ENGINEERING
EXCELLENCE AWARDS 2010

ENGINEERS
AUSTRALIA
Sydney Division

CATEGORY JUDGING CRITERIA

Entrants should carefully read the "Entrant Information" and after deciding in which Award Category they wish to enter should submit their entry fully in accordance with the information provided. Level 1 submissions should comply with the requirements of the "How to Enter" details provided on the Entrant Information document. Level 2 (finalists) submission should be in accordance with "How to Enter" for that entry level. The Level 2 entry should include all aspects of the stipulated format and type of delivery required.

Entrants submitting projects or entries into the excellence awards program should ensure that due regard is made to the requirements for the health and safety of the workforce.

INDUSTRY AWARDS

Control Systems and Communications

- Demonstration of the "areas of excellence" of the entry.
- Demonstration of benefits to the community and focus on customer needs.
- Innovation in design, construction, maintenance or management practices.
- Environmental sustainability.
- Use of sound engineering practices/principles.
- Demonstration of the engineering challenge.
- Commercial viability and quality of work.
- Significance of the work as a benchmark of Australian engineering.
- Extent to which the work represents world's best practice.
- Adherence to budget and program.
- Originality/ingenuity of solution.

Software & Embedded Systems

- Demonstration of the "areas of excellence" of the entry.
- Demonstration of benefits to the community and focus on customer needs.
- Innovation in design, construction, maintenance or management practices.
- Environmental sustainability.
- Use of sound engineering practices/principles.
- Demonstration of the engineering challenge.
- Commercial viability and quality of work.
- Significance of the work as a benchmark of Australian engineering.
- Extent to which the work represents world's best practice.
- Adherence to budget and program.
- Originality/ingenuity of solution.

Products, Manufacturing Facilities & Processes

For an entry to be eligible, a commercial track record is required. Judging criteria include:

Focus on market place

- Identification and verification of customer/community needs including consideration of export potential.
- Use of feedback for continuous improvement (from other projects/processes/products).
- Commercial viability and quality.
- Attention given to needs (and amenities) of users/operators.

The product/facilities/process itself

- Innovation or originality (in the design process, product, facilities, manufacturing process, maintenance or management).
- Technical complexity appropriate to situation.
- Provision for maintenance (efficiency and effectiveness).
- Aesthetic considerations/achievements.
- Innovative use of computing (automation, intelligence, modelling systems or multi-media techniques).

Responsibility issues

- Environmental sustainability explored/optimised.
- Human safety and well-being explored/optimised.
- Economy in use of resources.

Other factors

- Standard of the submission.
- Co-operation with other appropriate professions/disciplines.
- Systematic review of potential spin-offs for use in other products.
- Intellectual property - potential exploited/protected?

Environment & Heritage

- A major environmental or heritage element of a project.
- Demonstration that the environmental and/or heritage aspects of the project are leading practice within the industry.
- Demonstration that the project has delivered what it set out to achieve, ie that the delivery met the criteria set out in the planning phase.
- A clear shift in approach from environment protection to sustainability outcomes that have delivered across each of the triple bottom line areas.
- Demonstration that the project contributes a positive legacy to the local and regional area in which it is located.

Welfare Health and Safety

For this category the criteria given in the guidance to the applicants on the website will be applied. However, emphasis will vary depending on the relevance of the criteria to this category.

Some guidance is provided below:

