



*Promoting “Excellence in Technology”*

# **CODE OF ETHICS & GUIDELINES FOR INTERPRETATION**

# **Introduction**

## **Mission Statement of CTTAM**

“Provide certification through credibility, recognition, employability and relationship”.

## **Preamble**

The purpose of the Code of Ethics is to give general statements of the principles of ethical conduct in order that the members of CTTAM may fulfil their duty to the public, the profession, and their fellow members.

The following Code of Ethics principles shall be construed as a general guide, and not as a denial of the existence of other duties equally imperative and other rights though not specifically mentioned. The members are bound by its provisions just as they are bound by the provisions of CTTAM by-laws and regulations.

## **Members of CTTAM shall:**

1. Hold paramount the safety, health and welfare of the public, the protection of the environment and the promotion of health and safety within the workplace.
2. Undertake and accept responsibility for professional assignments only when qualified by training or experience.
3. Provide an opinion on a professional subject only when it is founded upon adequate knowledge and honest conviction.
4. Act with integrity towards clients or employers, maintain confidentiality and avoid a conflict of interest but, where such conflict arises, fully disclose the circumstances without delay to the employer or client.
5. Uphold the principle of appropriate and adequate compensation for the performance of their work.
6. Keep informed to maintain proficiency and competence, to advance the body of knowledge within their discipline and further opportunities for the professional development of their associates.
7. Conduct themselves with fairness, courtesy and good faith towards clients, colleagues and others, give credit where it is due and accept, as well as give, honest and fair professional comment.
8. Present clearly to employers and clients the possible consequences if professional decisions or judgements are overruled or disregarded.
9. Report to the appropriate agencies any hazardous, illegal or unethical professional decisions or practices by fellow members or others.
10. Promote public knowledge and appreciation of applied science technology and protect the association from misrepresentation and misunderstanding.

## **Principle 1**

Hold paramount the safety, health and welfare of the public, the protection of the environment and promote health and safety within the work place.

### *Amplification*

- (a) This principle must be considered the most significant in the Code of Ethics. Realistically, any project undertaken involves some risk to safety, health and welfare and may have some impact on the environment. To hold paramount is to emphasize the need to give diligent regard to this principle and to rank it ahead of expediency or economic gain to either client or self.
- (b) Members shall take appropriate action and notify proper authorities if in their professional opinion, unacceptable hazards to the public, human welfare or the environment do exist.
- (c) Members shall not complete, sign or seal plans or other documents that, in their professional opinion would result in unacceptable hazards to the public, human welfare or the environment, or do not conform to current standards. If the clients or employers insist on such conduct, and members are unable to dissuade them, then the commentary regarding Principle 8 should be followed.

### *Commentary*

Members must be familiar with current safety codes, standards and other external regulations pertaining to their discipline. They must understand their implications to the safety and welfare of the public.

Members should maintain a responsible interest in both the immediate and long-term effects of the application of practices that affect the public welfare and should be aware that the use of technology may create situations that endanger the long-term safety and welfare of the public. If necessary, members should advise corporate management accordingly.

Occasionally, the obligations that members have to their clients/employers and to the public may be in conflict. While the members are obliged not to disclose confidential information, or to use such information to the disadvantage of the clients/employers, failure to report a situation that members believe may endanger the safety or welfare of the public would be contrary to this paramount principle. There should be no doubt as to how members must act.

When members are retained as an expert in litigation cases, any information received or developed in the case is bound by the general rules of litigation, including rules of privilege and disclosure. Members face a dilemma when information they have poses an imminent danger to the public but is bound by legal privilege.

Members must act out of a sense of duty, and although the members ultimate responsibility is clear, there is no universally applicable procedure to be used for discharging it. Responsible disclosure must be conducted with the interest of the public in mind, and obviously requires that the members put their names on the action and sometimes their occupations on the line.

## **Principle 2**

Undertake and accept responsibility for professional assignments only when qualified by training and experience.

