

14TH CESA YOUNG PROFESSIONALS SUSTAINABILITY IMBIZO

Sustaining the Future of Engineering

Premier Hotel, Midrand | 19–20 August 2026

IMBIZO RESOLUTIONS

Preamble

The 14th CESA Young Professionals Sustainability Imbizo, convened at the Premier Hotel, Midrand on 19–20 August 2026 under the theme *Sustaining the Future of Engineering*, having considered presentations on engineering governance and public accountability, youth unemployment, ethics in the construction industry, artificial intelligence, professional registration, climate resilience, site exposure and engineering judgement, mining and energy policy, trenchless technology and dam safety —

RECOGNISING that compliance with a standard demonstrates that a requirement has been met, but does not by itself demonstrate readiness for changing conditions;

RECOGNISING FURTHER that engineering failures more often originate in failures of governance, judgement and accountability than in technical error;

CONCERNED by the scale of youth unemployment among qualified graduates, the deterioration of national infrastructure, and the persistence of unethical conduct and extortion in the built environment;

RESOLVES AS FOLLOWS:

Governance, Ethics and Accountability

Resolution 1 — Ethics as an individual practice

That every young professional present commits to four concrete actions within the next twelve months: to read and know their council's code of conduct; to identify the channel available to them for reporting unethical conduct before they need it; to mentor at least one person entering the profession; and to pilot at least one improvement within their own workplace. The Imbizo affirms that infrastructure statistics are the aggregate of individual decisions and individual signatures, and calls on member firms to ensure that young professionals are never placed under commercial or seniority pressure to sign work they have not independently satisfied themselves is correct.

Resolution 2 — Protection for those who raise concerns

That CESA and its member firms be requested to ensure that accessible, non-punitive channels exist for young professionals to escalate ethical, safety or technical concerns, recognising that a young professional without job security cannot reasonably be expected to carry this burden alone.

Youth Employment and Capacity

Resolution 3 — Deliberate investment in the first appointment

That the Imbizo calls on CESA member firms to treat the creation of first-opportunity positions for graduate engineers as a strategic industry obligation rather than a discretionary cost, and to formalise mentorship arrangements with defined contact time, defined developmental outcomes and accountability for the mentor, rather than relying on incidental exposure. Young professionals in turn commit to internalising national challenges as their own and to sustained action over the coming decade rather than episodic engagement.

Artificial Intelligence and Professional Responsibility

Resolution 4 — The unregistered graduate principle

That the Imbizo adopts the principle that artificial intelligence be treated as a capable but unregistered graduate: its output may be delegated but never signed without independent verification against first principles, codes and standards. The profession further recognises the shift in early-career value from performing calculations to judging them, and calls for training programmes to explicitly develop the ability to identify when an output is correct, marginally wrong, or dangerously wrong.

Resolution 5 — Firm-level AI governance and sequenced adoption

That CESA member firms adopt written internal AI usage policies addressing, at minimum: verification requirements before AI-assisted content enters drawings or client deliverables; POPIA-compliant limits on what client information may be entered into third-party tools; and documented disclosure of where AI has been used in the production of professional work. Adoption should follow a deliberate sequence — learn, pilot on work already understood, formalise policy, then scale — rather than uncontrolled individual adoption.

Professional Registration and Competence

Resolution 6 — Integrity of registration

That the Imbizo affirms that the misrepresentation of qualifications or experience to any registration council is not a victimless administrative matter but a direct risk to the lives of workers on site, and supports the strengthening of verification measures by ECSA and the SACPCMP.

Resolution 7 — Registration pathways and continuing development

That the SACPCMP and ECSA be requested to publish clearer guidance for professionals transitioning between engineering and construction management registration, setting out the distinct competency requirements of each so that candidates prepare appropriately; that the councils review the conduct and consistency of professional review interviews in light of concerns raised from the floor; and that young professionals use CPD deliberately to build toward their intended career direction, including dual registration where appropriate, rather than treating CPD as a compliance count.

