Pipeline

With the introduction of gas into the pipeline, a vessel causing damage to a it could face an immediate hazard either by loss of buoyancy due to gas aerated water, or by fire or explosion, or a combination of all the three, and result in an environmental hazard. A breach will also result in the contents of the pipeline escaping into the marine environment. The pollution hazard will depend on the composition of the gas. Hazardous pollution situations could result if the composition of H₂S in natural gas is high.

3D Hitech Systems's Community Relations policy within its areas of operation is aimed at establishing proactive partnerships that will foster healthy, long term relationship with host communities.

3D Hitech Systems's objectives for this partnership are:

- To cultivate and sustain, trusting and harmonious relationships as well as mutually beneficial social partnership with local communities.
- To foster good neighbourliness and ensure community goodwill and support for successful project implementation and operations.
- To maintain open , honest and constructive dialogue with all Stakeholder Groups and facilitate actions to manage their legitimate concerns and issues

To implement a sustainable Community Development Programme that will have positive impact on the living standards of people in the project affected communities.

In furtherance of these objectives, 3D Hitech Systems in partnership with host communities, through a Participatory Needs Assessment study, identified "high impact" programmes that address basic needs and economic development in these communities.

INJURY MANAGEMENT POLICY STATEMENT

3D Hitech Systems is committed to assisting injured workers to return to work as soon as medically appropriate and will adhere to the requirements of the Workers' Compensation and Injury Management Act 1981 in the event of a work related injury or illness.

Management supports the injury management process and recognises that success relies on the active participation and cooperation of the injured worker. Whenever possible, suitable duties will be arranged internally having regard for the injured worker's medical restrictions.

OCCUPATIONAL SAFETY AND HEALTH POLICY STATEMENT

The objective of the company and its Directors is to ensure a safe and healthy workplace, free of incident and or accidents.

This object can only be achieved by close co-operation and consultation between management, employees, contractors, the client and others.

The Occupational Safety and Health Act 1984 defines the responsibilities of the Employer, Employees and Contractors with respect to Safety and Duty of Care within the workplace .The standards laid down in this Act and its associated Regulations and Codes of Practice are, within 3D Hitech Systems and to be regarded as minimum standards only.

The Clients Occupational Safety and Health Policies and Procedures take precedent over and above 3D Hitech Systems Occupational Safety and Health Policies and Procedures.

3D Hitech System encourages everyone within the company to participate actively in the continuous improvement of our occupational safety and health performance.

HEALTH, SAFETY AND ENVIRONMENTAL POLICIES IN BRIEF.

INTRODUCTION: This COMPANY PROFILE contains the DETAILED MANUALS OF BOTH CASHES AND HSE POLICIES for **3D HITECH SYSTEMS LIMITED**.

One of our core values is to **"Never do a job if it can not be done safely"**. We maintain this through our in-house safety staff and the employees focus toward safety. It is our commitment to provide our employees, clients and the public a safe place to live and work. Our employees attend tailgate safety meetings each day while on the job. They are empowered to stop a job that is seen as unsafe. Our personnel attend safety trainings and obtain required certifications as necessary. Our company understands the importance of providing quality equipment and quality personnel on the job site. We maintain our equipment well and maintain a vast crew of highly skilled workers.

Safety defines our company. We understand that safety is for the protection of our employees, the protection of our company, and also, ultimately, for the protection of our client's assets as well. That is why we maintain in house two (2) Master Trainers with NCCER and Veriforce. We have an exceptional safety track record and maintain programs with ISNetwork.

3D Hitech Systems's team of experienced project managers, superintendents, and laborers can complete many types of construction projects. Projects include pipeline construction, pipeline repairs, pipeline coatings, fabrication, pressure testing and casings.

Below is just an insight / summary of 3D HITECH SYSTEMS LIMITED HSE and CASHES approach to execution of operations towards her PROJECTS, STAFF and ENVIRONMENT, for your perusal.

POLICY STATEMENT:

Our policy covers a broad spectrum from head of engineering services, head of departments, supervisors, welders, grinders, helpers, drivers, messengers, cleaners, etc.

It is the policy of **3D HITECH SYSTEMS LIMITED** to guide her staff and all persons associated with her OPERATIONS, in other to ensure total physical fitness on health matters, and also to practice and maintain safe and healthy environment taking into

consideration all statutory requirements and environmental impacts of our operational activities.

