DIVIDING WALL COLUMN TECHNOLOGY

Engineering Services

End-to-end process engineering — from feasibility to start-up.

Delivering the world's first commercial dual dividing wall columns

END-TO-END ENGINEERING

One team, feasibility to commissioning

DWC Innovations brings together like-minded technocrats delivering state-of-the-art process technology to the oil, gas and petrochemical industries. We carry a revamp or grass-roots project end to end — identifying the opportunity, engineering the solution, supplying the proprietary internals and supporting start-up.

Feasibility & PROPOSALS	**Basic** ENGINEERING	**FEED** PACKAGE	**Detailed** ENGINEERING	**Procurement** & INTERNALS	**Commissioning** & START-UP

WHY CHOOSE DWC INNOVATIONS

Turnkey & single-vendor delivery

From award to a running unit — licensing, engineering, procurement, construction support and commissioning under one roof.

In-house DWC expertise

DWC Prime, BDWC, TDWC and Dual DWC — dividing wall columns are our specialty, not a sideline.

The only commercial dual-DWC experience

The one technology partner with commercial dual dividing wall columns in operation.

Locally manufactured internals

Dividing walls, liquid splitters and vapor distributors built locally for shorter delivery.

Verified by dynamic simulation

Control schemes proven in steady-state & dynamic simulation before start-up.

Revamp specialists

Re-architect an existing column inside its shell, within a planned turnaround.

SOLUTIONS ACROSS THE REFINERY

Proven dividing-wall solutions for the units where they pay back fastest — from naphtha splitting and isomerization to benzene, hexane and whole-refinery optimization.

DWC Prime & Dual DWC Prime

Single- and multi-wall dividing wall columns — including TDWC and BDWC Prime — that replace two-column sequences, sidecut columns and indirect trains.

Octane Booster

Boost octane and throughput of light-naphtha (C_5–C_6) isomerization units without new columns — DWC Prime retrofits into the existing deisohexanizer.

Food Grade Hexane

Revamp the deisohexanizer to produce a valuable 4th cut — food-grade, polymer-grade or isohexane — raising isom-unit capacity by 20%+.

Benzene Saturation ★ BEN PRIME

Ben Prime technology manages benzene in the gasoline pool with a cost-effective saturation solution that meets stringent regulatory requirements.

CS_2 Removal

DWC Prime reduces carbon disulfide (CS_2) contamination in petrochemical naphtha to below 2 ppm — protecting downstream catalysts and equipment.

Refinery Process Optimization

Capacity increase, margin improvement and energy reduction — heat-pump and multi-effect distillation that save 20–50% in CAPEX and OPEX.

OUR SERVICES

The full engineering scope

Every discipline a refining or petrochemical project needs — delivered by one accountable team, and available individually or as a single turnkey scope from feasibility through to start-up.

01

Proposal & Feasibility Studies

- Screen existing units for revamp & retrofit opportunities
- Assess technical and economic viability of each option
- Develop a preliminary cost estimate to support the investment decision
- De-risk small-scale projects where minor process deviations drive profitability

02

Process Simulation & Modeling

- Property databases through to full flow-sheet process models
- Steady-state & dynamic simulation to configure and optimize the control scheme
- Hydraulic calculations and column loading checks
- Relief and flare system design

03

Basic Engineering Package (BEP)

- Design basis, PFDs, heat & material balance
- Utility, catalyst & chemical consumption; effluent summary
- Equipment specifications & datasheets; P&IDs; MOC diagrams
- Preliminary plot plan; instrument specs; PSV datasheet & flare loads
- Control narratives, cause & effect diagrams, operating guidelines

04

FEED Package

- Front-end engineering & design that firms up scope, cost and schedule
- Review-ready documentation to support the client's investment
- Bridges the basic package into detailed engineering with fewer surprises

05

Detailed Engineering

- Issued-for-construction detailed design of shells and tower internals
- Managed procurement of columns and proprietary internals
- Piping, layout and construction-support deliverables
- Locally manufactured dividing walls, splitters & distributors for shorter delivery

06

Technical Services & Consulting

- Independent review of detailed engineering work; HAZOP studies
- Field inspection to verify compliance with the licensor's design
- Operator training and plant start-up & troubleshooting support
- Test runs for performance guarantees; energy optimization & process tuning

Energy & heat integration throughout. Columns are integrated with the surrounding units — pinch and energy audits lower utility demand and lift overall profitability on every project.

ENGAGE US YOUR WAY

Single discipline

Bring us in for one package — a feasibility study, a HAZOP, a simulation, an internals design — wherever you need specialist DWC expertise.

Basic & FEED

A firm, review-ready design basis and front-end package that de-risks your investment decision before detailed engineering begins.

Full turnkey / EPCm

One accountable vendor from feasibility to start-up — licensing, engineering, internals, procurement and commissioning, as delivered at MRPL.