- The ability to demonstrate the areas of excellence of the project.
- There are two major areas that may be applicable to entries for this category. Entries need only be relevant to one of the two areas to qualify. Strong emphasis in the judging will be made in these areas:
  1. Welfare this will look at how the entry has benefited the community at large.
  2. Contribution to Health and Safety the extent to which the entry has or is likely to benefit those to whom it is targeted.
- Benefits to the community and focus on customer needs;
  - Benefits to the community will be covered in 1. above.
  - Focus on customer needs - a broad interpretation of customer will be taken for this criterion. Emphasis will be made on how well the entrant has identified the needs of those that stand to benefit from the project or product.
- Innovation in design, construction, maintenance or management practices;
  - This criterion is important to this category with originality being well viewed.
- Environmental sustainability;
  - Experience has shown that there is little applicability of this criterion and so it will not be given high emphasis.
- Use of sound engineering practices/principles;
  - These will be well regarded. The entry will be expected to have as its basis good engineering principles and practices.
- An engineering challenge;
  - Overcoming an engineering challenge will be well regarded.
- Commercial viability and quality of work;
  - Commercial viability is often of low relevance to entries in this category but will be given some recognition if a feature of the entry.
  - High quality work will be well regarded.
- Significance of the work as a benchmark of Australian engineering;
  - This will be taken into account if relevant.
- Extent to which the work represents worlds best practice;
  - This will be well regarded.
- Adherence to budget and program.
  - This is unlikely to be of relevance to many of the projects in this category and so will not be given strong emphasis.

Education and Training

Essential:

- Demonstrated excellence in significant education and training outcomes that meet customer needs evidence may include:
  - Evaluated impact,
  - Learning outcomes achieved,
  - Overall community benefit, and
  - Comparison with worlds best practice
- Innovation
- Use of sound engineering and educational principles in both the focus of the education and training, and in project design and implementation

Supporting:

- Commercial viability and quality
- Significance as a benchmark of Australian engineering education and training
- Adherence to budget and program
- Environmental sustainability
- An engineering challenge

Innovations & Inventions

- Entrants who are focusing on this category should note the scope and the range of coverage described in 'Award Categories' in the Entrant Guidelines.
- Judging will take into account the following main criteria, not necessarily in order of ranking:
- Innovative design, construction, maintenance or management practices - viz. originality/ ingenuity of the solutions.
  - Potential contribution to the economy.
  - Use of sound engineering practices/principles.
  - Significance of the work as a benchmark.
  - Impact of the work on the quality of life of the community.
  - Commercial viability and quality of the work, including the efficiency of patents and evident protection of intellectual property as well as marketing effort.
  - Environmental sustainability.
  - Standard of the submission.
- Judging will place emphasis on the above main criteria but may also take others into account.
- In addition to the above, entrants should refer to the 'Criteria of Entry' in the Entrant Guildlines.

PROJECT AWARDS

Research & Development

- This category looks at the means by which new ideas have been researched and developed for the marketplace. R&D consists of reviewing existing engineering knowledge, formulating new engineering ideas and concepts in the context of world markets, then testing and developing them. Research outcomes can include new artefacts, systems, products, processes, techniques and materials which have proceeded beyond the stage of innovation but prior to becoming a fully fledged manufacturing product or process.
- Submissions should include the following information to enable the judges to evaluate them:
  - The research undertaken, including any market research.
  - The uniqueness of the idea, including patents applied.
  - The scope and size and cost of the research project.
  - The development of the product, including the team size and composition, the time frame, the trade-offs made and the test-marketing undertaken to bring the end-product to the fruition.
  - The features and benefits of the product, including any environmental and sustainability benefits attaching to its use.

The quality and clarity of the submission will also be taken into account in the evaluation process and based on this, an interview with the R&D team may be required to fill out the details.

Project Management

This category provides for the management of a project or an engineering work which achieves client requirements in harmony with the environment, business and community considerations, while meeting time, cost and quality targets. The following assessment criteria should be addressed:

1. Performance against initial time target.
2. Performance against initial cost target.
3. Performance against initial quality target, QA measures put in place.
4. Innovation in project management methods and procedures in planning, organisation or control of project activities. Comment on how these innovations assisted in the management of the project.
5. Project management initiatives in the application of engineering solutions to specific problems including environmental, technical and commercial aspects.
6. The complexity of the project management role in terms of satisfying the needs of users, operators, the local community, suppliers, maintenance providers, consultants and financiers as well as the contractors and the owners.
7. Involvement with the environment, the local community and other interested parties and the manner in which the project manager dealt with local issues concerning the project.
8. Safety and well-being of workforce.
9. Skills development of employees and operatives on the job and any initiatives to improve productivity and efficiency.

Note:

(a) In regard to items 1 to 3, information should be provided on the initial agreed time, cost and quality targets at the commencement of the project. Any changes to the target/s as the project progressed should be described.