HEALTH :

The basis for admitting any personnel to work on our site, they must be medically certified fit for handling physical operations.

Hard drugs, alcohol, and smoking is not allowed on our sites.

All forms of self medications are discouraged and disallowed. Any ailment emanating from work should be reported immediately and appropriate medical treatment given.

A standard and well stocked first aid box, and associated first aid equipment manned by a **qualified nurse or First Aider** shall be available on site.

SAFETY & SECURITY :

The Health and Safety at Work Act of 1974 (applicable in Nigeria), shall be compulsorily enforced and mandatorily adhered to by all employee and associates of **3D HITECH SYSTEMS LIMITED** at work site and during transit.

Safety policies will be enforced by Safety Officers / Engineers along with full involvement of Sectional Heads and Management.

Security Guards : In other to ensure adequate security for staff, equipment and materials, it is the practice of our company to deploy and maintain professionally trained security Guards at our WORKSHOPS, WORK SITES and administrative office areas.

- TO TAKE AND MAINTAIN MOVEMENT RECORDS OF PERSONS IN AND OUT OF WORKSHOPS, WORK SITES ,and ADMINISRATIVE OFFICE AREAS.

- TO TAKE AND MAINTAIN MOVEMENT RECORDS OF EQUIPMENT AND, MATERIALS INCLUDING NUMBERS OF VEHICLES IN AND OUT OF WORKSHOPS, WORK SITES ,and ADMINISRATIVE OFFICE AREAS.
- ALSO TO LIASE WITH THE NIGERIAN POLICE FORCE, AND NIGERIAN ARMY IF THE PEACE OF THE ENVIRONMENT IS THREATENED BY DISSIDENT YOUTH OR ARMED BANDITS.

Reflective Safety Signs.

Signs & Labels Designs and Printing:

3D Hitech Systems Limited has acquired the latest knowledge on labels and signs designs and printing from **Multisigns & Traffics Company Ltd -Ghana**, in partnership with us. We are experts in reflective signs such as road and industrial safety signs (Prohibitions, Warning and), Pipeline Markers, directional and office signs, pavements and lane markings. Our aim is to increased Safety signs in the workplace as an indispensable way of protecting employees from accidents. In case of a fire, for instance, well placed signs that can speed up the evacuation of a building and help those giving first aid.

There is no longer excuses like it was night " *I Didn't See It*".

The purpose is to in convey information in a comprehensive way about objects and situations that can be dangerous.

We are committed in contributing to Safety and security in industries, commercial, transportation and residential facilities through the provision of reflective surfaces. Is not like the normal artist painting wooden or plastics signs they normally do in Nigeria.

This is absolutely . . . *Where Signs Talk And Direct*, and a trial will certainly convinced you.

Traffic Control

Initiating Best practice Road Traffic Safety in Nigeria as an indispensable way of controlling traffic and protect citizen from accidents.

We are experts in traffic congestions and Highway Fatalities reduction by making our roads safer through a data-driven, systematic approach.

It is about Reaching Out: The Development Of Communication - giving information on road conditions ahead.

Is to discourage aggressive driving behaviour and encourage well-mannered driving and respect for other road users.

Is to in convey information in a comprehensive way about objects and situations that can be dangerous

Aggressive driving linked to emotions, time pressures, the consumption of alcohol, drugs and the attitude of other road users. which involves over speeding, making unsafe lane changes, running red lights, lack of respect for traffic signs and signals, making rude hand gestures, aggressive use of the horn, etc.

Aggressive driving behaviour leads to road accidents.

It is about general public taking responsibility for their own safety.

It is about making every Nigerian to have an attitude of wanting to follow the safety rules and procedures

OUR PRODUCTS & SERVICES BENEFITS

Our safety signs has the following benefits;

The Road Safety Signs are reflective and visible at night.

It is anti-corrosive and fit for harsh and any marine environs

It has over 20 years guarantee before damage, not like the normal wooden or plastics signs normally produce in Nigeria.

It is produced with Aluminium plate as per customer thickness and size requirements

The sign design will include graphic design of landscaping and even roadside amenities such as picnic sites.

Replacing missing traffic signs can provide long life *benefits* to society and also brings It economic benefits

"It holds the potential to benefit goods transporters, ground-based emergency services and the everyday road-user."

