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PULP MILL DESIGN AND TECHNOLOGY

Innovative solutions for tomorrow

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PULP MILL DESIGN AND TECHNOLOGY



Pro Zell is an independent Austrian consulting and engineering company which possesses comprehensive know-how and expertise in the planning, design and implementation of pulp and paper mills based on wood and non-wood fibres.

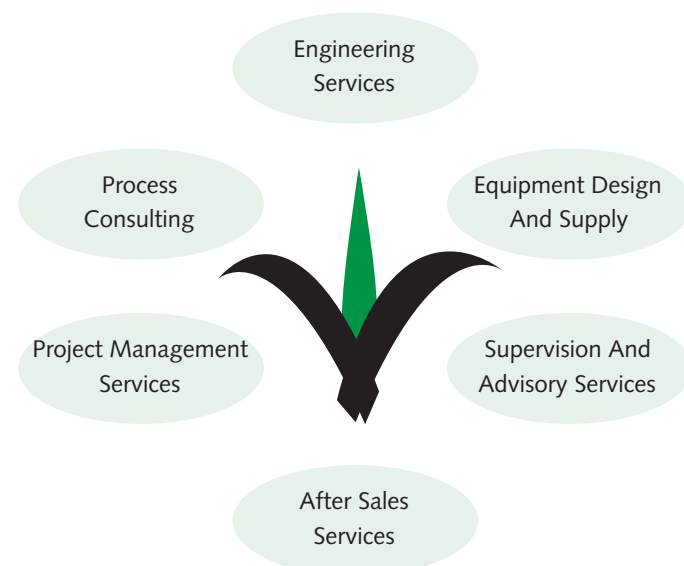
ProZell has experience with all common raw materials and pulping processes well as advanced technologies and the best suited equipment with the main task of:

- ▶ increased production
- ▶ improved quality
- ▶ increased economy
- ▶ improved environmental protection

Through co-operation with other engineering companies, pulp and paper mills and research institutes we can flexibly create project teams, secure backflow of mill operating data and participate in developing new processes.

SCOPE OF SERVICES AND CAPABILITIES

We offer our customers in existing pulp and paper mills, contractors, equipment suppliers, government and financial institutions a complete range of services for each phase of the project, from concept to commissioning, tailor-made to suit our clients' requirements.



PROCESS KNOW-HOW AND TECHNOLOGY

Pro Zell's extensive expertise and knowledge gained by successfully completing assignments around the world offers investors, equipment suppliers and pulp and paper manufactures the following advantages:

- ▶ Plant design according to the state-of-the-art technology available for nonwood pulp and paper mills.
- ▶ Optimisation of raw material, chemical and utilities consumption figures to improve the feasibility of the project.
- ▶ Tailor-made product quality by selection of the best suited technology and equipment.
- ▶ Improved environmental protection by proper selection of process technology according to local requirements.
- ▶ Minimization of investment costs by process optimisation and mill-wide interfacing.
- ▶ Improved procedures and equipment for moist and wet depithing of bagasse.

- ▶ Optimising procedures for wet bulk storage of bagasse in large piles.
- ▶ Rapid continuous pulping in horizontal tube digesters, reducing the overall digester cycle time to 10 – 20 minutes.
- ▶ Improved methods and machinery for washing, screening and cleaning.
- ▶ Optimising the bleaching process to obtain high brightness pulps with minimum consumption of bleaching chemicals, including oxygen, chlorine dioxide and peroxide.
- ▶ Developing optimum fiber furnishes with a high content of nonwood fiber pulp for all paper grades.

We have competence in processing of all kinds of non-wood fibres such as sugar-cane bagasse, cereal straw, bamboo, kenaf, jute, reed, cotton linters, grasses as well as other agricultural residues and industrial crops locally available.

PROCESS CONSULTING

- ▶ Raw material testing, laboratory investigations and evaluation of test results
- ▶ Feasibility studies and site analyses
- ▶ Technical, economical and environmental studies
- ▶ Conceptual design of complete mill and/or departments
- ▶ Selection of design criteria
- ▶ Process calculation
- ▶ Definition of utility requirements
- ▶ Equipment and material selection
- ▶ Debottlenecking and closure of mill loops
- ▶ Trouble-shooting and process optimization

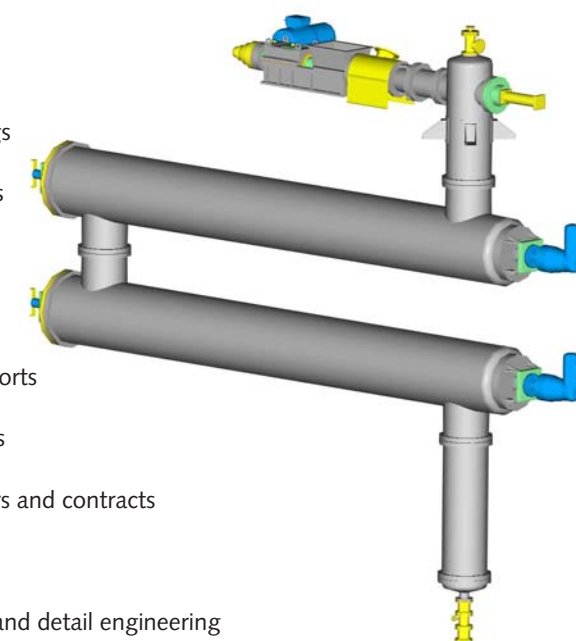
EQUIPMENT DESIGN AND SUPPLY

Based on 30 years experience in the pulp and paper industry we can offer all the support necessary for the successful implementation of pulp and paper projects. Our scope of services includes following mill departments:

- ▶ Bagasse preparation systems comprising:
 - Moist depithing
 - Wet bulk storage
 - Wet cleaning
- ▶ Fiberline
 - Continuous tube digester system
 - Brownstock washing
 - Screening and cleaning
 - Bleaching
- ▶ Chemical Recovery Systems
 - Evaporation plant
 - Recovery boiler
 - Recausticizing
 - Lime kiln
- ▶ Bleaching Chemical Preparation
- ▶ Steam and Power
- ▶ Water and Effluent Treatment
- ▶ Auxiliary Plants

ENGINEERING SERVICES

- ▶ Preparation of overall mill layout
- ▶ Equipment arrangement drawings
- ▶ Equipment lists and specifications
- ▶ P&ID diagrams
- ▶ Tender engineering
- ▶ Technical audits, reviews and reports
- ▶ Preparation of inquiry documents
- ▶ Evaluation of specifications, offers and contracts
- ▶ Basic and detail engineering
- ▶ Review and monitoring of basic and detail engineering
- ▶ Coordination of interfaces between mill departments



THE CONTINUOUS TUBE DIGESTER SYSTEM

Highlights

- ▶ Proven technology
- ▶ Superior cooking of nonwood fibres
- ▶ Ideal for high yield wood pulping
- ▶ Tailor made modular design
- ▶ Global references