THE DWC ADVANTAGE

Fewer columns. Lower cost. Same products.

Dividing wall columns intensify a whole separation into a single shell — the reason a DWC Prime revamp typically cuts capital, plot space and energy while making sharper products.

One shell replaces a two-column train

A single dividing wall column does the work of two conventional columns — fewer shells, foundations and tie-ins.

3+ on-spec products from one column

Sharper multi-cut separation yields more valuable products and better downstream feed.

30–40% smaller plot, fewer items

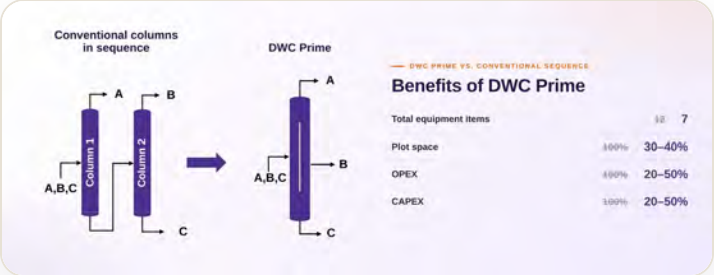
Fewer columns, reboilers, condensers and drums — a materially smaller, simpler unit.

No energy penalty

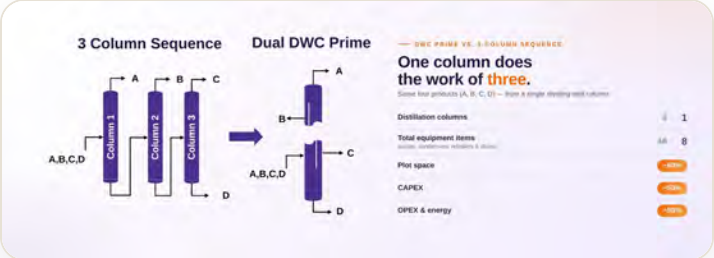
Thermal coupling delivers the extra cuts with no added reboiler duty — often less.

Dual DWC goes further still

A Dual DWC Prime takes it a step beyond a single wall — consolidating three or more columns into one shell, compounding the savings in equipment, plot space and energy.



A CONVENTIONAL COLUMN TRAIN INTENSIFIED INTO ONE DWC PRIME



DUAL DWC PRIME — ONE COLUMN DOES THE WORK OF THREE

ON SITE · DWC INNOVATIONS CREW — INSTALLATION OF DIVIDING WALL INTERNALS INSIDE THE COLUMN

TRUSTED BY LEADING REFINERS & PETROCHEMICAL PRODUCERS

ONGC MRPL · CPCL · Bharat Petroleum · IndianOil · HP · Reliance Industries Limited · HMEL · DEEPAK NITRITE

FEATURED REFERENCE · TURNKEY DELIVERY

MRPL — a naphtha splitter revamped turnkey

Naphtha Splitter → Dual DWC

CDU-2 naphtha splitter re-architected into a Dual Dividing Wall Column

At Mangalore Refinery & Petrochemicals, DWC Innovations converted the CDU-2 naphtha splitter into a Dual Dividing Wall Column using its proprietary DWC-Prime technology — delivered as a single-vendor project from feasibility through to start-up. Two dividing walls let one column make three sharper naphtha cuts — light, medium and heavy — with no change in reboiler duty, and reused the existing shell within the plant's planned turnaround.

SINGLE-VENDOR SCOPE

- DWC-Prime technology licensing
- Proprietary tower internals supply
- On-site supervision through turnaround
- Basic & detailed engineering
- Column & connected-piping modification
- Commissioning & start-up

3	0	1	ISOM+CCR
SHARPER NAPHTHA CUTS	ADDED REBOILER DUTY	EXISTING SHELL REUSED	FEED DEBOTTLENECKED

WHY IT MATTERS

A naphtha splitter can be re-architected into a multi-cut Dual DWC — sharper products, more operating flexibility and better downstream feed — with no energy penalty and inside the existing column, delivered by a single technology partner from feasibility to start-up.

DOWNSTREAM IMPACT

Cleaner light, medium and heavy cuts give the Isomerization and CCR units better-prepared feed — debottlenecking the whole naphtha train, not just the splitter, for more valuable products across the complex.

Published & peer-reviewed. DWC Innovations' dividing wall technology has been featured in **PTQ**, **AIChE CEP** and **Hydrocarbon Processing**.

Talk to us about your naphtha splitter

FEASIBILITY · ENGINEERING · INTERNALS · COMMISSIONING — DELIVERED TURNKEY

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Let's engineer your next revamp

From feasibility to commissioning — and turnkey where you need it, as delivered at MRPL — DWC Innovations brings the process technology, engineering, proprietary internals and field support to remove bottlenecks and unlock capacity, with dividing wall columns at the core.

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