### *Amplification*

- (a) Members shall not sign, seal or take credit for plans, specifications, reports or parts thereof unless actually prepared by them or prepared under their direct supervision. The seal and members signature must only be applied to work after the responsible members is satisfied the document or component for which he or she is professionally responsible is complete and correct.

### *Commentary*

Members shall offer services, advise or undertake professional assignments only in areas of their competence by virtue of training and experience. This includes exercising care and communicating clearly and accepting or interpreting assignments and in setting expected outcomes. It includes the responsibility to obtain the services of a specialist or an expert if required or, if the technique is uncertain, to proceed only with fullest disclosure of the experimental nature of the activity to all parties involved. This requirement is more than simply duty to a standard of care, it involves honesty with client, employer, and one's self.

In an age of rapidly expanding technologies, new concepts and theories, members cannot be expected to be conversant with every new development of knowledge. Thus, members have increased personal responsibility to employ the services of others who have expertise to supplement their own capabilities. This responsibility is most important when adopting new processes like computer software to ensure the programs are site-specific to the member's project. (Also see Principle 6).

## **Principle 3**

Provide an opinion on a professional subject only when it is founded upon adequate knowledge and honest conviction.

### *Amplification*

- (a) Members shall clearly distinguish between facts, assumptions, and opinions in reference to applied science technology in the preparation of reports, in conversation with clients and colleagues, in statements to the media, in the publication of papers and articles, and in discussion in a public forum.
- (b) Members shall not make statements, criticisms, or arguments generated or paid for by private interests on matters relating to public policy, unless they indicate on whose behalf the statements are being made.

- (c) Members shall ensure, to the best of their ability, that statements attributed to them properly reflect their professional opinion.
- (d) Members shall not misrepresent their qualifications to their clients or their employers.
- (e) Members shall engage or provide advice on engaging, experts or specialists when, in their judgement, such services are in the best interests of their client or employer.

#### *Commentary*

It is the responsibility of members to clearly and accurately express the results of their work and avoid bias due to political, economic or other non-technical factors. When called upon, members shall do their best to ensure that their professional opinions are accurately represented. When presenting complex issues to a non-technical audience, in order to avoid misinterpretation, members must simplify their discussions without losing the critical elements. Members shall separate their personal views from their professional activities and be impartial and factual when expressing professional opinions.

### **Principle 4**

Act with integrity towards clients or employers, maintain confidentiality and avoid a conflict of interest, but where such conflict arises, fully disclose the circumstances without delay to the employer or client.

#### *Amplification*

- (a) Members shall act judiciously when administering a contract on behalf of their client or employer and be realistic and honest in all estimates, reports and statements.
- (b) Information gained in confidence during the course of assignments shall not be used for personal gain, or divulged to either another client or new employer without the express permission of the previous client or employer.
- (c) Any conflict of interest concerning, for example, personal friends, close associates, or relatives shall be revealed immediately to the client or employer. If, in spite of a conflict, members are instructed to continue, the interests of the clients or employers shall be held paramount over the member's interests.
- (d) Any outside activity shall be avoided if it will have an adverse affect upon their employer's business.

#### *Commentary*

The interpretation of agreements and contract documents must be undertaken with fairness and impartiality, and if members become aware of errors or omissions in their services, they should report immediately to their superiors and work to rectify these problems.

Any information received of a confidential nature during the performing of their professional service shall be deemed the exclusive property of its owner and shall not be disclosed to others or used by the member except with the owner's specific approval.

When members use designs supplied by clients, the designs remain the property of the clients and should not be duplicated by members for others without express permission from the first client.

Technical knowledge of a non-confidential nature gained by the member through exposure to the work environment is part of a member's experience and may be used in subsequent projects without further consent.

Members should be careful in their businesses that potential conflicts of interest within their control be avoided, for example, a member employed by a municipality should not have an interest in a land developer operating in that municipality.