Climate Resilience and Design Readiness

Resolution 8 — The end of stationarity

That the Imbizo formally records that the assumption that future climatic conditions will resemble the historical record is no longer defensible, and that designs relying solely on historical rainfall, flood and temperature records without sensitivity testing should be regarded as incomplete.

Resolution 9 — Adoption of the survival test

That young professionals apply five questions to every project: what could cause catastrophic failure; what happens if the design assumptions are wrong; who is most exposed if the asset fails; what is the full cost of failure including disruption and lost productivity; and will this asset still perform at the end of its design life. Where the answer is unknown, this should trigger investigation rather than be set aside.

Resolution 10 — Life-cycle cost and equitable resilience

That CESA advocate, through its engagement with clients and public bodies, for procurement and evaluation frameworks that assess whole-of-life cost and resilience rather than lowest capital cost; and that the Imbizo affirms that the consequences of infrastructure failure are not distributed equally, and that the vulnerability of the served community be treated as an explicit design input.

Site Exposure and Engineering Judgement

Resolution 11 — Breaking the site exposure paradox

That the Imbizo recognises the cycle in which young engineers are denied site exposure because they lack plant experience, and thereby never acquire it, and calls on consulting firms to break this cycle deliberately by establishing structured site assignment programmes with defined minimum exposure periods, allocated by design rather than by availability, and of sufficient duration for a young engineer to observe the consequences of their design assumptions.

Resolution 12 — Partnerships, reciprocal placement and further research

That CESA facilitate partnerships between consulting firms and operating clients to create site placement opportunities, including reciprocal arrangements enabling operations personnel to spend time in design environments; and that the site exposure study presented be expanded beyond a single organisation and beyond process engineering, with CESA supporting this work and disseminating the findings across member firms.

Policy, Regulation and Delivery

Resolution 13 — Policy becomes infrastructure

That the Imbizo affirms that regulatory decisions ultimately determine what is physically built; encourages young professionals to develop working literacy in the legal, financial and policy environments surrounding their technical work; calls on CESA to advocate for regulatory certainty, consistency of application and reasonable decision timelines, on the basis that institutional uncertainty converts directly into commercial risk, project delay and lost employment; and commits the CESA YPF to continued joint engagement with the SAIMM Young Professionals Council, SAICE Young Professionals, the SANCOLD Young Persons Forum and equivalent bodies.

Asset Stewardship and Method Selection

Resolution 14 — Stewardship, disruption and measurement

That method selection explicitly weigh disruption to communities and economic activity, and that trenchless and low-disruption methods be evaluated on whole-cost and social-impact grounds rather than unit rate alone; that the operation, maintenance, rehabilitation and upgrading of existing infrastructure be affirmed as principal engineering work requiring the highest levels of judgement and positioned as such to students and graduates; and that the Imbizo supports the continued maintenance of South Africa's hydrological monitoring networks and instrumentation, recognising that resilience analysis depends entirely on the integrity of the underlying measurement record, and that instrumentation is of value only where a competent person reviews the data.

Implementation

Resolution 15 — Accountability and communication

That the YPF National Committee assign each resolution to a responsible structure, report on progress at each national committee meeting, and table a written implementation report at the 15th Imbizo in 2027; and that these resolutions be circulated to all CESA member firms, the CESA Board, the cidb, ECSA and the SACPCMP within thirty days of adoption.