Vehicle Operation Safety Signs-

We will design and post maximum safe speed Limits:





ENVIRONMENT :

3D HITECH SYSTEMS LIMITED has a burning passion for ENVIRONMENTAL RE-ORDERING in terms of ENVIRONMENTAL IMPACTS of her operational activities on the immediate and extended environment (Host and Neighbouring Communities.)

To this end we preach and practice environmental ethics devoid of Ecological Debasement as follows:

- Our operations are compliant with the Nigeria Environmental Regulations.
- Protect the Environment by carefully handling dangerous chemicals, spill of hazardous substances into the environment

where our operations are carried out in other not to destabilize the ecology.

- Good housekeeping ethics and values are practiced
- Intentional efforts are made to ensure that any negative effect of our operations must be abated completely immediately.
- A zero tolerance level of operations is adopted. But if by chance any environmentally unfriendly or degradable activities are carried out, a study/investigation of the event shall be carried out and recommendations shall be adopted to prevent future occurrence.

COMMUNITY AFFAIRS / RELATIONS.

3D HITECH SYSTEMS LIMITED considers community related issues as TOP PRIORITY in planning and execution of her projects.

Host communities are considered by us as STAKEHOLDERS. They are introduced by the clients' representatives, and thereafter a mutual understanding is reached between 3D HITECH SYSTEMS LIMITED and the communities and the client on how to meet their demands as follow:

- **Community Development projects**
- **Indigenous sub – contractors**
- **Employment of community based workers.**

Our company has a high conflict / crises resolution knack as the directors hails from Niger Delta region of Nigeria and can design endless methods of handling crises within Niger Delta and Nigeria at large.

Sustainability

Safety, health and the environment first

Our goal at 3D Hitech Systems is to achieve zero incidents and injuries – not just within our company but through active support of our partners and customers in achieving this goal.

Risk assessments are conducted to identify and understand all potential hazards. The safety of our customers' employees hinges on proactive practices.

We extend our zero-incidents mission beyond 3D Hitech Systems by supporting our customers with in-depth information and practical guidelines on the safe handling of our products.

Safety and health

Leading by example in safety, health, environment and quality (SHERQ) management

At 3D Hitech Systems, our aim is to avoid any harm to people and the environment. We strive to continuously improve the quality and safety of our products and services. We view the occupational health and safety of our employees and environmental protection as a vitally important part of our business strategy. Our global, integrated management system helps us achieve these goals by embedding health and safety in our daily operations. Our proactive SHERQ culture also helps our customers meet their legal and safety responsibilities.

All of these activities fall under the wider umbrella of our corporate SHERQ policy, which is dedicated to uniting the goals of customer value and sustainable development.

Caring for the environment

Not only do we actively seek to minimise the carbon footprint of our own operations worldwide, we also work in partnership with our customers to minimise – or even eliminate – hazardous emissions.

Customers or partners of 3D Hitech Systems Ltd can expect a lot more than just the right products and services at the right prices. We have a duty to ensure that our operations have minimal or no adverse effects on human health and the environment. We frame our sense of responsibility in this area in our SHERQ policy, which provides a defining framework for various tools and processes that steer our daily actions and approach to business in general. Above all, it embeds a sense of

responsibility at a personal level. Each and every employee of 3D Hitech Systems is individually and collectively responsible for ensuring that we meet our own standards and customers' expectations.

In-house action plan

At all of our production and administration sites worldwide, we are constantly investigating ways to minimise the environmental impact of our operations. Our Operations Division tracks progress in this area by reporting on key environmental indicators.

Specific activities include:

- Site certification (such as the ISO 14001 environmental management certification)
- Measures to cut energy consumption
- Reduction of direct and indirect greenhouse gases and other emissions
- Waste management
- Eco-friendly management of water consumption and wastewater disposal
- Reduction of materials consumption (metal and packaging materials)

“SHERQ is 100% of our behaviour, 100% of the time”

Within 3D Hitech Systems

One of the cornerstones of our SHERQ policy is the reduction or elimination of work-related illnesses, injuries and incidents. Our basic tenets stipulate that all of our people must:

- Have a safe and secure working environment
- Understand and follow the correct systems, procedures and conduct
- Work within an organisation which demonstrates strong visible leadership and rewards appropriate behaviour

And beyond

We expect people working for our partner and contractor companies to conduct themselves in a manner that demonstrates the highest prioritisation of health, safety and environmental care at all times.

