



by **John Patterson**, Chief Executive and Managing Director, JCB.



JCB 8018: New range of JCB mini excavators



JCB 444 diesel engine

## Future trends in construction equipment

JCB celebrates its 60th anniversary in 2005. Privately owned, with a reputation for innovation in the off-highway industry, JCB is continually reviewing market and industry trends with a long-term perspective. We seek to ensure that new products and technological innovations exactly match the needs of our customers.

Over the next 10 years, product design decisions and trends for compact and mid-range construction equipment will be heavily influenced by exhaust emissions legislation. Tier 4/Stage IIIB emissions will demand charge-air cooling, externally cooled exhaust gas recirculation, and exhaust aftertreatment systems for all engine ratings greater than 75 hp (56 kW). Electronic engine management will be prevalent for engine ratings greater than 50 hp (37 kW). These ratings become the natural nodes that drive the definition of machine engineering concepts.

At the machine level, reduction of parasitic losses, more efficient power management using electronic controls, and precise positioning of product functionality are among the key solutions that will be exploited to optimize price and value to the customer. External noise emissions standards will demand the correct balance of engine speed, power, and cooling system.

The JCB 444 diesel engine—launched at the beginning of 2005—is the first to be designed, developed, and manufactured by JCB. It has been created to serve the demands of mid-range off-highway equipment through this challenging period. The new engine architecture and functional attributes have been designed to provide a power source that can match

perfectly the needs of the JCB product range.

The emergence of electronics in construction machines presents the opportunity to re-engineer and simplify the operator interface of the machine. By using electronic and electrohydraulic control systems, intelligent machine functionality will dramatically improve operator ease of use. This change in turn will enhance machine productivity and the comfort and safety of the operator.

The compact sector will continue to be fast-growing in the construction equipment market. Customers of compact equipment demand more and more performance from machines with better operator visibility and site access. At the same time, customers will be less accepting of tradeoffs in machine operation and servicing to larger conventional machines. This trend is already evident in mini excavators. The new JCB 801X offers best-in-class dig performance from a reduced tail-swing package. The inline engine package enables excellent stability combined with good serviceability, while the full-width cab and outstanding joystick controllability give a big machine feel.

As with all manufactured products, the relentless need to engineer more cost-effective solutions will continue unabated. On this theme, the need to extend (or potentially eliminate) service intervals, and to reduce total cost of ownership will continue to be a route to competitive advantage in our industry.

JCB is proud to be associated with SAE, and we look forward to the next 100 years of progress in the off-highway industry together. **OHE**