Precise rules in conflict of interest are not possible and members must use their conscience and sense of honour for guidance.

In any inquiry to adjudicate an alleged conflict of interest, the total circumstances surrounding the conflict must be investigated.

## **Principle 5**

Members shall uphold the principle of appropriate and adequate compensation for the performance of their work.

### *Amplification*

- (a) Members should ensure that compensation is fair and appropriate for the services rendered, but are expected to put service above financial gain, quality above quantity and acknowledge a code of honour within a competitive spirit.
- (b) Members should not undertake a contract for anything other than a firm price, and be cautious of contracts containing contingency fee clauses.
- (c) Members should not submit any proposal to secure an engagement or assignment with a firm price or estimated cost lower than the realistic expected full estimated cost of the proposed engagement.

### *Commentary*

Member fees shall be determined by the scope of work and level of service required. Cutting fees to the extent that would result in the rendering of an incompetent or dangerous service is unethical.

Contingency fee arrangements may cloud the judgement of the member dependent on the size of the fee, for example, zero in the case of an unsatisfactory conclusion or disproportionately high in other situations.

Offering services at less than cost as a “loss leader” in order to secure future work is not recommended, particularly where the services might have an effect on the feasibility of future work. Potential clients should be made aware if a “loss leader” type of service is offered, together with the future work expectation.

## **Principle 6**

Keep informed to maintain proficiency and competence, to advance the body or knowledge within their discipline and further opportunities for the professional development of their associates.

### *Amplification*

- (a) Members must ensure that both their proficiency and competence are maintained throughout their careers by remaining abreast of developments and knowledge in their area of expertise. This requires a personal commitment to ongoing professional development and continuing education.
- (b) In addition to maintaining both their own proficiency and competence, members shall endeavour to contribute to the advancement of the body of knowledge within their areas of expertise.
- (c) Members have a special obligation to demonstrate understanding, professionalism and technical expertise to members under their supervision.
- (d) Within the framework of the practice of their profession, members are expected to participate in providing opportunities to further the professional development of their subordinates and colleagues.

### *Commentary*

Should there be a technologically driven or individually motivated shift in the area of technical activity, it is a member’s duty to attain and maintain competence in all areas of involvement.

Members are free to tackle new challenges and learn new skills through their work as long as successful completion of the assignment is not jeopardized, and honesty is maintained with the client or employer.

Where members render services based on computer programs, they shall do so only after taking steps to thoroughly understand the program, its underlying assumptions and its limitations.

Members should actively participate in technical and professional development seminars, continuing education programs and the presentation of papers at professional meetings. They

should contribute to the dialogue fostered by their professional journals and support instructional activities in their area of involvement.

Duties assigned to non-certified members should make use of their training and experience and give them maximum exposure to the knowledge of experienced members, which would include informal discussions with senior members on ethical dilemmas, individual employment interests and professional growth to maintain an up-to-date and competitive capability to serve employers, clients and the public.

Non-certified members should be assisted in their advancement through teaching and thoughtful supervision, and encouraged to become registered when they demonstrate adequate qualifications.

## **Principle 7**

Conduct themselves with fairness, courtesy and good faith toward clients, colleagues and others, give credit where it is due and accept, as well as give, honest and fair professional comment.

### *Amplification*

- (a) Members will not maliciously injure the character or the prospects of business of another member or individual, being as careful with a colleague's reputation as with their own.
- (b) Members will exercise restraint when commenting upon the work of another member.
- (c) Members will not, except in cases where review is usual and anticipated, evaluate the work of a fellow member without the knowledge of, and after communication with, that member.
- (d) Members shall not attempt to supplant another member in a particular employment after becoming aware that definite steps have been taken toward the other's engagement.
- (e) Members will not use the advantages of a salaried position to compete unfairly with another member.
- (f) Members will not compete improperly by reducing charges to underbid a fellow member after having been informed of that member's charge.
- (g) Members, when using designs supplied by a client or by a consultant, shall recognize and protect the ownership of the designs by the client or consultant and refrain from duplicating them for others without express permission.
- (h) Members, before undertaking work for others which involves improvements, plans, designs, inventions or other records which may be copyrighted or patented, shall attempt to enter into an agreement regarding the ownership of such copyrights or patents.
- (i) Members shall provide, when requested, a frank but private appraisal of employees or of members being considered for employment.