SHERQ values form an intuitive and intrinsic part of every investment and recruitment decision, business trip and site visit. At work or at home, developing or

manufacturing our products, delivering to our customers, a proactive SHERQ mindset is firmly embedded within our value chain.

QAQC

QAQC, NDT/INSPECTION SERVICES .

To give quality and prompt services in the field of NDT. The company had a modest beginning with only 3 personnel on Roll, and carrying out Gamma Radiography work, in Petrochemical Plants, Cross Country Pipelines and Storage Tank farms. We provide all the High Technology inspection services, such as Phased Array (PA), Time of Flight Diffraction (ToF), Automated Ultrasonic Testing for pipelines (AUT), Eddy Current Testing (ECT), Magnetic Flux Leakage (MFL), Remote Field Eddy Current Testing (RFET), Internal Rotary Inspection Systems (IRIS), Remote Videoscopic Inspection (RVI) for the Oil and Gas Industry, for maintenance and upkeep, and during annual turnarounds. We also provide Digitisation of Radiographs. We have the rich experience of working on Offshore Platforms and Offshore Barges for NDT of Subsea Pipelines, Risers etc.,

SUMMARY OF NDT SERVICES OFFERED

CONVENTIONAL NDT INSPECTION

- Gamma Radiography for Plant Piping, Pipelines, Tanks and Vessels
- X-Ray Radiography for Plant Piping and Tanks.
- Crawler X-Ray Radiography for Cross Country Pipelines.
- Ultrasonic Inspection -- A-Scan.
- Ultrasonic Thickness Survey.
- Magnetic Particle Testing by Magnet and Yokes –Visual and Flourescent.
- Liquid Penetrant Testing – Visual and Flourescent.
- Holiday Inspection
- PWHT -- Electrical Resistance Heating and Fuel Firing including Furnace and Insitu.
- Hardness Testing Vacuum Box Testing.

ADVANCED NDT INSPECTION

- Automated Ultrasonic Testing for Pipelines On shore and off shore.
- B-Scan and Corrosion Mapping.
- PAMI
- Eddy Current, IRIS & RFET for Internal Tube Inspection.
- Phased Array and TOFD Ultrasonic Inspection for Plant Piping and for Vessels etc.,
- Magnetic Flux Leakage Inspection -- Internal & External for pipes and Tanks.
- Remote Video Inspection/Internal Video Inspection.
- Digitization of Radiographs.
- Digital Radiography.
- In-situ Oxide Scale Measurement of Boiler tubes.
- Corrosion Mapping of Boiler Tubes Thermography Testing
- Helium Leak Testing.
- Sievert Controlled Area Gamma Radiography Services.
- Complete Industrial Process Diagnostics.

QUALITY ASSRANCE/QUALITY CONTROL (QAQC) INSPECTION SERVICES

Structural, Fabrication, Piping and pipeline inspection- We carry out Quality Assurance and Quality Control Inspection services for clients on Materials, Equipments, Vessel and Pipeline Inspection (Welding & Fabrication, Sandblasting, Coating & Painting) General Construction respectively.



Corrosion Control (Sand Blasting, Painting & Coating) Services.

Euston Specializes in metal finishing & coating services. We deliver a complete range of services designed to solve all types of corrosion-related problems.

These include;

- Steel & Concrete coating and restoration Systems
- High-performance industrial plant coatings
- Pipeline protective coatings

- Tank & vessel linings
- On-site plant or facility maintenance (Remedial works)
- Coating inspections
- Coating procedure specifications writing
- Pipeline Joint Rapping,
- Metal cleaning, Abrasive Blasting, sandblasting and Grit blasting;
- Coating removal, Paint removal & stripping services
- Epoxy Paint Coating Of Machinery & Equipment Metal Polishing & High Pressure Water Cleaning Of Machinery
- Painting and epoxy application

We pride ourselves as “**Complete**”,

“**Dependable**”, and “**Knowledgeable**” to service our client’s needs.



