



## PROJECT STUDIES

Optimized solutions for mining  
and bulk material handling applications

*Innovation out of tradition – It pays to talk to a specialist!*

TAKRAF Group, through its established and well-known brands, TAKRAF and DELKOR, provides innovative technological solutions to the mining and associated industries. We leverage our experience, acquired over more than a century, to provide equipment, systems and services that best satisfy our clients' mining, comminution, material handling, liquid/solid separation and beneficiation requirements. Owners and operators around the world trust our engineered solutions to lower the total cost of ownership and reduce environmental impact by improving efficiency with safe and reliable equipment. For sustainable solutions backed by expert service you can rely on TAKRAF Group. Visit us at [www.takraf.com](http://www.takraf.com).

## STUDIES TURN IDEAS INTO VALUE

Conceptual Study  $\pm 50\%$

$\pm 25\%$  Appraisal Study

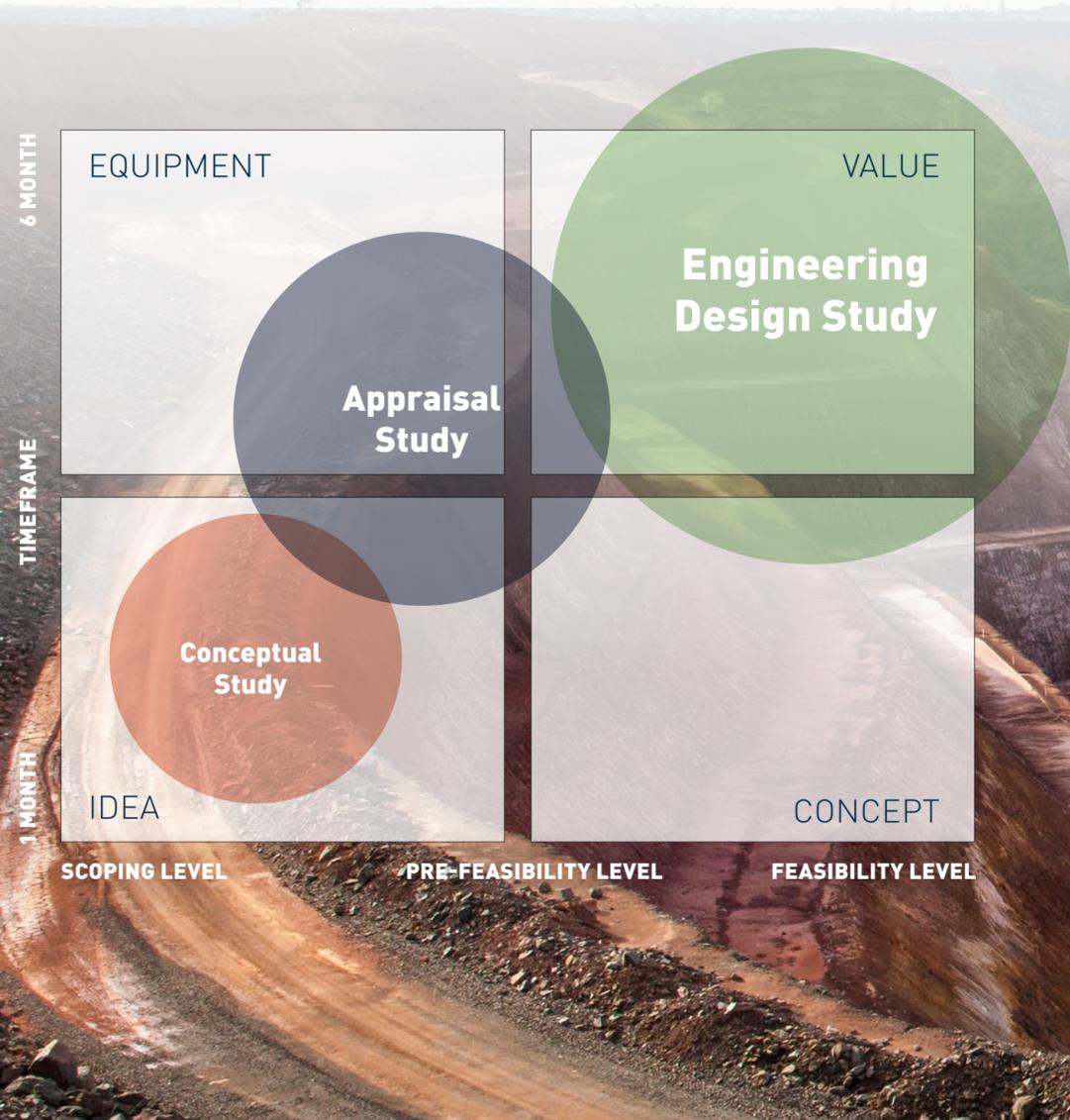
$\pm 10\%$  Engineering Design Study

# STUDIES ARE A MATTER OF TRUST

We understand that focused discussions as well as the critical and transparent characterization of feasible solutions are the basis of your investment decision. The TAKRAF Mining Technology Center (TMTC) boasts a strong background of TAKRAF's long-term experience in engineering, delivery and operation of mining and materials handling equipment combined with extensive global knowledge across multiple commodities and mining methods under local conditions.

The common objective of our studies is to identify the technical solution with best value for your investment project – also beyond TAKRAF's portfolio. TMTC's services cover Conceptual, Appraisal and Engineering Design Studies and include the definition of design criteria, mine planning, equipment selection and layout, investment and operating costs, as well as various economic evaluations.

Following international standards of project development, we offer a variety of project studies to various degrees of precision.



# MATCH YOUR PROJECT STAGE

As a project develops, so too does the required level of information. Each stage of a project's development process represents new and further refined objectives, a more concise scope of work, and greater economic accuracy in order to continue towards the final goal of successful project realization.

TAKRAF Project Studies are offered in levels that are attuned to the different stages of project development and we thus provide our clients with the required level of effort that matches their unique situation.

### Appraisal Study

- Results in one optimized mining technology based on the comparison of different options
- Provides technical specifications, mid-term mine plan, capital and operating expenses as well as particular information required by the customer to raise the project to the next level
- Considers mid to long-term operation scenarios in order to optimize equipment selection and design, thus supporting the integration of the TAKRAF project study into the overall project development
- ± 25 % ACCURACY
- 2 – 4 MONTHS

### Engineering Design Study

- Intended to be an integral part of a Feasibility Study or to be support a tendering process
- Provides all required technical specifications and information in order to plan and prepare the investment decision, as well as the future equipment operation
- Includes design criteria catalogue and specifications, project execution plan, HAZOP risk log and investment strategy plan, CAPEX and OPEX calculations and economic evaluations
- ± 10 % ACCURACY
- 5 – 6 MONTHS

### Conceptual Study

- Provides recommendations of advantageous mining technologies
- Results in the economic comparison of multiple technically viable concepts
- Comprises analysis of deposit and material conditions, development of system layout and selection of equipment
- ± 50 % ACCURACY
- 2 – 5 WEEKS PER CONCEPT

# GLOBAL PRESENCE

Wherever you may require assistance, experienced TAKRAF engineers are available to work and collaborate with your project team during the execution of the study so as to enable a focused and efficient flow of information. Our objective is to ensure transparent insight as to advancement of the project, applied approaches and quality of results at any point in time.

Worldwide references and satisfied customers are proof of our success.



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