- (j) Members will not use an affiliation with a non-member, a corporation or a partnership as a cloak for unethical acts or to avoid acceptance of personal responsibility.
- (k) Members shall refrain from distorting or altering facts in an attempt to justify decisions or avoid responsibilities.
- (l) Members will advise the client or employer when it appears that a project will not be in the best interests of the client, employer or the public.
- (m) Whenever possible, members shall acknowledge contributions of others for work with which the member is associated and name those who were individually responsible for designs, inventions, writings or other accomplishments.
- (n) Members shall be open and receptive to new approaches or criticisms offered in a positive vein, and not overly defensive regarding preconceived positions.
- (o) Members may promote and advertise their work or abilities provided that:
  - the advertising preserves the public interest by reporting accurate and factual information which neither exaggerates nor misleads,
  - the advertising does not impair the dignity of the members,
  - the statements do not convey criticism of other members directly or indirectly.
- (p) Members will not offer to pay or agree to pay either directly or indirectly, any commission, political contribution, gift, or other considerations in order to secure work.
- (q) Members will not accept compensation, financial or otherwise, from more than one interested party for the same service, or for services pertaining to the same work, unless there is full disclosure to, and consent of, all interested parties.
- (r) Members will not accept financial or other considerations, including free services, from material or equipment suppliers as a reward for specifying their product.
- (s) Members will not accept commissions or allowances, directly or indirectly, from contractors or other parties dealing with their clients or employer in connection with work for which they are responsible.
- (t) Members will endeavour to provide prospective employees with complete information on working conditions and proposed status of employment and after employment, keep them informed of any changes in such conditions or status.

*Commentary (a, b, c)*

Unless convinced that responsibility to the community demands it, members will not express professional opinions which reflect on the ability or integrity of another person or organization.

Contacting a member whose work is to be reviewed not only is a professional courtesy but also provides the opportunity for the exchange in pertinent information which would assist in

the review. If the results of such a review demonstrate safety or environmental concerns, it is mandatory that the member responsible for the work be contacted again to review these concerns in order to provide him or her with an opportunity to comment prior to further action (see also Principle 9).

If a client requests a review of the work of a member and further stipulates that this member not be contacted, the client should be advised that these instructions are contrary to the spirit and intent of the Code of Ethics.

Members are entitled to review and evaluate the work of other members when required by their employment duties and when the experience and knowledge is appropriate. For an adequate review, it may be important to be aware of the nature and conditions attached to the assignment handled by the first member. Open communication should exist between the two members so that underlying assumptions are understood by the reviewing member, and so that the first member has an opportunity to respond to any comments or criticisms.

If a document is simply being read for information, it is not being evaluated. The essence of evaluating is that the document be read in a critical manner and that the statements are confirmed or rejected by the reader. This process of criticism is not limited to the obvious formal full techniques of analysis and calculation; it can be quite informal and based simply upon experience.

*Commentary (d)*

Members, when accepting assignments, should ensure this subject is introduced in pre-contract discussions. They should not continue to seek employment on a specific engagement after being advised that another member has been selected.

*Commentary (e)*

Members should not engage in outside technological work to an extent prejudicial to their salaried position.

Members should not use the influence of a salaried position to direct clients to an office in which they have a financial interest.

Members should not use equipment, supplies, laboratory or office facilities of their employer to carry on outside practice without the employer's consent.