(b) The name of a key client representative who can corroborate this information should be provided for each project.

(c) Entries that are principally prepared for other categories of the Excellence Awards should ensure that the above assessment criteria are specifically addressed in the entry.

Infrastructure Projects

Entrants should provide a simple, succinct explanation of the project supported by diagrams and photos and highlighting the excellence aspects.

Judging will take into account the following criteria:

- Benefit to the community and focus on customer needs.
- Innovation – in design, construction, maintenance and management.
- Environmental sustainability.
- Use of sound engineering practices and principles.
- An engineering challenge – originality, ingenuity.
- Commercial viability.
- Significance as benchmark of Australian engineering.
- Extent to which project represents world best practice.
- Adherence to budget and program.
- Standard of submission.

Building & Structures

- Engineering features, which required significant new or innovative design and/or construction features.
- Quality of Engineering - such as the extent and thoroughness of testing and proving of design to assure and facilitate the project.
- Achievement of client objectives, with attention to cost, timely completion, quality of work and user satisfaction. Here we look primarily at the Engineering components rather than the Architectural features. Architectural features may, of course, set challenges for Engineering which will be valued in judging.
- Attention to environmental and heritage features that require special engineering attention. These can include energy conservation, construction techniques to preserve heritage features and general public compatibility of the project.
- Value of the project in advancing the status and reputation of Australian Engineering capability, both here and abroad. The potential to attract export business and build our international standing will be valued where appropriate.

Small Business Ventures

- The engineering challenge faced.
- Objectives and constraints.
- Evidence of originality and / or ingenuity.
- Evidence of a professional and rigorous approach.
- Evidence of results achieved across benefits, scope, quality. and achievement of objectives.

Engineering Reports

This category is intended to recognise excellent engineering reflected in a Published Report covering investigations, analyses, assessments and recommendations, where the importance of this work resides in its ability to influence decisions, practices, and future directions.

Entries will be expected to demonstrate how this Report has advanced the benchmark of Australian engineering, and the extent to which the work represents worlds best practice.

Entries for this category will be accepted from organisations of any size and without limit to the engineering topics covered in the Report.

- The engineering challenge faced
- Objectives and constraints
- Evidence of originality and / or ingenuity
- Evidence of a professional and rigorous approach
- Evidence of results achieved across benefits, scope, quality; and achievement of objectives
- Readability, presentation and clarity

Engineering for Regional Communities

This category looks for excellence in an engineering project which makes a clearly demonstrated contribution to the well-being of a defined regional community in terms of its lifestyle, economy and/or environment. In line with previous years the meaning of "defined regional community" may range from particular geographical locations (towns, villages), larger administrative regions (such as the Riverina or the Central West), or the entire non-metropolitan populace within NSW or Australia.

The following assessment criteria should be addressed:

- Impact of the work on the quality of life of relevant communities. There needs to be a demonstration that the entry contributes positively to the communities that use it in terms of cost, time, environment or general amenity.
- Use of sound engineering practices and principles. The design, use of materials, use of continuous improvements from other projects, the construction and/or manufacture of the project must be shown to be based on sound engineering principles that meet or exceed client expectations.
- Environmental sustainability. The entry should demonstrate achievement of the majority of the six principles of sustainability: inter-generational equity. the precautionary principle. biodiversity. economy in use of resources. mitigation of environmental impacts. and remediation of environmental damage.
- Originality/ingenuity of solution shall be highlighted where appropriate.
- Significance of the work as a Benchmark for Australian Engineering. Is the project at or close to world's best practice.
- Adherence to budget and program.
- Commercial viability or contribution to the economy of the relevant community. The entry should demonstrate a real contribution to the regional economy or at least deliver significant economic benefits to its clients/users. This could relate to the whole-of-life costs or the value the entry adds to engineering construction, manufacture, maintenance or application.
- The entry should include a good executive summary. clear illustrative material in the form of photos, (plans, video footage and the like for Level 2). and observe the entry guidelines in areas such as word and page limits.
- The X Factor – is this a project which excites the imagination of those who see it or use it?