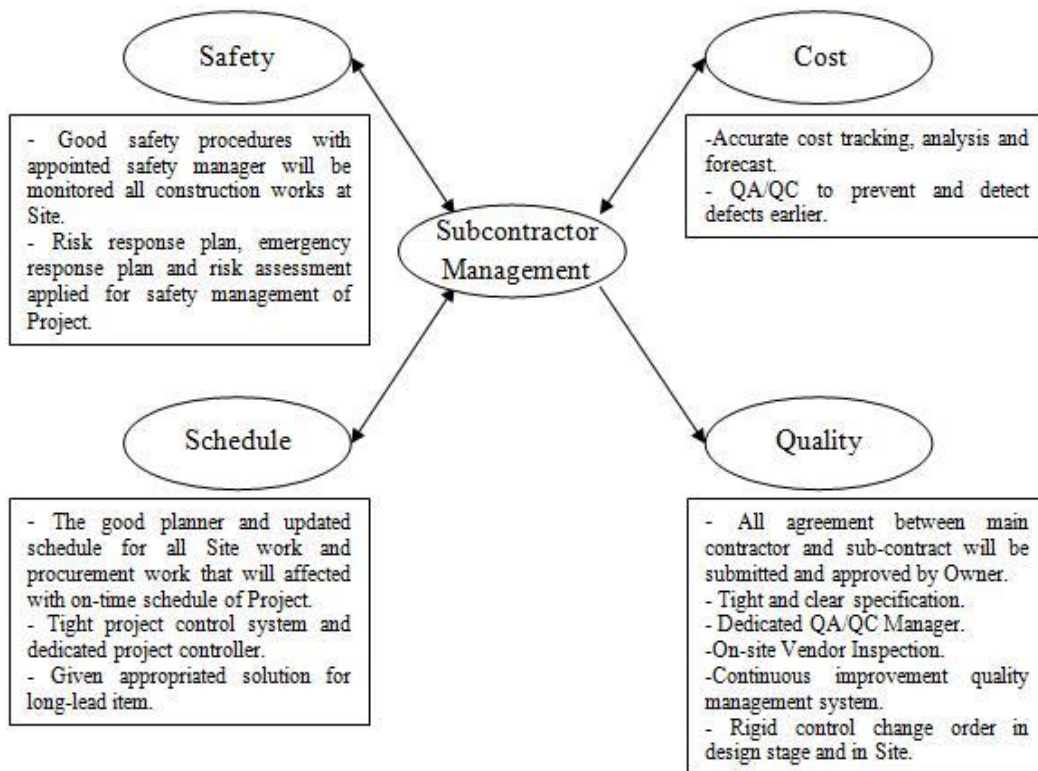


Figure 1: Analysis the factor that made subcontractor management successful

QUALITY ASSURANCE / CONTROL POLICY.

To review an existing comprehensive framework for the provision and facilitation of QUALITY ASSURANCE / CONTROL POLICIES through organization of teamwork, for eventual project actualization with high skilled professionals who are armed with the required globally accepted QA/QC CODES & STANDARDS as well as that of our CLIENTS LAID DOWN STANDARDS to the satisfaction of our clients.

THIS COVERS A FULL SPECTRUM OF THE COMPANY MANPOWER FROM THE HIGHEST MEMBERS OF MANAGEMENT STAFF DOWN TO FIELD WORKERS.

ALL EMPLOYEES ARE EXPECTED TO COMPLY WITH THE **QUALITY ASSURANCE POLICY/ QUALITY CONTROL (QA/QC) POLICY** REQUIREMENTS SET OUT ENABLE US ACCOMPLISH THE DESIRED QUALITY STIPULATED BY OUR CLIENTS IN ALL PROJECTS ENTRUSTED IN OUR HANDS.

This company profile has been prepared by:

3D HITECH SYSTEMS LIMITED

Approved by: Chairman / CEO.

Corporate Governance

3D Hitech Systems is committed to the principles of openness, integrity and accountability in its dealings with all stakeholders. We endorse the value and application of good corporate governance and standards.

Committees

The Board committees include the Executive Committee, Audit Committee, Risk Committee, Nominations and Remuneration Committee and the Social and Ethics Committee.

Executive Committee

The Executive Committee is constituted at the discretion of the Chief Executive Officer (CEO) and comprises 3D Hitech Systems' most senior line and functional executives. The primary objective of the Executive Committee is to enhance the company's growth and sustainability beyond that encapsulated in the strategies, plans and budgets of subsidiary companies by driving and co-ordinating new initiatives, innovation and intra-company activities.

Audit and Risk Committee

The Audit and Risk Committee comprises three independent non-executives.

Nominations and Remuneration Committees

The Nominations Committee comprises three non-executive directors

The Remuneration Committee comprises three non-executives.

Social and Ethics Committee

The Social and Ethics Committee comprises three independent non-executives.



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