Leadership, Governance and Authority

Resolution 16 — Converting engineering knowledge into institutional authority

That the Imbizo records that engineering knowledge remains inert until it is connected to decision-making authority, and that the recurring pattern of technically competent warnings being appended, filed and never reaching the structures that allocate capital constitutes a governance failure rather than a technical one. Accordingly, every delegate commits to two actions within twelve months: to hold a written plan toward professional registration, recognising registration as the formal mechanism by which engineering knowledge becomes technical authority rather than an administrative formality; and to name one governance space — board, committee, council, forum or portfolio structure — that they will enter or prepare to enter. The Imbizo further calls on CESA member firms to develop in young professionals the non-technical competencies that governance participation requires, including financial and risk literacy, people and conflict management, and emotional intelligence, on the basis that technical credibility is the entry requirement to such rooms but is not by itself sufficient to hold a position in them.

Mentorship and Human Capital

Resolution 17 — Engineering the profession behind you

That every delegate names one person they will deliberately advance before the end of the year, recognising that advancement need not mean promotion and may consist only of sustained contact, guidance and the opening of access; and that the Imbizo affirms the multiplier effect of this commitment, whereby each delegate reaching back to two others transforms the composition of this room within three years. The Imbizo further resolves that changes in representation be pursued through the deliberate use of existing formal instruments — nomination, appointment and selection processes — rather than through advocacy alone, and calls on the YPF to establish a mechanism through which young professionals without access to a mentor may be connected to one, on the basis that a young professional navigating the profession without a mentor is being failed by it.

Measurement, Data and Organisational Learning

Resolution 18 — From dark data to closed feedback loops

That the Imbizo adopts the principle that data collected but never accessed, interpreted or acted upon — dark data — represents wasted organisational effort and, in the case of technical warnings, a direct public risk. Firms are called upon to move from annual reporting cycles to continuous sensing of the metrics that matter, including the registration and development progress of their candidate engineers, and to close the feedback loop by ensuring that collected data results in a decision, an intervention and a response to the individuals concerned. The Imbizo further affirms that analytics must be applied ethically, and that data gathered for developmental purposes must not be repurposed to penalise staff.

Wellbeing and Human-Centred Leadership

Resolution 19 — Human-centred leadership and the limits of measurement

That the Imbizo cautions against proxies for contribution — recorded hours, volume of documentation, and visible busyness — which measure presence rather than value, and calls on firms to interrogate whether their performance indicators measure genuine influence or merely generate noise. The Imbizo affirms that not everything that matters can be measured, that wellbeing in particular resists quantification while remaining a legitimate leadership responsibility, and that young professionals are human beings before they are engineers. Senior professionals are specifically called upon to apply their own hard-won insights regarding balance, family and sustainability to those they currently manage, rather than reserving such insight for retrospective reflection while requiring of others the working patterns they themselves came to regret.

Equity of Opportunity and the Development Pipeline

Resolution 20 — Equity in the allocation of engineering work

That the Imbizo recognises that two young engineers holding identical years of experience may hold entirely unequal experience, where one has been exposed to design, site supervision, contract administration, client engagement, reporting and project management while the other has been confined to drafting and observation, and that this disparity is a function of the opportunity afforded by the employer rather than of the individual's ability or ambition. Accordingly, member firms are called upon to audit the breadth of work allocated to their candidate engineers against the competency requirements for professional registration, to allocate exposure deliberately rather than incidentally, and to ensure that candidates are informed of what they must accumulate in order to register. The Imbizo affirms that where firms fail to provide such access, they should not be surprised that young professionals join their organisations and leave them.

Resolution 21 — Transformation measured at technical leadership, not at entry

That the Imbizo records with concern that although women constitute approximately half of engineering graduates, only some sixteen percent of registered engineers are women, and resolves that diversity present at graduate level but absent at technical leadership does not constitute a transformed profession. Firms are called upon to measure transformation at the point of technical leadership and to address recruitment, retention, training and progression as a single connected pipeline. The Imbizo further commits delegates to four practices of inclusion: recognising that individuals differ and adjusting support accordingly rather than applying uniform expectation; creating psychological safety such that a struggling colleague can say so without penalty; actively challenging unconscious bias in the weighting given to a colleague's contribution; and maintaining respect while permitting genuine disagreement. Employers are called upon to build capacity beyond technical training, including exposure to procurement, financial and business practice, and to the policy and governance frameworks that give engineering work its purpose.