## **Principle 8**

Present clearly to employers and clients the possible consequences if professional decisions or judgements are overruled or disregarded.

### *Amplification*

- (a) This principle needs no further amplification.

### *Commentary*

Members may occasionally find themselves in a situation where their recommendation is being questioned by their employer, client, or another expert.

Communication should be established both in writing and by personal contact, particularly for contentious issue, to ensure that the information and assumptions are laid out simply and lucidly. When disagreement exists between two members, and the senior member chooses to overrule the other member's recommendation, the senior member consciously takes responsibility.

Note that members have continuing obligations, even through their recommendations may be overruled (see Principle 9).

Another element of difficulty is introduced when members find their recommendations being questioned by a non-member. The non-member may not have the technical expertise to appreciate both the rationale of the recommendation and the potential consequences of failure to accept the recommendation. Bearing in mind that the member remains the last line of defense for the public welfare, he or she must make all reasonable efforts to ensure that an appropriate decision is made.

When a situation arises wherein a client or employer makes a decision that adversely affects the public interest, and is contrary to the recommendation of the member, the member must inform the client or employer of the consequences of the decision. If the client or employer is unresponsive, the member should notify the appropriate regulatory authorities who have the ability to evaluate the concerns and the power to suspend activities until the technical issue is resolved.

## **Principle 9**

Report to the appropriate agencies any hazardous, illegal or unethical professional decisions or practices by fellow members, or others.

### *Amplification*

- (a) Members must immediately report hazardous, illegal or unethical conduct of which they become aware and take all required corrective measures. This principle is not limited to the work place.

### *Commentary*

Through informal contact, normal working relationships, or special circumstances such as design reviews, one member may develop the opinion that the work of another member is deficient. The inadequacies may arise from unskilled practice and/or unprofessional conduct.

If the immediate physical safety of the public is in jeopardy, speedy notification of the owner, operator or appropriate regulatory authorities is the immediate duty of the member. Prompt notification is necessary to prevent potential harm to the public through the continuation of unacceptable practices. Members have a responsibility to be aware of hazards to society created by their profession, and also have a responsibility to report unethical practice so it may be dealt with through the disciplinary process.

Some hazards are slow to develop, yet are of potentially great danger, such as chemical waste disposal. Such actions should be reviewed with the same concern for maximum public protection and minimum environmental impact.

Ignoring unprofessional practices, either for expediency or sympathy, may indirectly endanger the public and certainly circumvents the responsibility of self-regulation that has been granted to the Association. Intentionally refraining from reporting substantive breaches of the Code of Ethics on the part of another member therefore constitutes unprofessional conduct.

## **Principle 10**

Promote public knowledge and appreciation of applied science technology and protect the association from misrepresentation and misunderstanding.

### *Amplification*

- (a) The principle is self-explanatory and no amplification is needed.

### *Commentary*

The general public's image of our Association and its members is based on impressions gained from many sources. These perceptions are, in turn, biased both by the context in which they are encountered and by the past experience of the observers. Typical sources of these impressions include students of technology, the media, friends, relatives and teachers, some of whom may be members, and so on.

Members of the Association are role models and must be aware of it. What they do and say and the manner in which they communicate is observed, absorbed, and reported by others including children, non-member associates and friends. It is apparent, therefore, that what the public understands about members and their work depends upon members actions and what they understand themselves to be.

A positive image of the Association, its members and its technologies can be promoted in many ways including conscientious work, a caring attitude towards others, particularly students, and active participation in educational programs such as high school career days and science fairs.

Members should be prepared to defend the Association in the light of unfair and defamatory comments. They must, however, beware of the danger of compounding a problem with an inadequate or incorrect rebuttal. Guesswork must be avoided and correct facts obtained. If necessary, a source which has the facts and can follow up on the matter properly should be sought. The staff at the Association office can help in this regard.

Helping the public to become better informed and drawing its attention to our good works will promote and enhance our image.