Growth, Mentorship and Shared Risk

Resolution 22 — Recognising the invisible stage of professional growth

That the Imbizo affirms that the formative period in which a young professional feels uncertain, unqualified or out of place is a mechanism of growth rather than evidence of failure, and that the profession celebrates accomplished professionals while rarely acknowledging the difficult and invisible period that produced them. Young professionals are encouraged to treat unfamiliarity as an invitation to enquire rather than as proof that they do not belong, and to refrain from measuring themselves against a standard they have not yet had the opportunity to reach. The Imbizo affirms further that this development is not achieved through individual effort alone: firms wishing to produce capable professionals must provide the surrounding structure of mentors, sponsors and advisors experienced enough to convert a young professional's confusion into competence. Drawing on the principle from reinsurance practice that no participant carries risk alone and that risk distributed across a system prevents any single shock from breaking it, the Imbizo affirms that professional development, like risk, is best carried collectively.

Resilient Water Infrastructure

Resolution 23 — Stormwater interceptors as dual-function infrastructure

That the Imbizo recognises stormwater interceptors as performing two functions simultaneously — attenuating peak flows to reduce urban flood risk, and removing sediment, oils and greases from runoff before discharge — and notes research on the quality of runoff from South African highways identifying multiple pollutants entering receiving water bodies untreated. Given rapid urbanisation, the prevalence of areas with limited or no formal drainage, and the increasing frequency of extreme rainfall events, the Imbizo calls for the pre-treatment of urban and highway runoff to be treated as standard practice rather than as an optional enhancement, and for designers to apply SANS 50858 Parts 1 and 2 in sizing such systems. Noting that municipal specification has proven the effective lever for adoption in other jurisdictions, where authorities require interceptors in new developments as a condition of approval, the Imbizo calls on CESA to engage municipalities on the incorporation of equivalent requirements into South African development standards.

Procurement and Delivery Systems

Resolution 24 — Procurement as an act of engineering design

That the Imbizo records the finding presented that between eighty and ninety percent of the whole-life performance of an infrastructure asset is determined during procurement rather than during construction, and resolves accordingly that procurement strategy be treated as an engineering design decision rather than an administrative or supply chain function performed after the engineering is complete. Member firms and their engineers are called upon to seek involvement in the shaping of scope, risk allocation, evaluation criteria and contract strategy before a project reaches the market, and to advise clients that a tender award made on lowest capital cost alone conceals the variations, delays, rework and defective workmanship that follow it. The Imbizo affirms that speed, cost and reliability cannot be procured simultaneously, that an engineering-led and value-based approach evaluates whole-life cost, operability and efficiency rather than initial capital expenditure, and that risk should be allocated to the party best able to carry it rather than transferred wholesale to the contractor, consultant or client.

Resolution 25 — Matching capacity, design maturity and contract form to the project

That the Imbizo records the recurring pattern in which a client of insufficient capacity elects to manage delivery itself across a large number of disaggregated contracts, and appoints contractors before the design is complete, producing escalation, irregular expenditure, design mismatches and prolonged operational delay. Clients are accordingly called upon to assess their delivery capacity honestly and, where it is insufficient, to appoint a delivery partner acting as an extension of the client, as was done successfully on comparable international programmes delivering large contract portfolios under budget. The Imbizo further resolves that design maturity be established before going to market; that enabling and early works be executed ahead of main construction to reduce site and subterranean risk; that independent verification of milestones be adopted where public or private funds require protection; and that contract form be selected deliberately for the mechanisms it provides, including early warning provisions that surface problems while they remain correctable. The Imbizo notes that standard forms of contract are not the only lawful option, and that privately funded projects may adopt bespoke terms provided they meet legal requirements, while publicly funded projects remain subject to prescribed forms.